Casey Creek near Cadiz, Kentucky

Sinking Fork near Cadiz, Kentucky

North Fork Little River near Hopkinsville, Kentucky

Little River at Crute Road near Cadiz, Kentucky

Project Final Report

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Conversion Factors

Temperature in degrees Celsius (°C) may be converted to degrees Fahrenheit (°F) as follows:
°F=(1.8×°C)+32

Specific conductance is given in microsiemens per centimeter at 25 degrees Celsius (µS/cm at 25 °C).

Concentrations of chemical constituents in water are given either in milligrams per liter (mg/L) or micrograms per liter (µg/L).

Abbreviations

AIC – Akaike Information Criterion
EDI – equal-discharge increment
EWI – equal-width increment
GC/MS – gas chromatography/mass spectrometry
HAL – health advisory level
KDA – Kentucky Department of Agriculture
MCL – maximum contaminant level
MDL – method detection limit
mg/L – milligrams per liter
MRL – method reporting limit
N- normal
NASS – National Agricultural Statistics Service
NWQL – National Water Quality Laboratory
RPD – relative percent difference
µg/L – micrograms per liter
USEPA – United States Environmental Protection Agency
USGS – United States Geological Survey

Executive Summary

The Little River Basin is highly vulnerable to effects from runoff, because much of the area is underlain by karst. The Little River Basin encompasses about 600 square miles in Christian and Trigg Counties, and a portion of Caldwell County in western Kentucky. Water samples were collected in streams in the Little River Basin, Kentucky, during 2003-04 for a study conducted in cooperation with the Kentucky Department of Agriculture. The objectives of the study were to assess the occurrence and distribution of pesticides, nutrients, and suspended sediment, to evaluate spatial and seasonal variability of pesticides, nutrients, and suspended sediment, and to estimate the loads and yields of selected pesticides, nutrients, and suspended sediment in the basin.

Stream-sampling sites in the Little River Basin were selected having mixed land use and different types of agricultural land (pasture or row crop). Four fixed surface-water sites were sampled monthly during March-November 2003 and during February-November 2004. Additional samples were collected at each of these sites during three high-flow events and one low-flow event. Samples also were collected from five synoptic surface-water sites during three high-flow events and one low-flow event over the two years. Ninety-one water samples were analyzed for 127 pesticides and pesticide degradates, and ninety-two water samples were analyzed for nutrients and suspended sediment at the four fixed surface-water sites.

Herbicides were detected more frequently than insecticides and fungicides; 15 of the 24 pesticides detected in surface-water samples were herbicides. Atrazine and simazine were detected in all surface-water samples. Metolachlor and acetochlor were detected in more than 45 percent of the Deethylatrazine, a transformation compound of atrazine, was detected in 100 percent of the samples. Diazinon, the most commonly detected insecticide, was detected in 25 percent of the collected samples and was found at all sites, except Casey Creek.

Most pesticides were present in low concentrations. Atrazine and simazine (row-crop herbicides) had the highest measured concentrations (22 and 6.1 µg/L, respectively) and were the most heavily applied herbicides in the basin. Atrazine and simazine were the only two pesticide compounds to exceed the U.S. Environmental Protection Agency (USEPA) standards for drinking water. Metolachlor also was heavily applied in the basin, but concentrations were never greater than 0.32 µg/L.

In general, the largest mean-annual loads of select pesticides among the fixed surface-water sites were at the Little River near Cadiz site. The estimated annual loads of acetochlor, atrazine, diazinon, metolachlor, and simazine for the study period were about 0.01 to 2.2 percent of the amount applied in the basin. Atrazine had the highest estimated use and the highest estimated loads in the basin. The largest load of the insecticide, diazinon, estimated at the North Fork Little River site, was only 0.9 percent of the atrazine load.

Inputs of nitrogen and phosphorus to streams from point and nonpoint sources were estimated for the Little River Basin. Commercial-fertilizer and livestock waste application onto row crops are a principal source of nutrients for most of the Little River Basin.

Some of these nutrients from agricultural nonpoint sources eventually are transported to streams by surface runoff, erosion of sediment, or ground-water discharge.

Sources of nutrients in the urban areas are mainly from effluent discharge from wastewater-treatment facilities and fertilizer applications to lawns.

The Little River near Cadiz site contributed the largest estimated mean annual loads of nitrite plus nitrate (2,500,000 lb/yr) and total phosphorus (160,000 lb/yr) than the other three fixed-network sites. Of the two main upstream tributaries from the Little River near Cadiz site, the North Fork Little River was the greatest contributor of total phosphorus to the study area with about 69 percent of the total estimated mean annual load at the Little River near Cadiz site. The other main upstream tributary, South Fork Little River, had an estimated mean annual load that was about 20 percent of the mean annual load at the Little River near Cadiz site.

The North Fork Little River site had the largest mean annual yield of total phosphorus (1,600 (lb/yr)/mi^2) and orthophosphate (1,100 (lb/yr)/mi^2). A principal source of phosphorus for the North Fork Little River is discharge from wastewater-treatment facilities. The largest mean annual yield of nitrite plus nitrate was observed at the South Fork Little River site.

Concentrations of suspended sediment were highest in the spring (April-June) during runoff and low during fall. The highest concentration of suspended sediment (1,020 mg/L) was observed at the Sinking Fork near Cadiz site.

Estimated loads of suspended sediment were largest at the Little River near Cadiz site, where the estimated mean annual load for 2003-04 was about 84,000,000 lb/yr. The North Fork Little River site had the largest estimated mean annual yield of suspended sediment (450,000 (lb/yr)/mi^2).

Introduction

Pesticides are chemical or biological substances that are used to control pests such as weeds (herbicides), insects (insecticides), and fungi (fungicides). Nearly 1 billion pounds of pesticides are used annually in the United States (Barbash and Resek, 1997). About 80 percent of pesticides are used for agricultural purposes, but pesticides also are used for industrial, commercial, and residential purposes. Pesticides are present in streams and aquatic ecosystems in many parts of the United States and the world (Larson and others, 1997). Many streams also contain nutrients (including nitrogen and phosphorus compounds) at concentrations exceeding natural conditions (Fuhrer and others, 1999). Although pesticide and nutrient applications are useful for many purposes, excessive amounts of these compounds in the environment may cause a variety of adverse ecological or human-health effects. Suspended sediment plays a major role in the transport and fate of contaminants such as pesticides and nutrients because contaminants may sorb onto the surface or the suspended sediment particles and be transported and deposited in other areas downstream.

Water resources in the Little River Basin potentially are vulnerable to applications of pesticides and fertilizers associated with both agricultural and nonagricultural activities, especially because much of the basin is characterized by karst topography. Karst topography is characterized by internal (sinkhole) drainage and rapid flow through solutional conduits, providing reduced opportunity for natural attenuation of contaminants and enhanced potential for surface- and ground-water contamination (Field, 1990).

In Kentucky, about 520 stream miles are impaired because of nutrients and about 470 stream miles are impaired because of suspended sediment (U.S. Environmental Protection Agency, 2006). Currently, no streams in Kentucky are listed as impaired for pesticides, because there is a lack of data on concentrations of pesticides in surface water. The Kentucky Environmental and Public Protection Cabinet-Division of Water has listed some streams in the Little River Basin as impaired streams for nutrients and suspended sediment in the State's 2002 305(b) Report to Congress on Water Quality and in the 2002 and 2004 303(d) List of Waters for Kentucky report (Kentucky Environmental and Public Protection Cabinet, 2003a and 2003b; Kentucky Environmental and Public Protection Cabinet, 2005).

Because of these impairments, the State must develop plans to restore and maintain the water quality of the streams in the Little River Basin. The plans establish a "total maximum daily load", or TMDL, for the impaired streams. A TMDL represents the total amount of contaminant a water body can assimilate without violating the designated water-quality standard established by the U.S. Environmental Protection Agency.

In 2003, the U.S. Geological Survey, in cooperation with the Kentucky Department of Agriculture, began a study to determine concentrations, and estimate loads and yields of pesticides, nutrients, and suspended sediment in the Little River Basin. Information from this study will assist State and local water managers and planners, who are responsible for implementing TMDLs and who are responsible for drinking-water supplies in the Little River Basin, to make informed management decisions on pesticides, nutrients, and suspended sediment.

Purpose and Scope

The purpose of the study was to determine the presence and distribution of selected pesticides, nutrients, and suspended sediment in streams in the Little River Basin study area, to evaluate the variability in concentrations of pesticides, nutrients, and suspended sediment by site and season, and to estimate the loads and yields of selected pesticides, nutrients, and suspended sediment at select sites in the basin.

This report summarizes the occurrence and distribution of selected pesticides, nutrients, and suspended sediment and provides estimates of selected pesticides, nutrients, and suspended sediment loads and yields from samples collected from streams in the Little River Basin from 2003-04. Selected pesticides, nutrient, and suspended sediment loads are computed using LOADEST, a U.S. Geological Survey software program used to compute mean constituent loads in rivers using regression models. Loads and yields of selected pesticides, nutrients, and suspended sediment are presented for three sites in the basin.

Study Design

Stream-sampling sites in the Little River Basin were selected to assess the spatial and seasonal variability of nutrients, suspended sediment, selected pesticides and pesticide degradates in subbasins consisting of mixed land use and different types of agricultural land. Samples were collected on three Little River main stem sites and five tributaries—the North Fork Little River, South Fork Little River, Muddy Fork, Sinking Fork, and Casey Creek (fig.1 and table 1).

Water-quality and suspended-sediment samples were collected monthly (March 2003 through November 2003 and February 2004 through November 2004) at four fixed-network sites. The sites included North Fork Little River, South Fork Little River, Sinking Fork near Cadiz, and Little River near Cadiz. An additional four samples were collected at each of these sites based on high-flow events.

In addition to the routine sampling at the four fixed-network sites, five synoptic-network sites were sampled twice each year in 2003 and 2004. Three high-flow events and one low-flow event were collected over the two years to evaluate the spatial distribution of nutrients and suspended sediment in the various subbasins in the Little River Basin.

Ninety-two samples were collected for nutrient and suspended sediment at the basic-fixed sites, 20 samples were collected at the synoptic sites. Ninety-one samples were collected for pesticides and pesticide degradates. Twenty-two samples were collected for quality assurance/quality control (blanks and replicates).

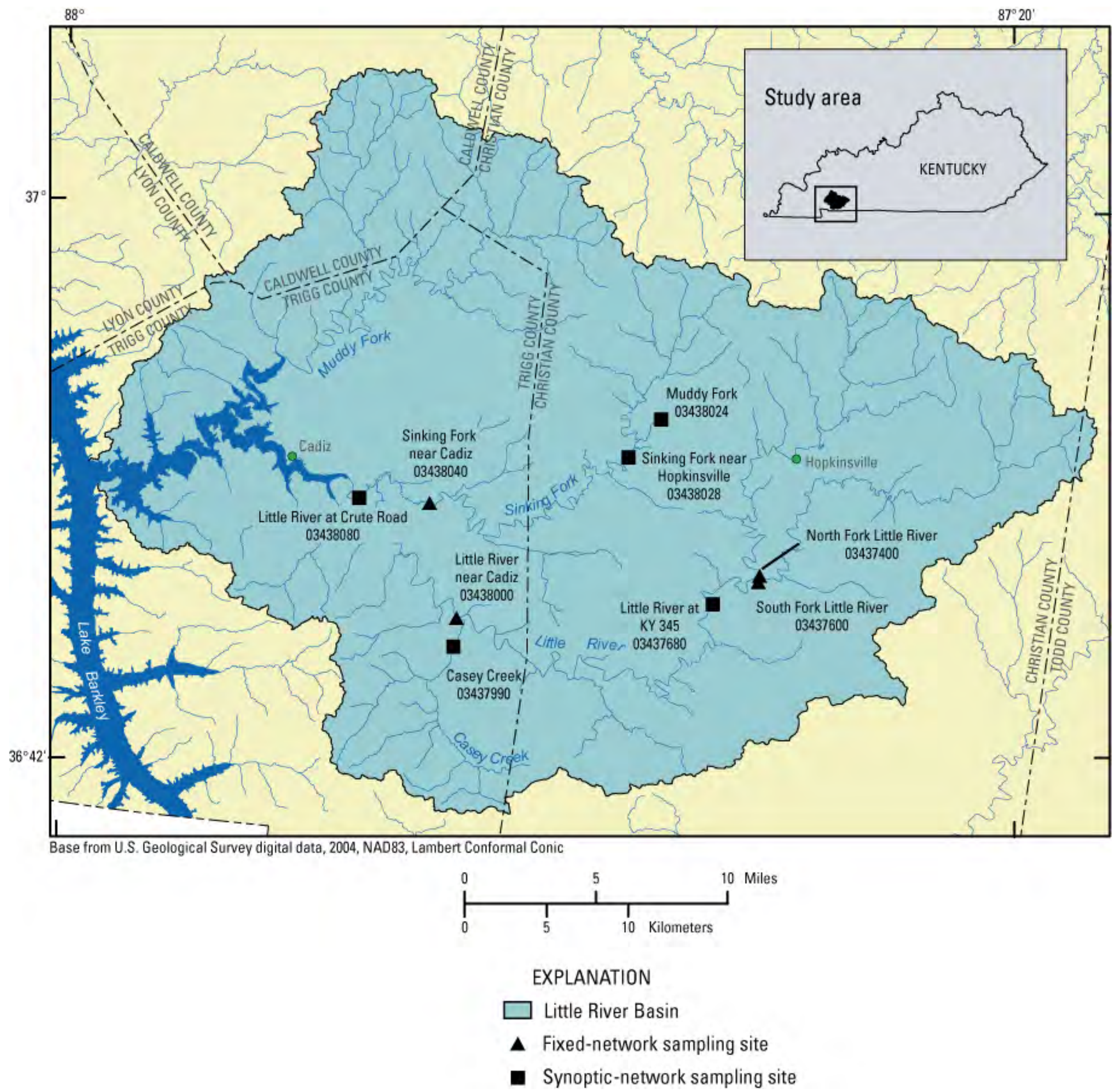


Figure 1. Location of the surface-water-sampling sites in the Little River Basin, Kentucky.

Table 1. Description of surface-water-quality sampling sites in the Little River Basin, Kentucky.

[USGS, U.S. Geological Survey; mi^2, square mile; Ky., Kentucky; N/A, not applicable]

USGS site number	USGS site name	Abbreviated site name	Drainage area (mi^2)	Site type	Percentage of basin area in indicated land use[1]			
					Agriculture	Forest	Urban	Water
03437400	North Fork Little River at Gary Lane Bridge near Hopkinsville, Ky.	North Fork Little River	58	Fixed	50	36	13	1
03437600	South Fork Little River at KY 107 near Hopkinsville, Ky.	South Fork Little River	67	Fixed	63	26	11	0
03438000	Little River near Cadiz, Ky.	Little River near Cadiz	244	Fixed	57	35	6	2
03438040	Sinking Fork at Kings Chapel Road near Cadiz, Ky.	Sinking Fork near Cadiz	107	Fixed	68	26	6	0
03437680	Little River at KY 345 near Hopkinsville, Ky.	Little River at KY 345	134	Synoptic[2]	N/A	N/A	N/A	N/A
03438024	Muddy Fork near Hopkinsville, Ky.	Muddy Fork	7.9	Synoptic[2]	N/A	N/A	N/A	N/A
03438028	Sinking Fork near Hopkinsville, Ky.	Sinking Fork near Hopkinsville	44	Synoptic[2]	N/A	N/A	N/A	N/A
03437990	Casey Creek at KY 525 near Cadiz, Ky.	Casey Creek	35.7	Synoptic[2]	N/A	N/A	N/A	N/A
03438080	Little River at Crute Road near Cadiz, Ky.	Little River at Crute Road	400	Synoptic[2]	N/A	N/A	N/A	N/A

[1]Kentucky Land Cover Data Set, 2001, Kentucky Commonwealth Office of Technology, November1, 2005.

[2]Site located within the 10-digit hydrologic-unit code of one of the four fixed sites.

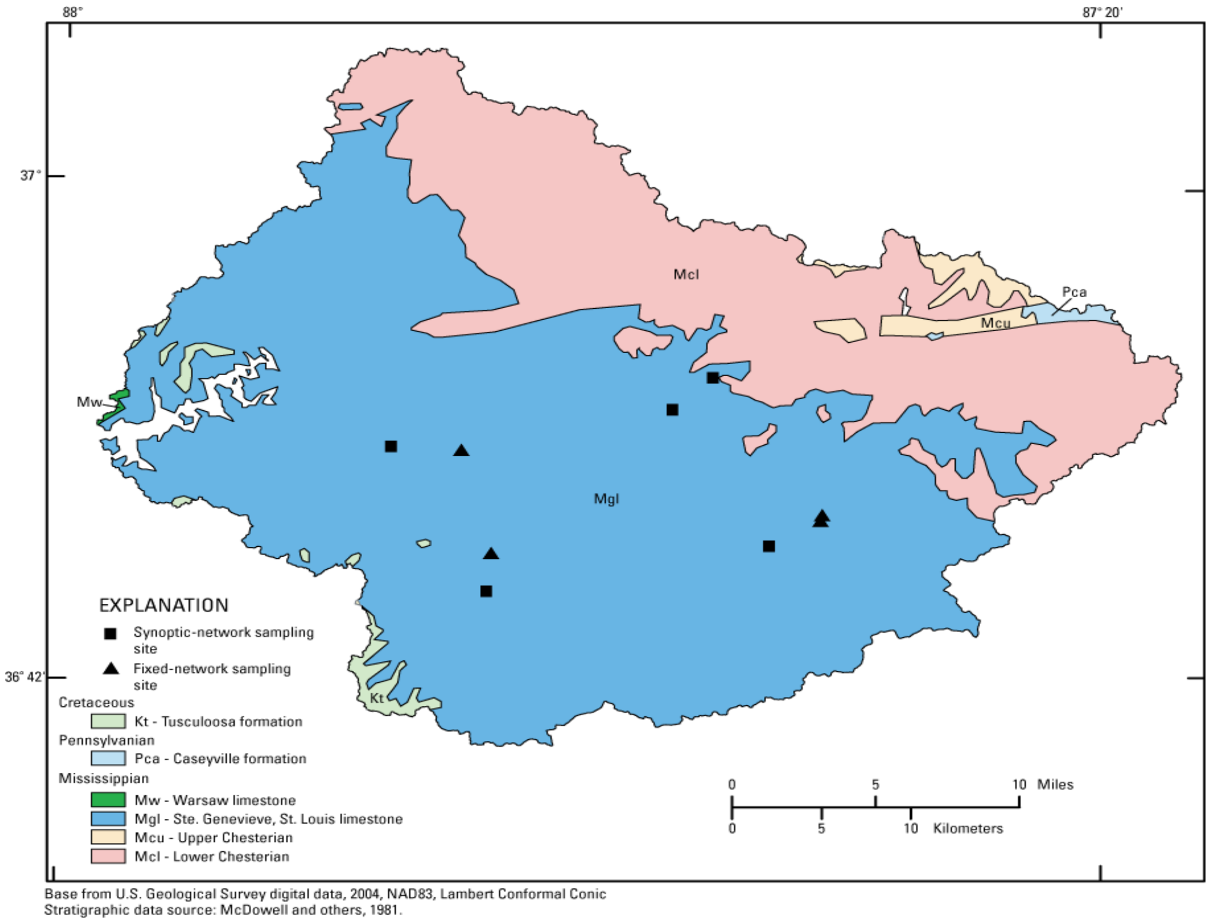


Figure 2. Surficial geology in the Little River Basin, Kentucky, study area.

Materials and Methods

Description of the Little River Basin

The Little River Basin encompasses about 600 mi^2 (fig.1). The Little River discharges into Lake Barkley reservoir on the Cumberland River. Water quality throughout the basin is directly affected by natural (geology, climate, soils) and human (population, land use) factors. The Little River Basin has a high "hydrogeologic sensitivity rating" indicating it is highly vulnerable to effects from runoff, because much of the area is underlain by karst (Ray and others, 1994). The hydrologic sensitivity of an area is defined as the ease and speed with which a contaminant is transported within a ground-water system (Ray and others, 1994). Some streams in the Little River Basin are listed as impaired streams in the State's 303(d) List of Waters report (Kentucky Environmental and Public Protection Cabinet, 2005). The Kentucky Division of Water has listed the causes of impairments to the streams in the basin as siltation, nutrients, pathogens, organic enrichment (low dissolved oxygen), and habitat alterations (Kentucky Environmental and Public Protection Cabinet, 2005, p.134-136).

Geology

The Little River Basin mostly is underlain by karstic limestone formations of late Mississippian age (fig.2). The limestone units of significance within the Little River Basin study area are St. Louis and Ste. Genevieve Limestone. The St. Louis Limestone mostly is composed of sequences of massively bedded (tabular) limestones, and the Ste. Genevieve Limestone mostly is composed of thin-bedded, cherty limestones. Overlying the Ste. Genevieve and St. Louis Limestones on the northeastern side of the study area is a thick sequence of limestone, sandstone, and shale formations of Chesterian age that are divided into upper and lower parts. The lower Chesterian formations are alternating sandstone and limestone strata that include Golconda formation (sandstone dominated) and the Girkin Limestone Formation (McDowell, 1986) The upper rocks of the Chesterian-age formations mainly are composed of siltstone and shale with alternating minor beds of limestone.

Numerous karst features including sinkholes (fig.3), sinking streams, and springs are present in the study area. The exposure of St. Louis Limestone at the land surface allows for water from surface-water streams to enter the underground cavities through sinkholes. Water also enters the Ste. Genevieve and Girkin Limestones through sinkholes developed in the sandstone members of the Golconda Formation. Potential contaminants may enter the karstic limestone aquifers with surface runoff drained by sinkholes in the St. Louis and Ste. Genevieve and through sinking streams.

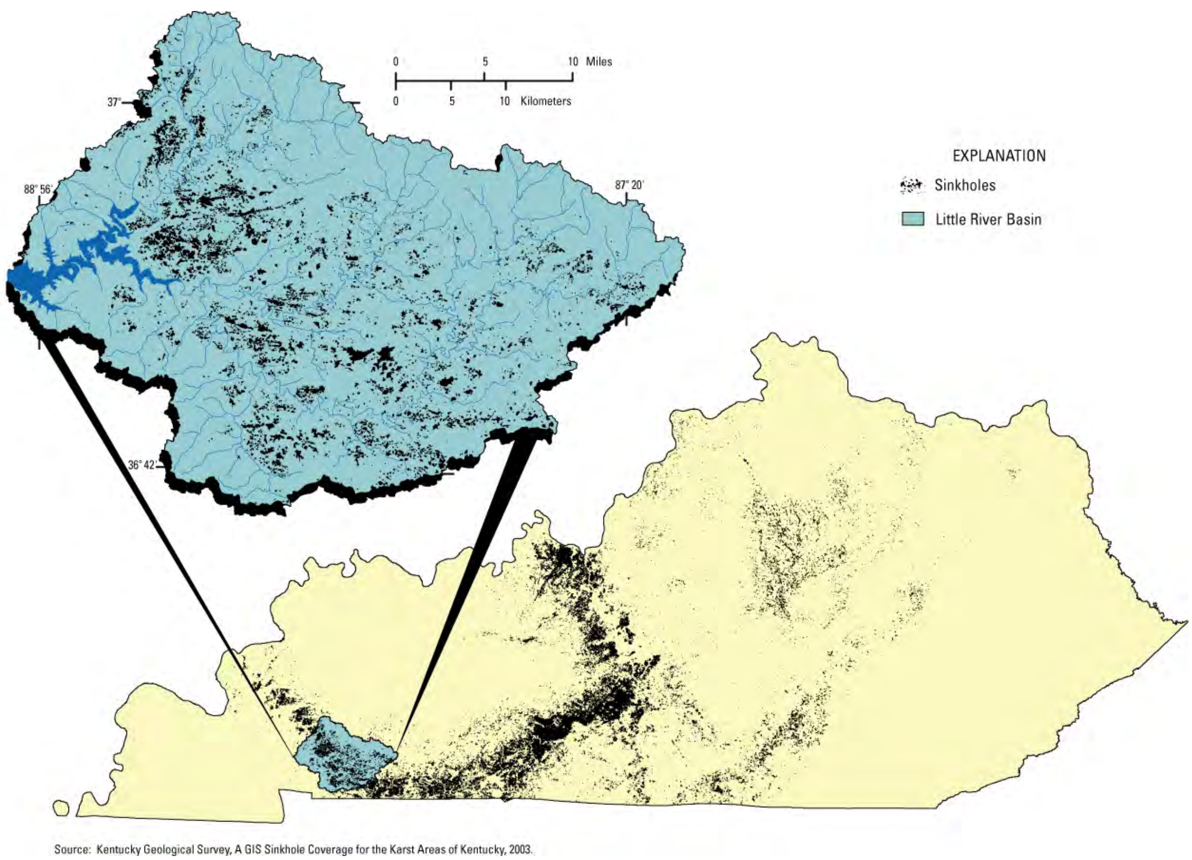


Figure 3. Generalized distribution of sinkholes in the Little River Basin and throughout Kentucky.

Streamflow

Direct-surface runoff and ground-water flow are the major sources of streamflow in the Little River Basin. Another source of flow to streams in the Little River Basin is interflow. Interflow is part of the subsurface flow that moves at shallow depths and potentially can reach the surface channels in a relatively short period of time. During a storm, interflow slowly increases until the end of the storm, then gradually decreases (Viessman and others, 1989, p. 171).

Annual mean discharges to streams can differ appreciably from year to year, with variations in climatic conditions. Mean annual streamflow of the Little River near Cadiz site (water years 1940-2004) was about 360 ft^3/s. It was 479 ft^3/s in 2003 and 299 ft^3/s in 2004. Mean monthly streamflow usually peaks in the spring (March-May); however, there is often a second peak in the winter (December-February). Low streamflow conditions typically occur from late summer (June-August) to early fall (September-November). The mean daily streamflows for the Little River near Cadiz site in 2003 ranged from 27 ft^3/s (November 7) to 5,170 ft^3/s (May 7); mean daily streamflows in 2004 ranged from 33 ft^3/s (October 11) to 2,670 ft^3/s (April 24).

Mean annual precipitation for the Little River Basin was 55.8 in. in 2003 and 54.0 in. in 2004 (National Oceanic and Atmospheric Administration, 2003 and 2004). About 63 percent of the mean annual precipitation in 2003 (34.9 in.) and about 57 percent of the mean annual precipitation in 2004 (31.0 in.) occurred during the growing season from April through October (fig.4). The long-term mean annual precipitation for the Little River Basin is about 50 in.

Land Use

Streams in the Little River Basin drain a diverse landscape of forest, agricultural areas, and urban areas around Hopkinsville and Cadiz. Forested land represents about 31 percent in the Little River Basin. The southern and western parts are the most densely forested areas in the basin.

Agricultural land uses represent about 60 percent of the study area. (fig.5). Most of the agricultural land (34 percent) is used for corn, soybeans, wheat, hay, and tobacco production. The remaining 26 percent of the agricultural land is used for pasture. Corn is the principal row crop harvested in the basin followed by soybeans. In 2003, about 95,000 acres of corn were harvested for seed, grain, silage, or sweet corn; and about 76,500 acres of soybeans were harvested (Kentucky Agricultural Statistics Service, 2003-2004).

Urban areas account for about 9 percent of the land use in the basin. The most heavily populated communities in the Little River Basin are Hopkinsville and Cadiz. Hopkinsville has a population of about 30,000; Cadiz has a population of about 2,400 (U.S. Census Bureau, 2001).

Pesticide Use

Herbicides commonly are used to control weeds in agricultural areas in the Little River Basin. The most commonly used herbicides are atrazine, simazine, metolachlor, and acetochlor. Glyphosate is another commonly used herbicide, but it was not examined during this study. The largest applications of these herbicides to agricultural land in the Little River Basin are on row crops such as corn, soybeans, tobacco, wheat, and on pasture and hay fields. Combinations of herbicides applied to row crops are sometimes used for more effective weed control. Multiple applications are common and include some combination of pre-plant applications of selective and nonselective herbicides and pre- and post-emergent applications of selective herbicides (Hippe and others, 1994).

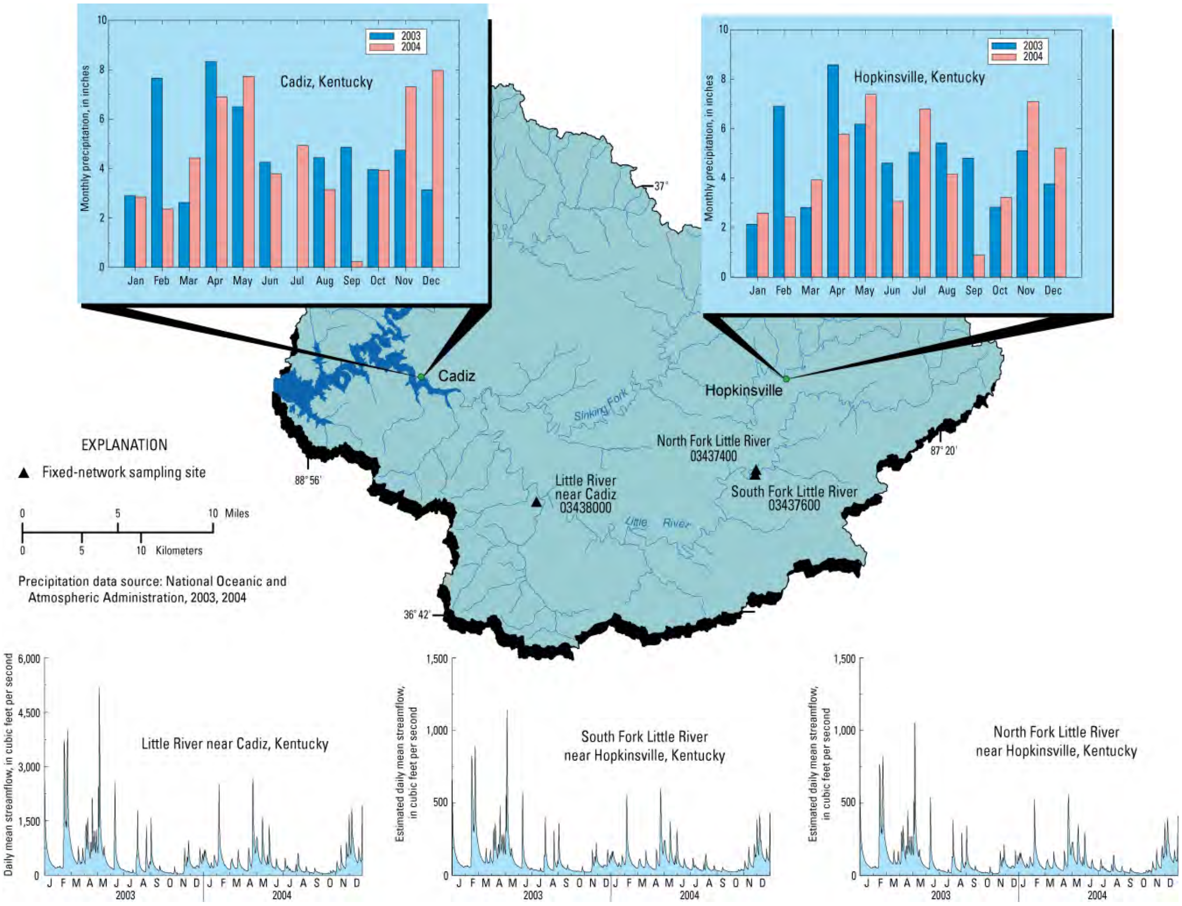


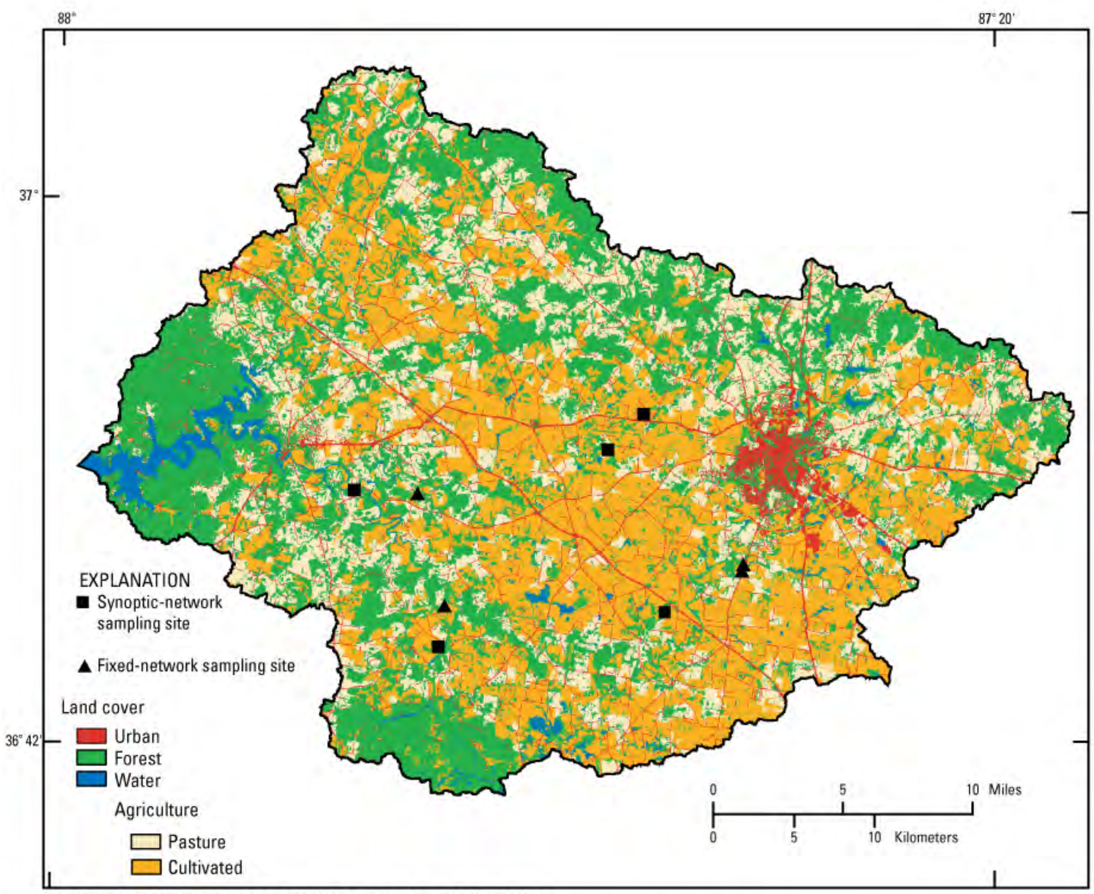
Figure 4. Location of surface-water-sampling sites and graphs showing precipitation and daily mean streamflow at selected surface-water sites in the Little River Basin, Kentucky, study area, 2003-04.

The three classes of herbicides most heavily used in the Little River Basin are triazines, chloroacetanilides, and organophosphate herbicides (glyphosate). The most common triazines (atrazine, simazine, and cyanazine) are used primarily on corn. The most common chloroacetanilides (acetochlor, metolachlor, and alachlor) are used on both corn and soybeans. The most common organophosphate herbicide, glyphosate, is used on corn and soybeans. Both the triazine and chloroacetanilide groups have moderate to high water solubility and moderately low soil-sorption coefficients and therefore can be persistent in soil (Wauchope and others, 1992). As a result, they have moderate to strong potential for transport from fields through surface runoff, primarily in the dissolved phase (Goss, 1992).

Chemical or biological processes can transform herbicides. Chemical transformation processes include photolysis (photochemical degradation), hydrolysis, oxidation, and reduction. The transformation of herbicides through microbial metabolic processes is considered to be the primary mechanism of biological degradation (Ritter and Shirmohammadi, 2001, p. 114).

Pesticide transformation compounds are more water soluble than their parent compounds. For example, Mills and Thurman (1994**)** found that one of the transformation compounds of the parent compound atrazine, deethylatrazine (DEA), sorbs less strongly to soils than does its parent compound. In some studies, pesticide transformation compounds often have been detected at higher concentrations than their respective parent compound (Kolpin and others, 1998); Scribner and others, 1998). The toxicity of pesticide transformation compounds is relatively unknown (U.S. Geological Survey, 1999).

The amount of pesticides annually applied to agricultural land within the Little River Basin (in pounds of active ingredient) were derived from county-based crop acreage data and State-level estimates of pesticide-use rates for individual crops from the National Agricultural Statistics Service (NASS) database. County-crop acreages were combined with the State pesticide-use coefficients to calculate county-level pesticide usage by pesticide and crop. The crops of interest included corn, soybeans, winter wheat, alfalfa hay, pasture, and tobacco. Little information was available for pesticide use in forestry, transportation (weed control along roadways and right-of-ways), aquatic use (algae control) and various commercial and industrial applications.



Base from U.S. Geological Survey digital data, 2004, NAD83, Lambert Conformal Conic
Land-cover source: Kentucky Land Cover Data Set 2001, Kentucky Commonwelth Office of Technology, November 1, 2005.

Figure 5. Land cover in the Little River Basin, Kentucky, study area, 2001.

Every year the Kentucky Department of Agriculture assembles a database of agricultural pesticide sales to evaluate where pesticides are being purchased and potentially applied in each county in Kentucky. The number of active ingredients that were sold statewide in the years 2003 and 2004 were 156 and 183, respectively. The top five active ingredients sold in Kentucky were atrazine, glyphosate, S-metolachlor, 2,4-D, and simazine in 2003, and glyphosate, atrazine, 2,4-D, fatty alcohol, and simazine in 2004 (Appendix C).

Atrazine was the top selling active ingredient sold in the Little River Basin (Trigg and Christian Counties) of the pesticides studied followed by simazine, acetochlor, metolachlor, Malathion, prometon, and diazinon (table 2). Glyphosate ranked second in pounds of active ingredient in the basin, but was not evaluated in this study. Christian County ranked fourth out of Kentucky's 120 counties in pounds of active ingredient for atrazine in 2003 and 2004. It is assumed that high sales of pesticides in the Little River Basin probably contribute to their detection rates, because atrazine and simazine were detected at all of the sampling sites in the basin. Although, the insecticide Malathion ranked fifth in sales among the pesticides studied in the basin, it was not frequently detected; however, it may not have been widely distributed in the basin and most applications may occur during periods of reduced runoff.

Sources of Nitrogen and Phosphorus

The sources of nutrients into the Little River Basin are categorized as being point or nonpoint-source (table 3). Contaminant sources that are diffuse and do not have a single point of origin into receiving streams are called nonpoint sources. Nonpoint sources of nutrients include atmospheric deposition, fertilizer applications from agricultural and residential areas, feed-lot discharges, septic systems, and urban runoff. Point sources differ from nonpoint sources in that they discharge directly into a receiving stream at a discrete point. Point sources primarily consist of a variety of large and small wastewater-treatment facilities, but nutrient inputs also can come from storm-water runoff and sewer overflows.

Table 2. Pesticide active-ingredient sales and detections in stream-water samples, Christian and Trigg Counties, Kentucky, 2003-04.

Constituent	Amount of active ingredient for 2003-04 (in pounds)[1]	Detection (in percent)
Acetochlor	36,030	46
Atrazine	353,301	100
Diazinon	433	25
Malathion	1,958	4
Metolachlor	8,137	94
Prometon	798	53
Simazine	88,102	100

[1]Ernest Collins, Kentucky Department of Agriculture, written commun., 2004.

Nonpoint Source Contributions

Nonpoint-source inputs of nutrients estimated in this report for the Little River Basin include atmospheric deposition, commercial fertilizer application, livestock waste, and nitrogen fixation from soybeans. Nutrient inputs from urban runoff, combined sewer overflows, and failing septic systems were not included in the nonpoint source estimates of this report because of minimal or no data.

Atmospheric Deposition

Atmospheric deposition of nitrogen has been measured at a site located in the Land between the Lakes National Recreation Area

(KY99) in Trigg County, since December 1994. The wet deposition data from the

Table 3. Estimated mean annual loads of total nitrogen and total phosphorus from nonpoint and point sources in the Little River Basin, Kentucky, 2003-04.

[lb/yr, pound per year; NA, not applicable]

Constituent	Mean annual load of total nitrogen (lb/yr)	Mean annual load of total phosphorus (lb/yr)
Inputs to land		
Atmospheric deposition[2]	2,600	NA
Farm fertilizer[3]	9,800,000	2,100,000
Nonfarm fertilizer[3]	68,000	4,000
Livestock waste[1]	3,000,000	1,000,000
Nitrogen fixation[4]	20,000	NA
Input to streams		
Municipal wastewater discharge[5]	221,000	102,000

[1]U.S. Department of Agriculture, 2004.
[2]Data from National Atmospheric Deposition Program, 2006. Dry deposition nitrogen not included in atmospheric deposition.
[3]Ruddy and others, 2006. Data from 2001.
[4]Kentucky Agricultural Statistics Service, 2004.
[5]U.S. Environmental Protection Agency, 2006b.

National Atmospheric Deposition Program (NADP) include nitrate, ammonia nitrogen, and other constituents. No dry deposition data are measured; therefore, total atmospheric deposition of nitrogen cannot be obtained. Atmospheric deposition of phosphorus in not measured by NADP because concentrations generally are not significant and samples are subject to contamination (National Atmospheric Deposition Program, 2001).

Rates of wet deposition of inorganic nitrogen in 2003 and 2004 were 2,900 lb/mi^2 and 2,300 lb/mi^2, respectively. The 8-year mean rate (1995-2004) of wet deposition of inorganic nitrogen was 2,200 lb/mi^2. The wet-deposition inputs for inorganic nitrogen in 2003 and 2004 were higher than the 8-year mean, reflecting above-average precipitation for those 2 years. The NADP provides annual-summary reports which are available online at http://nadp.sws.uiuc.edu/.

Commercial Fertilizer and Livestock Waste

Commercial fertilizers applied to agricultural lands has become a primary nonpoint source of nitrogen and phosphorus in the United States. Commercial nitrogen fertilizer is applied as either ammonia or nitrate and commercial phosphorus fertilizer is commonly applied as phosphate. Application of nitrogen and phosphorus in commercial fertilizers in the United States from 1945-1993 has increased by 20 and 3.6 percent, respectively (Ruddy and others, 2006).

County-level data for nitrogen and phosphorus from commercial fertilizer (farm and nonfarm) and livestock waste were compiled in a national data set (Ruddy and others, 2006). The methods for allocating data on State total fertilizer sales to individual counties and for estimating livestock-waste inputs from livestock populations are described in detail by Ruddy and others, 2006. The use of county-level data has some limitations in its application, because fertilizer and livestock waste sources are not evenly distributed within counties. The use of county-level data generally is more applicable to large drainage basins that encompass entire counties than smaller drainage basins that encompass only parts of one or more counties. However, the study area encompasses large portions of Christian and Trigg Counties, which are homogeneous in land use. Thus, any introduced error from using estimates of farm fertilizer and livestock waste inputs should not be appreciable.

Farm-fertilizer inputs of nutrients in 2001 were 9,800,000 lb of nitrogen and 2,100,000 lb of phosphorus in the Little River Basin, an average of about 8,100 lb/mi^2/yr of nitrogen and 1,700 lb/mi^2/yr of phosphorus applied. The amount of cultivated-agricultural land in the Little River Basin is about 34 percent, or about 200 mi^2. Nitrogen and phosphorus fertilizers generally are applied to corn in spring just before seeding. Livestock waste also can be used during this time. Nitrogen fertilizer is reapplied to corn fields 6-10 weeks after planting. Phosphorus fertilizer is applied to corn and soybeans at the time of planting. Nitrogen and phosphorus fertilizers and livestock waste are applied in late summer through early fall for cool-season pasture, hay fields, and wheat fields (University of Kentucky, 2001).

Nonfarm-fertilizer contributions of nutrients in 2001 were 68,000 lb of nitrogen and 14,000 lb of phosphorus in the Little River Basin resulting in an average of about 56 lb/mi^2/yr of nitrogen and 12 lb/mi^2/yr of phosphorus applied.

Nitrogen and phosphorus in livestock waste potentially can be a major source of nitrogen and phosphorus loads in streams draining agricultural areas. Animal-feeding operations and concentrated animal-feeding operations, which concentrate animals, feed, and waste on a small land area, have greater potential to contribute nutrients to surface runoff and ground water. Wastes produced by these operations may be applied to pasture land and crop land, becoming available for either crop uptake or losses to the environment. An animal-feeding operation in Kentucky is defined as a facility where animals are confined and fed for a total of 45 days or more in any 12-month period and where crops, vegetation forage growth, or post-harvest residues are not sustained over any portion of the facility in the normal growing season (Kentucky Environmental and Public Protection Cabinet, 2006). In order for an animal-feeding operations to be defined as a confined animal-feeding operation, the facility has more and 300 animal units confined and there is a discharge to the Waters of the Commonwealth, or if more than 1,000 head of beef cattle, 700 head of dairy cattle, 2,500 pigs, 25,000 broilers, or 82,000 laying hens or pullets are present at the facility. There are 11 animal-feeding operations and 0 confined animal-feeding operations within the southern portion of the Little River Basin as of July 2006 (James Seay, Kentucky Environmental and Public Protection Cabinet-Division of Water, written, commun., 2006).

In Kentucky, the average inputs of nutrients from livestock waste were 1,100,000 lb of nitrogen and 320,000 lb of phosphorus in 1997. In Christian and Trigg Counties, nutrient inputs were 3,000,000 lb of nitrogen and 1,000,000 lb of phosphorus. These nutrient inputs average about 2,500 lb/mi^2/yr of nitrogen and 830 lb/mi^2/yr of phosphorus throughout the basin. Actual nitrogen inputs to the land probably are lower because of volatilization of ammonia from the waste and nitrification and de-nitrification.

Nutrient-input estimates from livestock waste were based on county-level livestock-population data collected by the U.S. Census Bureau during the Census of Agriculture. The method and assumptions used in Ruddy and others (2006) to estimate nitrogen and phosphorus content of livestock waste produced by the various types of livestock are described by Goolsby and others, 1999). The livestock groups used to estimate nutrient inputs from livestock waste include beef cattle, dairy cows, hogs, and poultry.

Nitrogen Fixation by Soybeans

Nitrogen fixation by soybeans is an important source of nitrogen in the Little River Basin because of the large acreage of soybeans in the study area; however, the fixation of nitrogen from soybeans is not used in computations of nonpoint-source inputs of nitrogen because not much of this nitrogen is available to enter the surface and ground water. The amount of nitrogen produced by fixation from soybeans in the basin is based on the area of soybeans planted and an annual nitrogen fixation rate of 105 lb/acre, as used by Hoos and others (1999) for soybeans in the Southeast. This rate was multiplied by 2003 and 2004 harvested acres for soybeans (Kentucky Agricultural Statistics Service, 2005) to estimate the amount of fixed nitrogen. The estimated nitrogen fixation for the Little River Basin was 20,000 lb/mi^2/yr.

Point Source Contributions

The only point-source inputs of nitrogen and phosphorus estimated in this report are municipal-wastewater discharge. Only facilities with a mean flow greater than 0.1 Mgal/d were available for input computations for this study (table 4). The exclusion of minor privately-owned dischargers (<0.1 Mgal/d) in the study area, if totaled, could be a significant source of nitrogen and phosphorus to the basin.

The nutrient inputs are based on information from the NPDES permitting program of the USEPA. The required monitoring data for NPDES discharges are stored in the USEPA PCS data base. All of the wastewater-treatment facilities in the Little River Basin monitor effluent for total phosphorus and ammonia, but concentrations of total nitrogen were not available. A regression equation, developed from more than 800 observations of effluent concentrations from municipal wastewater-treatment facilities in Virginia and North Caroline, was used to estimate concentrations of total nitrogen from concentrations of ammonia nitrogen (McMahon and Lloyd, 1995, p. 70-71). The regression equation is:

Total nitrogen = 11.97 + 0.55 (ammonia)

where concentrations are in milligrams per liter, as nitrogen.

Nitrogen and phosphorus inputs to streams from municipal wastewater-treatment facilities were estimated using the following equation:

L= (RQ)(C)(f)(T)

where:

L is nutrient load in lb/yr;

RQ is wastewater effluent flow in ft3/s;

C is concentration of nutrient in milligrams per liter;

f is a unit conversion factor of 5.3943; and

T is time in days per year.

The estimated inputs from wastewater discharge were 221,000 lb/yr for nitrogen and 102,000 lb/yr for phosphorus for the Little River Basin. Wastewater discharges to the Little River ranged from 33 to 50 percent of the annual mean streamflow during 2003-04.

Sampling Methods

Representative water samples were collected by means of the equal-width increment (EWI) method, in which depth-integrated samples are collected at equal distances across the entire stream width and composited or by means of the equal-discharge increment (EDI) method, in which equal-volume, depth-integrated samples are collected at the center of each equal-discharge increment across the stream width and composited (Edwards and Glysson, 1998). All sampling material was constructed of Teflon to minimize contamination or sampling artifacts. Equipment used to collect and process nutrient samples was precleaned with a 0.1-percent nonphosphate detergent, triple

Table 4. Estimated mean annual loads of total nitrogen and total phosphorus from municipal wastewater discharge in the Little River Basin, Kentucky, 2003-04.

[Mgal/d, million gallons per day; lb/yr, pounds per year; WWTP, wastewater-treatment plant]

Facility name	County	Receiving stream	Effluent flow (Mgal/d)[1]	Mean annual load: Total nitrogen (lb/yr)	Mean annual load: Total phosphorus (lb/yr)
Hopkinsville Hammond Wood WWTP	Christian	North Fork Little River	3.35	123,000	87,200
Hopkinsville Northside WWTP	Christian	North Fork Little River	2.30	86,200	13,900
Cadiz WWTP	Trigg	Little River	.32	11,800	1,200
Total				**221,000**	**102,300**

[1]U.S. Environmental Protection Agency, 2006b

rinsed with tap water, acid rinsed with 5-percent hydrochloric acid for 30 minutes (nonmetal equipment only), triple rinsed with deionized water, air dried, and stored in a dust-free environment prior to sample collection (Webb and others, 1999).

Water samples for pesticides were pumped through Teflon tubing and filtered through a 142-millimeter-diameter, 0.7 micrometer (µm) pore size, borosilicate glass-fiber filter placed in a stainless-steel filter unit (Sandstrom, 1995). The filtered water was collected in amber-glass colored bottles and chilled for later analysis of pesticides and pesticide transformation products. Both the glass-fiber filters and the amber-glass bottles had been baked at 450˚C in a muffle furnace for a minimum of 2 hours. All pesticide samples were chilled and shipped on ice by overnight air express to the USGS National Water Quality Laboratory (NWQL) in Lakewood, Colorado, for analysis.

Water samples for dissolved nutrients were filtered using a 0.45 µm pore size filter that was pre-rinsed with deionized water and filtered native stream water and collected in the appropriate bottle types. Whole-water (unfiltered) nutrient samples were preserved using 1 milliliter of 4.5N sulfuric acid. All nutrient samples were chilled and shipped on ice by overnight air express to the USGS National Water Quality Laboratory (NWQL) in Lakewood, Colorodo, for analysis. Suspended-sediment samples were shipped to the USGS Kentucky Water Science Center Sediment Laboratory in Louisville, Kentucky.

Field measurements of stream discharge, air temperature, barometric pressure, water temperature, specific conductance, pH, and dissolved oxygen concentrations (DO), and turbidity were measured at the time of sampling. Alkalinity and bicarbonate concentrations were determined by titrating filtered sample water with 0.16N sulfuric acid using a digital titrator. Discharge was measured according to standard USGS guidelines as described by Rantz and others (1982).

A continuously recording (15 minute intervals) water-quality monitor was installed at the USGS streamflow-gaging station on the Little River near Cadiz site (station number 03438000) on April 1, 2003. Water-quality properties measured with the monitor from

April 2003 to November 2004 included water temperature, specific conductance, pH, dissolved oxygen, and turbidity. Measurements were transmitted every 4 hours via satellite to the USGS office in Louisville, Kentucky and were made available in near-real time on the World Wide Web at URL http//ky.water.usgs.gov/ (Appendix E). The water-quality monitor was inspected onsite by USGS personnel approximately every 3 to 4 weeks to maintain calibration. Guidelines and standard operating procedures for maintaining the site and reporting the data are described in Wagner and others (2000).

Analytical Methods

Pesticide-water samples were analyzed using capillary-column gas chromatography/mass spectrometry (GC/MS) with selected-ion monitoring (Zaugg and others, 1995; Sandstrom and others, 2001). Concentrations of pesticides were reported by the NWQL with appropriate qualifiers to indicate analytical limitations. Analytical data from the NWQL were reported as “less than” when a pesticide was not detected or not present at the method detection limit (MDL). The MDL is defined as the minimum concentration of a substance that can be identified, measured, and reported with 99-percent confidence that the compound concentration is greater than zero (Wershaw and others, 1987). When the presence of a pesticide was detected and quantified in the sample, but the reported value was below the MDL, the concentration was identified as an estimated value and footnoted.

Water-quality samples for dissolved (filtered) and suspended (unfiltered) species of nitrogen and phosphorus were analyzed by colorimetric methods (Fishman, 1993; Patton and Truitt, 1992; U.S. Environmental Protection Agency, 1993). These analyses quantified sample concentrations of dissolved nitrite plus nitrate, dissolved ammonia (ammonia plus ammonium), dissolved orthophosphate, and total phosphorus (table 5). Nutrient concentrations discussed in this report represent their concentrations expressed as either nitrogen or phosphorus. For example, a nitrate concentration expressed as 10 mg/L refers to a nitrate concentration of 10 mg/L as nitrogen.

Suspended-sediment samples were analyzed by filtering samples through a pretared 0.45 µm membrane filter. The filtrate was rinsed with deionized water to remove salts, and the insoluble material and filter were dried at 103°C and weighed (Fishman and Friedman, 1989).

Table 5. Reporting limits for nutrients as established by the U.S. Geological Survey National Water-Quality Laboratory.

[mg/L, milligrams per liter; N, nitrogen; P, phosphorus]

Constituent	Laboratory reporting level
Ammonia (as N), dissolved	0.04 mg/L as N
Nitrite plus nitrate (as N), dissolved	.06 mg/L as N
Phosphorus (as P), total	.004 mg/L as P
Orthophosphate (as P), dissolved	.006 mg/L as P

Quality Control

Quality-control information is needed to estimate the bias and variability that result from sample collection, sample processing, and laboratory analysis in order to ensure proper interpretation of water-quality data. About 25 percent of all samples submitted to the laboratory were quality-control samples, which included equipment blanks and field blanks to measure contamination and bias, and replicate samples to measure variability.

A blank is a water sample that consists of water that has undetectable concentrations of analytes of interest. Blank-water samples are used to test for bias that could result from contamination during any stage of sample collection or analysis process. Field-blank samples were collected to demonstrate that: (1) equipment has been adequately cleaned to remove contamination introduced by samples obtained at previous sites; (2) sample collection and processing have not resulted in contamination; and (3) sample handling, transport, and laboratory analysis have not introduced contamination (Mueller and others, 1997). The procedure for blank samples was to place pesticide-free water through all of the sampling and filtration steps as a typical water-quality sample. Field-blank sample concentrations for pesticides did not indicate any contamination from the equipment or sampling processing methods.

Replicate samples are a set of two or more environmental samples considered to be essentially identical in composition. Concurrent replicates are prepared by using one sampler and alternating collection of the samples into two or more compositing containers. All replicates collected in the Little River Basin were concurrent replicates.

Data obtained from the six sets of replicate samples was used to access the variability of the overall sampling and analytical process. Replicate samples were compared by using relative percent differences. Relative percent difference (RPD) for each analyte and replicate sample pair was calculated by the equation:

$$RPD=|S1-S2|/(S1+S2)/2 \times 100$$

where:

S1 is equal to the concentration in the environmental sample, in milligrams per liter (nutrients) or micrograms per liter (pesticides); and

S2 is equal to the concentration in the replicate sample, in milligrams per liter (nutrients) or micrograms per liter (pesticides).

A large relative percent difference can indicate greater variability in those samples. Median concentration differences, as measured by RPD, within replicate sets ranged from 0 to 6.9 percent for pesticides, 0 to 5 percent for nutrients, and were 15 percent for suspended sediment (table 6).

Table 6. Summary of replicate sample data for commonly detected pesticides and pesticide-transformation compounds, nutrients, and suspended sediment.

[RPD, relative percent difference; <, less than]]

Constituent	Number of replicate sample sets	Median RPD	Maximum RPD
Pesticides			
Acetochlor	6	1.8	15
Atrazine	6	4.5	143
Deethylatrazine*	6	3.6	95
Diazinon	6	1.5	127
Metolachlor	6	6.9	77
Prometon	6	0	40
Simazine	6	2.8	132
Nutrients			
Ammonia (as N), dissolved	6	0	<1
Nitrite plus nitrate (as N), dissolved	6	0.14	2
Phosphorus (as P), total	6	0.94	5
Orthophosphate (as P), dissolved	6	1.1	3
Sediment			
Suspended sediment	5	2	15

*Pesticide-transformation compound.

Statistical Analysis of Pesticides, Nutrients, and Suspended Sediment

The S-Plus software program (Insightful, 2005) was used to calculate summary statistics such as the mean, median, minimum, and maximum concentrations for selected pesticides, nutrients and suspended sediment. The Wilcoxson rank-sum nonparametric statistical test (Helsel and Hirsch, 1992) was used to compare concentrations of nutrients and suspended sediment at the four fixed-network sites in the basin. The Wilcoxson rank-sum tests ranks the data points to determine the statistical significance of differences in concentrations between groups of data. Differences between the groups of data with a probability (p) values of 0.05 or less were considered significant in this study.

Load Estimation Methods

Select pesticide (atrazine, acetochlor, simazine, metolachlor, and diazinon) loads and nutrient (nitrite plus nitrate, total phosphorus, and orthophosphate) loads, and suspended-sediment loads were estimated with the USGS software called LOADEST. This software uses time-series streamflow data and constituent concentrations to calibrate a regression model that describes constituent loads in terms of various functions of streamflow and time (Runkel and others, 2004).

The LOADEST software allows the user to choose between selecting the general form of the regression from several predefined models and letting the software automatically select the best-defined model, on the basis of the Akaike Information Criterion (AIC) (Akaike, 1981). The predefined model with the lowest value for the AIC is then selected for use in load estimation. A user-defined model was used for this study. Comparisons were made between user-defined model and models defined by the software (table 7). The relative percent differences between the two methods ranged from about zero percent to 53 percent for selected pesticides, zero percent to 13 percent for nutrients, and 14 percent for suspended sediment (table 7).

The output regression equations take the following general form:

$$ln(\mathrm{L}) = a+b(ln\mathrm{Q})+c)\ \ln\mathrm{Q}^2) +d[\sin(2\pi\mathrm{T})]+e[\cos(2\pi\mathrm{T})]+f\mathrm{T} +g\mathrm{T}^2$$

where

L is the constituent load, in pounds per day;

Q is the stream discharge, in cubic feet per second;

T is the time, in decimal years from the beginning of the calibration period; and

a,b,c,d,e,f,g are regression coefficients.

Runkel and others (2004) provide a complete discussion of the theory and principles behind the calibration and estimation methods.

Results and Discussion

Continuous Water-Quality Field Parameters

Annual summaries of continuously measured specific conductance, pH, water temperature, turbidity, and dissolved oxygen were measured at the Little River near Cadiz site are presented in table 8.

Specific conductance is a measure of the water's ability to conduct an electrical current, which usually is associated with the concentration of ionized substances in water (Hem, 1985). Specific conductance is affected by soil and rock composition; evaporation, which concentrates dissolved solids; and contaminant sources, including agricultural and urban runoff (Jordan and Stamer, 1995). Continuous specific conductance values varied from 157 µS/cm on May 7, 2003 to 535 µS/cm on October 28, 2004 during the study period (table 8). The annual mean specific conductance value

Table 7. A comparison of loads for select pesticides at three sites using LOADEST predefined and user-defined models.

[lb/yr, pound per year; ---, unable to determine from available data]

Constituent	Predefined LOADEST model results (lb/yr)	User-defined LOADEST model results (lb/yr)	Relative difference (in percent)
North Fork Little River near Hopkinsville, Ky. (03437400)			
Atrazine	601	613	2.1
Simazine	75	74	0.22
Metolachlor	4.3	4.2	3.8
Diazinon	4.3	5.6	27
Ammonia (as N), dissolved	13,000	13,000	0
Nitrite plus nitrate (as N), dissolved	470,000	450,000	4.3
Phosphorus (as P), total	105,000	107,000	1.9
Orthophosphate (as P), dissolved	75,000	74,000	1.3
Suspended sediment	26,000,000	30,000,000	14
South Fork Little River near Hopkinsville, Ky. (03437600)			
Atrazine	503	631	23
Simazine	55	55	0.58
Metolachlor	10	10	1.6
Diazinon	1.9	1.1	53
Ammonia (as N), dissolved	---	---	---
Nitrite plus nitrate (as N), dissolved	803,000	780,000	4.6
Phosphorus (as P), total	28,000	32,000	13
Orthophosphate (as P), dissolved	13,000	14,000	7.4
Suspended sediment	18,000,000	18,000,000	0
Little River near Cadiz, Ky. (03438000)			
Atrazine	2,144	2,337	8.6
Simazine	349	331	5.2
Metolachlor	26	20	28
Diazinon	4.3	3.1	32
Ammonia (as N), dissolved	---	---	---
Nitrite plus nitrate (as N), dissolved	2,700,000	2,500,000	5.6
Phosphorus (as P), total	145,000	166,000	13
Orthophosphate (as P), dissolved	59,000	65,000	9.7
Suspended sediment	91,000,000	84,000,000	8.0

at the Little River near Cadiz site from April through September 2003 was 13 percent smaller than the mean from April through September 2004.

pH is a measure of the effective hydrogen ion concentration and is used as an index of the status of equilibrium reactions in water (Hem, 1985). Kentucky aquatic-life-support criteria require that pH levels in streams remain not less than 6.0 and not more than 9.0 standard units (Kentucky Environmental and Public Protection Cabinet, 2006). During the study period, minimum continuous pH measurements remained above the lower criterion of 6.0 standard units and never exceeded the upper criterion of 9.0.

Water temperature is an important effect on the density of water, the solubility of constituents in water, specific conductance, pH, the rate of chemical reactions, and biological activity in water (Radtke and others, 1998a). The coldest water temperatures occurred from November through March, and the warmest water temperatures were from April through October.

Turbidity, which can make water appear cloudy or muddy, is caused by the presence of suspended and dissolved matter such as clay, silt, finely divided organic matter, plankton, other microscopic organisms, organic acids, and dyes (ASTM International, 2003). Turbidity is affected by the amount of precipitation and runoff, intensity and duration of storms, slope of stream channel, and time of travel from the point of origin to the point of measurement. Although turbid water is not necessarily harmful, particulates in water provide attachment sites for nutrients, pesticides, bacteria, and other potential contaminants. Also, increased turbidity affects light penetration and reduces photosynthesis and interferes with feeding activities. Continuous in-stream turbidity measurements ranged from <1 FNUs to 950 FNUs at the Little River near Cadiz site.

The dissolved oxygen concentration in surface water is related primarily to photosynthetic activity of aquatic plants and atmospheric reaeration (Radtke and others, 1998b).

During April 2003 to September 2004, continuous dissolved oxygen concentrations ranged from 4.6 mg/L to 18.7 mg/L. The lowest dissolved oxygen concentration measured during the study period occurred on September 14, 2004.

Table 8. Summary of data for continuous (daily) measurements at Little River near Cadiz, Kentucky, 2003-04.

Water year	Number of daily samples	Minimum	Mean	Maximum
		Specific Conductance (μS/cm)		
2003*	142	157		513
2004	345	211		535
		pH (standard units)		
2003*	136	6.8		8.1
2004	300	7.0		9.0
		Water Temperature (°C)		
2003*	139	9.9		24.9
2004	345	5.2		24.5
		Turbidity (FNU)		
2003*	128	0		950
2004	173	0		330
		Dissolved Oxygen (mg/L)		
2003*	78	6.6		10.9
2004	225	4.6		18.7

* partial year (April through September)

Concentrations of Selected Pesticides

Summary statistics for the concentrations of pesticides, pesticide degradates, nutrients (ammonia nitrogen, nitrite-plus-nitrate nitrogen, total phosphorus, and orthophosphate), and suspended sediment measured from March 2003 through November 2003 and February 2004 through November 2004 at all sampling sites are shown in Appendix D. These data provide the basis for analysis of concentrations, loads, and yields at the selected sampling sites.

Occurrence and Distribution of Selected Pesticides

Detections and concentrations of pesticides in streams are influenced by many factors, including the amount of pesticide used, the environmental persistence of the pesticide, and the analytical methods used. The most commonly detected pesticides were among the most heavily applied in the Little River Basin. Samples from all nine sites had detectable concentrations of at least one pesticide; 1 sample collected at the North Fork Little River site had 12 pesticides detected. A common method reporting limit (MRL) of 0.01 micrograms per liter (μg/L) was used to compare the detection frequencies of pesticides, because MRLs vary widely from one pesticide or related compound to another. The use of the detection threshold allows for comparisons among pesticides by censoring detections to a common reference concentration. The lowest appropriate MRL for comparing pesticides in 0.01 μg/L for most of the pesticides analyzed in this study; however, several pesticides (prometon, tebuthiuron, pendimethalin, carbaryl, and Malathion) had MRLs that were greater than or equal to 0.01 μg/L. For these pesticides, the detection frequency is preceded by the asterisk (*) symbol to indicate that the true percentage of samples with concentrations greater than the threshold probably are greater than or equal to that reported in figure 6. Of the 127 pesticides analyzed, 24 were detected above the adjusted MRL of 0.01 μg/L (table 9).

Herbicides were detected more frequently than insecticides and fungicides. Fifteen of the 24 pesticides detected in water were herbicides. The commonly used

Table 9. Pesticides and pesticide-transformation products analyzed in surface-water samples from the Little River Basin, Kentucky, 2003-04.

Acetochlor	***Desethylatrazine***	2-[(2-Ethyl-6-methylphenyl)-amino]-1-propanol	**Metolachlor**	Propetamphos parathion
Alachlor	Desulfinyl	Fenamiphos	**Metribuzin**	**Propiconazole (cis- and trans-)**
alpha-Endosulfan	Desulfinylfipronil	Fenamiphos	Molinate	**Propyzamide**
alpha-HCH	**Diazinon**	Fenamiphos	Myclobutanil	**Simazine**
2-Amino-N-isopropylbenzamide	Dichlorvos	Fenthion	1-Naphthol	Sulfotepp
Atrazine	2,5-Dichloroaniline	Fenthion	1,4-Naphthoquinone	Sulprofos
Azinphos-methyl	3,4-Dichloroaniline sulfate	Fipronil alcohol	**Napropamide**	Tebupirimphos
Azinphos-methyl	3,5-Dichloroaniline	Fipronil	O-Ethyl-O-methyl-S-propylphosphorothioate sulfide	**Tebuthiuron**
Benfluralin	4,4'-Dichlorobenzophenone	Fipronil	Oxyfluorfen sulfone	Tefluthrin
beta-Endosulfan	*2,6-Diethylaniline*	Flumetralin	pp'-DDE amide	Tefluthrin
Bifenthrin	(E)-Dimethomorph	Fonofos methyl	Paraoxon fipronil	Tefluthrin
Butylate	(Z)-Dimethomorph	Fonofos oxygen analog	Parathion	Temephos
2-(4-tert-Butylphenoxy)-cyclohexanol	Dicrotophos	***gamma*-HCH (Lindane)**	**Pebulate**	Terbacil
Carbaryl	**Dieldrin**	Hexazinone oxygen analog	**Pendimethalin**	Terbufos
Carbofuran	Dimethoate	4-(Hydroxymethyl)	3-Phenoxybenzyl	Terbufos
4-Chloro-2-methylphenol	Disulfoton	Iprodione sulfone	Phorate	Terbuthylazine
4-Chlorophenyl	***Disulfoton sulfone***	Isofenphos sulfoxide	Phorate	Thiobencarb
2-Chloro-2',6'-diethylacetanilide	Disulfoton sulfoxide	lambda-Cyhalothrin ether	Phosmet	Triallate
Chlorpyrifos	Endosulfan	Linuron sulfone	Phosmet	Tribuphos
Chlorpyrifos	Endosulfan	Malaoxon sulfoxide	Phostebupirim	Trifluralin
cis-Permethrin	**EPTC**	**Malathion**	Profenofos	3-(Trifluoromethyl)aniline
Cyanazine	Ethalfluralin	**Metalaxyl**	**Prometon**	
Cycloate	Ethion	Methidathion	Prometryn	
Cyfluthrin	Ethion	Methyl (cis- and trans-)	Propachlor	
Cypermethrin	Ethoprop	Methyl paraoxon	Propanil	
DCPA	2-Ethyl-6-methylaniline	Methyl pendimethalin	Propargite	

[**Bold-faced** compounds were detected; *italicized* compounds are pesticide-transformation products] herbicides, atrazine, simazine, metolachlor, acetochlor, and prometon were found throughout the basin. Atrazine, and simazine were detected in 100 percent, and metolachlor and acetochlor were detected in

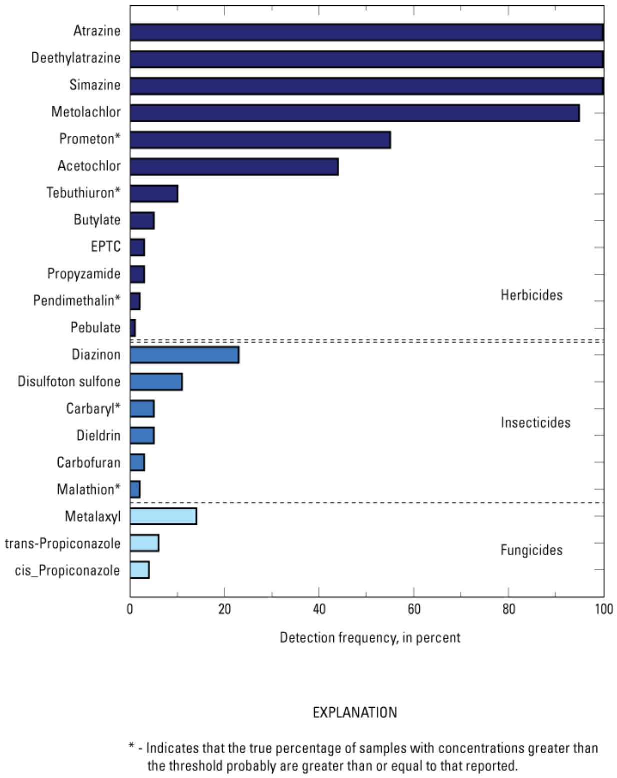


Figure 6. Occurrence of pesticide compounds from all samples at all sites in the Little River Basin, Kentucky, study area, 2003-04.

more than 45 percent of all surface-water samples (fig. 6). Almost 60 percent of the atrazine and 93 percent of the simazine samples were in the 0.1 to 1.0 μg/L range. The pesticide transformation compound, deethylatrazine, was detected in 100 percent of the samples. Only one nonagricultural herbicide, prometon, was detected in more than 50 percent of the samples. Less frequently detected herbicides were butylate, pebulate, propyzamide, EPTC, tebuthiuron, and pendimethalin.

The insecticides carbaryl, carbofuran, diazinon, dieldrin, Malathion, and disulfoton sulfone (transformation compound of disulfoton) were the only insecticides detected at any of the sites. Diazinon, the most commonly detected insecticide, was found in 23 percent of the samples and was detected at all sites, except Casey Creek. Insecticides, such as diazinon, typically are associated with urban areas. Diazinon was most frequently detected (10 out of 26 samples) at the North Fork Little River sampling site which is 13 percent urban. Although detected in 23 percent of the all samples; diazinon was detected in 54 percent of the samples collected in July and August. Disulfoton sulfone was detected in 11 percent of all samples and frequently occurred in the spring. Carbaryl and dieldrin were each detected in five percent of all samples. Carbaryl was most frequently detected at the North Fork Little River sampling site (3 out of 6 samples). Carbofuran and Malathion were detected in three and two percent of the samples, respectively. The lower use relative to herbicides and the application during periods of reduced runoff probably account for lower detection rates and low concentrations of insecticides in the basin.

Metalaxyl was the most commonly detected fungicide (14 percent); most detections of metalaxyl were from the Sinking Fork subbasin. Metalaxyl was detected in about 63 percent of the samples collected during June, July, and August, although it was detected in only 14 percent of all samples. Propiconazole (cis- and trans- forms) was the only other fungicide detected in the samples.

Spatial Variability of Selected Pesticides

The Wilcoxson rank-sum nonparametric statistical test (Helsel and Hirsch, 1992) was used to compare selected pesticide concentrations at the four fixed-network sites in the basin. The Wilcoxson rank-sum test ranks the data points to determine if one data set has higher values than another data set. Differences between the groups with probability (p) values of

0.05 or less were considered significant in this study. A total of 23 samples were collected at each of the four fixed-network sites during 2003-04. Median concentrations of atrazine and simazine were notably larger at North Fork Little River than at the Sinking Fork near Cadiz site and at the South Fork Little River site, respectively (fig. 7). There is no clear explanation as to why there are greater concentrations of atrazine and simazine at the North Fork Little River site than at the other sites, since it has the least amount of cultivated land (19 percent). No statistical differences were found among the median concentrations of atrazine or simazine at the other sites. Differences in the edian concentrations of deethylatrazine (transformation compound of atrazine) were smaller at the North Fork Little River site than at the other fixed-network sites. The median concentration of deethylatrazine at the North Fork Little River site was 0.26 µg/L.

Concentrations of metolachlor were significantly larger at the Sinking Fork near Cadiz site than at the other three sites (fig.7). The median concentration of metolachlor for this site was about 2.5 times larger (0.05 µg/L) than at the other three sites. Differences in the median concentrations of deethylatrazine (transformation compound of atrazine) were smaller at the North Fork Little River site than at the other fixed-network sites. The median concentration of deethylatrazine at the North Fork Little River site was 0.26 µg/L.

Median concentrations of diazinon were notably larger at the North Fork Little River site than at the other three sites (fig.7). The median concentration for diazinon for the North Fork Little River site was 0.01 µg/L. One explanation for North Fork Little River having a significantly larger median concentration of diazinon than the other sites is because the amount of urban land where diazinon (an urban insecticide) might be used is greater in the North Fork Little River subbasin (13 percent).

Seasonal Variability of Selected Pesticides

Concentrations of pesticides varied throughout the year in samples collected at all the sampling sites with the highest concentrations generally occurring during storm runoff in the spring. The maximum concentrations of 11 of the 15 herbicides detected occurred in the growing season (March-May) (fig.8). The maximum concentrations for the four remaining detected herbicides (EPTC, pebulate, propyzamide, and tebuthiuron) occurred during the nongrowing season. The most commonly detected pesticides in the Little River Basin were found in streams year around, but at low concentrations (table 10). Atrazine (22 µg/L), simazine (6.1 µg/L), and acetochlor (4.1 µg/L had the highest detected concentrations in the basin of the 15 herbicides detected. These herbicides are row-crop herbicides and are the most heavily applied pesticides in the basin. Metolachlor also is a heavily applied row-crop herbicide in the basin, but concentrations were never greater than 0.32 µg/L. Median concentrations of the herbicides---acetochlor, atrazine, metolachlor, prometon, and simazine---ranged from <0.018 µg/L for prometon to 0.58 µg/L for atrazine for all samples collected during this study (table 10). The highest concentrations of herbicides occurred in March, April, and May, during storm runoff (fig. 8).

Concentrations of atrazine and its transformation compound (deethylatrazine) in relation to daily mean streamflow at three of the fixed-network sites are shown in figure 9. Daily mean streamflow was estimated for the North Fork Little River and South Fork Little River sites (both ungaged sites) by multiple-regression analysis using the available daily mean streamflow at the Little River near Cadiz site.

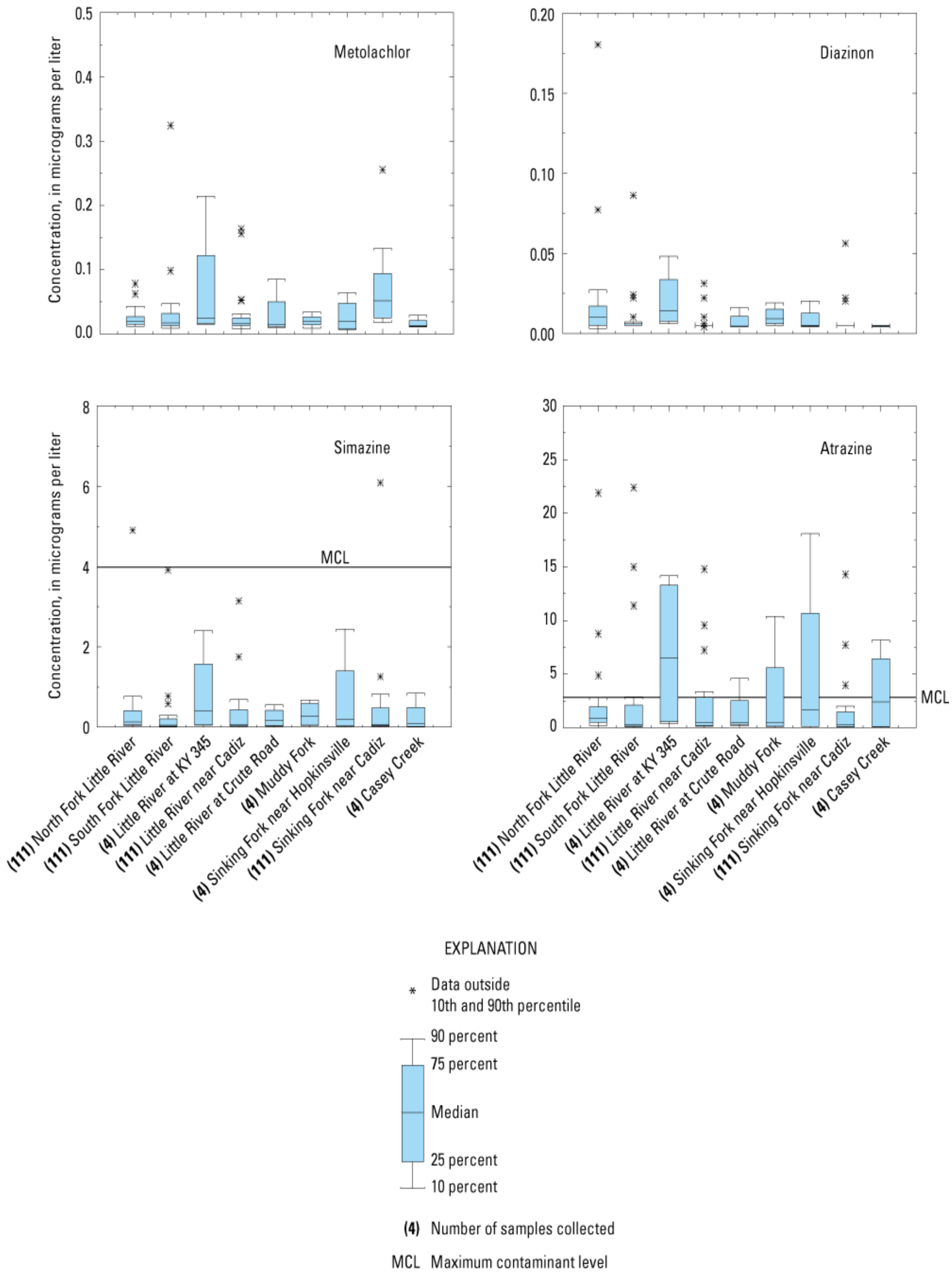


Figure 7. Concentrations of selected pesticides (metolachlor, diazinon, simazine, and atrazine) at all sampling sites in the Little River Basin, Kentucky, 2003-04.

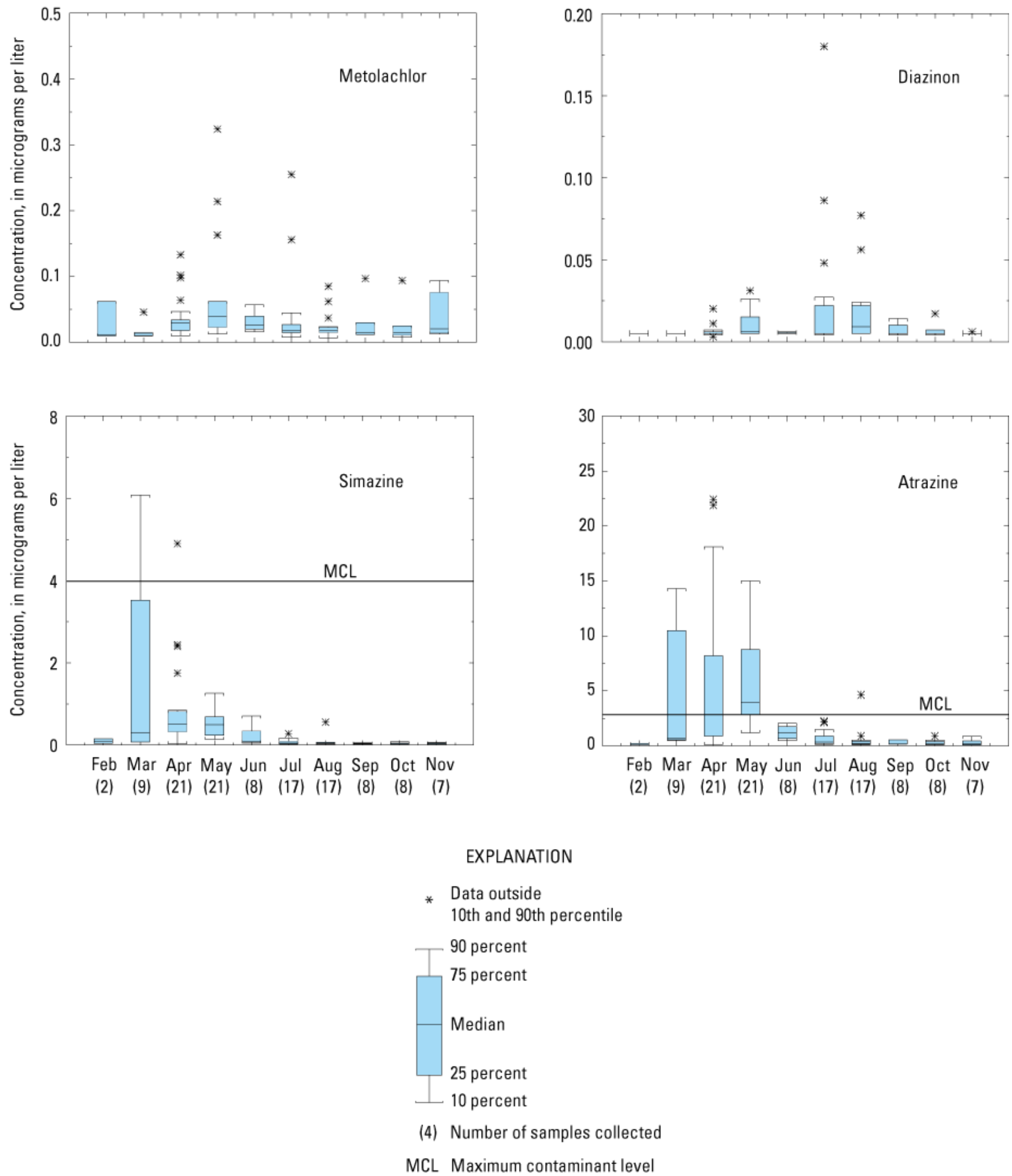


Figure 8. Monthly concentrations of selected pesticides at all sampling sties in the Little River Basin, Kentucky, 2003-04.

Table 10. Summary statistics of the detected herbicides, insecticides, and fungicide in samples collected in the Little River Basin, Kentucky; laboratory reporting limits; drinking-water standards; and aquatic-life criteria.

[Concentrations in micrograms per liter (µg/L); MCL. maximum contaminant level; HAL, health advisory level; --, no regulation or guideline; Ky, Kentucky; CIAT, 2-chloro-4-isopropylamino-6-amino-s-triazine; LD, less than laboratory reporting level; drinking water standards from U.S. Environmental Protection Agency (2004b), unless otherwise noted]

Compound	Trade name(s)	Method detection limit (µg/L)	Median concentration of all samples (µg/L)	90th percentile of all samples	Maximum concentration detected (µg/L)	Site of maximum concentration	Drinking water standard or guideline (MCL or HAL) (µg/L)	Aquatic Life Criterion (µg/L)
				Herbicides				
Acetochlor	Harness	0.002	0.008	0.253	4.14	Little River near Cadiz, Ky.	--	--
Alachlor	Lasso	.002	LD	.006	.015	Sinking Fork near Hopkinsville, Ky.	2	--
Atrazine	Aatrex	.001	.58	9.41	22.4	South Fork Little River at Hopkinsville, Ky.	3	[1]1.8
Butylate	Sutan+	.002	LD	.01	[2].02	North Fork Little River at Hopkinsville, Ky.	350	--
CIAT	Degradate of	.002	[2].218	[2].448	[2].997	South Fork Little River at Hopkinsville, Ky.	--	--
EPTC	Eptam	.002	LD	.009	.035	North Fork Little River at Hopkinsville, Ky.	--	--
Metoalchlor	Dual	.002	.02	.09	.32	South Fork Little River at Hopkinsville, Ky.	[3]100	[1]7.8
Metribuzin	Lexone, Sencor	.004	LD	LD	.029	Little River near Cadiz, Ky.	[3]200	[1]1
Napropamide	Devrinol	.003	LD	LD	.022	South Fork Little River at Hopkinsville, Ky.	--	--
Pebulate	Tillam	.004	LD	LD	.012	North Fork Little River at Hopkinsville, Ky.	--	--
Pendimethalin	Prowl, Tillam	.004	LD	LD	.121	Sinking Fork near Hopkinsville, Ky.	--	--
Prometon	Pramitol	.018	LD	.05	.16	Sinking Fork at Kings Chapel Road near Cadiz, Ky.	[3]100	--
Propyzamide	Kerb	.004	LD	.008	.015	North Fork Little River at Hopkinsville, Ky. South Fork Little River at Hopkinsville, Ky.	--	--
Simazine	Princep,	.005	.07	.77	6.1	Sinking Fork at Kings Chapel Road near	4	--
Tebuthiuron	Spike, Graslan	.010	LD	LD	.11	South Fork Little River at Hopkinsville, Ky.	500	--
				Insecticides				
Carbaryl	Sevin	.003	LD	LD	[2].404	North Fork Little River at Hopkinsville, Ky.	700	[1].20
Carbofuran	Furadan	.003	LD	LD	[2].035	North Fork Little River at Hopkinsville, Ky.	40	[1]1.8
Diazinon	Diazinon and	.002	LD	.02	.18	North Fork Little River at Hopkinsville, Ky.	[3]0.6	[1].08
Dieldrin	Panoram D-31	.001	[2].008	[2].009	.021	North Fork Little River at Hopkinsville, Ky. South Fork Little River at Hopkinsville, Ky.	--	--
Disulfoton	Disyston and	.017	LD	LD	.10	South Fork Little River at Hopkinsville, Ky.	.3	--
gamma-HCH	Lindane	.011	LD	LD	.016	Muddy Fork near Hopkinsville, Ky.	[3].2	[1].01
Malathion	Malathion and	.005	LD	LD	.038	North Fork Little River at Hopkinsville, Ky.	200	.1
				Fungicides				
opiconazole	Banner, Orbit	.001	LD	LD	0.027	Muddy Fork near Hopkinsville, Ky.	--	--
trans-Propiconazole	Banner, Orbit	.001	LD	LD	.04	Muddy Fork near Hopkinsville, Ky.	--	--
Metalaxyl	Apron, Subdue	.002	LD	0.02	.05	Little River near Cadiz, Ky.	--	--

[1]Canadian water-quality guidelines for the protection of freshwater aquatic life (Canadian Council of Ministers of the Environment, 2003).

[2]Estimated value.

[3]U.S. Environmental Protection Agency lifetime-health advisory for a 70-kilogram adult (U.S. Environmental Protection Agency, 2004a)

Concentrations of the parent pesticide compound, atrazine, were higher in the spring following application during periods of increased streamflow and lower later in the growing season when there is no application and decreased streamflow is decreased. The seasonal pattern for the pesticide transformation compound, deethylatrazine, mirrored that of its parent compound, atrazine, but at lower concentrations. However, concentrations of deethylatrazine at South Fork Little River and at the Little River near Cadiz site were slightly higher than atrazine during late summer and fall; however, the difference was less than one-tenth of a microgram per liter (fig. 9). It would be expected for pesticide transformation compounds to follow a similar seasonal pattern as the parent pesticide compounds, because most pesticides begin to degrade by chemical or biological processes following application.

In contrast to the most commonly detected herbicides, the most commonly detected insecticide, diazinon, was primarily present in the summer. The highest concentrations of diazinon occurred during July and August (fig.10). When present, concentrations of diazinon were less than 0.18 µg/L. Diazinon typically is applied to lawns later in the season to control fleas, ticks, and white grubs, which would probably explain its highest detection and concentrations during the summer months. It also is used to control cockroaches. Unlike diazinon, disulfoton sulfone was most frequently detected in the spring. The highest concentrations occurred in April. Disulfoton is a systemic insecticide used to control aphids and various other insects; disulfoton sulfone is a transformation product of disulfoton.

Median concentrations of the detected insecticides were less than their detection levels with the exception of dieldrin. The median concentration of dieldrin was E0.008 µg/L. Concentrations of fungicides were highest during summer and late fall. Concentrations of pesticides can vary seasonally because of differences in the time and frequency that pesticides are applied, hydrologic conditions, types of soil, and the physical, chemical, and biological characteristics of pesticide compounds.

Concentrations of Stream Pesticides Compared to Drinking-Water Standards and Aquatic-Life Guidelines

The U.S. Environmental Protection Agency (USEPA) has developed water-quality standards and guidelines for some compounds that can adverse effects on human health and aquatic organisms. The standards and guidelines (also known as maximum contaminant levels (MCL)) established by the USEPA pertain to finished drinking water; however, the MCL values provide comparison with sampled concentrations (U.S.Environmental Protection Agency, 2004a). Aquatic-life criteria provide for the protection of aquatic organisms for short-term (acute) and long-term (chronic) exposures to chemical compounds. In certain instances, Canadian guidelines were used for comparisons when other criteria were unavailable (International Joint Commission Canada and United States, 1977; Canadian Council of Ministers of the Environment, 2003).

Most detections of pesticides during this study were at low concentrations in relation to existing drinking-water standards and guidelines established for the protection of aquatic life (table 10). Many of the pesticides detected during this study, including the pesticide transformation compounds, do not have established

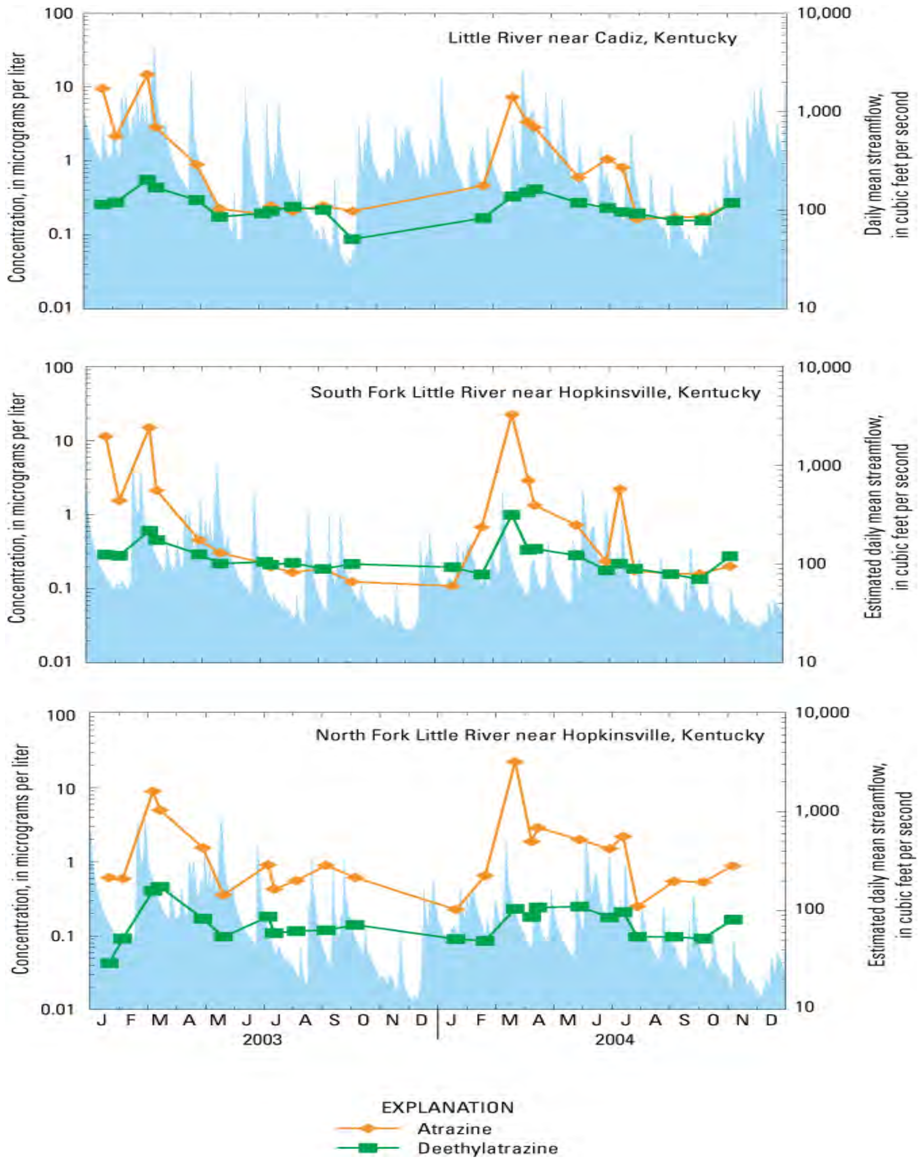


Figure 9. Seasonal variability of atrazine and its transformation product, deethylatrazine, at three selected sampling sites in the Little River Basin, Kentucky, 2003-04.

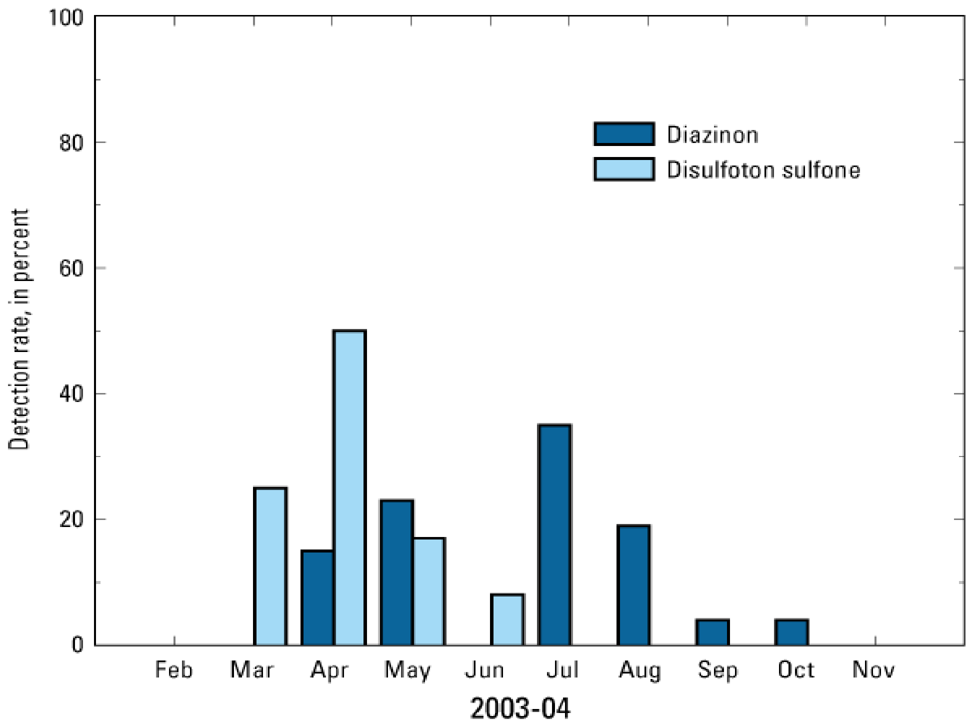


Figure 10. Monthly detection rates of selected insecticides (diazinon and disulfonton sulfone) in the Little River Basin, Kentucky, 2003-04. (Monthly detection rates were combined for 2003 2004.)

standards or criteria. Only two pesticide compounds—atrazine and simazine—exceeded the USEPA established MCL. Atrazine and simazine exceeded the established MCL in 17 percent and 2 percent of the samples, respectively. These exceedences occurred in the spring, and for atrazine, were observed at all sampling sites.

Although most detections of pesticides were at concentrations less than the U.S. Environmental Protection Agency (2004b) drinking-water MCLs and health advisory levels (HALs), several pesticides—atrazine, carbaryl, diazinon, and *gamma*-HCH (lindane)—were detected in stream samples at concentrations exceeding guidelines established to protect aquatic life (Canadian Council of Ministers of the Environment, 2003; International Joint Commission Canada and United States, 1977).

Concentrations of atrazine exceeded its aquatic-life criterion (1.8 µg/L) in 32 samples collected from all sites. The concentration of atrazine in the storm sample collected from the South Fork Little River site (22.4 µg/L) was more than 12 times its aquatic-life criterion. Most of the high concentrations of atrazine occurred in storm samples. The highest concentrations of the insecticides—carbaryl, diazinon, and *gamma*-HCH—also usually occurred in storm samples. Carbaryl was detected at concentrations that exceeded the aquatic-life criterion of 0.2 µg/L in 12 samples. Concentrations of diazinon exceeded its aquatic-life criterion (0.08 µg/L) in two samples collected in July from at the North Fork Little River and at the South Fork Little River sites. *Gamma*-HCH was detected in one sample from Muddy Fork near Hopkinsville at a concentration of

0.016 µg/L, exceeding its aquatic-life criterion of 0.01 µg/L).

Estimated Loads and Yields of Selected Pesticides

Water-resource managers often need to know the amount of a contaminant transported in a stream to determine the stream's condition and how it changes over time. Loads and yields of the contaminants are common measures for these assessments. Loads and yields were estimated for the five pesticides frequently detected in samples for three of the four fixed-sampling sites from samples collected in 2003 and 2004 (table 8). Loads were not estimated at the Sinking Fork near Cadiz site, because a streamflow relation between this site and the Little River near Cadiz site could not be reliably established.

Mean annual loads (in pounds per year) for select pesticides were estimated using the LOADEST program. Load represents the mass (usually in pounds or tons) of a given constituent moving past a given point per unit time. Load estimates based on monitoring sites with long periods of record are more reliable than estimates from sites with short periods of record. Annual loads vary depending on drainage basin size, discharge conditions, and land uses.

The largest mean-annual loads of selected pesticides among three fixed-network were at the Little River near Cadiz site. This site had the highest mean annual loads of atrazine (2,337 lb/yr), metolachlor (19.51 lb/yr), and simazine (330.8 lb/yr) from 2003 through 2004. North Fork Little River had the largest mean annual load of diazinon (5.57 lb/yr). The mean-annual load of acetochlor (190 lb/yr) was largest at the South Fork Little River site.

Atrazine had the highest estimated use and the highest estimated loads. The load for diazinon, an insecticide that is primarily used for nonagricultural purposes, was less than agricultural herbicides. For example, the load of diazinon at the North Fork Little River site was only 0.9 percent of the atrazine load.

The estimated annual loads of acetochlor, atrazine, diazinon, metolachlor, and simazine for the study period were about 0.01 to 2.2 percent of the amount applied in the basin. The large variability in the values for load as a percentage of use is to be expected because of the considerable variability in physical properties and in application practices (Larson and others, 1997).

Yield is equal to the load divided by the drainage area.Yields are helpful in comparisons between basins of differing size and streamflow characteristics, because they minimize the effect of differences in streamflow. The South Fork Little River site had the highest yields of commonly used row-crop herbicides (acetochlor, atrazine, and metolachlor). The yield of atrazine was 10.9 lb/yr/mi^2 (table 11); acetochlor and metolachlor yields were 3.3 and 0.18 lb/yr/mi^2), respectively. Simazine, another commonly used row-crop herbicide, had the highest yield at the Little River near Cadiz site (1.4 lb/yr/mi^2). North Fork Little River, a more urban site, had the highest yield of diazinon (0.08 lb/yr/mi^2); diazinon is a pesticide typically used in urban areas.

Concentrations of Nutrients

Although nutrients such as nitrogen and phosphorus are necessary for plant and animal life, in excessive quantities they can accelerate the growth of aquatic plants and cause algal blooms. Excessive aquatic-growth may result in unsuitable habitat conditions for aquatic animals and can interfere with recreational activities such as fishing, swimming, and boating. Decomposition of aquatic-plant growth can cause odor and taste problems in drinking water supplies and can consume dissolved oxygen, which can adversely affect aquatic life.

Spatial Variability of Nutrients

Concentrations of nitrate greater than 10 milligrams per liter (mg/L) in drinking water can have adverse human-health effects. Concentrations of nitrite plus nitrate ranged from 0.36 to 5.7 mg/L at the seven sites (fig.11). The highest concentration of nitrite plus nitrate of 5.7 mg/L was observed at South Fork Little River. The lowest concentration of nitrite plus nitrate of 0.36 mg/L was observed at Casey Creek. The median concentration of nitrite plus nitrate for all sites sampled was 3.6 mg/L. The Sinking Fork near Cadiz site had the highest median nitrogen concentration (4.6 mg/L). Concentrations of ammonia nitrogen ranged from <0.04 to 0.66 mg/L at the seven sites (Appendix A). The highest concentration of ammonia nitrogen was observed at the South Fork Little River site.

Phosphorus is a common element in rocks; other sources of phosphorus include sewage effluent, detergents, and leachates from septic tanks. Although no established aquatic-life criterion exists for total phosphorus, the USEPA recommends a maximum concentration of total phosphorus of 0.1 mg/L to discourage excessive growth of aquatic plants and algae. Total phosphorus concentrations in 58 percent of the samples were greater than 0.1 mg/L (fig.11). The median concentration of total phosphorus for all sites sampled was 0.13 mg/L. Concentrations of orthophosphates ranged from <0.006 to 2.0 mg/L. The highest concentration of orthophosphate was measured at the North Fork Little River site: 2.0 mg/L. This sampling site is located just downstream of a wastewater-treat facility. Sources of orthophosphate include weathering of soils, animal waste, detergents, decaying plants, and wastewater-treatment facility discharge.

A Wilcoxson rank-sum nonparameteric statistical test (Helsel and Hirsch, 1992) was used to compare concentrations of nitrite plus nitrate, total phosphorus, and orthophosphate between the four fixed-network sites. A total of 23 samples were collected at each of the four fixed-network sites during 2003-04.

The fixed-network sites sampled in the Little River Basin represent drainage areas in predominately agricultural areas, forested areas, or a mixture of both. Urban areas represent only a small portion of the study area. Median concentrations of nitrite plus nitrate were lowest at the North Fork Little River site, which had the least agricultural land use and most urban land use (fig.11). However, the North Fork Little River site had higher median concentrations of both total phosphorus and orthophosphate than samples from the other fixed-network sites, probably because of the urban sources in the North Fork Little River subbasin. The Sinking Fork near Cadiz site had a higher median concentration of nitrite plus nitrate than the other fixed-network sites, likely because this site had a higher percentage of drainage area in row crops. Median concentrations of total phosphorus and orthophosphate were lowest at the Sinking Fork near Cadiz site.

Seasonal Variability of Nutrients

Concentrations of nutrients can vary seasonally. Concentrations of nitrite plus nitrate tended to be highest during spring and lowest in fall in the Little River Basin. During late fall, plants become dormant and limit the uptake of available nutrients allowing for nutrients to build up in the soil. An increase in precipitation in the spring allows for the runoff of nutrients, such as nitrite plus nitrate, into the streams. In addition, nitrogen fertilizers are applied in the spring to row crops such as corn, adding more available nutrients to the soil that potentially can runoff into the streams. Precipitation decreases in fall allowing plants to uptake much of the available nutrients in the soil, thus, concentrations of nitrite plus nitrate decrease in streams. An insufficient number of samples were

Table 11. Mean annual load and yield of selected pesticides at selected fixed-network sites in the Little River Basin, Kentucky, 2003-04.

[lb/d, pound per day; [(lb/yr)/mi^2], pound per year per square mile; DA, drainage area; mi^2, square mile; <, less than]

Pesticide	Mean annual load (lb/d)	95 percent confidence interval: Lower	95 percent confidence interval: Upper	Standard error	Mean annual yield (lb/yr)/mi^2
Little River near Cadiz, Ky. (DA = 244 mi^2)					
Acetochlor	66	7.3	234	40	0.27
Atrazine	2,300	1,100	4,400	780	9.4
Deethylatrazine	266	219	314	24	1.1
Diazinon	<4	<4	7.3	.8	<.02
Metolachlor	18	11	29	4.8	.07
Simazine	330	175	584	96	1.3
North Fork Little River near Hopkinsville, Ky. (DA = 67 mi^2)					
Acetochlor	33	7.3	95	24	.49
Atrazine	620	274	1,170	217	9.2
Deethylatrazine	36	26	48	5.3	.05
Diazinon	<4	<4	11	2.4	<.06
Metolachlor	<4	<4	<4	.41	<.06
Simazine	73	47	113	16	1.1
South Fork Little River near Hopkinsville, Ky. (DA = 58 mi^2)					
Acetochlor	193	7.3	912	241	3.3
Atrazine	620	193	1,570	338	11
Deethylatrazine	80	55	95	8.0	1.4
Diazinon	<4	<4	4	<4	<.07
Metolachlor	11	4	18	4	.19
Simazine	55	26	106	16	.95

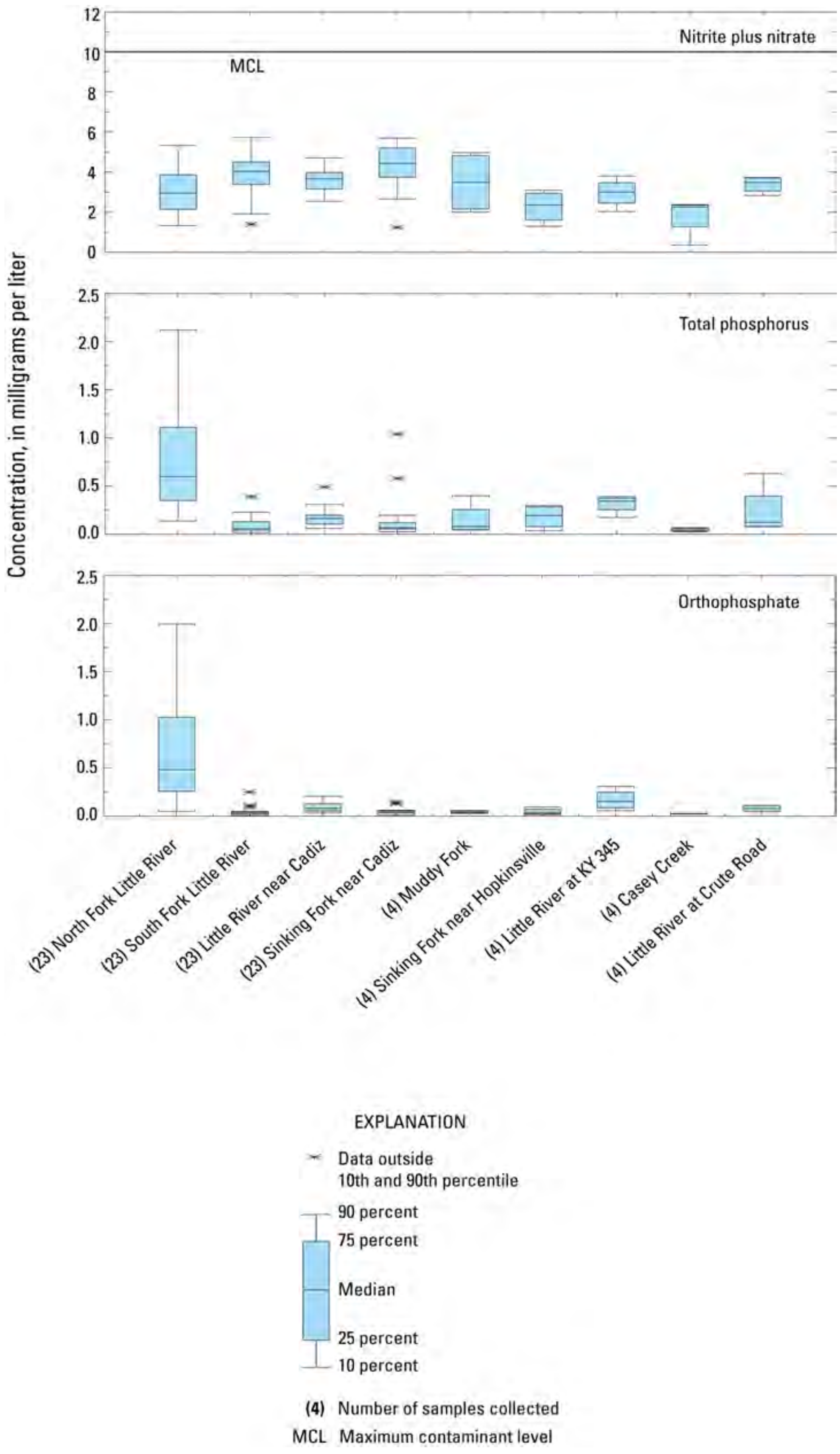


Figure 11. Concentrations of nitrite plus nitrate, total phosphorus, and orthophosphate at all sampling sites in the Little River Basin, Kentucky, 2003-04.

collected in the winter to perform a statistical analysis.

Differences in median concentrations of nitrite plus nitrate were minimal between fall and spring at South Fork Little River and the Sinking Fork near Cadiz site (fig.12). The other fixed-network sites showed no difference between fall and spring. The South Fork Little River site also showed difference between spring and summer. No statistical difference was shown between fall and summer at any of the sites.

Seasonal variation in concentrations of total phosphorus was minimal, with the exception of the North Fork Little River site (fig.13). The North Fork Little River site and the Little River near Cadiz site had high concentrations of orthophosphate in fall and low concentrations of orthophosphate during spring (fig.13). Concentrations of orthophosphate always were higher at the North Fork Little River site than at the other sites. A possible explanation is the effluent from the wastewater-treatment facilities on the North Fork Little River considerably contributes to streamflow. The percentage of total phosphorus that is orthophosphate varies seasonally. Concentrations of total phosphorus and orthophosphate are similar in the fall and summer at the fixed-network sites, but concentrations of orthophosphate are lower than concentrations of total phosphorus in the spring (fig.13). This probably is because orthophosphate is readily consumed by aquatic plants and algae during the spring growing season.

The Wilcoxson rank-sum test showed that median concentrations of orthophosphate and total phosphorus were different between fall and spring (p value: 0.024 and 0.014, respectively), and between summer and spring (p value: 0.001 for both constituents) at the North Fork Little River site. Only median concentrations of orthophosphate at the Little River near Cadiz site were notable during the same seasons. Median concentrations of orthophosphate and total phosphorus were not similar among any of the three seasons at the South Fork Little River site and the Sinking Fork near Cadiz site.

Estimated Loads and Yields of Nutrients

Load represents the mass (usually pounds or tons) of a given water-borne constituent moving past a given point per unit of time. Annual loads can vary depending upon drainage basin size, hydrologic conditions, and land uses within a basin. Mean annual loads (in lb/yr) for nutrients were estimated using the LOADEST program at three of the four-fixed network sites from samples collected during 2003 and 2004 (table 12). The 95-percent confidence interval for each estimated annual load of ammonia nitrogen, nitrite plus nitrate, total phosphorus, and orthophosphate has been calculated from the standard error of prediction provided by the LOADEST program. The confidence interval is shown in pounds per year. Loads were not estimated at the Sinking Fork near Cadiz site, because a streamflow relation between this site and the Little River near Cadiz site could not be established; however, Michael C. Ierardi, (U.S. Geological Survey, unpub. Data, 2006) has reported estimates for this site (table 12).

The coefficients of determination (R^2) for the best-fit regression models for loads of nitrite plus nitrate, total phosphorus, orthophosphate, and suspended sediment are listed in table 12. High R^2 values indicate that the models for all four constituents successfully simulated the variability in constituent loads at the three fixed-network sites. Overall, the model simulations for nitrite plus nitrate showed the highest R^2 values. The model simulations for total phosphorus showed a better fit than the orthophosphate model based on R^2 values. The better fit for total phosphorus likely is related to the suspended components of total phosphorus. Generally, suspended material has a stronger relation to streamflow than do

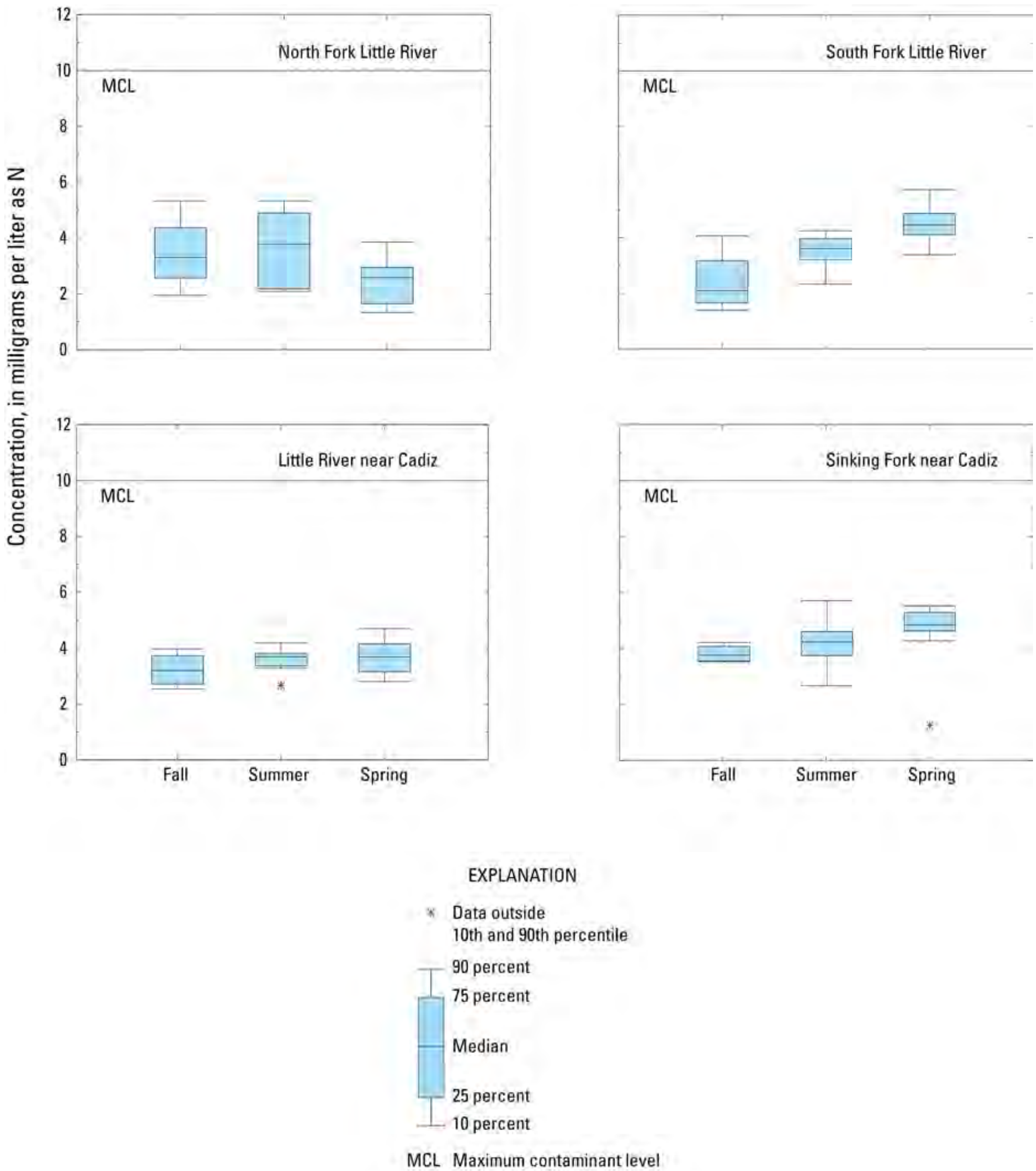


Figure 12. Seasonal distribution of concentrations of nitrite plus nitrate for four fixed-network sites in the Little River Basin, Kentucky, 2003-04.

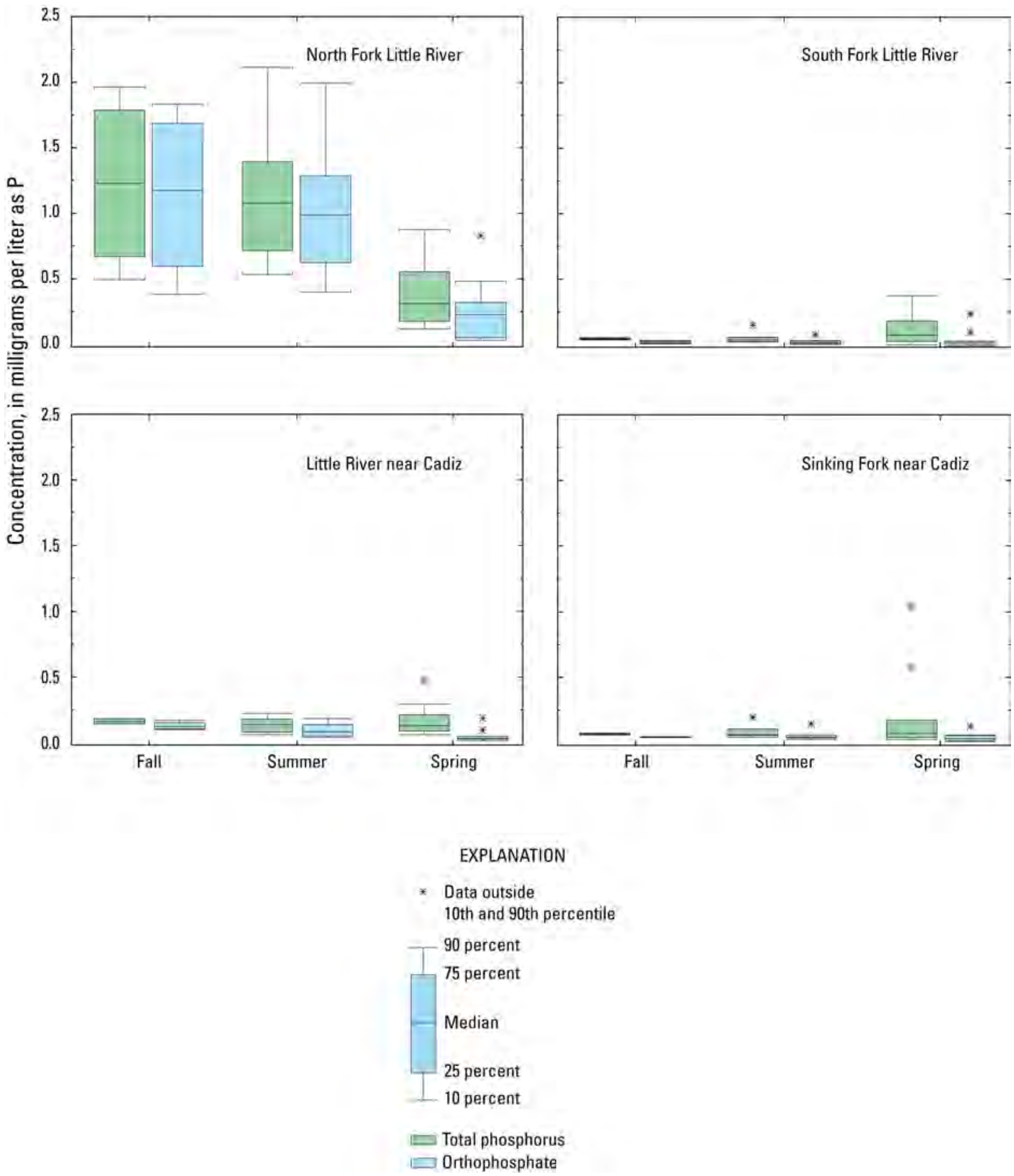


Figure 13. Seasonal distribution of concentrations of total phosphorus and orthophosphate for four fixed-network sites in the Little River Basin, Kentucky, 2003-04.

Table 12. Regression coefficients and coefficients for determination (R^2) for load models used to estimate nitrite plus nitrate, total phosphorus, orthophosphate, and suspended sediment at three sites in the Little River Basin, Kentucky, 2003-04.

[Site locations are shown in figure 1. The regression equation is $ln(L)=a + b(lnQ) + c(lnQ^2) + d[\sin(2\pi T)] + e[\cos(2\pi T)] + fT + gT^2$: where L is the constituent load, in pounds per day; Q is stream discharge, in cubic feet per second; T is time in decimal years from the beginning of the calibration period; *a*,*b*,*c*,*d*,*e*,*f*,*g* are regression coefficients; R^2 represents the amount of variance explained by the model].

Site name	Regression coefficient *a*	*b*	*c*	*d*	*e*	*f*	*g*	R^2 (percent)
Nitrite plus nitrate								
North Fork Little River near Hopkinsville, Ky.	6.09	0.750	-0.002	-0.059	-0.209	0.343	0.527	92
South Fork Little River near Hopkinsville, Ky.	6.24	1.008	-.049	.273	-.208	.013	-.016	97
Little River near Cadiz, Ky.	7.67	1.000	-.040	.084	-.068	.152	-.144	99
Total phosphorus								
North Fork Little River near Hopkinsville, Ky.	4.72	.855	.124	-.436	-.146	.751	-.306	86
South Fork Little River near Hopkinsville, Ky.	1.91	1.46	.158	.328	-.052	-.127	.478	85
Little River near Cadiz, Ky.	4.35	1.22	.181	-.199	.026	.246	.404	88
Orthophosphate								
North Fork Little River near Hopkinsville, Ky.	4.41	.583	.030	-.494	-.271	.985	-.501	81
South Fork Little River near Hopkinsville, Ky.	1.16	1.52	.084	-.897	-.164	-.250	.681	77
Little River near Cadiz, Ky.	3.83	1.02	.063	-.349	-.048	.479	-.126	84
Suspended sediment								
North Fork Little River near Hopkinsville, Ky.	8.47	2.21	-.041	.131	-.473	-.394	-1.22	94
South Fork Little River near Hopkinsville, Ky.	6.59	2.08	.247	-.041	.016	.035	.798	86
Little River near Cadiz, Ky.	8.32	2.02	.179	.176	-.876	-.108	1.11	91

dissolved components such as orthophosphate. Model simulations for suspended sediment showed high R^2 values for all three fixed-network sites.

The largest estimated mean annual load of nitrite plus nitrate among the three fixed sites was at the Little River near Cadiz site (2,500,000 lb/yr) (table 13). This site also had the largest mean annual load of total phosphorus (166,000 lb/yr). The mean annual load of orthophosphate was 65,000 lb/yr which is about 40 percent of the mean annual load of total phosphorus at this site. Estimates of mean annual total load of nitrite plus nitrate and total phosphorus from 1985-97 reported by Crain (2001) and estimates reported by Michael C. Ierardi (U.S. Geological Survey, unpub. data, 2006) are similar to the estimates in this report. The estimated mean annual load of nitrite plus nitrate and total phosphorus reported from 1985-97 was 2,100,000 lb/yr and 212,000 lb/yr, respectively (Crain, 2001). Estimated mean annual loads for total nitrogen was 2,000,000 lb/yr and for total phosphorus was 210,000 lb/yr as reported by Michael C. Ierardi (U.S. Geological Survey, unpub. data, 2006). Although Michael C. Ierardi (U.S. Geological Survey, unpub. data, 2006) reported mean annual loads for total nitrogen and not nitrite plus nitrate, the major form of nitrogen in the Little River Basin is nitrite plus nitrate (about 87 percent of total nitrogen) (Crain, 2001). Load estimates with long periods of record are more reliable than estimates from sites with short periods of record.

Of the two main upstream tributaries from the Little River near Cadiz site, the North Fork Little River site was the greatest contributor of total phosphorus to the study area with an estimate mean annual load of 107,000 lb/yr or about 64 percent of the total mean annual load at the Little River near Cadiz site from about 27 percent of the overall drainage area. The South Fork Little River site contributed an estimated mean annual load of total phosphorus of 32,000 lb/yr which was about 20 percent of the total mean annual load at the Little River near Cadiz site, from 24 percent of the overall drainage area.

The estimated mean annual loads for orthophosphate for the North Fork Little River and South Fork Little River Little River are 74,000 lb/yr and 14,000 lb/yr, respectively.

The mean annual load of orthophosphate represented a larger percentage of the mean annual load of total phosphorus at the North Fork Little River site (68 percent) than at the South Fork Little River site (44 percent). A possible reason for the larger percentage of orthophosphate to total phosphorus at the North Fork Little River site is a wastewater-treatment facility which discharges just upstream from the sampling site. The estimated mean annual load of nitrite plus nitrate for the South Fork Little River site was 780,000 lb/yr. The North Fork Little River site had an estimated mean annual load of nitrite plus nitrate of 450,000 lb/yr.

Yields are defined as the amount of load per unit area and are useful for comparing basins with varying size, land use and physiography. Yields for ammonia, nitrite plus nitrate, total phosphorus, and orthophosphate were computed for each of the three fixed-sampling sites (table 13).

Estimated historical mean-annual yields (Crain, 2001; Michael C. Ierardi, U.S. Geological Survey, unpub.data, 2006) of nitrite plus nitrate and total phosphorus for the Little River near Cadiz site were than similar to those computed from samples collected in 2003 and 2004. The estimated mean annual yields of nitrite plus nitrate and total phosphorus reported by Crain (2001) were 8,600 lb/yr/mi^2 and 870 lb/yr/mi^2, respectively. Estimated mean annual yields of total nitrogen and total phosphorus from Michael C. Ierardi (U.S. Geological Survey, unpub. data, 2006) were 8,200 lb/yr/mi^2 and 860 lb/yr/mi^2, respectively; whereas, the

Table 13. Mean annual load and yield of nutrients and suspended sediment at selected, fixed-network sites in the Little River Basin, Kentucky, 2003-04.

[lb/yr, pound per year; [(lb/yr)/mi^2], pound per year per square mile; DA, drainage area; mi^2, square mile; <, less than]

Constituent	Mean annual load (lb/yr)	95-percent confidence interval Lower	95-percent confidence interval Upper	Standard error	Mean annual yield (lb/yr)/mi^2
North Fork Little River near Hopkinsville, Ky. (DA = 67 mi^2)					
Ammonia (as N), dissolved	13,000	7,800	20,000	3,000	190
Nitrite plus nitrate (as N), dissolved	450,000	396,000	516,000	31,000	6,700
Phosphorus (as P), total	107,000	87,000	129,000	10,000	1,600
Orthophosphate (as P), dissolved	74,000	60,000	90,000	7,500	1,100
Suspended sediment	30,000,000	7,000,000	23,000,000	4,400,000	450,000
South Fork Little River near Hopkinsville, Ky. (DA = 58 mi^2)					
Ammonia (as N), dissolved	---	---	---	---	---
Nitrite plus nitrate (as N), dissolved	780,000	678,000	890,000	54,000	13,000
Phosphorus (as P), total	32,000	14,500	62,000	12,000	550
Orthophosphate (as P), dissolved	14,000	6,100	29,000	5,900	240
Suspended sediment	18,000,000	3,500,000	55,000,000	14,000,000	310,000
Little River near Cadiz, Ky. (DA = 244 mi^2)					
Ammonia (as N), dissolved	---	---	---	---	---
Nitrite plus nitrate (as N), dissolved	2,500,000	230,000	2,800,000	103,000	10,000
Phosphorus (as P), total	166,000	102,000	250,000	39,000	660
Orthophosphate (as P), dissolved	65,000	46,000	89,000	11,000	270
Suspended sediment	84,000,000	59,000	620,000	150,000	340,000
Sinking Fork near Cadiz, Ky.[1] (DA = 107 mi^2)					
Total nitrogen	1,200,000	---	---	660,000	12,000
Total phosphorus	114,000	---	---	67,000	1,000

[1]Data from Michael C. Ierardi (U.S. Geological Survey, unpub. data, 2006)

mean annual yield of nitrite plus nitrate was 10,000 lb/yr/mi^2 and the mean annual yield for total phosphorus was 660 lb/yr/mi^2 for the years 2003 and 2004 at the Little River near Cadiz site. Mean annual streamflow for the Little River near Cadiz site was 389 ft^3/s for water years 2003 and 2004, compared to 372 ft^3/s for water years 1985-97, and 355 ft^3/s for the period reported by Michael C. Ierardi (U.S. Geological Survey, unpub.data, 2006).

The North Fork Little River site had the largest mean annual yield of total phosphorus (1,600 (lb/yr)/mi^2) and orthophosphate (1,100 (lb/yr)/mi^2). Thirteen percent of the land is considered urban in this subbasin. A principal source of phosphorus for the North Fork Little River is discharge from wastewater-treatment facilities. The mean annual yields for total phosphorus and orthophosphate for the Little River near Cadiz site and the South Fork Little River site were similar, with the Little River near Cadiz site having slightly larger yields (table 13). The South Fork Little River site had the largest mean annual yield of nitrite plus nitrate (13,000 lb/yr/mi^2 followed by the Little River near Cadiz site (10,000 (lb/yr)/mi^2) and the North Fork Little River site (6,700 (lb/yr)/mi^2). Estimated mean annual yields for nitrogen and phosphorus from Crain (2001) and Michael C. Ierardi (U.S. Geological Survey, unpub.data, 2006) were similar to the mean annual yields estimated in this report.

Concentrations of Suspended Sediment

Suspended sediment is all particulate matter suspended in the water column resulting from streambed resuspension, rock weathering, and soil erosion. Suspended-sediment concentrations are influenced by natural conditions (streambank erosion, steep slopes, and forest fires) and anthropogenic activities (construction, timber harvesting, and certain agricultural practices).

High concentrations of suspended-sediment can cause habitat destruction and limit light penetration throughout the water column. In addition, suspended sediment plays a major role in the transport and fate of contaminants. Contaminants may sorb onto the surface of the suspended sediments and be transported and deposited in other areas downstream.

Spatial Variability of Suspended Sediment

Concentrations of suspended-sediment generally were low in the Little River Basin (fig.14). The median concentration of suspended sediment for all sites sampled was 12 mg/L.
The highest concentration of suspended sediment was measured at the Sinking Fork near Cadiz site (1,020 mg/L) during a spring runoff event.

Concentrations of suspended sediment for the four fixed-network sites were grouped by site and compared by means of the Wilcoxson rank-sum test. Differences in median concentrations of suspended sediment were not significant (p value: >0.05) among any of the fixed-network sites.

Seasonal Variability of Suspended Sediment

Concentrations of suspended sediment were higher during spring and low during fall (fig.15) Concentrations of suspended sediment were grouped by season and compared by means of the Wilcoxson rank-sum test. Median concentrations of suspended sediment were not statistically significant at South Fork Little River between any season, while the Little River near Cadiz site had median concentrations of suspended sediment that were statistically significant between all seasons. Median concentrations of suspended sediment at North Fork Little River were statistically significant between fall and summer and between fall and spring. Sinking Fork near Cadiz only had median concentrations of

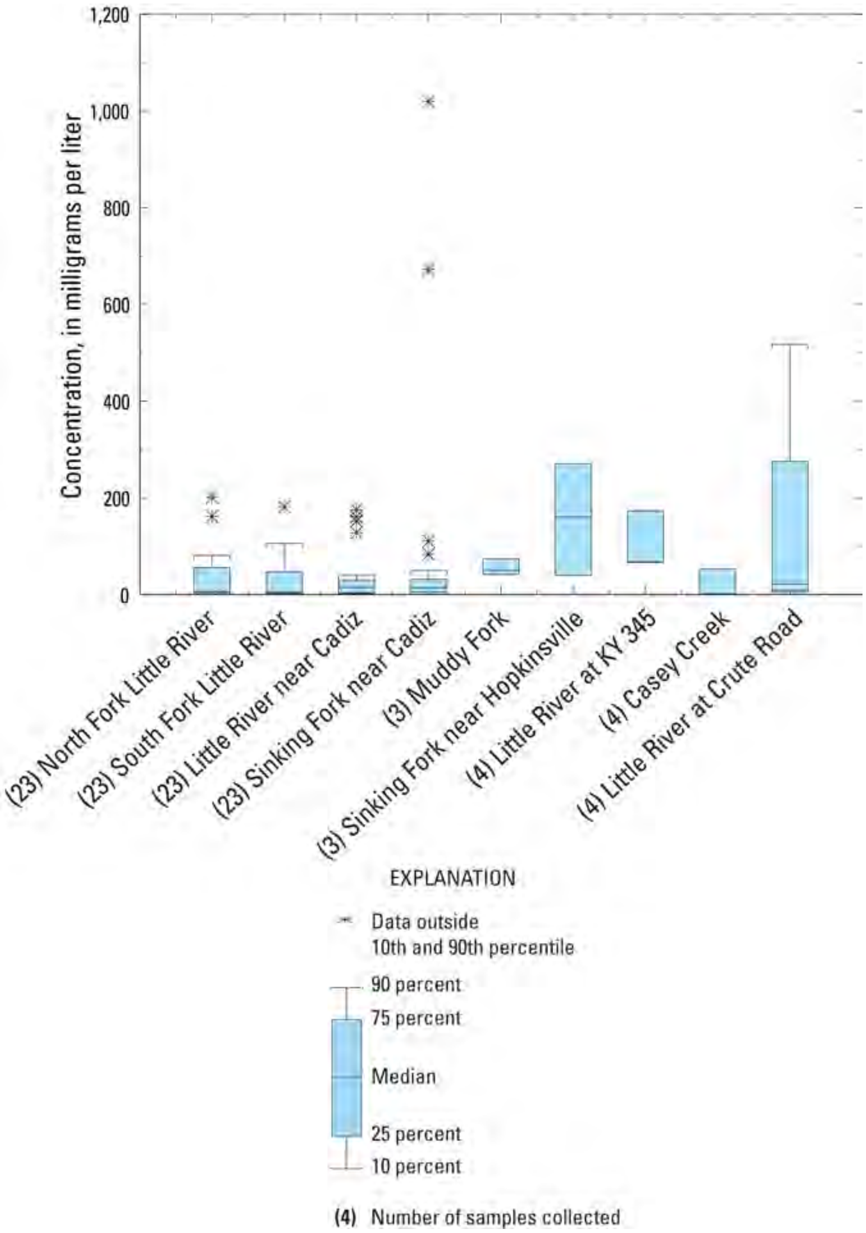


Figure 14. Concentrations of suspended sediment at all sampling sites in the Little River Basin, Kentucky, 2003-04.

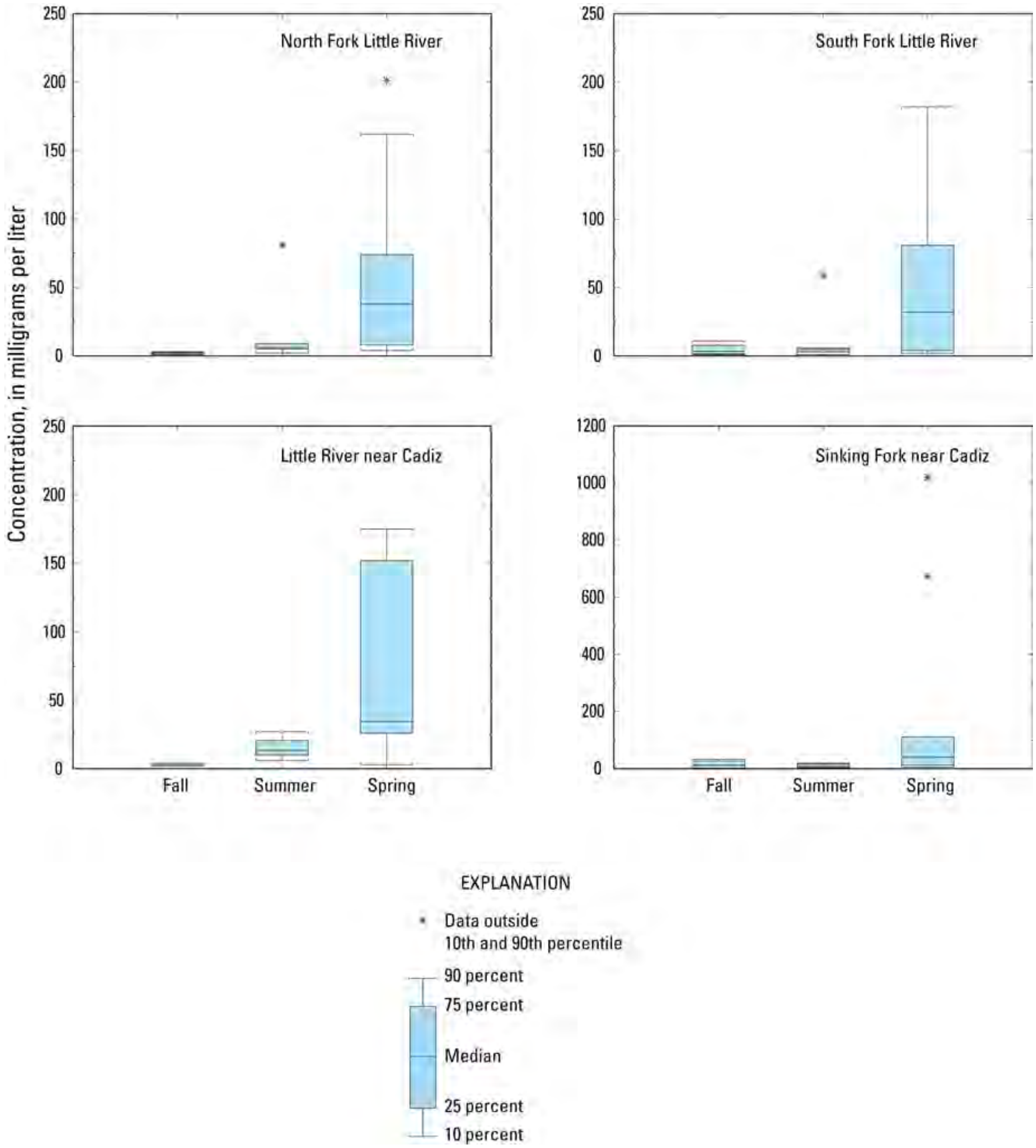


Figure 15. Seasonal distribution of concentrations of suspended sediment for four fixed-network sites in the Little River Basin, Kentucky, 2003-04.

suspended sediment that were statistically significant between summer and spring.

Estimated Loads and Yields of Suspended Sediment

Mean annual loads (in lb/yr) for suspended sediment was estimated using the LOADEST program at three of the four fixed-sampling sites from samples collected during 2003 and 2004 (table 12). Annual loads can vary depending upon drainage basin size, hydrologic conditions, and land uses within a basin. The 95-percent confidence interval for each estimated annual load of suspended sediment has been calculated from the standard error of prediction provided by the LOADEST program. The confidence interval is shown in pounds per year. Loads of suspended sediment was not estimated at Sinking Fork near Cadiz, because a streamflow relation between this site and the Little River near Cadiz site could not be established.

Estimated loads of suspended sediment were largest at Little River near Cadiz, where the mean annual load for 2003 and 2004 was about 84,000,000 lb/yr (table 12). The largest mean annual yield was 450,000 lb/yr/mi^2 at the North Fork Little River site. The smallest mean annual loads and yields of suspended sediment, 18,000,000 lb/yr and 310,000 (lb/yr)/mi^2, respectively, were estimated at the South Fork Little River site.

Summary and Conclusions

A water-quality assessment of streams in the Little River Basin (about 600 square miles in western Kentucky) was conducted during 2003-04, in cooperation with the Kentucky Department of Agriculture. The purpose of the study was to determine the presence and distribution of pesticides, nutrients, and suspended sediment in streams in the study area, to evaluate the variability in concentrations of pesticides, nutrients, and suspended sediment both spatially and seasonally, and to evaluate loads and yields of selected pesticides, nutrients, and suspended sediment in the basin. Four fixed-network sites were sampled monthly during March-November 2003 and during February-November 2004. Additional samples were collected at each of these sites during floods to define pesticide concentrations during high-flow events. Samples were collected from five synoptic-network sites during three high-flow events and one low-flow event over the two years to better define spatial variability in concentrations of pesticides. Ninety-one water samples were collected and analyzed for 127 pesticides and pesticide degradates, and ninety-two water samples were analyzed for nutrients and suspended sediment at the four fixed surface-water sites.

Herbicides were detected more frequently than insecticides and fungicides; 15 of the 24 pesticides detected in surface-water samples were herbicides. The most commonly detected herbicides were those used on row crops. Atrazine and simazine were detected in all surface-water samples. Metolachlor and acetochlor were detected in more than 45 percent of the samples. Deethylatrazine, a transformation compound of atrazine, was detected in 100 percent of the samples. Only one nonagricultural herbicide, prometon, was detected in more than 50 percent of the samples. Diazinon, the most commonly detected insecticide, was detected in 25 percent of the collected samples and was found at all sites, except Casey Creek. It was detected most frequently in July and August. Samples from all 9 sites had detectable concentrations of at least 1 pesticide; 1 sample collected at North Fork Little River had 12 pesticides detected. Pesticide detections most frequently occurred in the spring to early summer months (March-June) when agricultural pesticides are applied. Most pesticides were present in low concentrations. Atrazine and simazine (row-crop herbicides) had the highest measured concentrations (22 and 6.1 µg/L, respectively) and were the most heavily applied herbicides in the basin. Metolachlor also was heavily applied in the basin, but concentrations were never greater than 0.32 µg/L. Although heavily applied in the basin in 2003 and 2004, the insecticide—Malathion, was not frequently detected (4 percent of the samples). The highest concentration of Malathion was 0.04 µg/L and was measured at the South Fork Little River site.

Concentrations of deethylatrazine, an herbicide transformation compound, tended to follow the same monthly concentration pattern as its parent compound (atrazine), but concentrations of deethylatrazine were lower than those of atrazine. However, concentrations of deethylatrazine at the South Fork Little River site and at the Little River near Cadiz site were slightly higher than concentrations of atrazine during late summer and fall.

Most detections of pesticides were at low concentrations in relation to existing drinking-water standards and guidelines established for the protection of aquatic life. Only two pesticide compounds—atrazine and simazine—exceeded the U.S. Environmental Protection Agency (USEPA) standards for drinking water. Atrazine exceeded the USEPA maximum contaminant level (MCL) in 17 percent of all samples; simazine exceeded its established MCL in 2 percent of all samples. Concentrations of atrazine also exceeded its established aquatic-life criterion (1.8 µg/L) in 29 percent of all samples.

A statistical comparison of selected pesticide concentrations among the four fixed-network sites showed larger differences in median concentrations of atrazine, simazine, and diazinon at the North Fork Little River site than the other sites. Differences in median concentrations of deethylatrazine were smaller at the North Fork Little River site than the other sites. Concentrations of metolachlor were appreciably larger at the Sinking Fork near Cadiz site than at the other three fixed-network sites.

In general, the largest mean-annual loads of select pesticides among the fixed-network sites were at the Little River near Cadiz site. Loads were not estimated for the fixed surface-water site, the Sinking Fork near Cadiz site. The Little River near Cadiz site had the highest mean annual loads of atrazine (2,337 lb/yr), metolachlor (19.51 lb/yr), and simazine (330.8 lb/yr) from 2003-2004. The North Fork Little River site had the largest mean annual load of diazinon (5.57 lb/yr). The mean-annual load of acetochlor (189.5 lb/yr) was largest at the South Fork Little River site.

The estimated annual loads of acetochlor, atrazine, diazinon, metolachlor, and simazine for the study period were about 0.01 to 2.2 percent of the amount applied in the basin. Atrazine had the highest estimated use and the highest estimated loads in the basin. The largest load of the insecticide, diazinon, estimated at the North Fork Little River site, was only 0.9 percent of the atrazine load.

Total yields of atrazine ranged from 9.07 to 10.88 lb/yr/mi^2. The South Fork Little River site had the highest yields of commonly used row-crop herbicides (acetochlor, atrazine, and metolachlor). The yield of atrazine was 10.88 lb/yr/mi^2; acetochlor and metolachlor yields were 3.27 and 0.18 lb/yr/mi^2, respectively. Simazine, another commonly used row-crop herbicide, had the highest yield at the Little River near Cadiz site (1.36 lb/yr/mi^2). The North Fork Little River site, a more urban site, had the highest yield of diazinon (0.08 lb/yr/mi^2) which is a pesticide more typically used in urban areas.

Inputs of nitrogen and phosphorus to streams from point and nonpoint sources were estimated for the Little River Basin. Commercial-fertilizer and livestock waste application onto corn and soybean fields is the principal source of nutrients for most of the Little River Basin. Some of these nutrients from agricultural nonpoint sources eventually are transported to streams by surface runoff, erosion of sediment, or ground-water discharge. Sources of nutrients in the urban areas (Hopkinsville) are mainly from effluent discharge from wastewater-treatment facilities and fertilizer applications to lawns.

Median concentrations of nitrogen, phosphorus, and suspended sediment varied spatially and seasonally. Nitrogen concentrations were higher in the spring (March-May) after fertilizer application and runoff. The highest nitrogen concentration of 5.7 milligrams per liter (mg/L) was observed at the South Fork Little River site. The Sinking Fork near Cadiz site had the highest median concentration of nitrite plus nitrate (4.6 mg/L). Differences in median concentrations of nitrite plus nitrate were shown between fall and spring at the South Fork Little River site and the Sinking Fork near Cadiz site. The other fixed-network sites showed no differences between fall and spring. The 10 milligram per liter (mg/L) drinking water maximum contaminant level (MCL) for nitrate (as nitrogen) was never exceeded.

Concentrations of orthophosphate were higher in the fall and lower in the spring at the North Fork Little River site and the Little River near Cadiz site. Concentrations of orthophosphate remained high during the summer for the North Fork Little River site likely because of the contribution of wastewater-effluent to streamflow. Fifty-eight percent of the concentrations of total phosphorus at the nine sites exceeded the U.S. Environmental Protection Agency's recommended maximum concentration of 0.1 mg/L.

The Little River near Cadiz site contributed the largest estimated mean annual loads of nitrite plus nitrate (2,500,000 lb/yr) and total phosphorus (160,000 lb/yr) than the other three fixed-network sites. The estimated mean annual loads of nitrogen and phosphorus for the Little River near Cadiz site were similar to estimates from previous studies. Of the two main upstream tributaries from the Little River near Cadiz site, the North Fork Little River was the greatest contributor of total phosphorus to the study area with an estimated mean annual load of 107,000 lb/yr or about 69 percent of the total mean annual load at the Little River near Cadiz site. The other main upstream tributary, South Fork Little River, had an estimated mean annual load that was about 20 percent of the mean annual load at the Little River near Cadiz site.

The North Fork Little River site had the largest mean annual yield of total phosphorus (1,600 (lb/yr)/mi^2) and orthophosphate (1,100 (lb/yr)/mi^2). A principal source of phosphorus for the North Fork Little River is discharge from wastewater-treatment facilities. The largest mean annual yield of nitrite plus nitrate was observed at the South Fork Little River site.

Concentrations of suspended sediment were highest in the spring (April-June) during runoff and low during fall. The highest concentration of suspended sediment (1,020 mg/L) was observed at the Sinking Fork near Cadiz site . The median concentration of suspended sediment for all sites sampled was 12 mg/L. A nonparameteric statistical test (Wilcoxson rank-sum) determined that the median concentrations of suspended sediment were not different among any of fixed-network sites.

Estimated loads of suspended sediment were largest at the Little River near Cadiz site, where the mean annual load for 2003-04 was about 84,000,000 lb/yr. The North Fork Little River site had the largest mean annual yield of suspended sediment (450,000 lb/yr/mi^2). The smallest mean annual loads and yields of suspended sediment were estimated at the South Fork Little River site.

The results presented in this report provide an assessment of the presence of pesticides, nutrients, and suspended sediment in 2003-04. The vulnerability of drinking-water supplies and of aquatic life to applications of pesticides and nutrients and soil erosion in the Little River Basin is enhanced by development of karst features, which provide reduced opportunity for natural attenuation of contaminants and increased opportunity for surface- and ground-water contamination.

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Appendixes

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1. Workplan Outputs

The "Assessment of Pesticides, Nutrients, and Suspended Sediment of the Little River Basin, Kentucky" consisted of the following major outputs:

a. Developed and submitted a QA/QC plan
b. Established and selected surface-water monitoring sites, installed appropriate equipment, and developed an equipment servicing protocol
c. Established water-quality sampling schedules
d. Requested and received 2003 and 2004 pesticide sales from the Agriculture
e. Submitted Annual Reports and USGS Scientific Investigations Reports
f. Submitted all project data in electronic format to the Environmental and Public Protection Cabinet and Department of Agriculture
g. Developed and submitted three copies of the Final Report and three copies of all products produced by the project

Discussion of Major Outputs

a. *Developed and submitted a QA/QC plan*

The QA/QC plan was developed and submitted to the staff of the Division of Water NPS Section in July 2002. It was reviewed and approved by the staff of the Division of Water on August 20, 2002. An addendum to the QA/QC plan dated 4/21/2003 was reviewed and approved by the Division of Water and was placed in the project file. The site locations of 3 synoptic-network sites were changed.

b. Established and selected surface-water monitoring site, installed appropriate equipment, and developed an equipment servicing protocol

All monitoring sites were selected during the development of the QA/QC plan. These sites consisted of four fixed-network sites in the ground-water recharge areas of the basin and five synoptic-network sites located in various subbasins in the Little River Basin. The four fixed-network sites were North Fork Little River, South Fork Little River, Little River near Cadiz, and Sinking Fork near Cadiz. The five synoptic-network sites (changed 4/21/03) were established for high-flow events and low-flow events. They were located at Little River at KY345, Muddy Fork near Hopkinsville, Sinking Fork near Hopkinsville, Casey Creek near Cadiz, and Little River at Crute Road near Cadiz. There were a total of nine water-quality sites.

USGS personnel from the Paducah Field Office were assigned to visit the Little River near Cadiz (03438000) site every 2-4 weeks or sooner when necessary to clean, calibrate, and service the equipment. Based upon the inspections the QW monitor at the Little River Cadiz site was found to be experiencing technical difficulties in April 03 and had be replaced with a new working monitor.

c. *Established water-quality sampling schedules*

Collection of nutrient, pesticide, and suspended sediment samples at the four fixed-network sites began on March 19, 2003. The fixed-network sites included: Little River near Cadiz (03438000); North Fork Little River near Hopkinsville (03437400); South Fork Little River near Hopkinsville (03437600); and Sinking Fork at Kings Chapel Road near Cadiz (03438040).

Water-quality samples at the five synoptic-network sites were collected April 30 and May 1, 2003 and again on August 19 and 20, 2003. The synoptic-network sites include: Little River @ Crute Road Bridge near Cadiz (03438080); Casey Creek @ KY525 bridge near Cadiz (03437990); Sinking Fork near Hopkinsville (03438028); Muddy Fork near Hopkinsville (03438024); and Little River @ KY345 near Hopkinsville (03437680). The first year of sample collection was completed during the week of November 10th.

The Second Year monitoring followed a similar schedule as above.

Collection of nutrient, pesticide, and suspended sediment samples at the four fixed-network sites began in February 2004. High-flow event samples were collected on April 13th and 14th at the five synoptic-network sites and the four fixed-network sites. Low-flow event samples collected on July 13th and 14th at all 9 sites. Collection of water-quality and sediment samples ended on November 10, 2004 for the completion of the data collection phase of the project. The data will be published in the USGS Water Resources Annual Data Book for fiscal year 2005.

An annual report was submitted to the Cabinet in October 2005 for the reporting period of October 2004 through September 2005.

d. *Requested and received 2003 and 2004 pesticide sales data from the Agriculture*

Yearly, the Department of Agriculture does its annual sales survey of pesticide dealers. The survey starts in November with update of collections forms and as the forms are received into the office, the data is input into a database. Through the summer and into the fall the data is calculated, analyzed and reported the EPA and Partners such as the USGS.

In January 05 the Kentucky Department of Agriculture provided the 2003 and 2004 pesticide sales information for the project in electronic format.

e. *Submitted Annual Reports and USGS Scientific Investigation Reports*

The First Annual report was submitted to the Cabinet in January 2004 for the reporting period of March through December 2003.

A Second Annual report will be submitted to the Cabinet in October 2005 for the reporting period of October 2004 through September 2005.

Two USGS Scientific Investigation Reports were written and submitted to the KDOW for review March 2006. Update: The first SIR was submitted on March 7, 2006 for review. The second SIR was submitted to KDOW April 2006.

The first SIR (pesticides) was approved by the USGS NE Region Reports Improvement Advisor on June 15, 2006, and was sent to the government printing office on July 18, 2006. The OFR on nutrients and suspended sediment has been changed to an SIR and has returned from USGS colleague review (June 21, 2006). Comments for the nutrients and suspended sediment report were received on June 2006, from KDOW and KDA. All review comments have been addressed and the report will be sent to the USGS NE Region Reports Improvement Advisor for her review at the end of July 2006. The second SIR was returned from the government printing office on September 21, 2006.

f. *Submitted all project data in electronic format to the Cabinet and Agriculture*

All electronic water-quality data was submitted to the Kentucky Division of Water TMDL section in February 2006, at their request.

All electronic water-quality data was submitted to the Department of Agriculture prior to the end of the project on September 30, 2006.

g. *Developed and submitted three copies of the Final Report and three copies of all products produced by this project*

Three copies of the Final Report and all products were submitted to the Kentucky Division of Water on October 2, 2006.

2. Budget Summary

Appendix B. QA/QC for water-quality monitoring.

a. Original Detailed Budget

Budget Categories	319 Grant	Non-federal Match	Total
Personnel	$14,000	$116,000	$130,000
Supplies	0	0	0
Equipment	*$3,000		*$3,000
Travel	*$3,000		*$3,000
Contractual	$288,100		$288,100
Operating Costs		89,400	89,400
Other	0	0	0
Total	**$308,100**	**$205,400**	**$513,500**

b. Revised Original Detailed Budget Revised (09/21/05)

Budget Categories	**319 Grant**	**Non-federal Match**	**Total**
Personnel	$14,000	$116,000	$130,000
Supplies	0	0	0
Equipment	*$2,089		*$2,089
Travel	*$3,911		*$3,911
Contractual	$288,100		$288,100
Operating Costs		89,400	89,400
Other	0	0	0
Total	**$308,100**	**$205,400**	**$513,500**

In the 4th Quarter Billing 2005, $911 of unused equipment funds was moved to travel ($236.15). This increased the travel to $1,147.15 : ($911 + $ 236.15 = $1,147.15). This movement of funds was approved by Joel Murphy (08/08/05). See newly reworked original budget above.

The above revised budget reflects the movement of the $911 from equipment to travel. Where the original travel was $3,000 the revised budget, now reflects the addition of $911.

$3,000 + $911 **= * $3,911** total for Travel.

Based upon the original detail budget there was no change in the total dollar amounts of **$513,500.**

c. Remaining Funds Available after Final Billing # 015

Appendix B. QA/QC for water-quality monitoring.

Budget Categories	319(h) Dollars	Match	Total
Personnel	102.44	153.66	256.10
Supplies			
Equipment	*		*
Travel	155.03		155.03
Contractual	0		0
Operating Costs		0	0
Other			
TOTAL:	**257.47**	**153.66**	**411.13**

d. Final Expenditures (Federal) + (Nonfederal Match) = $513,088.87

Budget Categories	319(h) Dollars	Match	Total
Personnel	13,897.55	115,846.35	129,743.90
Supplies			
Equipment	2,089		2,089
Travel	3,755.97		3,755.97
Contractual	288,100		288,100
Operating Costs		89,400	89,400
Other			
TOTAL:	**307,842.52**	**205,246.35**	**513,088.87**

*** Based upon the Total of $513,088.87 X 60% = $307,853.32 was received by the Department of Agriculture from the Division of Water's NPS Section.**

Actual reimbursement to the Kentucky Department of Agriculture, Technical Support Branch was $307,852.73 (actual accumulative total received).

There is a 0.59 cent difference between actual amount received and calculated.

Therefore, based on total ($411.13) federal funds remaining unspent.

411.13 X 60% = 246.67

3. Equipment Summary

The following list is equipment that was purchased from the grant funding to operator the program:

1)	Lexmark T630n Laser Printer	$1,049.00
2)	Lexmark T 250 Sheet Duplex for printer	$ 275.00
3)	Lexmark 250 Sheet Drawer for printer	$ 195.00
4)	Lexmark T Envelop Feeder for printer	$ 242.00
5)	Lexmark Warranty 3 years for printer	$ 328.00
	TOTAL	$2,089.000

The Laser Printer and its accessories were used to do the grant billings and reports associated with the water quality and pesticide programs.

Note: The Laser Printer and accessories do not have a current per-unit fair market value exceeding $5,000. As can be seen above all value is below $2,089.00

QA/QC PLAN FOR

Assessment of pesticides, nutrients, and suspended sediment of the
Little River Basin, Kentucky

Angie S. Crain
U.S. Geological Survey
9818 Bluegrass Parkway
Louisville, Kentucky 40299
502/493-1943
ascrain@usgs.gov

July 2002

The nonpoint source problems being addressed are nutrient, sediment, and pesticide runoff associated with agriculture and urban land use.

Project Organization and Responsibility

A.

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B.

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303/236-3250
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C. No other agency is directly involved with water-quality monitoring for this project.

Appendix B. QA/QC for water-quality monitoring.

Watershed Information

A. Little River — North Fork Little River
South Fork Little River — Sinking Fork
Muddy Fork — Casey Creek

B. Lower Cumberland River Basin

C.

Stream name	***Waterbody identification number***
Little River at KY 1253 bridge	KY5130205-008
Little River at Crute Road bridge	KY5130205-008
Little River at West-Parr Road bridge	KY5130205-008
North Fork Little River at Gary Lane bridge	KY5130205-009
South Fork Little River at KY 107 bridge	KY5130205-010
Sinking Fork at Kings Chapel Road bridge	KY5130205-011
Sinking Fork at US 68/80 bridge	KY5130205-011
Muddy Fork at US 68/80 bridge	KY5130205-011
Casey Creek at KY 525 bridge	KY5130205-013

D. 8-digit HUC: 05130205

E.

Stream name	***Stream order***
Little River at KY 1253 bridge	V
Little River at Crute Road bridge	V
Little River at West-Parr Road bridge	V
North Fork Little River at Gary Lane bridge	IV
South Fork Little River at KY 107 bridge	IV
Sinking Fork at Kings Chapel Road bridge	IV
Sinking Fork at US 68/80 bridge	IV
Muddy Fork at US 68/80 bridge	II
Casey Creek at KY 525 bridge	IV

F. Christian County, and Trigg County

G.

Stream name	***USGS 7.5 minute topographic name***
Little River at KY 1253 bridge	Caledonia, KY
Little River at Crute Road bridge	Cadiz, KY
Little River at West-Parr Road bridge	Herndon, KY-TN
North Fork Little River at Gary Lane bridge	Church Hill, KY
South Fork Little River at KY 107 bridge	Church Hill, KY
Sinking Fork at Kings Chapel Road bridge	Caledonia, KY

Sinking Fork at US 68/80 bridge	Pleasant Green Hill, KY
Muddy Fork at US 68/80 bridge	Pleasant Green Hill, KY
Casey Creek at KY 525 bridge	Caledonia, KY

H.

Stream name	***Milepoint (in river miles)***	
Little River at KY 1253 bridge	29.58	Above the mouth at Cumberland River
Little River at Crute Road bridge	18.42	Above the mouth at Cumberland River
Little River at West-Parr Road bridge	43.21	Above the mouth of Cumberland River
North Fork Little River at Gary Lane bridge	0.21	Above the confluence with North Fork
South Fork Little River at KY 107 bridge	0.18	Above the confluence with South Fork
Sinking Fork at Kings Chapel Road bridge	3.82	Above the mouth at Little River
Sinking Fork at US 68/80 bridge	25.07	Above the mouth at Little River
Muddy Fork at US 68/80 bridge	0.62	Above the mouth at Sinking Fork
Casey Creek at KY 525 bridge	2.18	Above the mouth at Little River

I. No streams listed in the tables above are listed in the 2000 305(b) report to Congress.

Monitoring Objective(s)

The objective of this project is to identify the spatial and temporal variability in pesticide, nutrient, and suspended sediment concentrations in streams in the Little River Basin and to relate the concentrations to land cover in the basin. Concentrations of nutrients and pesticides also will be related to their use in the basin. Nine sites (4 fixed and 5 synoptic) in the basin have been selected, based on land cover, for sampling between February 2003 and November 2004. Samples will be collected monthly at the four fixed sites from February to November of 2003 and 2004. The five synoptic sites will be sampled twice in 2003 and 2004 to evaluate the spatial distribution of water quality during extreme hydrologic events (high flow and low flow). All sample collection will follow the Clean Hands/Dirty Hands protocol developed by the USGS. Water-quality samples will be analyzed for nutrients (ammonia, nitrite plus nitrate, total phosphorus, and orthophosphate), suspended sediment, and 80 pesticide compounds and their degradation products. Laboratory analyses will be conducted at the USGS National Water-Quality Laboratory in Arvada, Colorado, and the USGS Kentucky District Sediment Laboratory in Louisville, Kentucky.

An in-situ continuous water-quality monitoring system will be installed at the Little River near Cadiz, Kentucky surface-water site for 20 months. The system configuration for data collection will be a five-parameter water-quality monitoring system, which collects temperature, specific conductance, dissolved oxygen, pH, and turbidity data. USGS personnel from the Paducah Field Office will visit the site every 2-4 weeks and the data will be viewable through the USGS Kentucky District homepage (http://ky.water.usgs.gov) and published in the USGS Annual Water Resources Data Report.

Sampling the water-quality can help provide information needed to better evaluate surface- and ground-water quality and agricultural nonpoint pollution in the Little River Basin. This information can assist resource managers in the planning and implementation of nonpoint-source pollution control programs.

Study Area Description

A.

Little River at KY 1253 bridge (364641N: 0874318W)
Little River at Crute Road bridge (365035N: 0874707W)
Little River at West-Parr Road bridge (364428N: 0873518W)
North Fork Little River at Gary Lane bridge (364807N: 0873049W)
South Fork Little River at KY 107 bridge (364754N: 0873052W)
Sinking Fork at Kings Chapel Road bridge (365026N: 0874426W)
Sinking Fork at US 68/80 bridge (365254N: 0873634W)
Muddy Fork at US 68/80 bridge (365246N: 0873523W)
Casey Creek at KY 525 bridge (364521N: 0874331W)

B.

Little River at KY 1253 bridge
Topography: Land surfaces are gently rolling, expect on the steep rims of scattered deep sinkholes. Karst with abundant sinkholes, sinking streams, springs, and karst windows.
Soils: Baxter and Crider association
Geology: St. Louis Limestone and Ste. Genevieve Limestone occur at the surface. St. Louis Limestone is relatively pure, thick-bedded, oolitic to micritic limestone. It also contains thin, argillaceaous-carbonate and shale beds and both bedded and nodular chert. The Ste. Genevieve Limestone is very pure, thick-bedded, oolitic to micritic limestone with scattered, thin-bedded chert layers, primarily near its base.
Physiographic Region: Mississippian Plateau
Ecoregion: Southeastern Temperate Forested Plains and Hills; Level III ecoregion is Interior Plateau. The natural vegetation is primarily oak-hickory forest. The region has a diverse fish fauna.

Little River at Crute Road bridge
Topography: Land surfaces are gently rolling, expect on the steep rims of scattered deep sinkholes. Karst with abundant sinkholes, sinking streams, springs, and karst windows.
Soils: Baxter and Crider association
Geology: St. Louis Limestone and Ste. Genevieve Limestone occur at the surface. St. Louis Limestone is relatively pure, thick-bedded, oolitic to micritic limestone. It also contains thin, argillaceaous-carbonate and shale beds and both bedded and nodular chert. The Ste. Genevieve Limestone is very pure, thick-bedded, oolitic to micritic limestone with scattered, thin-bedded chert layers, primarily near its base.
Physiographic Region: Mississippian Plateau

Ecoregion: Southeastern Temperate Forested Plains and Hills; Level III ecoregion is Interior Plateau. The natural vegetation is primarily oak-hickory forest. The region has a diverse fish fauna.

Little River at West-Parr Road bridge

Topography: Land surfaces are gently rolling, expect on the steep rims of scattered deep sinkholes. Karst with abundant sinkholes, sinking streams, springs, and karst windows.
Soils: Crider, Pembroke, and Bedford association
Geology: St. Louis Limestone and Ste. Genevieve Limestone occur at the surface. St. Louis Limestone is relatively pure, thick-bedded, oolitic to micritic limestone. It also contains thin, argillaceaous-carbonate and shale beds and both bedded and nodular chert. The Ste. Genevieve Limestone is very pure, thick-bedded, oolitic to micritic limestone with scattered, thin-bedded chert layers, primarily near its base.
Physiographic Region: Mississippian Plateau
Ecoregion: Southeastern Temperate Forested Plains and Hills; Level III ecoregion is Interior Plateau. The natural vegetation is primarily oak-hickory forest. The region has a diverse fish fauna.

North Fork Little River at Gary Lane bridge

Topography: Land surfaces are gently rolling, expect on the steep rims of scattered deep sinkholes. Karst with abundant sinkholes, sinking streams, springs, and karst windows.
Soils: Christian, Caneyville, and Zanesville association in the headwaters. Christian, Pembroke, and Bedford association near Hopkinsville.
Geology: St. Louis Limestone and Ste. Genevieve Limestone occur at the surface. St. Louis Limestone is relatively pure, thick-bedded, oolitic to micritic limestone. It also contains thin, argillaceaous-carbonate and shale beds and both bedded and nodular chert. The Ste. Genevieve Limestone is very pure, thick-bedded, oolitic to micritic limestone with scattered, thin-bedded chert layers, primarily near its base.
Physiographic Region: Mississippian Plateau
Ecoregion: Southeastern Temperate Forested Plains and Hills; Level III ecoregion is Interior Plateau. The natural vegetation is primarily oak-hickory forest. The region has a diverse fish fauna.

South Fork Little River at KY 107 bridge

Topography: Land surfaces are gently rolling, expect on the steep rims of scattered deep sinkholes. Karst with abundant sinkholes, sinking streams, springs, and karst windows.
Soils: Christian, Caneyville, and Zanesville association in the headwaters. Christian, Pembroke, and Bedford association near Hopkinsville.
Geology: St. Louis Limestone and Ste. Genevieve Limestone occur at the surface. St. Louis Limestone is relatively pure, thick-bedded, oolitic to micritic limestone. It also contains thin, argillaceaous-carbonate and shale beds and both bedded and nodular chert. The Ste. Genevieve

Limestone is very pure, thick-bedded, oolitic to micritic limestone with scattered, thin-bedded chert layers, primarily near its base.
Physiographic Region: Mississippian Plateau
Ecoregion: Southeastern Temperate Forested Plains and Hills; Level III ecoregion is Interior Plateau. The natural vegetation is primarily oak-hickory forest. The region has a diverse fish fauna.

Sinking Fork at Kings Chapel Road bridge
Topography: Land surfaces are gently rolling, expect on the steep rims of scattered deep sinkholes. Karst with abundant sinkholes, sinking streams, springs, and karst windows.
Soils: Baxter and Crider association
Geology: St. Louis Limestone and Ste. Genevieve Limestone occur at the surface. St. Louis Limestone is relatively pure, thick-bedded, oolitic to micritic limestone. It also contains thin, argillaceaous-carbonate and shale beds and both bedded and nodular chert. The Ste. Genevieve Limestone is very pure, thick-bedded, oolitic to micritic limestone with scattered, thin-bedded chert layers, primarily near its base.
Physiographic Region: Mississippian Plateau
Ecoregion: Southeastern Temperate Forested Plains and Hills; Level III ecoregion is Interior Plateau. The natural vegetation is primarily oak-hickory forest. The region has a diverse fish fauna.

Sinking Fork at US 68/80 bridge
Topography: Land surfaces are gently rolling, expect on the steep rims of scattered deep sinkholes. Karst with abundant sinkholes, sinking streams, springs, and karst windows.
Soils: Baxter and Crider association
Geology: St. Louis Limestone and Ste. Genevieve Limestone occur at the surface. St. Louis Limestone is relatively pure, thick-bedded, oolitic to micritic limestone. It also contains thin, argillaceaous-carbonate and shale beds and both bedded and nodular chert. The Ste. Genevieve Limestone is very pure, thick-bedded, oolitic to micritic limestone with scattered, thin-bedded chert layers, primarily near its base.
Physiographic Region: Mississippian Plateau
Ecoregion: Southeastern Temperate Forested Plains and Hills; Level III ecoregion is Interior Plateau. The natural vegetation is primarily oak-hickory forest. The region has a diverse fish fauna.

Muddy Fork at US 68/80 bridge
Topography: Land surfaces are gently rolling, expect on the steep rims of scattered deep sinkholes. Karst with abundant sinkholes, sinking streams, springs, and karst windows.
Soils: Baxter and Crider association
Geology: St. Louis Limestone and Ste. Genevieve Limestone occur at the surface. St. Louis Limestone is relatively pure, thick-bedded, oolitic to micritic limestone. It also contains thin, argillaceaous-carbonate and shale beds and both bedded and nodular chert. The Ste. Genevieve Limestone is very pure, thick-bedded, oolitic to micritic limestone with scattered, thin-bedded chert layers, primarily near its base.
Physiographic Region: Mississippian Plateau

Ecoregion: Southeastern Temperate Forested Plains and Hills; Level III ecoregion is Interior Plateau. The natural vegetation is primarily oak-hickory forest. The region has a diverse fish fauna.

Casey Creek at KY 525 bridge
Topography: Land surfaces are gently rolling, expect on the steep rims of scattered deep sinkholes. Karst with abundant sinkholes, sinking streams, springs, and karst windows.
Soils: Baxter and Crider association
Geology: St. Louis Limestone and Ste. Genevieve Limestone occur at the surface. St. Louis Limestone is relatively pure, thick-bedded, oolitic to micritic limestone. It also contains thin, argillaceaous-carbonate and shale beds and both bedded and nodular chert. The Ste. Genevieve Limestone is very pure, thick-bedded, oolitic to micritic limestone with scattered, thin-bedded chert layers, primarily near its base.
Physiographic Region: Mississippian Plateau
Ecoregion: Southeastern Temperate Forested Plains and Hills; Level III ecoregion is Interior Plateau. The natural vegetation is primarily oak-hickory forest. The region has a diverse fish fauna.

C.
Little River at KY 1253 bridge
Watershed acreage: 155,979 acres (244 square miles)
Streams and major basins: Lower Cumberland River Basin
Flow patterns: Unknown
Sinks: abundant sinkholes; common land form
Relevant groundwater systems: Unknown

Little River at Crute Road bridge
Watershed acreage: 255,841 acres (400 square miles)
Streams and major basins: Lower Cumberland River Basin
Flow patterns: Unknown
Sinks: abundant sinkholes; common land form
Relevant groundwater systems: Unknown

Little River at West-Parr Road bridge
Watershed acreage: 109,406 acres (171 square miles)
Streams and major basins: Lower Cumberland River Basin
Flow patterns: Unknown
Sinks: abundant sinkholes; common land form
Relevant groundwater systems: Unknown

North Fork Little River at Gary Lane bridge
Watershed acreage: 42,910 acres (67 square miles)
Streams and major basins: Lower Cumberland River Basin

Flow patterns: Unknown
Sinks: abundant sinkholes; common land form
Relevant groundwater systems: Unknown

South Fork Little River at KY 107 bridge
Watershed acreage: 37,358 acres (58 square miles)
Streams and major basins: Lower Cumberland River Basin
Flow patterns: Unknown
Sinks: abundant sinkholes; common land form
Relevant groundwater systems: Unknown

Sinking Fork at Kings Chapel Road bridge
Watershed acreage: 68,547 acres (107 square miles)
Streams and major basins: Lower Cumberland River Basin
Flow patterns: Unknown
Sinks: abundant sinkholes; common land form
Relevant groundwater systems: Unknown

Sinking Fork at US 68/80 bridge
Watershed acreage: 18,796 acres (29 square miles)
Streams and major basins: Lower Cumberland River Basin
Flow patterns: Unknown
Sinks: abundant sinkholes; common land form
Relevant groundwater systems: Unknown

Muddy Fork at US 68/80 bridge
Watershed acreage: 5,298 acres (8.3 square miles)
Streams and major basins: Lower Cumberland River Basin
Flow patterns: Unknown
Sinks: abundant sinkholes; common land form
Relevant groundwater systems: Unknown

Casey Creek at KY 525 bridge
Watershed acreage: 195,788 acres (306 square miles)
Streams and major basins: Lower Cumberland River Basin
Flow patterns: Unknown
Sinks: abundant sinkholes; common land form
Relevant groundwater systems: Unknown

D. Agriculture is the principal land use in the Little River Basin. A large percentage of agricultural areas are used to grow corn, soybeans, hay, wheat, and burley and dark-fired tobacco (Kentucky Agricultural Statistics, 1999). Livestock production includes beef cattle and dairy cattle. There are 6 KPDES permitted discharge facilities in the Little River Basin (Natural Resources and Environmental Protection Cabinet, 2000). The two largest permitted discharge facilities include Hopkinsville—northside (20013001) and southside (20013007) sewage treatment facilities. The largest city in the Little River Basin is Hopkinsville, Kentucky with a population of about 30,000 (U.S. Census Bureau, 1990). Because much of the Little River Basin is in a karst region and has intensive agricultural practices, this makes the ground water and surface water in this basin vulnerable to potential nonpoint-source pollution.

E.

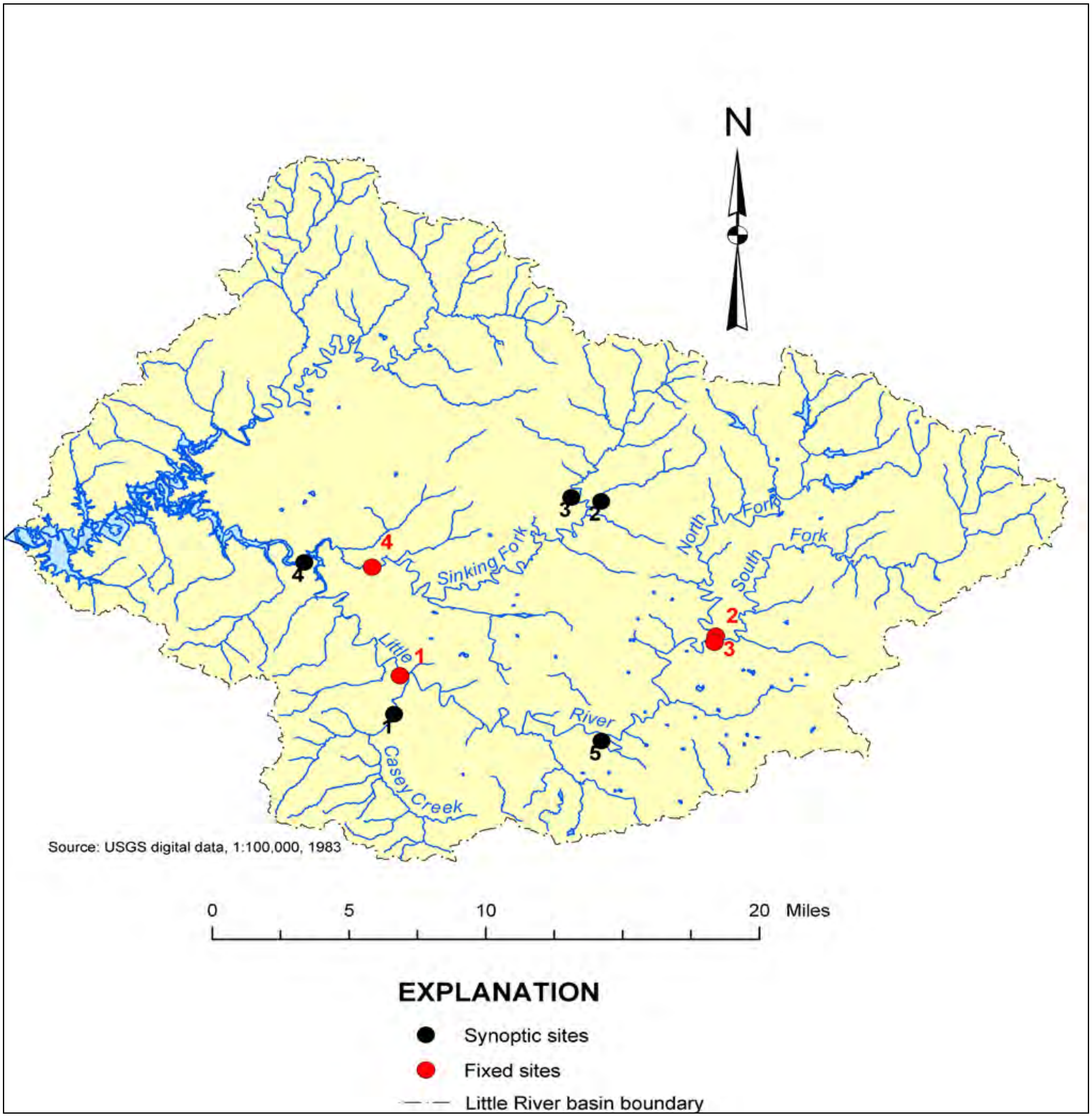

Figure 1. Location of sampling sites.

Monitoring Program/Technical Design

A. **The design of the surface-water-quality monitoring program involves the selection of sites to increase the understanding of seasonal and spatial variability of runoff of nutrients, pesticides, and suspended sediment in the Little River Basin. Two types of sampling programs—the fixed-site network and the synoptic-site network---were designed to accomplish this goal.**

The fixed-site network consists of 4 sites distributed throughout the basin (fig. 1 and table 1). These sites will be monitored for seasonal changes in water-quality resulting from a variety of land-use activities including agriculture, urban, forested, and mixtures of these. Additional water-quality samples will be collected during periods of high flow in the spring.

The synoptic-site network includes 5 sites located in selected agricultural and forested settings. These sites will be monitored primarily to evaluate spatial distribution of water quality during extreme hydrologic conditions (high flow and low flow).

An in-situ continuous water-quality monitoring system will be installed at the Little River near Cadiz, Kentucky surface-water site for 20 months. The system configuration for data collection will be a five-parameter water-quality monitoring system, which collects temperature, specific conductance, dissolved oxygen, pH, and turbidity data. USGS personnel from the Paducah Field Office will visit the site every 2-4 weeks and the data will be viewable through the USGS Kentucky District homepage (http://ky.water.usgs.gov) and published in the USGS Annual Water Resources Data Report.

B. The sampling site locations are provided on the site map (fig. 1). Table 1 lists the names of the sampling sites that correspond to the numbers on the site map. A major component of the site-selection process was to target specific subbasins in the Little River Basin that are primarily influenced by a dominant land use (agriculture or urban) and to investigate the occurrence and distribution of pesticides, pesticide degradation products, nutrients, and suspended sediment in surface water. North Fork Little River at Gary Lane Bridge and South Fork Little River at KY 107 Bridge were selected to represent streams that drain predominantly urban basins. Casey Creek at KY 525 Bridge was chosen to represent water quality in a predominantly forested area. The Muddy Fork and Sinking Fork were selected to represent streams that drain primarily agriculture subbasins. The three sites on the Little River were chosen to represent a large stream with mixed land use (row-crop agriculture, pasture, forest, and urban).

Table 1. Selected sampling sites.

Map number (figure 1)	Sampling site name
	FIXED-SITE NETWORK SITES
1	Little River at KY 1253 bridge
2	North Fork Little River at Gary Lane bridge
3	South Fork Little River at KY 107 bridge
4	Sinking Fork at Kings Chapel Road bridge
	SYNOPTIC-SITE NETWORK SITES
1	Casey Creek at KY 525 bridge
2	Muddy Fork at US 68/80 bridge
3	Sinking Fork at US 68/80 bridge
4	Little River at Crute Road bridge
5	Little River at West-Parr Road bridge

C. Nutrient, suspended sediment, pesticide, and pesticide degradation product samples will be sampled monthly from February to November 2003 and 2004 at the fixed-site network sites. Two additional water-quality samples will be collected during spring runoff (mid-March through late June) following application of pesticides.

The synoptic-site network sites will be sampled twice a year in 2003 and 2004 for nutrients, suspended sediment, pesticides, and pesticide degradation products to evaluate the spatial distribution of water quality during extreme hydrologic events (high flow and low flow).

An in-situ continuous water-quality monitoring system will be installed at the Little River near Cadiz, Kentucky surface-water site for 20 months. The system configuration for data collection will be a five-parameter water-quality monitoring system, which collects temperature, specific conductance, dissolved oxygen, pH, and turbidity data. USGS personnel from the Paducah Field Office will visit the site every 2-4 weeks.and the data will be viewable through the USGS Kentucky District homepage (http://ky.water.usgs.gov) and published in the USGS Annual Water Resources Data Report.

D. The types of data to be collected are outlined in Appendix 1. The analytical methods to be used for nutrients, pesticides, pesticide degradation products, and suspended sediment include:

Nutrients

Nitrogen, ammonia: Colorimetry, ASF, Salicylate-hypochlorite
Nitrogen, nitrite+nitrate: Colorimetry, ASF, Cadmium reduction--diazotization
Total phosphorus: Colorimetry, ASF, Microkjeldahl digestion
Orthophosphate: Colorimetry, ASF, Phosphomolybdate

Pesticides and their degradation products

Solid Phase Extraction followed by Gas Chromatography/Mass Spectrometer

Suspended sediment

Filtration Method (Guy, 1969)

Chain-of-Custody Procedures

A. Field personnel will record all field activities on USGS, WRD, Water-Quality Field Note sheets (appendix 2).

B. Please refer to the attached USGS Office of Water Quality Technical Memorandum OWQ 99.004 in Appendix 3.

C. Analytical Request Forms from the U.S. Geological Survey National Water Quality Laboratory will be used to establish sample custody in the field prior to shipment as well as chain-of-custody forms (appendix 4 and 5). A copy of the U.S. Geological Survey National Water-Quality Laboratory's Standard Operating Procedures for chain-of-custody forms is in appendix 6.

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Quality Control Procedures

A. Cleaning of equipment used to collect and process water for analysis of inorganic and/or organic constituents involves a several-step office-laboratory procedure. Figure 2 summarizes the general sequence of cleaning procedures for equipment used to collect samples for inorganic and (or) organic analytes. (Wilde and others, 1998, chap A4 and A5)

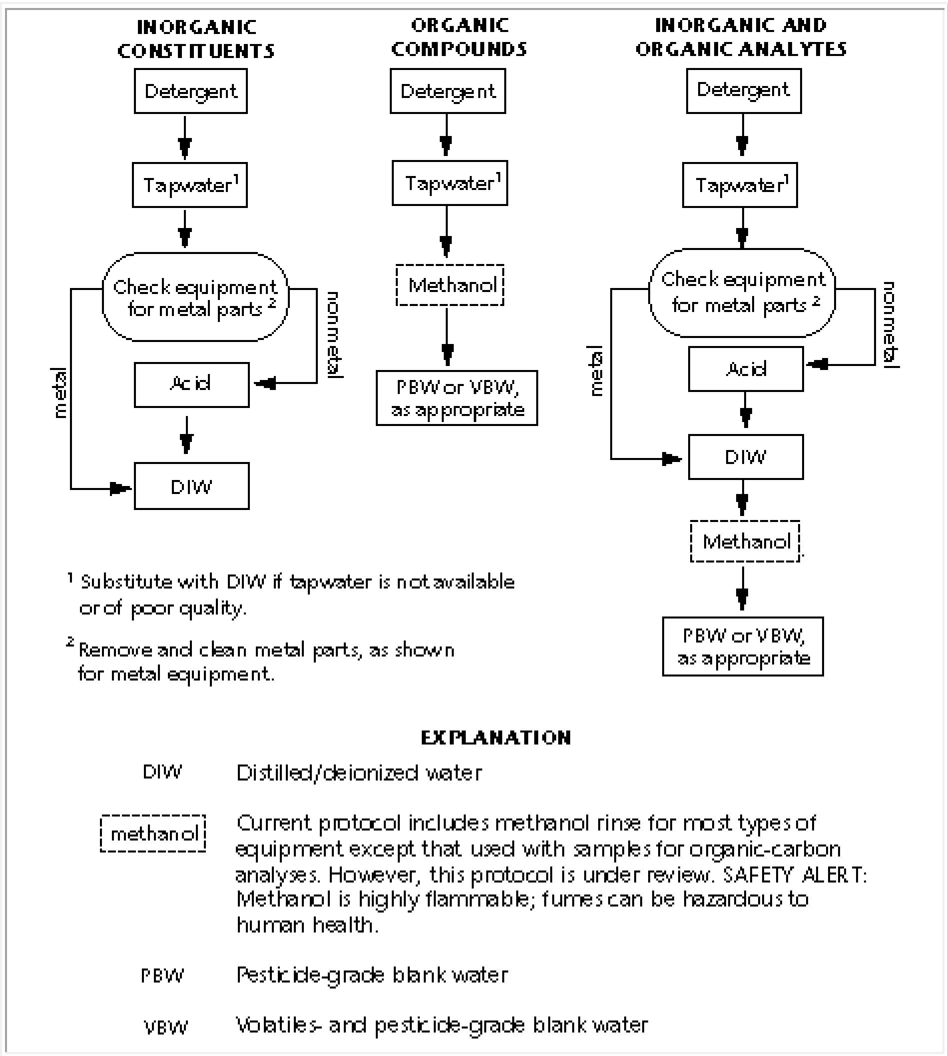


Figure 2. General sequence for cleaning equipment before sampling for inorganic and (or) organic analytes.

Inorganic-sample bottle cleaning procedures

1. Put on powderless, vinyl gloves.
2. Fill each bottle about one-quarter full of DIW and cap.
3. Shake vigorously and decant DIW.
4. Repeat the DIW rinse (Steps 2 and 3 above) two more times.
5. Following the last rinse, fill each bottle half full with DIW and cap the bottle.
6. Rinse exterior of bottle with DIW and dry with lint-free laboratory tissue.
7. Store bottles in doubled plastic bags.

Organic-sample bottle cleaning procedures

Organic-sample bottles are glass bottles that are baked at 450°C by the laboratory. Therefore, bottles are not rinsed.

B. A Hydrolab H20 or YSI multiprobe will be used in the collection of the field parameters including temperature, dissolved oxygen, specific electrical conductance, and pH. This instrument will be calibrated according to the calibration procedures outlined in the USGS National Field Manual for the Collection of Water-Quality Data, 1998. A Hach 2100P turbidity meter will be used for measuring turbidity. This instrument will be calibrated according to the manufacturer's instructions.

C. The USGS Clean Hands/Dirty Hands protocol will be used when collecting the water-quality samples. This protocol requires two people. The Clean Hands person has the only contact with the sample bottles and transfers the sample from the sampler. The Dirty Hands person operates the sampling equipment and manages any contact with potential sources of contamination. Both persons wear appropriate disposable powderless gloves throughout the collection of the sample.

A water-quality field vehicle will be used for sample processing. Plastic sheeting will be used to cover work areas where inorganic-compound samples are processed and aluminum foil will be used for organic-compound sample processing.

D. Field blanks will be collected and processed at the field site in the same manner and using the same equipment as the environmental samples. Additional quality assurance samples include:

Concurrent replicates

Spiked samples

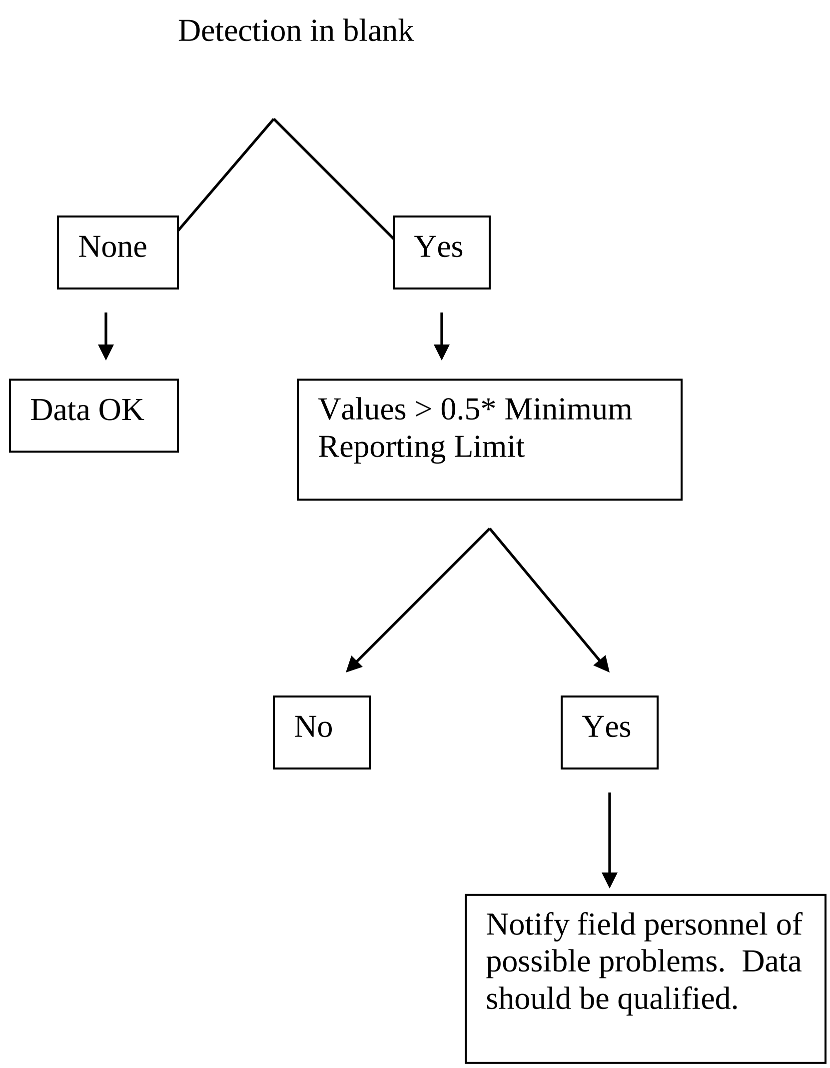
Equipment blanks

E. The acceptable level of variance for concurrent replicates will be <15% relative percent deviation.

F. Please contact the USGS National Water-Quality Laboratory in Denver, Colorado for the laboratory's standard operating procedures (SOPs).

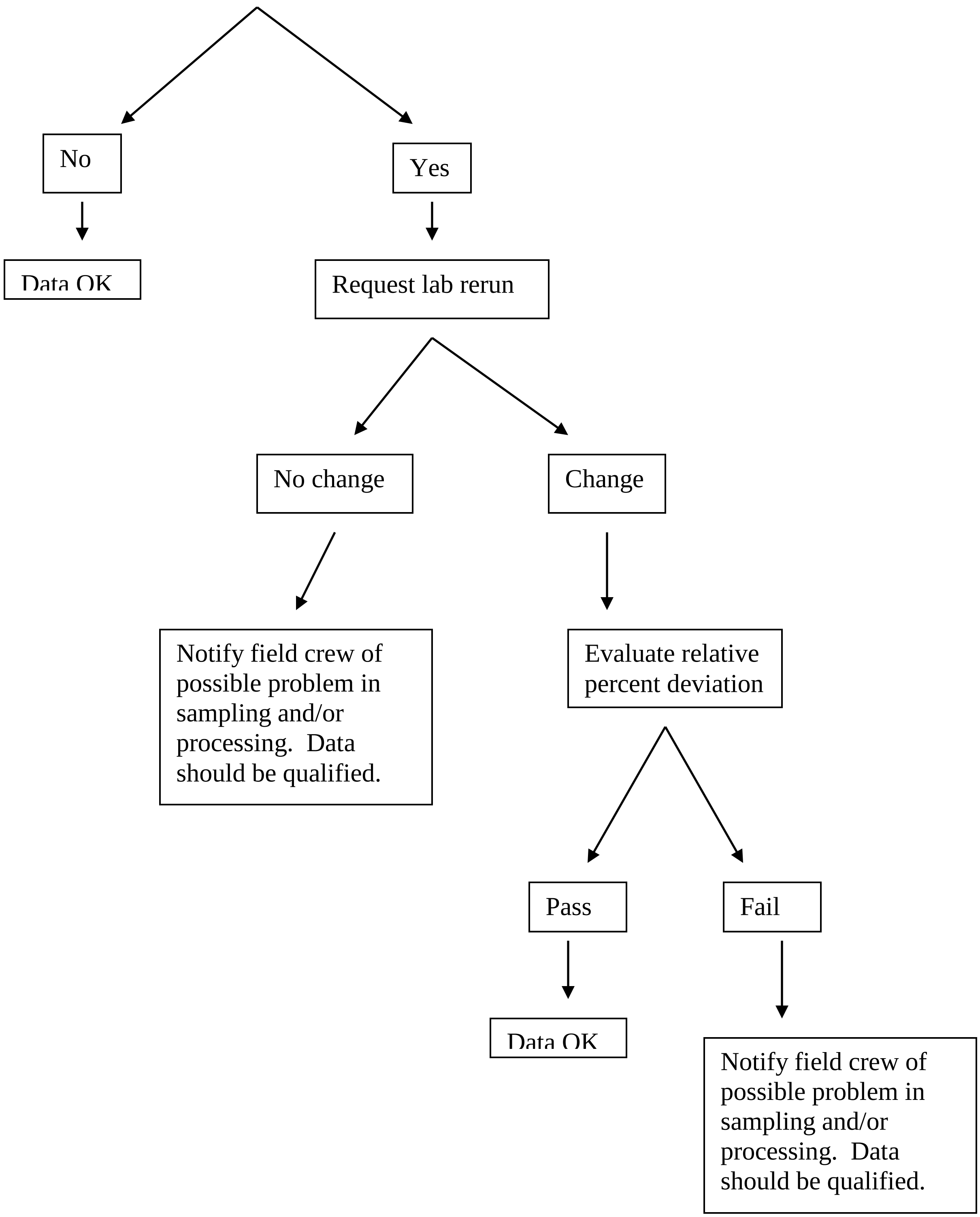
G. Identification of unacceptable results. Please refer to the following flow charts for field blanks and concurrent replicates. The project chief will be responsible for reviewing QC data in a timely manner, and when appropriate, implementing necessary modifications to sampling and processing techniques.

FIELD BLANKS



CONCURRENT REPLICATES

Relative percent deviation >15%



Data Reporting Standards

A. The standards for sampling location reporting will follow the guidelines set-forth by the USGS with regard to the USGS National Water Information System (NWIS).
B. The standards for sample identification reporting will follow guidelines set-forth by the USGS with regard to the USGS National Water Information System (NWIS).
C. The standards of data reporting will follow guidelines set-forth by the USGS with regard to the USGS National Water Information System (NWIS).
D. Sample analysis results reporting will follow the USGS National Water-Quality Laboratory guidelines.
E. The data generated by this project will be analyzed and interpreted using descriptive statistics, boxplots, frequency plots, and figures.

Data Management

A. All data will be electronically stored in the USGS National Water-Information System (NWIS 4_1) database.

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C. The data generated by this project will be analyzed and interpreted using descriptive statistics, boxplots, frequency plots, and figures. The raw data will be submitted both in ASCII format and MS EXCEL format via email and on a 100MB Zip Disk.

References

Guy, H.P., 1969, Laboratory theory and methods for sediment analysis: U.S. Geological Survey Techniques of Water-Resources Investigations, book 5, chap. C1, 58 p.

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Wilde, F.K., Radtke, D.B., Gibs, J., and Iwatsubo, R.T. (eds.), 1998. National Field Manual for the Collection of Water-Quality Data: U.S. Geological Survey Techniques of Water Resources Investigations, book 9, chap A4, 103 pp.

Wilde, F.K., Radtke, D.B., Gibs, J., and Iwatsubo, R.T. (eds.), 1999. National Field Manual for the Collection of Water-Quality Data: U.S. Geological Survey Techniques of Water Resources Investigations, book 9, chap A5, 128 pp.

Appendix 1 of QA/QC plan. Type of data collected in the Little River Basin.

Description: *Pesticides, Water, Filtered, SPE-C18, Lab Extracted*
Method: *Solid Phase Extraction followed by Gas Chromatography/Mass Spectrometry (USGS publication: OFR 95-181)*

Parameter Name	Parameter Code	RL	Unit	Reporting Limit Type	Volume Required for Analysis	Container	Sample Holding Time	Transport to Lab
2,6-Diethylaniline	82660	0.006	µg/L	lrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Acetochlor	49260	0.006	µg/L	lrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Alachlor	46342	0.0045	µg/L	lrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
alpha-HCH	34253	0.0046	µg/L	lrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
alpha-HCH-d6 (surrogate)	91065	0.1	pct	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Atrazine	39632	0.007	µg/L	lrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Azinphos-methyl	82686	0.05	µg/L	lrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Benfluralin	82673	0.010	µg/L	lrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Butylate	04028	0.002	µg/L	lrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Carbaryl	82680	0.041	µg/L	lrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Carbofuran	82674	0.020	µg/L	lrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Chlorpyrifos	38933	0.005	µg/L	lrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
cis-Permethrin	82687	0.006	µg/L	lrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Cyanazine	04041	0.018	µg/L	lrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Dacthal	82682	0.0030	µg/L	lrl	1-Liter	Glass, amber	4 days	FEDEX

						bottle		overnight on ice (4°C)
Deethylatrazine	04040	0.006	µg/L	lrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Diazinon	39572	0.005	µg/L	lrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Diazinon-d10 (surrogate)	91063	0.1	pct	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Dieldrin	39381	0.0048	µg/L	lrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Disulfoton	82677	0.021	µg/L	lrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
EPTC	82668	0.0020	µg/L	lrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Ethalfluralin	82663	0.009	µg/L	lrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Ethoprophos	82672	0.005	µg/L	lrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Fonofos	04095	0.0027	µg/L	lrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Lindane	39341	0.0040	µg/L	lrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Linuron	82666	0.035	µg/L	lrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Malathion	39532	0.027	µg/L	lrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Metolachlor	39415	0.013	µg/L	lrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Metribuzin	82630	0.006	µg/L	lrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Molinate	82671	0.0016	µg/L	lrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Napropamide	82684	0.007	µg/L	lrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)

Appendix B. QA/QC for water-quality monitoring.

p,p'-DDE	34653	0.0025	µg/L	lrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Parathion	39542	0.010	µg/L	lrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Parathion-methyl	82667	0.006	µg/L	lrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Pebulate	82669	0.0041	µg/L	lrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Pendimethalin	82683	0.022	µg/L	lrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Phorate	82664	0.011	µg/L	lrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Prometon	04037	0.015	µg/L	lrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Propachlor	04024	0.010	µg/L	lrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Propanil	82679	0.011	µg/L	lrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Propargite	82685	0.023	µg/L	lrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Propyzamide	82676	0.0041	µg/L	lrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Sample volume	99856	1	mL	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
set number, schedule 2001	99818	N/A	no.	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Simazine	04035	0.005	µg/L	lrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Tebuthiuron	82670	0.016	µg/L	lrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Terbacil	82665	0.034	µg/L	lrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Terbufos	82675	0.017	µg/L	lrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)

Appendix B. QA/QC for water-quality monitoring.

Thiobencarb	82681	0.0048	µg/L	lrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Tri-allate	82678	0.0023	µg/L	lrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Trifluralin	82661	0.009	µg/L	lrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)

Description: *Moderate use pesticides & degradates, SPE-C18, Wat, Lab Ext* ***Method:*** *Solid Phase Extraction followed by Gas Chromatography/Mass Spectrometry (USGS publication: WRIR 01-4098—online citation available)*

Parameter Name	Parameter Code	RL	Unit	RL Type	Volume Required for Analysis	Container	Sample Holding Time	Transport to Lab
1,4-Napthaquinone	61611	0.050	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
1-Naphthol	49295	0.088	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
2,5-Dichloroaniline	61614	0.026	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
2-(4-tert-butylphenoxy)-cyclohexanol	61637	0.010	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
2-[2-Ethyl-6-methylphenyl)amino]-1-propanol	61615	0.12	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
2-Amino-N-isopropylbenzamide	61617	0.0049	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
2-Chloro-2,6-diethylacetanilide	61618	0.0050	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
2-Ethyl-6-methylaniline	61620	0.0045	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
3,4-Dichloroaniline	61625	0.0045	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
3,5-Dichloroaniline	61627	0.0047	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
3-Phenoxybenzyl alcohol	61629	0.046	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
3-Trifluoromethylaniline	61630	0.010	µg/L	mrl	1-Liter	Glass, amber	4 days	FEDEX

Appendix B. QA/QC for water-quality monitoring.

						bottle		overnight on ice (4°C)
4,4'-Dichlorobenzophenone	61631	0.0034	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
4-(Hydroxymethyl)pendimethalin	61665	0.14	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
4-Chloro-2-methylphenol	61633	0.0056	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
4-Chlorobenzylmethyl sulfone	61634	0.030	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
alpha-Endosulfan	34362	0.0047	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
alpha-HCH-d6 (surrogate)	99224	0.1	pct	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Azinphos-methyl-oxon	61635	0.016	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
beta-Endosulfan	34357	0.014	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Bifenthrin	61580	0.0053	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
c-Methyl-3-(2,2-dichlorovinyl)-2,2-dimethyl-(1-cyclopropane)-carboxylate	79842	0.039	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Chlorpyrofos, oxygen analog	61636	0.056	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
cis-Propiconazole	79846	0.008	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Cycloate	04031	0.0047	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Cyfluthrin	61585	0.008	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Cyhalothrin	61595	0.0089	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Cypermethrin	61586	0.0086	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)

Appendix B. QA/QC for water-quality monitoring.

Diazinon-d10 (surrogate)	99223	0.1	pct	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Dichlorvos	38775	0.011	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Dicrotophos	38454	0.084	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Dimethoate	82662	0.0061	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Disulfoton sulfone	61640	0.015	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Disulfotone sulfoxide	61641	0.0024	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
e-Dimethomorph	79844	0.020	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Endosulfan ether	61642	0.0041	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Endosulfan sulfate	61590	0.0058	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Ethion	82346	0.0040	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Ethion monoxon	61644	0.033	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Fenamiphos	61591	0.029	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Fenamiphos sulfone	61645	0.0077	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Fenamiphos sulfoxide	61646	0.031	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Fenthion	38801	0.015	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Fenthion sulfoxide	61647	0.0079	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Flumetralin	61592	0.004	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)

Appendix B. QA/QC for water-quality monitoring.

Fonofos, oxygen analog	61649	0.0021	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Hexazinone	04025	0.012	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Iprodione	61593	1.4	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Isofenphos	61594	0.0034	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Malaoxon	61652	0.008	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Metalaxyl	61596	0.0051	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Methidathion	61598	0.0058	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Myclobutanil	61599	0.008	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
O-Ethyl-O-methyl-S-propylphosphorothioate	61660	0.0083	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Oxyfluorfen	61600	0.0073	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Paraoxon-ethyl	61663	0.008	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Paraoxon-methyl	61664	0.029	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Phorate oxon	61666	0.097	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Phosmet	61601	0.0079	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Phosmet oxon	61668	0.055	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Profenofos	61603	0.0059	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Prometryn	04036	0.0054	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)

Appendix B. QA/QC for water-quality monitoring.

Propetamphos	61604	0.0038	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Sample Volume, Schedule 2002	99839	N/A	mL	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Set Number, Schedule 2002	99838	N/A	no.	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Sulfotepp	61605	0.0025	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Sulprofos	38716	0.015	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
t-Methyl-3-(2,2-dichlorovinyl)-2,2-dimethyl-(1-cyclopropane)-carboxylate	79843	0.033	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Tebupirimphos	61602	0.0055	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Tebupirimphos oxygen analogue	61669	0.0063	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Tefluthrin	61606	0.0077	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Tefluthrin metabolite [R 119364]	61671	0.015	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Tefluthrin metabolite [R 152912]	61672	0.010	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Temephos (Abate)	61607	0.26	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Terbufos-O-analogue sulfone	61674	0.067	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Terbuthylazine	04022	0.010	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
trans-Propiconazole	79847	0.013	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
Tribufos	61610	0.0044	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)
z-Dimethomorph	79845	0.045	µg/L	mrl	1-Liter	Glass, amber bottle	4 days	FEDEX overnight on ice (4°C)

Appendix B. QA/QC for water-quality monitoring.

Description: *KY – Nutrients, ascrain*
Nitrogen, ammonia Method: *Colorimetry, ASF, Salicylate-hypochlorite, filtered sample*
Nitrogen, nitrite+nitrate Method: *Colorimetry, ASF, Cadmium reduction—diazotization, filtered sample*
Phosphorus Method: *Colorimetry, ASF, Microkjeldahl Digestion, whole water sample*
Phosphorus, orthophosphate Method: *Colorimetry, ASF, Phosphomolybdate, filtered sample*

Owner: *21*

Parameter Name	Parameter Code	RL	Unit	RL Type	Volume Required for Analysis	Preserv-ative	Container	Sample Holding Time	Transport to Lab
nitrogen, ammonia	00608	0.041	mg/L	lrl	125 mL	None.	Brown polyethylene bottle	28 days	FEDEX overnight on ice (4°C)
nitrogen, nitrite + nitrate	00631	0.047	mg/L	lrl	125 mL	None.	Brown polyethylene bottle	28 days	FEDEX overnight on ice (4°C)
phosphorus	00665	0.0037	mg/L	lrl	125 mL	1 mL of 4.5 normal H_2SO_4	Translucent polyethylene bottle	28 days	FEDEX overnight on ice (4°C)
phosphorus, phosphate, ortho	00671	0.007	mg/L	lrl	125 mL	None.	Brown polyethylene bottle	28 days	FEDEX overnight on ice (4°C)

Appendix 2 of QA/QC plan. Documentation of nutrient sample preservation methods used by the U.S. Geological Survey.

Changes in Field Treatment Protocols and Bottle Types for Whole-Water Samples Collected for Total Ammonium plus Organic Nitrogen and Total Phosphorus Determinations

Date: Wed, 25 Nov 1998 11:34:53 -0500
From: Nana Snow
Reply-To: "Nana L Snow, Secretary (OA), Reston, VA "
To: "E - All WRD Employees"
CC: " WRD Archive File, "
Subject: OWQ 99.004--Changes in Field Treatment Protocols and Bottle Types for

In Reply Refer To:
Mail Stop 412 November 25, 1998

OFFICE OF WATER QUALITY TECHNICAL MEMORANDUM NO. 99.04

Subject: Changes in Field Treatment Protocols and Bottle Types for
Whole-Water Samples Collected for Total Ammonium plus
Organic Nitrogen and Total Phosphorus Determinations

This technical memorandum pertains to changes, effective January 1,1999, in field-treatment protocols and bottle types for whole-watersamples collected for determining ammonium (see definitions) plus organic nitrogen (Kjeldahl nitrogen) and phosphorus. Specifically, itannounces that,

1. Whole-water samples collected for these analyses will be preserved with sulfuric acid at collection sites, and

2. Translucent ("plain"), polyethylene bottles will be used to collect, ship, and store these samples rather than the brown ones formerly specified.

As a consequence of these changes, RCA and RCC sample designators (see Table 1) will be discontinued and replaced by a new WCA (Whole-water, Chilled, Acidified) sample designator (see table 2) on January 1, 1999. Table 3 shows bottle-type changes for affected analyses. Note that National Water Quality Laboratory (NWQL) codes and NWIS (National Water Information System) parameter and method codes for affected analyses remain unchanged.

Between January 1, 1999 and February 28, 1999, RCC samples inadvertently sent to the NWQL will be preserved with sulfuric acid and designated as WCA samples prior to analyses at no charge to the customer. After this grace period, all RCC bottles received at the NWQL will be returned at submitters' expense or discarded.

Table 1. Excerpt from the current NWQL catalog showing sample designations, container sizes, container types, and treatment protocols that will be discontinued December 31, 1998

[mL, milliliter; oz, ounce; deg C, degree Celsius; RCA, raw chilled acidified; RCC, raw chilled]

Sample Container Container Treatment and preservation designation size type

RCA 125 mL Brown Use unfiltered sample to (4 oz) polyethylene rinse bottles, acidify with bottle H_2SO_4, chill and maintain at 4 deg C; ship immediately.
RCC 125 mL Brown Use unfiltered sample to (4 oz) polyethylene rinse bottles, chill, and bottle maintain at 4 deg C; ship immediately.

Table 2. Entry to the NWQL catalog, effective January 1, 1999, showing new sample designation, container size, container type, and treatment protocol for whole-water nutrient samples

[WCA, whole-water, chilled, acidified; mL, milliliter; oz, ounce; deg C, degree Celsius]

Sample Container Container Treatment and preservation designation size type

WCA 125 mL Plain Use unfiltered sample to (4 oz) (translucent) bottles, acidify with 1 mL polyethylene of 4.5 normal (N) H_2SO_4, bottle chill and maintain at 4 deg C; ship immediately.

Table 3. Discontinued and replacement bottle types for nutrient determinations in whole-water nutrient samples.
[ASF, automated-segmented flow; WWR, whole-water recoverable]

Lab NWIS Procedure name Required bottle type code Parameter Before After

1982 00665 (F) Colorimetry, ASF, acid RCC WCA persulfate digestion, low-level phosphorus, as P, WWR
1984 00665 (D) Colorimetry, ASF, micro- RCC WCA Kjeldahl digestion, phosphorus, as P, WWR
1986 00625 (D) Colorimetry, ASF, micro- RCC WCA Kjeldahl digestion, ammonia + organic nitrogen, as N, WWR
1993 00665 (E) Colorimetry, ASF, micro- RCA WCA Kjeldahl digestion, phosphorus, as P, WWR, acidified
1995 00625 (E) Colorimetry, ASF, micro- RCA WCA Kjeldahl digestion, ammonia + organic nitrogen, as N, WWR, acidified

Process WCA bottles at collection sites as follows:

1. Field rinse the translucent, 125-mL polyethylene bottles with three 10- to 15-mL volumes of well-mixed, whole water dispensed from churn or cone splitters. Then fill bottles to the level of their shoulders (approximately 120 mL).
2. Add 1 mL of sulfuric acid preservative to each WCA bottle and secure the cap.
3. Immediately shake or swirl the bottle to mix the sulfuric acid preservative with the sample.
4. Pack processed sample bottles in ice and ship them with next-day priority to the NWQL for analyses.

Appendix B. QA/QC for water-quality monitoring.

Required field supplies, available from the USGS Quality of Water Service Unit (QWSU) in Ocala, Florida, are tabulated below.

QWSU Number	Item Description	Quantity
407FLD	Bottle, Poly., Plain, 4 oz (125 mL)	Case (100)
406FLD	Bottle, Poly., Plain, 4 oz (125 mL)	Case (500)
26FLD	Bottle Cap, Plastic, 28 mm	Box (900)
417FLD	Bottle Cap, Plastic, 28 mm	Pack (100)
438FLD	Vial (PP), H2SO4, 4.5 N (1:7), 1 mL, Whole Water (WCA) Nutrient Preservative	Box (24)

RATIONALE FOR CHANGES

On October 1, 1994, the USGS discontinued the practice of adding mercuric chloride to samples collected for nutrient analysis (U.S. Geological Survey Office of Water Quality Technical Memorandum No. 94.16, 1994). The decision to discontinue this practice was based on preliminary analysis data from the USGS nutrient preservation experiment (Patton and Truitt, 1995). Additional statistical analysis of these data (Patton and Gilroy, in press) suggested that for some whole-water samples containing high (1.5 to 5.5 mg of NH4-N/L) initial ammonium concentrations, sulfuric acid or mercury (II) preservative was necessary to ensure stability of the ammonium fraction of Kjeldahl nitrogen during 30-day storage at 4°C. The cause of this instability is unknown, but may be rationalized by the assumption of high biological activity in affected samples. Sulfuric acid preservative was selected in preference to mercury (II) preservative for stabilizing whole-water nutrient samples during storage because of its comparable effectiveness and lower toxicity. Patton and Gilroy (in press), upon which these changes are based, received Director's approval on June 24, 1998, and is accessible in its entirety as an Acrobat PDF document from the NWQL home page (http://wwwnwql.cr.usgs.gov/).

The primary reason for the change to a translucent container for WCA samples is to enable laboratory analysts to estimate the quantity and settling rate of suspended solids in whole-water samples by visual inspection prior to analysis. With this change, the analysts' ability to obtain representative subsamples for whole-water digest preparation will improve. An added, anticipated benefit of using different bottles for collection and storage of dissolved and whole-water nutrient samples is reduced potential for collection-site and laboratory bottle mix-ups.

The new WCA designation was established to emphasize that a specific sulfuric acid concentration (1 mL of 4.5 N H2SO4 per 125-mL container) is now required.

Because our data have shown that 30-day storage stability of filtered nutrient species is not improved by sulfuric acid amendment (Patton and Gilroy, in press), this memo has no direct effect on field treatment protocols or bottle types for filtered nutrient samples. However, acidification of filtered nutrient samples is required by some U.S.

Environmental Protection Agency (USEPA) protocols. When filtered nutrient samples are collected in compliance with USEPA protocols, it is recommended that the WCA preservative (1 mL of 4.5 N H_2SO_4 per 125 mL of sample) be added to FCA (filtered, chilled, acidified) samples. Use of this preservative in all acidified nutrient samples will provide the NWQL with a known and consistent analytical matrix, which in turn should improve the analytical data quality.

DEFINITIONS

Ammonium. As discussed in Office of Water Quality Technical Memorandum 93.12, the long-established and prevailing convention of reporting the sum of ammonium (NH_4^+) and solvated ammonia (NH_3 {aq}) as "ammonia" is misleading and confusing, because ammonium is the overwhelmingly predominant species in most unpolluted natural water systems and in Kjeldahl nitrogen digests. In an effort to achieve and promote technical correctness, this memo uses ammonium to describe the analyte reported as ammonia in the NWQL SPiN database.

Analyte. As used in this memo, analyte is the substance being identified and measured in an analytical determination.

REFERENCES

Patton, C.J., and Gilroy, E.J., in press, U.S. Geological Survey nutrient preservation experiment—Experimental design, statistical analysis, and interpretation of analytical results: U.S. Geological Survey Water-Resources Investigations Report 98-4118.

Patton, C.J., and Truitt, E.P., 1995, U.S. Geological Survey nutrient preservation experiment—Nutrient concentration data for surface-, ground-, and municipal-supply water samples: U.S. Geological Survey Open-File Report 95-141, 140 p.

U.S. Geological Survey, 1994, New preservation techniques nutrient samples: Office of Water Quality Technical Memorandum No. 94.16, accessed September 30, 1998, at URL http://water.usgs.gov/public/admin/memo/QW/qw94.16.

U.S. Geological Survey, 1998, Reporting level changes for volatile organic compounds (Schedules 2020/2021), Inductively Coupled Plasma-Atomic Emission Spectrometry (ICP-AES), Ammonia plus Organic Nitrogen and Phosphorus (micro-Kjeldahl) in Water Methods at the National Water Quality Laboratory: National Water Quality Laboratory Technical Memorandum No. 98.07, accessed September 30, 1998, at URL http://wwwnwql.cr.usgs.gov/tech_memos/Public/nwql.98-07.html.

Janice R. Ward
Acting Chief, Office of Water Quality

Distribution: All WRD Employees

Contact: Charles J. Patton, Methods Research and Development Program 303/467-8084; email: cjpatton@usgs.gov

This memorandum does not supersede any other Office of Water Quality Memorandum.

Key Words: Nutrients, Whole-Water Samples, RCA, RCC, WCA, Preservative

Appendix 3 of QA/QC plan. U.S. Geological Survey Analytical Service Request Form

U.S. GEOLOGICAL SURVEY – NATIONAL WATER QUALITY LABORATORY
ANALYTICAL SERVICES REQUEST

THIS SECTION MANDATORY FOR SAMPLE LOGIN

NWIS RECORD NUMBER
SAMPLE TRACKING ID

User Code

Project Account

LAB USE ONLY
NWQL LABORATORY ID

STATION ID

2 0
Begin Date (YYYYMMDD)

Begin Time

Medium Code

Sample Type

District Contact Phone Number

End Date (YYYYMMDD)

End Time

District Contact Email

SITE / SAMPLE / SPECIAL PROJECT INFORMATION (Optional)

State | County | Geologic Unit Code | Analysis Status* | Analysis Source* | Hydrologic Condition* | Hydrologic Event* | Chain of Custody | Sample Set

NWQL Proposal Number | NWQL Contact Name | NWQL Contact Email | Program/Project

Station Name: ______ Field ID: ______

Comments to NWQL: ______

Hazard (please explain): ______

ANALYTICAL WORK REQUESTS: SCHEDULES AND LAB CODES (CIRCLE A=add D=delete)

SCHED 1: ______ SCHED 2: ______ SCHED 3: ______ SCHED 4: ______ SCHED 5: ______ SCHED 6: ______

Lab Code: ______	A D	Lab Code: ______	A D	Lab Code: ______	A D	Lab Code: ______	A D	Lab Code: ______	A D
Lab Code:	A D	Lab Code:	A D	Lab Code:	A D	Lab Code:	A D	Lab Code:	A D

SHIPPING INFORMATION (Please fill in number of containers sent)

___ ALF	___ COD	___ FA	___ FCN	___ IQE	___ IRM	___ RA	___ RU	___ SUR	___ TPCN
___ BGC	___ CRB	___ FAM	___ FU	___ IQL	___ MBAS	___ RAM	___ RUR	___ SUSO	___ UAS
___ C18	___ CU	___ FAR	___ FUS	___ IQM	___ OAG	___ RAR	___ RURCT	___ TBI	___ WCA
___ CC	___ CUR	___ FCA	___ GCC	___ IRE	___ PHE	___ RCB	___ RURCV	___ TBY	___ ___
___ CHY	___ DOC	___ FCC	___ GCV	___ IRL	___ PIC	___ RCN	___ RUS	___ TOC	___ ___

NWQL Login Comments: ______

Collected by: ______ Phone No. ______ Date Shipped: ______

FIELD VALUES

Lab/P Code	**Value**	**Remark**	**Lab/P Code**	**Value**	**Remark**	**Lab/P Code**	**Value**	**Remark**
21/00095 Specific Conductance uS/cm @ 25 deg C			51/00400 pH Standard Units			2/39086 Alkalinity – IT mg/L as CaCO3		
/			/			/		

Field Comments: ______

*MANDATORY FOR NWIS

Form 9-3094
(August 2000)

PLEASE USE BLACK INK ONLY

INSTRUCTIONS FOR COMPLETING ANALYTICAL SERVICES REQUEST FORM

SAMPLE IDENTIFICATION (Mandatory)

NWIS Record No.	-	Record number of sample assigned by NWIS database (District)
User Code	-	Enter District user code (indicates which office sample data are to be directed)
Project Acct	-	Enter 9 character account number
NWQL Laboratory ID	-	Leave blank (for Laboratory use only)
Station ID	-	Enter downstream order number, 15 digit latitude, longitude and sequence number or unique sample identifier
Begin Date (YYYYMMDD)	-	Enter 4 digit number for year, 2 digit number for month, 2 digit number for day sample collection started
Begin Time	-	Enter 4 digit military time sample collection started
Medium Code	-	Enter sample medium code (see attached table)
Sample Type	-	Enter sample type code (see attached table)
District Contact Phone Number	-	Enter complete phone number for District contact for sample questions or problems
End Date (YYYYMMDD)	-	Enter 4 digit number for year, 2 digit number for month, 2 digit number for day sample collection ended
End Time	-	Enter 4 digit military time sample collection ended
District Contact Email	-	Enter complete email address for District contact for sample questions or problems

SITE / SAMPLE / SPECIAL PROJECT INFORMATION (Optional)

State	-	Enter 2 digit FIPS code for State in which station is located
County	-	Enter 3 digit FIPS code for county in which station is located
Geologic Unit Code	-	Enter geologic unit code for ground-water sample (multiple aquifer identification)
*Analysis Status	-	Enter analysis status code (see attached table)
*Analysis Source	-	Enter analysis source code (see attached table)
*Hydrologic Condition	-	Enter hydrologic condition code (see attached table)
*Hydrologic Event	-	Enter hydrologic event code (see attached table)
Chain of Custody	-	Enter Y if sample is chain of custody
Sample Set	-	Enter identifier for sample set, and place on all bottles and associated log form, for example: "A", "BB" (max. 2)
NWQL Proposal Number -	-	Denotes non-routine or custom work assigned by NWQL in negotiated proposal
NWQL Contact Name	-	Enter name of NWQL person to be contacted when sample arrives at Lab
NWQL Contact Email	-	Enter email of NWQL person to be contacted when sample arrives at Lab
Program/Project	-	For example: NAWQA, NASQAN, NPDES, DW - if applicable
Station Name	-	Enter local station name
Field ID	-	Enter identification assigned by District
Comments to NWQL	-	Enter information about sample that NWQL should be aware of (high concentration, etc.)

Note: Samples collected for analysis by Geologic Division **MUST** have the latitude/longitude provided for login

Hazard	-	Describe any known hazard associated with sample (chemical, biological, radiological, etc.)

ANALYTICAL WORK REQUESTS: SCHEDULES AND LAB CODES

Schedule	-	Enter schedule number(s) for the desired analyses.
Lab Code	-	Enter lab code for analyses to be added or deleted. Circle "A" for addition or "D" for deletion. Maximum 15.

SHIPPING INFORMATION (Please fill in number of sample types sent)

NWQL Login Comments	-	NWQL login personnel comments.
Collected by:	-	Enter name of individual that collected/shipped samples
Phone No.	-	Enter phone number of individual that collected/shipped samples
Date Shipped	-	Enter date samples packed/shipped to NWQL.

FIELD VALUES

Lab/P Code/Value/Remark	-	Enter values and remarks for sc, pH, alk, if needed, enter P code, value, remark for other field values
Field Comments	-	For field use only. Will not be used by NWQL.

*Mandatory for storage in NWIS

	Christian County[1,2]	Trigg County[1,2]	Kentucky[1,2]

Appendix B. QA/QC for water-quality monitoring.

Constituent	2003	2004	2003	2004	2003	2004
Atrazine	141,370	165,390	27,736	18,805	2,062,598	2,014,366
Simazine	33,163	31,960	13,212	9,768	321,451	344,193
Acetochlor	19,501	16,170	359	---	285,713	312,598
S-Metolachlor	5,191	2,892	23	31	416,427	293,974
Diazinon	207	202	24	--	6,659	4,161
Prometon	80	573	---	145	6,735	7,679

[1]Amount of active ingredient in pounds

[2] Ernest Collins, Kentucky Department of Agriculture, written commun., 2003 and 2004.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

As the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the U.S. Geological Survey collects limited streamflow data at sites other than stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. Data collected at these partial-record stations are usable in low-flow or floodflow analyses, depending on the type of data collected. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Crest-stage partial-record stations

The following table contains annual maximum discharges for crest-stage stations. A crest-stage gage is a device which will register the peak stage occurring between inspections of the gage. At a few of these stations crest stages are determined from continuous water-stage recorder graphs. A stage-discharge relation for each gage is developed from discharge measurements made by indirect measurements of peak flow or by current meter. The date of the maximum discharge is not always certain but is usually determined by comparison with nearby continuous record stations, weather records, or local inquiry. Only the maximum discharge for each water year is given. Information on some lower floods may have been obtained but is not published herein. The years given in the period of record represent water years for which the annual maximum has been determined.

Annual maximum discharge at crest-stage partial-record stations during water year 2004.

Station number	Station name	Location	Drainage area (mi^2)	Period of record	Annual maximum Date	Gage height (feet)	Discharge (ft^3/s)
		BEARGRASS CREEK BASIN					
03293200	Middle Fork Beargrass Creek at Beals Branch Road at Louisville, Ky.	Lat 38°14’32”, long 85°41’57”, Jefferson County, Hydrologic Unit 05140101, at bridge on Beals Branch Road at Louisville, Ky., and at mile 1.5	22.7	†2004	07-10-04	10.12	2400
		SALT RIVER BASIN					
03297980	Long Run near Fisherville, Ky.	Lat 38°13’10”, long 85°26’56”, Jefferson County, Hydrologic Unit 05140101, at bridge on State Highway 1531 near Fisherville, Ky., 0.7 mi below South Long Run and at mile 2.4.	22.5	†2004	05-28-04	8.73	3570
03298100	Pope Lick at Pope Lick Road near Middletown, Ky.	Lat 38°13’09”, long 85°31’07”, Jefferson County, Hydrologic Unit 05140102, at culvert on Pope Lick Road near Middletown, Ky. and at mile 3.2.	2.9	†2004	05-28-04	7.82	343

Annual maximum discharge at crest-stage partial-record stations during water year 2004.--*Continued*

Station number	Station name	Location	Drainage area (mi^2)	Period of record	Annual maximum Date	Annual maximum Gage height (feet)	Annual maximum Discharge (ft^3/s)
03301880	Southern Ditch at Minors Lane near Okolona, Ky.	Lat 38°08'04", long 85°42'34", Jefferson County, Hydrologic Unit 05140102, at bridge on Minors Lane nr Okolona, Ky., 0.2 mi below Mud Creek, and at mile 4.2.	12.8	†2004	05-28-04	6.73	2,800
03301950	Spring Ditch at Private Drive near Okolona, Ky.	Lat 38°09'27", long 85°40'57", Jefferson County, Hydrologic Unit 05140102, at at culvert on Private Drive nr Okolona, Ky., and at mile 4.2	1.6	†2004	05-28-04	6.17	368

Discharge measurements made at miscellaneous sites during water year 2004.

Station no.	Station name	Location	Period of record	Date	Discharge (ft^3/s)
		GREEN RIVER BASIN			
03316000	Mud River near Lewisburg, Ky.	Lat 37°00'15", Long 86°54'26", Logan County, Hydrologic Unit 05110003, at upstream side of bridge on State Highway 106, 2.5 mi northeast of Lewisburg, 7.5 mi downstream from Motts Lick Creek, and 14.0 mi upstream from Wolf Lick Creek.	2001-04	10-06-03	54.6

03303195 SINKING CREEK AT ROSETTA, KY

WATER-QUALITY RECORDS

LOCATION.--Lat 37°47'47", long 86°16'25", Breckinridge County, Hydrologic Unit 05140104.

DRAINAGE AREA.--36 mi^2.

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

COOPERATION.--Kentucky Department of Agriculture.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Sample type	Instantaneous discharge, cfs (00061)	Turbidity, IR LED light, det ang 90 deg, FNU (63680)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Alkalinity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicarbonate, wat flt incrm. titr., field, mg/L (00453)	Chloride, water, fltrd, mg/L (00940)
APR												
22...	1205	Environmental	125	16.0	743	9.5	7.3	308	12.3	115	139	13.1
MAY												
27...	1230	Environmental	2,080	432	738	8.3	7.0	142	16.1	58	71	1.74
JUL												
08...	1400	Environmental	7.4	4.30	749	9.4	7.6	546	19.9	136	166	5.67
08...	1408	Field Blank	--	--	--	--	--	--	--	--	--	0.24
AUG												
02...	1145	Environmental	7.0	9.61	758	9.6	7.3	597	20.2	154	186	5.96
SEP												
07...	1120	Environmental	17	5.90	750	6.1	7.6	641	20.9	161	195	6.20

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	2,6-Diethylaniline water fltrd 0.7u GF ug/L (82660)	CIAT, water, fltrd, ug/L (04040)	Acetochlor, water, fltrd, ug/L (49260)	Alachlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atrazine, water, fltrd, ug/L (39632)	Azinphos-methyl, water, fltrd 0.7u GF ug/L (82686)	Benfluralin, water, fltrd 0.7u GF ug/L (82673)	Butylate, water, fltrd, ug/L (04028)
APR													
22...	<0.04	0.81	0.015	0.066	<0.006	E0.025	0.027	<0.005	<0.005	0.139	<0.050	<0.010	<0.004
MAY													
27...	<.04	.21	.010	.25	<.006	E.099	.092	<.005	<.005	.905	<.050	<.010	<.004
JUL													
08...	<.04	1.06	E.003	.037	<.006	E.063	.008	<.005	<.005	.436	<.050	<.010	<.004
08...	<.04	<.06	<.006	<.004	--	--	--	--	--	--	--	--	--
AUG													
02...	<.04	1.02	.008	.023	<.006	E.064	.006	<.005	<.005	.132	<.050	<.010	<.004
SEP													
07...	<.04	.70	.011	.031	<.006	E.022	E.003	<.005	<.005	.044	<.050	<.010	<.004

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Carbaryl, water, fltrd 0.7u GF ug/L (82680)	Carbofuran, water, fltrd 0.7u GF ug/L (82674)	Chlorpyrifos water, fltrd, ug/L (38933)	cis-Permethrin water fltrd 0.7u GF ug/L (82687)	Cyanazine, water, fltrd, ug/L (04041)	DCPA, water fltrd 0.7u GF ug/L (82682)	Diazinon, water, fltrd, ug/L (39572)	Dieldrin, water, fltrd, ug/L (39381)	Disulfoton, water, fltrd 0.7u GF ug/L (82677)	EPTC, water, fltrd 0.7u GF ug/L (82668)	Ethalfluralin, water, fltrd 0.7u GF ug/L (82663)	Ethoprop, water, fltrd 0.7u GF ug/L (82672)	Fonofos water, fltrd, ug/L (04095)
APR													
22...	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.005	<0.009	<0.02	<0.004	<0.009	<0.005	<0.003
MAY													
27...	<.041	<.020	<.005	<.006	<.018	<.003	<.005	<.009	<.02	<.004	<.009	<.005	<.003
JUL													
08...	<.041	<.020	<.005	<.006	<.018	<.003	<.005	<.009	<.02	<.004	<.009	<.005	<.003
08...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
02...	<.041	<.020	<.005	<.006	<.018	<.003	<.005	<.009	<.02	<.004	<.009	<.005	<.003
SEP													
07...	<.041	<.020	<.005	<.006	<.018	<.003	<.005	<.009	<.02	<.004	<.009	<.005	<.003

03303195 SINKING CREEK AT ROSETTA, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Lindane water, fltrd, ug/L (39341)	Linuron water fltrd 0.7u GF ug/L (82666)	Malathion, water, fltrd, ug/L (39532)	Methyl parathion, water, fltrd 0.7u GF ug/L (82667)	Metolachlor, water, fltrd, ug/L (39415)	Metribuzin, water, fltrd, ug/L (82630)	Molinate, water, fltrd 0.7u GF ug/L (82671)	Napropamide, water, fltrd 0.7u GF ug/L (82684)	p,p'-DDE, water, fltrd, ug/L (34653)	Parathion, water, fltrd, ug/L (39542)	Pebulate, water, fltrd 0.7u GF ug/L (82669)	Pendimethalin, water, fltrd 0.7u GF ug/L (82683)	Phorate water fltrd 0.7u GF ug/L (82664)
APR 22...	<0.004	<0.035	<0.027	<0.015	E0.010	<0.006	<0.003	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011
MAY 27...	<.004	<.035	<.027	<.015	.112	<.006	<.003	<.007	<.003	<.010	<.004	<.022	<.011
JUL 08...	<.004	<.035	<.027	<.015	.025	<.006	<.003	<.007	<.003	<.010	<.004	<.022	<.011
08...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG 02...	<.004	<.035	<.027	<.015	.014	<.006	<.003	<.007	<.003	<.010	<.004	<.022	<.011
SEP 07...	<.004	<.035	<.027	<.015	E.004	<.006	<.003	<.007	<.003	<.010	<.004	<.022	<.011

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Prometon, water, fltrd, ug/L (04037)	Propyzamide, water, fltrd 0.7u GF ug/L (82676)	Propachlor, water, fltrd, ug/L (04024)	Propanil, water, fltrd 0.7u GF ug/L (82679)	Propargite, water, fltrd 0.7u GF ug/L (82685)	Simazine, water, fltrd, ug/L (04035)	Tebuthiuron water fltrd 0.7u GF ug/L (82670)	Terbacil, water, fltrd 0.7u GF ug/L (82665)	Terbufos, water, fltrd 0.7u GF ug/L (82675)	Thiobencarb water fltrd 0.7u GF ug/L (82681)	Triallate, water, fltrd 0.7u GF ug/L (82678)	Trifluralin, water, fltrd 0.7u GF ug/L (82661)	Suspended sediment concentration mg/L (80154)
APR 22...	<0.01	<0.004	<0.025	<0.011	<0.02	0.013	<0.02	<0.034	<0.02	<0.010	<0.002	<0.009	26
MAY 27...	<.01	<.004	<.025	<.011	<.02	.010	<.02	<.034	<.02	<.010	<.002	<.009	306
JUL 08...	.02	<.004	<.025	<.011	<.02	.009	<.02	<.034	<.02	<.010	<.002	<.009	73
08...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG 02...	.01	<.004	<.025	<.011	<.02	<.010	<.02	<.034	<.02	<.010	<.002	<.009	4
SEP 07...	.01	<.004	<.025	<.011	<.02	E.005	<.02	<.034	<.02	<.010	<.002	<.009	5

E--Laboratory estimated value.

<--Numeric result is less than the value shown.

03303205 SINKING CREEK NEAR LODIBURG, KY

WATER-QUALITY RECORDS

LOCATION.--Lat 37°52'06", long 86°23'16", Breckinridge County, Hydrologic Unit 05140104.

DRAINAGE AREA.--125 mi^2.

PERIOD OF RECORD.--April 2004 to current water year.

COOPERATION.--Kentucky Department of Agriculture.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Sample type	Instan-taneous dis-charge, cfs (00061)	Turb-idity, IR LED light, det ang 90 deg, FNU (63680)	Baro-metric pres-sure, mm Hg (00025)	Dis-solved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conduc-tance, wat unf uS/cm 25 degC (00095)	Temper-ature, water, deg C (00010)	Alka-linity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicar-bonate, wat flt incrm. titr., field, mg/L (00453)	Chlor-ide, water, fltrd, mg/L (00940)
APR												
22...	1445	Environmental	333	46.0	743	9.9	7.4	432	13.4	181	218	4.95
MAY												
25...	1445	Environmental	1,160	227	743	8.5	7.0	360	15.8	126	153	3.63
27...	1500	Environmental	5,260	445	738	8.6	7.1	175	16.2	82	100	1.89
JUL												
08...	1550	Environmental	44	14.1	749	9.4	7.1	533	17.8	120	147	5.31
12...	1229	Environmental	--	--	--	--	--	--	--	--	--	--
12...	1416	Environmental	--	--	--	--	--	--	--	--	--	--
AUG												
02...	1445	Environmental	38	9.96	758	11.1	7.1	588	18.4	222	269	6.43
SEP												
07...	1520	Environmental	20	11.6	750	8.3	7.3	511	17.8	187	227	5.11

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Ortho-phos-phate, water, fltrd, mg/L as P (00671)	Phos-phorus, water, unfltrd mg/L (00665)	2,6-Di-ethyl-aniline water fltrd 0.7u GF ug/L (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF ug/L (82686)	Ben-flur-alin, water, fltrd 0.7u GF ug/L (82673)	Butyl-ate, water, fltrd, ug/L (04028)
APR													
22...	<0.04	1.29	0.014	0.096	<0.006	E0.047	0.010	<0.020	<0.005	0.409	<0.050	<0.010	<0.004
MAY													
25...	<.04	1.34	.072	.42	<.006	E.126	.227	<.010	<.005	.753	<.050	<.010	<.004
27...	<.04	0.35	.037	.40	<.006	E.116	.091	.011	<.005	.942	<.050	<.010	<.004
JUL													
08...	<.04	2.04	.042	.070	<.006	E.118	E.006	<.005	<.005	.200	<.050	<.010	<.004
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
02...	<.04	2.17	.071	.101	<.006	E.075	.008	<.005	<.005	.119	<.050	<.010	<.004
SEP													
07...	<.04	1.33	.054	.086	<.006	E.046	E.004	<.005	<.005	.069	<.050	<.010	<.004

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Car-baryl, water, fltrd 0.7u GF ug/L (82680)	Carbo-furan, water, fltrd 0.7u GF ug/L (82674)	Chlor-pyrifos water, fltrd, ug/L (38933)	cis-Per-methrin water fltrd 0.7u GF ug/L (82687)	Cyana-zine, water, fltrd, ug/L (04041)	DCPA, water fltrd 0.7u GF ug/L (82682)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	Disul-foton, water, fltrd 0.7u GF ug/L (82677)	EPTC, water, fltrd 0.7u GF ug/L (82668)	Ethal-flur-alin, water, fltrd 0.7u GF ug/L (82663)	Etho-prop, water, fltrd 0.7u GF ug/L (82672)	Fonofos water, fltrd, ug/L (04095)
APR													
22...	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.005	<0.009	<0.02	<0.004	<0.009	<0.005	<0.003
MAY													
25...	<.041	<.020	<.005	<.006	<.018	<.003	<.005	<.009	<.02	<.004	<.009	<.005	<.003
27...	<.041	<.020	<.005	<.006	<.018	<.003	<.005	<.009	<.02	<.004	<.009	<.005	<.003
JUL													
08...	<.041	<.020	<.005	<.006	<.018	<.003	<.005	<.009	<.02	<.004	<.009	<.005	<.003
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
02...	<.041	<.075	<.005	<.006	<.018	<.003	<.005	<.009	<.02	<.150	<.009	<.005	<.003
SEP													
07...	<.041	<.020	<.005	<.006	<.018	<.003	<.005	<.009	<.02	<.004	<.009	<.005	<.003

03303205 SINKING CREEK NEAR LODIBURG, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Lindane water, fltrd, ug/L (39341)	Linuron water fltrd 0.7u GF ug/L (82666)	Mala-thion, water, fltrd, ug/L (39532)	Methyl para-thion, water, fltrd 0.7u GF ug/L (82667)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Moli-nate, water, fltrd 0.7u GF ug/L (82671)	Naprop-amide, water, fltrd 0.7u GF ug/L (82684)	p,p'-DDE, water, fltrd, ug/L (34653)	Para-thion, water, fltrd, ug/L (39542)	Peb-ulate, water, fltrd 0.7u GF ug/L (82669)	Pendi-meth-alin, water, fltrd 0.7u GF ug/L (82683)	Phorate water fltrd 0.7u GF ug/L (82664)
APR													
22...	<0.004	<0.035	<0.027	<0.015	E0.008	<0.006	<0.003	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011
MAY													
25...	<.004	<.035	<.027	<.015	.047	<.006	<.003	.013	<.003	<.010	<.004	<.022	<.011
27...	<.004	<.035	<.027	<.015	.102	<.006	<.003	<.007	<.003	<.010	<.004	<.022	<.011
JUL													
08...	<.004	<.035	<.027	<.015	E.011	<.006	<.003	<.007	<.003	<.010	<.004	<.022	<.011
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
02...	<.004	<.035	<.027	<.015	E.010	<.006	<.003	<.007	<.003	<.010	<.004	<.022	<.011
SEP													
07...	<.004	<.035	<.027	<.015	E.007	<.006	<.003	<.007	<.003	<.010	<.004	<.022	<.011

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Prome-ton, water, fltrd, ug/L (04037)	Propy-zamide, water, fltrd 0.7u GF ug/L (82676)	Propa-chlor, water, fltrd, ug/L (04024)	Pro-panil, water, fltrd 0.7u GF ug/L (82679)	Propar-gite, water, fltrd 0.7u GF ug/L (82685)	Sima-zine, water, fltrd, ug/L (04035)	Tebu-thiuron water fltrd 0.7u GF ug/L (82670)	Terba-cil, water, fltrd 0.7u GF ug/L (82665)	Terbu-fos, water, fltrd 0.7u GF ug/L (82675)	Thio-bencarb water fltrd 0.7u GF ug/L (82681)	Tri-allate, water, fltrd 0.7u GF ug/L (82678)	Tri-flur-alin, water, fltrd 0.7u GF ug/L (82661)	Sus-pended sedi-ment concen-tration mg/L (80154)
APR													
22...	<0.01	<0.004	<0.025	<0.011	<0.02	0.017	<0.02	<0.034	<0.02	<0.010	<0.002	<0.009	106
MAY													
25...	.02	<.004	<.025	<.011	<.02	.035	<.02	<.034	<.02	<.010	<.002	<.009	414
27...	<.01	<.004	<.025	<.011	<.02	.056	<.02	<.034	<.02	<.010	<.002	<.009	563
JUL													
08...	.01	<.004	<.025	<.011	<.02	.014	<.02	<.034	<.02	<.010	<.002	<.009	67
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
02...	.01	<.004	<.025	<.011	<.02	.012	<.02	<.034	<.02	<.010	<.002	E.005	19
SEP													
07...	.01	<.004	<.025	<.011	<.02	.009	<.02	<.034	<.02	<.010	<.002	<.009	8

E--Laboratory estimated value.

<--Numeric result is less than the value shown.

3747550860904 F15CS004--BIG SPRING AT BIG SPRING, KY

WATER-QUALITY RECORDS

LOCATION.--Lat 37°47'55", long 86°09'04", Breckinridge County, Hydrologic Unit 05140104.

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

COOPERATION.--Kentucky Department of Agriculture.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Sample type	Instantaneous discharge, cfs (00061)	Turbidity, IR LED light, det ang 90 deg, FNU (63680)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Alkalinity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicarbonate, wat flt incrm. titr., field, mg/L (00453)	Chloride, water, fltrd, mg/L (00940)
APR												
22...	1500	Environmental	46	39.5	743	13.4	7.7	318	12.3	132	161	6.52
MAY												
25...	1545	Environmental	--	134	751	8.8	7.3	306	13.6	117	142	7.08
27...	1030	Environmental	--	114	738	7.5	7.0	201	15.3	65	79	2.40
AUG												
02...	1130	Environmental	2.4	5.30	745	--	7.4	375	13.9	182	209	5.99
SEP												
07...	1120	Environmental	1.6	--	750	10.2	7.0	383	13.7	174	211	4.31

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	2,6-Diethylaniline water fltrd 0.7u GF ug/L (82660)	CIAT, water, fltrd, ug/L (04040)	Acetochlor, water, fltrd, ug/L (49260)	Alachlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atrazine, water, fltrd, ug/L (39632)	Azinphosmethyl, water, fltrd 0.7u GF ug/L (82686)	Benfluralin, water, fltrd 0.7u GF ug/L (82673)	Butylate, water, fltrd, ug/L (04028)
APR													
22...	0.14	2.01	0.052	0.119	<0.006	E0.172	<0.010	<0.005	<0.005	4.92	<0.050	<0.010	<0.004
MAY													
25...	<.04	3.09	.136	.30	<.006	E.300	.014	<.005	<.005	2.08	<.050	<.010	<.004
27...	<.04	1.24	.152	.34	<.006	E.330	.009	.186	<.005	2.99	<.050	<.010	<.004
AUG													
02...	<.04	2.32	.037	.052	<.006	E.133	.018	<.005	<.005	0.097	<.100	<.010	<.004
SEP													
07...	<.04	1.68	.030	--	<.006	E.093	.007	<.005	<.005	.065	<.050	<.010	<.004

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Carbaryl, water, fltrd 0.7u GF ug/L (82680)	Carbofuran, water, fltrd 0.7u GF ug/L (82674)	Chlorpyrifos water, fltrd, ug/L (38933)	cis-Permethrin water fltrd 0.7u GF ug/L (82687)	Cyanazine, water, fltrd, ug/L (04041)	DCPA, water fltrd 0.7u GF ug/L (82682)	Diazinon, water, fltrd, ug/L (39572)	Dieldrin, water, fltrd, ug/L (39381)	Disulfoton, water, fltrd 0.7u GF ug/L (82677)	EPTC, water, fltrd 0.7u GF ug/L (82668)	Ethalfluralin, water, fltrd 0.7u GF ug/L (82663)	Ethoprop, water, fltrd 0.7u GF ug/L (82672)	Fonofos water, fltrd, ug/L (04095)
APR													
22...	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.005	<0.009	<0.02	<0.004	<0.009	<0.005	<0.003
MAY													
25...	<.041	<.020	<.005	<.006	<.018	<.003	<.005	<.009	<.02	<.004	<.009	<.005	<.003
27...	<.041	<.020	<.005	<.006	<.018	<.003	<.005	<.009	<.02	<.004	<.009	<.005	<.003
AUG													
02...	<.041	<.020	<.005	<.006	<.018	<.003	<.005	<.009	<.02	<.004	<.009	<.005	<.003
SEP													
07...	<.041	<.020	<.005	<.006	<.018	<.003	<.005	<.009	<.02	<.004	<.009	<.005	<.003

3747550860904 F15CS004--BIG SPRING AT BIG SPRING, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Lindane water, fltrd, ug/L (39341)	Linuron water fltrd 0.7u GF ug/L (82666)	Mala-thion, water, fltrd, ug/L (39532)	Methyl para-thion, water, fltrd 0.7u GF ug/L (82667)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Moli-nate, water, fltrd 0.7u GF ug/L (82671)	Naprop-amide, water, fltrd 0.7u GF ug/L (82684)	p,p-' DDE, water, fltrd, ug/L (34653)	Para-thion, water, fltrd, ug/L (39542)	Peb-ulate, water, fltrd 0.7u GF ug/L (82669)	Pendi-meth-alin, water, fltrd 0.7u GF ug/L (82683)	Phorate water fltrd 0.7u GF ug/L (82664)
APR													
22...	<0.004	<0.035	<0.027	<0.015	0.309	0.029	<0.003	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011
MAY													
25...	<.004	<.035	<.027	<.015	.447	.023	<.003	<.007	<.003	<.010	<.004	<.022	<.011
27...	<.004	<.035	<.027	<.015	.736	<.006	<.003	<.007	<.003	<.010	<.004	<.022	<.011
AUG													
02...	<.004	<.035	<.027	<.015	.017	.089	<.003	<.007	<.003	<.010	<.004	<.022	<.011
SEP													
07...	<.004	<.035	<.027	<.015	E.006	.026	<.003	<.007	<.003	<.010	<.004	<.022	<.011

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Prome-ton, water, fltrd, ug/L (04037)	Propy-zamide, water, fltrd 0.7u GF ug/L (82676)	Propa-chlor, water, fltrd, ug/L (04024)	Pro-panil, water, fltrd 0.7u GF ug/L (82679)	Propar-gite, water, fltrd 0.7u GF ug/L (82685)	Sima-zine, water, fltrd, ug/L (04035)	Tebu-thiuron water fltrd 0.7u GF ug/L (82670)	Terba-cil, water, fltrd 0.7u GF ug/L (82665)	Terbu-fos, water, fltrd 0.7u GF ug/L (82675)	Thio-bencarb water fltrd 0.7u GF ug/L (82681)	Tri-allate, water, fltrd 0.7u GF ug/L (82678)	Tri-flur-alin, water, fltrd 0.7u GF ug/L (82661)	Sus-pended sedi-ment concen-tration mg/L (80154)
APR													
22...	<0.01	<0.004	<0.025	<0.011	<0.02	0.152	<0.02	<0.034	<0.02	<0.010	<0.002	<0.009	62
MAY													
25...	<.01	<.004	<.025	<.011	<.02	.043	<.02	<.034	<.02	<.010	<.002	<.009	82
27...	<.01	<.004	<.025	<.011	<.02	.548	<.02	<.034	<.02	<.010	<.002	<.009	153
AUG													
02...	<.01	<.004	<.025	<.011	<.02	.018	<.02	<.034	<.02	<.010	<.002	<.009	6
SEP													
07...	.01	<.004	<.025	<.011	<.02	.010	<.02	<.034	<.02	<.010	<.002	<.009	2

E--Laboratory estimated value.

<--Numeric result is less than the value shown.

374813086171501 F14DS005--FLAT ROCK SPRING NEAR ROSETTA, KY

WATER-QUALITY RECORDS

LOCATION.--Lat 37°48'13", long 86°17'15", Breckinridge County, Hydrologic Unit 05140104.

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

COOPERATION.--Kentucky Department of Agriculture.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Sample type	Instan- taneous dis- charge, cfs (00061)	Turb- idity, IR LED light, det ang 90 deg, FNU (63680)	Baro- metric pres- sure, mm Hg (00025)	Dis- solved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conduc- tance, wat unf uS/cm 25 degC (00095)	Temper- ature, water, deg C (00010)	Alka- linity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicar- bonate, wat flt incrm. titr., field, mg/L (00453)	Chlor- ide, water, fltrd, mg/L (00940)
APR 22...	1215	Environmental	50	--	743	--	7.2	325	12.5	--	--	5.85
MAY 25...	1440	Environmental	--	164	751	9.2	7.3	293	14.2	126	154	3.90
JUL 08...	1330	Environmental	12	7.40	749	10.3	7.3	417	14.1	312	381	4.82
AUG 02...	1300	Environmental	8.6	20.3	750	--	7.3	390	14.3	188	229	5.22
SEP 07...	1255	Environmental	4.8	--	750	9.8	7.0	423	14.1	193	235	4.95

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Ortho- phos- phate, water, fltrd, mg/L as P (00671)	Phos- phorus, water, unfltrd mg/L (00665)	2,6-Di- ethyl- aniline water fltrd 0.7u GF ug/L (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto- chlor, water, fltrd, ug/L (49260)	Ala- chlor, water, fltrd, ug/L (46342)	alpha- HCH, water, fltrd, ug/L (34253)	Atra- zine, water, fltrd, ug/L (39632)	Azin- phos- methyl, water, fltrd 0.7u GF ug/L (82686)	Ben- flur- alin, water, fltrd 0.7u GF ug/L (82673)	Butyl- ate, water, fltrd, ug/L (04028)
APR 22...	<0.04	1.61	0.030	0.077	<0.006	E0.062	0.011	0.011	<0.005	0.588	<0.050	<0.010	<0.004
MAY 25...	<.04	0.76	.115	.30	<.006	E.342	.033	<.005	<.005	2.91	<.050	<.010	<.004
JUL 08...	<.04	2.03	.043	.079	<.006	E.138	E.004	<.005	<.005	.195	<.050	<.010	<.004
AUG 02...	<.04	1.90	.092	.148	<.006	E.066	.007	<.005	<.005	.103	<.050	<.010	<.004
SEP 07...	<.04	1.57	.066	.094	<.006	E.075	<.006	<.005	<.005	.063	<.050	<.010	<.004

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Car- baryl, water, fltrd 0.7u GF ug/L (82680)	Carbo- furan, water, fltrd 0.7u GF ug/L (82674)	Chlor- pyrifos water, fltrd, ug/L (38933)	cis- Per- methrin water fltrd 0.7u GF ug/L (82687)	Cyana- zine, water, fltrd, ug/L (04041)	DCPA, water fltrd 0.7u GF ug/L (82682)	Diazi- non, water, fltrd, ug/L (39572)	Diel- drin, water, fltrd, ug/L (39381)	Disul- foton, water, fltrd 0.7u GF ug/L (82677)	EPTC, water, fltrd 0.7u GF ug/L (82668)	Ethal- flur- alin, water, fltrd 0.7u GF ug/L (82663)	Etho- prop, water, fltrd 0.7u GF ug/L (82672)	Fonofos water, fltrd, ug/L (04095)
APR 22...	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.005	<0.009	<0.02	<0.004	<0.009	<0.005	<0.003
MAY 25...	E.009	<.020	<.005	<.006	<.018	<.003	<.005	<.009	<.02	<.004	<.009	<.005	<.003
JUL 08...	<.041	<.020	<.005	<.006	<.018	<.003	<.005	<.009	<.02	<.004	<.009	<.005	<.003
AUG 02...	<.041	<.030	<.005	<.006	<.018	<.003	<.005	<.009	<.02	<.015	<.009	<.005	<.003
SEP 07...	<.041	<.020	<.005	<.006	<.018	<.003	<.005	<.009	<.02	<.004	<.009	<.005	<.003

374813086171501 F14DS005--FLAT ROCK SPRING NEAR ROSETTA, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Lindane water, fltrd, ug/L (39341)	Linuron water fltrd 0.7u GF ug/L (82666)	Malathion, water, fltrd, ug/L (39532)	Methyl parathion, water, fltrd 0.7u GF ug/L (82667)	Metolachlor, water, fltrd, ug/L (39415)	Metribuzin, water, fltrd, ug/L (82630)	Molinate, water, fltrd 0.7u GF ug/L (82671)	Napropamide, water, fltrd 0.7u GF ug/L (82684)	p,p'-DDE, water, fltrd, ug/L (34653)	Parathion, water, fltrd, ug/L (39542)	Pebulate, water, fltrd 0.7u GF ug/L (82669)	Pendimethalin, water, fltrd 0.7u GF ug/L (82683)	Phorate water fltrd 0.7u GF ug/L (82664)
APR													
22...	<0.004	<0.035	<0.027	<0.015	E0.009	<0.006	<0.003	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011
MAY													
25...	<.004	<.035	<.027	<.015	.058	<.010	<.003	<.007	<.003	<.010	<.004	.028	<.011
JUL													
08...	<.004	<.035	<.027	<.015	E.010	E.004	<.003	<.007	<.003	<.010	<.004	.023	<.011
AUG													
02...	<.004	<.035	.181	<.015	E.007	.006	<.003	<.007	<.003	<.010	<.004	E.010	<.011
SEP													
07...	<.004	<.035	<.027	<.015	<.013	<.006	<.003	<.007	<.003	<.010	<.004	<.022	<.011

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Prometon, water, fltrd, ug/L (04037)	Propyzamide, water, fltrd 0.7u GF ug/L (82676)	Propachlor, water, fltrd, ug/L (04024)	Propanil, water, fltrd 0.7u GF ug/L (82679)	Propargite, water, fltrd 0.7u GF ug/L (82685)	Simazine, water, fltrd, ug/L (04035)	Tebuthiuron water fltrd 0.7u GF ug/L (82670)	Terbacil, water, fltrd 0.7u GF ug/L (82665)	Terbufos, water, fltrd 0.7u GF ug/L (82675)	Thiobencarb water fltrd 0.7u GF ug/L (82681)	Triallate, water, fltrd 0.7u GF ug/L (82678)	Trifluralin, water, fltrd 0.7u GF ug/L (82661)	Suspended sediment concentration mg/L (80154)
APR													
22...	<0.01	<0.004	<0.025	<0.011	<0.02	0.027	<0.02	<0.034	<0.02	<0.010	<0.002	<0.009	25
MAY													
25...	<.01	<.004	<.025	E.010	<.02	2.28	<.02	<.034	<.02	<.010	<.002	<.009	138
JUL													
08...	<.01	<.004	<.025	<.011	<.02	.020	<.02	<.034	<.02	<.010	<.002	<.009	28
AUG													
02...	M	<.004	<.025	<.011	<.02	.014	<.02	<.034	<.02	<.010	<.002	<.009	20
SEP													
07...	<.01	<.004	<.025	<.011	<.02	.019	<.02	<.034	<.02	<.010	<.002	<.009	5

E--Laboratory estimated value.

M--Presence of material verified but not quantified.

<--Numeric result is less than the value shown.

374846086154101 F14DS003--ROSS KARST WINDOW NEAR BIG SPRING, KY

WATER-QUALITY RECORDS

LOCATION.--Lat 37°48'46", long 86°15'41", Breckinridge County, Hydrologic Unit 05140104.

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

COOPERATION.--Kentucky Department of Agriculture.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Sample type	Turbidity, IR LED light, det ang 90 deg, FNU (63680)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Alkalinity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicarbonate, wat flt incrm. titr., field, mg/L (00453)	Chloride, water, fltrd, mg/L (00940)	Ammonia water, fltrd, mg/L as N (00608)
MAY												
25...	1510	Environmental	152	751	9.2	7.3	280	14.0	88	108	4.32	<0.04
27...	1120	Environmental	264	738	7.7	7.1	125	15.7	66	80	1.61	<.04
AUG												
02...	1230	Environmental	21.8	748	--	7.2	389	14.3	186	227	5.11	<.04
SEP												
07...	1200	Environmental	--	750	8.9	6.9	445	14.1	208	254	5.08	<.04

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Nitrite + nitrate water fltrd, mg/L as N (00631)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	2,6-Diethylaniline water fltrd 0.7u GF ug/L (82660)	CIAT, water, fltrd, ug/L (04040)	Acetochlor, water, fltrd, ug/L (49260)	Alachlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atrazine, water, fltrd, ug/L (39632)	Azinphos-methyl, water, fltrd 0.7u GF ug/L (82686)	Benfluralin, water, fltrd 0.7u GF ug/L (82673)	Butylate, water, fltrd, ug/L (04028)	Carbaryl, water, fltrd 0.7u GF ug/L (82680)
MAY													
25...	0.82	0.092	0.24	<0.006	E0.252	0.080	<0.005	<0.005	2.10	<0.050	<0.010	<0.004	E0.018
27...	.42	.043	.41	<.006	E.133	.016	.113	<.005	1.45	<.050	<.010	<.004	<.041
AUG													
02...	1.95	.081	.140	<.006	E.083	.008	<.005	<.005	0.109	<.100	<.010	<.004	<.041
SEP													
07...	1.59	.060	.089	<.006	E.070	E.003	<.005	<.005	.080	<.050	<.010	<.004	<.041

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Carbofuran, water, fltrd 0.7u GF ug/L (82674)	Chlorpyrifos water, fltrd, ug/L (38933)	cis-Permethrin water fltrd 0.7u GF ug/L (82687)	Cyanazine, water, fltrd, ug/L (04041)	DCPA, water fltrd 0.7u GF ug/L (82682)	Diazinon, water, fltrd, ug/L (39572)	Dieldrin, water, fltrd, ug/L (39381)	Disulfoton, water, fltrd 0.7u GF ug/L (82677)	EPTC, water, fltrd 0.7u GF ug/L (82668)	Ethalfluralin, water, fltrd 0.7u GF ug/L (82663)	Ethoprop, water, fltrd 0.7u GF ug/L (82672)	Fonofos water, fltrd, ug/L (04095)	Lindane water, fltrd, ug/L (39341)
MAY													
25...	E0.015	<0.005	<0.006	<0.018	<0.003	<0.005	<0.009	<0.02	<0.015	<0.009	<0.005	<0.003	<0.004
27...	<.020	<.005	<.006	<.018	<.003	<.005	<.009	<.02	<.004	<.009	<.005	<.003	<.004
AUG													
02...	<.020	<.005	<.006	<.018	<.003	<.005	<.009	<.02	<.004	<.009	<.005	<.003	<.004
SEP													
07...	<.020	<.005	<.006	<.018	<.003	<.005	<.009	<.02	<.020	<.009	<.005	<.003	<.004

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Linuron water fltrd 0.7u GF ug/L (82666)	Malathion, water, fltrd, ug/L (39532)	Methyl parathion, water, fltrd 0.7u GF ug/L (82667)	Metolachlor, water, fltrd, ug/L (39415)	Metribuzin, water, fltrd, ug/L (82630)	Molinate, water, fltrd 0.7u GF ug/L (82671)	Napropamide, water, fltrd 0.7u GF ug/L (82684)	p,p'-DDE, water, fltrd, ug/L (34653)	Parathion, water, fltrd, ug/L (39542)	Pebulate, water, fltrd 0.7u GF ug/L (82669)	Pendimethalin, water, fltrd 0.7u GF ug/L (82683)	Phorate water fltrd 0.7u GF ug/L (82664)	Prometon, water, fltrd, ug/L (04037)
MAY													
25...	<0.035	<0.027	<0.015	0.048	<0.010	<0.003	<0.007	<0.003	<0.010	<0.004	E0.015	<0.011	0.01
27...	<.035	<.027	<.015	.345	<.006	<.003	<.007	<.003	<.010	<.004	<.022	<.011	<.01
AUG													
02...	<.035	.211	<.015	E.009	<.006	<.003	<.007	<.003	<.010	<.004	<.022	<.011	<.01
SEP													
07...	<.035	<.027	<.015	E.005	.007	<.003	<.007	<.003	<.010	<.004	<.022	<.011	.01

374846086154101 F14DS003--ROSS KARST WINDOW NEAR BIG SPRING, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Propy- zamide, water, fltrd 0.7u GF ug/L (82676)	Propa- chlor, water, fltrd, ug/L (04024)	Pro- panil, water, fltrd 0.7u GF ug/L (82679)	Propar- gite, water, fltrd 0.7u GF ug/L (82685)	Sima- zine, water, fltrd, ug/L (04035)	Tebu- thiuron water fltrd 0.7u GF ug/L (82670)	Terba- cil, water, fltrd 0.7u GF ug/L (82665)	Terbu- fos, water, fltrd 0.7u GF ug/L (82675)	Thio- bencarb water fltrd 0.7u GF ug/L (82681)	Tri- allate, water, fltrd 0.7u GF ug/L (82678)	Tri- flur- alin, water, fltrd 0.7u GF ug/L (82661)	Sus- pended sedi- ment concen- tration mg/L (80154)
MAY												
25...	<0.004	<0.025	0.011	<0.02	1.31	<0.02	<0.034	<0.02	<0.010	<0.002	<0.009	106
27...	<.004	<.025	<.011	<.02	0.507	<.02	<.034	<.02	<.010	<.002	<.009	581
AUG												
02...	<.004	<.025	<.011	<.02	.019	<.02	<.034	<.02	<.010	<.002	<.009	25
SEP												
07...	<.004	<.025	<.011	<.02	.012	M	<.034	<.02	<.010	<.002	<.009	6

E--Laboratory estimated value.

M--Presence of material verified but not quantified.

<--Numeric result is less than the value shown.

374847086172901 F14DS007--FIDDLE SPRING NEAR ROSETTA, KY

WATER-QUALITY RECORDS

LOCATION.--Lat 37°48'47", long 86°17'29", Breckinridge County, Hydrologic Unit 05140104.

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

COOPERATION.--Kentucky Department of Agriculture.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Sample type	Instantaneous discharge, cfs (00061)	Turbidity, IR LED light, det ang 90 deg, FNU (63680)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Alkalinity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicarbonate, wat flt incrm. titr., field, mg/L (00453)	Chloride, water, fltrd, mg/L (00940)
APR												
22...	1320	Environmental	23	9.90	743	12.8	7.2	545	13.1	188	229	5.38
MAY												
25...	1340	Environmental	--	211	751	7.2	7.0	280	14.7	111	135	3.35
25...	1350	Replicate	--	--	--	--	--	--	--	112	136	3.67
AUG												
02...	1400	Environmental	4.4	28.2	749	--	7.0	531	14.5	210	256	5.87
SEP												
07...	1345	Environmental	2.7	--	750	9.2	6.9	1,000	14.3	244	297	6.92

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	2,6-Diethylaniline water fltrd 0.7u GF ug/L (82660)	CIAT, water, fltrd, ug/L (04040)	Acetochlor, water, fltrd, ug/L (49260)	Alachlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atrazine, water, fltrd, ug/L (39632)	Azinphosmethyl, water, fltrd 0.7u GF ug/L (82686)	Benfluralin, water, fltrd 0.7u GF ug/L (82673)	Butylate, water, fltrd, ug/L (04028)
APR													
22...	<0.04	1.12	0.025	0.065	<0.006	E0.031	<0.008	<0.005	<0.005	0.345	<0.050	<0.010	<0.004
MAY													
25...	<.04	0.40	.090	.31	<.006	E.141	.091	<.005	<.005	.850	<.050	<.010	<.004
25...	<.04	.37	.092	.38	<.006	E.157	.088	<.005	<.005	.828	<.050	<.010	<.004
AUG													
02...	<.04	2.08	.192	.25	<.006	E.026	.011	<.005	<.005	.075	<.100	<.010	<.004
SEP													
07...	<.04	1.44	.042	.070	<.006	E.020	<.006	<.005	<.005	.047	<.050	<.010	<.004

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Carbaryl, water, fltrd 0.7u GF ug/L (82680)	Carbofuran, water, fltrd 0.7u GF ug/L (82674)	Chlorpyrifos water, fltrd, ug/L (38933)	cis-Permethrin water fltrd 0.7u GF ug/L (82687)	Cyanazine, water, fltrd, ug/L (04041)	DCPA, water fltrd 0.7u GF ug/L (82682)	Diazinon, water, fltrd, ug/L (39572)	Dieldrin, water, fltrd, ug/L (39381)	Disulfoton, water, fltrd 0.7u GF ug/L (82677)	EPTC, water, fltrd 0.7u GF ug/L (82668)	Ethalfluralin, water, fltrd 0.7u GF ug/L (82663)	Ethoprop, water, fltrd 0.7u GF ug/L (82672)	Fonofos water, fltrd, ug/L (04095)
APR													
22...	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.005	<0.009	<0.02	<0.004	<0.009	<0.005	<0.003
MAY													
25...	E.012	<.020	<.005	<.006	<.018	E.003	<.005	<.009	<.02	<.004	<.009	<.005	<.003
25...	E.012	<.020	<.005	<.006	<.018	<.003	<.005	<.009	<.02	<.004	<.009	<.005	<.003
AUG													
02...	E.018	<.020	<.005	<.006	<.018	<.003	<.005	<.009	<.02	<.004	<.009	<.005	<.003
SEP													
07...	<.041	<.020	<.005	<.006	<.018	<.003	<.005	<.009	<.02	<.004	<.009	<.005	<.003

374847086172901 F14DS007--FIDDLE SPRING NEAR ROSETTA, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Lindane water, fltrd, ug/L (39341)	Linuron water fltrd 0.7u GF ug/L (82666)	Malathion, water, fltrd, ug/L (39532)	Methyl parathion, water, fltrd 0.7u GF ug/L (82667)	Metolachlor, water, fltrd, ug/L (39415)	Metribuzin, water, fltrd, ug/L (82630)	Molinate, water, fltrd 0.7u GF ug/L (82671)	Napropamide, water, fltrd 0.7u GF ug/L (82684)	p,p'-DDE, water, fltrd, ug/L (34653)	Parathion, water, fltrd, ug/L (39542)	Pebulate, water, fltrd 0.7u GF ug/L (82669)	Pendimethalin, water, fltrd 0.7u GF ug/L (82683)	Phorate water fltrd 0.7u GF ug/L (82664)
APR													
22...	<0.004	<0.035	<0.027	<0.015	<0.013	<0.006	<0.003	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011
MAY													
25...	<.004	<.035	<.027	<.015	.036	<.006	<.003	<.007	<.003	<.010	<.004	<.022	<.011
25...	<.004	<.035	<.027	<.015	.035	<.006	<.003	<.007	<.005	<.010	<.004	<.022	<.011
AUG													
02...	<.004	<.035	<.027	<.015	<.013	<.006	<.003	<.007	<.003	<.010	<.004	<.022	<.011
SEP													
07...	<.004	<.035	<.027	<.015	<.013	<.006	<.003	<.007	<.003	<.010	<.004	<.022	<.011

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Prometon, water, fltrd, ug/L (04037)	Propyzamide, water, fltrd 0.7u GF ug/L (82676)	Propachlor, water, fltrd, ug/L (04024)	Propanil, water, fltrd 0.7u GF ug/L (82679)	Propargite, water, fltrd 0.7u GF ug/L (82685)	Simazine, water, fltrd, ug/L (04035)	Tebuthiuron water fltrd 0.7u GF ug/L (82670)	Terbacil, water, fltrd 0.7u GF ug/L (82665)	Terbufos, water, fltrd 0.7u GF ug/L (82675)	Thiobencarb water fltrd 0.7u GF ug/L (82681)	Triallate, water, fltrd 0.7u GF ug/L (82678)	Trifluralin, water, fltrd 0.7u GF ug/L (82661)	Suspended sediment concentration mg/L (80154)
APR													
22...	<0.01	<0.004	<0.025	<0.011	<0.02	0.013	<0.02	<0.034	<0.02	<0.010	<0.002	<0.009	11
MAY													
25...	.01	<.004	<.025	<.011	<.02	.481	<.02	<.034	<.02	<.010	<.002	<.009	253
25...	<.01	<.004	<.025	<.011	<.02	.461	<.02	<.034	<.02	<.010	<.002	<.009	--
AUG													
02...	<.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034	<.02	<.010	<.002	<.009	28
SEP													
07...	.01	<.004	<.025	<.011	<.02	<.005	<.02	<.034	<.02	<.010	<.002	<.009	6

E--Laboratory estimated value.

<--Numeric result is less than the value shown.

375209086224001 F14CS002--BOILING SPRING NEAR LODIBURG, KY

WATER-QUALITY RECORDS

LOCATION.--Lat 37°52'09", long 86°22'40", Breckinridge County, Hydrologic Unit 05140104.

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

COOPERATION.--Kentucky Department of Agriculture.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Sample type	Instan-taneous dis-charge, cfs (00061)	Turb-idity, IR LED light, det ang 90 deg, FNU (63680)	Baro-metric pres-sure, mm Hg (00025)	Dis-solved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conduc-tance, wat unf uS/cm 25 degC (00095)	Temper-ature, water, deg C (00010)	Alka-linity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicar-bonate, wat flt incrm. titr., field, mg/L (00453)	Chlor-ide, water, fltrd, mg/L (00940)
APR												
22...	1340	Environmental	--	45.0	743	9.2	7.4	430	13.4	181	220	5.73
MAY												
25...	1235	Environmental	--	--	743	--	7.2	300	--	132	161	4.00
27...	1610	Environmental	--	677	738	6.5	7.0	188	16.4	80	97	1.75
AUG												
02...	1415	Environmental	37	15.2	758	10.2	6.9	581	17.2	220	268	6.29
SEP												
07...	1320	Environmental	3.5	10.5	750	7.2	7.3	520	17.0	196	239	5.15

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Ortho-phos-phate, water, fltrd, mg/L as P (00671)	Phos-phorus, water, unfltrd mg/L (00665)	2,6-Di-ethyl-aniline water fltrd 0.7u GF ug/L (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF ug/L (82686)	Ben-flur-alin, water, fltrd 0.7u GF ug/L (82673)	Butyl-ate, water, fltrd, ug/L (04028)
APR													
22...	<0.04	1.31	0.019	0.106	<0.006	E0.047	0.010	<0.005	<0.005	0.424	<0.050	<0.010	<0.004
MAY													
25...	<.04	0.83	.075	.45	<.006	E.104	.137	<.005	<.005	.658	<.050	<.010	<.004
27...	<.04	.47	.038	.31	<.006	E.109	.082	<.005	<.005	.866	<.050	<.010	<.004
AUG													
02...	<.04	2.23	.078	.106	<.006	E.075	.007	<.005	<.005	.129	<.050	<.010	<.004
SEP													
07...	<.04	1.52	.057	.087	<.006	E.046	E.004	<.005	<.005	.073	<.050	<.010	<.004

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Car-baryl, water, fltrd 0.7u GF ug/L (82680)	Carbo-furan, water, fltrd 0.7u GF ug/L (82674)	Chlor-pyrifos water, fltrd, ug/L (38933)	cis-Per-methrin water fltrd 0.7u GF ug/L (82687)	Cyana-zine, water, fltrd, ug/L (04041)	DCPA, water fltrd 0.7u GF ug/L (82682)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	Disul-foton, water, fltrd 0.7u GF ug/L (82677)	EPTC, water, fltrd 0.7u GF ug/L (82668)	Ethal-flur-alin, water, fltrd 0.7u GF ug/L (82663)	Etho-prop, water, fltrd 0.7u GF ug/L (82672)	Fonofos water, fltrd, ug/L (04095)
APR													
22...	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.005	<0.009	<0.02	<0.004	<0.009	<0.005	<0.003
MAY													
25...	<.041	<.020	<.005	<.006	<.018	<.003	<.005	<.009	<.02	<.004	<.009	<.005	<.003
27...	<.041	<.020	<.005	<.006	<.018	<.003	<.005	<.009	<.02	<.004	<.009	<.005	<.003
AUG													
02...	<.041	<.020	<.005	<.006	<.018	<.003	<.005	<.009	<.02	<.075	<.009	<.005	<.003
SEP													
07...	<.041	<.020	<.005	<.006	<.018	<.003	<.005	<.009	<.02	<.004	<.009	<.005	<.003

375209086224001 F14CS002--BOILING SPRING NEAR LODIBURG, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Lindane water, fltrd, ug/L (39341)	Linuron water fltrd 0.7u GF ug/L (82666)	Mala-thion, water, fltrd, ug/L (39532)	Methyl para-thion, water, fltrd 0.7u GF ug/L (82667)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Moli-nate, water, fltrd 0.7u GF ug/L (82671)	Naprop-amide, water, fltrd 0.7u GF ug/L (82684)	p,p'-DDE, water, fltrd, ug/L (34653)	Para-thion, water, fltrd, ug/L (39542)	Peb-ulate, water, fltrd 0.7u GF ug/L (82669)	Pendi-meth-alin, water, fltrd 0.7u GF ug/L (82683)	Phorate water fltrd 0.7u GF ug/L (82664)
APR													
22...	<0.004	<0.035	<0.027	<0.015	E0.008	<0.006	<0.003	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011
MAY													
25...	<.004	<.035	<.027	<.015	.042	<.006	<.003	.011	<.003	<.010	<.004	<.022	<.011
27...	<.004	<.035	<.027	<.015	.106	<.006	<.003	<.007	<.003	<.010	<.004	<.022	<.011
AUG													
02...	<.004	<.035	<.027	<.015	E.011	<.006	<.003	<.007	<.003	<.010	<.004	<.022	<.011
SEP													
07...	<.004	<.035	<.027	<.015	E.007	<.006	<.003	<.007	<.003	<.010	<.004	<.022	<.011

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Prome-ton, water, fltrd, ug/L (04037)	Propy-zamide, water, fltrd 0.7u GF ug/L (82676)	Propa-chlor, water, fltrd, ug/L (04024)	Pro-panil, water, fltrd 0.7u GF ug/L (82679)	Propar-gite, water, fltrd 0.7u GF ug/L (82685)	Sima-zine, water, fltrd, ug/L (04035)	Tebu-thiuron water fltrd 0.7u GF ug/L (82670)	Terba-cil, water, fltrd 0.7u GF ug/L (82665)	Terbu-fos, water, fltrd 0.7u GF ug/L (82675)	Thio-bencarb water fltrd 0.7u GF ug/L (82681)	Tri-allate, water, fltrd 0.7u GF ug/L (82678)	Tri-flur-alin, water, fltrd 0.7u GF ug/L (82661)	Sus-pended sedi-ment concen-tration mg/L (80154)
APR													
22...	<0.01	<0.004	<0.025	<0.011	<0.02	0.018	<0.02	<0.034	<0.02	<0.010	<0.002	<0.009	135
MAY													
25...	.01	<.004	<.025	<.011	<.02	.039	<.02	<.034	<.02	<.010	<.002	<.009	409
27...	<.01	<.004	<.025	<.011	<.02	.050	<.02	<.034	<.02	<.010	<.002	<.009	408
AUG													
02...	.01	<.004	<.025	<.011	<.02	.013	<.02	<.034	<.02	<.010	<.002	<.009	11
SEP													
07...	.01	<.004	<.025	<.011	<.02	.010	<.02	<.034	<.02	<.010	<.002	<.009	7

E--Laboratory estimated value.

<--Numeric result is less than the value shown.

03437400 NORTH FORK LITTLE RIVER AT GARY LANE BRIDGE NEAR HOPKINSVILLE, KY

WATER-QUALITY RECORDS

LOCATION.--Lat 36°48'07", long 87°30'49", Christian County, Hydrologic Unit 05130205.

DRAINAGE AREA.--67 mi^2.

PERIOD OF RECORD.--March 2003 to current water year.

COOPERATION.--Kentucky Department of Agriculture.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Sample type	Instan- taneous dis- charge, cfs (00061)	Baro- metric pres- sure, mm Hg (00025)	Dis- solved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conduc- tance, wat unf uS/cm 25 degC (00095)	Temper- ature, water, deg C (00010)	Alka- linity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicar- bonate, wat flt incrm. titr., field, mg/L (00453)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)
OCT												
15...	1500	Environmental	19	762	8.4	7.4	620	18.8	149	182	<0.04	3.43
NOV												
12...	1410	Environmental	22	762	6.3	7.5	500	16.0	146	178	.08	1.95
FEB												
17...	1410	Environmental	49	770	13.6	7.7	479	8.2	162	198	<.04	3.31
MAR												
16...	1410	Environmental	44	759	12.9	7.8	497	11.9	164	201	.06	2.90
16...	1418	Field Blank	--	--	--	--	--	--	--	--	<.010	<0.016
APR												
14...	0930	Environmental	372	748	12.7	6.1	226	7.8	68	83	.48	1.34
30...	1210	Environmental	E75	764	8.2	7.3	363	17.1	132	161	E.02	2.73
MAY												
06...	1240	Environmental	E125	765	8.2	7.4	366	17.3	132	161	.06	2.95
JUN												
15...	1410	Environmental	E32	764	4.7	7.6	501	22.3	155	189	E.04	3.86
JUL												
14...	1020	Environmental	110	745	6.7	7.3	344	23.1	120	146	<.04	2.09
27...	1230	Environmental	E50	766	8.5	7.6	521	20.9	155	190	E.03	3.95
27...	1240	Replicate	--	--	--	--	--	--	155	189	E.02	3.95
AUG												
10...	1230	Environmental	E80	764	7.2	7.7	576	21.6	198	242	E.03	4.86
SEP												
14...	1210	Environmental	E100	767	6.5	7.4	626	21.9	149	182	E.04	5.33

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Ortho- phos- phate, water, fltrd, mg/L as P (00671)	Phos- phorus, water, unfltrd mg/L (00665)	1,4- Naphth- oquin- one, water, fltrd, ug/L (61611)	1-Naph- thol, water, fltrd 0.7u GF ug/L (49295)	2-(4-t- Butyl- phenoxy)cyclo- hexanol wat flt ug/L (61637)	2,5-Di- chloro- aniline water, fltrd, ug/L (61614)	2,6-Di- ethyl- aniline water fltrd 0.7u GF ug/L (82660)	2-[(2- Et-6-Me -Ph)- -amino] propan- 1-ol, ug/L (61615)	2Amino- N-iso- propyl- benz- amide, wat flt ug/L (61617)	CIAT, water, fltrd, ug/L (04040)	2-Ethyl -6- methyl- aniline water, fltrd, ug/L (61620)	3-(Tri- fluoro- methyl) aniline water, fltrd, ug/L (61630)	3,4-Di- chloro- aniline water fltrd, ug/L (61625)
OCT													
15...	1.55	1.62	<0.05	--	<0.01	<0.03	<0.006	<0.1	<0.005	E0.117	<0.004	<0.01	0.093
NOV													
12...	0.397	0.51	<.05	<0.09	E.01	<.03	<.006	<.1	<.005	E.138	<.004	<.01	.044
FEB													
17...	.461	.60	<.05	<.09	<.01	M	<.006	--	<.005	E.089	<.004	<.01	.016
MAR													
16...	.497	.62	<.05	<.09	<.01	E.01	<.006	--	<.005	E.084	<.004	<.01	.021
16...	<.006	--	--	--	--	--	--	--	--	--	--	--	--
APR													
14...	.262	.57	<.05	<.09	<.01	<.03	<.006	--	<.005	E.227	<.004	<.01	<.004
30...	.228	.35	<.05	<.09	<.01	E.01	<.006	--	<.005	E.176	<.004	<.01	.013
MAY													
06...	.258	.31	<.05	<.09	<.01	<.03	<.006	--	<.005	E.236	<.004	<.01	.016
JUN													
15...	.842	.89	<.05	<.09	--	E.01	<.006	--	<.005	E.244	<.004	<.01	.094
JUL													
14...	.413	.55	<.04	<.09	<.01	<.01	<.006	--	<.005	E.174	<.004	<.01	.033
27...	1.52	1.58	<.04	--	<.01	E.01	<.006	--	<.005	E.206	<.004	<.01	E.054
27...	1.47	1.66	<.04	--	<.01	<.01	<.006	--	<.005	E.159	<.004	<.01	<.004
AUG													
10...	1.03	1.07	<.04	--	<.01	.01	<.006	--	<.005	E.095	<.004	<.01	.068
SEP													
14...	2.00	2.12	<.04	<.09	<.01	.01	<.006	--	<.005	E.095	<.004	<.01	.064

03437400 NORTH FORK LITTLE RIVER AT GARY LANE BRIDGE NEAR HOPKINSVILLE, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	3,5-Di-chloro-aniline water, fltrd, ug/L (61627)	4,4-Di' chloro-benzo-phen-one, wat flt ug/L (61631)	4Chloro 2methyl phenol, water, fltrd, ug/L (61633)	4Chloro phenyl-methyl sulfone water, fltrd, ug/L (61634)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-Endo-sulfan, water, fltrd, ug/L (34362)	alpha-HCH, water, fltrd, ug/L (34253)	alpha-HCH-d6, sur2002 /9002, wat unf percent recovry (99224)	alpha-HCH-d6, surrog, wat flt 0.7u GF percent recovry (91065)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl oxon, water, fltrd, ug/L (61635)	Azin-phos-methyl, water, fltrd 0.7u GF ug/L (82686)
OCT													
15...	<0.005	<0.003	<0.006	<0.03	<0.006	0.006	<0.005	<0.005	88.9	110	0.874	<0.02	<0.200
NOV													
12...	<.005	<.003	<.006	<.03	<.010	<.010	<.005	<.005	93.8	107	.602	<.02	<.050
FEB													
17...	<.005	<.003	<.006	<.03	<.006	<.005	<.005	<.005	172	E106	.222	<.02	<.050
MAR													
16...	<.005	<.003	<.006	<.03	<.006	<.005	<.005	<.005	85.3	98.1	.637	<.02	<.050
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
14...	<.005	<.003	<.006	<.03	.199	<.005	<.005	<.005	81.2	94.7	E21.9	<.02	<.050
30...	<.005	<.003	<.006	<.03	.035	<.005	<.005	<.005	79.6	91.1	1.84	<.02	<.050
MAY													
06...	<.005	<.003	<.006	<.03	.035	<.005	<.005	<.005	84.0	96.6	2.83	<.02	<.050
JUN													
15...	<.005	<.003	--	<.01	.009	<.005	<.005	<.005	90.1	108	1.95	<.02	<.050
JUL													
14...	<.004	<.007	<.006	<.01	.010	<.005	<.005	<.005	81.6	92.2	1.47	<.07	<.050
27...	<.004	<.007	<.006	<.01	<.015	<.005	<.005	<.005	74.7	89.0	2.14	<.07	<.050
27...	<.004	<.007	<.006	<.01	.011	<.005	<.005	<.005	89.1	98.8	.352	<.07	<.050
AUG													
10...	<.004	<.007	<.006	<.01	.012	<.005	<.005	<.005	76.6	85.9	.245	<.07	<.050
SEP													
14...	<.004	<.007	<.006	<.01	<.006	<.005	<.005	<.005	75.3	90.9	.534	<.07	<.100

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Ben-flur-alin, water, fltrd 0.7u GF ug/L (82673)	beta-Endo-sulfan, water, fltrd, ug/L (34357)	Bifen-thrin, water, fltrd, ug/L (61580)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd 0.7u GF ug/L (82680)	Carbo-furan, water, fltrd 0.7u GF ug/L (82674)	Chlor-pyrifos oxon, water, fltrd, ug/L (61636)	Chlor-pyrifos water, fltrd, ug/L (38933)	cis-Per-methrin water fltrd 0.7u GF ug/L (82687)	cis-Propi-cona-zole, water, fltrd, ug/L (79846)	Cyana-zine, water, fltrd, ug/L (04041)	Cyclo-ate, water, fltrd, ug/L (04031)	lambda-Cyhalo-thrin, water, fltrd, ug/L (61595)
OCT													
15...	<0.010	<0.01	<0.005	0.005	<0.041	<0.020	<0.06	<0.005	<0.006	<0.008	<0.018	<0.005	<0.009
NOV													
12...	<.010	<.01	<.005	<.010	<.041	<.020	<.06	<.005	<.006	<.008	<.018	<.005	<.009
FEB													
17...	<.010	<.01	<.005	E.018	<.041	<.020	<.06	<.005	<.006	<.008	<.018	<.005	<.009
MAR													
16...	<.010	<.01	<.005	.013	<.041	E.025	<.06	<.005	<.006	<.008	<.018	<.005	<.009
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
14...	<.010	<.01	<.005	<.010	E.054	<.020	<.06	<.005	<.006	<.008	<.018	<.005	<.009
30...	<.010	<.01	<.005	.011	E.021	<.020	<.06	<.005	<.006	<.008	<.018	<.005	<.009
MAY													
06...	<.010	<.01	<.005	.008	E.036	<.020	<.06	<.005	<.006	<.008	<.018	<.005	<.009
JUN													
15...	<.010	<.01	<.005	<.018	<.073	<.047	<.06	<.005	<.006	<.008	<.018	<.005	<.009
JUL													
14...	<.010	<.01	<.005	<.004	E.160	<.035	<.06	E.004	<.006	<.008	<.018	<.005	<.009
27...	<.010	<.01	<.005	.009	E.013	<.050	<.06	<.005	<.006	<.008	<.018	<.005	<.009
27...	<.010	<.01	<.005	<.004	E.033	<.020	<.06	<.005	<.006	<.008	<.018	<.005	<.009
AUG													
10...	<.010	<.01	<.005	.008	E.009	<.030	<.06	<.005	<.006	<.008	<.018	<.005	<.009
SEP													
14...	<.010	<.01	<.005	<.004	<.041	<.020	<.06	<.005	<.006	<.008	<.018	<.005	<.009

03437400 NORTH FORK LITTLE RIVER AT GARY LANE BRIDGE NEAR HOPKINSVILLE, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Cyper-methrin water, fltrd, ug/L (61586)	DCPA, water fltrd 0.7u GF ug/L (82682)	Diazi-non, water, fltrd, ug/L (39572)	Dicro-tophos, water fltrd, ug/L (38454)	Diel-drin, water, fltrd, ug/L (39381)	Dimeth-oate, water, fltrd 0.7u GF ug/L (82662)	Disulf-oton sulfone water, fltrd, ug/L (61640)	Disulf-oton sulf-oxide, water, fltrd, ug/L (61641)	Disul-foton, water, fltrd 0.7u GF ug/L (82677)	(E)-Di-metho-morph, water, fltrd, ug/L (79844)	Endo-sulfan ether, water, fltrd, ug/L (61642)	EPTC, water, fltrd 0.7u GF ug/L (82668)	Ethal-flur-alin, water, fltrd 0.7u GF ug/L (82663)
OCT													
15...	<0.009	<0.003	0.017	<0.08	<0.005	<0.006	<0.02	<0.050	<0.02	<0.02	<0.004	0.003	<0.009
NOV													
12...	<.009	<.003	.006	<.08	<.009	<.006	<.02	<.002	<.02	<.02	<.004	E.003	<.009
FEB													
17...	<.009	<.003	<.005	<.08	<.009	<.006	<.02	<.002	<.02	<.02	<.004	.006	<.009
MAR													
16...	<.009	<.003	<.005	<.08	<.010	<.006	.02	<.002	<.02	<.02	<.004	.007	<.009
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
14...	<.009	<.003	.006	<.08	E.007	<.006	<.02	<.002	<.02	<.02	<.004	<.010	<.009
30...	<.009	<.003	.007	<.08	E.007	<.006	E.01	<.002	<.02	<.02	<.004	.004	<.009
MAY													
06...	<.009	<.003	.010	<.08	<.009	<.006	.02	<.002	<.02	<.02	<.004	.004	<.009
JUN													
15...	<.009	<.003	<.006	<.08	<.009	<.006	<.02	<.002	<.02	<.02	<.004	.006	<.009
JUL													
14...	<.009	<.003	.180	<.08	.012	<.006	<.01	<.036	<.02	<.02	<.007	<.035	<.009
27...	<.009	<.003	.027	<.08	.021	<.006	<.01	<.036	<.02	<.02	<.007	.004	<.009
27...	<.009	<.003	.006	<.08	.015	<.006	<.01	<.036	<.02	<.02	<.007	<.004	<.009
AUG													
10...	<.009	<.003	<.010	<.08	.012	<.006	<.01	<.036	<.02	<.02	<.007	E.004	<.009
SEP													
14...	<.009	<.003	<.010	<.08	<.010	<.006	<.01	<.036	<.02	<.02	<.007	<.004	<.009

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Ethion monoxon water, fltrd, ug/L (61644)	Ethion, water, fltrd, ug/L (82346)	Etho-prop, water, fltrd 0.7u GF ug/L (82672)	Fenami-phos sulfone water, fltrd, ug/L (61645)	Fenami-phos sulf-oxide, water, fltrd, ug/L (61646)	Fenami-phos, water, fltrd, ug/L (61591)	Fen-thion sulf-oxide, water, fltrd, ug/L (61647)	Flume-tralin, water, fltrd, ug/L (61592)	Fonofos oxon, water, fltrd, ug/L (61649)	Fonofos water, fltrd, ug/L (04095)	Hexa-zinone, water, fltrd, ug/L (04025)	Ipro-dione, water, fltrd, ug/L (61593)	Isofen-phos, water, fltrd, ug/L (61594)
OCT													
15...	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.004	<0.002	<0.003	<0.013	<1	<0.003
NOV													
12...	<.03	<.004	<.005	<.008	<.03	<.03	<.008	<.004	<.002	<.003	<.013	<1	<.003
FEB													
17...	<.03	<.004	<.005	<.008	<.03	<.03	<.008	<.004	<.002	<.003	<.013	<1	<.003
MAR													
16...	<.03	<.004	<.005	<.008	<.03	<.03	<.008	<.004	<.002	<.003	<.013	<1	<.003
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
14...	<.03	<.004	<.005	<.008	<.03	<.03	<.008	<.004	<.002	<.003	<.013	<1	<.003
30...	<.03	<.004	<.005	<.008	<.03	<.03	<.008	<.004	<.002	<.003	<.013	<1	<.003
MAY													
06...	<.03	<.004	<.005	<.008	<.03	<.03	<.008	<.004	<.002	<.003	<.013	<1	<.003
JUN													
15...	<.03	<.004	<.005	<.008	<.03	<.03	<.008	<.004	<.002	<.003	<.013	<1	<.003
JUL													
14...	<.0020	<.004	<.005	<.049	<.04	<.03	<.008	<.004	<.003	<.003	<.013	<0.387	<.003
27...	<.0020	<.004	<.005	<.049	<.04	<.03	<.008	<.004	<.003	<.003	<.013	<.387	<.003
27...	<.0020	<.004	<.005	<.049	<.04	<.03	<.008	<.004	<.003	<.003	<.013	<.387	<.003
AUG													
10...	<.0020	<.004	<.005	<.049	<.04	<.03	<.008	<.004	<.003	<.003	<.013	<.387	<.003
SEP													
14...	<.0020	<.004	<.005	<.049	<.04	<.03	<.008	<.004	<.003	<.003	<.013	<.387	<.003

03437400 NORTH FORK LITTLE RIVER AT GARY LANE BRIDGE NEAR HOPKINSVILLE, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Lindane water, fltrd, ug/L (39341)	Linuron water fltrd 0.7u GF ug/L (82666)	Mala-oxon, water, fltrd, ug/L (61652)	Mala-thion, water, fltrd, ug/L (39532)	Meta-laxyl, water, fltrd, ug/L (61596)	Methi-althion water, fltrd, ug/L (61598)	c-Per-methric acid methyl ester, wat flt ug/L (79842)	Methyl para-oxon, water, fltrd, ug/L (61664)	Methyl para-thion, water, fltrd 0.7u GF ug/L (82667)	t-Per-methric acid methyl ester, wat flt ug/L (79843)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Moli-nate, water, fltrd 0.7u GF ug/L (82671)
OCT													
15...	<0.004	<0.035	<0.008	<0.027	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	0.017	<0.006	<0.002
NOV													
12...	<.004	<.035	<.008	<.027	<.005	<.006	<.04	<.03	<.015	<.03	.014	<.006	<.003
FEB													
17...	<.004	<.035	<.008	<.027	<.005	<.006	<.04	<.03	<.015	<.03	E.012	<.006	<.003
MAR													
16...	<.004	<.035	<.008	<.027	<.005	<.006	<.04	<.03	<.015	<.03	.015	<.006	<.003
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
14...	<.004	<.035	<.008	<.027	<.005	<.006	<.04	<.03	<.015	<.03	.028	<.006	<.003
30...	<.004	<.035	<.008	<.027	<.005	<.006	<.04	<.03	<.015	<.03	.027	<.006	<.003
MAY													
06...	<.004	<.035	<.008	<.027	<.005	<.006	<.04	<.03	<.015	<.03	.022	<.006	<.003
JUN													
15...	<.004	<.035	<.008	<.027	<.005	<.006	<.04	<.03	<.015	<.03	.027	<.006	<.003
JUL													
14...	<.004	<.035	<.030	<.027	<.005	<.006	<.02	<.03	<.015	<.01	.027	<.006	<.003
27...	<.004	<.035	<.030	<.027	<.005	<.006	<.02	<.03	<.015	<.01	.043	<.006	<.003
27...	<.004	<.035	<.030	<.027	.018	<.006	<.02	<.03	<.015	<.01	.019	.008	<.003
AUG													
10...	<.004	<.035	<.030	<.027	<.200	<.006	<.02	<.03	<.015	<.01	.062	<.006	<.003
SEP													
14...	<.004	<.035	<.030	<.027	<.005	<.006	<.02	<.03	<.015	<.01	.030	<.006	<.003

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Myclo-butanil water, fltrd, ug/L (61599)	Naprop-amide, water, fltrd 0.7u GF ug/L (82684)	O-Et-O-Me-S-Pr -phos-phoro-thioate wat flt ug/L (61660)	Oxy-fluor-fen, water, fltrd, ug/L (61600)	p,p'-DDE, water, fltrd, ug/L (34653)	Para-oxon, water, fltrd, ug/L (61663)	Para-thion, water, fltrd, ug/L (39542)	Peb-ulate, water, fltrd 0.7u GF ug/L (82669)	Pendi-meth-alin, water, fltrd 0.7u GF ug/L (82683)	Phorate oxon, water, fltrd, ug/L (61666)	Phorate water fltrd 0.7u GF ug/L (82664)	Phosmet oxon, water, fltrd, ug/L (61668)	Phosmet water, fltrd, ug/L (61601)
OCT													
15...	<0.008	<0.007	<0.008	<0.007	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011	<0.06	<0.008
NOV													
12...	<.008	<.007	<.008	<.007	<.003	<.008	<.010	<.004	<.022	<.10	<.011	<.06	<.008
FEB													
17...	<.008	<.007	<.008	<.007	<.003	<.008	<.010	<.004	<.022	<.10	<.011	--	--
MAR													
16...	<.008	<.007	<.008	<.007	<.003	<.008	<.010	<.004	<.022	<.10	<.011	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
14...	<.008	<.007	<.008	<.007	<.003	<.008	<.010	<.004	<.022	<.10	<.011	<.06	<.008
30...	<.008	<.007	<.008	<.007	<.003	<.008	<.010	<.004	.076	<.10	<.011	<.06	<.008
MAY													
06...	<.008	<.007	<.008	<.007	<.003	<.008	<.010	<.004	<.022	<.10	<.011	<.06	<.008
JUN													
15...	<.008	<.007	<.008	<.007	<.003	<.008	<.010	<.004	<.022	<.10	<.011	<.06	<.008
JUL													
14...	<.008	<.007	<.005	<.007	<.003	<.016	<.010	<.004	<.022	<.10	<.011	<.05	<.008
27...	<.008	<.007	<.005	<.007	<.003	<.016	<.010	<.004	<.022	<.10	<.011	--	<.008
27...	<.008	<.007	<.005	<.007	<.003	<.016	<.010	<.004	<.022	<.10	<.011	--	<.008
AUG													
10...	<.008	<.007	<.005	<.007	<.003	<.070	<.010	<.004	<.022	<.10	<.011	--	<.008
SEP													
14...	<.008	<.007	<.005	<.007	<.003	<.016	<.010	<.004	<.022	<.10	<.011	--	--

03437400 NORTH FORK LITTLE RIVER AT GARY LANE BRIDGE NEAR HOPKINSVILLE, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Phoste-bupirim water, fltrd, ug/L (61602)	Pro-fenofos water, fltrd, ug/L (61603)	Prome-ton, water, fltrd, ug/L (04037)	Prome-tryn, water, fltrd, ug/L (04036)	Propy-zamide, water, fltrd 0.7u GF ug/L (82676)	Propa-chlor, water, fltrd, ug/L (04024)	Pro-panil, water, fltrd 0.7u GF ug/L (82679)	Propar-gite, water, fltrd 0.7u GF ug/L (82685)	Propet-amphos, water, fltrd, ug/L (61604)	Sima-zine, water, fltrd, ug/L (04035)	Sulfo-tepp, water, fltrd, ug/L (61605)	Sulpro-fos, water, fltrd, ug/L (38716)	Tebu-pirim-phos oxon, water, fltrd, ug/L (61669)
OCT													
15...	<0.005	<0.006	0.04	<0.005	<0.004	<0.010	<0.011	<0.02	<0.004	0.084	<0.003	<0.02	<0.006
NOV													
12...	<.005	<.006	.02	<.005	<.010	<.025	<.011	<.02	<.004	.061	<.003	<.02	<.006
FEB													
17...	<.005	<.006	.01	<.005	<.004	<.025	<.011	<.02	<.004	.156	<.003	<.02	<.006
MAR													
16...	<.005	<.006	.01	<.005	<.004	<.025	<.011	<.02	<.004	.143	<.003	<.02	<.006
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
14...	<.005	<.006	.08	<.005	.011	<.025	<.011	<.02	<.004	4.90	<.003	<.02	<.006
30...	<.005	<.006	.06	<.005	<.004	<.025	<.011	<.02	<.004	.415	<.003	<.02	<.006
MAY													
06...	<.005	<.006	.02	<.005	<.004	<.025	<.011	<.02	<.004	.502	<.003	<.02	<.006
JUN													
15...	<.005	<.006	.02	<.005	<.004	<.025	<.011	<.02	<.004	.208	<.003	<.02	<.006
JUL													
14...	<.005	<.006	.03	<.005	<.007	<.025	<.011	<.02	<.004	.128	<.003	<.02	<.006
27...	<.005	<.006	.03	<.005	<.015	<.025	<.030	<.02	<.004	.157	<.003	<.02	<.006
27...	<.005	<.006	.02	<.005	<.004	<.025	<.011	<.02	<.004	.032	<.003	<.02	<.006
AUG													
10...	<.005	<.006	.03	<.005	<.010	<.025	<.015	<.02	<.004	.038	<.003	<.02	<.006
SEP													
14...	<.005	<.006	.02	<.005	<.004	<.025	<.011	<.02	<.004	.047	<.003	<.02	<.006

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Tebu-thiuron water fltrd 0.7u GF ug/L (82670)	Teflu-thrin, water, fltrd, ug/L (61606)	Teme-phos, water, fltrd, ug/L (61607)	Terba-cil, water, fltrd 0.7u GF ug/L (82665)	Ter-bufos oxon sulfone water, fltrd, ug/L (61674)	Terbu-fos, water, fltrd 0.7u GF ug/L (82675)	Ter-buthyl-azine, water, fltrd, ug/L (04022)	Thio-bencarb water fltrd 0.7u GF ug/L (82681)	trans-Propi-cona-zole, water, fltrd, ug/L (79847)	Tri-allate, water, fltrd 0.7u GF ug/L (82678)	Tribu-phos, water, fltrd, ug/L (61610)	Tri-flur-alin, water, fltrd 0.7u GF ug/L (82661)	(Z)-Di-metho-morph, water, fltrd, ug/L (79845)
OCT													
15...	<0.02	<0.008	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	<0.01	<0.002	<0.004	<0.009	<0.05
NOV													
12...	<.02	<.008	<.3	<.034	<.07	<.02	<.01	<.010	<.01	<.002	<.004	<.009	<.05
FEB													
17...	<.02	<.008	<.3	<.034	<.07	<.02	<.01	<.010	<.01	<.002	<.004	<.009	<.05
MAR													
16...	<.02	<.008	<.3	<.034	<.07	<.02	<.01	<.010	<.01	<.002	<.004	<.009	<.05
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
14...	<.02	<.008	<.3	<.034	<.07	<.02	<.01	<.010	<.01	<.002	<.004	<.009	<.05
30...	<.02	<.008	<.3	<.034	<.07	<.02	<.01	<.010	<.01	<.002	<.004	<.009	<.05
MAY													
06...	<.02	<.008	<.3	<.034	<.07	<.02	<.01	<.010	<.01	<.002	<.004	<.009	<.05
JUN													
15...	<.02	<.008	<.3	<.034	<.07	<.02	<.01	<.010	<.01	<.002	<.004	<.009	<.05
JUL													
14...	.02	<.008	<.3	<.034	<.07	<.02	<.01	<.010	<.01	<.002	<.004	<.009	<.05
27...	.03	<.008	<.3	<.034	<.07	<.02	<.01	<.010	<.01	<.002	<.004	<.009	<.05
27...	E.01	<.008	<.3	<.034	<.07	<.02	<.01	<.010	<.01	<.002	<.004	<.009	<.05
AUG													
10...	.02	<.008	<.3	<.034	<.07	<.02	<.01	<.010	<.01	<.002	<.004	<.009	<.05
SEP													
14...	.02	<.008	<.3	<.034	<.07	<.02	<.01	<.010	<.01	<.002	<.004	<.009	<.05

03437400 NORTH FORK LITTLE RIVER AT GARY LANE BRIDGE NEAR HOPKINSVILLE, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Di-chlor-vos, water fltrd, ug/L (38775)	Sus-pended sedi-ment concen-tration mg/L (80154)
OCT		
15...	<0.01	3
NOV		
12...	<.01	2
FEB		
17...	<.01	4
MAR		
16...	<.01	4
16...	--	--
APR		
14...	<.01	201
30...	<.01	56
MAY		
06...	<.01	20
JUN		
15...	<.01	6
JUL		
14...	<.01	81
27...	<.01	6
27...	<.01	7
AUG		
10...	<.01	6
SEP		
14...	<.01	5

E--Laboratory estimated value.
M--Presence of material verified but not quantified.
<--Numeric result is less than the value shown.

03437600 SOUTH FORK LITTLE RIVER AT KY 107 NEAR HOPKINSVILLE, KY

WATER-QUALITY RECORDS

LOCATION.--Lat 36°47'52", long 87°30'52", Christian County, Hydrologic Unit 05130205. "

DRAINAGE AREA.--68 mi^2.

PERIOD OF RECORD.--March 2003 to current water year.

COOPERATION.--Kentucky Department of Agriculture.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Sample type	Instan-taneous dis-charge, cfs (00061)	Baro-metric pres-sure, mm Hg (00025)	Dis-solved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conduc-tance, wat unf uS/cm 25 degC (00095)	Temper-ature, water, deg C (00010)	Alka-linity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicar-bonate, wat flt incrm. titr., field, mg/L (00453)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)
OCT												
15...	1210	Environmental	9.8	761	9.0	7.6	523	18.9	216	263	<0.04	2.28
NOV												
12...	1210	Environmental	19	762	9.0	7.7	520	16.1	220	268	<.04	1.40
FEB												
17...	1210	Environmental	83	772	14.5	--	467	8.0	187	228	<.04	4.75
MAR												
16...	1210	Environmental	56	769	15.9	8.1	451	11.3	181	216	<.04	3.97
APR												
14...	1530	Environmental	242	748	12.4	6.8	296	9.5	102	124	.66	4.41
30...	1310	Environmental	200	764	9.3	7.6	372	16.2	154	187	E.03	4.51
30...	1318	Field Blank	--	--	--	--	--	--	--	--	--	--
MAY												
06...	1420	Environmental	226	765	10.1	7.6	426	16.2	174	213	<.04	5.73
JUN												
15...	1230	Environmental	50	762	5.4	7.7	464	20.7	188	230	<.04	4.89
15...	1238	Field Blank	--	--	--	--	--	--	--	--	<.010	<0.016
JUL												
14...	0840	Environmental	85	745	7.1	7.3	375	22.1	145	176	<.04	2.93
27...	1130	Environmental	80	766	8.5	7.6	479	19.8	188	230	<.04	3.56
AUG												
10...	1110	Environmental	90	764	8.1	7.6	485	19.9	214	261	<.04	4.25
SEP												
14...	1100	Environmental	80	767	6.9	7.5	466	19.9	189	227	<.04	2.33

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Ortho-phos-phate, water, fltrd, mg/L as P (00671)	Phos-phorus, water, unfltrd mg/L (00665)	1,4-Naphth-oquin-one, water, fltrd, ug/L (61611)	1-Naph-thol, water, fltrd 0.7u GF ug/L (49295)	2-(4-t-Butyl-phenoxy)cyclo-hexanol wat flt ug/L (61637)	2,5-Di-chloro-aniline water, fltrd, ug/L (61614)	2,6-Di-ethyl-aniline water fltrd 0.7u GF ug/L (82660)	2-[(2-Et-6-Me -Ph)- -amino] propan-1-ol, ug/L (61615)	2Amino-N-iso-propyl-benz-amide, wat flt ug/L (61617)	CIAT, water, fltrd, ug/L (04040)	2-Ethyl -6-methyl-aniline water, fltrd, ug/L (61620)	3-(Tri-fluoro-methyl) aniline water, fltrd, ug/L (61630)	3,4-Di-chloro-aniline water fltrd, ug/L (61625)
OCT													
15...	0.049	0.073	M	--	<0.01	<0.03	<0.006	<0.1	<0.005	E0.186	<0.004	<0.01	<0.004
NOV													
12...	.031	.059	<0.05	<0.09	<.01	<.03	<.006	<.1	<.005	E.216	<.004	<.01	<.004
FEB													
17...	.007	.021	<.05	<.09	<.01	<.03	<.006	--	<.005	E.196	<.004	<.01	<.004
MAR													
16...	<.006	.019	<.05	<.09	<.01	<.03	<.006	--	<.005	E.156	<.004	<.01	<.004
APR													
14...	.111	.23	<.05	<.09	<.01	<.03	<.006	--	<.005	E.997	<.004	<.01	<.004
30...	.042	.20	<.05	<.09	<.01	<.03	<.006	--	<.005	E.336	<.004	<.01	<.004
30...	--	--	<.05	<.09	<.01	<.03	<.006	--	<.005	<.006	<.004	<.01	<.004
MAY													
06...	.019	.043	<.05	<.09	<.01	<.03	<.006	--	<.005	E.346	<.004	<.01	<.004
JUN													
15...	.028	.051	<.05	<.09	--	<.03	<.006	--	<.005	E.284	<.004	<.01	<.004
15...	E.003	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
14...	.093	.165	<.04	<.09	<.01	<.01	<.006	--	<.005	E.178	<.004	<.01	<.004
27...	.030	.050	<.04	--	<.01	.01	<.006	--	<.005	E.218	<.004	<.01	.092
AUG													
10...	.039	.058	<.04	--	<.01	<.01	<.006	--	<.005	E.187	<.004	<.01	E.003
SEP													
14...	.048	.073	<.04	<.09	<.01	<.01	<.006	--	<.005	E.158	<.004	<.01	<.004

03437600 SOUTH FORK LITTLE RIVER AT KY 107 NEAR HOPKINSVILLE, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	3,5-Di-chloro-aniline water, fltrd, ug/L (61627)	4,4-Di'chloro-benzo-phen-one, wat flt ug/L (61631)	4Chloro 2methyl phenol, water, fltrd, ug/L (61633)	4Chloro phenyl-methyl sulfone water, fltrd, ug/L (61634)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-Endo-sulfan, water, fltrd, ug/L (34362)	alpha-HCH, water, fltrd, ug/L (34253)	alpha-HCH-d6, sur2002 /9002, wat unf percent recovry (99224)	alpha-HCH-d6, surrog, wat flt 0.7u GF percent recovry (91065)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl oxon, water, fltrd, ug/L (61635)	Azin-phos-methyl, water, fltrd 0.7u GF ug/L (82686)
OCT													
15...	<0.005	<0.003	<0.006	<0.03	0.008	0.005	<0.005	<0.005	91.3	96.5	0.187	<0.02	<0.050
NOV													
12...	<.005	<.003	<.006	<.03	.010	<.005	<.005	<.005	87.7	97.4	.125	<.02	<.050
FEB													
17...	<.005	<.003	<.006	<.03	.008	<.005	<.005	<.005	167	E102	.109	<.02	<.050
MAR													
16...	<.005	<.003	<.006	<.03	.007	<.005	<.005	<.005	88.3	87.2	.679	<.02	<.050
APR													
14...	<.005	<.003	<.006	<.03	2.21	<.005	<.005	<.005	86.2	103	E22.4	<.02	<.050
30...	<.005	<.003	<.006	<.03	.254	.006	<.005	<.005	89.3	96.7	2.90	<.02	<.050
30...	<.005	<.003	<.006	<.03	<.006	<.005	<.005	<.005	83.5	89.9	<.007	<.02	<.050
MAY													
06...	<.005	<.003	<.006	<.03	.075	<.005	<.005	<.005	85.3	98.1	1.34	<.02	<.050
JUN													
15...	<.005	<.003	--	<.01	.016	<.005	<.005	<.005	88.4	107	.726	<.02	<.050
15...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
14...	<.004	<.007	<.006	<.01	<.006	<.005	<.005	<.005	88.0	98.1	.233	<.07	<.050
27...	<.004	<.007	<.006	<.01	.014	<.005	<.005	<.005	88.2	97.9	2.22	<.07	<.050
AUG													
10...	<.004	<.007	<.006	<.01	E.005	E.004	<.005	<.005	76.1	79.1	.175	<.07	<.050
SEP													
14...	<.004	<.007	<.006	<.01	<.006	<.005	<.005	<.005	86.4	92.6	.161	<.07	<.050

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Ben-flur-alin, water, fltrd 0.7u GF ug/L (82673)	beta-Endo-sulfan, water, fltrd, ug/L (34357)	Bifen-thrin, water, fltrd, ug/L (61580)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd 0.7u GF ug/L (82680)	Carbo-furan, water, fltrd 0.7u GF ug/L (82674)	Chlor-pyrifos oxon, water, fltrd, ug/L (61636)	Chlor-pyrifos water, fltrd, ug/L (38933)	cis-Per-methrin water fltrd 0.7u GF ug/L (82687)	cis-Propi-cona-zole, water, fltrd, ug/L (79846)	Cyana-zine, water, fltrd, ug/L (04041)	Cyclo-ate, water, fltrd, ug/L (04031)	lambda-Cyhalo-thrin, water, fltrd, ug/L (61595)
OCT													
15...	<0.010	<0.01	<0.005	<0.002	<0.041	<0.020	<0.06	<0.005	<0.006	<0.008	<0.018	<0.005	<0.009
NOV													
12...	<.010	<.01	<.005	<.004	<.041	<.020	<.06	<.005	<.006	<.008	<.018	<.005	<.009
FEB													
17...	<.010	<.01	<.005	<.005	<.041	<.020	<.06	<.005	<.006	<.008	<.018	<.005	<.009
MAR													
16...	<.010	<.01	<.005	<.004	<.041	<.020	<.06	<.005	<.006	<.008	<.018	<.005	<.009
APR													
14...	<.010	<.01	<.005	<.004	<.041	<.020	<.06	<.005	<.006	<.008	<.018	<.005	<.009
30...	<.010	<.01	<.005	<.004	E.012	<.020	<.06	<.005	<.006	.012	<.018	<.005	<.009
30...	<.010	<.01	<.005	<.004	<.041	<.020	<.06	<.005	<.006	<.008	<.018	<.005	<.009
MAY													
06...	<.010	<.01	<.005	<.004	<.041	<.020	<.06	<.005	<.006	<.008	<.018	<.005	<.009
JUN													
15...	<.010	<.01	<.005	<.004	<.041	<.020	<.06	<.005	<.006	<.008	<.018	<.005	<.009
15...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
14...	<.010	<.01	<.005	<.004	E.049	<.020	<.06	<.005	<.006	<.008	<.018	<.005	<.009
27...	<.010	<.01	<.005	<.010	E.013	<.050	<.06	<.005	<.006	<.008	<.018	<.005	<.009
AUG													
10...	<.010	<.01	<.005	E.004	E.011	<.020	<.06	<.005	<.006	<.008	<.018	<.005	<.009
SEP													
14...	<.010	<.01	<.005	<.004	<.041	<.020	<.06	<.005	<.006	<.008	<.018	<.005	<.009

03437600 SOUTH FORK LITTLE RIVER AT KY 107 NEAR HOPKINSVILLE, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Cyper-methrin water, fltrd, ug/L (61586)	DCPA, water fltrd 0.7u GF ug/L (82682)	Diazi-non, water, fltrd, ug/L (39572)	Dicro-tophos, water fltrd, ug/L (38454)	Diel-drin, water, fltrd, ug/L (39381)	Dimeth-oate, water, fltrd 0.7u GF ug/L (82662)	Disulf-oton sulfone water, fltrd, ug/L (61640)	Disulf-oton sulf-oxide, water, fltrd, ug/L (61641)	Disul-foton, water, fltrd 0.7u GF ug/L (82677)	(E)-Di-metho-morph, water, fltrd, ug/L (79844)	Endo-sulfan ether, water, fltrd, ug/L (61642)	EPTC, water, fltrd 0.7u GF ug/L (82668)	Ethal-flur-alin, water, fltrd 0.7u GF ug/L (82663)
OCT													
15...	<0.009	<0.003	0.007	<0.08	<0.005	<0.006	<0.02	<0.002	<0.02	<0.02	<0.004	<0.002	<0.009
NOV													
12...	<.009	<.003	<.005	<.08	E.005	<.006	<.02	<.002	<.02	<.02	<.004	<.004	<.009
FEB													
17...	<.009	<.003	<.005	<.08	<.009	<.006	E.01	E.009	E.01	<.02	<.004	E.003	<.009
MAR													
16...	<.009	<.003	<.005	<.08	<.010	<.006	E.01	<.002	<.02	<.02	<.004	<.004	<.009
APR													
14...	<.009	<.003	.006	<.08	<.009	<.006	.02	E.019	<.02	<.02	<.004	<.004	<.009
30...	<.009	.003	<.005	<.08	E.006	<.006	E.01	<.002	<.02	<.02	<.004	<.010	<.009
30...	<.009	<.003	<.005	<.08	<.009	<.006	<.02	<.002	<.02	<.02	<.004	<.004	<.009
MAY													
06...	<.009	<.003	<.005	<.08	<.009	<.006	<.02	<.002	<.02	<.02	<.004	<.004	<.009
JUN													
15...	<.009	<.003	<.005	<.08	<.009	<.006	<.02	<.002	<.02	<.02	<.004	<.004	<.009
15...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
14...	<.009	<.003	.086	<.08	E.007	<.006	<.01	<.036	<.02	<.02	<.007	.026	<.009
27...	<.009	<.003	.022	<.08	.021	<.006	<.01	<.036	<.02	<.02	<.007	<.004	<.009
AUG													
10...	<.009	<.003	<.005	<.08	.009	<.006	<.01	<.036	<.02	<.02	<.007	E.003	<.009
SEP													
14...	<.009	<.003	<.005	<.08	<.010	<.006	<.01	<.036	<.02	<.02	<.007	<.004	<.009

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Ethion monoxon water, fltrd, ug/L (61644)	Ethion, water, fltrd, ug/L (82346)	Etho-prop, water, fltrd 0.7u GF ug/L (82672)	Fenami-phos sulfone water, fltrd, ug/L (61645)	Fenami-phos sulf-oxide, water, fltrd, ug/L (61646)	Fenami-phos, water, fltrd, ug/L (61591)	Fen-thion sulf-oxide, water, fltrd, ug/L (61647)	Flume-tralin, water, fltrd, ug/L (61592)	Fonofos oxon, water, fltrd, ug/L (61649)	Fonofos water, fltrd, ug/L (04095)	Hexa-zinone, water, fltrd, ug/L (04025)	Ipro-dione, water, fltrd, ug/L (61593)	Isofen-phos, water, fltrd, ug/L (61594)
OCT													
15...	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.004	<0.002	<0.003	<0.013	<1	<0.003
NOV													
12...	<.03	<.004	<.005	<.008	<.03	<.03	<.008	<.004	<.002	<.003	<.013	<1	<.003
FEB													
17...	<.03	<.004	<.005	<.008	<.03	<.03	<.008	<.004	<.002	<.003	<.013	<1	<.003
MAR													
16...	<.03	<.004	<.005	<.008	<.03	<.03	<.008	<.004	<.002	<.003	<.013	<1	<.003
APR													
14...	<.03	<.004	<.005	<.008	<.03	<.03	<.008	<.004	<.002	<.003	<.013	<1	<.003
30...	<.03	<.004	<.005	<.008	<.03	<.03	<.008	<.004	<.002	<.003	<.013	<1	<.003
30...	<.03	<.004	<.005	<.008	<.03	<.03	<.008	<.004	<.002	<.003	<.013	<1	<.003
MAY													
06...	<.03	<.004	<.005	<.008	<.03	<.03	<.008	<.004	<.002	<.003	<.013	<1	<.003
JUN													
15...	<.03	<.004	<.005	<.008	<.03	<.03	<.008	<.004	<.002	<.003	<.013	<1	<.003
15...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
14...	<.0020	<.004	<.005	<.049	<.04	<.03	<.008	<.004	<.003	<.003	<.013	<0.387	<.003
27...	<.0020	<.004	<.005	<.049	<.04	<.03	<.008	<.004	<.003	<.003	<.013	<.387	<.003
AUG													
10...	<.0020	<.004	<.005	<.049	<.04	<.03	<.008	<.004	<.003	<.003	<.013	<.387	<.003
SEP													
14...	<.0020	<.004	<.005	<.049	<.04	<.03	<.008	<.004	<.003	<.003	<.013	<.387	<.003

03437600 SOUTH FORK LITTLE RIVER AT KY 107 NEAR HOPKINSVILLE, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Lindane water, fltrd, ug/L (39341)	Linuron water fltrd 0.7u GF ug/L (82666)	Mala-oxon, water, fltrd, ug/L (61652)	Mala-thion, water, fltrd, ug/L (39532)	Meta-laxyl, water, fltrd, ug/L (61596)	Methi-althion water, fltrd, ug/L (61598)	c-Per-methric acid methyl ester, wat flt ug/L (79842)	Methyl para-oxon, water, fltrd, ug/L (61664)	Methyl para-thion, water, fltrd 0.7u GF ug/L (82667)	t-Per-methric acid methyl ester, wat flt ug/L (79843)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Moli-nate, water, fltrd 0.7u GF ug/L (82671)
OCT													
15...	<0.004	<0.035	<0.008	<0.027	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	0.025	<0.006	<0.002
NOV													
12...	<.004	<.035	<.008	<.027	<.005	<.006	<.04	<.03	<.015	<.03	.024	<.006	<.003
FEB													
17...	<.004	<.035	<.008	<.027	<.005	<.006	<.04	<.03	<.015	<.03	E.010	<.006	<.003
MAR													
16...	<.004	<.035	<.008	<.027	<.005	<.006	<.04	<.03	<.015	<.03	E.011	<.006	<.003
APR													
14...	<.004	<.035	<.008	.038	<.005	<.006	<.04	<.03	<.015	<.03	.098	<.006	<.003
30...	<.004	<.035	<.008	<.027	<.005	<.006	<.04	<.03	<.015	<.03	.047	<.006	<.003
30...	<.004	<.035	<.008	<.027	<.005	<.006	<.04	<.03	<.015	<.03	<.013	<.006	<.003
MAY													
06...	<.004	<.035	<.008	<.027	<.005	<.006	<.04	<.03	<.015	<.03	.032	<.006	<.003
JUN													
15...	<.004	<.035	<.008	<.027	.022	<.006	<.04	<.03	<.015	<.03	.016	<.006	<.003
15...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
14...	<.004	<.035	<.030	<.027	.016	<.006	<.02	<.03	<.015	<.01	.015	<.006	<.003
27...	<.004	<.035	<.030	<.027	<.005	<.006	<.02	<.03	<.015	<.01	.045	<.006	<.003
AUG													
10...	<.004	<.035	<.030	<.027	.011	<.006	<.02	<.03	<.015	<.01	.013	.006	<.003
SEP													
14...	<.004	<.035	<.030	E.010	<.005	<.006	<.02	<.03	<.015	<.01	E.012	<.006	<.003

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Myclo-butanil water, fltrd, ug/L (61599)	Naprop-amide, water, fltrd 0.7u GF ug/L (82684)	O-Et-O-Me-S-Pr -phos-phoro-thioate wat flt ug/L (61660)	Oxy-fluor-fen, water, fltrd, ug/L (61600)	p,p'-DDE, water, fltrd, ug/L (34653)	Para-oxon, water, fltrd, ug/L (61663)	Para-thion, water, fltrd, ug/L (39542)	Peb-ulate, water, fltrd 0.7u GF ug/L (82669)	Pendi-meth-alin, water, fltrd 0.7u GF ug/L (82683)	Phorate oxon, water, fltrd, ug/L (61666)	Phorate water fltrd 0.7u GF ug/L (82664)	Phosmet oxon, water, fltrd, ug/L (61668)	Phosmet water, fltrd, ug/L (61601)
OCT													
15...	<0.008	<0.007	<0.008	<0.007	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011	<0.06	<0.008
NOV													
12...	<.008	<.007	<.008	<.007	<.003	<.008	<.010	<.004	<.022	<.10	<.011	<.06	<.008
FEB													
17...	<.008	<.007	<.008	<.007	<.003	<.008	<.010	<.004	<.022	<.10	<.011	--	--
MAR													
16...	<.008	<.007	<.008	<.007	<.003	<.008	<.010	<.004	<.022	<.10	<.011	--	--
APR													
14...	<.008	.022	<.008	<.007	<.003	<.008	<.010	<.004	<.022	<.10	<.011	<.06	<.008
30...	<.008	<.007	<.008	<.007	<.003	<.008	<.010	<.004	E.010	<.10	<.011	<.06	<.008
30...	<.008	<.007	<.008	<.007	<.003	<.008	<.010	<.004	<.022	<.10	<.011	<.06	<.008
MAY													
06...	<.008	<.007	<.008	<.007	<.003	<.008	<.010	<.004	<.022	<.10	<.011	<.06	<.008
JUN													
15...	<.008	<.007	<.008	<.007	<.003	<.008	<.010	<.004	<.022	<.10	<.011	<.06	<.008
15...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
14...	<.008	<.007	<.005	<.007	<.003	<.016	<.010	<.004	<.022	<.10	<.011	<.05	<.008
27...	<.008	<.007	<.005	<.007	<.003	<.016	<.010	<.004	<.022	<.10	<.011	--	<.008
AUG													
10...	<.008	<.007	<.005	<.007	<.003	<.016	<.010	<.004	<.022	<.10	<.011	--	<.008
SEP													
14...	<.008	<.007	<.005	<.007	<.003	<.016	<.010	<.004	<.022	<.10	<.011	--	--

03437600 SOUTH FORK LITTLE RIVER AT KY 107 NEAR HOPKINSVILLE, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Phostebupirim water, fltrd, ug/L (61602)	Profenofos water, fltrd, ug/L (61603)	Prometon, water, fltrd, ug/L (04037)	Prometryn, water, fltrd, ug/L (04036)	Propyzamide, water, fltrd 0.7u GF ug/L (82676)	Propachlor, water, fltrd, ug/L (04024)	Propanil, water, fltrd 0.7u GF ug/L (82679)	Propargite, water, fltrd 0.7u GF ug/L (82685)	Propetamphos, water, fltrd, ug/L (61604)	Simazine, water, fltrd, ug/L (04035)	Sulfotepp, water, fltrd, ug/L (61605)	Sulprofos, water, fltrd, ug/L (38716)	Tebupirimphos oxon, water, fltrd, ug/L (61669)
OCT													
15...	<0.005	<0.006	E0.01	<0.005	<0.004	<0.010	<0.011	<0.02	<0.004	0.023	<0.003	<0.02	<0.006
NOV													
12...	<.005	<.006	.01	<.005	<.004	<.025	<.011	<.02	<.004	.024	<.003	<.02	<.006
FEB													
17...	<.005	<.006	.01	<.005	<.004	<.025	<.011	<.02	<.004	.082	<.003	<.02	<.006
MAR													
16...	<.005	<.006	.01	<.005	<.004	<.025	<.011	<.02	<.004	.073	<.003	<.02	<.006
APR													
14...	<.005	<.006	.05	<.005	.012	<.025	<.011	<.02	<.004	.771	<.003	<.02	<.006
30...	<.005	<.006	.05	<.005	.008	<.025	<.011	<.02	<.004	.296	<.003	<.02	<.006
30...	<.005	<.006	<.01	<.005	<.004	<.025	<.011	<.02	<.004	<.005	<.003	<.02	<.006
MAY													
06...	<.005	<.006	.02	<.005	<.004	<.025	<.011	<.02	<.004	.139	<.003	<.02	<.006
JUN													
15...	<.005	<.006	.04	<.005	<.004	<.025	<.011	<.03	<.004	.094	<.003	<.02	<.006
15...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
14...	<.005	<.006	.02	<.005	<.004	<.025	<.011	<.02	<.004	.024	<.003	<.02	<.006
27...	<.005	<.006	.03	<.005	<.015	<.025	<.025	<.02	<.004	.168	<.003	<.02	<.006
AUG													
10...	<.005	<.006	.01	<.005	<.004	<.025	<.011	<.02	<.004	.018	<.003	<.02	<.006
SEP													
14...	<.005	<.006	.01	<.005	<.004	<.025	<.011	<.02	<.004	.021	<.003	<.02	<.006

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Tebuthiuron water fltrd 0.7u GF ug/L (82670)	Tefluthrin, water, fltrd, ug/L (61606)	Temephos, water, fltrd, ug/L (61607)	Terbacil, water, fltrd 0.7u GF ug/L (82665)	Terbufos oxon sulfone water, fltrd, ug/L (61674)	Terbufos, water, fltrd 0.7u GF ug/L (82675)	Terbuthylazine, water, fltrd, ug/L (04022)	Thiobencarb water fltrd 0.7u GF ug/L (82681)	trans-Propiconazole, water, fltrd, ug/L (79847)	Triallate, water, fltrd 0.7u GF ug/L (82678)	Tribuphos, water, fltrd, ug/L (61610)	Trifluralin, water, fltrd 0.7u GF ug/L (82661)	(Z)-Dimethomorph, water, fltrd, ug/L (79845)
OCT													
15...	<0.02	<0.008	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	<0.01	<0.002	<0.004	<0.009	<0.05
NOV													
12...	E.01	<.008	<.3	<.034	<.07	<.02	<.01	<.010	<.01	<.002	<.004	<.009	<.05
FEB													
17...	E.01	<.008	<.3	<.034	<.07	<.02	<.01	<.010	<.01	<.002	<.004	<.009	<.05
MAR													
16...	<.02	<.008	<.3	<.034	<.07	<.02	<.01	<.010	<.01	<.002	<.004	<.009	<.05
APR													
14...	<.02	<.008	<.3	<.034	<.07	<.02	E.01	<.010	<.01	<.002	<.004	<.009	<.05
30...	E.02	<.008	<.3	<.034	<.07	<.02	E.01	<.010	.02	<.002	<.004	<.009	<.05
30...	<.02	<.008	<.3	<.034	<.07	<.02	<.01	<.010	<.01	<.002	<.004	<.009	<.05
MAY													
06...	<.02	<.008	<.3	<.034	<.07	<.02	<.01	<.010	<.01	<.002	<.004	<.009	<.05
JUN													
15...	<.02	<.008	<.3	<.034	<.07	<.02	<.01	<.010	<.01	<.002	<.004	<.009	<.05
15...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
14...	E.01	<.008	<.3	<.034	<.07	<.02	<.01	<.010	<.01	<.002	<.004	<.009	<.05
27...	.02	<.008	<.3	<.034	<.07	<.02	<.01	<.010	<.01	<.002	<.004	<.009	<.05
AUG													
10...	.04	<.008	<.3	<.034	<.07	<.02	<.01	<.010	<.01	<.002	<.004	<.009	<.05
SEP													
14...	<.02	<.008	<.3	<.034	<.07	<.02	<.01	<.010	<.01	<.002	<.004	<.009	<.05

03437600 SOUTH FORK LITTLE RIVER AT KY 107 NEAR HOPKINSVILLE, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Di-chlor-vos, water fltrd, ug/L (38775)	Sus-pended sedi-ment concen-tration mg/L (80154)
OCT		
15...	<0.01	2
NOV		
12...	<.01	1
FEB		
17...	<.01	6
MAR		
16...	<.01	2
APR		
14...	<.01	63
30...	<.01	182
30...	<.01	--
MAY		
06...	<.01	17
JUN		
15...	<.01	3
15...	--	--
JUL		
14...	<.01	59
27...	<.01	3
AUG		
10...	<.01	5
SEP		
14...	<.01	4

E--Laboratory estimated value.
M--Presence of material verified but not quantified.
<--Numeric result is less than the value shown.

03437680 LITTLE RIVER AT KY 345 NEAR CADIZ, KY

WATER-QUALITY RECORDS

LOCATION.--Lat 36°47'02", long 87°32'50", Christian County, Hydrologic Unit 05130205.

PERIOD OF RECORD.--March 2003 to current water year.

COOPERATION.--Kentucky Department of Agriculture.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Sample type	Instan-taneous dis-charge, cfs (00061)	Baro-metric pres-sure, mm Hg (00025)	Dis-solved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conduc-tance, wat unf uS/cm 25 degC (00095)	Temper-ature, water, deg C (00010)	Alka-linity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicar-bonate, wat flt incrm. titr., field, mg/L (00453)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)
APR												
14...	1140	Environmental	688	748	12.9	6.1	302	8.1	108	131	00.22	2.03
JUL												
14...	1410	Environmental	187	745	7.9	7.3	388	23.5	144	175	<.04	2.87
14...	1418	Field Blank	--	--	--	--	--	--	--	--	--	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Ortho-phos-phate, water, fltrd, mg/L as P (00671)	Phos-phorus, water, unfltrd mg/L (00665)	1,4-Naphth-oquin-one, water, fltrd, ug/L (61611)	1-Naph-thol, water, fltrd 0.7u GF ug/L (49295)	2-(4-t-Butyl-phenoxy)cyclo-hexanol wat flt ug/L (61637)	2,5-Di-chloro-aniline water, fltrd, ug/L (61614)	2,6-Di-ethyl-aniline water fltrd 0.7u GF ug/L (82660)	2Amino-N-iso-propyl-benz-amide, wat flt ug/L (61617)	CIAT, water, fltrd, ug/L (04040)	2-Ethyl -6-methyl-aniline water, fltrd, ug/L (61620)	3-(Tri-fluoro-methyl) aniline water, fltrd, ug/L (61630)	3,4-Di-chloro-aniline water fltrd, ug/L (61625)	3,5-Di-chloro-aniline water, fltrd, ug/L (61627)
APR													
14...	0.116	0.36	<0.05	<0.09	<0.01	<0.03	<0.006	<0.005	E0.209	<0.004	<0.01	<0.004	<0.005
JUL													
14...	.191	.33	<.04	<.09	<.01	<.01	<.006	<.005	E.194	<.004	<.01	.017	<.004
14...	--	--	--	--	--	--	<.006	--	<.006	--	--	--	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	4,4-Di' chloro-benzo-phen-one, wat flt ug/L (61631)	4Chloro 2methyl phenol, water, fltrd, ug/L (61633)	4Chloro phenyl-methyl sulfone water, fltrd, ug/L (61634)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-Endo-sulfan, water, fltrd, ug/L (34362)	alpha-HCH, water, fltrd, ug/L (34253)	alpha-HCH-d6, sur2002 /9002, wat unf percent recovry (99224)	alpha-HCH-d6, surrog, wat flt 0.7u GF percent recovry (91065)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl oxon, water, fltrd, ug/L (61635)	Azin-phos-methyl, water, fltrd 0.7u GF ug/L (82686)	Ben-flur-alin, water, fltrd 0.7u GF ug/L (82673)
APR													
14...	<0.003	<0.006	<0.03	0.718	<0.005	<0.005	<0.005	80.0	97.3	12.4	<0.02	<0.050	<0.010
JUL													
14...	<.007	<.006	<.01	<.007	<.005	<.005	<.005	80.8	90.5	0.716	<.07	<.050	<.010
14...	--	--	--	<.006	<.005	--	<.005	--	94.8	<.007	--	<.050	<.010

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	beta-Endo-sulfan, water, fltrd, ug/L (34357)	Bifen-thrin, water, fltrd, ug/L (61580)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd 0.7u GF ug/L (82680)	Carbo-furan, water, fltrd 0.7u GF ug/L (82674)	Chlor-pyrifos oxon, water, fltrd, ug/L (61636)	Chlor-pyrifos water, fltrd, ug/L (38933)	cis-Per-methrin water fltrd 0.7u GF ug/L (82687)	cis-Propi-cona-zole, water, fltrd, ug/L (79846)	Cyana-zine, water, fltrd, ug/L (04041)	Cyclo-ate, water, fltrd, ug/L (04031)	lambda-Cyhalo-thrin, water, fltrd, ug/L (61595)	Cyper-methrin water, fltrd, ug/L (61586)
APR													
14...	<0.01	<0.005	<0.004	E0.044	<0.020	<0.06	<0.005	<0.006	<0.008	<0.018	<0.005	<0.009	<0.009
JUL													
14...	<.01	<.005	<.004	E.016	<.020	<.06	<.005	<.006	<.008	<.018	<.005	<.009	<.009
14...	--	--	<.004	<.041	<.020	--	<.005	<.006	--	<.018	--	--	--

03437680 LITTLE RIVER AT KY 345 NEAR CADIZ, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	DCPA, water fltrd 0.7u GF ug/L (82682)	Diazinon, water, fltrd, ug/L (39572)	Dicrotophos, water fltrd, ug/L (38454)	Dieldrin, water, fltrd, ug/L (39381)	Dimethoate, water, fltrd 0.7u GF ug/L (82662)	Disulfoton sulfone water, fltrd, ug/L (61640)	Disulfoton sulfoxide, water, fltrd, ug/L (61641)	Disulfoton, water, fltrd 0.7u GF ug/L (82677)	(E)-Dimethomorph, water, fltrd, ug/L (79844)	Endosulfan ether, water, fltrd, ug/L (61642)	EPTC, water, fltrd 0.7u GF ug/L (82668)	Ethalfluralin, water, fltrd 0.7u GF ug/L (82663)	Ethion monoxon water, fltrd, ug/L (61644)
APR													
14...	<0.003	0.006	<0.08	<0.009	<0.006	E0.01	<0.002	<0.02	<0.02	<0.004	<0.004	<0.009	<0.03
JUL													
14...	<.003	.048	<.08	<.009	<.006	<.01	<.036	<.02	<.02	<.007	<.004	<.009	<.0020
14...	<.003	<.005	--	<.009	--	--	--	<.02	--	--	<.004	<.009	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Ethion, water, fltrd, ug/L (82346)	Ethoprop, water, fltrd 0.7u GF ug/L (82672)	Fenamiphos sulfone water, fltrd, ug/L (61645)	Fenamiphos sulfoxide, water, fltrd, ug/L (61646)	Fenamiphos, water, fltrd, ug/L (61591)	Fenthion sulfoxide, water, fltrd, ug/L (61647)	Flumetralin, water, fltrd, ug/L (61592)	Fonofos oxon, water, fltrd, ug/L (61649)	Fonofos water, fltrd, ug/L (04095)	Hexazinone, water, fltrd, ug/L (04025)	Iprodione, water, fltrd, ug/L (61593)	Isofenphos, water, fltrd, ug/L (61594)	Lindane water, fltrd, ug/L (39341)
APR													
14...	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.004	<0.002	<0.003	<0.013	<1	<0.003	<0.004
JUL													
14...	<.004	<.005	<.049	<.04	<.03	<.008	<.004	<.003	<.003	<.013	<0.387	<.003	<.004
14...	--	<.005	--	--	--	--	--	--	<.003	--	--	--	<.004

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Linuron water fltrd 0.7u GF ug/L (82666)	Malaoxon, water, fltrd, ug/L (61652)	Malathion, water, fltrd, ug/L (39532)	Metalaxyl, water, fltrd, ug/L (61596)	Methidathion water, fltrd, ug/L (61598)	c-Permethric acid methyl ester, wat flt ug/L (79842)	Methyl paraoxon, water, fltrd, ug/L (61664)	Methyl parathion, water, fltrd 0.7u GF ug/L (82667)	t-Permethric acid methyl ester, wat flt ug/L (79843)	Metolachlor, water, fltrd, ug/L (39415)	Metribuzin, water, fltrd, ug/L (82630)	Molinate, water, fltrd 0.7u GF ug/L (82671)	Myclobutanil water, fltrd, ug/L (61599)
APR													
14...	<0.035	<0.008	<0.027	<0.005	<0.006	<0.04	<0.03	<0.015	<0.03	0.030	<0.006	<0.003	<0.008
JUL													
14...	<.035	<.030	<.027	<.005	<.006	<.02	<.03	<.015	<.01	.018	<.006	<.003	<.008
14...	<.035	--	<.027	--	--	--	--	<.015	--	<.013	<.006	<.003	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Napropamide, water, fltrd 0.7u GF ug/L (82684)	O-Et-O-Me-S-Pr-phosphorothioate wat flt ug/L (61660)	Oxyfluorfen, water, fltrd, ug/L (61600)	p,p'-DDE, water, fltrd, ug/L (34653)	Paraoxon, water, fltrd, ug/L (61663)	Parathion, water, fltrd, ug/L (39542)	Pebulate, water, fltrd 0.7u GF ug/L (82669)	Pendimethalin, water, fltrd 0.7u GF ug/L (82683)	Phorate oxon, water, fltrd, ug/L (61666)	Phorate water fltrd 0.7u GF ug/L (82664)	Phosmet oxon, water, fltrd, ug/L (61668)	Phosmet water, fltrd, ug/L (61601)	Phostebupirim water, fltrd, ug/L (61602)
APR													
14...	<0.007	<0.008	<0.007	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011	<0.06	<0.008	<0.005
JUL													
14...	<.007	<.005	<.007	<.003	<.016	<.010	<.004	<.022	<.10	<.011	<.05	<.008	<.005
14...	<.007	--	--	<.003	--	<.010	<.004	<.022	--	<.011	--	--	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Profenofos water, fltrd, ug/L (61603)	Prometon, water, fltrd, ug/L (04037)	Prometryn, water, fltrd, ug/L (04036)	Propyzamide, water, fltrd 0.7u GF ug/L (82676)	Propachlor, water, fltrd, ug/L (04024)	Propanil, water, fltrd 0.7u GF ug/L (82679)	Propargite, water, fltrd 0.7u GF ug/L (82685)	Propetamphos, water, fltrd, ug/L (61604)	Simazine, water, fltrd, ug/L (04035)	Sulfotepp, water, fltrd, ug/L (61605)	Sulprofos, water, fltrd, ug/L (38716)	Tebupirimphos oxon, water, fltrd, ug/L (61669)	Tebuthiuron water fltrd 0.7u GF ug/L (82670)
APR													
14...	<0.006	0.06	<0.005	0.012	<0.025	<0.011	<0.02	<0.004	2.40	<0.003	<0.02	<0.006	<0.02
JUL													
14...	<.006	.01	<.005	<.007	<.025	<.011	<.03	<.004	0.066	<.003	<.02	<.006	E.01
14...	--	<.01	--	<.004	<.025	<.011	<.02	--	<.005	--	--	--	<.02

03437680 LITTLE RIVER AT KY 345 NEAR CADIZ, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Teflu-thrin, water, fltrd, ug/L (61606)	Teme-phos, water, fltrd, ug/L (61607)	Terba-cil, water, fltrd 0.7u GF ug/L (82665)	Ter-bufos oxon sulfone water, fltrd, ug/L (61674)	Terbu-fos, water, fltrd 0.7u GF ug/L (82675)	Ter-buthyl-azine, water, fltrd, ug/L (04022)	Thio-bencarb water fltrd 0.7u GF ug/L (82681)	trans-Propi-cona-zole, water, fltrd, ug/L (79847)	Tri-allate, water, fltrd 0.7u GF ug/L (82678)	Tribu-phos, water, fltrd, ug/L (61610)	Tri-flur-alin, water, fltrd 0.7u GF ug/L (82661)	(Z)-Di-metho-morph, water, fltrd, ug/L (79845)	Di-chlor-vos, water fltrd, ug/L (38775)
APR													
14...	<0.008	<0.3	<0.034	<0.07	<0.02	<0.01	<0.010	<0.01	<0.002	<0.004	<0.009	<0.05	<0.01
JUL													
14...	<.008	<.3	<.034	<.07	<.02	<.01	<.010	<.01	<.002	<.004	<.009	<.05	<.01
14...	--	--	<.034	--	<.02	--	<.010	--	<.002	--	<.009	--	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Sus-pended sedi-ment concen-tration mg/L (80154)
APR	
14...	173
JUL	
14...	67
14...	--

E--Laboratory estimated value.
M--Presence of material verified but not quantified.
<--Numeric result is less than the value shown.

03437990 CASEY CREEK AT KY 525 NEAR CADIZ, KY

WATER-QUALITY RECORDS

LOCATION.--Lat 36°45'21", long 87°43'31", Trigg County, Hydrologic Unit 05130205.

DRAINAGE AREA.--306 mi^2.

PERIOD OF RECORD.--March 2003 to current water year.

COOPERATION.--Kentucky Department of Agriculture.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Sample type	Instan- taneous dis- charge, cfs (00061)	Baro- metric pres- sure, mm Hg (00025)	Dis- solved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conduc- tance, wat unf uS/cm 25 degC (00095)	Temper- ature, water, deg C (00010)	Alka- linity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicar- bonate, wat flt incrm. titr., field, mg/L (00453)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)
APR												
14...	1130	Environmental	84	769	11.8	7.3	209	11.8	85	104	<0.04	0.36
JUL												
14...	1500	Environmental	13	762	11.3	7.6	313	19.4	140	171	<.04	2.34

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Ortho- phos- phate, water, fltrd, mg/L as P (00671)	Phos- phorus, water, unfltrd mg/L (00665)	1,4- Naphth- oquin- one, water, fltrd, ug/L (61611)	1-Naph- thol, water, fltrd 0.7u GF ug/L (49295)	2-(4-t- Butyl- phenoxy)cyclo- hexanol wat flt ug/L (61637)	2,5-Di- chloro- aniline water, fltrd, ug/L (61614)	2,6-Di- ethyl- aniline water fltrd 0.7u GF ug/L (82660)	2Amino- N-iso- propyl- benz- amide, wat flt ug/L (61617)	CIAT, water, fltrd, ug/L (04040)	2-Ethyl -6- methyl- aniline water, fltrd, ug/L (61620)	3-(Tri- fluoro- methyl) aniline water, fltrd, ug/L (61630)	3,4-Di- chloro- aniline water fltrd, ug/L (61625)	3,5-Di- chloro- aniline water, fltrd, ug/L (61627)
APR													
14...	<0.006	0.051	<0.05	<0.09	<0.01	<0.03	<0.006	<0.005	E0.406	<0.004	<0.01	<0.004	<0.005
JUL													
14...	.021	.035	<.04	<.09	<.01	<.01	<.006	<.005	E.169	<.004	<.01	<.004	<.004

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	4,4-Di' chloro- benzo- phen- one, wat flt ug/L (61631)	4Chloro 2methyl phenol, water, fltrd, ug/L (61633)	4Chloro phenyl- methyl sulfone water, fltrd, ug/L (61634)	Aceto- chlor, water, fltrd, ug/L (49260)	Ala- chlor, water, fltrd, ug/L (46342)	alpha- Endo- sulfan, water, fltrd, ug/L (34362)	alpha- HCH, water, fltrd, ug/L (34253)	alpha- HCH-d6, sur2002 /9002, wat unf percent recovry (99224)	alpha- HCH-d6, surrog, wat flt 0.7u GF percent recovry (91065)	Atra- zine, water, fltrd, ug/L (39632)	Azin- phos- methyl oxon, water, fltrd, ug/L (61635)	Azin- phos- methyl, water, fltrd 0.7u GF ug/L (82686)	Ben- flur- alin, water, fltrd 0.7u GF ug/L (82673)
APR													
14...	<0.003	<0.006	<0.03	0.016	<0.005	<0.005	<0.005	80.8	93.4	8.19	<0.02	<0.050	<0.010
JUL													
14...	<.007	<.006	<.01	<.006	<.005	<.005	<.005	82.6	97.9	0.126	<.07	<.050	<.010

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	beta- Endo- sulfan, water, fltrd, ug/L (34357)	Bifen- thrin, water, fltrd, ug/L (61580)	Butyl- ate, water, fltrd, ug/L (04028)	Car- baryl, water, fltrd 0.7u GF ug/L (82680)	Carbo- furan, water, fltrd 0.7u GF ug/L (82674)	Chlor- pyrifos oxon, water, fltrd, ug/L (61636)	Chlor- pyrifos water, fltrd, ug/L (38933)	cis- Per- methrin water fltrd 0.7u GF ug/L (82687)	cis- Propi- cona- zole, water, fltrd, ug/L (79846)	Cyana- zine, water, fltrd, ug/L (04041)	Cyclo- ate, water, fltrd, ug/L (04031)	lambda- Cyhalo- thrin, water, fltrd, ug/L (61595)	Cyper- methrin water, fltrd, ug/L (61586)
APR													
14...	<0.01	<0.005	<0.004	<0.041	<0.020	<0.06	<0.005	<0.006	<0.008	<0.018	<0.005	<0.009	<0.009
JUL													
14...	<.01	<.005	<.004	<.041	<.020	<.06	<.005	<.006	<.008	<.018	<.005	<.009	<.009

03437990 CASEY CREEK AT KY 525 NEAR CADIZ, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	DCPA, water fltrd 0.7u GF ug/L (82682)	Diazinon, water, fltrd, ug/L (39572)	Dicrotophos, water fltrd, ug/L (38454)	Dieldrin, water, fltrd, ug/L (39381)	Dimethoate, water, fltrd 0.7u GF ug/L (82662)	Disulfoton sulfone water, fltrd, ug/L (61640)	Disulfoton sulfoxide, water, fltrd, ug/L (61641)	Disulfoton, water, fltrd 0.7u GF ug/L (82677)	(E)-Dimethomorph, water, fltrd, ug/L (79844)	Endosulfan ether, water, fltrd, ug/L (61642)	EPTC, water, fltrd 0.7u GF ug/L (82668)	Ethalfluralin, water, fltrd 0.7u GF ug/L (82663)	Ethion monoxon water, fltrd, ug/L (61644)
APR													
14...	<0.003	E0.004	<0.08	<0.009	<0.006	<0.02	<0.002	<0.02	<0.02	<0.004	<0.004	<0.009	<0.03
JUL													
14...	<.003	<.005	<.08	<.009	<.006	<.01	<.036	<.02	<.02	<.007	<.004	<.009	<.0020

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Ethion, water, fltrd, ug/L (82346)	Ethoprop, water, fltrd 0.7u GF ug/L (82672)	Fenamiphos sulfone water, fltrd, ug/L (61645)	Fenamiphos sulfoxide, water, fltrd, ug/L (61646)	Fenamiphos, water, fltrd, ug/L (61591)	Fenthion sulfoxide, water, fltrd, ug/L (61647)	Flumetralin, water, fltrd, ug/L (61592)	Fonofos oxon, water, fltrd, ug/L (61649)	Fonofos water, fltrd, ug/L (04095)	Hexazinone, water, fltrd, ug/L (04025)	Iprodione, water, fltrd, ug/L (61593)	Isofenphos, water, fltrd, ug/L (61594)	Lindane water, fltrd, ug/L (39341)
APR													
14...	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.004	<0.002	<0.003	<0.013	<1	<0.003	<0.004
JUL													
14...	<.004	<.005	<.049	<.04	<.03	<.008	<.004	<.003	<.003	<.013	<0.387	<.003	<.004

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Linuron water fltrd 0.7u GF ug/L (82666)	Malaoxon, water, fltrd, ug/L (61652)	Malathion, water, fltrd, ug/L (39532)	Metalaxyl, water, fltrd, ug/L (61596)	Methialthion water, fltrd, ug/L (61598)	c-Permethric acid methyl ester, wat flt ug/L (79842)	Methyl paraoxon, water, fltrd, ug/L (61664)	Methyl parathion, water, fltrd 0.7u GF ug/L (82667)	t-Permethric acid methyl ester, wat flt ug/L (79843)	Metolachlor, water, fltrd, ug/L (39415)	Metribuzin, water, fltrd, ug/L (82630)	Molinate, water, fltrd 0.7u GF ug/L (82671)	Myclobutanil water, fltrd, ug/L (61599)
APR													
14...	<0.035	<0.008	<0.027	<0.005	<0.006	<0.04	<0.03	<0.015	<0.03	E0.011	<0.006	<0.003	<0.008
JUL													
14...	<.035	<.030	<.027	.006	<.006	<.02	<.03	<.015	<.01	<.013	<.006	<.003	<.008

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Napropamide, water, fltrd 0.7u GF ug/L (82684)	O-Et-O-Me-S-Pr-phosphorothioate wat flt ug/L (61660)	Oxyfluorfen, water, fltrd, ug/L (61600)	p,p'-DDE, water, fltrd, ug/L (34653)	Paraoxon, water, fltrd, ug/L (61663)	Parathion, water, fltrd, ug/L (39542)	Pebulate, water, fltrd 0.7u GF ug/L (82669)	Pendimethalin, water, fltrd 0.7u GF ug/L (82683)	Phorate oxon, water, fltrd, ug/L (61666)	Phorate water fltrd 0.7u GF ug/L (82664)	Phosmet oxon, water, fltrd, ug/L (61668)	Phosmet water, fltrd, ug/L (61601)	Phostebupirim water, fltrd, ug/L (61602)
APR													
14...	<0.007	<0.008	<0.007	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011	<0.06	<0.008	<0.005
JUL													
14...	<.007	<.005	<.007	<.003	<.016	<.010	<.004	<.022	<.10	<.011	<.05	<.008	<.005

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Profenofos water, fltrd, ug/L (61603)	Prometon, water, fltrd, ug/L (04037)	Prometryn, water, fltrd, ug/L (04036)	Propyzamide, water, fltrd 0.7u GF ug/L (82676)	Propachlor, water, fltrd, ug/L (04024)	Propanil, water, fltrd 0.7u GF ug/L (82679)	Propargite, water, fltrd 0.7u GF ug/L (82685)	Propetamphos, water, fltrd, ug/L (61604)	Simazine, water, fltrd, ug/L (04035)	Sulfotepp, water, fltrd, ug/L (61605)	Sulprofos, water, fltrd, ug/L (38716)	Tebupirimphos oxon, water, fltrd, ug/L (61669)	Tebuthiuron water fltrd 0.7u GF ug/L (82670)
APR													
14...	<0.006	<0.01	<0.005	<0.004	<0.025	<0.011	<0.02	<0.004	0.845	<0.003	<0.02	<0.006	<0.02
JUL													
14...	<.006	<.01	<.005	<.004	<.025	<.011	<.02	<.004	.024	<.003	<.02	<.006	<.02

03437990 CASEY CREEK AT KY 525 NEAR CADIZ, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Teflu-thrin, water, fltrd, ug/L (61606)	Teme-phos, water, fltrd, ug/L (61607)	Terba-cil, water, fltrd 0.7u GF ug/L (82665)	Ter-bufos oxon sulfone water, fltrd, ug/L (61674)	Terbu-fos, water, fltrd 0.7u GF ug/L (82675)	Ter-buthyl-azine, water, fltrd, ug/L (04022)	Thio-bencarb water fltrd 0.7u GF ug/L (82681)	trans-Propi-cona-zole, water, fltrd, ug/L (79847)	Tri-allate, water, fltrd 0.7u GF ug/L (82678)	Tribu-phos, water, fltrd, ug/L (61610)	Tri-flur-alin, water, fltrd 0.7u GF ug/L (82661)	(Z)-Di-metho-morph, water, fltrd, ug/L (79845)	Di-chlor-vos, water fltrd, ug/L (38775)
APR													
14...	<0.008	<0.3	<0.034	<0.07	<0.02	<0.01	<0.010	<0.01	<0.002	<0.004	<0.009	<0.05	<0.01
JUL													
14...	<.008	<.3	<.034	<.07	<.02	<.01	<.010	<.01	<.002	<.004	<.009	<.05	<.01

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Sus-pended sedi-ment concen-tration mg/L (80154)
APR	
14...	53
JUL	
14...	2

E--Laboratory estimated value.
M--Presence of material verified but not quantified.
<--Numeric result is less than the value shown.

03438000 LITTLE RIVER NEAR CADIZ, KY—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--March 2003 to current water year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Sample type	Instan-taneous dis-charge, cfs (00061)	Baro-metric pres-sure, mm Hg (00025)	Dis-solved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conduc-tance, wat unf uS/cm 25 degC (00095)	Temper-ature, water, deg C (00010)	Alka-linity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicar-bonate, wat flt incrm. titr., field, mg/L (00453)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)
OCT												
16...	1420	Environmental	E76	763	9.4	7.7	475	18.4	196	239	<0.04	3.50
NOV												
13...	1250	Environmental	E47	777	9.7	7.8	504	13.5	--	243	<.04	2.54
13...	1258	Field Blank	--	--	--	--	--	--	--	--	--	--
FEB												
18...	1400	Environmental	296	771	14.2	8.0	385	9.1	166	202	<.04	4.48
MAR												
17...	1300	Environmental	195	768	13.5	8.5	431	12.2	174	203	<.04	3.67
17...	1310	Replicate	--	--	--	--	--	--	173	208	<.04	3.66
APR												
14...	1330	Environmental	E986	768	10.9	7.7	439	11.1	165	201	.04	3.83
28...	1150	Environmental	704	769	9.8	7.3	370	14.6	139	170	<.04	4.23
MAY												
05...	1440	Environmental	773	765	10.6	7.5	328	15.8	134	163	<.04	4.16
05...	1448	Field Blank	--	--	--	--	--	--	--	--	<.010	E0.009
JUN												
16...	1400	Environmental	E441	766	9.0	7.7	403	20.9	161	196	<.04	4.71
JUL												
14...	1240	Environmental	E165	765	8.3	7.7	372	23.5	152	185	<.04	3.45
28...	1050	Environmental	76	770	8.3	7.8	431	20.4	175	214	<.04	3.81
AUG												
11...	1250	Environmental	E160	766	8.4	7.8	416	20.2	178	218	<.04	3.81
SEP												
16...	1230	Environmental	65	763	7.2	7.4	390	20.3	154	188	<.04	3.29

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	3,5-Di-chloro-aniline water, fltrd, ug/L (61627)	4,4-Di' chloro-benzo-phen-one, wat flt ug/L (61631)	4Chloro 2methyl phenol, water, fltrd, ug/L (61633)	4Chloro phenyl-methyl sulfone water, fltrd, ug/L (61634)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-Endo-sulfan, water, fltrd, ug/L (34362)	alpha-HCH, water, fltrd, ug/L (34253)	alpha-HCH-d6, sur2002 /9002, wat unf percent recovry (99224)	alpha-HCH-d6, surrog, wat flt 0.7u GF percent recovry (91065)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl oxon, water, fltrd, ug/L (61635)	Azin-phos-methyl, water, fltrd 0.7u GF ug/L (82686)
OCT													
16...	<0.005	<0.003	<0.006	<0.03	<0.006	E0.003	<0.005	<0.005	85.3	103	0.249	<0.02	<0.200
NOV													
13...	<.005	<.003	<.006	<.03	<.006	<.005	<.005	<.005	90.4	88.7	.210	<.02	<.050
13...	<.005	<.003	<.006	<.03	<.006	<.005	<.005	<.005	94.6	94.6	<.007	<.02	<.050
FEB													
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
17...	<.005	<.003	<.006	<.03	.011	<.005	<.005	<.005	93.7	90.3	.465	<.02	<.050
17...	<.005	<.003	<.006	<.03	.011	<.005	<.005	<.005	90.5	86.9	.503	<.02	<.050
APR													
14...	<.005	<.003	<.006	<.03	.026	<.005	<.005	<.005	84.0	97.8	7.25	<.02	<.050
28...	<.005	<.003	<.006	<.03	.117	<.005	<.005	<.005	84.1	92.9	3.39	<.02	<.050
MAY													
05...	<.005	<.003	<.006	<.03	.054	<.005	<.005	<.005	85.6	99.4	2.87	<.02	<.050
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
16...	<.005	<.003	--	<.01	.022	<.005	<.005	<.005	88.1	110	.602	<.02	<.050
JUL													
14...	<.004	<.007	<.006	<.01	.008	<.005	<.005	<.005	83.5	92.3	1.06	<.07	<.050
28...	<.004	<.007	<.006	<.01	.011	<.005	<.005	<.005	80.6	91.0	.817	<.07	<.050
AUG													
11...	<.004	<.007	<.006	<.01	E.005	<.005	<.005	<.005	79.3	88.8	.164	<.07	<.050
SEP													
16...	<.004	<.007	<.006	<.01	<.006	<.005	<.005	<.005	85.7	98.3	.174	<.07	<.050

03438000 LITTLE RIVER NEAR CADIZ, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Ben-flur-alin, water, fltrd 0.7u GF ug/L (82673)	beta-Endo-sulfan, water, fltrd, ug/L (34357)	Bifen-thrin, water, fltrd, ug/L (61580)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd 0.7u GF ug/L (82680)	Carbo-furan, water, fltrd 0.7u GF ug/L (82674)	Chlor-pyrifos oxon, water, fltrd, ug/L (61636)	Chlor-pyrifos water, fltrd, ug/L (38933)	cis-Per-methrin water fltrd 0.7u GF ug/L (82687)	cis-Propi-cona-zole, water, fltrd, ug/L (79846)	Cyana-zine, water, fltrd, ug/L (04041)	Cyclo-ate, water, fltrd, ug/L (04031)	lambda-Cyhalo-thrin, water, fltrd, ug/L (61595)
OCT													
16...	<0.010	<0.01	<0.005	<0.002	<0.041	<0.020	<0.06	<0.005	<0.006	<0.008	<0.018	<0.005	<0.009
NOV													
13...	<.010	<.01	<.005	<.004	E.013	<.020	<.06	<.005	<.006	<.008	<.018	<.005	<.009
13...	<.010	<.01	<.005	<.004	<.041	<.020	<.06	<.005	<.006	<.008	<.018	<.005	<.009
FEB													
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
17...	<.010	<.01	<.005	<.004	<.041	<.020	<.06	<.005	<.006	<.008	<.018	<.005	<.009
17...	<.010	<.01	<.005	<.004	<.041	<.020	<.06	<.005	<.006	<.008	<.018	<.005	<.009
APR													
14...	<.010	<.01	<.005	<.007	E.005	<.020	<.06	<.005	<.006	<.008	<.018	<.005	<.009
28...	<.010	<.01	<.005	<.004	E.007	<.020	<.06	<.005	<.006	<.008	<.018	<.005	<.009
MAY													
05...	<.010	<.01	<.005	<.004	<.041	<.020	<.06	<.005	<.006	<.008	<.018	<.005	<.009
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
16...	<.010	<.01	<.005	<.004	<.041	<.020	<.06	<.005	<.006	<.008	<.018	<.005	<.009
JUL													
14...	<.010	<.01	<.005	<.004	<.041	<.020	<.06	<.005	<.006	<.008	<.018	<.005	<.009
28...	<.010	<.01	<.005	<.004	<.041	<.020	<.06	<.005	<.006	<.008	<.018	<.005	<.009
AUG													
11...	<.010	<.01	<.005	<.004	<.041	<.020	<.06	<.005	<.006	<.008	<.018	<.005	<.009
SEP													
16...	<.010	<.01	<.041	<.004	<.041	<.020	<.06	<.005	<.006	<.008	<.018	<.005	<.009

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Cyper-methrin water, fltrd, ug/L (61586)	DCPA, water fltrd 0.7u GF ug/L (82682)	Diazi-non, water, fltrd, ug/L (39572)	Dicro-tophos, water fltrd, ug/L (38454)	Diel-drin, water, fltrd, ug/L (39381)	Dimeth-oate, water, fltrd 0.7u GF ug/L (82662)	Disulf-oton sulfone water, fltrd, ug/L (61640)	Disulf-oton sulf-oxide, water, fltrd, ug/L (61641)	Disul-foton, water, fltrd 0.7u GF ug/L (82677)	(E)-Di-metho-morph, water, fltrd, ug/L (79844)	Endo-sulfan ether, water, fltrd, ug/L (61642)	EPTC, water, fltrd 0.7u GF ug/L (82668)	Ethal-flur-alin, water, fltrd 0.7u GF ug/L (82663)
OCT													
16...	<0.009	<0.003	E0.004	<0.08	<0.005	<0.006	<0.02	<0.002	<0.02	<0.02	<0.004	<0.002	<0.009
NOV													
13...	<.009	<.003	<.005	<.08	<.009	<.006	<.02	<.002	<.02	<.02	<.004	<.004	<.009
13...	<.009	<.003	<.005	<.08	<.009	<.006	<.02	<.002	<.02	<.02	<.004	<.004	<.009
FEB													
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
17...	<.009	<.003	<.005	<.08	<.009	<.006	<.02	<.002	<.02	<.02	<.004	<.004	<.009
17...	<.009	<.003	<.005	<.08	<.009	<.006	<.02	<.002	<.02	<.02	<.004	<.004	<.009
APR													
14...	<.009	<.003	E.004	<.08	<.009	<.006	<.02	<.002	<.02	<.02	<.004	E.002	<.009
28...	<.009	<.003	<.005	<.08	<.009	<.006	E.01	<.002	<.02	<.02	<.004	E.002	<.009
MAY													
05...	<.009	<.003	<.005	<.08	<.009	<.006	E.01	<.002	<.02	<.02	<.004	<.004	<.009
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
16...	<.009	<.003	<.005	<.08	<.009	<.006	<.02	<.002	<.02	<.02	<.004	<.004	<.009
JUL													
14...	<.009	<.003	.010	<.08	E.003	<.006	<.01	<.036	<.02	<.02	<.007	<.004	<.009
28...	<.009	<.003	<.005	<.08	<.009	<.006	<.01	<.036	<.02	<.02	<.007	<.004	<.009
AUG													
11...	<.009	<.003	<.005	<.08	E.004	<.006	<.01	<.036	<.02	<.02	<.007	<.004	<.009
SEP													
16...	<.009	<.003	<.005	<.08	<.009	<.006	<.01	<.036	<.02	<.02	<.007	<.004	<.009

03438000 LITTLE RIVER NEAR CADIZ, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Ethion monoxon water, fltrd, ug/L (61644)	Ethion, water, fltrd, ug/L (82346)	Ethoprop, water, fltrd 0.7u GF ug/L (82672)	Fenamiphos sulfone water, fltrd, ug/L (61645)	Fenamiphos sulfoxide, water, fltrd, ug/L (61646)	Fenamiphos, water, fltrd, ug/L (61591)	Fenthion sulfoxide, water, fltrd, ug/L (61647)	Flumetralin, water, fltrd, ug/L (61592)	Fonofos oxon, water, fltrd, ug/L (61649)	Fonofos water, fltrd, ug/L (04095)	Hexazinone, water, fltrd, ug/L (04025)	Iprodione, water, fltrd, ug/L (61593)	Isofenphos, water, fltrd, ug/L (61594)
OCT													
16...	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.004	<0.002	<0.003	<0.013	<1	<0.003
NOV													
13...	<.03	<.004	<.005	<.008	<.03	<.03	<.008	<.004	<.002	<.003	<.013	<1	<.003
13...	<.03	<.004	<.005	<.008	<.03	<.03	<.008	<.004	<.002	<.003	<.013	<1	<.003
FEB													
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
17...	<.03	<.004	<.005	<.008	<.03	<.03	<.008	<.004	<.002	<.003	<.013	<1	<.003
17...	<.03	<.004	<.005	<.008	<.03	<.03	<.008	<.004	<.002	<.003	<.013	<1	<.003
APR													
14...	<.03	<.004	<.005	<.008	<.03	<.03	<.008	<.004	<.002	<.003	<.013	<1	<.003
28...	<.03	<.004	<.005	<.008	<.03	<.03	<.008	<.004	<.002	<.003	<.013	<1	<.003
MAY													
05...	<.03	<.004	<.005	<.008	<.03	<.03	<.008	<.004	<.002	<.003	<.013	<1	<.003
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
16...	<.03	<.004	<.005	<.008	<.03	<.03	<.008	<.004	<.002	<.003	<.013	<1	<.003
JUL													
14...	<.0020	<.004	<.005	<.049	<.04	<.03	<.008	<.004	<.003	<.003	<.013	<0.387	<.003
28...	<.0020	<.004	<.005	<.049	<.04	<.03	<.008	<.004	<.003	<.003	<.013	<.387	<.003
AUG													
11...	<.0020	<.004	<.005	<.049	<.04	<.03	<.008	<.004	<.003	<.003	<.013	<.387	<.003
SEP													
16...	<.0020	<.004	<.005	<.049	<.04	<.03	<.008	<.004	<.003	<.003	<.013	<.387	<.003

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Lindane water, fltrd, ug/L (39341)	Linuron water fltrd 0.7u GF ug/L (82666)	Malaoxon, water, fltrd, ug/L (61652)	Malathion, water, fltrd, ug/L (39532)	Metalaxyl, water, fltrd, ug/L (61596)	Methialthion water, fltrd, ug/L (61598)	c-Permethric acid methyl ester, wat flt ug/L (79842)	Methyl paraoxon, water, fltrd, ug/L (61664)	Methyl parathion, water, fltrd 0.7u GF ug/L (82667)	t-Permethric acid methyl ester, wat flt ug/L (79843)	Metolachlor, water, fltrd, ug/L (39415)	Metribuzin, water, fltrd, ug/L (82630)	Molinate, water, fltrd 0.7u GF ug/L (82671)
OCT													
16...	<0.004	<0.035	<0.008	<0.027	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	E0.013	<0.006	<0.002
NOV													
13...	<.004	<.035	<.008	<.027	<.005	<.006	<.04	<.03	<.015	<.03	.014	<.006	<.003
13...	<.004	<.035	<.008	<.027	<.005	<.006	<.04	<.03	<.015	<.03	<.013	<.006	<.003
FEB													
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
17...	<.004	<.035	<.008	<.027	<.005	<.006	<.04	<.03	<.015	<.03	E.010	<.006	<.003
17...	<.004	<.035	<.008	<.027	<.005	<.006	<.04	<.03	<.015	<.03	E.010	<.006	<.003
APR													
14...	<.004	<.035	<.008	<.027	<.005	<.006	<.04	<.03	<.015	<.03	.025	<.006	<.003
28...	<.004	<.035	<.008	<.027	<.005	<.006	<.04	<.03	<.015	<.03	.031	<.006	<.003
MAY													
05...	<.004	<.035	<.008	<.027	<.005	<.006	<.04	<.03	<.015	<.03	.052	<.006	<.003
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
16...	<.004	<.035	<.008	<.027	.052	<.006	<.04	<.03	<.015	<.03	.053	.029	<.003
JUL													
14...	<.004	<.035	<.030	<.027	<.005	<.006	<.02	<.03	<.015	<.01	.014	<.006	<.003
28...	<.004	<.035	<.030	<.027	.013	<.006	<.02	<.03	<.015	<.01	.156	<.006	<.003
AUG													
11...	<.004	<.035	<.030	<.027	<.005	<.006	<.02	<.03	<.015	<.01	.018	<.006	<.003
SEP													
16...	<.004	<.035	<.030	<.027	<.005	<.006	<.02	<.03	<.015	<.01	.013	<.006	<.003

03438000 LITTLE RIVER NEAR CADIZ, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Myclo-butanil water, fltrd, ug/L (61599)	Naprop-amide, water, fltrd 0.7u GF ug/L (82684)	O-Et-O-Me-S-Pr -phos-phoro-thioate wat flt ug/L (61660)	Oxy-fluor-fen, water, fltrd, ug/L (61600)	p,p'-DDE, water, fltrd, ug/L (34653)	Para-oxon, water, fltrd, ug/L (61663)	Para-thion, water, fltrd, ug/L (39542)	Peb-ulate, water, fltrd 0.7u GF ug/L (82669)	Pendi-meth-alin, water, fltrd 0.7u GF ug/L (82683)	Phorate oxon, water, fltrd, ug/L (61666)	Phorate water fltrd 0.7u GF ug/L (82664)	Phosmet oxon, water, fltrd, ug/L (61668)	Phosmet water, fltrd, ug/L (61601)
OCT													
16...	<0.008	<0.007	<0.008	<0.007	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011	<0.06	<0.008
NOV													
13...	<.008	<.007	<.008	<.007	<.003	<.008	<.010	<.004	<.022	<.10	<.011	<.06	<.008
13...	<.008	<.007	<.008	<.007	<.003	<.008	<.010	<.004	<.022	<.10	<.011	<.06	<.008
FEB													
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
17...	<.008	<.007	<.008	<.007	<.003	<.008	<.010	<.004	<.022	<.10	<.011	--	--
17...	<.008	<.007	<.008	<.007	<.003	<.008	<.010	<.004	<.022	<.10	<.011	--	--
APR													
14...	<.008	<.007	<.008	<.007	<.003	<.008	<.010	<.004	<.022	<.10	<.011	<.06	<.008
28...	<.008	<.007	<.008	<.007	<.003	<.008	<.010	<.004	<.022	<.10	<.011	<.06	<.008
MAY													
05...	<.008	<.007	<.008	<.007	<.003	<.008	<.010	<.004	<.022	<.10	<.011	<.06	<.008
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
16...	<.008	E.005	<.008	<.007	<.003	<.008	<.010	E.002	<.022	<.10	<.011	<.06	<.008
JUL													
14...	<.008	<.007	<.005	<.007	<.003	<.016	<.010	<.004	<.022	<.10	<.011	<.05	<.008
28...	<.008	<.007	<.005	<.007	<.003	<.016	<.010	<.004	<.022	<.10	<.011	<.05	<.008
AUG													
11...	<.008	<.007	<.005	<.007	<.003	<.016	<.010	<.004	<.022	<.10	<.011	--	<.008
SEP													
16...	<.008	<.007	<.005	<.007	<.003	<.016	<.010	<.004	<.022	<.10	<.011	--	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Phoste-bupirim water, fltrd, ug/L (61602)	Pro-fenofos water, fltrd, ug/L (61603)	Prome-ton, water, fltrd, ug/L (04037)	Prome-tryn, water, fltrd, ug/L (04036)	Propy-zamide, water, fltrd 0.7u GF ug/L (82676)	Propa-chlor, water, fltrd, ug/L (04024)	Pro-panil, water, fltrd 0.7u GF ug/L (82679)	Propar-gite, water, fltrd 0.7u GF ug/L (82685)	Propet-amphos, water, fltrd, ug/L (61604)	Sima-zine, water, fltrd, ug/L (04035)	Sulfo-tepp, water, fltrd, ug/L (61605)	Sulpro-fos, water, fltrd, ug/L (38716)	Tebu-pirim-phos oxon, water, fltrd, ug/L (61669)
OCT													
16...	<0.005	<0.006	E0.01	<0.005	<0.004	<0.010	<0.011	<0.02	<0.004	0.026	<0.003	<0.02	<0.006
NOV													
13...	<.005	<.006	.01	<.005	<.004	<.025	<.011	<.02	<.004	.030	<.003	<.02	<.006
13...	<.005	<.006	<.01	<.005	<.004	<.025	<.011	<.02	<.004	<.005	<.003	<.02	<.006
FEB													
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
17...	<.005	<.006	.01	<.005	<.004	<.025	<.011	<.02	<.004	.074	<.003	<.02	<.006
17...	<.005	<.006	<.01	<.005	<.004	<.025	<.011	<.02	<.004	.076	<.003	<.02	<.006
APR													
14...	<.005	<.006	.01	<.005	.007	<.025	<.011	<.02	<.004	1.75	<.003	<.02	<.006
28...	<.005	<.006	.01	<.005	<.004	<.025	<.011	<.02	<.004	.429	<.003	<.02	<.006
MAY													
05...	<.005	<.006	.02	<.005	<.004	<.025	<.011	<.02	<.004	.494	<.003	<.02	<.006
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
16...	<.005	<.006	.06	<.005	<.004	<.025	<.011	<.02	<.004	.069	<.003	<.02	<.006
JUL													
14...	<.005	<.006	.02	<.005	<.004	<.025	<.011	<.02	<.004	.091	<.003	<.02	<.006
28...	<.005	<.006	<.01	<.005	<.004	<.025	<.011	<.02	<.004	.048	<.003	<.02	--
AUG													
11...	<.005	<.006	.01	<.005	<.004	<.025	<.011	<.02	<.004	.028	<.003	<.02	<.006
SEP													
16...	<.005	<.006	<.01	<.005	<.004	<.025	<.011	<.02	<.004	.029	<.003	<.02	<.006

03438000 LITTLE RIVER NEAR CADIZ, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Tebu-thiuron water fltrd 0.7u GF ug/L (82670)	Teflu-thrin, water, fltrd, ug/L (61606)	Teme-phos, water, fltrd, ug/L (61607)	Terba-cil, water, fltrd 0.7u GF ug/L (82665)	Ter-bufos oxon sulfone water, fltrd, ug/L (61674)	Terbu-fos, water, fltrd 0.7u GF ug/L (82675)	Ter-buthyl-azine, water, fltrd, ug/L (04022)	Thio-bencarb water fltrd 0.7u GF ug/L (82681)	trans-Propi-cona-zole, water, fltrd, ug/L (79847)	Tri-allate, water, fltrd 0.7u GF ug/L (82678)	Tribu-phos, water, fltrd, ug/L (61610)	Tri-flur-alin, water, fltrd 0.7u GF ug/L (82661)	(Z)-Di-metho-morph, water, fltrd, ug/L (79845)
OCT													
16...	<0.02	<0.008	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	<0.01	<0.002	<0.004	<0.009	<0.05
NOV													
13...	<.02	<.008	<.3	<.034	<.07	<.02	<.01	<.010	<.01	<.002	<.004	<.009	<.05
13...	<.02	<.008	<.3	<.034	<.07	<.02	<.01	<.010	<.01	<.002	<.004	<.009	<.05
FEB													
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
17...	<.02	<.008	<.3	<.034	<.07	<.02	<.01	<.010	<.01	<.002	<.004	<.009	<.05
17...	<.02	<.008	<.3	<.034	<.07	<.02	<.01	<.010	<.01	<.002	<.004	<.009	<.05
APR													
14...	M	<.008	<.3	<.034	<.07	<.02	M	<.010	<.01	<.002	<.004	<.009	<.05
28...	<.02	<.008	<.3	<.034	<.07	<.02	E.01	<.010	<.01	<.002	<.004	<.009	<.05
MAY													
05...	<.02	<.008	<.3	<.034	<.07	<.02	<.01	<.010	<.01	<.002	<.004	<.009	<.05
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
16...	<.02	<.008	<.3	<.034	<.07	<.02	<.01	<.010	<.01	<.002	<.004	<.009	<.05
JUL													
14...	E.01	<.008	<.3	<.034	<.07	<.02	<.01	<.010	<.01	<.002	<.004	<.009	<.05
28...	<.02	<.008	<.3	<.034	<.07	<.02	<.01	<.010	<.01	<.002	<.004	<.009	<.05
AUG													
11...	.02	<.008	<.3	<.034	<.07	<.02	<.01	<.010	<.01	<.002	<.004	<.009	<.05
SEP													
16...	<.02	<.008	<.3	<.034	<.07	<.02	<.01	<.010	<.01	<.002	<.004	<.009	<.05

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Di-chlor-vos, water fltrd, ug/L (38775)	Sus-pended sedi-ment concen-tration mg/L (80154)
OCT		
16...	<0.01	2
NOV		
13...	<.01	2
13...	<.01	--
FEB		
18...	--	3
MAR		
17...	<.01	3
17...	<.01	3
APR		
14...	<.01	152
28...	<.01	30
MAY		
05...	<.01	39
05...	--	--
JUN		
16...	<.01	27
JUL		
14...	<.01	16
28...	<.01	11
AUG		
11...	<.01	27
SEP		
16...	<.01	14

E--Laboratory estimated value.
M--Presence of material verified but not quantified.
<--Numeric result is less than the value shown.

03438024 MUDDY FORK NEAR HOPKINSVILLE, KY

WATER-QUALITY RECORDS

LOCATION.--Lat 36°53'12", long 87°35'02", Christian County, Hydrologic Unit 05130205.

PERIOD OF RECORD.--March 2003 to current water year.

COOPERATION.--Kentucky Department of Agriculture.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Sample type	Instantaneous discharge, cfs (00061)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Alkalinity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicarbonate, wat flt incrm. titr., field, mg/L (00453)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)
APR												
13...	1540	Environmental	24	741	10.7	7.2	442	10.3	154	188	0.05	2.31
13...	1548	Field Blank	--	--	--	--	--	--	--	--	<.04	<0.06
JUL												
13...	1200	Environmental	3.1	750	5.8	6.9	470	17.6	207	252	<.04	4.97

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	1,4-Naphthoquinone, water, fltrd, ug/L (61611)	1-Naphthol, water, fltrd 0.7u GF ug/L (49295)	2-(4-t-Butylphenoxy)cyclohexanol wat flt ug/L (61637)	2,5-Dichloroaniline water, fltrd, ug/L (61614)	2,6-Diethylaniline water fltrd 0.7u GF ug/L (82660)	2Amino-N-isopropylbenzamide, wat flt ug/L (61617)	CIAT, water, fltrd, ug/L (04040)	2-Ethyl-6-methylaniline water, fltrd, ug/L (61620)	3-(Trifluoromethyl) aniline water, fltrd, ug/L (61630)	3,4-Dichloroaniline water fltrd, ug/L (61625)	3,5-Dichloroaniline water, fltrd, ug/L (61627)
APR													
13...	0.043	0.111	<0.05	<0.09	<0.01	<0.03	<0.006	<0.005	E0.230	<0.004	<0.01	<0.004	<0.005
13...	<.006	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
13...	.027	.050	<.04	<.09	<.01	<.01	<.006	<.005	E.254	<.004	<.01	<.004	<.004

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	4,4-Di' chlorobenzophenone, wat flt ug/L (61631)	4Chloro 2methyl phenol, water, fltrd, ug/L (61633)	4Chloro phenylmethyl sulfone water, fltrd, ug/L (61634)	Acetochlor, water, fltrd, ug/L (49260)	Alachlor, water, fltrd, ug/L (46342)	alpha-Endosulfan, water, fltrd, ug/L (34362)	alpha-HCH, water, fltrd, ug/L (34253)	alpha-HCH-d6, sur2002 /9002, wat unf percent recovry (99224)	alpha-HCH-d6, surrog, wat flt 0.7u GF percent recovry (91065)	Atrazine, water, fltrd, ug/L (39632)	Azinphosmethyl oxon, water, fltrd, ug/L (61635)	Azinphosmethyl, water, fltrd 0.7u GF ug/L (82686)	Benfluralin, water, fltrd 0.7u GF ug/L (82673)
APR													
13...	<0.003	<0.006	<0.03	0.073	0.010	<0.005	<0.005	82.0	94.1	0.806	<0.02	<0.050	<0.010
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
13...	<.007	<.006	<.01	.009	<.005	<.005	<.005	80.3	91.3	.188	<.07	<.050	<.010

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	beta-Endosulfan, water, fltrd, ug/L (34357)	Bifenthrin, water, fltrd, ug/L (61580)	Butylate, water, fltrd, ug/L (04028)	Carbaryl, water, fltrd 0.7u GF ug/L (82680)	Carbofuran, water, fltrd 0.7u GF ug/L (82674)	Chlorpyrifos oxon, water, fltrd, ug/L (61636)	Chlorpyrifos water, fltrd, ug/L (38933)	cis-Permethrin water fltrd 0.7u GF ug/L (82687)	cis-Propiconazole, water, fltrd, ug/L (79846)	Cyanazine, water, fltrd, ug/L (04041)	Cycloate, water, fltrd, ug/L (04031)	lambda-Cyhalothrin, water, fltrd, ug/L (61595)	Cypermethrin water, fltrd, ug/L (61586)
APR													
13...	<0.01	<0.005	<0.004	<0.041	<0.020	<0.06	<0.005	<0.006	<0.008	<0.018	<0.005	<0.009	<0.009
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
13...	<.01	<.005	<.004	<.041	<.020	<.06	<.005	<.006	E.004	<.018	<.005	<.009	<.009

03438024 MUDDY FORK NEAR HOPKINSVILLE, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	DCPA, water fltrd 0.7u GF ug/L (82682)	Diazinon, water, fltrd, ug/L (39572)	Dicrotophos, water fltrd, ug/L (38454)	Dieldrin, water, fltrd, ug/L (39381)	Dimethoate, water, fltrd 0.7u GF ug/L (82662)	Disulfoton sulfone water, fltrd, ug/L (61640)	Disulfoton sulfoxide, water, fltrd, ug/L (61641)	Disulfoton, water, fltrd 0.7u GF ug/L (82677)	(E)-Dimethomorph, water, fltrd, ug/L (79844)	Endosulfan ether, water, fltrd, ug/L (61642)	EPTC, water, fltrd 0.7u GF ug/L (82668)	Ethalfluralin, water, fltrd 0.7u GF ug/L (82663)	Ethion monoxon water, fltrd, ug/L (61644)
APR													
13...	<0.003	<0.005	<0.08	<0.009	<0.006	<0.02	<0.002	<0.02	<0.02	<0.004	<0.004	<0.009	<0.03
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
13...	<.003	.019	<.08	<.009	<.006	<.01	<.036	<.02	<.02	<.007	<.020	<.009	<.0020

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Ethion, water, fltrd, ug/L (82346)	Ethoprop, water, fltrd 0.7u GF ug/L (82672)	Fenamiphos sulfone water, fltrd, ug/L (61645)	Fenamiphos sulfoxide, water, fltrd, ug/L (61646)	Fenamiphos, water, fltrd, ug/L (61591)	Fenthion sulfoxide, water, fltrd, ug/L (61647)	Flumetralin, water, fltrd, ug/L (61592)	Fonofos oxon, water, fltrd, ug/L (61649)	Fonofos water, fltrd, ug/L (04095)	Hexazinone, water, fltrd, ug/L (04025)	Iprodione, water, fltrd, ug/L (61593)	Isofenphos, water, fltrd, ug/L (61594)	Lindane water, fltrd, ug/L (39341)
APR													
13...	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.004	<0.002	<0.003	<0.013	<1	<0.003	0.016
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
13...	<.004	<.005	<.049	<.04	<.03	<.008	<.004	<.003	<.003	<.013	<0.387	<.003	<.004

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Linuron water fltrd 0.7u GF ug/L (82666)	Malaoxon, water, fltrd, ug/L (61652)	Malathion, water, fltrd, ug/L (39532)	Metalaxyl, water, fltrd, ug/L (61596)	Methidathion water, fltrd, ug/L (61598)	c-Permethric acid methyl ester, wat flt ug/L (79842)	Methyl paraoxon, water, fltrd, ug/L (61664)	Methyl parathion, water, fltrd 0.7u GF ug/L (82667)	t-Permethric acid methyl ester, wat flt ug/L (79843)	Metolachlor, water, fltrd, ug/L (39415)	Metribuzin, water, fltrd, ug/L (82630)	Molinate, water, fltrd 0.7u GF ug/L (82671)	Myclobutanil water, fltrd, ug/L (61599)
APR													
13...	<0.035	<0.008	<0.027	<0.005	<0.006	<0.04	<0.03	<0.015	<0.03	0.019	<0.006	<0.003	<0.008
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
13...	<.035	<.030	<.027	<.005	<.006	<.02	<.03	<.015	<.01	E.009	<.006	<.003	<.008

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Napropamide, water, fltrd 0.7u GF ug/L (82684)	O-Et-O-Me-S-Pr-phosphorothioate wat flt ug/L (61660)	Oxyfluorfen, water, fltrd, ug/L (61600)	p,p'-DDE, water, fltrd, ug/L (34653)	Paraoxon, water, fltrd, ug/L (61663)	Parathion, water, fltrd, ug/L (39542)	Pebulate, water, fltrd 0.7u GF ug/L (82669)	Pendimethalin, water, fltrd 0.7u GF ug/L (82683)	Phorate oxon, water, fltrd, ug/L (61666)	Phorate water fltrd 0.7u GF ug/L (82664)	Phosmet oxon, water, fltrd, ug/L (61668)	Phosmet water, fltrd, ug/L (61601)	Phostebupirim water, fltrd, ug/L (61602)
APR													
13...	<0.007	<0.008	<0.007	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011	<0.06	<0.008	<0.005
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
13...	<.007	<.005	<.007	<.003	<.016	<.010	<.004	<.022	<.10	<.011	<.05	<.008	<.005

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Profenofos water, fltrd, ug/L (61603)	Prometon, water, fltrd, ug/L (04037)	Prometryn, water, fltrd, ug/L (04036)	Propyzamide, water, fltrd 0.7u GF ug/L (82676)	Propachlor, water, fltrd, ug/L (04024)	Propanil, water, fltrd 0.7u GF ug/L (82679)	Propargite, water, fltrd 0.7u GF ug/L (82685)	Propetamphos, water, fltrd, ug/L (61604)	Simazine, water, fltrd, ug/L (04035)	Sulfotepp, water, fltrd, ug/L (61605)	Sulprofos, water, fltrd, ug/L (38716)	Tebupirimphos oxon, water, fltrd, ug/L (61669)	Tebuthiuron water fltrd 0.7u GF ug/L (82670)
APR													
13...	<0.006	0.03	<0.005	<0.004	<0.025	<0.011	<0.02	<0.004	0.676	<0.003	<0.02	<0.006	<0.02
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
13...	<.006	.01	<.005	<.004	<.025	<.011	<.02	<.004	.051	<.003	<.02	<.006	<.02

03438024 MUDDY FORK NEAR HOPKINSVILLE, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Teflu- thrin, water, fltrd, ug/L (61606)	Teme- phos, water, fltrd, ug/L (61607)	Terba- cil, water, fltrd 0.7u GF ug/L (82665)	Ter- bufos oxon sulfone water, fltrd, ug/L (61674)	Terbu- fos, water, fltrd 0.7u GF ug/L (82675)	Ter- buthyl- azine, water, fltrd, ug/L (04022)	Thio- bencarb water fltrd 0.7u GF ug/L (82681)	trans- Propi- cona- zole, water, fltrd, ug/L (79847)	Tri- allate, water, fltrd 0.7u GF ug/L (82678)	Tribu- phos, water, fltrd, ug/L (61610)	Tri- flur- alin, water, fltrd 0.7u GF ug/L (82661)	(Z)-Di- metho- morph, water, fltrd, ug/L (79845)	Di- chlor- vos, water fltrd, ug/L (38775)
APR													
13...	<0.008	<0.3	<0.034	<0.07	<0.02	<0.01	<0.010	<0.01	<0.002	<0.004	<0.009	<0.05	<0.01
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
13...	<.008	<.3	<.034	<.07	<.02	<.01	<.010	E.01	<.002	<.004	<.009	<.05	<.01

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Sus- pended sedi- ment concen- tration mg/L (80154)
APR	
13...	42
13...	--
JUL	
13...	50

E--Laboratory estimated value.
M--Presence of material verified but not quantified.
<--Numeric result is less than the value shown.

03438028 SINKING FORK NEAR HOPKINSVILLE, KY

WATER-QUALITY RECORDS

LOCATION.--Lat 36°52'01", long 87°36'28", Christian County, Hydrologic Unit 05130205.

PERIOD OF RECORD.--March 2003 to current water year.

COOPERATION.--Kentucky Department of Agriculture.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Sample type	Instantaneous discharge, cfs (00061)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Alkalinity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicarbonate, wat flt incrm. titr., field, mg/L (00453)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)
APR												
13...	1720	Environmental	593	740	12.4	7.2	207	7.0	71	86	<0.04	1.30
JUL												
13...	1320	Environmental	6.5	750	5.9	7.2	338	22.7	141	172	<.04	2.79

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	1,4-Naphthoquinone, water, fltrd, ug/L (61611)	1-Naphthol, water, fltrd 0.7u GF ug/L (49295)	2-(4-t-Butylphenoxy)cyclohexanol wat flt ug/L (61637)	2,5-Dichloroaniline water, fltrd, ug/L (61614)	2,6-Diethylaniline water fltrd 0.7u GF ug/L (82660)	2Amino-N-isopropylbenzamide, wat flt ug/L (61617)	CIAT, water, fltrd, ug/L (04040)	2-Ethyl-6-methylaniline water, fltrd, ug/L (61620)	3-(Trifluoromethyl)aniline water, fltrd, ug/L (61630)	3,4-Dichloroaniline water fltrd, ug/L (61625)	3,5-Dichloroaniline water, fltrd, ug/L (61627)
APR													
13...	0.029	0.27	<0.05	<0.09	<0.01	<0.03	<0.006	<0.005	E0.456	<0.004	<0.01	<0.004	<0.005
JUL													
13...	.044	.119	<.04	E.01	<.01	<.01	<.006	<.005	E.170	<.004	<.01	<.004	<.004

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	4,4-Di' chlorobenzophenone, wat flt ug/L (61631)	4Chloro 2methyl phenol, water, fltrd, ug/L (61633)	4Chloro phenylmethyl sulfone water, fltrd, ug/L (61634)	Acetochlor, water, fltrd, ug/L (49260)	Alachlor, water, fltrd, ug/L (46342)	alpha-Endosulfan, water, fltrd, ug/L (34362)	alpha-HCH, water, fltrd, ug/L (34253)	alpha-HCH-d6, sur2002 /9002, wat unf percent recovry (99224)	alpha-HCH-d6, surrog, wat flt 0.7u GF percent recovry (91065)	Atrazine, water, fltrd, ug/L (39632)	Azinphos-methyl oxon, water, fltrd, ug/L (61635)	Azinphos-methyl, water, fltrd 0.7u GF ug/L (82686)	Benfluralin, water, fltrd 0.7u GF ug/L (82673)
APR													
13...	<0.003	<0.006	<0.03	0.832	<0.005	<0.005	<0.005	85.9	98.1	18.1	<0.02	<0.050	<0.010
JUL													
13...	<.007	<.006	<.01	<.006	<.005	<.005	<.005	84.1	96.4	0.136	<.07	<.050	<.010

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	beta-Endosulfan, water, fltrd, ug/L (34357)	Bifenthrin, water, fltrd, ug/L (61580)	Butylate, water, fltrd, ug/L (04028)	Carbaryl, water, fltrd 0.7u GF ug/L (82680)	Carbofuran, water, fltrd 0.7u GF ug/L (82674)	Chlorpyrifos oxon, water, fltrd, ug/L (61636)	Chlorpyrifos water, fltrd, ug/L (38933)	cis-Permethrin water fltrd 0.7u GF ug/L (82687)	cis-Propiconazole, water, fltrd, ug/L (79846)	Cyanazine, water, fltrd, ug/L (04041)	Cycloate, water, fltrd, ug/L (04031)	lambda-Cyhalothrin, water, fltrd, ug/L (61595)	Cypermethrin water, fltrd, ug/L (61586)
APR													
13...	<0.01	<0.005	<0.004	<0.041	<0.020	<0.06	<0.005	<0.006	<0.008	<0.018	<0.005	<0.009	<0.009
JUL													
13...	<.01	<.005	<.004	E.052	<.020	<.06	<.005	<.006	<.008	<.018	<.005	<.009	<.009

03438028 SINKING FORK NEAR HOPKINSVILLE, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	DCPA, water fltrd 0.7u GF ug/L (82682)	Diazi-non, water, fltrd, ug/L (39572)	Dicro-tophos, water fltrd, ug/L (38454)	Diel-drin, water, fltrd, ug/L (39381)	Dimeth-oate, water, fltrd 0.7u GF ug/L (82662)	Disulf-oton sulfone water, fltrd, ug/L (61640)	Disulf-oton sulf-oxide, water, fltrd, ug/L (61641)	Disul-foton, water, fltrd 0.7u GF ug/L (82677)	(E)-Di-metho-morph, water, fltrd, ug/L (79844)	Endo-sulfan ether, water, fltrd, ug/L (61642)	EPTC, water, fltrd 0.7u GF ug/L (82668)	Ethal-flur-alin, water, fltrd 0.7u GF ug/L (82663)	Ethion monoxon water, fltrd, ug/L (61644)
APR													
13...	<0.003	<0.005	<0.08	<0.009	<0.006	<0.02	<0.002	<0.02	<0.02	<0.004	<0.004	<0.009	<0.03
JUL													
13...	<.003	E.004	<.08	<.009	<.006	<.01	<.036	<.02	<.02	<.007	<.000	<.009	<.0020

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Ethion, water, fltrd, ug/L (82346)	Etho-prop, water, fltrd 0.7u GF ug/L (82672)	Fenami-phos sulfone water, fltrd, ug/L (61645)	Fenami-phos sulf-oxide, water, fltrd, ug/L (61646)	Fenami-phos, water, fltrd, ug/L (61591)	Fen-thion sulf-oxide, water, fltrd, ug/L (61647)	Flume-tralin, water, fltrd, ug/L (61592)	Fonofos oxon, water, fltrd, ug/L (61649)	Fonofos water, fltrd, ug/L (04095)	Hexa-zinone, water, fltrd, ug/L (04025)	Ipro-dione, water, fltrd, ug/L (61593)	Isofen-phos, water, fltrd, ug/L (61594)	Lindane water, fltrd, ug/L (39341)
APR													
13...	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.004	<0.002	<0.003	<0.013	<1	<0.003	<0.004
JUL													
13...	<.004	<.005	<.049	<.04	<.03	<.008	<.004	<.003	<.003	<.013	<0.387	<.003	<.004

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Linuron water fltrd 0.7u GF ug/L (82666)	Mala-oxon, water, fltrd, ug/L (61652)	Mala-thion, water, fltrd, ug/L (39532)	Meta-laxyl, water, fltrd, ug/L (61596)	Methi-althion water, fltrd, ug/L (61598)	c-Per-methric acid methyl ester, wat flt ug/L (79842)	Methyl para-oxon, water, fltrd, ug/L (61664)	Methyl para-thion, water, fltrd 0.7u GF ug/L (82667)	t-Per-methric acid methyl ester, wat flt ug/L (79843)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Moli-nate, water, fltrd 0.7u GF ug/L (82671)	Myclo-butanil water, fltrd, ug/L (61599)
APR													
13...	<0.035	<0.008	<0.027	<0.005	<0.006	<0.04	<0.03	<0.015	<0.03	0.031	<0.010	<0.003	<0.008
JUL													
13...	<.035	<.030	<.027	.025	<.006	<.02	<.03	<.015	<.01	E.008	<.006	<.003	<.008

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Naprop-amide, water, fltrd 0.7u GF ug/L (82684)	O-Et-O-Me-S-Pr -phos-phoro-thioate wat flt ug/L (61660)	Oxy-fluor-fen, water, fltrd, ug/L (61600)	p,p'-DDE, water, fltrd, ug/L (34653)	Para-oxon, water, fltrd, ug/L (61663)	Para-thion, water, fltrd, ug/L (39542)	Peb-ulate, water, fltrd 0.7u GF ug/L (82669)	Pendi-meth-alin, water, fltrd 0.7u GF ug/L (82683)	Phorate oxon, water, fltrd, ug/L (61666)	Phorate water fltrd 0.7u GF ug/L (82664)	Phosmet oxon, water, fltrd, ug/L (61668)	Phosmet water, fltrd, ug/L (61601)	Phoste-bupirim water, fltrd, ug/L (61602)
APR													
13...	<0.007	<0.008	<0.007	<0.003	<0.008	<0.010	<0.004	0.121	<0.10	<0.011	<0.06	<0.008	<0.005
JUL													
13...	<.007	<.005	<.007	<.003	<.016	<.010	<.004	<.022	<.10	<.011	<.05	<.008	<.005

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Pro-fenofos water, fltrd, ug/L (61603)	Prome-ton, water, fltrd, ug/L (04037)	Prome-tryn, water, fltrd, ug/L (04036)	Propy-zamide, water, fltrd 0.7u GF ug/L (82676)	Propa-chlor, water, fltrd, ug/L (04024)	Pro-panil, water, fltrd 0.7u GF ug/L (82679)	Propar-gite, water, fltrd 0.7u GF ug/L (82685)	Propet-amphos, water, fltrd, ug/L (61604)	Sima-zine, water, fltrd, ug/L (04035)	Sulfo-tepp, water, fltrd, ug/L (61605)	Sulpro-fos, water, fltrd, ug/L (38716)	Tebu-pirim-phos oxon, water, fltrd, ug/L (61669)	Tebu-thiuron water fltrd 0.7u GF ug/L (82670)
APR													
13...	<0.006	0.03	<0.005	<0.004	<0.025	<0.011	<0.02	<0.004	2.44	<0.003	<0.02	<0.006	<0.02
JUL													
13...	<.006	.01	<.005	<.004	<.025	<.011	<.02	<.004	0.031	<.003	<.02	<.006	<.02

03438028 SINKING FORK NEAR HOPKINSVILLE, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Teflu- thrin, water, fltrd, ug/L (61606)	Teme- phos, water, fltrd, ug/L (61607)	Terba- cil, water, fltrd 0.7u GF ug/L (82665)	Ter- bufos oxon sulfone water, fltrd, ug/L (61674)	Terbu- fos, water, fltrd 0.7u GF ug/L (82675)	Ter- buthyl- azine, water, fltrd, ug/L (04022)	Thio- bencarb water fltrd 0.7u GF ug/L (82681)	trans- Propi- cona- zole, water, fltrd, ug/L (79847)	Tri- allate, water, fltrd 0.7u GF ug/L (82678)	Tribu- phos, water, fltrd, ug/L (61610)	Tri- flur- alin, water, fltrd 0.7u GF ug/L (82661)	(Z)-Di- metho- morph, water, fltrd, ug/L (79845)	Di- chlor- vos, water fltrd, ug/L (38775)
APR													
13...	.008	.3	.034	.07	.02	<0.01	<0.010	<0.01	<0.002	<0.004	<0.009	<0.05	<0.01
JUL													
13...	<.008	<.3	<.034	<.07	<.02	<.01	<.010	<.01	<.002	<.004	.010	<.05	<.01

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Sus- pended sedi- ment concen- tration mg/L (80154)
APR	
13...	271
JUL	
13...	40

E--Laboratory estimated value.
M--Presence of material verified but not quantified.
<--Numeric result is less than the value shown.

03438040 SINKING CREEK AT KINGS CHAPEL ROAD NEAR CADIZ, KY

WATER-QUALITY RECORDS

LOCATION.--Lat 36°50'26", long 87°44'27", Christian County, Hydrologic Unit 05130205.

DRAINAGE AREA.--107 mi^2.

PERIOD OF RECORD.--March 2003 to current water year.

COOPERATION.--Kentucky Department of Agriculture.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Sample type	Instan- taneous dis- charge, cfs (00061)	Baro- metric pres- sure, mm Hg (00025)	Dis- solved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conduc- tance, wat unf uS/cm 25 degC (00095)	Temper- ature, water, deg C (00010)	Alka- linity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicar- bonate, wat flt incrm. titr., field, mg/L (00453)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)
OCT												
16...	1620	Environmental	7.7	763	8.3	7.6	467	19.0	208	254	<0.04	4.21
NOV												
13...	1440	Environmental	E8.7	777	8.4	7.6	458	13.0	210	256	<.04	3.58
13...	1450	Replicate	--	--	--	--	--	--	207	253	<.04	3.64
FEB												
18...	1600	Environmental	E125	769	12.9	7.8	403	10.3	164	201	<.04	5.62
MAR												
17...	1440	Environmental	90	768	13.2	8.4	411	12.5	174	212	<.04	4.91
APR												
13...	1300	Environmental	E90	761	10.3	7.7	408	12.1	171	209	<.04	4.77
28...	1330	Environmental	125	769	10.1	7.3	360	14.4	149	182	<.04	5.51
MAY												
05...	1210	Environmental	E358	768	9.9	7.3	355	14.5	146	179	<.04	5.16
JUN												
16...	1220	Environmental	E795	767	7.9	7.4	368	19.3	150	183	<.04	4.63
JUL												
13...	1220	Environmental	E175	767	8.0	7.5	383	21.6	136	166	<.04	4.26
28...	1210	Environmental	50	769	--	7.7	423	18.1	176	215	<.04	5.24
AUG												
11...	1130	Environmental	E100	767	8.2	7.5	410	18.5	--	--	<.04	4.23
SEP												
16...	1400	Environmental	E50	764	7.6	7.5	469	19.9	200	244	<.04	3.74

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Ortho- phos- phate, water, fltrd, mg/L as P (00671)	Phos- phorus, water, unfltrd mg/L (00665)	1,4- Naphth- oquin- one, water, fltrd, ug/L (61611)	1-Naph- thol, water, fltrd 0.7u GF ug/L (49295)	2-(4-t- Butyl- phenoxy)cyclo- hexanol wat flt ug/L (61637)	2,5-Di- chloro- aniline water, fltrd, ug/L (61614)	2,6-Di- ethyl- aniline water fltrd 0.7u GF ug/L (82660)	2-[(2- Et-6-Me -Ph)- -amino] propan- 1-ol, ug/L (61615)	2Amino- N-iso- propyl- benz- amide, wat flt ug/L (61617)	CIAT, water, fltrd, ug/L (04040)	2-Ethyl -6- methyl- aniline water, fltrd, ug/L (61620)	3-(Tri- fluoro- methyl) aniline water, fltrd, ug/L (61630)	3,4-Di- chloro- aniline water fltrd, ug/L (61625)
OCT													
16...	0.047	0.066	<0.05	--	<0.01	<0.03	<0.006	<0.1	<0.005	E0.246	<0.004	<0.01	<0.004
NOV													
13...	.040	.062	<.05	<0.09	<.01	<.03	<.006	<.1	<.005	E.110	<.004	<.01	<.004
13...	.040	.066	<.05	<.09	<.01	<.03	<.006	<.1	<.005	E.309	<.004	<.01	<.004
FEB													
18...	.019	.036	--	--	--	--	--	--	--	--	--	--	--
MAR													
17...	.008	.027	<.05	<.09	<.01	<.03	<.006	--	<.005	E.200	<.004	<.01	<.004
APR													
13...	.014	.040	<.05	<.09	<.01	<.03	<.006	--	<.005	E.158	<.004	<.01	<.004
28...	.031	.079	<.05	<.09	<.01	<.03	<.006	--	<.005	E.431	<.004	<.01	<.004
MAY													
05...	.027	.062	<.05	<.09	<.01	<.03	<.006	--	<.005	E.458	<.004	<.01	<.004
JUN													
16...	.054	.58	<.05	<.09	--	<.03	<.006	--	<.005	E.290	<.004	<.01	<.004
JUL													
13...	.060	.108	<.04	<.09	<.01	<.01	<.006	--	<.005	E.211	<.004	<.01	<.004
28...	.035	.057	<.04	--	<.01	<.01	<.006	--	<.005	E.188	<.004	<.01	.010
AUG													
11...	.054	.085	<.04	--	<.01	<.01	<.006	--	<.005	E.199	<.004	<.01	<.004
SEP													
16...	.036	.053	<.04	<.09	<.01	<.01	<.006	--	<.005	E.182	<.004	<.01	<.004

03438040 SINKING CREEK AT KINGS CHAPEL ROAD NEAR CADIZ, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	3,5-Di-chloro-aniline water, fltrd, ug/L (61627)	4,4-Di' chloro-benzo-phen-one, wat flt ug/L (61631)	4Chloro 2methyl phenol, water, fltrd, ug/L (61633)	4Chloro phenyl-methyl sulfone water, fltrd, ug/L (61634)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-Endo-sulfan, water, fltrd, ug/L (34362)	alpha-HCH, water, fltrd, ug/L (34253)	alpha-HCH-d6, sur2002 /9002, wat unf percent recovry (99224)	alpha-HCH-d6, surrog, wat flt 0.7u GF percent recovry (91065)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl oxon, water, fltrd, ug/L (61635)	Azin-phos-methyl, water, fltrd 0.7u GF ug/L (82686)
OCT													
16...	<0.005	<0.003	<0.006	<0.03	<0.006	<0.004	<0.005	<0.005	90.5	98.2	0.089	<0.02	<0.050
NOV													
13...	<.005	<.003	<.006	<.03	E.005	<.005	<.005	<.005	85.8	91.2	.092	<.02	<.050
13...	<.005	<.003	<.006	<.03	<.007	<.005	<.005	<.005	92.9	103	.093	<.02	<.050
FEB													
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
17...	<.005	<.003	<.006	<.03	E.005	<.005	<.005	<.005	85.2	75.7	.885	<.02	<.050
APR													
13...	<.005	<.003	<.006	<.03	.018	<.005	<.005	<.005	80.0	94.2	.424	<.02	<.050
28...	<.005	<.003	<.006	<.03	.177	.006	<.005	<.005	82.4	93.1	3.98	<.02	<.050
MAY													
05...	<.005	<.003	<.006	<.03	.067	<.006	<.005	<.005	86.0	99.1	1.52	<.02	<.050
JUN													
16...	<.005	<.003	--	<.01	<.009	<.005	<.005	<.005	93.3	114	.887	<.02	<.050
JUL													
13...	<.004	<.007	<.006	<.01	.008	<.005	<.005	<.005	71.5	85.2	.218	<.07	<.050
28...	<.004	<.007	<.006	<.01	<.006	<.005	<.005	<.005	88.4	99.1	.516	<.07	<.050
AUG													
11...	<.004	<.007	<.006	<.01	E.006	<.005	<.005	<.005	79.9	88.0	.156	<.07	<.050
SEP													
16...	<.004	<.007	<.006	<.01	<.006	<.005	<.005	<.005	81.5	92.2	.088	<.07	<.050

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Ben-flur-alin, water, fltrd 0.7u GF ug/L (82673)	beta-Endo-sulfan, water, fltrd, ug/L (34357)	Bifen-thrin, water, fltrd, ug/L (61580)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd 0.7u GF ug/L (82680)	Carbo-furan, water, fltrd 0.7u GF ug/L (82674)	Chlor-pyrifos oxon, water, fltrd, ug/L (61636)	Chlor-pyrifos water, fltrd, ug/L (38933)	cis-Per-methrin water fltrd 0.7u GF ug/L (82687)	cis-Propi-cona-zole, water, fltrd, ug/L (79846)	Cyana-zine, water, fltrd, ug/L (04041)	Cyclo-ate, water, fltrd, ug/L (04031)	lambda-Cyhalo-thrin, water, fltrd, ug/L (61595)
OCT													
16...	<0.010	<0.01	<0.005	<0.002	<0.041	<0.020	<0.06	<0.005	<0.006	<0.008	<0.018	<0.005	<0.009
NOV													
13...	<.010	<.01	<.005	<.004	<.041	<.020	<.06	<.005	<.006	<.008	<.018	<.005	<.009
13...	<.010	<.01	<.005	<.004	<.041	<.020	<.06	<.005	<.006	<.008	<.018	<.005	<.009
FEB													
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
17...	<.010	<.01	<.005	<.004	<.041	<.020	<.06	<.005	<.006	<.008	<.018	<.005	<.009
APR													
13...	<.010	<.01	<.005	<.004	<.041	<.020	<.06	<.005	<.006	<.008	<.018	<.005	<.009
28...	<.010	<.01	<.005	<.004	<.041	<.020	<.06	<.005	<.006	<.008	<.018	<.005	<.009
MAY													
05...	<.010	<.01	<.005	<.004	<.041	<.020	<.06	<.005	<.006	E.002	<.018	<.005	<.009
JUN													
16...	<.010	<.01	<.005	<.004	<.041	<.020	<.06	<.005	<.006	<.008	<.018	<.005	<.009
JUL													
13...	<.010	<.01	<.005	<.004	<.041	<.020	<.06	<.005	<.006	<.008	<.018	<.005	<.009
28...	<.010	<.01	<.005	<.004	E.030	<.020	<.06	<.005	<.006	<.008	<.018	<.005	<.009
AUG													
11...	<.010	<.01	<.005	<.004	<.041	<.020	<.06	<.005	<.006	<.008	<.018	<.005	<.009
SEP													
16...	<.010	<.01	<.005	<.004	<.041	<.020	<.06	<.005	<.006	<.008	<.018	<.005	<.009

03438040 SINKING CREEK AT KINGS CHAPEL ROAD NEAR CADIZ, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Cypermethrin water, fltrd, ug/L (61586)	DCPA, water fltrd 0.7u GF ug/L (82682)	Diazinon, water, fltrd, ug/L (39572)	Dicrotophos, water fltrd, ug/L (38454)	Dieldrin, water, fltrd, ug/L (39381)	Dimethoate, water, fltrd 0.7u GF ug/L (82662)	Disulfoton sulfone water, fltrd, ug/L (61640)	Disulfoton sulfoxide, water, fltrd, ug/L (61641)	Disulfoton, water, fltrd 0.7u GF ug/L (82677)	(E)-Dimethomorph, water, fltrd, ug/L (79844)	Endosulfan ether, water, fltrd, ug/L (61642)	EPTC, water, fltrd 0.7u GF ug/L (82668)	Ethalfluralin, water, fltrd 0.7u GF ug/L (82663)
OCT													
16...	<0.009	<0.003	<0.005	<0.08	<0.005	<0.006	<0.02	<0.002	<0.02	<0.02	<0.004	<0.002	<0.009
NOV													
13...	<.009	<.003	<.005	<.08	<.009	<.006	<.02	<.002	<.02	<.02	<.004	<.004	<.009
13...	<.009	<.003	<.005	<.08	<.009	<.006	<.02	<.002	<.02	<.02	<.004	<.004	<.009
FEB													
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
17...	<.009	<.003	<.005	<.08	<.009	<.006	<.02	<.002	<.02	<.02	<.004	<.004	<.009
APR													
13...	<.009	<.003	<.005	<.08	<.009	<.006	<.02	<.002	<.02	<.02	<.004	<.004	<.009
28...	<.009	<.003	<.005	<.08	<.009	<.006	E.01	<.002	<.02	<.02	<.004	<.004	<.009
MAY													
05...	<.009	<.003	<.005	<.08	<.009	<.006	E.01	<.002	<.02	<.02	<.004	<.004	<.009
JUN													
16...	<.009	<.003	<.005	<.08	<.009	<.006	<.02	<.002	<.02	<.02	<.004	<.004	<.009
JUL													
13...	<.009	<.003	<.005	<.08	<.009	<.006	<.01	<.036	<.02	<.02	<.007	<.004	<.009
28...	<.009	<.003	.056	<.08	E.007	<.006	<.01	<.036	<.02	<.02	<.007	<.004	<.009
AUG													
11...	<.009	<.003	<.005	<.08	<.009	<.006	<.01	<.036	<.02	<.02	<.007	<.004	<.009
SEP													
16...	<.009	<.003	<.005	<.08	<.009	<.006	<.01	<.036	<.02	<.02	<.007	<.004	<.009

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Ethion monoxon water, fltrd, ug/L (61644)	Ethion, water, fltrd, ug/L (82346)	Ethoprop, water, fltrd 0.7u GF ug/L (82672)	Fenamiphos sulfone water, fltrd, ug/L (61645)	Fenamiphos sulfoxide, water, fltrd, ug/L (61646)	Fenamiphos, water, fltrd, ug/L (61591)	Fenthion sulfoxide, water, fltrd, ug/L (61647)	Flumetralin, water, fltrd, ug/L (61592)	Fonofos oxon, water, fltrd, ug/L (61649)	Fonofos water, fltrd, ug/L (04095)	Hexazinone, water, fltrd, ug/L (04025)	Iprodione, water, fltrd, ug/L (61593)	Isofenphos, water, fltrd, ug/L (61594)
OCT													
16...	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.004	<0.002	<0.003	<0.013	<1	<0.003
NOV													
13...	<.03	<.004	<.005	<.008	<.03	<.03	<.008	<.004	<.002	<.003	<.013	<1	<.003
13...	<.03	<.004	<.005	<.008	<.03	<.03	<.008	<.004	<.002	<.003	<.013	<1	<.003
FEB													
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
17...	<.03	<.004	<.005	<.008	<.03	<.03	<.008	<.004	<.002	<.003	<.013	<1	<.003
APR													
13...	<.03	<.004	<.005	<.008	<.03	<.03	<.008	<.004	<.002	<.003	<.013	<1	<.003
28...	<.03	<.004	<.005	<.008	<.03	<.03	<.008	<.004	<.002	<.003	<.013	<1	<.003
MAY													
05...	<.03	<.004	<.005	<.008	<.03	<.03	<.008	<.004	<.002	<.003	<.013	<1	<.003
JUN													
16...	<.03	<.004	<.005	<.008	<.03	<.03	<.008	<.004	<.002	<.003	<.013	<1	<.003
JUL													
13...	<.0020	<.004	<.005	<.049	<.04	<.03	<.008	<.004	<.003	<.003	<.013	<0.387	<.003
28...	<.0020	<.004	<.005	<.049	<.04	<.03	<.008	<.004	<.003	<.003	<.013	<.387	<.003
AUG													
11...	<.0020	<.004	<.005	<.049	<.04	<.03	<.008	<.004	<.003	<.003	<.013	<.387	<.003
SEP													
16...	<.0020	<.004	<.005	<.049	<.04	<.03	<.008	<.004	<.003	<.003	<.013	<.387	<.003

03438040 SINKING CREEK AT KINGS CHAPEL ROAD NEAR CADIZ, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Lindane water, fltrd, ug/L (39341)	Linuron water fltrd 0.7u GF ug/L (82666)	Mala-oxon, water, fltrd, ug/L (61652)	Mala-thion, water, fltrd, ug/L (39532)	Meta-laxyl, water, fltrd, ug/L (61596)	Methi-althion water, fltrd, ug/L (61598)	c-Per-methric acid methyl ester, wat flt ug/L (79842)	Methyl para-oxon, water, fltrd, ug/L (61664)	Methyl para-thion, water, fltrd 0.7u GF ug/L (82667)	t-Per-methric acid methyl ester, wat flt ug/L (79843)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Moli-nate, water, fltrd 0.7u GF ug/L (82671)
OCT													
16...	<0.004	<0.035	<0.008	<0.027	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	0.074	<0.006	<0.002
NOV													
13...	<.004	<.035	<.008	<.027	<.005	<.006	<.04	<.03	<.015	<.03	.062	<.006	<.003
13...	<.004	<.035	<.008	<.027	<.005	<.006	<.04	<.03	<.015	<.03	.068	<.006	<.003
FEB													
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
17...	<.004	<.035	<.008	<.027	<.005	<.006	<.04	<.03	<.015	<.03	.018	<.006	<.003
APR													
13...	<.004	<.035	<.008	<.027	<.005	<.006	<.04	<.03	<.015	<.03	.032	<.006	<.003
28...	<.004	<.035	<.008	<.027	<.005	<.006	<.04	<.03	<.015	<.03	.062	<.006	<.003
MAY													
05...	<.004	<.035	<.008	<.027	<.005	<.006	<.04	<.03	<.015	<.03	.057	<.006	<.003
JUN													
16...	<.004	<.035	<.008	<.027	.010	<.006	<.04	<.03	<.015	<.03	.019	<.006	<.003
JUL													
13...	<.004	<.035	<.030	<.027	.009	<.006	<.02	<.03	<.015	<.01	.255	<.006	<.003
28...	<.004	<.035	<.030	<.027	<.005	<.006	<.02	<.03	<.015	<.01	.019	<.006	<.003
AUG													
11...	<.004	<.035	<.030	<.027	.010	<.006	<.02	<.03	<.015	<.01	.097	<.006	<.003
SEP													
16...	<.004	<.035	<.030	<.027	.025	<.006	<.02	<.03	<.015	<.01	.094	<.006	<.003

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Myclo-butanil water, fltrd, ug/L (61599)	Naprop-amide, water, fltrd 0.7u GF ug/L (82684)	O-Et-O-Me-S-Pr -phos-phoro-thioate wat flt ug/L (61660)	Oxy-fluor-fen, water, fltrd, ug/L (61600)	p,p-' DDE, water, fltrd, ug/L (34653)	Para-oxon, water, fltrd, ug/L (61663)	Para-thion, water, fltrd, ug/L (39542)	Peb-ulate, water, fltrd 0.7u GF ug/L (82669)	Pendi-meth-alin, water, fltrd 0.7u GF ug/L (82683)	Phorate oxon, water, fltrd, ug/L (61666)	Phorate water fltrd 0.7u GF ug/L (82664)	Phosmet oxon, water, fltrd, ug/L (61668)	Phosmet water, fltrd, ug/L (61601)
OCT													
16...	<0.008	<0.007	<0.008	<0.007	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011	<0.06	<0.008
NOV													
13...	<.008	<.007	<.008	<.007	<.003	<.008	<.010	<.004	<.022	<.10	<.011	<.06	<.008
13...	<.008	<.007	<.008	<.007	<.003	<.008	<.010	<.004	<.022	<.10	<.011	<.06	<.008
FEB													
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
17...	<.008	<.007	<.008	<.007	<.003	<.008	<.010	<.004	<.022	<.10	<.011	--	--
APR													
13...	<.008	<.007	<.008	<.007	<.003	<.008	<.010	<.004	<.022	<.10	<.011	<.06	<.008
28...	<.008	<.007	<.008	<.007	<.003	<.008	<.010	<.004	E.008	<.10	<.011	<.06	<.008
MAY													
05...	<.008	<.007	<.008	<.007	<.003	<.008	<.010	<.004	E.008	<.10	<.011	<.06	<.008
JUN													
16...	<.008	<.007	<.008	<.007	<.003	<.008	<.010	<.004	<.022	<.10	<.011	<.06	<.008
JUL													
13...	<.008	<.007	<.005	<.007	<.003	<.016	<.010	<.004	<.022	<.10	<.011	<.05	<.008
28...	<.008	<.007	<.005	<.007	<.003	<.016	<.010	<.004	<.022	<.10	<.011	--	<.008
AUG													
11...	<.008	<.007	<.005	<.007	<.003	<.016	<.010	<.004	<.022	<.10	<.011	--	<.008
SEP													
16...	<.008	<.007	<.005	<.007	<.003	<.016	<.010	<.004	<.022	<.10	<.011	--	--

03438040 SINKING CREEK AT KINGS CHAPEL ROAD NEAR CADIZ, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Phostebupirim water, fltrd, ug/L (61602)	Profenofos water, fltrd, ug/L (61603)	Prometon, water, fltrd, ug/L (04037)	Prometryn, water, fltrd, ug/L (04036)	Propyzamide, water, fltrd 0.7u GF ug/L (82676)	Propachlor, water, fltrd, ug/L (04024)	Propanil, water, fltrd 0.7u GF ug/L (82679)	Propargite, water, fltrd 0.7u GF ug/L (82685)	Propetamphos, water, fltrd, ug/L (61604)	Simazine, water, fltrd, ug/L (04035)	Sulfotepp, water, fltrd, ug/L (61605)	Sulprofos, water, fltrd, ug/L (38716)	Tebupirimphos oxon, water, fltrd, ug/L (61669)
OCT													
16...	<0.005	<0.006	<0.01	<0.005	<0.004	<0.010	<0.011	<0.02	<0.004	0.034	<0.003	<0.02	<0.006
NOV													
13...	<.005	<.006	.01	<.005	<.004	<.025	<.011	<.02	<.004	.041	<.003	<.02	<.006
13...	<.005	<.006	.01	<.005	<.004	<.025	<.011	<.02	<.004	.046	<.003	<.02	<.006
FEB													
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
17...	<.005	<.006	<.01	<.005	<.004	<.025	<.011	<.02	<.004	.323	<.003	<.02	<.006
APR													
13...	<.005	<.006	.01	<.005	<.004	<.025	<.011	<.02	<.004	.104	<.003	<.02	<.006
28...	<.005	<.006	.01	<.005	<.004	<.025	<.011	<.02	<.004	1.26	<.003	<.02	<.006
MAY													
05...	<.005	<.006	.01	<.005	<.004	<.025	<.011	<.02	<.004	.477	<.003	<.02	<.006
JUN													
16...	<.005	<.006	M	<.005	<.004	<.025	<.011	<.02	<.004	.085	<.003	<.02	<.006
JUL													
13...	<.005	<.006	.01	<.005	<.004	<.025	<.011	<.02	<.004	.047	<.003	<.02	<.006
28...	<.005	<.006	.02	<.005	<.010	<.025	<.011	<.02	<.004	.057	<.003	<.02	<.006
AUG													
11...	<.005	<.006	<.01	<.005	<.004	<.025	<.011	<.02	<.004	.035	<.003	<.02	<.006
SEP													
16...	<.005	<.006	<.01	<.005	<.004	<.025	<.011	<.02	<.004	.028	<.003	<.02	<.006

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Tebuthiuron water fltrd 0.7u GF ug/L (82670)	Tefluthrin, water, fltrd, ug/L (61606)	Temephos, water, fltrd, ug/L (61607)	Terbacil, water, fltrd 0.7u GF ug/L (82665)	Terbufos oxon sulfone water, fltrd, ug/L (61674)	Terbufos, water, fltrd 0.7u GF ug/L (82675)	Terbuthylazine, water, fltrd, ug/L (04022)	Thiobencarb water fltrd 0.7u GF ug/L (82681)	trans-Propiconazole, water, fltrd, ug/L (79847)	Triallate, water, fltrd 0.7u GF ug/L (82678)	Tribuphos, water, fltrd, ug/L (61610)	Trifluralin, water, fltrd 0.7u GF ug/L (82661)	(Z)-Dimethomorph, water, fltrd, ug/L (79845)
OCT													
16...	<0.02	<0.008	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	<0.01	<0.002	<0.004	<0.009	<0.05
NOV													
13...	<.02	<.008	<.3	<.034	<.07	<.02	<.01	<.010	<.01	<.002	<.004	<.009	<.05
13...	<.02	<.008	<.3	<.034	<.07	<.02	<.01	<.010	<.01	<.002	<.004	<.009	<.05
FEB													
18...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
17...	<.02	<.008	<.3	<.034	<.07	<.02	<.01	<.010	<.01	<.002	<.004	<.009	<.05
APR													
13...	<.02	<.008	<.3	<.034	<.07	<.02	<.01	<.010	<.01	<.002	<.004	<.009	<.05
28...	<.02	<.008	<.3	<.034	<.07	<.02	E.01	<.010	<.01	<.002	<.004	<.009	<.05
MAY													
05...	<.02	<.008	<.3	<.034	<.07	<.02	E.01	<.010	M	<.002	<.004	<.009	<.05
JUN													
16...	<.02	<.008	<.3	<.034	<.07	<.02	<.01	<.010	<.01	<.002	<.004	<.009	<.05
JUL													
13...	<.02	<.008	<.3	<.034	<.07	<.02	<.01	<.010	<.01	<.002	<.004	<.009	<.05
28...	E.01	<.008	<.3	<.034	<.07	<.02	<.01	<.010	<.01	<.002	<.004	<.009	<.05
AUG													
11...	<.02	<.008	<.3	<.034	<.07	<.02	<.01	<.010	<.01	<.002	<.004	<.009	<.05
SEP													
16...	<.02	<.008	<.3	<.034	<.07	<.02	<.01	<.010	<.01	<.002	<.004	<.009	<.05

03438040 SINKING CREEK AT KINGS CHAPEL ROAD NEAR CADIZ, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Di-chlor-vos, water fltrd, ug/L (38775)	Sus-pended sedi-ment concen-tration mg/L (80154)
OCT		
16...	<0.01	2
NOV		
13...	<.01	1
13...	<.01	1
FEB		
18...	--	7
MAR		
17...	<.01	5
APR		
13...	<.01	11
28...	<.01	50
MAY		
05...	<.01	29
JUN		
16...	<.01	673
JUL		
13...	<.01	18
28...	<.01	10
AUG		
11...	<.01	14
SEP		
16...	<.01	2

E--Laboratory estimated value.
M--Presence of material verified but not quantified.
<--Numeric result is less than the value shown.

03438080 LITTLE RIVER AT CRUTE ROAD BRIDGE NEAR CADIZ, KY

WATER-QUALITY RECORDS

LOCATION.--Lat 36°50'35", long 87°47'07", Trigg County, Hydrologic Unit 05130205.

DRAINAGE AREA.--400 mi^2.

PERIOD OF RECORD.--March 2003 to current water year.

COOPERATION.--Kentucky Department of Agriculture.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

Date	Time	Sample type	Instan-taneous dis-charge, cfs (00061)	Baro-metric pres-sure, mm Hg (00025)	Dis-solved oxygen, mg/L (00300)	pH, water, unfltrd field, std units (00400)	Specif. conduc-tance, wat unf uS/cm 25 degC (00095)	Temper-ature, water, deg C (00010)	Alka-linity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicar-bonate, wat flt incrm. titr., field, mg/L (00453)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)
APR												
13...	1150	Environmental	E99	761	9.8	7.6	408	11.3	164	200	0.06	3.26
JUL												
13...	1050	Environmental	E125	767	8.6	7.3	350	19.9	154	188	E.02	3.73

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Ortho-phos-phate, water, fltrd, mg/L as P (00671)	Phos-phorus, water, unfltrd mg/L (00665)	1,4-Naphth-oquin-one, water, fltrd, ug/L (61611)	1-Naph-thol, water, fltrd 0.7u GF ug/L (49295)	2-(4-t-Butyl-phenoxy)cyclo-hexanol wat flt ug/L (61637)	2,5-Di-chloro-aniline water, fltrd, ug/L (61614)	2,6-Di-ethyl-aniline water fltrd 0.7u GF ug/L (82660)	2Amino-N-iso-propyl-benz-amide, wat flt ug/L (61617)	CIAT, water, fltrd, ug/L (04040)	2-Ethyl -6-methyl-aniline water, fltrd, ug/L (61620)	3-(Tri-fluoro-methyl) aniline water, fltrd, ug/L (61630)	3,4-Di-chloro-aniline water fltrd, ug/L (61625)	3,5-Di-chloro-aniline water, fltrd, ug/L (61627)
APR													
13...	0.047	0.083	<0.05	<0.09	<0.01	<0.03	<0.006	<0.005	E0.205	<0.004	<0.01	<0.004	<0.005
JUL													
13...	.106	.165	<.04	<.09	<.01	<.01	<.006	<.005	E.231	<.004	<.01	.005	<.004

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	4,4-Di' chloro-benzo-phen-one, wat flt ug/L (61631)	4Chloro 2methyl phenol, water, fltrd, ug/L (61633)	4Chloro phenyl-methyl sulfone water, fltrd, ug/L (61634)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-Endo-sulfan, water, fltrd, ug/L (34362)	alpha-HCH, water, fltrd, ug/L (34253)	alpha-HCH-d6, sur2002 /9002, wat unf percent recovry (99224)	alpha-HCH-d6, surrog, wat flt 0.7u GF percent recovry (91065)	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl oxon, water, fltrd, ug/L (61635)	Azin-phos-methyl, water, fltrd 0.7u GF ug/L (82686)	Ben-flur-alin, water, fltrd 0.7u GF ug/L (82673)
APR													
13...	<0.003	<0.006	<0.03	0.019	<0.005	<0.005	<0.005	82.3	98.5	0.485	<0.02	<0.050	<0.010
JUL													
13...	<.007	<.006	<.01	<.006	<.005	<.005	<.005	84.0	91.6	.480	<.07	<.050	<.010

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	beta-Endo-sulfan, water, fltrd, ug/L (34357)	Bifen-thrin, water, fltrd, ug/L (61580)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd 0.7u GF ug/L (82680)	Carbo-furan, water, fltrd 0.7u GF ug/L (82674)	Chlor-pyrifos oxon, water, fltrd, ug/L (61636)	Chlor-pyrifos water, fltrd, ug/L (38933)	cis-Per-methrin water fltrd 0.7u GF ug/L (82687)	cis-Propi-cona-zole, water, fltrd, ug/L (79846)	Cyana-zine, water, fltrd, ug/L (04041)	Cyclo-ate, water, fltrd, ug/L (04031)	lambda-Cyhalo-thrin, water, fltrd, ug/L (61595)	Cyper-methrin water, fltrd, ug/L (61586)
APR													
13...	<0.01	<0.005	<0.004	<0.041	<0.020	<0.06	<0.005	<0.006	<0.008	<0.018	<0.005	<0.009	<0.009
JUL													
13...	<.01	<.005	<.004	<.041	<.020	<.06	<.005	<.006	<.008	<.018	<.005	<.009	<.009

03438080 LITTLE RIVER AT CRUTE ROAD BRIDGE NEAR CADIZ, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	DCPA, water fltrd 0.7u GF ug/L (82682)	Diazi- non, water, fltrd, ug/L (39572)	Dicro- tophos, water fltrd, ug/L (38454)	Diel- drin, water, fltrd, ug/L (39381)	Dimeth- oate, water, fltrd 0.7u GF ug/L (82662)	Disulf- oton sulfone water, fltrd, ug/L (61640)	Disulf- oton sulf- oxide, water, fltrd, ug/L (61641)	Disul- foton, water, fltrd 0.7u GF ug/L (82677)	(E)-Di- metho- morph, water, fltrd, ug/L (79844)	Endo- sulfan ether, water, fltrd, ug/L (61642)	EPTC, water, fltrd 0.7u GF ug/L (82668)	Ethal- flur- alin, water, fltrd 0.7u GF ug/L (82663)	Ethion monoxon water, fltrd, ug/L (61644)
APR													
13...	<0.003	E0.004	<0.08	<0.009	<0.006	<0.02	<0.002	<0.02	<0.02	<0.004	<0.004	<0.009	<0.03
JUL													
13...	<.003	E.004	<.08	<.009	<.006	<.01	<.036	<.02	<.02	<.007	<.004	<.009	<.0020

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Ethion, water, fltrd, ug/L (82346)	Etho- prop, water, fltrd 0.7u GF ug/L (82672)	Fenami- phos sulfone water, fltrd, ug/L (61645)	Fenami- phos sulf- oxide, water, fltrd, ug/L (61646)	Fenami- phos, water, fltrd, ug/L (61591)	Fen- thion sulf- oxide, water, fltrd, ug/L (61647)	Flume- tralin, water, fltrd, ug/L (61592)	Fonofos oxon, water, fltrd, ug/L (61649)	Fonofos water, fltrd, ug/L (04095)	Hexa- zinone, water, fltrd, ug/L (04025)	Ipro- dione, water, fltrd, ug/L (61593)	Isofen- phos, water, fltrd, ug/L (61594)	Lindane water, fltrd, ug/L (39341)
APR													
13...	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.004	<0.002	<0.003	<0.013	<1	<0.003	<0.004
JUL													
13...	<.004	<.005	<.049	<.04	<.03	<.008	<.004	<.003	<.003	<.013	<0.387	<.003	<.004

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Linuron water fltrd 0.7u GF ug/L (82666)	Mala- oxon, water, fltrd, ug/L (61652)	Mala- thion, water, fltrd, ug/L (39532)	Meta- laxyl, water, fltrd, ug/L (61596)	Methi- althion water, fltrd, ug/L (61598)	c-Per- methric acid methyl ester, wat flt ug/L (79842)	Methyl para- oxon, water, fltrd, ug/L (61664)	Methyl para- thion, water, fltrd 0.7u GF ug/L (82667)	t-Per- methric acid methyl ester, wat flt ug/L (79843)	Metola- chlor, water, fltrd, ug/L (39415)	Metri- buzin, water, fltrd, ug/L (82630)	Moli- nate, water, fltrd 0.7u GF ug/L (82671)	Myclo- butanil water, fltrd, ug/L (61599)
APR													
13...	<0.035	<0.008	<0.027	<0.005	<0.006	<0.04	<0.03	<0.015	<0.03	0.015	<0.006	<0.003	<0.008
JUL													
13...	<.035	<.030	<.027	<.005	<.006	<.02	<.03	<.015	<.01	.014	<.006	<.003	<.008

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Naprop- amide, water, fltrd 0.7u GF ug/L (82684)	O-Et-O- Me-S-Pr -phos- phoro- thioate wat flt ug/L (61660)	Oxy- fluor- fen, water, fltrd, ug/L (61600)	p,p'- DDE, water, fltrd, ug/L (34653)	Para- oxon, water, fltrd, ug/L (61663)	Para- thion, water, fltrd, ug/L (39542)	Peb- ulate, water, fltrd 0.7u GF ug/L (82669)	Pendi- meth- alin, water, fltrd 0.7u GF ug/L (82683)	Phorate oxon, water, fltrd, ug/L (61666)	Phorate water fltrd 0.7u GF ug/L (82664)	Phosmet oxon, water, fltrd, ug/L (61668)	Phosmet water, fltrd, ug/L (61601)	Phoste- bupirim water, fltrd, ug/L (61602)
APR													
13...	<0.007	<0.008	<0.007	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011	<0.06	<0.008	<0.005
JUL													
13...	<.007	<.005	<.007	<.003	<.016	<.010	<.004	<.022	<.10	<.011	<.05	<.008	<.005

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Pro- fenofos water, fltrd, ug/L (61603)	Prome- ton, water, fltrd, ug/L (04037)	Prome- tryn, water, fltrd, ug/L (04036)	Propy- zamide, water, fltrd 0.7u GF ug/L (82676)	Propa- chlor, water, fltrd, ug/L (04024)	Pro- panil, water, fltrd 0.7u GF ug/L (82679)	Propar- gite, water, fltrd 0.7u GF ug/L (82685)	Propet- amphos, water, fltrd, ug/L (61604)	Sima- zine, water, fltrd, ug/L (04035)	Sulfo- tepp, water, fltrd, ug/L (61605)	Sulpro- fos, water, fltrd, ug/L (38716)	Tebu- pirim- phos oxon, water, fltrd, ug/L (61669)	Tebu- thiuron water fltrd 0.7u GF ug/L (82670)
APR													
13...	<0.006	0.01	<0.005	<0.004	<0.025	<0.011	<0.02	<0.004	0.279	<0.003	<0.02	<0.006	<0.02
JUL													
13...	<.006	.01	<.005	<.004	<.025	<.011	<.02	<.004	.056	<.003	<.02	<.006	<.02

03438080 LITTLE RIVER AT CRUTE ROAD BRIDGE NEAR CADIZ, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Teflu-thrin, water, fltrd, ug/L (61606)	Teme-phos, water, fltrd, ug/L (61607)	Terba-cil, water, fltrd 0.7u GF ug/L (82665)	Ter-bufos oxon sulfone water, fltrd, ug/L (61674)	Terbu-fos, water, fltrd 0.7u GF ug/L (82675)	Ter-buthyl-azine, water, fltrd, ug/L (04022)	Thio-bencarb water fltrd 0.7u GF ug/L (82681)	trans-Propi-cona-zole, water, fltrd, ug/L (79847)	Tri-allate, water, fltrd 0.7u GF ug/L (82678)	Tribu-phos, water, fltrd, ug/L (61610)	Tri-flur-alin, water, fltrd 0.7u GF ug/L (82661)	(Z)-Di-metho-morph, water, fltrd, ug/L (79845)	Di-chlor-vos, water fltrd, ug/L (38775)
APR													
13...	<0.008	<0.3	<0.034	<0.07	<0.02	<0.01	<0.010	<0.01	<0.002	<0.004	<0.009	<0.05	<0.01
JUL													
13...	<.008	<.3	<.034	<.07	<.02	<.01	<.010	<.01	<.002	<.004	<.009	<.05	<.01

WATER-QUALITY DATA, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004—CONTINUED

Date	Sus-pended sedi-ment concen-tration mg/L (80154)
APR	
13...	5
JUL	
13...	33

E--Laboratory estimated value.
M--Presence of material verified but not quantified.
<--Numeric result is less than the value shown.

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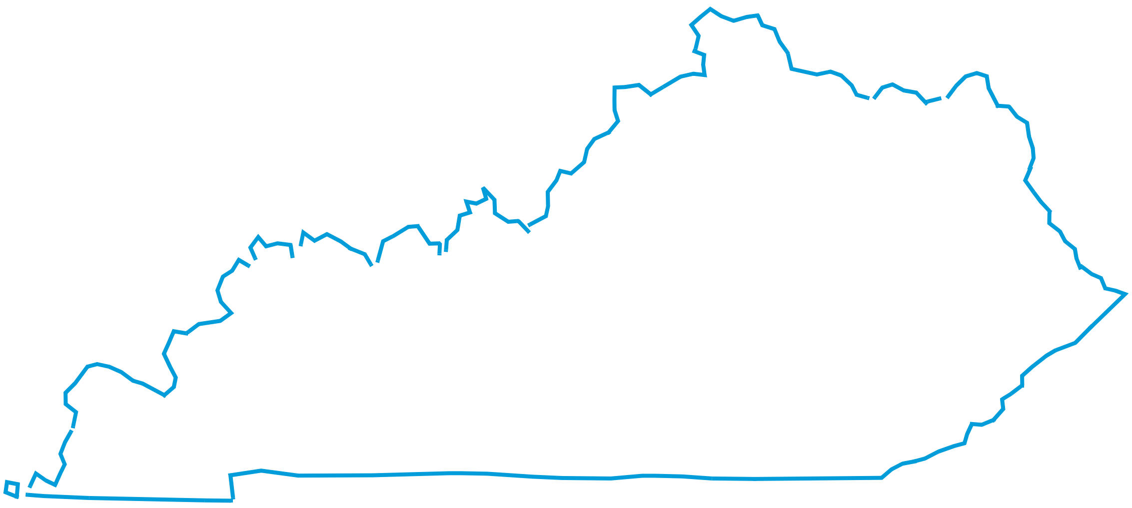
Prepared in cooperation with the Commonwealth of Kentucky and other agencies

Water Resources Data
Kentucky
Water Year 2003



Water-Data Report KY-03-1

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

CALENDAR FOR WATER YEAR 2003

2002

OCTOBER

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

NOVEMBER

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

DECEMBER

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

2003

JANUARY

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

FEBRUARY

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	

MARCH

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

APRIL

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

MAY

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

JUNE

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

JULY

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

AUGUST

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

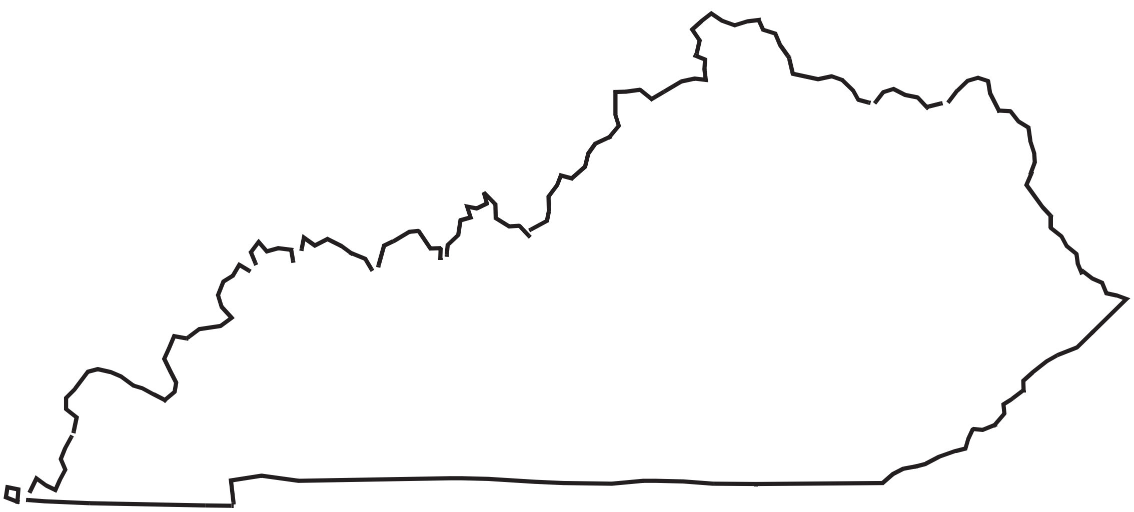
SEPTEMBER

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

Water Resources Data Kentucky Water Year 2003

By D.L. McClain, A.C. Brown, C.R. Moses, and R.S. Darnell

Water-Data Report KY-03-1



Prepared in cooperation with the
Commonwealth of Kentucky and other agencies

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

U.S. Department of the Interior
Gale A. Norton, Secretary

U.S. Geological Survey
Charles G. Groat, Director

2004

U.S. Geological Survey
9818 Bluegrass Parkway
Louisville, KY 40299–1906
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Information about all USGS reports and products is available by calling 1-888-ASK-USGS or on the Internet via the World Wide Web at http://www.usgs.gov/

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PREFACE

This volume of the annual hydrologic data report of Kentucky is one of a series of annual reports that document hydrologic data gathered from the U.S. Geological Survey's surface- and ground-water data-collection networks in each State, Puerto Rico, and the Trust Territories. These records of streamflow, ground-water levels, and water quality provide the hydrologic information needed by State, local, and Federal agencies, and the private sector for developing and managing our Nation's land and water resources.

This report is the culmination of a concerted effort by dedicated personnel of the U.S. Geological Survey who collected, compiled, analyzed, verified, and organized the data, and who typed, edited, and assembled the report. The authors had primary responsibility for assuring that the information contained herein is accurate, complete, and adheres to Survey policy and established guidelines. Most of the data were collected, computed, and processed from the District and field offices.

The data were collected, computed, and processed by the following personnel:

H.C. Allen	J.D. Filbeck	G.K. McCombs
P.J. Bruenderman	B.S. Fink	B.L. Moore
S.J. Couts	M.S. Griffin	S.B. Pickard
A.S. Crain	Zeke Hensley	R.E. Puckett
A.K. Dirrim	Jeffery Hurst	E.A. Shreve
D.W. Eichert	D.W. Keeling	C.R. Wagner
P.L. Faith	T.S. LeMaster	D.D. Zettwoch

This report was prepared in cooperation with the Commonwealth of Kentucky and other agencies under the general supervision of Dennis L. McClain, Supervisory Hydrologic Technician, and Mark A. Ayers, District Chief, Kentucky.

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13. ABSTRACT *(Maximum 200 words)*
Water resources data for the 2003 water year for Kentucky consist of records of stage, discharge, and water quality of streams and lakes; and water levels of wells. This report includes daily discharge records for 127 stream-gaging stations. It also includes water-quality data for eight stations sampled at regular intervals, continuous temperature at seven stations, and continuous water quality at nine stations. Ground-water levels are published for 8 recording and 16 partial-record sites. Precipitation data at regular intervals are published for one site. Additional water data were collected at various sites not involved in the systematic data-collection program and are published as miscellaneous measurement and analyses. These data represent that part of the National Water Data System operated by the U.S. Geological Survey and cooperating State and Federal agencies in Kentucky.

14. SUBJECT TERMS
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SURFACE-WATER STATIONS, IN DOWNSTREAM ORDER, FOR WHICH RECORDS ARE PUBLISHED IN THIS VOLUME

[Letters after station name designate type of data: (d) discharge, (g) stage, (c) chemical, (b) biological, (t) water temperature, (s) sediment, (r) recorder]

SURFACE-WATER STATIONS, IN DOWNSTREAM ORDER, FOR WHICH RECORDS ARE PUBLISHED IN THIS VOLUME--Continued

[Letters after station name designate type of data: (d) discharge, (g) stage, (c) chemical, (b) biological, (t) water temperature, (s) sediment, (r) recorder]

SURFACE-WATER STATIONS, IN DOWNSTREAM ORDER, FOR WHICH RECORDS ARE PUBLISHED IN THIS VOLUME--Continued

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SURFACE-WATER STATIONS, IN DOWNSTREAM ORDER, FOR WHICH RECORDS ARE PUBLISHED IN THIS VOLUME--Continued

[Letters after station name designate type of data: (d) discharge, (g) stage, (c) chemical, (b) biological, (t) water temperature, (s) sediment, (r) recorder]

GROUND-WATER WELLS, BY COUNTY, FOR WHICH RECORDS ARE PUBLISHED GROUND-WATER LEVELS

PRECIPITATION STATION, BY COUNTY FOR WHICH RECORD IS PUBLISHED

INTRODUCTION

Water resources data for the 2003 water year for Kentucky consist of records of stage, discharge, and water-quality of streams and lakes; and water levels of wells. This report includes daily discharge records for 127 stream-gaging stations. It also includes water-quality data for 8 stations sampled at regular intervals, continuous temperature at 7 stations, and continuous water-quality at 9 stations. Ground-water levels are published for 8 recording and 16 partial record sites. Precipitation data at a regular interval are published for 1 site. Additional water data were collected at various sites not involved in the systematic data-collection program and are published as miscellaneous measurement and analyses. These data represent that part of the National Water Data System operated by the U.S. Geological Survey and cooperating State and Federal agencies in Kentucky.

Records of discharge or stage of streams, and contents or stage of lakes and reservoirs were first published in a series of U.S. Geological Survey water-supply papers titled, "Surface Water Supply of the United States." Through September 30, 1960, these water-supply papers were in an annual series and then in a 5-year series for 1961-65 and 1966-70. Records of chemical quality, water temperatures, and suspended sediment were published from 1941 to 1970 in an annual series of water-supply papers titled, "Quality of Surface Waters of the United States." Records of ground-water levels were published from 1944 to 1973 in a series of water-supply papers titled, "Ground-Water Levels in the United States."

Beginning with the 1961 water year and continuing through water year 2003, streamflow data have been released by the U.S. Geological Survey in annual reports on a State-boundary basis. Water-quality records beginning with the 1964 water year, and ground-water data since the 1971 water year have been similarly released either in separate reports or in conjunction with streamflow records. These reports provided rapid release of preliminary water data shortly after the end of the water year. The final data were then released in the water-supply paper series mentioned above. Beginning with the 1975 water year, water data will be released on a State-boundary basis in final form and will not be republished in the water-supply paper series. The 1975 and subsequent water year reports will be in a series which will carry an identification number consisting of the two-letter State abbreviation, the last two digits of the water year, and the volume number. For example, this report is identified as "U.S. Geological Survey Water-Data Report KY03-1." These reports are for sale to the public for a nominal fee by the National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161.

Additional information, including current prices, for ordering specific reports may be obtained from the District Chief at the address given on the back of the title page or by telephone (502) 493-1900.

COOPERATION

The U.S. Geological Survey and organizations of the Commonwealth of Kentucky have had cooperative agreements for the systematic collection of streamflow records since 1938, for ground-water records since 1943, and for water-quality records since 1949. Organizations that assisted in collecting data through cooperative agreements with the Survey are

Ohio River Valley Water Sanitation Commission, Alan Vicory, Executive Director,

Kentucky Cabinet for Health Services, Dr. James Holsinger, Secretary,

Kentucky Geological Survey, Dr. James C. Cobb, Director and State Geologist,

Kentucky Natural Resources and Environmental Protection Cabinet, LaJuanq Wilcher, Secretary,

Kentucky River Authority, Steve Reeder, Executive Director,

Kentucky Transportation Cabinet, Maxwell Clay Bailey, Secretary,

Bullitt County, Kenneth J. Rigdon, Judge/Executive,

Jefferson County, Ken Herndon (Mayor Abramson), Judge/Executive,

Lexington-Fayette Urban County Government, Sandra M. Varellas, Judge/Executive,

Northern Kentucky Sanitation District No. 1, John Lyons, Director of Storm Water Management,

City of Bardstown, Dixie P. Hibbs, Mayor,

City of Frankfort, William I. May, Jr., Mayor,

City of Georgetown, Everette L. Varney, Mayor,

City of Lewisburg, Ken Whitson, Mayor,

City of Lexington, Teresa Ann Isaac, Mayor,

City of Louisville, Jerry Abramson, Mayor,

City of Mt. Sterling, B. D. Wilson, Judge/Executive,

City of Owingsville, Don Kincaid, Mayor,

City of Simpsonville, Steve Eden, Mayor,

Kentucky Heritage Resource Conservation & Development Council, Kenneth Catlett, Chairman,

University of Louisville, Dr. James Ramsey, President, and

Assistance in the form of funds or services was given by the Federal Highway Administration; U.S. Army Corps of Engineers; the U.S. Environmental Protection Agency, Region IV–Atlanta; and the U.S. Navy.

Organizations that supplied data are acknowledged in station descriptions.

SUMMARY OF HYDROLOGIC CONDITIONS

Surface Water

Monthly and annual mean streamflow for the 2003 water year and the period of record are shown in figure 1 for three representative streamflow-gaging stations in Kentucky.

Based on flow data collected at 20 surface-water gaging stations across Kentucky, recurrence intervals for annual peak flows during the 2003 water year were generally about two years with stations in the east-central part of the State (Kentucky River Basin) having recurrence intervals of less than five years to greater than ten years. One station in the extreme western part of the State (Bayou De Chien Basin) had a recurrence interval of greater than ten years. Low flow recurrence intervals across the State were less than two years with one station in the north-central part of the State (Beargrass Creek Basin) having a recurrence interval of greater than two years. In general, flows were above average (146 percent of the long term average) across the State (table 1).

No major flooding occurred during the 2003 water year.

Quality of Water

Water-quality data were collected primarily within the National Stream Quality Accounting Network (NASQAN) program. During the 2003 water year, six NASQAN stations were operated including Ohio River at Greenup Dam near Greenup, Kentucky (03216600); Ohio River at Cannelton Dam, Kentucky (03302280); Wabash River at New Harmony, Indiana (03378500); Tennessee River at Highway 60 near Paducah, Kentucky (03609750); Cumberland River at Smithland, Kentucky (03438500); and the Ohio River at Grand Chain, Illinois (03612500). Each station is routinely sampled 12 times per year with biweekly sampling in March, April, May, and June, except for the Tennessee River at Highway 60 near Paducah, Kentucky, and the Cumberland River at Smithland, Kentucky stations, which are sampled 6 times per year. Three additional samples are collected at each station during an occurrence of extreme hydrologic events (high flow or low flow). The exceptions are the Tennessee River at Highway 60 near Paducah, Kentucky, and the Cumberland River at Smithland, Kentucky stations, which have completely regulated flow.

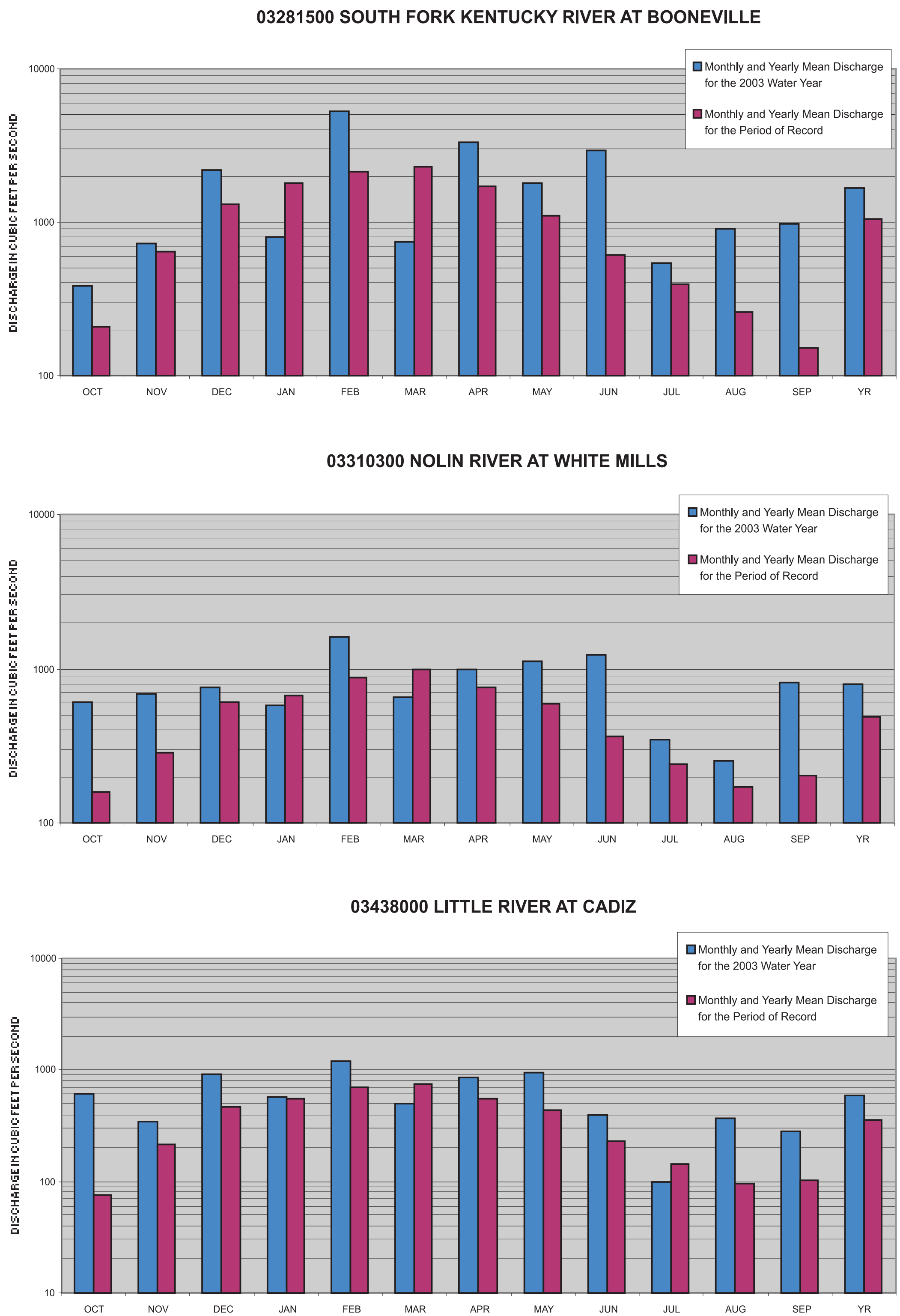

Figure 1. Mean discharge during 2003 water year and period of record for three representative gaging stations.

Table 1. Mean, maximum, and minimum streamflow for water year 2003 and recurrence intervals

Station number	Length of record (years)	Mean		Maximum		Minimum	
		Daily streamflow (ft^3/s)	Percent of average	Peak streamflow (ft^3/s)	Recurrence interval (years)	Daily streamflow (ft^3/s)	Recurrence interval (years)
TYGARTS CREEK BASIN							
03217000	63	449	146	8500	>2	11	<2
KENTUCKY RIVER BASIN							
03280700	46	130	141	9300	>5	2.5	<2
03281100	39	361	139	12300	=5	9.5	<2
03281500	70	1691	161	34500	>2	4.7	<10
03282500	48	117	134	4850	>5	0.68	<2
03283500	66	681	138	19600	>10	20	<2
03285000	61	655	139	18200	>2	5.7	<2
BEARGRASS CREEK BASIN							
03293000	59	36.3	141	1400	>2	0.89	>2
SALT RIVER BASIN							
03298000	59	303	165	8070	<2	10	<2
03300400	31	1059	169	21400	>2	7.1	<2
03301500	65	2851	158	26200	<2	127	<2
GREEN RIVER BASIN							
03307000	64	374	129	12600	>2	23	<2
03310300	44	801	163	8090	>2	70	>2
03320500	63	413	151	4600	<2	0.38	<2
CUMBERLAND RIVER BASIN							
03404900	30	119	138	3200	>2	3.9	<2
03406500	67	1314	140	29200	>2	11	<2
03410500	61	2412	137	54700	>2	116	<2
03438000	63	587	164	7030	>2	45	<2
MASSAC CREEK BASIN							
03611260	32	23.2	131	2150	<2	0.42	<2
BAYOU DE CHIEN BASIN							
07024000	58	131	127	6240	>10	18	<2

A water-quality study related to the environmental effects of coal mining was started in June 1999 on the Big South Fork River to assist the National Park Service in their assessment of remedial activities in the Big South Fork National River and Recreation Area and the Big South Fork watershed. The selected stations for water-quality monitoring include the Big South Fork near Stearns, Kentucky (03410600) and Big South Fork near Yamacraw, Kentucky (03410500). Selection of these stations allow investigators to assess any changes in the water-quality of the Big South Fork River from the upstream station (03410600) to the downstream station (03410500) during the abatement of contaminated mine drainage. Each station is sampled every six weeks. The water-quality samples collected are analyzed for major cations and selected trace elements. Temperature, conductivity, and pH are continuously monitored at each station. This study ended in August 2000.

Ground-Water Levels

Most currently monitored observation wells tap the alluvial aquifer underlying downtown Louisville and northeast Jefferson County.

Ground-water levels in these areas of Jefferson County respond to rainfall, pumpage, river stage, and natural flow to the Ohio River. In general many of the wells in the downtown area are starting to rebound after reaching record lows. This rebound can be attributed to at or above normal rainfall in the recent years. Two wells in the eastern part of downtown Louisville reached record lows for the period of record because of short term, localized pumpage. In the northeast part of Jefferson County two wells reached record lows for the period of record because of sustained pumpage in the area over the last few years.

DOWNSTREAM ORDER AND STATION NUMBER

Since October 1, 1950, hydrologic-station records in USGS reports have been listed in order of downstream direction along the main stream. All stations on a tributary entering upstream from a main-stream station are listed before that station. A station on a tributary entering between two main-stream stations is listed between those stations. A similar order is followed in listing stations on first rank, second rank, and other ranks of tributaries. The rank of any tributary on which a station is located with respect to the stream to which it is immediately tributary is indicated by an indention in that list of stations in the front of this report. Each indentation represents one rank. This downstream order and system of indentation indicates which stations are on tributaries between any two stations and the rank of the tributary on which each station is located.

As an added means of identification, each hydrologic station and partial-record station has been assigned a station number. These station numbers are in the same downstream order used in this report. In assigning a station number, no distinction is made between partial-record stations and other stations; therefore, the station number for a partial-record station indicates downstream-order position in a list composed of both types of stations. Gaps are consecutive. The complete 8-digit (or 10-digit) number for each station such as 09004100, which appears just to the left of the station name, includes a 2-digit part number “09” plus the 6-digit (or 8-digit) downstream order number “004100.” In areas of high station density, an additional two digits may be added to the station identification number to yield a 10-digit number. The stations are numbered in downstream order as described above between stations of consecutive 8-digit numbers.

NUMBERING SYSTEM FOR WELLS AND MISCELLANEOUS SITES

The USGS well and miscellaneous site-numbering system is based on the grid system of latitude and longitude. The system provides the geographic location of the well or miscellaneous site and a unique number for each site. The number consists of 15 digits. The first 6 digits denote the degrees, minutes, and seconds of latitude, and the next 7 digits denote degrees, minutes, and seconds of longitude; the last 2 digits are a sequential number for wells within a 1-second grid. In the event that the latitude-longitude coordinates for a well and miscellaneous site are the same, a sequential number such as “01,” “02,” and so forth, would be assigned as one would for wells (see fig. 2). The 8-digit, downstream order station numbers are not assigned to wells and miscellaneous sites where only random water-quality samples or discharge measurements are taken.

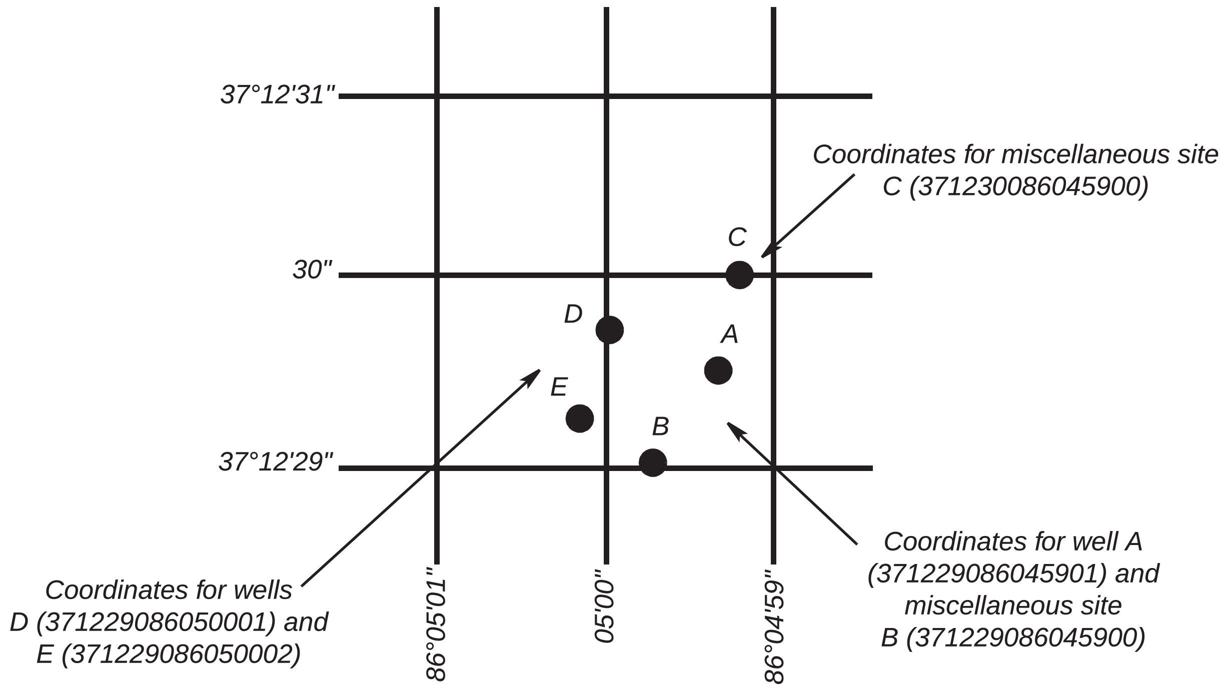

Figure 2. System for numbering wells, springs, and miscellaneous sites (latitude and longitude).

SPECIAL NETWORKS AND PROGRAMS

Hydrologic Benchmark Network is a network of 61 sites in small drainage basins in 39 States that was established in 1963 to provide consistent streamflow data representative of undeveloped watersheds nationwide, and from which data could be analyzed on a continuing basis for use in comparison and contrast with conditions observed in basins more obviously affected by human activities. At selected sites, water-quality information is being gathered on major ions and nutrients, primarily to assess the effects of acid deposition on stream chemistry. Additional information on the Hydrologic Benchmark Program may be accessed from http://water.usgs.gov/hbn/.

National Stream-Quality Accounting Network (NASQAN) is a network of sites used to monitor the water quality of large rivers within the Nation’s largest river basins. From 1995 through 1999, a network of approximately 40 stations was operated in the Mississippi, Columbia, Colorado, and Rio Grande River Basins. For the period 2000 through 2004, sampling was reduced to a few index stations on the Colorado and Columbia Rivers so that a network of 5 stations could be implemented on the Yukon River. Samples are collected with sufficient frequency that the flux of a wide range of constituents can be estimated. The objective of NASQAN is to characterize the water quality of these large rivers by measuring concentration and mass transport of a wide range of dissolved and suspended constituents, including nutrients, major ions, dissolved and sediment-bound heavy metals, common pesticides, and inorganic and organic forms of carbon. This information will be used (1) to describe the long-term trends and changes in concentration and transport of these constituents; (2) to test findings of the National Water-Quality Assessment (NAWQA) Program; (3) to characterize processes unique to large-river systems such as storage and re-mobilization of sediments and associated contaminants; and (4) to refine existing estimates of off-continent transport of water, sediment, and chemicals for assessing human effects on the world’s oceans and for determining global cycles of carbon, nutrients, and other chemicals. Additional information about the NASQAN Program may be accessed from http://water.usgs.gov/nasqan/.

The National Atmospheric Deposition Program/National Trends Network (NADP/NTN) is a network of monitoring sites that provide continuous measurement and assessment of the chemical constituents in precipitation throughout the United States. As the lead Federal agency, the USGS works together with over 100 organizations to provide a long-term, spatial and temporal record of atmospheric deposition generated from this network of 250 precipitation-chemistry monitoring sites. The USGS supports 74 of these 250 sites. This long-term, nationally consistent monitoring program, coupled with ecosystem research, provides critical information toward a national scorecard to evaluate the effectiveness of ongoing and future regulations intended to reduce atmospheric emissions and subsequent impacts to the Nation's land and water resources. Reports and other information on the NADP/NTN Program, as well as data from the individual sites, may be accessed from *http://bqs.usgs.gov/acidrain/*.

The USGS National Water-Quality Assessment (NAWQA) Program is a long-term program with goals to describe the status and trends of water-quality conditions for a large, representative part of the Nation's ground- and surface-water resources; to provide an improved understanding of the primary natural and human factors affecting these observed conditions and trends; and to provide information that supports development and evaluation of management, regulatory, and monitoring decisions by other agencies.

Assessment activities are being conducted in 42 study units (major watersheds and aquifer systems) that represent a wide range of environmental settings nationwide and that account for a large percentage of the Nation's water use. A wide array of chemical constituents is measured in ground water, surface water, streambed sediments, and fish tissues. The coordinated application of comparative hydrologic studies at a wide range of spatial and temporal scales will provide information for water-resources managers to use in making decisions and a foundation for aggregation and comparison of findings to address water-quality issues of regional and national interest.

Communication and coordination between USGS personnel and other local, State, and Federal interests are critical components of the NAWQA Program. Each study unit has a local liaison committee consisting of representatives from key Federal, State, and local water-resources agencies, Indian nations, and universities in the study unit. Liaison committees typically meet semiannually to discuss their information needs, monitoring plans and progress, desired information products, and opportunities to collaborate efforts among the agencies. Additional information about the NAWQA Program may be accessed from *http://water.usgs.gov/nawqa/*.

The USGS National Streamflow Information Program (NSIP) is a long-term program with goals to provide framework streamflow data across the Nation. Included in the program are creation of a permanent Federally funded streamflow network, research on the nature of streamflow, regional assessments of streamflow data and databases, and upgrades in the streamflow information delivery systems. Additional information about NSIP may be accessed from *http://water.usgs.gov/nsip/*.

EXPLANATION OF STAGE- AND WATER-DISCHARGE RECORDS

Data Collection and Computation

The base data collected at gaging stations (figs. 3-5 consist of records of stage and measurements of discharge of streams or canals, and stage, surface area, and volume of lakes or reservoirs. In addition, observations of factors affecting the stage-discharge relation or the stage-capacity relation, weather records, and other information are used to supplement base data in determining the daily flow or volume of water in storage. Records of stage are obtained from a water-stage recorder that is either downloaded electronically in the field to a laptop computer or similar device or is transmitted using telemetry such as GOES satellite, land-line or cellular-phone modems, or by radio transmission. Measurements of discharge are made with a current meter or acoustic Doppler current profiler, using the general methods adopted by the USGS. These methods are described in standard textbooks, USGS Water-Supply Paper 2175, and the Techniques of Water-Resources Investigations of the United States Geological Survey (TWRIs), Book 3, Chapters A1 through A19 and Book 8, Chapters A2 and B2. The methods are consistent with the American Society for Testing and Materials (ASTM) standards and generally follow the standards of the International Organization for Standards (ISO).

For stream-gaging stations, discharge-rating tables for any stage are prepared from stage-discharge curves. If extensions to the rating curves are necessary to express discharge greater than measured, the extensions are made on the basis of indirect measurements of peak discharge (such as slope-area or contracted-opening measurements, or computation of flow over dams and weirs), step-backwater techniques, velocity-area studies, and logarithmic plotting. The daily mean discharge is computed from gage heights and rating tables, then the monthly and yearly mean discharges are computed from the daily values. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features of the stream channel, the daily mean discharge is computed by the shifting-control method in which correction factors based on individual discharge measurements and notes by engineers and observers are used when applying the gage heights to the rating tables. If the stage-discharge relation for a station is temporarily changed by the presence of aquatic growth or debris on the controlling section, the daily mean discharge is computed by the shifting-control method.

The stage-discharge relation at some stream-gaging stations is affected by backwater from reservoirs, tributary streams, or other sources. Such an occurrence necessitates the use of the slope method in which the slope or fall in a reach of the stream is a factor in computing discharge. The slope or fall is obtained by means of an auxiliary gage at some distance from the base gage.

An index velocity is measured using ultrasonic or acoustic instruments at some stream-gaging stations and this index velocity is used to calculate an average velocity for the flow in the stream. This average velocity along with a stage-area relation is then used to calculate average discharge.

At some stations, stage-discharge relation is affected by changing stage. At these stations, the rate of change in stage is used as a factor in computing discharge.

At some stream-gaging stations in the northern United States, the stage-discharge relation is affected by ice in the winter; therefore, computation of the discharge in the usual manner is impossible. Discharge for periods of ice effect is computed on the basis of gage-height record and occasional winter-discharge measurements. Consideration is given to the available information on temperature and precipitation, notes by gage observers and hydrologists, and comparable records of discharge from other stations in the same or nearby basins.

For a lake or reservoir station, capacity tables giving the volume or contents for any stage are prepared from stage-area relation curves defined by surveys. The application of the stage to the capacity table gives the contents, from which the daily, monthly, or yearly changes are computed.

If the stage-capacity curve is subject to changes because of deposition of sediment in the reservoir, periodic resurveys of the reservoir are necessary to define new stage-capacity curves. During the period between reservoir surveys, the computed contents may be increasingly in error due to the gradual accumulation of sediment.

For some stream-gaging stations, periods of time occur when no gage-height record is obtained or the recorded gage height is faulty and cannot be used to compute daily discharge or contents. Such a situation can happen when the recorder stops or otherwise fails to operate properly, the intakes are plugged, the float is frozen in the well, or for various other reasons. For such periods, the daily discharges are estimated on the basis of recorded range in stage, prior and subsequent records, discharge measurements, weather records, and comparison with records from other stations in the same or nearby basins. Likewise, lake or reservoir volumes may be estimated on the basis of operator’s log, prior and subsequent records, inflow-outflow studies, and other information.

Data Presentation

The records published for each continuous-record surface-water discharge station (stream-gaging station) consist of five parts: (1) the station manuscript or description; (2) the data table of daily mean values of discharge for the current water year with summary data; (3) a tabular statistical summary of monthly mean flow data for a designated period, by water year; (4) a summary statistics table that includes statistical data of annual, daily, and instantaneous flows as well as data pertaining to annual runoff, 7-day low-flow minimums, and flow duration; and (5) a hydrograph of discharge.

Station Manuscript

The manuscript provides, under various headings, descriptive information, such as station location; period of record; historical extremes outside the period of record; record accuracy; and other remarks pertinent to station operation and regulation. The following information, as appropriate, is provided with each continuous record of discharge or lake content. Comments follow that clarify information presented under the various headings of the station description.

LOCATION.—Location information is obtained from the most accurate maps available. The location of the gaging station with respect to the cultural and physical features in the vicinity and with respect to the reference place mentioned in the station name is given. River mileages, given for only a few stations, were determined by methods given in “River Mileage Measurement,” Bulletin 14, Revision of October 1968, prepared by the Water Resources Council or were provided by the U.S. Army Corps of Engineers.

DRAINAGE AREA.—Drainage areas are measured using the most accurate maps available. Because the type of maps available varies from one drainage basin to another, the accuracy of drainage areas likewise varies. Drainage areas are updated as better maps become available.

PERIOD OF RECORD.—This term indicates the time period for which records have been published for the station or for an equivalent station. An equivalent station is one that was in operation at a time that the present station was not and whose location was such that its flow reasonably can be considered equivalent to flow at the present station.

REVISED RECORDS.—If a critical error in published records is discovered, a revision is included in the first report published following discovery of the error.

GAGE.—The type of gage in current use, the datum of the current gage referred to a standard datum, and a condensed history of the types, locations, and datums of previous gages are given under this heading.

REMARKS.—All periods of estimated daily discharge either will be identified by date in this paragraph of the station description for water-discharge stations or flagged in the daily discharge table. (See section titled Identifying Estimated Daily Discharge.) Information is presented relative to the accuracy of the records, to special methods of computation, and to conditions that affect natural flow at the station. In addition, information may be presented pertaining to average discharge data for the period of record; to extremes data for the period of record and the current year; and, possibly, to other pertinent items. For reservoir stations, information is given on the dam forming the reservoir, the capacity, the outlet works and spillway, and the purpose and use of the reservoir.

COOPERATION.—Records provided by a cooperating organization or obtained for the USGS by a cooperating organization are identified here.

EXTREMES OUTSIDE PERIOD OF RECORD.—Information here documents major floods or unusually low flows that occurred outside the stated period of record. The information may or may not have been obtained by the USGS.

REVISIONS.—Records are revised if errors in published records are discovered. Appropriate updates are made in the USGS distributed data system, NWIS, and subsequently to its Web-based National data system, NWISWeb (*http://water.usgs.gov/nwis/nwis*). Users are encouraged to obtain all required data from NWIS or NWISWeb to ensure that they have the most recent data updates. Updates to NWISWeb are made on an annual basis.

Although rare, occasionally the records of a discontinued gaging station may need revision. Because no current or, possibly, future station manuscript would be published for these stations to document the revision in a REVISED RECORDS entry, users of data for these stations who obtained the record from previously published data reports may wish to contact the District Office (address given on the back of the title page of this report) to determine if the published records were revised after the station was discontinued. If, however, the data for a discontinued station were obtained by computer retrieval, the data would be current. Any published revision of data is always accompanied by revision of the corresponding data in computer storage.

Manuscript information for lake or reservoir stations differs from that for stream stations in the nature of the REMARKS and in the inclusion of a stage-capacity table when daily volumes are given.

Peak Discharge Greater than Base Discharge

Tables of peak discharge above base discharge are included for some stations where secondary instantaneous peak discharge data are used in flood-frequency studies of highway and bridge design, flood-control structures, and other flood-related projects. The base discharge value is selected so an average of three peaks a year will be reported. This base discharge value has a recurrence interval of approximately 1.1 years or a 91-percent chance of exceedence in any 1 year.

Data Table of Daily Mean Values

The daily table of discharge records for stream-gaging stations gives mean discharge for each day of the water year. In the monthly summary for the table, the line headed TOTAL gives the sum of the daily figures for each month; the line headed MEAN gives the arithmetic average flow in cubic feet per second for the month; and the lines headed MAX and MIN give the maximum and minimum daily mean discharges, respectively, for each month. Discharge for the month is expressed in cubic feet per second per square mile (line headed CFSM); or in inches (line headed IN); or in acre-feet (line headed AC-FT). Values for cubic feet per second per square mile and runoff in inches or in acre-feet may be omitted if extensive regulation or diversion is in effect or if the drainage area includes large noncontributing areas. At some stations, monthly and (or) yearly observed discharges are adjusted for reservoir storage or diversion, or diversion data or reservoir volumes are given. These values are identified by a symbol and a corresponding footnote.

Statistics of Monthly Mean Data

A tabular summary of the mean (line headed MEAN), maximum (MAX), and minimum (MIN) of monthly mean flows for each month for a designated period is provided below the mean values table. The water years of the first occurrence of the maximum and minimum monthly flows are provided immediately below those values. The designated period will be expressed as FOR WATER YEARS __-__, BY WATER YEAR (WY), and will list the first and last water years of the range of years selected from the PERIOD OF RECORD paragraph in the station manuscript. The designated period will consist of all of the station record within the specified water years, including complete months of record for partial water years, and may coincide with the period of record for the station. The water years for which the statistics are computed are consecutive, unless a break in the station record is indicated in the manuscript.

Summary Statistics

A table titled SUMMARY STATISTICS follows the statistics of monthly mean data tabulation. This table consists of four columns with the first column containing the line headings of the statistics being reported. The table provides a statistical summary of yearly, daily, and instantaneous flows, not only for the current water year but also for the previous calendar year and for a designated period, as appropriate. The designated period selected, WATER YEARS __-__, will consist of all of the station records within the specified water years, including complete months of record for partial water years, and may coincide with the period of record for the station. The water years for which the statistics are computed are consecutive, unless a break in the station record is indicated in the manuscript. All of the calculations for the statistical characteristics designated ANNUAL (see line headings below), except for the ANNUAL 7-DAY MINIMUM statistic, are calculated for the designated period using complete water years. The other statistical characteristics may be calculated using partial water years.

The date or water year, as appropriate, of the first occurrence of each statistic reporting extreme values of discharge is provided adjacent to the statistic. Repeated occurrences may be noted in the REMARKS paragraph of the manuscript or in footnotes. Because the designated period may not be the same as the station period of record published in the manuscript, occasionally the dates of occurrence listed for the daily and instantaneous extremes in the designated-period column may not be within the selected water years listed in the heading. When the dates of occurrence do not fall within the selected water years listed in the heading, it will be noted in the REMARKS paragraph or in footnotes. Selected streamflow duration-curve statistics and runoff data also are given. Runoff data may be omitted if extensive regulation or diversion of flow is in effect in the drainage basin.

The following summary statistics data are provided with each continuous record of discharge. Comments that follow clarify information presented under the various line headings of the SUMMARY STATISTICS table.

ANNUAL TOTAL.—The sum of the daily mean values of discharge for the year.

ANNUAL MEAN.—The arithmetic mean for the individual daily mean discharges for the year noted or for the designated period.

HIGHEST ANNUAL MEAN.—The maximum annual mean discharge occurring for the designated period.

LOWEST ANNUAL MEAN.—The minimum annual mean discharge occurring for the designated period.

HIGHEST DAILY MEAN.—The maximum daily mean discharge for the year or for the designated period.

LOWEST DAILY MEAN.—The minimum daily mean discharge for the year or for the designated period.

ANNUAL 7-DAY MINIMUM.—The lowest mean discharge for 7 consecutive days for a calendar year or a water year. Note that most low-flow frequency analyses of annual 7-day minimum flows use a climatic year (April 1-March 31). The date shown in the summary statistics table is the initial date of the 7-day period. This value should not be confused with the 7-day 10-year low-flow statistic.

MAXIMUM PEAK FLOW.—The maximum instantaneous peak discharge occurring for the water year or designated period. Occasionally the maximum flow for a year may occur at midnight at the beginning or end of the year, on a recession from or rise toward a higher peak in the adjoining year. In this case, the maximum peak flow is given in the table and the maximum flow may be reported in a footnote or in the REMARKS paragraph in the manuscript.

MAXIMUM PEAK STAGE.—The maximum instantaneous peak stage occurring for the water year or designated period. Occasionally the maximum stage for a year may occur at midnight at the beginning or end of the year, on a recession from or rise toward a higher peak in the adjoining year. In this case, the maximum peak stage is given in the table and the maximum stage may be reported in the REMARKS paragraph in the manuscript or in a footnote. If the dates of occurrence of the maximum peak stage and maximum peak flow are different, the REMARKS paragraph in the manuscript or a footnote may be used to provide further information.

INSTANTANEOUS LOW FLOW.—The minimum instantaneous discharge occurring for the water year or for the designated period.

ANNUAL RUNOFF.—Indicates the total quantity of water in runoff for a drainage area for the year. Data reports may use any of the following units of measurement in presenting annual runoff data:

> Acre-foot (AC-FT) is the quantity of water required to cover 1 acre to a depth of 1 foot and is equivalent to 43,560 cubic feet or about 326,000 gallons or 1,233 cubic meters.
>
> Cubic feet per square mile (CFSM) is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming the runoff is distributed uniformly in time and area.
>
> Inches (INCHES) indicate the depth to which the drainage area would be covered if all of the runoff for a given time period were uniformly distributed on it.

10 PERCENT EXCEEDS.—The discharge that has been exceeded 10 percent of the time for the designated period.

50 PERCENT EXCEEDS.—The discharge that has been exceeded 50 percent of the time for the designated period.

90 PERCENT EXCEEDS.—The discharge that has been exceeded 90 percent of the time for the designated period.

Data collected at partial-record stations follow the information for continuous-record sites. Data for partial-record discharge stations are presented in two tables. The first table lists annual maximum stage and discharge at crest-stage stations, and the second table lists discharge measurements at low-flow partial-record stations. The tables of partial-record stations are followed by a listing of discharge measurements made at sites other than continuous-record or partial-record stations. These measurements are often made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for a special reason are called measurements at miscellaneous sites.

Identifying Estimated Daily Discharge

Estimated daily-discharge values published in the water-discharge tables of annual State data reports are identified. This identification is shown either by flagging individual daily values with the letter “e” and noting in a table footnote, “e–Estimated,” or by listing the dates of the estimated record in the REMARKS paragraph of the station description.

Accuracy of Field Data and Computed Results

The accuracy of streamflow data depends primarily on (1) the stability of the stage-discharge relation or, if the control is unstable, the frequency of discharge measurements, and (2) the accuracy of observations of stage, measurements of discharge, and interpretations of records.

The degree of accuracy of the records is stated in the REMARKS in the station description. “Excellent” indicates that about 95 percent of the daily discharges are within 5 percent of the true value; “good” within 10 percent; and “fair,” within 15 percent. “Poor” indicates that daily discharges have less than “fair” accuracy. Different accuracies may be attributed to different parts of a given record.

Values of daily mean discharge in this report are shown to the nearest hundredth of a cubic foot per second for discharges of less than 1 ft^3/s; to the nearest tenths between 1.0 and 10 ft^3/s; to whole numbers between 10 and 1,000 ft^3/s; and to 3 significant figures above 1,000 ft^3/s. The number of significant figures used is based solely on the magnitude of the discharge value. The same rounding rules apply to discharge values listed for partial-record stations.

Discharge at many stations, as indicated by the monthly mean, may not reflect natural runoff due to the effects of diversion, consumption, regulation by storage, increase or decrease in evaporation due to artificial causes, or to other factors. For such stations, values of cubic feet per second per square mile and of runoff in inches are not published unless satisfactory adjustments can be made for diversions, for changes in contents of reservoirs, or for other changes incident to use and control. Evaporation from a reservoir is not included in the adjustments for changes in reservoir contents, unless it is so stated. Even at those stations where adjustments are made, large errors in computed runoff may occur if adjustments or losses are large in comparison with the observed discharge.

Other Data Records Available

Information of a more detailed nature than that published for most of the stream-gaging stations such as discharge measurements, gage-height records, and rating tables is available from the District office. Also, most stream-gaging station records are available in computer-usable form and many statistical analyses have been made.

Information on the availability of unpublished data or statistical analyses may be obtained from the District office (see address that is shown on the back of the title page of this report).

EXPLANATION OF PRECIPATITION QUALITY RECORDS

The precipitation-quality data presented in this report represent analyses of time-composite samples, most often for a collection period of one week. This is in contrast to most of the published surface-water quality data which represent samples taken of specific times.

On-Site Measurements and Sample Collection

Precipitation samples are collected with wet/dry collectors. The wet/dry collector is the preferred precipitation sampler and consists of a bucket which is open only during periods of wet (rainfall, snow, etc.) precipitation. During dry periods the sample bucket is covered, thus excluding dry-fall precipitation from the sample.

National Trends Network (NTN) stations are equipped with weighing-bucket rain gages, which graphically record rainfall as well as count rainfall events. The other commonly-used recording gage consists of a rainfall catchment pipe and a float-driven digital recorder which periodically records the water-level in the pipe.

Time-composite wet-precipitation samples are collected and brought back to the laboratory and weighed. Rainfall quantity is estimated from the sample weight. A temperature-density correction can be applied if desired but normally this correction results in a very small change in the estimated quantity of rainfall. An estimation of the sampler efficiency is made by computing the ratio of rainfall amount collected in the sample bucket to that measured by the recording rain gage. This collector efficiency ratio is an important indicator of possible collector malfunction. For example, a ratio substantially less than one indicates that the wet/dry collector was not opening properly and thus, excluding rainfall.

After weighing the sample, a small portion is removed for measurement of pH, specific conductance, and, in some instances, titratable acidity. The pH and special conductance are both determined electrometrically according to methods described in the National Atmospheric Deposition Program "NADP Instruction Manual: Site Operation." The remainder of the sample is then used for laboratory chemical analyses. This portion of the sample is shipped to the

laboratory raw and untreated. In the case of NTN operation, the original bucket is resealed and mailed to the Illinois State Water Survey Central Analytical Laboratory (CAL) for analysis. In all other instances, sample portions are preserved, treated, and analyzed according to specific project requirements.

Data Presentation

Records of precipitation quality are published following the "records of ground-water" section of this report. As with records of daily water discharge and surface-water quality, precipitation-quality records consist of two parts, a station header and a data table. The station header contains the descriptive information pertinent to the establishment, location, and operation of the site. Records are presented alphabetically by county and, within each county, by latitude, longitude, and sequence number. As with ground-water wells, the primary site identifier used for precipitation-quality stations in this report is the 15-digit composite of these three numbers. The following text presents a clarification of the subheadings which follow the station identification number and station name.

LOCATION.--See Data Presentation under "Records of Stage and Water Discharge;" same comments apply.

PERIOD OF RECORD.--This indicates the periods for which there are published precipitation-quality records for the station. Periods of record are presented separately for each type of sample collected at the site (in this report, wet precipitation, dry precipitation, and fog).

INSTRUMENTATION.--In this section, an abbreviated-style listing of the data-recording and sample-collection equipment permanently housed at the site is presented.

REMARKS.--This section is reserved for comments pertaining to unusual or extraordinary circumstances or to qualifying information which must be used accurately interpret the data presented for the site. More general comments which may pertain to several or all of the sites are presented in the "EXPLANATION OF RECORDS" section in the introductory part of the report.

COOPERATION.--Chemical-quality data were provided by National Atmospheric Deposition Program.

EXPLANATION OF WATER-QUALITY RECORDS

Collection and Examination of Data

Surface-water samples for analysis usually are collected at or near stream-gaging stations. The quality-of-water records are given immediately following the discharge records at these stations.

The descriptive heading for water-quality records gives the period of record for all water-quality data; the period of daily record for parameters that are measured on a daily basis (specific conductance, water temperature, sediment discharge, and so forth); extremes for the current year; and general remarks.

For ground-water records, no descriptive statements are given; however, the well number, depth of well, sampling date, or other pertinent data are given in the table containing the chemical analyses of the ground water.

Water Analysis

Most of the methods used for collecting and analyzing water samples are described in the TWRIs. A list of TWRIs is provided in this report.

One sample can define adequately the water quality at a given time if the mixture of solutes throughout the stream cross-section is homogeneous. However, the concentration of solutes at different locations in the cross section may vary widely with different rates of water discharge, depending on the source of material and the turbulence and mixing of the stream. Some streams must be sampled at several verticals to obtain a representative sample needed for an accurate mean concentration and for use in calculating load.

Chemical-quality data published in this report are considered to be the most representative values available for the stations listed. The values reported represent water-quality conditions at the time of sampling as much as possible, consistent with available sampling techniques and methods of analysis. In the rare case where an apparent inconsistency exists between a reported pH value and the relative abundance of carbon dioxide species (carbonate and bicarbonate), the inconsistency is the result of a slight uptake of carbon dioxide from the air by the sample between measurement of pH in the field and determination of carbonate and bicarbonate in the laboratory.

For chemical-quality stations equipped with digital monitors, the records consist of daily maximum and minimum values (and sometimes mean or median values) for each constituent measured, and are based on 15-minute or 1-hour intervals of recorded data beginning at 0000 hours and ending at 2400 hours for the day of record.

SURFACE-WATER-QUALITY RECORDS

Records of surface-water quality ordinarily are obtained at or near stream-gaging stations because discharge data is useful in the interpretation of surface-water quality. Records of surface-water quality in this report involve a variety of types of data and measurement frequencies.

Classification of Records

Water-quality data for surface-water sites are grouped into one of three classifications. A *continuous-record station* is a site where data are collected on a regularly scheduled basis. Frequency may be one or more times daily, weekly, monthly, or quarterly. A *partial-record station* is a site where limited water-quality data are collected systematically over a period of years. Frequency of sampling is usually less than quarterly. A *miscellaneous sampling site* is a location other than a continuous- or partial-record station, where samples are collected to give better areal coverage to define water-quality conditions in the river basin.

A careful distinction needs to be made between *continuous records* as used in this report and *continuous recordings* that refer to a continuous graph or a series of discrete values recorded at short intervals. Some records of water quality, such as temperature and specific conductance, may be obtained through continuous recordings; however, because of costs, most data are obtained only monthly or less frequently. Locations of stations for which records on the quality of surface water appear in this report are shown in figures 7-8.

Accuracy of the Records

One of four accuracy classifications is applied for measured physical properties at continuous-record stations on a scale ranging from poor to excellent. The accuracy rating is based on data values recorded before any shifts or corrections are made. Additional consideration also is given to the amount of publishable record and to the amount of data that have been corrected or shifted.

Arrangement of Records

Water-quality records collected at a surface-water daily record station are published immediately following that record, regardless of the frequency of sample collection. Station number and name are the same for both records. Where a surface-water daily record station is not available or where the water quality differs significantly from that at the nearby surface-water station, the continuing water-quality record is published with its own station number and name in the regular downstream-order sequence. Water-quality data for partial-record stations and for miscellaneous sampling sites appear in separate tables following the table of discharge measurements at miscellaneous sites.

On-Site Measurements and Sample Collection

In obtaining water-quality data, a major concern is assuring that the data obtained represent the naturally occurring quality of the water. To ensure this, certain measurements, such as water temperature, pH, and dissolved oxygen, must be made on site when the samples are taken. To assure that measurements made in the laboratory also represent the naturally occurring water, carefully prescribed procedures must be followed in collecting the samples, in treating the samples to prevent changes in quality pending analysis, and in shipping the samples to the laboratory. Procedures for on-site measurements and for collecting, treating, and shipping samples are given in TWRIs Book 1, Chapter D2; Book 3, Chapters A1, A3, and A4; and Book 9, Chapters A1-A9. These TWRIs are listed in this report. Also, detailed information on collecting, treating, and shipping samples can be obtained from the USGS District office (see address that is shown on the back of title page in this report).

Water Temperature

Water temperatures are measured at most of the water-quality stations. In addition, water temperatures are taken at the time of discharge measurements for water-discharge stations. For stations where water temperatures are taken manually once or twice daily, the water temperatures are taken at about the same time each day. Large streams have a small diurnal temperature change; shallow streams may have a daily range of several degrees and may follow closely the changes in air temperature. Some streams may be affected by waste-heat discharges.

At stations where recording instruments are used, either mean temperatures or maximum and minimum temperatures for each day are published. Water temperatures measured at the time of water-discharge measurements are on file in the District office.

Sediment

Suspended-sediment concentrations are determined from samples collected by using depth-integrating samplers. Samples usually are obtained at several verticals in the cross section, or a single sample may be obtained at a fixed point and a coefficient applied to determine the mean concentration in the cross section.

During periods of rapidly changing flow or rapidly changing concentration, samples may be collected more frequently (twice daily or, in some instances, hourly). The published sediment discharges for days of rapidly changing flow or concentration were computed by the subdivided-day method (time-discharge weighted average). Therefore, for those days when the published sediment discharge value differs from the value computed as the product of discharge times mean concentration times 0.0027, the reader can assume that the sediment discharge for that day was computed by the subdivided-day method. For periods when no samples were collected, daily discharges of suspended sediment were estimated on the basis of water discharge, sediment concentrations observed immediately before and after the periods, and suspended-sediment loads for other periods of similar discharge.

At other stations, suspended-sediment samples are collected periodically at many verticals in the stream cross section. Although data collected periodically may represent conditions only at the time of observation, such data are useful in establishing seasonal relations between quality and streamflow and in predicting long-term sediment-discharge characteristics of the stream.

In addition to the records of suspended-sediment discharge, records of the periodic measurements of the particle-size distribution of the suspended sediment and bed material are included for some stations.

Laboratory Measurements

Samples for biochemical oxygen demand (BOD) and indicator bacteria are analyzed locally. All other samples are analyzed in the USGS laboratory in Lakewood, Colorado, unless otherwise noted. Methods used in analyzing sediment samples and computing sediment records are given in TWRI, Book 5, Chapter C1. Methods used by the USGS laboratories are given in the TWRIs, Book 1, Chapter D2; Book 3, Chapter C2; and Book 5, Chapters A1, A3, and A4. These methods are consistent with ASTM standards and generally follow ISO standards.

Data Presentation

For continuing-record stations, information pertinent to the history of station operation is provided in descriptive headings preceding the tabular data. These descriptive headings give details regarding location, drainage area, period of record, type of data available, instrumentation, general remarks, cooperation, and extremes for parameters currently measured daily. Tables of chemical, physical, biological, radiochemical data, and so forth, obtained at a frequency less than daily are presented first. Tables of “daily values” of specific conductance, pH, water temperature, dissolved oxygen, and suspended sediment then follow in sequence.

In the descriptive headings, if the location is identical to that of the discharge gaging station, neither the LOCATION nor the DRAINAGE AREA statements are repeated. The following information is provided with each continuous-record station. Comments that follow clarify information presented under the various headings of the station description.

LOCATION.—See Data Presentation information in the EXPLANATION OF STAGE- AND WATER-DISCHARGE RECORDS section of this report (same comments apply).

DRAINAGE AREA.—See Data Presentation information in the EXPLANATION OF STAGE- AND WATER-DISCHARGE RECORDS section of this report (same comments apply).

PERIOD OF RECORD.—This indicates the time periods for which published water-quality records for the station are available. The periods are shown separately for records of parameters measured daily or continuously and those measured less than daily. For those measured daily or continuously, periods of record are given for the parameters individually.

INSTRUMENTATION.—Information on instrumentation is given only if a water-quality monitor temperature record, sediment pumping sampler, or other sampling device is in operation at a station.

REMARKS.—Remarks provide added information pertinent to the collection, analysis, or computation of the records.

COOPERATION.—Records provided by a cooperating organization or obtained for the USGS by a cooperating organization are identified here.

EXTREMES.—Maximums and minimums are given only for parameters measured daily or more frequently. For parameters measured weekly or less frequently, true maximums or minimums may not have been obtained. Extremes, when given, are provided for both the period of record and for the current water year.

REVISIONS.—Records are revised if errors in published water-quality records are discovered. Appropriate updates are made in the USGS distributed data system, NWIS, and subsequently to its Web-based National data system, NWISWeb (*http://waterdata.usgs.gov/nwis*). Users of USGS water-quality data are encouraged to obtain all required data from NWIS or NWISWeb to ensure that they have the most recent updates. Updates to the NWISWeb are made on an annual basis.

The surface-water-quality records for partial-record stations and miscellaneous sampling sites are published in separate tables following the table of discharge measurements at miscellaneous sites. No descriptive statements are given for these records. Each station is published with its own station number and name in the regular downstream-order sequence.

Remark Codes

The following remark codes may appear with the water-quality data in this section:

Printed Output	Remark
E or e	Estimated value.
>	Actual value is known to be greater than the value shown.
<	Actual value is known to be less than the value shown.
K	Results based on colony count outside the acceptance range (non-ideal colony count).
L	Biological organism count less than 0.5 percent (organism may be observed rather than counted).
D	Biological organism count equal to or greater than 15 percent (dominant).
V	Analyte was detected in both the environmental sample and the associated blanks.
&	Biological organism estimated as dominant.

Water-Quality Control Data

The USGS National Water Quality Laboratory collects quality-control data on a continuing basis to evaluate selected analytical methods to determine long-term method detection levels (LT-MDLs) and laboratory reporting levels (LRLs). These values are re-evaluated each year on the basis of the most recent quality-control data and, consequently, may change from year to year.

This reporting procedure limits the occurrence of false positive error. Falsely reporting a concentration greater than the LT-MDL for a sample in which the analyte is not present is 1 percent or less. Application of the LRL limits the occurrence of false negative error. The chance of falsely reporting a non-detection for a sample in which the analyte is present at a concentration equal to or greater than the LRL is 1 percent or less.

Accordingly, concentrations are reported as less than LRL for samples in which the analyte was either not detected or did not pass identification. Analytes detected at concentrations between the LT-MDL and the LRL and that pass identification criteria are estimated. Estimated concentrations will be noted with a remark code of “E.” These data should be used with the understanding that their uncertainty is greater than that of data reported without the E remark code.

Data generated from quality-control (QC) samples are a requisite for evaluating the quality of the sampling and processing techniques as well as data from the actual samples themselves. Without QC data, environmental sample data cannot be adequately interpreted because the errors associated with the sample data are unknown. The various types of QC samples collected by this District office are described in the following section. Procedures have been established for the storage of water-quality-control data within the USGS. These procedures allow for storage of all derived QC data and are identified so that they can be related to corresponding environmental samples. These data are not presented in this report but are available from the District office.

Blank Samples

Blank samples are collected and analyzed to ensure that environmental samples have not been contaminated in the overall data-collection process. The blank solution used to develop specific types of blank samples is a solution that is free of the analytes of interest. Any measured value signal in a blank sample for an analyte (a specific component measured in a chemical analysis) that was absent in the blank solution is believed to be due to contamination. Many types of blank samples are possible; each is designed to segregate a different part of the overall data-collection process. The types of blank samples collected in this district are:

Field blank—A blank solution that is subjected to all aspects of sample collection, field processing preservation, transportation, and laboratory handling as an environmental sample.

Trip blank—A blank solution that is put in the same type of bottle used for an environmental sample and kept with the set of sample bottles before and after sample collection.

Equipment blank—A blank solution that is processed through all equipment used for collecting and processing an environmental sample (similar to a field blank but normally done in the more controlled conditions of the office).

Sampler blank—A blank solution that is poured or pumped through the same field sampler used for collecting an environmental sample.

Filter blank—A blank solution that is filtered in the same manner and through the same filter apparatus used for an environmental sample.

Splitter blank—A blank solution that is mixed and separated using a field splitter in the same manner and through the same apparatus used for an environmental sample.

Preservation blank—A blank solution that is treated with the sampler preservatives used for an environmental sample.

Reference Samples

Reference material is a solution or material prepared by a laboratory. The reference material composition is certified for one or more properties so that it can be used to assess a measurement method. Samples of reference material are submitted for analysis to ensure that an analytical method is accurate for the known properties of the reference material. Generally, the selected reference material properties are similar to the environmental sample properties.

Replicate Samples

Replicate samples are a set of environmental samples collected in a manner such that the samples are thought to be essentially identical in composition. Replicate is the general case for which a duplicate is the special case consisting of two samples. Replicate samples are collected and analyzed to establish the amount of variability in the data contributed by some part of the collection and analytical process. Many types of replicate samples are possible, each of which may yield slightly different results in a dynamic hydrologic setting, such as a flowing stream. The types of replicate samples collected in this district are:

Concurrent samples—A type of replicate sample in which the samples are collected simultaneously with two or more samplers or by using one sampler and alternating the collection of samples into two or more compositing containers.

Sequential samples—A type of replicate sample in which the samples are collected one after the other, typically over a short time.

Split sample—A type of replicate sample in which a sample is split into subsamples, each subsample contemporaneous in time and space.

Spike Samples

Spike samples are samples to which known quantities of a solution with one or more well-established analyte concentrations have been added. These samples are analyzed to determine the extent of matrix interference or degradation on the analyte concentration during sample processing and analysis.

EXPLANATION OF GROUND-WATER-LEVEL RECORDS

Generally, only ground-water-level data from selected wells with continuous recorders from a basic network of observation wells are published in this report. This basic network contains observation wells located so that the most significant data are obtained from the fewest wells in the most important aquifers.

Site Identification Numbers

Each well is identified by means of (1) a 15-digit number that is based on latitude and longitude and (2) a local number that is produced for local needs.

Data Collection and Computation

Measurements are made in many types of wells, under varying conditions of access and at different temperatures; hence, neither the method of measurement nor the equipment can be standardized. At each observation well, however, the equipment and techniques used are those that will ensure that measurements at each well are consistent.

Most methods for collecting and analyzing water samples are described in the TWRIs referred to in the On-site Measurements and Sample Collection and the Laboratory Measurements sections in this report. In addition, TWRI Book 1, Chapter D2, describes guidelines for the collection and field analysis of ground-water samples for selected unstable constituents. Procedures for on-site measurements and for collecting, treating, and shipping samples are given in TWRIs Book 1, Chapter D2; Book 3, Chapters A1, A3, and A4; and Book 9, Chapters A1 through A9. The values in this report represent water-quality conditions at the time of sampling, as much as possible, and that are consistent with available sampling techniques and methods of analysis. These methods are consistent with ASTM standards and generally follow ISO standards. Trained personnel collected all samples. The wells sampled were pumped long enough to ensure that the water collected came directly from the aquifer and had not stood for a long time in the well casing where it would have been exposed to the atmosphere and to the material, possibly metal, comprising the casings.

Water-level measurements in this report are given in feet with reference to land-surface datum (lsd). Land-surface datum is a datum plane that is approximately at land surface at each well. If known, the elevation of the land-surface datum above sea level is given in the well description. The height of the measuring point (MP) above or below land-surface datum is given in each well description. Water levels in wells equipped with recording gages are reported for every fifth day and the end of each month (EOM).

Water levels are reported to as many significant figures as can be justified by the local conditions. For example, in a measurement of a depth of water of several hundred feet, the error in determining the absolute value of the total depth to water may be a few tenths of a foot, whereas the error in determining the net change of water level between successive measurements may be only a hundredth or a few hundredths of a foot. For lesser depths to water the accuracy is greater. Accordingly, most measurements are reported to a hundredth of a foot, but some are given only to a tenth of a foot or a larger unit.

Data Presentation

Water-level data are presented in alphabetical order by county. The primary identification number for a given well is the 15-digit site identification number that appears in the upper left corner of the table. The secondary identification number is the local or county well number. Well locations are shown in figures 9-11 each well is identified on the map by its local well or county well number.

Each well record consists of three parts: the well description, the data table of water levels observed during the water year, and, for most wells, a hydrograph following the data table. Well descriptions are presented in the headings preceding the tabular data.

The following comments clarify information presented in these various headings.

LOCATION.—This paragraph follows the well-identification number and reports the hydrologic-unit number and a geographic point of reference. Latitudes and longitudes used in this report are reported as North American Datum of 1927 unless otherwise specified.

AQUIFER.—This entry designates by name and geologic age the aquifer that the well taps.

WELL CHARACTERISTICS.—This entry describes the well in terms of depth, casing diameter and depth or screened interval, method of construction, use, and changes since construction.

INSTRUMENTATION.—This paragraph provides information on both the frequency of measurement and the collection method used, allowing the user to better evaluate the reported water-level extremes by knowing whether they are based on continuous, monthly, or some other frequency of measurement.

DATUM.—This entry describes both the measuring point and the land-surface elevation at the well. The altitude of the land-surface datum is described in feet above the altitude datum; it is reported with a precision depending on the method of determination. The measuring point is described physically (such as top of casing, top of instrument shelf, and so forth), and in relation to land surface (such as 1.3 ft above land-surface datum). The elevation of the land-surface datum is described in feet above National Geodetic Vertical Datum of 1929 (NGVD 29); it is reported with a precision depending on the method of determination.

REMARKS.—This entry describes factors that may influence the water level in a well or the measurement of the water level, when various methods of measurement were begun, and the network (climatic, terrane, local, or areal effects) or the special project to which the well belongs.

PERIOD OF RECORD.—This entry indicates the time period for which records are published for the well, the month and year at the start of publication of water-level records by the USGS, and the words “to current year” if the records are to be continued into the following year. Time periods for which water-level records are available, but are not published by the USGS, may be noted.

EXTREMES FOR PERIOD OF RECORD.—This entry contains the highest and lowest instantaneously recorded or measured water levels of the period of published record, with respect to land-surface datum or sea level, and the dates of occurrence.

Water-Level Tables

A table of water levels follows the well description for each well. Water-level measurements in this report are given in feet with reference to either sea level or land-surface datum (lsd). Missing records are indicated by dashes in place of the water-level value.

For wells not equipped with recorders, water-level measurements were obtained periodically by steel or electric tape. Tables of periodic water-level measurements in these wells show the date of measurement and the measured water-level value.

Hydrographs

Hydrographs are a graphic display of water-level fluctuations over a period of time. In this report, current water year and, when appropriate, period-of-record hydrographs are shown. Hydrographs that display periodic water-level measurements show points that may be connected with a dashed line from one measurement to the next. Hydrographs that display recorder data show a solid line representing the mean water level recorded for each day. Missing data are indicated by a blank space or break in a hydrograph. Missing data may occur as a result of recorder malfunctions, battery failures, or mechanical problems related to the response of the recorder’s float mechanism to water-level fluctuations in a well.

GROUND-WATER-QUALITY DATA

Data Collection and Computation

The ground-water-quality data in this report were obtained as a part of special studies in specific areas. Consequently, a number of chemical analyses are presented for some wells within a county but not for others. As a result, the records for this year, by themselves, do not provide a balanced view of ground-water quality Statewide.

Most methods for collecting and analyzing water samples are described in the TWRIs. Procedures for on-site measurements and for collecting, treating, and shipping samples are given in TWRI, Book 1, Chapter D2; Book 3, Chapter C2; and Book 5, Chapters A1, A3, and A4. Also, detailed information on collecting, treating, and shipping samples may be obtained from the USGS District office (see address shown on back of title page in this report).

Laboratory Measurements

Analysis for sulfide and measurement of alkalinity, pH, water temperature, specific conductance, and dissolved oxygen are performed on site. All other sample analyses are performed at the USGS laboratory in Lakewood, Colorado, unless otherwise noted. Methods used by the USGS laboratory are given in TWRI, Book 1, Chapter D2; Book 3, Chapter C2; and Book 5, Chapters A1, A3, and A4.

ACCESS TO USGS WATER DATA

The USGS provides near real-time stage and discharge data for many of the gaging stations equipped with the necessary telemetry and historic daily-mean and peak-flow discharge data for most current or discontinued gaging stations through the World Wide Web (WWW). These data may be accessed from *http://water.usgs.gov*.

Water-quality data and ground-water data also are available through the WWW. In addition, data can be provided in various machine-readable formats on various media. Information about the availability of specific types of data or products, and user charges, can be obtained locally from each Water Discipline District Office (See address that is shown on the back of the title page of this report.)

DEFINITION OF TERMS

Specialized technical terms related to streamflow, water-quality, and other hydrologic data, as used in this report, are defined below. Terms such as algae, water level, and precipitation are used in their common everyday meanings, definitions of which are given in standard dictionaries. Not all terms defined in this alphabetical list apply to every State. See also table for converting English units to International System (SI) Units. Other glossaries that also define water-related terms are accessible from *http://water.usgs.gov/glossaries.html*.

Acid neutralizing capacity (ANC) is the equivalent sum of all bases or base-producing materials, solutes plus particulates, in an aqueous system that can be titrated with acid to an equivalence point. This term designates titration of an “unfiltered” sample (formerly reported as alkalinity).

Acre-foot (AC-FT, acre-ft) is a unit of volume, commonly used to measure quantities of water used or stored, equivalent to the volume of water required to cover 1 acre to a depth of 1 foot and equivalent to 43,560 cubic feet, 325,851 gallons, or 1,233 cubic meters. (See also “Annual runoff”)

Adenosine triphosphate (ATP) is an organic, phosphate-rich compound important in the transfer of energy in organisms. Its central role in living cells makes ATP an excellent indicator of the presence of living material in water. A measurement of ATP therefore provides a sensitive and rapid estimate of biomass. ATP is reported in micrograms per liter.

Adjusted discharge is discharge data that have been mathematically adjusted (for example, to remove the effects of a daily tide cycle or reservoir storage).

Algal growth potential (AGP) is the maximum algal dry weight biomass that can be produced in a natural water sample under standardized laboratory conditions. The growth potential is the algal biomass present at stationary phase and is expressed as milligrams dry weight of algae produced per liter of sample. (See also “Biomass” and “Dry weight”)

Alkalinity is the capacity of solutes in an aqueous system to neutralize acid. This term designates titration of a “filtered” sample.

Annual runoff is the total quantity of water that is discharged (“runs off”) from a drainage basin in a year. Data reports may present annual runoff data as volumes in acre-feet, as discharges per unit of drainage area in cubic feet per second per square mile, or as depths of water on the drainage basin in inches.

Annual 7-day minimum is the lowest mean value for any 7-consecutive-day period in a year. Annual 7-day minimum values are reported herein for the calendar year and the water year (October 1 through September 30). Most low-flow frequency analyses use a climatic year (April 1-March 31), which tends to prevent the low-flow period from being artificially split between adjacent years. The date shown in the summary statistics table is the initial date of the 7-day period. (This value should not be confused with the 7-day, 10-year low-flow statistic.)

Aroclor is the registered trademark for a group of poly-chlorinated biphenyls that were manufactured by the Monsanto Company prior to 1976. Aroclors are assigned specific 4-digit reference numbers dependent upon molecular type and degree of substitution of the biphenyl ring hydrogen atoms by chlorine atoms. The first two digits of a numbered aroclor represent the molecular type, and the last two digits represent the percentage weight of the hydrogen-substituted chlorine.

Artificial substrate is a device that purposely is placed in a stream or lake for colonization of organisms. The artificial substrate simplifies the community structure by standardizing the substrate from which each sample is collected. Examples of artificial substrates are basket samplers (made of wire cages filled with clean streamside rocks) and multiplate samplers (made of hardboard) for benthic organism collection, and plexiglass strips for periphyton collection. (See also “Substrate”)

Ash mass is the mass or amount of residue present after the residue from a dry-mass determination has been ashed in a muffle furnace at a temperature of 500°C for 1 hour. Ash mass of zooplankton and phytoplankton is expressed in grams per cubic meter (g/m^3), and periphyton and benthic organisms in grams per square meter (g/m^2). (See also “Biomass” and “Dry mass”)

Aspect is the direction toward which a slope faces with respect to the compass.

Bacteria are microscopic unicellular organisms, typically spherical, rodlike, or spiral and threadlike in shape, often clumped into colonies. Some bacteria cause disease, whereas others perform an essential role in nature in the recycling of materials; for example, by decomposing organic matter into a form available for reuse by plants.

Bankfull stage, as used in this report, is the stage at which a stream first overflows its natural banks formed by floods with 1- to 3-year recurrence intervals.

Base discharge (for peak discharge) is a discharge value, determined for selected stations, above which peak discharge data are published. The base discharge at each station is selected so that an average of about three peak flows per year will be published. (See also “Peak flow”)

Base flow is sustained flow of a stream in the absence of direct runoff. It includes natural and human-induced streamflows. Natural base flow is sustained largely by ground-water discharge.

Bed material is the sediment mixture of which a stream-bed, lake, pond, reservoir, or estuary bottom is composed. (See also “Bedload” and “Sediment”)

Bedload is material in transport that primarily is supported by the streambed. In this report, bedload is considered to consist of particles in transit from the bed to the top of the bedload sampler nozzle (an elevation ranging from 0.25 to 0.5 foot). These particles are retained in the bedload sampler. A sample collected with a pressure-differential bedload sampler also may contain a component of the suspended load.

Bedload discharge (tons per day) is the rate of sediment moving as bedload, reported as dry weight, that passes through a cross section in a given time. NOTE: Bedload discharge values in this report may include a component of the suspended-sediment discharge. A correction may be necessary when computing the total sediment discharge by summing the bedload discharge and the suspended-sediment discharge. (See also “Bedload,” “Dry weight,” “Sediment,” and “Suspended-sediment discharge”)

Benthic organisms are the group of organisms inhabiting the bottom of an aquatic environment. They include a number of types of organisms, such as bacteria, fungi, insect larvae and nymphs, snails, clams, and crayfish. They are useful as indicators of water quality.

Biochemical oxygen demand (BOD) is a measure of the quantity of dissolved oxygen, in milligrams per liter, necessary for the decomposition of organic matter by microorganisms, such as bacteria.

Biomass is the amount of living matter present at any given time, expressed as mass per unit area or volume of habitat.

Biomass pigment ratio is an indicator of the total proportion of periphyton that are autotrophic (plants). This also is called the Autotrophic Index.

Blue-green algae (*Cyanophyta*) are a group of phytoplankton and periphyton organisms with a blue pigment in addition to a green pigment called chlorophyll. Blue-green algae can cause nuisance water-quality conditions in lakes and slow-flowing rivers; however, they are found commonly in streams throughout the year. The abundance of blue-green algae in phytoplankton samples is expressed as the number of cells per milliliter (cells/mL) or biovolume in cubic micrometers per milliliter (μm^3/mL). The abundance of blue-green algae in periphyton samples is given in cells per square centimeter (cells/cm^2) or biovolume per square centimeter ($\mu m^3/cm^2$). (See also "Phytoplankton"and "Periphyton")

Bottom material (See "Bed material")

Bulk electrical conductivity is the combined electrical conductivity of all material within a doughnut-shaped volume surrounding an induction probe. Bulk conductivity is affected by different physical and chemical properties of the material including the dissolved-solids content of the pore water, and the lithology and porosity of the rock.

Canadian Geodetic Vertical Datum 1928 is a geodetic datum derived from a general adjustment of Canada's first order level network in 1928.

Cell volume (biovolume) determination is one of several common methods used to estimate biomass of algae in aquatic systems. Cell members of algae are used frequently in aquatic surveys as an indicator of algal production. However, cell numbers alone cannot represent true biomass because of considerable cell-size variation among the algal species. Cell volume (μm^3) is determined by obtaining critical cell measurements or cell dimensions (for example, length, width, height, or radius) for 20 to 50 cells of each important species to obtain an average biovolume per cell. Cells are categorized according to the correspondence of their cellular shape to the nearest geometric solid or combinations of simple solids (for example, spheres, cones, or cylinders). Representative formulae used to compute biovolume are as follows:

$$\text{sphere } 4/3\ \pi r^3 \quad \text{cone } 1/3\ \pi r^2 h \quad \text{cylinder } \pi r^2 h.$$

pi (π) is the ratio of the circumference to the diameter of a circle; pi = 3.14159….

From cell volume, total algal biomass expressed as biovolume (μm^3/mL) is thus determined by multiplying the number of cells of a given species by its average cell volume and then summing these volumes for all species.

Cells/volume refers to the number of cells of any organism that is counted by using a microscope and grid or counting cell. Many planktonic organisms are multicelled and are counted according to the number of contained cells per sample volume, and generally are reported as cells or units per milliliter (mL) or liter (L).

Cfs-day (See "Cubic foot per second-day")

Channel bars, as used in this report, are the lowest prominent geomorphic features higher than the channel bed.

Chemical oxygen demand (COD) is a measure of the chemically oxidizable material in the water and furnishes an approximation of the amount of organic and reducing material present. The determined value may correlate with BOD or with carbonaceous organic pollution from sewage or industrial wastes. [See also "Biochemical oxygen demand (BOD)"]

Clostridium perfringens *(C. perfringens)* is a spore-forming bacterium that is common in the feces of human and other warmblooded animals. Clostridial spores are being used experimentally as an indicator of past fecal contamination and the presence of microorganisms that are resistant to disinfection and environmental stresses. (See also "Bacteria")

Coliphages are viruses that infect and replicate in coliform bacteria. They are indicative of sewage contamination of water and of the survival and transport of viruses in the environment.

Color unit is produced by 1 milligram per liter of platinum in the form of the chloroplatinate ion. Color is expressed in units of the platinum-cobalt scale.

Confined aquifer is a term used to describe an aquifer containing water between two relatively impermeable boundaries. The water level in a well tapping a confined aquifer stands above the top of the confined aquifer and can be higher or lower than the water table that may be present in the material above it. In some cases, the water level can rise above the ground surface, yielding a flowing well.

Contents is the volume of water in a reservoir or lake. Unless otherwise indicated, volume is computed on the basis of a level pool and does not include bank storage.

Continuous-record station is a site where data are collected with sufficient frequency to define daily mean values and variations within a day.

Control designates a feature in the channel that physically affects the water-surface elevation and thereby determines the stage-discharge relation at the gage. This feature may be a constriction of the channel, a bedrock outcrop, a gravel bar, an artificial structure, or a uniform cross section over a long reach of the channel.

Control structure, as used in this report, is a structure on a stream or canal that is used to regulate the flow or stage of the stream or to prevent the intrusion of saltwater.

Cubic foot per second (CFS, ft^3/s) is the rate of discharge representing a volume of 1 cubic foot passing a given point in 1 second. It is equivalent to approximately 7.48 gallons per second or approximately 449 gallons per minute, or 0.02832 cubic meters per second. The term “second-foot” sometimes is used synonymously with “cubic foot per second” but is now obsolete.

Cubic foot per second-day (CFS-DAY, Cfs-day, $[(ft^3/s)/d]$) is the volume of water represented by a flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, 1.98347 acre-feet, 646,317 gallons, or 2,446.6 cubic meters. The daily mean discharges reported in the daily value data tables numerically are equal to the daily volumes in cfs-days, and the totals also represent volumes in cfs-days.

Cubic foot per second per square mile [CFSM, $(ft^3/s)/mi^2$] is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming the runoff is distributed uniformly in time and area. (See also “Annual runoff”)

Daily mean suspended-sediment concentration is the time-weighted mean concentration of suspended sediment passing a stream cross section during a 24-hour day. (See also “Sediment” and “Suspended-sediment concentration”)

Daily record station is a site where data are collected with sufficient frequency to develop a record of one or more data values per day. The frequency of data collection can range from continuous recording to data collection on a daily or near-daily basis.

Data collection platform (DCP) is an electronic instrument that collects, processes, and stores data from various sensors, and transmits the data by satellite data relay, line-of-sight radio, and/or landline telemetry.

Data logger is a microprocessor-based data acquisition system designed specifically to acquire, process, and store data. Data usually are downloaded from onsite data loggers for entry into office data systems.

Datum is a surface or point relative to which measurements of height and/or horizontal position are reported. A vertical datum is a horizontal surface used as the zero point for measurements of gage height, stage, or elevation; a horizontal datum is a reference for positions given in terms of latitude-longitude, State Plane coordinates, or Universal Transverse Mercator (UTM) coordinates. (See also “Gage datum,” “Land-surface datum,” “National Geodetic Vertical Datum of 1929,” and “North American Vertical Datum of 1988”)

Diatoms *(Bacillariophyta)* are unicellular or colonial algae with a siliceous cell wall. The abundance of diatoms in phytoplankton samples is expressed as the number of cells per milliliter (cells/mL) or biovolume in cubic micrometers per milliliter ($\mu m^3/mL$). The abundance of diatoms in periphyton samples is given in cells per square centimeter ($cells/cm^2$) or biovolume per square centimeter ($\mu m^3/cm^2$). (See also “Phytoplankton” and “Periphyton”)

Diel is of or pertaining to a 24-hour period of time; a regular daily cycle.

Discharge, or **flow**, is the rate that matter passes through a cross section of a stream channel or other water body per unit of time. The term commonly refers to the volume of water (including, unless otherwise stated, any sediment or other constituents suspended or dissolved in the water) that passes a cross section in a stream channel, canal, pipeline, and so forth, within a given period of time (cubic feet per second). Discharge also can apply to the rate at which constituents, such as suspended sediment, bedload, and dissolved or suspended chemicals, pass through a cross section, in which cases the quantity is expressed as the mass of constituent that passes the cross section in a given period of time (tons per day).

Dissolved refers to that material in a representative water sample that passes through a 0.45-micrometer membrane filter. This is a convenient operational definition used by Federal and State agencies that collect water-quality data. Determinations of “dissolved” constituent concentrations are made on sample water that has been filtered.

Dissolved oxygen (DO) is the molecular oxygen (oxygen gas) dissolved in water. The concentration in water is a function of atmospheric pressure, temperature, and dissolved-solids concentration of the water. The ability of water to retain oxygen decreases with increasing temperature or dissolved-solids concentration. Photosynthesis and respiration by plants commonly cause diurnal variations in dissolved-oxygen concentration in water from some streams.

Dissolved solids concentration in water is the quantity of dissolved material in a sample of water. It is determined either analytically by the “residue-on-evaporation” method, or mathematically by totaling the concentrations of individual constituents reported in a comprehensive chemical analysis. During the analytical determination, the bicarbonate (generally a major dissolved component of water) is converted to carbonate. In the mathematical calculation, the bicarbonate value, in milligrams per liter, is multiplied by 0.4926 to convert it to carbonate. Alternatively, alkalinity concentration (as mg/L $CaCO_3$) can be converted to carbonate concentration by multiplying by 0.60.

Diversity index (H) (Shannon index) is a numerical expression of evenness of distribution of aquatic organisms. The formula for diversity index is:

$$\bar{d} = -\sum_{i \approx 1}^{s} \frac{n_i}{n} \log_2 \frac{n_i}{n},$$

where n_i is the number of individuals per taxon, n is the total number of individuals, and s is the total number of taxa in the sample of the community. Index values range from zero, when all the organisms in the sample are the same, to some positive number, when some or all of the organisms in the sample are different.

Drainage area of a stream at a specific location is that area upstream from the location, measured in a horizontal plane, that has a common outlet at the site for its surface runoff from precipitation that normally drains by gravity into a stream. Drainage areas given herein include all closed basins, or noncontributing areas, within the area unless otherwise specified.

Drainage basin is a part of the Earth’s surface that contains a drainage system with a common outlet for its surface runoff. (See “Drainage area”)

Dry mass refers to the mass of residue present after drying in an oven at 105 °C, until the mass remains unchanged. This mass represents the total organic matter, ash and sediment, in the sample. Dry-mass values are expressed in the same units as ash mass. (See also “Ash mass,” “Biomass,” and “Wet mass”)

Dry weight refers to the weight of animal tissue after it has been dried in an oven at 65 °C until a constant weight is achieved. Dry weight represents total organic and inorganic matter in the tissue. (See also “Wet weight”)

Embeddedness is the degree to which gravel-sized and larger particles are surrounded or enclosed by finer-sized particles. (See also “Substrate embeddedness class”)

Enterococcus bacteria commonly are found in the feces of humans and other warmblooded animals. Although some strains are ubiquitous and not related to fecal pollution, the presence of enterococci in water is an indication of fecal pollution and the possible presence of enteric pathogens. Enterococcus bacteria are those bacteria that produce pink to red colonies with black or reddish-brown precipitate after incubation at 41 °C on mE agar (nutrient medium for bacterial growth) and subsequent transfer to EIA medium. Enterococci include *Streptococcus feacalis, Streptococcus feacium, Streptococcus avium,* and their variants. (See also “Bacteria”)

EPT Index is the total number of distinct taxa within the insect orders Ephemeroptera, Plecoptera, and Trichoptera. This index summarizes the taxa richness within the aquatic insects that generally are considered pollution sensitive; the index usually decreases with pollution.

Escherichia coli *(E. coli)* are bacteria present in the intestine and feces of warmblooded animals. *E. coli* are a member species of the fecal coliform group of indicator bacteria. In the laboratory, they are defined as those bacteria that produce yellow or yellow-brown colonies on a filter pad saturated with urea substrate broth after primary culturing for 22 to 24 hours at 44.5 °C on mTEC medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample. (See also “Bacteria”)

Estimated (E) value of a concentration is reported when an analyte is detected and all criteria for a positive result are met. If the concentration is less than the method detection limit (MDL), an E code will be reported with the value. If the analyte is identified qualitatively as present, but the quantitative determination is substantially more uncertain, the National Water Quality Laboratory will identify the result with an E code even though the measured value is greater than the MDL. A value reported with an E code should be used with caution. When no analyte is detected in a sample, the default reporting value is the MDL preceded by a less than sign (<). For bacteriological data, concentrations are reported as estimated when results are based on non-ideal colony counts.

Euglenoids (*Euglenophyta*) are a group of algae that usually are free-swimming and rarely creeping. They have the ability to grow either photosynthetically in the light or heterotrophically in the dark. (See also “Phytoplankton”)

Extractable organic halides (EOX) are organic compounds that contain halogen atoms such as chlorine. These organic compounds are semivolatile and extractable by ethyl acetate from air-dried streambed sediment. The ethyl acetate extract is combusted, and the concentration is determined by microcoulometric determination of the halides formed. The concentration is reported as micrograms of chlorine per gram of the dry weight of the streambed sediment.

Fecal coliform bacteria are present in the intestines or feces of warmblooded animals. They often are used as indicators of the sanitary quality of the water. In the laboratory, they are defined as all organisms that produce blue colonies within 24 hours when incubated at 44.5 °C plus or minus 0.2 °C on M-FC medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample. (See also “Bacteria”)

Fecal streptococcal bacteria are present in the intestines of warmblooded animals and are ubiquitous in the environment. They are characterized as gram-positive, cocci bacteria that are capable of growth in brain-heart infusion broth. In the laboratory, they are defined as all the organisms that produce red or pink colonies within 48 hours at 35 °C plus or minus 1.0 °C on KF-streptococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample. (See also “Bacteria”)

Fire algae (*Pyrrhophyta*) are free-swimming unicells characterized by a red pigment spot. (See also “Phytoplankton”)

Flow-duration percentiles are values on a scale of 100 that indicate the percentage of time for which a flow is not exceeded. For example, the 90th percentile of river flow is greater than or equal to 90 percent of all recorded flow rates.

Gage datum is a horizontal surface used as a zero point for measurement of stage or gage height. This surface usually is located slightly below the lowest point of the stream bottom such that the gage height is usually slightly greater than the maximum depth of water. Because the gage datum is not an actual physical object, the datum is usually defined by specifying the elevations of permanent reference marks such as bridge abutments and survey monuments, and the gage is set to agree with the reference marks. Gage datum is a local datum that is maintained independently of any national geodetic datum. However, if the elevation of the gage datum relative to the national datum (North American Vertical Datum of 1988 or National Geodetic Vertical Datum of 1929) has been determined, then the gage readings can be converted to elevations above the national datum by adding the elevation of the gage datum to the gage reading.

Gage height (G.H.) is the water-surface elevation, in feet above the gage datum. If the water surface is below the gage datum, the gage height is negative. Gage height often is used interchangeably with the more general term “stage,” although gage height is more appropriate when used in reference to a reading on a gage.

Gage values are values that are recorded, transmitted, and/or computed from a gaging station. Gage values typically are collected at 5-, 15-, or 30-minute intervals.

Gaging station is a site on a stream, canal, lake, or reservoir where systematic observations of stage, discharge, or other hydrologic data are obtained.

Gas chromatography/flame ionization detector (GC/FID) is a laboratory analytical method used as a screening technique for semivolatile organic compounds that are extractable from water in methylene chloride.

Geomorphic channel units, as used in this report, are fluvial geomorphic descriptors of channel shape and stream velocity. Pools, riffles, and runs are types of geomorphic channel units considered for National Water-Quality Assessment (NAWQA) Program habitat sampling.

Green algae *(Chlorophyta)* are unicellular or colonial algae with chlorophyll pigments similar to those in terrestrial green plants. Some forms of green algae produce mats or floating “moss” in lakes. The abundance of green algae in phytoplankton samples is expressed as the number of cells per milliliter (cells/mL) or biovolume in cubic micrometers per milliliter (μm^3/mL). The abundance of green algae in periphyton samples is given in cells per square centimeter (cells/cm^2) or biovolume per square centimeter ($\mu m^3/cm^2$). (See also “Phytoplankton” and “Periphyton”)

Habitat, as used in this report, includes all nonliving (physical) aspects of the aquatic ecosystem, although living components like aquatic macrophytes and riparian vegetation also are usually included. Measurements of habitat typically are made over a wider geographic scale than are measurements of species distribution.

Habitat quality index is the qualitative description (level 1) of instream habitat and riparian conditions surrounding the reach sampled. Scores range from 0 to 100 percent with higher scores indicative of desirable habitat conditions for aquatic life. Index only applicable to wadable streams.

Hardness of water is a physical-chemical characteristic that commonly is recognized by the increased quantity of soap required to produce lather. It is computed as the sum of equivalents of polyvalent cations (primarily calcium and magnesium) and is expressed as the equivalent concentration of calcium carbonate ($CaCO_3$).

High tide is the maximum height reached by each rising tide. The high-high and low-high tides are the higher and lower of the two high tides, respectively, of each tidal day. *See NOAA Web site: http://www.co-ops.nos.noaa.gov/tideglos.html*

Hilsenhoff's Biotic Index (HBI) is an indicator of organic pollution that uses tolerance values to weight taxa abundances; usually increases with pollution. It is calculated as follows:

$$HBI = sum\frac{(n)(a)}{N},$$

where n is the number of individuals of each taxon, a is the tolerance value of each taxon, and N is the total number of organisms in the sample.

Horizontal datum (See "Datum")

Hydrologic index stations referred to in this report are continuous-record gaging stations that have been selected as representative of streamflow patterns for their respective regions. Station locations are shown on index maps.

Hydrologic unit is a geographic area representing part or all of a surface drainage basin or distinct hydrologic feature as defined by the former Office of Water Data Coordination and delineated on the State Hydrologic Unit Maps by the USGS. Each hydrologic unit is identified by an 8-digit number.

Inch (IN., in.), in reference to streamflow, as used in this report, refers to the depth to which the drainage area would be covered with water if all of the runoff for a given time period were distributed uniformly on it. (See also "Annual runoff")

Instantaneous discharge is the discharge at a particular instant of time. (See also "Discharge")

International Boundary Commission Survey Datum refers to a geodetic datum established at numerous monuments along the United States-Canada boundary by the International Boundary Commission.

Island, as used in this report, is a mid-channel bar that has permanent woody vegetation, is flooded once a year, on average, and remains stable except during large flood events.

Laboratory reporting level (LRL) generally is equal to twice the yearly determined long-term method detection level (LT-MDL). The LRL controls false negative error. The probability of falsely reporting a nondetection for a sample that contained an analyte at a concentration equal to or greater than the LRL is predicted to be less than or equal to 1 percent. The value of the LRL will be reported with a "less than" (<) remark code for samples in which the analyte was not detected. The National Water Quality Laboratory (NWQL) collects quality-control data from selected analytical methods on a continuing basis to determine LT-MDLs and to establish LRLs. These values are reevaluated annually on the basis of the most current quality-control data and, therefore, may change. The LRL replaces the term 'non-detection value' (NDV).

Land-surface datum (lsd) is a datum plane that is approximately at land surface at each ground-water observation well.

Latent heat flux (often used interchangeably with latent heat-flux density) is the amount of heat energy that converts water from liquid to vapor (evaporation) or from vapor to liquid (condensation) across a specified cross-sectional area per unit time. Usually expressed in watts per square meter.

Light-attenuation coefficient, also known as the extinction coefficient, is a measure of water clarity. Light is attenuated according to the Lambert-Beer equation:

$$I = I_o e^{-\lambda L},$$

where I_o is the source light intensity, I is the light intensity at length L (in meters) from the source, λ is the light-attenuation coefficient, and e is the base of the natural logarithm. The light-attenuation coefficient is defined as

$$\lambda = -\frac{1}{L}\log_e\frac{I}{I_o}.$$

Lipid is any one of a family of compounds that are insoluble in water and that make up one of the principal components of living cells. Lipids include fats, oils, waxes, and steroids. Many environmental contaminants such as organochlorine pesticides are lipophilic.

Long-term method detection level (LT-MDL) is a detection level derived by determining the standard deviation of a minimum of 24 method detection limit (MDL) spike-sample measurements over an extended period of time. LT-MDL data are collected on a continuous basis to assess year-to-year variations in the LT-MDL. The LT-MDL controls false positive error. The chance of falsely reporting a concentration at or greater than the LT-MDL for a sample that did not contain the analyte is predicted to be less than or equal to 1 percent.

Low tide is the minimum height reached by each falling tide. The high-low and low-low tides are the higher and lower of the two low tides, respectively, of each tidal day. *See NOAA Web site: http://www.co-ops.nos.noaa.gov/tideglos.html*

Macrophytes are the macroscopic plants in the aquatic environment. The most common macrophytes are the rooted vascular plants that usually are arranged in zones in aquatic ecosystems and restricted in the area by the extent of illumination through the water and sediment deposition along the shoreline.

Mean concentration of suspended sediment (Daily mean suspended-sediment concentration) is the time-weighted concentration of suspended sediment passing a stream cross section during a given time period. (See also “Daily mean suspended-sediment concentration” and “Suspended-sediment concentration”)

Mean discharge (MEAN) is the arithmetic mean of individual daily mean discharges during a specific period. (See also “Discharge”)

Mean high or **low tide** is the average of all high or low tides, respectively, over a specific period.

Mean sea level is a local tidal datum. It is the arithmetic mean of hourly heights observed over the National Tidal Datum Epoch. Shorter series are specified in the name; for example, monthly mean sea level and yearly mean sea level. In order that they may be recovered when needed, such datums are referenced to fixed points known as benchmarks. (See also “Datum”)

Measuring point (MP) is an arbitrary permanent reference point from which the distance to water surface in a well is measured to obtain water level.

Megahertz is a unit of frequency. One megahertz equals one million cycles per second.

Membrane filter is a thin microporous material of specific pore size used to filter bacteria, algae, and other very small particles from water.

Metamorphic stage refers to the stage of development that an organism exhibits during its transformation from an immature form to an adult form. This developmental process exists for most insects, and the degree of difference from the immature stage to the adult form varies from relatively slight to pronounced, with many intermediates. Examples of metamorphic stages of insects are egg-larva-adult or egg-nymph-adult.

Method detection limit (MDL) is the minimum concentration of a substance that can be measured and reported with 99-percent confidence that the analyte concentration is greater than zero. It is determined from the analysis of a sample in a given matrix containing the analyte. At the MDL concentration, the risk of a false positive is predicted to be less than or equal to 1 percent.

Method of Cubatures is a method of computing discharge in tidal estuaries based on the conservation of mass equation.

Methylene blue active substances (MBAS) indicate the presence of detergents (anionic surfactants). The determination depends on the formation of a blue color when methylene blue dye reacts with synthetic anionic detergent compounds.

Micrograms per gram (UG/G, μg/g) is a unit expressing the concentration of a chemical constituent as the mass (micrograms) of the element per unit mass (gram) of material analyzed.

Micrograms per kilogram (UG/KG, μg/kg) is a unit expressing the concentration of a chemical constituent as the mass (micrograms) of the constituent per unit mass (kilogram) of the material analyzed. One microgram per kilogram is equivalent to 1 part per billion.

Micrograms per liter (UG/L, μg/L) is a unit expressing the concentration of chemical constituents in water as mass (micrograms) of constituent per unit volume (liter) of water. One thousand micrograms per liter is equivalent to 1 milligram per liter. One microgram per liter is equivalent to 1 part per billion.

Microsiemens per centimeter (US/CM, μS/cm) is a unit expressing the amount of electrical conductivity of a solution as measured between opposite faces of a centimeter cube of solution at a specified temperature. Siemens is the International System of Units nomenclature. It is synonymous with mhos and is the reciprocal of resistance in ohms.

Milligrams per liter (MG/L, mg/L) is a unit for expressing the concentration of chemical constituents in water as the mass (milligrams) of constituent per unit volume (liter) of water. Concentration of suspended sediment also is expressed in milligrams per liter and is based on the mass of dry sediment per liter of water-sediment mixture.

Minimum reporting level (MRL) is the smallest measured concentration of a constituent that may be reliably reported by using a given analytical method.

Miscellaneous site, miscellaneous station, or miscellaneous sampling site is a site where streamflow, sediment, and/or water-quality data or water-quality or sediment samples are collected once, or more often on a random or discontinuous basis to provide better areal coverage for defining hydrologic and water-quality conditions over a broad area in a river basin.

Most probable number (MPN) is an index of the number of coliform bacteria that, more probably than any other number, would give the results shown by the laboratory examination; it is not an actual enumeration. MPN is determined from the distribution of gas-positive cultures among multiple inoculated tubes.

Multiple-plate samplers are artificial substrates of known surface area used for obtaining benthic invertebrate samples. They consist of a series of spaced, hardboard plates on an eyebolt.

Nanograms per liter (NG/L, ng/L) is a unit expressing the concentration of chemical constituents in solution as mass (nanograms) of solute per unit volume (liter) of water. One million nanograms per liter is equivalent to 1 milligram per liter.

National Geodetic Vertical Datum of 1929 (NGVD 29) is a fixed reference adopted as a standard geodetic datum for elevations determined by leveling. It formerly was called “Sea Level Datum of 1929” or “mean sea level.” Although the datum was derived from the mean sea level at 26 tide stations, it does not necessarily represent local mean sea level at any particular place. *See NOAA Web site: http://www.ngs.noaa.gov/faq.shtml#WhatVD29VD88* (See “North American Vertical Datum of 1988”)

Natural substrate refers to any naturally occurring immersed or submersed solid surface, such as a rock or tree, upon which an organism lives. (See also “Substrate”)

Nekton are the consumers in the aquatic environment and consist of large, free-swimming organisms that are capable of sustained, directed mobility.

Nephelometric turbidity unit (NTU) is the measurement for reporting turbidity that is based on use of a standard suspension of formazin. Turbidity measured in NTU uses nephelometric methods that depend on passing specific light of a specific wavelength through the sample.

North American Datum of 1927 (NAD 27) is the horizontal control datum for the United States that was defined by a location and azimuth on the Clarke spheroid of 1866.

North American Datum of 1983 (NAD 83) is the horizontal control datum for the United States, Canada, Mexico, and Central America that is based on the adjustment of 250,000 points including 600 satellite Doppler stations that constrain the system to a geocentric origin. NAD 83 has been officially adopted as the legal horizontal datum for the United States by the Federal government.

North American Vertical Datum of 1988 (NAVD 88) is a fixed reference adopted as the official civilian vertical datum for elevations determined by Federal surveying and mapping activities in the United States. This datum was established in 1991 by minimum-constraint adjustment of the Canadian, Mexican, and United States first-order terrestrial leveling networks.

Open or **screened interval** is the length of unscreened opening or of well screen through which water enters a well, in feet below land surface.

Organic carbon (OC) is a measure of organic matter present in aqueous solution, suspension, or bottom sediment. May be reported as dissolved organic carbon (DOC), particulate organic carbon (POC), or total organic carbon (TOC).

Organic mass or **volatile mass** of a living substance is the difference between the dry mass and ash mass and represents the actual mass of the living matter. Organic mass is expressed in the same units as for ash mass and dry mass. (See also “Ash mass,” “Biomass,” and “Dry mass”)

Organism count/area refers to the number of organisms collected and enumerated in a sample and adjusted to the number per area habitat, usually square meter (m^2), acre, or hectare. Periphyton, benthic organisms, and macrophytes are expressed in these terms.

Organism count/volume refers to the number of organisms collected and enumerated in a sample and adjusted to the number per sample volume, usually milliliter (mL) or liter (L). Numbers of planktonic organisms can be expressed in these terms.

Organochlorine compounds are any chemicals that contain carbon and chlorine. Organochlorine compounds that are important in investigations of water, sediment, and biological quality include certain pesticides and industrial compounds.

Parameter code is a 5-digit number used in the USGS computerized data system, National Water Information System (NWIS), to uniquely identify a specific constituent or property.

Partial-record station is a site where discrete measurements of one or more hydrologic parameters are obtained over a period of time without continuous data being recorded or computed. A common example is a crest-stage gage partial-record station at which only peak stages and flows are recorded.

Particle size is the diameter, in millimeters (mm), of a particle determined by sieve or sedimentation methods. The sedimentation method uses the principle of Stokes Law to calculate sediment particle sizes. Sedimentation methods (pipet, bottom-withdrawal tube, visual-accumulation tube, sedigraph) determine fall diameter of particles in either distilled water (chemically dispersed) or in native water (the river water at the time and point of sampling).

Particle-size classification, as used in this report, agrees with the recommendation made by the American Geophysical Union Subcommittee on Sediment Terminology. The classification is as follows:

Classification	Size (mm)	Method of analysis
Clay	>0.00024 - 0.004	Sedimentation
Silt	>0.004 - 0.062	Sedimentation
Sand	>0.062 - 2.0	Sedimentation/sieve
Gravel	>2.0 - 64.0	Sieve
Cobble	>64 - 256	Manual measurement
Boulder	>256	Manual measurement

The particle-size distributions given in this report are not necessarily representative of all particles in transport in the stream. For the sedimentation method, most of the organic matter is removed, and the sample is subjected to mechanical and chemical dispersion before analysis in distilled water. Chemical dispersion is not used for native water analysis.

Peak flow (peak stage) is an instantaneous local maximum value in the continuous time series of streamflows or stages, preceded by a period of increasing values and followed by a period of decreasing values. Several peak values ordinarily occur in a year. The maximum peak value in a year is called the annual peak; peaks lower than the annual peak are called secondary peaks. Occasionally, the annual peak may not be the maximum value for the year; in such cases, the maximum value occurs at midnight at the beginning or end of the year, on the recession from or rise toward a higher peak in the adjoining year. If values are recorded at a discrete series of times, the peak recorded value may be taken as an approximation of the true peak, which may occur between the recording instants. If the values are recorded with finite precision, a sequence of equal recorded values may occur at the peak; in this case, the first value is taken as the peak.

Percent composition or **percent of total** is a unit for expressing the ratio of a particular part of a sample or population to the total sample or population, in terms of types, numbers, weight, mass, or volume.

Percent shading is a measure of the amount of sunlight potentially reaching the stream. A clinometer is used to measure left and right bank canopy angles. These values are added together, divided by 180, and multiplied by 100 to compute percentage of shade.

Periodic-record station is a site where stage, discharge, sediment, chemical, physical, or other hydrologic measurements are made one or more times during a year but at a frequency insufficient to develop a daily record.

Periphyton is the assemblage of microorganisms attached to and living upon submerged solid surfaces. Although primarily consisting of algae, they also include bacteria, fungi, protozoa, rotifers, and other small organisms. Periphyton are useful indicators of water quality.

Pesticides are chemical compounds used to control undesirable organisms. Major categories of pesticides include insecticides, miticides, fungicides, herbicides, and rodenticides.

pH of water is the negative logarithm of the hydrogen-ion activity. Solutions with pH less than 7.0 standard units are termed “acidic,” and solutions with a pH greater than 7.0 are termed “basic.” Solutions with a pH of 7.0 are neutral. The presence and concentration of many dissolved chemical constituents found in water are affected, in part, by the hydrogen-ion activity of water. Biological processes including growth, distribution of organisms, and toxicity of the water to organisms also are affected, in part, by the hydrogen-ion activity of water.

Phytoplankton is the plant part of the plankton. They usually are microscopic, and their movement is subject to the water currents. Phytoplankton growth is dependent upon solar radiation and nutrient substances. Because they are able to incorporate as well as release materials to the surrounding water, the phytoplankton have a profound effect upon the quality of the water. They are the primary food producers in the aquatic environment and commonly are known as algae. (See also “Plankton”)

Picocurie (PC, pCi) is one-trillionth (1×10^{-12}) of the amount of radioactive nuclide represented by a curie (Ci). A curie is the quantity of radioactive nuclide that yields 3.7×10^{10} radioactive disintegrations per second (dps). A picocurie yields 0.037 dps, or 2.22 dpm (disintegrations per minute).

Plankton is the community of suspended, floating, or weakly swimming organisms that live in the open water of lakes and rivers. Concentrations are expressed as a number of cells per milliliter (cells/mL) of sample.

Polychlorinated biphenyls (PCBs) are industrial chemicals that are mixtures of chlorinated biphenyl compounds having various percentages of chlorine. They are similar in structure to organochlorine insecticides.

Polychlorinated naphthalenes (PCNs) are industrial chemicals that are mixtures of chlorinated naphthalene compounds. They have properties and applications similar to polychlorinated biphenyls (PCBs) and have been identified in commercial PCB preparations.

Pool, as used in this report, is a small part of a stream reach with little velocity, commonly with water deeper than surrounding areas.

Primary productivity is a measure of the rate at which new organic matter is formed and accumulated through photo-synthetic and chemosynthetic activity of producer organisms (chiefly, green plants). The rate of primary production is estimated by measuring the amount of oxygen released (oxygen method) or the amount of carbon assimilated (carbon method) by the plants.

Primary productivity (carbon method) is expressed as milligrams of carbon per area per unit time [mg C/(m^2/time)] for periphyton and macrophytes or per volume [mg C/(m^3/time)] for phytoplankton. The carbon method defines the amount of carbon dioxide consumed as measured by radioactive carbon (carbon-14). The carbon-14 method is of greater sensitivity than the oxygen light- and dark-bottle method and is preferred for use with unenriched water samples. Unit time may be either the hour or day, depending on the incubation period. (See also “Primary productivity”)

Primary productivity (oxygen method) is expressed as milligrams of oxygen per area per unit time [mg O/(m^2/time)] for periphyton and macrophytes or per volume [mg O/(m^3/time)] for phytoplankton. The oxygen method defines production and respiration rates as estimated from changes in the measured dissolved-oxygen concentration. The oxygen light- and dark-bottle method is preferred if the rate of primary production is sufficient for accurate measurements to be made within 24 hours. Unit time may be either the hour or day, depending on the incubation period. (See also “Primary productivity”)

Radioisotopes are isotopic forms of elements that exhibit radioactivity. Isotopes are varieties of a chemical element that differ in atomic weight but are very nearly alike in chemical properties. The difference arises because the atoms of the isotopic forms of an element differ in the number of neutrons in the nucleus; for example, ordinary chlorine is a mixture of isotopes having atomic weights of 35 and 37, and the natural mixture has an atomic weight of about 35.453. Many of the elements similarly exist as mixtures of isotopes, and a great many new isotopes have been produced in the operation of nuclear devices such as the cyclotron. There are 275 isotopes of the 81 stable elements, in addition to more than 800 radioactive isotopes.

Reach, as used in this report, is a length of stream that is chosen to represent a uniform set of physical, chemical, and biological conditions within a segment. It is the principal sampling unit for collecting physical, chemical, and biological data.

Recoverable from bed (bottom) material is the amount of a given constituent that is in solution after a representative sample of bottom material has been digested by a method (usually using an acid or mixture of acids) that results in dissolution of readily soluble substances. Complete dissolution of all bottom material is not achieved by the digestion treatment and thus the determination represents less than the total amount (that is, less than 95 percent) of the constituent in the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results. (See also “Bed material”)

Recurrence interval, also referred to as return period, is the average time, usually expressed in years, between occurrences of hydrologic events of a specified type (such as exceedances of a specified high flow or nonexceedance of a specified low flow). The terms “return period” and “recurrence interval” do not imply regular cyclic occurrence. The actual times between occurrences vary randomly, with most of the times being less than the average and a few being substantially greater than the average. For example, the 100-year flood is the flow rate that is exceeded by the annual maximum peak flow at intervals whose average length is 100 years (that is, once in 100 years, on average); almost two-thirds of all exceedances of the 100-year flood occur less than 100 years after the previous exceedance, half occur less than 70 years after the previous exceedance, and about one-eighth occur more than 200 years after the previous exceedance. Similarly, the 7-day, 10-year low flow ($7Q_{10}$) is the flow rate below which the annual minimum 7-day-mean flow dips at intervals whose average length is 10 years (that is, once in 10 years, on average); almost two-thirds of the nonexceedances of the $7Q_{10}$ occur less than 10 years after the previous nonexceedance, half occur less than 7 years after, and about one-eighth occur more than 20 years after the previous nonexceedance. The recurrence interval for annual events is the reciprocal of the annual probability of occurrence. Thus, the 100-year flood has a 1-percent chance of being exceeded by the maximum peak flow in any year, and there is a 10-percent chance in any year that the annual minimum 7-day-mean flow will be less than the $7Q_{10}$.

Replicate samples are a group of samples collected in a manner such that the samples are thought to be essentially identical in composition.

Return period (See “Recurrence interval”)

Riffle, as used in this report, is a shallow part of the stream where water flows swiftly over completely or partially submerged obstructions to produce surface agitation.

River mileage is the curvilinear distance, in miles, measured upstream from the mouth along the meandering path of a stream channel in accordance with Bulletin No. 14 (October 1968) of the Water Resources Council and typically is used to denote location along a river.

Run, as used in this report, is a relatively shallow part of a stream with moderate velocity and little or no surface turbulence.

Runoff is the quantity of water that is discharged (“runs off”) from a drainage basin during a given time period. Runoff data may be presented as volumes in acre-feet, as mean discharges per unit of drainage area in cubic feet per second per square mile, or as depths of water on the drainage basin in inches. (See also “Annual runoff”)

Sea level, as used in this report, refers to one of the two commonly used national vertical datums (NGVD 1929 or NAVD 1988). See separate entries for definitions of these datums.

Sediment is solid material that originates mostly from disintegrated rocks; when transported by, suspended in, or deposited from water, it is referred to as “fluvial sediment.” Sediment includes chemical and biochemical precipitates and decomposed organic material, such as humus. The quantity, characteristics, and cause of the occurrence of sediment in streams are affected by environmental and land-use factors. Some major factors are topography, soil characteristics, land cover, and depth and intensity of precipitation.

Sensible heat flux (often used interchangeably with latent sensible heat-flux density) is the amount of heat energy that moves by turbulent transport through the air across a specified cross-sectional area per unit time and goes to heating (cooling) the air. Usually expressed in watts per square meter.

Seven-day, 10-year low flow ($7Q_{10}$) is the discharge below which the annual 7-day minimum flow falls in 1 year out of 10 on the long-term average. The recurrence interval of the $7Q_{10}$ is 10 years; the chance that the annual 7-day minimum flow will be less than the $7Q_{10}$ is 10 percent in any given year. (See also “Annual 7-day minimum” and “Recurrence interval”)

Shelves, as used in this report, are streambank features extending nearly horizontally from the flood plain to the lower limit of persistent woody vegetation.

Sodium adsorption ratio (SAR) is the expression of relative activity of sodium ions in exchange reactions within soil and is an index of sodium or alkali hazard to the soil. Sodium hazard in water is an index that can be used to evaluate the suitability of water for irrigating crops.

Soil heat flux (often used interchangeably with soil heat-flux density) is the amount of heat energy that moves by conduction across a specified cross-sectional area of soil per unit time and goes to heating (or cooling) the soil. Usually expressed in watts per square meter.

Soil-water content is the water lost from the soil upon drying to constant mass at 105 °C; expressed either as mass of water per unit mass of dry soil or as the volume of water per unit bulk volume of soil.

Specific electrical conductance (conductivity) is a measure of the capacity of water (or other media) to conduct an electrical current. It is expressed in microsiemens per centimeter at 25 °C. Specific electrical conductance is a function of the types and quantity of dissolved substances in water and can be used for approximating the dissolved-solids content of the water. Commonly, the concentration of dissolved solids (in milligrams per liter) is from 55 to 75 percent of the specific conductance (in microsiemens). This relation is not constant from stream to stream, and it may vary in the same source with changes in the composition of the water.

Stable isotope ratio (per MIL) is a unit expressing the ratio of the abundance of two radioactive isotopes. Isotope ratios are used in hydrologic studies to determine the age or source of specific water, to evaluate mixing of different water, as an aid in determining reaction rates, and other chemical or hydrologic processes.

Stage (See “Gage height”)

Stage-discharge relation is the relation between the water-surface elevation, termed stage (gage height), and the volume of water flowing in a channel per unit time.

Streamflow is the discharge that occurs in a natural channel. Although the term “discharge” can be applied to the flow of a canal, the word “streamflow” uniquely describes the discharge in a surface stream course. The term “streamflow” is more general than “runoff” as streamflow may be applied to discharge whether or not it is affected by diversion or regulation.

Substrate is the physical surface upon which an organism lives.

Substrate embeddedness class is a visual estimate of riffle streambed substrate larger than gravel that is surrounded or covered by fine sediment (<2 mm, sand or finer). Below are the class categories expressed as the percentage covered by fine sediment:

0	no gravel or larger substrate	3	26-50 percent
1	> 75 percent	4	5-25 percent
2	51-75 percent	5	< 5 percent

Surface area of a lake is that area (acres) encompassed by the boundary of the lake as shown on USGS topographic maps, or other available maps or photographs. Because surface area changes with lake stage, surface areas listed in this report represent those determined for the stage at the time the maps or photographs were obtained.

Surficial bed material is the upper surface (0.1 to 0.2 foot) of the bed material that is sampled using U.S. Series Bed-Material Samplers.

Surrogate is an analyte that behaves similarly to a target analyte, but that is highly unlikely to occur in a sample. A surrogate is added to a sample in known amounts before extraction and is measured with the same laboratory procedures used to measure the target analyte. Its purpose is to monitor method performance for an individual sample.

Suspended (as used in tables of chemical analyses) refers to the amount (concentration) of undissolved material in a water-sediment mixture. It is defined operationally as the material retained on a 0.45-micrometer filter.

Suspended, recoverable is the amount of a given constituent that is in solution after the part of a representative suspended water-sediment sample that is retained on a 0.45-micrometer membrane filter has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all the particulate matter is not achieved by the digestion treatment, and, thus, the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent present in the sample. To achieve comparability of analytical data, equivalent digestion procedures are required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results. Determinations of "suspended, recoverable" constituents are made either by directly analyzing the suspended material collected on the filter or, more commonly, by difference, on the basis of determinations of (1) dissolved and (2) total recoverable concentrations of the constituent. (See also "Suspended")

Suspended sediment is the sediment maintained in suspension by the upward components of turbulent currents or that exists in suspension as a colloid. (See also "Sediment")

Suspended-sediment concentration is the velocity-weighted concentration of suspended sediment in the sampled zone (from the water surface to a point approximately 0.3 foot above the bed) expressed as milligrams of dry sediment per liter of water-sediment mixture (mg/L). The analytical technique uses the mass of all of the sediment and the net weight of the water-sediment mixture in a sample to compute the suspended-sediment concentration. (See also "Sediment" and "Suspended sediment")

Suspended-sediment discharge (tons/d) is the rate of sediment transport, as measured by dry mass or volume, that passes a cross section in a given time. It is calculated in units of tons per day as follows: concentration (mg/L) x discharge (ft^3/s) x 0.0027. (See also "Sediment," "Suspended sediment," and "Suspended-sediment concentration")

Suspended-sediment load is a general term that refers to a given characteristic of the material in suspension that passes a point during a specified period of time. The term needs to be qualified, such as "annual suspended-sediment load" or "sand-size suspended-sediment load," and so on. It is not synonymous with either suspended-sediment discharge or concentration. (See also "Sediment")

Suspended solids, total residue at 105 °C concentration is the concentration of inorganic and organic material retained on a filter, expressed as milligrams of dry material per liter of water (mg/L). An aliquot of the sample is used for this analysis.

Suspended, total is the total amount of a given constituent in the part of a water-sediment sample that is retained on a 0.45-micrometer membrane filter. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. Knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to determine when the results should be reported as "suspended, total." Determinations of "suspended, total" constituents are made either by directly analyzing portions of the suspended material collected on the filter or, more commonly, by difference, on the basis of determinations of (1) dissolved and (2) total concentrations of the constituent. (See also "Suspended")

Synoptic studies are short-term investigations of specific water-quality conditions during selected seasonal or hydrologic periods to provide improved spatial resolution for critical water-quality conditions. For the period and conditions sampled, they assess the spatial distribution of selected water-quality conditions in relation to causative factors, such as land use and contaminant sources.

Taxa (Species) richness is the number of species (taxa) present in a defined area or sampling unit.

Taxonomy is the division of biology concerned with the classification and naming of organisms. The classification of organisms is based upon a hierarchial scheme beginning with Kingdom and ending with Species at the base. The higher the classification level, the fewer features the organisms have in common. For example, the taxonomy of a particular mayfly, *Hexagenia limbata,* is the following:

Kingdom:	Animal
Phylum:	Arthropeda
Class:	Insecta
Order:	Ephemeroptera
Family:	Ephemeridae
Genus:	*Hexagenia*
Species:	*Hexagenia limbata*

Thalweg is the line formed by connecting points of minimum streambed elevation (deepest part of the channel).

Thermograph is an instrument that continuously records variations of temperature on a chart. The more general term "temperature recorder" is used in the table descriptions and refers to any instrument that records temperature whether on a chart, a tape, or any other medium.

Time-weighted average is computed by multiplying the number of days in the sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the total number of days. A time-weighted average represents the composition of water resulting from the mixing of flow proportionally to the duration of the concentration.

Tons per acre-foot (T/acre-ft) is the dry mass (tons) of a constituent per unit volume (acre-foot) of water. It is computed by multiplying the concentration of the constituent, in milligrams per liter, by 0.00136.

Tons per day (T/DAY, tons/d) is a common chemical or sediment discharge unit. It is the quantity of a substance in solution, in suspension, or as bedload that passes a stream section during a 24-hour period. It is equivalent to 2,000 pounds per day, or 0.9072 metric ton per day.

Total is the amount of a given constituent in a representative whole-water (unfiltered) sample, regardless of the constituent's physical or chemical form. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent present in both the dissolved and suspended phases of the sample. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as "total." (Note that the word "total" does double duty here, indicating both that the sample consists of a water-suspended sediment mixture and that the analytical method determined at least 95 percent of the constituent in the sample.)

Total coliform bacteria are a particular group of bacteria that are used as indicators of possible sewage pollution. This group includes coliforms that inhabit the intestine of warmblooded animals and those that inhabit soils. They are characterized as aerobic or facultative anaerobic, gram-negative, nonspore-forming, rod-shaped bacteria that ferment lactose with gas formation within 48 hours at 35 °C. In the laboratory, these bacteria are defined as all the organisms that produce colonies with a golden-green metallic sheen within 24 hours when incubated at 35 °C plus or minus 1.0 °C on M-Endo medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 milliliters of sample. (See also "Bacteria")

Total discharge is the quantity of a given constituent, measured as dry mass or volume, that passes a stream cross section per unit of time. When referring to constituents other than water, this term needs to be qualified, such as “total sediment discharge,” “total chloride discharge,” and so on.

Total in bottom material is the amount of a given constituent in a representative sample of bottom material. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as “total in bottom material.”

Total length (fish) is the straight-line distance from the anterior point of a fish specimen’s snout, with the mouth closed, to the posterior end of the caudal (tail) fin, with the lobes of the caudal fin squeezed together.

Total load refers to all of a constituent in transport. When referring to sediment, it includes suspended load plus bed load.

Total organism count is the number of organisms collected and enumerated in any particular sample. (See also “Organism count/volume”)

Total recoverable is the amount of a given constituent in a whole-water sample after a sample has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all particulate matter is not achieved by the digestion treatment, and thus the determination represents something less than the “total” amount (that is, less than 95 percent) of the constituent present in the dissolved and suspended phases of the sample. To achieve comparability of analytical data for whole-water samples, equivalent digestion procedures are required of all laboratories performing such analyses because different digestion procedures may produce different analytical results.

Total sediment discharge is the mass of suspended-sediment plus bed-load transport, measured as dry weight, that passes a cross section in a given time. It is a rate and is reported as tons per day. (See also “Bedload,” “Bedload discharge,” “Sediment,” “Suspended sediment,” and “Suspended-sediment concentration”)

Total sediment load or **total load** is the sediment in transport as bedload and suspended-sediment load. The term may be qualified, such as “annual suspended-sediment load” or “sand-size suspended-sediment load,” and so on. It differs from total sediment discharge in that load refers to the material, whereas discharge refers to the quantity of material, expressed in units of mass per unit time. (See also “Sediment,” “Suspended-sediment load,” and “Total load”)

Transect, as used in this report, is a line across a stream perpendicular to the flow and along which measurements are taken, so that morphological and flow characteristics along the line are described from bank to bank. Unlike a cross section, no attempt is made to determine known elevation points along the line.

Turbidity is the reduction in the transparency of a solution because of the presence of suspended and some dissolved substances. The measurement technique records the collective optical properties of the solution that cause light to be scattered and attenuated rather than transmitted in straight lines; the higher the intensity of scattered or attenuated light, the higher the value of the turbidity. Turbidity is expressed in nephelometric turbidity units (NTU). Depending on the method used, the turbidity units as NTU can be defined as the intensity of light of a specified wavelength scattered or attenuated by suspended particles or absorbed at a method specified angle, usually 90 degrees, from the path of the incident light. Currently approved methods for the measurement of turbidity in the USGS include those that conform to USEPA Method 180.1, ASTM D1889-00, and ISO 7027. Measurements of turbidity by these different methods and different instruments are unlikely to yield equivalent values.

Ultraviolet (UV) absorbance (absorption) at 254 or 280 nanometers is a measure of the aggregate concentration of the mixture of UV absorbing organic materials dissolved in the analyzed water, such as lignin, tannin, humic substances, and various aromatic compounds. UV absorbance (absorption) at 254 or 280 nanometers is measured in UV absorption units per centimeter of path length of UV light through a sample.

Unconfined aquifer is an aquifer whose upper surface is a water table free to fluctuate under atmospheric pressure. (See “Water-table aquifer”)

Vertical datum (See “Datum”)

Volatile organic compounds (VOCs) are organic compounds that can be isolated from the water phase of a sample by purging the water sample with inert gas, such as helium, and, subsequently, analyzed by gas chromatography. Many VOCs are human-made chemicals that are used and produced in the manufacture of paints, adhesives, petroleum products, pharmaceuticals, and refrigerants. They often are components of fuels, solvents, hydraulic fluids, paint thinners, and dry-cleaning agents commonly used in urban settings. VOC contamination of drinking-water supplies is a human-health concern because many are toxic and are known or suspected human carcinogens.

Water table is that surface in a ground-water body at which the water pressure is equal to the atmospheric pressure.

Water-table aquifer is an unconfined aquifer within which the water table is found.

Water year in USGS reports dealing with surface-water supply is the 12-month period October 1 through September 30. The water year is designated by the calendar year in which it ends and which includes 9 of the 12 months. Thus, the year ending September 30, 2002, is called the “2002 water year.”

Watershed (See “Drainage basin”)

WDR is used as an abbreviation for “Water-Data Report” in the REVISED RECORDS paragraph to refer to State annual hydrologic-data reports. (WRD was used as an abbreviation for “Water-Resources Data” in reports published prior to 1976.)

Weighted average is used in this report to indicate discharge-weighted average. It is computed by multiplying the discharge for a sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the sum of the discharges. A discharge-weighted average approximates the composition of water that would be found in a reservoir containing all the water passing a given location during the water year after thorough mixing in the reservoir.

Wet mass is the mass of living matter plus contained water. (See also “Biomass” and “Dry mass”)

Wet weight refers to the weight of animal tissue or other substance including its contained water. (See also “Dry weight”)

WSP is used as an acronym for “Water-Supply Paper” in reference to previously published reports.

Zooplankton is the animal part of the plankton. Zooplankton are capable of extensive movements within the water column and often are large enough to be seen with the unaided eye. Zooplankton are secondary consumers feeding upon bacteria, phytoplankton, and detritus. Because they are the grazers in the aquatic environment, the zooplankton are a vital part of the aquatic food web. The zooplankton community is dominated by small crustaceans and rotifers. (See also “Plankton”)

TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS OF THE U.S. GEOLOGICAL SURVEY

The USGS publishes a series of manuals, the Techniques of Water-Resources Investigations, 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, chap. D1. 1975. 65 p.

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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, chap. D1. 1974. 116 p.

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Section E. Subsurface Geophysical Methods

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5–A2.*Determination of minor elements in water by emission spectroscopy,* by P.R. Barnett and E.C. Mallory, Jr.: USGS–TWRI book 5, chap. A2. 1971. 31 p.
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, chap. A3. 1987. 80 p.
5–A4.*Methods for collection and analysis of aquatic biological and microbiological samples,* by L.J. Britton and P.E. Greeson, editors: USGS–TWRI book 5, chap. A4. 1989. 363 p.
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, chap. A5. 1977. 95 p.
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, chap. A6. 1982. 181 p.

Section C. Sediment Analysis

5–C1.*Laboratory theory and methods for sediment analysis*, by H.P. Guy: USGS–TWRI book 5, chap. C1. 1969. 58 p.

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, chap. A1. 1988. 586 p.
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, chap. A2. 1991. 68 p.
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, chap. A3. 1993. 136 p.
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, chap. A4. 1992. 108 p.
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, chap. A5. 1993. 243 p.
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: USGS–TWRI book 6, chap. A6. 1996. 125 p.
6–A7.*User's guide to SEAWAT: A computer program for simulation of three-dimensional variable-density ground-water flow*, by Weixing Guo and Christian D. Langevin: USGS–TWRI book 6, chap. A7. 2002. 77 p.

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, chap. C1. 1976. 116 p.
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, chap. C2. 1978. 90 p.
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, chap. C3. 1981. 110 p.

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, chap. A1. 1968. 23 p.
8–A2.*Installation and service manual for U.S. Geological Survey manometers*, by J.D. Craig: USGS–TWRI book 8, chap. A2. 1983. 57 p.

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, chap. B2. 1968. 15 p.

Book 9. Handbooks for Water-Resources Investigations

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

9–A1.*National field manual for the collection of water-quality data: Preparations for water sampling*, by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI book 9, chap. A1. 1998. 47 p.
9–A2.*National field manual for the collection of water-quality data: Selection of equipment for water sampling*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI book 9, chap. A2. 1998. 94 p.
9–A3.*National field manual for the collection of water-quality data: Cleaning of equipment for water sampling*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI book 9, chap. A3. 1998. 75 p.
9–A4.*National field manual for the collection of water-quality data: Collection of water samples*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI book 9, chap. A4. 1999. 156 p.
9–A5.*National field manual for the collection of water-quality data: Processing of water samples*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI book 9, chap. A5. 1999, 149 p.
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, chap. A6. 1998. Variously paginated.
9–A7.*National field manual for the collection of water-quality data: Biological indicators*, edited by D.N. Myers and F.D. Wilde: USGS–TWRI book 9, chap. A7. 1997 and 1999. Variously paginated.
9–A8.*National field manual for the collection of water-quality data: Bottom-material samples*, by D.B. Radtke: USGS–TWRI book 9, chap. A8. 1998. 48 p.
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, chap. A9. 1998. 60 p.

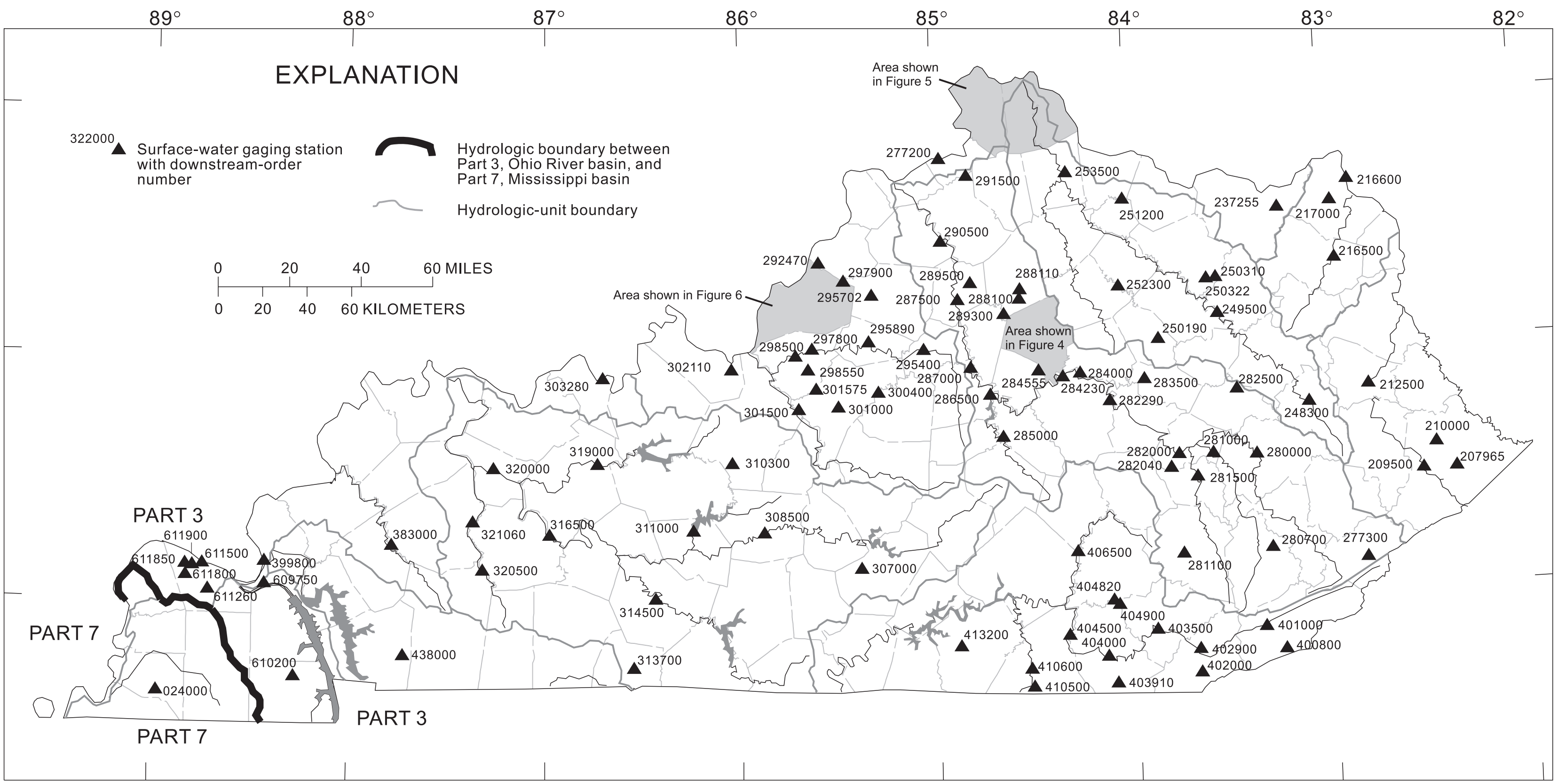

Figure 3. Location of gaging stations in Kentucky.

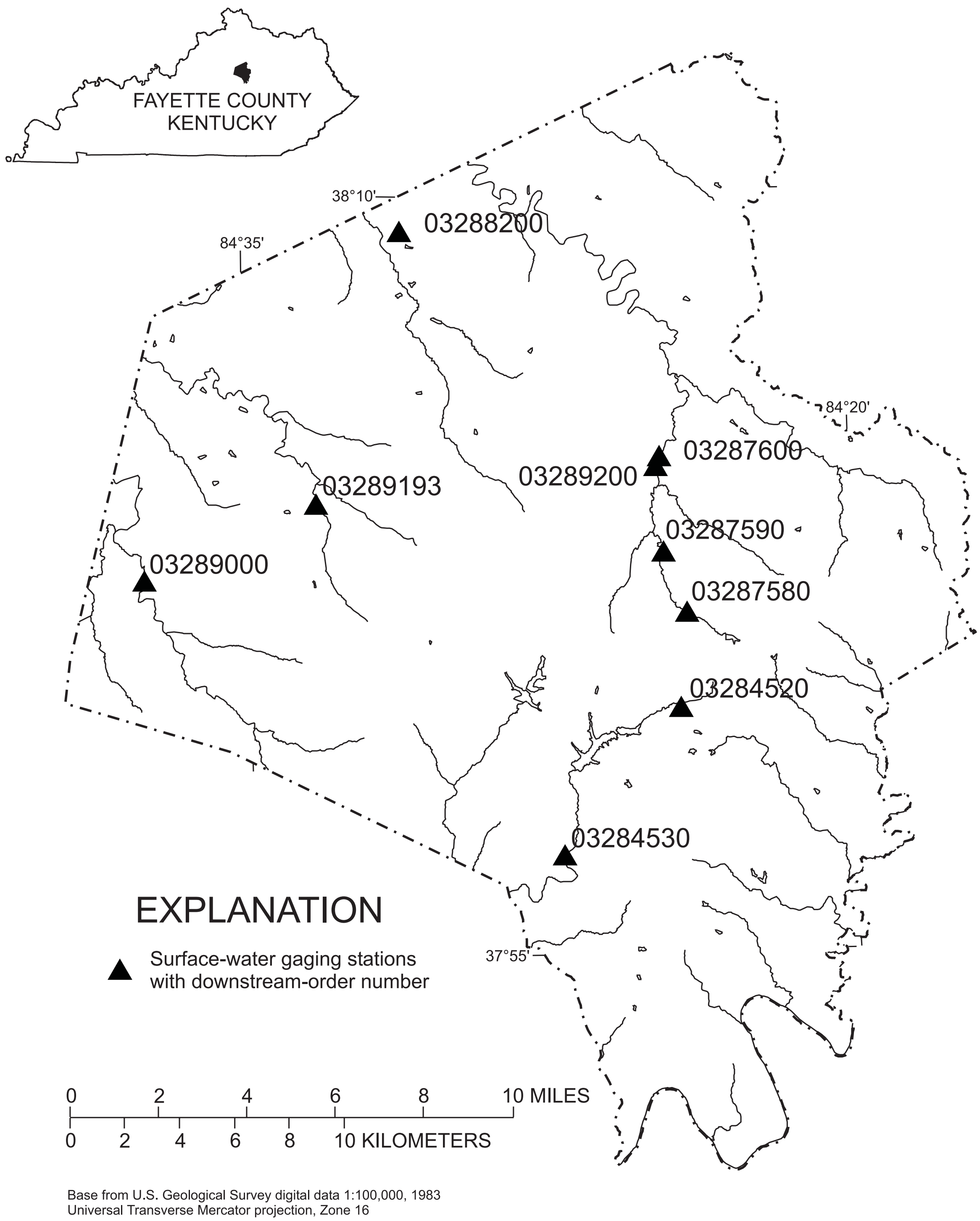

Figure 4. Location of surface-water gaging stations in Fayette County, Kentucky.

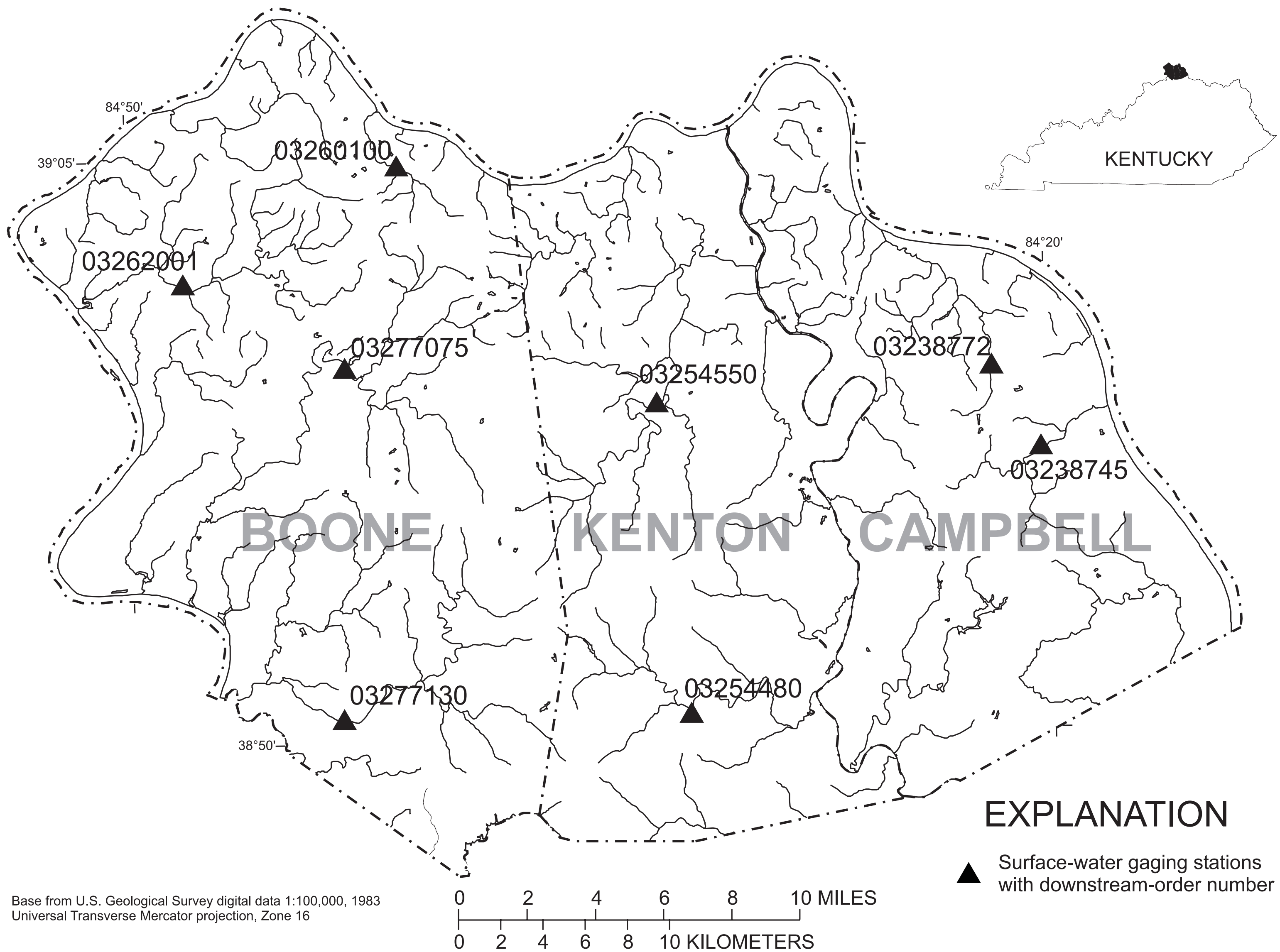

Figure 5. Location of surface-water gaging stations in Boone, Kenton, and Campbell Counties, Kentucky.

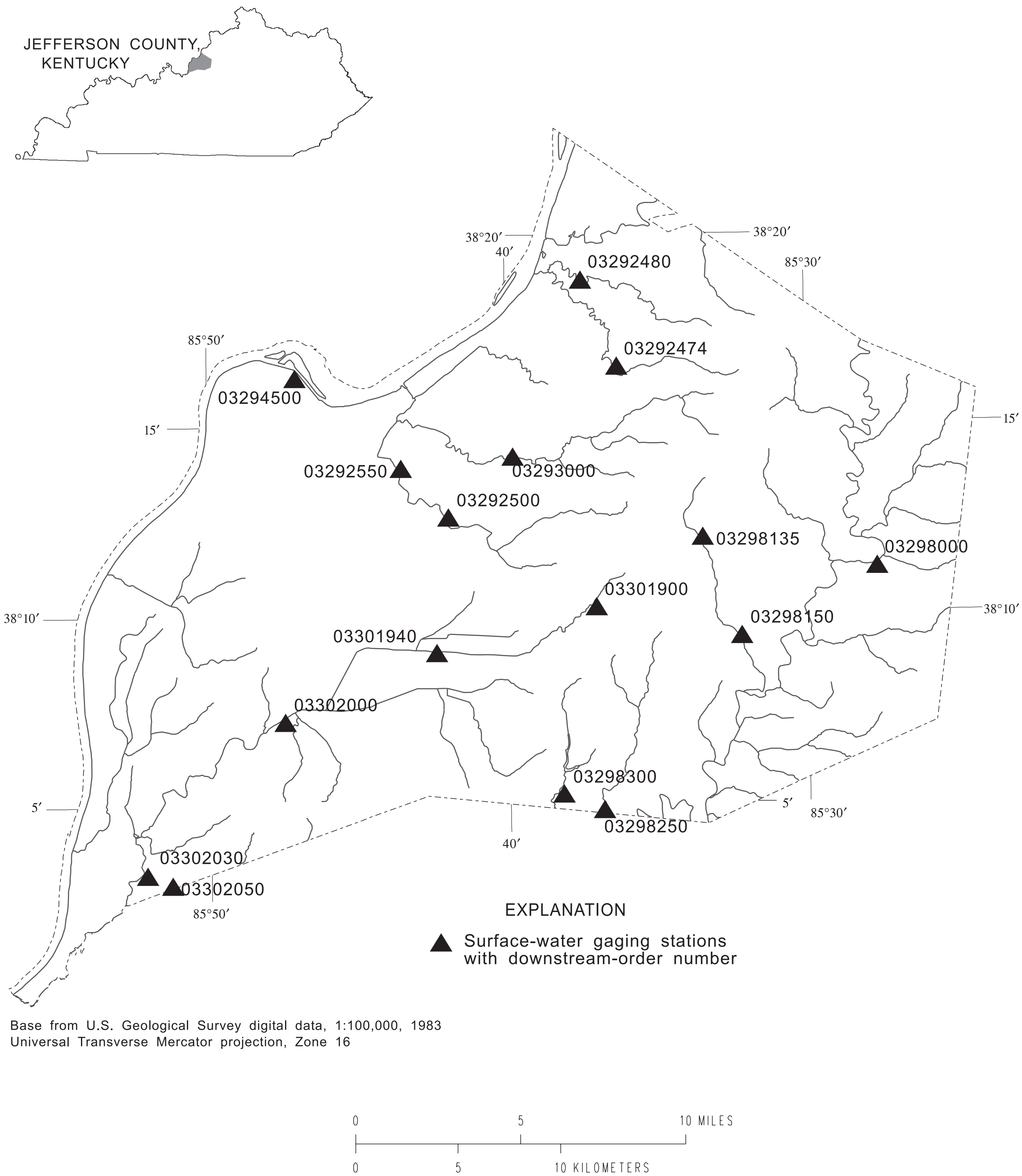

Figure 6. Location of gaging stations in Jefferson County, Kentucky.

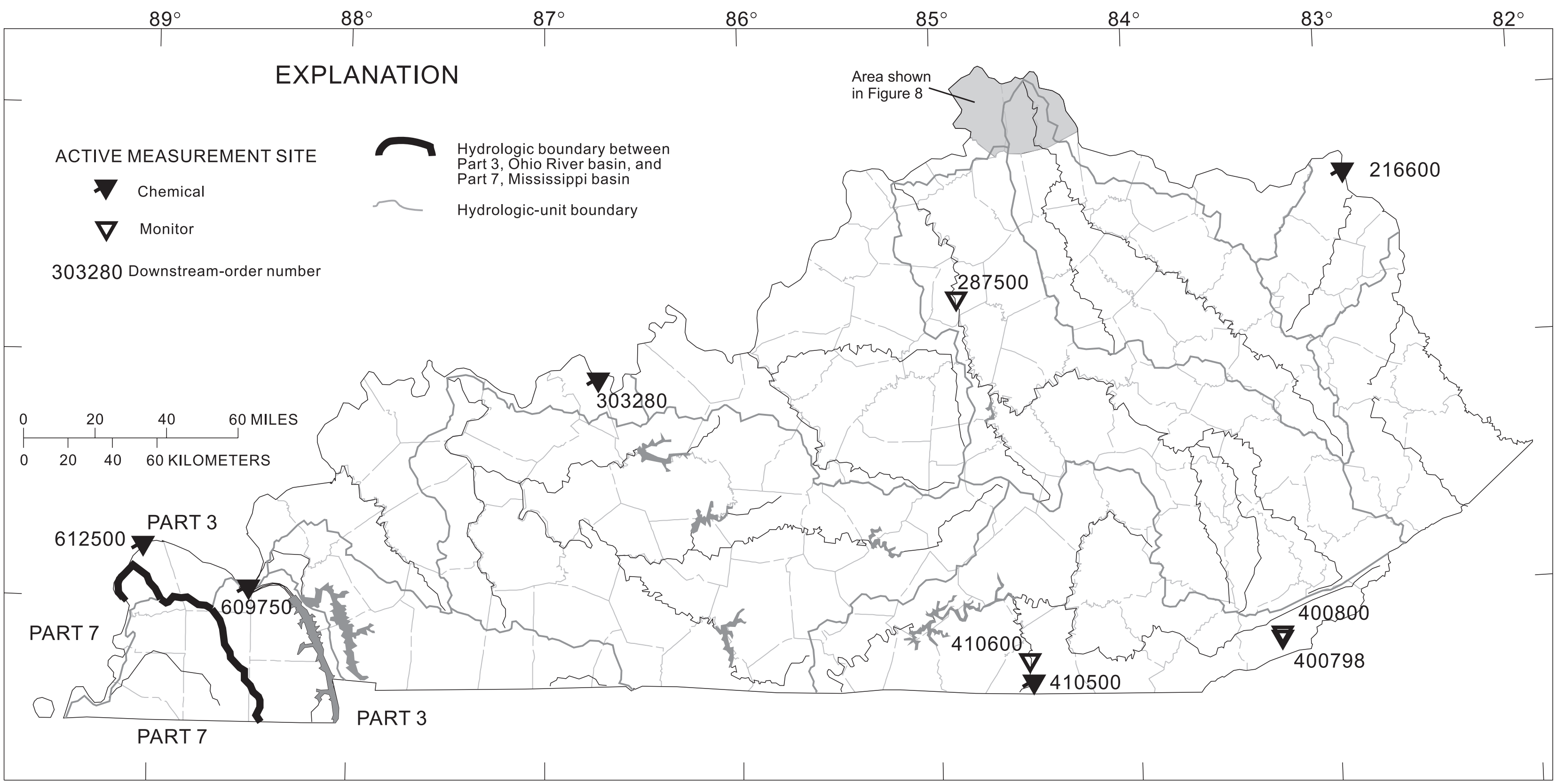

Figure 7. Location of surface-water-quality stations in Kentucky.

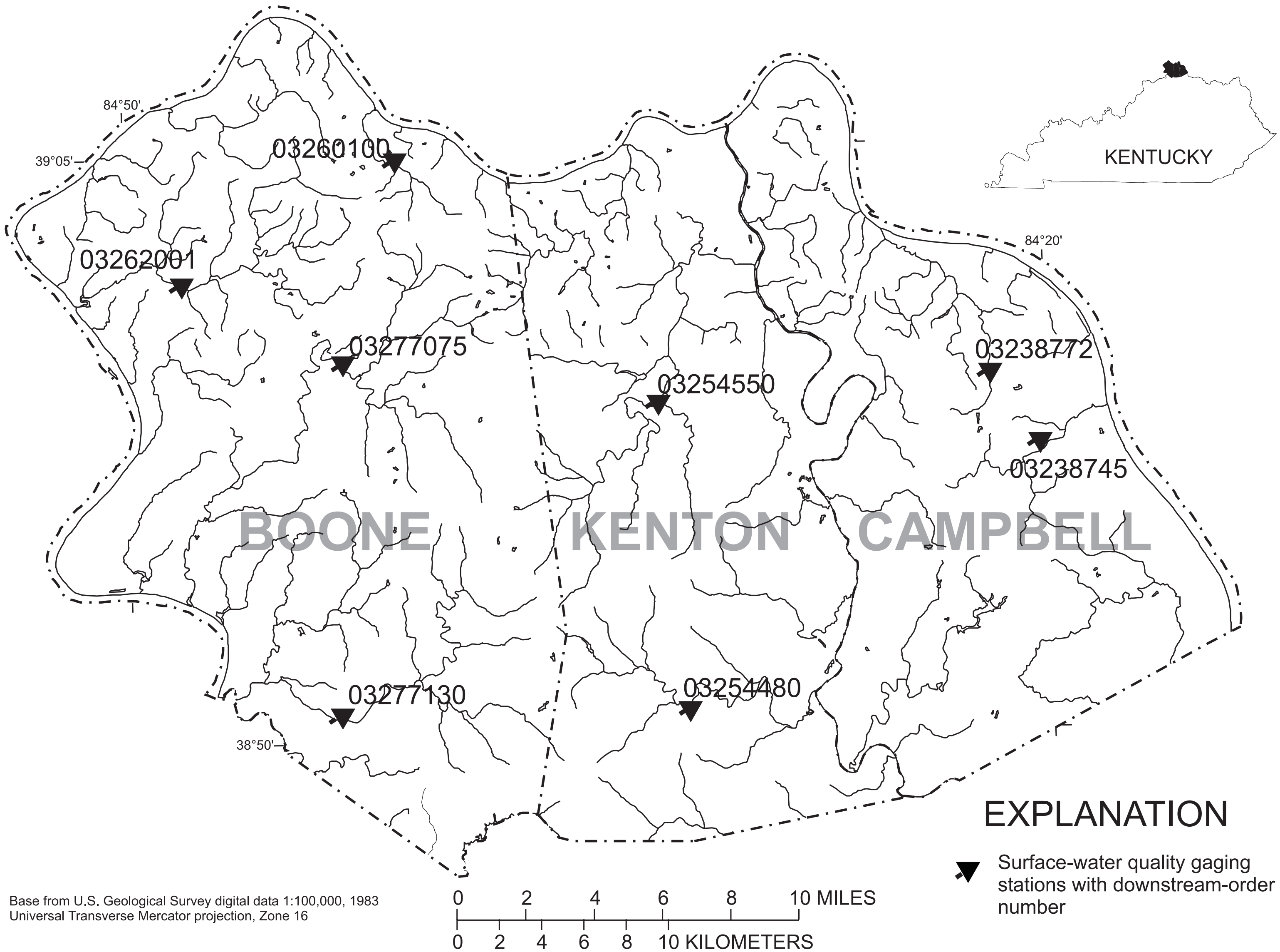

Figure 8. Location of water-quality stations in Boone, Kenton, and Campbell Counties, Kentucky.

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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^2.

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

GAGE.--Water-stage recorder with telemetry. Datum of gage is 780 ft above NGVD of 1929, from topographic map.

REMARKS.--Records fair except those estimated which are poor.

COOPERATION.--Kentucky Natural Resources and Enviromental Protection Cabinet.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 200 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb 16	0715	*442	*2.43	Jun 15	2230	326	2.19
Apr 10	2215	213	1.88	Jun 17	u	353	2.25

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.7	2.0	2.3	9.8	20	18	7.4	24	5.7	e3.1	0.53	1.4
2	1.7	1.3	2.1	9.5	20	15	7.5	17	4.0	e3.2	0.55	1.2
3	1.0	1.6	1.9	12	19	13	7.6	8.6	5.4	e3.4	1.6	1.4
4	1.2	1.5	2.0	13	23	11	8.7	5.7	12	e2.8	1.5	8.0
5	0.92	4.9	13	14	22	11	12	5.2	10	e2.6	1.6	3.5
6	0.81	5.9	14	14	21	9.8	11	4.0	7.5	e2.5	1.2	2.3
7	0.85	3.4	9.3	13	21	8.6	71	5.3	36	19	4.6	1.7
8	0.73	2.2	7.0	13	18	7.9	52	6.6	29	5.4	2.8	1.4
9	0.76	1.5	6.2	12	18	7.5	71	8.4	16	5.7	2.2	1.1
10	1.4	6.9	5.3	11	18	6.8	83	6.6	10	4.5	1.9	1.0
11	1.8	7.0	13	10	17	6.5	85	5.7	8.9	6.0	1.7	0.83
12	1.2	4.9	15	8.9	17	6.7	33	4.0	6.8	5.9	2.3	0.72
13	1.1	3.5	12	e8.2	17	7.3	20	3.1	5.4	8.5	10	0.67
14	0.74	1.9	15	e7.9	17	6.9	15	2.5	7.3	5.0	11	0.59
15	5.0	2.3	16	e7.4	119	6.5	12	9.4	46	3.1	11	0.73
16	4.3	4.3	14	e7.1	220	6.5	10	9.2	75	2.4	9.7	0.61
17	1.8	5.4	12	e6.8	73	6.4	9.4	7.6	e124	1.3	11	0.55
18	1.2	4.1	10	e6.6	33	6.6	18	9.5	e80	1.0	12	0.50
19	1.1	3.1	9.1	e6.5	21	6.1	16	9.0	e41	0.81	7.4	1.1
20	1.1	2.3	12	e6.4	15	6.0	13	6.8	e22	0.63	3.3	0.67
21	0.96	3.4	12	e8.0	13	5.3	11	12	e14	0.84	1.3	0.57
22	0.79	6.7	11	e7.4	97	5.0	9.7	11	e10	1.1	9.6	3.1
23	0.70	6.2	10	e6.8	64	4.8	8.0	8.7	e7.8	0.85	4.9	1.2
24	0.57	4.7	11	e6.5	31	4.6	6.6	6.4	e6.2	0.59	3.1	0.49
25	0.87	3.8	14	e6.3	24	4.6	6.0	4.8	e5.2	0.44	2.3	0.40
26	0.83	3.3	15	e6.0	19	5.0	9.0	3.8	e4.6	0.36	1.9	0.42
27	2.3	4.1	14	e5.8	18	4.6	6.6	3.4	e4.3	0.31	1.7	1.6
28	9.4	3.2	13	e5.7	19	4.9	6.0	3.2	e3.9	0.34	1.6	1.4
29	21	2.8	11	13	---	5.4	5.9	7.7	e3.6	2.1	1.5	0.94
30	6.2	2.8	9.8	22	---	8.1	6.1	5.6	e3.3	0.81	1.4	0.75
31	2.9	---	8.8	21	---	7.5	---	6.6	---	0.65	1.5	---
TOTAL	76.93	111.0	320.8	305.6	1,034	233.9	637.5	231.4	614.9	95.23	128.68	40.84
MEAN	2.48	3.70	10.3	9.86	36.9	7.55	21.2	7.46	20.5	3.07	4.15	1.36
MAX	21	7.0	16	22	220	18	85	24	124	19	12	8.0
MIN	0.57	1.3	1.9	5.7	13	4.6	5.9	2.5	3.3	0.31	0.53	0.40
CFSM	0.40	0.60	1.67	1.59	5.96	1.22	3.43	1.20	3.31	0.50	0.67	0.22
IN.	0.46	0.67	1.92	1.83	6.20	1.40	3.83	1.39	3.69	0.57	0.77	0.25

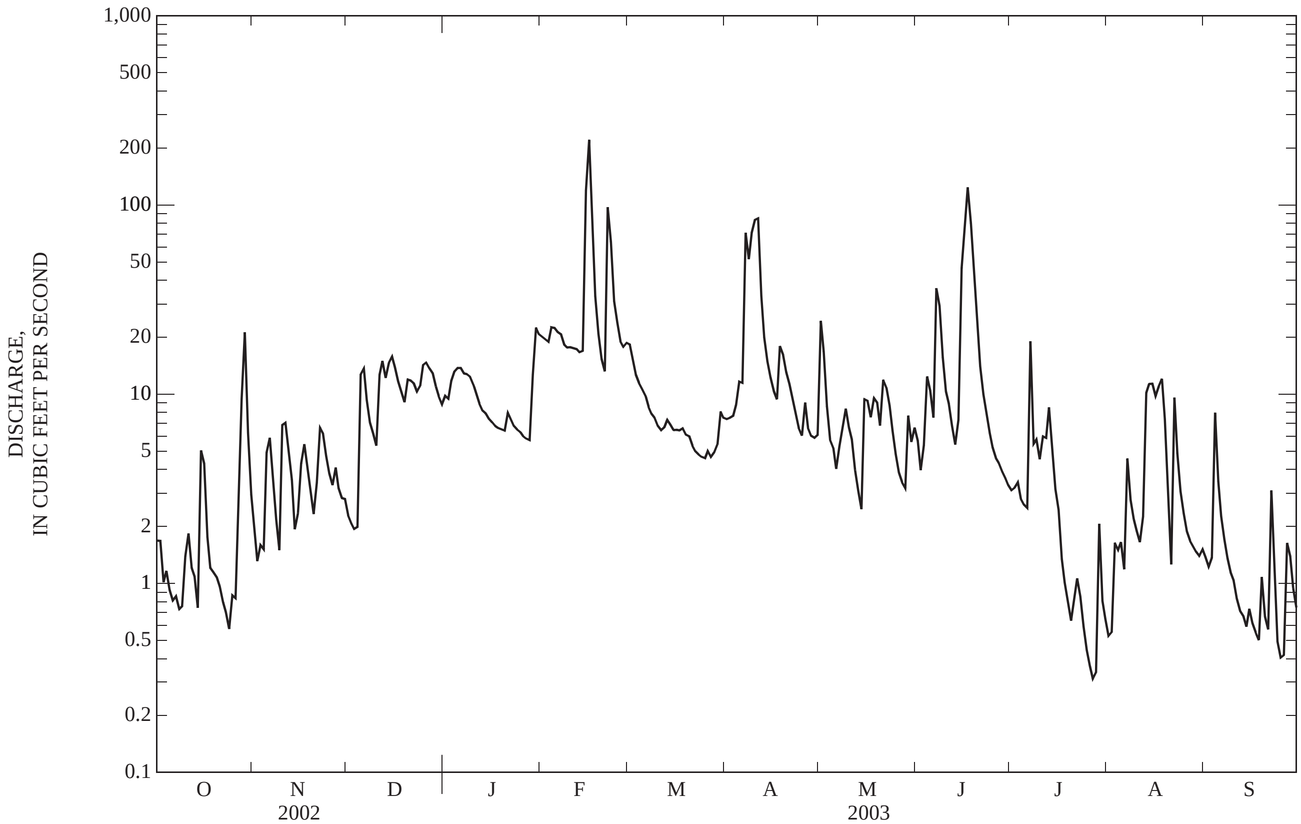
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1974 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	3.61	5.79	7.57	13.3	13.7	17.3	13.7	11.0	7.95	3.85	3.47	2.14
MAX	28.0	31.0	18.8	42.6	36.9	53.6	30.7	47.7	23.7	23.2	14.0	5.75
(WY)	(1990)	(1974)	(1979)	(1974)	(2003)	(1975)	(1998)	(1989)	(1998)	(2000)	(2001)	(1989)
MIN	0.32	0.27	0.98	1.44	2.55	7.12	4.62	0.71	0.64	0.32	0.31	0.38
(WY)	(1992)	(1982)	(1982)	(1981)	(2002)	(1977)	(1982)	(1976)	(1980)	(1991)	(1981)	(1981)

03207965 GRAPEVINE CREEK NEAR PHYLLIS, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1974 - 2003	
ANNUAL TOTAL	2,910.02		3,830.78			
ANNUAL MEAN	7.97		10.5		8.35	
HIGHEST ANNUAL MEAN					17.2	1974
LOWEST ANNUAL MEAN					5.30	1992
HIGHEST DAILY MEAN	150	May 3	220	Feb 16	448	Apr 4, 1977
LOWEST DAILY MEAN	0.57	Oct 24	0.31	Jul 27	0.01	Aug 19, 1982
ANNUAL SEVEN-DAY MINIMUM	0.83	Oct 20	0.57	Jul 22	0.04	Sep 22, 1981
MAXIMUM PEAK FLOW			442	Feb 16	1,650	Jun 1, 1974
MAXIMUM PEAK STAGE			2.43	Feb 16	9.10	Apr 7, 1977
INSTANTANEOUS LOW FLOW					0.01	Aug 19, 1982
ANNUAL RUNOFF (CFSM)	1.29		1.69		1.35	
ANNUAL RUNOFF (INCHES)	17.46		22.98		18.31	
10 PERCENT EXCEEDS	16		19		17	
50 PERCENT EXCEEDS	3.1		6.2		3.3	
90 PERCENT EXCEEDS	1.3		0.86		0.57	

e Estimated



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^2.

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 with telemetry. Datum of gage is 631.98 ft above NGVD of 1929. 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.--Records good. Flow regulated since March 1965 by John W. Flannagan Lake (station 03208990), since August 1966 by North Fork Pound River Lake (station 03208680) and since October 1968 by Fishtrap Lake (station 03207995).

COOPERATION.--U.S. Army Corps of Engineers, Huntington District.

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

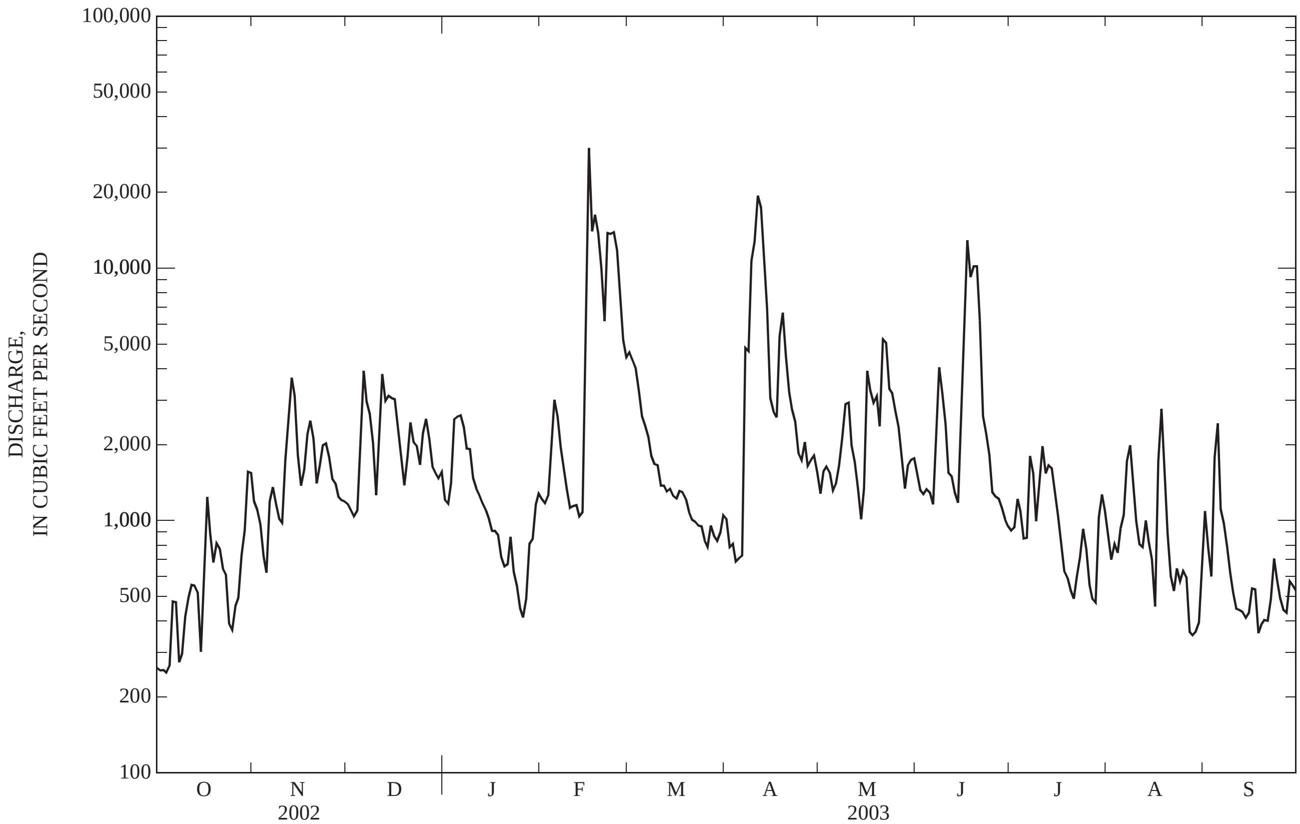
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	261	1,190	1,160	1,210	1,220	4,640	1,010	1,280	1,530	913	877	1,090
2	255	1,110	1,100	1,160	1,170	4,310	785	1,560	1,320	942	700	781
3	255	965	1,040	1,410	1,260	4,020	808	1,630	1,270	1,220	806	600
4	250	721	1,090	2,520	1,940	3,280	689	1,550	1,330	1,090	745	1,780
5	266	621	1,850	2,580	3,010	2,590	708	1,310	1,290	849	931	2,430
6	478	1,190	3,920	2,610	2,590	2,370	726	1,400	1,160	856	1,050	1,110
7	475	1,350	2,960	2,340	1,940	2,140	4,840	1,650	2,200	1,800	1,720	973
8	274	1,160	2,640	1,930	1,590	1,800	4,700	2,130	4,050	1,540	1,990	790
9	296	1,020	2,040	1,920	1,330	1,670	10,700	2,890	3,180	994	1,340	618
10	416	981	1,260	1,470	1,120	1,660	12,800	2,930	2,410	1,360	996	519
11	493	1,740	2,440	1,340	1,140	1,380	19,400	1,990	1,550	1,970	806	446
12	556	2,610	3,810	1,270	1,150	1,380	17,400	1,710	1,500	1,540	784	441
13	553	3,680	2,980	1,180	1,040	1,300	10,800	1,340	1,290	1,650	1,000	434
14	520	3,130	3,120	1,110	1,080	1,340	6,910	1,010	1,170	1,610	826	412
15	302	1,820	3,050	1,020	7,870	1,250	3,050	1,340	2,890	1,290	702	429
16	557	1,380	3,030	908	30,000	1,230	2,710	3,920	5,310	1,030	456	539
17	1,240	1,590	2,380	910	14,000	1,310	2,570	3,260	12,900	791	1,720	534
18	889	2,200	1,810	877	16,300	1,290	5,370	2,930	9,230	632	2,770	357
19	683	2,490	1,380	716	13,800	1,220	6,660	3,110	10,200	595	1,570	386
20	814	2,110	1,800	657	9,980	1,080	4,450	2,360	10,200	529	891	404
21	774	1,400	2,450	670	6,170	1,010	3,230	5,230	6,200	491	600	401
22	645	1,670	2,040	861	13,800	988	2,750	5,070	2,600	597	526	490
23	612	1,990	1,970	625	13,700	956	2,460	3,340	2,210	712	645	706
24	392	2,020	1,670	550	13,900	951	1,860	3,200	1,820	927	575	585
25	370	1,780	2,220	448	11,800	836	1,740	2,720	1,300	770	632	492
26	459	1,460	2,530	413	7,960	787	2,050	2,350	1,250	556	597	442
27	494	1,400	2,110	490	5,220	956	1,650	1,820	1,220	489	362	432
28	727	1,240	1,640	805	4,430	870	1,730	1,340	1,120	472	351	574
29	916	1,200	1,540	842	---	832	1,810	1,650	1,010	1,030	363	555
30	1,560	1,190	1,470	1,160	---	898	1,550	1,740	953	1,270	394	529
31	1,540	---	1,560	1,280	---	1,050	---	1,760	---	1,090	652	---
TOTAL	18,322	48,408	66,060	37,282	190,510	51,394	137,916	71,520	95,663	31,605	28,377	20,279
MEAN	591	1,614	2,131	1,203	6,804	1,658	4,597	2,307	3,189	1,020	915	676
MAX	1,560	3,680	3,920	2,610	30,000	4,640	19,400	5,230	12,900	1,970	2,770	2,430
MIN	250	621	1,040	413	1,040	787	689	1,010	953	472	351	357

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	774	1,088	1,500	2,230	2,832	2,924	2,330	1,995	1,072	643	510	455
MAX	3,939	3,991	5,385	6,861	6,804	8,081	7,646	6,067	3,492	2,028	1,150	1,606
(WY)	(1990)	(1978)	(1973)	(1974)	(2003)	(1975)	(1977)	(1984)	(1979)	(2001)	(2001)	(1989)
MIN	158	312	300	278	814	529	388	349	210	200	203	168
(WY)	(1970)	(2001)	(1981)	(1981)	(1992)	(1988)	(1986)	(1976)	(1988)	(1988)	(1969)	(1969)

03209500 LEVISA FORK AT PIKEVILLE, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1969 - 2003	
ANNUAL TOTAL	540,874		797,336			
ANNUAL MEAN	1,482		2,184		1,523	
HIGHEST ANNUAL MEAN					2,459	1979
LOWEST ANNUAL MEAN					522	1988
HIGHEST DAILY MEAN	22,100	Mar 18	30,000	Feb 16	69,300	Apr 5, 1977
LOWEST DAILY MEAN	192	Jan 4	250	Oct 4	66	Dec 3, 1970
ANNUAL SEVEN-DAY MINIMUM	211	Aug 30	320	Oct 1	103	Oct 10, 1968
MAXIMUM PEAK FLOW			33,000	Feb 16	85,500	Jan 30, 1957
MAXIMUM PEAK STAGE			39.97	Feb 16	52.72	Jan 30, 1957
INSTANTANEOUS LOW FLOW					66	Dec 3, 1970
10 PERCENT EXCEEDS	2,930		4,030		3,480	
50 PERCENT EXCEEDS	742		1,280		754	
90 PERCENT EXCEEDS	234		491		233	



03210000 JOHNS CREEK NEAR META, KY

LOCATION.--Lat 37°34'01", long 82°27'29", Pike County, Hydrologic Unit 05070203, on right bank 100 ft upstream 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^2.

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 with telemetry and crest-stage gage. Datum of gage is 715.66 ft above NGVD of 1929. See WDR KY-90-1 for history of changes prior to Dec. 21, 1965.

REMARKS.--Records good except those estimated which are poor.

COOPERATION.--Kentucky Natural Resources and Environmental Protection Cabinet and U.S. Army Corps of Engineers, Huntington District.

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^3/s.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,600 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb 16	0930	*3,340	*16.30	Jun 17	1830	2,490	14.79
Apr 11	0130	1,870	13.42				

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.1	33	22	52	87	166	38	51	36	29	14	17
2	6.8	26	19	57	89	153	37	59	28	29	14	12
3	5.1	22	18	74	86	126	34	48	36	31	23	24
4	6.9	22	16	94	118	105	35	41	108	26	26	206
5	7.8	26	107	91	117	93	46	53	81	24	23	58
6	8.4	65	116	82	99	81	38	59	55	23	16	30
7	7.9	57	73	70	e77	68	532	44	261	54	95	22
8	8.7	37	56	67	e64	61	430	57	267	30	36	21
9	11	28	46	63	e53	56	768	75	136	37	25	17
10	12	25	39	54	65	51	644	64	83	37	18	15
11	23	148	138	45	62	45	1,010	58	70	63	14	14
12	24	88	144	e33	57	44	357	45	59	53	12	12
13	11	56	113	e30	52	48	227	36	46	89	31	12
14	7.3	41	158	e27	54	49	157	31	162	45	16	12
15	6.4	34	157	e25	1,310	42	119	59	363	32	12	12
16	64	45	117	e24	2,210	41	98	80	419	27	13	12
17	28	87	87	e23	649	41	90	66	1,050	22	20	9.9
18	15	88	70	e22	331	40	200	125	780	20	21	11
19	10	66	60	e21	222	37	183	119	339	19	14	12
20	11	50	90	e20	161	35	139	84	198	18	11	11
21	12	46	85	e22	135	34	114	96	132	19	10	9.3
22	9.3	66	77	e19	887	32	89	85	97	18	17	19
23	9.5	62	64	e17	625	31	73	76	75	15	35	33
24	7.4	51	67	e16	339	29	61	62	58	15	15	14
25	7.4	40	100	e15	241	27	56	52	50	14	13	13
26	10	32	104	e14	191	28	72	44	43	13	10	11
27	12	33	89	e13	166	27	59	38	40	11	9.4	12
28	44	28	74	e12	171	25	50	34	37	13	9.4	22
29	153	27	62	35	---	25	47	38	35	15	9.7	13
30	113	27	53	93	---	40	42	36	32	13	14	11
31	52	---	46	89	---	40	---	36	---	12	15	---
TOTAL	711.0	1,456	2,467	1,319	8,718	1,720	5,845	1,851	5,176	866	611.5	697.2
MEAN	22.9	48.5	79.6	42.5	311	55.5	195	59.7	173	27.9	19.7	23.2
MAX	153	148	158	94	2,210	166	1,010	125	1,050	89	95	206
MIN	5.1	22	16	12	52	25	34	31	28	11	9.4	9.3
CFSM	0.41	0.86	1.41	0.76	5.53	0.99	3.46	1.06	3.06	0.50	0.35	0.41
IN.	0.47	0.96	1.63	0.87	5.76	1.14	3.86	1.22	3.42	0.57	0.40	0.46

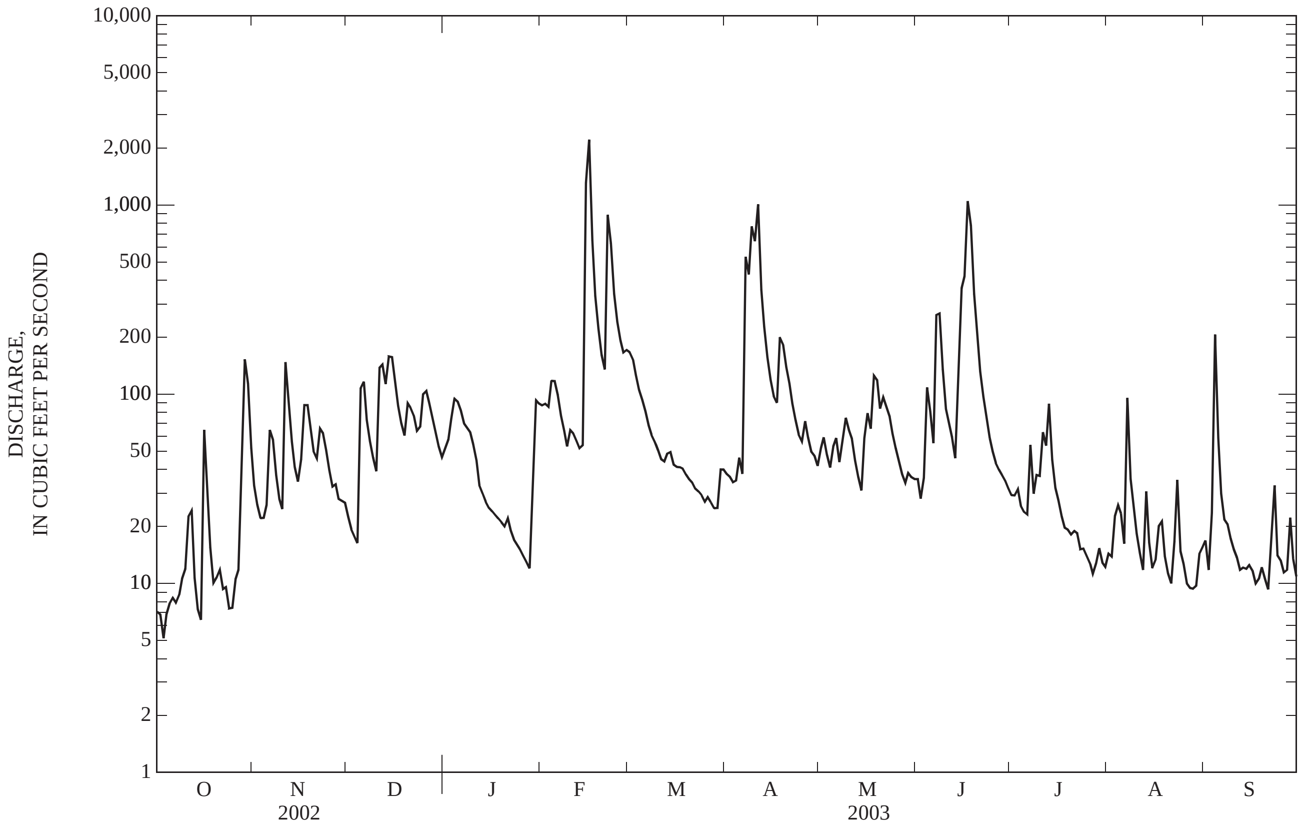
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	17.5	36.8	72.1	105	138	160	118	73.3	41.1	27.7	18.3	15.6
MAX	175	213	319	413	338	489	356	271	193	167	155	153
(WY)	(1990)	(1974)	(1973)	(1974)	(1972)	(1955)	(1948)	(1984)	(1979)	(2000)	(1942)	(1966)
MIN	0.000	0.23	0.95	6.57	17.5	36.0	15.8	7.33	1.99	0.42	0.35	0.000
(WY)	(1954)	(1954)	(1966)	(1966)	(1954)	(1988)	(1963)	(1941)	(1969)	(1944)	(1943)	(1943)

03210000 JOHNS CREEK NEAR META, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1941 - 2003	
ANNUAL TOTAL	24,550.9		31,437.7			
ANNUAL MEAN	67.3		86.1		68.5	
HIGHEST ANNUAL MEAN					135	1974
LOWEST ANNUAL MEAN					24.5	1954
HIGHEST DAILY MEAN	1,410	May 3	2,210	Feb 16	3,340	May 7, 1984
LOWEST DAILY MEAN	2.9	Sep 10	5.1	Oct 3	0.00	Oct 1, 1941
ANNUAL SEVEN-DAY MINIMUM	4.6	Sep 8	7.1	Oct 1	0.00	Oct 1, 1941
MAXIMUM PEAK FLOW			3,340	Feb 16	7,380	Mar 12, 1963
MAXIMUM PEAK STAGE			16.30	Feb 16	19.62	May 7, 1984
INSTANTANEOUS LOW FLOW					0.00	Oct 1, 1941
ANNUAL RUNOFF (CFSM)	1.19		1.53		1.22	
ANNUAL RUNOFF (INCHES)	16.22		20.77		16.53	
10 PERCENT EXCEEDS	140		155		155	
50 PERCENT EXCEEDS	28		41		23	
90 PERCENT EXCEEDS	7.7		12		2.2	

e Estimated



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^2.

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 with telemetry. Datum of gage is 566.84 ft above NGVD of 1929. See WDR KY-90-1 for history of changes prior to Oct. 19, 1954.

REMARKS.--Records good except those estimated which are poor. Flow regulated since May 1950 by Dewey Lake (station 03211000), since March 1965 by John Flannagan Lake (station 03208990), since August 1966 by North Fork Pound River Lake (station 03208680), since October 1968 by Fishtrap Lake (station 03207995).

COOPERATION.--U.S. Army Corps of Engineers, Huntington District.

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 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	538	2,480	1,600	2,400	2,370	8,400	e1,890	2,160	2,350	1,290	1,290	1,070
2	377	1,710	1,550	2,470	2,220	7,990	1,660	2,260	2,000	1,320	1,060	1,320
3	357	1,470	1,450	2,540	2,110	6,640	e1,360	2,410	1,850	1,380	1,040	1,180
4	351	1,350	1,370	2,890	2,780	6,040	1,350	2,380	2,130	1,580	1,210	3,610
5	333	1,400	1,540	3,680	4,340	4,980	1,380	2,290	2,290	1,350	1,210	4,940
6	325	2,340	3,450	3,710	4,520	4,110	1,420	2,380	2,020	1,060	1,330	2,680
7	519	2,620	4,460	3,770	3,570	3,300	4,830	2,360	3,580	1,200	1,400	1,450
8	527	2,240	3,620	3,090	3,040	2,880	10,200	2,450	6,500	2,140	2,520	1,230
9	347	1,910	3,260	2,740	2,640	2,600	14,700	3,760	5,990	1,700	2,090	1,000
10	386	1,770	2,460	2,550	e2,280	2,490	20,800	5,040	4,470	1,340	1,700	825
11	666	2,820	3,050	2,010	e2,080	2,390	25,300	4,060	3,620	2,000	1,280	724
12	730	4,090	6,750	1,900	2,080	2,150	27,700	3,160	3,420	2,330	1,000	640
13	733	4,640	6,650	1,800	1,900	2,090	24,800	2,440	3,390	2,220	975	611
14	707	4,320	7,940	1,680	1,760	2,080	15,000	1,990	2,750	2,160	1,110	601
15	644	3,390	7,340	1,580	11,600	2,030	7,320	1,740	3,730	1,900	937	598
16	744	2,480	6,230	1,430	33,200	1,920	4,700	3,110	12,000	2,430	837	618
17	1,020	2,460	4,950	1,420	41,100	1,870	4,220	5,270	14,300	1,640	660	675
18	1,520	3,010	3,530	e1,300	32,700	1,920	10,300	5,080	19,000	1,130	2,330	675
19	1,150	3,800	2,800	e1,180	24,500	1,860	12,700	5,940	16,500	940	2,390	508
20	950	3,420	3,560	e1,110	20,400	1,840	9,150	5,280	14,000	886	1,520	506
21	1,030	3,030	4,720	e1,150	15,400	1,720	7,010	4,830	14,600	776	959	521
22	937	2,300	4,190	e1,380	15,700	1,590	5,790	8,860	7,790	730	681	586
23	801	2,700	3,430	e1,030	25,500	1,510	4,640	6,510	4,410	860	608	912
24	784	2,750	3,180	e860	23,700	1,450	3,770	4,420	3,110	965	695	952
25	569	2,720	3,330	e740	22,000	1,430	3,080	4,170	2,390	1,120	701	758
26	544	2,330	3,890	e700	17,800	1,330	3,190	3,430	2,010	952	727	654
27	605	2,100	4,030	e840	13,000	1,310	3,170	2,970	1,880	759	685	620
28	1,010	1,890	3,210	e1,100	9,890	1,370	2,670	2,620	1,790	670	443	781
29	2,930	1,730	2,780	1,340	---	1,340	2,820	2,220	1,550	673	497	835
30	4,010	1,650	2,610	1,790	---	1,490	2,570	2,370	1,350	1,380	500	773
31	3,260	---	2,400	2,260	---	1,830	---	2,530	---	1,380	576	---
TOTAL	29,404	76,920	115,330	58,440	344,180	85,950	239,490	110,490	166,770	42,261	34,961	32,853
MEAN	949	2,564	3,720	1,885	12,290	2,773	7,983	3,564	5,559	1,363	1,128	1,095
MAX	4,010	4,640	7,940	3,770	41,100	8,400	27,700	8,860	19,000	2,430	2,520	4,940
MIN	325	1,350	1,370	700	1,760	1,310	1,350	1,740	1,350	670	443	506

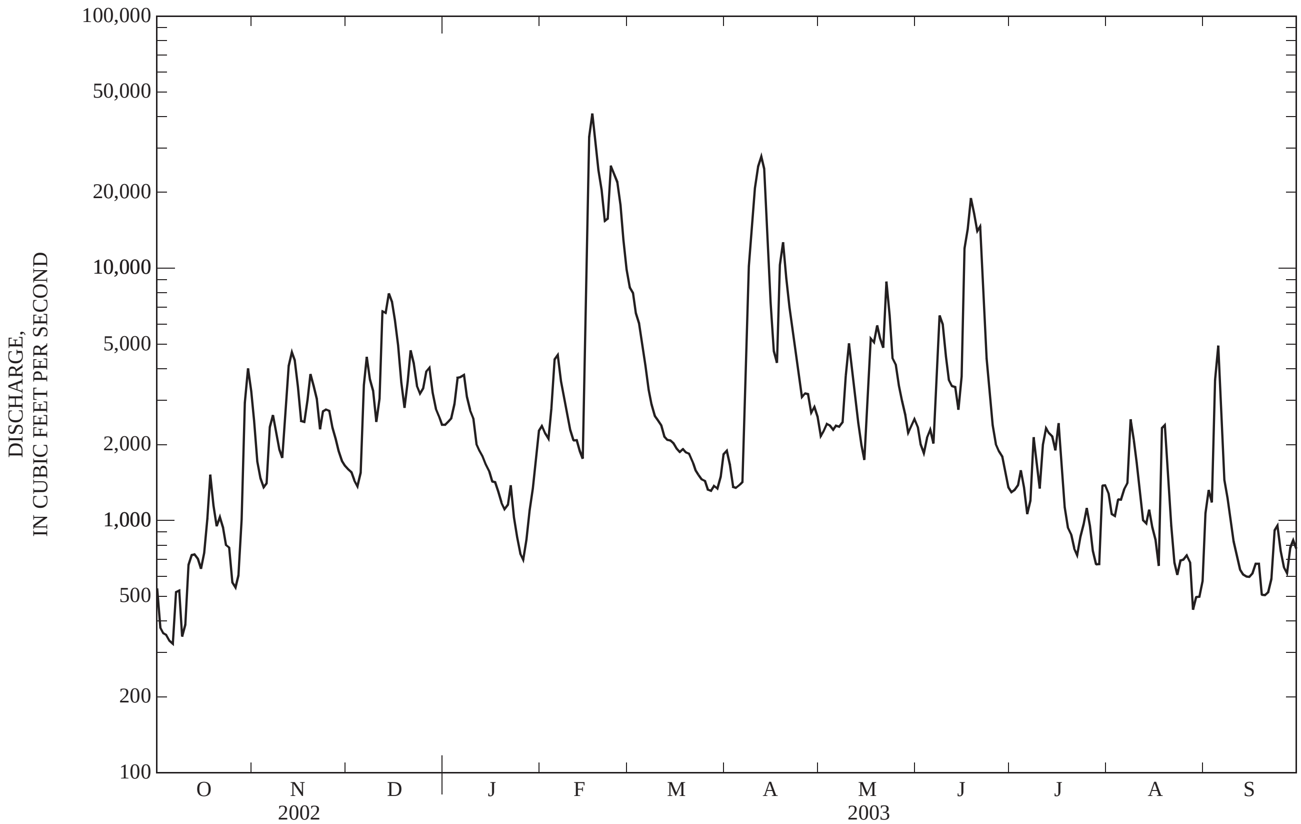
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1,076	1,744	2,620	3,769	4,913	5,072	4,160	3,373	1,823	1,004	832	691
MAX	6,560	4,908	8,870	12,030	12,290	13,160	10,040	9,664	5,559	2,678	2,244	2,054
(WY)	(1990)	(1978)	(1973)	(1974)	(2003)	(1975)	(1987)	(1984)	(2003)	(2000)	(2001)	(1989)
MIN	181	447	570	435	1,336	963	594	519	278	257	291	239
(WY)	(1970)	(1970)	(1981)	(1981)	(2002)	(1988)	(1986)	(1976)	(1988)	(1988)	(1969)	(1969)

03212500 LEVISA FORK AT PAINTSVILLE, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1969 - 2003	
ANNUAL TOTAL	936,915		1,337,049			
ANNUAL MEAN	2,567		3,663		2,577	
HIGHEST ANNUAL MEAN					4,234	1975
LOWEST ANNUAL MEAN					830	1988
HIGHEST DAILY MEAN	25,400	Mar 19	41,100	Feb 17	42,000	Apr 6, 1977
LOWEST DAILY MEAN	245	Jan 6	325	Oct 6	98	Oct 1, 1968
ANNUAL SEVEN-DAY MINIMUM	273	Jan 1	394	Oct 3	122	Aug 27, 1969
MAXIMUM PEAK FLOW			41,300	Feb 17	69,700	Jan 31, 1957
MAXIMUM PEAK STAGE			37.67	Feb 17	45.92	Jan 31, 1957
INSTANTANEOUS LOW FLOW					98	Oct 1, 1968
10 PERCENT EXCEEDS	5,480		7,330		6,140	
50 PERCENT EXCEEDS	1,370		2,100		1,230	
90 PERCENT EXCEEDS	334		679		368	

e Estimated



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^2.

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 with telemetry. Datum of gage is 557.95 ft above NGVD of 1929. 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.--Records good. Flow regulated since March 1968 by Grayson Lake (station 03216300).

COOPERATION.--U.S. Army Corps of Engineers, Huntington District.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	46	577	141	566	164	2,700	194	327	333	112	575	64
2	42	329	103	1,450	170	2,020	144	1,430	236	104	218	79
3	40	405	131	1,510	211	1,110	136	597	185	98	181	123
4	39	380	126	918	528	535	120	388	341	92	545	350
5	39	565	128	867	837	498	119	1,180	317	87	1,570	316
6	38	2,210	127	1,030	517	483	135	8,330	187	89	1,140	81
7	37	1,500	117	877	541	425	829	4,010	2,020	149	449	67
8	37	1,320	117	357	509	334	1,240	3,110	2,890	121	614	63
9	37	1,050	83	409	412	302	1,350	2,570	2,080	114	971	58
10	40	643	87	508	198	275	1,830	1,930	1,150	119	1,150	54
11	851	1,290	237	302	298	295	1,870	1,930	335	420	1,050	52
12	1,600	1,170	856	268	346	275	1,470	1,590	321	304	1,170	50
13	1,030	1,330	1,080	249	303	260	1,140	763	419	294	852	48
14	555	1,080	3,160	247	334	378	770	534	406	263	223	47
15	187	679	3,150	230	2,360	433	589	700	783	e180	221	45
16	240	862	2,420	213	5,900	299	537	1,290	1,860	140	208	44
17	724	1,000	1,350	201	8,260	329	456	1,070	4,750	112	201	43
18	616	984	788	174	4,200	415	936	2,550	5,310	96	176	42
19	249	860	688	147	3,390	331	1,460	3,250	2,860	86	81	42
20	233	436	1,090	140	3,200	310	1,020	2,970	3,220	80	74	41
21	283	407	1,030	141	3,260	535	917	3,010	2,910	74	71	42
22	381	506	853	137	3,340	690	945	2,220	2,730	71	68	43
23	257	583	769	170	2,620	627	610	1,110	2,320	68	67	46
24	139	337	469	171	3,480	584	482	848	1,900	101	66	48
25	166	316	508	137	3,200	453	455	486	1,350	93	64	49
26	158	285	625	85	3,100	432	533	472	343	77	60	49
27	150	167	867	89	3,100	380	639	436	297	69	56	50
28	148	159	712	114	3,000	281	502	399	205	74	54	54
29	302	151	339	156	---	274	638	344	132	87	52	61
30	1,190	146	393	223	---	284	571	341	122	78	65	60
31	1,010	---	582	169	---	264	---	358	---	160	69	---
TOTAL	10,864	21,727	23,126	12,255	57,778	16,811	22,637	50,543	42,312	4,012	12,361	2,211
MEAN	350	724	746	395	2,064	542	755	1,630	1,410	129	399	73.7
MAX	1,600	2,210	3,160	1,510	8,260	2,700	1,870	8,330	5,310	420	1,570	350
MIN	37	146	83	85	164	260	119	327	122	68	52	41

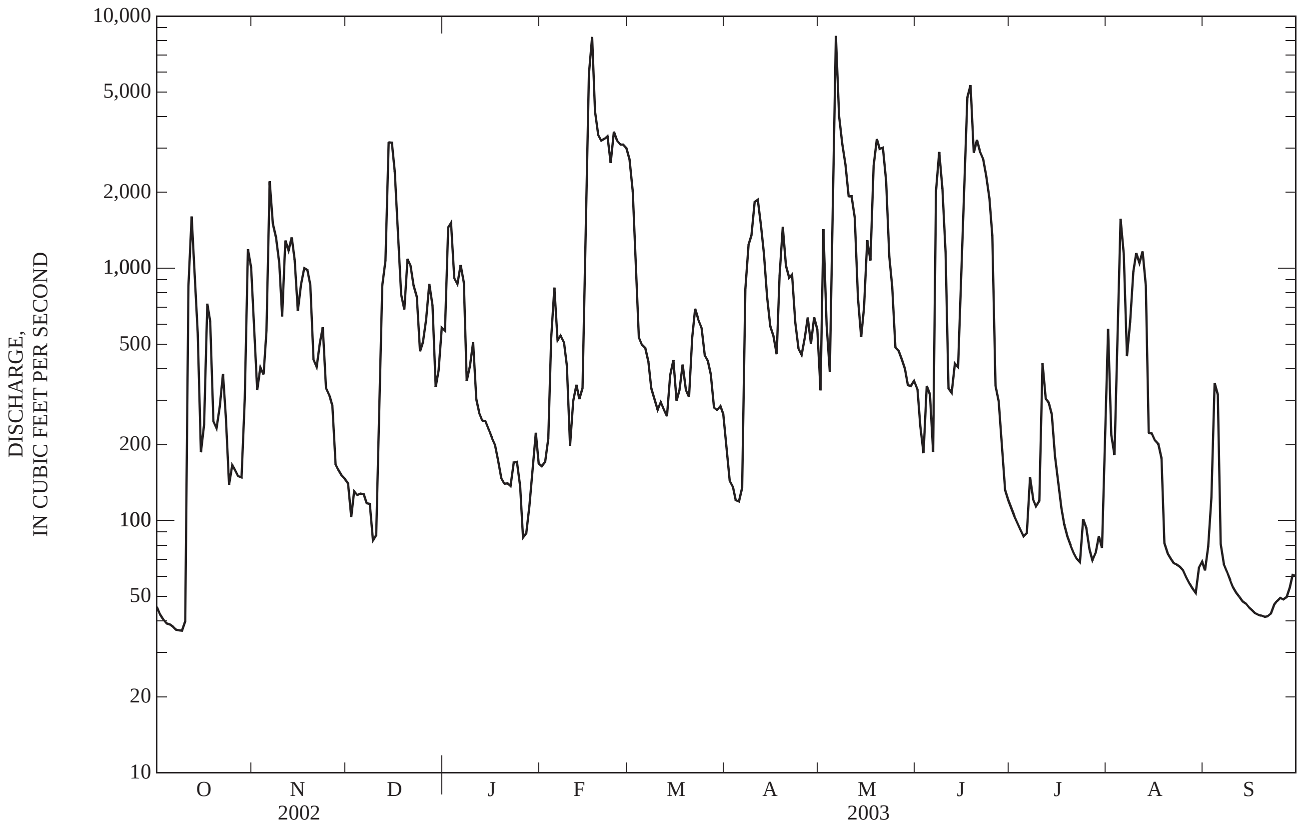
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	163	331	591	702	936	1,008	673	675	319	180	113	110
MAX	733	993	2,630	1,954	2,886	3,226	2,291	2,116	1,410	841	399	585
(WY)	(1990)	(1987)	(1979)	(1974)	(1989)	(1997)	(1972)	(1996)	(2003)	(1971)	(2003)	(1979)
MIN	30.1	28.4	53.6	45.2	129	133	109	62.1	34.4	33.6	34.7	30.4
(WY)	(1981)	(1982)	(1982)	(1981)	(2002)	(1969)	(2001)	(1976)	(1999)	(1999)	(1988)	(1998)

03216500 LITTLE SANDY RIVER AT GRAYSON, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1969 - 2003	
ANNUAL TOTAL	206,069		276,637			
ANNUAL MEAN	565		758		481	
HIGHEST ANNUAL MEAN					838	1979
LOWEST ANNUAL MEAN					116	1969
HIGHEST DAILY MEAN	10,000	Mar 20	8,330	May 6	14,600	Mar 2, 1997
LOWEST DAILY MEAN	19	Jan 5	37	Oct 7	5.8	Oct 1, 1968
ANNUAL SEVEN-DAY MINIMUM	26	Jan 3	38	Oct 3	18	Nov 1, 1968
MAXIMUM PEAK FLOW			9,850	May 6	24,500	Sep 22, 1950
MAXIMUM PEAK STAGE			25.41	May 6	30.57	Mar 2, 1997
INSTANTANEOUS LOW FLOW					1.5	Oct 12, 1953
10 PERCENT EXCEEDS	1,550		2,130		1,370	
50 PERCENT EXCEEDS	146		341		161	
90 PERCENT EXCEEDS	35		62		39	

e Estimated



03216600 OHIO RIVER 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 north of Greenup, and at mile 341.5.

DRAINAGE AREA.--62,000 mi^2, approximately.

WATER DISCHARGE RECORDS

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

GAGE.--Records of Greenup Dam gate operations and hydropower releases are furnished by the U.S. Army Corps of Engineers and are used to determine daily discharge. Water-stage recorder with telemetry in Greenup Dam tailwater for peak stage determinations. Datum of gage is 472.43 ft above NGVD of 1929 or 472.97 ft Ohio River Datum. Auxiliary water-stage recorder is located at the waste water treatment plant in 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 NGVD of 1929 or 470.99 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. Slope rating computation from Oct. 1, 1981 to Sept. 30, 1983, and Branch Flow Model, gate and tailwater rating from Oct. 1, 1983 to current year.

REMARKS.--Records good except for those below 20,000 ft^3/s and those estimated, which are poor. Flow regulated by Ohio River system of locks, dams, and reservoirs upstream from the station.

COOPERATION.--U.S. Army Corps of Engineers, Huntington District.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23,900	86,500	60,700	93,000	50,700	190,000	89,200	66,300	96,200	35,500	113,000	89,700
2	16,500	66,200	56,300	157,000	57,600	178,000	96,600	53,000	124,000	33,200	91,100	105,000
3	18,600	45,000	51,800	200,000	63,600	183,000	96,800	64,200	139,000	50,500	86,400	178,000
4	16,700	40,900	47,600	251,000	78,300	182,000	89,000	62,000	176,000	50,500	116,000	200,000
5	18,200	41,300	38,500	209,000	136,000	172,000	103,000	76,100	209,000	71,100	129,000	205,000
6	18,100	72,800	40,800	190,000	135,000	184,000	103,000	132,000	192,000	70,200	108,000	201,000
7	8,940	74,700	43,000	171,000	123,000	211,000	143,000	130,000	174,000	37,700	97,100	160,000
8	15,300	90,300	44,500	149,000	106,000	206,000	179,000	124,000	187,000	73,200	102,000	115,000
9	12,900	72,700	37,200	137,000	95,100	185,000	204,000	108,000	185,000	101,000	113,000	77,100
10	8,520	69,700	40,200	121,000	82,700	181,000	261,000	160,000	176,000	136,000	122,000	63,000
11	31,000	84,700	40,400	117,000	71,500	186,000	266,000	276,000	155,000	162,000	134,000	64,700
12	20,800	102,000	61,300	103,000	56,300	176,000	270,000	312,000	141,000	176,000	129,000	46,400
13	18,900	102,000	98,000	83,900	62,900	157,000	271,000	306,000	129,000	153,000	113,000	33,000
14	25,500	127,000	164,000	67,600	53,400	150,000	209,000	236,000	135,000	118,000	96,300	41,000
15	17,900	110,000	198,000	60,600	88,600	169,000	183,000	158,000	171,000	80,900	88,600	30,800
16	42,800	88,400	190,000	68,800	171,000	184,000	153,000	172,000	189,000	60,500	83,800	35,700
17	54,900	84,400	167,000	51,000	288,000	177,000	125,000	175,000	208,000	74,500	93,000	46,000
18	64,900	107,000	140,000	36,300	303,000	169,000	105,000	185,000	286,000	41,800	95,200	40,100
19	51,200	135,000	120,000	40,100	187,000	179,000	95,700	193,000	282,000	71,000	e81,600	72,000
20	41,200	128,000	114,000	31,000	150,000	187,000	108,000	198,000	214,000	50,700	77,200	139,000
21	30,600	106,000	141,000	41,900	142,000	174,000	94,100	186,000	203,000	51,400	57,300	143,000
22	26,900	97,000	176,000	39,200	169,000	164,000	108,000	192,000	183,000	42,800	43,500	130,000
23	37,500	109,000	174,000	27,300	211,000	163,000	111,000	173,000	154,000	99,700	38,400	108,000
24	22,400	95,300	140,000	37,800	382,000	158,000	84,100	154,000	109,000	157,000	29,800	121,000
25	17,800	85,100	127,000	30,000	406,000	142,000	78,700	143,000	92,300	166,000	24,000	135,000
26	22,300	80,700	131,000	31,400	387,000	127,000	82,400	144,000	64,300	130,000	36,500	125,000
27	28,000	69,200	139,000	22,100	332,000	123,000	59,300	120,000	39,100	102,000	28,100	90,100
28	21,900	73,700	129,000	24,200	205,000	113,000	65,500	95,800	56,200	85,300	67,000	91,600
29	41,400	76,200	105,000	36,900	---	103,000	51,700	81,500	41,200	116,000	54,800	103,000
30	65,700	e62,900	85,500	35,000	---	103,000	52,600	99,100	46,100	138,000	15,700	115,000
31	85,000	---	79,700	44,900	---	93,700	---	85,600	---	114,000	68,100	---
TOTAL	926,260	2,583,700	3,180,500	2,708,000	4,593,700	5,069,700	3,937,700	4,660,600	4,556,400	2,849,500	2,532,500	3,104,200
MEAN	29,880	86,120	102,600	87,350	164,100	163,500	131,300	150,300	151,900	91,920	81,690	103,500
MAX	85,000	135,000	198,000	251,000	406,000	211,000	271,000	312,000	286,000	176,000	134,000	205,000
MIN	8,520	40,900	37,200	22,100	50,700	93,700	51,700	53,000	39,100	33,200	15,700	30,800

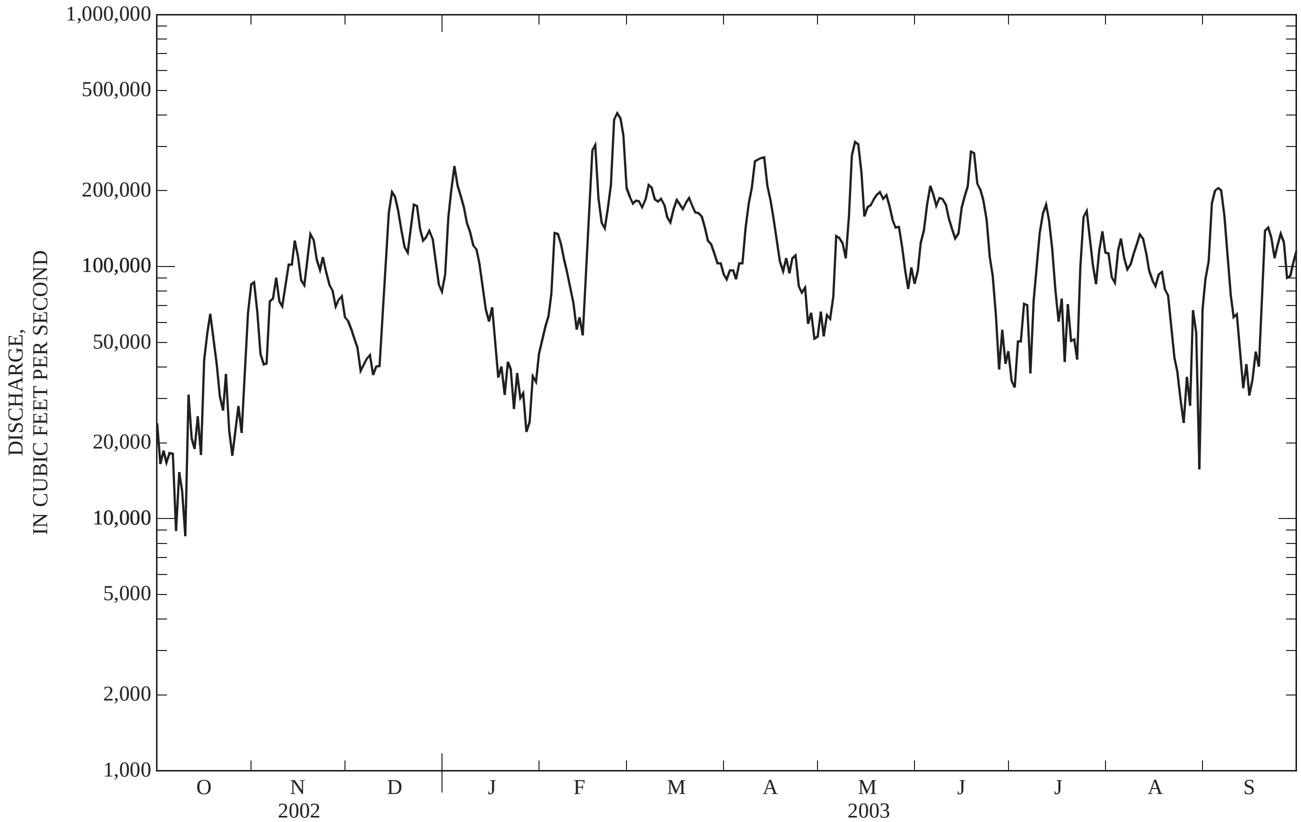
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	37,780	66,960	106,500	114,600	143,000	161,200	140,900	107,700	68,860	45,480	37,040	33,730
MAX	111,300	208,600	252,700	242,700	259,100	268,600	258,400	276,700	174,000	100,700	113,600	103,500
(WY)	(1980)	(1986)	(1973)	(1974)	(1994)	(1994)	(1994)	(1996)	(1981)	(1972)	(1980)	(2003)
MIN	11,310	14,720	24,080	27,170	66,240	53,550	52,660	36,610	13,440	13,040	11,270	9,706
(WY)	(1992)	(1999)	(1999)	(1977)	(1978)	(1969)	(1986)	(1976)	(1988)	(1999)	(1988)	(1999)

03216600 OHIO RIVER AT GREENUP DAM NEAR GREENUP, KY

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1969 - 2003	
ANNUAL TOTAL	29,333,580		40,702,760			
ANNUAL MEAN	80,370		111,500		88,350	
HIGHEST ANNUAL MEAN					120,100	1996
LOWEST ANNUAL MEAN					49,760	1988
HIGHEST DAILY MEAN	371,000	Mar 22	406,000	Feb 25	540,000	Jan 12, 1974
LOWEST DAILY MEAN	4,850	Aug 31	8,520	Oct 10	3,920	Jun 11, 1999
ANNUAL SEVEN-DAY MINIMUM	10,700	Aug 30	14,100	Oct 4	7,740	Sep 22, 1999
MAXIMUM PEAK FLOW			409,000	Feb 25	520,000	Mar 4, 1997
MAXIMUM PEAK STAGE			52.16	Feb 25	54.50	Feb 21, 2000
10 PERCENT EXCEEDS	187,000		192,000		200,000	
50 PERCENT EXCEEDS	55,400		102,000		61,900	
90 PERCENT EXCEEDS	14,100		35,300		17,000	

e Estimated



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 2002 TO SEPTEMBER 2003

Date	Time	Sample type	Instan-taneous dis-charge, cfs (00061)	Turbid-ity, wat unf lab, Hach 2100AN NTU (99872)	UV absorb-ance, 254 nm, wat flt units /cm (50624)	UV absorb-ance, 280 nm, wat flt units /cm (61726)	Dis-solved oxygen, mg/L (00300)	Dis-solved oxygen, percent of sat-uration (00301)	pH, water, unfltrd field, std units (00400)	Specif. conduc-tance, wat unf uS/cm 25 degC (00095)	Temper-ature, water, deg C (00010)	Hard-ness, water, unfltrd mg/L as CaCO3 (00900)
NOV												
26...	1620	Environmental	82,800	22	0.060	0.044	11.8	103	7.4	245	8.5	110
26...	1628	Field Blank	--	--	--	--	--	--	--	--	--	--
DEC												
11...	1550	Environmental	40,300	10	0.049	0.036	14.3	112	7.5	224	4.2	110
11...	1600	Replicate	--	10	0.050	0.037	--	--	--	--	--	110
JAN												
16...	1510	Environmental	56,700	14	0.047	0.035	14.2	105	7.3	220	2.1	100
FEB												
12...	1600	Environmental	54,900	21	0.043	0.032	15.3	112	7.4	248	1.9	120
12...	1608	Field Blank	--	--	0.002	0.003	--	--	--	--	--	--
26...	1700	Environmental	362,000	190	0.065	0.049	12.8	97	6.7	240	3.0	77
MAR												
19...	1000	Environmental	166,000	42	0.047	0.035	12.6	107	7.4	213	6.8	100
19...	1010	Replicate	--	43	0.047	0.035	--	--	--	--	--	100
APR												
10...	1130	Environmental	259,000	71	0.059	0.044	10.3	96	7.4	284	11.4	99
24...	1100	Environmental	82,800	19	0.046	0.035	10.4	105	7.3	262	15.0	93
MAY												
15...	1600	Environmental	149,000	150	0.085	0.064	8.3	87	7.4	261	17.2	92
28...	1450	Environmental	94,000	35	0.067	0.049	10.2	107	7.2	292	17.7	97
28...	1458	Field Blank	--	--	--	--	--	--	--	--	--	--
JUN												
11...	1520	Environmental	153,000	73	0.071	0.053	9.8	107	7.4	226	18.9	77
11...	1530	Other QA	--	68	--	--	--	--	--	--	--	90
JUN												
25	1420	Environmental	93,700	60	0.078	0.057	10.3	8	7.2	293	21.0	86
JUL												
23...	1600	Environmental	105,000	34	0.088	0.064	7.7	97	7.6	349	25.9	130
AUG												
13...	1520	Environmental	113,000	96	0.103	0.077	7.1	88	7.3	279	24.6	110
13...	1528	Field Blank	--	--	<0.004	<0.004	--	--	--	--	--	--
SEP												
15...	1600	Environmental	24,200	14	0.091	0.065	6.8	91	7.3	297	23.7	100
15...	1608	Field Blank	--	--	--	--	--	--	--	--	--	--

03216600 OHIO RIVER AT GREENUP DAM, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnes-ium, water, fltrd, mg/L (00925)	Potas-sium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	Alka-linity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicar-bonate, wat flt incrm. titr., field, mg/L (00453)	Chlor-ide, water, fltrd, mg/L (00940)	Fluor-ide, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 180degC wat flt mg/L (70300)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia + org-N, water, unfltrd mg/L as N (00625)
NOV													
26...	27.9	8.53	2.46	18.0	44	54	13.4	<0.17	5.16	49.6	148	0.21	0.31
26...	0.04	<0.008	0.01	<0.09	--	--	0.98	0.05	<0.13	<0.01	--	--	--
DEC													
11...	27.5	9.43	2.10	18.1	49	60	16.8	<0.17	5.35	65.6	187	0.20	0.20
11...	27.6	9.44	2.15	18.1	49	60	17.1	<0.17	5.39	67.9	192	0.19	0.19
JAN													
16...	26.6	8.01	1.78	19.4	38	47	26.6	<0.17	5.96	55.1	179	0.21	0.28
FEB													
12...	32.7	9.81	1.89	24.5	41	50	32.8	0.13	5.49	67.5	222	0.28	0.41
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
26...	20.7	6.16	1.78	13.5	32	40	17.8	0.10	5.36	41.4	134	0.18	0.86
MAR													
19...	28.3	8.00	1.74	16.1	43	53	26.9	0.12	5.53	57.1	184	0.23	0.42
19...	28.2	8.06	1.77	16.3	--	--	28.9	0.12	5.50	57.7	187	0.23	0.44
APR													
10...	26.1	8.19	1.81	15.2	42	52	21.3	0.13	5.13	57.1	177	0.15	0.64
24...	24.5	7.69	1.83	13.3	38	46	15.3	<0.17	5.26	51.9	160	0.22	0.25
MAY													
15...	25.5	6.95	2.15	12.6	40	49	15.3	<0.2	5.70	52.3	158	0.17	0.92
28...	25.5	7.97	1.82	13.4	49	60	16.0	<0.2	5.70	55.0	175	0.15	0.41
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
11...	20.1	6.46	1.56	10.7	35	43	12.1	<0.2	5.61	46.9	144	0.23	0.53
11...	24.1	7.26	1.86	11.5	--	--	11.3	<0.2	6.52	48.1	139	0.16	0.42
JUN													
25	22.5	7.12	2.00	9.99	49	60	9.87	<0.2	7.04	42.3	143	0.23	0.38
JUL													
23...	34.6	10.1	2.74	19.2	50	61	21.9	<0.2	6.14	69.0	215	0.30	0.45
AUG													
13...	30.6	8.15	2.67	14.6	34	50	16.1	<0.2	6.04	47.7	174	0.22	0.54
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
15...	27.2	7.79	2.61	12.8	53	65	15.6	<0.2	6.46	54.8	183	0.27	0.31
15...	0.12	E.007	0.021	<0.10	--	--	2.26	<0.01	0.05	0.03	--	--	--

03216600 OHIO RIVER AT GREENUP DAM, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Ortho-phos-phate, water, fltrd, mg/L as P (00671)	Partic-ulate nitro-gen, susp, water, mg/L (49570)	Phos-phorus, water, fltrd, mg/L (00666)	Phos-phorus, water, unfltrd mg/L (00665)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inor-ganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)	Pheo-phytin a, phyto-plank-ton, ug/L (62360)	Chloro-phyll a phyto-plank-ton, fluoro, ug/L (70953)
NOV													
26...	E.03	0.85	0.008	0.014	0.07	0.020	0.061	0.7	<0.1	0.7	2.2	--	--
26...	<0.015	<0.022	<0.002	<0.007	--	--	--	--	--	--	--	--	--
DEC													
11...	E.04	0.85	0.010	0.009	0.04	0.018	0.028	0.3	<0.1	0.3	1.9	1.0	0.3
11...	<0.04	0.85	0.010	E.006	0.06	0.018	0.029	0.5	<0.1	0.5	1.9	1.0	0.3
JAN													
16...	0.05	1.15	E.007	E.006	0.09	0.010	0.044	0.8	<0.1	0.8	1.9	1.3	1.0
FEB													
12...	0.14	1.12	0.015	0.011	0.06	0.019	0.054	0.5	<0.1	0.5	1.5	0.7	1.2
12...	--	--	--	--	<0.02	--	--	<0.1	<0.1	<0.1	0.6	--	--
26...	0.07	0.86	0.008	E.004	0.55	0.009	0.23	6.7	<0.1	6.6	2.5	5.1	3.3
MAR													
19...	0.08	1.19	0.012	E.006	0.20	0.011	0.097	1.9	<0.1	1.9	2.1	2.3	1.7
19...	0.06	1.18	0.013	E.005	0.22	0.013	0.100	2.1	<0.1	2.1	2.1	2.3	1.8
APR													
10...	E.03	0.74	0.012	<0.007	0.24	0.012	0.128	3.4	<0.1	3.4	2.1	6.8	5.7
24...	<0.04	0.68	E.005	<0.007	0.13	0.008	0.041	1.0	<0.1	0.9	1.8	7.9	9.4
MAY													
15...	<0.04	0.75	0.011	0.008	0.55	0.014	0.25	6.3	0.1	6.2	2.9	9.6	5.2
28...	<0.04	0.82	0.010	0.007	0.14	0.015	0.084	1.7	<0.1	1.6	2.7	3.4	4.5
28...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
11...	<0.04	0.58	E.004	0.007	0.42	0.012	0.127	3.2	<0.1	3.2	2.4	3.6	2.4
11...	<0.04	0.57	E.004	0.008	--	0.012	0.111	--	--	--	--	--	--
JUN													
25	<0.04	0.64	E.007	E.004	0.12	0.013	0.079	1.5	<0.1	1.5	3.3	1.3	1.4
JUL													
23...	<0.04	0.93	0.008	0.009	0.20	0.021	0.072	1.8	<0.1	1.8	3.2	7.7	4.3
AUG													
13...	<0.04	0.72	0.008	0.018	0.29	0.028	0.139	2.5	0.1	2.4	3.4	3.7	2.4
13...	--	--	--	--	<0.02	--	--	<0.1	<0.1	<0.1	0.9	--	--
SEP													
15...	<0.04	0.78	0.013	0.010	0.07	0.025	0.044	0.5	<0.1	0.5	3.8	1.1	2.1
15...	<0.015	<0.022	<0.002	<0.007	--	--	--	--	--	--	--	--	--

03216600 OHIO RIVER AT GREENUP DAM, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Arsenic water, fltrd, ug/L (01000)	Boron, water, fltrd, ug/L (01020)	Iron, water, fltrd, ug/L (01046)	Lithium water, fltrd, ug/L (01130)	Selen-ium, water, fltrd, ug/L (01145)	Stront-ium, water, fltrd, ug/L (01080)	Vanad-ium, water, fltrd, ug/L (01085)	2,6-Di-ethyl-aniline water fltrd 0.7u GF ug/L (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)
NOV													
26...	0.3	38	18	5.5	E.4	188	0.3	<0.006	E.006	<0.006	<0.004	<0.005	0.020
26...	<0.3	<7	<10	<0.5	<0.5	<0.20	<0.1	--	--	--	--	--	--
DEC													
11...	0.3	34	25	5.4	E.4	199	0.3	<0.006	E.004	<0.006	<0.004	<0.005	0.018
11...	0.3	36	24	5.4	E.3	196	0.3	<0.006	E.004	<0.006	<0.004	<0.005	0.014
JAN													
16...	E.2	25	21	4.3	E.3	148	0.2	<0.006	E.008	<0.006	<0.004	<0.005	0.016
FEB													
12...	0.3	39	20	6.2	E.5	197	0.6	<0.006	E.008	<0.006	<0.004	<0.005	0.015
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
26...	0.3	26	32	3.3	E.3	67.0	0.2	<0.006	E.003	<0.006	<0.004	<0.005	0.008
MAR													
19...	E.2	23	13	4.3	<0.5	158	0.1	<0.006	E.012	<0.006	<0.004	<0.005	0.023
19...	E.2	23	E10	4.3	<0.5	161	0.1	<0.006	<0.006	<0.006	<0.004	<0.005	<0.007
APR													
10...	0.3	29	12	4.9	E.3	157	0.3	<0.006	E.006	E.004	<0.004	<0.005	0.013
24...	0.3	28	E8	5.8	<0.5	152	0.6	<0.006	E.006	<0.006	<0.004	<0.005	0.015
MAY													
15...	0.4	31	16	4.2	E.4	145	0.5	<0.006	E.019	0.064	<0.004	<0.005	0.400
28...	0.4	32	11	4.8	E.3	154	0.2	<0.006	E.025	0.029	<0.004	<0.005	0.301
28...	--	--	--	--	--	--	--	<0.006	<0.006	<0.006	<0.004	<0.005	<0.007
JUN													
11...	0.3	25	16	4.2	E.3	134	0.4	<0.006	E.016	0.022	<0.004	<0.005	0.193
11...	0.3	26	15	4.0	E.3	143	0.3	--	--	--	--	--	--
JUN													
25	0.3	29	9	3.8	E.4	141	0.4	<0.006	E.019	0.015	<0.004	<0.005	0.136
JUL													
23...	0.6	48	<8	5.5	E.4	212	0.7	<0.006	E.036	0.035	0.011	<0.005	0.301
AUG													
13...	0.6	40	E6	3.9	E.3	153	0.7	<0.006	E.016	0.009	E.002	<0.005	0.099
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
15...	0.6	37	12	4.8	E.4	163	0.6	<0.006	E.015	E.005	<0.004	<0.005	0.038
15...	<0.3	<7	<8	<0.5	<0.5	<0.20	<0.1	--	--	--	--	--	--

03216600 OHIO RIVER AT GREENUP DAM, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Azinphos-methyl, water, fltrd 0.7u GF ug/L (82686)	Benfluralin, water, fltrd 0.7u GF ug/L (82673)	Butylate, water, fltrd, ug/L (04028)	Carbaryl, water, fltrd 0.7u GF ug/L (82680)	Carbofuran, water, fltrd 0.7u GF ug/L (82674)	Chlorpyrifos water, fltrd, ug/L (38933)	cis-Permethrin water fltrd 0.7u GF ug/L (82687)	Cyanazine, water, fltrd, ug/L (04041)	DCPA, water fltrd 0.7u GF ug/L (82682)	Diazinon, water, fltrd, ug/L (39572)	Dieldrin, water, fltrd, ug/L (39381)	Disulfoton, water, fltrd 0.7u GF ug/L (82677)	EPTC, water, fltrd 0.7u GF ug/L (82668)
NOV													
26...	<0.050	<0.010	<0.002	E.005	<0.020	<0.005	<0.006	<0.018	<0.003	<0.006	<0.005	<0.02	<0.002
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
11...	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.005	<0.005	<0.02	<0.002
11...	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.005	<0.005	<0.02	<0.002
JAN													
16...	<0.050	<0.010	<0.002	E.003	<0.020	<0.005	<0.006	<0.018	<0.003	<0.005	<0.005	<0.02	<0.002
FEB													
12...	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.005	<0.005	<0.02	<0.002
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
26...	<0.050	<0.010	<0.002	E.005	<0.020	<0.005	<0.006	<0.018	<0.003	<0.005	<0.005	<0.02	<0.002
MAR													
19...	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.005	<0.005	<0.02	<0.002
19...	<0.050	<0.010	<0.002	<0.041	<0.020	<0.010	<0.006	<0.018	<0.003	<0.005	<0.005	<0.02	<0.002
APR													
10...	<0.050	<0.010	<0.002	E.008	<0.020	<0.005	<0.006	<0.018	<0.003	<0.005	<0.005	<0.02	<0.002
24...	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.005	<0.005	<0.02	<0.002
MAY													
15...	<0.050	<0.010	<0.002	E.005	<0.020	<0.005	<0.006	<0.018	<0.003	E.005	<0.005	<0.02	<0.002
28...	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.005	<0.005	<0.02	<0.002
28...	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.005	<0.005	<0.02	<0.002
JUN													
11...	<0.050	<0.010	<0.002	E.006	<0.020	<0.005	<0.006	<0.018	<0.003	E.004	<0.005	<0.02	<0.002
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
25	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.005	<0.005	<0.02	<0.002
JUL													
23...	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	0.006	<0.005	<0.02	<0.002
AUG													
13...	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	E.004	<0.005	<0.02	<0.002
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
15...	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	E.004	<0.005	<0.02	<0.010
15...	--	--	--	--	--	--	--	--	--	--	--	--	--

03216600 OHIO RIVER AT GREENUP DAM, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ethal-flur-alin, water, fltrd 0.7u GF ug/L (82663)	Etho-prop, water, fltrd 0.7u GF ug/L (82672)	Fonofos water, fltrd, ug/L (04095)	Lindane water, fltrd, ug/L (39341)	Linuron water fltrd 0.7u GF ug/L (82666)	Mala-thion, water, fltrd, ug/L (39532)	Methyl para-thion, water, fltrd 0.7u GF ug/L (82667)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Moli-nate, water, fltrd 0.7u GF ug/L (82671)	Naprop-amide, water, fltrd 0.7u GF ug/L (82684)	p,p-' DDE, water, fltrd, ug/L (34653)	Para-thion, water, fltrd, ug/L (39542)
NOV													
26...	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	E.003	<0.006	<0.002	<0.007	<0.003	<0.010
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
11...	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	E.008	<0.006	<0.002	<0.007	<0.003	<0.010
11...	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	E.007	<0.006	<0.002	<0.007	<0.003	<0.010
JAN													
16...	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	E.008	<0.006	<0.002	<0.007	<0.003	<0.010
FEB													
12...	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	E.008	<0.006	<0.002	<0.007	<0.003	<0.010
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
26...	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	E.004	<0.006	<0.002	<0.007	<0.003	<0.010
MAR													
19...	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	E.012	<0.006	<0.002	<0.007	<0.003	<0.010
19...	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	<0.013	<0.006	<0.002	<0.007	<0.003	<0.010
APR													
10...	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	E.006	<0.006	<0.002	<0.007	<0.003	<0.010
24...	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	E.010	<0.006	<0.002	<0.007	<0.003	<0.010
MAY													
15...	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	0.090	E.005	<0.002	<0.007	<0.003	<0.010
28...	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	0.065	<0.006	<0.002	<0.007	<0.003	<0.010
28...	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	<0.013	<0.006	<0.002	<0.007	<0.003	<0.010
JUN													
11...	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	0.043	<0.006	<0.002	<0.007	<0.003	<0.010
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
25	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	0.039	<0.006	<0.002	<0.007	<0.003	<0.010
JUL													
23...	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	0.095	<0.006	<0.002	<0.007	<0.003	<0.010
AUG													
13...	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	0.025	<0.006	<0.002	<0.007	<0.003	<0.010
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
15...	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	E.012	<0.006	<0.002	<0.007	<0.003	<0.010
15...	--	--	--	--	--	--	--	--	--	--	--	--	--

03216600 OHIO RIVER AT GREENUP DAM, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Peb-ulate, water, fltrd 0.7u GF ug/L (82669)	Pendi-meth-alin, water, fltrd 0.7u GF ug/L (82683)	Phorate water fltrd 0.7u GF ug/L (82664)	Prome-ton, water, fltrd, ug/L (04037)	Pron-amide, water, fltrd 0.7u GF ug/L (82676)	Propa-chlor, water, fltrd, ug/L (04024)	Pro-panil, water, fltrd 0.7u GF ug/L (82679)	Propar-gite, water, fltrd 0.7u GF ug/L (82685)	Sima-zine, water, fltrd, ug/L (04035)	Tebu-thiuron water fltrd 0.7u GF ug/L (82670)	Terba-cil, water, fltrd 0.7u GF ug/L (82665)	Terbu-fos, water, fltrd 0.7u GF ug/L (82675)	Thio-bencarb water fltrd 0.7u GF ug/L (82681)
NOV													
26...	<0.004	<0.022	<0.011	E.01	<0.004	<0.010	<0.011	<0.02	0.006	<0.02	<0.034	<0.02	<0.005
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
11...	<0.004	<0.022	<0.011	M	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005
11...	<0.004	<0.022	<0.011	M	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005
JAN													
16...	<0.004	<0.022	<0.011	M	<0.004	<0.010	<0.011	<0.02	0.005	<0.02	<0.034	<0.02	<0.005
FEB													
12...	<0.004	<0.022	<0.011	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
26...	<0.004	<0.022	<0.011	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005
MAR													
19...	<0.004	<0.022	<0.011	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005
19...	<0.004	<0.022	<0.011	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005
APR													
10...	<0.004	<0.022	<0.011	M	<0.004	<0.010	<0.011	<0.02	0.006	<0.02	<0.034	<0.02	<0.005
24...	<0.004	<0.022	<0.011	<0.01	<0.004	<0.010	<0.011	<0.02	0.011	<0.02	<0.034	<0.02	<0.005
MAY													
15...	<0.004	<0.022	<0.011	E.01	<0.004	<0.010	<0.011	<0.02	0.078	E.01	<0.034	<0.02	<0.005
28...	<0.004	<0.022	<0.011	E.01	<0.004	<0.010	<0.011	<0.02	0.058	<0.02	<0.034	<0.02	<0.005
28...	<0.004	<0.022	<0.011	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005
JUN													
11...	<0.004	<0.022	<0.011	E.01	<0.004	<0.010	<0.011	<0.02	0.019	<0.02	<0.034	<0.02	<0.005
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
25	<0.004	<0.022	<0.011	<0.01	<0.004	<0.010	<0.011	<0.02	0.015	<0.02	<0.034	<0.02	<0.005
JUL													
23...	<0.004	<0.022	<0.011	E.01	<0.004	<0.010	<0.011	<0.02	0.045	<0.02	<0.034	<0.02	<0.005
AUG													
13...	<0.004	<0.022	<0.011	E.01	<0.004	<0.010	<0.011	<0.02	0.015	<0.02	<0.034	<0.02	<0.005
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
15...	<0.004	<0.022	<0.011	E.01	<0.004	<0.010	<0.011	<0.02	0.009	E.01	<0.034	<0.02	<0.005
15...	--	--	--	--	--	--	--	--	--	--	--	--	--

03216600 OHIO RIVER AT GREENUP DAM, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Tri-allate, water, fltrd 0.7u GF ug/L (82678)	Tri-flur-alin, water, fltrd 0.7u GF ug/L (82661)	Suspnd. sedi-ment, sieve diametr percent <.063mm (70331)	Sus-pended sedi-ment concen-tration mg/L (80154)
NOV				
26...	<0.002	<0.009	98	28
26...	--	--	--	--
DEC				
11...	<0.002	<0.009	99	8
11...	<0.002	<0.009	99	8
JAN				
16...	<0.002	<0.009	98	17
FEB				
12...	<0.002	<0.009	100	24
12...	--	--	--	--
26...	<0.002	<0.009	87	299
MAR				
19...	<0.002	<0.009	92	61
19...	<0.002	<0.009	91	61
APR				
10...	<0.002	<0.009	79	145
24...	<0.002	<0.009	99	25
MAY				
15...	<0.002	<0.009	97	214
28...	<0.002	<0.009	98	46
28...	<0.002	<0.009	--	--
JUN				
11...	<0.002	<0.009	97	101
11...	--	--	--	--
JUN				
25	<0.002	<0.009	98	58
JUL				
23...	<0.002	<0.009	95	46
AUG				
13...	<0.002	<0.009	100	101
13...	--	--	--	--
SEP				
15...	<0.002	<0.009	99	12
15...	--	--	--	--

Other QA--Grab sample at center vertical (surface only).
E--Laboratory estimated value.
M--Presence of material verified but not quantified.
<--Numeric result is less than the value shown.

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^2.

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 with telemetry. Datum of gage is 547.14 ft above NGVD of 1929.

REMARKS.--Records fair except for daily discharges below 10 ft^3/s, and for those estimated, which are poor. Occasional diversion at low flow caused by withdrawal of water for cooling purposes by gas transmission plant above station.

COOPERATION.--Kentucky Natural Resources and Environmental Protection Cabinet and U.S. Corps of Engineers, Huntington District.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb 17	1500	4,630	15.97	May 18	1730	3,590	13.85
Feb 23	1000	4,230	15.25	Jun 7	2330	4,070	14.94
May 7	0200	*8,500	*19.00	Jun 18	1530	4,510	15.75

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	44	205	124	683	e190	363	183	291	155	64	664	75
2	30	142	114	2,180	e180	338	169	246	136	57	233	361
3	26	110	103	908	215	308	158	244	280	52	135	423
4	20	96	95	625	438	274	149	209	1,020	48	211	340
5	14	164	94	464	693	251	148	1,640	511	45	475	161
6	14	2,270	94	385	e400	251	148	4,950	293	42	339	101
7	16	856	93	334	318	290	463	5,990	2,830	53	198	70
8	14	409	90	e300	e280	276	1,080	2,490	2,440	56	302	55
9	11	287	90	e270	e255	253	2,040	817	788	87	192	45
10	11	879	100	e235	e230	228	1,990	1,230	487	83	185	39
11	342	1,900	167	e205	e215	205	1,060	1,470	337	132	134	33
12	537	1,080	532	e180	e205	191	1,030	817	341	190	119	29
13	220	453	600	159	e195	186	639	467	293	184	108	26
14	187	319	2,660	e140	e190	241	446	329	252	93	95	23
15	115	260	1,540	e130	2,120	301	365	1,090	310	78	82	22
16	239	534	659	e115	4,350	264	310	3,240	454	72	170	20
17	312	660	435	e105	4,570	244	274	1,340	2,420	81	128	17
18	193	402	403	e96	2,200	226	531	3,370	4,140	75	102	16
19	122	309	376	e89	838	209	711	2,910	1,400	102	80	15
20	99	266	915	e82	674	220	445	1,040	611	67	65	15
21	96	232	720	e76	1,150	524	359	2,200	399	50	57	15
22	101	249	451	e70	2,560	551	320	1,370	291	42	50	16
23	87	291	358	e65	3,880	376	273	674	217	51	49	20
24	71	258	303	e60	1,330	306	236	462	169	63	50	30
25	60	221	311	e55	712	268	209	339	138	46	47	27
26	54	192	347	e53	520	242	290	271	115	37	44	29
27	50	175	302	e52	432	221	436	229	100	31	41	30
28	48	157	271	e50	389	200	299	201	88	31	37	34
29	91	142	253	e80	---	191	288	186	79	64	35	43
30	600	131	230	e280	---	202	380	182	70	71	34	50
31	358	---	208	e250	---	202	---	171	---	57	44	---
TOTAL	4,182	13,649	13,038	8,776	29,729	8,402	15,429	40,465	21,164	2,204	4,505	2,180
MEAN	135	455	421	283	1,062	271	514	1,305	705	71.1	145	72.7
MAX	600	2,270	2,660	2,180	4,570	551	2,040	5,990	4,140	190	664	423
MIN	11	96	90	50	180	186	148	171	70	31	34	15
CFSM	0.56	1.88	1.74	1.17	4.39	1.12	2.13	5.39	2.92	0.29	0.60	0.30
IN.	0.64	2.10	2.00	1.35	4.57	1.29	2.37	6.22	3.25	0.34	0.69	0.34

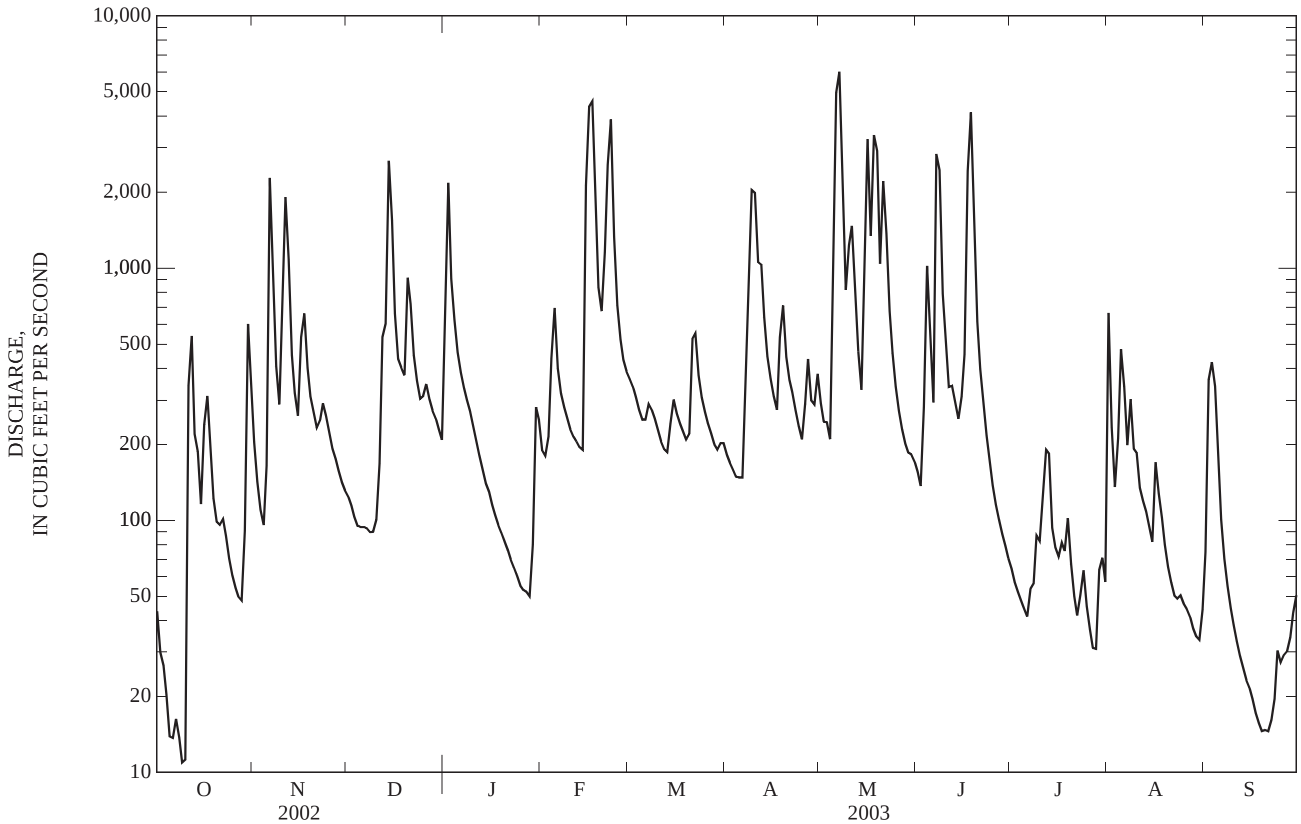
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	55.6	151	371	471	611	690	507	406	186	114	82.0	65.3
MAX	509	869	1,954	1,665	1,953	2,092	1,513	1,309	994	645	445	1,031
(WY)	(1976)	(1987)	(1979)	(1950)	(1989)	(1997)	(1972)	(1996)	(1961)	(1960)	(1979)	(1950)
MIN	0.35	0.70	3.23	31.1	20.7	80.8	90.9	27.6	4.16	3.91	2.09	1.21
(WY)	(1954)	(1954)	(1954)	(1977)	(1954)	(1941)	(1941)	(1941)	(1999)	(1999)	(1944)	(1998)

03217000 TYGARTS CREEK NEAR GREENUP, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1940 - 2003	
ANNUAL TOTAL	116,021.47		163,723			
ANNUAL MEAN	318		449		308	
HIGHEST ANNUAL MEAN					589	1979
LOWEST ANNUAL MEAN					67.5	1954
HIGHEST DAILY MEAN	9,670	Mar 20	5,990	May 7	25,800	Mar 2, 1997
LOWEST DAILY MEAN	0.12	Aug 25	11	Oct 9	0.00	Aug 24, 1952
ANNUAL SEVEN-DAY MINIMUM	0.12	Sep 13	14	Oct 4	0.00	Sep 17, 1955
MAXIMUM PEAK FLOW			8,500	May 7	34,400	Mar 2, 1997
MAXIMUM PEAK STAGE			19.00	May 7	23.65	Mar 2, 1997
INSTANTANEOUS LOW FLOW					0.00	Aug 24, 1952
ANNUAL RUNOFF (CFSM)	1.31		1.85		1.27	
ANNUAL RUNOFF (INCHES)	17.83		25.17		17.28	
10 PERCENT EXCEEDS	623		1,050		695	
50 PERCENT EXCEEDS	101		211		93	
90 PERCENT EXCEEDS	0.59		42		5.0	

e Estimated



03237255 KINNICONICK CREEK BELOW TRACE CREEK AT TANNERY, KY

LOCATION.--Lat 38°32'43", long 83°13'17", Lewis County, Hydrologic Unit 05090201, on bridge on Hwy 9, 0.10 mi downstream from Trace Creek, 0.20 mi west of Tannery, and 9.7 mi upstream from the mouth.

DRAINAGE AREA.--214 mi^2.

PERIOD OF RECORD.--December 7, 2000 to current year.

GAGE.--Water-stage recorder with telemetry. Datum of gage is 533.859 ft above NGVD of 1929.

REMARKS.--Records fair except for those estimated which are poor.

COOPERATION.--Kentucky Natural Resources and Environmental Protection Cabinet.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 14,600 ft^3/s, May 6, gage height, 19.11 ft.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	210	90	1,320	161	367	217	419	115	36	48	27
2	16	131	77	1,910	204	408	198	348	92	36	49	1,320
3	12	86	66	861	256	372	175	302	426	31	49	1,040
4	10	67	60	617	734	309	158	228	1,490	27	77	748
5	9.9	304	58	477	742	287	156	3,380	677	25	231	355
6	7.2	2,320	59	394	457	287	154	8,670	395	23	177	196
7	6.5	751	56	329	363	294	621	2,220	5,230	23	97	121
8	5.3	417	50	301	273	280	1,030	1,390	1,480	22	107	84
9	6.1	274	63	277	228	262	3,230	718	1,070	24	128	63
10	7.8	2,060	82	233	236	222	1,610	767	638	29	97	49
11	621	3,210	168	185	231	191	900	1,160	420	43	141	41
12	539	975	578	144	199	176	773	913	386	77	511	34
13	186	505	691	123	156	176	541	533	332	55	194	31
14	101	326	3,450	e96	171	256	402	358	283	38	104	27
15	59	250	1,180	e86	3,460	282	323	1,020	392	31	68	25
16	239	603	687	e75	3,100	264	273	1,970	652	36	51	22
17	328	666	462	e67	2,940	244	240	898	1,440	40	42	20
18	157	444	503	e60	1,200	221	446	2,610	2,500	38	39	18
19	82	320	550	e55	721	205	469	1,760	854	42	37	17
20	61	256	2,140	e52	652	1,020	367	929	505	33	32	15
21	86	211	1,020	e48	1,220	2,180	448	4,060	326	30	29	14
22	94	219	602	e46	4,080	965	519	1,200	225	29	26	15
23	62	211	423	e45	3,470	609	381	672	158	28	25	19
24	45	181	326	e44	1,040	442	296	455	114	29	26	42
25	34	157	332	e42	696	342	253	319	85	29	35	34
26	30	135	305	e41	544	285	370	243	67	28	29	26
27	27	122	252	e42	441	239	534	184	56	26	26	23
28	27	109	233	e43	389	203	375	148	48	24	23	26
29	169	97	217	43	---	200	408	133	42	34	21	54
30	871	94	192	78	---	246	567	134	38	69	20	39
31	363	---	178	142	---	238	---	129	---	45	20	---
TOTAL	4,285.8	15,711	15,150	8,276	28,364	12,072	16,434	38,270	20,536	1,080	2,559	4,545
MEAN	138	524	489	267	1,013	389	548	1,235	685	34.8	82.5	152
MAX	871	3,210	3,450	1,910	4,080	2,180	3,230	8,670	5,230	77	511	1,320
MIN	5.3	67	50	41	156	176	154	129	38	22	20	14

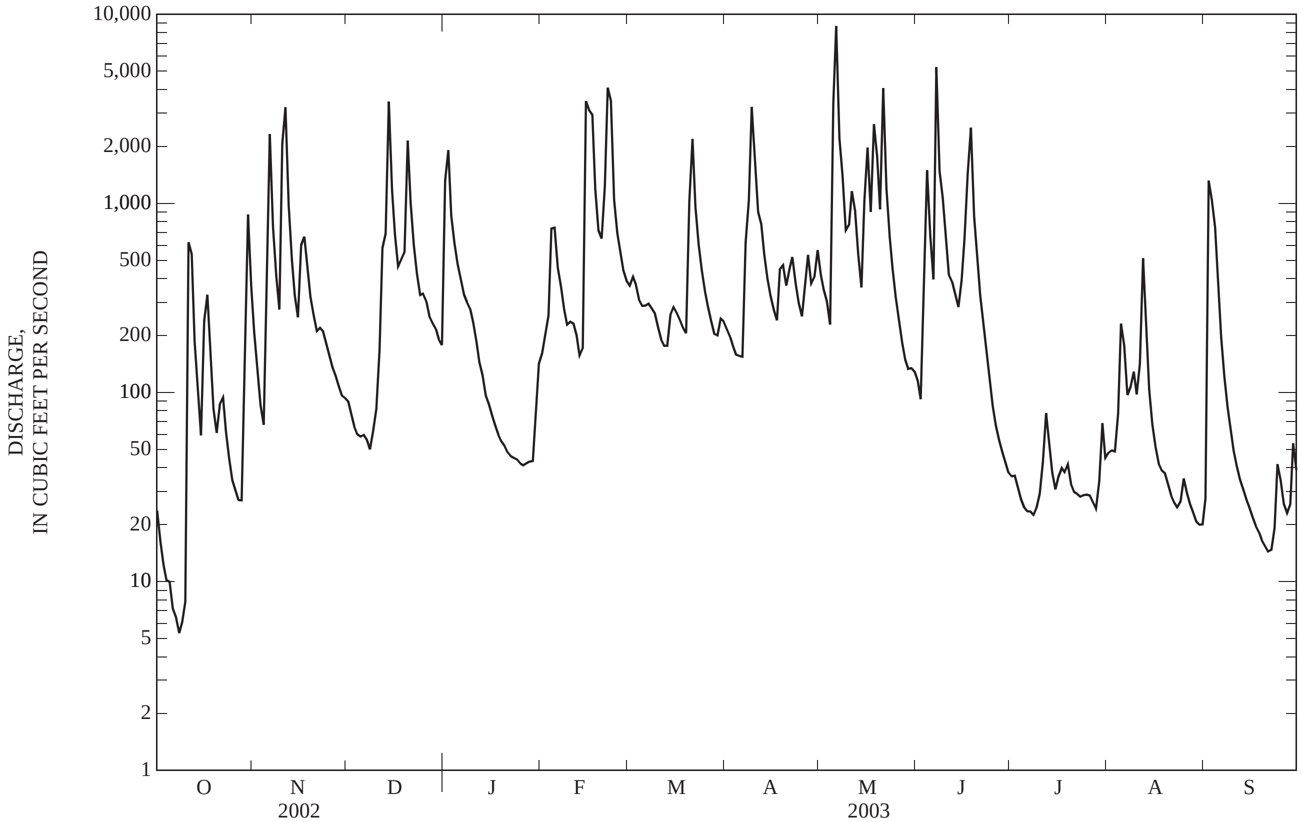
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2001 - 2003, BY WATER YEAR (WY)

MEAN	75.8	274	377	293	551	673	428	784	355	171	87.1	63.9
MAX	138	524	489	473	1,013	1,079	636	1,235	685	454	175	152
(WY)	(2003)	(2003)	(2003)	(2002)	(2003)	(2002)	(2002)	(2003)	(2003)	(2001)	(2001)	(2003)
MIN	13.3	25.1	265	138	192	389	102	511	136	22.7	3.98	9.12
(WY)	(2002)	(2002)	(2002)	(2001)	(2002)	(2003)	(2001)	(2001)	(2002)	(2002)	(2002)	(2002)

03237255 KINNICONICK CREEK BELOW TRACE CREEK AT TANNERY, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 2001 - 2003	
ANNUAL TOTAL	131,711.85		167,282.8			
ANNUAL MEAN	361		458		374	
HIGHEST ANNUAL MEAN					458	2003
LOWEST ANNUAL MEAN					290	2002
HIGHEST DAILY MEAN	13,600	Mar 20	8,670	May 6	13,600	Mar 20, 2002
LOWEST DAILY MEAN	0.00	Aug 16	5.3	Oct 8	0.00	Aug 16, 2002
ANNUAL SEVEN-DAY MINIMUM	0.19	Aug 15	7.5	Oct 4	0.19	Aug 15, 2002
MAXIMUM PEAK FLOW			14,600	May 6	16,300	Mar 20, 2002
MAXIMUM PEAK STAGE			19.11	May 6	20.28	Mar 20, 2002
INSTANTANEOUS LOW FLOW			5.3	Oct 8	5.3	Oct 8, 2002
10 PERCENT EXCEEDS	760		1,040		860	
50 PERCENT EXCEEDS	110		200		128	
90 PERCENT EXCEEDS	2.5		26		5.4	

e Estimated



03238745 TWELVEMILE CREEK AT HIGHWAY 1997 NEAR ALEXANDRIA, KY

LOCATION.--Lat 38°57'05", long 84°20'18", Campbell County, Hydrologic Unit 05090201,at bridge on Highway 1997, 1.0 miles upstream from Lick Branch, 2.5 miles east of Alexandria, and 2.8 miles upstream from the mouth.

DRAINAGE AREA.--39.0 mi^2.

WATER DISCHARGE RECORDS

PERIOD OF RECORD.--January 2001 to current year.

REVISIONS.--WDR KY-01-1: Latitude.

GAGE.--Water-stage recorder with telemetry. Datum of gage is 505.854 ft above NGVD of 1929.

REMARKS.--Records fair except for those estimated which are poor.

COOPERATION.--Northern Kentucky Sanitation District No. 1.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.8	8.5	7.4	1,150	24	87	24	11	17	4.1	5.7	35
2	3.6	6.1	7.0	113	38	154	21	18	12	3.7	262	1,070
3	4.6	6.6	6.5	69	53	68	19	15	76	3.4	44	58
4	5.7	7.5	5.9	50	254	44	18	11	41	3.2	65	22
5	8.2	94	6.6	45	52	111	53	1,040	21	6.9	68	13
6	4.7	124	6.6	59	30	73	28	93	14	3.9	22	8.2
7	4.8	18	6.6	47	27	47	76	271	16	3.4	14	6.4
8	4.1	9.6	7.0	40	25	34	45	56	66	3.1	13	5.5
9	3.9	6.1	7.5	35	22	29	91	32	33	4.7	11	4.6
10	4.3	220	7.4	30	22	24	54	2,050	17	391	9.0	4.0
11	16	222	127	26	23	21	34	227	13	83	57	4.0
12	16	36	97	24	21	21	26	55	20	23	47	3.2
13	11	19	127	22	18	53	22	34	19	13	16	2.8
14	8.3	14	183	22	20	51	19	28	87	9.5	9.7	2.6
15	e7.6	13	46	19	330	31	18	59	37	8.0	8.4	2.3
16	e9.4	34	26	19	96	26	17	26	109	146	7.6	2.0
17	e7.8	26	117	19	51	23	17	46	189	24	6.5	2.2
18	e6.4	16	112	19	35	21	20	99	75	13	6.2	1.9
19	e9.8	13	879	19	30	56	16	47	28	11	5.2	1.8
20	e11	11	445	19	37	113	35	145	23	8.4	4.2	2.2
21	e8.2	11	35	18	230	372	482	186	17	9.6	3.5	2.5
22	e6.6	18	14	16	1,490	66	45	42	13	14	7.3	122
23	e12	16	8.2	15	247	39	27	28	11	20	4.8	43
24	21	13	6.0	15	62	30	21	23	9.0	20	4.2	13
25	83	11	14	15	39	26	19	20	7.8	15	4.6	6.3
26	73	10	8.9	16	31	35	17	21	7.1	8.3	3.9	4.4
27	25	9.7	5.8	16	28	27	15	18	8.5	6.0	3.4	154
28	18	9.0	5.3	16	28	23	13	16	7.9	11	3.0	29
29	334	8.4	4.9	22	---	99	12	23	6.0	23	2.6	14
30	61	8.2	27	29	---	e44	12	19	4.8	10	4.6	9.2
31	14	---	310	21	---	e28	---	19	---	6.8	8.0	---
TOTAL	805.8	1,018.7	2,666.6	2,045	3,363	1,876	1,316	4,778	1,005.1	910.0	731.4	1,649.1
MEAN	26.0	34.0	86.0	66.0	120	60.5	43.9	154	33.5	29.4	23.6	55.0
MAX	334	222	879	1,150	1,490	372	482	2,050	189	391	262	1,070
MIN	2.8	6.1	4.9	15	18	21	12	11	4.8	3.1	2.6	1.8
CFSM	0.67	0.87	2.21	1.69	3.08	1.55	1.12	3.95	0.86	0.75	0.60	1.41
IN.	0.77	0.97	2.54	1.95	3.21	1.79	1.26	4.56	0.96	0.87	0.70	1.57

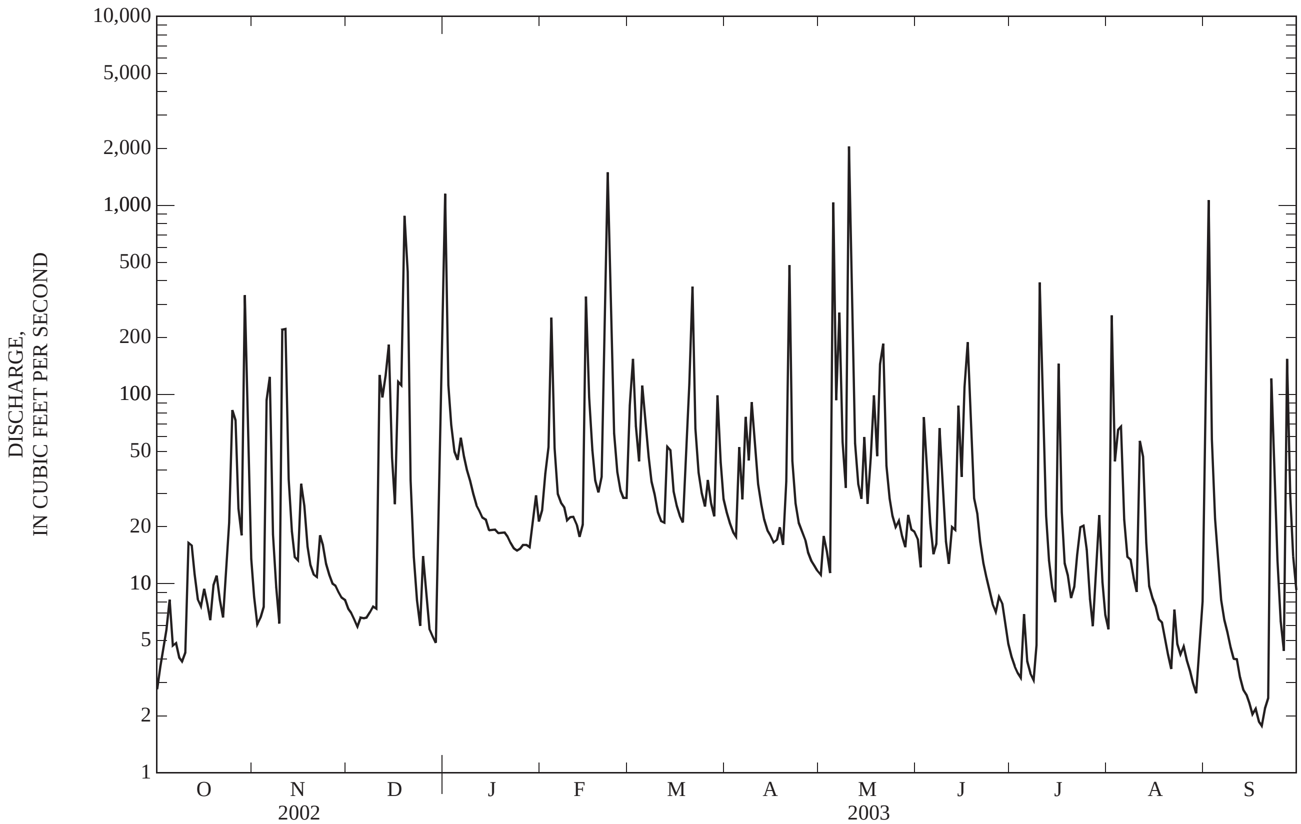
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2001 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	36.0	52.2	92.5	50.1	61.2	62.6	53.7	110	32.8	29.4	22.5	33.3
MAX	46.1	70.4	99.0	66.0	120	93.3	106	160	37.5	55.3	42.4	55.0
(WY)	(2002)	(2002)	(2002)	(2003)	(2003)	(2002)	(2002)	(2002)	(2001)	(2001)	(2001)	(2003)
MIN	26.0	34.0	86.0	34.2	30.0	34.1	11.2	14.8	27.4	3.50	1.40	4.01
(WY)	(2003)	(2003)	(2003)	(2002)	(2002)	(2001)	(2001)	(2001)	(2002)	(2002)	(2002)	(2001)

03238745 TWELVEMILE CREEK AT HIGHWAY 1997 NEAR ALEXANDRIA, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 2001 - 2003	
ANNUAL TOTAL	19,622.27		22,164.7			
ANNUAL MEAN	53.8		60.7		60.1	
HIGHEST ANNUAL MEAN					60.7	2003
LOWEST ANNUAL MEAN					59.6	2002
HIGHEST DAILY MEAN	1,290	Apr 28	2,050	May 10	2,050	May 10, 2003
LOWEST DAILY MEAN	0.68	Aug 24	1.8	Sep 19	0.68	Aug 24, 2002
ANNUAL SEVEN-DAY MINIMUM	0.83	Aug 21	2.1	Sep 15	0.83	Aug 21, 2002
MAXIMUM PEAK FLOW			6,920	May 10	6,920	May 10, 2003
MAXIMUM PEAK STAGE			9.18	May 10	9.18	May 10, 2003
ANNUAL RUNOFF (CFSM)	1.38		1.56		1.54	
ANNUAL RUNOFF (INCHES)	18.72		21.14		20.95	
10 PERCENT EXCEEDS	118		111		113	
50 PERCENT EXCEEDS	12		19		16	
90 PERCENT EXCEEDS	1.6		4.7		3.0	

e Estimated



03238745 TWELVEMILE CREEK AT HIGHWAY 1997 NEAR ALEXANDRIA, KY—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--December 2002 to September 2003.

COOPERATION.--Northern Kentucky Sanitation District No. 1.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: December 2000 to current year.
pH: December 2000 to current year.
WATER TEMPERATURES: December 2000 to current year.
DISSOLVED OXYGEN: December 2000 to current year.
TURBIDITY: December 2000 to current year.

INSTRUMENTATION.--Water-quality monitor with telemetry.

REMARKS.--
SPECIFIC CONDUCTANCE: Records good.
pH: Records good.
WATER TEMPERATURES: Records good.
DISSOLVED OXYGEN: Records good.
TURBIDITY: Records good.

EXTREMES FOR PERIOD OF RECORD.--
SPECIFIC CONDUCTANCE: Maximum recorded, 2620 microsiemens, Dec. 11, 2002; minimum recorded, 91 microsiemens, Sept. 2, 2003.
pH: Maximum recorded, 9.1 units, May 13, 2001 and Jul. 18, 2002; minimum recorded, 6.6 units, Dec. 25-26, 2000.
WATER TEMPERATURES: Maximum recorded, 32.3°C, Aug. 8, 2001; minimum recorded, -0.1°C, Jan. 11-13, 2003.
DISSOLVED OXYGEN: Maximum recorded, 21.2 mg/L, Feb. 27, 28, 2002; minimum recorded, 0.3 mg/L, May 16, 2001.
TURBIDITY: Maximum recorded, greater than 1000 NTU, many days in 2001, 2002 and 2003; minimum recorded, 1.1 NTU, Jun. 13, 2002.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum recorded, 2620 microsiemens, Dec. 11, 2002; minimum recorded, 91 microsiemens, Sept. 2, 2003.
pH: Maximum recorded, 9.0 units, Apr. 3, 2003; minimum recorded, 7.1 units, Oct. 3-5, 2002.
WATER TEMPERATURES: Maximum recorded, 31.7°C, Jul. 8, 2003; minimum recorded, -0.3°C, Jan. 11-13, 2003.
DISSOLVED OXYGEN: Maximum recorded, greater than 20 mg/L, Dec. 7, 2002; minimum recorded, 3.2 mg/L, Aug. 30, 2003.
TURBIDITY: Maximum recorded, greater than 1000 NTU, many days in 2003; minimum recorded, 3.0 NTU, Apr. 16 and May 19, 2003.

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	565	479	523	469	429	450	642	624	635	250	134	182
2	595	565	583	536	466	498	650	631	642	335	227	283
3	686	591	636	582	536	569	651	632	643	420	335	377
4	648	544	573	597	574	587	661	642	652	459	420	436
5	653	547	584	594	333	521	660	625	644	679	459	513
6	593	551	567	397	340	363	671	638	656	679	529	596
7	618	593	611	418	364	388	728	664	705	546	530	539
8	649	607	631	463	418	440	751	707	725	554	545	549
9	680	642	659	510	462	488	798	732	761	558	550	553
10	686	673	678	540	188	459	764	716	738	565	558	560
11	700	552	639	350	229	307	2,620	445	815	586	565	570
12	561	512	530	399	350	372	504	413	431	604	586	592
13	564	533	544	455	398	424	566	340	431	608	592	602
14	592	564	574	486	455	473	391	336	356	609	600	603
15	620	592	610	530	486	504	422	366	395	646	609	627
16	653	617	640	540	486	508	455	418	434	660	646	653
17	679	646	664	530	487	504	510	280	408	683	658	665
18	703	673	687	560	530	546	408	305	386	728	683	707
19	719	694	706	578	560	572	460	147	344	729	698	712
20	754	714	738	585	573	580	287	149	223	711	687	696
21	778	743	761	594	579	586	366	287	329	705	678	693
22	781	755	761	607	572	586	416	366	392	722	687	704
23	781	757	768	576	562	569	451	416	431	715	695	708
24	783	766	773	587	573	581	481	451	465	734	711	727
25	787	377	669	603	587	598	522	479	500	747	719	734
26	487	402	434	612	598	605	550	522	540	738	721	730
27	548	487	522	622	605	613	572	550	561	759	730	739
28	597	547	573	629	611	620	576	564	568	770	729	747
29	608	253	434	634	620	629	585	575	579	872	733	790
30	362	267	317	647	630	639	641	492	590	821	729	769
31	430	362	398	---	---	---	549	250	412	784	744	762
MONTH	787	253	606	647	188	519	2,620	147	529	872	134	617

03238745 TWELVEMILE CREEK AT HIGHWAY 1997 NEAR ALEXANDRIA, KY—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	834	768	786	635	474	586	557	518	532	647	600	626
2	836	743	785	481	355	386	577	518	548	642	612	625
3	818	659	691	414	355	379	592	523	560	640	619	628
4	811	362	415	467	414	434	609	557	582	634	620	628
5	448	383	417	471	405	432	667	524	566	631	186	269
6	501	448	473	426	398	407	567	506	532	381	244	320
7	549	497	517	489	426	468	582	402	484	413	210	309
8	639	549	594	523	488	501	498	454	483	403	283	347
9	639	598	615	544	523	530	517	439	482	479	403	444
10	683	626	647	568	544	553	465	433	445	488	139	257
11	756	674	713	591	568	574	506	459	480	356	199	292
12	780	714	749	600	588	591	545	506	518	422	355	391
13	826	769	794	739	474	583	565	525	543	471	422	445
14	1,130	768	854	557	475	533	580	538	561	508	439	487
15	1,130	293	452	557	547	552	593	555	576	522	308	425
16	444	336	394	570	543	551	615	582	595	544	494	522
17	518	444	482	594	565	574	636	603	618	555	469	531
18	582	518	550	607	569	589	641	622	630	478	469	475
19	682	582	622	709	449	588	650	619	637	500	476	485
20	---	---	---	509	420	447	661	374	635	522	297	493
21	---	---	---	492	280	316	374	231	286	344	256	291
22	379	157	245	430	334	384	429	339	387	434	344	390
23	359	189	273	497	430	463	486	429	456	492	434	462
24	482	359	411	539	497	514	529	486	503	538	492	508
25	533	482	507	571	534	547	562	529	542	563	538	545
26	572	532	553	586	546	565	577	532	560	586	556	568
27	598	572	583	589	539	562	592	524	572	595	563	583
28	635	596	608	603	562	586	609	541	582	605	573	591
29	---	---	---	620	427	520	616	573	596	622	585	606
30	---	---	---	---	---	---	638	595	617	610	574	596
31	---	---	---	---	---	---	---	---	---	615	601	609
MONTH	1,130	157	567	739	280	507	667	231	537	647	139	476
		JUNE			JULY			AUGUST			SEPTEMBER	
1	615	578	600	613	572	597	582	555	571	536	250	483
2	621	586	603	657	600	632	577	176	368	384	91	206
3	614	439	547	670	657	661	390	327	361	319	211	271
4	445	424	432	671	611	662	437	231	370	382	319	352
5	479	445	458	658	545	616	452	395	420	419	382	401
6	503	479	489	637	589	606	395	378	385	462	419	437
7	527	503	519	643	609	626	424	385	407	486	459	468
8	537	147	447	652	626	643	442	368	422	501	475	489
9	549	382	485	668	402	634	480	426	446	513	484	499
10	583	549	563	606	153	480	504	470	487	523	496	508
11	611	583	591	312	191	262	522	285	474	535	497	515
12	616	596	606	381	312	346	324	259	282	539	508	526
13	598	587	592	431	381	400	396	324	368	553	533	540
14	606	187	509	454	427	440	443	396	421	576	553	567
15	531	414	488	490	423	469	495	442	470	599	566	591
16	536	314	400	494	227	296	498	473	486	613	593	607
17	409	219	324	358	290	325	503	487	497	613	595	606
18	321	236	272	406	358	381	506	477	496	630	603	615
19	425	321	372	473	406	444	517	496	504	651	618	632
20	467	425	447	478	444	457	531	505	518	656	639	649
21	510	467	486	554	466	498	553	530	541	640	596	616
22	543	510	525	540	241	476	619	530	568	621	324	476
23	562	541	552	474	373	427	563	484	505	369	348	358
24	581	544	565	489	461	475	516	498	508	386	364	373
25	598	540	571	520	462	492	541	515	529	432	386	407
26	600	555	582	553	520	535	558	526	547	465	432	449
27	629	565	595	572	553	564	578	554	565	490	260	342
28	609	551	586	626	557	582	608	572	586	310	273	289
29	600	528	581	562	511	521	636	602	614	367	310	335
30	605	557	584	512	488	505	631	602	619	420	359	380
31	---	---	---	555	512	538	625	529	580	---	---	---
MONTH	629	147	512	671	153	503	636	176	481	656	91	466
YEAR	2,620	91	526									

03238745 TWELVEMILE CREEK AT HIGHWAY 1997 NEAR ALEXANDRIA, KY—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	7.7	7.2	7.4	8.2	7.9	8.0	8.4	7.9	8.2	7.8	7.7	7.7
2	7.6	7.2	7.3	8.2	7.9	8.0	8.5	7.9	8.2	7.9	7.7	7.8
3	7.7	7.1	7.3	8.0	7.8	7.9	8.6	7.9	8.3	8.0	7.9	8.0
4	7.6	7.1	7.3	7.9	7.8	7.9	8.5	8.2	8.4	8.2	8.0	8.1
5	7.7	7.1	7.4	7.9	7.7	7.8	8.7	8.1	8.4	8.2	8.0	8.1
6	7.8	7.3	7.5	7.8	7.7	7.8	8.7	8.1	8.4	8.2	8.0	8.1
7	8.0	7.5	7.7	8.0	7.7	7.9	8.7	8.2	8.4	8.2	8.1	8.1
8	8.1	7.5	7.8	8.1	7.8	7.9	8.7	8.1	8.4	8.2	8.1	8.1
9	8.2	7.6	7.8	8.2	7.8	7.9	8.6	8.1	8.4	8.2	8.1	8.2
10	8.0	7.5	7.7	8.1	7.6	7.8	8.6	8.1	8.4	8.3	8.1	8.2
11	7.7	7.3	7.5	7.7	7.6	7.6	8.4	7.5	7.9	8.3	8.2	8.2
12	7.9	7.4	7.6	7.8	7.6	7.7	7.9	7.8	7.8	8.3	8.2	8.2
13	8.1	7.4	7.7	8.0	7.7	7.8	7.9	7.8	7.8	8.4	8.2	8.3
14	8.2	7.7	7.9	8.1	7.8	7.9	7.9	7.8	7.8	8.4	8.3	8.3
15	8.1	7.8	7.9	7.9	7.8	7.8	8.0	7.8	7.9	8.4	8.2	8.3
16	8.2	7.7	7.9	7.9	7.8	7.8	8.3	7.8	8.0	8.3	8.2	8.3
17	8.3	7.8	8.0	8.1	7.8	8.0	7.9	7.8	7.9	8.3	8.1	8.2
18	8.4	7.9	8.1	8.1	7.9	8.0	7.9	7.8	7.9	8.3	8.1	8.2
19	8.1	7.7	7.9	8.2	7.8	8.0	7.9	7.7	7.8	8.3	8.2	8.2
20	8.5	7.6	8.0	8.2	7.8	8.0	7.8	7.7	7.7	8.4	8.2	8.3
21	8.5	8.0	8.2	8.2	7.8	8.0	7.9	7.8	7.8	8.4	8.2	8.3
22	8.5	8.0	8.2	8.2	7.8	8.0	7.9	7.8	7.9	8.4	8.2	8.3
23	8.6	8.0	8.3	8.3	7.8	8.1	8.0	7.9	8.0	8.4	8.2	8.3
24	8.7	8.1	8.3	8.4	7.9	8.1	8.1	7.9	8.0	8.3	8.2	8.3
25	8.4	7.7	8.0	8.3	7.9	8.1	8.1	7.9	8.0	8.4	8.2	8.3
26	7.7	7.6	7.7	8.3	7.9	8.1	8.0	7.8	7.9	8.3	8.2	8.2
27	8.2	7.6	7.9	8.5	7.9	8.2	8.0	7.9	8.0	8.2	8.1	8.2
28	8.3	7.8	8.0	8.4	8.0	8.2	8.1	7.9	8.0	8.3	8.1	8.2
29	8.1	7.8	7.9	8.4	7.9	8.1	8.1	8.0	8.0	8.3	8.1	8.2
30	7.9	7.6	7.8	8.4	7.8	8.1	8.0	7.9	8.0	8.3	8.2	8.2
31	8.0	7.8	7.9	---	---	---	7.9	7.8	7.9	8.4	8.2	8.3
MONTH	8.7	7.1	7.8	8.5	7.6	8.0	8.7	7.5	8.0	8.4	7.7	8.2

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	8.4	8.2	8.3	8.1	8.0	8.0	8.8	8.0	8.3	8.8	8.0	8.4
2	8.4	8.2	8.3	8.0	7.9	7.9	8.9	8.0	8.4	8.5	8.0	8.2
3	8.3	8.1	8.2	8.1	7.9	8.0	9.0	7.9	8.4	8.5	8.0	8.2
4	8.1	8.0	8.0	8.1	8.0	8.0	8.8	7.9	8.3	8.7	8.0	8.3
5	8.1	8.0	8.0	8.1	8.0	8.0	8.1	7.9	8.0	8.2	7.7	7.8
6	8.1	7.9	8.0	8.0	7.9	8.0	8.5	7.9	8.1	7.9	7.7	7.8
7	8.2	8.0	8.1	8.1	7.9	8.0	8.0	7.8	7.9	7.8	7.7	7.7
8	8.3	8.0	8.1	8.2	7.9	8.0	8.2	7.8	8.0	8.0	7.7	7.8
9	8.4	8.1	8.2	8.3	7.9	8.1	8.0	7.8	7.9	8.1	7.8	7.9
10	8.3	8.1	8.2	8.3	8.0	8.1	8.3	7.9	8.0	7.9	7.6	7.7
11	8.4	8.1	8.2	8.4	8.0	8.1	8.4	7.9	8.1	7.8	7.6	7.7
12	8.4	8.1	8.3	8.4	8.1	8.2	8.6	7.8	8.1	8.0	7.8	7.9
13	8.4	8.2	8.3	8.2	8.1	8.1	8.6	7.9	8.2	8.1	7.9	8.0
14	8.3	8.1	8.2	8.4	8.1	8.2	8.6	7.8	8.2	8.2	7.9	8.0
15	8.1	7.8	7.9	8.5	8.0	8.2	8.6	7.8	8.1	7.9	7.7	7.8
16	7.9	7.8	7.8	8.6	8.0	8.2	8.5	7.8	8.1	8.1	7.8	7.9
17	8.0	7.8	7.9	8.7	8.0	8.3	8.2	7.8	7.9	8.0	7.8	7.8
18	8.1	7.9	8.0	8.8	8.0	8.3	8.2	7.8	8.0	7.9	7.8	7.8
19	8.2	8.0	8.1	8.7	8.0	8.2	8.5	7.8	8.1	8.0	7.8	7.9
20	8.2	8.0	8.1	8.1	7.9	8.0	8.4	7.7	8.0	8.0	7.7	7.9
21	8.1	7.9	8.0	7.9	7.8	7.8	7.7	7.6	7.7	7.8	7.7	7.7
22	7.9	7.8	7.8	8.1	7.8	7.9	8.0	7.7	7.8	8.1	7.8	7.9
23	7.9	7.8	7.8	8.4	7.9	8.1	8.3	7.8	8.0	8.2	7.8	8.0
24	8.0	7.8	7.9	8.5	7.9	8.2	8.4	7.8	8.1	8.4	7.9	8.1
25	8.0	7.8	7.9	8.6	7.9	8.2	8.3	7.8	8.0	8.3	7.9	8.1
26	8.1	7.9	8.0	8.6	7.9	8.2	8.6	7.9	8.2	8.5	7.9	8.1
27	8.1	8.0	8.0	8.7	7.9	8.3	8.7	7.9	8.3	8.5	7.9	8.1
28	8.1	8.0	8.0	8.8	7.9	8.3	8.8	7.8	8.3	8.5	7.9	8.2
29	---	---	---	8.0	7.9	8.0	8.9	7.8	8.3	8.4	7.9	8.1
30	---	---	---	---	---	---	8.9	8.0	8.4	8.5	7.9	8.2
31	---	---	---	---	---	---	---	---	---	8.3	7.9	8.1
MONTH	8.4	7.8	8.1	8.8	7.8	8.1	9.0	7.6	8.1	8.8	7.6	8.0

03238745 TWELVEMILE CREEK AT HIGHWAY 1997 NEAR ALEXANDRIA, KY—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS—CONTINUED
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	8.6	7.9	8.2	8.4	7.8	8.1	8.2	7.6	7.9	8.0	7.5	7.8
2	8.6	7.9	8.2	8.4	7.8	8.1	7.9	7.4	7.6	7.5	7.3	7.4
3	8.2	7.8	7.9	8.4	7.8	8.1	7.7	7.5	7.6	7.6	7.4	7.5
4	8.0	7.8	7.9	8.4	7.8	8.1	7.7	7.5	7.5	7.8	7.5	7.6
5	8.4	7.8	8.1	8.3	7.7	8.0	7.8	7.6	7.7	7.9	7.6	7.7
6	8.5	7.8	8.1	8.3	7.7	8.0	7.8	7.6	7.6	8.1	7.7	7.8
7	8.4	7.8	8.0	8.1	7.7	7.9	7.8	7.5	7.7	8.0	7.7	7.9
8	8.4	7.7	7.9	8.2	7.6	7.9	7.9	7.6	7.7	8.3	7.7	8.0
9	8.2	7.7	7.9	8.2	7.7	7.9	7.9	7.6	7.8	8.3	7.7	8.0
10	8.3	7.8	8.0	7.9	7.6	7.8	8.0	7.6	7.8	8.4	7.8	8.1
11	8.3	7.8	8.0	7.6	7.5	7.6	7.9	7.5	7.7	8.4	7.8	8.2
12	8.1	7.8	7.9	7.7	7.6	7.7	7.6	7.4	7.5	8.5	7.8	8.2
13	8.2	7.8	8.0	7.9	7.6	7.7	7.9	7.5	7.6	8.6	7.9	8.2
14	8.0	7.7	7.8	8.0	7.7	7.8	7.9	7.5	7.7	8.4	7.8	8.1
15	7.9	7.7	7.8	8.0	7.7	7.8	7.9	7.5	7.7	8.5	7.7	8.0
16	7.8	7.6	7.7	7.7	7.5	7.6	8.0	7.6	7.8	8.6	7.7	8.1
17	7.8	7.5	7.6	7.9	7.5	7.6	8.1	7.7	7.9	8.6	7.8	8.1
18	7.7	7.5	7.6	7.9	7.6	7.7	8.2	7.7	8.0	8.6	7.8	8.1
19	7.8	7.6	7.7	8.2	7.6	7.9	8.3	7.8	8.0	8.5	7.8	8.0
20	8.1	7.7	7.9	8.2	7.7	8.0	8.3	7.7	8.0	8.6	7.7	8.1
21	8.2	7.9	8.0	8.1	7.7	7.9	8.3	7.6	7.9	8.6	7.8	8.1
22	8.3	7.9	8.1	8.2	7.7	7.9	7.7	7.5	7.6	8.0	7.5	7.7
23	8.3	7.9	8.1	7.9	7.6	7.7	8.1	7.5	7.7	7.8	7.6	7.7
24	8.3	7.9	8.1	8.1	7.8	7.9	8.2	7.6	7.8	8.0	7.7	7.8
25	8.4	7.9	8.2	8.2	7.8	8.0	8.2	7.6	7.9	8.0	7.6	7.8
26	8.4	7.9	8.1	8.2	7.8	8.0	8.3	7.6	7.9	8.1	7.7	7.9
27	8.5	7.8	8.2	8.3	7.7	8.0	8.1	7.6	7.8	7.8	7.4	7.6
28	8.5	7.9	8.2	8.1	7.7	7.9	8.3	7.5	7.8	7.7	7.5	7.6
29	8.5	7.9	8.2	8.3	7.8	8.0	8.3	7.6	7.8	7.8	7.6	7.7
30	8.4	7.8	8.2	8.3	7.8	8.0	7.8	7.5	7.6	7.9	7.6	7.8
31	---	---	---	8.1	7.6	7.8	7.8	7.5	7.6	---	---	---
MONTH	8.6	7.5	8.0	8.4	7.5	7.9	8.3	7.4	7.7	8.6	7.3	7.9
YEAR	9.0	7.1	8.0									

03238745 TWELVEMILE CREEK AT HIGHWAY 1997 NEAR ALEXANDRIA, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	22.5	19.9	21.0	10.6	8.0	9.4	2.7	0.7	1.6	6.7	5.2	5.9
2	22.8	20.7	21.6	8.3	5.1	6.8	3.2	0.5	1.8	5.2	4.4	4.9
3	23.3	20.5	21.9	7.1	5.6	6.7	2.9	1.0	1.7	4.4	3.2	3.7
4	22.9	21.4	22.1	8.2	7.1	7.7	1.0	0.2	0.4	3.8	2.5	3.1
5	21.4	18.1	19.6	9.8	8.0	8.5	0.7	0.0	0.2	3.2	2.0	2.8
6	18.1	15.2	16.8	9.2	8.6	9.0	1.1	0.1	0.4	3.3	2.3	3.0
7	18.3	15.3	16.9	10.8	8.0	9.1	0.8	0.0	0.3	3.3	1.4	2.2
8	16.0	13.0	14.6	10.9	6.8	8.8	1.6	0.2	0.8	4.8	2.0	3.1
9	15.8	13.4	14.5	12.4	9.0	10.6	1.3	0.1	0.6	5.5	2.7	3.8
10	15.8	14.7	15.3	15.5	12.3	13.4	1.7	0.3	0.9	3.5	1.4	2.9
11	17.6	15.6	16.6	13.9	11.8	13.1	1.8	1.0	1.6	1.5	-0.3	0.6
12	18.8	16.9	17.7	11.8	10.1	10.8	3.0	1.8	2.3	0.2	-0.3	-0.1
13	18.4	15.4	17.1	11.2	8.7	9.9	4.1	3.0	3.5	0.4	-0.3	0.0
14	15.4	11.7	13.2	10.3	7.9	9.1	4.4	3.9	4.2	0.4	-0.2	0.1
15	12.2	10.9	11.7	9.3	8.4	8.8	4.8	2.9	4.0	0.2	-0.2	-0.1
16	12.3	11.2	11.7	9.0	7.2	8.0	5.4	3.7	4.4	-0.1	-0.2	-0.2
17	12.0	10.1	10.9	7.4	5.9	6.9	4.3	3.5	3.8	0.0	-0.2	-0.2
18	12.1	9.5	10.7	6.5	4.1	5.5	6.1	4.3	5.1	0.0	-0.2	-0.1
19	12.9	11.7	12.4	9.0	5.8	7.3	7.7	5.8	6.8	0.0	-0.2	-0.1
20	13.5	11.2	12.3	7.9	4.4	6.4	7.6	5.7	6.7	0.0	-0.2	-0.1
21	12.6	10.3	11.4	8.4	6.2	7.4	6.2	4.7	5.3	0.2	-0.2	-0.1
22	11.3	9.0	10.2	7.9	5.6	6.4	6.2	4.2	5.2	0.0	-0.2	-0.1
23	11.9	8.9	10.3	6.6	4.4	5.5	4.3	2.6	3.6	-0.1	-0.2	-0.2
24	12.2	9.7	10.7	6.7	3.3	5.0	3.8	3.3	3.5	0.0	-0.2	-0.1
25	11.9	10.1	10.7	5.8	4.3	4.8	3.5	2.5	3.0	0.0	-0.2	-0.1
26	12.1	11.6	11.9	4.7	3.2	3.6	2.5	1.6	2.0	-0.1	-0.2	-0.2
27	13.1	11.5	12.2	4.0	2.6	3.2	2.8	1.3	1.8	-0.1	-0.2	-0.2
28	12.7	11.2	11.9	2.6	1.0	1.9	3.1	0.7	1.8	-0.1	-0.2	-0.1
29	12.2	9.9	10.8	4.9	1.0	2.6	4.0	1.1	2.3	-0.1	-0.2	-0.1
30	10.2	9.5	9.8	4.9	2.3	3.9	5.0	1.6	3.2	-0.1	-0.2	-0.2
31	10.7	9.2	9.8	---	---	---	6.7	4.6	5.5	0.1	-0.2	-0.1
MONTH	23.3	8.9	14.1	15.5	1.0	7.3	7.7	0.0	2.8	6.7	-0.3	1.1

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	0.1	-0.1	0.0	4.1	2.5	3.2	15.5	7.8	10.8	24.1	17.1	20.3
2	1.6	-0.1	0.6	3.8	2.8	3.6	18.7	10.6	14.0	21.4	17.9	19.5
3	3.5	0.3	1.5	4.4	1.2	2.6	20.6	12.4	15.9	18.8	16.1	17.3
4	3.7	1.6	2.7	4.7	0.9	2.8	18.8	14.9	16.6	17.3	13.2	15.5
5	2.8	0.2	1.2	5.4	4.1	4.6	16.7	12.3	14.5	16.2	13.4	14.8
6	1.7	0.2	0.9	4.6	2.9	4.1	12.3	9.7	10.8	18.9	16.2	17.2
7	2.2	0.0	1.0	5.1	2.2	3.2	10.5	9.0	9.7	17.6	16.2	16.8
8	0.7	-0.1	0.2	7.8	2.0	4.6	10.3	8.9	9.6	20.1	16.0	17.8
9	2.2	0.0	0.9	8.2	4.3	5.9	9.3	7.4	8.2	20.5	17.7	19.0
10	2.0	0.5	1.2	7.0	2.0	4.1	10.1	6.8	8.2	19.1	17.5	18.1
11	0.8	-0.1	0.2	8.4	2.6	5.0	14.3	7.2	10.1	18.9	17.0	17.9
12	1.1	-0.1	0.3	6.6	4.5	5.3	16.5	8.7	11.9	17.9	15.8	16.7
13	0.9	-0.1	0.2	6.3	4.7	5.3	17.7	9.7	13.0	19.7	14.3	16.6
14	0.3	-0.1	0.1	8.4	3.7	5.7	19.7	10.1	14.2	18.7	14.5	16.3
15	0.4	0.0	0.2	9.9	5.2	7.2	21.5	12.4	16.3	18.2	15.0	16.6
16	0.0	-0.1	-0.1	12.6	6.4	9.1	21.4	14.0	17.4	20.7	15.8	17.7
17	0.3	-0.1	0.0	12.9	8.4	10.5	18.3	15.5	16.5	18.1	17.0	17.4
18	0.8	0.0	0.3	14.5	10.6	12.2	17.0	14.8	15.7	17.8	16.7	17.2
19	0.8	0.3	0.5	14.6	11.5	13.0	21.9	13.3	17.1	20.4	16.9	18.3
20	3.6	0.3	1.3	13.3	10.6	11.9	19.8	16.0	17.9	19.5	18.2	18.8
21	1.4	0.7	1.0	11.8	9.3	10.4	16.0	14.2	14.8	18.6	16.2	17.3
22	1.8	1.0	1.5	11.6	8.0	9.8	14.2	12.4	13.5	19.6	15.3	17.1
23	2.1	1.1	1.6	13.2	9.1	10.9	17.4	10.2	13.2	19.4	15.4	17.2
24	2.5	0.8	1.6	15.6	9.0	11.9	14.7	10.5	12.5	19.6	14.6	16.9
25	2.6	0.0	1.0	16.2	10.4	13.2	13.7	12.2	12.9	17.1	15.4	16.3
26	2.0	-0.1	0.8	16.5	11.8	13.6	19.4	11.9	14.8	19.2	14.9	16.5
27	2.8	0.5	1.5	16.1	10.0	12.9	20.5	11.2	15.3	20.3	15.4	17.4
28	3.7	1.6	2.4	18.1	12.4	14.8	20.9	11.7	16.2	19.6	15.3	17.4
29	---	---	---	15.0	9.9	11.8	21.5	16.4	18.6	19.8	16.1	17.5
30	---	---	---	---	---	---	21.7	16.3	18.9	18.8	15.5	17.2
31	---	---	---	---	---	---	---	---	---	17.6	16.3	17.0
MONTH	3.7	-0.1	0.9	18.1	0.9	8.0	21.9	6.8	14.0	24.1	13.2	17.3

03238745 TWELVEMILE CREEK AT HIGHWAY 1997 NEAR ALEXANDRIA, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	20.5	14.6	17.2	27.8	23.5	25.4	27.7	22.4	24.9	25.3	22.2	23.4
2	19.1	13.9	16.8	28.1	23.3	25.6	25.9	21.0	23.1	22.4	21.3	21.8
3	17.8	15.2	15.8	28.8	23.3	26.0	24.8	21.8	23.0	23.0	21.8	22.2
4	15.8	15.0	15.4	30.1	24.2	26.8	22.9	21.0	21.8	24.1	21.0	22.1
5	20.5	13.9	16.8	28.5	23.1	26.0	23.6	20.8	22.0	23.0	19.1	20.8
6	21.8	14.9	18.2	29.5	25.1	27.1	24.9	20.6	22.4	22.5	17.5	20.0
7	21.3	17.7	19.3	28.9	24.5	26.5	25.2	21.1	23.2	21.1	17.8	19.6
8	21.6	17.4	18.7	31.7	25.8	27.5	25.6	21.6	23.6	22.1	18.8	20.5
9	21.6	16.3	18.7	28.1	24.6	26.0	25.0	21.8	23.5	22.7	19.4	21.3
10	22.3	17.4	19.9	25.1	22.5	23.8	25.4	21.8	23.6	23.4	20.1	22.0
11	22.9	19.3	21.0	24.5	21.7	22.8	24.1	19.9	22.6	23.3	20.2	22.0
12	22.0	20.4	21.1	25.5	21.1	23.1	23.3	19.5	21.1	22.4	18.7	20.9
13	24.1	20.0	21.8	26.0	20.7	23.3	25.8	20.8	23.1	23.6	19.6	21.5
14	24.2	20.7	21.9	26.5	21.4	24.2	26.9	22.8	24.9	21.9	20.1	21.1
15	21.9	20.9	21.4	25.4	22.7	23.7	26.2	24.2	25.4	23.2	19.9	21.2
16	22.6	20.6	21.5	25.4	22.5	23.7	27.6	23.9	25.8	22.6	17.3	19.6
17	22.8	20.9	21.7	26.7	21.4	23.8	27.5	24.3	25.9	22.3	17.1	19.4
18	23.2	20.9	21.9	26.3	22.2	24.3	26.2	21.9	24.2	21.7	17.0	19.0
19	22.0	20.5	21.4	27.3	23.1	25.1	26.5	21.3	23.9	20.2	17.6	18.9
20	22.6	18.2	20.1	26.4	21.2	24.3	27.4	22.1	24.6	20.9	15.5	17.6
21	23.5	17.1	20.1	25.8	22.9	24.5	29.3	24.0	26.3	20.2	15.2	17.6
22	24.9	17.5	21.0	26.2	22.0	24.3	26.2	23.4	24.7	18.7	18.1	18.5
23	25.7	18.5	22.1	23.1	20.9	21.9	27.4	21.9	24.2	19.6	16.9	17.9
24	26.3	19.6	23.0	24.3	19.8	22.0	26.9	21.2	23.8	20.0	14.9	17.2
25	26.8	20.8	24.1	26.3	20.4	23.2	26.8	21.7	24.2	19.7	16.9	18.2
26	26.9	22.4	24.8	26.3	21.5	24.2	28.6	23.1	25.5	18.0	14.8	16.5
27	26.4	21.9	24.3	28.4	23.4	25.8	28.0	24.2	25.7	18.2	16.7	17.6
28	26.0	20.1	23.3	26.4	24.3	25.3	28.8	23.4	25.8	16.9	14.9	16.1
29	26.7	21.0	24.1	26.7	22.4	24.3	29.2	24.0	26.2	15.8	13.3	14.5
30	27.0	22.3	24.8	25.8	20.7	23.5	25.9	23.7	24.8	15.2	11.3	13.4
31	---	---	---	25.0	22.7	23.8	23.7	22.1	22.7	---	---	---
MONTH	27.0	13.9	20.7	31.7	19.8	24.6	29.3	19.5	24.1	25.3	11.3	19.4
YEAR	31.7	-0.3	13.0									

03238745 TWELVEMILE CREEK AT HIGHWAY 1997 NEAR ALEXANDRIA, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8.6	5.0	6.6	11.1	9.0	9.8	18.6	12.5	15.0	11.6	10.6	11.2
2	8.6	5.1	6.3	12.0	9.3	10.5	19.7	12.9	15.4	11.4	10.4	11.1
3	10.6	5.4	7.0	11.5	9.4	10.3	18.5	12.2	15.0	11.9	10.5	11.0
4	9.2	4.8	6.2	10.4	9.1	9.7	18.1	13.1	15.3	11.4	10.4	10.9
5	9.3	5.6	7.1	10.1	8.8	9.3	19.6	13.1	15.8	11.6	10.4	10.9
6	9.3	6.2	7.5	9.2	8.6	8.9	19.9	13.2	16.0	12.1	10.3	11.1
7	10.5	6.1	7.9	9.9	8.5	9.0	20.5	13.4	16.3	13.0	10.6	11.4
8	11.8	6.9	8.9	11.3	8.5	9.6	19.9	12.8	15.8	11.7	10.3	10.9
9	12.2	7.3	9.1	10.7	8.2	9.2	20.1	12.8	15.8	11.7	10.0	10.7
10	10.2	6.7	8.2	10.3	7.4	8.6	19.2	12.6	15.4	12.1	10.2	11.0
11	8.7	6.1	7.4	8.9	7.9	8.2	13.8	12.0	12.8	13.5	11.2	12.0
12	9.9	5.9	7.5	9.4	8.2	8.9	12.8	12.1	12.5	14.6	12.6	13.6
13	10.6	5.8	7.7	10.8	8.8	9.5	12.4	11.8	12.0	13.8	12.6	13.0
14	11.5	6.9	8.8	11.4	9.2	10.0	11.9	11.5	11.7	13.2	12.4	12.7
15	10.8	7.6	9.0	10.2	9.2	9.6	12.9	11.3	11.9	13.9	12.9	13.4
16	11.3	7.5	9.0	10.3	9.5	9.9	13.8	11.3	12.1	13.8	13.0	13.3
17	12.6	8.0	9.9	11.8	10.0	10.7	12.3	11.5	11.8	14.0	12.9	13.3
18	12.4	8.3	10	12.9	10.6	11.6	11.8	10.4	11.2	14.2	12.8	13.4
19	9.4	7.3	8.3	12.8	10.3	11.3	11.3	10.3	10.6	14.0	11.8	13.1
20	12.9	6.7	9.1	13.6	10.3	11.5	11.3	10.6	11.0	13.9	12.6	13.1
21	12.5	8.1	9.9	13.7	10.0	11.2	12.0	11.3	11.7	14.4	12.7	13.3
22	12.1	8.3	9.9	12.9	9.9	11.2	11.9	11.4	11.6	14.2	12.7	13.4
23	13.7	8.4	10.4	14.7	10.9	12.2	12.8	11.7	12.2	14.1	12.7	13.4
24	13.0	8.5	10.4	15.4	11.1	12.6	12.6	11.9	12.2	14.2	12.9	13.5
25	10.2	7.9	8.7	14.4	10.9	12.3	12.7	11.8	12.2	14.2	12.9	13.5
26	8.0	7.3	7.5	15.0	11.5	13.0	13.3	12.4	12.8	13.5	12.8	13.2
27	10.0	6.9	8.1	17.1	11.9	14.0	13.5	12.8	13.0	14.2	12.9	13.4
28	10.7	7.2	8.5	17.4	12.6	14.4	13.5	12.4	13.0	13.8	12.8	13.2
29	9.7	7.1	8.5	17.3	12.3	14.2	13.2	12.2	12.7	14.4	12.8	13.4
30	9.3	8.8	9.1	16.3	10.9	13.3	12.5	11.4	12.1	14.6	13.4	13.8
31	10.3	9.0	9.5	---	---	---	11.6	10.8	11.3	14.0	13.0	13.5
MONTH	13.7	4.8	8.5	17.4	7.4	10.8	20.5	10.3	13.2	14.6	10.0	12.5
		FEBRUARY			MARCH			APRIL			MAY	
1	13.9	12.8	13.3	13.4	12.2	12.9	15.1	8.5	11.4	14.6	5.6	9.2
2	13.9	12.6	13.3	12.9	11.9	12.4	15.8	7.6	11.0	10.7	5.4	7.5
3	12.7	11.1	11.9	13.5	12.2	12.8	15.8	6.9	10.6	10.1	6.1	7.7
4	12.9	11.3	12.1	13.6	11.9	12.8	14.5	6.7	9.5	11.9	6.7	8.7
5	12.4	11.5	11.9	12.1	11.2	11.6	8.6	6.6	7.8	9.2	6.9	8.4
6	13.1	11.7	12.2	12.0	11.0	11.6	11.9	8.1	9.5	7.6	6.7	7.3
7	13.0	11.9	12.2	13.0	11.7	12.3	9.4	8.6	9.0	7.7	6.7	7.0
8	13.6	12.1	12.8	14.0	10.5	11.9	11.2	9.0	9.8	7.3	6.2	6.8
9	13.3	12.0	12.7	12.5	10.5	11.6	10.0	9.2	9.6	7.1	6.0	6.4
10	13.1	11.9	12.3	13.6	11.5	12.5	11.4	9.4	10.3	8.5	5.9	7.2
11	14.8	12.2	13.2	14.0	11.8	12.6	12.3	8.7	10.3	6.9	6.6	6.8
12	14.8	12.2	13.6	14.0	11.7	12.5	13.0	8.1	10.2	7.6	6.9	7.2
13	14.2	13.1	13.7	12.8	11.7	12.1	13.7	8.0	10.2	8.3	7.0	7.6
14	14.2	12.4	13.3	13.8	11.6	12.6	13.6	7.3	10.0	8.8	7.1	7.9
15	14.4	12.3	13.7	13.9	10.9	12.2	13.1	6.8	9.4	7.8	7.1	7.4
16	13.4	12.2	12.6	14.6	10.1	12.1	12.2	6.2	8.8	8.9	7.0	7.7
17	13.0	12.1	12.5	15.2	9.5	11.9	9.3	6.0	7.5	8.2	6.9	7.4
18	13.0	12.0	12.4	15.8	9.1	11.6	10.3	6.8	8.2	7.9	7.3	7.6
19	13.2	11.9	12.4	15.0	8.8	10.7	12.3	6.5	9.0	9.0	7.4	8.0
20	13.2	12.0	12.4	10.2	9.2	9.7	10.6	6.3	8.2	8.6	7.4	7.9
21	14.1	12.4	13.1	10.6	9.3	10.3	9.2	8.2	8.6	8.6	7.7	8.1
22	14.2	13.4	13.8	11.4	9.8	10.5	9.7	8.5	9.0	9.6	7.7	8.5
23	13.7	12.5	13.2	12.6	9.6	10.8	11.5	8.7	9.9	10.2	7.7	8.7
24	13.9	12.7	13.2	13.6	9.0	10.9	12.4	8.7	10.2	11.1	7.6	9.0
25	14.4	13.0	13.8	14.5	8.5	10.7	11.9	8.6	9.7	10.5	7.4	8.7
26	14.4	13.5	13.9	13.9	8.6	10.5	13.9	8.3	10.6	11.8	7.2	9.0
27	14.2	12.9	13.7	15.3	8.4	11.2	15.1	8.1	10.9	11.9	7.0	8.8
28	13.9	12.7	13.3	15.5	7.8	10.8	16.3	7.6	11.1	12.1	6.8	8.8
29	---	---	---	9.8	7.7	9.0	15.6	7.2	10.5	11.3	6.5	8.2
30	---	---	---	---	---	---	14.8	6.3	9.7	12.2	6.9	9.1
31	---	---	---	---	---	---	---	---	---	9.8	6.6	8.0
MONTH	14.8	11.1	12.9	15.8	7.7	11.6	16.3	6.0	9.7	14.6	5.4	8.0

03238745 TWELVEMILE CREEK AT HIGHWAY 1997 NEAR ALEXANDRIA, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	13.3	7.3	9.7	10.5	4.5	7.0	9.6	4.8	6.8	7.8	4.4	5.5
2	13.2	7.0	9.6	10.2	4.9	7.1	6.9	4.3	5.6	6.8	4.7	5.9
3	8.0	6.8	7.5	10.5	4.6	7.2	5.7	4.7	5.3	6.8	6.1	6.3
4	8.4	7.5	7.8	10.5	4.4	6.9	5.5	4.4	4.9	8.1	6.0	6.6
5	10.7	6.9	8.5	8.8	4.4	6.3	5.7	4.5	5.2	9.8	6.0	7.1
6	10.9	6.2	8.3	8.7	3.9	5.8	5.6	4.2	4.9	11.6	5.6	7.8
7	9.8	6.1	7.4	8.3	3.8	5.5	5.6	4.0	4.7	14.2	5.4	7.7
8	10.4	6.4	7.5	9.1	3.7	5.4	6.4	4.1	4.9	14.6	5.3	8.1
9	8.6	6.5	7.5	8.3	4.3	5.9	6.8	4.2	5.1	11.7	4.8	7.9
10	9.4	6.2	7.5	6.8	5.3	5.8	7.5	4.2	5.5	11.5	6.0	8.3
11	9.1	6.0	7.2	7.4	6.8	7.2	7.3	4.4	5.2	11.8	5.8	8.2
12	7.6	5.8	6.6	8.2	6.9	7.5	5.6	5.1	5.3	12.3	5.8	8.5
13	8.4	5.8	7.0	9.2	6.6	7.7	6.7	4.5	5.5	12.7	5.5	8.4
14	7.3	5.7	6.4	10.2	6.6	8.0	6.8	3.9	5.1	10.7	5.2	7.5
15	6.9	6.0	6.5	9.6	6.4	7.7	7.0	3.8	5.0	11.7	5.2	7.6
16	6.4	5.7	6.1	7.3	6.1	6.8	8.1	4.4	5.9	12.9	5.5	8.0
17	7.5	5.7	6.6	8.1	5.9	6.6	8.3	4.2	5.8	12.8	5.8	8.2
18	7.8	7.0	7.4	8.8	5.9	7.3	9.2	4.5	6.5	14.0	5.6	8.3
19	7.4	6.7	7.1	8.9	5.9	7.1	15.1	4.6	8.0	12.6	5.5	7.5
20	8.4	6.7	7.5	9.8	6.0	7.6	11.5	4.4	6.9	14.1	6.1	8.7
21	9.2	6.9	7.8	8.9	5.9	7.0	11.4	3.8	6.5	14.3	6.4	9.0
22	9.7	6.5	7.9	9.5	6.3	7.6	6.4	3.4	4.4	7.8	5.8	6.7
23	10.1	6.1	7.9	7.8	7.0	7.3	10.2	4.2	6.1	7.2	6.6	6.9
24	10.5	5.8	7.8	9.2	7.2	8.1	11.0	4.0	6.4	8.6	6.6	7.4
25	10.5	5.5	7.6	10.3	6.8	8.4	11.5	4.0	6.6	9.5	6.7	7.8
26	10.3	5.2	7.1	10.0	6.0	8.0	11.9	4.0	6.8	10.9	7.0	8.5
27	10.3	5.0	7.2	10.1	5.9	7.5	11.7	3.8	6.0	8.0	7.3	7.7
28	10.9	5.4	7.7	8.3	5.1	6.5	13.1	3.9	6.8	8.4	7.8	8.1
29	11.0	5.1	7.6	9.2	6.1	7.4	13.8	3.5	6.3	9.3	8.2	8.6
30	10.8	4.9	7.4	10.6	5.5	7.9	6.6	3.2	4.5	10.2	8.2	9.0
31	---	---	---	9.1	4.7	6.4	6.6	3.6	4.8	---	---	---
MONTH	13.3	4.9	7.5	10.6	3.7	7.0	15.1	3.2	5.7	14.6	4.4	7.7
YEAR	20.5	3.2	9.6									

03238745 TWELVEMILE CREEK AT HIGHWAY 1997 NEAR ALEXANDRIA, KY—Continued

TURBIDITY, WATER, UNFILTERED, NEPHELOMETRIC TURBIDITY UNITS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	53	25	36	57	37	46	10	7.1	9.0	710	94	200
2	96	29	39	130	18	33	15	8.5	9.6	95	68	85
3	70	20	38	18	11	14	12	4.1	8.2	70	42	56
4	190	21	44	15	8.0	9.6	7.3	4.5	5.4	42	29	35
5	66	38	52	210	7.0	61	24	5.6	7.2	61	25	30
6	51	20	32	160	75	100	19	6.7	8.2	58	25	32
7	35	20	22	75	51	62	56	8.1	22	35	18	23
8	34	18	23	53	31	40	120	6.5	36	32	16	18
9	32	20	22	38	18	26	120	9.1	21	85	15	18
10	26	21	23	990	15	150	120	10	38	19	13	15
11	83	23	52	630	140	340	650	12	180	17	12	14
12	69	39	47	150	92	120	140	78	110	18	11	13
13	59	41	44	95	45	66	270	66	130	12	10	11
14	57	42	44	66	28	38	220	96	140	12	10	11
15	60	29	38	49	25	29	110	68	80	16	10	11
16	37	31	33	38	26	33	71	54	61	11	10	11
17	44	33	36	43	19	26	810	50	210	11	10	11
18	40	35	36	58	13	18	210	100	140	14	10	11
19	46	20	34	14	10	12	1,000	87	430	16	7.0	8.8
20	33	20	25	14	10	12	1,000	140	320	8.0	7.0	7.4
21	31	24	26	18	9.9	13	140	81	110	10	7.0	8.1
22	36	26	28	19	14	16	83	67	74	11	8.0	9.0
23	52	28	30	46	13	18	74	57	62	12	8.0	9.2
24	57	31	35	17	12	14	61	47	52	35	8.0	9.6
25	600	34	130	15	8.4	11	69	55	62	12	9.0	10
26	200	98	140	10	7.7	9.2	91	46	54	11	8.0	9.2
27	99	68	85	9.8	5.9	7.9	150	41	56	11	9.0	9.6
28	120	57	65	9.4	7.1	8.0	140	40	45	10	9.0	9.3
29	560	31	240	9.7	7.4	8.2	58	40	43	17	9.0	12
30	210	84	120	12	7.8	9.1	170	42	84	17	13	15
31	84	53	68	---	---	---	480	98	240	14	10	11
MONTH	600	18	54	990	5.9	45	1,000	4.1	92	710	7.0	24
		FEBRUARY			MARCH			APRIL			MAY	
1	16	11	12	140	27	54	64	48	54	42	5.5	16
2	38	15	22	140	79	110	51	40	46	47	12	21
3	240	26	37	80	50	61	47	39	42	29	22	25
4	780	170	390	51	35	43	50	37	42	30	22	24
5	170	74	110	160	45	91	230	43	130	1,000	23	680
6	82	51	64	100	62	85	160	89	120	490	130	240
7	53	40	47	74	38	50	350	86	180	1,000	56	420
8	44	30	37	52	26	32	140	90	100	320	120	180
9	53	29	36	31	18	23	160	87	110	120	82	93
10	41	22	26	47	10	15	120	73	100	1,000	57	530
11	24	16	20	13	4.0	7.8	73	46	58	770	150	310
12	18	13	15	23	4.0	5.4	47	30	38	150	99	120
13	15	12	14	250	4.0	95	37	24	28	130	86	100
14	85	12	17	180	50	75	33	23	27	950	77	120
15	640	85	370	71	51	60	30	18	23	1,000	130	330
16	190	67	100	58	28	40	39	3.0	15	150	93	110
17	130	44	55	40	19	24	20	12	14	250	87	160
18	55	32	38	49	16	19	27	15	17	240	97	150
19	44	25	30	430	15	100	30	15	17	150	3.0	57
20	26	13	19	430	150	220	1,000	13	110	820	4.0	140
21	320	13	110	990	190	510	1,000	180	560	800	110	280
22	1,000	180	650	190	81	120	180	96	130	110	59	79
23	620	87	200	87	53	66	140	62	77	64	33	44
24	93	52	67	57	36	44	73	39	50	47	21	29
25	55	37	46	42	28	33	44	27	32	28	13	20
26	39	28	33	120	33	52	76	17	27	34	13	18
27	33	23	27	53	30	39	65	6.0	20	51	7.0	15
28	29	21	24	35	25	29	72	7.0	32	19	5.0	9.9
29	---	---	---	260	28	130	83	6.0	25	29	10	16
30	---	---	---	---	---	---	30	11	13	150	7.0	28
31	---	---	---	---	---	---	---	---	---	260	8.0	46
MONTH	1,000	11	93	990	4.0	77	1,000	3.0	75	1,000	3.0	140

03238745 TWELVEMILE CREEK AT HIGHWAY 1997 NEAR ALEXANDRIA, KY—Continued

TURBIDITY, WATER, UNFILTERED, NEPHELOMETRIC TURBIDITY UNITS—CONTINUED
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	47	8.0	20	46	14	28	58	31	45	730	74	130
2	68	9.0	28	49	11	23	990	43	420	1,000	210	540
3	250	11	120	40	13	16	330	190	250	210	73	120
4	380	79	170	50	5.0	18	990	120	330	73	43	56
5	460	46	100	260	19	66	240	180	200	55	20	28
6	90	15	38	63	14	35	220	140	170	45	10	17
7	280	11	42	70	12	32	170	120	130	17	7.0	12
8	970	9.0	240	46	10	29	170	100	120	41	7.0	15
9	220	27	83	520	12	69	130	110	120	75	10	25
10	44	6.0	25	990	100	380	160	100	120	19	9.0	12
11	31	5.0	20	990	210	450	460	100	190	28	8.0	11
12	410	9.6	86	210	88	130	420	190	280	17	8.0	9.8
13	54	15	36	110	65	77	220	140	160	19	6.0	9.0
14	960	29	280	79	44	64	210	160	180	15	6.0	8.3
15	350	70	120	220	48	61	190	140	160	14	7.0	9.0
16	680	71	270	990	130	560	200	110	140	120	7.0	11
17	960	140	420	920	140	250	120	82	100	13	6.0	8.4
18	690	150	320	170	79	120	110	64	91	40	6.0	8.4
19	520	110	180	130	71	95	160	77	96	28	6.0	8.8
20	560	68	140	140	63	89	99	57	80	16	6.0	8.2
21	77	33	59	110	68	89	84	52	69	25	5.0	8.5
22	62	23	44	1,000	55	170	130	58	80	980	5.0	280
23	49	14	32	1,000	190	520	100	55	84	240	110	170
24	54	9.0	26	270	180	210	82	49	69	200	64	88
25	34	14	21	340	170	200	93	25	50	110	40	53
26	30	14	20	290	190	240	80	41	47	53	30	36
27	79	18	28	320	190	240	71	32	51	920	31	370
28	28	4.0	20	330	77	130	75	42	56	290	150	200
29	29	5.0	20	160	67	120	86	53	64	180	77	110
30	63	5.0	28	92	16	48	88	65	73	110	52	70
31	---	---	---	75	36	42	110	71	82	---	---	---
MONTH	970	4.0	100	1,000	5.0	150	990	25	130	1,000	5.0	81
YEAR	1,000	3.0	89									

03238772 FOURMILE CREEK AT POPLAR RIDGE NEAR ALEXANDRIA, KY

LOCATION.--Lat 38°59'12", long 84°21'55", Campbell County, Hydrologic Unit 05090203,on right bank at bridge on Poplar Ridge Road, 2.5 miles north of Alexandria, 3.0 mi upstream from Tug Creek, and 6.7 mi upstream from the mouth.

DRAINAGE AREA.--3.1 mi^2.

PERIOD OF RECORD.--March 2001 to current year.

GAGE.--Water-stage recorder with telemetry. Datum of gage is 535.243 ft above NGVD of 1929. Gage operated from May 1999 to September 2000 downstream 2.0 mi at different datum. Old site station number is 03238780.

REMARKS.--Water year 2001: Records fair except for estimated records, which are poor.
Water year 2002: Records fair.
Water year 2003: Records fair.

COOPERATION.--Northern Kentucky Sanitation District No. 1.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

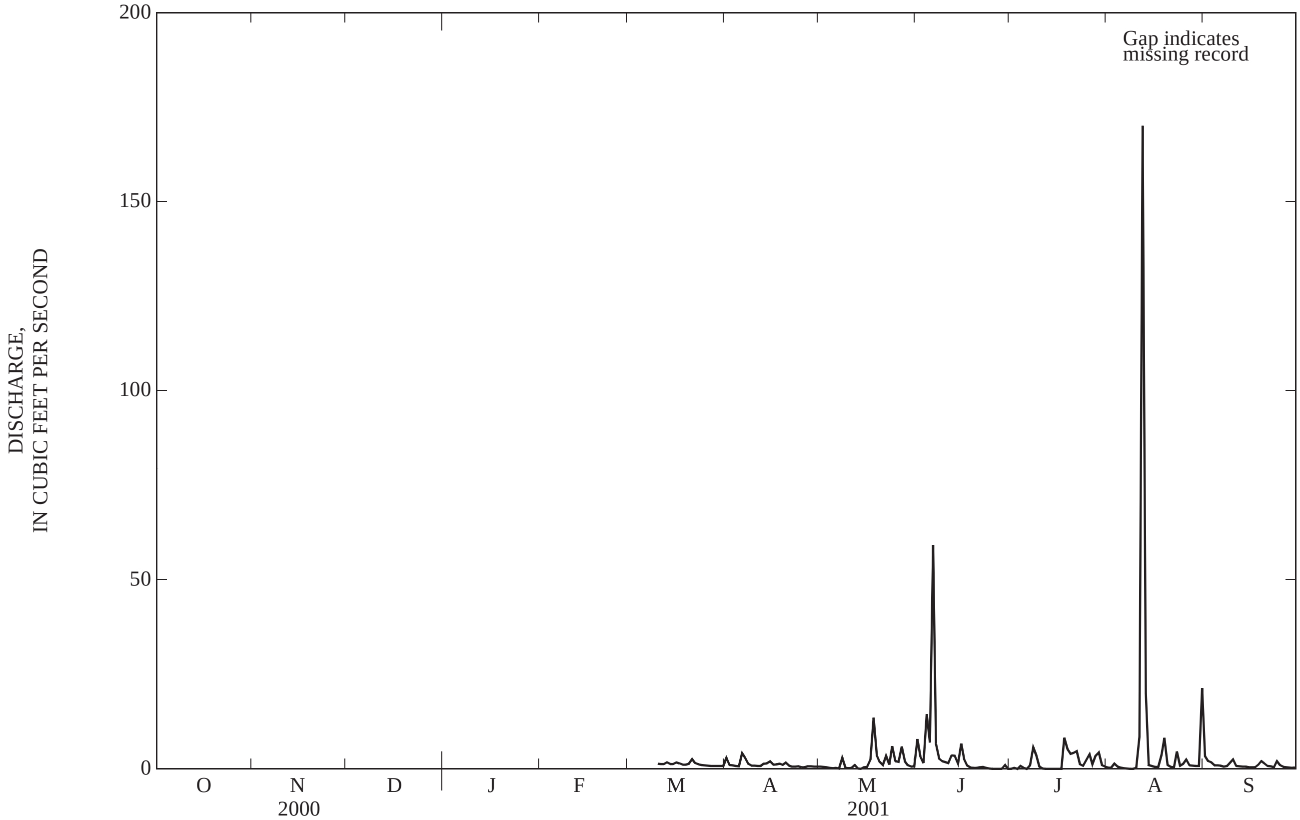
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	2.9	0.59	7.8	0.01	0.31	3.4
2	---	---	---	---	---	---	1.0	0.54	3.4	0.24	0.26	2.0
3	---	---	---	---	---	---	0.95	0.43	1.5	0.00	1.4	1.7
4	---	---	---	---	---	---	0.75	0.29	14	0.74	0.59	0.89
5	---	---	---	---	---	---	0.71	0.18	6.9	0.23	0.31	0.92
6	---	---	---	---	---	---	4.2	0.25	59	0.00	0.18	0.82
7	---	---	---	---	---	---	2.9	0.11	6.6	0.90	0.10	0.63
8	---	---	---	---	---	---	1.3	2.8	2.7	5.7	0.04	0.75
9	---	---	---	---	---	---	0.85	0.29	2.1	3.7	0.00	1.7
10	---	---	---	---	---	1.3	0.81	0.15	1.8	0.57	0.25	2.5
11	---	---	---	---	---	1.3	0.74	0.25	1.5	0.06	8.5	0.75
12	---	---	---	---	---	1.3	0.74	0.99	3.5	0.00	e170	0.68
13	---	---	---	---	---	1.7	1.4	0.12	3.5	0.00	e20	0.61
14	---	---	---	---	---	1.3	1.5	0.02	1.4	0.00	e1.0	0.56
15	---	---	---	---	---	1.3	2.0	0.42	6.7	0.00	e0.80	0.44
16	---	---	---	---	---	1.7	1.1	0.47	2.6	0.00	e0.50	0.39
17	---	---	---	---	---	1.4	1.2	2.4	0.84	0.00	e0.50	0.43
18	---	---	---	---	---	1.1	1.4	14	0.33	e8.2	e3.7	1.1
19	---	---	---	---	---	1.1	0.98	3.7	0.24	e5.3	e8.2	2.1
20	---	---	---	---	---	1.3	1.6	1.8	0.24	e4.0	e1.0	1.4
21	---	---	---	---	---	2.5	0.83	1.0	0.46	e4.2	e0.50	0.74
22	---	---	---	---	---	1.5	0.63	3.4	0.49	e4.7	e0.40	0.65
23	---	---	---	---	---	1.2	0.55	1.1	0.24	e1.2	e4.6	0.45
24	---	---	---	---	---	1.0	0.68	6.0	0.12	e0.75	e0.80	2.0
25	---	---	---	---	---	0.91	0.41	2.0	0.01	e2.3	e1.3	0.90
26	---	---	---	---	---	0.82	0.46	1.8	0.00	e3.8	e2.5	0.49
27	---	---	---	---	---	0.72	0.70	5.9	0.00	e1.2	e0.90	0.38
28	---	---	---	---	---	0.72	0.64	1.9	0.02	e3.5	e0.85	0.30
29	---	---	---	---	---	0.79	0.57	0.90	1.0	e4.3	e0.80	0.29
30	---	---	---	---	---	0.73	0.58	0.63	0.00	e0.94	0.76	0.26
31	---	---	---	---	---	0.76	---	0.64	---	e0.56	21	---
TOTAL	---	---	---	---	---	---	35.08	55.07	128.99	57.10	252.05	30.23
MEAN	---	---	---	---	---	---	1.17	1.78	4.30	1.84	8.13	1.01
MAX	---	---	---	---	---	---	4.2	14	59	8.2	170	3.4
MIN	---	---	---	---	---	---	0.41	0.02	0.00	0.00	0.00	0.26

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2001 - 2001, BY WATER YEAR (WY)

MEAN	---	---	---	---	---	---	1.17	1.78	4.30	1.84	8.13	1.01
MAX	---	---	---	---	---	---	1.17	1.78	4.30	1.84	8.13	1.01
(WY)	---	---	---	---	---	---	(2001)	(2001)	(2001)	(2001)	(2001)	(2001)
MIN	---	---	---	---	---	---	1.17	1.78	4.30	1.84	8.13	1.01
(WY)	---	---	---	---	---	---	(2001)	(2001)	(2001)	(2001)	(2001)	(2001)

e Estimated

03238772 FOURMILE CREEK AT POPLAR RIDGE NEAR ALEXANDRIA, KY--Continued



03238772 FOURMILE CREEK AT POPLAR RIDGE NEAR ALEXANDRIA, KY--Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

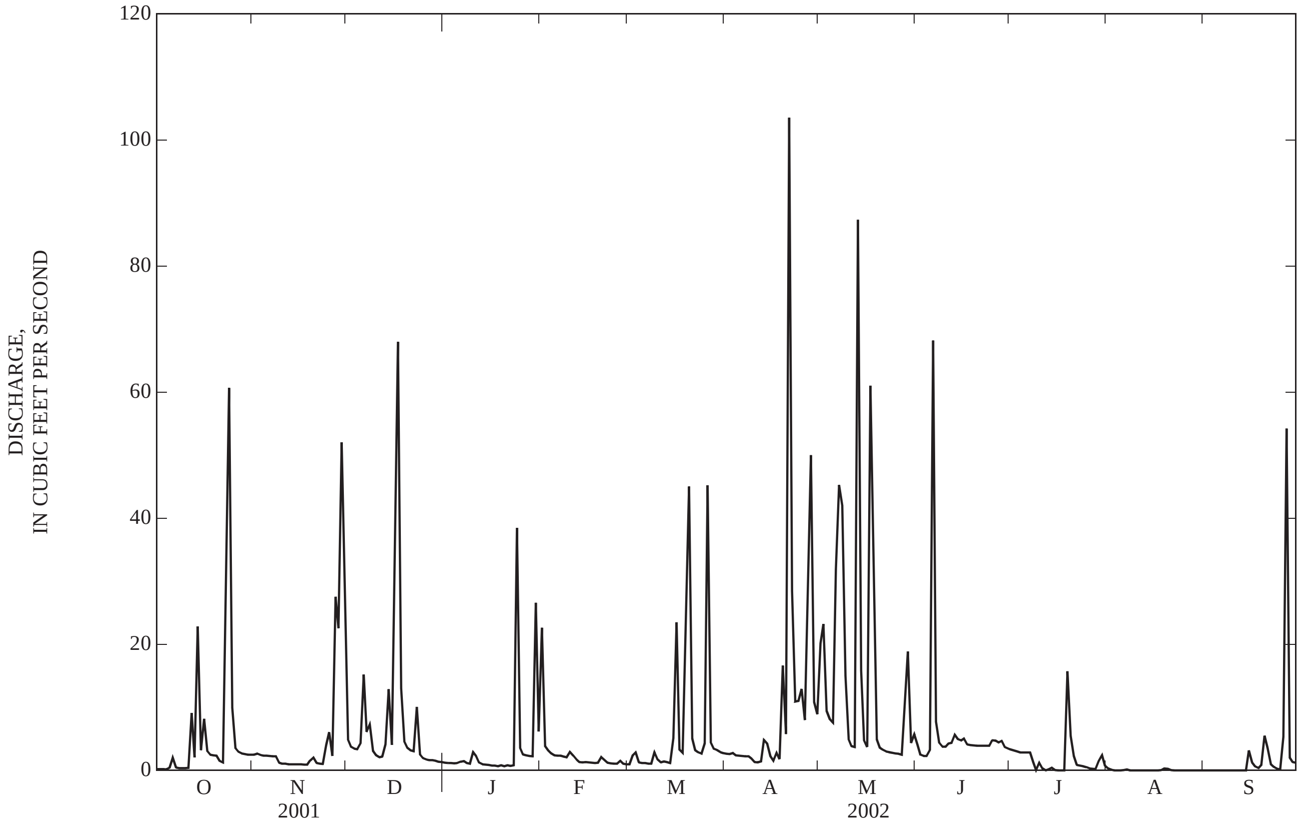
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.22	2.5	4.9	1.2	23	0.98	2.6	20	4.1	3.3	0.32	0.00
2	0.22	2.7	3.7	1.2	3.9	2.4	2.6	23	2.5	3.2	0.12	0.00
3	0.21	2.4	3.4	1.2	3.1	2.9	2.8	9.5	2.3	3.0	0.01	0.00
4	0.19	2.4	3.4	1.2	2.7	1.3	2.4	8.1	2.3	2.9	0.00	0.00
5	0.43	2.4	4.3	1.2	2.4	1.2	2.4	7.6	3.2	2.9	0.00	0.00
6	2.0	2.3	15	1.4	2.4	1.2	2.3	32	68	2.9	0.09	0.00
7	0.50	2.3	6.1	1.5	2.3	1.1	2.2	45	7.7	2.8	0.17	0.00
8	0.37	2.2	7.3	1.2	2.2	1.1	2.2	42	4.4	1.3	0.00	0.00
9	0.39	1.2	3.1	1.1	2.1	2.9	1.9	15	3.8	0.01	0.00	0.00
10	0.40	1.1	2.4	2.9	2.9	1.8	1.3	5.0	3.8	1.2	0.00	0.00
11	0.40	1.1	2.1	2.3	2.4	1.3	1.3	3.9	4.3	0.32	0.00	0.00
12	9.1	0.99	2.2	1.2	1.8	1.5	1.4	3.7	4.4	0.00	0.00	0.00
13	2.0	1.00	4.1	0.96	1.4	1.3	4.8	87	5.7	0.16	0.00	0.00
14	23	1.0	13	0.93	1.3	1.2	4.3	16	4.9	0.43	0.00	0.01
15	3.2	0.98	4.0	0.90	1.3	5.1	2.3	4.8	4.8	0.07	0.00	3.2
16	8.2	0.98	35	0.77	1.3	23	1.5	3.7	5.0	0.00	0.00	1.3
17	3.1	0.93	68	0.80	1.2	3.3	2.8	61	4.1	0.00	0.00	0.65
18	2.5	0.94	13	0.69	1.2	2.8	1.8	27	4.0	0.00	0.05	0.37
19	2.4	1.6	4.6	0.84	1.2	27	17	4.9	4.0	16	0.35	0.91
20	2.3	2.0	3.6	0.68	2.1	45	5.8	3.6	3.9	5.5	0.29	5.5
21	1.5	1.2	3.2	0.82	1.7	5.0	103	3.3	3.9	2.3	0.07	3.5
22	1.3	1.1	3.1	0.71	1.3	3.2	28	3.0	3.9	0.89	0.00	1.00
23	30	1.0	10	0.82	1.2	2.9	11	2.9	3.9	0.76	0.00	0.53
24	61	3.9	2.5	38	1.1	2.7	11	2.8	3.9	0.68	0.00	0.29
25	10	6.1	1.9	3.6	1.1	4.3	13	2.7	4.8	0.52	0.00	0.17
26	3.5	2.3	1.7	2.6	1.5	45	8.0	2.7	4.7	0.32	0.00	5.4
27	3.0	28	1.7	2.4	1.1	4.5	24	2.5	4.4	0.25	0.00	54
28	2.7	23	1.6	2.3	0.98	3.4	50	11	4.7	0.23	0.00	2.0
29	2.6	52	1.5	2.2	---	3.2	11	19	3.7	1.5	0.00	1.3
30	2.5	25	1.4	27	---	2.9	8.9	4.3	3.5	2.4	0.00	1.3
31	2.5	---	1.3	6.2	---	2.8	---	5.7	---	0.77	0.00	---
TOTAL	181.73	176.62	233.1	110.82	72.18	208.28	333.6	482.7	188.6	56.61	1.47	81.43
MEAN	5.86	5.89	7.52	3.57	2.58	6.72	11.1	15.6	6.29	1.83	0.047	2.71
MAX	61	52	68	38	23	45	103	87	68	16	0.35	54
MIN	0.19	0.93	1.3	0.68	0.98	0.98	1.3	2.5	2.3	0.00	0.00	0.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2001 - 2002, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	5.86	5.89	7.52	3.57	2.58	6.72	6.14	8.67	5.29	1.83	4.09	1.86
MAX	5.86	5.89	7.52	3.57	2.58	6.72	11.1	15.6	6.29	1.84	8.13	2.71
(WY)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2001)	(2001)	(2002)
MIN	5.86	5.89	7.52	3.57	2.58	6.72	1.17	1.78	4.30	1.83	0.047	1.01
(WY)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2001)	(2001)	(2001)	(2002)	(2002)	(2001)

03238772 FOURMILE CREEK AT POPLAR RIDGE NEAR ALEXANDRIA, KY--Continued

SUMMARY STATISTICS	FOR 2002 WATER YEAR		WATER YEARS 2001 - 2002	
ANNUAL TOTAL	2127.14			
ANNUAL MEAN	5.83		5.83	
HIGHEST ANNUAL MEAN			5.83	2002
LOWEST ANNUAL MEAN			5.83	2002
HIGHEST DAILY MEAN	103	Apr 21	170	Aug 12, 2001
LOWEST DAILY MEAN	0.00	Jul 12	0.00	Jun 26, 2001
ANNUAL SEVEN-DAY MINIMUM	0.00	Aug 8	0.00	Aug 8, 2002
MAXIMUM PEAK FLOW	520	Apr 21	520	Apr 21, 2002
MAXIMUM PEAK STAGE	7.18	Apr 21	7.18	Apr 21, 2002
10 PERCENT EXCEEDS	14		14	
50 PERCENT EXCEEDS	2.3		2.3	
90 PERCENT EXCEEDS	0.00		0.00	



03238772 FOURMILE CREEK AT POPLAR RIDGE NEAR ALEXANDRIA, KY--Continued

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

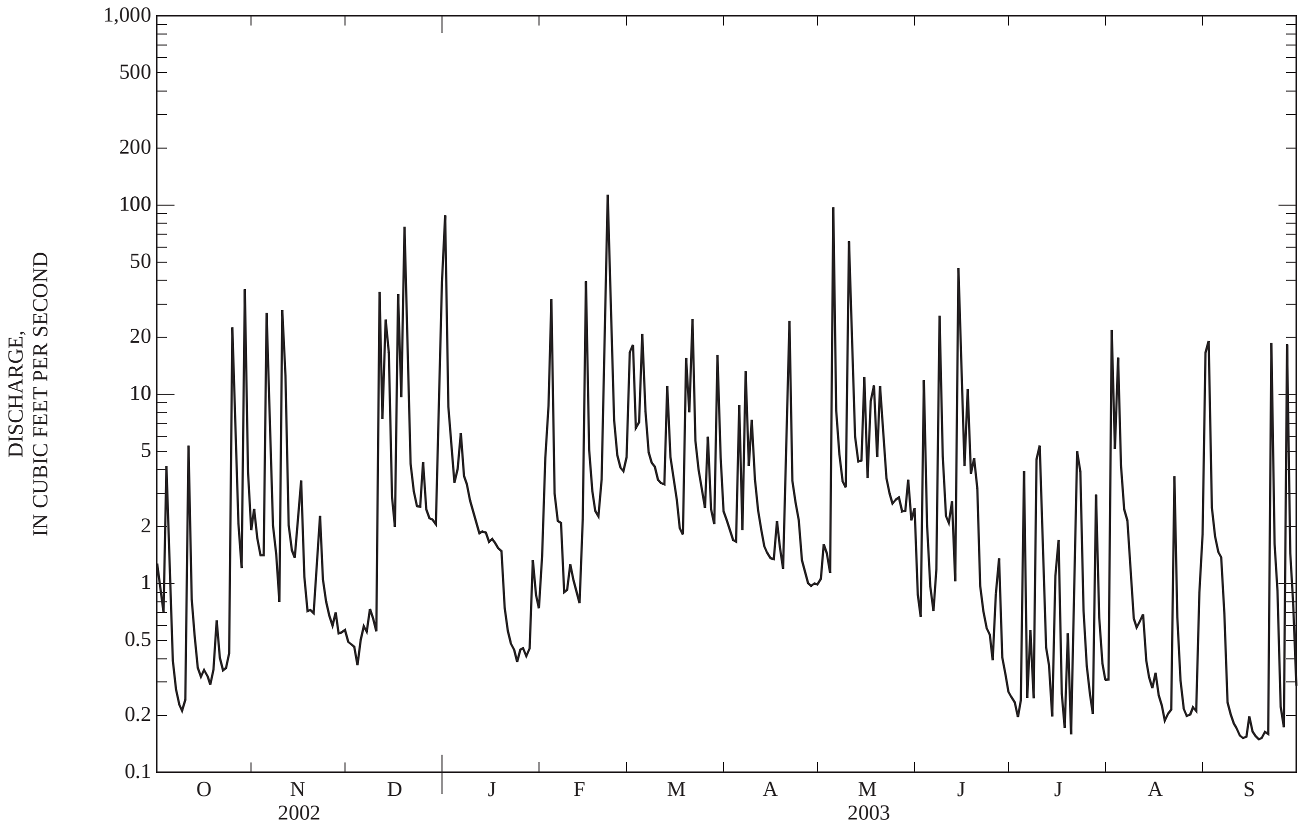
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.3	2.5	0.49	88	1.4	17	2.1	1.0	0.87	0.25	0.31	16
2	0.93	1.7	0.48	8.6	4.6	18	1.9	1.6	0.67	0.24	22	19
3	0.70	1.4	0.46	5.4	8.7	6.6	1.7	1.4	12	0.20	5.1	2.5
4	4.2	1.4	0.37	3.4	32	7.1	1.7	1.1	2.0	0.24	16	1.8
5	1.4	27	0.50	4.0	3.0	21	8.7	97	0.96	3.9	4.2	1.5
6	0.39	7.5	0.60	6.2	2.1	8.1	1.9	8.2	0.72	0.25	2.5	1.4
7	0.27	2.0	0.56	3.7	2.1	4.9	13	4.8	1.2	0.57	2.1	0.69
8	0.23	1.4	0.73	3.3	0.90	4.3	4.2	3.5	26	0.25	1.2	0.23
9	0.21	0.80	0.65	2.7	0.92	4.1	7.3	3.2	4.7	4.5	0.65	0.20
10	0.24	28	0.56	2.4	1.3	3.5	3.6	64	2.3	5.3	0.58	0.18
11	5.3	12	35	2.1	1.0	3.4	2.4	28	2.1	1.8	0.63	0.17
12	0.82	2.0	7.4	1.8	0.90	3.3	1.9	6.0	2.7	0.46	0.68	0.16
13	0.53	1.5	25	1.9	0.78	11	1.6	4.4	1.0	0.37	0.39	0.15
14	0.36	1.4	17	1.9	2.2	4.7	1.4	4.5	46	0.20	0.32	0.15
15	0.32	2.2	2.9	1.7	39	3.6	1.4	12	10	1.1	0.28	0.20
16	0.35	3.5	2.0	1.7	5.1	2.8	1.3	3.6	4.2	1.7	0.34	0.17
17	0.32	1.1	34	1.6	3.1	2.0	2.1	9.2	11	0.26	0.25	0.16
18	0.29	0.71	9.6	1.5	2.4	1.8	1.6	11	3.8	0.17	0.22	0.15
19	0.35	0.72	77	1.5	2.3	15	1.2	4.6	4.6	0.54	0.19	0.15
20	0.64	0.69	25	0.74	3.5	8.0	8.0	11	3.2	0.16	0.20	0.16
21	0.40	1.3	4.3	0.56	25	25	24	6.4	0.97	0.87	0.21	0.16
22	0.35	2.3	3.1	0.48	113	5.7	3.5	3.6	0.71	5.0	3.7	19
23	0.36	1.1	2.5	0.45	24	4.0	2.7	3.0	0.58	3.9	0.66	1.6
24	0.43	0.80	2.5	0.38	7.3	3.2	2.2	2.6	0.54	0.71	0.31	0.91
25	23	0.67	4.4	0.45	4.7	2.5	1.3	2.8	0.39	0.37	0.22	0.22
26	5.0	0.60	2.5	0.45	4.1	5.9	1.1	2.8	0.88	0.26	0.20	0.17
27	2.1	0.70	2.2	0.41	3.9	2.5	1.0	2.4	1.4	0.20	0.20	18
28	1.2	0.54	2.2	0.45	4.6	2.1	0.97	2.4	0.41	2.9	0.22	1.4
29	36	0.55	2.1	1.3	---	16	1.00	3.5	0.33	0.66	0.21	0.78
30	3.9	0.57	8.4	0.87	---	4.6	0.99	2.1	0.27	0.38	0.89	0.29
31	1.9	---	39	0.74	---	2.4	---	2.5	---	0.31	1.8	---
TOTAL	93.79	108.65	313.50	150.68	303.90	224.1	107.76	314.2	146.50	38.02	66.76	87.65
MEAN	3.03	3.62	10.1	4.86	10.9	7.23	3.59	10.1	4.88	1.23	2.15	2.92
MAX	36	28	77	88	113	25	24	97	46	5.3	22	19
MIN	0.21	0.54	0.37	0.38	0.78	1.8	0.97	1.0	0.27	0.16	0.19	0.15

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2001 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	4.44	4.75	8.82	4.22	6.72	6.97	5.29	9.16	5.16	1.63	3.44	2.21
MAX	5.86	5.89	10.1	4.86	10.9	7.23	11.1	15.6	6.29	1.84	8.13	2.92
(WY)	(2002)	(2002)	(2003)	(2003)	(2003)	(2003)	(2002)	(2002)	(2002)	(2001)	(2001)	(2003)
MIN	3.03	3.62	7.52	3.57	2.58	6.72	1.17	1.78	4.30	1.23	0.047	1.01
(WY)	(2003)	(2003)	(2002)	(2002)	(2002)	(2002)	(2001)	(2001)	(2001)	(2003)	(2002)	(2001)

03238772 FOURMILE CREEK AT POPLAR RIDGE NEAR ALEXANDRIA, KY--Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 2001 - 2003	
ANNUAL TOTAL	2,051.63		1,955.51			
ANNUAL MEAN	5.62		5.36		5.59	
HIGHEST ANNUAL MEAN					5.83	2002
LOWEST ANNUAL MEAN					5.36	2003
HIGHEST DAILY MEAN	103	Apr 21	113	Feb 22	170	Aug 12, 2001
LOWEST DAILY MEAN	0.00	Jul 12	0.15	Sep 13	0.00	Jun 26, 2001
ANNUAL SEVEN-DAY MINIMUM	0.00	Aug 8	0.16	Sep 13	0.00	Aug 8, 2002
MAXIMUM PEAK FLOW			309	Dec 19	520	Apr 21, 2002
MAXIMUM PEAK STAGE			5.20	Dec 19	7.18	Apr 21, 2002
10 PERCENT EXCEEDS	15		12		13	
50 PERCENT EXCEEDS	1.9		1.8		2.1	
90 PERCENT EXCEEDS	0.00		0.25		0.20	



03238772 FOUR MILE CREEK AT POPLAR RIDGE ROAD NEAR ALEXANDRIA, KY

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 2002 to September 2003.

COOPERATION.--Northern Kentucky Sanitation District No. 1.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: April 2001 to current year.
pH: April 2001 to current year.
WATER TEMPERATURES: April 2001 to current year.
DISSOLVED OXYGEN: April 2001 to current year.
TURBIDITY: April 2001 to current year.

INSTRUMENTATION.--Water-quality monitor with telemetry.

REMARKS.--
SPECIFIC CONDUCTANCE: Records good.
pH: Records good.
WATER TEMPERATURES: Records good.
DISSOLVED OXYGEN: Records good.
TURBIDITY: Records good.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum recorded, 2650 microsiemens, Feb. 10, 20031; minimum recorded, 82 microsiemens, Apr 21, 2002.
pH.--Maximum recorded, 8.5 units, Mar. 24, 30, Apr. 1-5, 2002, and Mar. 14, 15, 2003; minimum recorded, 7.0 units, Aug. 19-21, 2002, and July 30, 2003.
WATER TEMPERATURES: Maximum recorded, 26.9°C, July 5, 2002; minimum recorded, -0.1°C, Jan. 12, 13, 15, 17-19, 29, 30 and Feb.5, 2003.
DISSOLVED OXYGEN: Maximum recorded, 18.0 mg/L, Feb. 24, 2002; minimum recorded 1.7 mg/L, Aug. 19, 2002.
TURBIDITY: Maximum recorded, greater than 1000 NTU, many days in 2001, 2002 and 2003; minimum recorded, 0.0 NTU, Jan. 21-23, 2003.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum recorded, 2650 microsiemens, Feb. 10, 2003; minimum recorded, 133 microsiemens, June 14, 2003.
pH.--Maximum recorded, 8.5 units, Mar. 14, 15, 2003; minimum recorded, 7.0 units, July 30, 2003.
WATER TEMPERATURES: Maximum recorded, 25.3°C, July 8, 2003; minimum recorded, -0.1°C, Jan. 12, 13, 15, 17-19, 29, 30, and Feb. 5, 2003.
DISSOLVED OXYGEN: Maximum recorded, 17.4 mg/L, Feb. 13, 2003; minimum recorded 3.0 mg/L, Aug. 27, 2003.
TURBIDITY: Maximum recorded, greater than 1000 NTU, many days in 2003, minimum recorded, 0.0 NTU, Jan. 21-23, 2003.

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	478	454	475	560	548	555	843	829	837	383	139	273
2	579	469	495	604	550	582	845	836	841	512	383	461
3	694	488	636	686	604	638	845	835	838	807	512	653
4	734	506	664	768	686	735	---	---	---	602	575	585
5	639	506	584	825	278	628	862	848	855	2,300	575	836
6	701	639	673	527	329	462	880	855	861	2,560	793	1,250
7	725	694	707	556	527	546	938	880	915	793	673	710
8	750	725	738	603	556	575	1,280	938	1,070	690	635	644
9	768	750	757	707	603	647	1,630	1,280	1,450	642	621	634
10	783	768	775	802	166	656	1,630	1,520	1,570	622	597	610
11	839	529	633	514	267	439	2,620	494	985	597	567	582
12	707	617	670	533	514	528	650	524	609	581	552	570
13	742	706	727	537	526	534	735	327	566	577	554	569
14	766	742	753	533	526	530	546	407	478	584	562	567
15	791	766	776	635	527	548	596	546	576	662	577	595
16	805	790	799	660	579	607	603	596	601	677	593	636
17	819	804	814	670	610	642	666	214	488	687	591	636
18	841	819	828	710	670	689	531	335	458	742	663	686
19	844	837	840	748	710	728	614	138	430	832	698	770
20	850	837	843	764	748	755	456	209	368	898	699	772
21	866	841	850	798	760	775	497	456	483	1,000	898	967
22	883	866	877	801	683	722	518	497	511	1,010	993	1,000
23	880	868	876	711	683	693	520	516	518	1,060	985	1,000
24	868	861	863	740	711	726	543	519	526	1,070	1,010	1,040
25	866	264	676	771	740	756	898	531	699	1,010	971	992
26	566	413	520	776	771	773	905	703	780	1,050	1,010	1,030
27	576	566	573	810	773	787	741	619	652	1,530	1,010	1,300
28	635	576	603	824	810	818	619	588	598	1,200	1,040	1,090
29	779	243	475	823	810	818	597	573	582	2,560	1,040	1,550
30	547	431	509	834	802	820	1,160	569	709	2,490	1,770	2,220
31	553	547	550	---	---	---	684	224	493	1,770	1,440	1,580
MONTH	883	243	695	834	166	657	2,620	138	712	2,560	139	865

03238772 FOUR MILE CREEK AT POPLAR RIDGE ROAD NEAR ALEXANDRIA, KY—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	1,720	1,410	1,540	961	536	836	781	591	743	829	599	782
2	2,030	1,070	1,640	581	535	562	793	759	777	898	640	814
3	1,450	969	1,050	656	567	616	802	771	789	862	811	849
4	1,070	474	595	706	584	656	815	786	803	866	822	846
5	701	669	687	757	537	580	875	511	648	886	144	325
6	710	685	697	794	584	697	777	689	745	534	414	499
7	975	706	828	714	677	689	889	445	640	606	534	570
8	1,250	952	1,010	687	660	679	679	596	654	577	539	565
9	1,620	1,240	1,460	688	656	676	783	621	681	597	427	562
10	2,650	1,110	1,520	668	639	653	714	647	693	595	137	309
11	2,550	1,870	2,140	658	635	654	756	712	743	352	231	292
12	2,300	1,640	2,030	671	654	664	780	745	765	389	352	380
13	1,790	1,560	1,670	1,170	659	721	782	754	769	578	387	557
14	2,510	1,580	1,750	688	662	676	793	762	777	581	549	570
15	2,400	486	819	707	676	694	803	773	789	581	324	464
16	1,110	877	954	730	687	709	817	609	767	564	527	551
17	1,030	909	939	820	730	796	863	600	730	635	470	551
18	1,050	905	951	833	786	813	928	847	883	563	502	530
19	2,160	1,020	1,270	999	491	755	876	834	854	590	546	562
20	2,120	1,880	1,980	677	514	619	862	339	812	669	463	584
21	1,560	632	974	832	483	564	607	269	480	639	463	562
22	679	198	391	657	599	637	654	607	639	653	592	624
23	1,480	380	714	685	652	669	666	636	655	628	587	603
24	1,460	850	1,050	699	657	680	686	637	666	605	572	594
25	1,430	896	1,150	790	679	747	799	679	751	609	572	593
26	896	811	856	939	526	689	808	790	799	676	584	635
27	827	787	797	594	537	562	797	754	779	612	572	600
28	998	821	854	592	559	577	799	770	786	606	566	590
29	---	---	---	663	348	530	819	602	774	657	569	620
30	---	---	---	---	---	---	826	799	815	608	569	593
31	---	---	---	---	---	---	---	---	---	674	577	634
MONTH	2,650	198	1,150	1,170	348	669	928	269	740	898	137	575
		JUNE			JULY			AUGUST			SEPTEMBER	
1	791	652	722	803	788	795	696	686	691	656	194	564
2	764	726	744	818	801	808	784	193	455	508	196	402
3	838	382	575	---	---	---	580	470	522	543	507	526
4	700	560	637	---	---	---	565	214	442	543	512	531
5	752	700	732	---	---	---	532	425	507	512	485	499
6	784	731	749	---	---	---	535	522	529	491	482	486
7	802	731	779	---	---	---	542	521	533	559	479	517
8	799	149	610	802	768	775	577	529	547	605	549	572
9	535	386	501	924	405	761	643	565	602	694	590	625
10	560	534	550	629	375	526	730	631	698	741	687	701
11	597	556	579	612	538	586	759	730	739	778	734	746
12	663	580	618	693	612	646	785	746	767	788	764	772
13	738	620	680	731	684	707	762	699	743	805	787	792
14	868	133	365	755	729	743	729	700	720	807	793	799
15	517	309	437	760	438	742	741	710	731	831	801	811
16	546	403	516	630	514	555	749	732	741	837	808	819
17	571	315	509	680	591	636	776	737	755	818	789	797
18	567	477	546	718	676	690	778	763	770	796	778	787
19	631	550	581	767	681	736	774	762	770	804	778	789
20	586	533	566	768	723	755	776	759	768	788	762	770
21	710	586	652	822	683	733	781	767	776	777	742	755
22	755	707	725	714	243	662	777	340	555	785	253	530
23	771	739	752	519	243	417	589	428	522	572	501	552
24	775	750	761	605	518	561	639	564	597	567	554	559
25	783	765	775	660	600	629	669	632	646	609	567	589
26	913	729	781	710	656	677	677	641	661	690	602	639
27	736	623	670	733	693	712	677	649	664	698	294	468
28	738	687	713	744	502	624	695	671	677	577	531	562
29	772	737	755	634	566	602	698	675	685	615	577	595
30	788	771	780	661	630	644	745	515	704	705	615	656
31	---	---	---	776	657	676	745	656	706	---	---	---
MONTH	913	133	645	924	243	669	785	193	652	837	194	640
YEAR	2,650	133	721									

03238772 FOUR MILE CREEK AT POPLAR RIDGE ROAD NEAR ALEXANDRIA, KY—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	7.7	7.5	7.6	8.1	8.0	8.1	7.8	7.7	7.7	7.3	7.2	7.2
2	7.6	7.4	7.4	8.1	8.0	8.1	7.7	7.7	7.7	7.4	7.2	7.3
3	7.7	7.3	7.5	8.0	7.8	7.8	7.7	7.6	7.6	7.5	7.4	7.5
4	7.7	7.4	7.5	7.8	7.7	7.8	---	---	---	7.6	7.5	7.5
5	7.6	7.5	7.5	8.1	7.8	7.8	7.9	7.8	7.9	7.6	7.5	7.5
6	7.6	7.5	7.5	7.9	7.8	7.9	7.9	7.8	7.9	7.6	7.5	7.6
7	7.6	7.4	7.5	8.0	7.9	7.9	7.8	7.8	7.8	7.6	7.5	7.6
8	7.6	7.4	7.6	8.1	7.9	8.0	7.8	7.8	7.8	7.7	7.5	7.6
9	7.6	7.5	7.6	7.9	7.8	7.9	7.8	7.8	7.8	7.7	7.6	7.6
10	7.6	7.5	7.6	7.9	7.6	7.8	7.9	7.7	7.8	7.7	7.6	7.6
11	7.8	7.6	7.8	7.8	7.6	7.7	7.8	7.6	7.7	7.7	7.6	7.7
12	7.8	7.7	7.7	7.9	7.7	7.8	7.7	7.6	7.7	7.7	7.6	7.7
13	7.7	7.6	7.6	8.0	7.8	7.9	7.8	7.6	7.7	7.8	7.6	7.7
14	7.6	7.6	7.6	7.9	7.8	7.9	7.7	7.6	7.7	7.8	7.6	7.7
15	7.7	7.6	7.6	7.9	7.8	7.9	7.7	7.6	7.6	7.8	7.6	7.7
16	7.6	7.6	7.6	7.9	7.9	7.9	7.8	7.6	7.7	7.8	7.6	7.7
17	7.8	7.6	7.7	7.9	7.8	7.8	7.8	7.5	7.7	7.8	7.6	7.7
18	7.8	7.7	7.8	7.9	7.9	7.9	7.6	7.5	7.6	7.8	7.6	7.7
19	7.8	7.7	7.8	7.9	7.8	7.9	7.7	7.4	7.5	7.8	7.6	7.7
20	7.8	7.7	7.7	7.9	7.8	7.8	7.5	7.4	7.4	7.8	7.6	7.7
21	7.8	7.8	7.8	7.9	7.8	7.8	7.6	7.5	7.5	7.8	7.7	7.7
22	7.8	7.8	7.8	7.9	7.9	7.9	7.6	7.5	7.6	7.7	7.7	7.7
23	7.8	7.7	7.8	7.9	7.8	7.9	7.6	7.5	7.6	7.7	7.7	7.7
24	7.8	7.8	7.8	7.8	7.8	7.8	7.6	7.5	7.5	7.7	7.6	7.7
25	8.0	7.8	7.8	7.8	7.7	7.8	7.6	7.6	7.6	7.7	7.6	7.6
26	8.0	7.8	8.0	7.9	7.8	7.8	7.6	7.6	7.6	7.7	7.6	7.7
27	8.1	8.0	8.0	7.8	7.7	7.8	7.6	7.5	7.6	7.7	7.6	7.6
28	8.1	7.9	8.0	7.8	7.7	7.8	7.6	7.5	7.5	7.7	7.6	7.6
29	8.1	7.9	8.0	7.8	7.7	7.7	7.6	7.5	7.5	7.8	7.6	7.7
30	8.1	8.0	8.0	7.7	7.7	7.7	7.6	7.5	7.5	7.8	7.6	7.7
31	8.1	8.0	8.1	---	---	---	7.6	7.2	7.4	7.8	7.6	7.7
MONTH	8.1	7.3	7.7	8.1	7.6	7.9	7.9	7.2	7.6	7.8	7.2	7.6

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	7.8	7.6	7.7	7.9	7.6	7.7	8.2	7.9	8.1	8.0	7.7	7.8
2	7.9	7.6	7.7	7.8	7.6	7.7	8.2	7.8	8.0	7.8	7.6	7.7
3	7.9	7.6	7.7	8.0	7.6	7.8	8.1	7.7	7.9	8.0	7.7	7.8
4	7.7	7.5	7.6	8.1	7.7	7.8	8.0	7.7	7.9	8.1	7.8	7.9
5	7.8	7.6	7.6	7.7	7.7	7.7	8.0	7.7	7.9	7.9	7.5	7.6
6	7.8	7.5	7.6	8.0	7.7	7.8	8.3	7.9	8.1	7.7	7.5	7.6
7	7.9	7.6	7.7	8.1	7.7	7.9	8.2	7.9	8.0	7.8	7.6	7.7
8	7.8	7.5	7.6	8.2	7.7	7.9	8.3	7.9	8.1	7.9	7.6	7.7
9	7.7	7.6	7.6	8.3	7.7	7.9	8.1	8.0	8.1	7.8	7.6	7.7
10	7.8	7.6	7.7	8.2	7.7	7.9	8.4	8.0	8.2	7.7	7.5	7.6
11	7.7	7.6	7.7	8.4	7.7	8.0	8.3	7.9	8.1	7.7	7.5	7.6
12	7.8	7.5	7.7	8.4	7.8	8.1	8.3	7.9	8.1	7.9	7.6	7.7
13	7.8	7.6	7.7	8.3	7.8	7.9	8.2	7.9	8.1	8.0	7.7	7.8
14	7.8	7.6	7.7	8.5	7.8	8.1	8.2	7.9	8.0	8.0	7.8	7.9
15	7.6	7.5	7.5	8.5	7.8	8.1	8.1	7.8	8.0	7.9	7.6	7.8
16	7.7	7.5	7.6	8.4	7.8	8.1	8.1	7.8	7.9	8.1	7.6	7.8
17	7.8	7.5	7.6	8.3	7.7	8.0	8.0	7.7	7.9	7.9	7.6	7.7
18	7.9	7.6	7.7	8.2	7.7	8.0	8.0	7.7	7.9	7.8	7.7	7.7
19	7.9	7.6	7.7	8.1	7.7	7.9	8.1	7.9	8.0	8.0	7.7	7.8
20	7.9	7.6	7.7	8.2	7.7	7.9	8.0	7.8	7.9	7.9	7.6	7.7
21	7.7	7.5	7.6	7.9	7.7	7.8	8.0	7.7	7.8	8.0	7.6	7.8
22	7.7	7.5	7.5	8.4	7.8	8.0	8.3	7.8	8.0	8.0	7.6	7.8
23	7.6	7.5	7.5	8.4	7.8	8.0	8.3	7.8	8.0	8.1	7.7	7.9
24	7.7	7.5	7.6	8.4	7.8	8.0	8.3	7.8	8.1	8.2	7.7	7.9
25	7.8	7.6	7.7	8.2	7.7	7.9	8.2	7.8	8.0	8.2	7.7	7.9
26	7.8	7.6	7.7	8.3	7.8	8.0	8.1	7.9	8.0	8.3	7.8	7.9
27	7.9	7.7	7.8	8.3	7.8	8.0	8.0	7.8	7.9	8.3	7.7	7.9
28	7.9	7.7	7.8	8.2	7.7	8.0	8.0	7.8	7.9	8.3	7.7	8.0
29	---	---	---	8.0	7.8	7.9	8.0	7.7	7.8	8.3	7.7	7.9
30	---	---	---	---	---	---	8.0	7.8	7.9	8.3	7.7	8.0
31	---	---	---	---	---	---	---	---	---	8.2	7.7	7.9
MONTH	7.9	7.5	7.7	8.5	7.6	7.9	8.4	7.7	8.0	8.3	7.5	7.8

03238772 FOUR MILE CREEK AT POPLAR RIDGE ROAD NEAR ALEXANDRIA, KY—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS—CONTINUED
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	7.9	7.7	7.8	7.8	7.6	7.7	7.4	7.3	7.3	7.8	7.4	7.6
2	7.9	7.8	7.8	7.7	7.6	7.6	7.5	7.3	7.4	7.7	7.5	7.6
3	7.9	7.7	7.7	---	---	---	7.6	7.4	7.5	7.8	7.6	7.7
4	7.9	7.7	7.7	---	---	---	7.6	7.3	7.4	7.8	7.6	7.7
5	8.0	7.9	7.9	---	---	---	7.7	7.4	7.5	7.8	7.6	7.7
6	8.0	7.8	7.9	---	---	---	7.7	7.4	7.5	7.9	7.6	7.7
7	7.9	7.7	7.9	---	---	---	7.8	7.5	7.6	7.8	7.7	7.7
8	7.9	7.6	7.8	7.8	7.7	7.8	7.7	7.5	7.6	7.7	7.6	7.6
9	7.8	7.6	7.7	7.9	7.6	7.7	7.5	7.4	7.5	7.9	7.5	7.7
10	8.0	7.7	7.8	7.9	7.6	7.8	7.6	7.4	7.5	7.8	7.7	7.7
11	8.0	7.8	7.9	8.0	7.7	7.8	7.6	7.4	7.5	7.8	7.7	7.7
12	8.0	7.8	7.9	7.9	7.7	7.8	7.6	7.4	7.5	7.8	7.7	7.7
13	7.9	7.7	7.8	7.9	7.6	7.7	7.6	7.5	7.5	7.8	7.7	7.7
14	7.9	7.5	7.6	7.9	7.6	7.7	7.6	7.5	7.5	7.8	7.7	7.7
15	7.8	7.5	7.6	7.8	7.6	7.6	7.5	7.4	7.5	7.8	7.7	7.7
16	7.9	7.6	7.7	7.8	7.5	7.7	7.6	7.4	7.5	7.7	7.6	7.6
17	7.9	7.6	7.7	7.7	7.5	7.6	7.5	7.4	7.4	7.8	7.6	7.7
18	7.9	7.7	7.8	7.7	7.5	7.6	7.5	7.4	7.4	7.7	7.6	7.7
19	8.0	7.7	7.8	8.0	7.6	7.7	7.5	7.4	7.4	7.7	7.6	7.7
20	8.0	7.7	7.9	7.9	7.6	7.7	7.5	7.4	7.5	7.7	7.6	7.6
21	7.9	7.6	7.7	7.9	7.5	7.7	7.6	7.5	7.5	7.9	7.7	7.7
22	7.9	7.6	7.7	7.8	7.6	7.7	7.7	7.3	7.5	8.0	7.7	7.8
23	8.0	7.6	7.8	7.9	7.6	7.7	7.5	7.3	7.3	8.0	7.8	7.9
24	8.0	7.7	7.8	7.9	7.7	7.8	7.4	7.3	7.3	8.1	7.8	7.9
25	8.0	7.6	7.8	7.9	7.6	7.7	7.5	7.3	7.4	8.0	7.8	7.8
26	7.9	7.7	7.8	7.9	7.7	7.7	7.5	7.3	7.4	7.8	7.7	7.7
27	7.9	7.6	7.7	7.7	7.5	7.6	7.4	7.3	7.4	8.0	7.8	7.9
28	7.9	7.5	7.6	7.9	7.5	7.7	7.5	7.3	7.4	8.0	7.8	7.9
29	8.0	7.5	7.7	7.7	7.5	7.6	7.5	7.3	7.4	8.0	7.8	7.9
30	8.0	7.6	7.7	7.7	7.0	7.5	7.6	7.4	7.5	7.9	7.8	7.9
31	---	---	---	7.5	7.3	7.4	7.8	7.5	7.6	---	---	---
MONTH	8.0	7.5	7.8	8.0	7.0	7.7	7.8	7.3	7.5	8.1	7.4	7.7
YEAR	8.5	7.0	7.7									

03238772 FOUR MILE CREEK AT POPLAR RIDGE ROAD NEAR ALEXANDRIA, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	21.1	19.1	19.9	9.9	7.9	9.1	2.8	2.0	2.4	6.8	5.0	5.8
2	21.4	19.8	20.4	7.9	5.7	6.6	3.1	2.1	2.6	5.0	4.3	4.7
3	22.4	19.9	20.9	7.1	5.9	6.4	---	---	---	4.3	3.0	3.4
4	21.4	20.3	20.7	7.6	6.7	7.2	---	---	---	3.6	2.2	2.9
5	20.6	17.7	18.8	9.8	7.6	8.4	2.0	1.6	1.8	3.6	1.9	2.9
6	17.7	15.0	16.4	9.8	8.4	9.1	2.0	1.3	1.6	3.6	2.5	3.3
7	17.1	14.8	16.0	9.8	7.7	8.7	1.8	0.9	1.4	3.3	1.4	2.4
8	14.8	13.1	13.7	9.8	6.7	8.3	2.2	1.1	1.6	5.1	2.4	3.6
9	14.0	12.9	13.4	11.7	9.1	10.3	1.5	0.8	1.2	5.3	3.1	4.2
10	14.9	13.9	14.3	14.8	11.6	12.9	1.5	0.9	1.2	4.4	1.9	3.1
11	16.8	14.7	15.9	13.5	11.3	12.6	3.7	0.2	2.0	1.9	0.1	0.7
12	18.1	16.7	17.2	11.3	9.2	9.9	4.3	3.7	3.9	0.7	-0.1	0.1
13	17.7	15.0	16.4	10.1	7.4	9.2	4.4	4.0	4.1	0.7	-0.1	0.2
14	15.0	11.8	13.0	9.5	7.7	8.7	4.5	4.0	4.2	0.6	0.3	0.5
15	11.8	10.8	11.2	9.3	8.4	8.7	5.0	2.6	3.8	0.5	-0.1	0.1
16	11.4	11.0	11.2	8.9	6.9	7.8	4.9	3.8	4.4	0.1	0.0	0.0
17	11.0	10.1	10.4	6.9	5.8	6.4	4.6	3.3	3.7	0.2	-0.1	0.0
18	11.4	9.4	10.2	5.8	4.0	5.0	7.0	4.6	5.7	0.2	-0.1	0.0
19	12.1	11.4	11.7	8.3	5.3	6.8	7.7	6.4	7.0	0.2	-0.1	0.0
20	11.8	10.9	11.3	7.9	4.9	6.4	7.5	5.2	6.2	0.4	0.0	0.2
21	11.2	10.1	10.6	8.0	6.1	7.0	5.7	4.2	5.0	0.7	0.1	0.3
22	11.1	9.1	10.1	7.5	5.4	6.2	6.0	4.5	5.1	0.5	0.1	0.2
23	10.3	9.0	9.7	5.8	4.4	5.1	4.5	2.3	3.3	0.3	0.1	0.1
24	10.4	9.5	9.8	5.9	3.4	4.7	3.9	3.5	3.7	0.3	0.0	0.2
25	12.2	9.7	10.5	5.3	4.2	4.6	3.6	2.6	3.0	0.4	0.1	0.2
26	12.4	12.0	12.2	4.7	3.4	3.7	2.6	2.0	2.3	0.2	0.0	0.1
27	12.7	11.7	12.1	3.5	2.6	3.2	2.9	1.6	2.2	0.2	0.0	0.1
28	12.0	11.2	11.6	3.4	2.2	2.6	3.4	1.1	2.2	0.2	0.0	0.1
29	11.6	9.6	10.5	3.8	1.9	2.6	4.0	1.9	3.0	0.2	-0.1	0.0
30	10.0	9.3	9.5	4.0	2.8	3.5	6.1	2.6	4.1	0.6	-0.1	0.1
31	10.1	9.0	9.6	---	---	---	7.1	5.7	6.3	0.8	0.0	0.3
MONTH	22.4	9.0	13.5	14.8	1.9	7.1	7.7	0.2	3.4	6.8	-0.1	1.3
	FEBRUARY			MARCH			APRIL			MAY		
1	0.5	0.1	0.2	4.4	2.6	3.3	14.5	7.4	10.5	21.4	16.4	18.5
2	1.3	0.1	0.3	3.5	2.3	3.2	17.2	11.0	14.0	19.4	17.1	18.0
3	4.7	0.2	1.4	4.3	0.1	1.9	18.3	12.4	15.4	17.7	15.1	16.0
4	4.9	1.2	3.1	6.0	0.4	2.8	17.5	14.6	16.1	15.1	12.2	13.7
5	1.5	-0.1	0.7	5.4	3.6	4.4	16.8	10.0	12.8	17.4	13.1	15.0
6	1.6	0.1	0.7	3.7	2.0	3.0	10.0	7.8	8.6	19.2	15.2	16.6
7	1.9	0.7	1.3	5.5	1.4	2.9	11.4	8.0	9.4	17.6	15.8	16.7
8	1.6	0.1	0.6	8.6	1.4	4.7	10.9	9.0	9.9	20.2	15.2	17.4
9	2.1	0.3	0.9	7.6	4.3	5.8	10.1	7.3	8.0	20.1	16.6	18.3
10	1.1	0.5	0.8	5.1	1.0	3.1	11.3	6.7	8.6	19.2	17.0	17.7
11	0.8	0.1	0.3	6.9	1.4	3.9	14.1	6.9	10.2	19.3	16.1	17.6
12	1.4	0.0	0.5	6.2	3.5	4.8	14.9	8.6	11.7	17.0	14.2	15.4
13	1.3	0.1	0.5	6.0	4.3	5.2	15.1	9.2	12.2	18.4	12.9	15.4
14	0.5	0.0	0.2	8.7	2.5	5.3	16.6	9.5	13.0	17.9	13.5	15.6
15	0.9	0.0	0.4	10.2	4.1	6.8	18.7	12.1	15.2	18.5	14.5	16.4
16	0.4	0.0	0.1	12.5	6.2	9.1	19.1	13.9	16.5	19.4	14.7	16.7
17	0.3	0.0	0.1	12.2	8.5	10.5	17.8	14.8	15.7	18.5	16.2	16.7
18	0.7	0.1	0.3	13.5	10.3	11.9	15.0	13.5	14.2	17.7	15.9	16.7
19	0.9	0.5	0.7	13.8	10.2	12.4	18.7	12.4	15.2	20.5	16.4	18.0
20	3.2	0.5	1.3	14.1	9.1	11.3	17.8	15.3	16.7	19.7	17.0	18.1
21	2.0	1.1	1.6	12.4	9.2	10.6	15.7	13.7	14.7	19.0	15.1	16.7
22	2.2	0.8	1.6	12.5	7.2	9.8	14.3	11.8	12.8	19.0	14.4	16.4
23	2.7	0.8	1.7	13.5	9.0	11.1	15.4	8.5	11.6	18.1	14.0	16.0
24	2.8	0.3	1.5	15.4	8.5	11.8	13.7	9.1	11.4	18.0	13.2	15.5
25	1.7	0.0	0.8	15.4	10.1	12.9	13.1	11.8	12.3	17.2	14.6	15.6
26	1.5	0.0	0.6	15.5	10.4	12.8	16.8	11.7	13.6	17.8	14.3	15.7
27	2.9	0.4	1.5	14.1	8.5	11.5	16.9	11.2	13.8	18.4	14.7	16.4
28	3.8	1.6	2.6	16.6	11.5	14.0	17.7	11.5	14.5	18.1	14.7	16.5
29	---	---	---	15.5	8.7	10.6	19.3	15.8	17.1	18.5	15.5	16.8
30	---	---	---	---	---	---	19.3	15.8	17.3	18.0	14.8	16.3
31	---	---	---	---	---	---	---	---	---	17.5	16.0	16.5
MONTH	4.9	-0.1	0.9	16.6	0.1	7.6	19.3	6.7	13.1	21.4	12.2	16.5

03238772 FOUR MILE CREEK AT POPLAR RIDGE ROAD NEAR ALEXANDRIA, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	16.5	13.8	15.0	22.9	20.6	21.6	23.7	20.7	21.9	23.5	21.4	22.1
2	15.9	13.3	14.6	---	---	---	23.7	20.7	22.4	22.5	21.5	21.9
3	15.4	13.8	14.8	---	---	---	24.0	21.5	22.6	23.0	21.8	22.3
4	15.4	14.9	15.2	---	---	---	23.4	20.4	21.5	22.7	20.6	21.7
5	17.5	13.7	15.3	---	---	---	23.1	19.9	21.1	21.7	18.5	19.9
6	18.5	14.7	16.3	---	---	---	23.2	20.0	21.6	20.3	17.4	19.0
7	19.1	17.0	17.9	---	---	---	23.4	21.0	22.2	19.9	17.9	18.9
8	18.9	16.6	17.8	25.3	23.9	24.5	23.4	21.4	22.3	20.6	18.2	19.1
9	20.2	15.2	17.3	24.6	22.9	23.6	23.0	21.2	22.0	20.9	18.5	19.4
10	20.3	16.2	18.2	23.1	22.1	22.6	22.8	21.1	21.9	21.0	18.6	19.6
11	21.0	18.3	19.5	22.8	20.7	21.8	22.3	21.2	21.5	20.3	18.6	19.3
12	20.9	19.3	19.9	22.8	20.7	21.7	22.3	19.7	20.7	19.8	17.5	18.5
13	21.5	19.1	20.1	23.1	20.3	21.5	23.2	20.4	21.4	20.1	17.8	18.7
14	21.7	18.9	20.2	23.4	20.3	21.5	24.0	21.8	22.7	19.9	18.2	18.9
15	20.6	19.3	19.8	22.7	20.7	21.4	23.9	22.5	23.2	19.5	18.6	19.1
16	22.5	19.4	20.6	23.9	21.5	22.4	24.7	22.4	23.4	18.6	16.5	17.5
17	22.1	20.2	20.8	23.2	20.5	21.7	24.3	22.5	23.1	18.4	16.1	17.0
18	21.9	19.0	20.2	23.0	20.9	21.8	22.8	20.6	21.4	17.8	15.8	16.8
19	21.6	19.6	20.3	23.7	21.6	22.4	22.0	19.6	20.7	17.9	16.7	17.3
20	20.5	16.5	18.4	22.9	19.9	21.3	22.8	19.9	21.1	17.0	14.9	15.9
21	19.7	16.3	17.9	22.8	20.7	21.8	24.1	21.5	22.7	18.0	14.5	15.9
22	20.7	16.7	18.4	22.8	20.5	22.2	23.8	22.1	22.9	19.1	16.4	18.3
23	21.6	17.5	19.2	21.3	20.1	20.6	23.2	21.3	22.0	18.2	16.3	17.3
24	22.5	18.2	20.0	21.9	19.2	20.4	22.2	20.0	21.0	17.8	14.4	16.1
25	23.2	19.0	20.8	22.5	19.3	20.5	22.7	19.8	21.1	18.5	16.8	17.3
26	23.2	20.3	21.6	22.6	19.6	21.0	23.8	20.9	22.2	17.0	14.7	15.7
27	22.7	20.0	21.2	23.3	20.7	22.0	23.5	22.1	22.8	18.4	16.6	17.4
28	22.4	18.5	20.1	23.3	22.2	22.9	24.1	21.7	22.7	17.1	14.8	15.5
29	23.0	18.8	20.5	22.9	21.2	21.9	23.8	22.2	23.1	14.8	12.5	13.4
30	23.0	19.6	21.0	22.4	19.8	20.8	23.7	22.6	23.2	13.7	10.9	12.3
31	---	---	---	22.2	20.3	21.1	22.9	21.1	21.9	---	---	---
MONTH	23.2	13.3	18.8	25.3	19.2	21.8	24.7	19.6	22.1	23.5	10.9	18.1
YEAR	25.3	-0.1	12.0									

03238772 FOUR MILE CREEK AT POPLAR RIDGE ROAD NEAR ALEXANDRIA, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	7.9	6.3	7.0	9.8	9.1	9.4	12.8	11.2	11.9	12.5	10.7	11.5
2	7.1	5.2	6.2	9.5	8.8	9.1	13.0	11.9	12.3	11.6	11.0	11.4
3	6.8	5.4	6.2	8.8	7.5	7.8	13.0	11.9	12.4	12.5	11.4	12.0
4	6.8	4.5	5.5	7.6	6.4	6.8	---	---	---	12.9	12.0	12.4
5	7.2	5.6	6.1	9.6	6.4	7.6	13.6	11.9	12.6	12.9	11.9	12.3
6	6.5	5.4	5.8	9.0	8.5	8.7	13.8	12.2	12.8	12.7	11.9	12.3
7	5.9	4.7	5.0	9.6	8.8	9.1	14.2	12.6	13.3	13.4	12.3	12.9
8	5.3	4.7	5.1	9.7	8.7	9.1	13.8	12.4	13.0	13.0	11.7	12.4
9	5.3	4.9	5.0	8.7	7.5	7.9	14.1	12.5	13.1	12.8	11.6	12.1
10	6.1	5.2	5.5	9.5	6.9	7.5	13.9	12.6	13.1	13.3	11.6	12.5
11	7.9	5.8	7.3	8.8	8.3	8.5	13.3	11.4	12.1	14.5	12.7	13.7
12	7.0	6.1	6.6	9.6	8.5	9.2	11.4	11.0	11.2	15.0	13.7	14.4
13	6.6	5.2	5.6	10.0	9.2	9.6	11.7	10.5	11.0	14.8	13.5	14.1
14	6.1	5.6	5.8	10.2	9.2	9.7	11.2	10.8	11.0	14.4	13.4	13.8
15	6.4	5.7	6.0	9.9	9.1	9.5	12.1	10.5	11.3	15.4	13.7	14.5
16	6.7	6.0	6.3	10.2	9.7	10	12.2	10.4	11.2	14.6	13.9	14.2
17	6.8	6.0	6.5	10.9	9.9	10.3	12.4	10.9	11.4	15.4	13.7	14.4
18	7.5	6.6	6.9	11.3	10.5	10.8	11.2	10.0	10.7	15.6	14.0	14.6
19	7.5	6.2	7.0	10.9	10.1	10.6	11.2	10.0	10.4	15.6	13.7	14.5
20	6.7	5.9	6.2	10.7	9.9	10.2	10.5	10.1	10.3	15.0	13.4	14.2
21	7.0	6.5	6.8	10.5	9.8	10.1	11.0	10.3	10.6	15.9	14.0	14.8
22	6.6	6.1	6.3	10.7	9.6	10.2	10.8	10.5	10.7	16.2	14.4	15.1
23	6.4	6.1	6.2	11.5	10.3	10.8	12.0	10.6	11.4	15.8	14.4	15.0
24	6.6	6.2	6.3	11.5	10.6	11.1	11.6	11.1	11.3	16.4	14.6	15.2
25	10.2	6.3	7.7	11.2	10.4	10.8	11.9	11.1	11.5	16.5	14.4	15.1
26	9.3	8.6	8.9	11.7	10.3	10.9	12.3	11.5	11.9	15.1	14.0	14.5
27	9.1	8.4	8.7	12.7	11.0	11.7	12.6	11.9	12.2	15.7	13.8	14.3
28	8.6	7.7	8.1	13.0	11.7	12.2	12.6	11.5	12.2	15.4	14.1	14.7
29	10.7	7.2	8.9	12.9	12.0	12.4	12.5	11.4	11.9	16.1	13.8	14.7
30	9.8	8.6	9.6	12.5	11.0	11.6	11.9	10.6	11.3	16.8	13.9	15.0
31	10.1	9.4	9.7	---	---	---	11.3	10.5	10.8	16.9	13.9	15.3
MONTH	10.7	4.5	6.7	13.0	6.4	9.8	14.2	10.0	11.7	16.9	10.7	13.8
	FEBRUARY			MARCH			APRIL			MAY		
1	16.1	13.7	14.7	15.3	13.9	14.3	12.6	8.9	10.4	9.5	6.6	7.8
2	16.2	13.9	14.5	14.7	14.0	14.3	11.9	7.3	9.4	7.6	5.5	6.5
3	14.8	11.9	13.9	16.2	14.3	15.2	11.6	6.7	8.9	8.4	5.4	6.6
4	13.8	12.6	13.2	16.2	13.6	14.9	10.8	6.4	8.5	10.6	6.6	8.3
5	15.6	13.4	14.5	14.1	13.6	13.8	9.6	7.3	8.6	9.4	7.1	8.2
6	15.8	13.8	14.6	16.0	14.0	14.9	14.0	8.8	11.0	7.4	6.6	7.2
7	16.0	13.4	14.5	16.6	13.8	15.1	11.4	9.0	9.9	7.4	6.6	7.0
8	16.4	14.1	15.1	16.5	12.4	14.7	12.5	9.0	10.4	8.0	6.4	7.2
9	16.5	14.1	15.1	16.8	12.4	14.4	11.2	9.4	10.3	8.0	6.5	7.3
10	16.1	13.6	14.8	17.4	13.5	15.3	14.1	10.0	11.5	8.7	6.8	7.5
11	16.4	13.9	14.9	17.2	12.1	14.9	14.5	9.1	11.3	7.8	7.2	7.4
12	17.2	14.0	15.5	16.5	11.2	13.1	14.2	8.6	11.0	8.5	7.3	7.8
13	17.4	14.8	16.0	13.2	10.8	11.5	13.7	8.3	10.7	8.8	7.3	8.0
14	17.0	14.3	15.4	16.2	10.7	13.1	12.8	8.4	10.4	9.7	7.2	8.4
15	15.0	14.1	14.5	16.7	10.3	12.9	11.8	7.8	9.6	8.9	7.7	8.3
16	15.5	14.2	14.7	16.7	9.6	12.7	11.2	7.5	9.1	9.8	7.6	8.5
17	16.0	14.3	14.9	16.9	8.8	12.4	8.6	6.2	7.3	8.7	7.5	8.2
18	16.6	14.3	15.1	15.7	8.0	11.7	9.9	6.5	7.8	8.9	8.0	8.6
19	16.7	14.1	15.0	12.4	7.8	9.8	11.6	7.1	9.0	9.0	7.6	8.2
20	16.8	13.9	14.8	11.7	8.2	9.9	9.3	6.7	8.0	8.0	7.3	7.6
21	15.1	13.6	14.2	9.9	8.2	9.3	8.9	7.8	8.4	8.8	6.8	7.8
22	15.7	14.2	14.7	12.9	8.6	10.5	10.2	7.6	8.7	8.4	6.3	7.2
23	15.2	14.5	14.8	13.5	8.4	10.4	11.4	8.4	9.6	8.7	6.5	7.5
24	15.3	14.5	14.9	13.6	8.2	10.3	11.8	7.8	9.7	9.2	6.6	7.7
25	16.0	14.7	15.4	13.4	7.7	10	10.4	7.5	8.9	8.4	6.4	7.2
26	16.1	14.8	15.4	12.2	7.6	9.6	11.7	8.0	9.7	9.0	6.8	7.6
27	15.9	14.3	15.1	13.6	7.7	10.3	11.0	8.1	9.4	8.5	6.4	7.3
28	15.8	14.0	14.7	12.4	7.2	9.5	10.9	8.4	9.4	9.0	6.3	7.4
29	---	---	---	9.8	7.1	9.0	10.7	7.6	8.9	8.4	6.8	7.5
30	---	---	---	---	---	---	10.0	7.1	8.4	9.2	6.4	7.6
31	---	---	---	---	---	---	---	---	---	8.0	6.5	7.1
MONTH	17.4	11.9	14.8	17.4	7.1	12.3	14.5	6.2	9.5	10.6	5.4	7.6

03238772 FOUR MILE CREEK AT POPLAR RIDGE ROAD NEAR ALEXANDRIA, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	8.5	6.9	7.5	6.1	5.2	5.7	5.5	3.4	4.1	8.3	3.9	5.4
2	8.9	7.9	8.3	6.1	4.4	5.4	7.5	3.4	6.2	8.4	6.8	7.5
3	9.2	7.9	8.6	---	---	---	6.6	4.5	5.7	7.2	6.5	6.9
4	9.0	8.1	8.5	---	---	---	7.3	4.4	5.3	7.4	6.4	6.8
5	9.9	8.3	8.9	---	---	---	6.3	4.8	5.5	8.1	6.6	7.3
6	9.2	8.0	8.5	---	---	---	6.4	4.7	5.3	8.4	6.8	7.5
7	8.9	7.3	8.1	---	---	---	6.2	4.4	5.0	7.8	6.6	7.1
8	9.3	7.4	8.1	6.2	5.0	5.4	5.7	3.8	5.1	7.5	6.0	6.5
9	9.0	7.8	8.5	6.8	3.7	5.2	5.4	3.8	4.5	7.0	5.4	6.1
10	8.8	7.7	8.2	6.8	6.1	6.5	4.6	3.7	4.1	6.1	3.9	5.1
11	8.5	7.4	7.8	7.2	5.7	6.6	4.5	3.5	4.1	4.7	3.8	4.2
12	8.4	7.5	8.0	6.8	4.2	5.4	5.2	4.0	4.5	4.4	3.6	4.0
13	8.4	7.5	7.9	7.2	4.4	5.3	5.1	3.8	4.5	4.4	3.7	4.0
14	9.6	7.8	8.6	7.3	4.1	5.2	5.1	3.8	4.5	4.5	3.9	4.2
15	8.5	7.9	8.2	7.1	4.0	5.1	4.7	3.6	4.2	4.3	3.8	4.0
16	8.4	7.8	8.1	6.9	4.9	6.0	5.6	3.4	4.3	4.2	3.5	3.8
17	8.6	7.6	7.8	5.6	4.0	4.6	5.8	3.7	4.4	4.8	3.8	4.1
18	8.4	7.4	8.0	5.6	3.9	4.5	4.7	3.7	4.2	4.8	3.8	4.3
19	8.1	7.3	7.6	7.6	4.6	5.5	5.0	4.2	4.5	4.9	3.9	4.5
20	8.8	7.4	8.2	6.1	4.5	5.2	5.1	4.2	4.6	5.3	4.3	4.7
21	7.8	7.0	7.3	7.2	4.5	5.8	5.2	4.1	4.7	5.5	4.6	5.0
22	7.5	6.9	7.2	8.2	4.0	5.2	7.3	4.0	5.1	8.7	4.2	6.8
23	7.2	6.4	6.8	8.1	6.3	7.2	5.2	3.7	4.3	7.4	6.5	7.1
24	7.1	6.4	6.8	8.4	5.8	6.5	5.3	3.8	4.3	7.9	6.5	7.1
25	6.8	5.9	6.4	7.8	5.0	6.0	5.2	4.0	4.5	7.1	5.6	6.2
26	6.3	5.5	5.9	7.8	5.2	6.2	4.9	3.8	4.3	7.6	5.8	6.2
27	6.2	5.2	5.5	7.9	4.6	6.4	4.3	3.0	3.8	8.9	6.6	7.9
28	6.1	4.9	5.5	7.9	5.2	6.6	4.6	3.1	3.7	8.5	7.4	7.8
29	5.9	4.5	5.5	7.6	5.1	5.6	4.7	3.4	4.1	8.5	7.3	7.8
30	6.4	5.2	5.7	7.4	3.8	5.1	6.0	3.9	4.7	8.0	7.5	7.8
31	---	---	---	5.1	3.7	4.2	6.5	4.0	5.2	---	---	---
MONTH	9.9	4.5	7.5	8.4	3.7	5.6	7.5	3.0	4.6	8.9	3.5	5.9
YEAR	17.4	3.0	9.2									

03238772 FOUR MILE CREEK AT POPLAR RIDGE ROAD NEAR ALEXANDRIA, KY—Continued

TURBIDITY, WATER, UNFILTERED, NEPHELOMETRIC TURBIDITY UNITS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	61	25	40	21	4.5	13	9.6	7.5	8.6	700	69	170
2	78	19	29	22	5.5	10	9.4	8.2	8.7	69	27	42
3	180	34	70	10	5.3	7.8	12	9.0	9.5	39	22	27
4	320	29	86	11	3.6	6.7	---	---	---	25	18	21
5	170	35	70	420	6.4	82	3.5	0.8	1.8	26	17	21
6	140	25	34	180	43	72	3.3	0.8	1.8	30	19	24
7	230	22	34	95	26	40	5.0	1.5	3.1	69	14	19
8	25	18	21	67	27	41	5.0	3.1	3.9	180	11	25
9	30	18	21	220	29	80	6.0	2.6	4.1	16	12	14
10	21	15	18	1,000	10	110	4.7	3.2	3.9	15	10	13
11	240	20	110	250	57	99	320	3.8	110	18	11	13
12	71	48	59	67	34	46	75	38	49	18	11	13
13	160	49	65	45	30	36	500	27	110	20	10	14
14	68	52	62	49	25	34	100	45	66	14	9.0	11
15	230	29	62	45	22	30	47	28	36	14	11	12
16	61	25	29	66	26	41	33	22	27	17	9.0	12
17	39	27	29	29	14	23	1,000	23	180	18	9.0	11
18	59	18	25	18	12	15	130	50	73	18	9.0	11
19	22	16	18	14	11	12	1,000	47	240	17	8.0	9.8
20	47	19	22	14	8.3	11	200	76	110	12	1.0	5.9
21	26	20	23	25	7.0	10	80	54	64	4.0	0.0	1.3
22	34	22	25	70	25	44	59	46	52	5.0	0.0	2.0
23	31	25	26	26	14	20	51	43	47	7.0	0.0	2.1
24	39	27	32	14	11	12	52	41	45	6.0	1.0	1.9
25	840	32	150	13	10	11	120	52	74	6.0	2.0	3.0
26	110	56	70	13	8.7	9.8	54	41	46	13	2.0	4.5
27	61	48	55	10	8.5	9.4	48	40	44	8.0	3.0	4.4
28	53	45	48	10	8.3	9.0	53	39	45	8.0	3.0	4.3
29	470	44	110	9.1	7.9	8.8	49	39	43	33	4.0	12
30	62	19	36	9.8	7.8	8.9	190	42	95	35	11	19
31	30	10	17	---	---	---	510	67	160	22	9.0	14
MONTH	840	10	48	1,000	3.6	32	1,000	0.8	59	700	0.0	18
		FEBRUARY			MARCH			APRIL			MAY	
1	23	11	15	200	78	100	48	32	38	36	22	29
2	120	18	42	120	93	100	46	32	38	61	30	42
3	420	30	65	100	81	91	48	37	41	72	40	55
4	1,000	63	210	120	74	88	49	34	40	52	24	37
5	74	43	55	590	83	140	730	34	220	980	26	320
6	58	29	40	91	65	76	74	50	60	170	120	140
7	46	29	37	69	53	61	550	53	150	150	99	120
8	44	22	31	61	44	51	99	63	76	100	61	84
9	31	20	26	69	42	48	110	60	82	160	37	59
10	33	24	29	53	33	42	88	54	66	970	45	330
11	34	25	29	48	19	34	63	43	51	430	83	130
12	35	23	28	36	18	25	58	48	53	88	60	74
13	42	26	32	460	20	140	58	37	47	74	44	62
14	79	24	40	130	41	65	54	33	43	100	9.0	35
15	420	76	170	42	24	32	55	25	40	950	23	150
16	85	55	65	37	24	30	48	18	31	200	2.0	24
17	59	48	53	36	23	28	100	23	38	160	11	62
18	55	46	50	36	22	27	71	22	41	84	45	58
19	51	44	48	910	22	180	39	16	26	77	31	45
20	50	13	28	230	62	100	990	18	79	320	37	91
21	270	13	79	370	66	170	990	80	230	210	49	90
22	1,000	100	310	140	56	74	88	46	69	67	35	48
23	130	93	110	69	46	57	65	27	45	75	38	50
24	99	82	90	60	46	53	48	27	37	68	35	49
25	98	81	88	80	41	51	43	23	31	70	38	53
26	91	79	85	140	65	93	41	19	27	74	39	57
27	86	77	82	120	51	67	39	20	30	67	39	53
28	87	73	80	59	50	55	38	21	29	67	41	53
29	---	---	---	310	52	130	39	22	27	110	58	82
30	---	---	---	---	---	---	40	23	31	74	46	61
31	---	---	---	---	---	---	---	---	---	110	49	75
MONTH	1,000	11	72	910	18	76	990	16	61	980	2.0	84

03238772 FOUR MILE CREEK AT POPLAR RIDGE ROAD NEAR ALEXANDRIA, KY—Continued

TURBIDITY, WATER, UNFILTERED, NEPHELOMETRIC TURBIDITY UNITS—CONTINUED
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	77	52	63	22	14	18	45	19	28	1,000	38	190
2	63	50	56	20	16	18	1,000	28	200	600	95	160
3	590	53	190	---	---	---	230	74	120	98	60	79
4	89	39	63	---	---	---	1,000	49	210	70	44	58
5	61	26	45	---	---	---	170	63	99	59	35	47
6	48	25	36	---	---	---	80	43	61	140	30	45
7	51	30	42	---	---	---	69	39	52	50	34	41
8	990	38	160	220	24	34	68	38	49	44	17	26
9	180	110	130	1,000	23	140	50	40	44	22	3.0	16
10	120	68	93	1,000	120	310	52	38	44	18	8.0	13
11	87	64	76	220	57	100	49	39	43	15	6.0	10
12	110	69	89	100	36	60	65	42	53	14	4.0	8.8
13	110	65	79	130	28	43	73	25	43	13	5.0	7.9
14	980	38	280	62	21	34	29	21	25	16	7.0	10
15	590	120	180	490	13	46	25	19	23	55	8.0	11
16	160	90	110	700	88	250	23	17	20	180	9.0	22
17	680	88	180	94	34	66	20	12	17	140	8.0	20
18	140	67	99	59	20	35	21	13	16	160	7.0	21
19	240	76	110	45	21	33	21	13	17	16	9.0	13
20	130	61	89	49	16	27	24	15	16	19	10	14
21	95	40	70	88	19	44	26	15	17	21	8.0	15
22	60	31	47	990	24	120	960	17	280	1,000	7.0	250
23	51	29	38	990	53	290	200	66	110	240	55	100
24	46	25	36	68	33	50	78	53	65	71	30	48
25	41	23	32	51	27	38	58	48	53	41	19	27
26	110	22	31	40	23	30	53	44	47	27	17	22
27	210	63	140	50	13	24	48	40	43	1,000	15	230
28	110	30	50	280	13	99	49	39	42	98	52	74
29	42	22	31	81	37	59	45	32	36	68	35	49
30	120	13	21	47	15	35	39	30	35	41	30	34
31	---	---	---	75	16	24	120	28	60	---	---	---
MONTH	990	13	89	1,000	13	78	1,000	12	63	1,000	3.0	55
YEAR	1,000	0.0	61									

03248300 LICKING RIVER BELOW MASON FORK NEAR SALYERSVILLE, KY

LOCATION.--Lat 37°45'50", long 83°03'29", Magoffin County, Hydrologic Unit 05100101, on left bank downstream side of bridge on State Highway 1090, 0.9 mi southeast of Salyersville, 2.2 mi upstream from Burning Fork and at mile 272.2.

DRAINAGE AREA.--107 mi^2

PERIOD OF RECORD.--October 2001 to current year.

REVISIONS.--The maximum discharge for WY 2002 has been revised to 2,630 ft^3/s May 3, gage height is 14.92 ft.

GAGE.--Water-stage recorder with telemetry. Datum of gage is 840 ft above NGVD of 1929 (from topographic map).

REMARKS.--Records fair.

COOPERATION.--U.S. Army Corps of Engineers, Louisville District.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	90	58	261	e103	302	136	95	68	56	24	23
2	9.8	70	53	385	e105	287	122	146	60	70	30	24
3	10	59	49	259	e101	242	112	141	62	60	36	36
4	9.2	55	44	217	e261	212	106	111	109	52	57	399
5	8.8	102	54	188	e272	197	129	127	98	47	78	262
6	8.3	358	72	170	e198	183	126	206	74	48	46	82
7	8.0	178	62	152	e170	160	793	140	440	42	33	50
8	7.5	110	73	139	e138	147	657	119	471	37	37	35
9	7.4	87	84	127	e118	137	1,580	252	217	33	30	28
10	9.3	75	86	e100	e112	125	1,250	227	144	34	26	23
11	52	232	319	e89	e104	117	1,200	196	351	57	23	20
12	55	199	532	e80	e100	111	649	161	1,100	49	21	18
13	34	120	424	e74	e94	113	406	118	530	49	26	17
14	28	92	1,290	e69	e110	112	297	97	446	40	21	16
15	20	84	631	e66	e1,220	102	236	95	292	33	18	15
16	71	157	353	e63	e2,700	96	200	130	983	34	17	15
17	80	181	243	e61	e1,880	92	210	107	1,640	32	19	16
18	42	163	193	e58	e581	90	991	199	614	28	40	14
19	28	138	160	e56	558	89	953	170	407	26	27	13
20	24	120	338	e55	416	94	405	135	323	25	19	11
21	23	105	323	e54	384	96	464	141	250	24	16	11
22	21	119	231	e52	1,630	86	393	139	184	24	15	13
23	19	113	187	e49	1,840	80	284	120	142	32	14	49
24	16	97	172	e47	713	76	223	107	114	30	14	31
25	14	87	265	e46	487	72	194	93	97	26	13	19
26	17	78	253	e44	389	78	186	84	84	23	11	16
27	20	81	206	e42	342	77	158	77	77	20	11	17
28	120	74	181	e40	344	71	131	73	73	19	10	40
29	524	67	162	e52	---	96	120	85	66	27	9.9	34
30	421	63	144	e85	---	140	107	87	60	36	12	23
31	141	---	129	e103	---	153	---	74	---	25	17	---
TOTAL	1,859.3	3,554	7,371	3,283	15,470	4,033	12,818	4,052	9,576	1,138	770.9	1,370
MEAN	60.0	118	238	106	552	130	427	131	319	36.7	24.9	45.7
MAX	524	358	1,290	385	2,700	302	1,580	252	1,640	70	78	399
CFSM	0.56	1.11	2.22	0.99	5.16	1.22	3.99	1.22	2.98	0.34	0.23	0.43
IN.	0.65	1.24	2.56	1.14	5.38	1.40	4.46	1.41	3.33	0.40	0.27	0.48

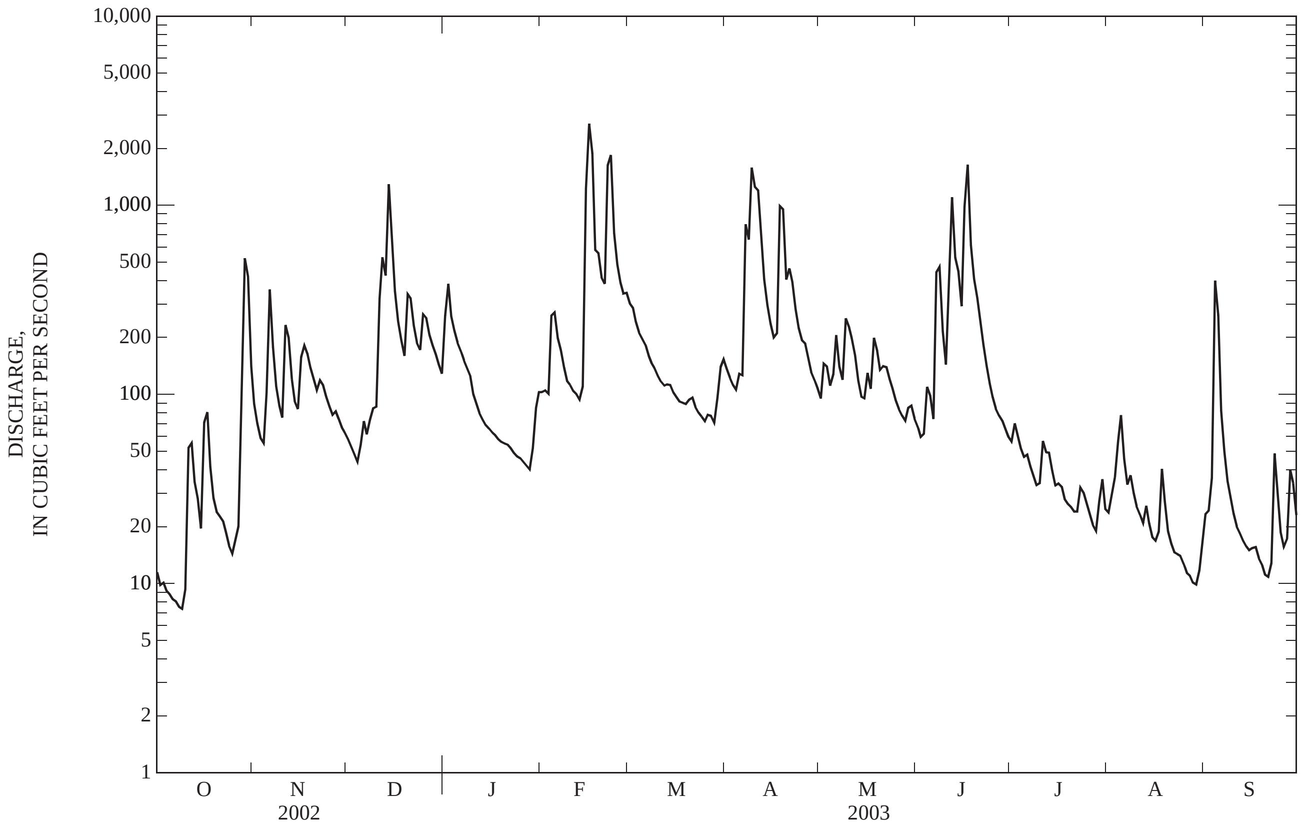
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2001 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	34.4	64.2	130	93.1	295	220	338	190	116	33.1	14.4	19.4
MAX	60.0	118	238	106	552	311	427	436	319	58.8	24.9	45.7
(WY)	(2003)	(2003)	(2003)	(2003)	(2003)	(2002)	(2003)	(2002)	(2003)	(2002)	(2003)	(2003)

03248300 LICKING RIVER BELOW MASON FORK NEAR SALYERSVILLE, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 2001 - 2003	
ANNUAL TOTAL	50,264.9		65,295.2			
ANNUAL MEAN	138		179		142	
HIGHEST ANNUAL MEAN					179	2003
HIGHEST DAILY MEAN	2,580	May 3	2,700	Feb 16	2,700	Feb 16, 2003
LOWEST DAILY MEAN	4.3	Sep 11	7.4	Oct 9	2.7	Sep 19, 2001
ANNUAL SEVEN-DAY MINIMUM	4.8	Sep 9	8.4	Oct 4	2.8	Sep 13, 2001
MAXIMUM PEAK FLOW			3,710	Feb 16	3,710	Feb 16, 2003
MAXIMUM PEAK STAGE			17.75	Feb 16	17.75	Feb 16, 2003
ANNUAL RUNOFF (CFSM)	1.29		1.67		1.33	
ANNUAL RUNOFF (INCHES)	17.48		22.70		18.09	
10 PERCENT EXCEEDS	361		401		353	
50 PERCENT EXCEEDS	39		90		44	
90 PERCENT EXCEEDS	10		17		9.3	

e Estimated



03249500 LICKING RIVER AT FARMERS, KY

LOCATION.--Lat 38°06'55", long 83°32'36", Bath County, Hydrologic Unit 05100101, on left bank, 0.2 mi downstream from Hog Hollow, 0.8 mi downstream from Cave Run Dam, 1.9 mi south of Farmers, 4.5 mi upstream from Triplett Creek, and at mile 174.

DRAINAGE AREA.--827 mi^2.

PERIOD OF RECORD.--July 1915 to June 1920 (gage heights only), April 1928 to September 1931, December 1936 to February 1937 (in WSP 838), April 1938 to September 1994, October 2002 to current year. All figures of discharge above 2,000 ft^3/s prior to April 1938 are unreliable and should not be used. Gage-height records collected at former site since 1915 are contained in reports of National Weather Service.

REVISED RECORDS.--WSP 1275: 1928-31, 1937. WSP 1505: 1950(P). WSP 1705; 1952, drainage area.

GAGE.--Water-stage recorder with telemetry. Datum of gage is 646.55 ft above sea level. See WRD-KY-90-1 for history of changes prior to Oct. 20, 1965.

REMARKS.--Records good. Discharge values published are days with mean values, 1,040 ft^3/s and below: Flow regulated by Cave Run Dam beginning December 1973 (station 03249498). High Flow only regulated prior to December 1973 (Cave Run Dam under construction). Diversion above station from Cave Run Lake for Fish Hatchery; return flow of which enters Licking River below station.

COOPERATION.--U.S. Army Corps of Engineers, Louisville District.

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

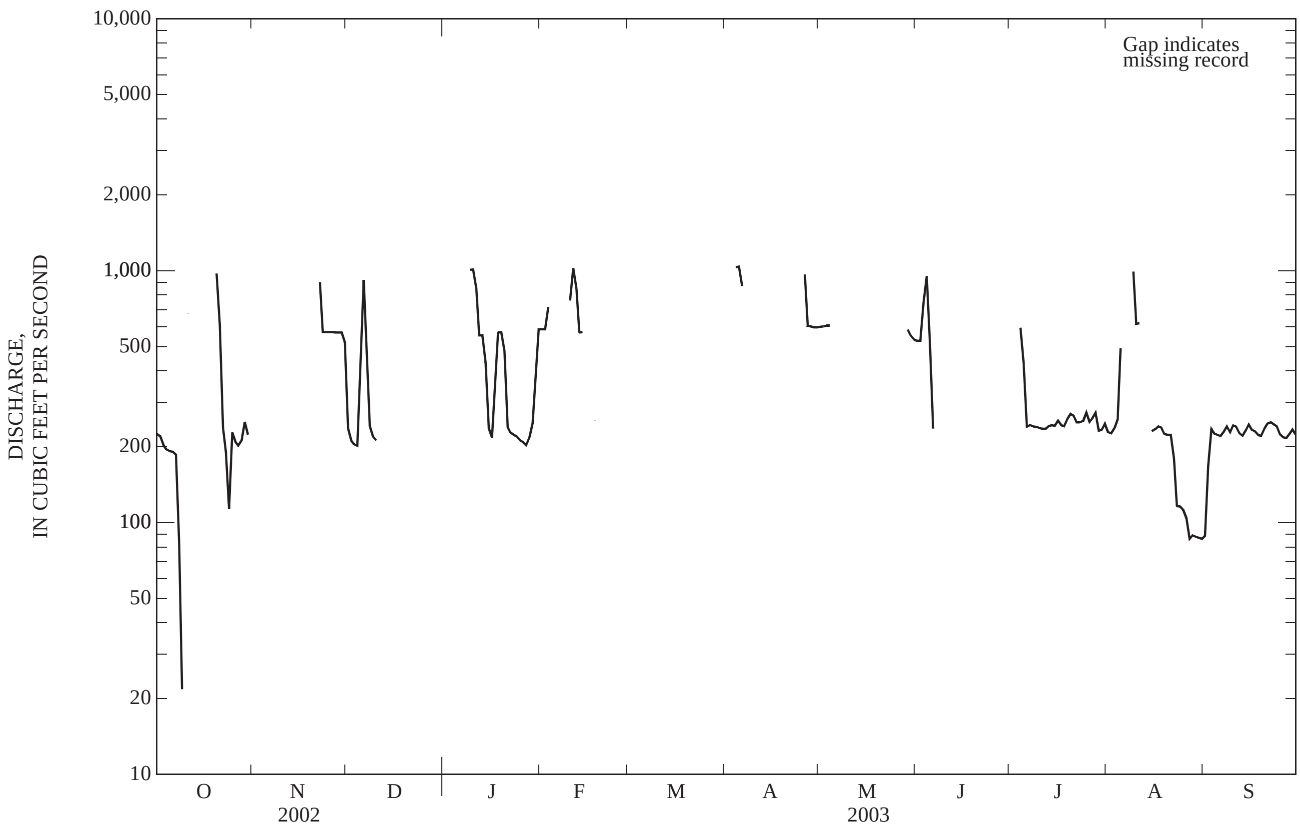
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	224	---	236	---	586	---	---	599	528	---	228	89
2	220	---	212	---	586	---	---	602	527	---	226	168
3	203	---	205	---	718	---	---	605	747	---	236	235
4	195	---	202	---	---	---	1,030	605	950	595	257	225
5	192	---	505	---	---	---	1,040	---	514	430	491	222
6	191	---	919	---	---	---	869	---	236	240	---	221
7	186	---	448	---	---	---	---	---	---	243	---	229
8	82	---	241	---	---	---	---	---	---	241	---	241
9	22	---	219	1,010	---	---	---	---	---	240	990	229
10	---	---	212	1,010	761	---	---	---	---	237	615	243
11	675	---	---	848	1,020	---	---	---	---	236	619	240
12	---	---	---	554	849	---	---	---	---	236	---	227
13	---	---	---	554	569	---	---	---	---	241	---	221
14	---	---	---	432	570	---	---	---	---	244	---	233
15	---	---	---	237	---	---	---	---	---	242	231	245
16	---	---	---	218	---	---	---	---	---	253	234	233
17	---	---	---	345	---	---	---	---	---	243	241	230
18	---	---	---	569	254	---	---	---	---	241	238	223
19	---	---	---	569	---	---	---	---	---	258	225	221
20	974	---	---	480	---	---	---	---	---	270	223	236
21	610	---	---	240	---	---	---	---	---	265	223	247
22	239	898	---	228	---	---	---	---	---	250	180	250
23	191	570	---	223	---	---	---	---	---	250	116	245
24	113	570	---	219	---	---	---	---	---	253	116	240
25	228	571	---	212	160	---	---	---	---	273	112	224
26	209	571	---	208	---	---	966	---	---	251	104	218
27	202	568	---	202	---	---	605	---	---	259	86	217
28	211	569	---	217	---	---	600	---	---	272	89	225
29	251	568	---	248	---	---	596	583	---	231	88	234
30	223	520	---	370	---	---	596	550	---	234	87	223
31	---	---	---	585	---	---	---	532	---	247	86	---
TOTAL	---	---	---	---	---	---	---	---	---	---	---	6,734
MEAN	---	---	---	---	---	---	---	---	---	---	---	224
MAX	---	---	---	---	---	---	---	---	---	---	---	250
MIN	---	---	---	---	---	---	---	---	---	---	---	89

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1974 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	539	807	1,429	1,652	1,875	2,089	1,617	1,106	808	331	301	409
MAX	2,336	1,988	3,096	3,692	3,717	3,670	4,061	3,350	2,521	1,620	836	2,360
(WY)	(1990)	(1990)	(1986)	(1991)	(1991)	(1989)	(1994)	(1984)	(1983)	(1981)	(1979)	(1974)
MIN	25.2	19.7	310	138	507	286	51.0	41.1	41.7	40.2	35.5	80.5
(WY)	(1979)	(1979)	(1982)	(1981)	(1984)	(1983)	(1986)	(1976)	(1988)	(1988)	(1988)	(2002)

03249500 LICKING RIVER AT FARMERS, KY—Continued

SUMMARY STATISTICS	WATER YEARS 1974-2003		
ANNUAL MEAN	1,078		
HIGHEST ANNUAL MEAN	1,754		1994
LOWEST ANNUAL MEAN	496		1988
HIGHEST DAILY MEAN	7,820	Jan 15	1974
LOWEST DAILY MEAN	6.1	Jul 21	1983
ANNUAL SEVEN-DAY MINIMUM	14	Oct 4	1978
MAXIMUM PEAK FLOW	24,000	Feb 28	1962
MAXIMUM PEAK STAGE	31.10	Feb 9	1918
INSTANTANEOUS LOW FLOW	0.70	Oct 14	1930
10 PERCENT EXCEEDS	3,310		
50 PERCENT EXCEEDS	349		
90 PERCENT EXCEEDS	65		



03250190 SLATE CREEK AT HIGHWAY 713 NEAR MOUNT STERLING, KY

LOCATION.--Lat 38°01'26", long 83°49'54", Montgomery County, Hydrologic Unit 05100101, on right downstream side of bridge on Highway 713, 0.2 mi below Greenbrier Creek, 1.0 mi above Town Branch, 6.4 mi east of Mount Sterling, and at mile 43.2.

DRAINAGE AREA.--84.5 mi^2

PERIOD OF RECORD.--March 2000 to current year.

GAGE.--Water-stage recorder with telemetry. Datum of gage is 800 ft above NGVD of 1929 (from topographic map).

REMARKS.--Records fair except for those estimated, which are poor.

COOPERATION.--City of Mount Sterling.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	129	29	605	76	168	48	24	37	10	39	286
2	11	93	27	443	87	133	39	38	27	9.7	18	392
3	8.7	74	26	296	80	106	35	239	306	9.0	43	523
4	7.0	69	21	218	511	90	32	65	239	7.9	1,140	374
5	40	608	e20	168	228	84	64	897	98	6.8	1,370	110
6	17	916	e19	129	e140	93	60	545	55	6.0	191	58
7	12	280	e19	101	e110	84	965	250	2,410	5.4	83	39
8	8.8	168	27	e78	99	73	295	151	423	5.0	68	e28
9	6.7	118	47	e66	89	65	764	1,010	270	4.7	48	e22
10	663	907	49	e56	113	53	430	1,300	111	61	49	e19
11	1,910	1,030	311	e47	105	45	338	584	103	134	152	e16
12	318	329	295	43	91	45	239	267	188	28	269	e12
13	406	200	480	e38	71	80	149	118	129	18	56	e10
14	115	140	1,940	e36	102	180	101	74	286	11	53	e7.4
15	66	131	473	e33	2,920	105	74	418	474	8.3	58	e6.0
16	167	408	318	e30	5,200	83	60	623	854	8.1	22	e4.8
17	121	263	223	e27	2,660	70	86	477	1,020	11	19	e4.0
18	69	167	187	e25	431	61	294	1,070	950	7.3	16	e3.3
19	51	128	168	e24	307	186	114	491	274	6.0	12	e2.8
20	71	103	532	e22	268	1,140	76	325	137	5.5	9.9	e2.6
21	76	87	249	e21	282	474	87	578	87	5.5	e8.4	e2.4
22	56	91	161	e20	1,200	266	75	303	62	6.0	e7.0	e2.1
23	43	77	116	e19	790	165	55	173	73	328	e6.2	75
24	37	63	125	18	389	115	44	111	103	130	e5.8	36
25	33	55	279	e17	310	90	39	76	59	31	e7.0	29
26	52	58	187	e17	245	77	40	59	23	17	e6.4	28
27	49	64	162	e16	210	65	33	47	20	12	e5.4	83
28	99	49	138	e16	207	55	27	44	18	11	e4.2	86
29	694	41	115	46	---	83	31	100	15	24	e3.7	50
30	428	36	90	126	---	95	31	110	12	14	24	34
31	199	---	77	71	---	63	---	54	---	11	26	---
TOTAL	5,851.2	6,882	6,910	2,872	17,321	4,492	4,725	10,621	8,863	952.2	3,820.0	2,345.4
MEAN	189	229	223	92.6	619	145	158	343	295	30.7	123	78.2
MAX	1,910	1,030	1,940	605	5,200	1,140	965	1,300	2,410	328	1,370	523
MIN	6.7	36	19	16	71	45	27	24	12	4.7	3.7	2.1

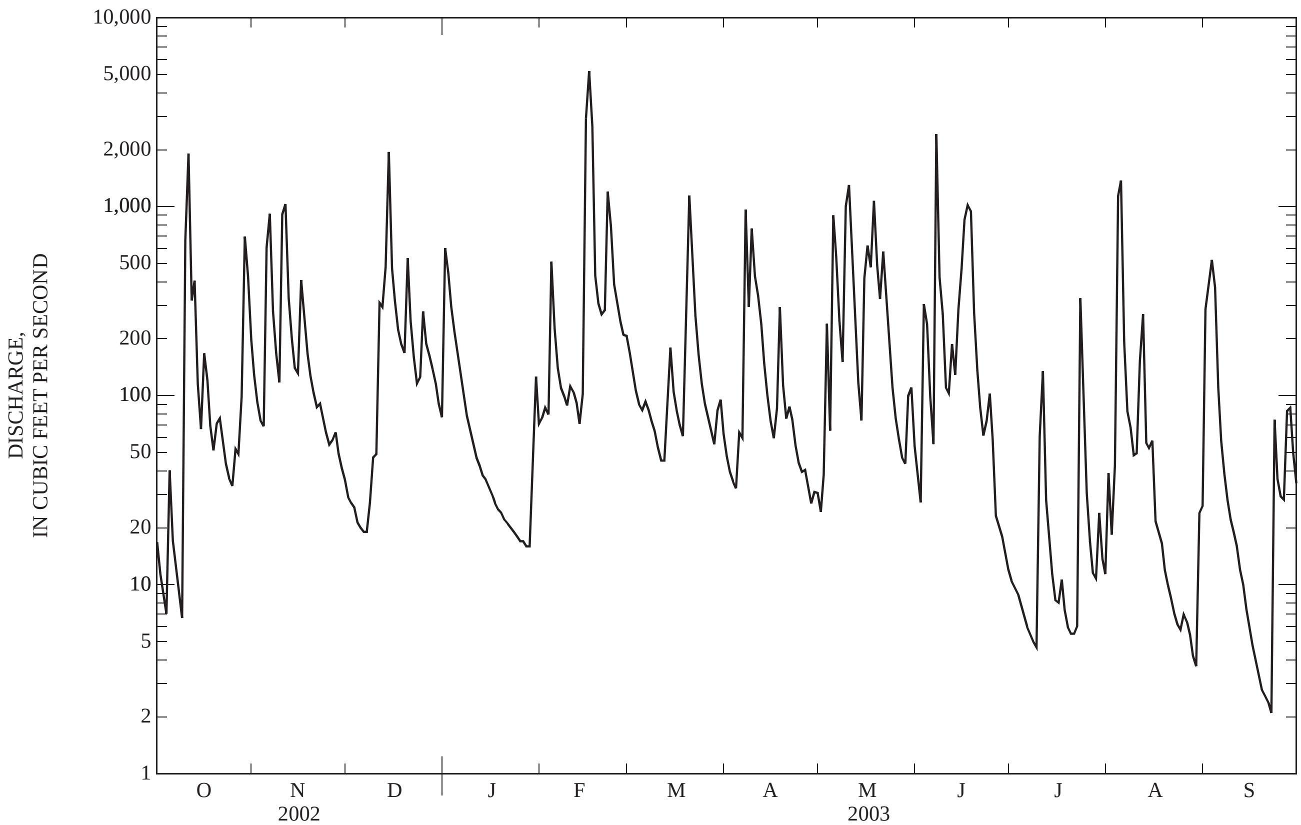
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2003, BY WATER YEAR (WY)

MEAN	73.2	89.3	131	96.2	286	239	135	181	95.4	70.6	57.8	29.1
MAX	189	229	223	131	619	512	169	343	295	215	123	78.2
(WY)	(2003)	(2003)	(2003)	(2002)	(2003)	(2002)	(2000)	(2003)	(2003)	(2001)	(2003)	(2003)
MIN	4.26	8.88	74.5	65.1	43.5	135	50.7	3.11	11.4	5.45	12.2	5.30
(WY)	(2001)	(2001)	(2001)	(2001)	(2002)	(2000)	(2001)	(2000)	(2002)	(2002)	(2002)	(2001)

03250190 SLATE CREEK AT HIGHWAY 713 NEAR MOUNT STERLING, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 2000 - 2003	
ANNUAL TOTAL	56,156.18		75,654.8			
ANNUAL MEAN	154		207		134	
HIGHEST ANNUAL MEAN					207	2003
LOWEST ANNUAL MEAN					81.4	2001
HIGHEST DAILY MEAN	6,610	Mar 20	5,200	Feb 16	6,610	Mar 20, 2002
LOWEST DAILY MEAN	0.00	Aug 23	2.1	Sep 22	0.00	Sep 22, 2000
ANNUAL SEVEN-DAY MINIMUM	1.8	Jul 30	3.1	Sep 16	0.25	Sep 5, 2000
MAXIMUM PEAK FLOW			7,270	Feb 16	9,380	Mar 20, 2002
MAXIMUM PEAK STAGE			21.07	Feb 16	22.65	Mar 20, 2002
10 PERCENT EXCEEDS	381		478		315	
50 PERCENT EXCEEDS	39		75		37	
90 PERCENT EXCEEDS	2.7		9.4		2.2	

e Estimated



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^2

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

GAGE.--Water-stage recorder with telemetry. Datum of gage is 694.94 ft above NGVD of 1929. Gage moved 50 ft downstream August 8, 2002.

REMARKS.--Records fair except for those estimated, which are poor.

COOPERATION.--Kentucky Natural Resources and Environmental Protection Cabinet.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.22	0.85	0.38	20	2.0	2.1	1.2	0.81	0.67	0.22	0.07	3.8
2	0.17	0.65	0.38	6.1	2.2	1.8	1.1	0.69	0.62	0.20	0.08	16
3	0.14	0.53	0.33	3.9	2.0	1.4	1.0	0.62	13	0.18	0.10	7.8
4	0.13	0.55	e0.30	2.5	12	1.2	0.95	0.55	4.6	0.17	0.18	3.2
5	0.17	18	e0.27	1.9	2.8	1.2	1.2	31	2.2	0.15	0.20	1.4
6	0.16	6.7	e0.25	1.6	1.8	1.7	1.2	16	1.4	0.17	0.17	0.95
7	0.13	2.0	e0.24	1.4	1.5	1.5	15	19	34	0.26	0.16	0.70
8	0.15	1.2	0.29	1.4	e1.2	1.3	4.9	5.6	8.0	0.26	0.31	0.55
9	0.14	0.95	0.59	1.2	1.3	1.1	29	3.6	6.2	0.20	0.92	0.43
10	0.24	20	0.84	1.0	1.4	0.97	6.5	15	2.3	0.66	7.0	0.35
11	15	15	6.4	0.86	1.3	0.88	5.4	20	1.5	0.71	11	0.29
12	1.9	2.7	3.8	e0.76	1.1	0.87	3.5	5.3	1.3	0.43	3.0	0.26
13	0.93	1.5	18	e0.66	1.0	5.0	2.2	3.5	1.1	0.34	1.1	0.22
14	0.60	1.1	20	e0.59	2.4	3.6	1.7	2.5	1.5	0.24	0.74	0.20
15	0.46	2.3	5.7	e0.52	47	2.1	1.4	20	9.3	0.15	0.52	0.18
16	2.0	5.7	2.9	e0.46	48	1.6	1.2	8.3	25	0.13	0.40	0.17
17	1.1	2.4	1.9	e0.41	16	1.4	1.2	22	20	0.10	0.31	0.16
18	0.67	1.5	1.9	e0.37	5.3	1.2	2.1	29	5.7	0.08	0.25	0.15
19	0.50	1.2	e3.5	e0.34	3.4	7.5	1.4	10	2.7	0.08	0.21	0.15
20	0.80	1.0	e10	e0.31	6.3	12	0.97	35	1.6	0.06	0.18	0.15
21	0.78	0.91	3.3	e0.28	5.9	5.5	0.74	20	1.2	0.06	0.17	0.15
22	0.56	0.91	2.1	e0.26	27	2.9	0.64	3.7	0.95	0.05	4.9	0.32
23	0.42	0.81	1.5	e0.24	9.0	2.1	0.55	1.9	0.77	0.07	1.6	0.29
24	0.35	0.70	1.3	e0.23	5.1	1.6	0.49	1.4	0.63	0.07	0.77	0.28
25	0.31	0.60	2.1	e0.22	3.8	1.3	0.46	1.0	0.49	0.05	0.50	0.25
26	0.27	0.54	1.5	e0.20	2.6	1.2	0.57	0.92	0.41	0.05	0.37	0.22
27	0.24	0.48	1.2	e0.19	2.1	1.1	0.58	0.80	0.36	0.05	0.29	0.34
28	0.25	0.46	1.1	e0.18	2.4	1.0	0.43	0.78	0.30	0.07	0.23	0.43
29	7.5	0.42	0.99	2.9	---	2.7	1.8	1.0	0.27	0.06	0.25	0.39
30	2.5	0.42	0.90	2.9	---	2.0	1.1	0.89	0.25	0.05	1.4	0.33
31	1.2	---	0.87	1.6	---	1.4	---	0.81	---	0.06	1.1	---
TOTAL	39.99	92.08	94.83	55.48	217.9	73.22	90.48	281.67	148.32	5.43	38.48	40.11
MEAN	1.29	3.07	3.06	1.79	7.78	2.36	3.02	9.09	4.94	0.18	1.24	1.34
MAX	15	20	20	20	48	12	29	35	34	0.71	11	16
MIN	0.13	0.42	0.24	0.18	1.0	0.87	0.43	0.55	0.25	0.05	0.07	0.15

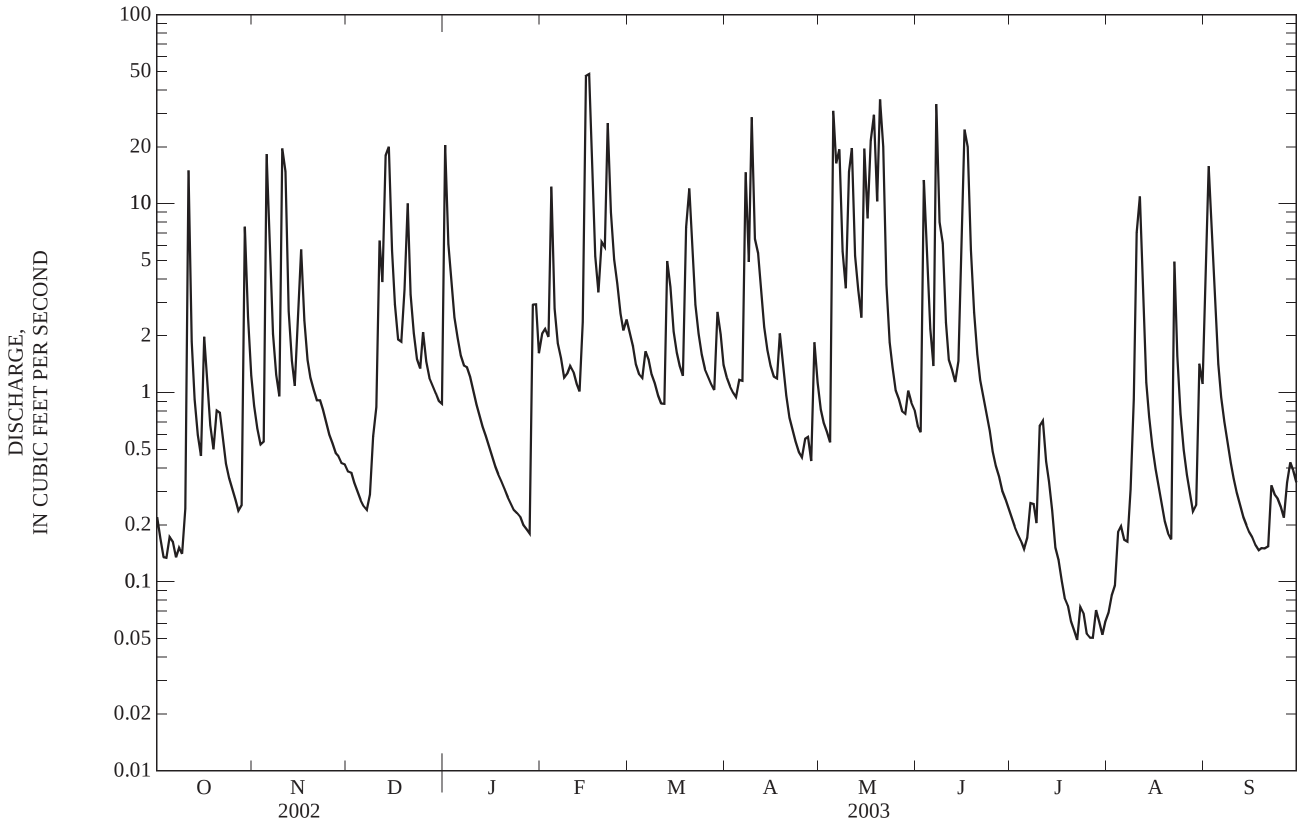
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	0.22	0.65	1.35	1.96	4.44	3.33	2.02	2.54	1.75	1.81	0.54	0.38
MAX	1.29	3.07	3.06	3.42	11.4	8.93	4.05	9.09	4.94	10.4	1.24	1.34
(WY)	(2003)	(2003)	(2003)	(1998)	(2000)	(1997)	(1998)	(2003)	(2003)	(2001)	(2003)	(2003)
MIN	0.009	0.037	0.31	0.29	0.42	2.07	0.49	0.14	0.046	0.003	0.005	0.000
(WY)	(1998)	(1999)	(1998)	(2000)	(2002)	(1998)	(1999)	(1999)	(2000)	(1999)	(1999)	(1999)

03250310 ROCK LICK CREEK ABOVE UNNAMED TRIBUTARY NEAR SHARKEY, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1996 - 2003	
ANNUAL TOTAL	526.05		1,177.99			
ANNUAL MEAN	1.44		3.23		1.72	
HIGHEST ANNUAL MEAN					3.23	2003
LOWEST ANNUAL MEAN					0.65	1999
HIGHEST DAILY MEAN	21	Apr 28	48	Feb 16	227	Jul 9, 2001
LOWEST DAILY MEAN	0.00	Jun 21	0.05	Jul 22	0.00	Sep 15, 1997
ANNUAL SEVEN-DAY MINIMUM	0.00	Sep 6	0.06	Jul 25	0.00	Sep 15, 1997
MAXIMUM PEAK FLOW			277	Jun 16	916	Jul 8, 2001
MAXIMUM PEAK STAGE			4.79	Jun 16	6.51	Jul 8, 2001
10 PERCENT EXCEEDS	3.1		8.1		3.0	
50 PERCENT EXCEEDS	0.44		1.0		0.34	
90 PERCENT EXCEEDS	0.02		0.17		0.00	

e Estimated



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^2

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

REVISIONS.--Maximum discharge for the water year 1997 and period of record has been revised to 1320 ft^3/s, Mar. 2, 1997.

GAGE.--Water-stage recorder with telemetry. Datum of gage is 645.451 ft above NGVD of 1929 prior to July 15, 2003. Gage datum reset to 645.045 ft above NGVD 0f 1929 on July 15, 2003.

REMARKS.--Records fair except for those estimated, which are poor.

COOPERATION.--Kentucky Natural Resources and Environmental Protection Cabinet.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 400 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 6	0815	*885	*9.13	May 20	2200	502	7.28

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.69	2.6	0.75	38	5.1	7.2	3.3	2.0	2.3	0.66	0.28	e9.0
2	0.42	1.8	0.70	18	5.3	4.9	2.8	1.9	1.9	0.58	0.16	e40
3	0.24	1.5	0.58	11	5.0	4.1	2.6	1.6	28	0.50	1.2	18
4	0.67	2.3	e0.52	7.5	25	3.6	2.5	1.3	11	0.42	0.94	6.5
5	1.7	53	e0.49	e5.9	7.4	3.4	3.5	104	5.4	0.35	0.59	2.3
6	0.21	18	e0.46	e5.4	5.0	5.1	2.9	561	3.7	e0.61	0.27	1.3
7	0.09	6.7	e0.43	e4.5	4.7	4.0	28	99	107	1.8	2.5	0.90
8	0.05	4.1	1.2	e3.9	e3.3	3.4	12	15	19	e0.90	1.6	0.71
9	0.03	2.9	1.2	3.4	e3.2	2.8	64	9.5	13	e0.30	1.6	0.58
10	3.8	47	1.5	2.9	4.1	2.4	17	43	6.5	e2.0	15	0.48
11	40	37	14	2.4	3.6	2.2	15	37	5.5	e4.0	22	0.40
12	6.7	8.0	9.1	e2.0	3.1	2.5	9.5	12	4.6	e2.0	5.1	0.34
13	3.5	4.8	45	e1.8	2.6	11	6.5	6.7	4.1	e1.0	1.3	0.32
14	2.1	3.4	48	e1.6	5.2	8.6	4.9	4.7	6.2	e0.50	0.72	0.30
15	2.1	6.2	15	e1.5	131	5.3	4.1	41	23	e0.23	0.52	0.29
16	8.7	14	8.3	e1.4	144	4.3	3.5	18	66	0.36	0.43	0.28
17	3.8	6.8	5.8	e1.3	44	3.7	4.0	41	34	0.20	0.36	0.27
18	2.3	4.4	5.7	e1.2	15	3.2	5.3	56	13	0.18	0.29	0.26
19	2.1	3.5	8.6	e1.2	10	17	3.5	19	7.5	0.17	0.26	0.25
20	3.6	2.8	26	e1.1	15	29	2.7	96	5.1	0.15	0.24	0.25
21	2.6	2.5	9.1	e1.1	14	15	2.6	76	3.9	0.14	0.22	0.25
22	1.7	2.6	6.2	e1.1	60	8.2	2.1	15	3.1	0.27	e15	2.1
23	1.3	2.0	4.6	e1.0	24	5.9	1.8	9.2	2.6	1.2	e6.0	0.97
24	0.98	1.7	4.3	e0.99	14	4.7	1.7	6.7	2.1	0.31	e1.5	0.38
25	1.2	1.4	6.2	e0.98	10	4.0	1.7	5.3	1.7	0.17	e0.64	0.31
26	1.1	1.4	4.3	e0.97	7.7	3.9	2.6	4.4	1.5	0.14	0.44	0.28
27	0.58	1.4	3.5	e0.96	6.7	3.2	1.7	3.7	1.3	0.12	0.36	0.94
28	1.4	1.1	2.9	e0.95	7.5	2.8	1.5	3.6	1.1	0.89	0.31	0.65
29	17	0.97	2.7	e1.2	---	7.8	5.2	5.5	0.84	0.27	e1.0	0.45
30	7.7	0.86	2.4	2.6	---	5.3	2.5	3.5	0.74	0.15	e3.0	0.34
31	4.1	---	2.2	3.8	---	3.8	---	2.7	---	0.27	e2.0	---
TOTAL	122.46	246.73	241.73	131.65	585.5	192.3	221.0	1,305.3	385.68	20.84	85.83	89.40
MEAN	3.95	8.22	7.80	4.25	20.9	6.20	7.37	42.1	12.9	0.67	2.77	2.98
MAX	40	53	48	38	144	29	64	561	107	4.0	22	40
MIN	0.03	0.86	0.43	0.95	2.6	2.2	1.5	1.3	0.74	0.12	0.16	0.25

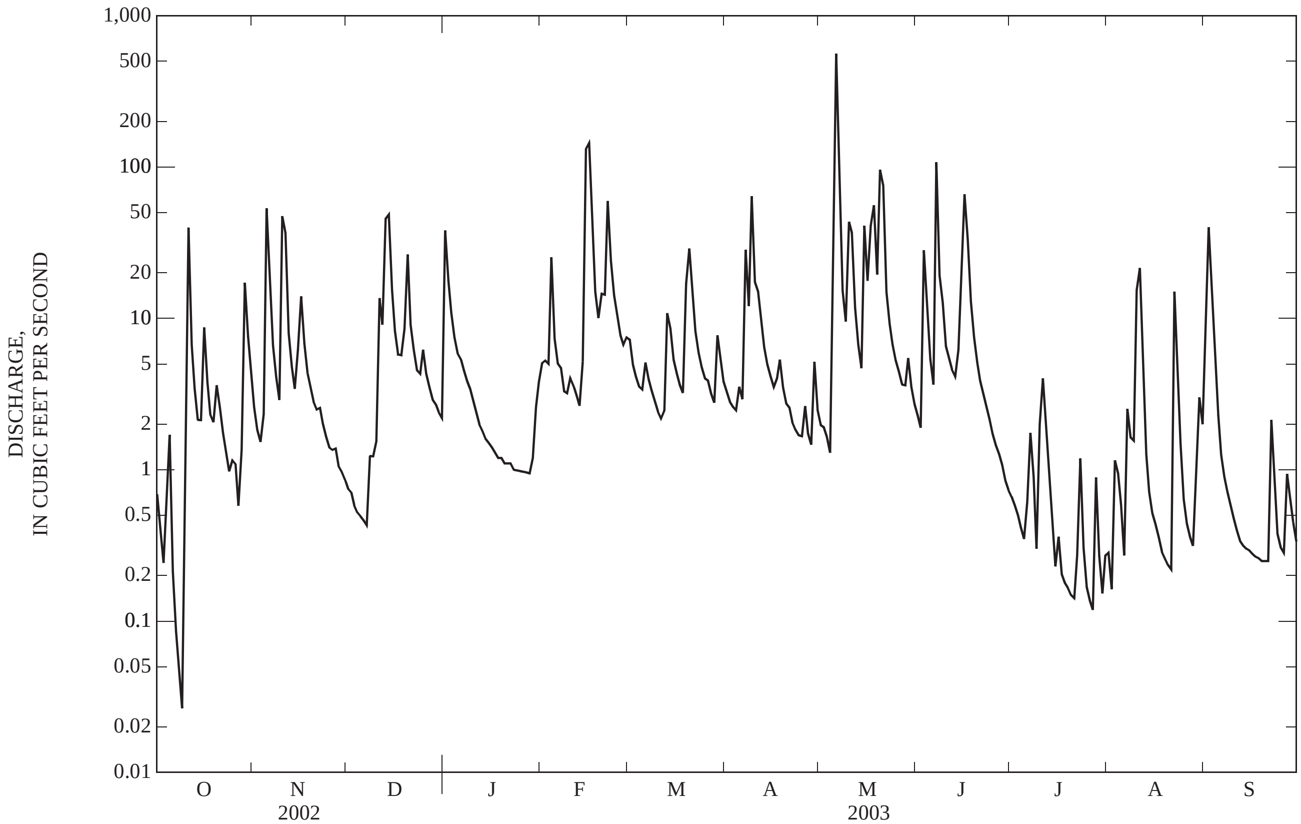
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	0.75	2.19	4.44	7.55	12.3	10.1	6.94	11.2	5.71	4.39	2.23	0.88
MAX	3.95	8.22	10.0	14.9	28.6	17.5	16.2	42.1	15.3	20.2	9.53	2.98
(WY)	(2003)	(2003)	(1997)	(1998)	(2000)	(1997)	(1998)	(2003)	(1997)	(2001)	(2001)	(2003)
MIN	0.027	0.14	0.61	0.88	1.62	5.77	1.39	0.31	0.11	0.000	0.054	0.000
(WY)	(2000)	(2000)	(2000)	(2000)	(2002)	(2000)	(1999)	(1999)	(1999)	(1999)	(1999)	(1999)

03250322 ROCK LICK CREEK AT HIGHWAY 158 NEAR SHARKEY, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1997 - 2003	
ANNUAL TOTAL	2,154.78		3,628.42			
ANNUAL MEAN	5.90		9.94		5.69	
HIGHEST ANNUAL MEAN					9.94	2003
LOWEST ANNUAL MEAN					2.65	1999
HIGHEST DAILY MEAN	157	Apr 28	561	May 6	561	May 6, 2003
LOWEST DAILY MEAN	0.00	Jun 21	0.03	Oct 9	0.00	Sep 21, 1997
ANNUAL SEVEN-DAY MINIMUM	0.00	Jul 31	0.20	Jul 15	0.00	Sep 21, 1997
MAXIMUM PEAK FLOW			885	May 6	3,190	Jul 8, 2001
MAXIMUM PEAK STAGE			9.13	May 6	10.71	Mar 2, 1997
10 PERCENT EXCEEDS	13		18		11	
50 PERCENT EXCEEDS	1.6		2.8		1.3	
90 PERCENT EXCEEDS	0.00		0.31		0.00	

e Estimated



03250500 LICKING RIVER AT BLUE LICK SPRINGS, KY

LOCATION.--Lat 38°25'13", long 83°59'50", Nicholas County, Hydrologic Unit 05100101, at bridge on Highway 68 at Blue Lick Springs, 1.3 mi upstream from Indian Run, 10 mi upstream from Johnson Creek, 10 mi downstream from Fleming Creek and at mile 97.6.

DRAINAGE AREA.--1,785 mi^2

PERIOD OF RECORD.--April 1938 to September 1959 and October 2001 to current year.

GAGE.--Water-stage recorder with telemetry and crest-stage gage. Datum of gage is 560.99 ft above NGVD of 1929. Gage operated from April 1938 to September 1959 500 ft downstream at same datum.

REMARKS.--Records fair except for those estimated, which are poor. Flow regulated since December 1973 by Cave Run Lake (station 03249498).

COOPERATION.--National Streamflow Information Program.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 35,900 ft^3/s April 13, 1948, maximum stage 45.0 ft April 13, 1948 from flood mark.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of January 1937 reached a stage of 47.4 ft.

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

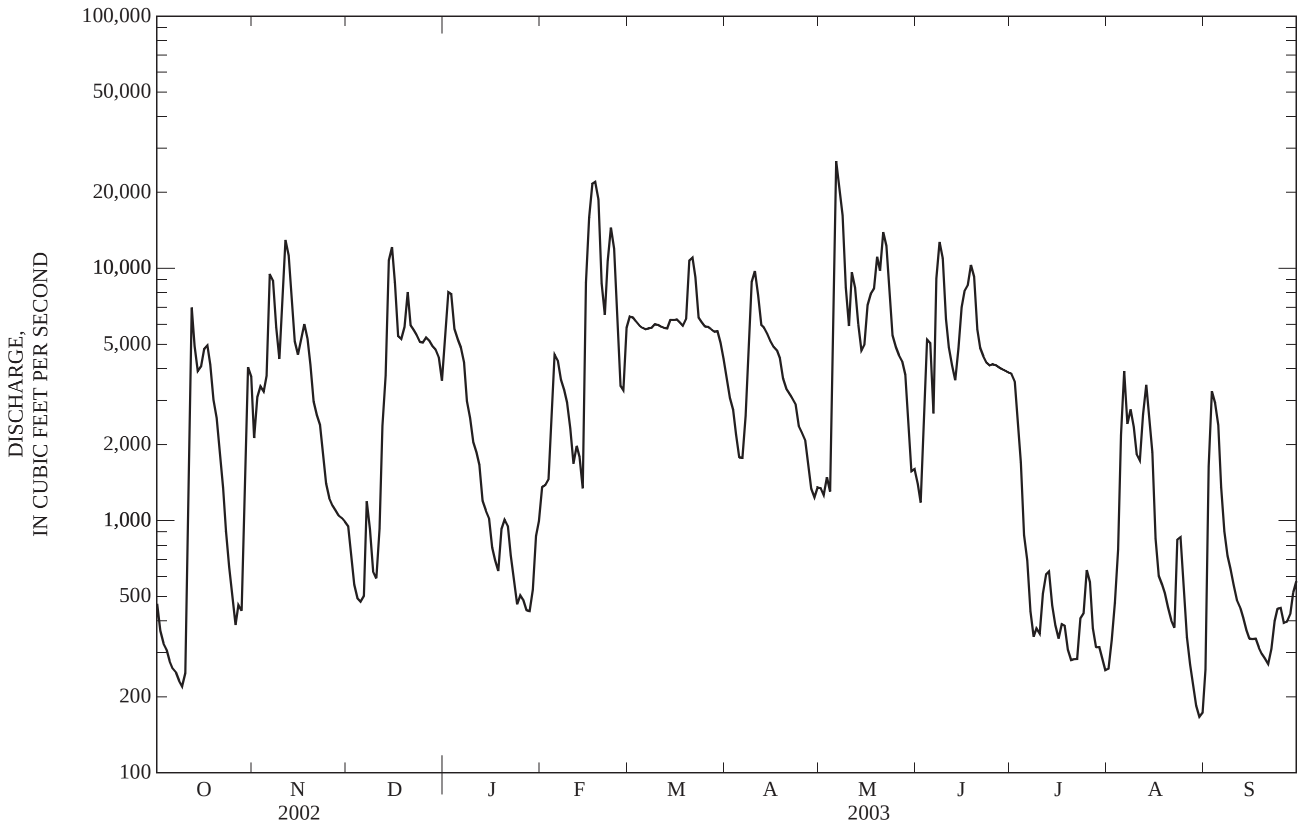
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	469	2,120	951	5,330	1,360	6,440	3,650	1,340	1,400	3,810	258	256
2	366	3,080	729	8,040	1,380	6,380	3,060	1,270	1,180	3,560	335	1,640
3	326	3,400	557	7,910	1,460	6,170	2,740	1,480	2,710	2,430	474	3,250
4	309	3,250	492	5,740	2,600	5,950	2,200	1,300	5,220	1,710	767	2,930
5	277	3,740	477	5,260	4,560	5,810	1,780	8,770	5,050	877	2,180	2,390
6	258	9,510	501	4,860	4,310	5,730	1,780	26,600	2,660	696	3,900	1,360
7	250	8,960	1,190	4,240	3,610	5,780	2,600	21,000	9,110	438	2,410	905
8	231	5,850	924	2,980	3,280	5,820	5,140	16,200	12,700	346	2,760	723
9	220	4,370	629	2,550	2,930	6,010	8,820	8,400	11,000	374	2,350	637
10	248	7,540	590	2,040	2,320	5,970	9,750	5,890	6,310	356	1,840	556
11	2,420	13,000	926	1,860	1,690	5,870	7,840	9,650	4,860	514	1,730	486
12	6,990	11,300	2,370	1,660	1,980	5,800	5,970	8,370	4,130	613	2,640	455
13	4,930	7,420	3,750	1,200	1,780	5,780	5,820	6,000	3,600	628	3,460	411
14	3,910	5,120	10,700	1,100	1,340	6,260	5,510	4,710	4,800	461	2,520	367
15	4,070	4,550	12,100	1,030	8,780	6,240	5,140	4,970	7,010	383	1,870	340
16	4,790	5,260	8,780	781	15,900	6,260	4,880	7,130	8,120	341	849	339
17	4,960	6,020	5,380	697	21,600	6,110	4,720	7,900	8,550	388	603	341
18	4,150	5,250	5,240	631	22,000	5,920	4,410	8,280	10,300	383	560	314
19	3,010	4,140	5,840	925	18,800	6,290	3,650	11,100	9,250	307	515	296
20	2,550	2,960	8,050	1,010	8,730	10,700	3,340	9,780	5,730	280	452	284
21	1,890	2,610	5,950	953	6,530	11,000	3,180	13,900	4,840	283	403	270
22	1,350	2,390	5,690	727	10,700	9,230	3,060	12,200	4,490	283	376	310
23	912	1,870	5,410	583	14,500	6,380	2,900	8,200	4,220	408	839	398
24	655	1,400	5,100	465	12,000	6,120	2,380	5,420	4,120	427	860	446
25	502	1,230	5,080	504	6,400	5,870	2,230	4,900	4,160	635	525	451
26	386	1,150	5,310	485	3,430	5,870	2,090	4,530	4,130	570	345	393
27	464	1,090	5,150	441	3,290	5,750	1,710	4,290	4,050	375	269	397
28	439	1,050	4,900	438	5,820	5,610	1,330	3,780	3,970	314	226	426
29	1,660	1,020	4,750	532	---	5,630	1,240	2,470	3,910	315	184	517
30	4,050	988	4,460	869	---	5,030	1,350	1,560	3,860	282	166	575
31	3,720	---	3,590	995	---	4,380	---	1,600	---	255	173	---
TOTAL	60,762	131,638	125,566	66,836	193,080	196,160	114,270	232,990	165,440	23,042	36,839	22,463
MEAN	1,960	4,388	4,051	2,156	6,896	6,328	3,809	7,516	5,515	743	1,188	749
MAX	6,990	13,000	12,100	8,040	22,000	11,000	9,750	26,600	12,700	3,810	3,900	3,250
MIN	220	988	477	438	1,340	4,380	1,240	1,270	1,180	255	166	256

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	218	1,002	2,309	3,779	5,358	5,415	3,911	2,455	1,584	1,280	603	433
MAX	1,960	4,388	7,695	12,110	14,010	12,270	11,340	7,516	7,300	5,954	2,390	4,959
(WY)	(2003)	(2003)	(1952)	(1950)	(1939)	(1955)	(1948)	(2003)	(1950)	(1938)	(1938)	(1950)
MIN	6.09	10.8	26.8	409	308	1,159	807	255	175	40.8	40.6	14.2
(WY)	(1954)	(1954)	(1954)	(1940)	(1954)	(1941)	(1941)	(1941)	(1949)	(1944)	(1957)	(1953)

03250500 LICKING RIVER AT BLUE LICK SPRINGS, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1938 - 2003	
ANNUAL TOTAL	1,053,852		1,369,086			
ANNUAL MEAN	2,887		3,751		2,330	
HIGHEST ANNUAL MEAN					4,083	1950
LOWEST ANNUAL MEAN					644	1954
HIGHEST DAILY MEAN	25,500	Mar 22	26,600	May 6	35,200	Apr 13, 1948
LOWEST DAILY MEAN	40	Aug 15	166	Aug 30	2.9	Sep 9, 1957
ANNUAL SEVEN-DAY MINIMUM	43	Aug 13	231	Aug 26	3.4	Sep 3, 1957
MAXIMUM PEAK FLOW			28,300	May 6	35,900	Apr 13, 1948
MAXIMUM PEAK STAGE			36.99	May 6	45.00	Apr 13, 1948
INSTANTANEOUS LOW FLOW			164	Aug 10	164	Aug 10, 2003
10 PERCENT EXCEEDS	6,850		8,460		6,640	
50 PERCENT EXCEEDS	951		2,710		718	
90 PERCENT EXCEEDS	89		362		46	



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^2

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

GAGE.--Water-stage recorder with telemetry. Datum of gage is 622.46 ft above NGVD of 1929.

REMARKS.--Records fair.

COOPERATION.--Kentucky Natural Resources and Environmental Protection Cabinet.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,900 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb 23	1100	*5,100	*19.59	May 7	1400	4,870	19.20

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

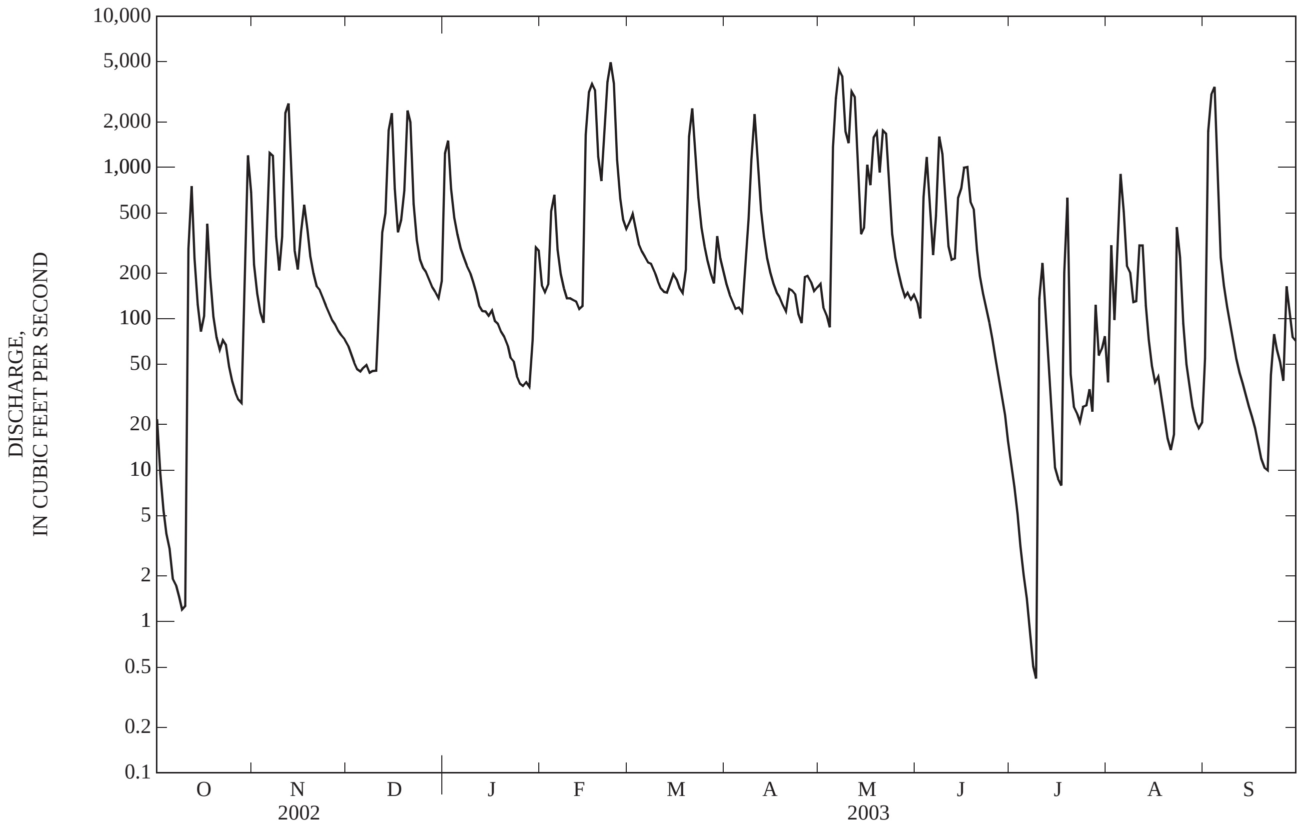
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	228	67	1,230	166	433	169	170	128	11	38	54
2	9.5	147	58	1,500	150	493	145	119	100	7.8	305	1,730
3	5.4	110	51	727	169	396	129	106	638	5.1	98	3,020
4	3.8	94	46	467	513	313	116	88	1,170	3.1	335	3,390
5	3.0	288	45	360	660	278	118	1,360	584	2.0	903	861
6	1.9	1,240	48	292	287	256	111	2,870	263	1.4	510	255
7	1.7	1,190	49	254	197	235	218	4,430	480	0.85	225	166
8	1.4	351	44	226	158	230	453	4,020	1,600	0.50	203	121
9	1.2	209	45	203	137	205	1,130	1,720	1,230	0.42	129	90
10	1.3	350	45	175	137	179	2,240	1,440	562	136	131	70
11	290	2,280	142	148	132	159	1,110	3,170	300	233	304	54
12	751	2,640	372	122	129	150	524	2,920	245	111	306	44
13	250	676	498	113	116	149	351	906	250	51	123	37
14	124	282	1,760	112	121	171	251	361	626	22	73	31
15	82	212	2,280	104	1,640	197	201	397	724	10	49	26
16	105	374	725	113	3,130	182	170	1,040	996	8.7	38	22
17	422	567	372	97	3,570	161	149	764	1,010	7.9	41	19
18	190	390	448	92	3,260	148	139	1,560	594	201	29	15
19	104	258	706	82	1,180	212	124	1,700	533	631	22	12
20	75	198	2,370	76	812	1,600	112	928	285	43	16	10
21	62	164	1,980	67	1,660	2,450	157	1,750	192	26	14	10
22	72	155	575	55	3,680	1,360	154	1,670	147	24	17	43
23	67	139	329	52	4,950	635	145	680	117	21	403	79
24	48	122	246	42	3,590	398	107	363	94	26	254	62
25	38	109	218	37	1,120	297	93	254	74	27	94	52
26	33	98	203	36	622	240	189	199	55	34	50	39
27	29	91	181	38	451	198	192	163	42	24	35	164
28	28	83	161	36	391	171	176	140	31	123	26	108
29	321	77	149	72	---	352	152	149	23	57	21	75
30	1,200	73	137	296	---	249	161	134	16	64	19	71
31	683	---	178	282	---	209	---	144	---	77	20	---
TOTAL	5,025.2	13,195	14,528	7,506	33,128	12,706	9,486	35,715	13,109	1,989.77	4,831	10,730
MEAN	162	440	469	242	1,183	410	316	1,152	437	64.2	156	358
MAX	1,200	2,640	2,370	1,500	4,950	2,450	2,240	4,430	1,600	631	903	3,390
MIN	1.2	73	44	36	116	148	93	88	16	0.42	14	10
CFSM	0.72	1.95	2.07	1.07	5.24	1.81	1.40	5.10	1.93	0.28	0.69	1.58
IN.	0.83	2.17	2.39	1.24	5.45	2.09	1.56	5.88	2.16	0.33	0.80	1.77

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1991 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	24.4	137	342	576	570	698	357	484	271	124	76.9	64.9
MAX	162	454	857	1,165	1,183	1,796	676	1,524	779	296	257	358
(WY)	(2003)	(1994)	(1997)	(1994)	(2003)	(1997)	(1994)	(1996)	(1998)	(1992)	(2001)	(2003)
MIN	0.014	0.008	15.0	152	213	228	73.2	18.9	1.34	0.20	0.25	0.057
(WY)	(2000)	(2000)	(2000)	(2000)	(2002)	(1998)	(1999)	(1999)	(1999)	(1999)	(2002)	(1999)

03251200 NORTH FORK LICKING RIVER NEAR MOUNT OLIVET, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1991 - 2003	
ANNUAL TOTAL	130,561.61		161,948.97			
ANNUAL MEAN	358		444		311	
HIGHEST ANNUAL MEAN					444	2003
LOWEST ANNUAL MEAN					175	1999
HIGHEST DAILY MEAN	6,430	Jan 25	4,950	Feb 23	12,400	Mar 2, 1997
LOWEST DAILY MEAN	0.00	Sep 3	0.42	Jul 9	0.00	Oct 10, 1997
ANNUAL SEVEN-DAY MINIMUM	0.00	Sep 3	1.9	Jul 3	0.00	Oct 17, 1997
MAXIMUM PEAK FLOW			5,100	Feb 23	13,500	Mar 2, 1997
MAXIMUM PEAK STAGE			19.59	Feb 23	34.71	Mar 2, 1997
INSTANTANEOUS LOW FLOW			0.36	Jul 9	0.36	Jul 9, 2003
ANNUAL RUNOFF (CFSM)	1.58		1.96		1.38	
ANNUAL RUNOFF (INCHES)	21.49		26.66		18.71	
10 PERCENT EXCEEDS	773		1,230		773	
50 PERCENT EXCEEDS	101		158		76	
90 PERCENT EXCEEDS	0.22		22		0.87	



03251500 LICKING RIVER AT MCKINNEYSBURG, KY

LOCATION.--Lat 38°35'52", long 84°16'00", Pendleton County, Hydrologic Unit 05100101, on right bank at downstream side of highway bridge at McKinneysburg, 6.5 mi southeast of Falmouth, 9.0 mi upstream from Blanket Creek, 12.9 mi upstream from South Fork, and at mile 64.6.

DRAINAGE AREA.--2,326 mi^2.

PERIOD OF RECORD.--July 1924 to August 1926, October 1938 to September 1994, September 2000 to current year. Monthly discharge only for October, November 1938, published in WSP 1305.

REVISED RECORDS.--WSP 1705: Drainage area.

GAGE.--Water-stage recorder with telemetry. Datum of gage is 520.83 ft above NGVD of 1929. July 23, 1924 to August 9, 1926, nonrecording gage at same site, datum unknown. Nov. 18, 1983 to June 30, 1939, nonrecording gage at present site an datum. Oct. 1, 1949 to Sept. 30, 1957, auxiliary water-stage recorder 4.0 mi downstream.

REMARKS.-- Records good except for those estimated, which are poor. Flow requlated since December 1973 by Cave Run Lake (station 03249498).

COOPERATION.--National Streamflow Information Program.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in January 1937 reached a stage of 47.8 ft from flood marks. Flood of March 1997 reached a stage of 55.21 feet from flood marks. Discharge for the March 1997 flood was 74,000 cfs from rating extension.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	543	3,220	1,150	8,860	1,630	6,970	4,190	1,680	1,700	3,630	371	255
2	422	2,760	1,050	9,520	2,380	7,370	3,480	1,540	1,440	3,570	623	3,820
3	364	3,430	789	9,820	2,620	6,960	3,120	1,760	3,990	2,820	895	6,730
4	335	3,430	666	7,210	3,260	6,510	2,600	1,540	6,260	1,920	902	6,370
5	334	3,580	623	5,930	4,780	6,270	2,150	9,120	6,500	1,320	2,880	4,850
6	291	10,700	598	5,380	5,110	6,120	1,960	28,600	4,000	874	4,290	2,320
7	265	11,100	873	4,850	4,050	6,070	2,620	27,400	6,120	764	3,430	1,370
8	250	7,930	1,270	3,730	3,580	6,030	4,610	22,800	13,700	437	3,030	1,020
9	235	5,030	943	3,060	3,260	6,200	9,590	14,200	14,100	414	2,800	823
10	240	5,870	740	2,460	2,740	6,190	12,200	9,130	8,770	1,310	2,200	713
11	4,330	16,100	1,200	2,090	1,980	6,040	10,800	12,400	5,750	1,750	2,090	600
12	6,840	15,100	2,860	1,910	1,970	5,930	7,350	13,000	5,010	964	2,850	517
13	6,910	10,900	4,130	1,580	2,010	5,880	6,450	8,670	4,070	870	3,510	477
14	4,150	6,180	11,600	1,340	1,680	6,230	5,990	5,580	4,730	723	2,910	422
15	4,150	4,960	14,600	1,260	9,950	6,520	5,490	5,360	7,400	537	2,170	378
16	4,280	5,730	12,400	1,140	17,800	6,460	5,100	7,940	9,650	489	1,310	348
17	5,430	6,700	6,930	1,010	23,000	6,350	4,900	8,920	9,670	430	700	346
18	4,870	6,340	6,340	1,090	24,600	6,110	4,880	10,900	10,600	472	553	337
19	3,650	4,990	7,160	1,900	22,300	6,080	4,020	12,300	10,600	1,220	503	315
20	2,840	3,690	14,700	2,190	14,000	11,800	3,620	12,100	7,340	636	445	298
21	2,210	3,010	9,290	e1,300	9,700	14,600	4,370	15,600	5,160	383	382	285
22	1,670	2,760	7,280	e940	17,100	12,500	3,490	14,900	4,640	353	339	569
23	1,270	2,280	6,070	e680	20,700	8,320	3,250	11,100	4,280	339	320	800
24	882	1,790	5,530	e580	17,800	6,830	2,740	6,610	4,060	887	1,360	622
25	680	1,500	5,310	e520	11,100	6,390	2,370	5,300	4,050	490	872	556
26	503	1,400	5,470	e510	5,380	6,190	3,020	4,790	4,030	832	493	515
27	458	1,330	5,450	e500	3,690	6,020	2,330	4,430	3,940	563	323	793
28	486	1,270	5,120	e540	5,480	5,810	1,820	4,140	3,830	584	250	1,040
29	2,360	1,230	4,900	e600	---	6,490	1,910	3,190	3,760	667	210	684
30	5,800	1,190	4,720	1,090	---	6,140	1,720	2,060	3,690	458	202	665
31	5,490	---	4,400	1,550	---	4,920	---	1,700	---	367	178	---
TOTAL	72,538	155,500	154,162	85,140	243,650	216,300	132,140	288,760	182,840	31,073	43,391	38,838
MEAN	2,340	5,183	4,973	2,746	8,702	6,977	4,405	9,315	6,095	1,002	1,400	1,295
MAX	6,910	16,100	14,700	9,820	24,600	14,600	12,200	28,600	14,100	3,630	4,290	6,730
MIN	235	1,190	598	500	1,630	4,920	1,720	1,540	1,440	339	178	255

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1974 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1,184	2,262	4,400	4,655	5,594	6,225	4,560	3,551	2,149	1,192	1,001	1,097
MAX	4,877	5,227	13,020	10,430	13,960	10,920	9,136	11,130	6,095	5,783	3,537	8,088
(WY)	(1976)	(1987)	(1979)	(1974)	(1989)	(1994)	(1975)	(1983)	(2003)	(1979)	(1979)	(1979)
MIN	121	228	859	275	1,382	1,006	465	293	100	164	69.9	144
(WY)	(1974)	(1988)	(1981)	(1981)	(2002)	(1983)	(1986)	(1976)	(1988)	(1984)	(1983)	(1987)

03251500 LICKING RIVER AT MCKINNEYSBURG, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1974 - 2003	
ANNUAL TOTAL	1,277,788		1,644,332			
ANNUAL MEAN	3,501		4,505		3,145	
HIGHEST ANNUAL MEAN					5,802	1979
LOWEST ANNUAL MEAN					1,528	1988
HIGHEST DAILY MEAN	33,200	Mar 21	28,600	May 6	43,100	Feb 16, 1989
LOWEST DAILY MEAN	44	Aug 17	178	Aug 31	44	Aug 17, 2002
ANNUAL SEVEN-DAY MINIMUM	48	Aug 15	273	Aug 26	48	Aug 15, 2002
MAXIMUM PEAK FLOW			30,100	May 6	59,100	Mar 10, 1964
MAXIMUM PEAK STAGE			32.35	May 6	50.26	Mar 10, 1964
INSTANTANEOUS LOW FLOW			190	Aug 31	190	Aug 31, 2003
10 PERCENT EXCEEDS	8,080		10,700		7,910	
50 PERCENT EXCEEDS	1,200		3,430		1,300	
90 PERCENT EXCEEDS	87		458		195	

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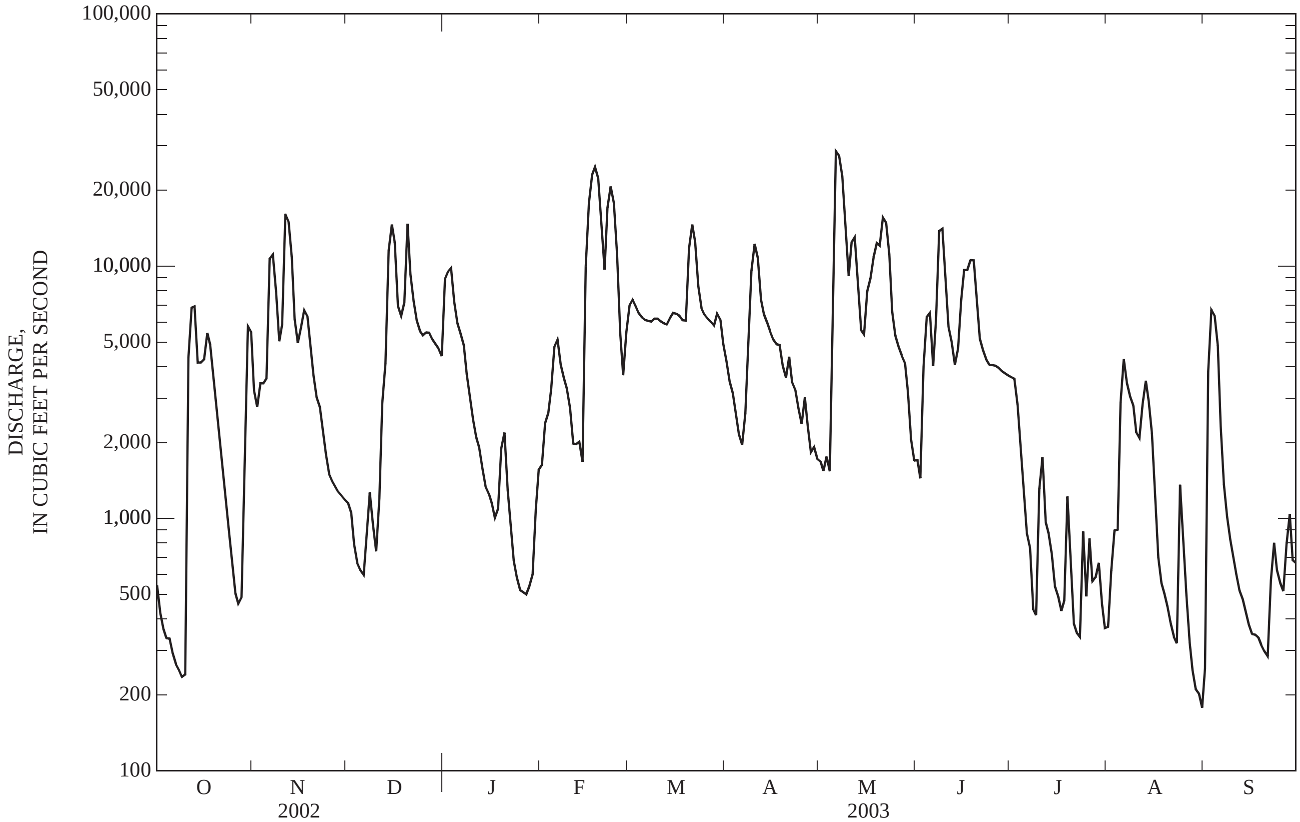


LICKING RIVER BASIN

03252300 HINKSTON CREEK NEAR CARLISLE, KY

LOCATION.--Lat 38°14'33", long 84°03'10", Bourbon County, Hydrologic Unit 05100102, at upstream side 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^2.

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

REVISED RECORDS.--WRD KY-93-1: Drainage area, WRD KY-99-1: Longitude.

GAGE.--Water-stage recorder with telemetry and crest-stage gage. Datum of gage is 764.88 ft above NGVD of 1929.

REMARKS.-- Records fair except for discharges below 10 ft^3/s and for those estimated, which are poor.

COOPERATION.--Kentucky Natural Resources and Enviromental Protection Cabinet.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb 17	0900	*4,340	*25.64	No other peak greater than base discharge.			

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	187	40	646	84	303	125	51	77	24	10	46
2	11	119	36	1,080	90	268	110	49	63	20	17	286
3	7.1	85	33	630	89	226	97	76	347	19	47	399
4	6.3	74	30	458	299	189	87	56	657	18	499	334
5	7.3	270	32	327	365	171	91	775	288	16	1,020	135
6	7.9	1,860	32	254	200	155	99	2,300	167	14	183	64
7	43	871	31	200	155	149	300	1,060	2,120	11	105	40
8	22	359	29	174	126	129	539	925	2,870	10	100	27
9	12	210	36	155	105	116	1,220	399	1,420	9.1	60	20
10	9.0	1,330	42	131	105	100	1,280	1,380	484	19	66	15
11	623	2,540	174	105	113	87	726	2,450	285	116	78	13
12	712	1,270	549	85	111	83	503	1,170	e224	77	42	9.4
13	200	466	495	73	99	84	328	398	e231	41	29	6.8
14	104	263	1,880	e66	95	206	232	238	180	29	22	5.0
15	64	185	1,390	e63	2,010	235	187	201	258	22	17	4.3
16	72	497	570	e59	3,540	171	157	737	238	17	44	3.4
17	198	527	346	e56	4,260	142	136	455	362	14	31	2.8
18	114	327	268	e52	3,210	124	146	712	440	14	20	2.4
19	69	217	237	e50	938	137	139	1,260	296	13	14	1.3
20	86	170	1,520	e47	614	2,160	104	630	187	9.6	10	0.92
21	117	138	766	e45	732	1,380	101	1,820	139	8.4	7.1	1.6
22	93	122	380	e43	1,520	668	94	1,140	104	8.0	6.3	6.7
23	63	105	252	e40	2,770	408	78	519	83	12	5.6	22
24	47	86	194	e37	1,490	286	67	317	67	28	5.1	46
25	37	74	279	e35	772	219	62	217	56	34	6.4	19
26	30	65	304	e33	536	183	61	171	48	23	5.2	8.7
27	26	61	232	e31	396	159	58	139	42	14	3.8	11
28	31	55	200	33	325	136	50	114	37	10	3.0	43
29	278	50	175	50	---	149	47	103	33	9.3	2.5	51
30	770	45	149	176	---	202	51	109	29	11	2.7	27
31	389	---	131	139	---	159	---	97	---	14	2.9	---
TOTAL	4,267.6	12,628	10,832	5,373	25,149	9,184	7,275	20,068	11,832	684.4	2,464.6	1,651.32
MEAN	138	421	349	173	898	296	242	647	394	22.1	79.5	55.0
MAX	770	2,540	1,880	1,080	4,260	2,160	1,280	2,450	2,870	116	1,020	399
MIN	6.3	45	29	31	84	83	47	49	29	8.0	2.5	0.92
CFSM	0.89	2.73	2.27	1.13	5.83	1.92	1.57	4.20	2.56	0.14	0.52	0.36
IN.	1.03	3.05	2.62	1.30	6.07	2.22	1.76	4.85	2.86	0.17	0.60	0.40

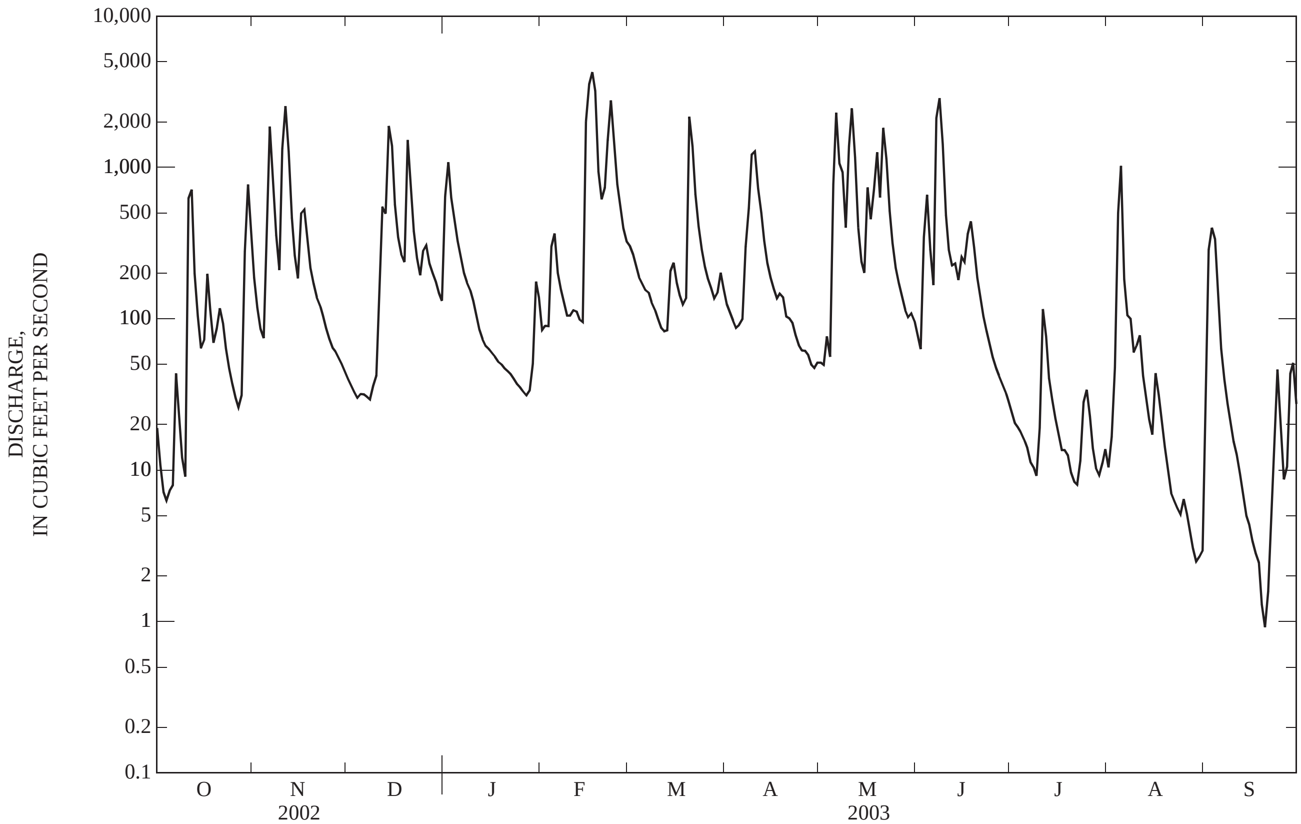
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	29.9	111	199	358	360	482	191	318	169	74.8	66.3	17.7
MAX	138	421	453	675	898	1,210	436	875	652	315	277	56.5
(WY)	(2003)	(2003)	(1997)	(1994)	(2003)	(1997)	(1994)	(1996)	(1997)	(2001)	(2001)	(1996)
MIN	1.33	3.10	9.99	35.3	79.7	240	40.4	17.7	14.5	8.92	3.80	0.70
(WY)	(1998)	(2000)	(2000)	(2000)	(2002)	(1998)	(1999)	(1999)	(1999)	(1999)	(2002)	(1999)

03252300 HINKSTON CREEK NEAR CARLISLE, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1992 - 2003	
ANNUAL TOTAL	84,096.05		111,408.92			
ANNUAL MEAN	230		305		198	
HIGHEST ANNUAL MEAN					305	2003
LOWEST ANNUAL MEAN					77.1	2000
HIGHEST DAILY MEAN	4,770	Mar 21	4,260	Feb 17	7,520	Mar 2, 1997
LOWEST DAILY MEAN	0.02	Aug 15	0.92	Sep 20	0.00	Aug 11, 1999
ANNUAL SEVEN-DAY MINIMUM	0.12	Aug 13	2.4	Sep 15	0.00	Aug 11, 1999
MAXIMUM PEAK FLOW			4,340	Feb 17	7,800	Mar 2, 1997
MAXIMUM PEAK STAGE			25.64	Feb 17	37.00	Mar 2, 1997
INSTANTANEOUS LOW FLOW			0.50	Sep 20	0.50	Sep 20, 2003
ANNUAL RUNOFF (CFSM)	1.50		1.98		1.28	
ANNUAL RUNOFF (INCHES)	20.31		26.91		17.44	
10 PERCENT EXCEEDS	511		771		460	
50 PERCENT EXCEEDS	53		104		51	
90 PERCENT EXCEEDS	3.3		10		2.8	

e Estimated



03253500 LICKING RIVER AT CATAWBA, KY

LOCATION.--Lat 38°42'31", long 84°18'38", Pendleton County, Hydrologic Unit 05100101, on left bank 1.0 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^2.

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 with telemetry. Datum of gage is 500.01 ft above NGVD of 1929 (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.--Records good except for those estimated, which are fair. Flow regulated since December 1973 by Cave Run Lake (station 03249498).

COOPERATION.--U.S. Army Corps of Engineers, Louisville District.

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

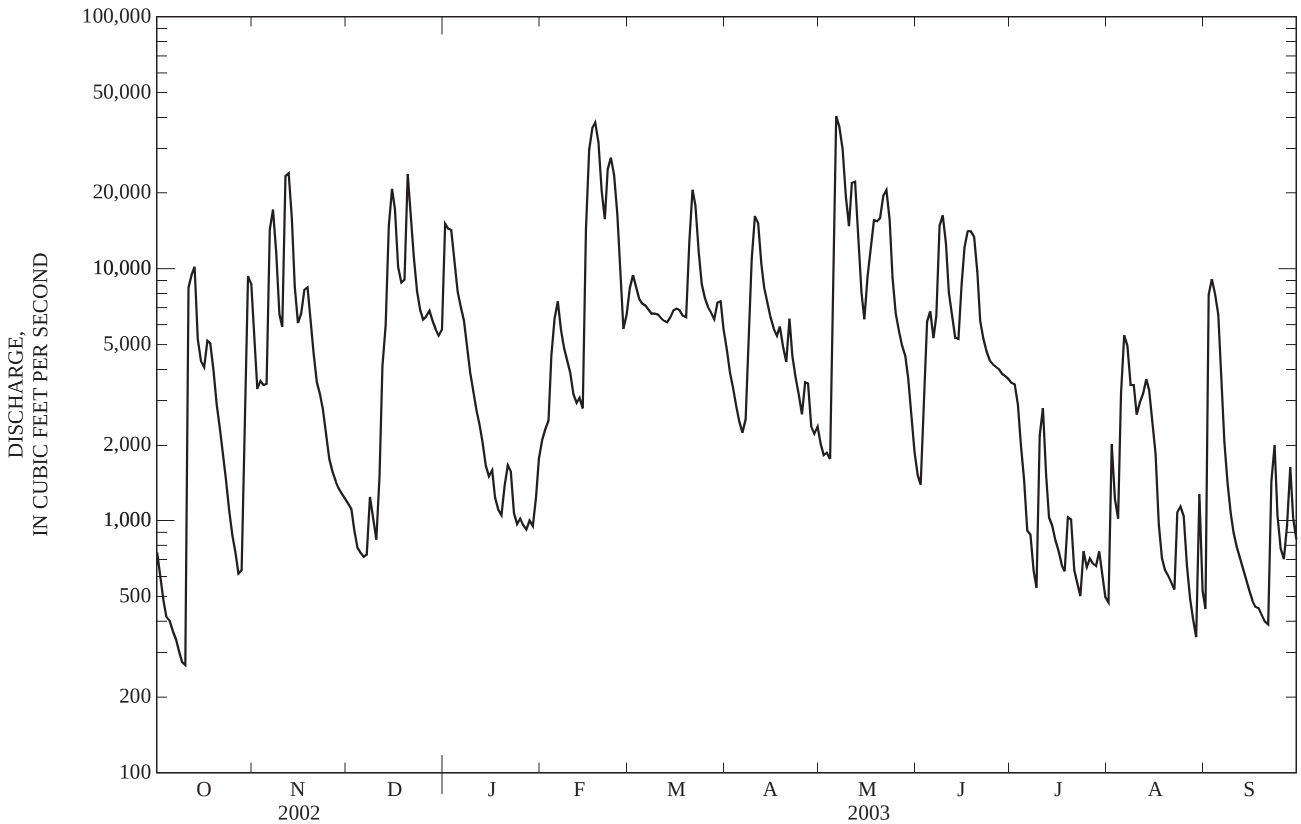
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	748	5,210	1,170	15,100	2,090	8,370	4,800	2,000	1,510	3,530	474	446
2	593	3,330	1,110	14,400	2,300	9,440	3,890	1,820	1,390	3,470	2,010	7,900
3	480	3,580	918	14,200	2,500	8,520	3,350	1,870	3,160	2,880	1,220	9,110
4	414	3,450	782	10,500	4,540	7,630	2,880	1,760	6,150	2,010	1,020	7,950
5	400	3,490	747	8,120	6,350	7,270	2,480	11,700	6,770	1,460	3,180	6,590
6	364	14,300	718	7,050	7,430	7,140	2,240	40,300	5,300	916	5,450	3,620
7	338	17,200	734	6,200	5,730	6,880	2,530	36,500	6,540	881	4,940	2,060
8	301	11,600	1,240	4,890	4,810	6,640	4,790	29,900	14,800	634	3,470	1,410
9	275	6,610	1,020	3,890	4,350	6,650	10,900	19,500	16,300	541	3,460	1,070
10	267	5,870	841	3,280	3,850	6,580	16,200	14,800	12,600	2,180	2,640	894
11	8,420	23,400	1,520	2,740	3,170	6,360	15,300	21,900	8,060	2,790	2,950	784
12	9,480	23,900	4,120	2,420	2,930	6,210	10,500	22,100	6,470	1,520	3,190	710
13	10,200	15,800	5,940	2,050	3,070	6,120	8,410	14,000	5,320	1,030	3,650	642
14	5,250	8,510	14,900	1,650	2,790	6,410	7,330	8,060	5,250	956	3,290	581
15	4,310	6,090	20,700	1,500	14,300	6,840	6,400	6,300	8,690	837	2,420	529
16	4,080	6,650	17,300	1,580	29,700	6,940	5,790	9,310	12,200	758	1,840	481
17	5,180	8,240	10,200	1,230	36,200	6,850	5,420	11,900	14,100	668	973	454
18	5,070	8,440	8,830	1,110	38,000	6,500	5,900	15,600	14,100	629	709	448
19	3,960	6,430	9,070	1,050	31,800	6,420	4,900	15,400	13,400	1,030	640	423
20	2,890	4,620	23,800	1,380	20,400	12,700	4,270	15,900	9,750	1,010	608	398
21	2,320	3,550	16,500	1,670	15,700	20,600	6,340	19,400	6,220	635	572	388
22	1,790	3,170	11,200	1,580	24,800	17,900	4,510	20,600	5,270	569	533	1,440
23	1,460	2,770	8,170	1,070	27,600	11,800	3,720	15,600	4,690	502	1,080	1,990
24	1,100	2,220	6,860	968	23,500	8,660	3,180	9,250	4,320	756	1,140	1,050
25	876	1,760	6,280	1,020	16,500	7,620	2,640	6,660	4,190	655	1,040	775
26	745	1,560	6,480	962	8,880	7,090	3,540	5,670	4,090	708	664	704
27	617	1,440	6,790	924	5,770	6,730	3,500	4,950	4,000	677	491	963
28	637	1,350	6,190	1,000	6,560	6,320	2,380	4,510	3,830	662	409	1,630
29	2,350	1,280	5,740	953	---	7,330	2,210	3,680	3,750	756	345	1,020
30	9,340	1,230	5,430	1,240	---	7,430	2,360	2,560	3,660	613	1,270	844
31	8,750	---	5,730	1,770	---	5,760	---	1,860	---	499	527	---
TOTAL	93,005	207,050	211,030	117,497	355,620	253,710	162,660	395,360	215,880	36,762	56,205	57,304
MEAN	3,000	6,902	6,807	3,790	12,700	8,184	5,422	12,750	7,196	1,186	1,813	1,910
MAX	10,200	23,900	23,800	15,100	38,000	20,600	16,200	40,300	16,300	3,530	5,450	9,110
MIN	267	1,230	718	924	2,090	5,760	2,210	1,760	1,390	499	345	388

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1974 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1,306	2,708	5,488	6,440	7,704	8,466	5,678	5,189	3,230	1,700	1,271	1,330
MAX	7,178	6,902	18,500	15,110	21,140	21,310	11,920	16,660	11,230	6,962	4,630	12,860
(WY)	(1976)	(2003)	(1979)	(1974)	(1989)	(1997)	(1975)	(1983)	(1997)	(1979)	(1974)	(1979)
MIN	79.8	107	1,008	420	1,950	1,247	666	342	101	86.0	68.4	51.5
(WY)	(2000)	(2000)	(2000)	(1981)	(2002)	(1983)	(1986)	(1999)	(1999)	(1999)	(1999)	(1999)

03253500 LICKING RIVER AT CATAWBA, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1974 - 2003	
ANNUAL TOTAL	1,728,142		2,162,083			
ANNUAL MEAN	4,735		5,924		4,193	
HIGHEST ANNUAL MEAN					7,730	1979
LOWEST ANNUAL MEAN					2,006	1977
HIGHEST DAILY MEAN	51,000	Mar 21	40,300	May 6	104,000	Mar 3, 1997
LOWEST DAILY MEAN	57	Aug 23	267	Oct 10	25	Jul 8, 1988
ANNUAL SEVEN-DAY MINIMUM	60	Aug 17	337	Oct 4	38	Jul 3, 1988
MAXIMUM PEAK FLOW			44,500	May 6	110,000	Mar 3, 1997
MAXIMUM PEAK STAGE			30.85	May 6	2,002.00	Mar 21, 2002
INSTANTANEOUS LOW FLOW			262	Oct 9	2.5	Aug 5, 1930
10 PERCENT EXCEEDS	11,900		15,000		10,600	
50 PERCENT EXCEEDS	1,440		3,680		1,650	
90 PERCENT EXCEEDS	86		639		230	



03254480 CRUISES CREEK AT HIGHWAY 17 NEAR PINER, KY

LOCATION.--Lat 38°50'40", long 84°31'56", Kenton County, Hydrologic Unit 05100101, at bridge on Highway 17, 0.6 mi downstream from Sawyers Fork, 0.9 mi north of Piner, and 7.8 mi upstream from the mouth.

DRAINAGE AREA.--18.0 mi^2.

WATER DISCHARGE RECORDS

PERIOD OF RECORD.--December 2000 to current year.

GAGE.--Water-stage recorder with telemetry. Datum of gage is 656.926 ft above NGVD of 1929.

REMARKS.--Records fair except for those estimated and those above 700 ft^3/s, which are poor.

COOPERATION.--Northern Kentucky Sanitation District No. 1.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.92	5.7	2.9	625	5.6	63	21	6.5	6.0	1.3	5.0	83
2	0.90	13	2.5	81	e7.0	85	17	6.1	4.7	1.1	83	674
3	2.5	24	2.5	45	13	48	15	5.5	18	0.99	27	74
4	3.0	24	2.1	32	121	43	13	4.7	10	0.85	224	41
5	6.7	67	2.4	29	22	85	37	443	6.9	0.73	63	17
6	2.5	39	2.8	37	15	53	14	72	5.1	0.67	24	11
7	2.7	9.8	2.3	32	12	36	33	37	5.5	0.68	96	8.6
8	3.2	6.4	2.5	27	9.8	29	21	25	70	1.0	e90	7.0
9	3.1	9.9	2.4	22	9.2	24	29	17	30	1.6	49	5.8
10	3.4	146	2.3	17	12	20	25	1,610	11	105	21	4.9
11	e10	89	41	14	12	18	20	185	8.8	18	80	4.3
12	5.7	15	37	9.3	9.6	18	16	54	14	5.0	62	3.9
13	4.1	9.2	79	9.3	8.9	29	13	29	8.9	2.7	22	3.8
14	3.5	6.8	78	8.5	11	28	11	21	22	1.8	16	3.8
15	3.0	6.6	44	6.8	212	23	10	23	14	21	75	4.5
16	3.0	9.5	24	6.6	53	20	9.4	15	8.7	40	37	3.9
17	3.1	6.9	111	6.4	30	16	12	56	6.7	5.2	17	3.3
18	3.2	5.3	62	5.5	20	14	12	55	5.8	3.0	12	2.8
19	4.7	4.8	719	5.7	18	33	8.6	31	5.5	14	9.0	3.0
20	5.2	4.0	185	5.6	20	39	34	54	12	3.6	8.2	8.0
21	5.0	4.1	60	4.8	104	57	188	60	4.8	5.2	5.8	3.0
22	4.7	6.6	36	4.1	758	41	42	29	3.6	4.4	3.7	145
23	5.0	4.5	20	3.8	150	27	20	21	3.3	2.6	5.0	31
24	5.3	4.0	17	3.2	53	22	16	15	2.6	2.0	6.7	8.6
25	22	3.7	20	3.9	34	18	14	12	2.3	1.5	3.4	5.3
26	31	3.4	11	4.0	29	23	11	19	2.2	1.1	2.0	3.9
27	12	3.3	11	3.7	25	17	9.0	9.8	3.6	0.90	3.3	183
28	10	2.9	10	4.0	24	16	8.2	8.4	2.5	7.6	5.3	24
29	106	2.9	9.6	8.5	---	61	8.3	11	1.8	4.7	2.4	11
30	21	3.0	41	8.7	---	e33	7.2	7.3	1.4	2.2	22	9.7
31	7.6	---	226	4.9	---	e24	---	7.2	---	30	8.0	---
TOTAL	304.02	540.3	1,866.3	1,078.3	1,798.1	1,063	694.7	2,949.5	301.7	290.42	1,087.8	1,392.1
MEAN	9.81	18.0	60.2	34.8	64.2	34.3	23.2	95.1	10.1	9.37	35.1	46.4
MAX	106	146	719	625	758	85	188	1,610	70	105	224	674
MIN	0.90	2.9	2.1	3.2	5.6	14	7.2	4.7	1.4	0.67	2.0	2.8

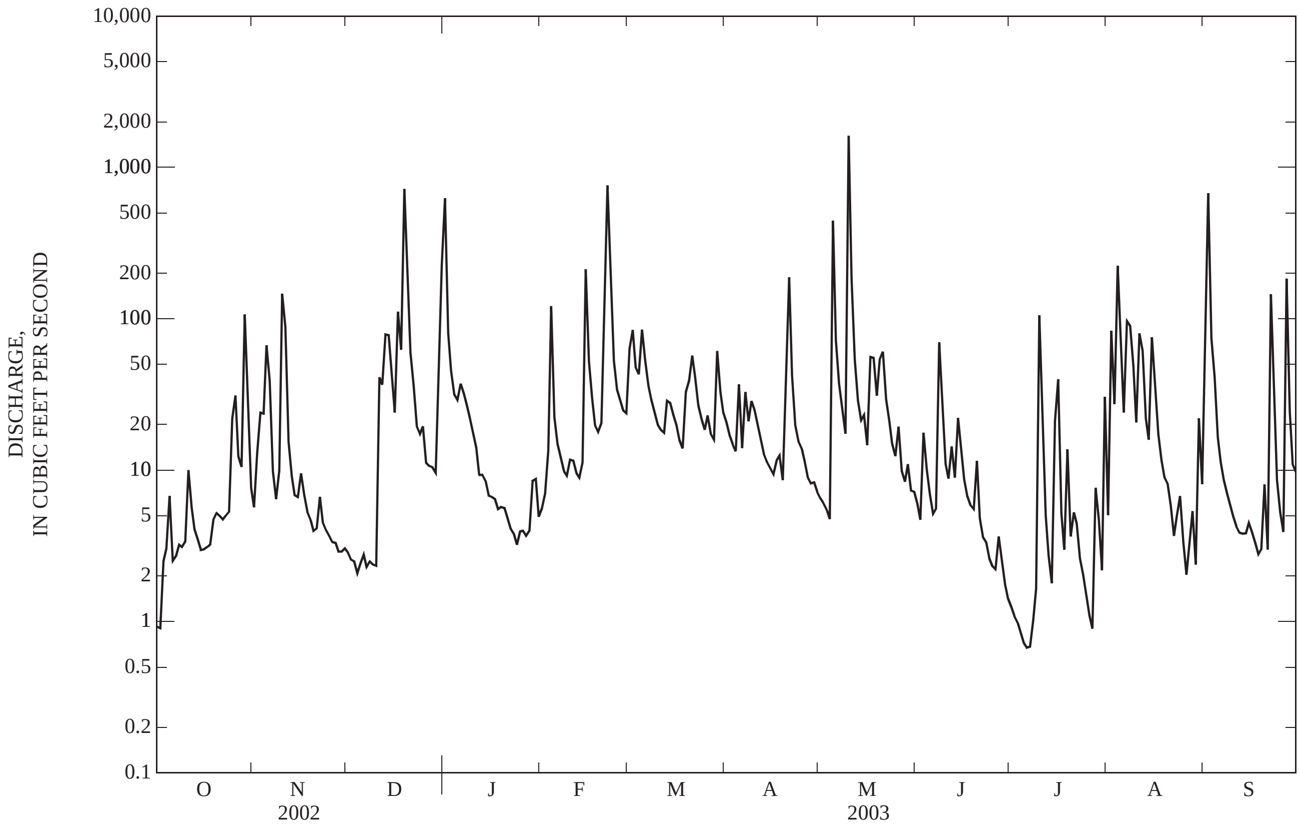
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2001 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	25.5	32.4	51.2	25.2	36.6	34.9	28.8	62.6	14.5	13.6	13.6	18.9
MAX	41.1	46.8	62.6	34.8	64.2	53.6	60.2	95.1	20.4	31.4	35.1	46.4
(WY)	(2002)	(2002)	(2002)	(2003)	(2003)	(2002)	(2002)	(2003)	(2002)	(2001)	(2003)	(2003)
MIN	9.81	18.0	30.7	11.3	21.7	16.8	2.89	3.83	10.1	0.018	0.000	3.32
(WY)	(2003)	(2003)	(2001)	(2001)	(2002)	(2001)	(2001)	(2001)	(2003)	(2002)	(2002)	(2001)

03254480 CRUISES CREEK AT HIGHWAY 17 NEAR PINER, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 2001 - 2003	
ANNUAL TOTAL	11,279.64		13,366.24			
ANNUAL MEAN	30.9		36.6		36.4	
HIGHEST ANNUAL MEAN					36.6	2003
LOWEST ANNUAL MEAN					36.1	2002
HIGHEST DAILY MEAN	719	Dec 19	1,610	May 10	1,610	May 10, 2003
LOWEST DAILY MEAN	0.00	Jul 8	0.67	Jul 6	0.00	Jul 8, 2002
ANNUAL SEVEN-DAY MINIMUM	0.00	Jul 16	0.86	Jul 2	0.00	Jul 16, 2002
MAXIMUM PEAK FLOW			9,110	May 10	9,110	May 10, 2003
MAXIMUM PEAK STAGE			11.62	May 10	11.62	May 10, 2003
INSTANTANEOUS LOW FLOW					0.00	Jul 8, 2002
10 PERCENT EXCEEDS	64		68		72	
50 PERCENT EXCEEDS	7.0		11		9.1	
90 PERCENT EXCEEDS	0.00		2.7		0.06	

e Estimated



03254480 CRUISES CREEK AT HIGHWAY 17 NEAR PINER, KY—Continued
WATER-QUALITY RECORDS

PERIOD OF RECORD.--December 2002 to September 2003.

COOPERATION.--Northern Kentucky Sanitation District No. 1.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: December 2000 to current year.
pH: December 2000 to current year.
WATER TEMPERATURES: December 2000 to current year.
DISSOLVED OXYGEN: December 2000 to current year.
TURBIDITY: December 2000 to current year.

INSTRUMENTATION.--Water-quality monitor with telemetry.

REMARKS.--
SPECIFIC CONDUCTANCE: Records good.
pH: Records good.
WATER TEMPERATURES: Records good.
DISSOLVED OXYGEN: Records good.
TURBIDITY: Records good.

EXTREMES FOR PERIOD OF RECORD.--
SPECIFIC CONDUCTANCE: Maximum recorded, 916 microsiemens, Feb. 25, 2001; minimum recorded, 104 microsiemens, May 10, 2003.
pH: Maximum recorded, 8.6 units, March 3, 2001, and March 12, 2003; minimum recorded, 7.1 units, Sept. 2, 2003.
WATER TEMPERATURE: Maximum recorded 27.3°C, Aug. 8, 2001; minimum recorded, 0.2°C, Jan. 11-19, 21-27, 29-31, and Feb. 5, 6, 8-17, 26, 2003.
DISSOLVED OXYGEN: Maximum recorded, 20.0 mg/L, March 10, 2003; minimum recorded, 1.2 mg/L, July 24, 2001.
TURBIDITY: Maximum recorded, greater than 1000 NTU, many days in 2001, 2002 and 2003; minimum recorded, 0.0 NTU, Nov. 30, Dec. 2, 2002, and Jan. 12-29, 31, Feb. 1, 2, 2003.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum recorded, 902 microsiemens, Dec. 11, 2002; minimum recorded, 104 microsiemens, May 10, 2003.
pH: Maximum recorded, 8.6 units, Mar. 12, 2003; minimum recorded, 7.1 units, Sept. 2, 2003.
WATER TEMPERATURES: Maximum recorded, 26.7°C, July 5, 2003; minimum recorded, 0.2°C, Jan. 11-19, 21-27, 29-31, and Feb. 5, 6, 8-17, 26, 2003.
DISSOLVED OXYGEN: Maximum recorded, 20.0 mg/L, March 10, 2003; minimum recorded, 3.5 mg/L, July 9, 2003.
TURBIDITY: Maximum recorded, greater than 1000 NTU, several days in 2003; minimum recorded, 0.0 NTU, Nov. 30, Dec. 2, 2002, and Jan. 12-29, 31, Feb. 1, 2, 2003.

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	360	332	344	521	494	507	538	519	531	301	133	224
2	366	341	353	531	510	519	540	520	533	385	301	345
3	390	350	369	533	526	530	545	524	537	418	381	399
4	450	386	413	541	531	537	559	541	551	442	415	430
5	534	449	515	545	365	491	569	533	556	477	438	447
6	548	524	534	444	360	397	558	532	548	531	446	480
7	554	528	541	494	444	472	583	545	567	469	455	461
8	545	527	533	525	494	508	580	547	563	481	464	475
9	565	520	552	544	512	525	581	554	569	484	475	480
10	521	423	464	543	189	381	614	557	572	480	467	475
11	475	390	424	408	249	357	902	405	505	480	461	468
12	498	475	491	481	408	446	478	407	447	520	480	498
13	507	497	502	503	481	494	505	346	447	542	520	531
14	504	497	500	516	503	512	436	345	384	523	512	519
15	498	483	490	523	515	519	443	433	438	544	515	533
16	487	464	473	524	516	519	460	442	449	556	540	552
17	464	451	456	528	523	526	506	261	419	573	542	556
18	452	440	445	531	526	529	435	296	382	559	540	549
19	449	431	438	535	529	532	459	117	343	558	540	552
20	442	422	434	536	530	534	335	183	285	567	543	557
21	427	411	419	540	523	534	363	334	350	547	533	542
22	428	403	418	536	524	531	390	352	365	555	535	546
23	423	406	415	538	530	535	418	390	410	563	537	554
24	427	413	421	533	521	529	434	416	427	587	559	575
25	436	313	399	531	524	528	452	414	428	586	571	578
26	400	370	389	578	528	542	458	416	439	585	567	578
27	401	362	382	540	529	535	510	458	486	587	574	582
28	362	347	354	541	529	534	501	491	496	584	571	579
29	374	260	328	540	528	534	498	493	495	694	529	585
30	455	349	410	536	520	529	521	391	465	557	502	533
31	494	454	477	---	---	---	413	205	336	562	542	554
MONTH	565	260	441	578	189	506	902	117	462	694	133	508

03254480 CRUISES CREEK AT HIGHWAY 17 NEAR PINER, KY—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	594	534	550	528	392	483	507	479	493	520	497	511
2	541	488	526	422	385	408	507	471	491	532	505	523
3	547	443	517	458	417	439	501	468	488	537	515	527
4	443	338	392	481	434	462	502	480	493	542	525	531
5	487	438	471	440	382	406	513	415	450	538	204	292
6	508	486	498	448	397	429	507	452	473	447	353	408
7	532	502	509	467	446	459	523	414	462	468	447	461
8	565	512	536	489	463	477	516	457	500	486	467	478
9	596	549	573	495	478	486	528	483	503	525	481	506
10	672	503	541	494	471	482	527	484	509	530	104	256
11	584	514	540	494	471	483	525	499	515	380	290	345
12	611	579	592	504	457	474	527	497	516	436	380	415
13	621	573	595	512	427	461	526	500	516	474	436	457
14	597	554	582	476	440	463	530	493	515	484	470	478
15	613	256	340	485	460	473	531	489	516	481	467	472
16	438	375	414	489	467	479	536	502	521	504	481	498
17	463	427	447	496	465	481	538	509	528	508	364	442
18	478	444	467	502	463	485	533	517	529	464	393	437
19	510	468	482	543	398	474	557	532	544	491	464	480
20	634	477	540	482	418	452	569	256	535	502	343	455
21	655	378	527	482	412	436	415	226	348	470	365	427
22	387	152	269	488	417	465	435	413	429	489	464	482
23	430	262	335	486	424	465	481	429	455	498	487	493
24	445	414	430	499	471	487	488	477	481	498	490	494
25	490	440	474	501	471	489	498	484	491	509	496	504
26	503	477	493	501	462	480	508	472	494	507	433	495
27	516	490	503	507	484	496	498	464	483	472	430	446
28	545	500	517	507	479	495	491	468	480	508	472	498
29	---	---	---	510	388	428	494	473	484	508	495	502
30	---	---	---	---	---	---	502	479	495	505	489	496
31	---	---	---	---	---	---	---	---	---	504	493	501
MONTH	672	152	488	543	382	465	569	226	491	542	104	462

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	514	498	508	470	404	441	407	323	378	471	260	451
2	513	498	506	435	413	424	412	270	337	361	180	297
3	510	466	483	449	413	431	405	349	379	441	361	399
4	494	472	483	441	415	428	419	176	340	442	416	424
5	509	494	504	457	407	434	390	309	366	479	428	460
6	521	507	515	459	404	441	431	377	398	488	479	484
7	526	513	521	468	409	452	445	226	398	500	488	495
8	531	265	446	478	442	464	337	287	318	508	499	505
9	464	335	411	488	472	481	393	291	356	512	507	509
10	488	462	477	481	216	382	440	393	425	514	511	512
11	516	487	504	420	297	368	455	290	403	522	513	517
12	517	500	508	416	395	404	367	312	346	528	519	522
13	521	509	516	452	413	436	441	367	400	528	522	523
14	533	430	496	473	452	463	463	441	457	528	523	525
15	486	426	457	608	295	474	467	295	394	532	524	527
16	514	486	502	425	297	371	417	325	379	535	523	530
17	538	514	529	455	406	431	438	417	430	542	529	536
18	549	538	544	487	455	473	475	438	461	538	529	535
19	564	530	556	488	399	445	490	475	484	541	525	537
20	546	526	540	449	438	442	498	488	494	555	536	543
21	526	507	512	499	448	469	502	495	499	555	450	494
22	531	514	524	537	499	522	510	501	504	450	214	345
23	534	529	531	539	522	532	512	507	509	455	342	391
24	531	523	528	530	520	524	526	512	516	462	389	415
25	525	514	520	537	530	534	533	526	529	522	455	502
26	518	500	511	551	536	543	529	504	520	539	515	531
27	505	490	498	554	534	546	506	465	494	538	207	350
28	496	487	492	544	478	516	484	398	427	488	380	435
29	497	474	488	860	484	524	427	414	422	514	486	503
30	484	452	473	519	507	513	427	286	377	529	453	499
31	---	---	---	521	233	373	458	426	443	---	---	---
MONTH	564	265	503	860	216	461	533	176	425	555	180	477
YEAR	902	104	474									

03254480 CRUISES CREEK AT HIGHWAY 17 NEAR PINER, KY—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	7.5	7.4	7.4	8.1	8.0	8.0	8.2	8.1	8.2	7.9	7.7	7.8
2	7.7	7.4	7.5	8.1	8.0	8.0	8.3	8.1	8.2	8.1	7.9	8.0
3	7.8	7.5	7.7	8.0	8.0	8.0	8.4	8.3	8.3	8.2	8.1	8.1
4	7.7	7.6	7.7	8.0	8.0	8.0	8.4	8.3	8.3	8.2	8.1	8.1
5	7.9	7.6	7.8	8.0	7.9	8.0	8.4	8.3	8.3	8.2	8.1	8.1
6	7.9	7.8	7.8	8.0	7.8	7.9	8.3	8.2	8.3	8.2	8.1	8.1
7	7.9	7.8	7.8	8.1	7.9	8.0	8.3	8.2	8.3	8.2	8.1	8.2
8	8.0	7.9	8.0	8.1	8.0	8.1	8.3	8.2	8.2	8.2	8.1	8.2
9	8.0	8.0	8.0	8.1	8.0	8.1	8.3	8.2	8.3	8.3	8.1	8.2
10	8.0	7.9	8.0	8.2	7.5	8.0	8.3	8.2	8.2	8.3	8.1	8.2
11	8.0	7.9	7.9	7.9	7.6	7.8	8.3	8.0	8.1	8.3	8.1	8.2
12	8.0	7.8	7.9	8.1	7.9	8.0	8.2	8.0	8.1	8.1	8.0	8.1
13	8.0	7.8	7.9	8.2	8.1	8.1	8.2	7.9	8.1	8.2	8.0	8.1
14	8.0	7.9	8.0	8.2	8.1	8.2	8.1	7.9	8.0	8.1	8.1	8.1
15	8.0	8.0	8.0	8.2	8.1	8.2	8.3	8.1	8.2	8.2	8.0	8.1
16	8.0	8.0	8.0	8.2	8.1	8.2	8.4	8.1	8.2	8.1	8.0	8.1
17	8.0	7.9	8.0	8.3	8.2	8.2	8.2	7.9	8.1	8.1	8.0	8.1
18	8.0	8.0	8.0	8.2	8.1	8.2	8.2	7.9	8.1	8.1	8.0	8.1
19	8.0	7.9	7.9	8.2	8.1	8.2	8.1	7.7	8.0	8.1	8.0	8.1
20	8.0	7.8	7.9	8.2	8.1	8.2	8.0	7.7	7.9	8.2	8.0	8.1
21	8.0	7.9	8.0	8.2	8.1	8.2	8.1	8.0	8.0	8.2	8.0	8.1
22	8.0	7.9	8.0	8.3	8.1	8.2	8.1	8.0	8.1	8.2	8.0	8.1
23	8.0	7.9	8.0	8.3	8.1	8.2	8.2	8.1	8.2	8.2	8.0	8.1
24	8.0	7.9	8.0	8.3	8.1	8.3	8.2	8.1	8.2	8.1	8.0	8.1
25	8.0	7.7	7.9	8.3	8.1	8.2	8.2	8.2	8.2	8.1	8.0	8.1
26	7.9	7.7	7.8	8.3	8.2	8.2	8.3	8.2	8.2	8.1	8.0	8.0
27	8.1	7.8	7.9	8.3	8.2	8.2	8.3	8.2	8.2	8.0	7.9	8.0
28	8.1	7.8	7.9	8.2	8.1	8.2	8.3	8.2	8.2	8.0	7.8	7.9
29	7.9	7.6	7.7	8.2	8.1	8.2	8.3	8.2	8.2	8.1	7.8	8.0
30	7.9	7.7	7.8	8.2	8.1	8.1	8.3	8.1	8.2	8.2	7.9	8.0
31	8.1	7.8	7.9	---	---	---	8.1	7.8	8.0	8.2	7.9	8.1
MONTH	8.1	7.4	7.9	8.3	7.5	8.1	8.4	7.7	8.2	8.3	7.7	8.1

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	8.2	7.9	8.0	8.0	7.7	7.9	8.3	7.9	8.1	8.2	7.8	8.0
2	8.2	7.9	8.1	7.8	7.7	7.7	8.3	7.8	8.1	8.1	7.9	8.0
3	8.1	7.9	8.0	7.9	7.7	7.8	8.3	7.8	8.0	8.1	7.9	8.0
4	7.9	7.7	7.8	8.0	7.7	7.8	8.2	7.8	8.0	8.2	8.0	8.1
5	8.1	7.8	7.9	7.8	7.6	7.7	8.0	7.8	7.9	8.1	7.7	7.8
6	8.1	7.9	8.0	8.0	7.6	7.8	8.3	7.7	8.0	8.1	7.8	7.9
7	8.2	8.0	8.1	8.0	7.7	7.9	8.1	7.7	8.0	8.1	7.9	8.0
8	8.2	8.0	8.1	8.0	7.7	7.9	8.2	7.8	8.0	8.2	7.9	8.1
9	8.2	8.0	8.1	8.1	7.7	7.9	8.1	7.8	8.0	8.2	8.0	8.1
10	8.2	8.0	8.1	8.2	7.8	8.0	8.3	7.9	8.1	8.3	7.4	7.7
11	8.2	8.0	8.1	8.4	8.1	8.3	8.2	7.9	8.1	8.0	7.7	7.9
12	8.2	8.0	8.1	8.6	7.6	8.3	8.3	7.9	8.1	8.1	8.0	8.1
13	8.2	8.0	8.1	8.1	7.9	8.0	8.2	7.9	8.0	8.2	8.0	8.1
14	8.1	7.8	7.9	8.3	7.8	8.0	8.2	7.8	8.0	8.2	8.1	8.1
15	7.9	7.5	7.7	8.3	7.9	8.1	8.2	7.8	8.0	8.1	8.0	8.1
16	7.9	7.7	7.8	8.3	7.9	8.1	8.2	7.8	8.0	8.2	8.0	8.1
17	8.0	7.8	7.9	8.4	7.9	8.1	8.1	7.7	7.9	8.1	7.9	8.0
18	8.1	7.8	8.0	8.4	7.9	8.1	8.2	7.9	8.1	8.1	7.9	8.0
19	8.1	7.9	8.0	8.2	7.8	8.0	8.4	7.9	8.1	8.3	8.0	8.1
20	8.1	7.9	8.0	8.3	7.8	8.0	8.2	7.6	8.0	8.1	7.9	8.0
21	8.0	7.6	7.8	8.0	7.8	7.9	8.0	7.6	7.8	8.2	7.9	8.1
22	7.6	7.4	7.5	8.3	7.8	8.1	8.2	7.9	8.1	8.2	8.0	8.1
23	7.8	7.5	7.7	8.3	7.8	8.1	8.3	8.0	8.1	8.2	8.0	8.1
24	7.9	7.7	7.8	8.3	7.9	8.1	8.3	8.1	8.2	8.3	8.1	8.2
25	7.9	7.8	7.9	8.3	7.9	8.1	8.2	8.0	8.1	8.2	8.1	8.2
26	8.0	7.8	7.9	8.3	7.9	8.1	8.4	8.0	8.2	8.3	8.1	8.2
27	8.0	7.8	7.9	8.3	7.9	8.1	8.4	8.0	8.2	8.2	7.9	8.1
28	8.0	7.8	7.9	8.3	7.9	8.1	8.4	8.0	8.2	8.2	8.0	8.1
29	---	---	---	8.0	7.8	7.9	8.2	7.8	8.0	8.2	8.0	8.1
30	---	---	---	---	---	---	8.2	7.8	8.0	8.2	8.0	8.1
31	---	---	---	---	---	---	---	---	---	8.2	8.0	8.1
MONTH	8.2	7.4	7.9	8.6	7.6	8.0	8.4	7.6	8.0	8.3	7.4	8.1

03254480 CRUISES CREEK AT HIGHWAY 17 NEAR PINER, KY—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS—CONTINUED
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	8.1	8.0	8.1	8.4	7.9	8.1	7.8	7.7	7.8	7.6	7.3	7.6
2	8.1	8.0	8.1	8.3	8.1	8.2	7.8	7.6	7.8	7.6	7.1	7.3
3	8.1	7.8	7.9	8.3	8.1	8.2	7.9	7.7	7.8	7.6	7.4	7.5
4	8.1	7.9	8.0	8.3	8.0	8.1	7.9	7.4	7.7	7.7	7.6	7.6
5	8.2	7.9	8.0	8.2	7.9	8.1	7.9	7.7	7.8	7.8	7.7	7.7
6	8.1	7.9	8.0	8.2	7.9	8.0	7.9	7.8	7.8	7.8	7.8	7.8
7	8.0	7.8	7.9	8.1	7.7	7.9	8.0	7.6	7.9	7.9	7.7	7.8
8	7.9	7.6	7.8	8.1	7.8	7.8	7.8	7.7	7.8	7.7	7.7	7.7
9	8.0	7.6	7.8	8.0	7.7	7.8	8.0	7.7	7.9	7.7	7.7	7.7
10	8.0	7.8	7.9	8.0	7.7	7.8	7.9	7.8	7.9	7.7	7.7	7.7
11	8.0	7.8	7.9	8.1	7.8	7.9	7.9	7.4	7.8	7.7	7.7	7.7
12	7.9	7.7	7.8	8.0	7.9	8.0	7.9	7.7	7.8	7.8	7.7	7.7
13	7.9	7.7	7.8	8.0	8.0	8.0	7.9	7.7	7.8	7.8	7.7	7.7
14	7.8	7.7	7.8	8.1	8.0	8.0	7.9	7.8	7.8	7.7	7.7	7.7
15	7.8	7.7	7.7	8.0	7.6	8.0	7.8	7.4	7.7	7.7	7.6	7.7
16	7.9	7.7	7.8	8.0	7.6	7.9	7.9	7.6	7.7	7.7	7.7	7.7
17	7.9	7.7	7.7	8.0	7.9	8.0	7.8	7.7	7.8	7.7	7.7	7.7
18	7.8	7.7	7.7	8.0	7.9	8.0	7.8	7.7	7.8	7.7	7.7	7.7
19	7.8	7.5	7.6	8.0	7.9	8.0	7.8	7.8	7.8	7.7	7.6	7.7
20	7.7	7.5	7.6	8.0	7.9	7.9	7.8	7.8	7.8	7.8	7.6	7.7
21	7.7	7.5	7.6	8.1	7.9	7.9	7.8	7.7	7.7	7.8	7.7	7.7
22	7.7	7.6	7.7	8.1	8.0	8.0	7.7	7.7	7.7	7.7	7.4	7.5
23	7.8	7.7	7.7	8.1	8.0	8.0	7.8	7.6	7.7	7.8	7.6	7.7
24	7.7	7.6	7.7	8.0	7.9	8.0	7.8	7.7	7.8	7.9	7.7	7.7
25	7.8	7.6	7.7	8.0	7.9	7.9	7.7	7.7	7.7	7.9	7.8	7.9
26	7.8	7.7	7.8	8.0	7.8	7.9	7.7	7.6	7.6	8.0	7.9	7.9
27	7.9	7.7	7.8	8.0	7.9	7.9	7.6	7.5	7.6	8.0	7.5	7.7
28	7.9	7.8	7.8	7.9	7.8	7.8	7.6	7.4	7.5	8.0	7.8	7.9
29	8.1	7.8	7.9	7.8	7.4	7.7	7.5	7.4	7.5	8.1	8.0	8.0
30	8.2	7.9	8.0	8.0	7.8	7.9	7.6	7.3	7.5	8.1	8.0	8.1
31	---	---	---	8.0	7.4	7.7	7.7	7.6	7.6	---	---	---
MONTH	8.2	7.5	7.8	8.4	7.4	7.9	8.0	7.3	7.7	8.1	7.1	7.7
YEAR	8.6	7.1	8.0									

03254480 CRUISES CREEK AT HIGHWAY 17 NEAR PINER, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	20.7	17.9	19.1	8.9	7.0	8.3	1.7	0.6	1.0	7.6	5.8	6.5
2	21.3	19.1	20.0	7.0	5.3	6.1	1.9	0.4	1.0	5.8	4.9	5.3
3	21.4	19.4	20.3	6.1	5.5	5.7	1.6	0.7	1.3	4.9	3.4	4.0
4	21.2	20.4	20.7	6.9	6.1	6.4	0.7	0.4	0.5	3.4	2.4	3.0
5	20.4	17.5	18.9	9.6	6.8	7.6	0.8	0.2	0.4	3.7	2.3	3.1
6	17.5	15.2	16.4	9.7	8.1	9.0	0.9	0.2	0.4	4.0	3.0	3.7
7	16.5	14.8	16.1	8.7	7.2	8.0	0.8	0.1	0.4	3.0	1.6	2.4
8	14.8	12.9	13.5	9.1	6.8	8.0	1.0	0.3	0.6	4.6	2.5	3.5
9	13.9	12.9	13.4	11.3	8.7	9.8	0.8	0.1	0.4	5.1	3.7	4.4
10	14.4	13.9	14.1	14.1	11.3	12.5	0.6	0.2	0.4	4.2	1.7	3.3
11	16.2	14.4	15.3	13.2	11.4	12.5	2.1	0.3	1.0	1.7	-0.2	0.4
12	17.6	16.1	16.7	11.4	8.9	9.8	4.2	2.1	3.8	0.2	-0.2	-0.1
13	17.4	14.6	16.3	8.9	7.6	8.4	5.5	4.0	4.5	0.3	-0.2	0.0
14	14.6	11.8	12.7	8.9	7.2	8.1	5.5	4.9	5.3	0.0	-0.2	-0.1
15	11.8	10.4	10.8	8.4	7.7	8.0	5.5	3.2	4.4	0.1	-0.2	-0.1
16	11.0	10.2	10.6	8.2	6.2	7.1	5.4	4.0	4.6	0.0	-0.2	-0.1
17	10.2	9.2	9.7	6.2	5.2	5.8	5.9	3.6	4.2	0.0	-0.2	-0.1
18	10.5	8.7	9.7	5.2	3.2	4.3	7.7	5.9	6.8	0.0	-0.2	-0.1
19	11.4	10.3	10.9	7.3	4.8	6.0	8.3	7.7	7.9	0.0	-0.2	-0.1
20	11.3	10.7	11.1	6.2	4.0	5.4	8.0	6.0	7.0	0.0	-0.1	-0.1
21	10.9	9.8	10.4	7.4	5.5	6.5	6.0	4.9	5.4	0.0	-0.2	-0.1
22	10.4	8.6	9.6	7.1	5.0	5.7	6.0	4.8	5.5	0.0	-0.2	-0.1
23	10.1	8.8	9.4	5.0	3.7	4.4	4.8	2.9	3.5	0.0	-0.2	-0.1
24	10.0	8.8	9.4	4.6	2.7	3.8	3.7	3.3	3.5	0.0	-0.2	-0.1
25	11.5	9.3	10	4.4	3.5	3.9	3.5	2.1	2.7	0.0	-0.2	-0.1
26	12.1	11.5	11.9	3.8	2.3	2.8	2.1	1.3	1.7	-0.1	-0.2	-0.1
27	12.6	11.6	12.0	2.7	1.7	2.2	1.9	0.9	1.4	-0.1	-0.2	-0.1
28	12.0	11.1	11.6	1.7	0.7	1.2	2.5	0.6	1.6	-0.1	-0.1	-0.1
29	11.6	10.1	10.7	2.4	0.5	1.4	3.1	1.3	2.3	0.0	-0.2	-0.1
30	10.1	8.7	9.2	3.0	1.7	2.7	7.1	1.9	3.8	0.2	-0.2	-0.1
31	9.4	8.4	8.9	---	---	---	7.6	6.7	7.2	0.2	-0.2	-0.1
MONTH	21.4	8.4	13.2	14.1	0.5	6.4	8.3	0.1	3.0	7.6	-0.2	1.2
	FEBRUARY			MARCH			APRIL			MAY		
1	0.0	-0.1	-0.1	4.8	3.3	4.0	13.8	7.4	10.3	21.5	16.8	19.1
2	0.5	-0.1	0.1	4.6	3.2	4.1	17.3	11.5	14.2	20.5	17.6	18.9
3	2.3	-0.1	0.4	3.4	0.5	2.2	18.8	13.3	16.0	18.8	15.5	16.9
4	3.5	1.3	2.7	5.5	1.2	3.2	18.2	15.5	16.7	15.5	12.9	14.2
5	1.6	-0.2	0.4	6.6	4.7	5.7	17.0	9.4	12.8	15.6	12.4	13.9
6	0.3	-0.2	0.0	4.7	2.8	3.6	9.4	7.5	8.1	17.7	14.4	15.7
7	1.1	-0.1	0.4	4.4	1.6	2.9	10.5	7.4	8.7	17.3	15.7	16.4
8	0.3	-0.2	-0.1	7.6	2.0	4.7	10.4	8.8	9.6	19.4	15.5	17.3
9	0.6	-0.2	0.1	7.6	4.5	6.4	9.5	6.9	7.8	19.9	17.8	18.8
10	0.3	-0.2	0.0	4.5	1.5	3.1	10.0	6.2	7.9	19.1	15.6	16.8
11	0.0	-0.2	-0.2	5.9	1.7	3.7	13.4	7.0	10.0	17.7	15.4	16.3
12	0.3	-0.2	-0.1	5.8	4.1	4.8	15.0	8.9	11.9	15.6	13.3	14.6
13	0.2	-0.2	-0.1	5.9	4.7	5.3	15.6	9.5	12.5	16.9	12.4	14.7
14	-0.1	-0.2	-0.1	7.4	3.2	5.3	17.0	9.6	13.3	16.8	13.7	15.2
15	2.6	-0.2	1.5	9.0	5.4	7.0	19.1	12.3	15.6	17.3	15.0	16.2
16	1.8	-0.2	0.2	11.5	6.9	9.2	20.0	14.4	17.3	18.3	14.9	16.6
17	0.4	-0.2	0.0	12.7	9.1	10.8	18.6	14.8	16.2	17.8	15.4	16.3
18	1.0	0.1	0.5	14.1	10.7	12.3	15.0	13.6	14.3	16.8	15.0	15.7
19	1.4	0.8	1.1	14.4	10.7	12.9	18.8	12.1	15.2	18.6	16.1	17.2
20	3.8	0.9	2.1	13.1	9.1	11.2	18.5	14.7	17.0	18.3	15.4	17.3
21	3.5	2.8	3.1	12.6	9.0	10.5	14.7	12.6	13.5	16.7	13.9	15.2
22	3.7	1.6	3.0	11.5	6.8	9.2	13.0	10.7	11.6	16.9	13.8	15.4
23	3.4	1.9	2.7	11.9	7.9	10	13.7	7.7	10.7	16.4	13.8	15.3
24	2.7	1.0	1.9	13.6	8.2	10.9	12.2	9.5	11.0	16.4	13.0	14.8
25	2.1	-0.1	0.9	14.9	10.2	12.6	12.5	11.1	11.8	15.5	14.1	14.6
26	1.1	-0.2	0.4	14.9	11.5	13.0	16.4	11.4	13.5	15.6	13.2	14.3
27	2.6	0.5	1.5	13.8	9.1	11.6	17.1	10.9	14.1	17.8	14.7	16.1
28	4.0	2.2	3.0	16.4	11.5	13.8	18.3	11.6	15.1	17.2	14.7	16.1
29	---	---	---	14.9	8.2	10.1	20.3	16.1	18.0	17.7	15.2	16.3
30	---	---	---	---	---	---	19.6	16.6	18.1	17.0	15.0	16.1
31	---	---	---	---	---	---	---	---	---	16.7	15.8	16.2
MONTH	4.0	-0.2	0.9	16.4	0.5	7.7	20.3	6.2	13.1	21.5	12.4	16.1

03254480 CRUISES CREEK AT HIGHWAY 17 NEAR PINER, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	16.8	13.8	15.3	24.5	21.7	23.1	23.9	20.4	22.0	23.3	21.1	21.9
2	16.2	13.4	15.1	24.7	21.9	23.4	23.3	20.0	21.7	21.5	20.5	21.1
3	15.8	14.1	14.8	25.6	21.9	23.8	22.3	20.4	21.4	21.4	20.7	21.0
4	15.3	14.3	14.8	26.2	22.6	24.4	21.8	19.3	20.3	21.4	19.9	20.7
5	17.9	13.6	15.7	26.7	22.8	24.6	21.1	18.7	19.8	20.3	17.9	19.0
6	18.8	14.8	16.9	25.9	23.4	24.6	21.3	19.4	20.5	18.9	16.4	17.8
7	19.4	17.3	18.3	26.4	23.4	24.8	22.0	20.0	20.9	18.4	16.4	17.6
8	19.3	15.9	17.9	26.6	24.3	25.2	22.1	20.0	21.1	19.6	17.3	18.4
9	18.0	14.6	16.3	26.5	23.8	24.9	21.6	19.6	20.7	20.4	17.9	19.3
10	19.1	16.0	17.7	24.8	21.7	23.3	21.8	20.1	21.0	21.0	18.6	19.9
11	20.4	18.0	19.1	22.7	20.7	21.7	21.1	20.2	20.6	20.8	19.0	20.0
12	20.1	18.9	19.5	23.1	20.2	21.7	21.8	19.1	20.5	20.2	18.0	19.1
13	21.5	18.8	20.0	23.2	20.3	21.8	22.7	20.3	21.5	20.7	18.6	19.6
14	21.3	20.0	20.7	24.1	21.2	22.6	24.5	21.6	23.0	20.1	19.0	19.6
15	20.6	19.9	20.3	23.4	21.4	22.5	23.9	22.6	23.0	20.6	19.3	19.9
16	22.1	19.7	20.8	23.8	21.0	22.2	24.0	21.7	22.8	19.4	16.9	18.3
17	23.1	20.7	21.9	23.6	20.7	22.3	24.4	22.5	23.4	18.6	16.5	17.7
18	23.0	20.7	22.0	23.9	21.5	22.7	23.5	20.8	22.3	18.4	16.5	17.6
19	22.5	20.0	21.2	23.6	21.1	22.4	22.7	20.0	21.6	18.3	17.2	17.7
20	20.3	17.4	19.0	23.7	20.3	22.0	23.5	20.5	22.1	17.2	15.5	16.5
21	20.2	16.5	18.5	23.5	21.7	22.6	25.0	22.4	23.7	17.4	14.3	15.8
22	21.3	17.3	19.4	23.7	21.9	22.8	24.5	22.9	23.7	18.4	17.0	17.6
23	22.2	18.4	20.4	23.0	21.4	22.0	23.7	21.7	22.7	17.9	16.4	17.1
24	23.1	19.5	21.3	22.7	20.2	21.5	23.1	20.8	22.1	17.0	14.5	16.0
25	24.1	20.4	22.2	23.3	20.4	21.9	23.8	20.7	22.2	17.6	16.0	16.7
26	24.6	22.0	23.3	24.0	20.8	22.4	25.1	21.7	23.2	16.6	14.0	15.2
27	23.7	21.8	22.8	25.5	21.8	23.6	25.1	22.9	23.9	17.5	16.1	16.8
28	22.8	20.0	21.6	24.4	22.7	23.3	24.9	22.1	23.5	16.7	13.8	15.1
29	23.8	20.3	22.0	23.3	21.1	22.2	25.7	23.3	24.5	13.8	12.3	13.0
30	24.2	20.8	22.5	23.3	20.3	21.9	24.5	21.4	22.4	13.0	10.3	11.8
31	---	---	---	22.7	20.0	21.3	22.3	21.0	21.5	---	---	---
MONTH	24.6	13.4	19.4	26.7	20.0	22.9	25.7	18.7	22.1	23.3	10.3	17.9
YEAR	26.7	-0.2	12.1									

03254480 CRUISES CREEK AT HIGHWAY 17 NEAR PINER, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	---	---	---	11.0	9.8	10.3	17.4	14.7	15.9	11.2	9.9	10.4
2	6.3	5.9	6.1	11.0	10.2	10.6	17.5	15.8	16.6	10.6	10.2	10.4
3	6.9	5.1	6.0	10.8	10.3	10.5	17.3	15.0	16.0	12.4	10.4	11.4
4	6.5	5.6	6.1	10.4	9.7	10	17.3	15.7	16.3	13.0	12.0	12.5
5	7.3	5.4	6.6	9.9	9.2	9.5	17.7	15.1	16.0	12.8	12.0	12.4
6	7.6	6.5	7.0	9.6	8.7	9.1	17.4	14.8	16.1	12.6	11.8	12.2
7	7.6	6.7	7.1	10.3	9.0	9.6	17.8	15.6	16.5	13.4	12.3	12.8
8	8.7	7.4	7.9	10.2	9.0	9.5	17.4	15.2	16.3	12.9	11.5	12.3
9	8.8	8.2	8.5	9.8	8.2	8.9	17.4	15.3	16.1	12.4	11.3	11.8
10	8.7	7.6	8.0	9.5	7.6	8.4	17.1	15.0	16.0	13.2	11.5	12.3
11	8.1	7.1	7.7	8.3	7.6	8.0	16.4	12.3	13.6	14.6	12.6	13.7
12	7.9	6.7	7.2	10.4	7.9	9.1	12.4	11.6	12.0	15.0	13.9	14.3
13	7.9	6.3	7.1	11.0	9.6	10.3	12.1	10.9	11.5	14.9	13.8	14.2
14	9.0	7.5	8.1	11.5	10.0	10.6	11.8	10.9	11.2	14.5	13.6	13.9
15	8.9	8.4	8.7	10.7	10.0	10.3	13.0	10.9	11.9	15.2	13.8	14.4
16	9.2	8.3	8.7	11.3	10.2	10.7	13.4	10.8	11.9	14.8	13.7	14.2
17	10.0	8.8	9.3	12.6	10.7	11.5	12.1	10.9	11.4	14.8	13.5	14.0
18	10.0	9.4	9.8	13.4	11.4	12.3	11.4	9.9	10.8	15.2	13.7	14.3
19	9.8	8.1	8.9	12.6	11.4	12.0	10.9	9.8	10.2	14.8	13.4	14.1
20	9.4	7.6	8.4	13.2	11.1	12.1	10.7	10.2	10.4	15.2	13.4	14.2
21	9.6	8.9	9.2	13.2	11.0	11.9	11.2	10.5	10.9	15.7	13.6	14.6
22	9.2	8.7	9.0	13.5	10.8	12.0	11.0	10.7	10.9	15.9	13.8	14.9
23	9.2	8.8	9.1	14.8	11.6	13.1	12.3	10.9	11.7	15.4	13.9	14.7
24	9.5	8.9	9.2	15.4	12.4	13.7	11.9	11.2	11.6	16.0	14.3	15.1
25	9.4	8.2	8.8	15.0	12.2	13.6	12.2	11.1	11.7	16.2	14.2	15.3
26	8.4	7.8	8.0	15.3	12.9	14.0	13.0	12.0	12.4	15.9	13.9	14.4
27	9.4	7.8	8.5	17.0	13.5	15.1	13.0	12.5	12.7	14.9	13.5	14.1
28	9.8	7.9	8.7	17.3	14.5	15.8	12.9	12.0	12.6	14.8	13.6	14.2
29	9.5	7.8	8.5	16.8	14.8	15.8	12.5	11.8	12.2	16.3	13.2	14.4
30	9.5	8.6	9.1	16.2	13.8	14.9	11.8	9.8	11.2	16.6	13.4	14.8
31	10.8	9.1	9.7	---	---	---	10.4	9.7	9.9	16.8	13.5	15.0
MONTH	10.8	5.1	8.2	17.3	7.6	11.4	17.8	9.7	13.0	16.8	9.9	13.6

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	16.1	13.3	14.5	13.5	11.5	12.1	12.8	7.9	10.3	10.1	6.4	8.0
2	16.4	13.2	14.5	12.6	11.5	11.9	12.5	7.1	9.3	8.2	5.3	6.9
3	15.0	12.0	13.6	15.3	11.7	13.1	11.8	6.5	8.7	8.5	5.4	6.8
4	12.6	11.6	12.1	15.7	10.3	12.8	10.8	6.2	8.1	9.6	6.6	8.0
5	14.7	12.4	13.6	11.8	10.2	10.5	9.7	6.6	8.3	8.9	7.8	8.4
6	15.1	13.4	14.0	13.9	10.5	11.8	13.0	8.8	10.6	8.2	7.1	7.9
7	15.5	13.1	14.1	16.8	10.6	12.4	10.5	8.8	9.8	8.8	7.2	7.9
8	15.9	13.7	14.6	18.1	8.9	12.4	12.7	8.6	10.2	9.5	7.2	8.3
9	16.1	13.4	14.5	18.4	8.5	11.3	11.8	9.0	10.2	8.6	6.7	7.4
10	15.6	13.2	14.2	20.0	10.1	13.9	13.4	9.8	11.2	9.1	6.7	8.4
11	15.6	13.3	14.2	15.7	12.0	13.5	12.8	9.0	10.6	8.8	7.3	8.3
12	16.5	13.3	14.7	15.5	11.3	12.8	12.9	8.4	10.2	9.4	7.7	8.6
13	16.6	13.9	15.0	12.9	10.7	11.6	13.1	8.1	10.2	9.1	7.8	8.5
14	16.1	13.5	14.5	15.3	10.9	12.6	12.5	8.2	10	9.4	7.2	8.2
15	13.5	12.9	13.1	15.2	10.2	12.1	11.5	7.4	9.0	8.6	7.0	7.8
16	14.8	13.1	14.0	15.0	9.4	11.8	10.8	6.5	8.3	9.5	6.9	8.1
17	15.4	13.8	14.4	15.5	8.6	11.3	8.6	5.9	7.1	9.0	6.7	7.9
18	15.8	13.6	14.5	14.9	8.1	10.8	10.5	7.1	8.4	9.3	7.5	8.4
19	15.7	13.3	14.3	11.9	7.4	9.2	12.0	7.2	9.2	9.3	7.5	8.2
20	15.7	12.6	14.1	12.0	8.2	9.9	9.9	5.9	7.8	8.4	7.3	7.8
21	13.7	11.8	12.4	10.0	8.1	9.1	9.0	8.3	8.8	9.2	8.0	8.6
22	13.2	11.7	12.4	12.6	8.8	10.2	10.2	8.2	9.2	9.5	7.8	8.6
23	13.3	12.4	12.8	13.3	8.7	10.5	11.4	8.7	9.9	9.6	7.7	8.5
24	13.9	12.4	13.1	13.3	8.3	10.4	11.8	8.4	9.8	10.0	7.8	8.7
25	14.7	12.7	13.7	13.2	7.9	9.9	11.1	8.3	9.3	9.2	7.6	8.3
26	14.7	13.1	13.8	12.5	7.6	9.5	12.4	8.1	9.8	10.0	7.7	8.5
27	14.3	12.4	13.4	13.0	7.8	9.9	12.7	7.8	9.8	9.7	7.1	8.1
28	14.1	11.8	12.7	12.6	7.3	9.4	12.7	7.8	9.8	9.7	6.9	8.1
29	---	---	---	10.0	7.0	9.0	11.1	6.7	8.6	9.4	6.8	7.9
30	---	---	---	---	---	---	10.2	6.3	8.1	9.8	6.6	8.0
31	---	---	---	---	---	---	---	---	---	8.3	6.6	7.5
MONTH	16.6	11.6	13.8	20.0	7.0	11.2	13.4	5.9	9.4	10.1	5.3	8.1

03254480 CRUISES CREEK AT HIGHWAY 17 NEAR PINER, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	10.4	7.0	8.5	10.2	7.5	8.9	6.8	6.1	6.4	7.4	5.9	6.2
2	10.1	7.3	8.6	9.5	7.0	8.3	7.4	5.8	6.5	8.0	6.7	7.1
3	8.8	7.0	7.5	8.8	6.2	7.5	6.6	5.9	6.2	7.1	6.7	6.9
4	8.7	7.0	7.7	9.4	5.9	7.1	7.8	6.0	6.6	7.3	6.7	7.1
5	9.7	7.2	8.3	8.4	4.9	6.4	6.8	5.7	6.4	8.2	6.8	7.7
6	9.2	6.8	7.9	8.3	4.3	6.0	6.2	5.5	5.8	8.6	7.6	8.1
7	8.3	6.0	7.1	8.4	4.1	5.6	7.0	5.4	5.8	8.6	7.6	8.1
8	8.2	6.3	7.1	8.0	4.0	5.2	6.6	6.1	6.4	8.6	7.5	8.0
9	8.6	7.1	8.0	6.2	3.5	4.8	6.2	5.3	6.0	8.5	7.1	7.8
10	9.0	7.2	8.0	7.0	4.0	5.3	6.0	5.3	5.5	8.3	6.9	7.6
11	8.9	6.8	7.7	6.2	5.2	6.0	6.6	5.2	5.8	8.6	6.7	7.6
12	7.4	6.6	7.0	6.1	4.9	5.5	6.7	5.8	6.3	9.0	6.9	7.8
13	7.7	6.5	7.0	6.4	4.9	5.6	6.4	5.5	5.9	8.9	7.0	7.9
14	7.6	6.3	6.9	6.7	5.2	5.9	6.5	5.5	6.0	8.1	6.9	7.5
15	7.0	6.4	6.7	7.0	5.1	5.7	6.4	5.4	5.8	7.7	6.3	7.1
16	7.3	6.3	6.7	6.7	5.5	6.1	6.4	5.5	6.0	7.8	6.3	7.1
17	7.4	5.7	6.3	6.5	5.3	5.9	6.0	5.2	5.5	7.8	6.5	7.2
18	7.4	5.9	6.6	6.0	4.9	5.5	6.2	5.1	5.6	8.2	7.0	7.4
19	7.0	6.0	6.4	---	---	---	6.3	5.2	5.7	8.1	6.6	7.3
20	8.3	6.6	7.6	---	---	---	6.4	5.2	5.8	8.3	6.6	7.5
21	8.3	6.9	7.5	---	---	---	6.9	5.6	6.2	8.6	7.3	7.9
22	8.5	6.8	7.5	7.6	6.8	7.3	6.3	5.1	5.4	8.5	7.2	7.8
23	8.4	6.6	7.5	7.6	6.2	6.9	6.7	4.9	5.7	8.1	7.1	7.6
24	8.2	6.5	7.3	7.8	6.7	7.2	6.8	5.4	6.0	8.0	7.0	7.5
25	8.1	6.4	7.2	7.9	6.6	7.3	6.9	5.4	6.1	7.8	6.9	7.3
26	8.0	6.2	7.1	8.1	6.3	7.2	6.5	5.2	6.0	8.3	6.9	7.6
27	8.5	5.8	7.0	8.1	6.6	7.3	6.3	5.6	5.9	8.9	7.3	7.9
28	8.8	6.3	7.4	7.4	6.0	6.7	5.7	4.8	5.2	8.7	7.4	8.1
29	8.5	6.5	7.6	7.2	6.1	6.6	5.3	4.1	4.7	9.3	8.2	8.8
30	9.8	6.9	8.4	7.6	6.3	6.9	6.1	5.0	5.7	9.7	8.6	9.2
31	---	---	---	7.8	5.9	6.8	6.2	5.5	5.9	---	---	---
MONTH	10.4	5.7	7.4	10.2	3.5	6.5	7.8	4.1	5.9	9.7	5.9	7.6
YEAR	20.0	3.5	9.7									

03254480 CRUISES CREEK AT HIGHWAY 17 NEAR PINER, KY—Continued

TURBIDITY, WATER, UNFILTERED, NEPHELOMETRIC TURBIDITY UNITS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	120	59	84	32	23	26	2.0	1.0	1.2	1,000	35	230
2	61	40	50	520	19	27	2.0	0.0	1.1	76	36	54
3	43	30	37	20	17	19	---	---	---	40	5.0	20
4	49	22	31	49	15	17	---	---	---	11	2.0	6.2
5	45	23	35	170	14	62	---	---	---	7.0	2.0	4.5
6	45	24	33	130	39	70	---	---	---	12	6.0	9.7
7	29	21	25	40	26	31	---	---	---	10	3.0	5.9
8	78	12	24	38	18	23	---	---	---	5.0	2.0	2.8
9	23	18	20	920	17	50	---	---	---	7.0	3.0	4.5
10	27	21	25	1,000	23	220	---	---	---	6.0	3.0	4.4
11	100	26	59	730	110	210	250	60	99	4.0	2.0	2.9
12	55	38	44	930	16	110	61	11	28	3.0	0.0	1.7
13	46	29	38	32	12	17	150	8.0	65	0.0	0.0	0.0
14	33	29	31	15	8.5	11	110	20	42	0.0	0.0	0.0
15	33	30	32	27	8.3	13	37	14	23	0.0	0.0	0.0
16	35	31	33	22	11	15	15	7.0	11	0.0	0.0	0.0
17	36	33	35	16	7.7	9.8	---	---	---	0.0	0.0	0.0
18	46	33	35	9.7	5.4	6.7	140	18	46	0.0	0.0	0.0
19	39	33	36	7.4	4.2	5.8	1,000	17	270	0.0	0.0	0.0
20	43	38	41	7.1	4.0	5.5	310	48	160	0.0	0.0	0.0
21	53	42	48	42	3.8	13	290	110	150	0.0	0.0	0.0
22	66	48	57	37	6.5	13	110	58	90	0.0	0.0	0.0
23	80	58	68	10	5.2	7.3	58	43	48	0.0	0.0	0.0
24	91	66	80	7.2	3.0	4.5	73	39	42	0.0	0.0	0.0
25	560	81	190	5.0	3.0	3.6	61	29	39	0.0	0.0	0.0
26	970	150	340	4.0	1.0	2.9	30	18	24	0.0	0.0	0.0
27	870	130	290	3.0	1.0	1.2	19	15	17	0.0	0.0	0.0
28	360	120	150	4.0	1.0	1.4	19	15	16	0.0	0.0	0.0
29	580	120	240	7.0	1.0	1.6	17	14	16	24	0.0	2.8
30	330	79	130	8.0	0.0	2.3	140	17	70	9.0	1.0	5.0
31	84	22	45	---	---	---	910	66	220	5.0	0.0	2.4
MONTH	970	12	77	1,000	0.0	33	1,000	0.0	67	1,000	0.0	12
	FEBRUARY			MARCH			APRIL			MAY		
1	6.0	0.0	1.6	99	23	52	41	30	33	82	11	51
2	12	0.0	3.9	82	45	55	35	29	32	27	14	20
3	1,000	5.0	34	47	28	36	50	32	37	32	18	26
4	1,000	36	190	59	24	38	52	36	39	36	18	28
5	36	13	22	230	30	100	170	41	100	1,000	36	420
6	14	9.0	11	92	39	56	79	66	73	140	66	99
7	10	7.0	8.6	39	22	29	1,000	73	180	90	58	70
8	11	8.0	8.9	26	15	20	130	94	110	66	53	59
9	14	9.0	12	19	12	16	170	110	130	68	52	59
10	13	9.0	11	18	3.0	8.7	160	74	100	1,000	18	410
11	15	12	13	4.4	3.4	3.6	110	44	85	260	110	140
12	15	12	14	8.2	3.0	4.2	260	79	110	120	63	82
13	15	13	14	190	3.1	41	300	65	170	200	34	51
14	110	13	20	44	12	26	530	69	330	250	37	53
15	400	58	170	15	5.2	9.2	850	120	470	120	44	64
16	60	20	34	16	5.3	8.0	440	130	180	69	24	41
17	21	12	16	12	3.4	7.4	200	1.0	100	320	33	110
18	13	10	12	16	2.5	4.9	16	6.0	9.5	140	52	77
19	13	10	11	510	1.6	83	16	2.0	6.5	79	36	45
20	22	7.0	13	120	20	60	1,000	4.0	70	550	34	120
21	170	18	64	300	39	82	1,000	54	260	190	50	94
22	1,000	82	350	41	17	26	77	26	40	64	26	40
23	140	45	68	22	12	16	38	14	24	37	18	28
24	47	24	33	20	9.0	14	32	15	20	32	16	23
25	26	12	19	35	11	17	24	13	18	37	11	21
26	15	11	13	59	15	28	24	8.6	16	31	14	22
27	17	12	13	25	18	21	25	9.8	16	33	11	22
28	32	13	19	51	18	22	30	14	19	44	5.0	17
29	---	---	---	300	24	120	43	22	27	63	12	25
30	---	---	---	---	---	---	62	32	45	28	8.0	18
31	---	---	---	---	---	---	---	---	---	22	11	17
MONTH	1,000	0.0	43	510	1.6	35	1,000	1.0	95	1,000	5.0	76

03254480 CRUISES CREEK AT HIGHWAY 17 NEAR PINER, KY—Continued

TURBIDITY, WATER, UNFILTERED, NEPHELOMETRIC TURBIDITY UNITS—CONTINUED
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	29	13	20	56	11	23	350	85	180	980	120	200
2	27	13	19	85	7.5	17	990	77	400	980	100	310
3	84	18	59	68	8.1	18	160	110	140	130	56	81
4	66	34	47	32	13	23	990	79	330	66	40	53
5	53	16	27	45	3.3	27	240	130	170	49	18	31
6	32	13	21	150	11	30	150	75	100	26	7.0	15
7	46	4.0	11	48	8.3	24	990	79	230	20	6.0	12
8	970	6.0	310	38	17	28	510	270	360	16	6.0	10
9	380	49	130	34	6.6	22	440	98	190	35	8.0	12
10	55	26	40	990	22	270	110	72	94	40	13	17
11	44	24	34	250	75	130	990	58	240	48	10	15
12	120	33	70	95	33	51	300	130	200	16	10	13
13	75	50	63	170	23	40	130	74	100	14	9.0	11
14	150	49	82	98	17	29	130	25	51	16	8.0	11
15	84	70	75	990	15	95	990	62	270	18	9.0	13
16	81	63	72	990	110	420	240	88	120	20	11	15
17	170	26	78	190	41	77	120	51	81	27	13	17
18	83	22	47	110	24	47	90	69	77	25	16	21
19	360	26	57	400	25	200	91	70	79	30	21	25
20	110	52	65	170	77	110	84	68	75	59	28	36
21	73	37	55	81	67	73	82	60	70	52	41	45
22	50	20	36	85	37	53	84	49	68	1,000	41	240
23	39	15	25	95	22	41	120	67	73	140	63	87
24	35	13	22	61	11	34	100	70	80	69	45	55
25	30	12	20	50	13	26	98	68	79	52	39	43
26	60	14	20	1,000	13	790	81	67	74	50	41	44
27	36	18	25	1,000	1,000	1,000	86	51	71	1,000	45	250
28	38	15	26	1,000	1,000	1,000	340	68	210	120	61	83
29	53	15	25	1,000	990	990	170	120	140	65	46	54
30	34	16	24	990	27	620	980	150	330	55	44	48
31	---	---	---	990	28	380	150	130	140	---	---	---
MONTH	970	4.0	54	1,000	3.3	220	990	25	160	1,000	6.0	62
YEAR	1,000	0.0	78									

03254550 BANKLICK CREEK AT HIGHWAY 1829 NEAR ERLANGER, KY

LOCATION.--Lat 38°58'48", long 84°32'32", Kenton County, Hydrologic Unit 05100101, at bridge on Highway 1829, 2.5 mi below Brushy Fork, 4.6 mi southeast of Erlanger, and at mile 8.2.

DRAINAGE AREA.--30.0 mi^2.

WATER DISCHARGE RECORDS

PERIOD OF RECORD.--April 1999 to current year.

REVISIONS.--WDR KY-01-1: Drainage area.

GAGE.--Water-stage recorder with telemetry. Datum of gage is 540.33 ft above NGVD of 1929.

REMARKS.--Records fair except for those estimated periods, which are poor.

COOPERATION.--Northern Kentucky Sanitation District No. 1.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.2	14	4.7	836	e13	72	31	7.7	11	1.8	2.3	161
2	4.3	10	4.3	127	e19	115	25	13	7.9	1.5	339	332
3	3.7	8.6	e4.2	77	e27	72	21	14	33	1.3	56	e82
4	6.5	8.8	e3.7	54	162	62	19	7.8	22	1.2	143	37
5	14	65	e3.6	51	e42	148	42	733	14	2.5	69	20
6	6.0	79	e3.8	61	e31	87	23	104	9.3	2.5	27	14
7	4.0	27	e4.3	49	e24	56	35	55	9.1	1.9	192	11
8	3.2	17	e4.6	42	e21	44	29	37	16	1.6	254	9.0
9	2.7	13	e4.6	35	e19	36	34	29	24	4.1	96	7.5
10	2.8	116	e4.4	28	e19	28	31	574	11	61	37	6.1
11	24	137	92	e25	e18	26	25	195	9.4	19	31	4.8
12	12	30	74	e22	e19	24	21	66	18	7.6	28	4.0
13	7.0	17	115	e19	e19	53	17	40	14	4.3	15	3.7
14	4.8	12	128	e18	e21	52	16	28	35	2.9	11	3.9
15	3.8	11	46	e17	e186	38	14	27	24	4.8	62	3.2
16	3.6	18	27	e15	74	32	15	20	19	19	40	2.9
17	3.4	12	194	e15	e43	28	19	29	15	5.9	18	2.8
18	3.0	9.4	124	e14	e31	24	23	43	15	3.3	11	2.5
19	3.4	8.3	1,040	e14	e26	53	14	27	12	61	11	2.3
20	4.2	7.5	300	e13	e28	75	13	26	11	12	8.7	2.1
21	4.1	7.4	76	e11	128	66	80	e40	7.4	17	6.1	2.0
22	3.4	14	49	e10	911	48	28	e33	5.5	14	4.6	360
23	3.0	9.1	35	e8.8	195	36	19	18	4.6	37	5.2	55
24	2.8	7.6	30	e8.3	79	29	15	15	3.9	11	4.1	22
25	128	6.8	37	e8.0	e52	26	14	13	3.1	6.5	3.0	12
26	61	6.2	26	e8.0	e43	40	12	18	2.8	4.2	2.4	9.0
27	18	6.2	24	e8.3	36	28	9.9	14	7.3	3.0	2.0	248
28	11	5.4	23	9.3	34	24	8.7	12	4.9	7.3	1.9	43
29	119	5.3	21	17	---	108	8.2	22	3.1	9.8	1.6	23
30	54	5.3	66	26	---	56	7.9	14	2.2	4.6	2.3	16
31	23	---	302	13	---	37	---	14	---	3.0	16	---
TOTAL	548.9	693.9	2,871.2	1,659.7	2,320	1,623	669.7	2,288.5	374.5	336.6	1,500.2	1,501.8
MEAN	17.7	23.1	92.6	53.5	82.9	52.4	22.3	73.8	12.5	10.9	48.4	50.1
MAX	128	137	1,040	836	911	148	80	733	35	61	339	360
MIN	2.7	5.3	3.6	8.0	13	24	7.9	7.7	2.2	1.2	1.6	2.0

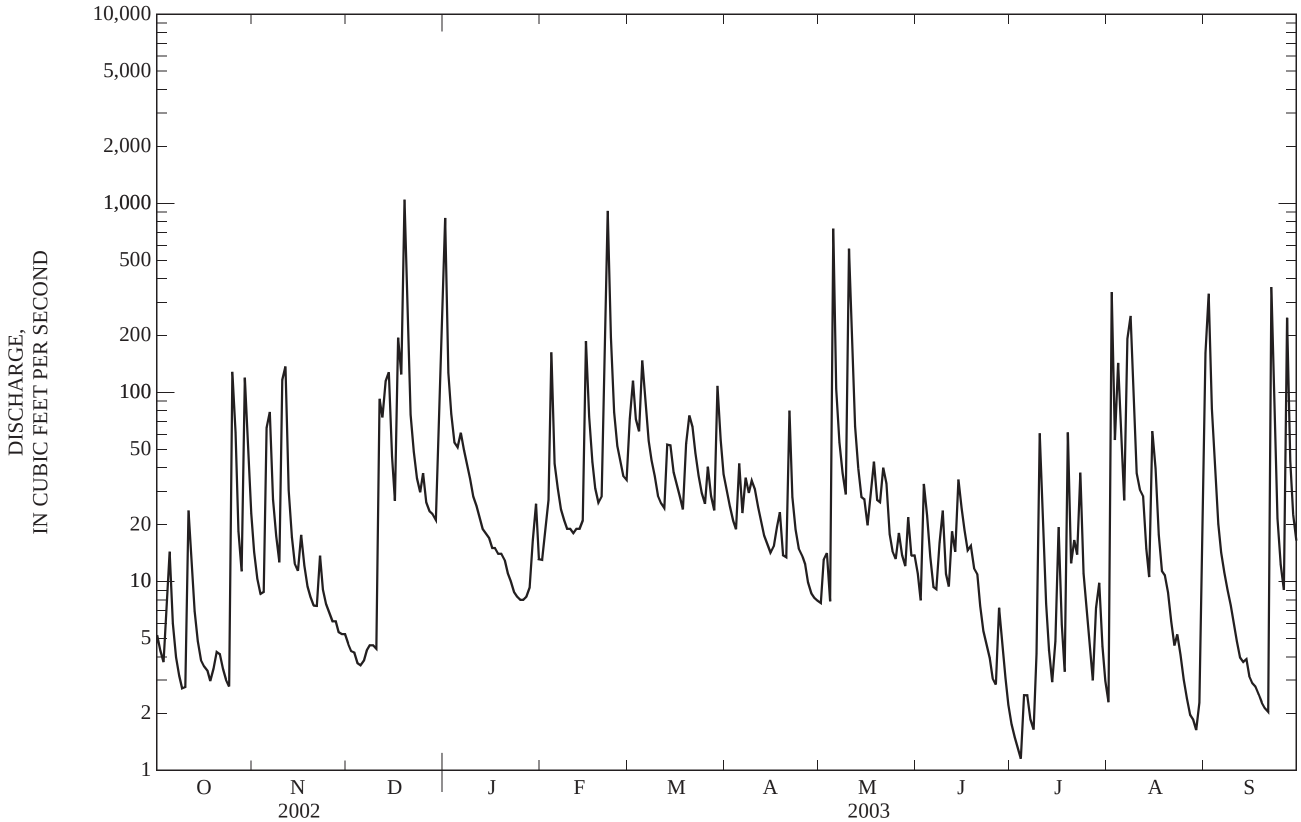
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1999 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	22.1	18.9	60.4	40.3	74.6	47.8	44.7	51.9	20.9	12.7	17.3	18.4
MAX	66.4	45.8	92.6	53.5	143	74.3	110	150	41.1	29.4	48.4	50.1
(WY)	(2002)	(2002)	(2003)	(2003)	(2000)	(2002)	(2002)	(2002)	(2001)	(2001)	(2003)	(2003)
MIN	1.65	1.27	10.5	21.3	33.0	21.4	6.62	5.10	2.71	2.59	0.21	0.071
(WY)	(2000)	(2000)	(2000)	(2001)	(2002)	(2001)	(2001)	(1999)	(1999)	(2002)	(2002)	(1999)

03254550 BANKLICK CREEK AT HIGHWAY 1829 NEAR ERLANGER, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1999 - 2003	
ANNUAL TOTAL	17,923.97		16,388.0			
ANNUAL MEAN	49.1		44.9		38.2	
HIGHEST ANNUAL MEAN					54.8	2002
LOWEST ANNUAL MEAN					22.1	2001
HIGHEST DAILY MEAN	1,330	May 8	1,040	Dec 19	2,130	Feb 18, 2000
LOWEST DAILY MEAN	0.00	Sep 13	1.2	Jul 4	0.00	Sep 21, 1999
ANNUAL SEVEN-DAY MINIMUM	0.03	Sep 8	1.8	Jul 2	0.00	Sep 21, 1999
MAXIMUM PEAK FLOW			4,650	Dec 19	9,570	Apr 21, 2002
MAXIMUM PEAK STAGE			9.07	Dec 19	10.65	Apr 21, 2002
10 PERCENT EXCEEDS	95		84		71	
50 PERCENT EXCEEDS	13		18		11	
90 PERCENT EXCEEDS	0.21		3.4		0.69	

e Estimated



03254550 BANKLICK CREEK AT HIGHWAY 1829 NEAR ERLANGER, KY—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--December 2000 to current year.

COOPERATION.--Northern Kentucky Sanitation District No. 1.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: December 2000 to current year.
pH:December 2000 to current year.
WATER TEMPERATURES: December 2000 to current year.
DISSOLVED OXYGEN: December 2000 to current year.
TURBIDITY: December 2000 to current year.

INSTRUMENTATION.--Water-quality monitor with telemetry.

RECORDS.--
SPECIFIC CONDUCTANCE: Records good.
pH: Records good.
WATER TEMPERATURES: Records good.
DISSOLVED OXYGEN: Records good.
TURBIDITY: Records good.

EXTREMES FOR PERIOD OF RECORD.--
SPECIFIC CONDUCTANCE: Maximum recorded, 1570 microsiemens, Dec. 11, 2002; minimum recorded, 124 microsiemens, Dec. 19, 2002.
pH: Maximum recorded, 8.9 units, Mar. 16, 2003; minimum recorded, 7.3 units, Jul. 2, 2003.
WATER TEMPERATURES: Maximum recorded, 32.7°C, Aug. 8, 2001; minimum recorded, 0.5°C, Dec. 4, 5, 2002.
DISSOLVED OXYGEN: Maximum recorded, greater than 20 mg/L, Feb. 28, 2001; minimum recorded, 2.5 mg/L, Jun. 4, 2002.
TURBIDITY: Maximum recorded, greater than 1000 NTU, several days in 2001, 2002, and 2003; minimum recorded, 0.0 NTU, Jan. 22, 25-29, 2003, and Mar. 13, 2003.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum recorded, 1570 microsiemens, Dec. 11, 2002; minimum recorded, 124 microsiemens, Dec. 19, 2002.
pH: Maximum recorded, 8.9 units,Mar. 16, 2003; minimum recorded, 7.3 units, July 2, 2003.
WATER TEMPERATURES: Maximum recorded, 30.8°C, July 8, 2003; minimum recorded, -0.5°C, Dec. 4,5, 2002.
DISSOLVED OXYGEN: Maximum recorded, 17.3 mg/L, Jan. 25, 2003; minimum recorded, 3.0 mg/L, July 9, 2003 2002.
TURBIDITY: Maximum recorded, greater than 1000 NTU, several days in 2003; minimum recorded, 0.0 NTU, Jan. 22, 25-29, 2003, and Mar. 13, 2003.

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	640	616	628	614	582	597	634	614	623	482	442	462
2	668	633	654	647	614	627	631	609	622	530	482	507
3	676	655	664	671	644	655	635	610	622	550	523	533
4	758	640	682	664	649	657	633	620	626	532	511	518
5	645	570	583	668	432	608	638	615	629	910	509	584
6	626	594	611	508	403	456	642	618	634	943	675	825
7	644	624	636	558	508	539	708	628	672	675	576	618
8	669	639	659	602	558	581	837	707	780	576	568	571
9	694	657	680	613	596	606	883	829	853	573	568	570
10	702	672	689	669	310	575	858	833	843	577	568	573
11	751	552	630	475	307	402	1,570	653	926	590	561	576
12	620	586	604	533	475	507	653	579	595	627	584	601
13	625	602	615	565	532	546	660	448	582	626	597	611
14	635	613	622	576	560	566	529	452	486	606	595	601
15	669	635	656	603	576	585	573	529	553	645	599	622
16	695	668	682	604	575	584	595	573	584	655	629	647
17	754	633	687	594	584	590	611	329	519	689	646	659
18	679	635	663	598	585	592	498	348	431	800	689	733
19	691	665	677	607	590	600	541	124	378	844	786	813
20	752	655	710	613	593	604	227	143	192	786	772	776
21	723	658	697	619	591	606	266	227	247	782	742	766
22	730	701	719	641	575	597	297	266	282	756	737	745
23	719	702	712	598	573	586	325	297	310	746	730	738
24	719	705	713	604	578	590	352	325	339	755	736	744
25	728	321	575	606	589	598	414	349	379	790	743	771
26	539	367	471	611	597	603	458	414	443	791	769	782
27	587	539	567	615	588	603	484	454	467	773	756	765
28	626	587	606	612	594	602	473	461	465	833	756	788
29	630	367	501	620	604	612	491	467	478	1,020	832	890
30	537	411	487	631	615	623	514	488	501	1,340	967	1,160
31	582	537	562	---	---	---	503	436	476	1,220	928	1,020
MONTH	758	321	634	671	307	583	1,570	124	533	1,340	442	696

03254550 BANKLICK CREEK AT HIGHWAY 1829 NEAR ERLANGER, KY—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	928	885	903	693	584	652	607	556	586	650	618	635
2	1,030	882	960	584	513	525	605	547	579	671	557	628
3	1,000	876	946	541	520	528	599	556	578	608	566	581
4	914	538	605	567	538	553	603	578	590	628	603	616
5	642	585	617	542	460	499	643	556	578	610	255	345
6	673	642	657	536	481	514	622	596	613	484	371	438
7	776	670	696	560	535	552	646	596	618	522	484	506
8	1,040	776	906	573	559	565	640	610	626	553	522	539
9	1,060	961	1,010	580	562	573	643	604	625	566	548	559
10	961	895	920	585	574	580	639	598	621	576	266	386
11	1,150	912	1,050	592	578	586	636	589	616	446	354	401
12	1,280	1,150	1,230	600	585	592	626	588	610	505	445	481
13	1,340	1,130	1,250	733	580	610	624	595	612	532	505	519
14	1,130	1,060	1,100	617	571	593	630	607	619	551	531	543
15	1,240	557	725	602	561	585	637	609	625	558	536	548
16	853	653	767	611	551	587	640	608	626	561	529	547
17	901	769	822	613	552	588	695	624	655	605	545	575
18	837	783	819	614	550	587	685	660	673	561	542	547
19	863	817	839	662	544	594	741	657	701	576	552	566
20	1,110	863	956	570	542	552	692	576	672	595	568	585
21	1,160	632	1,020	602	570	589	625	467	523	568	553	557
22	633	257	426	603	557	585	604	559	584	586	562	572
23	556	354	456	600	536	575	622	590	609	603	570	588
24	582	550	559	608	538	579	628	589	612	611	571	593
25	618	582	602	612	547	582	633	604	622	611	583	599
26	613	596	605	621	563	592	644	591	624	616	575	595
27	616	602	610	636	564	614	641	576	625	610	575	592
28	662	615	631	629	562	604	645	619	632	622	582	602
29	---	---	---	611	513	545	652	607	633	620	566	591
30	---	---	---	559	527	551	640	617	629	602	575	588
31	---	---	---	---	---	---	---	---	---	617	589	601
MONTH	1,340	257	810	733	460	574	741	467	617	671	255	549

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	617	574	598	648	622	638	646	602	622	530	206	475
2	615	586	600	658	639	650	625	184	412	393	218	312
3	623	530	578	672	654	665	521	424	480	471	393	437
4	563	538	545	682	667	675	545	298	451	523	471	502
5	588	563	578	797	647	715	522	352	458	551	523	538
6	618	586	600	682	616	647	569	521	550	571	548	558
7	634	598	613	641	611	630	571	205	439	582	553	568
8	632	534	605	645	620	637	484	184	378	586	556	572
9	562	541	548	653	417	625	489	282	409	584	553	568
10	576	548	562	624	360	417	527	485	508	586	554	569
11	590	560	573	514	422	475	605	527	549	593	561	573
12	632	554	577	568	514	540	560	398	450	597	575	583
13	597	574	587	593	568	583	524	447	498	611	579	592
14	611	520	553	617	593	606	559	524	547	603	585	594
15	595	494	548	645	402	614	594	315	497	623	603	616
16	592	462	570	526	459	492	477	315	406	641	618	631
17	625	592	610	568	526	550	518	477	504	644	620	634
18	629	593	613	599	568	588	545	518	533	643	621	635
19	629	603	620	594	357	396	553	524	539	652	630	644
20	636	589	616	497	413	458	563	520	544	661	650	656
21	637	599	618	565	488	518	558	526	539	682	657	667
22	638	615	625	584	450	537	582	533	556	672	258	440
23	648	622	636	527	384	435	584	553	571	487	394	450
24	660	621	644	539	476	508	573	555	566	520	487	506
25	664	634	650	601	538	574	579	558	567	547	520	537
26	679	636	659	641	599	618	586	557	571	570	546	559
27	733	606	654	666	627	644	593	558	581	570	379	439
28	622	602	614	764	587	665	611	577	597	522	453	495
29	625	598	614	632	610	621	604	582	592	546	522	536
30	638	609	626	639	601	618	622	567	603	567	546	557
31	---	---	---	630	599	614	635	518	567	---	---	---
MONTH	733	462	601	797	357	579	646	184	519	682	206	548
YEAR	1,570	124	602									

03254550 BANKLICK CREEK AT HIGHWAY 1829 NEAR ERLANGER, KY—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8.1	7.8	7.9	8.3	8.0	8.1	8.3	8.1	8.2	7.9	7.7	7.7
2	8.7	7.7	8.1	8.3	8.0	8.1	8.4	8.1	8.2	8.0	7.7	7.9
3	8.7	8.3	8.5	8.4	8.0	8.2	8.3	8.1	8.2	8.1	8.0	8.0
4	8.5	8.2	8.3	8.4	8.1	8.2	8.2	7.9	8.1	8.1	8.0	8.1
5	8.8	8.3	8.5	8.3	8.1	8.2	8.4	7.9	8.1	8.2	8.1	8.1
6	8.7	8.3	8.5	8.3	8.1	8.2	8.3	8.0	8.2	8.3	8.2	8.2
7	8.7	8.3	8.5	8.5	8.2	8.3	8.3	8.0	8.2	8.3	8.2	8.3
8	8.6	8.2	8.4	8.5	8.2	8.3	8.3	8.0	8.1	8.4	8.3	8.3
9	8.5	8.2	8.3	8.6	8.2	8.3	8.3	8.0	8.1	8.4	8.3	8.3
10	8.4	8.2	8.3	8.6	8.1	8.4	8.3	8.0	8.1	8.5	8.3	8.4
11	8.5	8.2	8.3	8.3	8.1	8.2	8.1	7.9	8.0	8.5	8.4	8.4
12	8.5	8.2	8.3	8.7	8.2	8.3	8.3	8.0	8.2	8.5	8.3	8.4
13	8.6	8.2	8.3	8.5	8.2	8.3	8.3	8.1	8.2	8.5	8.4	8.4
14	8.6	8.2	8.4	8.5	8.2	8.3	8.2	8.1	8.1	8.5	8.4	8.4
15	8.4	8.1	8.3	8.3	8.1	8.2	8.4	8.1	8.2	8.6	8.4	8.5
16	8.5	8.1	8.3	8.4	8.2	8.3	8.5	8.2	8.3	8.6	8.5	8.5
17	8.5	8.1	8.3	8.5	8.2	8.3	8.4	8.1	8.2	8.6	8.5	8.5
18	8.5	8.1	8.3	8.5	8.2	8.3	8.3	8.0	8.1	8.6	8.5	8.5
19	8.3	8.0	8.1	8.5	8.1	8.3	8.2	7.7	8.1	8.6	8.5	8.5
20	8.5	8.0	8.2	8.5	8.1	8.3	8.1	7.8	8.0	8.7	8.5	8.6
21	8.4	8.1	8.2	8.5	8.1	8.3	8.1	8.0	8.1	8.7	8.5	8.6
22	8.3	8.0	8.2	8.4	8.1	8.2	8.2	8.1	8.1	8.6	8.4	8.5
23	8.3	8.0	8.1	8.5	8.1	8.3	8.2	8.1	8.2	8.6	8.4	8.5
24	8.2	8.0	8.1	8.5	8.1	8.3	8.2	8.1	8.2	8.6	8.4	8.5
25	8.2	7.8	8.0	8.4	8.1	8.2	8.2	8.2	8.2	8.6	8.4	8.5
26	8.0	7.9	8.0	8.3	8.0	8.2	8.3	8.1	8.2	8.5	8.4	8.4
27	8.2	8.0	8.1	8.5	8.1	8.3	8.2	8.1	8.1	8.5	8.4	8.4
28	8.3	7.9	8.1	8.4	8.1	8.3	8.2	8.1	8.2	8.5	8.4	8.4
29	8.1	7.9	8.0	8.4	8.1	8.2	8.2	8.1	8.2	8.6	8.4	8.5
30	8.0	7.9	7.9	8.3	8.0	8.1	8.2	8.1	8.2	8.7	8.4	8.5
31	8.3	7.9	8.0	---	---	---	8.1	7.8	8.0	8.6	8.3	8.4
MONTH	8.8	7.7	8.2	8.7	8.0	8.2	8.5	7.7	8.1	8.7	7.7	8.4

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	8.6	8.3	8.4	8.4	8.2	8.3	8.7	8.2	8.4	8.4	7.9	8.1
2	8.7	8.3	8.5	8.3	8.2	8.2	8.7	8.1	8.4	8.3	7.8	8.1
3	8.6	8.3	8.4	8.5	8.2	8.3	8.5	8.0	8.3	8.4	8.0	8.2
4	8.4	8.3	8.4	8.5	8.2	8.4	8.5	8.0	8.2	8.5	7.9	8.2
5	8.6	8.4	8.5	8.3	8.2	8.2	8.3	8.0	8.2	8.1	7.8	7.9
6	8.6	8.4	8.5	8.5	8.2	8.3	8.5	8.1	8.3	8.3	8.1	8.2
7	8.7	8.4	8.5	8.6	8.3	8.4	8.5	8.1	8.3	8.3	8.1	8.2
8	8.6	8.4	8.5	8.6	8.1	8.3	8.6	8.1	8.3	8.4	8.1	8.2
9	8.6	8.3	8.4	8.6	8.2	8.3	8.5	8.1	8.3	8.4	8.1	8.2
10	8.6	8.3	8.4	8.5	8.2	8.3	8.6	8.2	8.4	8.1	7.8	8.0
11	8.5	8.3	8.4	8.6	8.1	8.3	8.6	8.2	8.4	8.2	8.0	8.1
12	8.5	8.3	8.4	8.6	8.1	8.3	8.5	8.0	8.2	8.3	8.2	8.2
13	8.6	8.2	8.4	8.4	8.1	8.3	8.4	8.0	8.2	8.4	8.2	8.3
14	8.5	8.3	8.4	8.7	8.2	8.4	8.4	8.0	8.2	8.4	8.1	8.3
15	8.3	8.2	8.3	8.8	8.2	8.4	8.4	7.9	8.2	8.5	8.2	8.3
16	8.5	8.3	8.4	8.9	8.1	8.5	8.4	7.9	8.1	8.5	8.1	8.3
17	8.5	8.3	8.4	8.8	8.0	8.4	8.2	7.9	8.0	8.4	8.0	8.2
18	8.5	8.2	8.4	8.8	8.0	8.3	8.4	8.0	8.1	8.4	8.2	8.3
19	8.5	8.3	8.4	8.6	8.0	8.2	8.5	7.9	8.2	8.6	8.2	8.3
20	8.6	8.3	8.4	8.6	8.1	8.3	8.3	7.8	8.1	8.4	8.0	8.2
21	8.4	8.1	8.3	8.5	8.2	8.3	8.2	7.9	8.1	8.5	8.2	8.3
22	8.1	7.9	8.0	8.7	8.2	8.4	8.5	8.1	8.3	8.5	8.2	8.4
23	8.2	8.0	8.1	8.8	8.2	8.4	8.5	8.0	8.2	8.5	8.1	8.3
24	8.3	8.2	8.3	8.8	8.1	8.4	8.4	7.9	8.2	8.5	8.1	8.3
25	8.4	8.3	8.3	8.7	8.1	8.3	8.3	7.9	8.1	8.3	8.0	8.1
26	8.4	8.3	8.3	8.6	8.1	8.3	8.4	8.0	8.1	8.4	8.0	8.2
27	8.4	8.2	8.3	8.6	8.0	8.3	8.3	7.9	8.1	8.4	8.0	8.2
28	8.4	8.2	8.3	8.6	8.1	8.3	8.3	7.8	8.0	8.4	8.0	8.1
29	---	---	---	8.3	8.0	8.2	8.3	7.8	8.0	8.4	8.0	8.2
30	---	---	---	8.6	8.2	8.3	8.3	7.9	8.1	8.4	8.0	8.2
31	---	---	---	---	---	---	---	---	---	8.2	7.9	8.1
MONTH	8.7	7.9	8.4	8.9	8.0	8.3	8.7	7.8	8.2	8.6	7.8	8.2

03254550 BANKLICK CREEK AT HIGHWAY 1829 NEAR ERLANGER, KY—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS—CONTINUED
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	8.3	7.9	8.1	7.9	7.5	7.7	8.1	7.6	7.9	8.3	7.7	8.0
2	8.3	7.8	8.0	7.8	7.3	7.6	8.0	7.6	7.8	8.0	7.7	7.9
3	8.1	7.8	8.0	7.9	7.4	7.6	8.1	7.9	8.0	8.1	8.0	8.0
4	8.3	7.9	8.1	8.1	7.4	7.7	8.0	7.8	7.9	8.2	7.9	8.0
5	8.4	7.9	8.2	8.1	7.4	7.8	8.1	7.9	8.0	8.2	7.9	8.0
6	8.3	7.9	8.1	8.2	7.5	7.8	8.2	7.9	8.0	8.2	7.9	8.0
7	8.2	7.7	7.9	8.1	7.4	7.7	8.0	7.5	7.8	8.2	7.9	8.0
8	8.1	7.7	7.9	7.8	7.4	7.6	8.0	7.5	7.8	8.2	7.9	8.0
9	8.3	7.9	8.1	7.9	7.4	7.6	8.0	7.6	7.8	8.2	7.9	8.0
10	8.3	7.8	8.0	7.7	7.5	7.7	8.1	7.9	8.0	8.2	7.9	8.0
11	8.2	7.8	8.0	8.0	7.7	7.8	8.1	7.9	8.0	8.2	7.8	8.0
12	8.2	7.8	8.0	8.0	7.7	7.8	8.1	7.8	8.0	8.2	8.0	8.1
13	8.2	7.8	8.0	8.0	7.6	7.8	8.2	7.8	8.0	8.2	8.0	8.1
14	8.0	7.7	7.9	8.0	7.6	7.8	8.1	7.8	8.0	8.2	8.0	8.1
15	8.0	7.8	7.9	7.9	7.5	7.7	8.1	7.8	7.9	8.2	8.0	8.1
16	8.4	7.7	8.0	8.0	7.6	7.9	8.2	7.8	8.0	8.2	8.0	8.1
17	8.3	7.9	8.1	8.2	7.7	7.9	8.3	7.9	8.1	8.2	8.0	8.1
18	8.3	8.0	8.1	8.1	7.7	7.9	8.3	7.9	8.1	8.2	8.0	8.1
19	8.3	7.9	8.1	7.9	7.6	7.8	8.3	7.9	8.1	8.2	8.0	8.1
20	8.3	8.0	8.1	8.1	7.8	7.9	8.3	7.9	8.1	8.2	8.0	8.1
21	8.2	7.8	8.0	8.1	7.7	7.9	8.2	7.7	8.0	8.1	8.0	8.1
22	8.1	7.7	7.9	8.1	7.9	8.0	8.0	7.7	7.8	8.2	7.9	8.0
23	8.1	7.7	7.9	8.0	7.8	7.9	8.1	7.7	7.9	8.3	7.9	8.1
24	8.0	7.6	7.8	8.1	7.8	7.9	8.1	7.8	8.0	8.3	8.1	8.2
25	8.0	7.6	7.8	8.2	7.8	8.0	8.1	7.7	7.9	8.3	8.1	8.2
26	8.0	7.6	7.8	8.1	7.8	7.9	8.1	7.7	7.9	8.3	8.1	8.2
27	8.1	7.6	7.9	8.1	7.7	7.9	8.0	7.7	7.8	8.3	7.9	8.0
28	8.0	7.7	7.9	8.1	7.7	7.9	8.0	7.7	7.9	8.2	8.0	8.1
29	7.9	7.5	7.7	8.3	8.0	8.1	8.0	7.7	7.9	8.3	8.2	8.2
30	7.9	7.5	7.7	8.1	7.8	8.0	7.9	7.6	7.8	8.3	8.2	8.2
31	---	---	---	8.1	7.7	7.9	8.1	7.8	7.9	---	---	---
MONTH	8.4	7.5	8.0	8.3	7.3	7.8	8.3	7.5	7.9	8.3	7.7	8.1
YEAR	8.9	7.3	8.2									

03254550 BANKLICK CREEK AT HIGHWAY 1829 NEAR ERLANGER, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	23.0	19.6	21.0	10.1	7.2	8.8	1.4	-0.1	0.6	7.2	5.3	6.1
2	23.9	20.1	21.7	8.2	5.0	6.6	2.1	-0.4	0.6	5.3	4.4	4.9
3	24.4	20.6	22.3	6.9	5.4	6.4	1.3	-0.3	0.4	4.4	3.0	3.6
4	23.3	21.1	22.1	7.7	6.8	7.2	0.0	-0.5	-0.3	3.4	2.0	2.8
5	21.2	18.4	19.8	9.0	7.3	7.9	0.5	-0.5	-0.1	3.6	2.2	3.0
6	19.9	15.4	17.7	9.1	8.1	8.7	0.8	0.0	0.2	3.9	2.6	3.5
7	19.5	15.8	17.6	9.8	7.2	8.3	0.6	0.0	0.2	3.1	1.5	2.3
8	16.7	13.2	14.9	10.4	6.8	8.4	0.9	0.0	0.3	4.7	2.0	3.2
9	15.7	13.6	14.7	11.4	8.6	10	0.4	-0.1	0.1	5.6	3.2	4.2
10	15.8	14.9	15.4	14.8	11.4	13.1	0.3	-0.2	0.1	4.1	1.7	3.3
11	16.8	15.4	16.1	13.7	11.3	12.8	1.4	-0.1	0.3	1.7	0.0	0.5
12	18.7	16.4	17.3	11.3	9.3	10.1	3.7	1.4	2.9	0.3	0.0	0.1
13	18.4	15.0	17.1	10.3	7.7	9.0	4.6	3.6	3.9	0.5	0.0	0.1
14	15.1	11.5	13.4	9.7	7.7	8.6	4.8	4.3	4.5	0.2	0.0	0.1
15	12.9	10.6	11.7	8.9	8.2	8.5	5.1	2.9	4.1	0.3	0.0	0.1
16	12.2	10.9	11.4	8.5	6.2	7.2	5.3	3.7	4.5	0.1	0.1	0.1
17	12.0	9.4	10.7	6.7	5.2	6.0	5.0	3.4	3.9	0.1	0.0	0.1
18	12.7	9.2	11.0	5.5	3.6	4.6	7.3	5.0	6.2	0.1	0.0	0.0
19	12.7	12.0	12.3	8.4	4.8	6.4	8.1	7.2	7.7	0.1	0.0	0.0
20	13.2	10.8	12.0	7.3	4.3	5.8	7.7	5.7	6.6	0.1	0.0	0.0
21	13.6	9.9	11.6	8.1	5.7	6.8	5.7	4.4	5.0	0.2	0.0	0.0
22	12.8	9.0	11.0	7.1	5.1	5.9	6.1	4.1	5.1	0.1	0.0	0.0
23	12.7	9.3	11.1	5.6	3.9	4.8	4.1	2.6	3.4	0.1	0.0	0.0
24	12.3	9.9	11.1	5.9	3.0	4.4	3.6	2.9	3.2	0.1	0.0	0.0
25	11.8	9.6	10.8	4.7	3.9	4.2	3.0	1.9	2.3	0.1	0.0	0.0
26	12.3	11.8	12.0	3.9	2.4	3.0	1.9	1.2	1.6	0.0	0.0	0.0
27	13.0	11.4	12.1	3.5	1.6	2.5	2.2	0.8	1.3	0.0	0.0	0.0
28	12.5	10.9	11.7	1.8	0.6	1.1	2.9	0.5	1.6	0.0	0.0	0.0
29	11.5	9.0	10.0	3.2	0.1	1.5	3.8	1.2	2.3	0.1	0.0	0.0
30	9.5	8.8	9.1	3.2	1.4	2.7	6.5	1.9	3.8	0.3	-0.1	0.1
31	9.9	8.5	9.1	---	---	---	7.5	6.5	7.0	0.1	-0.1	-0.1
MONTH	24.4	8.5	14.2	14.8	0.1	6.7	8.1	-0.5	2.7	7.2	-0.1	1.2
	FEBRUARY			MARCH			APRIL			MAY		
1	0.1	-0.1	-0.1	4.8	3.0	3.8	15.5	7.6	10.9	24.1	17.3	20.2
2	0.5	-0.1	0.1	4.3	2.7	3.7	18.8	11.0	14.5	20.9	18.1	19.4
3	1.4	-0.1	0.3	3.9	0.1	1.9	20.6	13.1	16.5	18.4	15.9	16.8
4	3.4	1.2	2.7	5.6	0.8	3.1	19.2	15.5	17.2	16.4	12.8	14.9
5	1.7	-0.1	0.6	6.1	4.3	5.3	17.4	10.7	14.1	16.6	13.1	14.7
6	0.8	-0.1	0.3	4.3	2.3	3.4	10.7	8.6	9.5	19.7	15.5	17.0
7	1.9	-0.1	0.7	5.2	1.7	2.9	11.0	8.4	9.5	18.4	16.9	17.6
8	0.6	-0.1	0.0	8.6	1.7	4.9	11.3	9.0	10.0	21.5	16.0	18.5
9	1.1	-0.1	0.3	8.2	4.0	6.1	9.7	7.5	8.2	21.3	17.9	19.5
10	1.1	0.0	0.4	6.1	1.0	3.4	11.8	6.7	8.8	20.0	16.6	17.7
11	0.4	-0.2	0.0	7.1	1.3	4.0	15.5	7.1	10.8	19.0	16.1	17.2
12	0.7	-0.1	0.1	6.6	4.0	5.0	17.2	9.2	12.8	17.0	14.3	15.5
13	0.4	-0.2	0.0	6.3	4.6	5.4	18.1	10.1	13.7	19.4	12.7	15.7
14	0.0	-0.2	-0.1	8.6	3.2	5.6	19.5	10.3	14.6	18.6	13.8	16.1
15	1.1	-0.1	0.5	10.5	4.8	7.2	21.6	13.1	16.9	19.6	15.4	17.4
16	0.8	-0.1	0.0	13.8	6.8	9.9	21.8	15.0	18.3	21.3	15.4	18.0
17	0.1	-0.1	0.0	13.8	9.4	11.6	19.2	15.9	17.0	19.1	17.2	17.7
18	0.7	-0.1	0.2	15.1	11.1	12.9	16.6	14.9	15.7	18.7	16.9	17.6
19	1.0	0.3	0.6	14.8	12.1	13.5	21.3	13.2	16.9	21.5	17.2	19.0
20	4.0	0.3	1.7	14.3	10.2	12.2	19.7	16.4	18.1	20.1	17.9	19.2
21	2.9	1.8	2.4	12.6	9.9	11.8	17.6	14.7	15.9	20.1	16.0	17.0
22	3.1	1.6	2.4	12.4	7.9	10.2	14.7	11.8	13.4	21.6	16.5	19.8
23	2.8	1.4	2.2	14.0	9.3	11.5	17.0	8.6	12.4	20.5	14.8	17.6
24	2.8	1.0	1.9	16.1	9.2	12.4	14.0	9.8	12.1	20.3	14.0	17.1
25	2.4	-0.1	0.8	16.8	10.8	13.7	13.3	11.8	12.4	17.9	15.4	16.4
26	1.6	-0.1	0.5	16.8	11.7	13.8	18.9	11.5	14.4	18.7	14.3	16.3
27	2.6	0.2	1.3	15.6	9.7	12.6	19.9	11.0	15.2	20.5	15.0	17.5
28	4.0	1.5	2.6	17.8	12.2	14.8	20.9	12.0	16.3	19.6	15.4	17.7
29	---	---	---	15.4	8.9	10.8	22.0	16.6	18.9	20.9	16.0	18.1
30	---	---	---	9.3	7.1	8.1	21.7	17.0	19.0	19.5	15.6	17.6
31	---	---	---	---	---	---	---	---	---	18.3	16.4	17.3
MONTH	4.0	-0.2	0.8	17.8	0.1	8.2	22.0	6.7	14.1	24.1	12.7	17.5

03254550 BANKLICK CREEK AT HIGHWAY 1829 NEAR ERLANGER, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	21.0	13.8	17.0	28.9	24.4	26.4	29.3	22.5	25.6	25.5	21.6	22.8
2	19.4	14.3	17.1	30.3	24.5	27.0	26.7	20.5	23.0	21.8	21.0	21.4
3	17.6	14.7	15.9	30.2	24.5	27.1	25.0	21.3	22.7	22.8	21.2	21.8
4	16.8	15.0	15.8	30.8	25.4	27.7	22.5	20.0	20.9	24.1	20.2	21.6
5	21.5	13.8	17.3	29.6	24.4	27.3	23.6	19.4	21.1	22.3	18.0	20.1
6	22.6	15.3	19.0	30.6	25.3	27.7	24.2	19.4	21.7	22.9	17.2	19.8
7	23.0	18.3	20.4	30.1	25.6	27.7	23.9	20.3	21.5	21.8	17.1	19.5
8	22.0	18.5	19.9	30.8	26.7	28.2	23.7	19.3	21.0	22.7	18.3	20.4
9	23.1	16.5	19.5	30.1	24.4	27.0	23.4	19.7	21.1	24.0	18.9	21.4
10	23.0	17.7	20.5	25.1	23.0	23.8	25.2	20.2	22.1	25.6	19.8	22.4
11	23.7	19.8	21.7	25.9	21.2	23.4	23.1	20.5	21.7	25.2	20.1	22.4
12	22.6	20.1	21.2	26.9	21.4	24.0	25.0	19.2	21.7	24.5	18.6	21.5
13	25.0	19.8	22.0	27.4	21.3	24.2	26.5	20.5	23.3	24.9	19.6	22.1
14	24.3	20.5	22.6	28.9	21.9	25.1	28.3	22.6	25.2	22.9	20.3	21.6
15	22.6	20.8	21.6	26.2	22.8	24.2	26.0	23.4	24.4	24.1	20.2	21.9
16	25.1	20.2	22.2	27.3	22.3	24.4	27.8	22.5	24.7	23.4	17.6	20.5
17	24.9	21.7	23.3	28.7	21.5	24.8	27.6	22.8	24.9	23.7	17.6	20.5
18	25.1	21.2	23.2	28.5	23.2	25.6	27.2	20.8	23.9	22.9	17.8	20.4
19	23.6	21.3	22.2	26.4	21.7	23.7	27.1	20.5	23.7	21.0	18.8	19.7
20	24.8	17.9	21.1	27.5	19.7	23.3	27.8	21.2	24.4	22.0	16.1	18.7
21	25.1	17.6	21.3	25.3	21.4	23.8	29.7	23.7	26.3	21.4	16.4	18.9
22	26.9	18.6	22.4	25.7	22.1	23.6	27.2	24.1	25.5	20.2	18.2	18.9
23	27.9	19.7	23.4	23.5	20.9	22.0	27.9	22.2	24.8	19.8	16.5	17.9
24	28.9	20.6	24.4	25.5	19.4	22.2	27.5	21.4	24.3	19.9	14.4	16.9
25	29.2	21.9	25.4	27.4	20.0	23.4	28.1	22.0	24.9	20.5	16.8	18.2
26	28.2	23.8	26.0	28.4	21.3	24.6	29.5	23.5	26.2	18.2	14.3	16.4
27	28.4	21.5	25.0	28.9	22.9	25.8	28.0	25.0	26.4	18.4	16.8	17.5
28	28.4	20.9	24.5	27.3	24.1	25.3	29.2	24.2	26.5	16.8	14.5	15.9
29	29.0	21.9	25.2	28.0	21.6	24.4	28.7	25.1	26.9	15.5	12.7	14.1
30	29.1	23.2	26.0	28.0	21.0	24.3	27.2	24.5	25.5	15.7	10.9	13.2
31	---	---	---	26.9	22.8	24.5	24.5	21.5	22.7	---	---	---
MONTH	29.2	13.8	21.6	30.8	19.4	25.0	29.7	19.2	23.8	25.6	10.9	19.6
YEAR	30.8	-0.5	13.0									

03254550 BANKLICK CREEK AT HIGHWAY 1829 NEAR ERLANGER, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	9.1	6.2	7.4	12.5	10.4	11.2	16.0	10.0	12.9	---	---	---
2	9.7	5.9	7.3	13.5	10.8	11.9	15.2	10.3	13.0	13.0	10.1	11.6
3	10.3	5.9	7.7	13.6	11.0	12.0	15.5	11.1	13.0	12.4	11.7	12.2
4	8.3	5.4	6.6	12.9	11.0	11.6	15.2	11.8	13.3	13.0	12.2	12.5
5	9.2	6.5	7.6	12.3	10.9	11.1	14.4	11.5	12.7	12.8	12.2	12.5
6	10.2	6.8	8.3	11.3	10.7	11.0	13.4	10.9	12.1	12.9	12.3	12.5
7	10.5	7.0	8.4	12.7	10.6	11.4	14.2	11.2	12.2	13.6	12.7	13.1
8	10.9	7.4	8.9	12.9	10.1	11.3	13.4	10.9	12.0	13.3	12.1	12.7
9	10.4	7.7	8.9	12.4	9.4	10.7	13.7	11.4	12.3	13.0	11.9	12.5
10	9.3	7.4	8.3	11.2	8.7	9.6	13.4	11.4	12.3	13.6	12.2	12.9
11	8.6	7.5	8.3	9.1	8.5	8.8	13.0	11.3	12.2	15.0	13.4	14.4
12	9.4	7.6	8.4	10.5	7.6	9.1	12.6	10.5	11.7	15.4	14.4	14.8
13	10.6	7.3	8.4	10.6	7.5	8.3	12.2	10.7	11.3	15.5	14.4	14.8
14	11.8	7.9	9.7	9.7	7.6	8.4	12.0	10.2	11.3	15.2	14.3	14.7
15	11.4	8.8	9.9	10.6	7.5	8.5	12.9	10.1	11.5	15.9	14.6	15.1
16	12.2	8.8	10.2	11.2	8.0	9.2	13.4	10.2	11.4	15.5	14.6	14.9
17	12.6	9.3	10.7	11.0	8.7	9.5	12.7	10.5	11.5	15.5	14.5	14.9
18	12.5	9.2	10.7	12.1	8.9	10.2	11.9	10.2	11.0	15.8	14.2	14.8
19	10.8	8.6	9.6	12.9	8.6	10.1	11.3	4.3	10.3	15.7	14.2	14.7
20	12.6	8.5	10.2	13.3	8.8	10.2	10.3	7.2	9.3	15.6	14.1	14.7
21	12.4	9.1	10.4	12.5	6.8	9.4	11.5	9.1	10.5	16.4	14.3	15.0
22	12.1	9.0	10.3	11.4	8.5	9.8	11.1	9.0	10.1	16.6	14.3	15.1
23	11.6	8.9	10.3	13.9	7.7	10.7	12.0	10.9	11.6	16.6	14.4	15.2
24	11.2	9.3	10.3	13.5	9.1	10.8	13.1	11.7	12.5	17.2	14.4	15.5
25	10.5	9.1	9.6	13.8	8.8	10.6	13.4	11.9	12.8	17.3	14.3	15.4
26	9.3	8.9	9.1	13.5	7.5	10.7	14.4	12.9	13.6	15.4	14.1	14.7
27	10.4	8.9	9.5	15.2	7.8	11.5	14.7	13.6	14.3	16.3	14.4	15.0
28	11.2	8.9	9.8	16.1	8.9	12.0	16.0	14.3	15.2	15.5	14.3	14.8
29	10.1	9.1	9.7	15.2	10.0	12.4	16.2	15.0	15.5	16.8	14.3	15.1
30	10.5	9.9	10.1	13.7	8.7	11.4	15.8	14.4	15.2	16.8	14.4	15.3
31	11.6	10.2	10.7	---	---	---	15.3	13.9	14.8	16.6	14.3	15.1
MONTH	12.6	5.4	9.2	16.1	6.8	10.4	16.2	4.3	12.4	17.3	10.1	14.2
	FEBRUARY			MARCH			APRIL			MAY		
1	16.3	14.1	14.9	13.4	12.2	12.7	11.7	7.9	9.8	10.4	6.0	7.8
2	16.6	14.2	14.9	12.9	12.2	12.5	10.9	7.1	8.9	9.2	5.8	7.1
3	15.5	13.5	14.6	14.8	12.8	13.6	10.1	6.6	8.2	9.4	6.8	7.8
4	13.8	13.0	13.4	14.3	11.8	13.1	9.2	6.6	7.6	11.5	7.0	8.8
5	15.5	13.8	14.6	12.0	11.5	11.7	9.0	6.6	8.1	9.0	7.2	8.3
6	15.6	14.0	14.8	13.5	12.0	12.7	11.4	8.8	10.0	8.6	7.4	7.8
7	16.0	14.0	14.8	14.5	12.2	13.2	10.8	8.6	9.7	8.2	7.5	7.8
8	16.7	14.4	15.1	14.4	10.9	12.7	11.7	9.0	10.1	8.8	7.1	7.9
9	16.3	13.9	15.0	14.5	10.9	12.4	11.5	9.3	10.4	8.5	6.8	7.6
10	16.0	13.8	14.6	15.5	11.9	13.5	12.5	9.3	10.9	8.7	6.9	8.0
11	16.3	13.8	14.5	15.6	11.6	13.4	12.1	8.6	10.3	8.6	8.2	8.4
12	16.5	13.8	14.7	14.6	11.0	12.6	11.6	8.0	9.8	9.7	8.5	9.1
13	16.4	13.7	14.7	12.7	11.0	11.6	11.1	7.9	9.4	10.3	8.6	9.4
14	16.1	13.7	14.6	14.0	10.7	12.2	10.9	7.3	9.2	10.5	8.4	9.4
15	14.4	13.6	13.8	14.0	9.8	11.9	10.9	6.8	8.7	10.9	8.4	9.5
16	14.5	13.7	14.0	14.1	8.7	11.1	10.2	6.8	8.3	11.9	8.1	9.7
17	15.0	13.8	14.2	13.6	8.3	10.4	9.4	6.8	8.1	10.1	8.1	8.9
18	15.4	13.8	14.4	12.9	7.9	9.9	10.7	8.1	9.0	10.2	8.7	9.3
19	15.4	13.7	14.3	11.9	7.9	9.0	12.1	7.1	9.5	11.3	8.0	9.4
20	15.7	13.0	14.3	10.4	8.3	9.2	10.6	6.9	8.5	9.8	7.9	8.7
21	14.2	12.9	13.3	9.9	8.3	9.1	8.7	7.7	8.4	10.6	8.7	9.5
22	14.1	12.5	13.1	12.0	8.7	10.1	11.2	8.3	9.6	11.3	7.6	9.7
23	13.4	12.8	13.0	12.3	8.4	9.9	12.2	8.6	10.3	11.2	7.7	9.3
24	13.8	12.9	13.3	12.3	7.8	9.8	12.4	8.6	10.3	11.8	7.7	9.5
25	14.9	13.5	14.1	11.5	7.5	9.1	10.8	8.6	9.5	10.9	7.6	9.0
26	14.8	13.5	14.2	10.5	7.6	8.8	11.8	8.1	9.9	11.4	7.9	9.3
27	14.5	13.0	13.8	11.3	7.7	9.3	11.3	7.8	9.4	11.5	7.5	9.1
28	14.2	12.5	13.3	10.4	7.0	8.5	11.0	7.3	9.0	11.4	7.3	8.8
29	---	---	---	9.3	7.0	8.5	10.2	6.4	8.2	10.1	7.1	8.3
30	---	---	---	11.1	9.2	10.3	9.8	6.1	7.7	10.4	7.0	8.5
31	---	---	---	---	---	---	---	---	---	9.2	6.7	8.0
MONTH	16.7	12.5	14.2	15.6	7.0	11.1	12.5	6.1	9.2	11.9	5.8	8.7

03254550 BANKLICK CREEK AT HIGHWAY 1829 NEAR ERLANGER, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	12.2	7.4	9.4	9.3	4.7	6.2	10.6	5.5	7.7	9.2	7.2	8.0
2	11.7	7.0	9.0	9.1	4.2	6.3	8.6	5.9	7.5	8.5	7.6	7.9
3	8.6	6.9	7.9	9.9	4.4	6.8	8.0	6.9	7.5	8.1	7.4	7.6
4	9.5	7.5	8.4	11.9	4.8	7.5	7.3	6.6	7.0	8.2	7.1	7.7
5	11.1	7.1	8.9	11.0	4.2	7.1	6.8	5.8	6.4	8.7	7.2	7.9
6	11.5	6.8	8.8	10.9	4.1	6.6	6.7	5.5	6.1	9.4	7.4	8.2
7	11.2	6.6	8.2	10.3	3.5	5.7	7.5	5.5	6.3	10.0	7.4	8.6
8	10.4	6.6	7.9	6.7	3.6	5.0	7.4	6.2	6.6	10.5	7.4	8.5
9	9.6	6.7	8.3	7.6	3.0	4.7	7.1	6.3	6.7	10.4	7.2	8.5
10	11.3	6.6	8.6	5.6	4.9	5.1	7.3	6.0	6.6	10.4	7.0	8.3
11	10.5	6.7	8.2	6.5	5.0	5.9	7.2	6.0	6.5	10.1	6.7	8.0
12	8.6	6.6	7.6	7.2	5.3	6.1	7.7	6.2	7.0	10.4	5.0	7.9
13	10.6	7.0	8.4	8.3	5.2	6.4	8.7	6.3	7.3	10.4	4.4	6.2
14	8.0	6.7	7.5	8.4	4.9	6.4	9.5	6.6	7.7	9.7	6.7	8.1
15	8.3	7.4	7.8	7.0	4.6	5.7	8.9	6.5	7.4	10.1	6.5	7.8
16	9.5	6.5	8.2	6.9	5.5	6.4	8.1	6.6	7.4	11.6	7.3	8.9
17	9.2	6.2	7.4	8.2	5.3	6.6	8.8	6.2	7.3	11.7	7.7	9.1
18	10.3	6.3	7.8	8.2	4.9	6.2	9.1	6.2	7.5	11.7	6.8	9.2
19	9.6	6.0	7.5	6.1	5.1	5.6	9.7	6.3	7.8	10.3	6.0	7.5
20	11.4	6.6	8.5	6.7	4.8	6.0	9.7	6.0	7.6	12.7	8.7	10.2
21	11.4	6.4	8.4	5.7	4.7	5.1	9.7	6.0	7.3	11.8	7.8	9.3
22	11.0	6.0	7.9	7.2	5.2	6.3	7.7	5.4	6.2	10.4	7.0	8.1
23	10.4	5.4	7.4	6.6	5.8	6.3	9.4	5.9	7.3	11.5	7.2	8.7
24	10.0	4.9	7.0	7.3	5.8	6.6	9.6	6.1	7.5	10.3	8.6	9.4
25	9.6	4.6	6.7	8.2	5.7	6.7	9.4	6.0	7.2	10.1	8.7	9.2
26	8.7	4.4	6.1	8.5	5.6	6.9	9.0	5.3	6.9	11.2	8.0	9.7
27	8.6	4.2	6.2	8.0	5.2	6.4	8.7	5.5	6.9	10.0	7.2	8.2
28	9.6	5.0	6.9	7.3	5.0	5.9	9.1	5.2	6.9	8.5	7.5	8.0
29	9.1	4.6	6.5	9.0	6.0	7.2	8.5	5.4	6.9	9.1	7.5	8.4
30	9.0	4.4	6.4	10.6	5.9	7.9	8.0	5.2	6.5	9.6	8.7	9.2
31	---	---	---	10.6	5.9	7.6	8.4	6.3	7.5	---	---	---
MONTH	12.2	4.2	7.8	11.9	3.0	6.3	10.6	5.2	7.1	12.7	4.4	8.4
YEAR	17.3	3.0	9.9									

03254550 BANKLICK CREEK AT HIGHWAY 1829 NEAR ERLANGER, KY—Continued

TURBIDITY, WATER, UNFILTERED, NEPHELOMETRIC TURBIDITY UNITS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	78	38	53	34	23	28	230	4.3	11	---	---	---
2	82	18	44	27	18	21	14	4.4	6.1	1,000	260	770
3	75	22	42	21	14	17	18	4.6	6.5	1,000	34	230
4	550	31	110	68	14	24	16	4.8	7.5	84	20	37
5	770	48	150	1,000	17	190	23	4.0	8.7	29	15	23
6	72	36	46	350	49	120	23	3.0	6.5	33	21	26
7	240	35	49	65	33	41	6.0	4.0	4.4	29	17	22
8	69	28	41	42	24	32	8.0	3.0	4.5	20	12	15
9	72	30	44	30	18	23	10	4.0	5.3	19	10	12
10	54	34	42	260	21	83	13	3.0	4.8	14	8.0	11
11	1,000	40	230	260	82	180	560	4.0	190	13	5.0	8.0
12	140	65	80	95	18	52	140	34	65	28	7.0	18
13	87	56	67	20	10	15	870	24	210	13	6.0	8.3
14	62	45	51	18	6.4	9.5	290	43	93	9.0	4.0	5.3
15	62	40	47	24	6.4	12	46	23	31	8.0	3.0	5.2
16	56	39	45	800	9.7	24	76	19	26	7.0	2.0	4.5
17	95	42	52	20	7.8	10	1,000	14	340	5.0	2.0	3.4
18	64	40	50	10	5.1	7.2	570	47	120	4.0	2.0	3.1
19	61	44	53	75	5.1	17	1,000	42	460	6.0	1.0	2.8
20	58	43	50	94	4.4	26	760	74	250	5.0	1.0	2.6
21	54	44	48	100	4.6	27	81	39	55	5.0	1.0	2.3
22	65	43	52	94	11	26	48	26	34	4.0	0.0	1.8
23	79	51	61	16	6.9	9.5	51	17	25	4.0	1.0	2.1
24	74	57	64	17	5.1	9.1	39	11	15	5.0	1.0	1.9
25	1,000	65	390	17	3.3	7.0	96	11	28	5.0	0.0	1.8
26	680	140	250	14	3.4	5.8	31	8.0	12	10	0.0	1.2
27	200	110	140	14	3.6	4.9	230	7.0	36	12	0.0	3.5
28	160	100	120	25	3.8	6.3	70	8.0	16	5.0	0.0	1.2
29	1,000	100	370	15	3.9	5.4	12	6.0	8.5	17	0.0	4.0
30	230	46	120	10	4.1	5.9	720	6.0	190	19	9.0	12
31	130	18	50	---	---	---	1,000	72	360	11	5.0	7.1
MONTH	1,000	18	97	1,000	3.3	35	1,000	3.0	85	1,000	0.0	42
	FEBRUARY			MARCH			APRIL			MAY		
1	6.0	3.0	4.1	190	49	95	55	26	32	39	9.1	21
2	51	4.0	15	180	93	120	46	25	29	770	14	130
3	1,000	10	100	95	73	83	42	29	33	430	42	150
4	1,000	71	430	210	68	99	70	31	38	57	18	37
5	72	24	44	1,000	120	330	970	32	190	990	41	540
6	160	20	49	190	98	130	76	37	53	330	94	160
7	59	11	17	98	69	84	260	37	66	180	64	85
8	19	11	14	94	54	63	69	31	38	91	42	59
9	17	10	12	68	38	47	64	31	38	150	39	63
10	43	11	13	50	30	36	39	24	32	990	54	440
11	150	10	40	34	19	25	73	20	24	410	130	230
12	160	17	48	23	1.0	13	29	16	20	170	82	110
13	50	19	27	850	0.0	120	32	13	17	250	58	84
14	66	20	28	160	23	59	28	13	18	95	45	61
15	700	64	310	28	8.0	13	50	13	18	83	39	51
16	100	48	67	18	6.0	8.5	23	3.7	9.4	62	38	46
17	49	36	41	15	6.0	9.0	440	3.1	25	96	42	65
18	75	29	33	15	5.0	7.4	55	1.9	13	100	46	68
19	110	24	29	610	3.0	120	11	1.0	2.0	62	34	44
20	590	20	52	380	35	120	1,000	0.3	59	220	29	63
21	510	32	230	66	33	42	1,000	120	530	140	56	94
22	1,000	220	740	39	15	24	130	29	64	40	17	23
23	690	96	230	31	12	15	72	20	31	51	12	27
24	670	58	160	29	12	16	61	24	32	52	6.0	19
25	66	47	53	40	13	18	66	19	28	44	12	23
26	52	44	45	54	19	33	39	9.5	19	75	15	28
27	48	42	43	28	15	19	37	10	18	29	13	22
28	55	41	45	63	17	21	51	13	23	46	18	26
29	---	---	---	610	21	200	64	9.9	20	120	26	54
30	---	---	---	120	40	67	46	7.1	21	55	23	33
31	---	---	---	---	---	---	---	---	---	74	23	33
MONTH	1,000	3.0	100	1,000	0.0	68	1,000	0.3	51	990	6.0	93

03254550 BANKLICK CREEK AT HIGHWAY 1829 NEAR ERLANGER, KY—Continued

TURBIDITY, WATER, UNFILTERED, NEPHELOMETRIC TURBIDITY UNITS—CONTINUED
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	51	17	28	91	43	61	210	77	110	940	60	230
2	39	23	29	93	22	51	990	86	350	870	62	210
3	290	31	130	62	20	38	280	170	220	210	53	93
4	150	69	100	65	20	31	990	150	420	89	40	61
5	75	25	56	83	28	46	480	130	190	66	42	57
6	92	39	57	60	26	42	170	120	140	110	37	56
7	84	43	54	72	22	46	980	110	310	71	37	53
8	670	52	160	68	24	41	980	120	420	64	34	52
9	240	110	160	980	46	150	960	120	200	58	27	45
10	140	70	98	980	620	900	140	100	120	58	15	33
11	200	76	90	910	250	460	170	93	120	60	24	36
12	300	86	160	270	150	210	180	120	150	59	20	38
13	150	80	110	190	130	150	150	64	98	53	14	29
14	790	85	270	190	100	150	90	58	74	54	22	31
15	530	100	170	970	120	210	970	38	210	50	14	32
16	950	50	230	970	310	680	350	67	140	62	17	34
17	110	35	62	360	190	270	170	62	80	77	17	36
18	84	30	49	330	170	210	95	60	77	57	13	32
19	84	32	51	960	130	690	100	59	77	46	13	24
20	86	25	45	730	300	440	100	66	81	40	20	28
21	91	20	40	950	300	480	93	64	78	51	12	29
22	84	26	43	960	250	390	93	69	81	880	12	230
23	69	25	45	960	460	790	89	64	76	140	54	88
24	96	32	52	660	320	400	100	66	79	66	33	44
25	90	31	52	420	150	280	110	58	75	50	21	35
26	85	34	57	250	140	180	120	47	71	42	16	25
27	120	42	70	200	110	160	95	49	62	1,000	17	350
28	72	29	51	630	110	160	87	47	63	110	43	65
29	80	32	55	200	68	110	75	39	55	50	27	35
30	93	42	60	150	67	93	87	41	64	78	23	30
31	---	---	---	150	76	110	420	17	120	---	---	---
MONTH	950	17	88	980	20	260	990	17	140	1,000	12	71
YEAR	1,000	0.0	95									

03260100 ELIJAHS CREEK AT ELIJAHS CREEK ROAD NEAR HEBRON, KY

LOCATION.--Lat 39°04'47", long 84°41'07", Boone County, Hydrologic Unit 05090203, at bridge on Elijahs Creek Road, 0.6 mi downstream from Interstate 275, 1.3 mi northeast of Hebron, and 2.5 mi upstream from the mouth.

DRAINAGE AREA.--4.03 mi^2.

WATER DISCHARGE RECORDS

PERIOD OF RECORD.--October 1999 to current year.

GAGE.--Water-stage recorder with telemetry. Datum of gage is 759.085 ft above NGVD of 1929.

REMARKS.--2002: Records fair except for those estimated which are poor.
2003: Records fair except for those estimated which are poor.

COOPERATION.--Northern Kentucky Sanitation District No. 1.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.53	1.5	0.30	3.2	2.2	16	2.3	1.9	0.91	0.64	0.44	e204
2	0.31	1.3	0.33	2.6	2.8	11	2.1	9.8	0.79	0.68	14	42
3	0.51	1.4	0.40	2.1	3.7	6.8	1.8	0.85	21	0.25	3.2	23
4	19	2.0	0.18	2.3	2.0	5.4	1.3	1.0	2.1	0.21	18	4.1
5	1.6	33	0.48	2.8	1.3	27	12	183	1.4	0.78	2.2	1.6
6	0.61	5.6	0.27	2.6	1.6	6.3	1.5	6.1	1.1	14	0.83	0.84
7	0.42	2.1	0.23	2.2	1.5	6.5	14	4.7	1.7	3.0	0.66	0.59
8	0.30	1.6	0.40	2.1	1.0	2.6	2.7	1.8	7.5	1.2	0.56	0.87
9	0.30	1.7	0.19	1.3	1.9	2.2	4.8	2.5	1.7	53	0.31	0.68
10	0.88	93	0.17	1.1	1.9	1.8	4.0	310	1.2	39	0.33	0.27
11	21	14	1.8	1.2	1.5	1.6	1.9	23	3.9	2.1	1.0	0.23
12	1.4	1.7	1.9	1.4	1.4	1.5	1.6	3.5	26	1.0	1.2	0.23
13	0.88	0.81	1.9	1.7	1.6	16	1.5	1.7	3.0	0.60	0.20	0.30
14	0.60	0.45	1.9	1.5	1.6	2.2	1.1	1.2	67	0.45	8.7	0.93
15	0.58	3.1	1.4	1.2	1.8	5.2	0.58	1.3	35	27	4.9	2.0
16	0.65	1.9	0.85	1.7	1.3	1.5	0.62	0.76	5.6	4.7	0.84	0.28
17	0.72	0.49	1.7	1.1	1.7	1.4	0.85	8.4	2.3	1.2	0.25	0.31
18	0.48	0.19	3.2	0.67	1.9	0.84	4.7	2.2	1.4	0.87	0.16	0.52
19	4.9	0.37	4.3	1.1	2.4	32	1.3	1.1	1.2	65	0.18	0.71
20	1.2	0.18	3.3	1.8	2.3	5.4	21	6.9	0.91	1.5	0.23	1.2
21	0.61	5.8	3.0	1.3	2.2	23	18	1.8	0.56	26	0.36	0.54
22	0.56	3.4	2.6	0.93	e7.0	4.1	2.0	0.94	0.48	3.0	51	25
23	0.54	0.45	1.9	0.70	e8.1	2.8	1.6	0.70	0.42	1.7	2.1	3.3
24	1.1	0.21	1.9	0.83	e6.6	2.6	1.6	0.57	0.46	1.2	0.67	1.5
25	91	0.17	2.0	1.3	6.8	4.6	1.8	2.0	0.57	0.53	1.2	0.73
26	6.9	0.50	1.7	1.2	2.5	10	1.4	1.5	11	0.30	0.55	0.19
27	2.2	0.48	1.7	0.65	1.9	2.6	1.2	1.5	2.2	0.25	0.59	48
28	14	0.17	1.8	1.8	7.2	2.1	1.2	8.0	0.62	11	0.23	1.5
29	59	0.26	1.7	2.2	---	42	1.3	7.2	0.36	0.75	3.1	0.87
30	5.1	0.52	4.3	1.8	---	7.0	1.1	1.2	0.29	0.70	2.9	0.97
31	2.1	---	5.5	1.9	---	5.7	---	2.8	---	0.60	46	---
TOTAL	239.98	178.35	53.30	50.28	79.7	259.74	112.85	599.92	202.67	263.21	166.89	367.26
MEAN	7.74	5.95	1.72	1.62	2.85	8.38	3.76	19.4	6.76	8.49	5.38	12.2
MAX	91	93	5.5	3.2	8.1	42	21	310	67	65	51	204
MIN	0.30	0.17	0.17	0.65	1.0	0.84	0.58	0.57	0.29	0.21	0.16	0.19

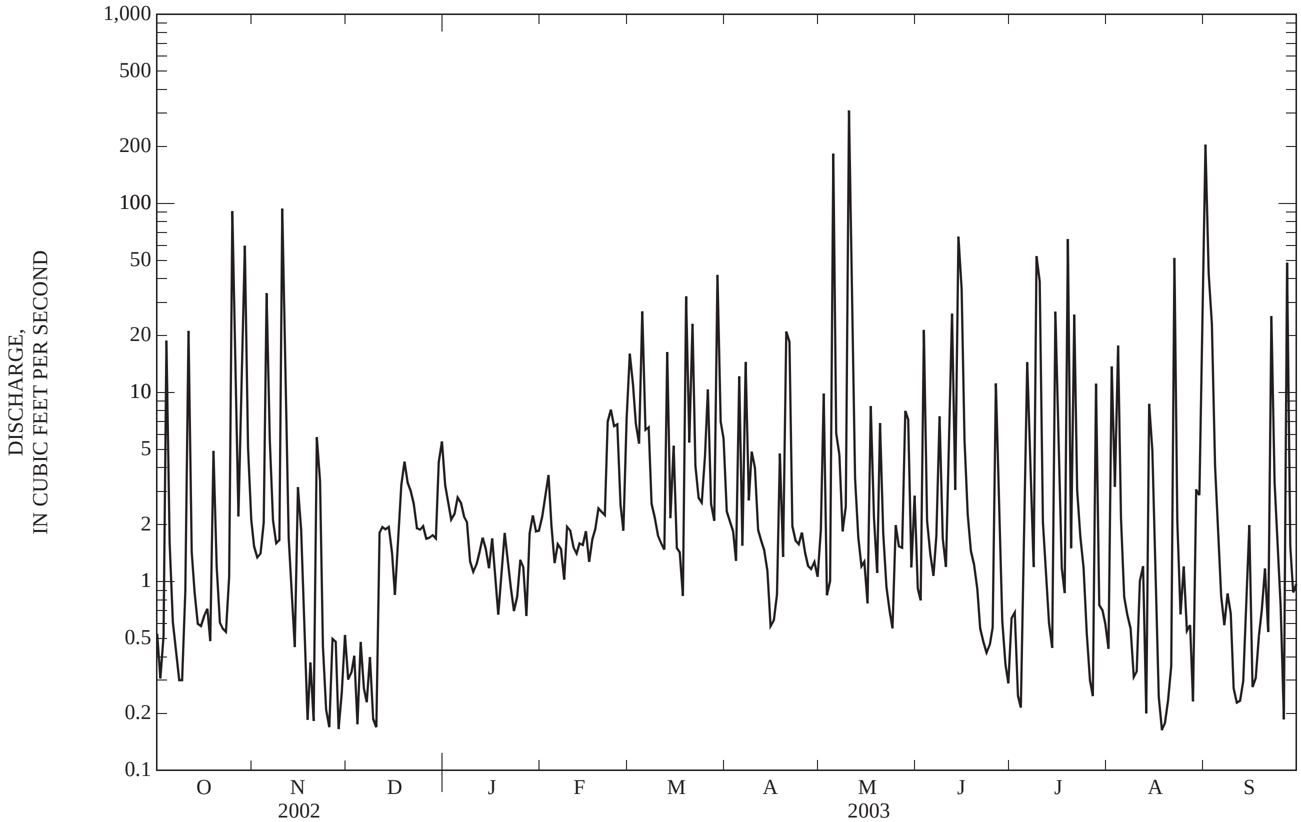
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	6.68	4.18	5.76	6.65	8.19	7.84	7.67	13.0	5.65	3.51	2.22	6.28
MAX	14.6	8.13	14.8	14.7	18.6	15.0	16.5	21.9	7.59	8.49	5.38	12.2
(WY)	(2002)	(2002)	(2002)	(2000)	(2000)	(2002)	(2002)	(2002)	(2002)	(2003)	(2003)	(2003)
MIN	1.06	0.86	1.72	1.62	2.85	1.79	1.57	4.27	3.22	0.80	0.63	0.006
(WY)	(2001)	(2000)	(2003)	(2003)	(2003)	(2001)	(2001)	(2001)	(2001)	(2002)	(2002)	(2001)

03260100 ELIJAHS CREEK AT ELIJAHS CREEK ROAD NEAR HEBRON, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 2000 - 2003	
ANNUAL TOTAL	3,136.24		2,574.15			
ANNUAL MEAN	8.59		7.05		6.46	
HIGHEST ANNUAL MEAN					10.5	2002
LOWEST ANNUAL MEAN					2.22	2001
HIGHEST DAILY MEAN	236	Sep 27	310	May 10	310	May 10, 2003
LOWEST DAILY MEAN	0.01	Jun 3	0.16	Aug 18	0.00	Oct 2, 1999
ANNUAL SEVEN-DAY MINIMUM	0.08	Jun 17	0.27	Dec 4	0.00	Oct 15, 1999
MAXIMUM PEAK FLOW			1,510	May 10	1,510	May 10, 2003
MAXIMUM PEAK STAGE			7.34	May 10	7.34	May 10, 2003
10 PERCENT EXCEEDS	17		14		11	
50 PERCENT EXCEEDS	1.6		1.6		1.3	
90 PERCENT EXCEEDS	0.17		0.35		0.16	

e Estimated



03260100 ELIJAHS CREEK AT ELIJAHS CREEK ROAD NEAR HEBRON, KY—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 2002 to September 2003.

COOPERATION.--Northern Kentucky Sanitation District No. 1.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: March 2001 to current year.
pH: March 2001 to current year.
WATER TEMPERATURES: March 2001 to current year.
DISSOLVED OXYGEN: March 2001 to current year.
TURBIDITY: March 2001 to current year.

INSTRUMENTATION.--Water-quality monitor with telemetry.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Records good.
pH: Records good.
WATER TEMPERATURES: Records good.
DISSOLVED OXYGEN: Records good.
TURBIDITY: Records good. Turbidity data collected from May 21, 2003 to June 17, 2003 pnly, due to trubidity probe problems and truidity probe being removed from the monitor.

EXTREMES FOR PERIOD OF RECORD.--
SPECIFIC CONDUCTANCE: Maximum recorded, 5520 microsiemens, Jan. 17, 2003; minimum recorded, 21 microsiemens, July 18, 2001.
pH: Maximum recorded, 6.7 units, Aug. 1, 13, 17, 18, 2003; minimum recorded, 6.7 units, April 9, 2003.
WATER TEMPERATURES: Maximum recorded, 29.°C, July 8, 2003; minimum recorded, 0.4°C, Dec. 5, 2002.
DISSOLVED OXYGEN: Maximum recorded, 19.9 mg/L, May 6, 2001; minimum recorded, 0.5 mg/L, May 19, 2001.
TURBIDITY: Maximum recorded, greater than 1000 NTU, several days in 2001, 2002 and June 8, 14, 2003; minimum recorded, 0.3 NTU, Sept. 18, 2001.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum recorded, 5520 microsiemens, Jan. 17, 2003; minimum recorded, 70 microsiemens, July 19, 2003.
pH: Maximum recorded, 8.7 units, Aug. 1, 13, 17, 18, 2003; minimum recorded, 6.7 units, Apr. 9, 2003.
WATER TEMPERATURES: Maximum recorded, 29.6°C, July 8, 2003; minimum recorded, 0.4°C, Dec. 5, 2002.
DISSOLVED OXYGEN: Maximum recorded, 18.4 mg/L, July 5, 2003; minimum recorded, 1.4 mg/L, Mar. 22, 23, 2003.
TURBIDITY: Maximum recorded, greater than 1000 NTU, June 8, 14, 2003; minimum recorded, 1.4 NTU, May 22, 26, 2003.

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	952	860	911	914	811	872	1,170	1,130	1,150	567	188	375
2	967	932	953	981	914	951	1,150	1,040	1,100	590	445	515
3	978	940	963	1,050	978	1,010	1,050	993	1,030	5,120	487	2,190
4	980	163	724	1,120	925	1,070	1,160	1,040	1,120	2,790	1,370	1,890
5	659	411	573	1,040	373	764	1,660	983	1,080	2,960	1,240	1,890
6	744	659	701	885	568	754	---	---	---	2,680	1,440	1,820
7	795	744	766	1,030	885	965	---	---	---	1,440	1,150	1,250
8	822	783	804	1,130	1,030	1,080	---	---	---	1,150	824	1,090
9	859	819	836	1,200	1,130	1,170	---	---	---	824	573	700
10	911	851	881	1,190	432	739	---	---	---	701	624	663
11	900	148	438	627	472	567	---	---	---	675	627	655
12	737	585	670	696	627	672	---	---	---	709	662	684
13	810	736	771	764	696	729	---	---	---	683	618	653
14	851	810	829	830	762	783	---	---	---	4,120	606	1,340
15	881	851	862	881	439	784	---	---	---	2,520	1,000	1,570
16	917	881	898	614	426	527	---	---	---	5,490	1,140	1,760
17	968	916	942	717	614	666	---	---	---	5,520	2,960	3,950
18	982	945	970	783	717	752	---	---	---	---	---	---
19	984	253	556	835	783	806	965	172	462	---	---	---
20	610	454	552	856	835	847	620	238	424	---	---	---
21	682	610	642	864	309	620	677	521	598	---	---	---
22	749	682	710	585	351	485	801	677	738	---	---	---
23	791	749	766	695	585	644	880	759	841	---	---	---
24	983	791	848	762	695	728	1,040	875	913	---	---	---
25	1,100	125	615	806	762	784	2,220	873	1,780	---	---	---
26	616	358	534	908	779	822	3,770	2,200	3,250	---	---	---
27	777	612	705	917	800	860	3,720	2,900	3,410	---	---	---
28	785	210	483	1,300	889	1,070	2,930	2,020	2,570	---	---	---
29	642	161	425	1,340	1,300	1,320	2,120	1,780	1,980	---	---	---
30	685	469	596	1,300	1,140	1,200	3,300	509	1,210	---	---	---
31	821	685	757	---	---	---	943	348	657	---	---	---
MONTH	1,100	125	732	1,340	309	835	3,770	172	1,350	5,520	188	1,350

03260100 ELIJAHS CREEK AT ELIJAHS CREEK ROAD NEAR HEBRON, KY—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	807	716	767	1,120	476	1,000
2	---	---	---	---	---	---	833	807	822	1,080	545	743
3	---	---	---	---	---	---	871	827	852	792	658	751
4	---	---	---	---	---	---	849	807	826	869	651	840
5	---	---	---	---	---	---	929	663	734	725	304	457
6	---	---	---	---	---	---	663	645	653	1,000	721	885
7	---	---	---	---	---	---	693	627	659	1,230	952	1,020
8	---	---	---	---	---	---	667	622	643	1,200	979	1,100
9	---	---	---	---	---	---	827	667	727	1,420	1,180	1,290
10	---	---	---	---	---	---	846	771	829	1,180	344	627
11	---	---	---	---	---	---	772	735	757	544	447	503
12	---	---	---	1,390	1,340	1,370	825	765	801	617	540	582
13	---	---	---	2,820	798	1,210	852	792	825	673	617	645
14	---	---	---	950	805	871	902	843	872	725	673	700
15	---	---	---	1,510	904	1,070	878	738	791	801	725	764
16	---	---	---	1,090	925	963	887	734	766	826	801	814
17	---	---	---	1,060	925	968	1,130	736	854	832	675	764
18	---	---	---	962	774	812	1,460	733	1,070	833	736	789
19	---	---	---	1,330	570	817	1,130	1,090	1,110	903	833	868
20	---	---	---	925	740	872	1,090	231	990	1,120	362	814
21	---	---	---	1,040	545	691	634	264	544	834	495	673
22	---	---	---	861	748	817	744	631	691	963	834	892
23	---	---	---	888	849	864	857	744	815	1,000	962	982
24	---	---	---	942	834	900	930	857	887	1,050	997	1,030
25	---	---	---	1,060	797	915	1,040	711	890	1,280	968	1,080
26	---	---	---	929	514	686	1,030	864	981	968	660	709
27	---	---	---	848	700	807	1,040	1,000	1,020	989	756	855
28	---	---	---	905	763	880	1,040	987	1,010	987	287	833
29	---	---	---	768	474	562	1,030	975	1,000	606	276	468
30	---	---	---	---	---	---	1,090	984	1,040	707	606	662
31	---	---	---	---	---	---	---	---	---	805	532	597
MONTH	---	---	---	2,820	474	893	1,460	231	841	1,420	276	798

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	618	567	593	992	890	929	986	887	941	696	77	507
2	727	618	671	1,080	900	996	988	241	602	621	115	428
3	738	203	418	1,080	998	1,040	698	552	608	585	232	436
4	618	445	541	1,100	983	1,040	712	202	548	734	305	592
5	715	613	670	1,170	1,000	1,100	960	477	676	836	704	775
6	834	715	767	1,180	163	898	880	638	829	933	780	893
7	1,090	821	985	706	378	529	1,030	848	897	963	922	946
8	895	307	698	751	596	639	1,040	915	978	989	428	783
9	722	466	634	745	137	545	1,060	944	1,020	963	816	898
10	822	720	776	643	106	429	1,060	1,010	1,040	983	923	955
11	921	581	661	771	643	708	1,160	960	1,110	996	983	989
12	647	200	425	884	771	847	1,170	657	765	983	915	944
13	597	372	504	947	884	930	665	616	649	955	928	943
14	627	142	355	981	941	964	684	152	570	1,010	926	965
15	564	246	421	1,020	119	861	450	161	390	1,090	633	778
16	679	424	574	263	136	231	683	414	559	633	599	615
17	911	679	773	334	262	302	769	683	711	640	612	623
18	908	789	818	394	330	367	782	719	755	669	615	654
19	879	789	838	756	70	465	771	743	758	804	669	700
20	937	879	904	932	756	884	800	701	782	886	486	779
21	946	924	935	978	226	613	856	800	824	542	468	482
22	963	902	942	873	629	781	882	118	490	637	71	386
23	1,020	963	997	804	613	726	742	447	679	693	471	566
24	1,040	990	1,010	1,070	791	911	833	684	784	700	468	531
25	1,040	923	971	1,070	930	987	881	424	658	672	457	529
26	1,230	172	853	1,120	828	953	935	499	737	870	672	802
27	581	223	451	930	884	899	1,000	891	947	874	151	436
28	694	581	639	944	268	562	1,020	942	989	774	608	696
29	800	694	743	786	575	689	980	355	809	851	774	826
30	900	800	837	1,020	784	816	512	344	421	912	657	773
31	---	---	---	1,070	916	992	543	137	367	---	---	---
MONTH	1,230	142	713	1,180	70	762	1,170	118	738	1,090	71	708
YEAR	5,520	70	843									

03260100 ELIJAHS CREEK AT ELIJAHS CREEK ROAD NEAR HEBRON, KY—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	8.3	8.0	8.1	8.3	8.1	8.2	8.3	8.0	8.1	7.7	7.5	7.6
2	8.4	8.0	8.1	8.3	8.1	8.2	8.3	8.1	8.2	7.5	7.4	7.5
3	8.4	8.0	8.1	8.3	8.1	8.2	8.3	8.1	8.2	7.7	7.4	7.5
4	8.4	7.7	8.0	8.3	8.1	8.2	8.3	8.1	8.2	7.8	7.5	7.6
5	8.2	7.8	7.9	8.2	7.8	8.0	8.3	8.0	8.2	7.7	7.6	7.6
6	8.3	7.8	8.0	8.1	7.8	8.0	8.3	8.0	8.1	7.7	7.6	7.6
7	8.4	7.9	8.1	8.2	8.0	8.1	8.3	8.0	8.1	7.8	7.6	7.7
8	8.5	8.0	8.2	8.2	7.9	8.1	8.3	8.0	8.1	7.8	7.6	7.7
9	8.5	8.0	8.2	8.2	7.9	8.0	8.3	7.9	8.1	7.7	7.6	7.6
10	8.4	8.0	8.2	8.0	7.6	7.8	8.3	8.0	8.1	7.8	7.6	7.7
11	8.1	7.8	8.0	7.8	7.6	7.7	8.1	7.8	7.9	7.9	7.8	7.8
12	8.3	7.9	8.0	8.0	7.8	7.9	8.2	7.9	8.0	7.8	7.7	7.8
13	8.4	7.9	8.1	8.0	7.8	7.9	8.2	7.9	8.0	7.9	7.7	7.8
14	8.4	8.0	8.2	8.5	7.8	8.0	8.2	7.9	8.0	7.9	7.7	7.8
15	8.4	8.0	8.2	8.0	7.7	7.9	8.3	8.0	8.1	7.9	7.7	7.8
16	8.5	8.1	8.2	7.9	7.7	7.8	8.2	7.9	8.1	7.8	7.5	7.7
17	8.4	8.1	8.2	8.1	7.8	7.9	8.1	7.9	8.0	---	---	---
18	8.4	8.1	8.3	8.1	7.9	8.0	8.2	7.9	8.0	---	---	---
19	8.2	7.8	8.0	8.2	7.9	8.0	8.1	7.8	7.9	---	---	---
20	8.5	7.8	8.1	8.2	7.9	8.1	8.0	7.8	7.9	---	---	---
21	8.4	7.9	8.1	8.1	7.6	7.9	8.0	7.9	7.9	---	---	---
22	8.5	7.9	8.2	8.0	7.7	7.9	8.0	7.9	7.9	---	---	---
23	8.5	8.0	8.2	8.2	7.9	8.0	8.0	7.9	7.9	---	---	---
24	8.5	8.1	8.3	8.2	7.9	8.1	8.0	7.9	7.9	---	---	---
25	8.2	7.8	8.0	8.2	8.0	8.1	7.9	7.8	7.9	---	---	---
26	8.0	7.8	7.9	8.3	8.1	8.2	7.8	7.7	7.7	---	---	---
27	8.1	8.0	8.0	8.3	8.0	8.1	7.8	7.7	7.8	---	---	---
28	8.1	7.8	7.9	8.2	8.0	8.1	7.9	7.7	7.8	---	---	---
29	8.0	7.9	7.9	8.2	8.0	8.0	7.9	7.8	7.9	---	---	---
30	8.2	7.9	8.1	8.2	8.0	8.1	7.9	7.8	7.9	---	---	---
31	8.3	8.1	8.2	---	---	---	7.8	7.6	7.7	---	---	---
MONTH	8.5	7.7	8.1	8.5	7.6	8.0	8.3	7.6	8.0	7.9	7.4	7.7
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	8.0	7.7	7.8	8.0	7.5	7.8
2	---	---	---	---	---	---	8.1	7.8	7.9	7.9	7.2	7.6
3	---	---	---	---	---	---	8.3	7.8	8.0	7.8	7.6	7.7
4	---	---	---	---	---	---	8.4	7.8	8.0	8.0	7.7	7.8
5	---	---	---	---	---	---	8.1	7.7	7.8	7.8	7.5	7.7
6	---	---	---	---	---	---	8.0	7.7	7.8	7.9	7.6	7.7
7	---	---	---	---	---	---	7.8	7.6	7.7	7.8	7.6	7.7
8	---	---	---	---	---	---	7.7	7.6	7.6	7.9	7.6	7.8
9	---	---	---	---	---	---	8.0	6.7	7.8	7.8	7.7	7.8
10	---	---	---	---	---	---	8.1	7.9	8.0	7.8	7.4	7.6
11	---	---	---	---	---	---	8.0	7.9	8.0	7.7	7.5	7.5
12	---	---	---	7.9	7.7	7.8	8.1	8.0	8.0	7.7	7.5	7.5
13	---	---	---	7.8	7.5	7.7	8.1	8.1	8.1	7.7	7.5	7.6
14	---	---	---	7.9	7.7	7.8	8.1	8.0	8.1	7.8	7.7	7.7
15	---	---	---	7.9	7.6	7.8	8.1	7.7	7.9	8.0	7.7	7.9
16	---	---	---	8.0	7.7	7.9	8.1	7.6	7.8	8.0	7.8	7.9
17	---	---	---	8.0	7.8	7.9	8.1	7.5	7.8	7.8	7.4	7.6
18	---	---	---	8.1	7.8	7.9	7.7	7.5	7.6	7.6	7.4	7.6
19	---	---	---	8.0	7.6	7.8	7.9	7.5	7.7	7.7	7.6	7.6
20	---	---	---	7.9	7.7	7.8	8.0	7.4	7.7	7.8	7.4	7.7
21	---	---	---	7.8	7.6	7.7	7.7	7.4	7.5	8.1	7.5	7.8
22	---	---	---	7.9	7.7	7.8	7.7	7.5	7.6	8.1	7.9	8.0
23	---	---	---	8.0	7.8	7.9	7.7	7.6	7.6	8.2	7.9	8.0
24	---	---	---	8.0	7.8	7.9	7.7	7.5	7.6	8.2	8.0	8.1
25	---	---	---	8.0	7.7	7.9	7.8	7.6	7.6	8.1	7.7	8.0
26	---	---	---	7.8	7.6	7.7	8.1	7.6	7.8	7.9	7.7	7.8
27	---	---	---	7.9	7.6	7.8	8.2	8.1	8.2	8.0	7.8	7.9
28	---	---	---	8.0	7.8	7.9	8.2	8.1	8.2	7.8	7.5	7.7
29	---	---	---	7.8	7.4	7.5	8.3	8.1	8.2	7.8	7.5	7.6
30	---	---	---	---	---	---	8.1	7.9	8.0	8.1	7.7	7.9
31	---	---	---	---	---	---	---	---	---	7.9	7.6	7.7
MONTH	---	---	---	8.1	7.4	7.8	8.4	6.7	7.8	8.2	7.2	7.8

03260100 ELIJAHS CREEK AT ELIJAHS CREEK ROAD NEAR HEBRON, KY—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS—CONTINUED
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	8.0	7.6	7.8	8.6	8.0	8.2	8.7	8.2	8.4	8.1	7.8	8.0
2	8.1	7.8	7.9	8.4	8.0	8.2	8.3	7.9	8.1	7.9	7.8	7.8
3	7.9	7.6	7.8	8.5	7.9	8.1	8.5	7.9	8.2	7.9	7.7	7.8
4	8.0	7.7	7.9	8.5	7.9	8.2	8.3	7.8	8.0	8.0	7.7	7.9
5	8.0	7.9	7.9	8.5	7.9	8.2	8.3	7.9	8.1	8.0	7.8	7.9
6	8.1	7.9	8.0	8.6	7.6	8.0	8.5	8.1	8.3	8.0	7.9	8.0
7	8.0	7.7	7.9	7.8	7.6	7.7	8.5	8.1	8.3	8.1	8.0	8.0
8	8.0	7.5	7.7	8.3	7.6	7.9	8.6	8.1	8.3	8.2	8.0	8.1
9	7.9	7.5	7.7	8.1	7.6	7.8	8.6	8.1	8.4	8.1	8.0	8.1
10	8.2	7.7	7.9	7.8	7.4	7.5	8.6	8.1	8.4	8.1	8.0	8.1
11	7.9	7.6	7.8	7.6	7.4	7.5	8.6	8.1	8.3	8.2	8.0	8.1
12	7.8	7.5	7.7	7.7	7.6	7.7	8.5	7.9	8.2	8.2	8.0	8.1
13	8.0	7.7	7.8	7.9	7.7	7.8	8.7	7.8	8.2	8.2	8.0	8.1
14	7.9	7.4	7.7	8.0	7.8	7.9	8.6	7.8	8.1	8.2	8.0	8.1
15	7.8	7.5	7.6	8.0	7.5	7.9	8.2	7.7	7.9	8.1	7.8	8.0
16	7.9	7.6	7.8	7.6	7.5	7.6	8.5	7.8	8.1	8.3	7.8	8.0
17	8.1	7.8	7.9	7.6	7.5	7.5	8.7	7.9	8.3	8.3	8.0	8.1
18	7.9	7.7	7.8	7.5	7.4	7.5	8.7	8.1	8.4	8.4	8.0	8.2
19	8.0	7.8	7.9	7.8	7.4	7.6	8.6	8.1	8.4	8.4	8.1	8.3
20	8.1	7.9	8.0	7.8	7.6	7.7	8.6	8.1	8.4	8.4	8.1	8.2
21	8.2	8.0	8.1	7.7	7.6	7.7	8.6	8.1	8.3	8.4	8.1	8.2
22	8.2	8.0	8.1	8.1	7.7	7.9	8.3	7.8	8.0	8.2	7.8	8.0
23	8.2	8.0	8.1	8.0	7.6	7.8	8.2	7.8	8.0	8.1	7.9	8.0
24	8.2	8.0	8.1	8.1	7.8	8.0	8.4	8.1	8.2	8.3	8.0	8.1
25	8.2	8.0	8.1	8.2	7.9	8.0	8.3	7.9	8.1	8.3	8.0	8.1
26	8.4	7.6	8.1	8.4	8.0	8.2	8.3	7.8	8.0	8.4	8.1	8.2
27	8.3	7.7	8.0	8.4	8.0	8.2	8.3	8.1	8.2	8.3	7.8	8.0
28	8.5	7.9	8.1	8.1	7.7	7.9	8.4	8.1	8.3	8.3	8.0	8.1
29	8.5	7.9	8.2	8.4	7.8	8.1	8.5	7.8	8.2	8.3	8.2	8.2
30	8.6	7.9	8.2	8.6	8.1	8.3	8.2	7.8	7.9	8.3	8.1	8.2
31	---	---	---	8.6	8.1	8.3	8.1	7.8	7.9	---	---	---
MONTH	8.6	7.4	7.9	8.6	7.4	7.9	8.7	7.7	8.2	8.4	7.7	8.1
YEAR	8.7	6.7	7.9									

03260100 ELIJAHS CREEK AT ELIJAHS CREEK ROAD NEAR HEBRON, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	22.3	19.0	20.4	8.6	6.1	7.8	1.3	0.2	0.7	7.0	4.4	5.2
2	23.3	19.3	21.0	6.8	4.1	5.6	2.6	0.1	1.0	4.4	3.1	4.0
3	23.6	20.0	21.6	6.8	4.7	6.0	1.3	-0.2	0.3	3.7	2.3	3.0
4	22.7	20.9	21.5	7.5	6.6	7.1	0.0	-0.2	-0.1	3.5	1.4	2.5
5	20.9	16.3	18.4	9.3	7.2	8.1	0.0	-0.4	-0.2	3.9	2.4	3.2
6	18.4	14.5	16.3	9.2	7.4	8.3	0.0	-0.3	-0.2	3.9	2.0	3.3
7	16.7	13.0	15.2	9.0	6.5	7.8	0.0	-0.2	-0.2	3.3	0.7	1.9
8	15.1	10.9	12.9	10.1	6.8	8.4	0.3	-0.3	-0.1	5.2	1.9	3.4
9	15.5	12.1	13.7	12.1	9.1	10.6	0.0	-0.2	-0.1	5.7	2.9	4.1
10	15.3	13.9	14.6	15.4	11.9	13.9	0.1	-0.2	-0.1	3.7	0.2	2.4
11	17.2	15.3	16.5	14.0	10.3	12.5	2.8	-0.3	1.4	0.5	0.0	0.1
12	18.4	16.1	17.1	10.3	8.7	9.2	3.5	2.4	3.0	0.4	0.1	0.2
13	17.0	12.5	15.5	9.7	7.0	8.4	4.2	2.8	3.4	0.5	0.1	0.2
14	12.8	9.6	11.3	13.2	7.5	10.4	4.0	3.0	3.5	0.3	0.0	0.2
15	12.1	9.2	10.6	12.3	11.3	11.6	5.3	1.8	3.8	0.4	0.1	0.2
16	11.2	8.9	10.4	12.0	8.4	9.8	4.9	2.8	3.8	0.3	-0.1	0.2
17	10.3	8.1	9.1	9.3	7.0	8.2	4.0	2.6	3.3	---	---	---
18	12.0	7.9	10	7.9	5.0	6.6	7.2	3.9	5.6	---	---	---
19	13.4	11.3	12.5	10.9	7.6	9.1	8.3	6.2	7.7	---	---	---
20	12.5	10.0	11.1	10.0	5.9	8.1	8.0	4.8	6.2	---	---	---
21	12.2	9.0	10.4	11.2	8.0	9.6	5.5	3.7	4.6	---	---	---
22	12.0	7.6	9.7	9.6	6.6	7.8	5.8	3.2	4.8	---	---	---
23	11.5	7.8	9.6	7.4	5.0	6.2	4.0	1.9	3.0	---	---	---
24	11.1	8.6	9.7	7.9	4.2	6.1	3.6	2.3	3.1	---	---	---
25	12.5	8.9	10.3	6.3	4.8	5.8	3.1	1.6	2.1	---	---	---
26	12.4	11.7	12.0	4.8	3.2	3.7	1.9	1.0	1.4	---	---	---
27	12.2	11.0	11.5	4.2	1.8	3.1	2.4	0.7	1.4	---	---	---
28	11.8	10.0	10.9	2.7	1.2	1.8	3.6	0.4	2.0	---	---	---
29	10.7	7.8	9.2	4.7	0.8	2.7	4.2	1.1	2.7	---	---	---
30	9.0	8.4	8.7	4.8	1.1	3.3	7.6	2.4	5.3	---	---	---
31	9.6	8.3	8.9	---	---	---	8.0	7.0	7.5	---	---	---
MONTH	23.6	7.6	13.2	15.4	0.8	7.6	8.3	-0.4	2.6	7.0	-0.1	2.1

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	15.9	6.9	10.8	22.8	16.4	19.1
2	---	---	---	---	---	---	18.3	9.8	13.7	20.0	16.2	18.0
3	---	---	---	---	---	---	19.6	11.8	15.5	17.0	13.8	15.3
4	---	---	---	---	---	---	18.0	13.9	15.8	15.3	11.1	13.4
5	---	---	---	---	---	---	16.2	8.5	12.1	18.1	13.0	15.3
6	---	---	---	---	---	---	8.6	6.3	7.5	20.2	15.6	17.5
7	---	---	---	---	---	---	10.2	6.9	8.4	18.4	16.6	17.4
8	---	---	---	---	---	---	9.8	7.6	8.6	20.0	15.9	17.9
9	---	---	---	---	---	---	8.3	5.5	6.7	21.6	17.3	19.3
10	---	---	---	---	---	---	11.4	5.6	7.9	20.2	17.9	18.7
11	---	---	---	---	---	---	14.5	5.8	9.9	19.2	15.4	17.9
12	---	---	---	7.1	3.7	5.0	15.4	7.4	11.4	15.8	13.4	14.6
13	---	---	---	7.4	3.9	5.4	15.7	8.2	12.0	17.3	12.3	14.9
14	---	---	---	9.4	1.6	5.1	17.4	8.4	12.8	17.5	13.8	15.6
15	---	---	---	10.7	3.7	6.5	19.9	12.0	15.6	18.5	15.2	16.8
16	---	---	---	14.3	5.3	9.5	20.2	13.5	16.9	18.7	14.9	16.8
17	---	---	---	13.9	7.8	10.9	17.2	15.0	15.9	17.9	16.4	17.3
18	---	---	---	15.0	10.2	12.5	17.2	13.8	15.4	18.3	16.8	17.4
19	---	---	---	14.7	10.8	12.9	20.4	12.5	16.4	20.2	17.0	18.4
20	---	---	---	14.9	9.5	11.9	19.5	15.7	17.4	19.5	17.7	19.0
21	---	---	---	12.5	8.9	11.0	16.0	13.4	14.8	18.2	15.0	16.7
22	---	---	---	12.7	6.6	9.8	13.4	10.6	12.1	18.6	14.1	16.2
23	---	---	---	14.3	8.0	11.0	15.3	7.6	11.4	18.3	13.6	16.0
24	---	---	---	16.7	8.0	12.1	13.4	9.1	11.3	17.6	12.9	15.4
25	---	---	---	16.4	9.9	13.0	12.5	11.3	11.8	15.6	14.2	15.0
26	---	---	---	15.6	9.6	12.2	16.7	10.6	13.3	16.9	13.8	15.3
27	---	---	---	15.6	7.8	11.6	17.1	9.5	13.6	18.1	14.2	16.1
28	---	---	---	17.3	11.4	14.2	19.1	10.4	15.0	18.5	14.5	16.6
29	---	---	---	13.8	7.3	9.0	19.9	15.5	17.5	18.2	15.5	16.7
30	---	---	---	---	---	---	19.7	15.4	17.5	17.9	14.5	16.4
31	---	---	---	---	---	---	---	---	---	16.9	15.1	16.2
MONTH	---	---	---	17.3	1.6	10.2	20.4	5.5	13.0	22.8	11.1	16.7

03260100 ELIJAHS CREEK AT ELIJAHS CREEK ROAD NEAR HEBRON, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	17.9	13.0	15.2	27.2	21.3	23.8	26.7	21.3	23.6	24.3	21.4	22.3
2	17.2	12.4	15.0	26.8	21.8	24.1	24.1	22.0	23.2	23.3	21.5	22.1
3	15.7	13.9	14.9	27.9	21.6	24.5	24.1	21.2	22.7	23.7	21.7	22.5
4	15.5	14.6	15.0	28.8	22.8	25.5	22.8	20.9	21.6	22.7	20.1	21.4
5	18.9	13.2	15.9	28.5	22.7	25.3	23.0	20.1	21.4	20.9	18.1	19.6
6	20.1	14.3	17.2	29.0	22.7	25.4	24.5	19.8	22.0	20.6	17.1	18.8
7	20.3	17.0	18.4	26.5	22.5	24.8	25.6	20.5	22.7	20.9	17.0	18.9
8	20.7	17.5	18.8	29.6	24.2	25.8	26.3	20.5	22.9	22.8	18.2	20.3
9	21.0	16.2	18.6	26.5	22.9	24.3	25.1	20.6	22.5	22.5	18.8	20.7
10	21.6	16.9	19.1	24.3	22.4	23.4	25.5	20.4	22.5	23.1	19.2	21.0
11	21.5	18.5	20.0	23.6	20.9	22.4	24.4	21.1	22.5	22.6	18.8	20.3
12	21.2	19.4	20.0	24.6	20.3	22.2	25.3	20.5	22.5	21.9	17.0	19.4
13	22.4	18.8	20.4	25.5	19.9	22.3	26.4	20.6	23.2	22.9	18.1	20.4
14	23.7	19.8	21.2	25.7	20.2	22.7	27.9	22.2	24.7	21.7	19.1	20.4
15	21.1	19.4	20.1	23.6	21.2	22.3	27.7	23.8	25.3	21.2	18.0	20.0
16	22.4	18.7	20.3	26.0	21.9	23.7	27.9	23.4	25.3	20.5	15.8	18.0
17	23.4	19.9	21.6	25.0	20.7	23.0	26.3	22.7	24.2	20.0	15.5	17.7
18	23.0	19.9	21.5	24.7	21.7	23.2	25.2	19.4	22.0	20.0	15.4	17.7
19	21.4	19.6	20.6	24.7	20.9	22.6	25.1	18.7	21.6	18.8	16.3	17.6
20	21.0	16.5	18.7	24.6	19.5	22.3	26.2	19.6	22.8	17.8	13.6	16.0
21	21.7	15.6	18.6	24.3	21.3	22.8	27.2	22.4	24.6	19.2	14.2	16.9
22	23.2	16.5	19.7	23.8	21.2	22.6	26.2	23.3	24.6	20.2	18.2	19.2
23	24.3	17.4	20.7	22.5	20.8	21.7	24.3	21.8	23.1	18.7	16.3	17.4
24	25.5	18.4	21.6	23.5	19.1	21.2	24.3	19.8	21.9	18.9	14.5	16.8
25	26.3	19.4	22.6	25.3	19.0	21.8	25.7	20.3	22.8	19.1	15.6	17.7
26	26.8	21.8	23.6	25.8	19.8	22.6	26.8	22.3	24.4	17.3	13.1	15.4
27	24.3	20.3	22.1	27.1	21.6	24.2	26.2	23.3	24.5	18.9	17.0	17.8
28	24.8	18.1	21.2	24.8	22.5	23.8	26.9	22.0	24.3	17.1	13.8	15.2
29	26.2	19.5	22.5	25.1	20.5	22.4	27.3	22.9	24.7	14.0	12.0	13.1
30	26.2	20.4	23.1	24.7	19.2	21.8	25.0	22.4	23.4	13.7	10.4	12.2
31	---	---	---	24.5	21.1	22.5	22.4	20.0	21.3	---	---	---
MONTH	26.8	12.4	19.6	29.6	19.0	23.3	27.9	18.7	23.2	24.3	10.4	18.6
YEAR	29.6	-0.4	14.3									

03260100 ELIJAHS CREEK AT ELIJAHS CREEK ROAD NEAR HEBRON, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	10.9	6.9	9.8	12.0	10.1	10.9	15.9	12.2	13.7	13.8	5.3	10.5
2	12.5	6.6	8.6	12.7	10.6	11.5	16.3	12.6	13.8	12.0	9.9	10.9
3	11.7	6.3	8.3	12.8	10.3	11.2	16.7	12.5	14.3	13.0	10.7	11.7
4	11.5	6.2	7.3	11.0	10.0	10.4	17.4	12.9	14.6	12.6	10.8	11.5
5	9.3	6.8	7.8	11.3	10.0	10.4	16.9	12.6	14.2	11.7	10.2	10.9
6	11.0	7.2	8.6	11.7	10.3	10.9	17.3	12.6	14.5	11.2	10.2	10.6
7	12.5	7.3	9.3	12.8	10.8	11.6	16.8	12.5	14.0	11.6	9.8	10.6
8	14.2	8.1	10.4	12.9	10.1	11.4	17.2	12.5	14.0	10.4	8.0	9.4
9	14.6	8.0	10.1	12.8	9.5	10.8	16.2	12.1	13.6	10.8	8.4	9.7
10	12.2	7.4	9.0	10.3	7.0	9.1	16.4	11.7	13.3	11.6	9.3	10.6
11	9.2	7.5	8.3	10.0	7.0	9.5	13.7	11.9	13.0	12.9	11.3	12.1
12	10.0	6.6	8.0	11.7	9.8	10.7	13.9	12.5	13.0	13.4	11.3	12.2
13	10.9	6.6	8.3	11.8	10.1	10.8	13.4	11.8	12.5	13.5	11.5	12.3
14	12.3	7.4	9.5	11.8	9.3	10.5	13.5	11.9	12.6	13.3	11.8	12.4
15	12.3	7.9	9.6	10.6	8.6	9.6	14.0	11.0	12.5	12.9	7.3	10.0
16	12.6	7.6	9.3	10.8	8.9	9.9	14.1	10.8	12.0	12.2	9.9	11.0
17	12.1	8.3	9.7	12.6	10.1	11.0	12.7	11.2	11.8	---	---	---
18	12.5	8.0	9.7	13.6	10.6	11.8	12.6	10.0	11.2	---	---	---
19	9.2	7.3	8.3	12.4	10.1	10.9	11.3	9.2	10.6	---	---	---
20	12.7	8.1	9.9	13.4	10.0	11.4	11.6	10.6	11.1	---	---	---
21	13.0	8.6	10.2	10.6	8.8	9.8	11.9	10.4	11.1	---	---	---
22	13.5	8.9	10.5	11.3	8.9	10.2	10.9	9.8	10.3	---	---	---
23	13.9	8.8	10.7	12.5	10.1	11.0	11.6	9.3	10.5	---	---	---
24	13.3	8.8	10.3	12.8	10.3	11.3	10.5	9.0	9.7	---	---	---
25	10.0	7.6	9.1	13.1	10.3	11.4	11.3	9.0	9.9	---	---	---
26	9.6	9.1	9.3	14.1	11.0	12.4	10.6	9.1	9.6	---	---	---
27	10.0	8.8	9.3	14.2	11.7	12.6	10.1	8.2	9.2	---	---	---
28	9.8	8.7	9.3	14.4	11.6	12.6	9.9	7.4	9.0	---	---	---
29	10.7	8.4	9.6	13.8	10.4	12.2	8.2	6.2	7.4	---	---	---
30	10.6	9.7	10.1	13.9	10.2	11.7	11.8	5.8	8.2	---	---	---
31	11.6	10.0	10.5	---	---	---	10.4	4.9	6.5	---	---	---
MONTH	14.6	6.2	9.3	14.4	7.0	11.0	17.4	4.9	11.7	13.8	5.3	11.0
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	5.4	4.5	4.9	5.6	2.0	3.8
2	---	---	---	---	---	---	5.8	4.7	5.2	7.4	3.2	5.4
3	---	---	---	---	---	---	6.4	5.0	5.6	6.7	3.7	5.3
4	---	---	---	---	---	---	7.1	5.2	6.0	8.7	5.9	7.3
5	---	---	---	---	---	---	5.9	5.2	5.5	9.9	7.1	8.7
6	---	---	---	---	---	---	7.4	5.7	6.6	8.9	6.5	8.0
7	---	---	---	---	---	---	7.3	5.9	6.3	7.8	3.7	5.6
8	---	---	---	---	---	---	7.2	6.1	6.6	7.9	6.0	7.0
9	---	---	---	---	---	---	8.0	6.5	7.1	6.7	3.0	3.8
10	---	---	---	---	---	---	6.9	6.6	6.8	11.7	3.2	7.8
11	---	---	---	---	---	---	7.2	6.9	7.1	10.5	7.8	9.3
12	---	---	---	9.6	8.8	9.3	7.5	7.2	7.4	9.4	5.3	8.3
13	---	---	---	10.8	9.0	9.9	7.8	7.5	7.7	8.4	5.3	7.7
14	---	---	---	12.2	9.2	10.7	8.1	7.8	7.9	8.8	7.6	8.3
15	---	---	---	10.6	7.6	9.4	8.3	6.4	7.9	8.4	4.6	6.6
16	---	---	---	9.0	5.6	7.4	10.2	6.2	8.1	5.8	4.6	5.3
17	---	---	---	6.9	5.1	6.0	10.4	6.2	7.9	8.8	5.5	6.4
18	---	---	---	8.7	5.6	7.9	8.5	2.1	4.8	5.9	5.0	5.5
19	---	---	---	9.1	5.8	7.9	6.0	3.4	4.5	6.1	5.5	5.9
20	---	---	---	7.2	4.0	6.0	9.3	3.3	4.9	6.9	4.8	6.0
21	---	---	---	5.5	2.8	4.0	8.8	6.2	6.9	9.4	6.3	7.7
22	---	---	---	3.0	1.4	2.2	9.2	6.5	7.8	10.0	7.4	8.4
23	---	---	---	1.7	1.4	1.6	9.2	5.8	7.8	10.6	7.3	8.7
24	---	---	---	2.0	1.7	1.9	7.2	4.5	6.1	11.1	7.2	8.7
25	---	---	---	2.3	2.0	2.1	6.4	4.0	5.1	9.9	5.9	8.0
26	---	---	---	2.6	2.3	2.4	4.2	3.8	3.9	8.4	5.1	6.5
27	---	---	---	2.9	2.6	2.7	4.5	4.2	4.3	7.9	3.0	5.9
28	---	---	---	3.2	2.8	3.0	5.2	4.5	4.8	5.7	2.5	3.6
29	---	---	---	3.6	3.1	3.3	5.3	4.7	5.0	6.9	5.0	6.0
30	---	---	---	---	---	---	5.4	3.6	5.0	7.7	5.4	6.5
31	---	---	---	---	---	---	---	---	---	6.0	2.1	3.5
MONTH	---	---	---	12.2	1.4	5.4	10.4	2.1	6.2	11.7	2.0	6.6

03260100 ELIJAHS CREEK AT ELIJAHS CREEK ROAD NEAR HEBRON, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	7.2	4.5	6.0	15.7	6.2	9.4	14.3	7.3	9.9	10.0	7.9	8.6
2	8.3	5.5	6.8	13.6	6.3	8.9	8.6	6.8	7.7	9.8	8.1	9.1
3	8.0	6.1	6.9	15.8	5.0	9.1	9.4	6.6	7.8	9.4	8.0	8.6
4	7.5	6.2	6.8	17.7	4.0	9.0	9.8	6.5	7.5	8.5	7.9	8.2
5	7.7	5.5	6.8	18.4	5.2	9.7	9.7	7.4	8.4	8.7	8.0	8.4
6	8.0	5.6	6.9	17.3	4.2	7.9	11.2	7.4	9.0	8.8	8.2	8.5
7	6.2	2.9	3.8	6.3	4.2	5.1	12.2	7.3	9.1	9.3	8.3	8.7
8	7.8	4.0	5.3	7.6	2.4	5.2	13.2	7.4	9.5	9.2	8.0	8.6
9	7.6	5.2	6.5	7.3	1.8	4.8	15.3	7.4	10.1	9.1	8.2	8.6
10	8.9	6.0	7.2	7.4	2.0	4.3	15.8	7.7	10.7	10.7	7.2	8.7
11	7.4	3.7	5.6	4.4	3.3	3.9	15.0	7.8	10.6	11.4	7.0	8.4
12	7.2	3.8	5.8	6.3	3.8	5.3	11.7	4.9	7.9	11.4	7.2	8.5
13	8.2	6.8	7.5	7.3	5.1	6.1	12.9	5.3	8.5	10.6	6.9	8.1
14	8.9	6.7	7.5	8.4	2.6	6.5	13.4	6.9	8.4	9.1	6.5	7.5
15	9.4	8.2	8.9	9.5	5.0	6.7	9.9	7.0	7.9	6.8	5.0	6.1
16	9.6	7.9	9.0	---	---	---	11.9	7.4	9.1	8.5	5.5	6.6
17	8.9	5.4	8.0	---	---	---	14.3	7.2	9.6	10.0	5.6	7.8
18	7.8	4.5	6.2	---	---	---	14.9	8.1	10.3	10.5	6.9	8.2
19	8.0	6.4	7.2	---	---	---	14.0	8.7	10.4	10.0	7.2	8.5
20	9.3	7.2	8.1	---	---	---	13.6	8.6	10.1	11.3	7.9	9.0
21	9.9	7.3	8.4	---	---	---	12.8	8.4	9.8	10.7	7.8	8.8
22	10.6	7.1	8.4	9.3	6.4	8.6	9.2	7.7	8.3	8.6	7.2	8.0
23	12.1	7.1	8.7	9.4	5.3	7.4	8.4	7.4	7.8	9.0	7.6	8.4
24	13.1	7.1	8.9	9.9	6.9	8.1	9.2	7.4	8.1	10.1	7.5	8.5
25	12.8	6.9	8.7	11.0	6.8	8.3	10.2	6.9	8.0	8.8	6.9	7.6
26	11.3	5.0	7.4	12.7	6.8	9.2	9.5	6.3	7.8	9.4	6.9	7.9
27	9.2	6.2	7.5	12.8	6.5	9.0	10.5	6.9	8.3	8.6	7.0	7.7
28	11.3	6.4	8.2	7.3	5.6	6.6	11.7	7.6	9.0	8.6	7.4	8.0
29	12.8	6.3	8.5	10.0	6.1	7.8	13.2	7.2	8.8	9.1	8.1	8.6
30	14.9	6.1	9.3	13.0	7.4	9.6	10.0	7.6	8.7	9.9	8.4	9.0
31	---	---	---	13.7	7.2	9.5	9.9	7.9	8.8	---	---	---
MONTH	14.9	2.9	7.4	18.4	1.8	7.4	15.8	4.9	8.9	11.4	5.0	8.2
YEAR	18.4	1.4	8.5									

03260100 ELIJAHS CREEK AT ELIJAHS CREEK ROAD NEAR HEBRON, KY—Continued

TURBIDITY, WATER, UNFILTERED, NEPHELOMETRIC TURBIDITY UNITS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	99	14	44
23	---	---	---	---	---	---	---	---	---	42	21	27
24	---	---	---	---	---	---	---	---	---	45	16	22
25	---	---	---	---	---	---	---	---	---	77	16	22
26	---	---	---	---	---	---	---	---	---	36	14	19
27	---	---	---	---	---	---	---	---	---	56	15	26
28	---	---	---	---	---	---	---	---	---	600	33	79
29	---	---	---	---	---	---	---	---	---	340	110	140
30	---	---	---	---	---	---	---	---	---	130	42	77
31	---	---	---	---	---	---	---	---	---	89	39	46
MONTH	---	---	---	---	---	---	---	---	---	600	14	50

03260100 ELIJAHS CREEK AT ELIJAHS CREEK ROAD NEAR HEBRON, KY—Continued

TURBIDITY, WATER, UNFILTERED, NEPHELOMETRIC TURBIDITY UNITS—CONTINUED
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	47	42	44	---	---	---	---	---	---	---	---	---
2	52	44	48	---	---	---	---	---	---	---	---	---
3	720	48	190	---	---	---	---	---	---	---	---	---
4	75	58	64	---	---	---	---	---	---	---	---	---
5	80	54	60	---	---	---	---	---	---	---	---	---
6	68	48	57	---	---	---	---	---	---	---	---	---
7	67	38	44	---	---	---	---	---	---	---	---	---
8	1,000	46	120	---	---	---	---	---	---	---	---	---
9	74	58	64	---	---	---	---	---	---	---	---	---
10	60	52	55	---	---	---	---	---	---	---	---	---
11	120	36	46	---	---	---	---	---	---	---	---	---
12	800	35	150	---	---	---	---	---	---	---	---	---
13	160	92	130	---	---	---	---	---	---	---	---	---
14	1,000	43	300	---	---	---	---	---	---	---	---	---
15	86	22	39	---	---	---	---	---	---	---	---	---
16	32	22	27	---	---	---	---	---	---	---	---	---
17	32	25	28	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	1,000	22	86	---	---	---	---	---	---	---	---	---
YEAR	1,000	14	73									

03262001 WOOLPER CREEK AT WOOLPER CREEK ROAD NEAR BURLINGTON, KY

LOCATION.--Lat 39°01'48", long 84°48'15", Boone County, Hydrologic Unit 05090203, at bridge, 1.0 mi upstream from Ashby Fork, 1.1 mi downstream from Double Lick Creek, 4.3 mi west of Burlington, and at mile 4.8.

DRAINAGE AREA.--24.19 mi^2.

PERIOD OF RECORD.--December 2000 to current year.

GAGE.--Water-stage recorder with telemetry. Datum of gage is 490.67 ft NGVD of 1929.

REMARKS.--Water year 2001: Records fair except for periods of estimated records, which are poor.
Water year 2002: Records fair except for periods of estimated records, which are poor.
Water year 2003: Records fair except for periods of estimated records, which are poor.

COOPERATION.--Northern Kentucky Sanitation District No. 1.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

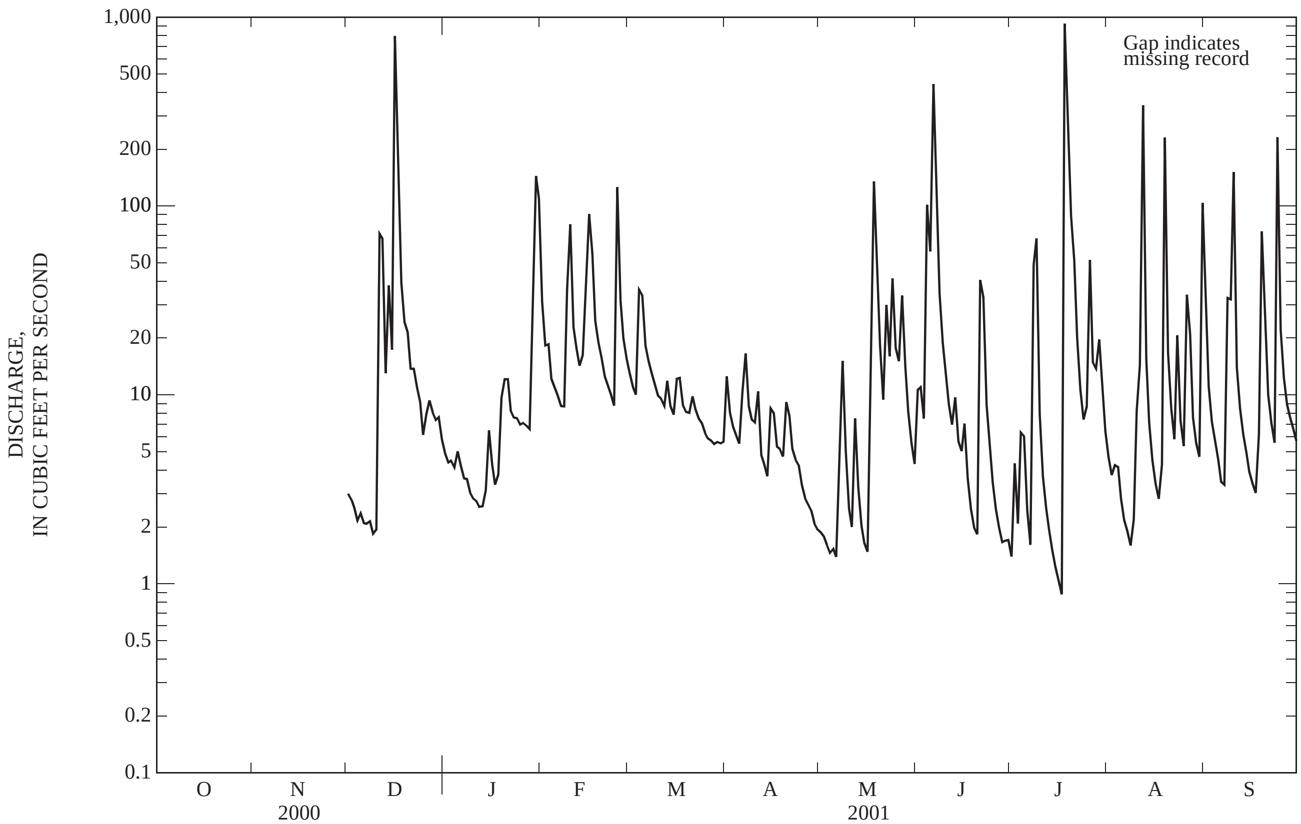
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	e3.0	4.9	31	13	13	1.9	11	1.4	4.7	32
2	---	---	2.8	4.4	18	e11	8.1	1.8	11	4.3	3.8	11
3	---	---	2.5	4.5	19	e10	6.7	1.6	7.5	2.1	4.3	7.2
4	---	---	2.2	4.2	12	36	6.1	1.5	101	6.3	4.2	5.7
5	---	---	2.4	5.0	11	34	5.5	1.5	57	6.0	2.8	4.5
6	---	---	2.1	4.2	9.9	18	10	1.4	441	2.5	2.2	3.5
7	---	---	2.1	3.6	8.7	15	17	3.6	120	1.6	1.9	3.3
8	---	---	2.1	3.6	8.7	13	8.7	15	34	49	1.6	33
9	---	---	1.8	3.0	36	11	7.4	5.0	19	67	2.2	e32
10	---	---	1.9	2.8	80	9.9	7.2	2.5	12	7.9	8.2	151
11	---	---	71	2.7	23	9.5	10	2.0	9.0	3.7	14	14
12	---	---	67	2.6	17	8.8	e4.8	7.5	7.0	2.5	340	8.5
13	---	---	e13	2.6	14	12	e4.3	3.2	9.7	2.0	16	6.2
14	---	---	e38	3.1	16	8.7	e3.7	2.0	5.7	1.5	7.2	4.9
15	---	---	17	6.5	37	7.9	8.5	1.6	5.0	1.2	4.5	3.9
16	---	---	795	4.3	91	12	8.0	1.5	7.1	1.0	3.4	3.4
17	---	---	166	3.3	56	12	5.3	15	3.6	0.88	2.8	3.0
18	---	---	39	3.8	25	8.9	5.2	135	2.5	921	4.3	6.2
19	---	---	24	9.6	19	8.1	4.7	57	2.0	364	230	73
20	---	---	21	12	16	8.1	9.2	18	1.8	88	17	27
21	---	---	14	12	13	9.8	7.7	9.4	41	51	8.5	10
22	---	---	14	8.3	11	8.4	5.2	30	33	20	5.8	7.1
23	---	---	11	7.6	10	7.5	4.6	16	8.9	11	21	5.6
24	---	---	9.2	7.5	8.8	7.1	4.2	41	5.4	7.4	7.3	231
25	---	---	6.2	7.0	125	6.3	3.3	18	3.5	8.7	5.4	22
26	---	---	7.8	7.1	32	5.9	2.8	15	2.5	52	34	12
27	---	---	9.3	6.9	20	5.7	2.6	33	2.0	15	21	8.9
28	---	---	8.1	6.6	16	5.5	2.4	14	1.7	14	7.6	7.5
29	---	---	7.4	26	---	5.6	2.1	8.2	1.7	20	5.6	6.7
30	---	---	7.6	144	---	5.5	1.9	5.6	1.7	11	4.7	5.7
31	---	---	5.8	110	---	5.7	---	4.3	---	6.5	104	---
TOTAL	---	---	1,374.3	433.7	784.1	339.9	190.2	473.1	968.3	1,750.48	900.0	749.8
MEAN	---	---	44.3	14.0	28.0	11.0	6.34	15.3	32.3	56.5	29.0	25.0
MAX	---	---	795	144	125	36	17	135	441	921	340	231
MIN	---	---	1.8	2.6	8.7	5.5	1.9	1.4	1.7	0.88	1.6	3.0

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2001 - 2001, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	---	---	44.3	14.0	28.0	11.0	6.34	15.3	32.3	56.5	29.0	25.0
MAX	---	---	44.3	14.0	28.0	11.0	6.34	15.3	32.3	56.5	29.0	25.0
(WY)	---	---	(2001)	(2001)	(2001)	(2001)	(2001)	(2001)	(2001)	(2001)	(2001)	(2001)
MIN	---	---	44.3	14.0	28.0	11.0	6.34	15.3	32.3	56.5	29.0	25.0
(WY)	---	---	(2001)	(2001)	(2001)	(2001)	(2001)	(2001)	(2001)	(2001)	(2001)	(2001)

e Estimated

03262001 WOOLPER CREEK AT WOOLPER CREEK ROAD NEAR BURLINGTON, KY—Continued



03262001 WOOLPER CREEK AT WOOLPER CREEK ROAD NEAR BURLINGTON, KY—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.6	13	55	9.2	377	12	23	24	11	0.67	0.62	0.23
2	4.2	12	33	8.7	57	20	21	51	7.9	0.53	0.36	0.07
3	3.8	11	25	8.7	38	55	20	23	6.1	0.41	0.18	0.00
4	3.6	11	22	7.9	29	24	18	18	5.0	0.33	0.04	0.00
5	4.6	9.8	19	8.4	22	21	17	14	149	0.27	0.00	0.00
6	20	9.2	109	9.5	21	18	16	70	556	0.20	0.00	0.00
7	5.6	8.9	52	10	20	16	15	454	59	0.16	0.00	0.00
8	4.3	8.6	48	9.1	17	15	14	e660	21	0.09	0.00	0.00
9	4.4	8.1	34	e9.5	16	32	19	151	12	0.04	0.00	0.00
10	3.5	7.9	26	e18	23	25	14	64	8.2	0.20	0.00	0.00
11	3.7	7.7	22	21	22	18	13	38	5.9	0.90	0.00	0.00
12	47	7.2	20	16	18	21	13	30	5.1	0.53	0.00	0.00
13	24	6.9	35	14	15	19	411	1,080	5.7	0.36	0.00	0.00
14	411	7.0	177	12	14	17	144	142	10	0.42	0.00	0.00
15	60	6.8	61	12	14	45	77	56	4.0	0.34	0.00	51
16	58	6.7	358	12	13	311	37	36	9.1	0.19	0.00	4.4
17	34	6.4	841	13	12	65	30	124	3.3	0.26	0.00	1.6
18	23	6.4	189	12	11	47	27	200	2.2	0.49	0.00	0.99
19	20	7.0	54	13	12	167	e60	56	1.8	0.35	0.00	0.76
20	16	11	33	14	24	398	e80	34	1.5	0.27	0.31	0.70
21	14	7.4	26	13	28	77	e1,150	26	1.3	0.27	0.29	2.0
22	13	6.5	22	13	16	44	e270	21	1.1	0.18	0.08	2.0
23	167	6.2	164	13	14	34	53	17	0.96	0.16	0.00	1.3
24	945	6.7	45	415	14	28	41	14	0.80	0.18	0.00	0.90
25	215	12	28	56	13	38	105	12	0.79	0.08	0.00	0.60
26	46	7.2	25	32	17	372	33	13	0.96	0.02	0.00	0.64
27	28	77	21	25	15	72	105	29	1.2	0.00	0.00	e390
28	21	323	19	22	13	44	e222	19	2.6	0.00	0.00	28
29	18	413	16	20	---	36	49	24	1.7	0.05	0.71	7.3
30	16	320	16	168	---	31	31	18	0.95	1.3	0.87	3.7
31	14	---	12	88	---	26	---	10	---	1.0	0.48	---
TOTAL	2,252.3	1,351.6	2,607	1,103.0	905	2,148	3,128	3,528	896.16	10.25	3.94	496.19
MEAN	72.7	45.1	84.1	35.6	32.3	69.3	104	114	29.9	0.33	0.13	16.5
MAX	945	413	841	415	377	398	1,150	1,080	556	1.3	0.87	390
MIN	3.5	6.2	12	7.9	11	12	13	10	0.79	0.00	0.00	0.00

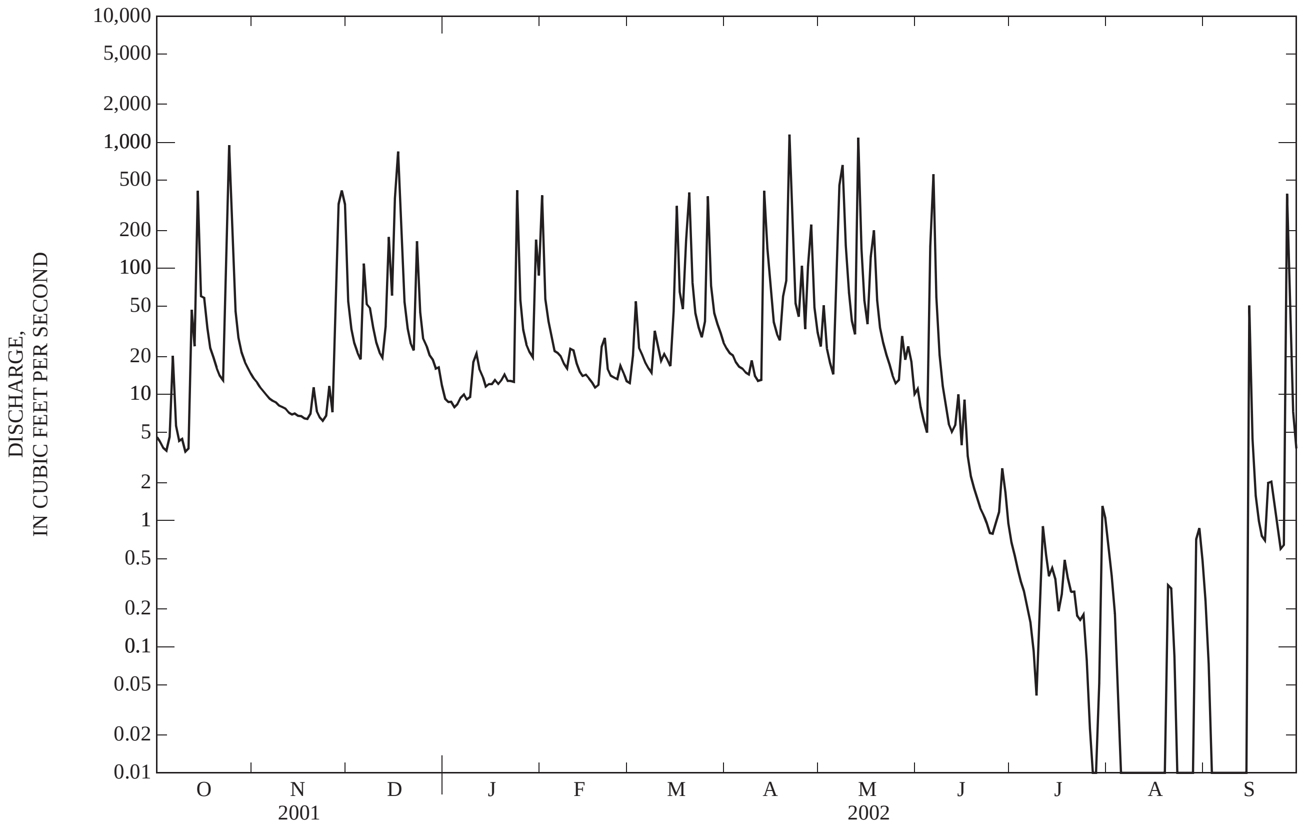
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2001 - 2002, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	72.7	45.1	64.2	24.8	30.2	40.1	55.3	64.5	31.1	28.4	14.6	20.8
MAX	72.7	45.1	84.1	35.6	32.3	69.3	104	114	32.3	56.5	29.0	25.0
(WY)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2001)	(2001)	(2001)	(2001)
MIN	72.7	45.1	44.3	14.0	28.0	11.0	6.34	15.3	29.9	0.33	0.13	16.5
(WY)	(2002)	(2002)	(2001)	(2001)	(2001)	(2001)	(2001)	(2001)	(2002)	(2002)	(2002)	(2002)

03262001 WOOLPER CREEK AT WOOLPER CREEK ROAD NEAR BURLINGTON, KY—Continued

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 2001 - 2002	
ANNUAL TOTAL	12,800.48		18,429.44			
ANNUAL MEAN	35.1		50.5		50.5	
HIGHEST ANNUAL MEAN					50.5	2002
LOWEST ANNUAL MEAN					50.5	2002
HIGHEST DAILY MEAN	945	Oct 24	1,150	Apr 21	1,150	Apr 21, 2002
LOWEST DAILY MEAN	0.88	Jul 17	0.00	Jul 27	0.00	Jul 27, 2002
ANNUAL SEVEN-DAY MINIMUM	1.7	Apr 30	0.00	Aug 5	0.00	Aug 5, 2002
MAXIMUM PEAK FLOW			e 5,860	May 8	6,640	Jul 18, 2001
MAXIMUM PEAK STAGE			e11.30	May 8	12.17	Jul 18, 2001
INSTANTANEOUS LOW FLOW			0.00	Sep 14	0.00	Sep 14, 2002
10 PERCENT EXCEEDS	57		105		105	
50 PERCENT EXCEEDS	8.7		13		13	
90 PERCENT EXCEEDS	2.6		0.03		0.03	

e Estimated



03262001 WOOLPER CREEK AT WOOLPER CREEK ROAD NEAR BURLINGTON, KY—Continued

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.6	13	4.9	685	9.6	83	20	6.1	7.3	1.8	1.1	360
2	2.1	9.9	4.6	103	27	104	16	25	5.4	1.6	6.4	222
3	1.8	9.3	4.5	57	42	60	14	21	39	1.6	4.4	139
4	3.7	8.5	3.5	36	70	57	13	10	19	1.5	41	30
5	12	71	4.3	33	24	121	21	638	12	1.2	15	13
6	2.8	66	4.9	33	22	67	12	83	8.1	1.2	4.4	8.0
7	2.0	21	4.1	24	14	44	43	46	7.4	6.9	2.5	5.7
8	1.5	13	4.3	21	17	34	26	32	26	2.4	1.7	4.6
9	1.3	10	4.2	17	12	28	25	28	21	83	1.4	3.8
10	1.3	322	3.5	13	12	22	20	934	9.1	136	1.4	3.3
11	13	166	79	9.6	18	20	17	152	9.8	17	1.2	2.7
12	5.9	36	67	12	11	17	14	26	40	6.7	1.9	2.3
13	3.1	20	99	9.3	11	35	11	11	36	4.0	1.6	2.1
14	2.0	14	109	8.2	13	30	9.9	6.9	322	2.7	1.0	2.1
15	1.7	12	37	7.8	176	22	9.1	5.2	256	6.2	0.77	4.0
16	1.5	16	20	8.0	51	19	8.5	3.4	89	36	0.65	3.6
17	14	11	65	9.1	31	17	9.3	6.0	36	5.6	0.54	2.5
18	1.3	8.8	64	8.5	22	15	10	6.1	20	3.0	0.45	2.1
19	2.8	7.9	908	9.8	19	50	8.1	2.9	15	21	0.37	2.0
20	4.0	6.9	221	9.2	23	51	17	5.8	12	4.2	0.28	2.0
21	2.0	7.1	52	7.9	77	67	58	9.0	8.3	19	0.21	2.0
22	1.5	17	27	7.6	624	35	16	e8.8	6.4	8.5	27	23
23	1.3	9.3	17	8.2	153	24	11	e8.7	5.0	5.9	10	9.3
24	1.3	7.9	14	8.4	60	20	10	8.7	4.0	3.0	2.3	3.8
25	248	7.0	18	10	40	17	10	7.8	3.2	2.3	1.3	2.6
26	70	6.4	11	10	35	30	10	9.7	3.2	1.7	0.95	2.0
27	15	6.7	9.1	8.4	28	19	7.5	7.5	15	1.3	0.72	70
28	31	5.7	9.0	9.5	29	16	6.6	12	4.0	4.9	0.64	12
29	261	5.7	8.5	13	---	97	6.9	33	2.7	3.2	0.60	5.7
30	60	5.9	121	19	---	e39	6.4	12	2.1	1.6	1.6	3.9
31	21	---	272	10	---	e26	---	9.5	---	1.2	46	---
TOTAL	792.5	921.0	2,270.4	1,225.5	1,670.6	1,286	466.3	2,175.1	1,044.0	396.2	179.38	949.1
MEAN	25.6	30.7	73.2	39.5	59.7	41.5	15.5	70.2	34.8	12.8	5.79	31.6
MAX	261	322	908	685	624	121	58	934	322	136	46	360
MIN	1.3	5.7	3.5	7.6	9.6	15	6.4	2.9	2.1	1.2	0.21	2.0

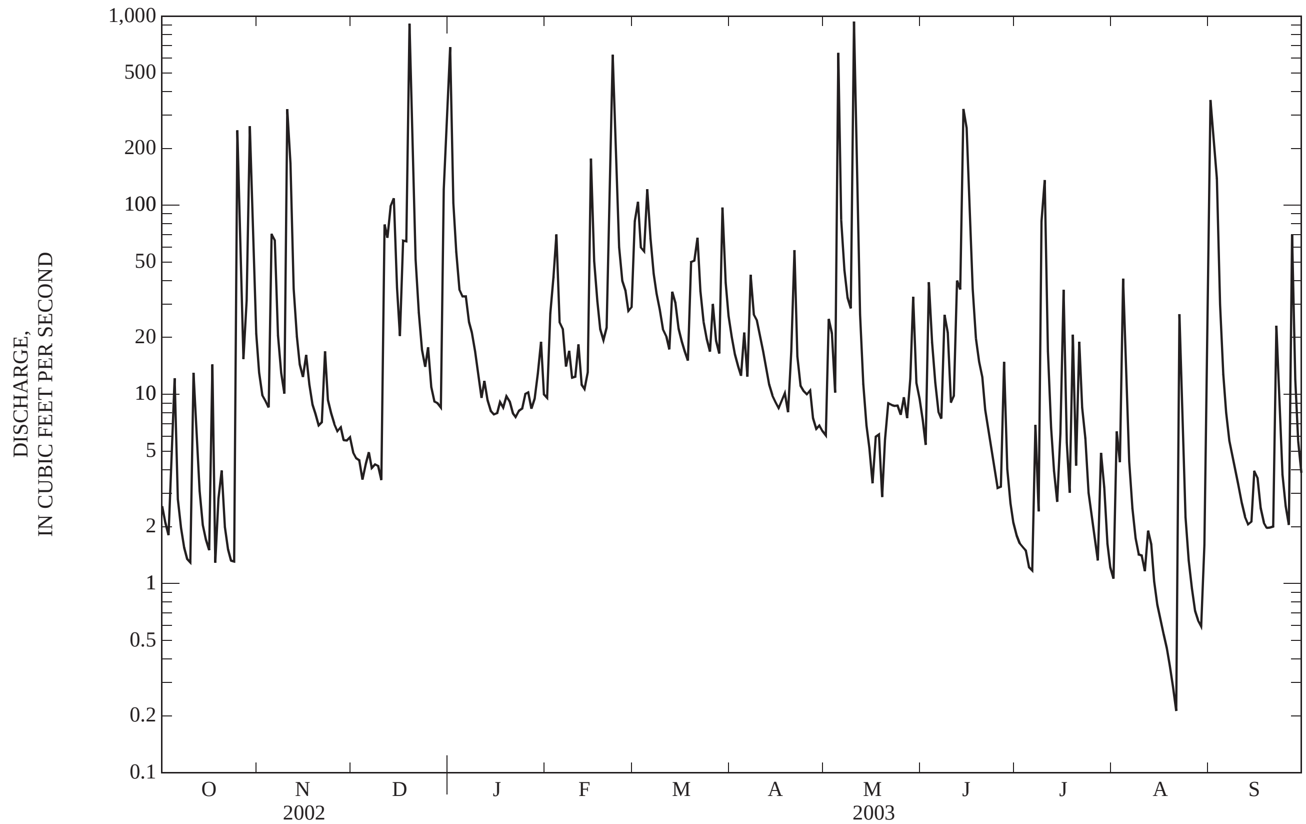
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2001 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	49.1	37.9	67.2	29.7	40.0	40.6	42.0	66.4	32.3	23.2	11.6	24.4
MAX	72.7	45.1	84.1	39.5	59.7	69.3	104	114	34.8	56.5	29.0	31.6
(WY)	(2002)	(2002)	(2002)	(2003)	(2003)	(2002)	(2002)	(2002)	(2003)	(2001)	(2001)	(2003)
MIN	25.6	30.7	44.3	14.0	28.0	11.0	6.34	15.3	29.9	0.33	0.13	16.5
(WY)	(2003)	(2003)	(2001)	(2001)	(2001)	(2001)	(2001)	(2001)	(2002)	(2002)	(2002)	(2002)

03262001 WOOLPER CREEK AT WOOLPER CREEK ROAD NEAR BURLINGTON, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 2001 - 2003	
ANNUAL TOTAL	16,202.44		13,376.08			
ANNUAL MEAN	44.4		36.6		43.6	
HIGHEST ANNUAL MEAN					50.5	2002
LOWEST ANNUAL MEAN					36.6	2003
HIGHEST DAILY MEAN	1,150	Apr 21	934	May 10	1,150	Apr 21, 2002
LOWEST DAILY MEAN	0.00	Jul 27	0.21	Aug 21	0.00	Jul 27, 2002
ANNUAL SEVEN-DAY MINIMUM	0.00	Aug 5	0.47	Aug 15	0.00	Aug 5, 2002
MAXIMUM PEAK FLOW			4,900	May 10	6,640	Jul 18, 2001
MAXIMUM PEAK STAGE			10.19	May 10	12.17	Jul 18, 2001
INSTANTANEOUS LOW FLOW					0.00	Sep 14, 2002
10 PERCENT EXCEEDS	79		70		77	
50 PERCENT EXCEEDS	12		10		12	
90 PERCENT EXCEEDS	0.03		1.7		0.53	

e Estimated



03262001 WOOLPER CREEK AT WOOLPER ROAD NEAR BURLINGTON, KY

WATER-QUALITY RECORDS

PERIOD OF RECORD.--December 2002 to September 2003.

COOPERATION.--Northern Kentucky Sanitation District No. 1.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: December 2000 to current year.
pH: December 2000 to current year.
WATER TEMPERATURES: December 2000 to current year.
DISSOLVED OXYGEN: December 2000 to current year.
TURBIDITY: December 2000 to current year.

INSTRUMENTATION.--Water-quality monitor with telemetry.

REMARKS.--
SPECIFIC CONDUCTANCE: Records good.
pH: Records good.
WATER TEMPERATURES: Records good.
DISSOLVED OXYGEN: Records good.
TURBIDITY: Records good.

EXTREMES FOR PERIOD OF RECORD.--
SPECIFIC CONDUCTANCE: Maximum recorded, 2220 microsiemens, Jan. 30, 2003; minimum recorded, 96 microsiemens, May 8, 2002.
pH: Maximum recorded, 8.8 units, Mar. 14, 16-18, and Apr. 1, 2, 2003; minimum recorded, 7.5 units, Nov. 10, 11, 2002.
WATER TEMPERATURES: Maximum recorded, 31.8°C, Jul. 4, 2002; minimum recorded, -0.3°C, several days in Jan, Feb. and Mar. 2002, and Jan. 11, 12, 14, 30, 31, Feb. 5-8, 10-14, and Mar. 3, 2002.
DISSOLVED OXYGEN: Maximum recorded, 20.0 mg/L, Dec. 4, 6, 2000; minimum recorded, 2.3 mg/L, Aug. 19, 2002.
TURBIDITY: Maximum recorded, grreater than 1000 NTU, several days in 2001, 2002 and 2003; minimum recorded, 0.0 NTU, Nov. 7 and Jul. 7-9, 2002.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum recorded, 2220 microsiemens, Jan. 30, 2003; minimum recorded, 114 microsiemens, Dec. 19, 2002.
pH: Maximum recorded, 8.8 units, Mar. 14, 16-18, and Apr. 1, 2, 2003; minimum recorded, 7.5 units, Nov. 10, 11, 2002.
WATER TEMPERATURES: Maximum recorded, 30.2°C, Jul. 6, 2003; minimum recorded, -0.3°C, Jan. 11, 12, 14, 30, 31, Feb. 5-8, 10-14, 25 and Mar. 3, 2003.
DISSOLVED OXYGEN: Maximum recorded, 17.1 mg/L, Feb. 13, 2003; minimum recorded, 4.7 mg/L, July 7, 2003.
TURBIDITY: Maximum recorded, greater than 1000 NTU, many days in 2003; minimum recorded, 1.0 NTU, Nov. Nov. 3, 4, 2002.

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	567	552	557	555	517	537	539	531	535	291	119	223
2	571	559	565	588	555	572	541	531	537	376	281	337
3	568	555	564	611	588	599	541	532	538	726	376	459
4	---	---	---	636	611	624	547	538	543	---	---	---
5	550	510	518	646	436	609	549	536	543	---	---	---
6	530	512	519	553	435	493	579	540	550	636	554	606
7	538	523	531	621	553	590	701	579	654	595	562	576
8	546	529	539	654	621	640	990	701	821	562	536	544
9	558	538	548	687	654	672	1,090	990	1,040	545	536	541
10	568	558	562	686	250	560	1,110	1,060	1,090	541	535	538
11	560	497	523	407	296	365	1,090	572	907	543	299	516
12	516	501	508	449	407	429	572	540	547	577	299	452
13	536	516	526	479	449	464	560	429	527	581	532	559
14	557	534	545	493	479	486	478	420	443	561	546	555
15	570	554	560	499	493	497	499	478	486	585	547	563
16	582	569	574	519	497	507	519	499	510	617	585	604
17	589	573	582	520	511	515	528	414	503	689	617	656
18	597	582	590	519	512	516	466	414	436	806	689	733
19	598	583	593	527	519	523	471	114	319	932	806	866
20	605	595	601	530	523	527	336	156	269	1,090	932	1,050
21	610	598	603	536	523	530	396	336	370	1,020	935	989
22	622	609	613	530	521	525	427	396	414	935	882	903
23	627	615	621	527	511	518	445	427	436	882	865	873
24	631	619	626	524	513	520	456	445	452	875	828	858
25	631	208	477	532	522	527	553	453	477	838	829	833
26	473	310	409	537	525	531	747	553	684	866	832	845
27	529	473	506	537	525	531	727	650	677	874	849	865
28	531	470	511	535	524	530	650	614	625	922	834	850
29	478	225	357	537	527	531	615	571	589	1,110	922	1,040
30	428	330	388	536	528	532	571	358	476	2,220	1,040	1,680
31	---	---	---	---	---	---	410	231	340	2,160	1,750	1,970
MONTH	631	208	538	687	250	533	1,110	114	559	2,220	119	762

03262001 WOOLPER CREEK AT WOOLPER ROAD NEAR BURLINGTON, KY—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	1,750	1,330	1,520	786	474	661	542	495	520	595	583	591
2	1,740	1,320	1,480	474	440	446	532	478	508	600	269	542
3	1,350	816	1,050	476	444	456	527	488	508	552	417	506
4	883	750	811	494	443	482	534	497	520	567	542	560
5	754	412	648	447	410	427	590	518	546	542	192	295
6	735	713	726	546	438	471	595	569	582	486	373	444
7	731	622	704	642	532	576	579	497	551	540	486	507
8	1,070	623	812	615	527	537	562	502	541	554	514	535
9	1,220	1,070	1,140	625	534	556	585	555	566	542	525	535
10	1,260	986	1,140	562	545	557	608	532	573	555	117	320
11	1,250	905	988	558	530	548	582	524	559	397	293	342
12	1,830	1,230	1,440	548	526	539	581	511	550	468	397	439
13	1,830	1,700	1,790	770	503	576	567	512	545	495	467	483
14	1,710	1,080	1,470	685	561	605	565	522	549	511	495	503
15	1,280	561	766	575	543	560	569	530	552	515	498	508
16	738	439	621	560	521	541	571	538	558	522	497	511
17	727	706	716	542	507	524	579	557	571	533	508	521
18	835	715	771	534	505	519	590	568	579	602	532	568
19	938	835	895	599	491	522	594	557	576	573	529	556
20	1,270	874	1,010	528	507	514	594	448	575	564	512	550
21	1,350	769	1,190	570	511	527	533	368	472	575	515	546
22	769	228	414	540	505	524	579	533	566	547	512	534
23	547	289	388	539	498	519	593	566	582	---	---	---
24	546	517	535	527	490	509	593	554	575	549	518	536
25	715	527	628	521	491	505	571	559	566	553	532	546
26	665	580	608	571	495	537	580	551	567	559	552	555
27	590	571	582	572	535	553	587	562	575	563	547	557
28	604	571	582	552	515	534	589	563	580	572	507	557
29	---	---	---	525	452	485	584	562	575	532	498	517
30	---	---	---	---	---	---	587	575	581	557	532	548
31	---	---	---	---	---	---	---	---	---	573	554	566
MONTH	1,830	228	908	786	410	528	608	368	556	602	117	509
	JUNE			JULY			AUGUST			SEPTEMBER		
1	580	572	576	577	538	559	684	643	665	412	135	339
2	595	578	586	580	543	563	676	577	637	394	163	313
3	594	477	534	582	544	565	607	565	586	412	269	348
4	542	482	513	590	549	568	605	252	511	494	412	456
5	578	542	563	591	551	571	487	403	453	529	494	517
6	590	578	583	599	554	577	541	487	515	536	528	533
7	592	580	585	599	516	554	568	541	551	550	536	544
8	595	358	549	536	510	522	585	559	570	553	544	549
9	525	386	475	541	224	484	594	558	577	550	539	545
10	545	525	536	447	248	343	594	560	577	552	537	545
11	560	539	549	524	447	496	605	567	583	556	540	550
12	568	411	542	566	523	550	602	574	590	562	547	554
13	510	387	451	584	566	574	608	584	597	568	554	562
14	525	126	415	590	572	581	615	585	601	572	555	567
15	399	219	337	606	477	584	619	581	603	565	556	560
16	469	341	424	497	388	423	625	573	602	579	564	568
17	507	469	485	517	451	484	632	567	602	591	573	580
18	547	507	534	556	517	535	618	575	596	599	576	587
19	551	541	545	555	435	503	618	570	592	606	586	596
20	569	549	556	506	496	500	617	565	591	615	592	602
21	590	558	573	539	469	501	621	564	594	617	592	606
22	572	549	560	522	496	513	608	265	511	617	447	550
23	573	548	559	546	506	522	441	422	430	526	487	513
24	564	547	557	578	540	553	467	436	447	535	525	529
25	564	543	556	597	570	581	480	450	464	554	531	539
26	566	511	552	600	565	587	494	443	469	563	537	548
27	620	523	574	612	575	594	509	457	485	563	326	406
28	575	536	558	611	578	596	520	460	494	483	384	440
29	560	530	548	669	609	632	528	472	501	532	483	509
30	562	512	548	689	652	668	522	488	506	562	528	545
31	---	---	---	689	656	675	593	307	415	---	---	---
MONTH	620	126	531	689	224	547	684	252	546	617	135	520
YEAR	2,220	114	584									

03262001 WOOLPER CREEK AT WOOLPER ROAD NEAR BURLINGTON, KY—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	8.1	7.9	8.0	8.0	7.9	8.0	8.4	8.1	8.3	7.8	7.6	7.7
2	8.1	7.9	8.0	8.1	7.9	7.9	8.5	8.1	8.3	7.9	7.7	7.8
3	8.2	7.9	8.0	8.0	7.8	7.9	8.5	8.1	8.3	8.0	7.9	7.9
4	---	---	---	8.0	7.7	7.9	8.5	8.2	8.4	---	---	---
5	8.0	7.8	7.9	8.0	7.8	7.9	8.6	8.2	8.4	---	---	---
6	8.0	7.7	7.8	7.9	7.8	7.8	8.6	8.3	8.4	8.1	8.0	8.0
7	8.0	7.7	7.8	8.1	7.7	7.9	8.5	8.2	8.4	8.1	7.9	8.0
8	8.2	7.7	7.9	8.1	7.7	7.9	8.6	8.2	8.4	8.2	8.0	8.1
9	8.2	7.8	7.9	8.1	7.9	8.0	8.4	8.1	8.3	8.2	8.0	8.1
10	8.1	7.8	7.9	7.9	7.5	7.8	8.4	8.1	8.3	8.2	8.0	8.1
11	8.1	7.9	8.0	7.8	7.5	7.7	8.2	8.1	8.1	8.1	8.0	8.1
12	8.1	7.9	8.0	7.9	7.7	7.8	8.2	8.1	8.1	8.2	7.9	8.0
13	8.1	7.9	8.0	7.9	7.8	7.8	8.3	8.0	8.1	8.2	8.0	8.1
14	8.2	7.9	8.0	8.0	7.8	7.9	8.2	8.0	8.1	8.2	8.0	8.1
15	8.2	7.9	8.0	7.9	7.8	7.9	8.5	8.0	8.2	8.2	8.0	8.1
16	8.2	7.9	8.0	8.0	7.8	7.9	8.6	8.1	8.3	8.2	8.0	8.1
17	8.4	7.9	8.1	8.1	7.8	7.9	8.3	8.0	8.1	8.2	8.0	8.1
18	8.3	8.0	8.1	8.1	7.8	8.0	8.5	8.0	8.2	8.2	8.0	8.1
19	8.1	8.0	8.1	8.2	8.0	8.1	8.1	7.7	7.9	8.2	8.0	8.1
20	8.3	8.1	8.2	8.3	7.9	8.1	7.9	7.7	7.8	8.2	8.0	8.1
21	8.3	8.1	8.2	8.3	7.9	8.1	8.0	7.9	8.0	8.3	8.0	8.2
22	8.3	8.1	8.2	8.3	8.0	8.1	8.1	8.0	8.0	8.3	8.0	8.1
23	8.3	8.1	8.2	8.3	8.0	8.1	8.1	8.0	8.1	8.2	8.0	8.1
24	8.4	8.1	8.2	8.3	8.0	8.1	8.2	8.0	8.1	8.2	8.0	8.1
25	8.2	7.9	8.1	8.2	8.0	8.1	8.2	8.1	8.1	8.2	7.9	8.1
26	8.2	8.0	8.1	8.2	8.0	8.1	8.2	8.0	8.1	8.1	8.0	8.0
27	8.3	8.2	8.2	8.4	8.0	8.2	8.2	8.1	8.1	8.1	7.9	8.0
28	8.4	8.2	8.3	8.4	8.0	8.2	8.2	8.1	8.1	8.1	7.9	8.0
29	8.2	8.1	8.2	8.4	8.1	8.3	8.2	8.0	8.1	8.3	8.0	8.1
30	8.2	8.1	8.2	8.4	8.1	8.2	8.0	7.8	7.9	8.3	8.0	8.2
31	---	---	---	---	---	---	8.0	7.7	7.8	8.3	8.0	8.2
MONTH	8.4	7.7	8.1	8.4	7.5	8.0	8.6	7.7	8.2	8.3	7.6	8.1
	FEBRUARY			MARCH			APRIL			MAY		
1	8.3	8.0	8.2	8.5	8.1	8.3	8.8	8.1	8.4	8.4	7.7	8.0
2	8.4	8.0	8.2	8.4	8.1	8.2	8.8	8.0	8.4	8.3	7.8	8.1
3	8.3	8.0	8.1	8.5	8.1	8.3	8.7	8.0	8.3	8.3	7.9	8.1
4	8.3	8.0	8.1	8.6	8.2	8.4	8.6	8.0	8.3	8.6	8.0	8.3
5	8.4	7.9	8.1	8.2	8.1	8.1	8.5	8.0	8.2	8.2	7.7	7.9
6	8.5	8.0	8.2	8.6	8.1	8.3	8.7	8.1	8.4	8.3	7.9	8.1
7	8.5	8.1	8.3	8.6	8.2	8.4	8.3	8.0	8.2	8.3	8.0	8.1
8	8.5	8.1	8.3	8.7	8.2	8.4	8.5	7.9	8.2	8.5	8.0	8.3
9	8.5	8.1	8.3	8.7	8.2	8.4	8.5	8.0	8.2	8.5	8.0	8.2
10	8.5	8.1	8.3	8.6	8.2	8.4	8.7	8.1	8.4	8.2	7.8	7.9
11	8.5	8.1	8.3	8.6	8.2	8.4	8.7	8.0	8.3	8.0	7.9	8.0
12	8.5	8.1	8.3	8.6	8.2	8.4	8.7	8.0	8.3	8.1	7.9	8.0
13	8.5	8.1	8.3	8.6	8.1	8.3	8.6	8.0	8.3	8.1	8.0	8.0
14	8.4	8.1	8.3	8.8	8.0	8.4	8.5	8.0	8.2	8.2	8.0	8.1
15	8.2	8.0	8.1	8.7	8.0	8.4	8.5	7.9	8.2	8.3	8.0	8.1
16	8.3	8.1	8.2	8.8	8.0	8.4	8.4	7.9	8.1	8.4	8.0	8.2
17	8.5	8.1	8.2	8.8	8.0	8.4	8.4	7.9	8.1	8.3	7.9	8.1
18	8.5	8.1	8.3	8.8	8.0	8.4	8.5	8.0	8.2	8.4	7.9	8.1
19	8.5	8.1	8.3	8.6	7.9	8.2	8.6	8.0	8.3	8.5	7.9	8.1
20	8.5	8.1	8.3	8.7	8.0	8.3	8.5	7.9	8.2	8.2	7.8	8.0
21	8.4	8.0	8.2	8.2	8.0	8.1	8.2	7.9	8.1	8.5	7.9	8.2
22	8.0	7.9	7.9	8.7	8.0	8.3	8.6	8.0	8.2	8.5	7.8	8.1
23	8.1	7.9	8.0	8.7	7.9	8.3	8.6	8.0	8.3	---	---	---
24	8.2	8.0	8.1	8.7	7.9	8.3	8.6	7.9	8.3	8.4	7.9	8.2
25	8.2	8.0	8.1	8.7	7.9	8.3	8.3	7.9	8.1	8.2	7.9	8.1
26	8.3	8.1	8.2	8.7	7.9	8.3	8.5	8.0	8.2	8.3	8.0	8.1
27	8.3	8.1	8.2	8.7	7.9	8.3	8.4	7.9	8.1	8.3	7.9	8.1
28	8.4	8.1	8.2	8.6	7.9	8.2	8.4	7.9	8.1	8.1	7.9	8.0
29	---	---	---	8.3	7.9	8.1	8.2	7.7	7.9	8.1	7.8	7.9
30	---	---	---	---	---	---	8.1	7.7	7.9	8.1	7.8	7.9
31	---	---	---	---	---	---	---	---	---	8.0	7.8	7.9
MONTH	8.5	7.9	8.2	8.8	7.9	8.3	8.8	7.7	8.2	8.6	7.7	8.1

03262001 WOOLPER CREEK AT WOOLPER ROAD NEAR BURLINGTON, KY—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS—CONTINUED
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	8.1	7.8	8.0	8.4	8.0	8.2	8.4	7.8	8.1	8.2	7.8	8.0
2	8.1	7.8	7.9	8.4	8.0	8.2	8.3	7.8	8.0	8.0	7.8	7.9
3	8.0	7.8	7.9	8.4	7.8	8.1	8.3	7.8	8.1	8.0	7.9	8.0
4	8.0	7.9	7.9	8.3	7.8	8.0	8.2	7.9	8.0	8.2	8.0	8.1
5	8.1	7.9	8.0	8.3	7.8	8.0	8.1	8.0	8.0	8.2	8.0	8.1
6	8.1	7.9	8.0	8.3	7.7	8.0	8.2	7.9	8.1	8.2	8.0	8.1
7	8.1	7.9	8.0	8.2	7.8	8.1	8.3	8.0	8.1	8.2	8.1	8.1
8	8.1	7.8	8.0	8.3	7.8	8.0	8.3	7.9	8.1	8.3	8.1	8.2
9	8.1	7.9	8.0	8.4	7.6	8.1	8.4	7.9	8.1	8.3	8.1	8.2
10	8.2	7.9	8.0	8.1	7.8	8.0	8.4	7.9	8.1	8.3	8.0	8.1
11	8.1	7.8	7.9	8.3	8.0	8.1	8.3	7.8	8.1	8.2	8.0	8.1
12	8.0	7.8	7.9	8.3	8.0	8.1	8.3	7.9	8.1	8.2	8.0	8.1
13	8.1	7.8	7.9	8.3	8.0	8.1	8.4	7.9	8.1	8.2	7.9	8.0
14	8.0	7.6	7.8	8.3	8.0	8.1	8.3	7.8	8.1	8.2	7.9	8.0
15	7.9	7.6	7.8	8.2	7.9	8.0	8.3	7.8	8.0	8.1	7.9	8.0
16	8.1	7.7	7.9	8.1	7.8	8.0	8.3	7.7	8.0	8.1	7.9	8.0
17	8.2	7.9	8.0	8.3	7.9	8.1	8.3	7.7	8.0	8.1	7.8	8.0
18	8.2	8.0	8.1	8.3	7.9	8.1	8.3	7.7	8.0	8.2	7.8	8.0
19	8.2	8.0	8.1	8.1	8.0	8.0	8.3	7.7	8.0	8.1	7.8	7.9
20	8.3	8.0	8.2	8.3	7.9	8.1	8.3	7.7	8.0	8.1	7.7	7.9
21	8.3	8.0	8.1	8.2	7.9	8.0	8.2	7.7	7.9	8.2	7.7	7.9
22	8.3	8.0	8.2	8.3	8.0	8.1	8.0	7.7	7.8	8.0	7.8	7.9
23	8.3	8.0	8.2	8.4	8.0	8.2	8.0	7.8	7.9	8.0	7.8	7.9
24	8.3	8.0	8.2	8.4	8.0	8.2	8.3	7.8	8.0	8.2	7.8	7.9
25	8.3	8.0	8.2	8.4	8.0	8.2	8.5	7.9	8.1	8.3	7.8	8.0
26	8.3	8.0	8.1	8.5	7.9	8.2	8.6	7.9	8.2	8.3	7.8	8.0
27	8.4	8.1	8.2	8.4	7.9	8.1	8.6	7.8	8.1	7.9	7.7	7.8
28	8.4	8.0	8.2	8.2	7.9	8.1	8.5	7.7	8.1	7.9	7.7	7.8
29	8.4	8.0	8.2	8.3	8.0	8.1	8.4	7.7	8.0	8.0	7.8	7.9
30	8.5	8.0	8.2	8.4	7.9	8.1	8.2	7.8	8.0	8.0	7.8	7.9
31	---	---	---	8.4	7.8	8.1	8.1	8.0	8.0	---	---	---
MONTH	8.5	7.6	8.0	8.5	7.6	8.1	8.6	7.7	8.0	8.3	7.7	8.0
YEAR	8.8	7.5	8.1									

03262001 WOOLPER CREEK AT WOOLPER ROAD NEAR BURLINGTON, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	21.5	18.6	20.0	9.1	7.5	8.6	1.9	0.5	1.2	7.1	4.9	5.7
2	22.3	19.8	20.8	7.5	5.4	6.5	2.3	0.1	1.2	4.9	3.8	4.5
3	22.6	19.6	20.6	6.9	5.7	6.4	1.8	0.2	1.1	3.8	2.9	3.2
4	22.0	20.6	21.2	7.7	6.9	7.3	0.3	-0.2	0.0	---	---	---
5	20.6	17.8	18.9	9.3	7.6	8.0	0.7	-0.2	0.1	---	---	---
6	18.0	15.4	17.0	9.3	8.1	8.7	0.9	-0.2	0.1	3.6	2.4	3.3
7	17.5	14.5	16.2	9.1	7.0	8.2	0.7	-0.2	0.1	2.6	1.2	2.0
8	16.1	12.9	14.3	9.7	7.0	8.5	1.4	-0.2	0.4	4.4	1.9	3.1
9	15.6	13.1	14.2	12.1	9.4	10.6	0.5	-0.3	0.0	4.7	2.7	3.8
10	15.4	14.2	14.8	15.1	12.1	13.5	0.5	-0.3	0.1	3.9	1.4	2.9
11	16.3	14.9	15.6	13.7	11.4	12.9	2.1	0.0	0.5	1.4	-0.3	0.2
12	17.5	15.7	16.5	11.4	9.5	10.0	3.5	2.1	3.1	0.0	-0.3	-0.2
13	16.9	14.3	16.1	9.9	8.1	9.1	4.3	3.5	3.7	0.5	-0.2	0.0
14	14.3	11.7	13.0	9.9	8.2	9.1	4.4	3.8	4.1	0.1	-0.3	-0.1
15	12.2	10.5	11.4	9.6	8.9	9.2	4.9	2.6	3.9	-0.2	-0.2	-0.2
16	11.5	10.1	10.9	8.9	6.7	7.7	4.9	3.9	4.5	-0.2	-0.2	-0.2
17	11.7	9.6	10.3	6.9	5.8	6.5	4.5	3.4	3.7	-0.1	-0.2	-0.2
18	12.4	8.7	10.4	5.8	4.1	5.0	7.2	4.5	5.9	-0.1	-0.2	-0.2
19	12.1	11.5	11.8	8.3	5.6	6.9	8.0	7.2	7.6	-0.1	-0.2	-0.2
20	11.7	10.3	11.1	7.4	5.1	6.4	7.7	5.5	6.4	-0.1	-0.2	-0.2
21	12.2	9.6	10.7	8.0	6.3	7.1	5.5	4.3	4.9	0.0	-0.2	-0.2
22	12.1	8.5	10.1	7.2	5.3	6.0	5.9	4.2	5.2	-0.1	-0.2	-0.2
23	11.9	8.3	9.8	5.5	4.1	4.8	4.2	2.4	3.1	-0.2	-0.2	-0.2
24	11.9	9.2	10.1	5.4	3.3	4.5	3.5	2.8	3.2	-0.1	-0.2	-0.2
25	12.0	9.4	10.2	4.9	4.2	4.5	2.8	1.7	2.1	-0.1	-0.2	-0.2
26	12.0	11.7	11.9	4.2	2.9	3.3	1.7	1.0	1.3	-0.2	-0.2	-0.2
27	12.1	11.3	11.7	3.4	1.7	2.7	1.8	0.6	1.2	-0.2	-0.2	-0.2
28	11.5	10.4	11.0	1.9	0.9	1.4	2.3	0.4	1.4	-0.2	-0.2	-0.2
29	10.9	9.2	10	3.3	0.6	1.9	3.1	1.1	2.1	-0.1	-0.2	-0.2
30	9.6	8.9	9.1	3.4	1.7	2.9	7.2	2.2	4.5	-0.1	-0.3	-0.2
31	9.6	8.9	9.4	---	---	---	7.5	7.1	7.3	0.0	-0.3	-0.2
MONTH	22.6	8.3	13.5	15.1	0.6	6.9	8.0	-0.3	2.7	7.1	-0.3	0.9

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	0.2	-0.2	-0.1	4.3	2.8	3.5	14.6	7.4	10.6	22.6	17.0	19.5
2	0.7	-0.2	0.0	3.5	2.1	3.1	17.2	10.9	13.9	19.8	12.3	17.5
3	1.3	-0.2	0.4	3.0	-0.3	1.4	18.5	12.8	15.6	15.7	14.1	14.6
4	2.6	0.6	2.0	5.0	0.5	2.7	17.8	14.8	16.3	14.4	11.8	13.4
5	0.6	-0.3	0.1	5.2	3.5	4.6	16.9	9.9	13.2	17.0	12.6	14.6
6	0.4	-0.3	0.0	3.7	1.9	2.9	9.9	8.0	8.6	20.1	15.4	17.2
7	0.8	-0.3	0.1	4.8	0.9	2.4	9.9	7.7	8.6	18.1	16.8	17.4
8	0.0	-0.3	-0.2	7.6	1.5	4.4	9.7	8.3	8.9	20.3	15.8	17.9
9	1.0	-0.2	0.2	7.1	3.8	5.7	8.6	6.7	7.3	20.3	17.3	18.7
10	0.6	-0.3	0.1	4.3	0.7	2.6	11.1	6.0	8.1	19.6	17.1	17.9
11	0.0	-0.3	-0.2	5.6	0.9	3.2	13.9	7.0	10.2	18.3	15.5	17.1
12	0.3	-0.3	-0.2	5.7	3.6	4.5	15.1	8.8	11.8	15.9	13.8	14.8
13	0.0	-0.3	-0.2	6.0	4.3	5.0	15.5	9.4	12.4	18.1	12.3	15.0
14	-0.1	-0.3	-0.2	7.7	2.6	5.0	16.7	9.7	13.2	17.1	13.4	15.3
15	0.7	-0.2	0.1	9.6	4.3	6.7	18.9	12.3	15.6	18.2	15.0	16.6
16	0.0	-0.2	-0.2	12.2	6.6	9.3	19.1	14.2	16.9	19.1	14.9	16.8
17	-0.1	-0.2	-0.2	12.5	8.8	10.7	17.6	15.4	16.0	18.1	16.4	16.9
18	0.4	-0.2	0.0	13.4	10.3	11.9	16.8	14.3	15.4	18.7	16.4	17.4
19	0.7	0.0	0.3	13.5	11.2	12.7	19.5	13.1	16.3	20.3	17.2	18.5
20	2.8	-0.1	1.1	13.6	9.8	11.6	19.1	16.1	17.5	19.5	17.4	18.6
21	2.1	0.7	1.4	12.5	9.4	11.1	16.5	13.9	15.0	19.7	15.6	17.4
22	2.4	1.0	1.8	11.6	7.2	9.6	13.9	11.3	12.7	19.6	15.2	17.1
23	2.4	0.7	1.5	12.8	8.8	10.8	15.0	8.4	11.6	---	---	---
24	2.3	0.2	1.3	14.5	8.6	11.5	13.0	9.9	11.6	18.1	13.8	16.0
25	1.4	-0.3	0.4	14.7	10.2	12.6	12.5	11.5	11.8	16.6	14.7	15.3
26	1.1	-0.2	0.3	15.1	10.8	12.8	17.2	11.1	13.7	16.2	13.8	14.9
27	2.4	0.0	1.1	14.0	8.7	11.5	17.8	11.4	14.7	18.7	14.4	16.4
28	3.6	1.3	2.4	15.9	11.7	13.7	18.7	12.1	15.6	17.9	15.1	16.6
29	---	---	---	14.3	8.2	10.0	20.9	16.1	18.1	18.2	15.2	16.4
30	---	---	---	---	---	---	20.5	16.7	18.4	17.5	14.6	16.2
31	---	---	---	---	---	---	---	---	---	16.8	15.7	16.3
MONTH	3.6	-0.3	0.5	15.9	-0.3	7.5	20.9	6.0	13.3	22.6	11.8	16.6

03262001 WOOLPER CREEK AT WOOLPER ROAD NEAR BURLINGTON, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	18.4	13.9	16.1	27.3	21.7	24.3	28.7	21.4	24.8	23.6	21.2	21.9
2	17.3	13.8	15.9	28.0	22.1	25.0	25.4	23.3	24.3	22.0	21.3	21.5
3	16.2	14.1	14.8	28.9	22.1	25.5	25.2	22.6	23.8	22.4	20.8	21.4
4	15.2	14.3	14.7	29.8	23.1	26.3	23.9	20.4	22.0	22.1	20.2	21.0
5	18.6	13.1	15.8	30.1	23.6	26.6	23.3	20.3	21.5	20.7	18.2	19.5
6	19.3	14.8	17.3	30.2	23.6	26.7	23.5	20.5	22.2	20.3	17.4	18.9
7	20.2	17.2	18.4	27.8	24.0	25.9	26.3	21.0	23.4	20.0	17.4	18.9
8	19.7	17.1	18.3	29.2	24.9	26.4	26.6	21.9	24.1	20.9	18.2	19.6
9	20.6	15.7	18.0	28.9	22.7	25.4	25.9	21.7	23.5	22.0	18.6	20.4
10	20.5	17.1	19.0	23.6	22.0	22.7	26.3	21.3	23.4	22.5	19.2	21.0
11	21.4	18.9	20.1	24.1	21.2	22.7	25.7	21.8	23.7	22.9	19.2	20.9
12	20.8	19.1	19.9	24.9	21.2	22.9	25.7	21.2	23.4	22.9	17.9	20.3
13	22.2	18.3	20.0	25.5	20.9	23.2	27.2	21.8	24.5	23.4	18.6	20.9
14	21.4	19.3	20.3	26.7	21.3	23.9	28.7	22.8	25.8	21.9	19.4	20.6
15	19.9	18.5	18.9	24.0	22.0	22.9	28.1	24.0	26.1	21.8	19.5	20.6
16	21.1	17.9	19.3	25.6	21.8	23.3	28.8	23.5	26.1	21.4	17.5	19.3
17	22.0	18.8	20.3	25.6	21.3	23.5	27.6	23.1	25.3	21.8	16.6	19.0
18	21.8	18.9	20.4	25.9	22.4	24.1	25.9	20.2	23.4	22.2	16.1	18.9
19	20.9	19.2	19.7	25.4	21.7	23.6	25.5	19.5	22.7	19.8	16.8	18.4
20	21.5	16.8	19.1	25.9	20.8	23.4	26.7	20.1	23.5	20.4	14.6	17.1
21	21.6	16.5	19.1	24.2	22.3	23.0	28.1	22.4	25.3	21.0	14.1	17.3
22	22.9	17.1	19.9	24.6	21.7	23.0	26.6	23.3	24.4	19.1	17.7	18.5
23	23.8	18.1	21.0	23.6	21.4	22.4	24.9	22.2	23.5	18.2	16.7	17.5
24	25.0	19.0	22.0	24.1	20.0	22.2	25.6	20.8	23.2	18.3	15.0	16.8
25	26.2	20.1	23.1	26.1	19.8	22.8	27.0	20.8	23.7	19.6	16.5	17.8
26	25.5	21.9	23.6	26.9	20.6	23.8	28.4	21.9	25.0	18.1	14.3	16.3
27	24.3	20.3	22.2	27.9	22.0	25.0	27.5	23.2	25.2	18.4	16.3	17.4
28	24.9	19.3	22.1	25.4	23.4	24.4	27.9	22.1	25.1	17.1	14.8	15.7
29	26.2	20.1	23.1	26.3	21.6	23.7	26.8	22.8	25.0	14.8	12.9	13.8
30	26.8	20.9	23.7	26.8	20.5	23.6	24.9	23.3	23.9	14.1	11.2	12.7
31	---	---	---	25.8	21.9	23.5	23.3	20.5	21.7	---	---	---
MONTH	26.8	13.1	19.5	30.2	19.8	24.1	28.8	19.5	24.0	23.6	11.2	18.8
YEAR	30.2	-0.3	12.5									

03262001 WOOLPER CREEK AT WOOLPER ROAD NEAR BURLINGTON, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	9.6	7.7	8.5	11.0	9.8	10.3	16.0	12.8	14.1	11.9	11.0	11.5
2	9.7	7.5	8.3	11.5	10.2	10.8	16.3	13.2	14.3	11.8	11.6	11.7
3	10.2	7.4	8.4	11.6	10.2	10.8	16.4	13.0	14.4	12.6	11.7	12.2
4	---	---	---	11.0	10.1	10.4	16.4	13.2	14.5	---	---	---
5	8.9	7.3	7.9	10.7	9.9	10.2	16.6	13.0	14.6	---	---	---
6	9.4	7.2	8.0	10.3	9.8	10	16.4	13.4	14.6	12.9	11.9	12.4
7	9.5	6.9	7.9	11.1	9.6	10.2	16.2	13.4	14.5	13.7	12.3	12.9
8	10.7	7.2	8.3	10.9	8.8	10	16.5	13.4	14.6	13.3	11.5	12.4
9	10.4	6.9	8.1	10.3	8.0	9.1	16.8	13.2	14.6	13.1	11.5	12.1
10	9.2	6.6	7.6	9.1	7.7	8.3	16.3	13.3	14.4	13.7	11.7	12.6
11	8.8	6.9	8.1	8.7	8.1	8.4	13.5	12.5	13.1	14.8	12.7	13.8
12	8.9	7.1	7.9	9.6	8.4	9.1	12.6	11.8	12.2	15.2	13.4	14.1
13	9.4	7.0	7.8	10.6	9.1	9.6	12.4	11.5	11.9	15.1	13.3	14.0
14	10.0	7.3	8.5	11.0	9.4	10.0	12.2	11.4	11.7	14.9	13.3	13.9
15	10.8	7.9	8.8	10.3	9.4	9.7	13.7	10.9	12.1	15.7	13.4	14.3
16	10.6	7.8	8.8	11.1	9.7	10.4	14.2	10.9	12.0	14.6	13.3	13.8
17	11.5	8.0	9.2	12.2	10.3	11.0	12.3	11.2	11.6	15.2	13.3	14.0
18	11.0	8.0	9.1	12.8	10.7	11.6	12.5	10.1	11.2	15.6	13.3	14.2
19	8.9	7.4	8.2	12.4	10.3	11.2	11.1	10.0	10.5	15.6	13.3	14.1
20	10.8	8.6	9.4	13.0	10.3	11.4	11.5	10.9	11.3	15.3	13.2	14.1
21	10.5	8.4	9.2	13.3	10.2	11.1	12.2	11.4	11.8	16.2	13.3	14.4
22	10.7	8.3	9.3	12.5	10.2	11.2	11.9	11.5	11.6	16.3	13.3	14.5
23	10.8	8.4	9.3	14.2	11.0	12.3	13.2	11.8	12.5	16.2	13.4	14.6
24	11.2	8.2	9.3	14.5	11.3	12.5	12.9	12.0	12.3	16.9	13.4	14.9
25	10.6	7.9	9.1	13.4	11.2	12.0	13.3	12.0	12.7	16.8	13.4	14.8
26	9.9	9.4	9.7	14.2	11.7	12.8	13.9	12.8	13.3	14.7	13.3	13.9
27	10.1	9.1	9.5	15.4	12.2	13.5	14.2	13.0	13.5	15.9	13.5	14.4
28	10.2	9.1	9.6	15.9	12.8	14.0	14.2	12.5	13.3	15.3	13.4	14.2
29	10.7	9.2	10.0	15.4	12.2	13.8	14.0	12.3	13.0	16.4	13.3	14.5
30	10.6	10.2	10.4	15.0	11.8	13.0	12.4	10.9	11.8	16.4	13.7	14.7
31	---	---	---	---	---	---	11.1	10.8	10.9	16.2	13.5	14.5
MONTH	11.5	6.6	8.8	15.9	7.7	11.0	16.8	10.0	12.9	16.9	11.0	13.7

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	15.9	13.0	14.2	14.8	13.1	13.7	11.6	7.1	9.3	10.0	6.1	7.5
2	15.9	13.4	14.4	14.1	13.4	13.6	11.2	6.3	8.5	10.2	6.4	8.2
3	14.5	12.8	13.7	15.9	13.8	14.6	10.3	6.0	7.8	10.1	8.4	9.0
4	13.6	12.5	13.1	15.6	12.5	14.1	9.6	5.8	7.2	12.2	8.2	9.7
5	15.9	12.2	14.1	12.9	12.5	12.6	9.3	6.0	7.8	10.5	8.5	9.9
6	16.1	13.0	14.4	15.0	12.9	13.8	11.6	7.8	9.3	10.2	8.7	9.5
7	16.6	13.3	14.9	15.3	12.7	14.0	10.0	7.7	8.5	10.4	8.9	9.5
8	16.7	12.3	14.5	15.4	11.1	13.3	10.2	7.7	8.6	11.7	8.3	9.8
9	16.8	13.9	15.0	14.8	11.1	12.8	10.6	7.9	9.1	11.5	8.2	9.5
10	16.4	13.7	14.7	15.5	12.1	13.8	11.6	7.5	9.6	10.4	8.0	9.5
11	16.6	13.0	14.7	15.4	11.9	13.7	11.3	6.7	8.9	10.2	9.3	9.8
12	16.8	13.2	14.9	14.6	10.7	12.6	11.4	6.7	8.6	10.5	9.4	10.0
13	17.1	13.2	15.0	13.0	10.6	11.3	11.4	6.6	8.5	10.9	9.0	10
14	16.5	13.7	14.8	14.2	10.2	12.0	11.1	6.4	8.4	10.9	8.9	9.9
15	14.3	13.9	14.1	13.8	9.2	11.4	11.0	6.1	8.2	11.0	8.7	9.7
16	14.9	13.4	14.0	13.4	8.4	10.6	11.2	6.0	8.0	11.8	8.3	9.9
17	15.5	13.6	14.3	13.1	7.9	10.1	10.3	6.2	8.0	10.7	8.3	9.5
18	15.8	13.6	14.4	12.6	7.5	9.4	12.6	7.4	9.2	12.1	8.6	10.0
19	15.7	13.4	14.2	11.5	7.4	8.8	14.0	7.4	10.1	13.1	8.4	9.9
20	15.9	12.9	14.1	10.9	7.9	9.5	12.8	7.2	9.5	10.6	7.8	9.3
21	14.4	12.8	13.4	9.6	8.0	8.9	10.5	9.1	9.7	12.7	8.7	10.4
22	14.2	13.0	13.6	12.3	8.4	10.1	13.3	9.1	10.7	15.0	8.5	11.1
23	14.4	13.8	14.1	12.4	7.9	9.7	14.5	9.0	11.5	---	---	---
24	15.0	14.0	14.4	12.0	7.2	9.3	14.8	8.9	11.5	14.6	9.7	11.6
25	15.5	13.9	14.8	11.7	7.1	8.7	11.8	8.9	9.9	12.4	9.2	10.5
26	15.6	14.5	15.0	11.2	7.0	8.7	13.4	8.0	10.4	12.6	9.2	10.7
27	15.6	13.8	14.7	11.4	6.7	8.7	12.4	7.6	9.6	12.3	8.3	10.2
28	15.4	13.4	14.3	10.8	6.1	8.0	11.5	6.7	8.8	11.1	7.7	9.5
29	---	---	---	9.8	6.3	8.8	10.3	6.3	7.8	10.2	8.3	9.7
30	---	---	---	---	---	---	9.2	6.0	7.2	10.4	8.0	9.1
31	---	---	---	---	---	---	---	---	---	9.1	7.6	8.3
MONTH	17.1	12.2	14.3	15.9	6.1	11.3	14.8	5.8	9.0	15.0	6.1	9.7

03262001 WOOLPER CREEK AT WOOLPER ROAD NEAR BURLINGTON, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	10.0	7.5	8.6	10.5	6.3	8.0	11.7	6.3	8.5	9.9	8.4	9.0
2	9.4	7.1	8.1	10.6	6.2	7.9	9.9	6.2	7.7	9.9	8.8	9.1
3	10.4	7.1	9.0	10.6	5.4	7.8	9.8	7.2	8.1	9.0	8.1	8.6
4	9.8	8.8	9.4	9.8	5.2	7.2	9.6	7.2	8.1	8.6	8.0	8.3
5	10.0	8.0	9.1	9.7	4.8	7.0	8.4	7.3	8.0	9.1	8.0	8.6
6	9.7	7.3	8.4	9.8	4.8	6.8	8.6	6.9	7.7	9.3	8.3	8.7
7	9.3	7.2	8.2	8.1	4.7	6.7	9.4	6.8	7.7	9.8	8.3	8.9
8	9.4	7.1	8.2	9.3	5.5	6.5	9.7	6.5	7.8	10.4	8.3	9.0
9	9.4	7.5	8.8	10.2	5.5	7.4	10.5	6.5	7.9	10.6	8.2	9.2
10	9.5	7.0	8.1	8.1	6.7	7.3	9.8	6.6	8.0	10.5	7.6	8.9
11	9.3	6.7	7.7	7.5	6.2	6.9	10.6	6.5	8.0	10.3	7.1	8.4
12	9.0	6.5	7.6	7.6	6.0	6.7	10.4	6.6	8.1	10.0	6.4	8.2
13	9.4	7.1	8.6	8.0	6.0	6.8	10.3	6.5	8.2	9.8	5.4	8.1
14	9.6	7.0	8.4	8.9	5.9	7.2	10.4	6.0	7.7	9.4	6.0	7.8
15	9.5	8.7	9.1	8.1	6.0	6.8	10.1	5.9	7.5	8.9	6.0	7.6
16	9.3	8.0	8.8	7.3	6.1	6.6	10.7	5.8	7.6	9.1	6.2	8.1
17	8.9	7.6	8.3	7.8	6.0	6.8	10.9	5.7	7.6	9.4	7.3	8.3
18	9.1	7.4	8.2	8.4	5.8	6.8	11.1	5.8	7.9	9.9	6.9	8.4
19	9.0	7.4	8.1	6.9	5.8	6.4	10.7	6.2	8.1	9.8	6.8	8.1
20	9.6	7.8	8.6	7.8	5.8	6.7	10.5	6.1	8.1	9.9	7.5	8.5
21	9.8	7.6	8.6	7.6	5.8	6.3	9.8	5.6	7.6	10.2	7.0	8.7
22	10.0	7.3	8.5	7.5	6.2	6.7	8.7	5.6	6.9	8.6	6.9	7.8
23	10.0	7.3	8.4	9.1	6.2	7.3	7.8	6.9	7.4	8.8	6.7	8.1
24	10.1	6.8	8.2	9.5	6.8	7.7	8.7	7.0	7.7	9.8	6.8	8.3
25	9.9	6.5	7.8	10.5	6.7	8.2	10.4	6.9	8.3	9.9	6.6	8.1
26	9.8	6.3	7.6	10.9	6.1	8.1	11.6	6.5	8.6	10.9	6.9	8.7
27	8.7	6.8	7.8	9.8	5.6	7.4	11.4	6.3	8.2	8.5	6.5	7.7
28	9.8	6.7	8.0	8.0	5.6	6.6	11.6	6.3	8.5	8.7	7.2	8.0
29	10.7	7.0	8.3	9.6	6.7	7.9	10.7	6.2	7.8	9.9	7.5	8.7
30	10.8	6.7	8.4	11.8	6.8	9.0	9.7	6.2	7.8	10.4	7.8	9.2
31	---	---	---	11.6	6.7	8.4	9.5	7.8	8.6	---	---	---
MONTH	10.8	6.3	8.4	11.8	4.7	7.2	11.7	5.6	7.9	10.9	5.4	8.4
YEAR	17.1	4.7	10.2									

03262001 WOOLPER CREEK AT WOOLPER ROAD NEAR BURLINGTON, KY—Continued

TURBIDITY, WATER, UNFILTERED, NEPHELOMETRIC TURBIDITY UNITS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	21	12	16	12	6.0	8.2	4.9	2.9	3.7	1,000	78	260
2	19	9.0	12	11	3.0	4.8	6.9	2.9	3.8	78	44	56
3	13	6.0	9.3	5.0	1.0	3.0	4.0	3.0	3.4	46	33	40
4	---	---	---	3.0	1.0	2.0	4.9	2.9	3.0	33	12	25
5	240	28	65	260	2.0	49	4.9	2.8	3.2	31	14	26
6	55	11	25	160	24	58	3.7	2.7	2.7	32	13	29
7	18	11	14	25	14	19	3.7	2.6	2.8	32	28	30
8	13	8.0	11	15	11	12	3.5	2.5	2.5	29	26	27
9	15	4.0	9.4	12	9.0	10	3.5	2.4	2.7	28	26	27
10	12	5.0	9.1	1,000	10	340	3.4	2.3	2.4	28	26	27
11	210	8.0	70	450	46	110	190	2.3	86	28	26	27
12	58	33	46	48	21	32	79	21	37	28	23	27
13	42	21	27	22	11	16	230	16	67	28	26	27
14	28	17	20	13	7.0	9.6	170	26	55	27	26	26
15	21	15	17	10	6.1	8.1	27	14	18	28	26	27
16	16	14	15	12	8.1	9.5	14	9.7	12	28	27	27
17	23	14	15	9.2	6.2	7.8	280	8.7	71	27	26	27
18	20	14	15	7.2	2.2	4.7	190	22	53	27	26	27
19	19	11	14	5.3	4.3	4.6	1,000	22	390	27	26	26
20	18	15	16	5.3	3.3	4.1	290	54	110	27	26	26
21	15	12	14	6.4	3.4	4.4	56	30	40	27	26	26
22	18	12	13	16	5.4	11	31	22	26	27	26	26
23	14	12	12	12	6.5	9.1	22	17	19	27	26	26
24	12	11	12	9.5	4.6	6.2	18	15	17	27	26	27
25	1,000	11	220	5.6	2.6	4.8	19	16	17	27	26	27
26	220	49	91	4.7	2.6	3.8	17	15	16	27	26	27
27	50	33	39	4.7	2.7	3.8	15	14	15	27	27	27
28	300	33	120	4.7	2.7	3.8	16	14	14	27	24	26
29	1,000	85	260	4.8	2.8	3.8	16	13	14	31	26	27
30	96	20	50	85	2.8	4.4	800	13	180	31	27	29
31	---	---	---	---	---	---	580	53	170	29	28	28
MONTH	1,000	4.0	43	1,000	1.0	26	1,000	2.3	47	1,000	12	36

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	29	28	28	140	56	82	17	13	15	14	3.0	6.8
2	100	29	43	130	72	85	24	14	15	990	6.7	170
3	100	56	70	79	53	62	16	13	14	670	60	220
4	310	64	130	100	55	70	17	13	14	78	17	30
5	68	57	62	250	98	140	29	15	21	990	46	460
6	60	52	56	98	62	75	20	17	18	120	34	60
7	56	51	54	66	47	56	460	17	130	52	23	31
8	57	41	50	52	31	41	140	25	50	28	18	22
9	59	53	55	36	27	31	27	22	24	25	14	20
10	58	54	56	31	17	25	23	16	20	990	17	320
11	67	48	56	26	9.0	16	19	13	15	990	63	190
12	62	41	54	11	3.0	5.4	14	10	12	63	26	40
13	61	50	57	98	5.0	33	12	8.0	9.4	27	16	21
14	64	48	54	110	13	44	9.0	2.0	6.1	19	11	14
15	550	62	200	13	9.0	11	5.0	1.0	3.0	16	8.0	11
16	75	44	57	18	9.0	12	4.0	2.0	2.4	11	6.0	8.2
17	53	44	48	13	11	12	3.9	2.2	2.6	16	7.0	9.3
18	46	43	45	15	11	13	6.1	3.2	3.9	20	6.0	11
19	45	42	43	490	13	120	10	3.9	5.3	10	3.0	5.3
20	71	14	44	420	38	100	1,000	6.3	62	140	4.0	23
21	160	47	75	310	40	110	1,000	71	460	100	23	39
22	1,000	99	390	91	36	66	71	17	34	---	---	---
23	210	72	100	67	33	57	20	9.2	13	---	---	---
24	74	56	63	76	35	62	14	6.7	8.9	6.4	2.3	3.7
25	63	55	58	150	42	71	9.5	6.8	8.0	12	4.5	6.1
26	57	52	54	100	73	90	11	7.1	9.4	10	7.2	8.5
27	55	52	53	350	64	90	14	7.0	9.4	20	7.7	9.2
28	56	52	54	790	78	94	12	8.8	10	990	8.9	65
29	---	---	---	850	47	150	13	9.2	11	700	54	190
30	---	---	---	---	---	---	48	12	16	87	28	38
31	---	---	---	---	---	---	---	---	---	36	28	29
MONTH	1,000	14	75	850	3.0	63	1,000	1.0	34	990	2.3	71

03262001 WOOLPER CREEK AT WOOLPER ROAD NEAR BURLINGTON, KY—Continued

TURBIDITY, WATER, UNFILTERED, NEPHELOMETRIC TURBIDITY UNITS—CONTINUED
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	40	27	29	22	8.0	14	33	26	29	1,000	110	260
2	37	29	31	13	4.0	8.3	250	17	92	990	130	300
3	380	33	140	32	6.0	9.2	230	96	150	990	130	270
4	160	48	81	13	7.0	9.0	1,000	76	370	130	83	97
5	48	40	44	13	7.0	8.4	540	250	370	85	64	75
6	50	42	44	11	6.0	8.7	250	110	170	68	48	59
7	56	38	43	120	9.0	60	160	85	120	60	38	47
8	1,000	39	260	120	52	82	95	63	86	59	27	33
9	1,000	90	220	1,000	23	130	94	62	81	28	14	21
10	93	66	78	1,000	170	530	95	57	82	14	5.0	9.8
11	87	71	76	170	65	120	83	59	79	7.0	4.0	5.6
12	1,000	74	220	90	63	77	89	78	81	8.0	5.0	6.0
13	450	72	140	79	49	69	92	59	84	7.0	5.0	6.0
14	1,000	74	220	68	37	53	90	69	79	12	5.0	6.8
15	1,000	94	260	1,000	50	120	76	70	73	13	9.0	11
16	190	36	68	1,000	230	560	78	50	61	13	9.0	11
17	49	20	29	250	110	170	64	55	59	11	7.0	9.3
18	28	9.0	18	150	70	98	70	46	64	10	8.0	9.0
19	20	8.0	13	1,000	73	450	75	48	70	9.0	3.0	8.0
20	19	7.0	12	360	140	250	81	52	70	15	9.0	9.7
21	14	4.0	8.9	1,000	110	350	75	49	68	18	8.0	9.5
22	11	4.0	7.2	360	160	230	1,000	67	290	270	8.0	100
23	12	3.0	6.9	210	87	130	890	200	320	170	60	88
24	13	4.0	6.8	120	31	82	200	100	160	70	25	49
25	10	5.0	7.7	62	27	45	130	90	110	39	28	33
26	190	7.0	20	35	8.0	20	110	74	95	34	19	29
27	250	20	88	15	2.0	8.3	95	71	90	1,000	25	400
28	48	24	36	48	2.0	20	97	71	92	210	64	120
29	43	18	24	51	25	34	100	73	95	64	37	49
30	30	16	20	52	13	34	100	93	98	40	24	31
31	---	---	---	34	29	30	1,000	82	330	---	---	---
MONTH	1,000	3.0	75	1,000	2.0	120	1,000	17	130	1,000	3.0	72
YEAR	1,000	1.0	66									

03277075 GUNPOWDER CREEK AT CAMP ERNST ROAD NEAR UNION, KY

LOCATION.--Lat 38°59'39", long 84°42'58", Boone County, Hydrologic Unit 05090203, on upstream right wing wall of bridge on Camp Ernst Road, 0.65 mi below South Fork Gunpowder Creek, 3.8 mi northwest of Union, and 14.2 mi above the mouth.

DRAINAGE AREA.--36.6 mi^2.

WATER DISCHARGE RECORDS

PERIOD OF RECORD.--April 1999 to current year.

GAGE.--Water-stage recorder with telemetry. Datum of gage is 683.066 ft above NGVD of 1929.

REMARKS.--Records fair except for periods of estimated records, which are poor.

COOPERATION.--Northern Kentucky Sanitation District No. 1.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.3	17	6.5	1,030	20	151	33	11	8.0	0.91	0.35	331
2	4.7	12	5.8	182	50	172	31	113	5.1	0.60	412	342
3	8.4	9.9	6.1	99	62	89	25	31	86	0.46	51	e360
4	75	9.5	4.6	58	240	78	18	16	19	0.25	704	56
5	34	71	5.6	61	42	182	88	e980	10	3.3	117	19
6	9.3	95	9.9	65	27	108	24	140	6.2	1.4	28	12
7	6.8	30	8.7	41	26	63	79	84	9.9	5.3	21	8.1
8	4.4	18	11	33	18	46	34	45	91	2.0	14	6.3
9	2.9	14	11	27	19	38	52	47	27	254	171	4.9
10	2.4	252	12	22	24	27	31	989	9.9	276	185	4.0
11	99	163	237	25	23	25	24	275	20	20	113	2.4
12	17	38	108	15	18	24	18	72	81	11	39	1.2
13	8.8	23	177	13	19	93	17	39	29	4.2	14	0.76
14	5.4	17	159	12	50	52	13	25	125	1.6	15	0.67
15	3.9	23	52	11	372	34	12	26	110	56	11	6.5
16	3.2	40	31	9.2	92	29	13	16	33	76	8.9	1.8
17	5.5	18	150	11	54	27	21	64	15	5.2	3.7	0.54
18	3.0	13	124	9.3	35	24	20	47	10	2.0	1.9	0.27
19	22	12	e810	9.4	38	133	11	22	9.8	164	1.1	0.14
20	15	11	e350	9.2	64	97	42	47	13	7.3	0.42	0.18
21	5.7	21	79	7.5	249	156	120	43	5.5	90	0.20	0.11
22	3.9	44	46	6.4	1,230	63	21	23	3.9	36	82	295
23	2.5	16	31	6.8	286	44	12	13	3.1	46	14	18
24	1.9	12	26	5.0	111	32	9.9	9.1	2.2	7.6	4.3	5.8
25	394	10	58	10	66	28	14	8.0	1.7	3.1	1.1	2.4
26	97	9.4	26	8.5	52	70	10	23	32	1.2	0.45	0.81
27	24	13	22	6.9	43	28	9.6	9.8	44	0.59	0.30	398
28	40	9.5	22	7.0	62	24	6.8	25	6.3	28	0.27	23
29	324	8.1	21	40	---	270	6.5	58	4.4	4.5	0.26	10
30	73	8.1	229	26	---	78	6.2	12	2.0	1.5	10	5.9
31	29	---	472	18	---	47	---	14	---	0.35	180	---
TOTAL	1,332.0	1,037.5	3,311.2	1,884.2	3,392	2,332	822.0	3,326.9	823.0	1,110.36	2,204.25	1,916.78
MEAN	43.0	34.6	107	60.8	121	75.2	27.4	107	27.4	35.8	71.1	63.9
MAX	394	252	810	1,030	1,230	270	120	989	125	276	704	398
MIN	1.9	8.1	4.6	5.0	18	24	6.2	8.0	1.7	0.25	0.20	0.11

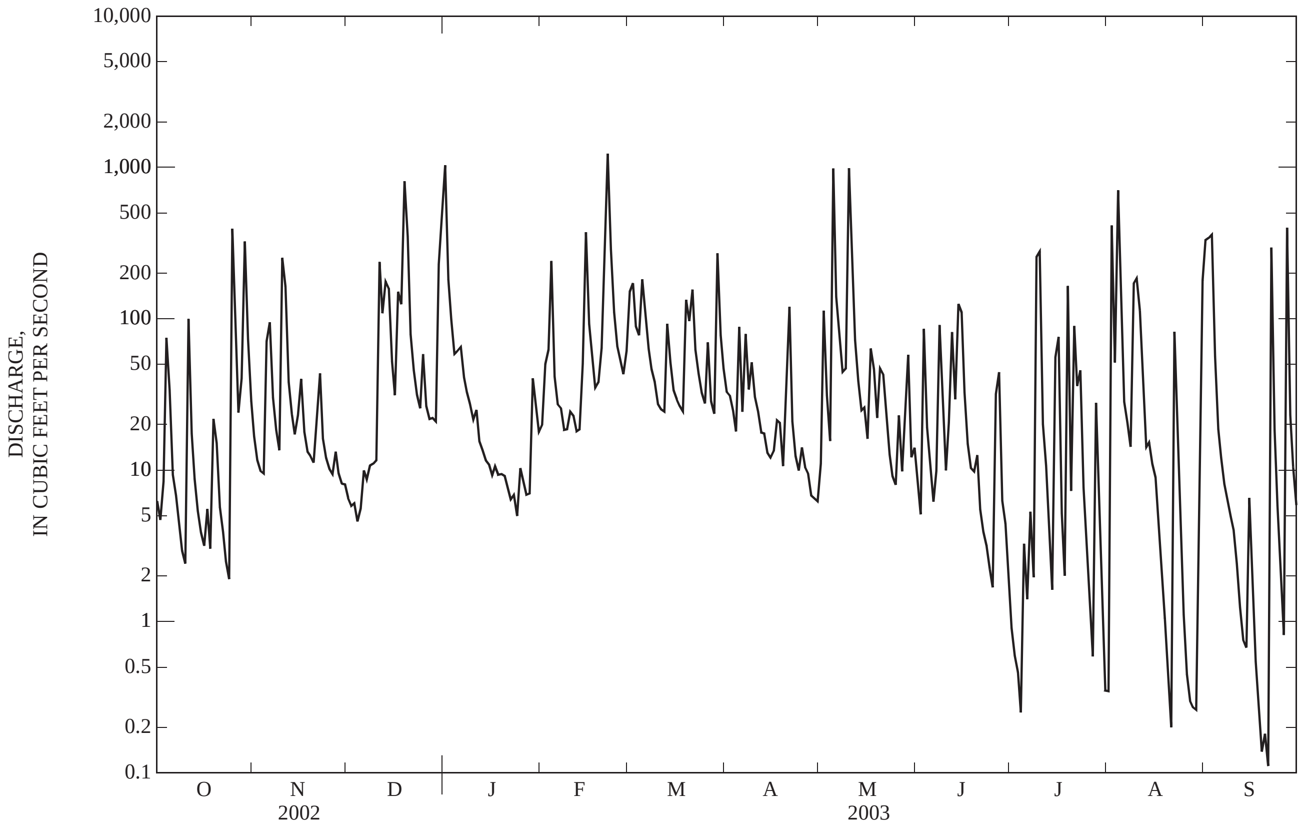
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1999 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	40.5	26.0	74.9	50.6	92.1	64.1	53.0	67.6	35.6	29.4	27.2	31.3
MAX	99.1	51.1	107	67.8	151	102	118	149	55.0	76.6	71.1	63.9
(WY)	(2002)	(2002)	(2003)	(2000)	(2000)	(2002)	(2002)	(2002)	(2000)	(2001)	(2003)	(2003)
MIN	7.91	5.68	31.8	21.9	44.8	22.5	10.9	9.25	9.79	4.00	2.89	1.01
(WY)	(2001)	(2000)	(2000)	(2001)	(2001)	(2001)	(2001)	(1999)	(1999)	(2002)	(2002)	(1999)

03277075 GUNPOWDER CREEK AT CAMP ERNST ROAD NEAR UNION, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1999 - 2003	
ANNUAL TOTAL	22,499.72		23,492.19			
ANNUAL MEAN	61.6		64.4		52.9	
HIGHEST ANNUAL MEAN					67.6	2002
LOWEST ANNUAL MEAN					32.8	2001
HIGHEST DAILY MEAN	1,170	Apr 21	1,230	Feb 22	1,370	Jan 3, 2000
LOWEST DAILY MEAN	0.00	Jul 6	0.11	Sep 21	0.00	Sep 10, 1999
ANNUAL SEVEN-DAY MINIMUM	0.00	Aug 3	1.3	Jun 30	0.00	Sep 10, 1999
MAXIMUM PEAK FLOW			4,190	Aug 4	6,590	May 8, 2002
MAXIMUM PEAK STAGE			7.17	Aug 4	8.22	May 8, 2002
INSTANTANEOUS LOW FLOW			0.03	Sep 21	0.03	Sep 21, 2003
10 PERCENT EXCEEDS	137		161		110	
50 PERCENT EXCEEDS	18		21		13	
90 PERCENT EXCEEDS	0.04		2.3		1.1	

e Estimated



03277075 GUNPOWDER CREEK AT CAMP ERNST ROAD NEAR UNION, KY—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--November 2002 to September 2003.

COOPERATION.--Northern Kentucky Sanitation District No. 1.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: November 2000 to current year.
pH: November 2000 to current year.
WATER TEMPERATURES: November 2000 to current year.
DISSOLVED OXYGEN: November 2000 to current year.
TURBIDITY: November 2000 to current year.

INSTRUMENTATION.--Water-quality monitor with telemetry.

REMARKS.--
SPECIFIC CONDUCTANCE: Records good.
pH: Records good.
WATER TEMPERATURES: Records good.
DISSOLVED OXYGEN: Records good.
TURBIDITY: Records good.

EXTREMES FOR PERIOD OF RECORD.--
SPECIFIC CONDUCTANCE: Maximum recorded, 6310 microsiemens, Jan. 29, 2003; minimum recorded, 118 microsiemens, July 18, 2001.
pH: Maximum recorded, 10.4 units, Aug. 12, 2001; minimum recorded, 6.5 units, Aug. 23, 2003.
WATER TEMPERATURES: Maximum recorded, 31.8°C, June 18, 2001; minimum recorded, -0.3°C, Jan. 29, 30, and Feb. 11-14, 2003.
DISSOLVED OXYGEN: Maximum recorded, 16.9 mg/L, Dec. 1, 2002; minimum recorded, 0.7 mg/L, Aug. 14, 2003.
TURBIDITY: Maximum recorded, greater than 1000 NTU, many days in 2001, 2002 and 2003; minimum recorded, 0.0 NTU, several days in Nov. and Dec. 2002, and Feb., July, Aug. and Sept. 2003.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum recorded, 6310 microsiemens, Jan. 29, 2003; minimum recorded, 169 microsiemens, Jan. 1, 2003.
pH: Maximum recorded, 8.8 units, Jan. 22, 2003; minimum recorded, 6.5 units, Aug. 23, 2003.
WATER TEMPERATURES: Maximum recorded, 30.5°C, Jul. 8, 2003; minimum recorded, 0.3°C, Jan. 29, 30, and Feb. 11-14, 2003.
DISSOLVED OXYGEN: Maximum recorded, 16.9 mg/L, Dec. 1, 2002; minimum recorded, 0.7 mg/L, Aug. 14, 2003.
TURBIDITY: Maximum recorded, greater than 1000 NTU, several days in 2003; minimum recorded, 0.0 NTU, several days in Nov. and Dec. 2002, and Feb., July, Aug., and Sept. 2003.

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	673	644	657	641	600	620	758	743	751	377	169	277
2	696	671	678	667	641	654	745	699	722	436	317	381
3	701	666	682	680	663	670	731	711	724	1,160	436	797
4	685	324	595	717	676	698	758	722	738	1,170	779	993
5	475	344	422	720	330	600	1,050	739	794	1,590	736	890
6	508	475	489	521	348	450	2,160	950	1,420	1,750	1,040	1,320
7	585	508	538	593	521	558	2,620	1,980	2,150	1,040	864	945
8	617	585	608	621	591	606	---	---	---	906	814	845
9	609	529	563	652	621	639	---	---	---	898	800	826
10	552	532	544	684	259	527	---	---	---	894	812	832
11	640	340	432	489	272	411	---	---	---	952	806	857
12	517	429	478	566	482	533	---	---	---	917	864	880
13	575	517	550	606	559	582	---	---	---	887	855	872
14	618	575	590	613	587	597	---	---	---	867	838	851
15	629	606	616	660	608	624	---	---	---	984	843	898
16	648	629	638	709	536	601	---	---	---	1,040	984	1,020
17	666	647	655	584	545	566	---	---	---	1,520	179	1,220
18	677	648	668	616	584	602	---	---	---	2,930	1,520	2,070
19	753	614	665	635	616	626	676	206	454	3,370	2,930	3,270
20	614	533	562	650	628	639	443	254	371	3,280	2,730	3,040
21	579	549	562	677	605	646	469	424	449	2,740	2,290	2,510
22	582	561	577	688	509	556	531	461	508	2,370	2,230	2,320
23	586	571	581	551	523	538	587	526	553	2,240	2,050	2,150
24	593	576	586	578	551	568	595	555	576	2,070	1,830	1,920
25	600	217	464	609	577	599	1,070	559	787	2,020	1,900	1,960
26	545	339	467	637	608	620	1,680	1,070	1,450	2,100	2,000	2,040
27	627	545	593	692	637	663	1,690	1,120	1,420	2,600	2,020	2,180
28	670	411	560	856	692	754	1,220	964	1,070	3,230	2,590	2,860
29	606	266	436	943	791	883	966	817	889	6,310	3,230	4,180
30	552	401	491	791	744	766	1,030	562	744	4,790	2,780	3,630
31	610	551	585	---	---	---	582	284	473	2,910	2,300	2,610
MONTH	753	217	566	943	259	613	2,620	206	852	6,310	169	1,660

03277075 GUNPOWDER CREEK AT CAMP ERNST ROAD NEAR UNION, KY—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	3,570	2,160	2,400	1,680	872	1,260	641	609	620	806	775	791
2	4,430	2,480	3,460	872	713	770	659	518	583	---	---	---
3	2,640	1,790	2,200	806	628	696	608	550	593	714	569	667
4	2,120	1,150	1,370	826	650	727	613	585	596	761	677	703
5	1,360	1,180	1,250	933	721	804	706	606	667	---	---	---
6	1,460	1,140	1,290	1,010	717	801	760	665	702	535	422	470
7	2,260	1,140	1,420	1,100	809	909	823	708	743	589	465	557
8	3,760	1,860	2,720	897	771	805	780	696	734	600	522	558
9	4,070	2,590	3,170	961	789	837	779	709	740	653	516	593
10	3,250	2,080	2,420	983	825	856	778	693	737	601	172	370
11	5,260	2,690	4,240	965	807	846	734	680	698	452	363	418
12	5,110	3,670	4,510	935	810	839	726	684	697	526	437	482
13	4,620	3,420	3,690	1,400	718	990	726	665	703	559	488	522
14	4,590	2,510	3,350	1,590	826	1,010	707	659	681	570	497	547
15	3,530	1,170	1,560	1,090	728	807	737	707	719	596	530	571
16	1,780	1,300	1,560	923	719	772	822	720	747	609	568	595
17	1,720	1,480	1,600	854	712	746	844	697	746	638	509	574
18	2,240	1,640	1,930	841	706	744	906	763	821	546	484	523
19	2,780	1,950	2,430	990	616	798	817	767	801	594	472	577
20	3,300	2,130	2,900	917	649	747	949	465	776	650	434	584
21	3,400	1,120	2,290	857	634	725	829	566	642	578	488	510
22	1,160	372	649	761	628	668	794	632	698	579	502	532
23	1,530	491	835	709	611	649	744	690	724	610	536	581
24	1,540	922	1,220	708	611	654	759	733	746	630	581	605
25	1,660	1,150	1,360	731	634	669	766	605	743	628	595	611
26	1,270	995	1,150	1,000	628	839	754	721	738	799	618	706
27	1,210	948	1,060	849	692	752	822	750	777	661	565	608
28	1,480	961	1,150	754	677	716	812	495	767	732	388	585
29	---	---	---	781	531	615	796	765	781	595	384	514
30	---	---	---	653	587	614	802	761	781	641	559	601
31	---	---	---	---	---	---	---	---	---	699	625	669
MONTH	5,260	372	2,110	1,680	531	789	949	465	717	806	172	573
		JUNE			JULY			AUGUST			SEPTEMBER	
1	695	643	665	831	688	797	587	559	573	457	175	360
2	686	643	666	842	656	805	593	204	432	410	181	319
3	716	414	535	869	592	671	562	497	538	467	184	360
4	590	478	533	623	598	609	---	---	---	498	391	450
5	662	590	632	732	607	665	---	---	---	543	481	511
6	690	659	676	698	667	684	---	---	---	581	456	561
7	723	667	699	870	694	774	---	---	---	591	556	580
8	749	377	640	735	606	674	---	---	---	649	583	609
9	554	440	495	694	207	565	560	201	442	687	617	639
10	615	553	586	508	294	393	465	196	382	646	564	622
11	685	572	650	591	482	542	510	301	395	649	562	633
12	672	412	537	636	523	600	547	359	466	618	601	607
13	579	444	507	654	606	635	556	522	539	624	602	614
14	659	248	535	639	548	604	630	393	551	632	584	620
15	559	265	415	673	283	628	526	393	468	709	603	665
16	630	490	575	498	262	418	584	526	564	710	666	695
17	657	600	631	576	495	537	588	541	562	666	644	651
18	683	645	667	613	562	592	566	530	546	652	638	643
19	722	628	692	614	232	397	540	518	531	662	652	657
20	760	692	725	601	473	550	546	525	537	666	656	662
21	754	696	720	620	392	505	555	527	542	669	647	660
22	738	696	718	533	400	489	562	281	471	655	179	433
23	741	717	730	557	312	442	442	316	400	535	408	477
24	772	739	757	619	556	592	498	439	468	586	535	566
25	798	760	780	686	619	648	498	462	478	594	582	588
26	819	649	780	713	614	695	490	464	479	610	593	600
27	708	540	613	690	657	675	510	486	496	611	219	383
28	742	657	715	707	386	602	525	500	514	536	439	492
29	789	742	770	590	576	584	543	507	529	597	536	566
30	812	783	797	584	562	572	618	525	560	619	586	605
31	---	---	---	583	558	572	619	242	392	---	---	---
MONTH	819	248	648	870	207	597	630	196	494	710	175	561
YEAR	6,310	169	847									

03277075 GUNPOWDER CREEK AT CAMP ERNST ROAD NEAR UNION, KY—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	8.3	8.0	8.1	8.6	8.4	8.5	8.2	7.9	8.0	7.9	7.7	7.9
2	8.3	8.0	8.1	8.6	8.4	8.5	8.1	7.8	7.9	7.9	7.8	7.9
3	8.4	8.0	8.2	8.5	8.3	8.4	8.0	7.8	7.9	8.3	7.9	8.1
4	8.4	7.8	8.1	8.5	8.3	8.4	8.3	7.7	7.9	8.4	8.1	8.3
5	8.2	7.8	8.0	8.6	8.0	8.3	8.2	7.9	8.1	8.4	8.2	8.3
6	8.4	8.0	8.2	8.4	8.0	8.2	8.3	8.1	8.2	8.3	8.1	8.2
7	8.4	8.0	8.2	8.5	8.2	8.4	8.2	8.0	8.1	8.5	8.2	8.3
8	8.6	8.1	8.3	8.6	8.3	8.4	8.3	8.0	8.2	8.5	8.3	8.4
9	8.5	8.1	8.3	8.6	8.2	8.4	8.3	8.0	8.1	8.5	8.2	8.3
10	8.4	7.9	8.1	8.6	7.8	8.1	8.4	8.0	8.2	8.5	8.2	8.3
11	8.0	7.8	7.9	8.2	7.8	8.0	8.2	7.8	8.0	8.5	8.4	8.4
12	8.3	7.8	8.0	8.3	8.0	8.2	8.0	7.8	7.9	8.5	8.3	8.4
13	8.3	7.9	8.1	8.5	8.1	8.3	8.1	7.8	8.0	8.5	8.3	8.4
14	8.4	8.0	8.2	8.6	8.2	8.4	8.3	7.8	8.0	8.5	8.3	8.4
15	8.5	8.1	8.2	8.3	8.1	8.2	8.3	8.0	8.1	8.5	8.3	8.4
16	8.5	8.1	8.2	8.2	8.0	8.1	8.3	7.9	8.1	8.5	8.3	8.4
17	8.5	8.1	8.3	8.5	8.0	8.2	8.0	7.8	8.0	8.5	8.3	8.4
18	8.5	8.1	8.3	8.5	8.2	8.3	8.1	7.8	7.9	8.5	8.3	8.4
19	8.2	8.0	8.1	8.5	8.1	8.3	8.2	7.6	7.8	8.5	8.2	8.3
20	8.4	7.9	8.1	8.4	8.0	8.2	7.7	7.6	7.6	8.5	8.3	8.4
21	8.5	8.0	8.2	8.5	8.0	8.2	8.1	7.7	8.0	8.6	8.3	8.4
22	8.5	8.0	8.2	8.1	7.8	8.0	8.1	8.0	8.0	8.8	8.3	8.5
23	8.5	7.9	8.2	8.5	7.9	8.2	8.3	8.1	8.2	8.4	8.3	8.4
24	8.5	7.9	8.2	8.4	7.9	8.2	8.3	8.2	8.2	8.5	8.2	8.3
25	8.2	7.7	7.9	8.3	7.9	8.1	8.2	8.1	8.2	8.4	8.2	8.3
26	8.0	7.7	7.8	8.3	7.9	8.1	8.4	8.1	8.2	8.3	8.1	8.2
27	8.2	7.9	8.0	8.3	8.0	8.1	8.5	8.3	8.4	8.3	8.1	8.2
28	8.1	7.8	8.0	8.2	7.9	8.1	8.5	8.3	8.4	8.2	8.1	8.2
29	8.0	7.7	7.8	8.2	7.9	8.1	8.4	8.1	8.3	8.4	8.1	8.2
30	8.4	7.9	8.2	8.0	7.7	7.9	8.2	7.7	8.0	8.4	8.1	8.2
31	8.6	8.4	8.5	---	---	---	7.8	7.6	7.7	8.5	8.2	8.3
MONTH	8.6	7.7	8.1	8.6	7.7	8.2	8.5	7.6	8.1	8.8	7.7	8.3
	FEBRUARY			MARCH			APRIL			MAY		
1	8.5	8.2	8.3	8.6	8.3	8.4	8.7	7.9	8.3	8.2	7.8	7.9
2	8.5	8.2	8.3	8.3	8.1	8.2	8.6	8.0	8.3	---	---	---
3	8.4	8.2	8.3	8.3	8.1	8.2	8.6	7.8	8.2	7.8	7.6	7.7
4	8.3	7.9	8.0	8.2	8.1	8.1	8.4	7.8	8.0	7.9	7.7	7.8
5	7.9	7.9	7.9	8.1	7.9	8.0	8.0	7.7	7.8	---	---	---
6	7.9	7.8	7.9	8.1	7.9	8.0	8.5	7.8	8.2	8.0	7.7	7.8
7	7.9	7.8	7.9	8.1	8.0	8.1	8.3	7.8	8.0	7.9	7.7	7.8
8	8.1	7.8	7.9	8.2	8.0	8.1	8.1	7.7	7.9	8.0	7.7	7.9
9	8.2	7.8	8.0	8.2	8.0	8.1	8.1	7.9	8.0	8.0	7.7	7.9
10	8.2	7.9	8.0	8.3	8.1	8.3	8.2	7.8	8.0	7.8	7.5	7.6
11	8.3	7.9	8.1	8.3	8.2	8.2	8.2	7.8	8.0	7.8	7.6	7.7
12	8.3	8.0	8.2	8.5	8.1	8.3	8.0	7.8	7.9	8.0	7.8	7.9
13	8.4	8.2	8.3	8.2	7.9	8.0	8.1	7.8	8.0	8.0	7.8	7.9
14	8.3	8.1	8.2	8.5	7.9	8.1	8.1	7.8	7.9	8.1	7.8	7.9
15	8.3	8.1	8.2	8.4	7.9	8.1	8.1	7.8	8.0	8.1	7.9	8.0
16	8.1	7.9	8.0	8.5	7.8	8.1	8.2	7.8	8.0	8.2	7.9	8.0
17	8.1	7.9	8.0	8.5	7.7	8.1	8.0	7.7	7.9	8.0	7.6	7.8
18	8.1	7.9	8.0	8.4	7.7	8.0	8.0	7.7	7.9	7.9	7.5	7.7
19	8.3	8.0	8.1	8.2	7.5	7.8	8.2	7.7	7.9	8.1	7.6	7.9
20	8.4	8.1	8.2	7.6	7.3	7.4	8.1	7.6	7.9	8.2	7.7	7.9
21	8.3	8.0	8.1	7.5	7.3	7.4	7.8	7.5	7.7	8.2	7.8	8.0
22	8.1	8.0	8.1	7.8	7.4	7.6	8.3	7.7	8.0	8.4	7.9	8.1
23	8.3	8.1	8.2	8.0	7.5	7.8	8.4	7.9	8.1	8.3	7.9	8.1
24	8.5	8.3	8.4	8.2	7.7	7.9	8.5	7.9	8.2	8.4	7.9	8.2
25	8.6	8.4	8.5	8.0	7.6	7.8	8.2	7.9	8.0	8.4	7.9	8.1
26	8.6	8.4	8.5	7.8	7.5	7.6	8.1	7.8	8.0	8.3	7.9	8.1
27	8.7	8.5	8.6	8.1	7.5	7.8	8.1	7.8	7.9	8.6	7.8	8.1
28	8.7	8.4	8.6	8.2	7.6	7.9	7.9	7.8	7.8	8.6	7.7	8.2
29	---	---	---	8.0	7.6	7.8	7.8	7.5	7.6	8.3	7.7	8.0
30	---	---	---	8.1	7.8	7.8	8.0	7.6	7.8	8.7	7.8	8.2
31	---	---	---	---	---	---	---	---	---	8.4	7.9	8.2
MONTH	8.7	7.8	8.2	8.6	7.3	8.0	8.7	7.5	8.0	8.7	7.5	7.9

03277075 GUNPOWDER CREEK AT CAMP ERNST ROAD NEAR UNION, KY—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS—CONTINUED
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	8.7	7.9	8.3	8.6	7.6	8.1	8.4	7.7	8.0	8.3	7.8	7.9
2	8.7	7.9	8.3	8.5	7.6	8.0	8.0	7.4	7.7	7.9	7.7	7.8
3	8.2	7.8	7.9	8.7	7.6	8.2	7.9	7.7	7.8	7.9	7.6	7.8
4	8.4	7.8	8.1	8.7	7.7	8.2	---	---	---	8.1	7.8	8.0
5	8.7	8.0	8.4	8.7	7.7	8.2	---	---	---	8.2	8.0	8.1
6	8.7	8.0	8.3	8.7	7.8	8.2	---	---	---	8.2	8.0	8.1
7	8.7	8.0	8.3	8.4	7.8	8.0	---	---	---	8.3	8.0	8.1
8	8.6	7.9	8.2	8.5	7.7	8.0	---	---	---	8.3	7.9	8.1
9	8.5	7.8	8.1	8.7	7.7	8.1	8.3	7.5	7.9	8.1	7.8	8.0
10	8.7	7.9	8.3	7.9	7.7	7.8	8.1	7.6	7.8	8.2	7.8	8.0
11	8.6	7.9	8.3	8.2	7.9	8.0	8.0	7.7	7.8	8.2	7.9	8.0
12	8.1	7.8	7.9	8.3	8.0	8.1	8.2	7.8	8.0	8.3	7.9	8.1
13	8.6	7.8	8.2	8.4	8.0	8.2	8.3	7.9	8.1	8.4	8.0	8.1
14	8.3	7.7	8.0	8.6	7.9	8.3	8.3	7.7	8.1	8.3	7.9	8.1
15	7.9	7.7	7.8	8.4	7.8	8.2	8.4	7.7	8.0	8.2	7.9	8.1
16	8.4	7.8	8.1	8.2	7.8	8.0	8.4	7.9	8.1	8.0	7.7	7.8
17	8.7	7.9	8.3	8.5	8.0	8.2	8.4	7.8	8.1	8.0	7.7	7.9
18	8.7	8.0	8.3	8.6	8.0	8.3	8.4	7.9	8.1	8.2	7.8	8.0
19	8.5	8.0	8.2	8.3	7.9	8.0	8.4	7.8	8.1	8.2	7.9	8.0
20	8.6	8.0	8.3	8.6	8.0	8.2	8.4	7.8	8.1	8.2	7.9	8.1
21	8.6	7.9	8.2	8.3	7.9	8.0	8.3	7.8	8.0	8.4	8.0	8.2
22	8.5	7.8	8.1	8.5	8.0	8.2	8.2	7.6	7.8	8.1	7.8	7.9
23	8.6	7.8	8.1	8.3	7.8	8.0	8.1	6.5	7.6	8.2	7.8	8.0
24	8.6	7.8	8.1	8.4	8.0	8.2	8.4	7.8	8.0	8.3	8.0	8.1
25	8.5	7.7	8.1	8.4	8.1	8.3	8.4	7.8	8.1	8.4	8.0	8.2
26	8.6	7.6	8.0	8.5	8.1	8.3	8.5	7.8	8.1	8.5	8.1	8.3
27	8.4	7.6	7.9	8.6	8.1	8.3	8.4	7.8	8.1	8.3	7.8	8.0
28	8.7	7.6	8.1	8.3	7.7	8.0	8.5	7.9	8.1	8.3	8.0	8.1
29	8.7	7.7	8.2	8.4	7.9	8.0	8.4	7.9	8.1	8.4	8.1	8.2
30	8.7	7.7	8.2	8.4	7.6	8.0	8.1	7.8	8.0	8.4	8.2	8.3
31	---	---	---	8.3	7.7	8.0	8.5	7.7	7.8	---	---	---
MONTH	8.7	7.6	8.2	8.7	7.6	8.1	8.5	6.5	8.0	8.5	7.6	8.0
YEAR	8.8	6.5	8.1									

03277075 GUNPOWDER CREEK AT CAMP ERNST ROAD NEAR UNION, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	22.6	19.9	21.0	9.1	7.2	8.4	1.4	0.0	0.6	7.3	4.9	5.7
2	23.3	20.6	21.7	7.2	4.9	6.1	2.2	-0.1	0.8	4.9	4.1	4.6
3	23.4	20.6	22.0	6.6	5.3	6.2	1.3	-0.1	0.5	4.1	3.0	3.4
4	23.1	21.3	22.1	7.4	6.6	7.0	0.1	-0.1	0.0	3.4	1.9	2.8
5	21.3	18.3	19.4	9.2	7.2	7.9	0.1	-0.1	0.0	3.8	2.6	3.3
6	18.4	15.4	17.2	9.2	7.9	8.5	0.1	-0.2	-0.1	3.8	2.4	3.4
7	17.6	15.3	16.5	9.0	6.8	7.9	0.0	-0.2	-0.1	2.9	1.0	2.0
8	15.9	12.8	14.4	9.5	7.0	8.3	0.4	-0.2	0.0	4.7	1.9	3.2
9	15.8	13.1	14.3	11.8	9.1	10.4	0.0	-0.2	-0.1	5.5	3.5	4.5
10	15.6	14.4	14.9	15.1	11.8	13.5	0.2	-0.2	0.0	4.2	1.2	3.1
11	17.1	15.3	16.3	14.0	11.2	12.8	2.9	-0.2	1.1	1.2	-0.2	0.1
12	18.6	16.8	17.6	11.2	9.1	9.7	3.8	2.9	3.3	0.0	-0.2	-0.1
13	18.2	14.5	16.6	9.3	7.5	8.6	4.0	3.5	3.7	0.2	-0.1	0.0
14	14.5	11.6	13.0	9.5	7.8	8.7	4.1	3.5	3.8	0.2	-0.1	0.0
15	12.4	10.3	11.4	9.1	8.4	8.7	5.0	2.5	3.9	-0.1	-0.1	-0.1
16	11.6	10.2	11.0	8.4	6.2	7.2	5.1	3.9	4.5	0.0	-0.1	0.0
17	11.5	9.1	10.1	6.4	5.2	5.8	4.3	3.3	3.6	0.0	-0.2	-0.1
18	12.0	8.7	10.3	5.2	3.3	4.4	7.1	4.3	5.7	-0.1	-0.2	-0.1
19	12.3	11.0	11.7	7.5	5.0	6.4	8.1	6.6	7.5	0.0	-0.2	-0.1
20	12.1	10.5	11.4	6.8	4.5	6.0	7.8	5.4	6.5	0.1	-0.1	0.0
21	12.2	9.8	10.9	8.0	6.0	7.0	5.4	4.1	4.8	0.1	-0.2	-0.1
22	11.9	8.6	10.2	7.3	5.1	6.0	5.7	4.1	5.0	0.0	-0.2	-0.1
23	11.2	8.6	10	5.2	3.7	4.6	4.1	2.5	3.3	-0.1	-0.2	-0.2
24	10.9	8.9	9.8	5.1	3.0	4.3	3.5	2.7	3.2	-0.1	-0.2	-0.2
25	12.3	9.2	10.3	5.0	4.0	4.5	2.7	1.8	2.2	-0.1	-0.2	-0.1
26	12.3	11.9	12.1	4.0	2.4	3.0	1.8	1.1	1.4	-0.1	-0.2	-0.1
27	12.6	11.4	12.0	2.6	1.4	2.1	2.1	0.7	1.3	-0.1	-0.2	-0.2
28	11.7	10.6	11.2	1.7	0.5	1.0	2.9	0.7	1.8	-0.1	-0.2	-0.1
29	11.2	8.5	9.6	3.3	0.1	1.5	3.8	1.5	2.7	0.0	-0.3	-0.2
30	9.2	8.6	8.8	3.5	1.4	2.8	7.2	2.6	4.8	0.2	-0.3	-0.1
31	9.5	8.4	8.9	---	---	---	7.7	6.9	7.3	0.3	-0.2	-0.1
MONTH	23.4	8.4	13.8	15.1	0.1	6.6	8.1	-0.2	2.7	7.3	-0.3	1.1
		FEBRUARY			MARCH			APRIL			MAY	
1	0.2	-0.2	0.0	4.5	3.0	3.7	14.8	7.9	11.2	23.6	17.8	19.4
2	0.1	-0.3	-0.1	3.6	2.2	3.2	16.2	11.0	13.7	---	---	---
3	2.5	-0.1	0.5	3.5	0.0	1.8	18.9	13.1	15.9	16.1	14.7	15.4
4	4.9	0.8	3.1	6.0	1.0	3.3	17.8	14.9	16.2	15.5	11.7	13.9
5	1.0	-0.1	0.3	5.8	4.0	5.2	16.7	9.6	13.0	---	---	---
6	1.1	-0.1	0.4	4.0	2.4	3.3	9.6	7.6	8.4	20.1	16.5	18.1
7	1.8	-0.2	0.6	5.1	1.6	3.0	10.7	7.3	8.7	19.2	17.5	18.4
8	0.4	-0.2	-0.1	8.4	2.1	5.3	10.2	8.4	9.2	21.3	16.9	19.0
9	0.9	-0.2	0.3	8.4	4.3	6.3	8.9	6.4	7.3	21.2	18.4	19.8
10	1.0	-0.1	0.3	5.0	0.6	3.2	11.2	5.6	8.0	20.1	18.0	18.7
11	0.5	-0.3	-0.1	6.8	1.5	4.3	14.8	7.0	10.7	19.8	17.1	18.3
12	0.2	-0.3	-0.2	6.8	4.8	5.5	15.9	8.9	12.5	17.1	14.7	15.9
13	0.2	-0.3	-0.1	6.9	5.1	5.8	16.2	9.7	13.1	18.8	13.3	16.0
14	0.2	-0.3	-0.1	8.4	3.1	5.7	18.1	10.1	14.2	18.6	14.7	16.6
15	1.4	-0.2	0.6	10.3	5.2	7.6	20.5	12.9	16.9	19.3	15.9	17.7
16	0.5	-0.2	0.0	13.7	7.2	10.4	21.4	14.6	18.4	20.5	15.9	18.2
17	0.4	-0.2	0.0	14.0	9.8	12.0	19.5	15.9	17.3	19.2	17.6	18.0
18	0.6	-0.1	0.2	15.1	11.6	13.3	17.3	14.7	15.8	19.3	17.4	18.2
19	1.0	0.2	0.6	15.1	12.3	13.8	20.9	13.4	17.2	21.5	17.8	19.4
20	3.9	0.2	1.7	15.0	10.8	12.8	20.1	16.5	18.3	20.4	18.3	19.6
21	2.9	1.4	2.1	13.3	10.0	11.7	17.5	14.7	16.0	20.2	16.0	18.1
22	2.4	1.2	1.8	12.0	7.8	10.2	14.7	11.7	13.3	20.7	15.5	18.1
23	2.7	0.6	1.6	14.2	9.2	11.6	15.7	8.4	12.3	19.7	15.2	17.7
24	2.8	0.2	1.6	15.2	9.1	12.2	14.0	10.3	12.4	19.5	14.2	17.2
25	1.9	-0.1	0.8	16.0	10.8	13.5	13.5	12.2	12.6	17.7	15.5	16.3
26	1.8	-0.1	0.8	15.7	11.0	13.4	18.1	11.4	14.4	17.8	14.2	15.9
27	2.9	0.4	1.6	14.9	9.4	12.4	19.2	11.3	15.4	20.4	15.0	17.5
28	4.6	1.8	3.0	17.0	12.7	14.8	20.9	12.3	16.8	19.6	15.6	17.7
29	---	---	---	15.0	8.5	10.1	21.8	16.9	19.2	19.2	15.9	17.3
30	---	---	---	8.5	6.9	7.6	21.2	17.4	19.3	18.9	15.1	17.2
31	---	---	---	---	---	---	---	---	---	17.8	16.2	17.0
MONTH	4.9	-0.3	0.8	17.0	0.0	8.2	21.8	5.6	13.9	23.6	11.7	17.6

03277075 GUNPOWDER CREEK AT CAMP ERNST ROAD NEAR UNION, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	19.8	13.7	16.8	28.3	22.9	25.6	28.4	22.0	25.1	24.5	21.4	22.5
2	19.8	14.0	17.1	28.6	23.1	25.8	26.1	21.5	23.6	22.8	21.8	22.2
3	17.4	14.6	15.5	29.5	23.0	26.3	25.0	22.0	23.3	22.8	21.7	22.3
4	16.4	14.9	15.6	30.1	23.9	27.0	---	---	---	23.0	20.9	21.9
5	20.9	13.6	17.2	30.0	24.1	27.2	---	---	---	21.8	18.7	20.4
6	22.5	15.5	19.1	30.3	24.4	27.4	---	---	---	21.5	17.5	19.7
7	21.9	18.3	20.0	29.3	24.5	26.8	---	---	---	21.2	17.5	19.6
8	22.2	18.7	20.0	30.5	25.5	27.4	---	---	---	22.0	18.7	20.4
9	22.1	16.7	19.4	29.3	23.6	25.9	25.6	22.0	23.2	23.1	19.3	21.3
10	22.7	17.6	20.4	24.3	22.7	23.5	23.5	20.6	21.9	23.9	19.9	22.1
11	23.1	19.4	21.3	25.6	21.9	23.7	22.9	20.7	21.7	23.6	20.1	21.8
12	22.1	20.2	20.7	25.9	21.3	23.6	24.2	20.1	22.1	23.3	18.6	21.0
13	23.7	19.5	21.3	26.2	21.0	23.7	25.9	21.3	23.5	24.0	19.5	21.8
14	23.5	20.8	22.2	28.0	21.6	24.7	28.1	23.0	25.6	22.5	20.3	21.5
15	22.6	20.7	21.4	25.7	22.7	23.8	27.9	24.5	26.3	22.4	19.9	21.2
16	23.9	20.2	21.8	27.3	22.9	24.7	28.0	24.2	26.2	22.0	17.3	19.7
17	25.2	21.2	23.1	26.9	21.6	24.6	27.6	24.3	25.9	21.6	17.1	19.5
18	25.6	21.0	23.3	27.5	22.9	25.1	26.6	21.6	24.2	22.0	17.0	19.6
19	23.6	20.7	21.9	26.0	21.9	23.8	26.5	20.8	23.7	20.3	18.1	19.4
20	23.6	17.6	20.7	27.1	20.6	24.0	27.8	21.3	24.6	18.9	14.8	17.3
21	24.9	17.2	21.1	25.7	21.7	23.7	29.1	23.8	26.4	20.4	14.9	17.8
22	26.4	18.3	22.3	25.6	22.1	23.6	27.4	24.5	25.5	20.0	18.7	19.5
23	27.4	19.2	23.4	24.2	21.2	22.5	26.1	22.5	24.4	19.2	17.2	18.4
24	28.1	20.2	24.3	24.6	20.1	22.6	26.0	21.1	23.6	18.8	14.8	17.0
25	28.9	21.4	25.3	26.6	20.3	23.4	27.1	21.4	24.2	19.7	17.3	18.3
26	28.7	23.4	25.7	28.2	21.5	24.8	28.3	22.9	25.6	18.1	14.8	16.7
27	26.5	21.4	23.9	29.5	23.2	26.3	27.4	24.3	25.9	18.9	17.5	18.1
28	27.1	19.8	23.5	27.4	23.8	25.0	28.4	23.3	25.9	17.5	14.7	16.1
29	28.4	20.9	24.7	27.0	21.6	24.2	28.3	24.0	26.2	14.9	12.9	14.0
30	28.6	22.1	25.3	26.9	20.8	24.0	26.1	23.6	24.4	14.4	10.9	12.9
31	---	---	---	25.6	22.5	24.0	23.6	20.9	21.8	---	---	---
MONTH	28.9	13.6	21.3	30.5	20.1	24.8	29.1	20.1	24.4	24.5	10.9	19.5
YEAR	30.5	-0.3	12.8									

03277075 GUNPOWDER CREEK AT CAMP ERNST ROAD NEAR UNION, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	9.7	7.2	8.1	12.1	10.4	11.1	16.9	13.0	14.5	13.0	10.7	12.3
2	10.2	7.0	8.1	12.9	10.8	11.9	16.8	12.7	14.6	13.2	11.6	12.4
3	10.9	7.1	8.5	13.2	11.1	11.9	16.9	13.1	14.8	13.3	11.4	12.3
4	11.0	6.7	7.7	12.5	10.8	11.3	15.7	12.3	14.0	13.2	11.7	12.3
5	9.1	7.4	8.1	11.9	10.2	10.8	15.1	11.7	13.1	12.6	11.3	11.9
6	10.3	7.7	8.7	11.0	9.9	10.5	15.5	12.3	13.7	12.3	11.2	11.6
7	10.8	7.6	8.8	12.2	10.2	10.9	16.4	12.3	13.9	13.1	10.8	12.0
8	12.6	8.5	10.1	12.3	9.8	10.8	16.6	13.8	14.9	11.8	9.7	10.9
9	12.4	8.6	10	12.1	9.0	10.2	16.0	13.5	14.5	10.6	9.1	9.7
10	11.2	8.2	9.3	9.2	8.0	8.8	16.2	13.3	14.4	10.4	8.5	9.6
11	8.9	8.1	8.5	9.8	8.5	9.1	14.1	12.0	13.1	12.9	8.3	10.8
12	10.0	7.8	8.6	11.0	9.1	9.9	12.7	11.4	11.9	11.4	7.8	9.5
13	10.8	7.6	8.9	11.8	9.7	10.5	12.7	11.0	11.8	11.7	9.8	10.6
14	12.0	8.7	10.1	12.9	9.8	10.9	12.9	11.8	12.3	11.4	9.6	10.4
15	12.5	9.5	10.7	11.5	9.7	10.3	13.9	11.6	12.8	12.9	10.5	11.5
16	12.9	9.4	10.7	11.4	9.9	10.6	14.1	11.5	12.4	12.6	10.9	11.5
17	13.1	9.8	11.2	14.0	10.6	11.9	13.4	11.9	12.5	15.2	10.8	12.5
18	12.6	9.9	11.0	15.2	11.1	12.8	12.3	10.0	11.4	15.5	12.7	13.8
19	10.1	9.1	9.5	14.6	11.0	12.2	11.6	10.0	10.6	15.0	12.6	13.5
20	12.2	9.0	10.2	15.4	10.8	12.6	11.6	10.1	11.1	15.0	12.6	13.6
21	12.3	9.1	10.3	15.6	10.6	12.2	12.7	10.6	12.0	15.8	12.8	13.9
22	12.9	9.5	10.7	12.9	10.5	11.5	13.2	10.8	12.5	16.1	12.6	13.9
23	13.3	9.6	11.0	15.9	11.2	13.0	15.1	12.1	13.3	15.0	12.1	13.3
24	13.5	9.6	11.0	16.2	11.9	13.5	14.3	12.5	13.5	15.6	12.0	13.4
25	10.5	9.5	9.9	15.6	11.6	13.1	14.4	12.6	13.7	15.3	11.2	12.8
26	10.0	9.2	9.6	16.1	12.3	13.9	15.1	13.2	14.3	12.6	11.2	11.9
27	10.6	9.0	9.6	15.6	13.0	13.8	16.5	13.6	14.3	13.6	10.8	11.9
28	10.3	8.9	9.5	16.4	13.2	14.4	15.0	12.8	13.9	13.0	11.0	11.9
29	11.0	9.1	10	16.2	11.8	14.0	13.7	10.7	12.1	14.5	10.7	12.2
30	11.1	10.2	10.6	14.1	11.8	12.9	12.2	8.3	10.4	12.9	10.8	11.7
31	11.9	10.4	10.9	---	---	---	12.0	7.5	9.7	12.9	10.1	11.1
MONTH	13.5	6.7	9.7	16.4	8.0	11.7	16.9	7.5	13.0	16.1	7.8	12.0
	FEBRUARY			MARCH			APRIL			MAY		
1	12.2	9.4	10.6	11.2	8.4	10.2	12.0	8.5	10.1	8.9	5.7	6.7
2	12.5	10.3	11.4	10.7	8.5	10	11.0	8.3	9.4	---	---	---
3	11.7	9.3	10.7	12.1	9.3	10.7	11.3	6.4	9.0	6.8	4.2	5.5
4	11.8	9.7	10.9	11.3	6.8	9.3	10.2	6.2	8.0	7.5	4.7	6.2
5	13.6	11.2	12.2	7.6	3.6	6.0	9.3	4.9	7.2	---	---	---
6	13.7	10.1	11.9	8.8	4.7	6.9	12.4	8.2	10.0	8.1	7.1	7.4
7	13.2	10.1	11.4	7.5	3.6	4.9	11.3	5.5	9.6	8.0	5.8	6.8
8	12.8	9.7	11.1	7.4	1.7	3.7	8.8	5.4	6.0	7.7	5.9	6.7
9	11.5	7.7	9.9	6.0	1.5	3.0	8.1	5.6	6.6	7.9	5.0	6.2
10	11.7	7.7	9.7	7.4	2.7	5.0	10.8	5.9	7.2	7.8	5.1	6.8
11	12.2	8.7	9.5	7.2	2.1	4.9	10.3	6.1	8.0	7.9	7.1	7.6
12	11.3	8.2	9.8	13.1	3.6	8.3	8.2	6.3	7.0	9.1	7.3	8.2
13	11.3	7.4	9.3	12.5	10.5	11.4	10.6	6.8	8.3	9.2	7.9	8.5
14	11.3	8.0	9.6	15.0	11.7	13.2	7.7	6.7	7.2	9.8	7.8	8.5
15	11.6	9.6	10.8	15.7	10.2	12.6	9.4	6.9	8.0	9.0	7.4	8.2
16	13.2	9.0	10.6	13.3	10.1	11.3	8.9	3.8	7.2	10.2	7.3	8.5
17	14.6	8.9	11.6	12.5	9.3	11.0	7.3	3.8	5.8	7.9	5.3	7.1
18	15.3	11.3	12.9	11.3	7.4	9.6	5.9	3.1	4.6	7.6	5.3	6.6
19	13.4	11.7	12.4	9.1	7.4	8.2	8.7	5.1	6.5	9.3	6.3	7.6
20	13.1	11.0	12.0	9.9	8.1	8.9	5.8	2.0	4.6	8.6	7.0	7.7
21	12.4	11.1	11.7	8.9	6.9	7.9	8.3	5.3	6.9	9.7	7.4	8.4
22	12.6	11.9	12.3	11.3	8.1	9.5	11.2	7.4	9.1	10.3	6.7	8.5
23	12.9	11.9	12.5	12.0	8.3	9.7	12.7	8.5	10.3	9.2	6.4	7.7
24	13.4	12.0	12.7	12.6	8.3	10.1	13.4	8.3	10.7	10.1	7.0	8.3
25	13.7	12.4	13.0	12.7	6.3	9.3	11.0	6.4	9.2	10.3	7.2	8.7
26	13.4	11.9	12.8	7.3	3.4	4.7	10.8	6.3	8.0	9.8	5.2	8.1
27	12.9	11.2	12.2	10.9	3.8	7.0	11.0	4.5	8.5	11.2	5.2	8.3
28	12.3	10.2	11.2	10.2	5.7	7.6	5.4	2.5	4.1	12.3	5.9	8.9
29	---	---	---	9.1	5.4	7.9	6.7	2.5	4.8	9.4	6.6	8.3
30	---	---	---	9.3	7.7	8.6	8.4	5.2	6.6	11.4	7.4	9.2
31	---	---	---	---	---	---	---	---	---	9.7	7.1	8.5
MONTH	15.3	7.4	11.3	15.7	1.5	8.4	13.4	2.0	7.6	12.3	4.2	7.7

03277075 GUNPOWDER CREEK AT CAMP ERNST ROAD NEAR UNION, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	13.6	7.0	10.0	11.3	4.8	7.5	9.6	5.3	7.0	8.7	6.6	7.3
2	13.9	7.9	10.3	10.7	4.6	7.0	8.0	5.3	6.9	8.3	7.5	7.9
3	9.3	7.8	8.7	11.4	4.6	7.5	7.5	6.3	7.0	8.3	7.3	7.9
4	10.8	8.6	9.4	11.1	4.3	7.0	---	---	---	8.9	7.3	8.0
5	12.5	7.8	9.9	10.7	4.2	6.6	---	---	---	9.4	7.6	8.3
6	13.8	7.8	10.0	10.3	3.9	6.5	---	---	---	9.7	7.6	8.5
7	12.6	7.5	9.5	9.0	3.7	5.5	---	---	---	10.4	7.6	8.8
8	13.2	7.6	9.3	8.4	3.2	5.1	---	---	---	11.1	6.1	8.8
9	11.2	8.3	9.5	8.9	4.0	6.2	9.5	6.6	7.4	8.7	4.8	7.0
10	13.1	8.2	10.1	7.0	5.9	6.5	8.2	7.0	7.6	10.4	6.5	8.2
11	11.3	6.3	8.9	7.5	6.4	6.9	7.3	5.7	6.6	11.0	7.6	8.7
12	8.9	6.2	7.9	8.5	6.3	7.2	6.6	4.8	5.8	11.3	7.6	8.9
13	10.8	7.5	9.1	8.8	6.1	7.3	6.6	4.7	5.4	11.3	7.1	8.7
14	9.6	7.4	8.4	9.6	5.6	7.3	7.0	0.7	4.9	9.9	6.9	8.1
15	9.2	7.5	8.6	8.3	5.2	6.7	6.4	1.1	4.5	8.3	5.3	7.3
16	10.0	7.3	8.7	7.2	5.9	6.5	6.4	3.7	4.8	5.4	1.3	3.4
17	10.3	6.7	8.5	9.2	5.9	7.2	7.5	3.9	5.2	7.7	4.7	6.1
18	12.4	6.3	8.5	10.0	6.0	7.5	7.7	4.4	5.7	8.9	5.8	7.1
19	9.9	6.0	7.5	8.1	6.2	7.6	7.8	4.7	5.8	8.8	6.0	7.2
20	12.3	6.7	8.8	10.0	6.4	8.2	7.8	4.6	5.9	9.8	6.9	8.1
21	12.8	6.2	8.7	7.7	6.3	6.8	7.3	4.3	5.4	10.8	7.3	8.6
22	11.7	5.9	8.1	8.3	6.3	7.0	6.6	4.1	5.2	8.4	6.5	7.6
23	11.5	5.6	7.7	9.0	6.6	8.2	6.9	5.2	5.8	9.4	8.0	8.5
24	11.6	5.2	7.5	10.1	7.2	8.4	8.6	5.5	6.6	10.3	8.0	8.9
25	11.7	4.9	7.5	10.2	5.9	8.1	9.4	5.7	7.0	10.3	7.8	8.7
26	11.4	4.5	7.2	12.1	6.2	9.0	9.5	5.4	6.9	11.5	8.0	9.4
27	8.7	5.2	6.7	12.0	6.5	8.7	8.8	5.0	6.5	8.6	7.8	8.2
28	11.6	5.3	7.8	8.1	4.0	6.2	9.3	5.5	6.8	9.4	8.0	8.7
29	12.1	5.3	7.7	9.4	5.3	6.9	9.0	5.3	6.6	10.3	8.7	9.4
30	12.1	5.1	7.9	10.0	5.2	7.2	7.1	4.9	6.0	10.7	8.8	9.7
31	---	---	---	9.6	5.1	6.9	8.0	4.8	6.6	---	---	---
MONTH	13.9	4.5	8.6	12.1	3.2	7.1	9.6	0.7	6.2	11.5	1.3	8.1
YEAR	16.9	0.7	9.3									

03277075 GUNPOWDER CREEK AT CAMP ERNST ROAD NEAR UNION, KY—Continued

TURBIDITY, WATER, UNFILTERED, NEPHELOMETRIC TURBIDITY UNITS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	19	4.2	7.9	9.3	3.0	5.9	18	6.2	9.2	860	120	330
2	8.1	2.0	3.5	4.0	2.0	3.3	34	4.3	8.8	240	38	140
3	9.0	3.0	5.2	5.0	2.0	3.6	12	2.0	4.3	160	19	53
4	730	1.0	140	5.0	0.0	1.3	4.0	0.0	1.0	20	12	16
5	250	36	82	550	0.0	120	8.3	1.1	4.1	20	11	13
6	38	19	29	160	17	49	6.5	1.6	3.0	25	16	19
7	31	10	15	28	11	19	8.0	2.9	4.5	27	9.0	15
8	14	6.0	8.0	20	11	16	13	3.1	4.4	17	7.0	8.6
9	17	8.0	11	14	4.0	6.5	16	4.5	7.0	10	5.0	7.0
10	13	9.0	10	1,000	4.0	130	29	4.7	5.3	8.0	5.0	6.1
11	250	9.0	140	780	29	140	580	6.0	210	14	5.0	7.3
12	95	30	48	31	18	23	76	25	39	9.0	6.0	6.5
13	32	19	24	19	9.0	13	610	20	150	6.0	5.0	5.6
14	22	15	18	24	9.0	15	190	29	66	15	4.0	6.4
15	16	13	14	38	9.0	14	30	16	22	6.0	5.0	5.4
16	18	12	14	49	25	34	19	13	15	6.0	4.0	5.4
17	18	11	14	26	11	17	960	11	180	81	1.0	4.6
18	17	12	13	13	8.0	9.5	190	17	53	2.0	1.0	1.6
19	26	10	17	9.0	7.0	7.6	990	16	320	2.0	1.0	1.3
20	36	23	29	9.0	6.0	7.0	300	66	130	190	1.0	9.2
21	24	16	20	69	6.0	14	71	27	43	14	1.0	6.5
22	19	14	15	77	36	54	36	22	26	310	4.0	65
23	16	13	14	37	17	25	52	17	23	64	12	24
24	16	12	13	17	11	13	24	15	18	18	10	12
25	1,000	10	310	13	8.0	9.4	46	19	36	14	9.0	11
26	270	52	110	10	7.0	8.1	32	23	26	13	9.0	9.9
27	140	31	56	820	8.5	99	35	22	26	13	9.0	11
28	160	31	84	26	9.2	14	34	27	30	12	9.0	10
29	990	40	250	150	8.1	51	63	30	46	80	10	29
30	91	9.9	34	240	10	48	920	49	280	210	38	73
31	10	3.5	5.8	---	---	---	770	140	340	140	43	76
MONTH	1,000	1.0	50	1,000	0.0	32	990	0.0	69	860	1.0	32

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	100	49	79	140	21	50	350	110	200	13	8.0	10
2	190	33	99	140	40	61	990	130	240	---	---	---
3	600	51	190	51	36	42	250	110	130	790	120	260
4	1,000	72	350	120	38	58	130	98	110	130	82	96
5	120	54	71	290	100	170	760	98	340	---	---	---
6	93	49	57	1,000	87	200	200	120	140	170	130	140
7	51	44	48	1,000	77	130	200	120	150	230	120	160
8	49	43	45	93	79	83	130	76	95	290	140	190
9	51	42	45	92	80	85	100	76	89	350	140	220
10	54	44	47	230	81	97	79	60	73	1,000	180	560
11	59	48	51	110	46	81	67	48	61	390	130	210
12	56	50	52	520	9.2	38	48	35	38	160	140	150
13	58	55	56	300	8.8	120	50	15	37	150	120	140
14	420	58	83	220	23	69	17	10	14	140	89	130
15	990	80	240	340	16	67	21	6.0	12	130	110	120
16	82	34	50	600	25	140	19	2.1	6.5	120	84	98
17	40	17	28	---	---	---	71	3.0	15	94	61	81
18	26	7.0	14	---	---	---	54	14	30	75	61	68
19	13	0.0	5.3	1,000	2.0	260	25	13	16	76	44	69
20	49	3.0	13	680	33	180	960	16	120	240	37	100
21	1,000	10	240	670	42	180	960	220	540	200	31	85
22	1,000	84	420	43	22	30	690	190	460	32	12	20
23	940	27	160	32	19	26	570	130	250	23	12	17
24	28	11	18	40	24	31	550	100	240	22	12	15
25	34	6.0	10	62	27	36	420	95	200	29	11	16
26	10	5.0	7.2	120	58	74	350	93	190	38	11	19
27	9.0	3.0	5.2	160	73	110	610	99	280	110	8.0	19
28	31	5.0	11	170	85	130	290	84	150	1,000	9.0	120
29	---	---	---	1,000	120	390	580	93	290	840	45	140
30	---	---	---	430	160	240	520	3.0	190	45	16	29
31	---	---	---	---	---	---	---	---	---	33	14	23
MONTH	1,000	0.0	89	1,000	2.0	110	990	2.1	160	1,000	8.0	110

03277075 GUNPOWDER CREEK AT CAMP ERNST ROAD NEAR UNION, KY—Continued

TURBIDITY, WATER, UNFILTERED, NEPHELOMETRIC TURBIDITY UNITS—CONTINUED
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	19	6.0	11	9.4	1.3	1.8	2.0	0.0	0.3	1,000	82	260
2	11	7.0	8.2	2.3	1.1	1.2	1,000	0.0	440	1,000	120	290
3	260	6.0	110	8.9	1.0	2.7	210	63	120	990	110	270
4	72	21	39	3.9	3.6	3.7	---	---	---	110	65	80
5	47	9.0	17	4.3	3.3	3.5	---	---	---	67	49	57
6	13	4.0	9.5	5.3	3.0	3.2	---	---	---	61	35	48
7	15	4.0	6.3	3.0	2.8	2.9	---	---	---	37	28	33
8	1,000	3.0	250	55	2.6	6.8	---	---	---	37	17	26
9	410	47	130	1,000	4.3	140	1,000	11	320	20	8.0	13
10	67	16	30	1,000	150	630	1,000	93	350	12	4.0	7.1
11	56	16	27	150	58	82	1,000	52	380	10	5.0	5.3
12	590	17	160	100	56	62	970	65	180	9.0	0.0	3.6
13	200	53	96	73	50	58	79	50	63	---	---	---
14	990	50	270	59	39	49	410	36	110	---	---	---
15	980	84	310	640	36	93	280	54	100	---	---	---
16	97	21	42	1,000	140	470	92	48	61	---	---	---
17	28	4.9	16	160	37	77	55	48	51	---	---	---
18	13	3.7	6.7	53	19	28	54	47	50	---	---	---
19	290	3.6	15	1,000	21	510	52	40	47	---	---	---
20	24	3.3	9.6	160	40	77	46	39	43	---	---	---
21	20	3.2	5.3	1,000	37	360	45	35	38	---	---	---
22	7.1	3.0	4.1	820	92	190	1,000	35	320	---	---	---
23	9.9	2.8	4.5	1,000	140	470	530	140	230	---	---	---
24	2.8	2.6	2.7	260	66	100	150	83	110	---	---	---
25	2.6	2.4	2.5	91	38	64	100	60	79	---	---	---
26	900	2.2	75	54	33	44	78	45	52	---	---	---
27	1,000	40	270	41	9.5	28	52	39	44	---	---	---
28	87	12	27	670	16	160	58	29	46	---	---	---
29	14	1.6	3.8	58	10	27	43	21	28	---	---	---
30	18	1.5	2.6	14	2.0	8.0	100	25	43	---	---	---
31	---	---	---	6.0	0.0	1.4	1,000	25	400	---	---	---
MONTH	1,000	1.5	65	1,000	0.0	120	1,000	0.0	140	1,000	0.0	91
YEAR	1,000	0.0	89									

03277130 MUD LICK CREEK AT HIGHWAY 42 NEAR BEAVERLICK, KY

LOCATION.--Lat 38°50'42", long 84°43'15", Boone County, Hydrologic Unit 05090203, at bridge on Highway 42 2.8 mi southwest of Beaverlick, 2.9 mi upstream from the mouth, and 3.0 mi downstream from the confluence of Fullers Creek and McCoys Fork.

DRAINAGE AREA.--36.4 mi^2.

WATER DISCHARGE RECORDS

PERIOD OF RECORD.--December 2000 to current year.

GAGE.--Water-stage recorder with telemetry. Datum of gage is 487.73 ft above NGVD of 1929.

REMARKS.--Records fair except for those below 1.0 ft^3/s cfs and those estimated which are poor.

COOPERATION.--Northern Kentucky Sanitation District No. 1.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.7	11	5.7	1,170	12	101	35	11	12	2.8	6.7	e100
2	3.0	7.8	5.1	181	16	140	29	11	9.2	2.4	212	836
3	3.5	9.6	5.0	97	25	78	25	9.5	27	2.2	75	164
4	3.9	11	4.4	63	198	59	23	9.0	20	2.0	251	77
5	11	71	4.6	58	42	123	48	810	13	1.7	108	39
6	6.2	72	5.6	68	28	86	25	129	9.8	1.6	97	26
7	4.3	18	5.1	56	25	58	33	67	9.7	4.3	372	20
8	3.8	13	5.7	47	22	46	28	45	45	3.3	146	16
9	3.5	11	5.6	39	20	38	34	36	34	8.4	55	14
10	3.5	195	5.5	30	20	30	31	2,080	16	174	68	11
11	14	170	83	23	23	28	26	318	14	44	80	9.7
12	10	31	67	21	18	27	23	101	18	18	54	8.4
13	6.1	19	106	20	16	57	19	56	14	11	26	7.7
14	4.4	15	134	19	20	49	18	41	22	7.6	19	7.2
15	3.8	14	45	15	422	37	16	46	18	34	27	7.3
16	3.8	18	28	15	108	33	15	29	13	98	16	7.3
17	3.3	13	231	15	58	29	18	56	11	18	12	6.7
18	3.2	11	157	13	38	27	23	76	10	11	9.5	6.0
19	3.7	9.4	677	14	32	75	16	43	9.5	119	7.7	5.2
20	4.6	8.5	439	13	38	82	32	48	22	22	6.8	5.1
21	5.1	8.4	100	12	202	75	198	82	11	26	6.0	5.3
22	5.1	13	58	10	1,400	55	41	41	7.6	20	6.9	495
23	4.5	9.9	40	9.2	292	42	27	30	6.1	17	12	63
24	4.1	8.3	33	7.9	106	34	22	23	5.1	11	7.1	21
25	77	7.7	39	8.9	64	30	20	20	4.7	8.0	5.2	13
26	43	7.1	29	9.5	51	40	18	24	3.9	6.2	4.5	10
27	11	7.1	25	9.1	42	28	14	17	6.0	5.1	4.0	358
28	7.4	6.6	24	9.3	40	25	13	15	5.8	42	13	42
29	131	6.3	22	15	---	e166	13	19	3.9	22	6.0	16
30	37	6.3	105	24	---	e70	12	14	3.0	11	36	10
31	16	---	440	12	---	e43	---	14	---	7.8	27	---
TOTAL	444.5	809.0	2,934.3	2,103.9	3,378	1,811	895	4,320.5	404.3	761.4	1,776.4	2,406.9
MEAN	14.3	27.0	94.7	67.9	121	58.4	29.8	139	13.5	24.6	57.3	80.2
MAX	131	195	677	1,170	1,400	166	198	2,080	45	174	372	836
MIN	3.0	6.3	4.4	7.9	12	25	12	9.0	3.0	1.6	4.0	5.1

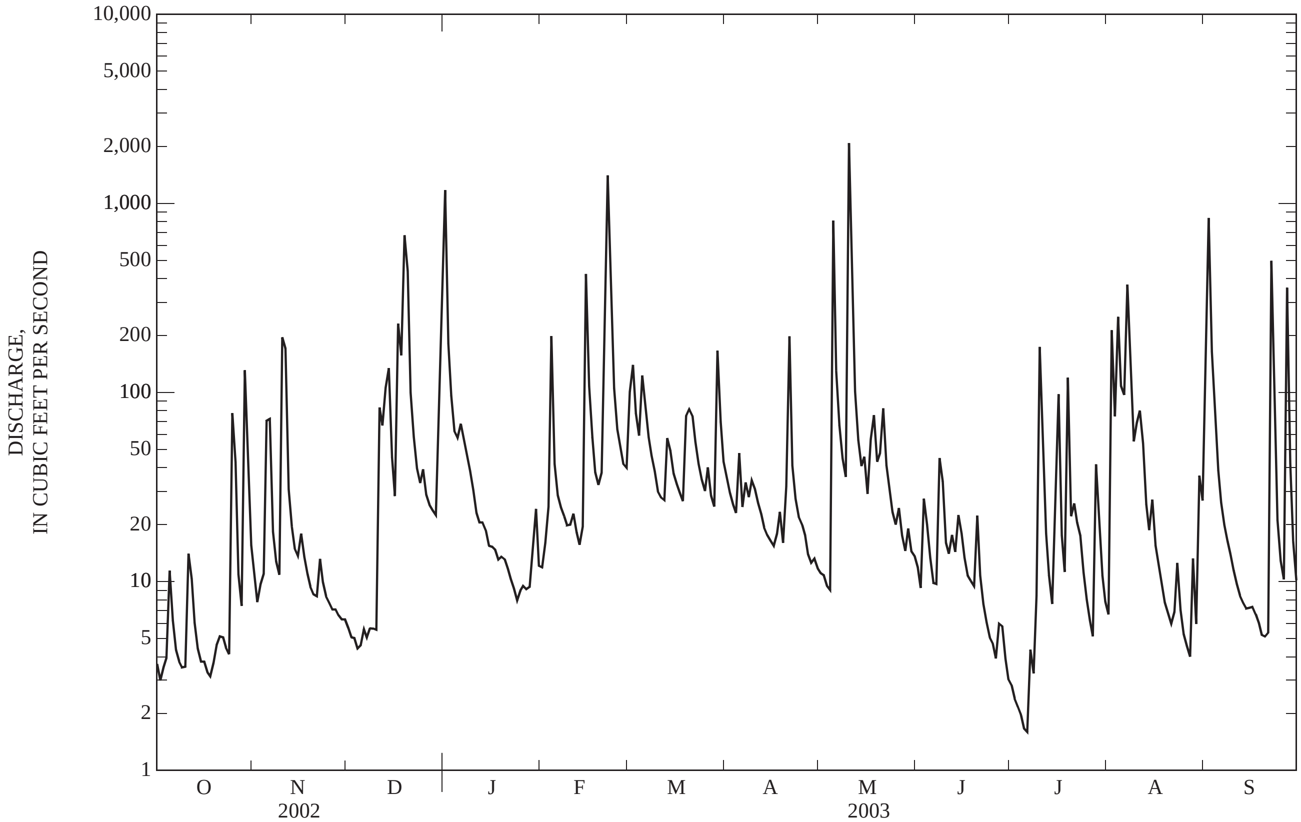
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2001 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	33.4	38.7	87.2	48.5	70.6	61.5	68.7	109	28.8	31.7	25.1	35.3
MAX	52.5	50.5	114	67.9	121	97.3	165	180	41.2	69.6	57.3	80.2
(WY)	(2002)	(2002)	(2002)	(2003)	(2003)	(2002)	(2002)	(2002)	(2001)	(2001)	(2003)	(2003)
MIN	14.3	27.0	53.3	19.6	44.9	28.6	11.9	8.49	13.5	0.76	0.79	10.1
(WY)	(2003)	(2003)	(2001)	(2001)	(2002)	(2001)	(2001)	(2001)	(2003)	(2002)	(2002)	(2001)

03277130 MUD LICK CREEK AT HIGHWAY 42 NEAR BEAVERLICK, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 2001 - 2003	
ANNUAL TOTAL	22,254.29		22,045.2			
ANNUAL MEAN	61.0		60.4		64.1	
HIGHEST ANNUAL MEAN					67.8	2002
LOWEST ANNUAL MEAN					60.4	2003
HIGHEST DAILY MEAN	1,720	Apr 21	2,080	May 10	2,080	May 10, 2003
LOWEST DAILY MEAN	0.00	Jul 8	1.6	Jul 6	0.00	Jul 8, 2002
ANNUAL SEVEN-DAY MINIMUM	0.00	Aug 2	2.2	Jun 30	0.00	Aug 2, 2002
MAXIMUM PEAK FLOW			10,000	May 10	12,600	Apr 21, 2002
MAXIMUM PEAK STAGE			9.46	May 10	10.26	Apr 21, 2002
10 PERCENT EXCEEDS	111		107		118	
50 PERCENT EXCEEDS	14		20		16	
90 PERCENT EXCEEDS	0.00		5.1		0.77	

e Estimated



03277130 MUD LICK CREEK AT HIGHWAY 42 NEAR BEAVERLICK, KY—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--December 2002 to September 2003.

COOPERATION.--Northern Kentucky Sanitation District No. 1.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: December 2000 to current year.
pH: December 2000 to current year.
WATER TEMPERATURES: December 2000 to current year.
DISSOLVED OXYGEN: December 2000 to current year.
TURBIDITY: December 2000 to current year.

INSTRUMENTATION.--Water-quality monitor with telemetry.

REMARKS.--
SPECIFIC CONDUCTANCE: Records good.
pH: Records good.
WATER TEMPERATURES: Records good.
DISSOLVED OXYGEN: Records good.
TURBIDITY: Records good.

EXTREMES FOR PERIOD OF RECORD.--
SPECIFIC CONDUCTANCE: Maximum recorded, 1580 microsiemens, Feb. 21, 2003; minimum recorded, 113 microsiemens, Apr. 21, 2002.
pH: Maximum recorded, 9.0 units, Dec. 2, 3, 5, 6, and 9, 2000; minimum recorded, 7.2 units, Mar. 9, 2003.
WATER TEMPERATURES: Maximum recorded, 33.8°C, Jun. 25, 2002; minimum recorded, -0.2°C, Jan. 11-31, and Feb. 1, 2, 5-17, 26, 2003.
DISSOLVED OXYGEN: Maximum recorded, 18.4 mg/L, Dec. 7, 2002; minimum recorded, 1.5 mg/L, Sept. 8, 2002.
TURBIDITY: Maximum recorded, greater than 1000 NTU, many days in 2001, 2002 and 2003; minimum recorded, 0.0 NTU, Feb. 25 and April 2, 6-8, Oct. 31, Nov. 1, 2, 4, 5, 14, 16, 20, 21, 2002, and Mar. 30, 2003.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum recorded, 1580 microsiemens, Feb. 21, 2003; minimum recorded, 116 microsiemens, Jan. 1, 2003, and May 10, 2003.
pH: Maximum recorded, 8.8 units, Oct. 8, 2002; minimum recorded, 7.2 units, Mar. 9, 2003.
WATER TEMPERATURES: Maximum recorded, 32.4°C, July 5, 2003; minimum recorded, 0.2°C, Jan. 11-31, and Feb. 1, 2, 5-17, 26, 2003.
DISSOLVED OXYGEN: Maximum recorded, 18.4 mg/L, Dec. 7, 2002; minimum recorded, 2.1 mg/L, July 7, 2003.
TURBIDITY: Maximum recorded, greater than 1000 NTU, many days in 2003; minimum recorded, 0.0 NTU, Oct. 31, Nov. 1, 2, 4, 5, 14, 16, 20, 21, 2002, and Mar. 10, 2003.

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	589	555	570	580	568	573	604	590	597	326	116	223
2	594	561	582	596	570	586	605	583	600	404	326	376
3	605	567	589	604	596	600	610	594	601	583	404	468
4	622	554	601	619	603	610	659	610	619	583	501	529
5	699	618	671	628	444	582	629	609	619	508	488	494
6	696	648	670	495	423	455	636	620	627	934	502	724
7	660	612	638	555	495	529	667	636	653	635	534	573
8	636	587	615	585	555	569	665	653	660	534	513	523
9	617	592	606	604	585	594	760	664	702	515	506	512
10	614	591	606	608	235	536	897	760	816	506	495	499
11	704	578	642	469	285	393	1,180	734	938	500	490	493
12	656	584	603	516	466	497	824	644	687	521	500	512
13	609	589	600	542	516	529	649	547	618	534	502	519
14	610	592	601	552	540	545	586	523	548	528	486	498
15	622	608	615	555	548	552	585	566	570	509	491	499
16	---	---	---	581	553	563	583	570	578	559	501	507
17	642	624	636	583	572	578	593	361	516	608	505	537
18	643	621	632	580	565	573	496	377	445	614	551	563
19	654	630	643	573	561	568	502	133	363	651	572	591
20	662	637	651	577	562	570	225	144	193	656	607	627
21	671	650	661	588	562	580	247	225	236	723	656	695
22	676	659	668	596	580	587	259	247	253	724	689	707
23	682	661	672	609	588	597	265	259	262	772	700	717
24	685	656	675	591	569	581	274	265	268	732	708	723
25	685	394	600	591	577	583	282	274	279	740	724	732
26	500	387	445	625	583	591	354	281	307	756	730	733
27	566	500	537	601	588	594	397	354	384	753	737	743
28	601	566	583	599	583	591	394	334	360	748	737	742
29	609	384	491	598	587	592	334	316	322	825	737	762
30	514	396	461	604	591	597	319	260	301	1,360	817	1,140
31	568	514	544	---	---	---	302	176	248	1,450	1,280	1,390
MONTH	704	384	604	628	235	563	1,180	133	489	1,450	116	624

03277130 MUD LICK CREEK AT HIGHWAY 42 NEAR BEAVERLICK, KY—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	1,280	1,010	1,130	855	553	786	572	550	562	622	595	610
2	1,010	909	949	553	476	501	559	544	552	629	605	619
3	1,250	657	1,050	565	473	533	550	533	541	637	617	629
4	839	629	714	560	513	544	559	537	545	639	605	625
5	726	680	709	545	489	517	570	533	555	612	193	339
6	760	723	730	574	527	538	585	556	571	522	408	481
7	793	714	727	584	568	578	613	579	589	564	522	543
8	774	718	737	568	553	559	633	613	627	574	564	571
9	1,150	774	892	561	551	557	635	613	621	581	567	575
10	1,460	898	1,030	562	550	555	642	625	638	581	116	302
11	912	844	878	567	555	562	625	603	613	436	339	403
12	1,410	912	1,210	566	553	561	605	591	596	475	430	459
13	1,580	1,390	1,490	694	519	574	596	584	590	491	429	463
14	1,470	1,110	1,350	711	640	681	596	576	587	493	467	490
15	1,110	536	669	640	589	616	596	579	590	513	368	444
16	725	615	672	600	565	583	599	576	590	376	362	369
17	970	725	895	579	553	567	607	589	598	380	358	370
18	887	813	832	568	552	561	652	607	633	432	378	396
19	905	832	857	618	491	557	678	649	657	561	432	525
20	1,280	848	1,030	600	573	590	681	352	636	559	502	547
21	1,580	684	1,260	629	577	596	518	371	455	528	506	518
22	684	258	444	630	569	599	549	518	538	542	528	537
23	419	258	335	583	538	563	565	548	556	545	533	539
24	448	404	421	564	537	551	566	553	560	542	526	535
25	759	409	711	553	534	544	564	559	561	539	530	533
26	769	708	740	597	538	561	569	553	563	563	536	544
27	765	731	751	626	597	619	570	537	557	566	524	554
28	791	758	771	621	591	602	582	555	564	573	542	561
29	---	---	---	604	405	503	592	567	582	573	553	562
30	---	---	---	---	---	---	605	581	595	578	555	568
31	---	---	---	---	---	---	---	---	---	585	568	578
MONTH	1,580	258	857	855	405	574	681	352	581	639	116	509
		JUNE			JULY			AUGUST			SEPTEMBER	
1	590	560	579	639	590	618	564	532	551	501	211	448
2	597	572	584	654	615	636	564	269	400	382	162	271
3	604	573	585	660	597	633	503	423	476	458	382	429
4	601	557	569	655	599	629	524	208	434	490	457	471
5	580	560	566	648	611	628	504	340	453	509	490	499
6	592	558	580	641	602	624	539	248	500	525	509	515
7	606	578	597	645	618	631	473	164	342	530	519	524
8	636	313	554	650	582	635	462	263	404	532	515	525
9	519	315	452	654	536	626	497	460	475	537	517	528
10	549	519	538	621	223	451	505	226	417	539	510	527
11	550	540	545	474	332	427	491	328	427	543	500	527
12	572	538	559	503	474	489	444	340	419	539	512	527
13	589	572	579	524	503	509	490	444	469	540	513	530
14	601	573	589	540	519	529	505	489	494	549	526	537
15	594	574	585	546	376	526	512	478	500	554	523	542
16	596	582	590	462	270	369	478	427	443	563	529	550
17	602	580	593	521	462	495	468	443	453	567	527	553
18	602	583	592	536	520	526	485	464	473	574	524	557
19	622	585	609	538	278	410	490	467	481	578	553	567
20	637	590	614	511	454	483	493	469	484	577	532	562
21	634	590	605	538	483	523	495	463	483	577	533	564
22	611	584	598	563	520	551	498	430	482	577	200	370
23	620	588	607	579	550	560	503	478	492	481	377	440
24	615	573	600	581	550	565	515	491	503	512	481	498
25	609	566	593	578	558	567	523	495	513	534	512	521
26	611	571	595	584	555	572	531	484	513	549	534	538
27	620	589	605	580	543	565	524	472	507	551	267	369
28	626	586	611	580	450	531	545	499	512	495	424	467
29	626	573	606	511	476	486	547	452	520	524	495	511
30	633	565	605	539	511	526	452	356	399	537	524	530
31	---	---	---	555	529	544	442	354	391	---	---	---
MONTH	637	313	583	660	223	544	564	164	465	578	162	500
YEAR	1,580	116	572									

03277130 MUD LICK CREEK AT HIGHWAY 42 NEAR BEAVERLICK, KY—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8.4	7.5	7.9	8.4	8.2	8.3	8.5	8.2	8.3	8.0	7.8	7.9
2	8.5	7.8	8.1	8.4	8.2	8.3	8.6	8.2	8.3	8.1	8.0	8.1
3	8.6	7.7	8.1	8.3	8.1	8.2	8.5	8.2	8.3	8.2	8.0	8.1
4	8.5	7.7	8.0	8.3	8.1	8.2	8.5	8.2	8.3	8.1	8.0	8.1
5	8.4	7.8	8.1	8.3	7.9	8.2	8.5	8.1	8.3	8.2	8.0	8.2
6	8.6	7.9	8.2	8.2	8.0	8.1	8.5	8.2	8.3	8.2	8.1	8.1
7	8.7	7.8	8.2	8.4	8.1	8.3	8.5	8.1	8.3	8.3	8.1	8.2
8	8.8	7.8	8.3	8.5	8.2	8.3	8.5	8.2	8.3	8.4	8.3	8.3
9	8.6	7.9	8.3	8.5	8.2	8.3	8.5	8.1	8.3	8.4	8.3	8.4
10	8.3	7.8	8.1	8.5	7.9	8.3	8.4	8.1	8.2	8.5	8.3	8.4
11	8.0	7.7	7.9	8.2	7.9	8.1	8.1	7.8	7.9	8.5	8.4	8.5
12	8.2	7.8	8.0	8.3	8.1	8.2	8.0	7.9	8.0	8.5	8.4	8.4
13	8.4	7.8	8.1	8.4	8.2	8.3	8.0	7.9	8.0	8.6	8.4	8.5
14	8.5	7.9	8.2	8.5	8.2	8.3	8.0	7.9	8.0	8.6	8.5	8.5
15	8.4	7.9	8.1	8.4	8.2	8.3	8.3	7.9	8.1	8.6	8.5	8.5
16	---	---	---	8.3	8.2	8.2	8.3	8.0	8.1	8.7	8.5	8.6
17	8.4	7.9	8.1	8.5	8.1	8.3	8.2	7.8	8.0	8.7	8.6	8.7
18	8.5	8.0	8.3	8.5	8.2	8.4	8.1	7.8	8.0	8.7	8.6	8.7
19	8.3	7.9	8.1	8.5	8.2	8.4	8.0	7.7	7.9	8.7	8.5	8.6
20	8.6	7.8	8.2	8.6	8.2	8.4	7.9	7.7	7.8	8.7	8.5	8.6
21	8.5	7.9	8.2	8.6	8.1	8.4	7.9	7.8	7.9	8.7	8.5	8.6
22	8.5	7.9	8.2	8.5	8.2	8.3	8.0	7.8	7.9	8.7	8.5	8.6
23	8.6	7.9	8.3	8.6	8.2	8.3	8.0	7.9	7.9	8.6	8.4	8.5
24	8.6	8.0	8.3	8.6	8.2	8.4	8.0	7.9	8.0	8.7	8.4	8.5
25	8.3	7.8	8.0	8.5	8.2	8.3	8.0	7.9	8.0	8.7	8.4	8.5
26	8.0	7.8	7.9	8.5	8.1	8.3	8.0	8.0	8.0	8.5	8.3	8.4
27	8.1	7.8	7.9	8.6	8.2	8.4	8.0	7.9	8.0	8.5	8.2	8.3
28	8.2	7.9	8.0	8.6	8.2	8.4	8.0	8.0	8.0	8.5	8.3	8.4
29	7.9	7.7	7.8	8.5	8.2	8.4	8.1	8.0	8.0	8.6	8.3	8.4
30	8.0	7.8	7.9	8.5	8.1	8.3	8.0	7.9	8.0	8.5	8.1	8.3
31	8.3	7.9	8.0	---	---	---	8.0	7.9	7.9	8.5	8.2	8.3
MONTH	8.8	7.5	8.1	8.6	7.9	8.3	8.6	7.7	8.1	8.7	7.8	8.4
		FEBRUARY			MARCH			APRIL			MAY	
1	8.5	8.2	8.4	7.7	7.4	7.6	8.5	8.1	8.3	8.4	7.7	8.0
2	8.5	8.1	8.3	7.6	7.4	7.5	8.6	8.0	8.3	8.4	7.6	8.0
3	8.3	8.1	8.2	7.8	7.5	7.6	8.6	8.0	8.3	8.2	7.6	7.9
4	8.2	8.0	8.1	7.8	7.5	7.6	8.4	7.9	8.1	8.3	7.5	7.9
5	8.4	8.1	8.2	7.6	7.3	7.4	8.1	7.9	8.0	7.8	7.4	7.6
6	8.3	8.0	8.2	7.7	7.3	7.5	8.3	7.9	8.1	7.9	7.7	7.8
7	8.4	8.1	8.2	7.8	7.4	7.6	8.3	8.0	8.2	7.9	7.7	7.8
8	8.3	8.1	8.2	7.8	7.4	7.6	8.3	8.0	8.2	8.0	7.7	7.9
9	8.2	8.0	8.1	7.8	7.2	7.5	8.2	8.0	8.1	8.0	7.7	7.9
10	8.2	8.0	8.1	8.4	7.4	7.8	8.3	8.0	8.1	7.9	7.4	7.5
11	8.2	8.0	8.1	8.6	8.2	8.4	8.3	8.0	8.2	7.8	7.5	7.7
12	8.2	8.0	8.1	8.6	8.2	8.4	8.3	8.0	8.1	7.7	7.6	7.6
13	8.1	7.8	8.0	8.4	8.1	8.3	8.3	8.0	8.1	7.9	7.6	7.7
14	8.1	7.9	8.0	8.7	8.0	8.4	8.4	7.9	8.1	7.9	7.7	7.8
15	7.9	7.7	7.8	8.7	8.1	8.4	8.4	7.8	8.0	7.9	7.7	7.8
16	7.9	7.7	7.8	8.7	8.1	8.4	8.4	7.7	8.1	8.1	7.7	7.9
17	8.0	7.7	7.8	8.7	8.1	8.4	8.3	7.8	8.0	7.7	7.6	7.7
18	8.0	7.8	7.9	8.7	8.1	8.4	8.3	7.9	8.1	7.9	7.6	7.7
19	8.0	7.8	7.9	8.4	8.0	8.2	8.5	7.9	8.2	8.2	7.7	7.9
20	8.0	7.7	7.8	8.6	7.9	8.2	8.4	7.6	8.1	8.1	7.9	8.0
21	7.8	7.6	7.7	8.4	8.0	8.2	8.0	7.6	7.8	8.2	7.8	8.0
22	7.6	7.5	7.5	8.6	8.0	8.4	8.2	7.9	8.0	8.3	7.9	8.1
23	7.6	7.4	7.5	8.7	8.1	8.4	8.2	7.8	8.1	8.3	7.9	8.1
24	7.7	7.5	7.6	8.6	8.0	8.3	8.2	7.9	8.1	8.3	7.9	8.1
25	7.7	7.6	7.7	8.6	8.0	8.3	8.1	7.9	8.0	8.1	7.9	8.0
26	7.7	7.6	7.6	8.6	8.0	8.3	8.4	7.9	8.1	8.3	7.9	8.1
27	7.7	7.5	7.6	8.5	8.0	8.3	8.4	7.8	8.0	8.3	7.8	8.1
28	7.7	7.6	7.6	8.6	8.1	8.3	8.5	7.7	8.0	8.3	7.8	8.0
29	---	---	---	8.2	7.9	8.0	8.5	7.8	8.1	8.2	7.8	8.0
30	---	---	---	---	---	---	8.5	7.7	8.1	8.3	7.8	8.1
31	---	---	---	---	---	---	---	---	---	8.0	7.8	7.9
MONTH	8.5	7.4	7.9	8.7	7.2	8.1	8.6	7.6	8.1	8.4	7.4	7.9

03277130 MUD LICK CREEK AT HIGHWAY 42 NEAR BEAVERLICK, KY—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS—CONTINUED
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	8.3	7.7	8.0	8.6	7.8	8.2	8.7	8.2	8.4	8.1	7.6	7.9
2	8.3	7.8	8.0	8.5	7.8	8.2	8.3	7.9	8.1	7.8	7.5	7.7
3	7.9	7.7	7.8	8.5	7.8	8.2	8.4	8.2	8.3	8.0	7.8	7.9
4	8.0	7.8	7.9	8.5	7.7	8.1	8.4	8.0	8.2	8.0	7.8	7.9
5	8.3	7.7	8.0	8.4	7.7	8.1	8.4	8.1	8.3	8.0	7.9	8.0
6	8.3	7.8	8.0	8.3	7.7	8.0	8.4	7.9	8.2	8.1	7.9	8.0
7	8.2	7.8	8.0	8.4	7.7	8.0	8.3	7.8	8.0	8.1	7.9	8.0
8	8.2	7.7	7.9	8.3	7.8	8.0	8.3	7.9	8.2	8.2	7.9	8.0
9	8.1	7.7	7.9	8.4	7.8	8.1	8.4	8.2	8.3	8.1	7.8	8.0
10	8.3	7.9	8.1	8.1	7.8	7.9	8.4	7.8	8.2	8.2	7.8	7.9
11	8.2	7.8	8.0	8.3	7.9	8.2	8.2	8.0	8.1	8.3	7.8	8.0
12	8.1	7.9	8.0	8.4	8.2	8.3	8.3	8.0	8.2	8.3	7.9	8.1
13	8.3	7.8	8.0	8.5	8.2	8.3	8.4	8.2	8.3	8.3	7.9	8.1
14	8.2	7.8	8.0	8.6	8.2	8.4	8.4	8.2	8.3	8.3	7.8	8.0
15	8.1	7.9	8.0	8.5	8.0	8.3	8.3	8.1	8.2	8.4	7.8	8.0
16	8.3	7.9	8.1	8.2	7.8	8.0	8.4	8.0	8.2	8.4	7.8	8.0
17	8.4	7.9	8.1	8.5	8.2	8.3	8.5	8.0	8.2	8.4	7.8	8.1
18	8.3	7.9	8.1	8.5	8.2	8.4	8.4	8.1	8.2	8.5	7.8	8.1
19	8.2	7.9	8.0	8.3	7.9	8.1	8.5	8.1	8.3	8.3	7.7	8.0
20	8.3	8.0	8.1	8.5	8.2	8.3	8.4	8.0	8.2	8.5	7.8	8.1
21	8.4	8.0	8.2	8.4	8.2	8.3	8.4	7.9	8.1	8.5	7.8	8.1
22	8.4	8.0	8.2	8.4	8.2	8.3	8.3	7.9	8.0	7.9	7.6	7.8
23	8.4	8.0	8.2	8.5	8.2	8.4	8.3	7.9	8.1	8.1	7.9	8.0
24	8.5	7.9	8.2	8.6	8.3	8.4	8.4	8.0	8.2	8.2	8.0	8.1
25	8.5	7.9	8.2	8.6	8.2	8.4	8.4	7.9	8.1	8.2	8.0	8.1
26	8.5	7.8	8.1	8.7	8.2	8.4	8.4	7.8	8.1	8.3	8.0	8.1
27	8.4	7.8	8.1	8.7	8.2	8.4	8.3	7.7	8.0	8.0	7.8	7.9
28	8.5	8.0	8.2	8.4	8.0	8.2	8.3	7.8	8.1	8.1	8.0	8.1
29	8.6	7.9	8.2	8.5	8.2	8.3	8.4	7.8	8.1	8.2	8.1	8.1
30	8.6	7.8	8.2	8.7	8.3	8.5	7.9	7.6	7.7	8.3	8.1	8.1
31	---	---	---	8.7	8.3	8.4	7.9	7.5	7.7	---	---	---
MONTH	8.6	7.7	8.1	8.7	7.7	8.2	8.7	7.5	8.1	8.5	7.5	8.0
YEAR	8.8	7.2	8.1									

03277130 MUD LICK CREEK AT HIGHWAY 42 NEAR BEAVERLICK, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	24.0	19.6	21.4	10.1	7.5	8.8	2.9	0.7	1.6	7.5	5.7	6.4
2	24.3	20.4	22.1	8.5	5.5	7.0	3.5	0.4	1.7	5.7	4.9	5.2
3	24.8	20.4	22.5	6.9	5.6	6.4	2.5	0.5	1.4	4.9	3.3	4.0
4	23.4	21.3	22.2	7.4	6.6	7.0	0.6	0.0	0.3	3.5	2.4	3.1
5	21.5	18.5	20.2	9.0	7.2	7.8	0.7	0.0	0.2	3.6	2.5	3.2
6	20.5	16.0	18.2	9.1	8.2	8.8	1.4	0.0	0.4	4.1	3.0	3.7
7	20.3	16.2	17.9	9.5	7.2	8.3	1.1	0.0	0.3	3.0	1.7	2.5
8	17.1	13.0	15.2	9.9	6.7	8.3	2.2	0.2	0.9	4.6	2.3	3.4
9	16.5	13.8	15.1	11.4	8.5	9.9	1.7	-0.1	0.6	5.4	3.6	4.5
10	15.8	15.0	15.4	14.9	11.3	13.0	1.1	0.0	0.5	4.5	2.1	3.5
11	16.6	15.6	16.1	13.8	11.7	13.0	1.8	0.5	0.9	2.1	-0.2	0.8
12	18.9	16.6	17.5	11.7	9.3	10.1	3.9	1.8	3.2	0.3	-0.2	0.0
13	18.9	15.2	17.4	9.9	7.9	9.0	4.6	3.8	4.0	0.5	-0.2	0.0
14	16.3	12.5	14.2	9.2	7.6	8.4	4.9	4.4	4.6	0.1	-0.2	-0.1
15	13.1	10.7	11.8	8.5	8.2	8.4	5.1	3.0	4.2	0.4	-0.2	-0.1
16	12.2	10.6	11.4	8.3	6.5	7.4	5.5	4.4	4.9	-0.1	-0.2	-0.2
17	12.4	9.6	11.1	6.5	5.3	6.1	5.3	3.8	4.3	0.1	-0.2	-0.1
18	14.4	9.1	11.6	5.6	3.7	4.8	7.7	5.3	6.6	0.1	-0.2	-0.1
19	12.7	12.2	12.4	8.3	5.1	6.6	8.1	7.5	7.9	0.1	-0.2	-0.1
20	13.9	11.0	12.4	7.6	4.5	6.1	8.0	5.9	6.8	0.0	-0.2	-0.1
21	14.5	10.1	12.0	8.4	5.9	7.0	5.9	4.7	5.3	0.2	-0.2	-0.1
22	13.3	9.0	11.3	7.1	5.3	6.1	6.2	4.8	5.4	0.1	-0.2	-0.1
23	13.7	9.1	11.3	5.9	4.0	4.9	4.8	3.0	3.6	0.0	-0.2	-0.2
24	13.5	9.8	11.3	6.1	3.0	4.5	3.8	3.3	3.5	0.1	-0.2	-0.1
25	11.5	10.1	10.7	4.8	3.9	4.3	3.3	2.1	2.6	0.1	-0.2	-0.1
26	12.3	11.5	12.0	4.1	2.8	3.2	2.1	1.4	1.7	-0.1	-0.2	-0.2
27	13.2	11.6	12.2	4.1	1.9	2.8	2.5	1.1	1.6	-0.1	-0.2	-0.2
28	12.9	11.2	12.0	2.2	1.0	1.5	2.7	0.7	1.7	-0.1	-0.2	-0.1
29	11.9	9.7	10.5	4.1	0.4	2.2	3.6	1.3	2.4	0.0	-0.2	-0.2
30	9.7	8.9	9.2	3.7	1.7	2.9	6.9	2.2	4.0	0.1	-0.2	-0.2
31	9.6	8.6	9.1	---	---	---	7.7	6.9	7.2	0.0	-0.2	-0.1
MONTH	24.8	8.6	14.4	14.9	0.4	6.8	8.1	-0.1	3.0	7.5	-0.2	1.2
		FEBRUARY			MARCH			APRIL			MAY	
1	0.0	-0.2	-0.1	4.6	3.3	4.0	14.2	7.6	10.8	23.5	17.9	20.5
2	0.7	-0.2	0.1	4.5	3.1	4.0	17.5	11.5	14.5	21.9	18.5	20.2
3	2.4	-0.1	0.5	3.7	0.6	2.3	19.2	13.7	16.4	19.7	16.1	18.0
4	3.2	0.4	2.5	5.2	1.2	3.2	18.8	16.1	17.3	16.4	13.7	15.2
5	1.4	-0.2	0.6	6.5	5.1	5.8	17.3	11.0	14.2	16.9	13.0	14.8
6	0.6	-0.2	0.1	5.1	2.8	3.8	11.0	8.5	9.4	18.6	15.7	17.0
7	1.2	-0.2	0.3	5.1	1.9	3.2	10.5	8.2	9.2	18.0	17.0	17.5
8	0.5	-0.2	0.0	8.0	2.3	5.2	10.7	9.0	9.8	20.3	16.5	18.4
9	1.5	-0.2	0.4	8.0	5.0	6.8	9.7	7.3	8.3	20.4	18.6	19.5
10	0.7	-0.2	0.2	5.1	2.1	3.8	10.8	6.6	8.4	20.0	16.9	17.7
11	0.2	-0.2	-0.1	6.4	2.0	4.3	14.1	7.5	10.7	18.7	16.4	17.3
12	1.0	-0.2	0.1	6.5	4.4	5.3	15.9	9.8	12.7	16.4	14.2	15.4
13	0.4	-0.2	0.0	6.4	5.1	5.7	16.8	10.7	13.6	17.9	13.2	15.4
14	0.0	-0.2	-0.1	8.2	3.9	6.0	18.2	11.1	14.6	17.4	14.4	16.0
15	2.1	-0.2	1.0	10.2	5.6	7.8	20.4	13.6	16.9	18.2	15.9	17.0
16	1.5	-0.2	0.2	12.7	7.8	10.3	20.7	15.3	18.2	19.8	15.9	17.7
17	0.1	-0.2	-0.1	13.0	9.9	11.5	18.7	15.9	17.1	18.3	16.8	17.4
18	0.8	-0.1	0.3	14.5	11.3	12.9	16.4	14.7	15.5	18.4	16.4	17.3
19	1.5	0.8	1.1	14.7	11.9	13.4	20.2	13.3	16.7	20.0	17.3	18.6
20	4.2	0.9	2.3	14.3	10.6	12.4	19.9	15.7	18.1	19.5	17.3	18.8
21	3.1	2.1	2.8	13.2	9.9	11.8	16.7	14.1	14.8	18.7	15.5	17.0
22	3.3	1.9	2.7	11.9	8.0	10.1	14.2	11.5	13.0	18.8	15.1	16.9
23	3.0	1.6	2.4	13.4	9.3	11.4	15.4	9.5	12.3	18.2	14.9	16.7
24	2.6	1.2	1.9	14.4	9.3	12.0	13.3	10.7	12.2	17.6	14.2	16.0
25	2.2	0.1	1.1	15.3	10.9	13.3	12.9	12.0	12.4	16.1	14.7	15.4
26	1.3	-0.2	0.5	16.0	12.0	13.8	17.9	12.0	14.5	16.8	14.0	15.2
27	2.4	0.5	1.5	14.8	10.2	12.7	19.1	12.3	15.7	18.8	15.2	16.7
28	4.0	2.1	3.0	16.7	12.7	14.7	19.9	12.9	16.5	18.2	15.2	16.9
29	---	---	---	15.2	8.9	10.5	22.0	16.9	19.0	18.7	16.0	17.2
30	---	---	---	---	---	---	21.7	17.5	19.4	18.7	15.8	17.2
31	---	---	---	---	---	---	---	---	---	17.5	16.2	17.0
MONTH	4.2	-0.2	0.9	16.7	0.6	8.3	22.0	6.6	14.1	23.5	13.0	17.2

03277130 MUD LICK CREEK AT HIGHWAY 42 NEAR BEAVERLICK, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	19.4	14.5	16.8	29.7	22.7	26.1	28.4	22.2	25.1	24.8	21.6	22.7
2	18.6	14.1	16.5	29.1	23.0	26.1	25.2	21.0	22.9	21.8	20.9	21.5
3	16.7	15.4	15.8	30.7	22.6	26.7	23.4	21.4	22.4	22.1	21.1	21.5
4	16.2	15.1	15.6	31.8	23.5	27.7	22.6	19.8	21.2	22.5	20.6	21.3
5	19.9	14.0	16.8	32.4	24.1	28.3	22.1	19.6	20.7	20.7	18.6	19.8
6	21.7	15.5	18.6	31.6	24.9	28.3	23.1	20.2	21.6	20.5	17.4	19.1
7	21.2	18.4	19.7	29.6	24.6	27.2	23.1	19.9	21.2	20.1	17.5	18.9
8	21.6	17.6	19.4	30.7	25.1	27.1	23.0	19.6	21.1	21.5	18.1	19.7
9	20.1	16.2	18.1	30.0	24.1	26.1	23.0	20.6	21.8	22.9	19.0	20.9
10	20.7	17.5	19.3	25.3	22.2	23.4	22.3	20.9	21.4	24.0	19.7	21.7
11	22.3	19.3	20.6	23.9	21.0	22.4	21.5	20.3	20.7	24.4	20.0	21.9
12	21.3	20.4	20.8	24.4	21.1	22.8	22.5	19.4	20.8	24.1	18.7	21.3
13	24.0	19.8	21.6	25.8	20.9	23.3	24.0	20.6	22.3	24.8	19.6	22.0
14	24.1	21.1	22.7	27.5	21.4	24.3	26.6	22.5	24.5	22.5	20.1	21.2
15	23.0	22.0	22.5	24.4	22.2	23.4	26.2	24.2	25.1	24.4	20.0	21.7
16	24.2	21.2	22.6	25.2	21.8	23.1	27.8	23.9	25.8	23.8	17.4	20.3
17	26.2	21.9	23.8	25.4	21.5	23.4	28.0	24.5	26.0	23.9	17.2	20.2
18	25.5	22.2	23.8	26.1	22.1	24.0	27.2	22.3	24.6	23.9	16.9	20.1
19	23.4	21.1	22.2	24.3	20.5	22.4	26.8	21.2	23.9	20.4	17.5	19.3
20	22.4	18.4	20.4	24.7	20.2	22.5	27.7	21.6	24.5	22.6	15.4	18.4
21	23.2	17.4	20.4	23.6	21.8	22.8	29.6	23.4	26.2	22.1	15.3	18.5
22	25.1	18.0	21.5	24.1	21.9	22.9	27.5	23.9	25.2	19.2	17.9	18.7
23	26.5	19.0	22.7	24.0	21.4	22.4	27.3	22.8	24.7	18.7	16.9	17.7
24	28.3	20.0	23.9	24.7	20.3	22.4	27.5	21.5	24.3	18.1	14.8	16.6
25	28.9	20.8	24.8	26.7	20.2	23.3	28.4	21.6	24.7	19.3	16.7	17.7
26	28.5	22.6	25.3	27.5	21.1	24.3	29.8	22.7	26.0	17.7	14.8	16.4
27	27.2	21.8	24.3	29.4	22.6	25.8	29.9	24.1	26.5	18.4	16.9	17.5
28	27.5	20.0	23.6	26.1	22.9	24.0	28.3	23.9	25.9	17.0	14.5	15.7
29	29.0	20.6	24.7	25.0	21.5	23.1	28.8	24.0	26.2	14.5	12.8	13.7
30	29.7	21.4	25.4	25.5	20.7	23.2	25.4	23.1	23.9	14.0	11.1	12.7
31	---	---	---	25.8	22.1	23.6	23.1	21.4	22.3	---	---	---
MONTH	29.7	14.0	21.1	32.4	20.2	24.4	29.9	19.4	23.7	24.8	11.1	19.3
YEAR	32.4	-0.2	13.0									

03277130 MUD LICK CREEK AT HIGHWAY 42 NEAR BEAVERLICK, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	11.4	5.9	8.1	13.9	12.0	12.7	17.7	13.4	15.1	11.6	9.8	10.9
2	12.6	6.0	8.5	14.5	12.2	13.1	18.0	13.9	15.4	11.7	11.2	11.4
3	13.0	5.7	8.6	14.2	12.0	12.8	18.0	13.7	15.6	12.4	11.4	11.9
4	11.9	5.4	7.3	13.4	11.6	12.2	17.6	14.3	15.6	12.8	12.0	12.4
5	10.5	5.8	8.0	12.7	11.1	11.7	17.7	13.9	15.5	12.7	12.1	12.3
6	12.6	6.8	9.1	11.7	11.0	11.3	18.1	14.2	15.6	12.5	12.0	12.3
7	13.6	6.4	9.3	12.6	10.6	11.5	18.4	14.2	15.7	13.4	12.4	12.9
8	14.6	7.0	10.1	12.8	10.2	11.3	17.8	13.7	15.3	13.0	11.8	12.5
9	12.8	7.2	9.6	12.3	9.2	10.5	18.0	14.0	15.5	12.7	11.7	12.1
10	9.5	7.1	8.2	11.4	8.1	9.7	17.0	13.6	14.9	13.2	11.8	12.5
11	8.9	6.6	7.9	9.9	8.8	9.3	13.9	13.1	13.5	14.6	12.9	13.9
12	9.5	7.1	8.2	10.8	9.0	9.7	13.4	12.3	12.8	15.0	14.0	14.5
13	11.0	7.0	8.5	11.6	9.6	10.5	12.7	12.1	12.3	15.0	14.2	14.5
14	12.7	7.7	9.7	12.2	10.0	10.8	12.7	12.0	12.2	14.9	14.1	14.5
15	11.5	8.3	9.6	11.2	10.0	10.4	13.9	11.8	12.7	15.6	14.3	14.9
16	---	---	---	11.6	10.2	10.8	13.8	11.6	12.4	15.4	14.4	14.7
17	13.6	8.6	10.4	13.2	10.9	11.8	12.5	11.4	11.9	15.8	14.3	14.9
18	14.4	9.2	11.3	14.1	11.4	12.5	11.6	10.4	11.2	16.0	14.5	15.1
19	9.9	8.4	9.2	14.0	11.2	12.2	10.9	10.4	10.6	16.0	14.4	15.0
20	14.5	8.1	10.8	14.4	11.2	12.4	10.9	10.1	10.5	16.0	14.3	15.0
21	13.9	8.8	10.9	14.7	10.8	11.9	10.7	9.6	10.3	16.4	14.4	15.2
22	14.1	9.0	11.1	13.2	10.7	11.8	10.2	9.7	10	16.6	14.5	15.3
23	14.7	9.2	11.5	15.4	11.5	13.0	11.2	10.0	10.7	16.7	14.4	15.3
24	14.6	9.1	11.3	16.0	12.1	13.5	11.1	10.3	10.7	17.7	14.6	15.7
25	10.5	8.9	9.7	15.0	11.8	13.0	11.2	10.2	10.8	17.7	14.5	15.7
26	10.0	9.5	9.7	15.2	12.2	13.4	11.8	11.1	11.4	15.4	14.5	14.9
27	11.2	9.4	10.1	16.7	12.7	14.3	11.9	11.2	11.5	16.8	14.3	15.3
28	11.8	9.3	10.3	17.3	13.4	14.9	11.9	11.0	11.4	16.7	14.4	15.3
29	11.3	9.2	10.2	17.0	13.0	14.8	11.5	10.6	11.0	17.1	14.4	15.5
30	11.1	10.4	10.7	16.0	12.4	13.9	10.8	9.8	10.4	17.1	14.4	15.5
31	12.5	10.7	11.5	---	---	---	11.1	9.2	9.8	16.9	14.3	15.4
MONTH	14.7	5.4	9.6	17.3	8.1	12.1	18.4	9.2	12.7	17.7	9.8	14.1

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	16.6	14.3	15.2	13.9	12.7	13.2	13.2	9.0	11.2	12.4	6.2	8.8
2	16.7	14.4	15.4	13.6	12.9	13.3	12.8	8.2	10.3	11.4	6.0	8.3
3	15.8	13.4	14.7	15.3	13.5	14.3	11.9	7.8	9.5	11.2	5.7	8.0
4	13.9	13.0	13.4	15.1	12.6	14.0	10.6	7.4	8.6	13.2	6.7	9.2
5	15.5	13.6	14.6	13.0	12.3	12.5	9.9	7.4	8.8	9.6	7.4	8.7
6	15.8	14.3	14.8	14.5	12.6	13.5	12.3	9.0	10.6	8.6	7.3	8.1
7	16.0	14.3	15.0	15.2	12.8	13.9	11.8	9.8	10.6	8.0	6.9	7.5
8	16.8	14.6	15.4	15.1	11.5	13.5	12.4	9.7	10.7	8.3	6.5	7.4
9	16.3	14.4	15.2	14.6	11.5	12.9	11.9	9.9	10.8	7.7	6.4	6.9
10	16.1	14.1	15.0	15.7	12.4	13.9	12.5	10.1	11.3	9.0	6.3	8.1
11	16.4	14.2	15.2	15.2	11.8	13.5	12.1	9.5	10.7	8.5	7.8	8.1
12	16.9	14.4	15.5	14.9	11.5	12.7	12.2	9.3	10.5	8.8	7.0	8.0
13	17.2	14.4	15.6	13.0	11.1	11.8	11.9	9.0	10.2	9.0	7.3	8.2
14	16.6	14.3	15.2	14.8	10.8	12.6	11.7	8.3	10	9.4	8.2	8.8
15	14.8	13.7	14.2	14.5	9.8	12.0	11.0	7.6	9.2	9.2	7.9	8.6
16	15.0	13.9	14.5	14.3	9.2	11.4	11.2	7.2	8.9	9.7	7.6	8.6
17	15.5	14.5	14.9	13.6	8.7	10.8	9.5	6.9	8.1	8.6	7.4	7.9
18	15.7	14.4	14.9	12.9	8.3	10.0	10.6	7.7	8.8	8.7	7.3	8.0
19	15.6	14.2	14.7	11.4	8.0	9.3	11.9	6.9	9.2	9.9	7.3	8.2
20	15.7	13.5	14.5	10.9	8.3	9.6	10.3	6.5	8.1	9.4	7.5	8.2
21	14.7	13.4	13.8	10.6	8.3	9.5	8.4	7.4	8.1	9.8	7.8	8.7
22	14.4	13.6	13.9	12.4	9.0	10.6	10.3	7.6	9.0	10.2	7.7	8.8
23	14.1	13.5	13.8	12.9	8.8	10.4	11.3	8.5	9.8	10.7	7.5	8.9
24	14.4	13.6	14.0	12.6	8.4	10.3	11.7	8.4	9.8	10.9	7.5	9.1
25	14.9	13.8	14.3	12.3	8.1	9.8	10.8	8.4	9.3	10.1	6.8	8.3
26	14.9	14.0	14.4	11.5	8.0	9.4	12.0	7.7	9.7	10.9	6.6	8.4
27	14.6	13.5	14.1	12.7	8.1	10.2	12.2	7.6	9.5	11.2	6.4	8.4
28	14.4	13.0	13.7	11.8	8.0	9.6	12.4	7.4	9.5	11.0	6.8	8.4
29	---	---	---	11.0	8.0	10.2	12.8	7.4	9.5	9.9	5.8	7.7
30	---	---	---	---	---	---	12.1	7.0	9.0	10.8	5.9	8.0
31	---	---	---	---	---	---	---	---	---	8.1	5.4	7.1
MONTH	17.2	13.0	14.6	15.7	8.0	11.7	13.2	6.5	9.6	13.2	5.4	8.2

03277130 MUD LICK CREEK AT HIGHWAY 42 NEAR BEAVERLICK, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	10.6	5.9	8.0	12.0	4.7	7.9	11.6	5.4	8.0	7.4	5.0	6.0
2	10.9	6.4	8.3	11.7	3.6	7.3	7.7	5.1	6.5	7.8	7.0	7.3
3	7.4	5.3	6.4	12.4	3.6	7.5	6.9	5.8	6.4	7.4	6.9	7.2
4	8.7	6.0	7.4	10.8	3.3	6.5	7.8	5.8	6.6	7.5	6.6	7.1
5	9.7	6.2	7.7	9.3	2.6	5.6	7.2	5.9	6.8	8.7	6.8	7.6
6	9.8	5.6	7.6	7.7	2.2	4.7	7.0	5.9	6.4	9.2	7.3	8.1
7	8.9	5.7	7.0	7.2	2.1	4.6	7.7	5.5	6.3	9.6	7.3	8.3
8	9.2	5.9	7.2	7.7	3.4	4.8	7.1	5.8	6.6	9.7	6.7	8.1
9	7.7	6.4	7.2	8.1	3.4	5.4	6.6	5.5	6.0	10.7	6.3	8.3
10	8.6	6.2	7.2	7.2	5.2	6.1	6.7	5.0	5.6	11.7	6.2	8.4
11	8.6	6.2	7.1	7.6	6.1	7.0	6.8	5.5	6.2	12.3	6.0	8.5
12	7.6	6.0	6.7	8.1	6.6	7.3	7.1	5.9	6.4	12.5	6.3	8.8
13	8.8	5.9	7.1	9.0	6.3	7.6	8.0	6.0	6.9	12.6	6.1	8.6
14	7.7	5.7	6.5	10.4	5.9	7.9	7.9	5.7	6.6	10.8	5.8	7.6
15	7.3	5.8	6.3	9.4	5.6	7.3	6.8	5.6	6.1	11.6	5.5	7.9
16	8.0	5.7	6.7	7.4	6.0	6.5	8.3	5.4	6.5	12.3	5.8	8.2
17	8.6	5.4	6.6	7.5	6.0	6.7	9.0	5.3	6.7	13.2	6.0	8.9
18	9.9	5.3	7.2	8.5	5.6	6.8	9.6	5.5	7.3	14.0	5.9	9.0
19	9.5	6.0	7.2	7.7	5.4	6.7	10.5	5.7	7.7	12.2	5.7	8.3
20	9.3	7.0	8.0	7.6	6.0	6.8	10.8	5.4	7.6	15.4	6.4	9.7
21	10.5	6.7	8.5	7.2	5.7	6.2	10.8	4.9	7.2	15.0	6.3	9.4
22	11.3	6.2	8.5	7.4	5.8	6.5	9.3	4.5	5.7	8.6	5.9	7.7
23	11.8	5.9	8.5	7.9	5.8	6.7	8.4	5.1	6.5	8.8	7.8	8.2
24	11.9	5.5	8.2	8.8	6.1	7.2	9.5	5.0	6.8	9.6	7.7	8.5
25	11.5	5.1	7.8	10.3	6.2	8.0	10.5	4.8	7.0	9.9	7.4	8.3
26	11.2	4.6	7.2	11.3	6.2	8.3	11.2	4.5	6.9	10.8	7.4	8.6
27	10.1	4.5	7.1	11.4	5.8	8.1	10.8	4.2	6.3	8.6	7.2	8.0
28	11.1	5.4	7.8	7.4	5.4	6.5	8.6	4.3	6.4	8.6	7.7	8.1
29	12.0	5.0	8.1	8.7	6.5	7.5	10.1	4.6	6.7	9.6	8.0	8.7
30	13.2	4.8	8.5	10.2	6.2	8.0	5.8	4.8	5.5	10.3	8.2	9.0
31	---	---	---	11.2	6.0	7.8	6.0	5.3	5.6	---	---	---
MONTH	13.2	4.5	7.5	12.4	2.1	6.8	11.6	4.2	6.6	15.4	5.0	8.2
YEAR	18.4	2.1	10.1									

03277130 MUD LICK CREEK AT HIGHWAY 42 NEAR BEAVERLICK, KY—Continued

TURBIDITY, WATER, UNFILTERED, NEPHELOMETRIC TURBIDITY UNITS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	17	8.0	12	3.0	0.0	1.1	3.0	2.0	2.1	910	5.0	200
2	22	7.0	10	3.0	0.0	0.6	3.0	1.0	1.9	150	25	63
3	38	6.0	11	7.9	1.0	1.5	1.4	0.3	0.9	79	9.0	23
4	47	7.0	12	3.0	0.0	0.7	1.8	0.5	1.2	10	6.0	7.8
5	26	9.0	14	200	0.0	44	3.1	0.8	1.7	7.0	5.0	5.9
6	60	9.0	12	140	29	69	2.5	1.2	2.3	8.0	6.0	7.3
7	77	10	14	29	12	18	3.6	1.8	2.6	7.0	4.0	5.1
8	12	10	11	26	10	13	3.1	2.0	2.9	4.3	2.0	3.5
9	71	11	14	18	9.4	13	17	3.1	4.0	4.0	3.0	3.5
10	40	10	17	1,000	6.8	160	4.8	3.5	3.7	11	3.0	5.8
11	88	13	45	990	35	220	150	3.8	90	5.0	3.0	4.0
12	83	29	40	35	8.3	17	81	24	43	5.0	3.0	4.3
13	33	25	28	10	3.0	5.8	180	21	59	5.0	4.0	4.7
14	45	22	26	3.0	0.0	1.6	120	31	62	4.0	4.0	4.0
15	60	22	24	3.0	1.0	1.3	31	17	22	5.0	4.0	4.2
16	---	---	---	4.0	0.0	2.2	18	14	15	5.0	4.0	4.4
17	26	23	25	5.0	1.0	2.3	1,000	15	210	5.0	4.0	4.1
18	29	22	23	3.0	2.0	2.1	280	27	75	5.0	4.0	4.5
19	31	23	25	5.0	1.0	2.1	1,000	27	350	5.0	4.0	4.9
20	29	24	26	7.0	0.0	1.2	630	7.0	67	5.0	4.0	4.6
21	27	24	25	17	0.0	2.2	7.0	7.0	7.0	5.0	4.0	4.6
22	37	22	26	3.0	2.0	2.4	7.0	7.0	7.0	5.0	4.0	4.9
23	25	22	23	3.0	1.0	1.7	7.0	7.0	7.0	6.0	4.0	5.0
24	26	22	24	4.0	1.0	2.0	7.0	7.0	7.0	5.0	5.0	5.0
25	520	23	130	2.0	1.0	1.7	7.0	7.0	7.0	5.0	5.0	5.0
26	350	65	150	7.0	1.0	1.4	8.0	7.0	7.2	6.0	5.0	5.0
27	71	41	53	4.0	1.0	1.5	8.0	7.0	7.8	6.0	5.0	5.3
28	48	32	36	2.0	1.0	1.9	8.0	7.0	7.7	6.0	5.0	5.8
29	420	33	150	2.0	1.0	1.6	8.0	7.0	7.7	8.0	5.0	6.6
30	150	26	64	3.0	1.0	1.7	110	7.0	10	12	8.0	9.8
31	39	0.0	14	---	---	---	280	2.9	11	10	9.0	9.6
MONTH	520	0.0	36	1,000	0.0	20	1,000	0.3	36	910	2.0	14

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	9.0	8.0	8.3	100	64	76	9.0	6.0	7.1	10	1.6	4.4
2	10	8.0	8.6	100	88	96	12	5.0	7.3	24	2.2	5.1
3	210	10	20	130	95	110	14	4.0	7.5	5.7	2.7	4.2
4	350	47	130	140	120	130	15	8.0	11	18	1.0	4.0
5	49	36	41	150	95	120	67	11	36	990	11	540
6	38	33	35	290	89	110	41	20	29	150	44	73
7	37	32	34	98	69	83	29	19	21	61	42	47
8	42	35	36	72	35	57	26	21	24	54	22	36
9	37	35	36	52	2.0	33	41	25	31	66	24	30
10	41	34	36	30	0.0	11	60	31	36	1,000	21	370
11	36	33	35	6.0	3.0	4.3	57	16	35	200	74	110
12	36	35	35	8.0	5.0	5.7	63	29	44	93	9.7	57
13	39	36	37	200	5.0	56	---	---	---	97	8.7	41
14	56	39	41	79	17	40	---	---	---	87	21	30
15	220	56	110	18	8.0	12	---	---	---	88	36	57
16	58	41	49	15	7.0	9.0	---	---	---	41	27	34
17	43	39	41	15	7.0	8.6	---	---	---	140	31	68
18	47	36	39	13	2.0	6.7	17	4.0	7.8	160	61	100
19	39	36	38	280	4.0	67	8.0	2.0	4.1	130	11	54
20	43	32	37	280	17	71	1,000	4.0	91	120	19	35
21	100	36	56	30	16	22	1,000	72	360	120	34	71
22	780	63	250	25	9.0	15	90	17	36	70	15	25
23	130	58	76	17	5.0	7.8	18	8.1	14	60	11	17
24	60	53	56	8.0	4.0	6.5	64	7.0	11	16	9.0	12
25	59	52	55	12	4.0	6.3	22	3.5	8.6	73	8.0	14
26	58	54	56	18	5.0	11	14	4.4	6.3	38	11	13
27	59	52	56	9.0	3.0	5.6	14	3.9	6.3	15	10	12
28	64	52	56	9.0	4.0	5.8	14	1.0	2.9	15	10	13
29	---	---	---	340	6.0	130	7.5	1.6	3.9	17	12	15
30	---	---	---	---	---	---	15	2.1	4.0	26	14	16
31	---	---	---	---	---	---	---	---	---	19	14	16
MONTH	780	8.0	54	340	0.0	45	1,000	1.0	34	1,000	1.0	62

03277130 MUD LICK CREEK AT HIGHWAY 42 NEAR BEAVERLICK, KY—Continued

TURBIDITY, WATER, UNFILTERED, NEPHELOMETRIC TURBIDITY UNITS—CONTINUED
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	94	14	18	18	5.2	12	61	48	55	990	88	210
2	72	13	19	14	2.7	7.2	1,000	54	420	1,000	82	340
3	110	18	40	13	4.2	7.5	250	35	110	140	64	81
4	56	25	34	20	8.6	14	1,000	31	310	95	54	69
5	60	8.0	25	26	7.8	15	250	46	100	100	36	58
6	46	20	24	18	9.6	13	1,000	29	120	110	24	57
7	31	22	26	190	12	25	1,000	61	290	73	17	31
8	1,000	21	260	57	13	21	330	110	140	60	11	29
9	1,000	84	250	660	16	98	210	98	130	130	17	44
10	140	36	60	1,000	160	560	1,000	95	270	60	10	28
11	80	42	50	350	92	170	1,000	68	170	60	3.0	11
12	78	51	60	100	47	68	120	58	90	11	5.0	7.9
13	76	38	55	79	41	53	120	87	96	11	6.0	7.7
14	95	50	67	64	25	40	100	68	81	14	7.0	8.9
15	77	31	51	1,000	28	130	120	72	94	17	8.0	9.9
16	54	23	40	1,000	160	530	94	75	84	14	9.0	11
17	44	14	28	180	77	120	87	79	83	24	10	12
18	59	19	35	89	63	74	90	64	77	19	12	14
19	53	19	27	1,000	73	480	78	66	72	19	13	16
20	120	49	78	200	120	150	100	55	63	21	16	17
21	75	30	41	220	110	140	72	54	60	23	15	17
22	40	24	32	220	110	130	280	57	88	1,000	17	340
23	34	24	30	150	84	100	100	62	79	130	68	92
24	37	23	30	100	75	86	70	60	65	71	56	64
25	35	20	27	95	56	72	66	55	62	63	54	59
26	39	22	27	90	59	66	67	41	53	69	52	60
27	29	21	25	93	44	62	58	41	48	1,000	52	360
28	37	20	26	420	57	190	80	46	59	990	75	420
29	34	9.3	19	220	75	120	110	43	52	79	58	68
30	29	4.6	13	94	58	73	250	110	200	65	52	59
31	---	---	---	75	42	60	210	110	150	---	---	---
MONTH	1,000	4.6	51	1,000	2.7	120	1,000	29	120	1,000	3.0	87
YEAR	1,000	0.0	57									

03277200 OHIO RIVER AT MARKLAND DAM NEAR 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^2, approximately.

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

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

GAGE.--Water-stage recorder with telemetry in tailwater gage. 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. Records of Markland Dam gate operations, headwater gage readings, and turbine flow are furnished by U.S. Army Corps of Engineers.

REMARKS.--Records good except for estimated period and those below 20,000 ft^3/s, which are poor. Daily discharge computed from head, gate openings, turbine flow, and tailwater rating. Flow regulated by Ohio River system of locks, dams, and reservoirs upstream from station.

COOPERATION.--U.S. Army Corps of Engineers, Louisville District.

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 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40,900	94,700	50,700	190,000	49,200	297,000	115,000	58,100	96,800	49,200	113,000	104,000
2	12,600	82,600	52,300	202,000	60,300	248,000	108,000	64,400	105,000	31,500	122,000	179,000
3	23,900	57,400	52,300	233,000	77,300	238,000	111,000	57,800	137,000	44,100	106,000	244,000
4	24,400	44,700	42,000	271,000	83,400	216,000	106,000	69,400	169,000	52,000	106,000	254,000
5	11,800	47,000	40,800	277,000	125,000	229,000	100,000	129,000	208,000	57,500	145,000	267,000
6	18,500	69,700	38,800	269,000	158,000	238,000	109,000	190,000	242,000	78,800	150,000	272,000
7	13,900	100,000	38,400	239,000	162,000	244,000	125,000	215,000	237,000	70,800	139,000	258,000
8	9,280	101,000	44,700	208,000	140,000	260,000	173,000	215,000	229,000	82,000	109,000	199,000
9	14,900	102,000	47,400	178,000	118,000	273,000	218,000	191,000	248,000	120,000	115,000	129,000
10	16,000	87,700	40,500	158,000	101,000	260,000	269,000	244,000	240,000	183,000	124,000	77,000
11	21,000	141,000	44,200	142,000	89,600	242,000	295,000	359,000	216,000	210,000	133,000	64,700
12	40,200	147,000	55,900	133,000	71,900	239,000	296,000	336,000	188,000	226,000	145,000	61,200
13	26,800	143,000	87,600	114,000	64,700	222,000	293,000	351,000	169,000	230,000	141,000	40,200
14	30,700	131,000	150,000	92,700	68,500	205,000	287,000	346,000	163,000	197,000	161,000	35,700
15	28,200	137,000	216,000	70,800	84,200	200,000	263,000	279,000	202,000	140,000	95,800	39,500
16	26,000	113,000	244,000	75,700	164,000	208,000	214,000	218,000	246,000	101,000	91,800	31,700
17	57,700	95,900	240,000	72,900	259,000	219,000	172,000	220,000	261,000	74,400	87,800	42,300
18	59,600	95,800	202,000	47,800	322,000	221,000	136,000	231,000	300,000	77,300	93,600	44,300
19	59,600	113,000	182,000	48,300	324,000	201,000	112,000	245,000	318,000	58,600	95,300	43,300
20	46,100	138,000	234,000	44,300	281,000	219,000	106,000	248,000	321,000	75,500	76,100	96,000
21	32,600	122,000	200,000	38,400	208,000	238,000	125,000	261,000	289,000	57,700	73,000	132,000
22	25,000	103,000	194,000	47,500	226,000	244,000	117,000	269,000	249,000	53,700	50,200	146,000
23	31,500	105,000	216,000	39,800	312,000	228,000	122,000	256,000	217,000	71,800	67,400	139,000
24	29,900	109,000	206,000	35,100	e358,000	205,000	117,000	226,000	169,000	129,000	35,800	111,000
25	26,100	99,000	167,000	39,800	e396,000	187,000	91,000	187,000	121,000	168,000	30,000	121,000
26	30,400	83,700	146,000	39,700	e429,000	175,000	84,600	168,000	98,500	169,000	28,000	133,000
27	25,600	82,400	149,000	27,800	e453,000	158,000	84,900	158,000	64,500	135,000	32,300	133,000
28	27,600	69,200	152,000	26,100	353,000	142,000	66,800	131,000	49,800	102,000	34,600	114,000
29	37,500	68,300	144,000	38,000	---	138,000	66,500	106,000	55,400	90,300	51,700	107,000
30	84,200	69,300	120,000	38,600	---	138,000	64,500	93,800	41,400	118,000	54,800	123,000
31	90,100	---	120,000	48,100	---	130,000	---	102,000	---	132,000	71,700	---
TOTAL	1,022,580	2,952,400	3,917,600	3,485,400	5,538,100	6,662,000	4,547,300	6,224,500	5,650,400	3,385,200	2,878,900	3,740,900
MEAN	32,990	98,410	126,400	112,400	197,800	214,900	151,600	200,800	188,300	109,200	92,870	124,700
MAX	90,100	147,000	244,000	277,000	453,000	297,000	296,000	359,000	321,000	230,000	161,000	272,000
MIN	9,280	44,700	38,400	26,100	49,200	130,000	64,500	57,800	41,400	31,500	28,000	31,700

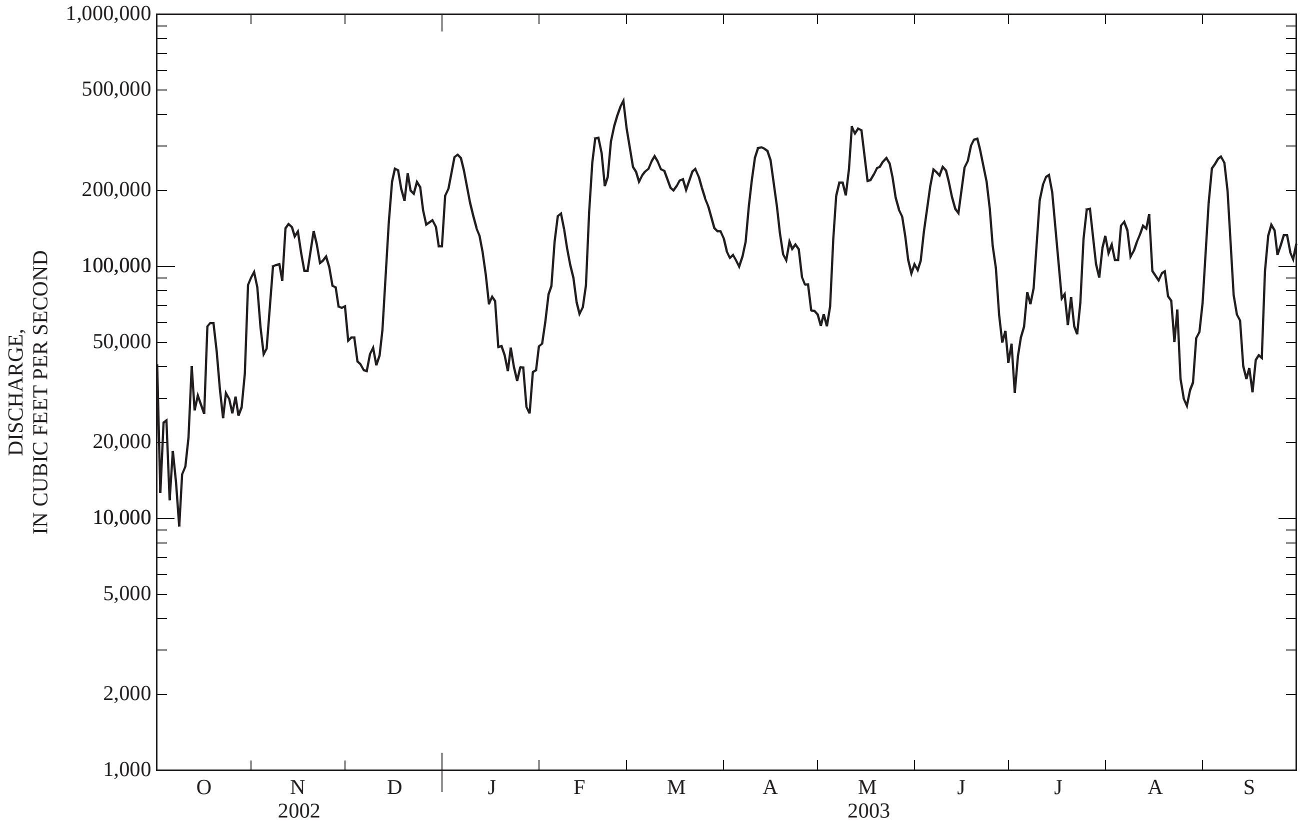
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	46,320	81,510	136,300	143,400	175,300	207,000	178,100	141,900	93,160	59,170	45,240	40,450
MAX	144,100	230,600	288,700	289,900	291,200	338,500	292,200	370,100	219,100	109,500	146,200	143,800
(WY)	(1980)	(1986)	(1973)	(1974)	(1975)	(1997)	(1972)	(1996)	(1981)	(1972)	(1980)	(1979)
MIN	13,910	16,810	29,220	34,060	77,100	98,440	61,160	43,510	15,030	13,890	13,060	9,033
(WY)	(1992)	(1999)	(1999)	(1977)	(1992)	(1990)	(1986)	(1976)	(1999)	(1999)	(1988)	(1999)

03277200 OHIO RIVER AT MARKLAND DAM NEAR WARSAW, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1970 - 2003	
ANNUAL TOTAL	36,944,280		50,005,280			
ANNUAL MEAN	101,200		137,000		112,300	
HIGHEST ANNUAL MEAN					157,300	1979
LOWEST ANNUAL MEAN					60,450	1988
HIGHEST DAILY MEAN	412,000	Mar 23	453,000	Feb 27	579,000	Mar 6, 1997
LOWEST DAILY MEAN	3,210	Sep 3	9,280	Oct 8	3,210	Sep 3, 2002
ANNUAL SEVEN-DAY MINIMUM	8,370	Sep 8	15,100	Oct 5	7,310	Jul 1, 1988
MAXIMUM PEAK FLOW					582,000	Mar 6, 1997
MAXIMUM PEAK STAGE			45.65	Feb 26	60.72	Mar 6, 1997
10 PERCENT EXCEEDS	258,000		259,000		258,000	
50 PERCENT EXCEEDS	63,300		118,000		79,000	
90 PERCENT EXCEEDS	13,200		38,400		20,000	

e Estimated



03277300 NORTH FORK KENTUCKY RIVER AT WHITESBURG, KY

LOCATION.--Lat 37°07'03", long 82°49'29", Letcher County, Hydrologic Unit 05100201, on downstream side of bridge on State Highway 15 at Whitesburg, 0.6 mile downstream from Solomon Branch, and at mile 405.4

DRAINAGE AREA.--66.4 mi^2.

PERIOD OF RECORD.--October 1952 to September 1954 and October 1957 to September 1975 (crest-stage partial-record), October 1987 to September 1998 (gage heights only), October 1998 to current year.

GAGE.--Water-stage recorder with telemetry. Datum of gage is 1,127.924 ft above NGVD of 1929. Prior to October 1, 1998, crest-stage gage and recording gage at same site and datum 1.0 ft higher.

REMARKS.--Records fair except for those estimated, which are poor. Small diversions by City of Whitesburg waterworks.

COOPERATION.--Kentucky River Authority and U.S. Army Corps of Engineers, Louisville District.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,400 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb 16	0730	*3,360	*9.54	Apr 10	1930	2,400	7.75
Feb 22	1130	1,760	6.38	Jun 17	1615	1,430	5.64
Apr 8	2145	1,760	6.38				

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	25	26	52	60	199	70	75	87	53	60	e49
2	12	19	24	47	55	177	70	74	75	52	46	e35
3	11	16	22	56	53	151	68	71	74	50	78	e80
4	9.4	19	25	58	105	134	66	69	90	44	82	e240
5	10	21	188	58	96	122	72	89	73	41	117	146
6	9.9	44	117	56	78	113	67	117	70	48	114	89
7	8.3	40	74	53	73	99	434	83	341	71	278	70
8	8.0	30	58	e49	61	91	659	126	255	41	130	59
9	7.7	24	48	e46	54	84	959	237	145	56	84	51
10	8.9	22	43	e43	e51	77	1,400	144	105	64	63	44
11	13	127	94	e41	e48	74	1,000	116	90	86	51	41
12	15	78	86	e38	e46	72	429	89	96	102	43	38
13	11	59	78	e35	45	81	305	76	76	113	36	35
14	11	44	148	e32	49	79	245	72	89	66	32	33
15	10	36	116	e30	545	73	201	130	133	79	30	32
16	44	44	87	e27	1,960	72	172	193	127	62	33	30
17	28	65	72	e25	499	71	155	151	470	47	169	29
18	19	63	63	e24	285	70	267	276	386	39	92	26
19	14	55	56	e23	214	68	217	175	296	35	46	27
20	14	50	75	e22	174	66	175	126	198	33	36	25
21	15	49	67	e21	151	62	152	318	144	38	30	24
22	14	53	61	e20	1,090	58	130	263	116	50	28	51
23	12	46	53	e19	665	54	116	185	99	52	28	55
24	11	40	59	e19	333	52	106	142	86	40	24	29
25	10	34	72	e18	265	51	102	116	76	32	22	25
26	11	32	66	e18	224	53	123	105	71	29	21	24
27	9.9	40	61	e17	201	51	100	94	67	28	20	25
28	35	32	57	e22	217	48	89	89	64	44	e19	31
29	51	31	53	46	---	49	85	116	59	191	e18	22
30	44	28	48	62	---	55	80	123	55	82	e17	20
31	32	---	45	61	---	69	---	101	---	64	e55	---
TOTAL	521.1	1,266	2,142	1,138	7,697	2,575	8,114	4,141	4,113	1,832	1,902	1,485
MEAN	16.8	42.2	69.1	36.7	275	83.1	270	134	137	59.1	61.4	49.5
MAX	51	127	188	62	1,960	199	1,400	318	470	191	278	240
MIN	7.7	16	22	17	45	48	66	69	55	28	17	20

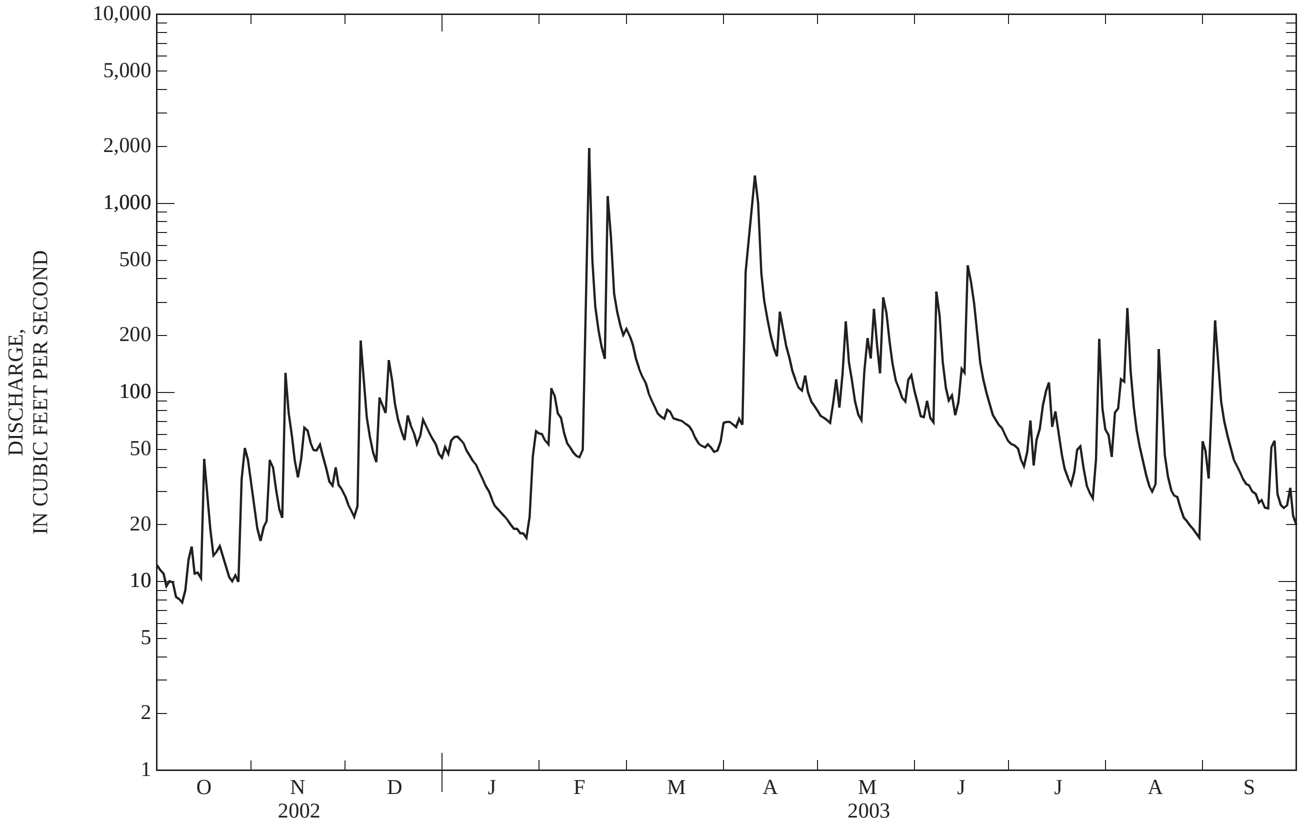
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1999 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	11.7	18.3	36.3	76.6	116	110	139	87.2	53.6	57.5	29.8	20.7
MAX	16.8	42.2	69.1	146	275	164	270	134	137	126	61.4	49.5
(WY)	(2003)	(2003)	(2003)	(2002)	(2003)	(2002)	(2003)	(2003)	(2003)	(2000)	(2003)	(2003)
MIN	9.08	9.90	13.6	24.6	56.8	45.5	80.2	52.9	17.6	13.4	7.66	5.47
(WY)	(2000)	(2002)	(2000)	(2000)	(2000)	(2000)	(2001)	(1999)	(1999)	(1999)	(1999)	(1999)

03277300 NORTH FORK KENTUCKY RIVER AT WHITESBURG, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1999 - 2003	
ANNUAL TOTAL	25,663.8		36,926.1			
ANNUAL MEAN	70.3		101		62.7	
HIGHEST ANNUAL MEAN					101	2003
LOWEST ANNUAL MEAN					45.8	2000
HIGHEST DAILY MEAN	1,780	Mar 18	1,960	Feb 16	1,960	Feb 16, 2003
LOWEST DAILY MEAN	6.1	Sep 13	7.7	Oct 9	1.9	Oct 8, 1999
ANNUAL SEVEN-DAY MINIMUM	6.4	Sep 8	8.9	Oct 4	3.8	Sep 13, 1999
MAXIMUM PEAK FLOW			3,360	Feb 16	7,730	Jan 29, 1957
MAXIMUM PEAK STAGE			9.54	Feb 16	14.90	Jan 29, 1957
10 PERCENT EXCEEDS	117		195		123	
50 PERCENT EXCEEDS	38		59		33	
90 PERCENT EXCEEDS	10		20		8.2	

e Estimated



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^2.

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 with telemetry. Datum of gage is 697.67 ft above NGVD of 1929. See WDR KY-90-1 for history of changes prior to Aug. 22, 1980.

REMARKS.--Records good except for those estimated, which are poor. Small diversions by City of Jackson waterworks. Flow regulated by Carr Fork Lake (station 03277446) beginning January 1976.

COOPERATION.--U.S. Army Corps of Engineers, Louisville District and Kentucky River Authority.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	306	940	445	1,650	1,520	3,600	1,390	1,070	1,110	875	971	978
2	261	721	404	2,330	1,420	3,420	1,260	1,390	977	810	1,060	767
3	235	601	380	1,860	1,280	2,940	1,170	1,260	899	704	911	841
4	215	468	360	1,650	2,210	2,270	1,090	1,050	1,190	612	1,630	6,030
5	191	498	507	1,520	2,660	2,030	1,150	1,090	1,250	597	3,170	4,200
6	189	1,370	2,140	1,420	2,270	1,880	1,360	1,840	1,030	592	2,090	1,790
7	180	1,200	1,690	1,270	1,980	1,720	5,750	1,660	2,650	605	1,280	971
8	179	953	1,250	1,160	1,660	1,520	9,990	2,290	4,250	849	1,120	707
9	182	777	1,120	e1,000	1,380	1,390	14,700	7,570	3,190	678	995	559
10	199	656	957	e920	e1,320	1,290	17,000	5,440	1,990	899	740	460
11	389	1,350	1,740	e820	e1,280	1,180	19,500	3,110	1,720	2,030	614	410
12	505	1,780	3,290	e760	e1,200	1,120	14,300	2,390	2,770	1,550	625	340
13	381	1,320	2,940	e680	1,170	1,070	6,430	1,740	2,240	2,170	553	306
14	360	1,020	6,840	e640	1,140	1,100	4,510	1,320	1,910	1,670	486	279
15	324	831	4,790	e620	8,770	1,110	3,700	1,250	4,300	1,060	443	262
16	341	979	3,200	e610	27,300	1,030	3,230	2,830	8,870	831	413	272
17	722	1,020	2,210	e590	29,700	973	2,770	2,770	8,760	712	423	283
18	641	1,180	1,640	e580	14,400	950	4,390	4,990	15,900	602	519	268
19	472	1,200	1,390	e560	5,550	924	5,120	4,750	9,500	520	901	253
20	390	1,080	2,350	e550	4,250	915	3,650	3,330	6,970	472	560	245
21	358	955	2,910	e540	3,690	882	3,100	2,980	4,360	441	451	240
22	327	916	2,260	e530	8,030	834	2,680	4,740	3,380	458	401	297
23	300	910	1,700	e852	18,300	776	2,220	3,550	2,840	486	360	903
24	266	809	1,500	e772	8,950	732	1,850	2,530	2,120	780	339	860
25	234	716	2,060	e670	5,220	699	1,580	1,960	1,380	625	315	684
26	251	646	2,300	e600	4,320	665	1,730	1,610	1,130	487	291	370
27	264	611	1,950	e570	3,780	681	1,780	1,360	1,030	417	271	350
28	529	565	1,690	e550	3,630	665	1,460	1,220	978	406	261	798
29	2,140	533	1,490	795	---	689	1,250	1,210	876	519	257	635
30	3,070	495	1,290	1,650	---	889	1,110	1,520	753	1,250	309	496
31	1,470	---	1,130	1,600	---	1,230	---	1,390	---	865	561	---
TOTAL	15,871	27,100	59,923	30,319	168,380	41,174	141,220	77,210	100,323	25,572	23,320	25,854
MEAN	512	903	1,933	978	6,014	1,328	4,707	2,491	3,344	825	752	862
MAX	3,070	1,780	6,840	2,330	29,700	3,600	19,500	7,570	15,900	2,170	3,170	6,030
MIN	179	468	360	530	1,140	665	1,090	1,050	753	406	257	240
CFSM	0.47	0.82	1.76	0.89	5.46	1.21	4.28	2.26	3.04	0.75	0.68	0.78
IN.	0.54	0.92	2.02	1.02	5.69	1.39	4.77	2.61	3.39	0.86	0.79	0.87

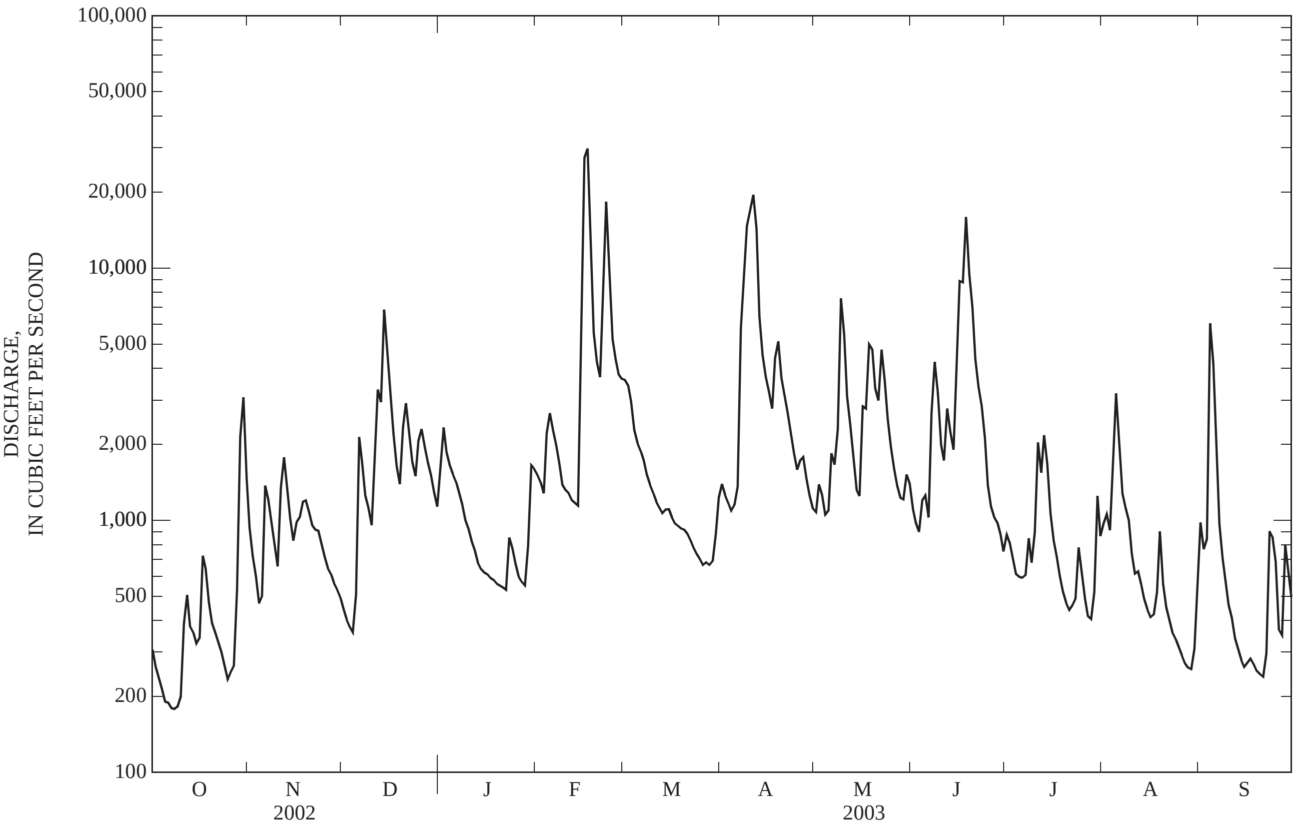
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1977 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	470	830	1,514	1,903	2,606	2,617	2,370	1,853	1,083	535	435	308
MAX	4,189	3,019	4,649	5,168	6,392	7,268	5,944	7,189	4,166	1,484	945	1,154
(WY)	(1990)	(1986)	(1992)	(1979)	(1994)	(1994)	(1998)	(1984)	(1989)	(2000)	(1977)	(1989)
MIN	92.8	152	196	155	790	541	452	526	136	90.2	85.6	37.5
(WY)	(1981)	(1982)	(1981)	(1981)	(1988)	(1988)	(1986)	(2001)	(1988)	(1988)	(1988)	(1999)

03280000 NORTH FORK KENTUCKY RIVER AT JACKSON, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1977 - 2003	
ANNUAL TOTAL	493,755		736,266			
ANNUAL MEAN	1,353		2,017		1,370	
HIGHEST ANNUAL MEAN					2,570	1994
LOWEST ANNUAL MEAN					477	1988
HIGHEST DAILY MEAN	17,900	Mar 19	29,700	Feb 17	52,200	May 8, 1984
LOWEST DAILY MEAN	45	Sep 13	179	Oct 8	21	Sep 20, 1999
ANNUAL SEVEN-DAY MINIMUM	49	Sep 9	191	Oct 4	26	Sep 17, 1999
MAXIMUM PEAK FLOW			31,600	Feb 17	53,500	Jan 30, 1957
MAXIMUM PEAK STAGE			37.29	Feb 17	43.10	Feb 4, 1939
INSTANTANEOUS LOW FLOW					0.00	Oct 16, 1930
ANNUAL RUNOFF (CFSM)	1.23		1.83		1.24	
ANNUAL RUNOFF (INCHES)	16.68		24.88		16.91	
10 PERCENT EXCEEDS	2,930		4,250		3,120	
50 PERCENT EXCEEDS	641		1,090		633	
90 PERCENT EXCEEDS	135		346		129	

e Estimated



03280700 CUTSHIN CREEK AT WOOTON, KY

LOCATION.--Lat 37°09'54", long 83°18'29", Leslie County, Hydrologic Unit 05100202, on right bank 30 ft upstream 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^2.

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

GAGE.--Water-stage recorder with telemetry. Datum of gage is 869.84 ft above NGVD of 1929. Prior to Dec. 26, 1957, nonrecording gage at same site and datum.

REMARKS.--Records fair except for those estimated, which are poor.

COOPERATION.--U.S. Army Corps of Engineers, Louisville District and Kentucky Natural Resources and Environmental Protection Cabinet.

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

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb 16	unknown	*9,300	*12.94	Apr 10	1800	5,510	9.84
Feb 22	0900	3,820	8.16	Jun 17	1100	4,550	8.92
Apr 7	0700	3,670	8.00	Jun 18	1900	1,760	5.59
Apr 8	1930	2,530	6.65				

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.7	12	9.8	138	86	211	102	51	40	23	52	14
2	2.5	8.7	8.8	125	75	189	93	70	31	19	18	10
3	2.7	7.2	8.8	122	69	150	83	54	34	18	27	27
4	2.9	7.1	14	108	175	125	75	45	52	13	263	272
5	3.7	11	332	100	147	108	116	97	31	12	415	77
6	4.2	33	123	87	118	101	211	88	24	16	165	26
7	4.3	28	74	72	107	85	2,040	95	177	21	98	18
8	3.7	16	57	67	82	77	1,150	114	129	11	65	13
9	3.5	12	47	e58	74	71	1,360	212	77	64	44	11
10	10	10	44	e50	e69	63	2,400	117	51	131	31	10
11	18	88	228	e42	e65	60	1,130	96	53	179	24	8.5
12	10	40	141	e37	e62	57	522	69	67	79	21	7.6
13	6.6	26	233	e34	60	61	295	54	44	151	17	6.6
14	8.0	17	474	e32	64	61	201	44	78	57	15	6.1
15	5.9	15	210	e30	1,380	57	154	260	250	70	13	9.2
16	31	22	125	e28	4,410	55	127	337	344	46	14	9.1
17	19	37	89	e26	467	54	134	314	1,550	28	15	6.4
18	8.8	36	70	e25	379	54	268	566	1,180	19	14	5.3
19	6.3	34	67	e24	238	51	196	282	1,080	15	11	4.9
20	6.9	29	268	e23	173	50	154	179	431	12	14	5.8
21	7.9	26	170	e29	148	46	129	485	220	11	15	5.0
22	7.0	26	116	e25	1,510	42	106	334	135	17	11	111
23	5.4	20	85	e20	595	39	89	215	88	36	10	95
24	4.6	17	152	e19	427	37	75	149	57	22	8.3	20
25	5.1	14	264	e19	294	35	70	108	41	12	7.7	12
26	6.6	14	176	e19	225	38	103	90	33	8.4	7.4	9.5
27	6.4	16	126	e18	194	37	73	75	37	6.8	6.8	26
28	54	13	101	e18	219	34	65	66	29	6.8	6.4	47
29	61	11	82	60	---	42	60	61	22	19	6.7	17
30	36	11	69	100	---	76	53	57	19	11	6.6	12
31	19	---	64	91	---	108	---	48	---	56	15	---
TOTAL	373.7	657.0	4,028.4	1,646	11,912	2,274	11,634	4,832	6,404	1,190.0	1,436.9	902.0
MEAN	12.1	21.9	130	53.1	425	73.4	388	156	213	38.4	46.4	30.1
MAX	61	88	474	138	4,410	211	2,400	566	1,550	179	415	272
MIN	2.5	7.1	8.8	18	60	34	53	44	19	6.8	6.4	4.9
CFSM	0.20	0.36	2.12	0.87	6.94	1.20	6.33	2.54	3.48	0.63	0.76	0.49
IN.	0.23	0.40	2.44	1.00	7.23	1.38	7.06	2.93	3.89	0.72	0.87	0.55

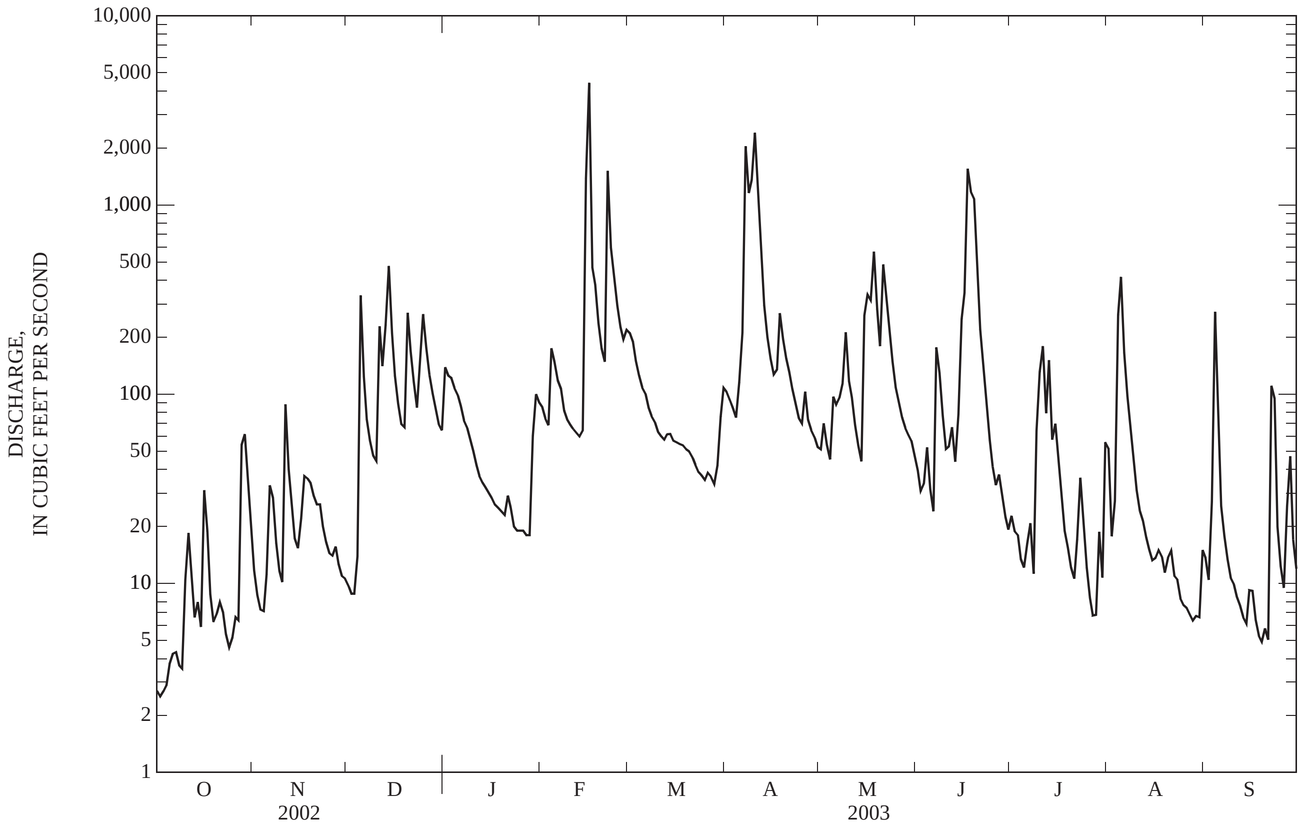
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1958 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	25.3	58.2	105	143	171	197	166	113	58.2	32.1	23.9	17.3
MAX	287	309	359	597	425	620	471	449	423	144	107	125
(WY)	(1990)	(1978)	(1973)	(1974)	(2003)	(1975)	(1998)	(1983)	(1989)	(1958)	(1966)	(1974)
MIN	0.26	5.05	3.30	6.97	27.0	21.4	16.6	14.0	3.17	2.17	1.16	0.73
(WY)	(1964)	(2001)	(1966)	(1981)	(1968)	(1988)	(1963)	(1964)	(1988)	(1970)	(1988)	(1969)

03280700 CUTSHIN CREEK AT WOOTON, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1958 - 2003	
ANNUAL TOTAL	31,904.9		47,290.0			
ANNUAL MEAN	87.4		130		92.1	
HIGHEST ANNUAL MEAN					212	1974
LOWEST ANNUAL MEAN					27.6	1988
HIGHEST DAILY MEAN	3,060	Mar 18	4,410	Feb 16	4,890	May 7, 1984
LOWEST DAILY MEAN	1.2	Sep 12	2.5	Oct 2	0.00	Sep 29, 1959
ANNUAL SEVEN-DAY MINIMUM	1.5	Sep 8	3.3	Oct 1	0.01	Sep 11, 1964
MAXIMUM PEAK FLOW			9,300	Feb 16	14,200	Mar 12, 1963
MAXIMUM PEAK STAGE			12.94	Feb 16	16.23	Mar 12, 1963
INSTANTANEOUS LOW FLOW					0.00	Sep 29, 1959
ANNUAL RUNOFF (CFSM)	1.43		2.11		1.50	
ANNUAL RUNOFF (INCHES)	19.36		28.70		20.41	
10 PERCENT EXCEEDS	169		243		200	
50 PERCENT EXCEEDS	24		51		32	
90 PERCENT EXCEEDS	2.8		7.7		2.9	

e Estimated



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^2.

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 with telemetry. Datum of gage is 642.13 ft above NGVD of 1929. Prior to Feb. 6, 1940, nonrecording gage at same site and datum.

REMARKS.--Records good. Flow regulated by Buckhorn Lake beginning December 1960 (station 03280800).

COOPERATION.--U.S.Army Corps of Engineers, Louisville District, and Kentucky River Authority.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	198	612	268	745	1,010	4,260	557	172	376	242	249	294
2	197	574	192	1,610	e900	4,220	803	169	362	239	335	427
3	160	371	148	2,010	e720	4,110	701	160	382	208	722	e670
4	97	340	134	1,880	e1,700	4,030	637	150	415	137	1,060	e3,340
5	96	404	215	1,240	e2,400	3,950	668	208	347	161	2,780	2,570
6	97	831	309	986	e1,800	4,060	697	312	302	160	2,500	1,960
7	94	668	921	811	e1,400	4,020	1,610	1,380	1,010	144	920	869
8	93	580	1,040	669	e1,050	3,900	3,870	1,340	1,690	158	702	426
9	93	526	1,050	e540	e760	3,950	5,640	4,430	1,950	168	522	369
10	103	515	1,020	e450	685	3,810	5,490	3,330	898	225	325	301
11	211	981	1,160	e390	673	3,150	5,740	1,300	1,100	1,400	263	193
12	179	638	1,600	e350	668	2,460	5,380	548	1,130	1,230	250	141
13	150	595	2,250	e320	645	1,890	4,900	820	1,510	1,060	239	133
14	126	580	4,640	e295	598	1,330	4,340	368	1,240	805	197	128
15	111	567	2,880	e270	4,150	655	4,120	597	1,690	381	99	127
16	214	585	2,620	e250	8,520	480	4,000	777	3,420	258	148	126
17	227	536	3,020	e230	9,100	426	3,930	1,840	3,480	244	256	133
18	190	671	2,400	e215	6,380	404	4,040	3,500	3,590	235	225	134
19	179	655	1,140	e205	3,260	358	4,230	3,090	5,050	231	181	101
20	288	624	1,120	e200	3,870	389	4,160	3,290	4,880	193	170	65
21	342	612	1,370	e245	4,060	484	4,160	2,010	4,350	150	157	111
22	333	730	1,930	e260	5,020	467	4,020	2,610	4,060	132	135	140
23	258	710	1,650	e230	5,420	321	3,300	1,790	3,890	167	120	508
24	308	689	1,520	e210	4,310	303	2,350	1,280	3,780	193	99	458
25	307	671	1,310	e190	4,410	309	1,740	972	1,220	429	94	269
26	318	660	1,960	e180	e4,200	291	1,310	658	283	322	89	202
27	310	536	1,920	e175	e4,250	306	830	441	177	213	58	209
28	604	368	1,390	e170	e4,200	249	459	376	214	135	43	211
29	1,260	335	1,010	224	---	333	264	413	254	80	41	288
30	1,090	330	801	680	---	379	191	496	248	228	308	323
31	687	---	642	1,040	---	446	---	506	---	233	514	---
TOTAL	8,920	17,494	43,630	17,270	86,159	55,740	84,137	39,333	53,298	10,161	13,801	15,226
MEAN	288	583	1,407	557	3,077	1,798	2,805	1,269	1,777	328	445	508
MAX	1,260	981	4,640	2,010	9,100	4,260	5,740	4,430	5,050	1,400	2,780	3,340
MIN	93	330	134	170	598	249	191	150	177	80	41	65
CFSM	0.54	1.09	2.62	1.04	5.73	3.35	5.22	2.36	3.31	0.61	0.83	0.95
IN.	0.62	1.21	3.02	1.20	5.97	3.86	5.83	2.72	3.69	0.70	0.96	1.05

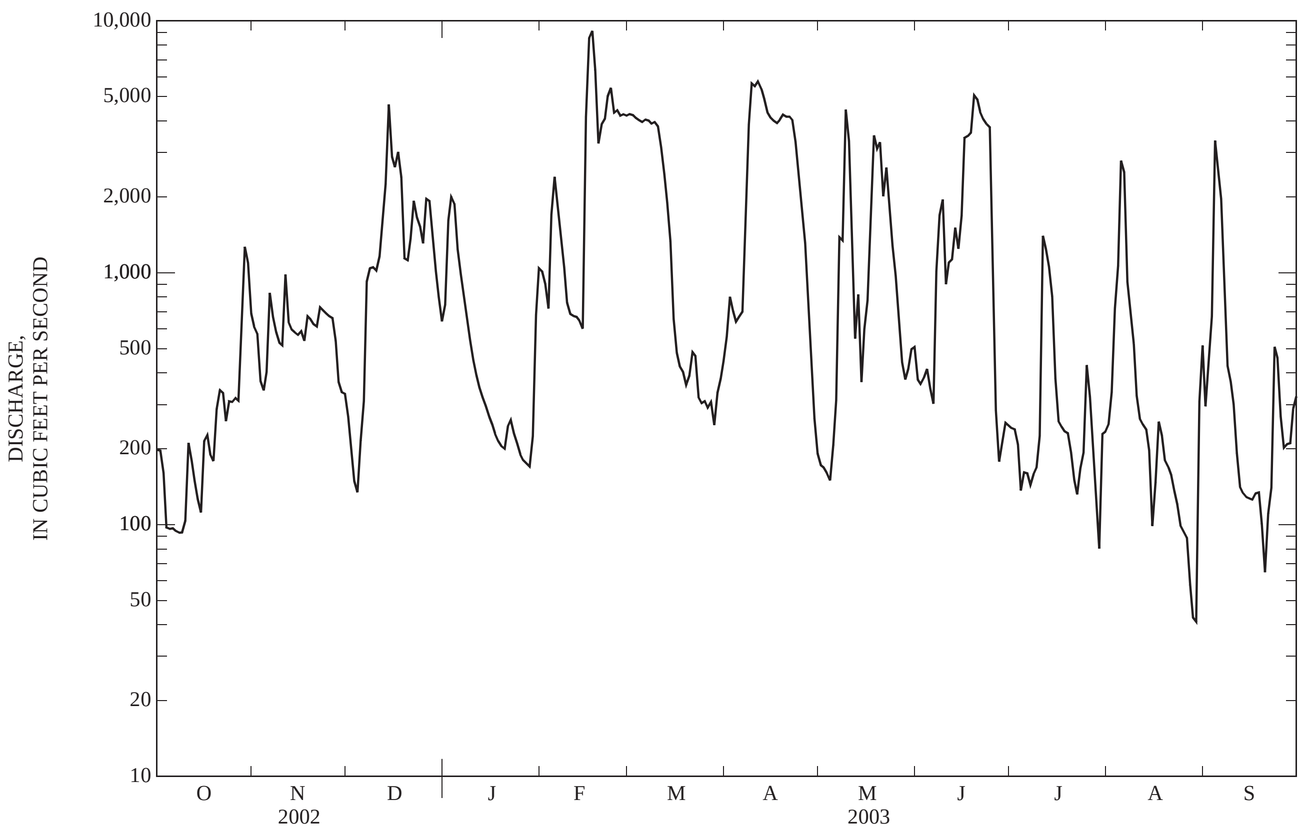
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	305	557	915	1,270	1,467	1,676	1,203	939	499	228	180	174
MAX	2,225	1,715	2,826	3,320	3,634	3,672	3,280	2,762	2,599	687	623	784
(WY)	(1990)	(1978)	(1973)	(1974)	(1994)	(1994)	(1994)	(1971)	(1989)	(1992)	(1992)	(1989)
MIN	47.5	23.8	45.5	56.8	270	241	98.7	57.9	49.1	43.6	33.9	45.9
(WY)	(1989)	(2002)	(1966)	(1981)	(1968)	(1988)	(1986)	(1986)	(1988)	(1988)	(2002)	(1987)

03281000 MIDDLE FORK KENTUCKY RIVER AT TALLEGA, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1961 - 2003	
ANNUAL TOTAL	292,417		445,169			
ANNUAL MEAN	801		1,220		781	
HIGHEST ANNUAL MEAN					1,492	1994
LOWEST ANNUAL MEAN					267	1988
HIGHEST DAILY MEAN	5,050	Mar 20	9,100	Feb 17	10,300	Feb 27, 1962
LOWEST DAILY MEAN	24	Sep 5	41	Aug 29	3.7	Nov 15, 2001
ANNUAL SEVEN-DAY MINIMUM	24	Sep 5	78	Aug 23	4.4	Nov 10, 2001
MAXIMUM PEAK FLOW			10,400	Feb 16	52,700	Jan 30, 1957
MAXIMUM PEAK STAGE			26.36	Feb 16	43.33	Jan 30, 1957
INSTANTANEOUS LOW FLOW					0.10	Oct 12, 1953
ANNUAL RUNOFF (CFSM)	1.49		2.27		1.45	
ANNUAL RUNOFF (INCHES)	20.26		30.84		19.77	
10 PERCENT EXCEEDS	2,910		4,010		2,520	
50 PERCENT EXCEEDS	308		540		298	
90 PERCENT EXCEEDS	28		148		63	

e Estimated



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^2.

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

GAGE.--Water-stage recorder with telemetry and crest-stage gages. Datum of gage is 819.37 ft above NGVD of 1929. Prior to September 15, 1975, nonrecording gage at same site and datum.

REMARKS.-- Records good except for those estimated, which are poor. Slight diversions by City of Manchester.

COOPERATION.--Kentucky River Authority.

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^3/s, 37.3 ft, discharge, 29,800 ft^3/s, and 33.5 ft, discharge, 21,500 ft^3/s, respectively, present site.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb 16	1600	*12,300	*27.11	Apr 11	0200	6,770	20.25
Feb 22	2300	4,970	17.44	Sep 4	1300	5,550	18.38

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	110	59	411	403	432	124	124	100	52	55	215
2	14	75	53	607	311	417	123	123	77	48	43	288
3	11	57	49	501	259	360	116	119	77	43	91	404
4	11	51	50	394	814	307	110	94	154	39	272	3,510
5	11	100	941	337	739	278	142	163	127	32	269	442
6	9.7	475	696	286	492	261	168	286	97	60	124	167
7	10	333	386	234	402	219	3,130	343	892	44	99	97
8	11	195	279	208	301	191	1,940	654	821	34	107	69
9	9.7	132	216	e170	245	178	3,960	430	382	42	e74	52
10	14	99	181	e150	e230	160	3,610	291	237	142	53	41
11	45	286	642	e130	e220	145	4,160	411	189	387	43	34
12	59	304	710	e109	e210	137	945	357	370	197	37	30
13	68	189	865	e96	203	131	562	229	274	170	31	26
14	39	132	3,100	e90	221	134	404	164	657	108	25	23
15	29	112	967	e83	2,850	118	322	448	1,810	73	21	23
16	66	148	536	e80	9,680	113	270	811	1,360	57	19	20
17	76	155	370	e74	4,660	109	288	575	2,840	47	66	18
18	48	155	280	e70	997	109	742	1,020	2,170	38	104	16
19	33	162	232	e66	619	106	580	641	2,580	31	44	15
20	28	161	651	e63	528	101	423	408	1,320	28	31	14
21	25	153	619	e79	470	94	337	733	655	24	24	13
22	21	144	439	e71	2,860	87	271	740	398	37	20	156
23	18	117	322	e62	2,710	79	215	468	252	104	17	267
24	15	98	339	e58	908	74	173	340	169	146	15	87
25	14	87	802	e56	618	71	155	243	121	75	13	53
26	16	80	671	e54	494	72	371	189	93	49	12	40
27	19	81	468	e53	423	74	304	153	91	36	10	37
28	307	72	356	e52	429	68	226	134	90	29	9.5	76
29	506	66	286	314	---	82	180	112	66	34	14	50
30	439	64	230	860	---	e140	149	118	57	36	66	38
31	187	---	195	542	---	123	---	102	---	39	196	---
TOTAL	2,178.4	4,393	15,990	6,360	33,296	4,970	24,500	11,023	18,526	2,281	2,004.5	6,321
MEAN	70.3	146	516	205	1,189	160	817	356	618	73.6	64.7	211
MAX	506	475	3,100	860	9,680	432	4,160	1,020	2,840	387	272	3,510
MIN	9.7	51	49	52	203	68	110	94	57	24	9.5	13
CFSM	0.43	0.90	3.16	1.26	7.30	0.98	5.01	2.18	3.79	0.45	0.40	1.29
IN.	0.50	1.00	3.65	1.45	7.60	1.13	5.59	2.52	4.23	0.52	0.46	1.44

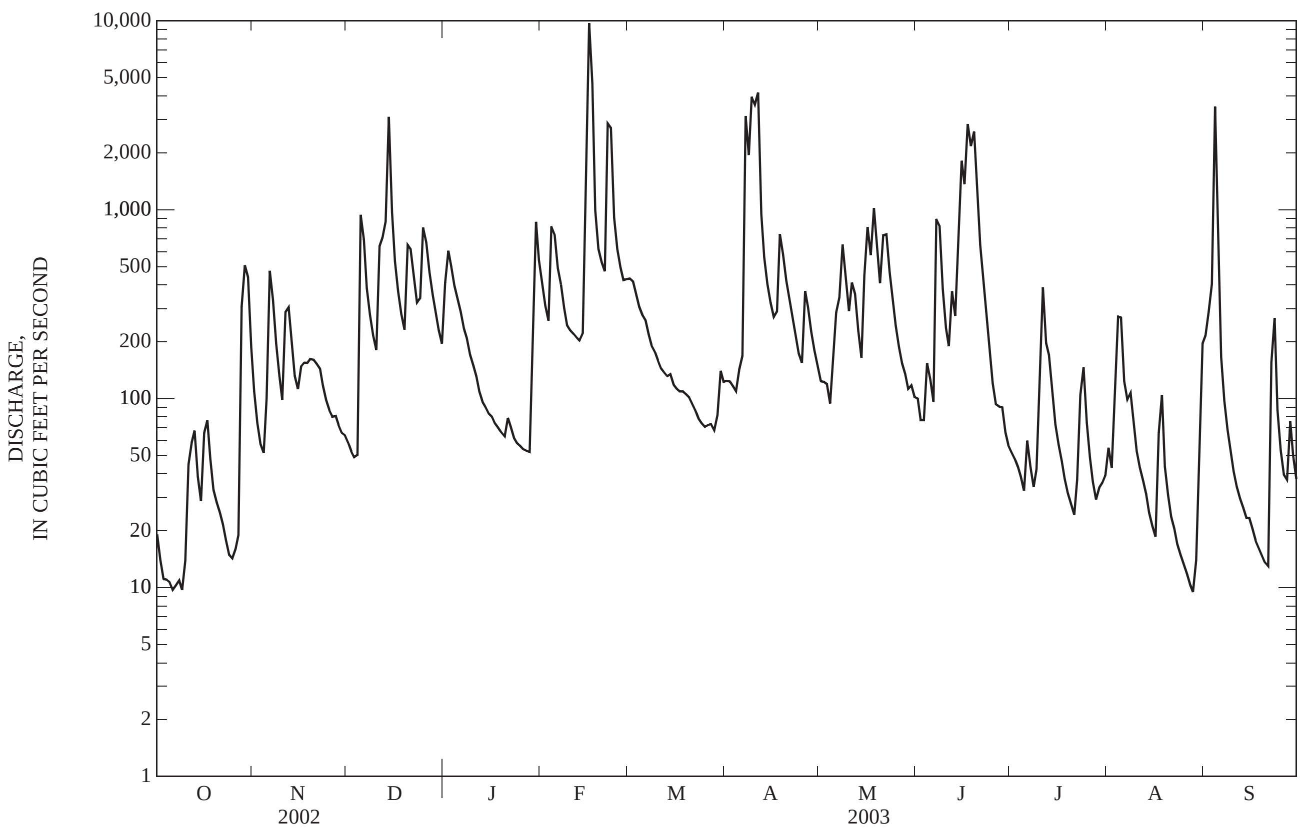
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	78.0	183	352	435	489	518	436	294	162	91.7	50.6	44.8
MAX	600	646	1,229	1,205	1,196	1,665	1,308	1,158	975	381	178	211
(WY)	(1990)	(1978)	(1991)	(1974)	(1972)	(1975)	(1998)	(1984)	(1989)	(1965)	(1977)	(2003)
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)

03281100 GOOSE CREEK AT MANCHESTER, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1965 - 2003	
ANNUAL TOTAL	87,054.4		131,842.9			
ANNUAL MEAN	239		361		260	
HIGHEST ANNUAL MEAN					456	1994
LOWEST ANNUAL MEAN					107	1988
HIGHEST DAILY MEAN	7,450	Mar 18	9,680	Feb 16	13,700	May 7, 1984
LOWEST DAILY MEAN	2.6	Sep 6	9.5	Aug 28	0.00	Oct 8, 1980
ANNUAL SEVEN-DAY MINIMUM	3.0	Sep 6	10	Oct 3	0.16	Oct 4, 1980
MAXIMUM PEAK FLOW			12,300	Feb 16	19,200	May 7, 1984
MAXIMUM PEAK STAGE			27.11	Feb 16	32.85	May 7, 1984
INSTANTANEOUS LOW FLOW					0.00	Oct 8, 1980
ANNUAL RUNOFF (CFSM)	1.46		2.22		1.60	
ANNUAL RUNOFF (INCHES)	19.87		30.09		21.68	
10 PERCENT EXCEEDS	509		702		557	
50 PERCENT EXCEEDS	72		134		87	
90 PERCENT EXCEEDS	6.0		25		6.1	

e Estimated



03281500 SOUTH FORK KENTUCKY RIVER AT BOONEVILLE, KY

LOCATION.--Lat 37°28'47", long 83°40'31", Owsley County, Hydrologic Unit 05100203, on right bank 100 ft downstream from Buck Creek, 350 ft downstream from bridge on State Highway 30 at Booneville, 0.3 mi downstream from Meadow Creek, and at mile 11.7.

DRAINAGE AREA.--722 mi^2.

PERIOD OF RECORD.--March 1925 to September 1931, October 1939 to current year. Monthly discharge only for October 1939, published in WSP 1305.

REVISED RECORDS.--WSP 893: 1929(M). WSP 1335: WSP 1555: Drainage area.

GAGE.--Water-stage recorder with telemetry. Datum of gage is 642.49 ft above NGVD of 1929. See WDR KY-92-1 for history of changes prior to Nov. 27, 1929. Nov. 28, 1929 to July 26, 2000, recording gage 500 ft downstream at present site and datum.

REMARKS.--Records fair except for those estimated, which are poor. Diversions by City of Booneville.

COOPERATION.--U.S. Army Corps of Engineers, Louisville District and Kentucky River Authority.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 14,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb 17	0700	*34,500	*38.63	Apr 11	1300	19,100	28.29
Feb 23	1100	15,100	24.66				

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	159	708	285	1,090	1,710	1,940	706	538	399	287	795	783
2	116	479	262	2,350	1,390	1,880	694	512	362	266	611	884
3	89	355	243	2,310	1,150	1,700	646	602	334	245	2,370	931
4	70	295	228	1,950	2,710	1,460	595	562	550	226	6,110	7,200
5	60	380	482	1,640	4,180	1,300	622	575	621	223	5,210	8,050
6	51	1,630	3,130	1,430	2,610	1,200	739	1,810	468	207	2,190	1,880
7	42	1,700	1,620	1,190	1,960	1,080	5,610	1,640	1,690	190	1,610	1,130
8	36	1,030	1,160	1,020	1,550	918	9,820	3,640	3,890	272	2,020	760
9	32	713	1,000	e820	1,220	827	11,500	5,710	2,120	203	1,210	548
10	45	556	874	e720	1,120	753	14,100	2,340	1,250	598	770	421
11	218	1,100	1,890	e620	1,080	672	17,800	1,560	2,050	2,310	531	353
12	279	1,640	3,850	e540	1,020	625	9,050	1,810	3,000	1,650	437	278
13	305	1,060	3,210	e450	946	603	3,770	1,190	3,230	2,010	350	236
14	252	737	10,600	e410	908	609	2,330	852	3,140	1,300	286	206
15	241	599	7,270	e380	7,480	580	1,760	943	7,790	814	240	189
16	254	756	3,280	e360	24,000	528	1,440	3,210	8,540	530	206	173
17	299	880	2,050	e340	32,400	506	1,280	2,910	9,890	386	226	157
18	294	828	1,510	e320	14,500	494	2,220	4,570	11,600	306	393	140
19	235	772	1,200	e300	4,320	490	2,740	3,930	8,990	253	457	125
20	185	756	2,100	e290	2,730	468	2,080	2,620	7,730	217	282	113
21	160	709	3,420	e275	2,260	465	1,810	2,050	3,530	191	211	105
22	145	668	2,360	e260	6,270	432	1,500	3,190	2,000	181	181	185
23	130	595	1,700	e250	13,900	394	1,210	2,160	1,370	264	160	1,200
24	116	503	1,390	e240	6,680	366	990	1,530	999	438	140	932
25	106	437	2,400	e230	3,630	348	853	1,160	741	550	126	465
26	104	398	3,230	e220	2,660	342	890	906	567	325	116	313
27	97	384	2,350	e215	2,180	344	1,170	743	471	238	109	269
28	493	363	1,780	e210	2,020	338	902	667	432	208	99	313
29	2,520	331	1,430	312	---	364	742	595	408	1,080	94	410
30	3,370	306	1,170	1,960	---	502	637	525	328	644	126	319
31	1,310	---	974	2,310	---	676	---	482	---	357	422	---
TOTAL	11,813	21,668	68,448	25,012	148,584	23,204	100,206	55,532	88,490	16,969	28,088	29,068
MEAN	381	722	2,208	807	5,307	749	3,340	1,791	2,950	547	906	969
MAX	3,370	1,700	10,600	2,350	32,400	1,940	17,800	5,710	11,600	2,310	6,110	8,050
MIN	32	295	228	210	908	338	595	482	328	181	94	105
CFSM	0.53	1.00	3.06	1.12	7.35	1.04	4.63	2.48	4.09	0.76	1.25	1.34
IN.	0.61	1.12	3.53	1.29	7.66	1.20	5.16	2.86	4.56	0.87	1.45	1.50

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1925 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	209	639	1,323	1,796	2,123	2,279	1,725	1,113	619	395	262	153
MAX	2,843	2,380	4,935	5,461	5,905	7,400	4,703	5,130	2,950	2,666	1,700	969
(WY)	(1990)	(1974)	(1991)	(1974)	(1956)	(1975)	(1998)	(1984)	(2003)	(1941)	(1942)	(2003)
MIN	0.084	0.32	12.1	104	178	568	222	119	36.7	3.67	4.56	0.68
(WY)	(1954)	(1954)	(1954)	(1981)	(1941)	(1988)	(1963)	(1941)	(1966)	(1944)	(1930)	(1930)

03281500 SOUTH FORK KENTUCKY RIVER AT BOONEVILLE, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1925 - 2003	
ANNUAL TOTAL	395,714.9		617,082			
ANNUAL MEAN	1,084		1,691		1,052	
HIGHEST ANNUAL MEAN					1,808	1994
LOWEST ANNUAL MEAN					413	1988
HIGHEST DAILY MEAN	19,100	Mar 19	32,400	Feb 17	51,300	Jan 30, 1957
LOWEST DAILY MEAN	4.7	Sep 11	32	Oct 9	0.00	Oct 11, 1953
ANNUAL SEVEN-DAY MINIMUM	5.8	Sep 7	48	Oct 4	0.00	Oct 11, 1953
MAXIMUM PEAK FLOW			34,500	Feb 17	66,100	Jan 30, 1957
MAXIMUM PEAK STAGE			38.63	Feb 17	43.40	Jan 30, 1957
INSTANTANEOUS LOW FLOW					0.00	Oct 11, 1953
ANNUAL RUNOFF (CFSM)	1.50		2.34		1.46	
ANNUAL RUNOFF (INCHES)	20.39		31.79		19.79	
10 PERCENT EXCEEDS	2,430		3,460		2,400	
50 PERCENT EXCEEDS	325		709		354	
90 PERCENT EXCEEDS	31		190		27	

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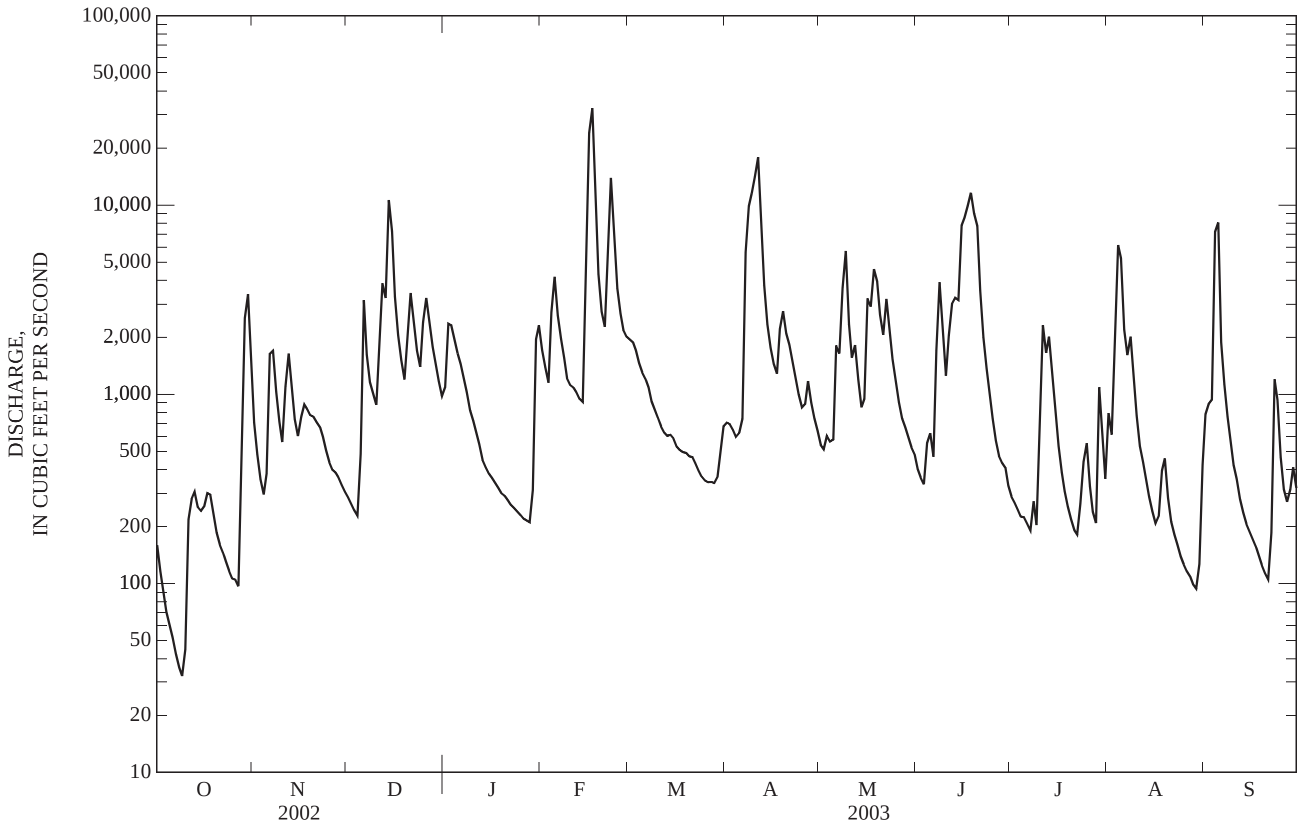


03282000 KENTUCKY RIVER AT LOCK 14, AT HEIDELBERG, KY

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^2.

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 with telemetry. Datum of gage is 626.66 ft, Ohio River datum. Prior to September 2, 1939, nonrecording gage at lock 14 at same datum.

REMARKS.--Records fair except for those below 150 ft^3/s and for those estimated, which are poor. 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.

COOPERATION.--U.S. Army Corps of Engineers, louisville District and Kentucky River Authority.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	831	3,220	1,250	3,060	5,200	13,000	2,510	1,830	2,350	1,440	1,840	1,910
2	653	2,210	1,060	6,960	4,610	12,700	2,940	1,790	1,860	1,520	2,060	2,410
3	556	1,650	903	8,170	3,790	11,900	2,630	2,100	1,750	1,400	3,790	2,060
4	434	1,340	791	7,110	5,860	10,300	2,520	1,890	1,990	1,200	9,360	11,900
5	376	1,360	931	5,610	11,600	9,130	2,390	2,270	2,370	1,040	14,100	25,100
6	343	4,060	e4,000	4,580	9,300	8,670	2,690	4,670	2,120	1,090	9,870	9,580
7	326	5,080	5,410	3,870	7,240	8,300	9,260	5,980	5,690	948	5,390	4,490
8	308	3,530	4,290	3,270	5,520	7,630	30,100	7,640	13,400	1,020	4,510	2,490
9	300	2,590	3,780	2,940	4,160	7,170	34,500	19,300	11,600	1,280	3,450	1,810
10	422	2,350	3,450	2,630	3,570	6,780	43,200	19,700	6,740	1,280	2,400	1,470
11	1,120	4,870	4,520	2,290	3,400	5,740	46,800	10,800	4,550	4,450	1,740	1,160
12	1,410	5,680	10,600	1,890	3,260	4,650	41,700	6,810	9,490	5,890	1,560	916
13	1,290	4,440	11,200	1,610	3,060	3,870	28,400	4,910	9,260	5,160	1,410	779
14	1,130	3,230	28,400	1,480	2,880	3,340	17,500	3,220	10,500	5,150	1,230	692
15	871	2,590	24,800	1,370	21,200	2,790	13,600	3,080	16,900	3,160	979	654
16	1,020	3,030	14,300	1,220	e55,700	2,210	11,600	6,910	25,600	2,020	815	621
17	1,230	3,310	10,100	1,230	e74,000	2,000	10,600	9,910	29,300	1,610	939	605
18	1,470	3,230	7,490	987	e60,200	1,890	11,400	18,400	32,900	1,370	1,270	630
19	1,310	3,250	4,860	1,000	29,900	1,800	16,600	18,300	33,900	1,190	1,360	581
20	1,110	3,090	5,340	1,150	12,800	1,770	14,700	14,100	29,400	1,010	1,480	506
21	1,060	2,820	9,770	1,210	10,500	1,890	12,500	9,760	19,200	839	1,080	500
22	966	2,730	9,050	1,080	16,700	1,810	11,500	12,000	13,200	747	825	621
23	842	2,620	6,770	968	39,500	1,610	9,340	11,900	10,500	909	776	1,700
24	775	2,420	5,200	650	34,600	1,420	7,100	7,880	9,060	1,100	643	2,560
25	742	2,190	5,930	673	21,900	1,390	5,390	5,420	5,330	1,810	571	1,760
26	706	2,000	9,070	772	16,700	1,310	4,540	3,900	2,740	1,460	524	1,290
27	699	1,840	8,200	778	14,300	1,320	4,400	3,000	2,040	1,110	472	1,010
28	1,390	1,590	6,290	781	13,100	1,250	3,530	2,480	1,840	833	412	1,020
29	6,610	1,410	4,780	952	---	1,310	2,640	2,390	1,800	1,220	386	1,470
30	12,000	1,350	3,870	2,770	---	1,570	2,130	2,660	1,600	1,650	435	1,380
31	6,430	---	3,180	5,740	---	2,070	---	2,770	---	1,950	1,780	---
TOTAL	48,730	85,080	219,585	78,801	494,550	142,590	408,710	227,770	318,980	56,856	77,457	83,675
MEAN	1,572	2,836	7,083	2,542	17,660	4,600	13,620	7,347	10,630	1,834	2,499	2,789
MAX	12,000	5,680	28,400	8,170	74,000	13,000	46,800	19,700	33,900	5,890	14,100	25,100
MIN	300	1,340	791	650	2,880	1,250	2,130	1,790	1,600	747	386	500
CFSM	0.59	1.07	2.67	0.96	6.65	1.73	5.13	2.77	4.00	0.69	0.94	1.05
IN.	0.68	1.19	3.07	1.10	6.92	2.00	5.72	3.19	4.47	0.80	1.08	1.17

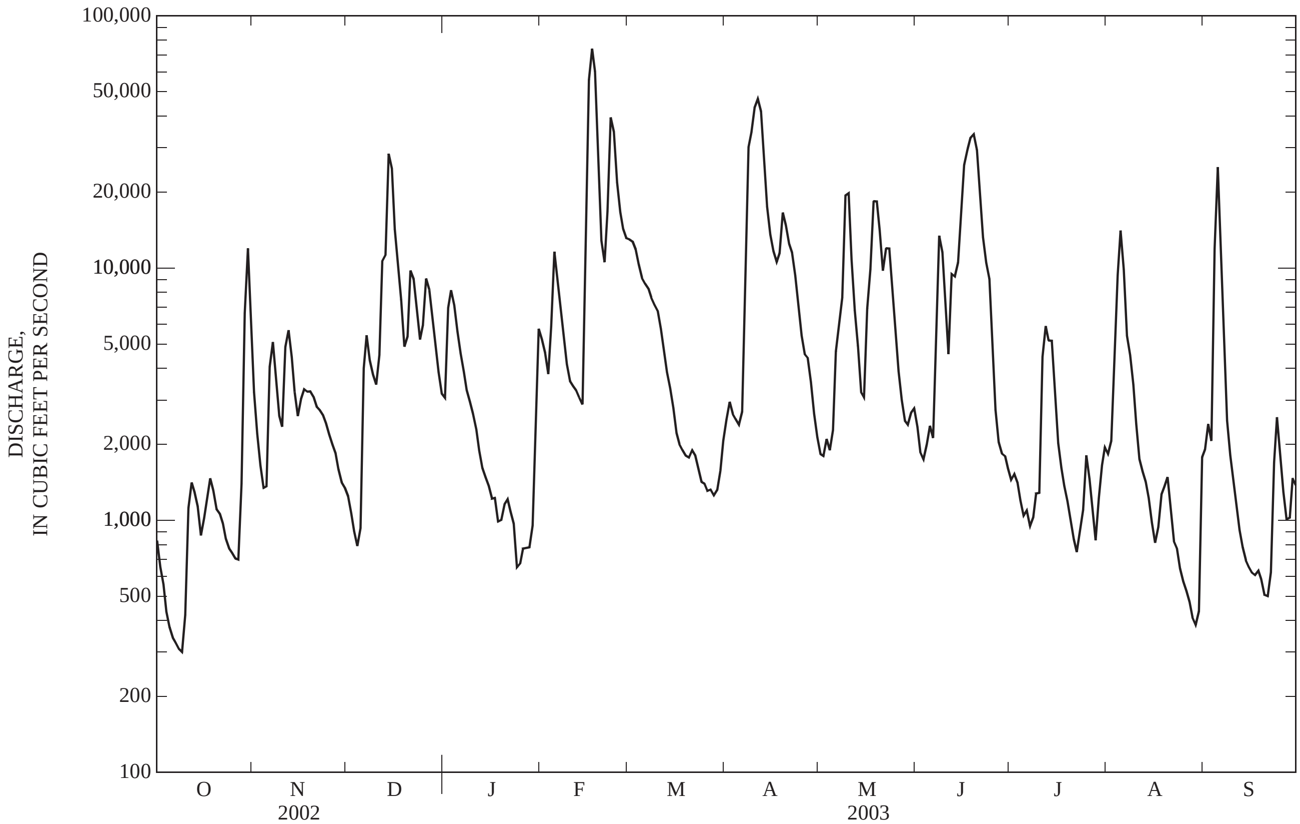
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1977 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1,269	2,496	4,612	5,670	7,350	7,509	6,306	4,963	2,833	1,253	1,022	778
MAX	10,380	7,006	14,850	14,010	17,660	18,260	15,260	16,010	10,630	3,320	3,006	3,680
(WY)	(1990)	(1978)	(1991)	(1994)	(2003)	(1994)	(1998)	(1984)	(2003)	(1992)	(1977)	(1989)
MIN	232	263	582	362	2,345	1,791	855	910	247	206	154	70.1
(WY)	(2000)	(2002)	(1981)	(1981)	(1988)	(1988)	(1986)	(1986)	(1988)	(1988)	(1988)	(1999)

03282000 KENTUCKY RIVER AT LOCK 14, AT HEIDELBERG, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1977 - 2003	
ANNUAL TOTAL	1,547,887		2,242,784			
ANNUAL MEAN	4,241		6,145		3,820	
HIGHEST ANNUAL MEAN					6,973	1994
LOWEST ANNUAL MEAN					1,461	1988
HIGHEST DAILY MEAN	44,300	Mar 19	74,000	Feb 17	85,900	May 8, 1984
LOWEST DAILY MEAN	79	Sep 13	300	Oct 9	45	Jul 10, 1988
ANNUAL SEVEN-DAY MINIMUM	92	Sep 8	358	Oct 4	51	Sep 11, 1999
MAXIMUM PEAK FLOW			76,500	Feb 17	120,000	Feb 4, 1939
MAXIMUM PEAK STAGE			27.10	Feb 17	35.60	Feb 4, 1939
INSTANTANEOUS LOW FLOW					4.0	Oct 20, 1930
ANNUAL RUNOFF (CFSM)	1.60		2.31		1.44	
ANNUAL RUNOFF (INCHES)	21.67		31.40		19.53	
10 PERCENT EXCEEDS	10,900		14,100		9,740	
50 PERCENT EXCEEDS	1,470		2,640		1,570	
90 PERCENT EXCEEDS	233		780		279	

e Estimated



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^2.

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

GAGE.--Water-stage recorder with telemetry and crest-stage gages. Datum of gage is 704.53 ft above NGVD of 1929.

REMARKS.--Records good except for those estimated, which are poor.

COOPERATION.--Kentucky Natural Resources and Environmental Protection Cabinet.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 29	1800	2,660	9.25	Jun 14	2015	2,290	8.67
Dec 14	0030	2,550	9.07	Jun 15	2230	3,130	9.85
Feb 16	1330	7,780	14.44	Jun 16	1830	2,260	8.62
Feb 22	2015	3,210	9.96	Jul 12	1745	3,010	9.69
Apr 10	1515	2,040	8.26	Aug 3	1145	2,760	9.34
May 9	0430	4,550	11.58	Aug 4	1115	*9,740	*15.94
May 15	1945	3,970	10.93				

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.7	106	28	162	89	209	52	35	23	15	99	87
2	7.2	70	24	205	82	191	49	38	17	12	69	e50
3	5.2	51	22	210	79	162	46	94	27	9.2	995	e66
4	5.9	45	20	191	353	138	43	48	51	7.0	3,120	e240
5	9.4	146	49	175	264	124	57	149	32	8.6	568	e190
6	11	496	58	151	199	111	51	166	21	32	246	e125
7	11	229	50	123	175	91	528	119	512	9.2	291	e82
8	10	143	74	e100	131	78	351	111	258	5.4	295	e56
9	9.2	101	91	e86	115	70	846	1,350	150	4.7	165	e37
10	40	93	93	e73	120	59	1,320	318	92	32	112	e25
11	173	419	388	e63	115	53	942	201	93	113	86	e16
12	91	202	384	e53	114	49	449	129	191	538	208	e17
13	58	135	613	e49	100	48	275	85	450	270	109	e17
14	44	98	1,370	e46	106	45	197	61	700	111	72	e17
15	32	99	474	e43	1,990	40	153	771	1,010	61	49	e18
16	64	247	294	e41	5,010	38	123	585	1,350	38	38	e18
17	60	200	211	e39	1,200	37	198	342	653	24	36	e19
18	41	151	167	e37	463	38	383	408	339	16	32	e18
19	33	131	140	e36	300	38	258	265	269	12	21	e17
20	32	110	338	e35	234	39	194	186	172	9.3	16	e17
21	33	94	258	e38	206	38	275	151	114	7.2	13	e16
22	28	87	204	e33	1,390	32	214	118	79	8.6	10	e22
23	22	67	160	e29	970	28	167	93	56	76	8.7	e37
24	18	55	162	e27	428	25	132	74	40	74	7.5	e27
25	17	47	251	e26	299	24	113	55	29	31	5.3	e19
26	21	43	215	e24	243	26	107	46	22	17	3.6	e13
27	21	47	185	e23	216	26	78	39	24	11	2.6	e14
28	365	37	161	e22	233	24	58	45	21	33	1.9	e23
29	1,080	33	137	56	---	45	49	40	14	240	1.5	e22
30	507	33	115	91	---	60	42	36	11	86	5.8	e19
31	180	---	100	85	---	53	---	29	---	94	107	---
TOTAL	3,038.6	3,815	6,836	2,372	15,224	2,039	7,750	6,187	6,820	2,005.2	6,793.9	1,344
MEAN	98.0	127	221	76.5	544	65.8	258	200	227	64.7	219	44.8
MAX	1,080	496	1,370	210	5,010	209	1,320	1,350	1,350	538	3,120	240
MIN	5.2	33	20	22	79	24	42	29	11	4.7	1.5	13
CFSM	1.27	1.65	2.85	0.99	7.03	0.85	3.34	2.58	2.94	0.84	2.84	0.58
IN.	1.46	1.84	3.29	1.14	7.33	0.98	3.73	2.98	3.28	0.96	3.27	0.65

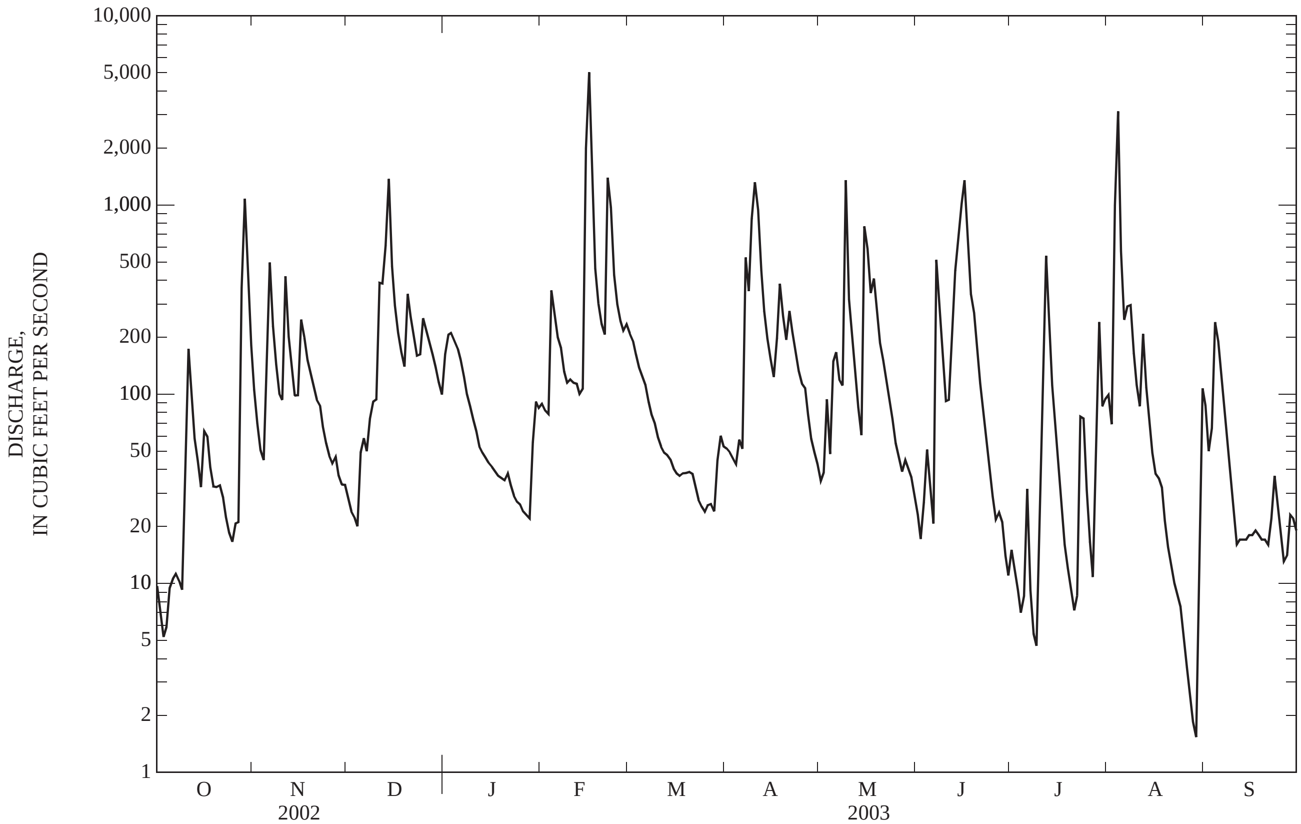
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	31.2	67.2	110	197	224	249	193	148	103	26.3	32.0	15.7
MAX	108	246	221	403	544	540	441	345	304	64.7	219	59.5
(WY)	(1997)	(1997)	(2003)	(1994)	(2003)	(1994)	(1998)	(1995)	(1997)	(2003)	(2003)	(1996)
MIN	1.22	2.70	16.8	30.3	76.4	65.8	49.6	22.4	2.20	1.22	0.11	0.30
(WY)	(2001)	(2001)	(2000)	(2000)	(2002)	(2003)	(1997)	(2001)	(1999)	(1999)	(1999)	(1999)

03282040 STURGEON CREEK AT CRESSMONT, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1993 - 2003	
ANNUAL TOTAL	50,143.06		64,224.7			
ANNUAL MEAN	137		176		116	
HIGHEST ANNUAL MEAN					195	1994
LOWEST ANNUAL MEAN					53.4	2000
HIGHEST DAILY MEAN	2,090	Mar 20	5,010	Feb 16	5,010	Feb 16, 2003
LOWEST DAILY MEAN	0.02	Sep 10	1.5	Aug 29	0.00	Aug 18, 1999
ANNUAL SEVEN-DAY MINIMUM	0.03	Sep 7	4.0	Aug 24	0.00	Aug 18, 1999
MAXIMUM PEAK FLOW			9,720	Aug 4	9,720	Aug 4, 2003
MAXIMUM PEAK STAGE			15.94	Aug 4	15.94	Aug 4, 2003
INSTANTANEOUS LOW FLOW					0.00	Aug 18, 1999
ANNUAL RUNOFF (CFSM)	1.78		2.28		1.50	
ANNUAL RUNOFF (INCHES)	24.13		30.91		20.34	
10 PERCENT EXCEEDS	360		372		263	
50 PERCENT EXCEEDS	44		70		39	
90 PERCENT EXCEEDS	1.8		16		1.8	

e Estimated



03282290 KENTUCKY RIVER AT LOCK 11 NEAR COLLEGE HILL, KY

LOCATION.--Lat 37°47'02", long 84°06'12", Estill County, Hydrologic Unit 05100205, on upstream right bank of Lock 11, 0.6 mi downstream from Flint Creek, 1.0 mi east of College Hill, 1.0 mi upstream from Lick Run, and at mile 201.

DRAINAGE AREA.--3,219 mi^2 of which 26.1 mi^2 is non-contributing.

PERIOD OF RECORD.--June 2002 to current year.

GAGE.--Water-stage recorder with telemetry. Datum of gage is 575.60 feet above NGVD of 1929.

REMARKS.--Records good except for periods of estimated record which are fair. 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.

COOPERATION.--Kentucky River Authority.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,110	4,870	1,520	4,090	5,670	11,500	2,590	2,420	2,980	1,580	2,530	2,310
2	840	3,100	1,370	5,880	5,290	11,300	3,100	2,300	2,410	1,500	2,140	2,470
3	694	2,290	1,210	8,190	4,600	10,800	3,120	2,490	2,260	1,510	2,900	3,000
4	594	1,780	1,100	7,760	5,410	9,800	2,950	2,470	2,380	1,340	8,630	4,820
5	488	1,860	1,110	6,700	9,860	8,650	2,850	6,770	2,630	1,150	14,500	19,500
6	428	4,870	2,030	5,630	9,700	8,090	3,000	9,790	2,670	1,100	10,500	12,200
7	376	6,310	4,850	4,890	8,010	7,790	5,990	6,870	12,700	1,120	6,970	6,030
8	353	5,000	4,850	4,220	6,520	7,290	19,900	6,890	15,100	998	5,400	3,380
9	337	3,620	4,220	3,740	5,270	6,800	25,400	19,900	12,400	1,110	4,390	2,240
10	1,190	3,770	3,890	3,370	4,500	6,540	30,500	19,000	8,680	1,560	3,350	1,730
11	4,130	7,810	e4,900	2,970	4,190	6,020	33,700	13,000	6,110	2,470	2,450	1,390
12	2,530	7,740	e8,900	2,570	4,020	5,220	34,900	8,030	8,350	5,600	2,080	1,120
13	1,680	5,960	e11,500	2,150	3,810	4,510	29,600	5,960	8,490	6,020	1,800	939
14	1,380	4,500	e23,000	1,940	3,620	3,950	17,900	4,560	12,300	5,350	1,500	830
15	1,100	3,530	e26,000	1,780	17,500	3,370	12,500	3,410	19,200	4,110	1,290	744
16	1,080	4,100	e18,000	1,620	39,400	2,770	10,600	6,170	22,200	3,120	1,280	684
17	1,290	4,500	e11,500	1,540	51,900	2,490	9,790	8,340	24,600	2,060	1,010	648
18	1,370	4,200	e8,800	1,430	55,900	2,330	11,800	13,800	24,400	1,620	1,150	636
19	1,380	3,940	e6,800	1,290	52,900	2,420	13,100	15,800	26,300	1,340	1,240	632
20	1,220	3,770	e6,400	1,320	36,400	3,140	13,500	13,200	25,200	1,150	1,390	587
21	1,120	3,450	e8,600	1,430	14,500	2,590	12,000	10,500	18,800	993	1,270	536
22	1,050	3,250	e9,400	1,400	15,900	2,470	11,300	9,220	12,400	860	985	617
23	954	3,120	e7,800	1,280	27,800	2,250	9,550	10,900	9,700	936	828	1,170
24	837	2,890	6,250	1,080	30,400	1,980	7,670	8,430	8,280	1,220	748	2,340
25	801	2,630	6,260	925	23,400	1,840	6,240	6,210	6,620	1,440	654	2,260
26	768	2,410	7,950	945	15,600	1,760	5,290	4,780	3,750	1,670	589	1,660
27	745	2,250	8,480	1,000	13,100	1,700	4,760	3,840	2,520	1,310	541	1,380
28	1,190	2,030	7,200	1,000	12,000	1,650	4,380	3,160	2,080	1,020	485	1,360
29	5,840	1,770	5,850	1,240	---	1,670	3,490	3,070	1,910	1,350	447	1,360
30	13,300	1,600	4,890	2,290	---	1,920	2,810	3,130	1,770	1,880	641	1,590
31	9,050	---	4,110	4,960	---	2,220	---	3,160	---	2,110	1,180	---
TOTAL	59,225	112,920	228,740	90,630	487,170	146,830	354,280	237,570	309,190	60,597	84,868	80,163
MEAN	1,910	3,764	7,379	2,924	17,400	4,736	11,810	7,664	10,310	1,955	2,738	2,672
MAX	13,300	7,810	26,000	8,190	55,900	11,500	34,900	19,900	26,300	6,020	14,500	19,500
MIN	337	1,600	1,100	925	3,620	1,650	2,590	2,300	1,770	860	447	536

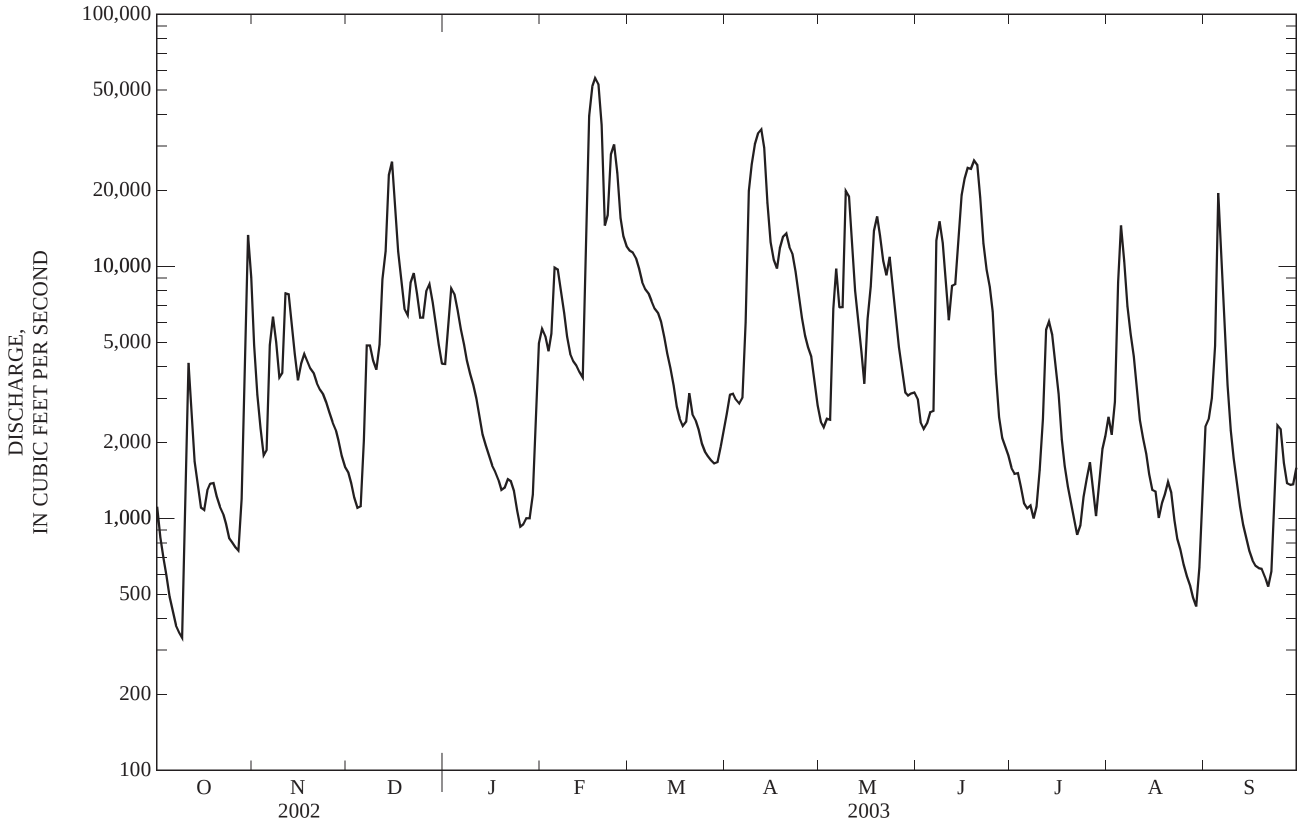
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2002 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1,910	3,764	7,379	2,924	17,400	4,736	11,810	7,664	10,310	1,541	1,518	1,550
MAX	1,910	3,764	7,379	2,924	17,400	4,736	11,810	7,664	10,310	1,955	2,738	2,672
(WY)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)
MIN	1,910	3,764	7,379	2,924	17,400	4,736	11,810	7,664	10,310	1,126	298	427
(WY)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2002)	(2002)	(2002)

03282290 KENTUCKY RIVER AT LOCK 11 NEAR COLLEGE HILL, KY—Continued

SUMMARY STATISTICS	FOR 2003 WATER YEAR		WATER YEARS 2002 - 2003	
ANNUAL TOTAL	83			
ANNUAL MEAN	70		6,170	
HIGHEST ANNUAL MEAN			6,170	2003
LOWEST ANNUAL MEAN			6,170	2003
HIGHEST DAILY MEAN	00	Feb 18	55,900	Feb 18, 2003
LOWEST DAILY MEAN	37	Oct 9	118	Sep 12, 2002
ANNUAL SEVEN-DAY MINIMUM	67	Oct 3	137	Sep 8, 2002
MAXIMUM PEAK FLOW	00	Feb 18	56,500	Feb 18, 2003
MAXIMUM PEAK STAGE	35.06	Feb 18	35.06	Feb 18, 2003
10 PERCENT EXCEEDS	00		13,600	
50 PERCENT EXCEEDS	50		3,250	
90 PERCENT EXCEEDS	90		990	

e Estimated



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^2.

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

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

GAGE.--Water-stage recorder with telemetry, crest-stage gage, and concrete control. Datum of gage is 870.11 ft NGVD of 1929.

REMARKS.--Records good except for daily discharges below 2.0 ft^3/s and for those estimated, which are poor.

Cooperation.--Kentucky Natural Resources and Environmental Protection Cabinet.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,100 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 14	0915	1,340	5.74	Feb 16	2130	*4,850	*14.50

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.2	63	36	112	56	139	56	46	45	15	6.2	8.5
2	2.0	44	35	193	59	129	55	75	39	14	6.2	8.8
3	1.4	37	32	171	56	114	51	99	38	13	12	11
4	1.4	31	24	146	174	96	49	66	40	11	55	60
5	1.1	66	24	124	196	90	48	287	44	9.5	51	50
6	1.0	302	29	e105	128	84	50	480	42	8.9	35	25
7	1.0	146	26	e86	105	71	319	240	628	8.5	26	16
8	0.88	86	26	e75	81	63	376	152	422	7.8	20	11
9	0.68	62	30	e64	66	57	744	334	211	7.1	41	9.2
10	26	273	33	e56	e60	51	637	392	116	7.0	32	7.8
11	107	657	117	e48	e54	48	444	297	87	9.7	90	6.6
12	52	294	260	e42	e51	46	319	180	154	14	178	6.8
13	25	148	318	e38	e48	47	225	111	146	21	45	7.5
14	26	95	1,230	e35	e60	52	158	79	220	20	27	7.6
15	16	78	519	e33	1,270	45	122	93	308	14	19	8.2
16	26	156	291	e31	3,510	44	100	232	458	20	16	9.1
17	36	148	188	e30	2,670	44	90	164	281	26	15	9.7
18	23	115	138	e28	551	43	150	805	208	19	11	9.1
19	16	97	110	e27	317	43	144	494	148	13	10	9.0
20	12	85	222	e26	228	46	121	268	130	9.8	9.0	8.9
21	14	74	214	e25	189	55	201	214	89	8.4	7.7	8.9
22	12	81	160	e24	490	49	161	161	63	7.5	7.1	9.9
23	10	72	118	e23	725	45	121	122	48	8.0	7.0	20
24	8.7	65	103	e22	371	44	93	96	40	10	6.2	13
25	8.1	58	137	e21	265	42	84	74	36	9.9	5.0	7.1
26	7.4	52	127	e20	207	40	86	60	29	8.8	4.7	4.3
27	7.6	51	113	e19	172	39	71	51	23	7.5	3.7	4.8
28	41	44	101	e18	162	38	58	49	22	6.1	3.4	12
29	280	41	90	22	---	38	53	64	20	5.6	3.2	12
30	441	38	77	42	---	41	47	69	17	6.0	5.5	8.5
31	115	---	69	56	---	53	---	53	---	6.2	8.3	---
TOTAL	1,322.46	3,559	4,997	1,762	12,321	1,836	5,233	5,907	4,152	352.3	766.2	390.3
MEAN	42.7	119	161	56.8	440	59.2	174	191	138	11.4	24.7	13.0
MAX	441	657	1,230	193	3,510	139	744	805	628	26	178	60
MIN	0.68	31	24	18	48	38	47	46	17	5.6	3.2	4.3
CFSM	0.65	1.80	2.45	0.86	6.69	0.90	2.65	2.90	2.10	0.17	0.38	0.20
IN.	0.75	2.01	2.83	1.00	6.97	1.04	2.96	3.34	2.35	0.20	0.43	0.22

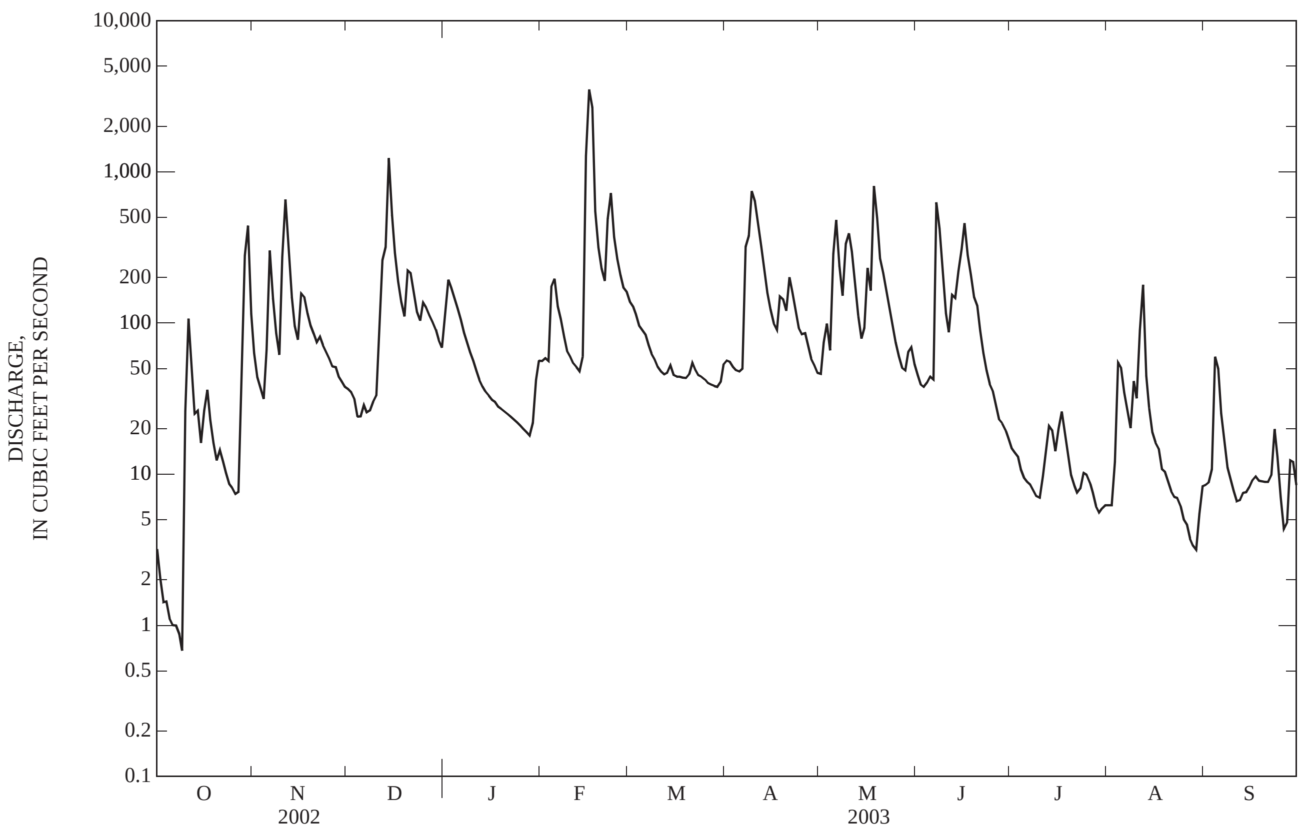
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	16.2	49.4	110	128	178	190	154	102	48.2	33.0	25.0	13.4
MAX	138	227	555	357	555	523	472	318	351	159	141	180
(WY)	(1990)	(1986)	(1979)	(1974)	(1989)	(1955)	(1972)	(1983)	(1997)	(2001)	(1974)	(1974)
MIN	0.22	0.54	2.76	17.5	27.6	49.1	16.6	13.9	1.19	0.99	0.27	0.048
(WY)	(1964)	(1956)	(1964)	(1981)	(1968)	(1969)	(1986)	(1986)	(1988)	(1999)	(1957)	(1999)

03282500 RED RIVER NEAR HAZEL GREEN, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1954 - 2003	
ANNUAL TOTAL	37,246.13		42,598.26			
ANNUAL MEAN	102		117		87.1	
HIGHEST ANNUAL MEAN					153	1994
LOWEST ANNUAL MEAN					39.6	1969
HIGHEST DAILY MEAN	1,820	Mar 20	3,510	Feb 16	6,170	Dec 9, 1978
LOWEST DAILY MEAN	0.00	Sep 5	0.68	Oct 9	0.00	Sep 14, 1954
ANNUAL SEVEN-DAY MINIMUM	0.00	Sep 5	1.1	Oct 3	0.00	Sep 12, 1955
MAXIMUM PEAK FLOW			4,850	Feb 16	9,080	Feb 27, 1962
MAXIMUM PEAK STAGE			14.50	Feb 16	22.12	Feb 27, 1962
INSTANTANEOUS LOW FLOW					0.00	Sep 14, 1954
ANNUAL RUNOFF (CFSM)	1.55		1.77		1.32	
ANNUAL RUNOFF (INCHES)	21.06		24.08		17.99	
10 PERCENT EXCEEDS	292		270		200	
50 PERCENT EXCEEDS	27		48		30	
90 PERCENT EXCEEDS	0.69		7.6		1.5	

e Estimated



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^2.

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 with telemetry and crest-stage gage. Datum of gage is 600.47 ft above NGVD of 1929 (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.--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.

COOPERATION.--U.S. Army Corps of Engineers, Louisville District and Kentucky River Authority.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 5,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 15	0900	5,180	14.79	Jun 8	1900	5,700	15.44
Feb 17	1000	*19,600	*23.16				

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	71	e430	189	656	377	740	302	266	417	102	103	330
2	51	e300	167	1,050	387	670	291	313	353	93	93	367
3	41	e270	153	832	382	605	279	377	451	90	107	582
4	35	257	142	727	772	537	266	386	575	85	675	1,260
5	29	e400	145	622	988	501	307	1,090	486	76	1,650	612
6	26	e1,400	152	550	665	483	328	2,380	414	70	495	361
7	24	e900	137	475	568	448	1,530	1,320	3,320	77	330	240
8	22	e600	143	e410	e480	408	1,890	848	5,170	70	339	180
9	20	e450	160	e370	e410	383	2,270	1,420	2,690	58	315	144
10	889	e1,300	166	e330	e420	356	3,390	1,660	990	132	447	118
11	3,310	e2,800	343	e300	e380	330	1,990	1,490	814	202	718	97
12	925	e2,000	752	e250	e350	320	1,530	1,140	956	189	502	82
13	487	e850	1,010	e230	e320	334	1,050	743	756	196	404	72
14	325	e550	3,820	e210	333	377	765	570	820	154	244	64
15	227	488	4,700	e200	3,590	357	614	810	2,290	105	227	60
16	229	788	1,720	e190	12,000	330	524	2,170	2,020	111	183	54
17	298	832	974	e180	18,200	318	536	1,140	1,740	194	145	48
18	e260	644	724	e170	9,910	310	829	1,860	1,090	139	133	43
19	e190	519	602	e165	3,160	480	695	2,460	781	88	109	40
20	e150	460	825	e160	1,260	953	582	1,390	626	68	90	38
21	e190	406	838	e155	1,030	518	626	1,220	515	57	78	35
22	e150	417	668	e150	2,280	451	864	961	401	51	68	55
23	e130	400	549	e145	3,650	395	622	741	328	105	63	148
24	117	349	488	e140	2,210	362	508	613	267	204	99	146
25	102	313	612	e135	1,390	337	451	519	220	128	74	92
26	105	278	590	e130	1,050	320	421	459	185	84	58	68
27	115	257	514	e125	864	311	386	414	174	61	49	190
28	202	240	478	e120	803	295	339	381	163	56	43	288
29	e1,000	215	449	195	---	310	301	499	140	55	44	196
30	e1,900	204	413	361	---	337	285	618	119	56	95	130
31	e650	---	380	366	---	318	---	494	---	59	151	---
TOTAL	12,270	19,317	23,003	10,099	68,229	13,194	24,771	30,752	29,271	3,215	8,131	6,140
MEAN	396	644	742	326	2,437	426	826	992	976	104	262	205
MAX	3,310	2,800	4,700	1,050	18,200	953	3,390	2,460	5,170	204	1,650	1,260
MIN	20	204	137	120	320	295	266	266	119	51	43	35

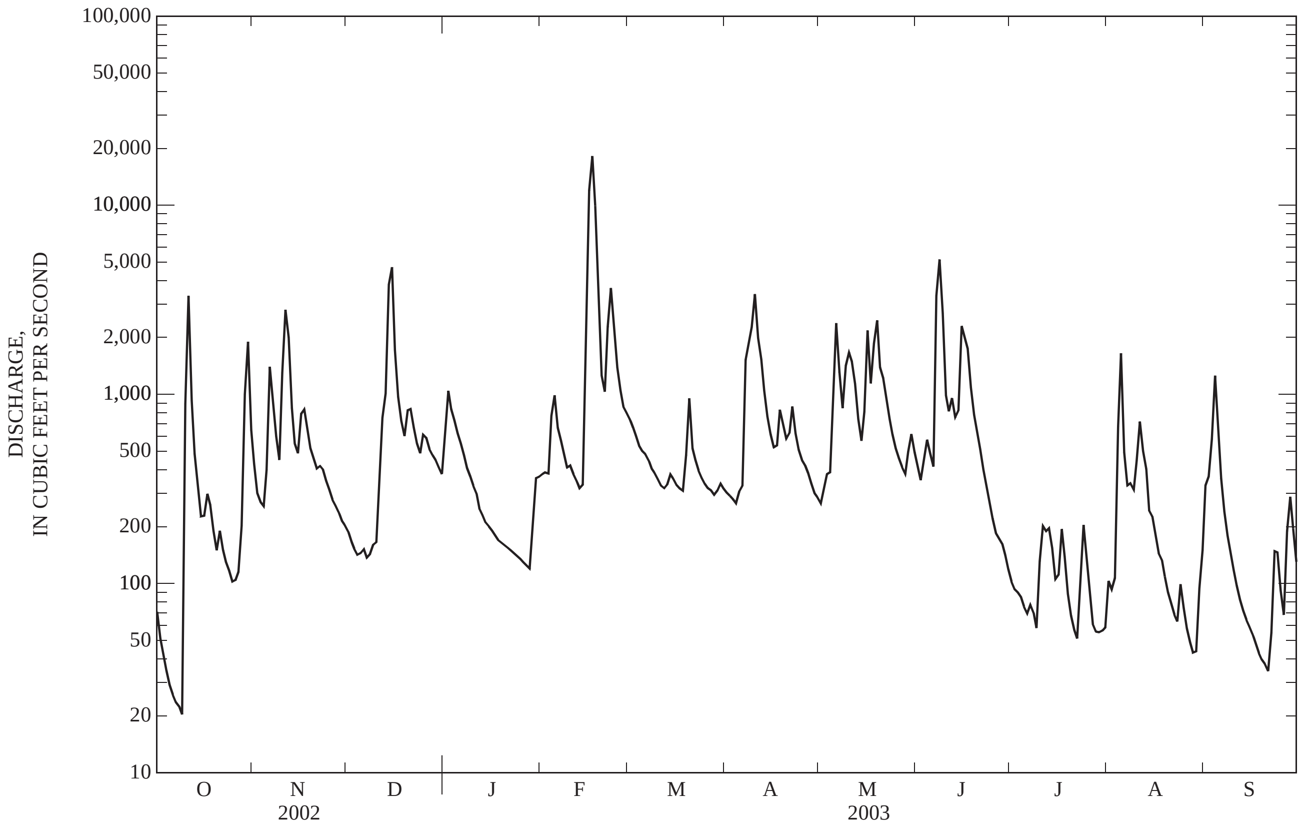
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	89.2	268	594	765	1,010	1,068	821	548	310	270	180	105
MAX	928	1,220	3,036	2,634	3,564	3,048	2,406	1,943	2,246	1,845	1,179	1,185
(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)

03283500 RED RIVER AT CLAY CITY, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1931 - 2003	
ANNUAL TOTAL	209,081.7		248,392			
ANNUAL MEAN	573		681		495	
HIGHEST ANNUAL MEAN					884	1989
LOWEST ANNUAL MEAN					158	1941
HIGHEST DAILY MEAN	11,900	Mar 21	18,200	Feb 17	26,100	Dec 9, 1978
LOWEST DAILY MEAN	6.5	Sep 13	20	Oct 9	1.2	Aug 10, 1944
ANNUAL SEVEN-DAY MINIMUM	7.3	Sep 8	28	Oct 3	2.0	Oct 2, 1930
MAXIMUM PEAK FLOW			19,600	Feb 17	28,800	Dec 9, 1978
MAXIMUM PEAK STAGE			23.16	Feb 17	26.75	Dec 9, 1978
INSTANTANEOUS LOW FLOW					1.2	Aug 10, 1944
10 PERCENT EXCEEDS	1,540		1,390		1,160	
50 PERCENT EXCEEDS	184		357		180	
90 PERCENT EXCEEDS	19		72		22	

e Estimated



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^2.

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

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

GAGE.--Water-stage recorder with telemetry. 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.--Records fair. Flow regulated since December 1960 by Buckhorn Lake (station 03280800), since January 1976 by Carr Fork Lake (station 03277446),.

COOPERATION.--Kentucky River Authority and U.S. Army Corps of Engineers, Louisville District.

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

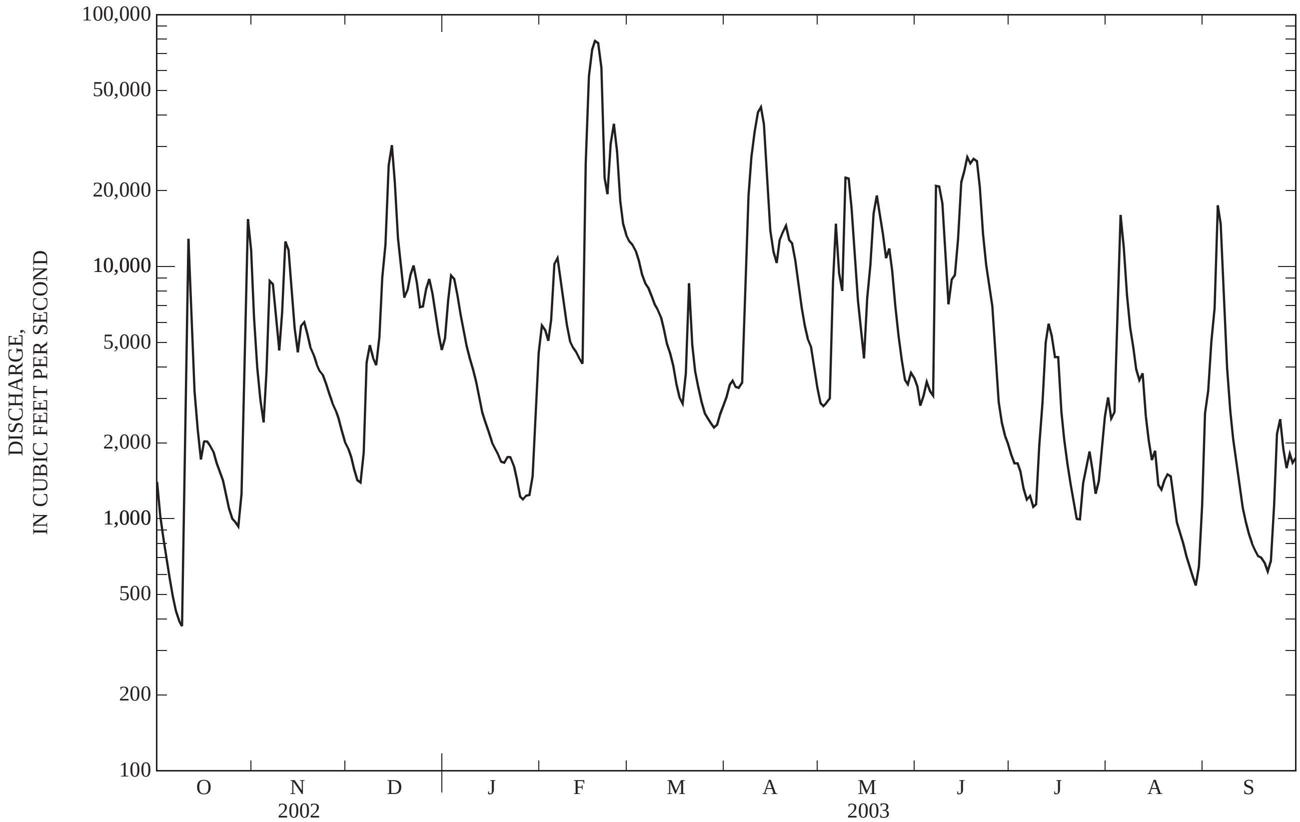
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,400	6,280	1,910	5,180	5,840	12,600	3,030	2,870	3,340	1,800	3,030	2,610
2	1,020	3,990	1,750	7,360	5,610	12,200	3,380	2,800	2,810	1,660	2,490	3,220
3	832	2,960	1,570	9,220	5,080	11,600	3,530	2,880	3,070	1,660	2,640	5,060
4	709	2,410	1,420	8,920	6,160	10,600	3,330	2,990	3,480	1,540	6,790	6,850
5	584	3,830	1,390	7,690	10,200	9,300	3,310	8,650	3,210	1,310	16,000	17,500
6	493	8,790	1,830	6,440	10,800	8,610	3,460	14,800	3,090	1,190	11,900	14,800
7	430	8,510	4,160	5,540	8,900	8,230	7,770	9,450	20,900	1,230	7,750	6,910
8	394	6,440	4,880	4,830	7,240	7,700	19,200	8,020	20,800	1,110	5,730	3,980
9	375	4,650	4,360	4,300	5,880	7,120	27,300	22,600	17,800	1,140	4,760	2,680
10	2,370	6,620	4,060	3,890	5,060	6,780	34,200	22,300	11,200	1,970	3,910	2,070
11	12,900	12,600	5,260	3,460	4,760	6,320	40,700	17,100	7,100	2,890	3,530	1,690
12	6,420	11,600	9,070	3,030	4,580	5,590	42,800	10,700	8,840	5,010	3,780	1,360
13	3,210	7,950	12,300	2,620	4,340	4,940	36,700	7,350	9,220	5,930	2,550	1,100
14	2,260	5,720	25,200	2,400	4,120	4,520	21,700	5,580	12,900	5,300	2,050	967
15	1,720	4,570	30,300	2,200	25,800	4,020	13,900	4,330	21,600	4,380	1,710	873
16	2,030	5,810	21,800	2,010	57,000	3,400	11,500	7,520	23,800	4,380	1,860	800
17	2,020	6,020	13,000	1,910	72,500	3,040	10,300	10,200	27,200	2,650	1,370	748
18	1,950	5,380	9,810	1,810	78,700	2,860	12,700	16,300	25,700	2,050	1,310	709
19	1,850	4,800	7,540	1,680	76,900	3,780	13,600	19,200	26,700	1,650	1,420	701
20	1,660	4,490	8,060	1,670	61,500	8,570	14,500	16,100	26,200	1,370	1,500	671
21	1,530	4,110	9,240	1,760	22,500	4,910	12,700	13,500	20,700	1,160	1,470	617
22	1,420	3,840	10,100	1,750	19,400	3,850	12,400	10,800	13,500	998	1,180	680
23	1,260	3,710	8,640	1,630	30,700	3,320	10,600	11,800	10,100	994	965	1,130
24	1,100	3,440	6,910	1,430	36,900	2,900	8,500	9,640	8,370	1,380	876	2,170
25	1,000	3,140	6,950	1,220	28,600	2,630	6,900	6,950	6,990	1,610	796	2,480
26	968	2,880	8,140	1,190	18,100	2,510	5,820	5,310	4,320	1,850	709	1,890
27	932	2,700	8,940	1,240	14,800	2,400	5,180	4,270	2,900	1,570	646	1,590
28	1,260	2,510	7,800	1,240	13,300	2,300	4,830	3,550	2,400	1,260	592	1,810
29	6,350	2,240	6,450	1,480	---	2,360	4,040	3,420	2,130	1,410	543	1,670
30	15,400	2,020	5,430	2,610	---	2,620	3,320	3,790	1,980	1,940	648	1,740
31	11,600	---	4,670	4,560	---	2,800	---	3,620	---	2,540	1,130	---
TOTAL	87,447	154,010	252,940	106,270	645,270	174,380	401,200	288,390	352,350	66,932	95,635	91,076
MEAN	2,821	5,134	8,159	3,428	23,050	5,625	13,370	9,303	11,740	2,159	3,085	3,036
MAX	15,400	12,600	30,300	9,220	78,700	12,600	42,800	22,600	27,200	5,930	16,000	17,500
MIN	375	2,020	1,390	1,190	4,120	2,300	3,030	2,800	1,980	994	543	617

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1,491	3,229	6,730	8,434	10,120	11,850	9,331	6,669	3,600	1,804	1,540	1,162
MAX	12,850	10,270	23,400	25,490	25,060	27,650	26,100	19,600	15,220	4,640	4,916	6,676
(WY)	(1990)	(1987)	(1979)	(1974)	(1989)	(1975)	(1972)	(1984)	(1997)	(1992)	(1992)	(1974)
MIN	177	359	416	446	2,011	3,125	1,177	1,031	265	292	258	102
(WY)	(1970)	(2002)	(1966)	(1981)	(1968)	(1988)	(1986)	(1976)	(1988)	(1970)	(1986)	(1999)

03284000 KENTUCKY RIVER AT LOCK 10 NEAR WINCHESTER, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1961 - 2003	
ANNUAL TOTAL	1,998,675		2,715,900			
ANNUAL MEAN	5,476		7,441		5,474	
HIGHEST ANNUAL MEAN					9,815	1994
LOWEST ANNUAL MEAN					2,228	1988
HIGHEST DAILY MEAN	64,600	Mar 21	78,700	Feb 18	99,100	Dec 10, 1978
LOWEST DAILY MEAN	157	Sep 13	375	Oct 9	22	Oct 1, 1999
ANNUAL SEVEN-DAY MINIMUM	187	Sep 9	545	Oct 3	72	Sep 7, 1999
MAXIMUM PEAK FLOW			79,700	Feb 18	101,000	Dec 10, 1978
MAXIMUM PEAK STAGE			32.41	Feb 18	40.15	Dec 10, 1978
10 PERCENT EXCEEDS	13,800		17,300		13,900	
50 PERCENT EXCEEDS	2,260		4,040		2,350	
90 PERCENT EXCEEDS	359		1,150		336	



03284230 KENTUCKY RIVER AT LOCK 9 AT VALLEY VIEW, KY

LOCATION.--Lat 37°50'36", long 84°26'27", Madison County, Hydrologic Unit 05100205, at Lock and Dam No. 9 at Valley View, 1.0 mi below Tate Creek, and at mile 157.9.

DRAINAGE AREA.--4,101 mi^2.

PERIOD OF RECORD.--October 1999 to current year.

REVISIONS.--Peak discharge for the water year 2001 has been revised to 34,800 ft^3/s February 18, 2001 based on rating number 2.

GAGE.--Water-stage recorder with telemetry. Datum of gage is 538.71 ft above NGVD of 1929.

REMARKS.--Records good except for those estimated, which are fair. 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.

COOPERATION.--Kentucky River Authority.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 72,600 ft^3/s, Feb. 18, 19, gage height, 36.12 ft.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,390	7,690	1,910	6,000	6,590	13,200	2,980	2,920	3,800	1,760	3,240	2,340
2	871	4,750	1,730	8,430	6,470	12,800	3,360	2,760	3,170	1,570	2,550	3,520
3	729	3,340	1,520	10,200	5,910	12,200	3,650	2,810	3,390	1,540	2,450	6,180
4	592	2,580	1,350	10,200	6,940	11,200	3,420	2,980	4,230	1,450	6,020	8,080
5	484	3,970	1,310	8,950	10,500	10,000	3,390	8,620	3,710	1,230	15,400	16,100
6	382	10,400	1,520	7,630	11,800	9,270	3,530	16,300	3,510	1,150	12,900	16,500
7	325	9,760	3,820	6,610	10,000	8,870	7,650	10,700	22,300	1,150	8,820	8,300
8	274	7,710	5,320	5,710	8,360	8,350	17,900	9,010	22,200	1,040	6,460	4,770
9	261	5,550	4,750	5,020	6,920	7,760	26,800	22,400	19,100	1,060	5,300	2,960
10	1,530	7,700	4,410	4,510	5,900	7,370	31,200	23,400	13,000	1,780	4,250	2,140
11	15,100	13,900	5,550	4,020	5,450	6,950	35,100	18,500	8,460	3,080	3,480	1,680
12	8,320	13,000	9,440	3,450	5,210	6,180	36,300	12,200	9,380	4,950	4,180	1,310
13	3,980	9,400	12,700	2,910	4,940	5,430	33,900	8,580	10,200	6,460	2,650	1,060
14	2,480	6,860	24,600	2,580	4,680	4,880	23,300	6,560	12,900	5,860	2,020	912
15	1,820	5,330	29,500	2,340	25,100	4,340	14,800	4,950	22,100	4,940	1,560	813
16	2,170	6,840	23,500	2,140	55,600	3,630	12,200	7,510	23,800	5,410	1,720	732
17	2,160	7,150	14,400	2,000	69,300	3,120	11,100	10,700	27,600	3,090	1,300	668
18	1,960	6,400	11,000	1,870	71,800	2,890	13,300	16,100	26,500	2,120	1,130	634
19	1,830	5,580	8,840	1,720	71,700	3,530	14,000	19,600	26,700	1,630	1,220	616
20	1,690	5,100	9,520	1,670	63,000	10,200	15,100	17,000	26,500	1,310	1,280	599
21	1,520	4,640	10,100	1,740	27,900	6,280	13,400	14,600	21,900	1,100	1,340	552
22	1,390	4,280	11,100	1,760	20,000	4,510	12,900	11,900	14,700	957	1,100	607
23	1,240	4,100	9,850	1,650	29,100	3,730	11,300	12,400	11,100	890	896	936
24	1,080	3,780	8,090	1,460	33,500	3,130	9,310	10,800	9,330	1,140	779	1,810
25	954	3,410	7,990	1,240	29,200	2,710	7,650	8,150	8,010	1,390	703	2,510
26	923	3,060	8,950	1,170	19,400	2,520	6,450	6,350	5,240	1,670	616	2,000
27	880	2,820	9,940	1,200	15,600	2,360	5,620	5,010	3,280	1,490	542	1,700
28	1,020	2,600	8,970	1,210	14,000	2,230	5,190	4,180	2,500	1,190	494	e1,670
29	5,460	2,300	7,570	1,370	---	2,310	4,400	3,840	2,140	1,190	451	1,650
30	15,600	2,060	6,390	2,500	---	2,600	3,540	4,290	1,970	1,690	593	1,700
31	13,100	---	5,440	4,600	---	2,730	---	4,130	---	2,300	857	---
TOTAL	91,515	176,060	271,080	117,860	644,870	187,280	392,740	309,250	372,720	67,587	96,301	95,049
MEAN	2,952	5,869	8,745	3,802	23,030	6,041	13,090	9,976	12,420	2,180	3,106	3,168
MAX	15,600	13,900	29,500	10,200	71,800	13,200	36,300	23,400	27,600	6,460	15,400	16,500
MIN	261	2,060	1,310	1,170	4,680	2,230	2,980	2,760	1,970	890	451	552

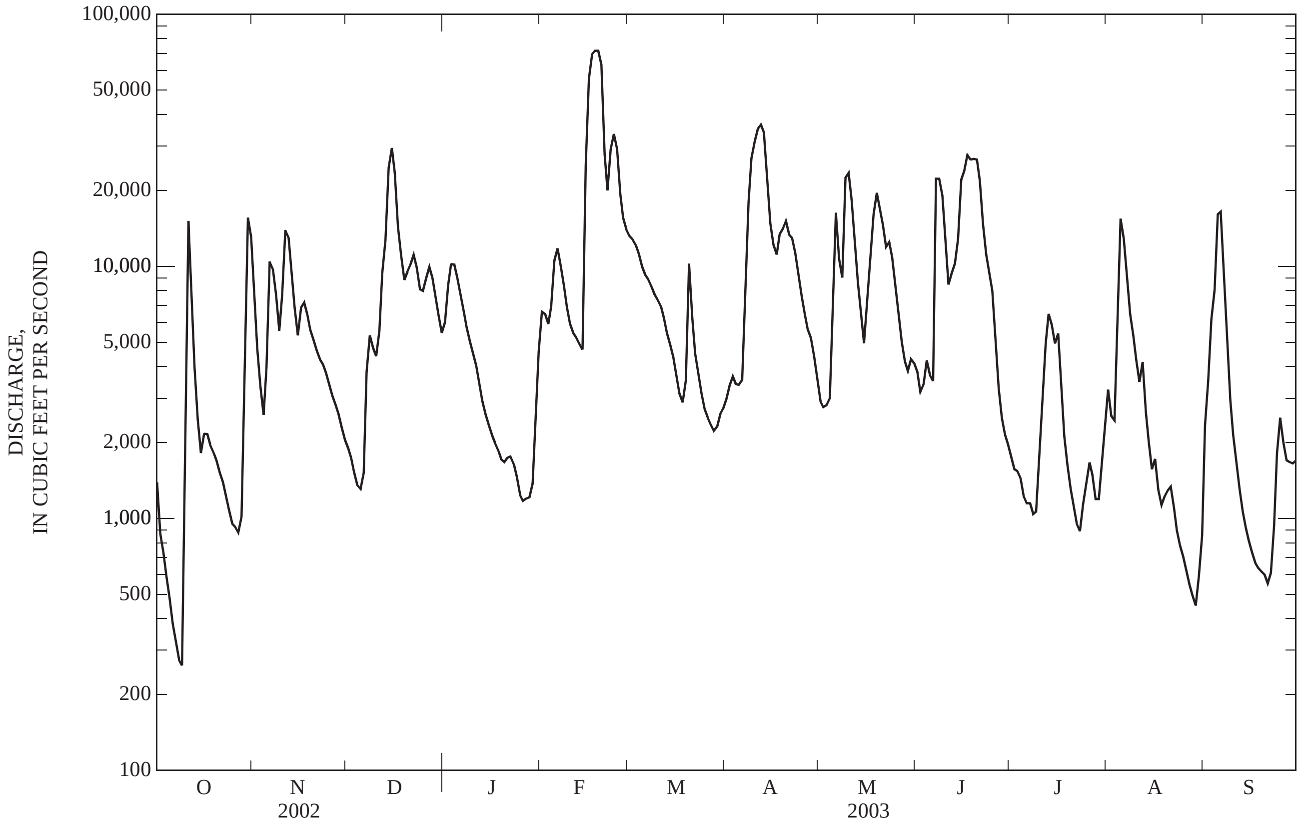
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1999 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1,023	1,815	4,057	3,943	11,120	8,096	8,885	6,644	4,734	2,776	2,302	1,163
MAX	2,952	5,869	8,745	6,483	23,030	13,990	13,090	12,320	12,420	4,145	3,933	3,168
(WY)	(2003)	(2003)	(2003)	(2002)	(2003)	(2002)	(2003)	(2002)	(2003)	(2001)	(2001)	(2003)
MIN	256	366	1,317	1,452	3,892	4,572	3,631	1,652	2,056	1,195	287	392
(WY)	(2000)	(2002)	(2000)	(2000)	(2002)	(2000)	(2001)	(2001)	(2000)	(2002)	(2002)	(2002)

03284230 KENTUCKY RIVER AT LOCK 9 AT VALLEY VIEW, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1999 - 2003	
ANNUAL TOTAL	2,076,892		2,822,312			
ANNUAL MEAN	5,690		7,732		4,671	
HIGHEST ANNUAL MEAN					7,732	2003
LOWEST ANNUAL MEAN					2,909	2000
HIGHEST DAILY MEAN	65,900	Mar 21	71,800	Feb 18	71,800	Feb 18, 2003
LOWEST DAILY MEAN	44	Sep 13	261	Oct 9	40	Oct 1, 1999
ANNUAL SEVEN-DAY MINIMUM	71	Sep 9	435	Oct 3	67	Oct 1, 1999
MAXIMUM PEAK FLOW			72,600	Feb 18	72,600	Feb 18, 2003
MAXIMUM PEAK STAGE			36.12	Feb 18	36.12	Feb 18, 2003
10 PERCENT EXCEEDS	15,100		17,400		12,000	
50 PERCENT EXCEEDS	2,170		4,510		1,870	
90 PERCENT EXCEEDS	236		1,070		302	

e Estimated



03284520 EAST HICKMAN CREEK AT ANDOVER VILLAGE NEAR CADENTOWN, KY

LOCATION.--Lat 37°59'50", long 84°24'20", Fayette County, Hydrologic Unit 05100205, on right wingwall, downstream side of culvert in Andover Village, 1.6 mi west of intersection of Todds Road and Walnut Hill-Chilesburg Road, and at mile 12.4.

DRAINAGE AREA.--1.58 mi^2.

PERIOD OF RECORD.--October 1997 to current year.

GAGE.--Water-stage recorder with telemetry. Elevation of gage is 980 ft above NGVD of 1929 from topographic map.

REMARKS.--Records fair except for those estimated, which are poor.

COOPERATION.--Lexington-Fayette Urban County Government.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.33	1.6	0.22	11	1.0	3.2	1.1	0.75	0.70	0.27	0.53	12
2	0.26	1.5	0.21	6.3	0.90	2.6	0.93	1.5	0.53	0.27	0.39	23
3	0.23	3.2	0.19	4.7	1.8	2.2	0.78	1.1	11	0.27	0.37	37
4	0.72	1.1	0.17	3.3	7.5	1.8	0.69	0.68	2.6	0.24	6.3	14
5	0.50	17	0.21	2.6	3.1	1.7	3.3	29	1.6	0.20	1.0	7.1
6	0.24	11	0.20	2.1	2.1	1.4	2.0	9.2	2.8	0.19	0.60	4.2
7	0.19	5.5	0.22	1.7	e1.7	1.2	7.9	16	36	0.18	0.71	2.9
8	0.18	2.7	0.37	2.1	e1.5	1.1	4.8	14	12	0.17	0.57	2.2
9	0.18	1.8	0.32	e1.6	e1.3	1.0	9.6	31	6.3	0.65	0.44	1.7
10	27	32	0.29	e1.2	e1.2	0.89	6.9	10	3.4	4.0	0.33	1.5
11	38	19	4.8	e0.96	e1.1	0.85	5.6	22	2.9	1.1	0.31	1.4
12	11	7.9	3.1	e0.72	e1.0	1.1	3.6	7.6	3.4	1.1	0.31	1.3
13	5.7	4.0	12	e0.64	e0.96	2.5	2.4	4.5	2.1	0.48	0.28	1.1
14	2.9	2.2	13	e0.56	2.6	1.6	1.8	3.2	14	0.35	0.27	1.00
15	3.8	7.2	6.0	e0.51	47	1.2	1.5	14	7.0	0.30	6.2	0.99
16	5.3	10	3.0	e0.47	44	1.1	1.2	6.0	3.8	7.4	1.7	0.94
17	2.5	5.9	1.8	e0.42	16	1.1	10	9.1	13	0.85	0.75	0.76
18	1.9	3.0	1.2	e0.38	8.9	1.0	6.3	7.3	8.8	0.52	0.56	0.75
19	2.6	1.8	12	e0.36	6.8	5.0	3.5	4.9	3.5	0.45	0.48	0.74
20	6.4	1.2	11	e0.34	5.9	6.0	2.4	6.5	2.1	0.41	0.43	0.83
21	3.4	1.1	5.8	e0.37	5.8	4.0	3.7	10	1.5	0.62	0.41	0.91
22	2.0	0.96	4.0	e0.33	21	2.7	1.9	5.2	1.2	2.5	0.37	4.8
23	1.3	0.50	2.6	e0.30	11	2.1	1.4	3.2	0.90	3.3	0.35	2.0
24	1.2	0.37	4.6	e0.28	7.6	1.7	1.1	2.2	0.69	1.1	0.33	0.69
25	1.9	0.27	6.2	e0.27	5.7	1.4	1.1	1.8	0.59	0.60	0.34	0.47
26	6.2	0.28	4.1	e0.26	4.4	1.7	1.6	1.4	0.48	0.48	0.33	0.42
27	4.9	0.25	2.9	e0.25	3.9	1.2	0.93	1.3	0.46	0.34	0.32	4.1
28	8.9	0.20	2.3	e0.24	3.9	1.1	0.81	1.3	0.36	1.0	0.32	1.2
29	12	0.18	1.9	1.3	---	4.6	1.7	2.3	0.34	1.0	0.50	0.75
30	6.4	0.21	1.7	0.93	---	1.9	0.92	1.1	0.30	0.44	2.7	0.56
31	2.7	---	2.3	0.59	---	1.2	---	0.85	---	1.1	38	---
TOTAL	160.83	143.92	108.70	47.08	219.66	62.14	91.46	228.98	144.35	31.88	66.50	131.31
MEAN	5.19	4.80	3.51	1.52	7.84	2.00	3.05	7.39	4.81	1.03	2.15	4.38
MAX	38	32	13	11	47	6.0	10	31	36	7.4	38	37
MIN	0.18	0.18	0.17	0.24	0.90	0.85	0.69	0.68	0.30	0.17	0.27	0.42

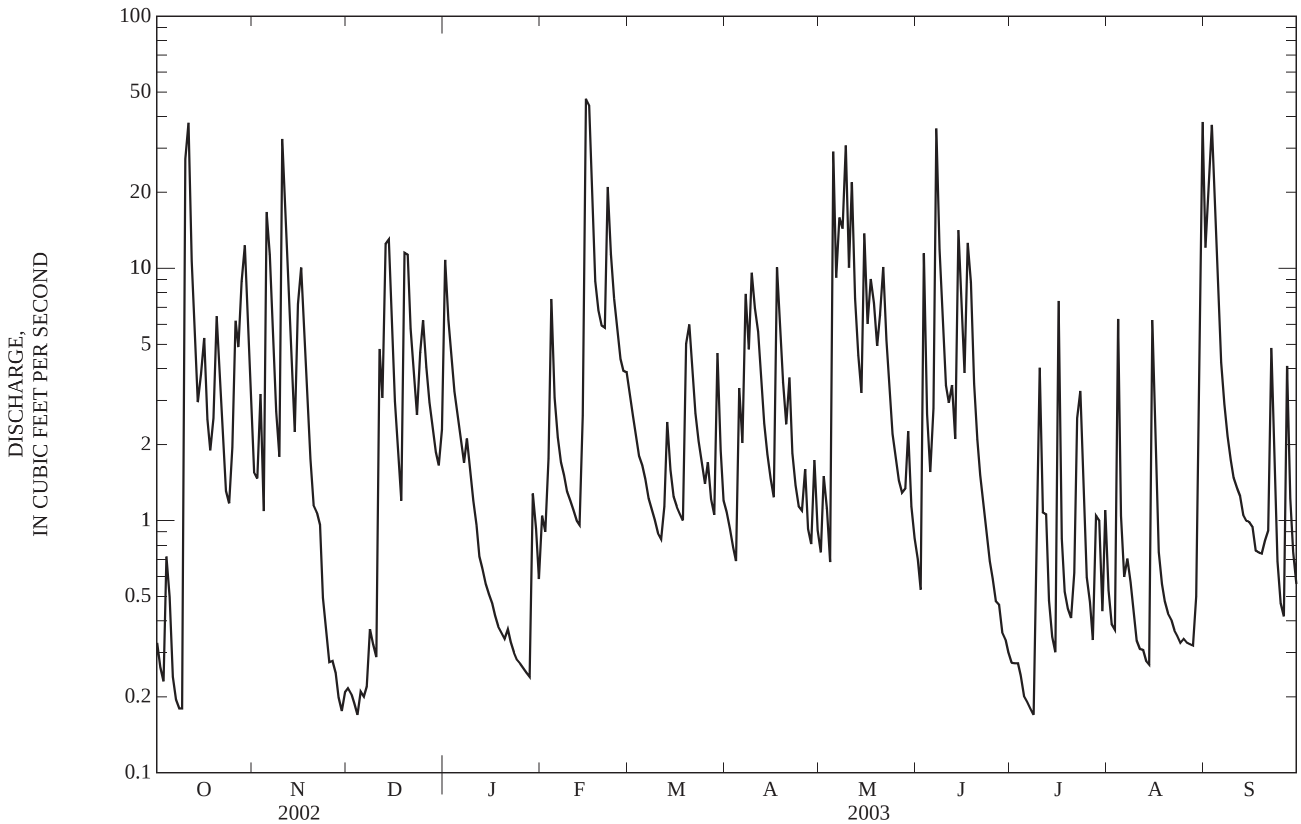
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1.61	1.33	2.03	2.86	4.10	3.65	2.64	3.24	2.42	1.65	0.69	1.39
MAX	5.19	4.80	3.51	5.69	7.84	6.57	5.34	7.39	6.73	4.78	2.15	4.38
(WY)	(2003)	(2003)	(2003)	(1998)	(2003)	(2002)	(1998)	(2003)	(1998)	(1998)	(2003)	(2003)
MIN	0.19	0.37	1.02	1.18	1.00	2.00	0.82	0.31	0.41	0.20	0.046	0.013
(WY)	(2001)	(1999)	(2000)	(2001)	(2002)	(2003)	(2001)	(1999)	(1999)	(2002)	(1999)	(1999)

03284520 EAST HICKMAN CREEK AT ANDOVER VILLAGE NEAR CADENTOWN, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1998 - 2003	
ANNUAL TOTAL	1,047.13		1,436.81			
ANNUAL MEAN	2.87		3.94		2.29	
HIGHEST ANNUAL MEAN					3.94	2003
LOWEST ANNUAL MEAN					1.48	1999
HIGHEST DAILY MEAN	63	Mar 20	47	Feb 15	63	Mar 20, 2002
LOWEST DAILY MEAN	0.00	Aug 4	0.17	Dec 4	0.00	Sep 20, 1998
ANNUAL SEVEN-DAY MINIMUM	0.00	Aug 4	0.20	Nov 28	0.00	Aug 31, 1999
MAXIMUM PEAK FLOW			269	Aug 31	269	Aug 31, 2003
MAXIMUM PEAK STAGE			4.78	Aug 31	4.78	Aug 31, 2003
INSTANTANEOUS LOW FLOW					0.00	Oct 1, 1999
10 PERCENT EXCEEDS	6.6		10		6.0	
50 PERCENT EXCEEDS	0.88		1.5		0.62	
90 PERCENT EXCEEDS	0.05		0.30		0.06	

e Estimated



03284525 EAST HICKMAN CREEK TRIBUTARY AT CHILESBURG ROAD NEAR LEXINGTON, KY

LOCATION.--Lat 37°59'18", long 84°24'40", Fayette County, Hydrologic Unit 05100205, on left bank, downstream side of bridge on Walnut Hill-Chilesburg Road, 0.9 mi northeast of Athens Road (#418), and 0.9 mi southwest of Todds Road (1927) and 3.1 mi east of Lexington.

DRAINAGE AREA.--0.96 mi^2.

PERIOD OF RECORD.--October 1997 to 2000, 2003.

GAGE.--Water-stage recorder with telemetry.

REMARKS.--Records poor.

COOPERATION.--Lexington-Fayette Urban County Government.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.08	0.87	0.28	6.7	0.38	e1.5	2.6	0.29	0.05	e0.10	0.16	8.9
2	0.07	0.59	0.27	5.3	0.41	e1.2	0.46	0.32	0.03	e0.10	0.10	15
3	0.08	0.46	0.25	3.8	0.62	e0.98	0.38	0.33	4.3	e0.09	0.09	21
4	0.13	0.47	0.22	2.4	e3.7	1.2	0.35	0.25	1.1	e0.09	1.5	12
5	0.18	6.2	0.29	1.7	e1.9	0.82	1.0	15	0.20	e0.08	e0.98	6.8
6	0.17	8.1	0.26	1.3	e1.4	0.75	0.74	7.4	0.16	e0.07	e0.47	3.7
7	0.16	4.8	0.25	0.99	e1.2	e0.56	5.6	7.5	20	e0.07	e0.34	1.8
8	0.16	2.5	0.32	0.82	e0.84	e0.50	3.3	5.1	8.1	e0.07	e0.25	1.1
9	0.17	1.2	0.33	e0.65	e0.66	e0.48	9.1	14	4.3	e0.24	e0.17	0.69
10	3.2	16	0.38	e0.54	e0.59	0.50	6.3	5.8	1.7	e0.90	e0.14	0.49
11	8.8	14	1.8	e0.47	e0.54	0.48	5.0	9.1	1.0	e0.69	e0.22	0.45
12	2.5	7.1	2.0	e0.39	e0.49	0.51	2.8	4.3	1.3	e0.44	e0.20	0.33
13	1.2	4.2	6.1	e0.37	e0.45	0.69	1.6	1.7	0.48	e0.33	e0.13	0.28
14	0.66	1.9	11	e0.35	e0.75	0.66	1.4	0.95	9.6	e0.20	e0.10	0.29
15	0.63	3.8	6.5	e0.33	e20	0.63	0.96	3.2	8.1	e0.14	e0.49	0.27
16	1.2	6.8	3.3	e0.31	e24	0.53	0.62	1.8	3.7	e3.9	e2.3	0.25
17	0.72	4.8	e2.4	e0.29	e14	0.53	5.6	3.4	3.0	e0.83	e0.72	0.21
18	0.47	2.4	1.7	e0.27	e5.4	0.47	4.7	2.9	2.8	e0.40	e0.35	0.18
19	0.42	1.5	5.3	e0.25	e3.1	2.2	2.3	1.7	e2.3	e0.27	e0.20	0.18
20	0.95	1.00	e7.5	e0.23	e2.8	3.7	1.3	1.8	e1.2	e0.19	e0.10	0.18
21	0.67	0.84	e3.5	e0.22	e2.6	2.3	1.4	5.8	e0.79	e0.22	e0.08	0.20
22	0.50	0.74	e2.2	e0.20	e9.9	1.4	0.87	2.4	e0.57	e0.53	e0.07	2.8
23	0.38	0.55	e1.5	e0.19	e6.9	0.98	0.70	1.2	e0.42	e2.0	e0.08	0.60
24	0.30	0.52	e2.0	e0.18	e4.2	0.81	0.58	0.60	e0.33	0.43	e0.07	0.30
25	0.29	0.46	4.7	e0.18	e3.1	0.70	0.54	0.40	e0.24	0.23	e0.06	0.27
26	0.30	0.47	2.8	e0.17	e2.1	0.68	0.57	0.27	e0.18	0.14	e0.06	0.25
27	0.23	0.44	1.9	e0.17	e1.7	0.54	0.41	0.70	e0.16	0.11	e0.06	2.5
28	0.30	0.41	1.4	e0.16	e1.8	0.47	0.34	0.20	e0.14	0.35	e0.06	0.65
29	2.7	0.40	1.0	0.53	---	1.8	0.46	0.38	e0.12	0.41	e0.08	0.44
30	2.5	0.35	0.86	0.27	---	0.83	0.35	0.18	e0.11	0.13	e0.21	0.25
31	1.4	---	0.92	0.28	---	1.5	---	0.11	---	0.27	26	---
TOTAL	31.52	93.87	73.23	30.01	115.53	30.90	62.33	99.08	76.48	14.02	35.84	82.36
MEAN	1.02	3.13	2.36	0.97	4.13	1.00	2.08	3.20	2.55	0.45	1.16	2.75
MAX	8.8	16	11	6.7	24	3.7	9.1	15	20	3.9	26	21
MIN	0.07	0.35	0.22	0.16	0.38	0.47	0.34	0.11	0.03	0.07	0.06	0.18

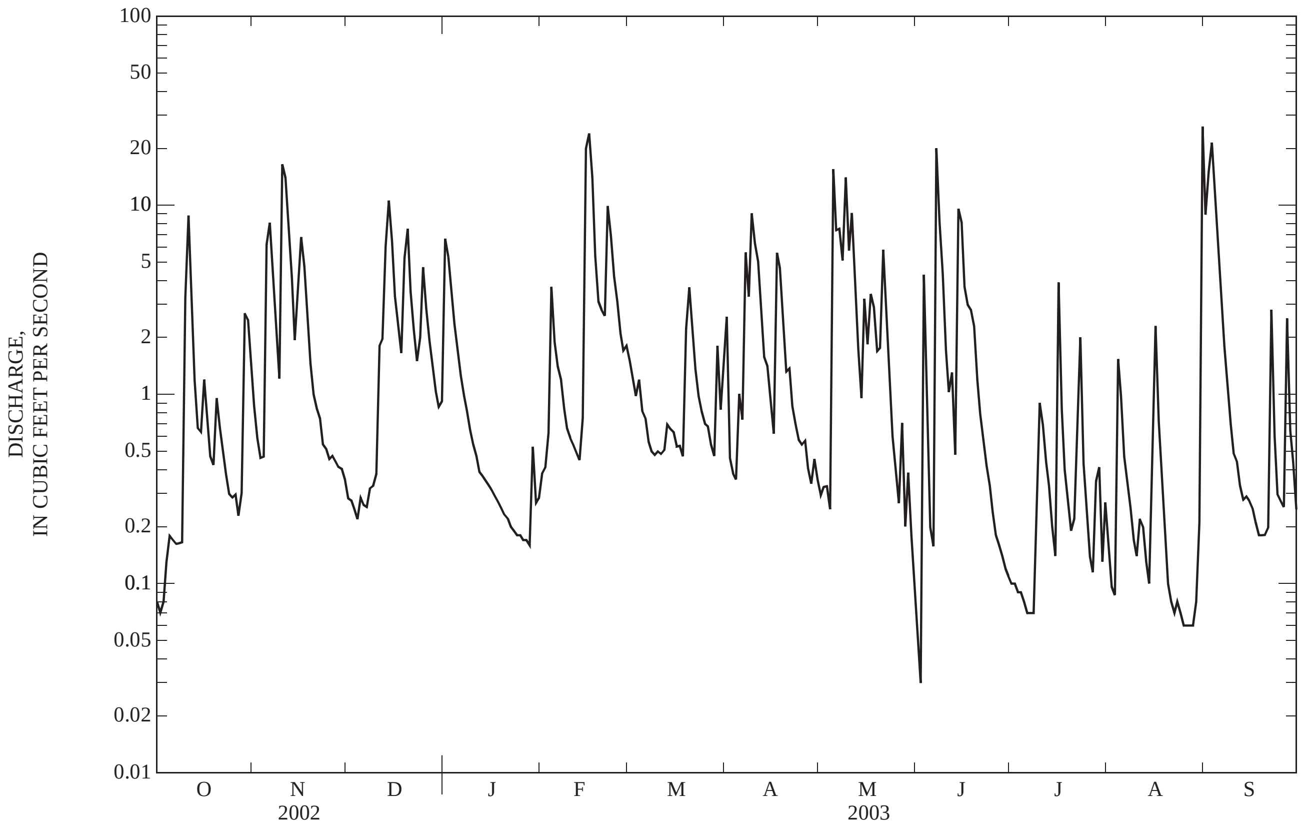
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	2.21	3.21	0.67	2.61	4.26	3.87	1.56	2.66	1.23	6.85	7.30	6.36
MAX	11.7	12.7	2.36	5.97	9.66	13.0	3.28	7.38	2.55	26.9	25.4	27.9
(WY)	(2002)	(2002)	(2003)	(2001)	(2001)	(2002)	(1998)	(2001)	(2003)	(2002)	(2002)	(2002)
MIN	0.000	0.005	0.039	0.11	1.54	1.00	0.18	0.068	0.025	0.044	0.000	0.000
(WY)	(2000)	(2000)	(2000)	(2000)	(1999)	(2003)	(1999)	(1999)	(1999)	(1999)	(1999)	(1999)

03284525 EAST HICKMAN CREEK TRIBUTARY AT CHILESBURG ROAD NEAR LEXINGTON, KY—Continued

SUMMARY STATISTICS	FOR 2003 WATER YEAR		WATER YEARS 1998 - 2003	
ANNUAL TOTAL	745.17			
ANNUAL MEAN	2.046		1.06	
HIGHEST ANNUAL MEAN			2.04	2003
LOWEST ANNUAL MEAN			0.54	1999
HIGHEST DAILY MEAN	26	Aug 31	75	Mar 20, 2002
LOWEST DAILY MEAN	0.03	Jun 2	0.00	Sep 17, 1998
ANNUAL SEVEN-DAY MINIMUM	0.07	Aug 22	0.00	Sep 27, 1998
MAXIMUM PEAK FLOW	232	Aug 31	232	Aug 31, 2003
MAXIMUM PEAK STAGE	4.06	Aug 31	4.06	Aug 31, 2003
INSTANTANEOUS LOW FLOW			0.00	Oct 1, 1998
10 PERCENT EXCEEDS	5.7		2.7	
50 PERCENT EXCEEDS	0.60		0.14	
90 PERCENT EXCEEDS	0.14		0.00	

e Estimated



03284530 EAST HICKMAN CREEK AT DELONG ROAD NEAR EAST HICKMAN, KY

LOCATION.--Lat 37°56'59", long 84°27'19", Fayette County, Hydrologic Unit 05100205, on right bank, downstream side of bridge on Delong Road, 1.0 mi north of intersection with Walnut Hill Road, 1.6 mi south of intersection with Armstrong Mill Road, 2.0 mi north of East Hickman, and at mile 7.6.

DRAINAGE AREA.--15.1 mi^2.

PERIOD OF RECORD.--October 1997 to current year.

GAGE.--Water-stage recorder with telemetry. Datum of gage is 913.491 ft above NGVD of 1929.

REMARKS.--Records fair except for those estimated and those below 1.0 ft^3/s, which are poor.

COOPERATION.--Lexington-Fayette Urban County Government.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.4	15	5.1	91	8.4	27	9.6	7.1	6.5	1.9	8.1	302
2	4.9	9.3	5.4	70	7.9	22	8.5	6.5	4.6	1.8	5.3	197
3	3.9	6.7	8.5	49	9.1	e16	7.1	12	79	1.8	4.3	368
4	3.3	7.3	5.7	34	72	e13	6.3	7.1	46	1.8	33	173
5	5.5	95	6.5	e25	38	e12	22	212	20	1.5	22	62
6	3.2	143	4.2	e20	29	14	18	121	14	1.4	9.7	29
7	1.3	68	4.3	e16	24	10	77	97	313	1.6	6.1	17
8	1.7	37	5.1	e14	18	8.8	49	71	121	1.3	4.5	12
9	1.1	21	6.3	e13	14	8.8	93	327	82	4.2	2.9	7.8
10	152	249	6.7	e11	15	11	74	92	38	14	2.3	5.7
11	390	247	33	e9.0	14	12	57	143	30	14	4.4	4.6
12	107	93	36	e8.0	12	11	33	75	28	8.0	4.0	3.2
13	52	51	78	e7.0	8.8	19	22	37	21	6.7	2.3	2.5
14	22	29	162	e6.4	13	19	20	23	121	4.1	1.6	2.3
15	15	52	70	e5.6	380	12	19	62	132	2.6	5.8	2.0
16	40	101	44	e5.1	500	9.6	18	80	66	76	56	1.8
17	20	65	34	e4.7	317	8.6	63	64	73	18	16	1.3
18	15	38	29	e4.4	109	7.9	84	52	122	8.1	6.7	1.7
19	7.3	25	69	e4.0	59	22	36	34	47	5.3	3.4	1.5
20	30	19	158	e3.7	52	50	22	28	25	3.5	1.5	1.4
21	19	16	70	e3.5	49	30	27	88	15	3.7	1.2	0.95
22	10	17	42	e3.4	192	22	18	48	11	7.9	0.97	24
23	7.4	12	29	e3.3	140	18	13	27	8.1	41	1.1	26
24	5.8	9.8	36	e3.3	83	14	10	18	6.6	25	0.94	6.1
25	3.3	9.2	59	e3.2	60	11	8.5	14	4.8	9.7	0.84	2.9
26	4.4	9.7	40	e3.2	40	14	16	12	3.6	5.2	0.91	1.9
27	4.9	8.6	30	e3.2	32	11	8.6	9.5	3.3	3.3	0.85	20
28	6.8	6.9	24	e3.2	33	8.8	6.6	8.6	2.8	4.3	0.84	14
29	44	5.9	19	e3.5	---	34	11	16	2.5	28	1.1	5.7
30	50	5.9	18	9.8	---	e18	9.3	13	2.0	9.2	2.4	2.8
31	27	---	21	6.2	---	e12	---	8.6	---	8.5	181	---
TOTAL	1,063.2	1,472.3	1,158.8	446.7	2,329.2	506.5	866.5	1,813.4	1,448.8	323.4	392.05	1,300.15
MEAN	34.3	49.1	37.4	14.4	83.2	16.3	28.9	58.5	48.3	10.4	12.6	43.3
MAX	390	249	162	91	500	50	93	327	313	76	181	368
MIN	1.1	5.9	4.2	3.2	7.9	7.9	6.3	6.5	2.0	1.3	0.84	0.95

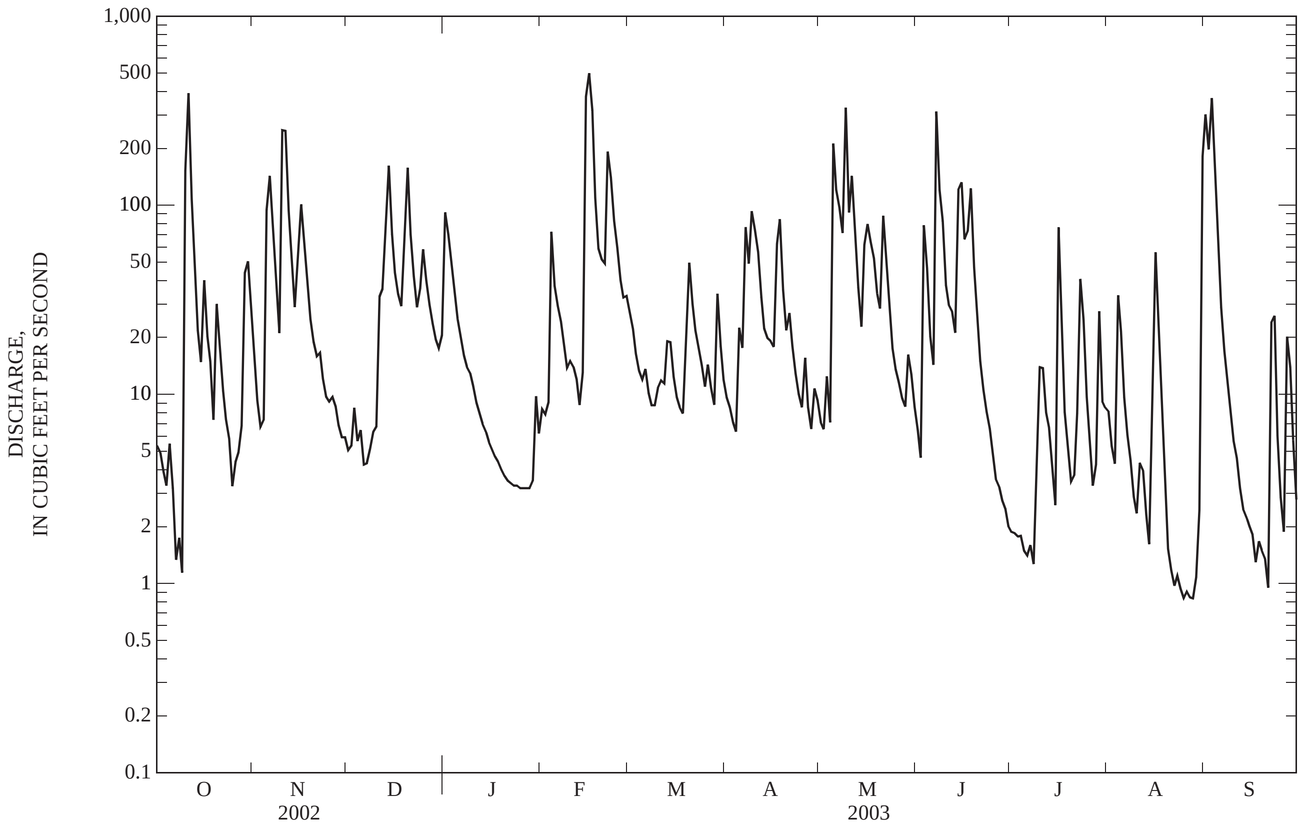
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	7.18	9.88	17.6	16.9	41.1	30.4	19.5	29.3	17.6	11.3	6.01	12.2
MAX	34.3	49.1	37.4	36.4	83.2	54.7	34.3	58.5	48.3	28.7	12.6	43.3
(WY)	(2003)	(2003)	(2003)	(1999)	(2003)	(2002)	(2002)	(2003)	(2003)	(1998)	(2003)	(2003)
MIN	1.00	1.25	1.70	3.94	27.6	12.9	7.25	1.86	1.24	3.40	0.092	0.18
(WY)	(1998)	(1999)	(2000)	(2000)	(1999)	(1998)	(1999)	(2000)	(1999)	(1999)	(1999)	(1999)

03284530 EAST HICKMAN CREEK AT DELONG ROAD NEAR EAST HICKMAN, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1998 - 2003	
ANNUAL TOTAL	9,866.92		13,121.00			
ANNUAL MEAN	27.0		35.9		18.1	
HIGHEST ANNUAL MEAN					35.9	2003
LOWEST ANNUAL MEAN					9.86	1999
HIGHEST DAILY MEAN	494	Apr 28	500	Feb 16	512	Jul 20, 1998
LOWEST DAILY MEAN	0.00	Aug 7	0.84	Aug 25	0.00	Aug 1, 1999
ANNUAL SEVEN-DAY MINIMUM	0.00	Sep 8	0.92	Aug 22	0.00	Aug 17, 1999
MAXIMUM PEAK FLOW			807	Aug 31	1,470	Feb 18, 2000
MAXIMUM PEAK STAGE			5.90	Aug 31	6.31	Mar 20, 2002
INSTANTANEOUS LOW FLOW			0.74	Aug 25	0.00	Sep 13, 2002
10 PERCENT EXCEEDS	70		86		46	
50 PERCENT EXCEEDS	6.7		13		4.0	
90 PERCENT EXCEEDS	0.31		2.5		0.45	

e Estimated



03284555 WEST HICKMAN CREEK AT ASH GROVE PIKE NEAR EAST HICKMAN, KY

LOCATION.--Lat 37°56'04", long 84°30'08", Jessamine County, Hydrologic Unit 05100205, on center pier, downstream side of bridge on Ash Grove Pike (#1980), 0.7 mi northwest of intersection with Macker Road, 1.9 mi northwest of East Hickman, 2.4 mi southeast of Nicholasville Road (US 27); and at mile 28.3.

DRAINAGE AREA.--20.5 mi^2.

PERIOD OF RECORD.--October 1997 to current year.

GAGE.--Water-stage recorder with telemetry. Datum of gage is 868.402 ft above NGVD of 1929.

REMARKS.--Records fair except those estimated, which are poor.

COOPERATION.--Lexington-Fayette Urban County Government.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	43	64	28	188	42	73	38	38	40	30	47	197
2	36	39	26	108	40	64	33	38	38	30	39	460
3	32	34	24	91	45	e56	31	43	255	30	40	691
4	39	39	23	74	166	51	27	38	109	30	77	276
5	37	239	25	65	78	44	79	520	74	30	43	135
6	30	175	26	57	62	40	51	221	58	31	38	85
7	28	104	28	50	62	37	204	210	e430	30	37	64
8	25	80	34	47	54	36	109	156	e200	30	50	49
9	25	68	33	43	48	34	208	673	e130	91	39	41
10	473	558	32	37	47	32	134	210	e98	176	34	35
11	700	339	121	39	45	27	115	322	e88	82	172	31
12	222	152	86	35	43	34	79	168	94	55	76	28
13	e150	103	207	33	39	62	59	113	e86	44	47	27
14	e100	80	245	34	54	46	47	87	e180	40	66	26
15	e77	161	133	31	765	40	42	204	e155	37	174	24
16	95	181	95	29	713	36	40	151	e230	331	172	22
17	67	115	80	29	365	33	206	191	162	73	96	21
18	55	87	69	30	211	31	145	136	133	53	69	21
19	51	73	237	28	153	80	89	103	92	45	53	20
20	89	63	241	28	134	76	63	121	66	39	45	20
21	66	65	130	25	126	60	88	192	53	47	40	21
22	64	63	96	24	413	51	51	116	45	79	37	133
23	57	53	73	24	264	45	42	89	41	114	36	65
24	54	36	92	23	179	39	37	67	36	67	34	45
25	53	32	109	24	134	34	35	57	34	46	32	38
26	54	34	79	24	104	42	82	52	33	39	30	35
27	52	34	67	23	90	36	45	48	35	36	30	88
28	55	30	59	24	85	32	41	51	33	54	30	54
29	119	28	52	45	---	144	73	69	32	91	39	42
30	78	28	48	38	---	62	38	49	31	42	67	36
31	62	---	61	33	---	46	---	45	---	65	315	---
TOTAL	3,088	3,157	2,659	1,383	4,561	1,523	2,331	4,578	3,091	1,987	2,104	2,830
MEAN	99.6	105	85.8	44.6	163	49.1	77.7	148	103	64.1	67.9	94.3
MAX	700	558	245	188	765	144	208	673	430	331	315	691
MIN	25	28	23	23	39	27	27	38	31	30	30	20

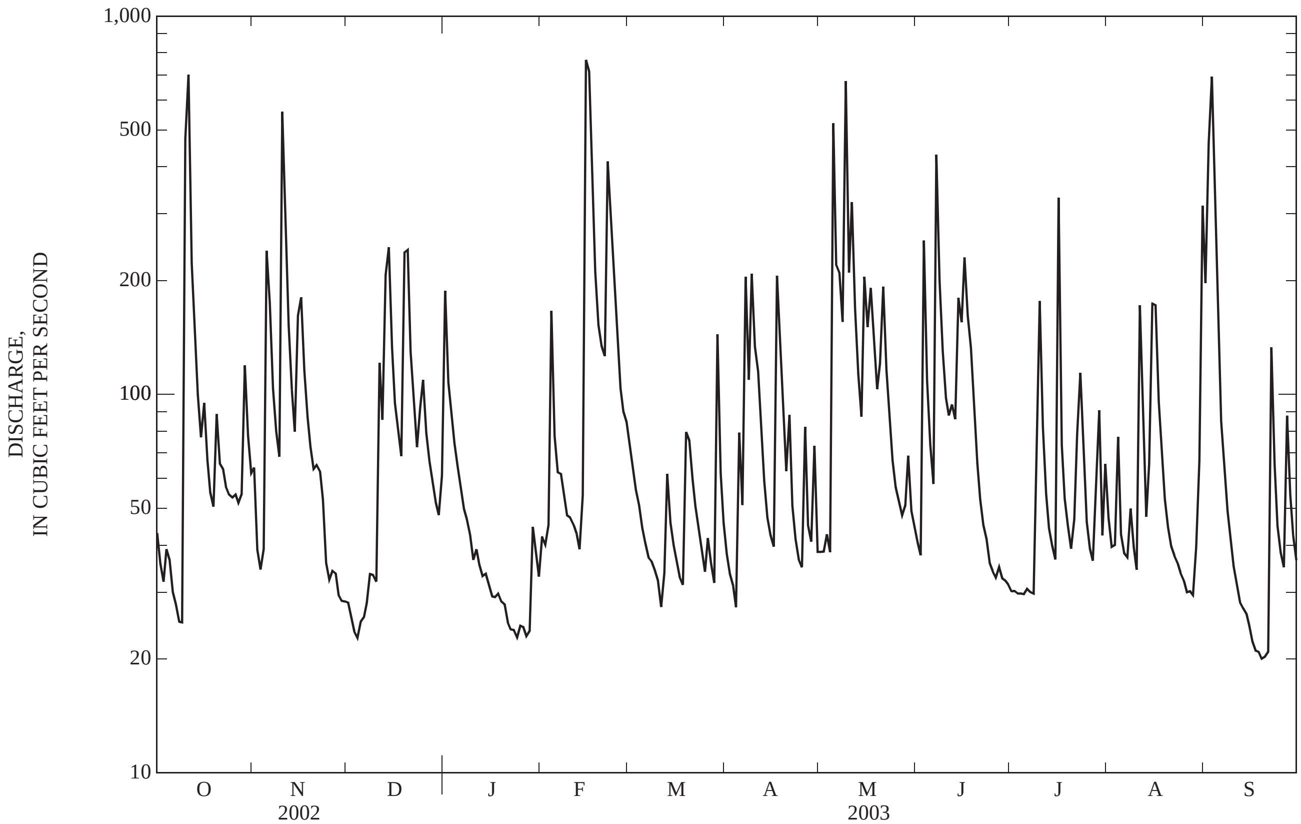
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	41.8	45.1	58.5	67.4	93.5	87.9	70.0	87.0	64.8	54.6	42.0	47.5
MAX	99.6	105	85.8	103	163	152	110	148	135	105	67.9	94.3
(WY)	(2003)	(2003)	(2003)	(1999)	(2003)	(2002)	(1998)	(2003)	(1998)	(1998)	(2003)	(2003)
MIN	26.3	23.6	33.4	42.6	37.5	49.1	39.6	31.0	26.7	25.6	20.6	18.9
(WY)	(2000)	(2000)	(2000)	(2001)	(2002)	(2003)	(2001)	(1999)	(1999)	(1999)	(1999)	(1999)

03284555 WEST HICKMAN CREEK AT ASH GROVE PIKE NEAR EAST HICKMAN, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1998 - 2003	
ANNUAL TOTAL	27,305		33,292			
ANNUAL MEAN	74.8		91.2		63.2	
HIGHEST ANNUAL MEAN					91.2	2003
LOWEST ANNUAL MEAN					45.0	1999
HIGHEST DAILY MEAN	1,190	Mar 20	765	Feb 15	1,190	Mar 20, 2002
LOWEST DAILY MEAN	20	Jul 9	20	Sep 19	12	Nov 5, 1998
ANNUAL SEVEN-DAY MINIMUM	21	Jul 6	21	Sep 15	17	Aug 16, 1999
MAXIMUM PEAK FLOW			2,800	May 9	3,040	Jul 20, 1998
MAXIMUM PEAK STAGE			7.04	May 9	7.43	Jul 20, 1998
INSTANTANEOUS LOW FLOW					1.4	Nov 5, 1998
10 PERCENT EXCEEDS	151		194		121	
50 PERCENT EXCEEDS	40		53		38	
90 PERCENT EXCEEDS	25		30		22	

e Estimated



03285000 DIX RIVER NEAR DANVILLE, KY

LOCATION.--Lat 37°38'31", long 84°39'39", Garrard County, Hydrologic Unit 05100205, on right bank 50 ft downstream from bridge on State Highway 52, 1.4 mi downstream from Hanging Fork, 6 mi east of Danville, and at mile 34.6.

DRAINAGE AREA.--318 mi^2.

PERIOD OF RECORD.--May to August 1905 (gage heights only), October 1942 to current year. Published as "Dicks River," 1905.

REVISED RECORDS.--WSP 1555: Drainage area.

GAGE.--Water-stage recorder with telemetry. Datum of gage is 750.10 ft above NGVD of 1929. Prior to Dec. 21, 1942, nonrecording gage at same site and datum. May to August 1905, nonrecording gage at site 6 mi downstream at different datum.

REMARKS.--Records good except for those estimated, which are poor.

COOPERATION.--Kentucky Natural Resources and Environmental Protection Cabinet.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 8,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 11	0700	8,910	9.78	Jun 7	1400	14,100	11.83
Feb 16	1900	*18,200	*13.12				

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	48	588	134	577	364	685	257	183	106	206	1,190	e105
2	33	404	118	1,280	333	589	218	228	86	145	395	e300
3	24	303	109	944	293	499	190	210	122	98	236	945
4	18	252	102	815	1,740	420	172	164	258	72	214	1,050
5	13	597	103	638	1,220	374	198	2,960	186	57	235	507
6	10	e3,260	179	513	715	349	413	2,630	136	47	177	255
7	7.7	e1,150	185	412	598	315	1,720	1,140	9,000	41	130	160
8	6.3	734	178	356	496	274	1,300	1,150	5,740	37	218	113
9	5.7	503	250	320	422	246	1,170	793	2,130	36	190	82
10	178	1,530	292	277	357	217	2,610	570	1,090	181	126	64
11	5,370	4,250	1,530	228	379	195	2,300	1,050	786	1,560	87	51
12	1,350	1,690	e1,740	185	380	182	1,200	720	1,840	682	70	43
13	575	867	e1,520	159	349	176	792	419	1,110	378	58	36
14	331	589	4,600	e143	307	168	572	304	1,620	247	50	32
15	230	555	1,790	e133	6,230	157	441	260	2,660	169	43	29
16	531	2,080	1,070	e125	13,100	147	355	323	1,830	779	37	26
17	517	1,290	764	e116	e8,840	140	562	369	2,520	566	34	23
18	322	843	596	e107	e2,180	136	2,610	1,120	1,260	253	62	20
19	226	619	501	e100	993	426	974	806	849	169	38	17
20	191	501	1,940	e95	798	3,140	637	510	582	126	30	15
21	190	410	1,200	e88	772	1,100	1,050	729	410	96	25	13
22	171	365	778	e84	3,260	682	823	767	306	83	22	17
23	141	311	558	e80	3,680	491	519	530	237	110	18	103
24	117	260	469	e76	1,790	387	392	385	188	174	16	104
25	98	225	1,020	e73	1,260	317	330	294	152	184	14	78
26	87	199	864	e70	934	286	860	240	124	103	12	49
27	85	185	622	e67	776	269	472	201	135	68	e9.9	46
28	714	174	515	e66	739	229	325	172	119	78	e8.7	69
29	2,290	157	437	e120	---	280	257	158	89	424	e8.5	56
30	2,310	146	366	722	---	e474	214	146	73	180	e5.9	50
31	964	---	318	479	---	e297	---	129	---	584	e11	---
TOTAL	17,153.7	25,037	24,848	9,448	53,305	13,647	23,933	19,660	35,744	7,933	3,771.0	4,458
MEAN	553	835	802	305	1,904	440	798	634	1,191	256	122	149
MAX	5,370	4,250	4,600	1,280	13,100	3,140	2,610	2,960	9,000	1,560	1,190	1,050
MIN	5.7	146	102	66	293	136	172	129	73	36	5.9	13
CFSM	1.74	2.62	2.52	0.96	5.99	1.38	2.51	1.99	3.75	0.80	0.38	0.47
IN.	2.01	2.93	2.91	1.11	6.24	1.60	2.80	2.30	4.18	0.93	0.44	0.52

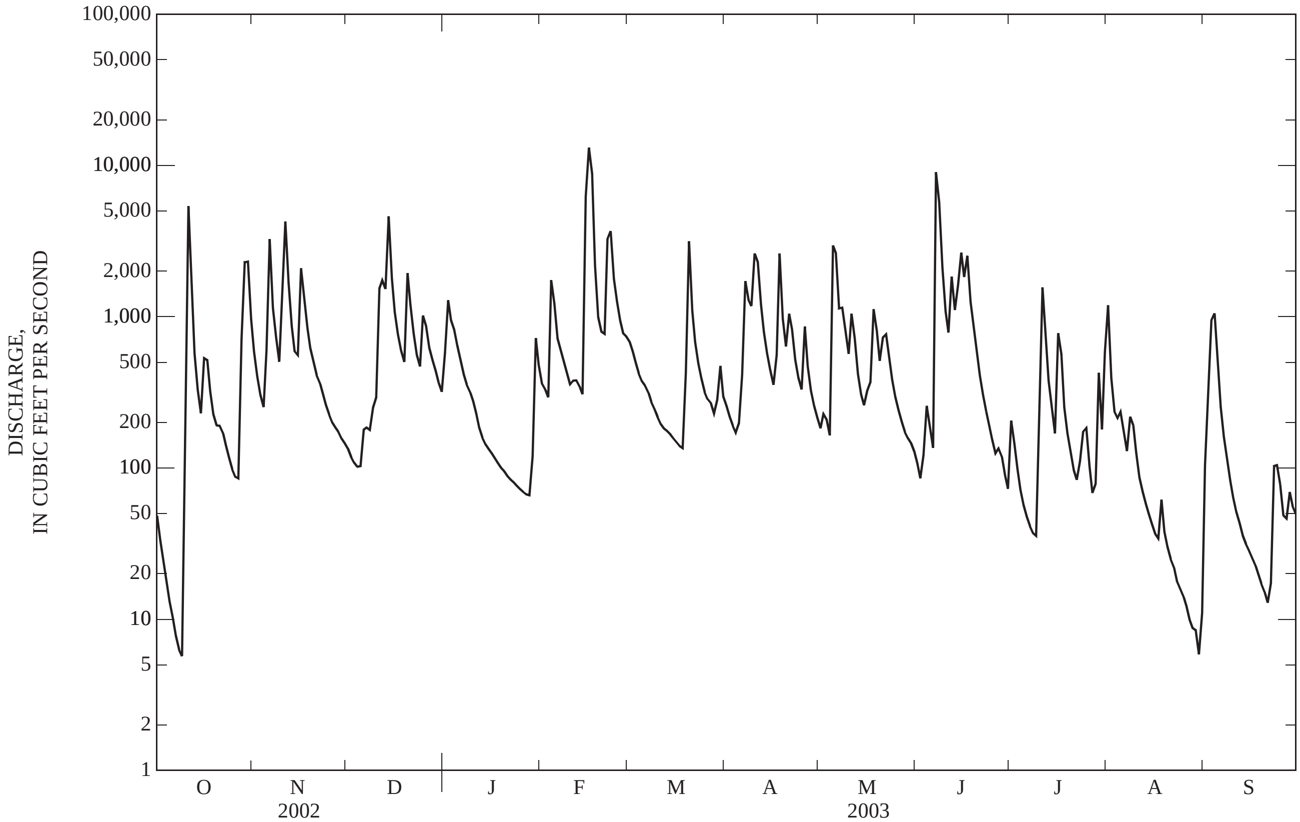
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1943 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	103	300	649	787	984	1,002	670	477	289	173	93.1	149
MAX	1,323	1,471	3,656	3,140	4,129	3,059	2,736	2,618	1,732	1,692	527	3,430
(WY)	(1980)	(1987)	(1979)	(1950)	(1989)	(1997)	(1972)	(1983)	(1997)	(1996)	(1958)	(1979)
MIN	0.000	0.030	0.69	17.0	72.1	174	57.1	51.8	8.83	0.31	0.93	0.013
(WY)	(1953)	(1954)	(1954)	(1981)	(1954)	(1983)	(1986)	(1976)	(1988)	(1944)	(1952)	(1953)

03285000 DIX RIVER NEAR DANVILLE, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1943 - 2003	
ANNUAL TOTAL	235,626.58		238,937.7			
ANNUAL MEAN	646		655		471	
HIGHEST ANNUAL MEAN					1,184	1979
LOWEST ANNUAL MEAN					119	1954
HIGHEST DAILY MEAN	12,800	Mar 20	13,100	Feb 16	35,100	Jul 20, 1996
LOWEST DAILY MEAN	0.50	Sep 15	5.7	Oct 9	0.00	Jul 21, 1944
ANNUAL SEVEN-DAY MINIMUM	0.61	Sep 12	10	Aug 25	0.00	Jul 29, 1944
MAXIMUM PEAK FLOW			18,200	Feb 16	52,400	Jul 20, 1996
MAXIMUM PEAK STAGE			13.12	Feb 16	21.81	Dec 9, 1978
ANNUAL RUNOFF (CFSM)	2.03		2.06		1.48	
ANNUAL RUNOFF (INCHES)	27.56		27.95		20.10	
10 PERCENT EXCEEDS	1,520		1,530		1,060	
50 PERCENT EXCEEDS	161		286		123	
90 PERCENT EXCEEDS	1.6		42		3.0	

e Estimated



KENTUCKY RIVER BASIN

03286500 KENTUCKY RIVER AT LOCK 7 NEAR HIGH BRIDGE, KY

LOCATION.--Lat 37°48'53", long 84°43'26", Jessamine County, Hydrologic Unit 05100205, on right bank at Lock 7, 0.45 mi northwest of High Bridge, 1.2 mi downstream from Dix River, 3.8 mi upstream of U.S. Highway 68 bridge, and at mile 117.

DRAINAGE AREA.--5,036 mi^2.

PERIOD OF RECORD.--October 1901 to September 1924 (gage-heights only), monthly discharge October 1924 to September 1927, December 1992 to current year.

GAGE.--Water-stage recorder with telemetry. Datum of gage is 503.92 ft above sea level, Kentucky River datum.

REMARKS.--Estimated daily discharges: Oct. 1 to Sept. 30. Discharge computed using percent of drainage area of Kentucky River at Lock #9 and Lock #6. Record fair above 1,000 ft^3/s and poor below. Flow regulated since November 1925 by Herrington Lake, since December 1960 by Buckhorn Lake, since January 1976 by Carr Fork Lake, and by hydroelectric plant at lock 7.

COOPERATION.--Kentucky Utilities.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e1,940	e10,300	e2,420	e6,700	e6,750	e16,000	e4,080	e4,020	e4,470	e2,320	e4,400	e2,720
2	e1,500	e6,450	e2,650	e10,000	e7,100	e15,400	e4,400	e3,700	e3,900	e2,160	e3,600	e4,310
3	e1,250	e4,380	e2,230	e12,100	e6,600	e14,700	e4,720	e3,660	e3,940	e2,100	e3,080	e8,000
4	e1,110	e3,820	e2,200	e12,000	e7,600	e13,600	e4,580	e3,510	e5,050	e1,980	e5,550	e11,400
5	e980	e4,780	e2,240	e10,400	e11,300	e12,200	e4,200	e10,100	e4,560	e1,600	e15,200	e16,400
6	e605	e13,600	e2,040	e9,200	e13,600	e11,200	e4,280	e23,500	e4,220	e1,460	e15,500	e21,200
7	e466	e12,800	e3,620	e8,150	e12,200	e10,600	e8,250	e14,900	e27,200	e1,460	e10,600	e11,400
8	e386	e10,100	e5,550	e7,100	e10,000	e10,100	e18,700	e11,900	e32,400	e1,680	e7,650	e6,650
9	e439	e6,950	e5,500	e6,100	e8,050	e9,400	e31,000	e26,400	e26,800	e1,600	e6,250	e4,380
10	e1,580	e9,400	e5,050	e5,350	e7,050	e8,900	e37,900	e30,200	e18,800	e2,210	e5,150	e3,140
11	e19,600	e18,400	e6,400	e5,200	e6,450	e8,450	e43,600	e24,100	e11,800	e3,900	e4,380	e2,700
12	e13,200	e17,500	e11,100	e4,620	e5,900	e7,650	e45,400	e16,800	e11,600	e5,300	e4,780	e1,990
13	e6,550	e12,800	e14,400	e4,060	e5,700	e6,850	e43,500	e11,300	e12,800	e7,050	e3,630	e1,470
14	e4,070	e9,300	e29,000	e3,290	e5,500	e6,250	e31,700	e8,550	e14,400	e6,750	e2,580	e1,260
15	e2,720	e7,350	e37,200	e3,040	e29,600	e5,650	e18,800	e6,550	e28,800	e5,900	e2,010	e1,200
16	e3,100	e9,050	e31,800	e2,700	e62,500	e4,950	e14,600	e8,150	e29,200	e6,450	e2,110	e1,260
17	e3,400	e9,600	e19,500	e2,460	e78,000	e4,340	e13,100	e11,800	e34,600	e4,850	e1,800	e1,130
18	e3,040	e8,600	e14,000	e2,310	e82,000	e4,040	e15,800	e17,600	e34,200	e3,080	e1,490	e1,060
19	e2,550	e7,500	e11,400	e2,170	e82,000	e4,400	e16,700	e23,200	e33,000	e2,340	e1,490	e995
20	e2,200	e6,800	e12,600	e2,040	e72,500	e12,700	e17,700	e21,000	e32,800	e1,820	e1,530	e745
21	e2,280	e6,250	e12,700	e2,040	e35,400	e9,350	e16,200	e17,900	e28,000	e1,520	e1,600	e710
22	e2,380	e5,650	e13,500	e2,100	e26,200	e6,500	e15,400	e14,900	e19,100	e1,390	e1,420	e955
23	e2,100	e4,800	e12,400	e2,060	e36,800	e5,300	e13,800	e14,200	e13,800	e1,360	e1,180	e1,380
24	e1,740	e4,440	e9,750	e1,900	e42,900	e4,580	e11,600	e13,000	e11,200	e1,620	e1,020	e2,020
25	e1,610	e4,360	e9,100	e1,660	e39,800	e4,020	e9,500	e9,900	e9,650	e1,930	e905	e2,840
26	e1,380	e4,130	e10,200	e1,540	e27,200	e3,760	e8,100	e7,850	e7,000	e2,070	e800	e2,470
27	e1,200	e3,770	e11,800	e1,540	e20,000	e3,440	e7,150	e6,150	e4,530	e2,000	e705	e2,100
28	e1,400	e3,220	e10,800	e1,540	e17,400	e3,330	e6,550	e5,050	e3,420	e1,600	e635	e2,060
29	e5,500	e2,820	e8,800	e1,620	---	e3,460	e5,700	e4,530	e2,680	e1,680	e590	e2,200
30	e17,600	e2,540	e7,650	e2,620	---	e3,850	e4,860	e4,840	e2,450	e2,360	e670	e2,200
31	e16,800	---	e6,400	e4,510	---	e3,930	---	e4,780	---	e2,720	e1,080	---
TOTAL	124,676	231,460	334,000	142,120	766,100	238,900	481,870	384,040	476,370	86,260	113,385	122,345
MEAN	4,022	7,715	10,770	4,585	27,360	7,706	16,060	12,390	15,880	2,783	3,658	4,078
MAX	19,600	18,400	37,200	12,100	82,000	16,000	45,400	30,200	34,600	7,050	15,500	21,200
MIN	386	2,540	2,040	1,540	5,500	3,330	4,080	3,510	2,450	1,360	590	710

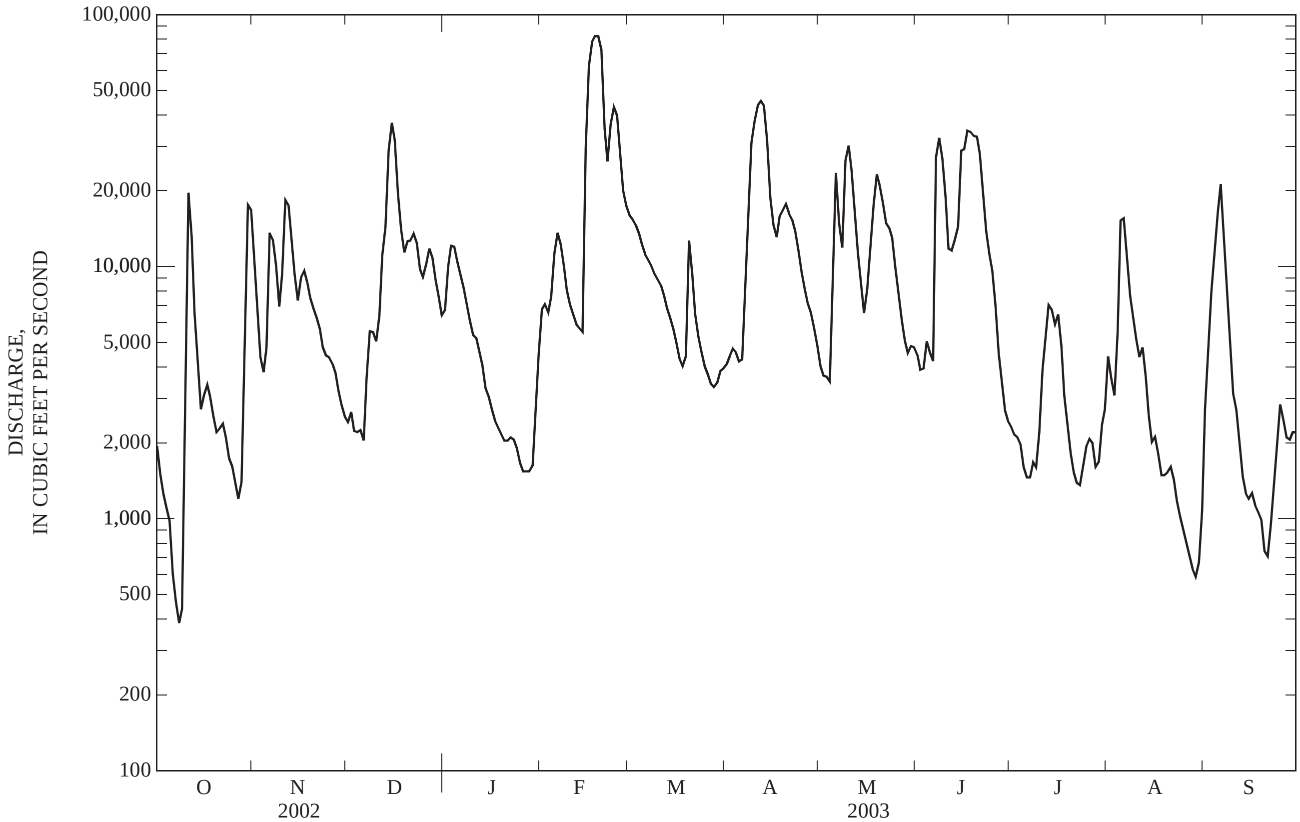
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1,399	3,098	5,881	10,190	12,620	15,310	11,030	9,357	6,248	2,466	1,845	1,069
MAX	4,022	9,309	12,670	22,370	27,360	29,500	21,390	22,020	18,360	4,867	4,660	4,078
(WY)	(2003)	(1997)	(1994)	(1994)	(2003)	(1997)	(1994)	(1995)	(1997)	(1998)	(2001)	(2003)
MIN	324	456	1,567	1,876	4,614	5,553	3,730	1,973	417	435	306	153
(WY)	(1998)	(2002)	(2000)	(2000)	(2002)	(2000)	(1999)	(2001)	(1999)	(1999)	(1999)	(1999)

03286500 KENTUCKY RIVER AT LOCK 7 NEAR HIGH BRIDGE, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1992 - 2003	
ANNUAL TOTAL	2,622,870		3,501,526			
ANNUAL MEAN	7,186		9,593		6,680	
HIGHEST ANNUAL MEAN					11,250	1994
LOWEST ANNUAL MEAN					3,371	2000
HIGHEST DAILY MEAN	82,000	Mar 21	82,000	Feb 18	87,900	Mar 2, 1997
LOWEST DAILY MEAN	79	Sep 13	386	Oct 8	79	Sep 13, 2002
ANNUAL SEVEN-DAY MINIMUM	109	Sep 9	748	Oct 3	109	Sep 9, 2002
MAXIMUM PEAK FLOW			83,700	Feb 18	92,800	Mar 10, 1994
MAXIMUM PEAK STAGE			34.48	Feb 18	37.90	Mar 10, 1994
10 PERCENT EXCEEDS	19,500		22,000		16,900	
50 PERCENT EXCEEDS	2,920		5,500		2,720	
90 PERCENT EXCEEDS	327		1,490		445	

e Estimated



03287000 KENTUCKY RIVER AT LOCK 6, NEAR SALVISA, KY

LOCATION.--Lat 37°55'32", long 84°49'17", Woodford County, Hydrologic Unit 05100205, on right bank at lock 6, 1.5 mi upstream from Clear Creek, 2.1 mi east of Salvisa, and at mile 96.2.

DRAINAGE AREA.--5,102 mi^2, of which about 101 mi^2 does not contribute directly to surface runoff.

PERIOD OF RECORD.--October 1925 to current year. Prior to October 1953, published as "at lock 6, at Warwick."

REVISED RECORDS.--WSP 1385: 1926-27, 1928(M), 1929, 1931(M), 1932, 1933-34(M), 1935, 1937, drainage area.

GAGE.--Water-stage recorder with telemetry. Datum of gage is 489.90 ft, Kentucky River datum. Prior to November 1934, nonrecording gage at same site and datum. Auxiliary water-stage recorder with telemetry, at lock 5, 14 mi downstream. Prior to Sept. 30, 1981, nonrecording gage at same site and datum.

REMARKS.--Records good above 1,000 ft^3/s, fair below. Flow regulated since November 1925 by Herrington Lake, since December 1960 by Buckhorn Lake, since January 1976 by Carr Fork Lake, and by hydroelectric plant at lock 7.

COOPERATION.--Kentucky River Authority, U.S. Army Corps of Engineers, Louisville District.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2,190	11,200	2,510	6,100	5,450	16,100	4,550	4,480	4,310	2,520	4,850	2,580
2	1,960	7,170	3,200	9,830	6,280	15,200	4,720	4,050	3,930	2,410	4,090	4,330
3	1,620	4,700	2,620	11,800	6,020	14,500	5,010	3,910	3,740	2,330	3,170	8,460
4	1,510	4,520	2,760	11,500	6,770	13,600	4,990	3,380	4,950	2,210	3,730	12,900
5	1,370	4,720	2,910	9,970	9,850	12,300	4,260	9,750	4,600	1,710	11,500	13,100
6	743	14,600	2,230	9,130	12,900	11,100	4,250	27,300	4,150	1,520	15,300	22,300
7	537	13,600	2,570	8,240	12,100	10,500	7,120	16,800	27,300	1,530	10,400	12,700
8	439	10,800	4,590	7,200	9,770	9,990	15,600	12,800	37,900	2,090	7,400	7,500
9	563	7,120	5,260	6,050	7,650	9,350	29,400	25,400	30,300	1,930	6,030	5,180
10	1,300	9,380	4,700	5,220	6,950	8,780	37,800	32,000	21,800	2,250	5,150	3,690
11	20,900	19,900	6,030	5,490	6,240	8,400	44,400	25,700	13,400	4,040	4,520	3,370
12	16,500	19,200	10,700	5,050	5,420	7,810	46,700	18,800	11,800	4,520	4,460	2,390
13	8,300	14,200	13,400	4,580	5,420	7,120	45,800	12,100	13,100	6,240	4,040	1,660
14	5,140	10,300	28,000	3,440	5,330	6,540	35,100	9,090	13,100	6,330	2,700	1,400
15	3,240	8,180	38,500	3,230	28,700	6,060	19,700	7,080	30,700	5,740	2,120	1,420
16	3,570	9,770	35,000	2,790	e57,000	5,490	14,400	7,150	29,400	6,350	2,120	1,640
17	4,180	10,500	21,500	2,470	e71,000	4,900	12,600	10,500	35,800	5,960	2,030	1,450
18	3,700	9,420	14,700	2,340	e76,000	4,570	15,500	15,600	36,100	3,590	1,610	1,350
19	2,880	8,200	11,900	2,240	e77,000	4,510	16,400	22,600	33,400	2,710	1,500	1,240
20	2,340	7,430	13,700	2,040	e68,000	13,000	17,000	21,400	33,400	2,050	1,510	760
21	2,720	6,870	13,100	1,950	e37,000	11,100	16,200	18,000	29,400	1,700	1,560	749
22	3,080	6,070	13,400	2,060	28,200	7,470	15,000	15,400	20,300	1,620	1,500	1,170
23	2,710	4,610	12,700	2,100	38,100	6,100	13,900	13,100	13,900	1,660	1,280	1,630
24	2,170	4,270	9,630	2,010	45,100	5,350	11,700	12,800	11,100	1,870	1,080	1,840
25	2,070	4,570	8,430	1,820	44,000	4,770	9,680	9,860	9,550	2,170	954	2,610
26	1,650	4,550	9,600	1,650	30,700	4,460	8,350	7,970	7,680	2,110	855	2,500
27	1,330	4,110	11,500	1,610	21,000	4,020	7,500	6,220	5,080	2,190	750	2,130
28	1,580	3,260	10,600	1,620	17,700	3,960	6,750	5,010	3,790	1,770	666	2,090
29	4,270	2,840	8,410	1,560	---	4,130	6,060	4,380	2,760	1,910	627	2,380
30	16,200	2,570	7,470	2,180	---	4,550	5,430	4,450	2,500	2,670	614	2,330
31	17,800	---	6,180	3,390	---	4,550	---	4,540	---	2,640	1,130	---
TOTAL	138,562	248,630	337,800	140,660	745,650	250,280	485,870	391,620	499,240	90,340	109,246	128,849
MEAN	4,470	8,288	10,900	4,537	26,630	8,074	16,200	12,630	16,640	2,914	3,524	4,295
MAX	20,900	19,900	38,500	11,800	77,000	16,100	46,700	32,000	37,900	6,350	15,300	22,300
MIN	439	2,570	2,230	1,560	5,330	3,960	4,250	3,380	2,500	1,520	614	749

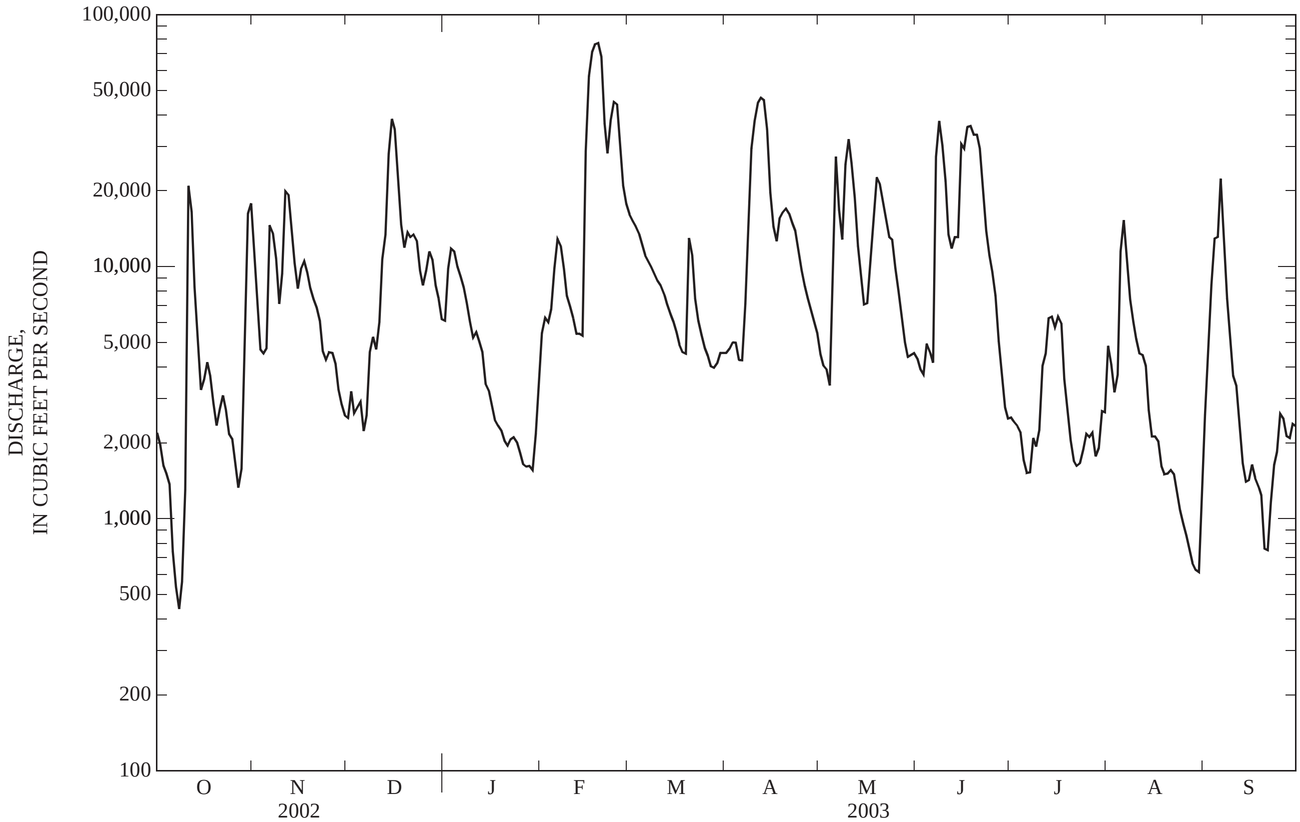
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1,894	3,981	8,581	10,600	12,590	14,800	11,470	8,384	4,647	2,255	1,966	1,665
MAX	13,680	12,450	31,030	31,910	34,850	33,640	35,920	26,910	18,890	5,441	6,238	10,860
(WY)	(1990)	(1987)	(1979)	(1974)	(1989)	(1975)	(1972)	(1983)	(1997)	(1998)	(1992)	(1974)
MIN	312	467	525	502	2,655	3,769	1,491	1,127	362	420	277	188
(WY)	(1981)	(2002)	(1966)	(1981)	(1968)	(1983)	(1986)	(1976)	(1988)	(1999)	(1986)	(1999)

03287000 KENTUCKY RIVER AT LOCK 6, NEAR SALVISA, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1961 - 2003	
ANNUAL TOTAL	2,716,256		3,566,747			
ANNUAL MEAN	7,442		9,772		6,877	
HIGHEST ANNUAL MEAN					11,050	1994
LOWEST ANNUAL MEAN					2,826	1988
HIGHEST DAILY MEAN	83,800	Mar 21	77,000	Feb 19	125,000	Dec 10, 1978
LOWEST DAILY MEAN	105	Sep 13	439	Oct 8	83	Sep 4, 1984
ANNUAL SEVEN-DAY MINIMUM	130	Sep 9	792	Aug 24	112	Nov 8, 1991
MAXIMUM PEAK FLOW			77,500	Feb 19	130,000	Dec 10, 1978
MAXIMUM PEAK STAGE			33.90	Feb 19	49.04	Dec 10, 1978
10 PERCENT EXCEEDS	20,500		22,400		17,400	
50 PERCENT EXCEEDS	3,050		5,430		2,980	
90 PERCENT EXCEEDS	354		1,620		467	

e Estimated



03287500 KENTUCKY RIVER AT LOCK 4, AT FRANKFORT, KY

LOCATION.--Lat 38°12'06", long 84°52'54", Franklin County, Hydrologic Unit 05100205, on left bank at downstream side of Broadway Street Bridge at Frankfort, 300 ft upstream from Benson Creek, 0.8 mi upstream from lock 4, and at mile 65.8. Records include flow of Benson Creek.

DRAINAGE AREA.--5,411 mi^2, (includes that of Benson Creek), of which about 120 mi^2 does not contribute directly to surface runoff.

WATER DISCHARGE RECORDS

PERIOD OF RECORD.--March 1905 to July 1906 (gage heights only), October 1925 to current year. Monthly discharge only October 1930 to February 1931, October, November 1931, and May to September 1932, published in WSP 1305. Gage-height records collected in this vicinity September 1887 to December 1889, January to May 1893, and since April 1901 are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 1113: 1941-42. WSP 1385: 1926-27, 1929(M), 1932-33, 1935-37, 1938(M), drainage area. WSP 1555: 1932(M).

GAGE.--Water-stage recorder with telemetry. Datum of gage is 462.10 ft above NGVD of 1929. See WDR KY-90-1 for history of changes prior to Jan. 28, 1982.

REMARKS.--Record fair except those for estimated daily discharges and flow below 1000 ft^3/s, which are poor. Flow regulated since November 1925 by Herrington Lake, since December 1960 by Buckhorn Lake, since January 1976 by Carr Fork Lake, and by hydroelectric plant at lock 7.

COOPERATION.--U.S. Army Corps of Engineers, Louisville District, Kentucky River Authority, and City of Frankfort.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2,320	14,100	2,360	10,300	5,330	17,800	4,850	4,940	4,340	2,390	4,260	2,380
2	1,930	8,830	2,920	11,300	6,860	16,800	4,980	4,260	3,910	2,280	4,400	6,400
3	1,680	5,820	2,740	13,500	6,700	16,100	5,270	4,230	4,770	2,190	3,560	10,600
4	1,470	4,790	2,510	13,600	7,860	15,200	5,360	3,430	5,410	2,130	3,140	15,700
5	1,550	6,530	2,960	11,700	10,600	13,800	4,860	12,300	5,020	1,640	9,260	13,700
6	908	16,400	2,150	10,700	13,700	12,500	4,330	29,300	4,270	1,430	16,900	22,800
7	616	16,200	2,180	9,330	13,900	11,700	6,640	22,100	19,300	1,320	12,500	16,200
8	507	13,300	4,230	8,400	12,400	11,100	15,000	15,800	38,800	1,810	9,150	9,270
9	491	8,910	5,450	7,250	11,700	10,500	27,700	26,900	32,200	1,850	6,850	6,080
10	910	11,900	5,080	5,800	7,790	9,800	35,900	33,600	24,600	e2,210	5,810	4,110
11	22,700	23,700	7,000	6,040	7,300	9,320	41,800	31,000	15,900	4,230	e5,610	3,520
12	21,700	22,200	11,900	5,580	6,170	8,720	45,000	22,900	13,100	4,650	e4,740	2,670
13	11,300	17,000	14,600	4,970	5,970	7,930	45,100	14,800	14,200	6,420	4,830	1,670
14	6,760	12,500	26,200	3,840	5,880	7,230	37,600	10,900	14,000	6,950	3,050	1,370
15	3,800	9,840	36,800	3,230	e31,000	6,630	23,000	9,140	28,600	6,460	2,220	1,270
16	3,620	11,000	36,000	3,020	e59,900	5,990	16,200	8,560	30,500	6,890	2,220	1,560
17	4,600	12,300	25,300	2,480	e73,000	5,250	14,400	11,900	34,300	7,490	2,140	1,440
18	4,130	11,100	17,300	2,320	e80,000	4,770	16,900	16,500	35,600	4,210	1,700	1,270
19	3,400	9,640	15,900	2,200	e82,000	4,840	17,700	23,000	33,100	2,910	1,490	1,320
20	2,490	8,550	19,000	2,030	e76,000	11,900	17,900	23,500	33,000	2,110	1,530	901
21	2,630	7,850	15,900	1,890	e50,000	14,400	18,100	21,100	30,300	1,710	1,560	777
22	3,270	7,130	15,100	1,950	38,600	9,290	16,500	18,000	22,700	1,650	3,180	5,200
23	3,000	5,210	14,600	2,060	39,100	7,190	15,500	14,800	15,800	1,730	2,710	2,580
24	2,190	4,620	11,900	e2,100	44,300	6,120	13,200	14,500	12,500	1,820	1,240	1,890
25	2,060	4,560	10,700	e2,000	45,300	5,290	11,000	11,600	10,700	2,080	1,020	2,580
26	1,880	4,910	10,800	e1,850	34,900	4,830	9,960	9,080	8,960	e2,080	945	2,620
27	1,340	4,470	12,800	e1,800	23,600	4,370	8,700	7,310	5,870	e2,190	793	2,320
28	1,480	3,530	12,500	e1,750	19,500	4,030	7,610	5,480	4,160	e1,820	737	2,160
29	5,280	2,860	10,100	e1,650	---	4,540	7,000	4,620	2,850	e1,750	702	2,270
30	15,900	2,530	8,500	2,080	---	e4,740	6,120	4,440	2,320	2,560	937	2,530
31	20,000	---	8,040	2,960	---	4,950	---	4,590	---	2,600	1,200	---
TOTAL	155,912	292,280	373,520	159,680	819,360	277,630	504,180	444,580	511,080	93,560	120,384	149,158
MEAN	5,029	9,743	12,050	5,151	29,260	8,956	16,810	14,340	17,040	3,018	3,883	4,972
MAX	22,700	23,700	36,800	13,600	82,000	17,800	45,100	33,600	38,800	7,490	16,900	22,800
MIN	491	2,530	2,150	1,650	5,330	4,030	4,330	3,430	2,320	1,320	702	777

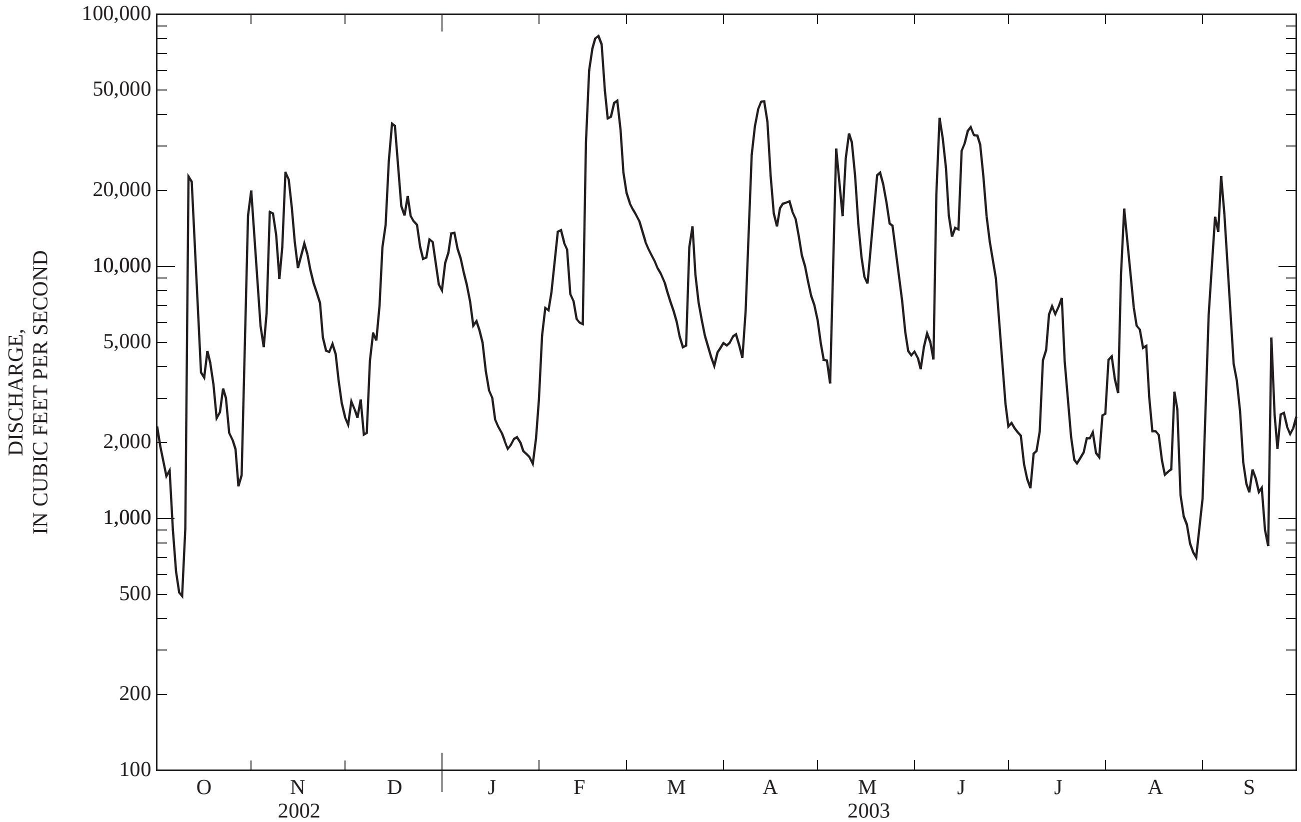
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	2,004	4,281	9,134	11,200	13,290	15,730	11,950	8,814	4,891	2,410	2,112	1,799
MAX	13,240	13,700	33,220	33,500	35,680	34,760	36,690	28,200	20,840	6,446	6,433	10,980
(WY)	(1990)	(1987)	(1979)	(1974)	(1989)	(1975)	(1972)	(1983)	(1997)	(1998)	(1992)	(1974)
MIN	289	542	566	540	2,885	4,175	1,518	1,142	417	568	260	207
(WY)	(1981)	(1966)	(1966)	(1981)	(1968)	(1983)	(1986)	(1976)	(1988)	(1970)	(2002)	(1999)

03287500 KENTUCKY RIVER AT LOCK 4, AT FRANKFORT, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1961 - 2003	
ANNUAL TOTAL	2,915,777		3,901,324			
ANNUAL MEAN	7,988		10,690		7,273	
HIGHEST ANNUAL MEAN					11,860	1979
LOWEST ANNUAL MEAN					3,182	1988
HIGHEST DAILY MEAN	81,100	Mar 21	82,000	Feb 19	116,000	Dec 10, 1978
LOWEST DAILY MEAN	78	Sep 13	491	Oct 9	78	Sep 13, 2002
ANNUAL SEVEN-DAY MINIMUM	88	Sep 8	905	Aug 25	88	Sep 8, 2002
MAXIMUM PEAK FLOW			82,500	Feb 19	118,000	Dec 9, 1978
MAXIMUM PEAK STAGE			35.16	Feb 19	48.47	Dec 10, 1978
10 PERCENT EXCEEDS	23,100		24,100		18,100	
50 PERCENT EXCEEDS	3,230		6,170		3,240	
90 PERCENT EXCEEDS	210		1,710		510	

e Estimated



03287500 KENTUCKY RIVER AT LOCK 4 AT FRANKFORT, KY

WATER-QUALITY RECORDS

PERIOD OF RECORD.-October 2002 to September 2003.

COOPERATION.--Kentucky River Authority

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: June 2001 to current year.
pH: June 2001 to current year.
WATER TEMPERATURES: June 2001 to current year.
DISSOLVED OXYGEN: June 2001 to current year.

INSTRUMENTATION.-- Water-quality monitor with telemetry.

REMARKS.--
SPECIFIC CONDUCTANCE: Records good.
pH: Records good.
WATER TEMPERATURES: Records good.
DISSOLVED OXYGEN: Records good.

EXTREMES FOR PERIOD OF RECORD.--
SPECIFIC CONDUCTANCE: Maximum recorded, 634 microsiemens, Dec 28-29, 2001; minimum recorded, 96 microsiemens, Feb. 20, 2003.
pH: Maximum recorded, 9.9 units, Aug. 19, 2003; minimum recorded, 6.7 units, Aug 31, and Sept 1, 3-5, 2001.
WATER TEMPERATURES: Maximum recorded, 31.3°C, Aug 5, 2002; minimum recorded, 3.3°C, Jan 8-9, 2002.
DISSOLVED OXYGEN: Maximum recorded, 15.4 mg/L, Jan 23, 2002; minimum recorded, 0.2 mg/L, Sept 13, 2001.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum recorded, 552 microsiemens, Aug. 10, 2003; minimum recorded, 96 microsiemens, Feb. 20, 2003.
pH: Maximum recorded, 9.9 units, Aug. 19, 2003; minimum recorded, 6.8 units, Aug 19, 2003.
WATER TEMPERATURES: Maximum recorded, 28.9°C, Aug. 28, 2003; minimum recorded, 1.3°C, Jan. 27, 2003.
DISSOLVED OXYGEN: Maximum recorded, 14.3 mg/L, Aug. 28, 2003; minimum recorded, 3.5 mg/L, Oct. 1, 2002.

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	512	469	487	519	470	505	361	353	358	284	280	283
2	469	386	430	509	463	485	364	352	356	289	284	286
3	386	343	361	488	466	479	364	355	359	290	279	285
4	350	339	344	489	467	475	365	362	364	284	280	282
5	392	347	368	495	454	481	362	344	357	291	280	282
6	416	392	405	454	396	433	344	331	337	---	---	---
7	433	416	424	402	357	382	331	322	327	280	278	278
8	446	428	435	359	350	353	322	307	312	286	279	282
9	459	444	450	362	356	360	314	305	310	288	279	284
10	481	459	469	362	339	349	331	306	317	299	288	292
11	522	411	482	340	306	324	364	331	352	303	299	301
12	476	383	421	344	329	336	364	354	359	309	301	306
13	471	386	424	357	328	342	390	357	367	310	302	307
14	488	471	484	359	334	347	410	376	394	302	296	298
15	494	484	489	334	325	333	384	295	335	296	294	295
16	493	456	483	327	292	315	295	234	255	296	295	295
17	456	405	423	325	319	323	234	183	199	298	296	297
18	408	404	405	337	317	324	194	183	187	300	297	298
19	431	406	422	356	337	348	216	194	203	300	298	299
20	415	399	405	365	356	361	236	215	228	299	298	298
21	415	384	401	366	359	364	245	236	240	309	292	302
22	421	390	407	359	348	354	264	245	255	310	306	309
23	408	376	389	348	336	341	266	263	264	310	306	308
24	407	376	387	336	329	332	267	265	266	307	306	306
25	442	379	414	329	321	325	270	266	268	309	306	307
26	445	436	442	321	319	320	269	260	263	311	309	309
27	436	423	430	331	320	325	273	258	262	312	309	311
28	423	384	406	348	331	340	284	273	281	313	310	311
29	385	359	370	354	348	350	280	276	277	322	313	315
30	502	363	431	356	344	350	286	277	282	322	316	320
31	470	409	429	---	---	---	286	277	280	322	320	321
MONTH	522	339	423	519	292	369	410	183	297	322	278	299

03287500 KENTUCKY RIVER AT LOCK 4 AT FRANKFORT, KY—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	327	322	325	250	247	248	343	336	339	279	274	276
2	336	326	329	258	250	254	354	343	348	280	278	279
3	353	336	346	274	258	266	365	354	360	283	279	281
4	372	352	362	284	274	279	373	365	370	285	280	280
5	397	372	383	290	284	288	378	368	372	288	275	281
6	442	397	414	296	290	293	393	378	385	313	275	291
7	457	433	443	304	296	300	401	393	398	300	256	274
8	481	419	459	311	304	307	433	397	414	331	300	318
9	419	367	387	312	311	312	465	420	437	340	288	311
10	367	352	361	312	311	312	458	333	405	330	253	283
11	352	350	351	311	309	310	333	207	246	336	278	313
12	353	350	352	310	305	308	207	166	179	301	274	291
13	352	328	340	305	299	302	174	156	164	274	248	257
14	328	304	314	300	299	299	191	174	183	263	247	251
15	312	280	298	306	300	303	200	191	195	294	263	280
16	300	249	264	308	306	307	218	200	208	293	273	285
17	251	211	231	310	307	308	240	218	227	293	288	290
18	211	148	173	313	310	311	249	239	246	305	293	298
19	148	128	136	317	313	315	275	249	258	315	276	295
20	131	96	117	318	315	317	291	274	280	321	268	293
21	160	131	146	331	318	324	294	291	292	327	282	304
22	182	160	172	331	305	316	293	279	286	344	285	316
23	193	182	188	323	305	313	284	279	282	285	261	267
24	207	193	199	344	323	335	291	277	280	301	266	278
25	216	207	213	348	343	347	343	291	325	307	290	301
26	229	216	221	343	333	336	318	282	290	290	286	288
27	255	229	239	342	335	340	282	273	277	286	281	282
28	247	243	245	339	337	337	274	273	273	293	282	287
29	---	---	---	339	336	337	273	272	272	298	293	296
30	---	---	---	---	---	---	275	273	274	305	295	299
31	---	---	---	---	---	---	---	---	---	308	305	307
MONTH	481	96	286	348	247	308	465	156	296	344	247	289

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	308	305	307	273	270	271	518	490	503	344	337	341
2	313	305	308	276	273	274	490	425	453	357	336	344
3	339	312	324	281	276	279	426	379	400	356	318	342
4	344	338	342	284	281	283	402	379	392	332	303	320
5	338	332	335	289	284	286	414	362	393	338	320	330
6	332	322	327	291	288	290	390	342	365	392	334	357
7	324	306	319	295	291	293	458	377	409	403	389	395
8	323	257	284	299	295	297	542	439	511	508	400	465
9	319	269	296	300	298	299	550	509	528	524	497	516
10	312	272	291	301	284	298	552	413	494	497	474	481
11	274	259	266	306	300	303	413	313	356	495	454	485
12	313	274	290	309	306	307	313	254	282	454	360	402
13	316	312	314	310	305	308	254	221	238	360	313	332
14	315	292	303	318	309	313	221	207	211	313	295	302
15	314	280	289	326	307	321	216	209	212	295	273	293
16	314	257	274	320	304	311	225	211	218	297	293	295
17	284	236	254	345	320	338	226	225	225	302	297	299
18	237	215	229	382	344	364	237	225	231	305	302	304
19	250	207	225	422	382	399	249	237	243	308	305	307
20	236	214	227	456	422	440	253	249	251	310	308	309
21	223	196	205	470	455	463	265	253	258	310	308	309
22	228	214	218	485	460	474	269	265	267	309	152	276
23	238	221	230	515	485	503	---	---	---	315	297	307
24	245	238	242	518	498	511	---	---	---	306	302	304
25	260	245	253	501	448	474	---	---	---	302	297	299
26	261	259	260	448	434	439	306	301	304	305	300	303
27	262	259	260	489	446	474	313	306	310	305	304	305
28	266	261	263	508	464	494	321	313	318	304	298	301
29	268	265	267	540	508	525	328	321	325	298	294	296
30	271	268	269	548	540	545	331	310	328	300	295	298
31	---	---	---	544	518	529	339	330	334	---	---	---
MONTH	344	196	276	548	270	378	552	207	334	524	152	341
YEAR	552	96	325									

03287500 KENTUCKY RIVER AT LOCK 4 AT FRANKFORT, KY—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	7.5	7.4	7.4	7.7	7.6	7.6	7.9	7.8	7.9	8.6	8.6	8.6
2	7.6	7.4	7.5	7.7	7.6	7.7	7.9	7.8	7.9	8.6	8.6	8.6
3	7.6	7.5	7.5	7.7	7.6	7.6	8.0	7.9	8.0	8.6	8.6	8.6
4	7.6	7.5	7.5	7.6	7.6	7.6	8.0	8.0	8.0	8.6	8.6	8.6
5	7.6	7.5	7.5	7.7	7.6	7.6	8.2	8.0	8.0	8.7	8.6	8.6
6	7.7	7.5	7.5	7.7	7.6	7.7	8.2	8.2	8.2	---	---	---
7	7.7	7.5	7.6	7.6	7.5	7.6	8.2	8.2	8.2	8.7	8.7	8.7
8	7.8	7.6	7.7	7.6	7.5	7.6	8.2	8.2	8.2	8.7	8.7	8.7
9	7.7	7.6	7.6	7.6	7.5	7.6	8.2	8.2	8.2	8.7	8.7	8.7
10	7.6	7.6	7.6	7.7	7.6	7.6	8.2	8.2	8.2	8.7	8.7	8.7
11	7.7	7.5	7.6	7.7	7.5	7.6	8.3	8.2	8.2	8.7	8.7	8.7
12	7.5	7.4	7.4	7.5	7.4	7.5	8.4	8.2	8.3	8.8	8.7	8.8
13	7.5	7.4	7.4	7.5	7.4	7.5	8.4	8.3	8.3	8.8	8.7	8.8
14	7.6	7.5	7.6	7.5	7.5	7.5	8.3	8.2	8.3	8.8	8.7	8.7
15	7.6	7.6	7.6	7.5	7.5	7.5	8.3	8.2	8.2	8.7	8.7	8.7
16	7.6	7.6	7.6	7.5	7.5	7.5	8.3	8.1	8.2	8.7	8.7	8.7
17	7.7	7.6	7.7	7.5	7.5	7.5	8.1	8.1	8.1	8.7	8.7	8.7
18	7.7	7.7	7.7	7.6	7.5	7.5	8.2	8.1	8.2	8.7	8.7	8.7
19	7.7	7.7	7.7	7.6	7.6	7.6	8.3	8.2	8.3	8.8	8.7	8.8
20	7.7	7.7	7.7	7.7	7.6	7.6	8.4	8.3	8.4	8.8	8.7	8.7
21	7.7	7.6	7.7	7.7	7.6	7.7	8.4	8.4	8.4	8.8	8.1	8.4
22	7.7	7.6	7.7	7.7	7.7	7.7	8.5	8.4	8.5	8.1	8.1	8.1
23	7.7	7.6	7.7	7.8	7.7	7.8	8.5	8.5	8.5	8.1	8.1	8.1
24	7.7	7.6	7.7	7.8	7.7	7.7	8.5	8.5	8.5	8.1	8.1	8.1
25	7.7	7.6	7.6	7.7	7.7	7.7	8.5	8.5	8.5	8.1	8.0	8.1
26	7.6	7.6	7.6	7.8	7.7	7.8	8.6	8.5	8.6	8.0	8.0	8.0
27	7.6	7.6	7.6	7.8	7.7	7.8	8.6	8.6	8.6	8.1	8.0	8.1
28	7.6	7.6	7.6	7.9	7.8	7.9	8.6	8.5	8.6	8.1	8.1	8.1
29	7.6	7.5	7.6	7.9	7.8	7.9	8.6	8.5	8.5	8.1	8.0	8.1
30	7.7	7.6	7.6	7.8	7.8	7.8	8.6	8.5	8.6	8.1	8.0	8.0
31	7.6	7.6	7.6	---	---	---	8.6	8.5	8.6	8.1	8.0	8.1
MONTH	7.8	7.4	7.6	7.9	7.4	7.6	8.6	7.8	8.3	8.8	8.0	8.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	8.1	8.0	8.1	8.1	8.1	8.1	8.2	8.1	8.1	7.6	7.6	7.6
2	8.1	8.0	8.0	8.1	8.1	8.1	8.2	8.2	8.2	7.6	7.6	7.6
3	8.0	8.0	8.0	8.2	8.1	8.1	8.3	8.2	8.2	7.6	7.6	7.6
4	8.1	8.0	8.0	8.1	8.1	8.1	8.3	8.2	8.2	7.6	7.6	7.6
5	8.0	8.0	8.0	8.1	8.1	8.1	8.3	8.2	8.2	7.6	7.4	7.6
6	8.0	7.9	7.9	8.2	8.1	8.2	8.4	8.2	8.3	7.7	7.6	7.7
7	7.9	7.9	7.9	8.2	8.0	8.1	8.4	8.1	8.3	7.7	7.6	7.6
8	7.9	7.9	7.9	8.1	8.0	8.0	8.3	8.1	8.2	7.7	7.6	7.7
9	7.9	7.8	7.9	8.1	8.1	8.1	8.4	7.9	8.0	7.7	7.5	7.6
10	7.9	7.8	7.8	8.1	8.1	8.1	7.9	7.8	7.9	7.7	7.5	7.6
11	7.9	7.8	7.8	8.1	8.0	8.1	7.9	7.8	7.8	7.7	7.6	7.7
12	7.9	7.8	7.8	8.1	8.1	8.1	7.9	7.8	7.9	7.8	7.6	7.7
13	7.9	7.8	7.9	8.1	8.0	8.1	7.8	7.7	7.8	7.8	7.8	7.8
14	7.8	7.8	7.8	8.1	8.0	8.1	7.8	7.7	7.7	7.8	7.8	7.8
15	7.8	7.8	7.8	8.1	8.0	8.0	7.7	7.4	7.6	7.9	7.8	7.8
16	7.8	7.7	7.7	8.1	8.0	8.0	7.5	7.5	7.5	7.9	7.7	7.8
17	7.8	7.6	7.8	8.0	8.0	8.0	7.6	7.5	7.5	7.8	7.8	7.8
18	7.7	7.5	7.6	8.1	8.0	8.0	7.7	7.6	7.6	7.9	7.8	7.8
19	7.6	7.5	7.5	8.1	8.0	8.1	7.6	7.6	7.6	7.9	7.8	7.8
20	7.5	7.4	7.5	8.1	7.9	8.0	7.6	7.6	7.6	7.9	7.8	7.8
21	7.5	7.4	7.4	8.2	8.1	8.1	7.6	7.6	7.6	7.9	7.8	7.8
22	7.4	7.4	7.4	8.1	8.1	8.1	7.6	7.6	7.6	7.8	7.8	7.8
23	7.5	7.4	7.4	8.1	8.0	8.0	7.6	7.6	7.6	7.8	7.7	7.8
24	7.5	7.4	7.5	8.0	8.0	8.0	7.6	7.6	7.6	7.8	7.8	7.8
25	7.6	7.5	7.6	8.1	8.0	8.1	7.6	7.6	7.6	7.8	7.8	7.8
26	7.6	7.5	7.5	8.1	8.0	8.1	7.6	7.6	7.6	7.8	7.8	7.8
27	7.9	7.5	7.5	8.1	8.1	8.1	7.7	7.6	7.6	7.8	7.7	7.8
28	8.1	7.9	8.1	8.1	8.1	8.1	7.6	7.6	7.6	7.8	7.7	7.8
29	---	---	---	8.2	8.1	8.2	7.6	7.6	7.6	7.8	7.7	7.8
30	---	---	---	---	---	---	7.6	7.6	7.6	7.8	7.7	7.8
31	---	---	---	---	---	---	---	---	---	7.8	7.7	7.7
MONTH	8.1	7.4	7.8	8.2	7.9	8.1	8.4	7.4	7.8	7.9	7.4	7.7

03287500 KENTUCKY RIVER AT LOCK 4 AT FRANKFORT, KY—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS—CONTINUED
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	7.7	7.7	7.7	7.5	7.4	7.4	7.8	7.2	7.5	7.6	7.4	7.5
2	7.7	7.7	7.7	7.7	7.4	7.5	7.7	7.4	7.6	7.6	7.3	7.4
3	7.8	7.7	7.7	7.7	7.4	7.5	7.6	7.2	7.4	7.4	7.3	7.4
4	7.7	7.7	7.7	7.6	7.3	7.4	7.5	7.1	7.3	7.3	7.3	7.3
5	7.8	7.7	7.7	7.8	7.2	7.5	7.4	7.1	7.3	7.4	7.3	7.3
6	7.8	7.7	7.7	7.8	7.2	7.4	7.4	7.2	7.3	7.4	7.3	7.3
7	7.8	7.6	7.7	7.5	7.2	7.3	7.3	7.2	7.3	7.3	7.2	7.3
8	7.7	7.5	7.6	7.9	7.2	7.5	7.4	7.2	7.3	7.3	7.2	7.3
9	7.6	7.6	7.6	7.8	7.2	7.4	7.4	7.2	7.3	7.4	7.3	7.4
10	7.6	7.6	7.6	7.6	7.2	7.3	7.3	7.3	7.3	7.4	7.3	7.4
11	7.6	7.6	7.6	7.5	7.2	7.3	7.3	7.2	7.2	7.4	7.4	7.4
12	7.8	7.6	7.7	7.5	7.3	7.4	7.2	7.1	7.2	7.4	7.3	7.4
13	7.8	7.7	7.8	7.5	7.3	7.4	7.1	7.1	7.1	7.4	7.3	7.3
14	7.8	7.7	7.7	7.5	7.3	7.4	7.2	7.0	7.1	7.3	7.2	7.3
15	7.7	7.5	7.6	7.4	7.3	7.4	8.1	7.0	7.3	7.4	7.2	7.3
16	7.6	7.5	7.6	7.4	7.3	7.4	7.8	7.0	7.3	7.4	7.2	7.3
17	7.6	7.5	7.5	7.5	7.3	7.4	7.3	7.0	7.2	7.4	7.2	7.3
18	7.6	7.5	7.6	7.5	7.3	7.4	8.4	6.9	7.3	7.4	7.2	7.3
19	7.6	7.5	7.5	7.5	7.4	7.4	9.9	6.8	7.5	7.8	7.3	7.3
20	7.5	7.5	7.5	7.5	7.2	7.3	8.9	6.9	7.6	7.8	7.3	7.4
21	7.5	7.3	7.4	7.3	7.1	7.2	8.9	7.0	7.7	8.0	7.4	7.5
22	7.4	7.3	7.4	7.8	7.2	7.3	7.4	7.0	7.1	7.5	7.4	7.4
23	7.4	7.3	7.3	7.4	7.2	7.3	---	---	---	7.5	7.4	7.4
24	7.5	7.4	7.4	7.7	7.1	7.3	---	---	---	7.5	7.4	7.4
25	7.5	7.4	7.5	7.7	7.0	7.3	---	---	---	7.4	7.4	7.4
26	7.6	7.4	7.5	7.5	7.1	7.2	8.1	7.5	7.8	7.5	7.4	7.4
27	7.6	7.5	7.6	7.5	7.1	7.3	8.5	7.2	8.0	7.5	7.4	7.4
28	7.6	7.5	7.6	7.3	7.1	7.2	8.8	8.0	8.4	7.5	7.4	7.5
29	7.5	7.4	7.4	7.5	7.0	7.3	8.7	8.1	8.4	7.5	7.4	7.5
30	7.6	7.4	7.5	7.5	7.0	7.3	8.4	7.8	8.1	7.5	7.5	7.5
31	---	---	---	7.4	7.2	7.3	7.8	7.4	7.7	---	---	---
MONTH	7.8	7.3	7.6	7.9	7.0	7.4	9.9	6.8	7.5	8.0	7.2	7.4
YEAR	9.9	6.8	7.8									

03287500 KENTUCKY RIVER AT LOCK 4 AT FRANKFORT, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	22.8	22.4	22.6	15.0	13.9	14.6	7.9	7.5	7.7	6.2	6.0	6.1
2	22.4	20.8	21.8	13.9	13.1	13.4	7.7	7.2	7.5	6.5	6.1	6.3
3	20.8	18.9	19.8	13.1	12.7	12.8	7.3	6.9	7.1	6.1	5.8	6.0
4	18.9	18.4	18.6	12.7	12.3	12.5	6.9	6.1	6.6	6.1	5.9	6.0
5	20.3	18.7	19.3	12.3	12.2	12.2	6.1	5.4	5.7	6.0	5.8	5.8
6	20.8	19.4	19.9	12.4	11.9	12.2	5.4	5.0	5.2	---	---	---
7	20.6	19.8	20.2	12.3	12.0	12.1	5.0	4.7	4.9	5.5	5.3	5.5
8	20.3	19.6	19.9	12.2	11.9	12.1	6.0	4.8	5.5	5.7	5.2	5.5
9	20.2	19.6	19.8	12.4	12.1	12.3	6.3	5.3	5.6	5.7	5.6	5.6
10	19.8	19.5	19.6	12.8	12.3	12.5	6.3	5.3	5.8	5.7	5.2	5.6
11	20.5	17.8	19.5	13.2	12.6	13.0	5.3	4.5	4.8	5.2	5.0	5.1
12	19.7	16.9	18.8	13.2	12.8	13.0	5.1	4.5	4.8	5.1	4.6	4.7
13	19.4	18.9	19.2	13.0	12.7	12.9	5.8	5.1	5.4	4.7	4.5	4.6
14	19.1	18.3	18.7	12.7	12.5	12.6	5.3	3.9	4.9	4.8	4.6	4.7
15	18.3	17.5	17.9	12.5	12.2	12.4	4.8	3.8	4.5	4.6	4.3	4.4
16	17.5	16.8	17.2	12.2	11.6	12.0	5.8	4.7	5.2	4.4	4.2	4.3
17	16.8	16.2	16.4	11.6	11.3	11.5	6.6	5.8	6.2	4.2	3.6	3.9
18	16.2	15.8	16.0	11.3	11.0	11.1	7.1	6.6	6.8	3.8	3.5	3.7
19	16.5	16.0	16.4	11.1	10.9	11.0	7.6	7.1	7.2	3.6	3.2	3.4
20	16.3	15.9	16.1	11.0	10.7	10.8	8.0	7.6	7.8	3.3	3.1	3.2
21	15.9	15.4	15.7	10.9	10.7	10.8	7.8	7.4	7.5	3.2	2.9	3.0
22	15.8	15.4	15.6	10.9	10.5	10.7	7.6	7.5	7.6	3.2	2.8	3.0
23	15.5	15.1	15.4	10.6	10.5	10.5	7.5	7.1	7.2	3.0	2.3	2.7
24	15.5	15.0	15.2	10.5	10.2	10.4	7.1	6.8	6.9	2.3	2.0	2.1
25	15.4	15.0	15.2	10.4	10.1	10.3	6.8	6.4	6.6	2.1	1.9	1.9
26	15.6	15.4	15.5	10.1	9.3	9.7	6.4	6.0	6.1	1.9	1.6	1.8
27	16.1	15.3	15.5	9.3	8.8	9.0	6.1	5.9	6.0	1.6	1.3	1.4
28	15.6	15.3	15.5	8.8	8.3	8.5	6.0	5.9	6.0	1.5	1.4	1.4
29	15.3	14.5	14.9	8.6	8.0	8.3	6.2	6.0	6.1	1.6	1.4	1.5
30	14.6	14.3	14.5	8.6	7.9	8.4	6.2	5.9	6.0	1.8	1.5	1.7
31	14.5	14.1	14.3	---	---	---	6.2	5.9	6.0	2.1	1.7	1.8
MONTH	22.8	14.1	17.6	15.0	7.9	11.5	8.0	3.8	6.2	6.5	1.3	3.9

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	2.3	2.1	2.2	5.6	5.5	5.6	11.5	10.9	11.2	16.1	15.5	15.8
2	2.5	2.1	2.3	5.6	5.3	5.5	12.2	11.2	11.7	16.4	15.9	16.1
3	2.7	2.0	2.2	5.3	5.0	5.2	12.9	12.1	12.5	16.3	16.0	16.2
4	2.9	2.7	2.8	5.4	5.0	5.2	13.3	12.8	13.1	16.0	15.5	15.7
5	3.2	2.6	3.0	5.7	5.4	5.5	13.3	12.8	13.1	16.2	15.5	15.7
6	2.6	2.0	2.1	5.7	5.6	5.6	12.8	12.3	12.5	17.1	15.1	16.4
7	2.8	2.2	2.5	6.0	5.5	5.7	12.9	12.2	12.5	16.7	16.3	16.5
8	2.4	2.2	2.3	6.6	5.9	6.2	14.3	12.7	13.5	17.2	16.5	16.7
9	2.8	2.1	2.5	7.0	6.6	6.7	14.1	13.0	13.4	17.0	16.7	16.8
10	3.1	2.5	2.7	6.9	6.6	6.8	13.4	12.1	12.7	17.7	17.0	17.5
11	3.1	2.6	2.8	7.4	6.7	7.0	12.9	11.5	11.8	18.2	17.7	18.0
12	3.0	2.8	2.9	7.4	7.1	7.2	11.7	11.2	11.3	18.1	17.7	18.0
13	3.8	3.0	3.4	7.5	7.1	7.3	11.2	10.8	10.9	17.7	17.4	17.6
14	3.7	3.6	3.6	7.7	7.2	7.4	11.4	10.8	11.1	17.7	17.4	17.5
15	4.6	3.7	4.0	8.2	7.7	8.0	12.0	11.4	11.6	17.5	17.1	17.3
16	4.8	4.1	4.5	8.7	8.1	8.4	12.5	11.9	12.2	17.6	16.7	17.1
17	4.2	3.8	4.0	9.0	8.7	8.9	12.7	12.5	12.6	17.7	17.1	17.4
18	4.2	3.8	4.1	9.4	9.0	9.2	13.0	12.7	12.8	18.5	16.7	17.4
19	4.2	4.1	4.2	9.4	9.2	9.3	13.9	13.0	13.4	18.9	17.8	18.4
20	4.5	4.2	4.4	9.6	9.3	9.4	14.2	13.6	13.9	18.3	18.1	18.2
21	4.8	4.5	4.6	10.3	9.3	9.8	14.6	14.1	14.4	18.2	17.2	17.7
22	5.5	4.8	5.1	11.2	10.2	10.7	14.5	14.1	14.4	17.6	17.0	17.3
23	6.0	5.2	5.5	11.2	10.9	11.0	14.3	13.8	14.0	17.7	17.3	17.5
24	6.0	5.9	5.9	11.4	10.8	11.1	14.2	14.0	14.1	18.0	17.4	17.7
25	6.5	5.9	6.1	11.8	11.4	11.6	14.3	14.1	14.1	18.0	17.7	17.8
26	6.5	6.3	6.5	12.1	11.7	11.8	14.4	14.0	14.2	17.8	17.5	17.7
27	6.3	5.8	6.1	12.3	11.7	12.0	14.7	14.1	14.4	18.3	17.7	17.9
28	5.8	5.6	5.6	12.5	12.0	12.3	15.2	14.5	14.9	18.4	18.1	18.3
29	---	---	---	12.4	12.0	12.2	15.4	14.7	15.0	18.4	17.5	18.2
30	---	---	---	---	---	---	15.6	15.4	15.5	18.3	17.1	17.6
31	---	---	---	---	---	---	---	---	---	18.6	18.3	18.4
MONTH	6.5	2.0	3.9	12.5	5.0	8.4	15.6	10.8	13.1	18.9	15.1	17.3

03287500 KENTUCKY RIVER AT LOCK 4 AT FRANKFORT, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	18.7	18.2	18.5	22.3	21.7	22.0	25.5	24.9	25.2	27.3	26.7	27.0
2	18.8	18.2	18.6	23.1	21.9	22.5	25.9	25.1	25.5	27.5	25.9	26.8
3	18.8	18.3	18.6	23.5	22.6	23.0	26.0	24.7	25.6	25.9	25.6	25.8
4	18.6	18.3	18.4	23.8	22.4	23.1	24.9	24.3	24.6	25.6	23.7	24.4
5	18.8	18.1	18.5	25.2	23.3	24.2	25.5	24.7	25.1	24.6	23.7	24.1
6	19.3	18.4	18.9	25.6	24.2	24.7	26.6	25.1	25.8	23.7	22.6	23.2
7	19.2	18.4	18.9	26.3	24.7	25.3	26.4	25.8	26.1	23.5	23.2	23.3
8	18.7	17.6	18.0	26.8	25.3	25.8	25.9	25.6	25.7	23.4	23.1	23.2
9	18.4	17.7	18.0	26.7	25.3	25.8	25.8	25.5	25.7	23.6	23.3	23.4
10	18.4	18.1	18.2	25.6	24.9	25.2	25.5	24.4	24.9	23.6	23.2	23.4
11	18.2	18.0	18.1	24.9	24.3	24.6	24.4	23.5	24.2	23.4	23.0	23.2
12	18.5	18.0	18.2	25.2	24.7	25.0	24.2	23.1	23.7	23.3	22.7	23.0
13	18.6	18.3	18.4	25.0	23.1	23.8	23.9	23.0	23.4	23.4	22.6	22.8
14	19.1	18.4	18.7	23.7	22.8	23.4	24.6	23.5	24.0	22.6	22.3	22.4
15	19.9	18.8	19.2	24.6	23.6	24.2	25.3	23.7	24.2	24.0	22.1	22.7
16	20.3	19.9	20.1	25.8	24.4	25.2	25.0	24.0	24.3	23.5	21.8	22.5
17	20.2	19.3	19.9	26.3	25.2	25.9	25.2	24.0	24.5	23.1	21.7	22.4
18	20.1	19.4	19.7	26.1	25.2	25.7	26.6	24.7	25.3	24.1	22.1	22.8
19	19.7	19.3	19.5	25.8	25.1	25.5	26.4	24.5	25.2	22.5	21.8	22.3
20	19.6	19.1	19.4	26.8	25.8	26.2	26.7	24.7	25.6	23.1	21.5	22.1
21	19.4	18.8	19.1	26.4	26.0	26.2	27.5	25.5	26.4	22.5	21.4	21.9
22	19.5	18.9	19.2	26.3	25.6	25.9	26.8	26.2	26.3	21.9	18.4	20.9
23	19.7	19.1	19.4	25.9	25.5	25.7	---	---	---	21.4	20.9	21.1
24	19.9	19.4	19.6	26.6	25.4	25.9	---	---	---	21.7	20.7	21.2
25	20.2	19.8	20.0	26.0	25.1	25.5	---	---	---	21.3	21.1	21.2
26	20.5	20.1	20.3	26.1	25.3	25.7	28.2	27.6	28.0	21.1	20.8	21.0
27	20.7	20.1	20.4	26.6	25.6	26.1	28.8	26.8	27.8	20.8	20.4	20.6
28	21.0	20.5	20.8	26.5	26.1	26.3	28.9	27.2	28.1	20.5	20.1	20.3
29	21.7	20.6	21.1	27.3	26.2	26.6	28.8	27.4	28.1	20.1	19.5	19.8
30	22.1	21.4	21.7	26.6	26.3	26.4	28.3	27.3	27.6	19.5	18.7	19.0
31	---	---	---	26.3	25.2	25.7	27.5	26.9	27.1	---	---	---
MONTH	22.1	17.6	19.2	27.3	21.7	25.1	28.9	23.0	25.6	27.5	18.4	22.6
YEAR	28.9	1.3	14.6									

03287500 KENTUCKY RIVER AT LOCK 4 AT FRANKFORT, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	4.5	3.5	3.9	9.3	9.0	9.1	10.6	10.0	10.3	12.1	11.8	11.9
2	5.5	3.9	4.6	9.4	9.1	9.3	11.0	10.1	10.6	12.0	11.6	11.8
3	7.5	4.4	5.7	9.2	9.0	9.1	11.9	10.6	11.3	12.3	11.9	12.1
4	7.2	5.8	6.1	9.1	9.0	9.0	11.8	10.8	11.3	12.3	12.1	12.2
5	7.4	5.6	6.0	9.2	9.0	9.1	12.2	11.2	11.8	12.3	12.2	12.2
6	7.3	5.3	5.9	9.3	8.7	9.1	12.1	11.8	12.0	---	---	---
7	6.9	5.3	5.8	9.4	9.0	9.2	12.2	12.0	12.1	12.5	12.2	12.3
8	7.3	5.2	5.9	9.3	9.1	9.2	12.3	11.7	11.9	12.4	12.0	12.2
9	6.3	5.1	5.5	9.1	8.8	9.0	12.2	11.7	12.0	12.1	11.9	12.0
10	5.8	5.1	5.4	8.8	8.6	8.7	12.4	11.8	12.1	12.0	10.6	11.6
11	8.3	5.4	7.2	8.8	8.3	8.6	12.7	12.3	12.6	11.0	10.6	10.8
12	8.5	8.0	8.3	9.0	8.2	8.8	12.8	12.5	12.6	11.3	10.6	11.0
13	8.7	8.4	8.5	9.2	8.3	9.1	12.7	12.3	12.6	11.7	10.9	11.2
14	8.7	8.5	8.6	9.2	8.9	9.1	13.8	12.5	12.9	11.1	10.7	11.0
15	8.7	8.5	8.6	9.0	8.8	8.9	13.8	12.8	13.2	11.3	10.8	11.0
16	8.6	8.4	8.5	9.0	8.8	8.9	12.8	12.1	12.4	11.3	10.7	11.0
17	8.6	8.3	8.5	9.3	9.0	9.2	12.2	12.0	12.1	12.0	10.8	11.1
18	8.7	8.4	8.6	9.4	9.2	9.3	12.2	11.9	12.0	11.3	10.8	11.0
19	8.6	8.3	8.5	9.3	9.0	9.3	12.0	11.6	11.8	11.5	10.7	11.1
20	8.5	8.2	8.4	9.3	8.8	9.2	11.6	11.3	11.5	11.7	10.8	11.2
21	8.5	8.3	8.4	9.2	8.9	9.0	11.7	11.4	11.6	13.6	10.9	12.5
22	8.5	8.2	8.4	9.2	8.6	9.0	11.7	11.5	11.6	13.4	13.1	13.2
23	8.5	8.2	8.4	9.3	8.9	9.1	12.0	11.7	11.9	13.5	13.1	13.3
24	8.5	8.2	8.4	10.2	9.1	9.3	12.0	11.9	12.0	13.8	13.4	13.6
25	8.5	8.0	8.3	9.9	9.3	9.5	11.9	11.7	11.8	13.9	13.6	13.8
26	8.3	8.0	8.2	9.9	9.4	9.6	12.1	11.8	12.0	14.1	13.7	13.9
27	8.2	8.0	8.1	10.0	9.6	9.9	12.4	12.1	12.2	14.1	11.0	12.1
28	8.2	7.7	8.0	10.2	9.8	10	12.4	12.3	12.3	11.9	10.6	11.1
29	8.2	7.8	8.0	11.0	9.7	10.2	12.3	12.1	12.2	13.2	10.3	11.4
30	9.0	7.7	8.5	10.9	9.5	10.2	12.3	12.0	12.2	12.6	10.7	11.5
31	9.3	8.9	9.1	---	---	---	12.2	12.0	12.1	12.7	11.9	12.4
MONTH	9.3	3.5	7.4	11.0	8.2	9.2	13.8	10.0	12.0	14.1	10.3	11.9

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	12.8	12.2	12.5	12.9	12.8	12.9	10.4	10.2	10.3	9.3	8.8	9.1
2	13.0	12.2	12.6	12.8	12.7	12.8	10.5	8.1	9.6	8.9	8.6	8.8
3	13.3	12.3	12.7	12.9	12.7	12.9	9.3	7.5	8.3	8.8	8.5	8.6
4	12.8	12.1	12.4	12.9	12.7	12.8	9.0	7.5	8.0	9.0	6.3	8.0
5	13.0	12.1	12.5	12.7	12.4	12.6	8.7	7.8	8.0	7.2	6.1	6.7
6	13.6	13.0	13.4	12.5	12.3	12.4	9.2	7.8	8.4	7.7	6.8	7.3
7	13.8	13.1	13.4	12.4	12.3	12.3	8.9	8.1	8.3	---	---	---
8	13.7	13.2	13.4	12.3	11.9	12.1	9.2	7.6	8.2	---	---	---
9	13.6	12.7	13.1	12.1	11.7	11.9	12.8	7.5	130	---	---	---
10	13.0	12.4	12.7	12.0	11.7	11.9	---	---	---	---	---	---
11	12.8	12.3	12.6	12.0	11.8	11.9	---	---	---	---	---	---
12	12.8	12.1	12.4	11.9	11.7	11.8	---	---	---	9.2	8.2	9.1
13	12.4	11.6	12.0	11.8	11.5	11.7	---	---	---	9.2	9.0	9.1
14	12.2	11.8	12.0	11.7	11.5	11.7	---	---	---	9.1	9.0	9.1
15	12.6	11.8	12.2	11.7	11.2	11.5	---	---	---	9.1	8.1	8.9
16	---	---	---	11.5	11.3	11.4	10.7	10.4	10.6	8.9	8.5	8.8
17	---	---	---	11.4	11.0	11.2	10.5	10.0	10.2	8.9	8.8	8.9
18	---	---	---	11.2	10.9	11.1	10.2	9.9	10.0	9.2	8.9	9.1
19	---	---	---	11.0	10.7	10.9	10.2	10.0	10.1	9.2	9.0	9.1
20	---	---	---	11.0	10.7	10.8	10.1	9.9	10	9.2	9.0	9.1
21	---	---	---	11.2	10.8	11.0	10.0	9.7	9.8	9.3	9.0	9.1
22	---	---	---	10.8	10.3	10.6	9.9	9.7	9.8	9.3	9.0	9.2
23	---	---	---	10.4	10.2	10.3	10.0	9.8	9.9	9.1	8.9	9.0
24	---	---	---	10.5	10.3	10.4	9.9	9.7	9.8	9.1	8.6	9.0
25	---	---	---	10.5	7.7	8.8	9.8	9.5	9.7	9.0	8.8	8.9
26	---	---	---	10.1	7.7	9.1	9.6	9.3	9.4	8.9	8.6	8.8
27	---	---	---	10.2	9.9	10.1	9.5	9.3	9.4	8.7	8.5	8.6
28	13.0	12.8	12.9	10.1	9.8	10.0	9.4	9.1	9.3	8.6	8.3	8.5
29	---	---	---	10.1	9.8	10.0	9.4	9.2	9.2	8.6	8.2	8.4
30	---	---	---	---	---	---	9.5	9.0	9.1	8.6	8.3	8.5
31	---	---	---	---	---	---	---	---	---	8.4	8.1	8.3
MONTH	13.8	11.6	12.7	12.9	7.7	11.3	12.8	7.5	14.4	9.3	6.1	8.7

03287500 KENTUCKY RIVER AT LOCK 4 AT FRANKFORT, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	8.3	8.0	8.2	7.9	7.6	7.7	10.0	6.7	7.8	6.2	5.1	5.7
2	8.4	8.0	8.2	7.8	5.0	7.0	9.3	6.9	7.9	6.0	5.2	5.5
3	8.4	8.1	8.3	7.5	4.9	5.9	9.2	6.6	7.5	6.8	5.8	6.4
4	8.2	8.0	8.1	7.8	4.9	6.4	9.3	6.8	7.6	7.5	6.8	7.3
5	8.2	7.9	8.1	7.6	4.9	6.2	8.6	7.2	7.6	7.9	7.5	7.7
6	8.2	7.9	8.1	7.7	4.8	5.9	8.4	7.5	7.8	8.2	7.9	8.0
7	8.5	8.0	8.2	6.9	4.7	5.4	8.5	7.6	7.8	8.2	7.9	8.0
8	8.4	7.7	7.9	7.2	4.6	5.5	9.1	7.3	7.9	8.0	7.9	8.0
9	8.5	7.9	8.3	7.6	4.5	5.3	9.0	7.3	8.0	7.9	7.7	7.8
10	8.6	8.3	8.5	7.1	4.5	5.4	9.5	7.2	7.9	8.0	7.7	7.9
11	8.5	8.3	8.4	7.7	4.8	5.7	7.9	7.3	7.6	8.1	7.8	7.9
12	8.5	7.0	8.3	7.8	5.3	6.2	7.7	7.4	7.6	8.0	7.7	7.9
13	8.6	8.3	8.4	8.2	5.4	6.6	7.7	7.4	7.6	7.9	7.4	7.7
14	8.6	8.4	8.5	7.7	5.4	6.3	7.7	7.3	7.5	7.8	7.4	7.6
15	8.7	8.3	8.6	7.6	5.7	6.4	7.5	7.2	7.4	8.1	7.4	7.6
16	8.6	7.8	8.1	7.5	5.7	6.2	7.5	7.1	7.3	7.9	7.1	7.5
17	8.4	8.3	8.3	7.9	5.5	6.1	7.4	7.0	7.2	8.1	7.2	7.6
18	---	---	---	8.0	5.8	6.5	7.4	6.9	7.1	8.2	7.1	7.6
19	---	---	---	8.4	5.9	7.2	8.4	6.8	7.4	7.8	7.3	7.5
20	---	---	---	8.3	5.7	7.0	8.2	6.8	7.5	8.8	7.4	7.9
21	---	---	---	7.7	5.8	6.3	8.9	6.9	7.6	8.8	7.5	8.0
22	---	---	---	8.0	5.7	6.2	7.6	6.9	7.3	8.9	7.5	7.9
23	---	---	---	7.6	5.7	6.2	7.6	7.6	7.6	7.6	7.1	7.3
24	---	---	---	8.2	5.6	6.4	7.7	7.6	7.6	7.7	7.1	7.3
25	---	---	---	7.8	5.6	6.4	7.7	7.7	7.7	7.6	7.1	7.2
26	8.2	8.0	8.1	8.3	5.9	6.8	10.8	7.7	8.6	7.9	7.4	7.6
27	8.2	7.9	8.1	8.6	5.9	7.1	13.2	7.2	10.2	8.2	7.6	7.8
28	8.1	7.6	8.0	7.1	6.1	6.5	14.3	9.6	12.1	8.1	7.7	7.9
29	8.1	7.7	7.9	8.7	6.0	6.9	13.0	9.2	11.4	8.3	7.7	7.9
30	7.9	7.6	7.8	8.5	6.4	7.2	10.4	7.2	8.8	8.5	8.0	8.2
31	---	---	---	8.2	6.2	6.9	7.2	5.5	6.6	---	---	---
MONTH	8.7	7.0	8.2	8.7	4.5	6.4	14.3	5.5	8.0	8.9	5.1	7.5
YEAR	14.3	3.5	9.6									

03287580 NORTH ELKHORN CREEK AT BRYANT ROAD NEAR CADENTOWN, KY

LOCATION.--Lat 38°01'42", long 84°24'07", Fayette County, Hydrologic Unit 05100205, on right bank, downstream side of bridge on Bryant Road, 0.7 miles northeast of intersection with I-75, 1.6 miles southeast of intersection of US 60 (Winchester Road), 1.8 miles northeast of Cadentown, and at mile 90.3.

DRAINAGE AREA.--2.20 mi^2.

PERIOD OF RECORD.--October 1997 to current year.

GAGE.--Water-stage recorder with telemetry. Datum of gage is 942.109 ft above NGVD of 1929.

REMARKS.--Records fair except for those below 2.0 ft^3/s and those estimated, which are poor.

COOPEARTION.--Lexington-Fayette County Urban Government.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.20	2.3	1.1	16	1.0	4.0	0.84	0.71	1.7	0.48	0.53	19
2	0.12	2.1	1.2	11	1.0	3.4	0.75	0.74	1.2	0.45	0.46	29
3	0.06	1.9	1.1	7.6	1.2	2.9	0.74	0.99	9.4	0.42	0.47	46
4	0.07	1.0	1.2	5.5	8.7	2.3	0.94	0.76	6.4	0.38	1.2	16
5	0.22	11	1.6	4.4	3.4	2.1	1.9	51	3.3	0.34	0.99	5.8
6	0.10	12	1.6	3.6	3.5	1.9	1.6	24	2.2	0.30	0.74	2.9
7	0.02	6.7	1.6	3.0	3.9	1.8	8.2	28	46	0.27	0.75	1.9
8	0.00	4.4	1.8	e2.7	3.2	1.3	5.9	21	17	0.23	0.83	0.98
9	0.00	3.1	1.8	e2.5	2.7	0.83	13	50	12	2.7	0.64	1.1
10	8.6	34	1.9	e2.3	2.9	0.81	9.5	18	6.3	4.7	0.54	1.4
11	21	33	8.0	e2.1	2.7	0.76	7.4	36	4.5	1.8	0.50	0.70
12	4.0	11	11	e2.0	2.6	0.81	4.6	14	4.3	0.96	0.45	0.56
13	3.0	6.2	18	e1.9	1.7	1.6	2.9	7.1	3.3	0.73	0.30	0.50
14	1.7	4.1	25	e1.8	3.7	2.0	2.1	4.5	11	0.57	0.23	0.45
15	1.1	6.8	11	e1.8	60	1.7	1.2	25	15	0.51	0.29	0.43
16	1.4	13	6.6	e1.7	75	1.5	1.1	15	8.8	5.7	0.75	0.38
17	1.2	8.9	4.8	e1.6	38	0.99	8.2	12	7.8	1.9	0.48	0.33
18	0.95	5.6	4.1	e1.5	14	0.81	9.3	11	7.8	1.2	0.33	0.29
19	1.0	4.0	13	e1.3	8.9	3.2	4.2	8.0	4.8	0.90	0.25	0.31
20	2.8	3.0	22	e1.2	8.3	9.1	2.6	6.7	3.0	0.73	0.21	0.33
21	2.4	2.8	9.7	e1.1	8.3	5.5	2.7	16	2.2	0.74	0.16	0.33
22	2.1	2.6	6.2	e1.0	42	3.2	2.0	9.0	1.6	0.82	0.13	1.8
23	1.9	2.3	4.1	e0.95	24	2.3	1.8	5.5	0.99	1.2	0.12	0.95
24	1.7	2.1	4.9	e0.90	12	2.1	1.3	3.7	0.84	1.1	0.08	0.67
25	1.7	1.6	9.0	e0.86	7.8	1.8	0.81	2.9	0.75	0.80	0.04	0.52
26	1.6	1.1	6.2	e0.82	5.6	1.4	0.74	2.0	0.68	0.63	0.03	0.43
27	1.6	1.0	4.7	e0.79	4.5	0.86	0.63	1.3	0.69	0.52	0.01	0.86
28	1.7	0.93	3.7	e0.76	4.5	1.2	0.59	1.2	0.61	0.51	0.00	0.69
29	4.5	0.89	3.0	1.1	---	2.4	0.81	1.7	0.53	0.52	0.00	0.77
30	4.4	0.95	2.7	0.99	---	2.1	0.78	1.5	0.50	0.45	3.5	1.2
31	3.0	---	2.9	0.88	---	1.2	---	1.5	---	0.51	25	---
TOTAL	74.14	190.37	195.5	85.65	355.1	67.87	99.13	380.80	185.19	33.07	40.01	136.58
MEAN	2.39	6.35	6.31	2.76	12.7	2.19	3.30	12.3	6.17	1.07	1.29	4.55
MAX	21	34	25	16	75	9.1	13	51	46	5.7	25	46
MIN	0.00	0.89	1.1	0.76	1.0	0.76	0.59	0.71	0.50	0.23	0.00	0.29

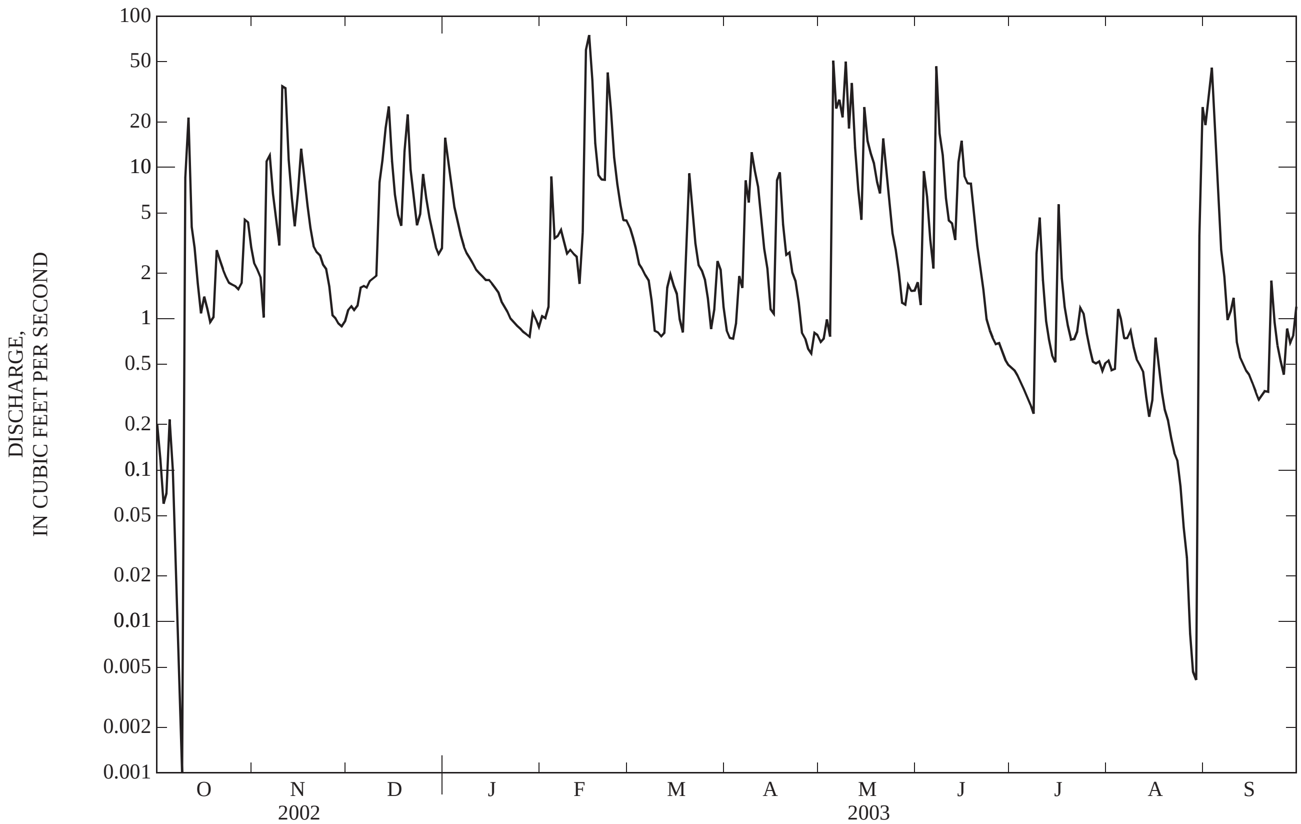
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	0.56	1.26	2.09	3.02	5.28	4.39	2.66	4.06	2.39	1.29	0.34	0.93
MAX	2.39	6.35	6.31	6.35	12.7	7.99	6.19	12.3	7.61	6.20	1.29	4.55
(WY)	(2003)	(2003)	(2003)	(1998)	(2003)	(2002)	(1998)	(2003)	(1998)	(1998)	(2003)	(2003)
MIN	0.000	0.000	0.068	0.25	0.48	2.19	0.73	0.20	0.028	0.016	0.000	0.000
(WY)	(2000)	(2000)	(2000)	(2000)	(2002)	(2003)	(2001)	(1999)	(1999)	(1999)	(1999)	(1999)

03287580 NORTH ELKHORN CREEK AT BRYANT ROAD NEAR CADENTOWN, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1998 - 2003	
ANNUAL TOTAL	1,009.20		1,843.41			
ANNUAL MEAN	2.76		5.05		2.34	
HIGHEST ANNUAL MEAN					5.05	2003
LOWEST ANNUAL MEAN					0.83	2000
HIGHEST DAILY MEAN	98	Mar 20	75	Feb 16	98	Mar 20, 2002
LOWEST DAILY MEAN	0.00	Jun 23	0.00	Oct 8	0.00	Oct 1, 1997
ANNUAL SEVEN-DAY MINIMUM	0.00	Jul 5	0.04	Aug 23	0.00	Oct 1, 1997
MAXIMUM PEAK FLOW			169	May 8	281	Jun 29, 1998
MAXIMUM PEAK STAGE			4.75	May 8	5.11	Jun 29, 1998
INSTANTANEOUS LOW FLOW					0.00	Jul 1, 2001
10 PERCENT EXCEEDS	6.7		12		5.6	
50 PERCENT EXCEEDS	0.54		1.8		0.47	
90 PERCENT EXCEEDS	0.00		0.43		0.00	

e Estimated



03287590 NORTH ELKHORN CREEK AT WINCHESTER ROAD NEAR LEXINGTON, KY

LOCATION.--Lat 38°02'54", long 84°24'40", Fayette County, Hydrologic Unit 05100205, on right bank, downstream side of culvert on Winchester Road (US 60), 0.5 miles east of I-75, 0.8 miles west of intersection with Bryant Road (1425), 2.2 miles east of Lexington, and at mile 89.1.

DRAINAGE AREA.--4.05 mi^2.

PERIOD OF RECORD.--October 1997 to current year.

REVISIONS.--Maximum discharge for the water year 1998 has been revised to 720 ft^3/s, July 20, 1998, gage height, 6.78 ft.

GAGE.--Water-stage recorder with telemetry. Elevation of gage is 921.258 ft above NGVD of 1929.

REMARKS.--Records fair except for discharges below 8.0 cfs, above 250 cfs, and those estimated, which are poor.

COOPERATION.--Lexington-Fayette County Urban Government.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.51	4.6	1.7	25	2.6	7.8	3.1	2.4	2.4	0.82	1.2	25
2	0.40	4.1	1.6	13	2.1	6.8	2.6	4.6	2.0	0.80	0.94	50
3	0.30	3.8	1.5	8.9	3.4	5.9	2.5	4.2	26	0.79	1.4	74
4	1.5	3.3	1.4	6.1	18	4.6	2.6	2.5	10	0.76	5.2	26
5	0.95	31	1.5	4.8	5.5	4.2	10	133	5.4	0.67	2.2	11
6	0.27	22	1.6	4.0	4.1	3.7	6.7	30	4.7	0.60	1.3	6.6
7	0.19	11	1.7	3.5	4.5	3.3	28	36	101	0.60	1.1	4.8
8	0.21	7.5	2.4	e3.1	4.0	2.8	16	32	28	0.53	1.3	3.0
9	0.19	6.1	2.7	e2.8	3.5	1.9	32	162	17	15	1.0	2.7
10	29	83	2.6	e2.6	3.4	1.5	23	29	9.0	18	0.91	3.2
11	75	55	14	e2.4	3.2	1.4	19	91	7.1	5.4	1.2	2.0
12	12	17	12	e2.3	2.9	2.3	13	21	6.5	2.7	0.94	1.6
13	7.3	9.9	28	e2.2	2.8	7.1	8.7	12	5.4	1.8	0.76	1.5
14	4.6	6.8	33	e2.1	6.2	6.0	6.9	7.6	19	1.3	0.60	1.4
15	4.5	16	15	e2.1	134	4.7	4.5	86	21	1.0	4.9	1.4
16	5.5	22	9.0	e2.0	162	4.2	3.7	23	15	24	2.9	1.3
17	3.6	13	7.7	e2.0	63	3.1	27	23	14	4.0	1.3	1.2
18	2.6	8.5	6.5	e1.9	27	2.5	20	17	12	2.3	0.86	1.2
19	3.2	6.6	30	e1.9	18	12	11	12	7.1	1.6	0.68	1.2
20	8.2	5.2	30	e1.8	17	18	8.0	13	5.0	1.2	0.62	1.3
21	5.2	5.5	13	e1.8	17	12	11	25	3.7	2.7	0.64	1.2
22	4.1	4.9	8.7	e1.7	77	8.2	6.6	13	2.8	3.4	0.69	14
23	3.6	3.9	6.1	e1.7	39	6.4	5.5	7.8	1.7	6.7	0.62	4.3
24	3.2	3.6	9.4	e1.6	22	5.7	4.5	5.5	1.5	3.0	0.52	2.5
25	3.6	3.0	13	e1.6	14	5.0	3.0	4.4	1.2	1.7	0.45	2.0
26	3.5	2.8	8.6	e1.5	9.8	5.4	3.8	3.4	1.1	1.2	0.45	1.5
27	3.0	2.3	6.6	e1.5	8.9	3.0	2.5	2.3	1.5	1.0	0.53	7.5
28	5.1	2.0	5.5	e1.4	9.0	3.1	2.2	2.7	1.0	1.5	0.53	3.3
29	13	1.9	4.6	e2.0	---	14	5.5	4.6	0.97	1.7	1.2	2.5
30	8.8	1.9	4.3	e4.7	---	6.7	2.9	2.7	0.90	0.97	18	3.3
31	5.8	---	5.7	e2.1	---	4.5	---	2.2	---	2.4	71	---
TOTAL	218.92	368.2	289.4	116.1	683.9	177.8	295.8	814.9	333.97	110.14	125.94	262.5
MEAN	7.06	12.3	9.34	3.75	24.4	5.74	9.86	26.3	11.1	3.55	4.06	8.75
MAX	75	83	33	25	162	18	32	162	101	24	71	74
MIN	0.19	1.9	1.4	1.4	2.1	1.4	2.2	2.2	0.90	0.53	0.45	1.2

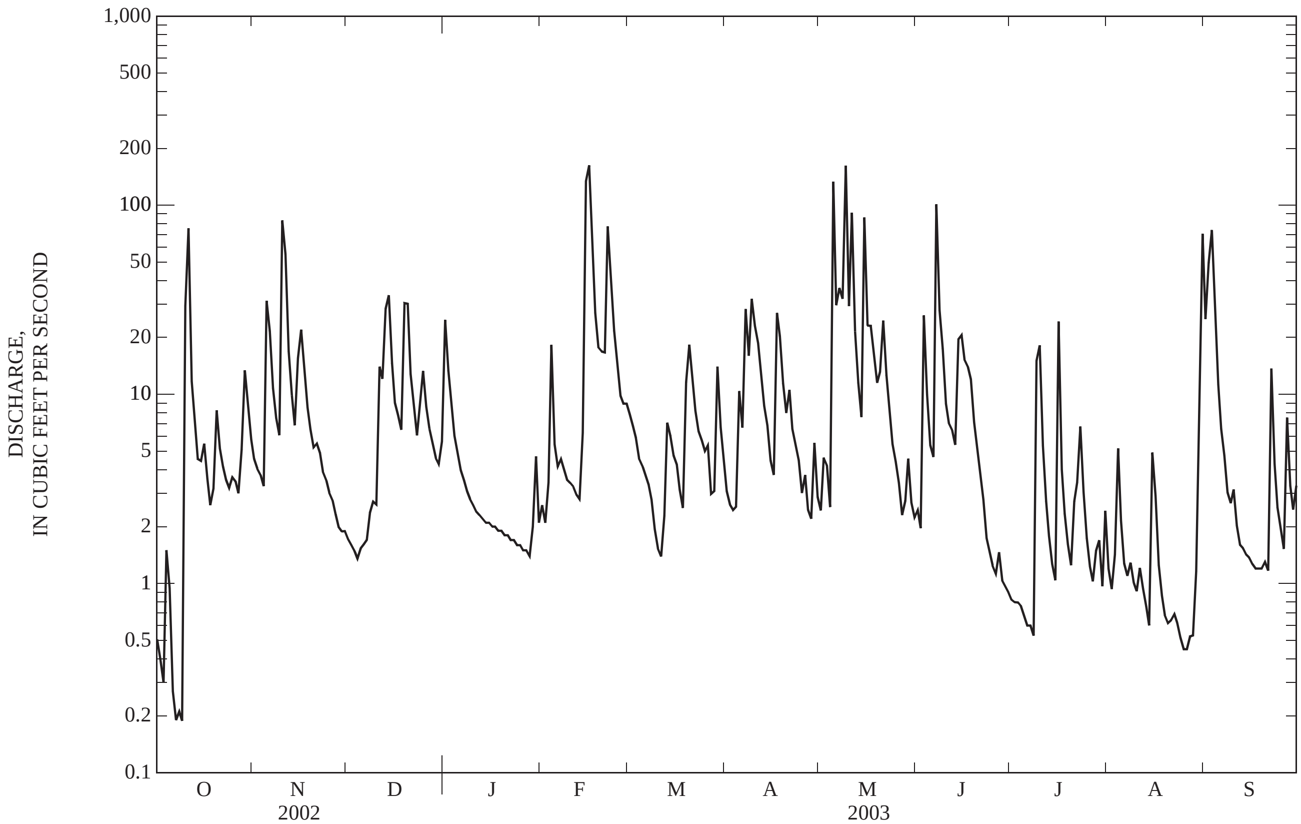
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1.86	3.11	5.46	7.53	12.9	10.8	6.61	9.38	5.03	4.62	1.42	2.73
MAX	7.06	12.3	11.2	13.7	24.4	21.5	12.3	26.3	15.3	18.6	4.06	8.75
(WY)	(2003)	(2003)	(2001)	(1999)	(2003)	(2002)	(1998)	(2003)	(1998)	(1998)	(2003)	(2003)
MIN	0.33	0.67	1.40	2.25	2.66	5.74	1.49	0.49	0.78	0.24	0.16	0.14
(WY)	(1998)	(2000)	(2000)	(2000)	(2002)	(2003)	(1999)	(1999)	(2001)	(2002)	(1999)	(1999)

03287590 NORTH ELKHORN CREEK AT WINCHESTER ROAD NEAR LEXINGTON, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1998 - 2003	
ANNUAL TOTAL	2,528.92		3,797.57			
ANNUAL MEAN	6.93		10.4		5.92	
HIGHEST ANNUAL MEAN					10.4	2003
LOWEST ANNUAL MEAN					3.11	2000
HIGHEST DAILY MEAN	235	Mar 20	162	Feb 16	357	Jul 20, 1998
LOWEST DAILY MEAN	0.00	Jul 9	0.19	Oct 7	0.00	Oct 5, 1997
ANNUAL SEVEN-DAY MINIMUM	0.00	Aug 3	0.52	Oct 3	0.00	Oct 5, 1997
MAXIMUM PEAK FLOW			758	May 9	758	May 9, 2003
MAXIMUM PEAK STAGE			6.89	May 9	6.89	May 9, 2003
INSTANTANEOUS LOW FLOW					0.00	Nov 8, 2000
10 PERCENT EXCEEDS	15		24		13	
50 PERCENT EXCEEDS	2.0		4.0		1.6	
90 PERCENT EXCEEDS	0.05		1.0		0.06	

e Estimated



03287600 NORTH ELKHORN CREEK AT BRYAN STATION ROAD AT MONTROSE, KY

LOCATION.--Lat 38°04'35", long 84°24'48", Fayette County, Hydrologic Unit 05100205, on right bank, downstream side of bridge on Bryan Station Road (Highway 57), 100 ft southwest of intersection of Briar Hill Road (Highway 1970) and Bryan Station Road (Highway 57), 0.5 miles northwest of Montrose, and at mile 86.0.

DRAINAGE AREA.--21.5 mi^2.

PERIOD OF RECORD.--October 1997 to current year.

REVISIONS.--Maximum discharge for the water year 1998 has been revised to 2480 ft^3/s, June 29, 1998, gage height, 10.23 ft.

GAGE.--Water-stage recorder with telemetry. Datum of gage is 892.042 ft above NGVD of 1929.

REMARKS.--Records fair except for those below 10 ft^3/s, those estimated, and record from June 26 to Sept. 27, which are poor.

COOPERATION.--Lexington-Fayette Urban County Government.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.8	22	9.6	147	e11	39	12	8.4	9.0	3.9	6.2	116
2	1.9	17	e8.9	85	e13	33	11	11	7.7	3.5	3.9	129
3	1.3	14	e8.4	61	17	28	9.7	16	99	2.9	6.1	171
4	3.1	14	e8.2	44	109	22	9.0	9.4	47	2.6	9.8	78
5	11	128	9.0	36	45	20	28	414	24	2.4	7.4	32
6	7.4	125	9.0	28	31	17	13	144	17	2.0	4.6	18
7	3.7	61	9.0	23	29	15	87	145	365	1.9	4.5	14
8	1.3	40	11	e20	26	14	46	84	130	1.8	5.6	11
9	0.93	27	13	e18	24	12	129	485	95	43	3.5	6.4
10	77	348	11	e16	21	9.7	86	127	50	79	2.7	5.8
11	330	308	58	e14	20	9.5	72	306	36	33	8.4	4.3
12	78	90	58	e12	19	13	46	98	33	12	6.1	3.3
13	40	55	128	e10	17	27	31	51	26	8.5	2.8	3.0
14	22	38	184	e9.2	28	21	23	32	54	5.6	2.4	2.7
15	17	e31	84	e8.2	557	16	18	237	124	4.4	5.1	2.6
16	32	e92	54	e7.4	649	15	15	121	99	76	28	2.0
17	19	e64	44	e6.8	319	14	84	109	80	16	5.7	1.6
18	14	47	38	e6.2	125	12	76	86	55	9.2	3.4	1.4
19	12	35	137	e5.8	82	35	38	61	33	6.8	2.3	1.4
20	30	26	184	e5.4	78	65	26	53	22	5.2	1.7	1.8
21	19	25	78	e5.2	82	45	34	133	16	7.3	1.6	1.7
22	15	25	52	e5.0	354	30	20	69	13	13	1.6	41
23	11	18	35	e4.9	201	24	15	43	9.6	27	1.8	16
24	10	16	44	e4.7	107	20	13	28	8.1	12	1.6	7.1
25	9.6	14	69	e4.6	76	17	12	21	6.7	6.3	1.1	5.3
26	12	13	47	e4.5	55	18	21	17	6.1	4.1	1.1	3.9
27	8.7	13	36	e4.4	45	14	11	13	7.2	3.2	1.1	26
28	14	11	30	e4.3	45	12	8.9	12	5.0	4.6	1.1	12
29	70	11	24	e6.0	---	48	19	20	4.0	6.9	1.2	6.9
30	58	11	21	e14	---	24	10	13	3.4	3.5	34	5.5
31	33	---	28	e12	---	16	---	10	---	13	70	---
TOTAL	964.73	1,739	1,530.1	632.6	3,185	705.2	1,023.6	2,976.8	1,484.8	420.6	236.4	730.7
MEAN	31.1	58.0	49.4	20.4	114	22.7	34.1	96.0	49.5	13.6	7.63	24.4
MAX	330	348	184	147	649	65	129	485	365	79	70	171
MIN	0.93	11	8.2	4.3	11	9.5	8.9	8.4	3.4	1.8	1.1	1.4

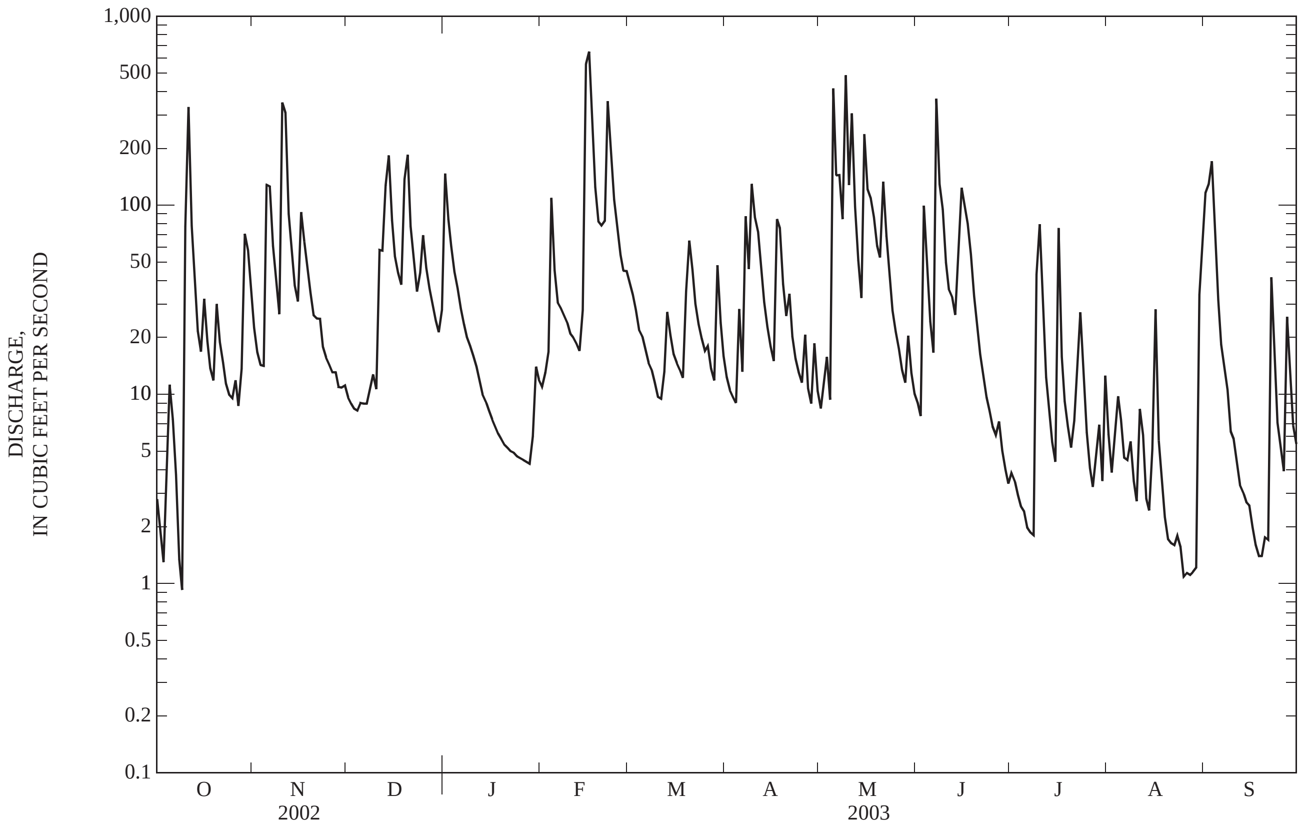
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	7.18	13.6	22.6	29.6	57.1	53.0	31.3	39.7	30.7	18.9	3.81	9.59
MAX	31.1	58.0	49.4	63.0	114	126	57.0	96.0	118	84.5	7.63	24.4
(WY)	(2003)	(2003)	(2003)	(1998)	(2003)	(2002)	(1998)	(2003)	(1998)	(1998)	(2003)	(2003)
MIN	1.03	2.26	6.78	15.8	13.6	22.7	8.29	4.00	3.22	0.72	1.13	0.007
(WY)	(1998)	(2000)	(2000)	(2000)	(2002)	(2003)	(1999)	(1999)	(2001)	(2002)	(1998)	(1999)

03287600 NORTH ELKHORN CREEK AT BRYAN STATION ROAD AT MONTROSE, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1998 - 2003	
ANNUAL TOTAL	13,286.62		15,629.53			
ANNUAL MEAN	36.4		42.8		28.8	
HIGHEST ANNUAL MEAN					42.8	2003
LOWEST ANNUAL MEAN					16.2	2000
HIGHEST DAILY MEAN	1,570	Mar 20	649	Feb 16	1,830	Jul 20, 1998
LOWEST DAILY MEAN	0.00	Jul 24	0.93	Oct 9	0.00	Oct 8, 1997
ANNUAL SEVEN-DAY MINIMUM	0.00	Jul 24	1.3	Aug 23	0.00	Sep 8, 1998
MAXIMUM PEAK FLOW			1,500	May 9	2,480	Jun 29, 1998
MAXIMUM PEAK STAGE			8.06	May 9	10.23	Jun 29, 1998
INSTANTANEOUS LOW FLOW					0.00	Aug 7, 1999
10 PERCENT EXCEEDS	72		99		64	
50 PERCENT EXCEEDS	11		17		7.6	
90 PERCENT EXCEEDS	0.10		3.3		0.25	

e Estimated



03288100 NORTH ELKHORN CREEK AT GEORGETOWN, KY

LOCATION.--Lat 38°13'10", long 84°33'47", Scott County, Hydrologic Unit 05100205, on right bank, 300 ft upstream of bridge on Highway 25 at Georgetown, 0.4 mi downstream from Dry Run, and at mile 33.4.

DRAINAGE AREA.--147 mi^2, of which about 8 mi^2 does not contribute directly to surface runoff.

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

GAGE.--Water-stage recorder with telemetry. Datum of gage is 803.40 ft above NGVD of 1929. Prior to Oct. 1, 1994 at datum 3.40 ft. lower.

REMARKS.--Records good except for those below 80 ft^3/s and those estimated, which are fair.

COOPERATION.--City of Georgetown.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,800 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov 11	0100	3,500	8.26	May 5	1700	3,000	7.80
Feb 16	2300	*4,530	*9.13	Jun 15	2000	4,460	9.07

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37	379	110	e599	118	326	160	111	111	41	24	225
2	25	278	99	e742	e64	294	140	89	96	35	33	677
3	21	234	94	597	e66	259	126	112	309	27	52	513
4	18	215	88	460	353	232	117	105	484	23	99	447
5	35	530	92	371	392	216	138	1,190	284	20	115	246
6	64	1,980	89	308	254	204	149	1,350	203	17	86	151
7	55	982	80	256	219	183	195	957	688	15	50	110
8	e36	624	77	232	e125	164	316	751	1,070	14	111	88
9	e28	462	91	211	e105	151	395	795	723	14	121	67
10	e30	1,290	103	186	163	137	571	1,380	495	62	104	47
11	1,440	2,810	216	160	165	127	453	1,480	351	174	105	33
12	1,160	1,050	477	141	159	124	370	1,110	322	117	45	27
13	584	635	475	e125	150	132	283	550	276	65	44	21
14	391	452	1,180	e110	155	159	228	369	618	56	35	18
15	283	365	809	e94	2,370	154	196	334	1,590	36	22	18
16	284	611	546	e86	3,610	136	169	809	1,160	84	20	16
17	298	584	402	e75	3,110	127	186	541	645	155	41	15
18	245	442	361	e66	1,170	120	372	624	546	85	34	14
19	220	346	637	e60	733	131	295	549	353	50	19	12
20	240	279	1,910	e54	666	310	214	434	259	33	13	11
21	277	238	917	e50	832	738	199	730	203	33	11	10
22	249	232	587	e48	1,670	477	186	644	163	52	12	152
23	223	204	420	e48	1,700	347	150	453	135	80	28	185
24	199	175	338	e49	912	273	130	327	116	96	15	118
25	187	158	399	e50	672	228	121	252	101	86	10	65
26	189	145	378	e52	520	206	122	217	87	44	9.6	37
27	186	138	317	e53	415	182	123	180	74	28	9.1	105
28	175	131	280	e57	362	158	104	153	62	21	9.1	130
29	619	122	249	82	---	204	113	147	53	20	9.1	97
30	964	117	224	e65	---	250	124	151	43	25	31	70
31	562	---	222	e71	---	192	---	129	---	40	48	---
TOTAL	9,324	16,208	12,267	5,558	21,230	6,941	6,445	17,023	11,620	1,648	1,364.9	3,725
MEAN	301	540	396	179	758	224	215	549	387	53.2	44.0	124
MAX	1,440	2,810	1,910	742	3,610	738	571	1,480	1,590	174	121	677
MIN	18	117	77	48	64	120	104	89	43	14	9.1	10
CFSM	2.05	3.68	2.69	1.22	5.16	1.52	1.46	3.74	2.63	0.36	0.30	0.84
IN.	2.36	4.10	3.10	1.41	5.37	1.76	1.63	4.31	2.94	0.42	0.35	0.94

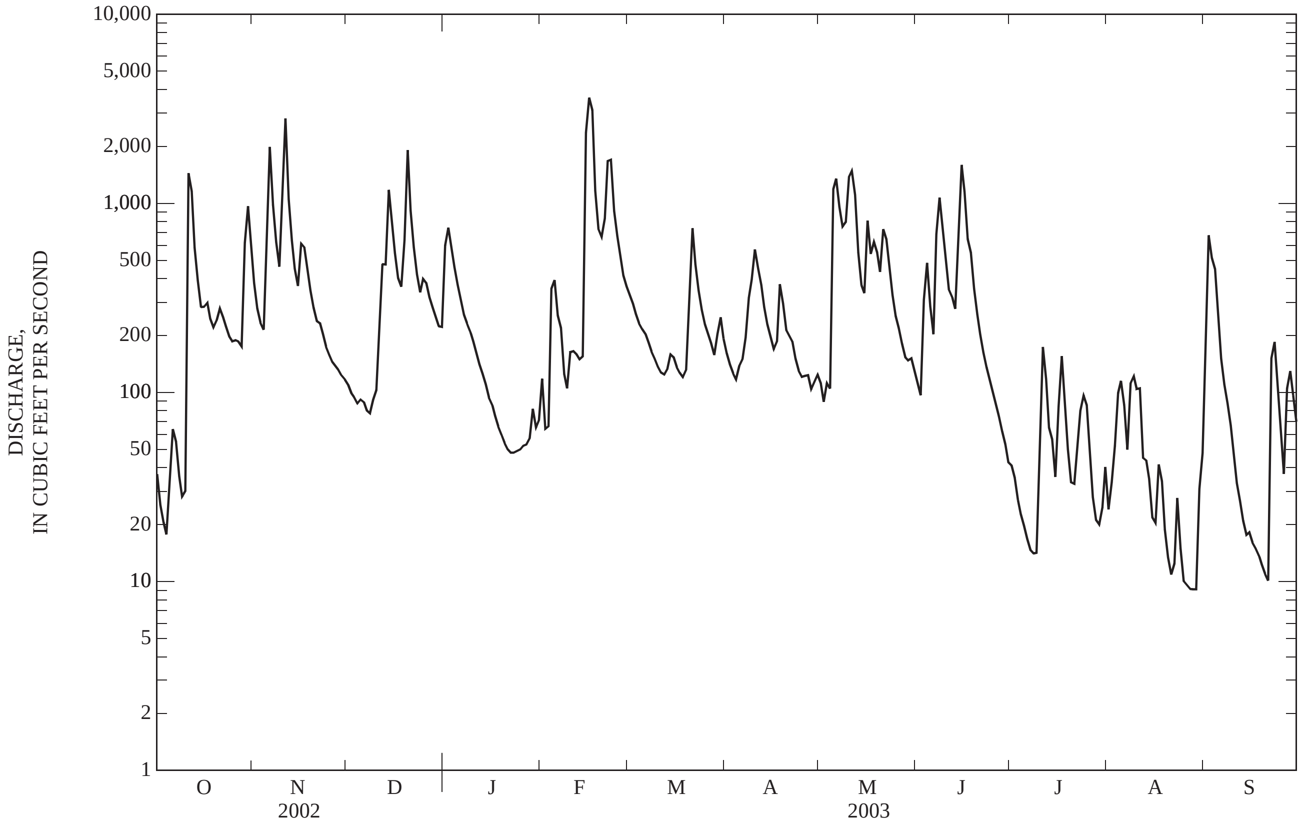
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	59.4	152	231	352	415	534	225	332	238	113	53.2	43.9
MAX	301	540	564	631	758	1,574	408	786	768	560	156	136
(WY)	(2003)	(2003)	(1997)	(1994)	(2003)	(1997)	(1994)	(1995)	(1997)	(1998)	(1993)	(1996)
MIN	6.82	9.49	29.7	55.1	136	224	62.7	25.0	19.6	12.8	4.39	2.63
(WY)	(2000)	(2000)	(2000)	(2000)	(2002)	(2003)	(1999)	(1999)	(1994)	(1999)	(2002)	(1999)

03288100 NORTH ELKHORN CREEK AT GEORGETOWN, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1993 - 2003	
ANNUAL TOTAL	103,556.8		113,353.9			
ANNUAL MEAN	284		311		231	
HIGHEST ANNUAL MEAN					371	1997
LOWEST ANNUAL MEAN					114	2000
HIGHEST DAILY MEAN	5,820	Mar 20	3,610	Feb 16	11,000	Mar 3, 1997
LOWEST DAILY MEAN	2.2	Aug 8	9.1	Aug 27	1.3	Sep 18, 1999
ANNUAL SEVEN-DAY MINIMUM	2.3	Aug 6	13	Aug 23	1.6	Sep 14, 1999
MAXIMUM PEAK FLOW			4,530	Feb 16	19,300	Mar 2, 1997
MAXIMUM PEAK STAGE			9.13	Feb 16	19.01	Mar 2, 1997
ANNUAL RUNOFF (CFSM)	1.93		2.11		1.57	
ANNUAL RUNOFF (INCHES)	26.21		28.69		21.31	
10 PERCENT EXCEEDS	663		726		555	
50 PERCENT EXCEEDS	94		160		74	
90 PERCENT EXCEEDS	4.3		28		9.2	

e Estimated



03288110 ROYAL SPRINGS AT GEORGETOWN, KY

LOCATION.--Lat 38°12'34", long 84°33'43", Scott County, Hydrologic Unit 05100205, at Georgetown Water Plant dam, and 0.64 mi upstream from mouth.

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

GAGE.--Water-stage recorder with telemetry. Datum of gage is 797.16 ft above NGVD of 1929.

REMARKS.--Records fair 10 ft^3/s, to 200 ft^3/s poor below 10 ft^3/s, and for those estimates are poor.

COOPERATION.--City of Georgetown.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.5	21	17	48	8.1	30	18	6.0	26	5.5	4.2	e28
2	2.2	37	13	38	8.0	29	15	5.8	24	4.7	3.1	e35
3	1.8	12	10	40	7.8	26	12	14	37	4.1	3.7	e30
4	1.8	9.1	8.8	36	28	25	11	8.2	16	3.8	7.7	25
5	14	39	8.5	32	25	23	17	33	19	3.7	5.9	26
6	6.9	33	7.9	29	23	22	14	29	32	3.4	3.9	20
7	4.4	23	7.8	26	22	19	27	36	49	2.8	4.7	15
8	3.0	18	7.7	24	21	18	22	31	38	2.3	4.9	11
9	2.1	11	7.6	22	19	16	37	33	39	2.9	4.3	7.6
10	7.9	24	7.5	19	17	14	11	40	32	17	3.7	6.0
11	38	34	23	17	18	13	9.3	43	26	23	5.0	4.4
12	33	13	32	20	17	11	6.7	36	26	10	15	3.7
13	36	21	40	24	15	18	14	27	21	10	6.9	3.2
14	19	23	70	22	17	22	23	21	19	5.9	4.6	2.8
15	20	21	66	19	48	19	20	22	22	4.5	3.9	2.6
16	27	23	56	17	41	15	16	28	25	18	14	2.1
17	22	21	51	14	34	13	21	27	21	8.0	6.8	1.9
18	19	19	48	12	19	12	21	27	17	9.7	4.1	2.0
19	16	15	46	11	11	14	20	26	18	7.1	3.0	2.3
20	20	27	37	9.3	8.7	29	22	23	37	5.2	2.2	2.9
21	17	41	36	8.6	10	24	21	40	33	5.0	1.6	1.4
22	14	40	27	8.2	28	24	17	34	30	6.0	1.7	23
23	12	36	28	7.5	25	32	14	28	26	6.6	1.9	27
24	9.7	33	47	6.6	15	36	12	21	25	5.5	1.6	16
25	8.6	30	20	6.8	9.6	31	11	16	23	4.0	1.1	11
26	8.3	29	18	6.2	6.9	27	e12	12	18	3.2	0.81	8.0
27	7.0	28	32	5.4	4.9	23	e9.0	12	13	2.7	0.70	18
28	12	26	44	5.3	15	19	e8.0	34	11	2.4	0.43	17
29	34	24	40	6.9	---	35	9.0	34	8.9	2.6	0.02	11
30	26	21	37	7.8	---	35	7.7	32	6.4	2.2	e1.5	8.5
31	19	---	37	7.6	---	22	---	29	---	3.2	e20	---
TOTAL	465.2	752.1	930.8	556.2	522.0	696	477.7	808.0	738.3	195.0	142.96	372.4
MEAN	15.0	25.1	30.0	17.9	18.6	22.5	15.9	26.1	24.6	6.29	4.61	12.4
MAX	38	41	70	48	48	36	37	43	49	23	20	35
MIN	1.8	9.1	7.5	5.3	4.9	11	6.7	5.8	6.4	2.2	0.02	1.4

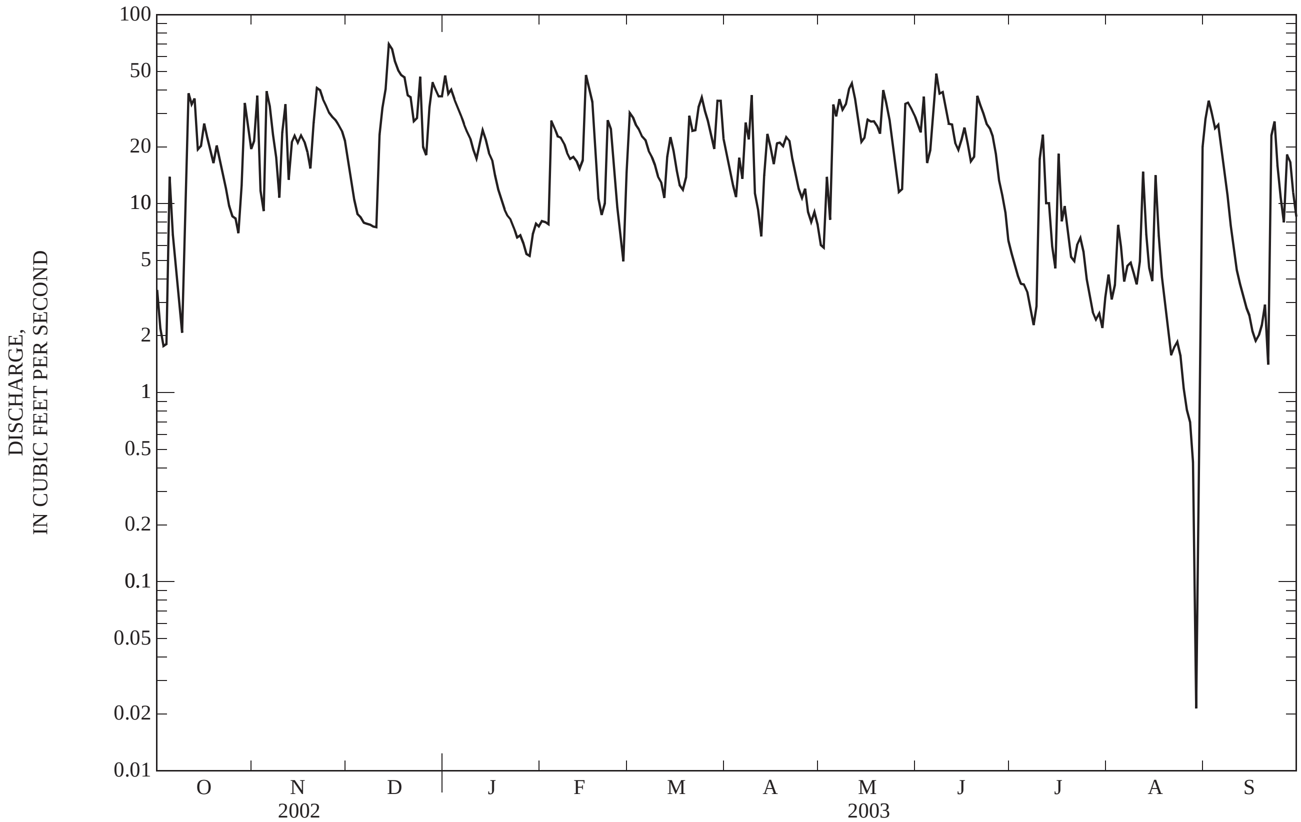
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	6.30	13.1	24.3	32.2	32.6	40.2	27.0	27.2	23.6	9.88	7.27	5.37
MAX	15.0	35.9	48.3	49.0	52.5	77.5	47.5	55.9	65.1	44.1	13.0	12.7
(WY)	(2003)	(1994)	(1997)	(1996)	(1994)	(1997)	(1994)	(1996)	(1997)	(1998)	(1993)	(1996)
MIN	1.57	0.98	6.00	5.67	13.7	16.4	13.5	5.26	3.04	0.75	0.040	0.26
(WY)	(1999)	(2000)	(1999)	(2000)	(2000)	(2002)	(2001)	(1999)	(1994)	(2002)	(2002)	(1998)

03288110 ROYAL SPRINGS AT GEORGETOWN, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1993 - 2003	
ANNUAL TOTAL	5,848.35		6,656.66			
ANNUAL MEAN	16.0		18.2		20.5	
HIGHEST ANNUAL MEAN					30.5	1997
LOWEST ANNUAL MEAN					9.07	2000
HIGHEST DAILY MEAN	70	Dec 14	70	Dec 14	313	Mar 1, 1997
LOWEST DAILY MEAN	0.00	Jul 31	0.02	Aug 29	0.00	Oct 15, 1993
ANNUAL SEVEN-DAY MINIMUM	0.00	Aug 2	0.88	Aug 24	0.00	Oct 4, 1997
MAXIMUM PEAK FLOW			106	Oct 11	2,240	Mar 1, 1997
MAXIMUM PEAK STAGE			5.93	Oct 11	7.30	Mar 1, 1997
10 PERCENT EXCEEDS	38		36		50	
50 PERCENT EXCEEDS	12		17		13	
90 PERCENT EXCEEDS	0.00		3.3		0.83	

e Estimated



03288200 CANE RUN AT BEREA ROAD NEAR DONERAIL, KY

LOCATION.--Lat 38°08'19", long 84°31'02", Fayette County, Hydrologic Unit 05100205, on right bank, upstream side of bridge on Berea Road, 0.2 mi southwest of Ironworks Road (Hwy 1973), 0.8 mi northeast of Georgetown Road (U.S. Hwy 25), 1.0 mi southeast of Donerail, Ky., and 9.0 mi upstream from North Elkhorn Creek.

DRAINAGE AREA.--19.9 mi^2.

PERIOD OF RECORD.--February 1999 to current year.

GAGE.--Water-stage recorder with telemetry. Datum of gage is 850 ft above NGVD of 1929, (from topographic map).

REMARKS.--Records poor.

COOPERATION.--Lexington-Fayette Urban County Government.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.38	0.00	e90	0.00	2.2	0.00	0.00	0.00	0.00	0.00	13
2	0.00	0.00	0.00	e40	0.00	1.1	0.00	0.00	0.00	0.00	0.00	18
3	0.00	0.00	0.00	17	0.00	0.43	0.00	0.00	19	0.00	0.00	34
4	0.00	0.00	0.00	6.7	4.3	0.00	0.00	0.00	3.3	0.00	0.00	9.2
5	0.00	51	0.00	3.1	0.00	0.00	0.00	83	1.1	0.00	0.00	0.00
6	0.00	70	0.00	1.5	0.00	0.00	0.00	38	0.02	0.00	0.00	0.00
7	0.00	31	0.00	0.17	0.00	0.00	1.2	42	114	0.00	0.00	0.00
8	0.00	11	0.00	0.00	0.00	0.00	0.00	21	49	0.00	0.00	0.00
9	0.00	2.5	0.00	0.00	0.00	0.00	6.2	64	31	0.00	0.00	0.00
10	0.63	146	0.00	0.00	0.00	0.00	1.7	38	12	9.5	0.00	0.00
11	123	228	0.31	0.00	0.00	0.00	0.91	76	6.5	0.68	0.42	0.00
12	29	60	0.72	0.00	0.00	0.00	0.00	39	9.5	0.00	1.1	0.00
13	17	30	18	0.00	0.00	0.00	0.00	17	3.4	0.00	0.00	0.00
14	0.06	13	58	0.00	0.00	0.00	0.00	5.3	9.1	0.00	0.00	0.00
15	0.00	18	32	0.00	169	0.00	0.00	42	4.1	0.00	0.00	0.00
16	0.00	29	15	0.00	299	0.00	0.00	24	18	14	0.82	0.00
17	0.00	14	7.1	0.00	148	0.00	11	24	25	0.00	0.00	0.00
18	0.00	4.7	4.7	0.00	e70	0.00	2.6	19	9.4	0.00	0.00	0.00
19	0.00	1.9	61	0.00	29	0.00	0.00	10	3.6	0.00	0.00	0.00
20	0.00	0.46	126	0.00	22	0.00	0.00	6.2	1.2	0.00	0.00	0.00
21	0.00	0.00	50	0.00	20	2.3	0.00	41	0.00	0.00	0.00	0.00
22	0.00	0.00	28	0.00	96	0.09	0.00	20	0.00	0.00	0.00	8.6
23	0.00	0.00	12	0.00	77	0.00	0.00	8.4	0.00	0.00	0.00	0.00
24	0.00	0.00	9.8	0.00	43	0.00	0.00	2.9	0.00	0.00	0.00	0.00
25	0.00	0.00	17	0.00	0.75	0.00	0.00	1.2	0.00	0.00	0.00	0.00
26	0.00	0.00	5.8	0.00	0.00	0.00	0.00	0.28	0.00	0.00	0.00	0.00
27	0.00	0.00	3.5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16
28	0.00	0.00	2.0	0.00	2.2	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29	40	0.00	0.28	0.00	---	3.3	0.00	0.00	0.00	0.00	0.00	0.00
30	28	0.00	0.00	0.00	---	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31	6.5	---	0.00	0.00	---	0.00	---	0.00	---	0.00	1.9	---
TOTAL	244.19	710.94	451.21	158.47	980.25	9.42	23.61	622.28	319.22	24.18	4.24	82.96
MEAN	7.88	23.7	14.6	5.11	35.0	0.30	0.79	20.1	10.6	0.78	0.14	2.77
MAX	123	228	126	90	299	3.3	11	83	114	14	1.9	34
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

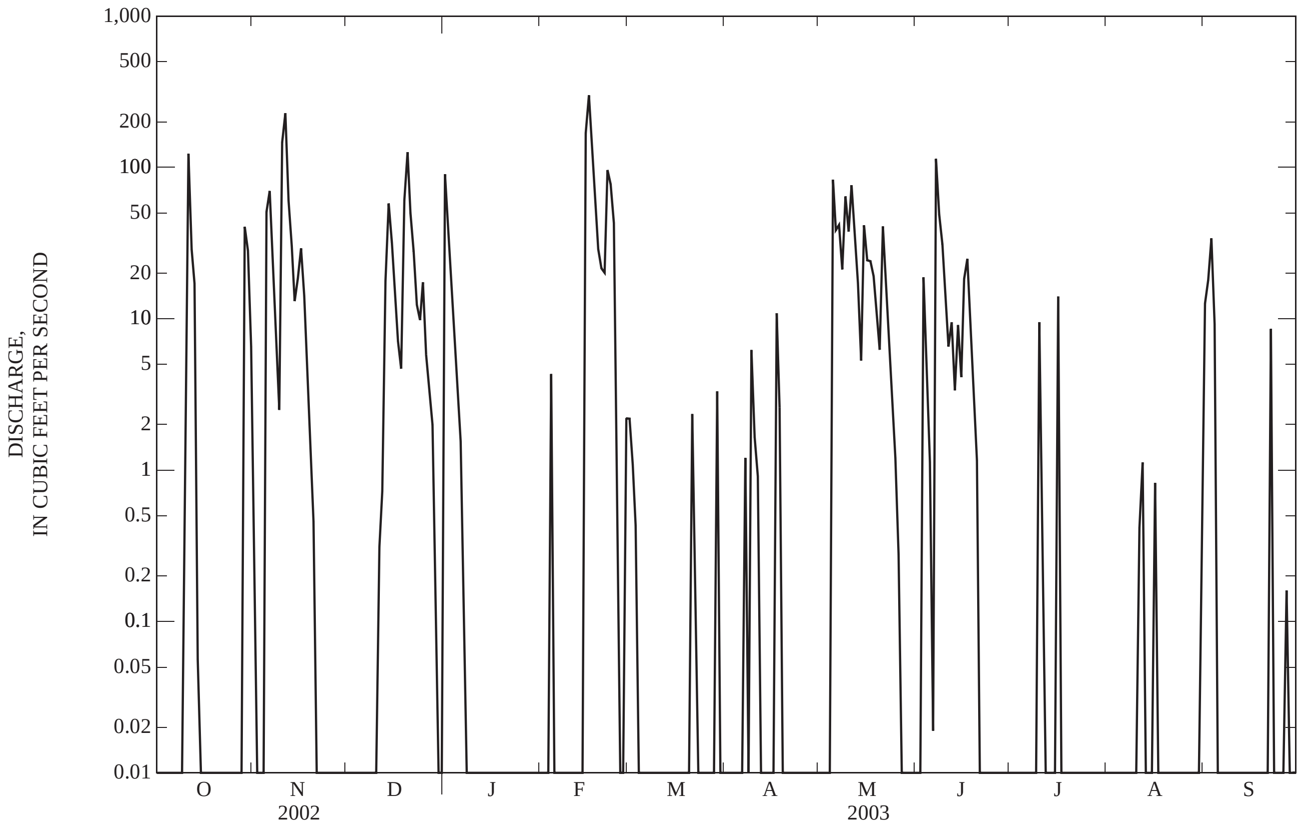
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1999 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1.99	6.36	5.44	2.62	14.0	14.2	2.72	6.97	2.28	0.59	0.18	1.38
MAX	7.88	23.7	14.6	5.11	35.0	50.3	11.3	20.1	10.6	2.15	0.68	2.77
(WY)	(2003)	(2003)	(2003)	(2003)	(2003)	(2002)	(2002)	(2003)	(2003)	(2001)	(2001)	(2003)
MIN	0.000	0.000	0.000	0.000	0.15	0.30	0.000	0.032	0.011	0.000	0.000	0.000
(WY)	(2000)	(2000)	(2000)	(2001)	(2002)	(2003)	(1999)	(2000)	(2001)	(1999)	(1999)	(1999)

03288200 CANE RUN AT BEREA ROAD NEAR DONERAIL, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1999 - 2003	
ANNUAL TOTAL	3,873.39		3,630.97			
ANNUAL MEAN	10.6		9.95		5.27	
HIGHEST ANNUAL MEAN					9.95	2003
LOWEST ANNUAL MEAN					1.99	2000
HIGHEST DAILY MEAN	772	Mar 20	299	Feb 16	772	Mar 20, 2002
LOWEST DAILY MEAN	0.00	Jan 1	0.00	Oct 1	0.00	Feb 17, 1999
ANNUAL SEVEN-DAY MINIMUM	0.00	Jan 1	0.00	Oct 1	0.00	Feb 17, 1999
MAXIMUM PEAK FLOW			567	Nov 11	1,750	Mar 20, 2002
MAXIMUM PEAK STAGE			5.62	Nov 11	7.60	Mar 20, 2002
INSTANTANEOUS LOW FLOW					0.00	Oct 1, 2001
10 PERCENT EXCEEDS	28		29		9.2	
50 PERCENT EXCEEDS	0.00		0.00		0.00	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

e Estimated



03289000 SOUTH ELKHORN CREEK AT FORT SPRING, KY

LOCATION.--Lat 38°02'35", long 84°37'35", Fayette County, Hydrologic Unit 05100205, on downstream side of bridge on Fort Spring Road at U.S. Highway 60 at Fort Spring, 1.7 mi upstream from Shannon Run, 6.5 mi west of Lexington, and at mile 42.6.

DRAINAGE AREA.--24.0 mi^2, of which about 3.0 mi^2 does not contribute directly to surface runoff.

PERIOD OF RECORD.--March 1950 to September 1992, October 1997 to current year.

REVISED RECORDS.--WSP 1275: 1951-52. WSP 1505: Drinage area. WSP 1625: 1951-52 (P).

GAGE.--Water-stage recorder with telemetry. Datum of gage is 834.25 ft above NGVD of 1929. Prior to Aug. 12, 1952, and Feb. 18 to Nov. 16, 1965, nonrecording gage and crest-stage gage at same site and datum.

REMARKS.- Records fair.

COOPERATION.--Lexington-Fayette Urban County Government.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 11	0510	1,160	7.41	May 9	0350	*2,180	*10.51
Nov 5	1840	795	6.49	May 11	1040	710	7.42
Nov 10	0935	1,890	8.85	May 15	1905	625	7.15
Nov 11	0135	1,620	8.38	Jun 7	0740	889	7.93
Dec 13	2135	644	6.03	Jun 14	1735	931	8.69
Dec 19	2210	1,450	8.04	Jun 15	0010	1,000	9.24
Feb 16	0310	1,570	8.28	Aug 7	2140	502	7.74
Feb 22	0905	764	7.58	Sep 3	1610	502	7.74
May 5	1430	1,200	8.68				

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

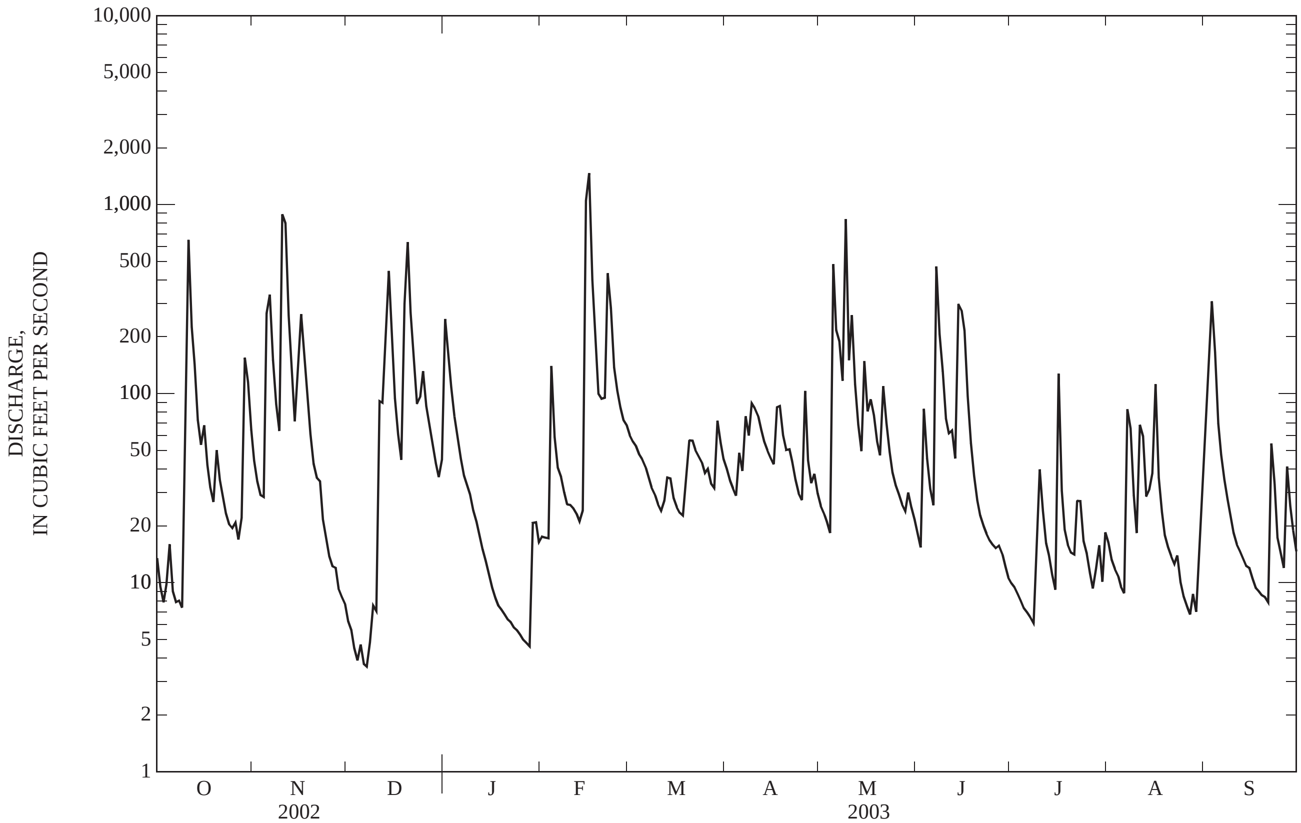
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	44	6.2	249	18	60	40	25	18	9.9	16	94
2	9.6	34	5.6	160	17	56	35	23	15	9.4	13	161
3	7.9	29	4.5	108	17	53	31	21	83	8.7	12	308
4	9.8	28	3.9	76	140	48	29	18	46	8.0	11	165
5	16	266	4.7	59	59	45	49	483	31	7.3	9.6	70
6	9.0	334	3.7	45	41	41	39	217	26	7.0	8.8	48
7	7.9	151	3.6	37	36	36	76	189	471	6.6	83	35
8	8.1	88	4.9	33	30	32	60	117	207	6.1	65	28
9	7.4	63	7.6	29	26	29	89	838	131	13	29	22
10	155	888	7.1	e24	26	26	84	150	74	40	18	18
11	650	795	91	e21	25	24	77	260	62	24	68	16
12	226	258	89	e18	23	27	64	113	64	16	59	15
13	144	127	209	e15	21	36	56	69	45	14	29	13
14	73	71	444	e13	24	36	50	50	298	11	31	12
15	54	145	202	e11	1,050	28	46	148	275	9.2	38	12
16	68	263	95	e9.4	1,470	25	42	80	216	127	112	11
17	42	165	61	e8.4	e400	23	85	93	97	31	36	9.4
18	32	95	45	e7.6	e200	23	86	77	55	19	24	9.0
19	27	61	298	e7.2	e100	37	60	56	37	16	18	8.6
20	50	42	633	e6.8	e94	57	50	47	27	14	15	8.4
21	35	36	269	e6.4	95	56	51	110	23	14	14	7.9
22	28	34	148	e6.2	434	50	43	70	20	27	13	55
23	23	22	89	e5.8	284	47	35	49	18	27	14	33
24	20	17	96	e5.6	138	43	30	38	17	17	10	17
25	19	14	132	e5.3	104	38	27	33	16	14	8.4	14
26	21	12	86	e5.0	84	40	103	29	15	11	7.5	12
27	17	12	68	e4.8	73	33	44	26	16	9.3	6.8	41
28	22	9.3	54	e4.6	68	32	34	24	14	12	8.7	26
29	155	8.5	43	21	---	72	38	30	12	16	7.0	19
30	115	7.8	36	21	---	55	30	25	11	10	22	15
31	65	---	45	16	---	45	---	22	---	18	52	---
TOTAL	2,130.7	4,119.6	3,284.8	1,039.1	5,097	1,253	1,583	3,530	2,440	572.5	858.8	1,303.3
MEAN	68.7	137	106	33.5	182	40.4	52.8	114	81.3	18.5	27.7	43.4
MAX	650	888	633	249	1,470	72	103	838	471	127	112	308
MIN	7.4	7.8	3.6	4.6	17	23	27	18	11	6.1	6.8	7.9
CFSM	3.24	6.48	5.00	1.58	8.59	1.91	2.49	5.37	3.84	0.87	1.31	2.05
IN.	3.74	7.23	5.76	1.82	8.94	2.20	2.78	6.19	4.28	1.00	1.51	2.29

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	9.64	22.6	50.3	49.1	66.3	68.9	43.6	35.0	21.2	15.7	11.7	10.2
MAX	68.7	137	198	159	227	172	145	156	83.2	97.0	68.0	81.4
(WY)	(2003)	(2003)	(1979)	(1951)	(1989)	(1964)	(1972)	(1983)	(1960)	(1958)	(1974)	(1979)
MIN	0.000	0.087	0.86	4.43	6.48	11.0	10.3	3.92	1.14	0.66	0.006	0.020
(WY)	(1954)	(1954)	(1954)	(1981)	(1954)	(1954)	(1971)	(1952)	(1954)	(1951)	(1965)	(1953)

03289000 SOUTH ELKHORN CREEK AT FORT SPRING, KY—Continued

e Estimated



03289193 WOLF RUN AT OLD FRANKFORT PIKE AT LEXINGTON, KY

LOCATION.--Lat 38°04'00", long 84°33'16", Fayette County, Hydrologic Unit 05100205, on left bank, downstream side of bridge on Old Frankfort Pike (1681), at Lexington 0.3 mile southeast of the intersection of Old Frankfort Pike and Viley Road, 0.7 mile northwest of the intersection of Old Frankfort Pike and New Circle Road (Hwy 4), and 0.5 mile above mouth.

DRAINAGE AREA.--9.57 mi^2.

PERIOD OF RECORD.--October 1997 to current year.

GAGE.--Water-stage recorder with telemetry. Elevation of gage is 860 ft above NGVD of 1929 (from topographic map).

REMARKS.--Records good except those estimated, which are poor.

COOPERATION.--Lexington-Fayette Urban County Government.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.5	11	3.4	57	5.4	17	7.8	9.2	8.4	8.7	11	47
2	4.4	8.2	3.2	32	4.6	15	7.2	8.9	8.1	8.9	10	117
3	3.5	6.8	3.1	25	8.3	13	6.6	8.2	68	8.5	11	104
4	11	7.7	3.0	19	40	e12	6.4	7.1	17	8.4	11	61
5	6.2	72	3.0	15	14	10	25	196	11	8.2	9.5	35
6	3.6	56	3.0	13	12	8.5	12	61	14	7.3	12	21
7	2.5	31	3.0	11	12	7.8	33	86	155	7.2	37	15
8	2.0	18	3.9	9.7	11	7.3	18	75	60	7.2	18	13
9	1.8	12	4.0	8.8	9.7	6.9	e32	421	34	89	11	12
10	75	302	4.4	7.5	9.7	6.6	e24	70	22	90	9.8	12
11	203	119	38	6.6	8.7	6.3	e19	118	23	23	54	11
12	73	57	16	e5.8	7.9	8.7	15	53	35	13	18	11
13	45	38	53	e5.2	7.2	16	12	32	21	10	11	10
14	21	23	62	e4.7	18	8.1	9.8	21	137	9.6	13	10
15	21	47	40	e4.2	160	7.0	8.7	153	67	9.1	119	10
16	19	47	25	e3.9	e400	6.5	7.9	50	83	70	56	10
17	10	32	23	e3.6	e150	6.2	54	66	52	12	21	10
18	7.7	20	14	e3.4	e82	6.0	26	42	32	11	13	9.9
19	9.6	14	95	e3.3	45	25	14	27	22	10	11	9.6
20	22	11	80	e3.2	36	19	11	45	17	9.6	11	9.5
21	8.6	15	46	e3.1	34	13	15	45	14	12	10	9.5
22	6.9	10	31	e3.0	114	9.9	9.2	27	12	22	10	73
23	5.8	7.1	21	e2.9	77	8.7	8.3	20	11	18	10	17
24	4.9	6.0	33	e2.8	53	7.9	7.7	15	10	12	10	11
25	5.4	5.4	28	e2.8	38	7.3	7.4	15	10	10	9.5	11
26	5.3	5.4	19	e2.7	29	8.9	105	12	9.6	9.5	9.5	10
27	3.9	5.1	16	e2.7	27	6.8	18	10	10	9.0	9.5	39
28	11	4.5	13	e2.6	22	6.4	14	11	9.4	38	18	12
29	62	4.0	11	6.6	---	45	26	16	9.0	27	9.4	11
30	33	3.6	11	6.4	---	13	11	9.7	8.9	9.6	31	11
31	17	---	23	4.8	---	8.8	---	8.8	---	31	154	---
TOTAL	710.6	998.8	732.0	282.3	1,435.5	348.6	571.0	1,738.9	990.4	618.8	748.2	742.5
MEAN	22.9	33.3	23.6	9.11	51.3	11.2	19.0	56.1	33.0	20.0	24.1	24.8
MAX	203	302	95	57	400	45	105	421	155	90	154	117
MIN	1.8	3.6	3.0	2.6	4.6	6.0	6.4	7.1	8.1	7.2	9.4	9.5
CFSM	2.40	3.48	2.47	0.95	5.36	1.18	1.99	5.86	3.45	2.09	2.52	2.59
IN.	2.76	3.88	2.85	1.10	5.58	1.36	2.22	6.76	3.85	2.41	2.91	2.89

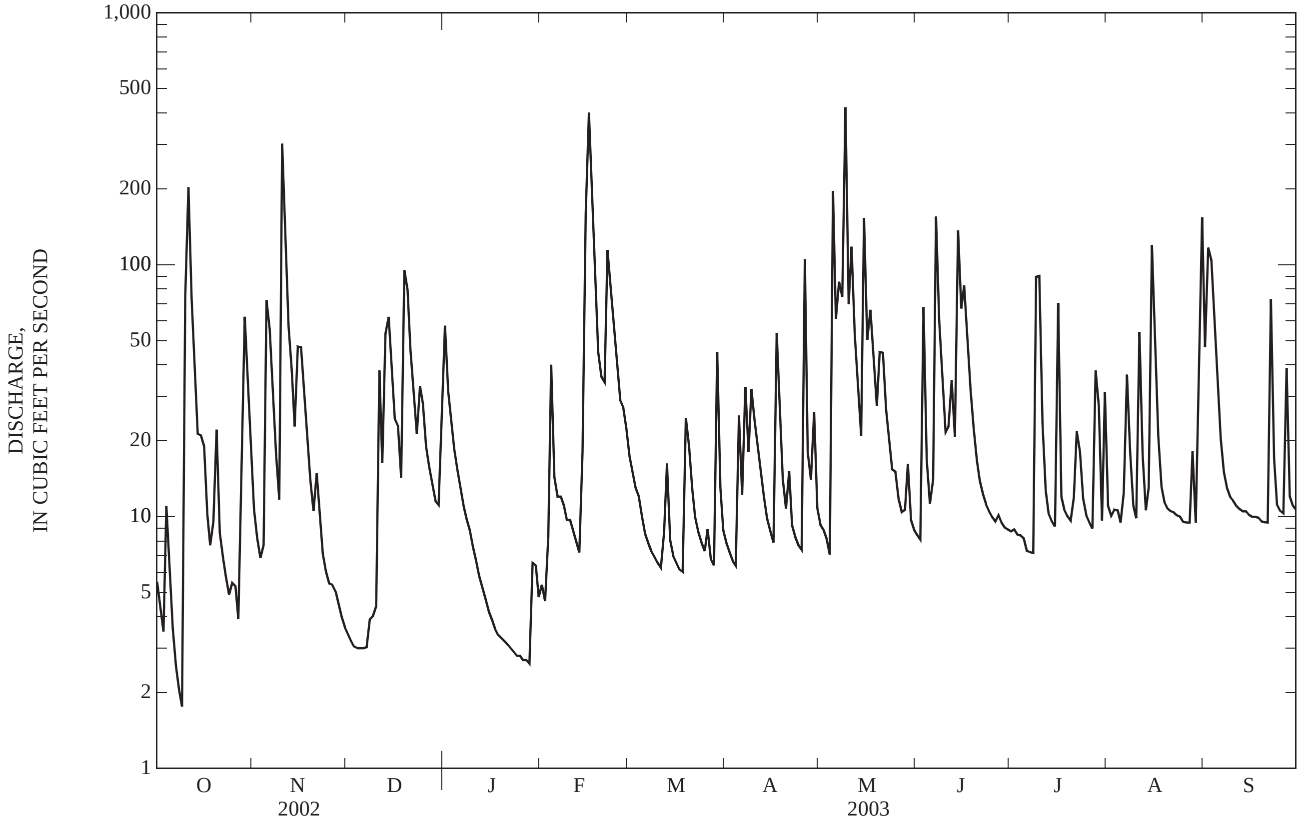
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	7.38	10.1	13.6	17.3	24.4	22.6	16.7	23.3	21.6	15.7	7.29	9.41
MAX	22.9	33.3	23.6	37.7	51.3	47.3	30.5	56.1	61.8	44.6	24.1	24.8
(WY)	(2003)	(2003)	(2003)	(1999)	(2003)	(2002)	(2002)	(2003)	(1998)	(1998)	(2003)	(2003)
MIN	1.59	2.45	5.19	6.31	6.35	11.2	5.84	5.82	5.10	2.21	1.58	1.37
(WY)	(2001)	(2000)	(2000)	(2001)	(2002)	(2003)	(2001)	(1999)	(2002)	(2002)	(2002)	(1999)

03289193 WOLF RUN AT OLD FRANKFORT PIKE AT LEXINGTON, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1998 - 2003	
ANNUAL TOTAL	6,806.60		9,917.6			
ANNUAL MEAN	18.6		27.2		15.7	
HIGHEST ANNUAL MEAN					27.2	2003
LOWEST ANNUAL MEAN					9.93	2000
HIGHEST DAILY MEAN	507	Mar 20	421	May 9	717	Jul 20, 1998
LOWEST DAILY MEAN	0.59	Sep 12	1.8	Oct 9	0.34	Oct 13, 1997
ANNUAL SEVEN-DAY MINIMUM	0.61	Sep 7	2.8	Jan 22	0.42	Oct 7, 1997
MAXIMUM PEAK FLOW			2,550	May 9	3,120	Jun 29, 1998
MAXIMUM PEAK STAGE			7.17	May 9	7.97	Jun 29, 1998
INSTANTANEOUS LOW FLOW					0.00	Dec 9, 1999
ANNUAL RUNOFF (CFSM)	1.95		2.84		1.64	
ANNUAL RUNOFF (INCHES)	26.46		38.55		22.33	
10 PERCENT EXCEEDS	40		64		32	
50 PERCENT EXCEEDS	6.0		11		6.2	
90 PERCENT EXCEEDS	0.90		4.8		1.0	

e Estimated



03289200 TOWN BRANCH AT YARNALLTON ROAD AT YARNALLTON, KY

LOCATION.--Lat 38°06'13", long 84°35'17", Fayette County, Hydrologic Unit 05100205, on the left bank, downstream side of bridge on Yarnallton Road (1977), 0.5 mile southwest of Leestown Road (HWY 421), 1.1 miles northeast of Old Frankfort Pike (HWY 1681), 0.2 mile Southwest of Yarnallton, KY.

DRAINAGE AREA.--30.0 mi^2.

PERIOD OF RECORD.--October 1997 to current year.

GAGE.--Water-stage recorder with telemetry. Elevation of gage is 830 ft above NGVD of 1929 (from topographic map).

REMARKS.--Records fair except for those estimated, which are poor. Flow regulated by a Sewage Treatment Plant and Federal Correctional Institute upstream.

COOPERATION.--Lexington-Fayette County Urban Government.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	49	94	38	235	42	98	57	57	46	45	67	191
2	44	73	38	170	38	85	53	54	43	42	52	341
3	36	62	37	144	39	e75	51	63	207	40	53	319
4	51	65	37	115	152	68	46	48	94	37	57	197
5	79	290	38	96	77	61	107	534	65	33	48	130
6	46	295	36	86	66	62	48	284	55	33	43	93
7	39	182	35	75	68	e58	136	349	448	34	83	74
8	35	133	38	68	57	e55	75	230	237	34	88	65
9	34	99	44	63	52	e52	138	904	181	126	74	57
10	209	597	38	58	56	e49	115	300	136	213	51	51
11	648	634	130	50	53	46	110	407	126	112	110	46
12	281	285	105	45	51	51	86	250	152	69	94	43
13	193	191	188	45	47	70	73	177	123	58	61	40
14	125	143	278	44	60	56	67	126	246	49	54	36
15	99	188	192	42	573	47	63	291	209	45	86	39
16	112	192	148	40	829	42	58	214	317	177	224	36
17	73	148	130	41	524	42	195	227	268	73	79	36
18	61	122	110	37	312	41	139	186	177	56	62	33
19	53	99	131	36	235	84	89	145	133	47	54	32
20	97	84	407	e35	201	94	73	134	107	41	47	30
21	63	83	234	e34	186	112	85	244	90	50	42	29
22	54	82	164	e33	447	83	67	153	79	62	40	195
23	48	63	129	e32	362	72	59	118	74	66	39	98
24	44	57	136	e32	267	67	55	91	68	71	33	66
25	47	55	145	e31	205	60	53	80	66	46	34	53
26	45	53	110	e31	159	65	152	68	63	40	33	45
27	38	51	93	e30	136	55	74	60	67	34	33	120
28	70	44	81	e30	122	50	64	58	57	40	66	68
29	250	42	71	54	---	149	100	82	51	103	41	57
30	185	40	68	45	---	80	65	61	48	49	86	49
31	127	---	91	40	---	62	---	50	---	90	189	---
TOTAL	3,335	4,546	3,520	1,917	5,416	2,091	2,553	6,045	4,033	2,015	2,123	2,669
MEAN	108	152	114	61.8	193	67.5	85.1	195	134	65.0	68.5	89.0
MAX	648	634	407	235	829	149	195	904	448	213	224	341
MIN	34	40	35	30	38	41	46	48	43	33	33	29
CFSM	3.59	5.05	3.78	2.06	6.45	2.25	2.84	6.50	4.48	2.17	2.28	2.97
IN.	4.14	5.64	4.36	2.38	6.72	2.59	3.17	7.50	5.00	2.50	2.63	3.31

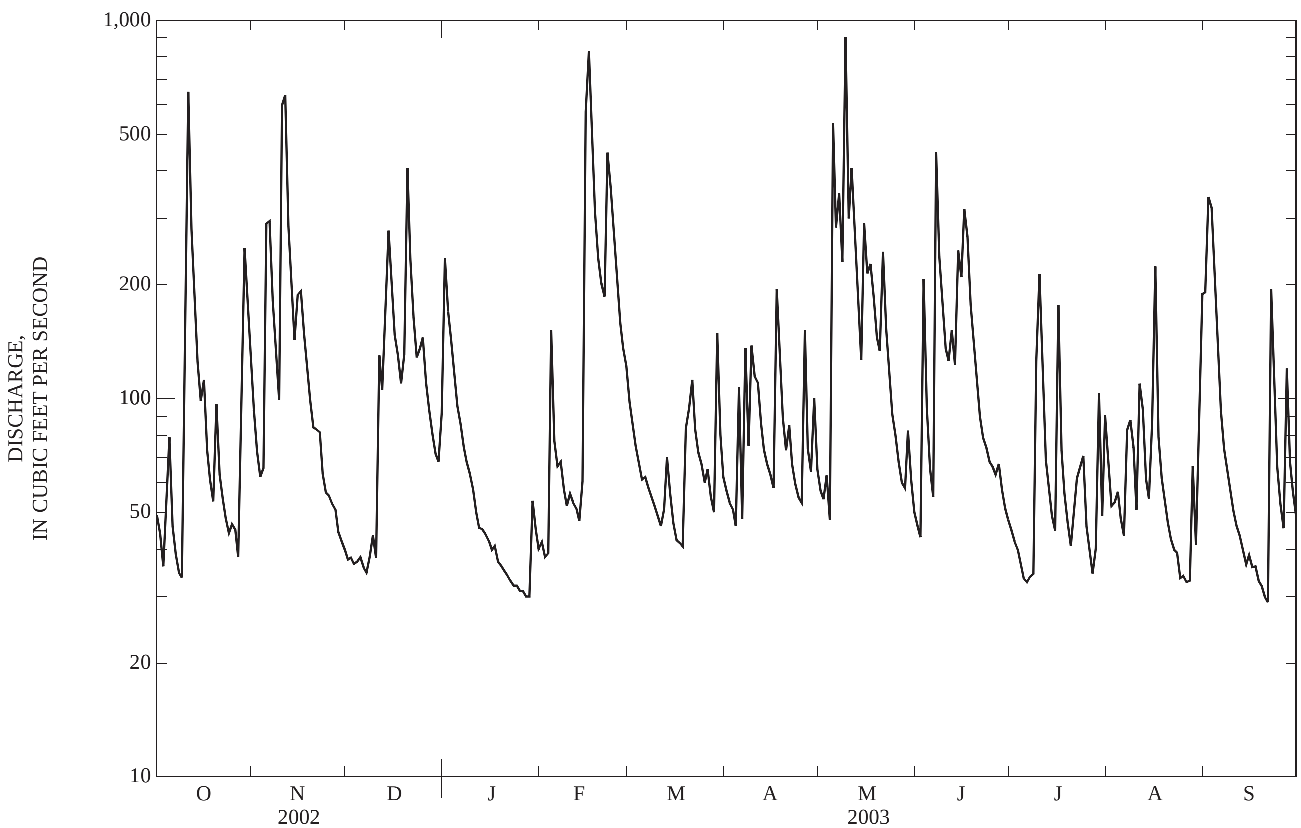
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	49.7	56.9	70.5	77.6	117	109	85.1	115	109	79.1	46.9	55.1
MAX	108	152	114	117	193	190	127	195	284	199	68.5	89.0
(WY)	(2003)	(2003)	(2003)	(1998)	(2003)	(2002)	(1998)	(2003)	(1998)	(1998)	(2003)	(2003)
MIN	32.1	32.0	41.2	47.8	51.5	67.5	49.6	46.5	46.4	32.3	30.3	24.9
(WY)	(2000)	(2000)	(2000)	(2001)	(2002)	(2003)	(1999)	(2000)	(2001)	(2002)	(2002)	(1999)

03289200 TOWN BRANCH AT YARNALLTON ROAD AT YARNALLTON, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1998 - 2003	
ANNUAL TOTAL	33,392		40,263			
ANNUAL MEAN	91.5		110		80.6	
HIGHEST ANNUAL MEAN					113	1998
LOWEST ANNUAL MEAN					60.8	2000
HIGHEST DAILY MEAN	1,480	Mar 20	904	May 9	1,960	Jul 20, 1998
LOWEST DAILY MEAN	22	Aug 10	29	Sep 21	17	Nov 29, 1997
ANNUAL SEVEN-DAY MINIMUM	22	Sep 7	31	Jan 22	22	Sep 13, 1999
MAXIMUM PEAK FLOW			2,990	May 9	6,750	Jun 29, 1998
MAXIMUM PEAK STAGE			6.65	May 9	9.12	Jun 29, 1998
INSTANTANEOUS LOW FLOW					13	Jul 16, 2001
ANNUAL RUNOFF (CFSM)	3.05		3.68		2.69	
ANNUAL RUNOFF (INCHES)	41.41		49.93		36.52	
10 PERCENT EXCEEDS	189		232		159	
50 PERCENT EXCEEDS	51		67		51	
90 PERCENT EXCEEDS	26		38		27	

e Estimated



03289300 SOUTH ELKHORN CREEK NEAR MIDWAY, KY

LOCATION.--Lat 38°08'27", long 84°38'43", Scott County, Hydrologic Unit 05100205, on right bank, 5 ft upstream from bridge on U.S. Route 62/421, 2.2 mi southeast of Midway, 6.5 mi downstream from Town Branch, and at mile 27.6.

DRAINAGE AREA.--95.0 mi^2, of which about 12 mi^2 does not contribute directly to surface runoff.

PERIOD OF RECORD.--September 1982 to current year.

GAGE.--Water-stage recorder with telemetry and crest-stage gage. Datum of gage is 790 ft above NGVD of 1929 (from togopraphic map).

REMARKS.--Records fair except for those estimated, which are poor. Water is diverted from the Kentucky River for use by the city of Lexington and is discharged into Town Branch at a site 17 mi above gage. Discharge partially regulated by low-head turbine, 1 mile upstream, since October 1989. Regulation does not effect peak discharge.

COOPERATION.--Kentucky River Authority.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 11	1200	1,630	11.06	Dec 20	0930	1,720	11.35
Nov 6	0130	1,220	9.76	Jun 15	0930	1,180	9.56
Nov 11	0745	*2,170	12.75	Jun 17	0300	1,470	*10.55

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	74	221	70	439	74	e300	e128	e105	94	59	127	410
2	65	169	68	521	74	e265	e118	e125	82	57	77	388
3	56	142	66	407	72	e230	e113	e148	252	54	72	699
4	48	135	62	319	148	e200	e109	e111	285	47	72	606
5	111	355	63	263	204	e170	e209	e982	170	46	69	320
6	73	891	63	223	165	e156	e133	e531	e150	45	56	207
7	59	505	55	190	e184	e142	e402	e537	e800	47	67	154
8	52	346	59	e165	e173	e135	e275	e408	e620	43	264	120
9	48	258	69	e140	e165	e124	e502	e1,080	e520	43	143	101
10	158	965	70	e125	e151	e113	e405	e499	386	246	88	82
11	1,210	1,720	137	e110	e147	e112	e365	e828	313	279	69	71
12	596	803	247	e100	e140	e134	e277	e435	315	114	276	63
13	464	515	236	e93	e128	e205	e217	e305	274	86	121	55
14	272	368	683	e84	e186	e172	e182	e237	280	68	84	51
15	198	344	565	e78	e1,580	e151	e159	e720	911	61	108	51
16	221	494	407	e72	e1,700	e142	e144	e486	579	334	338	48
17	162	385	304	e68	e1,000	e135	e382	e458	1,040	203	159	50
18	130	306	277	e65	e800	e128	e373	e411	518	117	103	43
19	108	251	232	e61	e640	e238	e247	e337	357	88	80	44
20	160	211	1,260	e58	e580	e343	e196	e306	266	71	67	33
21	135	186	747	e56	e620	e275	e231	e580	209	66	58	35
22	114	190	496	e53	e1,230	e214	e170	e420	169	84	52	159
23	97	150	361	e51	e940	e186	e146	335	141	144	53	253
24	86	129	296	e49	e710	e167	e132	261	120	113	47	113
25	80	117	367	e48	e560	e154	e124	210	104	76	45	81
26	84	e110	306	e46	e420	e159	e172	188	92	59	42	67
27	73	105	261	e45	e380	e136	e120	162	89	53	40	126
28	94	91	228	e44	e350	e126	e109	e140	79	53	55	139
29	336	81	199	61	---	e285	e164	e160	67	124	52	91
30	478	77	173	103	---	e187	e118	143	62	76	76	74
31	304	---	161	80	---	e152	---	110	---	77	88	---
TOTAL	6,146	10,620	8,588	4,217	13,521	5,636	6,422	11,758	9,344	3,033	3,048	4,734
MEAN	198	354	277	136	483	182	214	379	311	97.8	98.3	158
MAX	1,210	1,720	1,260	521	1,700	343	502	1,080	1,040	334	338	699
MIN	48	77	55	44	72	112	109	105	62	43	40	33
CFSM	1.89	3.37	2.64	1.30	4.60	1.73	2.04	3.61	2.97	0.93	0.94	1.50
IN.	2.18	3.76	3.04	1.49	4.79	2.00	2.28	4.17	3.31	1.07	1.08	1.68

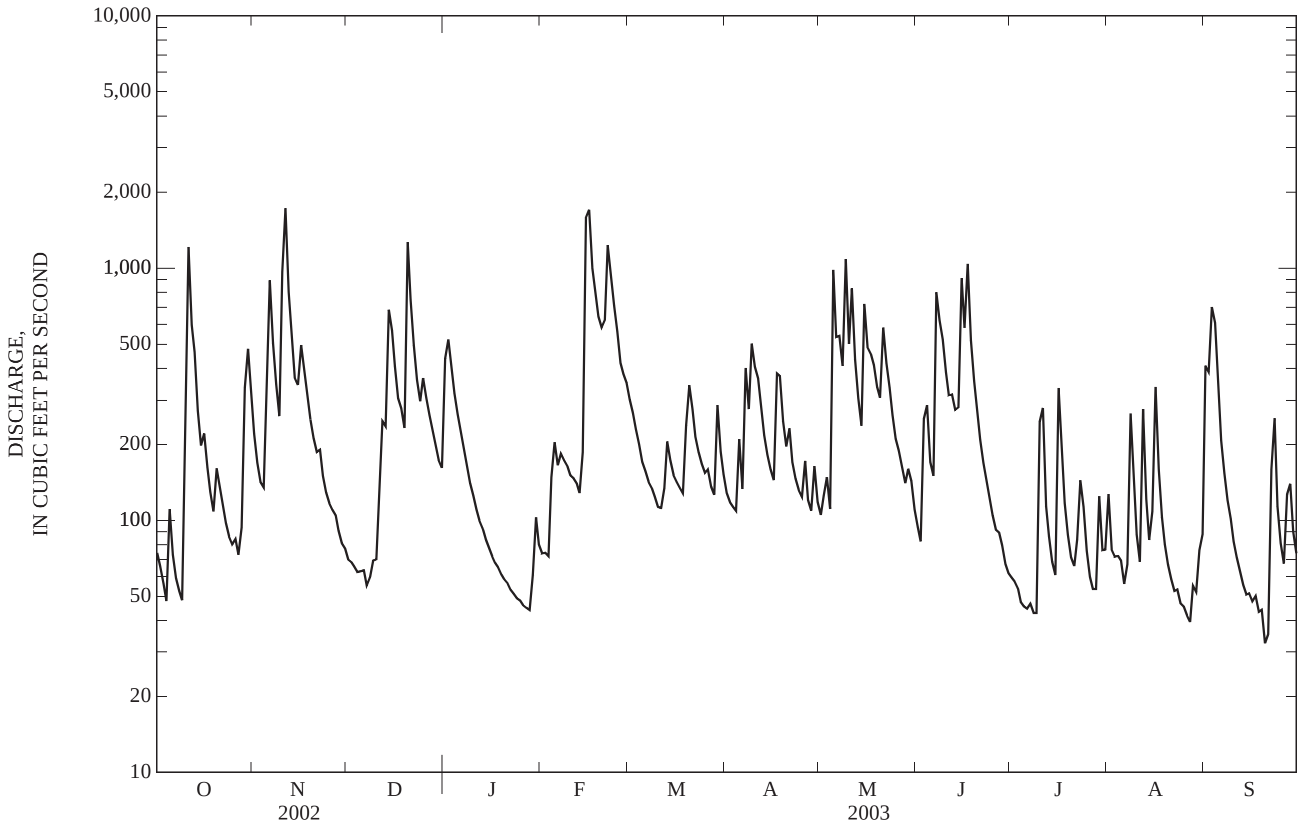
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1982 - 2003, BY WATER YEAR (WY)

MEAN	67.0	129	222	225	290	303	183	216	173	98.0	66.3	61.8
MAX	198	354	673	405	1,030	1,165	366	718	606	443	255	158
(WY)	(2003)	(2003)	(1991)	(1996)	(1989)	(1997)	(1984)	(1983)	(1997)	(1998)	(1992)	(2003)
MIN	24.5	21.1	42.6	50.4	114	60.1	61.0	35.9	39.5	30.7	22.5	16.4
(WY)	(2000)	(2000)	(2000)	(1986)	(1993)	(1983)	(1986)	(1999)	(1988)	(2002)	(1999)	(1999)

03289300 SOUTH ELKHORN CREEK NEAR MIDWAY, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1982 - 2003	
ANNUAL TOTAL	68,653		87,067			
ANNUAL MEAN	188		239		169	
HIGHEST ANNUAL MEAN					276	1997
LOWEST ANNUAL MEAN					99.6	2000
HIGHEST DAILY MEAN	1,950	Mar 20	1,720	Nov 11	10,700	Mar 2, 1997
LOWEST DAILY MEAN	14	Aug 7	33	Sep 20	3.1	Oct 8, 1994
ANNUAL SEVEN-DAY MINIMUM	18	Aug 1	43	Sep 15	8.5	Nov 18, 2000
MAXIMUM PEAK FLOW			2,170	Nov 11	12,300	Mar 2, 1997
MAXIMUM PEAK STAGE			12.75	Nov 11	26.37	Mar 2, 1997
INSTANTANEOUS LOW FLOW					0.00	Oct 7, 1992
ANNUAL RUNOFF (CFSM)	1.79		2.27		1.61	
ANNUAL RUNOFF (INCHES)	24.32		30.85		21.87	
10 PERCENT EXCEEDS	464		520		359	
50 PERCENT EXCEEDS	93		148		88	
90 PERCENT EXCEEDS	25		55		28	

e Estimated



03289500 ELKHORN CREEK NEAR FRANKFORT, KY

LOCATION.--Lat 38°16'07", long 84°48'53", Franklin County, Hydrologic Unit 05100205, on right bank, 50 ft downstream from bridge on State Highway 1900, 4.2 mi northeast of city limits of Frankfort, 7.4 mi downstream from confluence of North and South Elkhorn Creeks, and at mile 10.4.

DRAINAGE AREA.--473 mi^2 of which about 70 mi^2 does not contribute directly to surface runoff.

PERIOD OF RECORD.--May 1915 to December 1920 (gage heights only, October 1918 to December 1920), December 1939 to August 1984, October 1987 to current year. Published as "at Forks of Elkhorn" 1915-20.

REVISED RECORDS.--WSP 1555: Drainage area.

GAGE.--Water-stage recorder with telemetry. Datum of gage is approximately 540.20 ft above NGVD of 1929. See WDR KY-90-1 for history of changes prior to Aug. 31, 1970.

REMARKS.--Records fair except for those estimated, which are poor. City of Lexington diverts water from Hickman Creek in Kentucky River Basin for municipal water supply; return flow of which enters tributary above station.

COOPERATION.--Kentucky River Authority.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Aug. 2, 1932, reached a stage of about 17.5 ft, from information by local resident. Flood of January 1937 was about 0.3 ft lower.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 7,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov 11	1900	7,270	9.10	Feb 22	2000	7,840	9.43
Dec 20	1130	7,010	8.95	May 11	1200	7,820	9.42
Feb 17	1030	*8,030	*9.54				

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	211	1,230	263	2,460	285	1,260	564	388	396	168	120	410
2	166	873	239	3,030	274	1,110	477	333	337	152	170	2,270
3	137	676	223	2,180	281	988	417	314	716	145	155	2,890
4	118	578	208	1,640	536	874	382	327	1,450	131	194	2,070
5	118	775	211	1,320	1,030	793	399	2,320	1,090	108	235	1,360
6	181	4,040	245	1,100	763	728	483	5,030	734	102	220	795
7	164	3,090	221	912	617	662	509	3,790	1,340	96	213	526
8	157	1,870	187	782	527	591	790	3,450	3,090	95	269	379
9	124	1,290	189	702	448	529	996	2,770	2,500	e85	375	299
10	130	1,610	205	610	412	468	1,470	5,150	1,880	138	435	247
11	2,600	6,590	457	514	409	425	1,380	6,200	1,370	424	625	205
12	3,800	4,640	1,120	434	397	405	1,160	4,390	1,250	438	386	174
13	1,720	2,480	e1,240	384	372	397	954	2,550	1,160	265	367	159
14	1,120	1,690	2,540	357	368	430	780	1,690	1,630	188	222	136
15	740	1,270	2,900	331	4,030	453	665	1,280	3,820	157	187	126
16	590	1,470	1,950	305	e7,610	397	579	2,200	3,690	200	229	119
17	562	1,710	1,430	e280	e7,660	342	587	2,370	2,750	552	375	105
18	456	1,360	1,250	e252	e5,120	322	1,150	2,440	2,130	370	212	94
19	363	1,100	1,630	e240	3,030	323	1,190	2,110	1,410	236	175	88
20	340	914	6,240	e222	2,430	539	851	1,690	1,040	179	139	81
21	412	771	4,060	e217	3,080	1,540	766	2,280	782	163	116	69
22	389	696	2,420	e209	5,420	1,780	701	2,380	621	169	122	579
23	343	633	1,700	e209	6,320	1,310	589	1,800	491	212	619	1,140
24	286	518	1,300	e211	3,930	1,040	477	1,330	401	269	200	651
25	254	444	1,340	e217	2,750	852	421	1,040	339	246	144	385
26	237	395	1,330	e222	2,120	724	442	873	293	192	114	267
27	229	362	1,140	e230	1,700	647	596	726	266	145	92	249
28	240	337	1,010	e245	1,430	564	459	607	236	121	84	475
29	944	310	905	e261	---	598	392	537	206	116	84	419
30	2,920	287	792	e280	---	e832	438	536	183	157	161	316
31	1,910	---	799	e305	---	e718	---	481	---	132	246	---
TOTAL	21,961	44,009	39,744	20,661	63,349	22,641	21,064	63,382	37,601	6,151	7,285	17,083
MEAN	708	1,467	1,282	666	2,262	730	702	2,045	1,253	198	235	569
MAX	3,800	6,590	6,240	3,030	7,660	1,780	1,470	6,200	3,820	552	625	2,890
MIN	118	287	187	209	274	322	382	314	183	85	84	69
CFSM	1.76	3.65	3.19	1.66	5.62	1.81	1.74	5.08	3.11	0.49	0.58	1.42
IN.	2.03	4.07	3.67	1.91	5.86	2.09	1.95	5.86	3.48	0.57	0.67	1.58

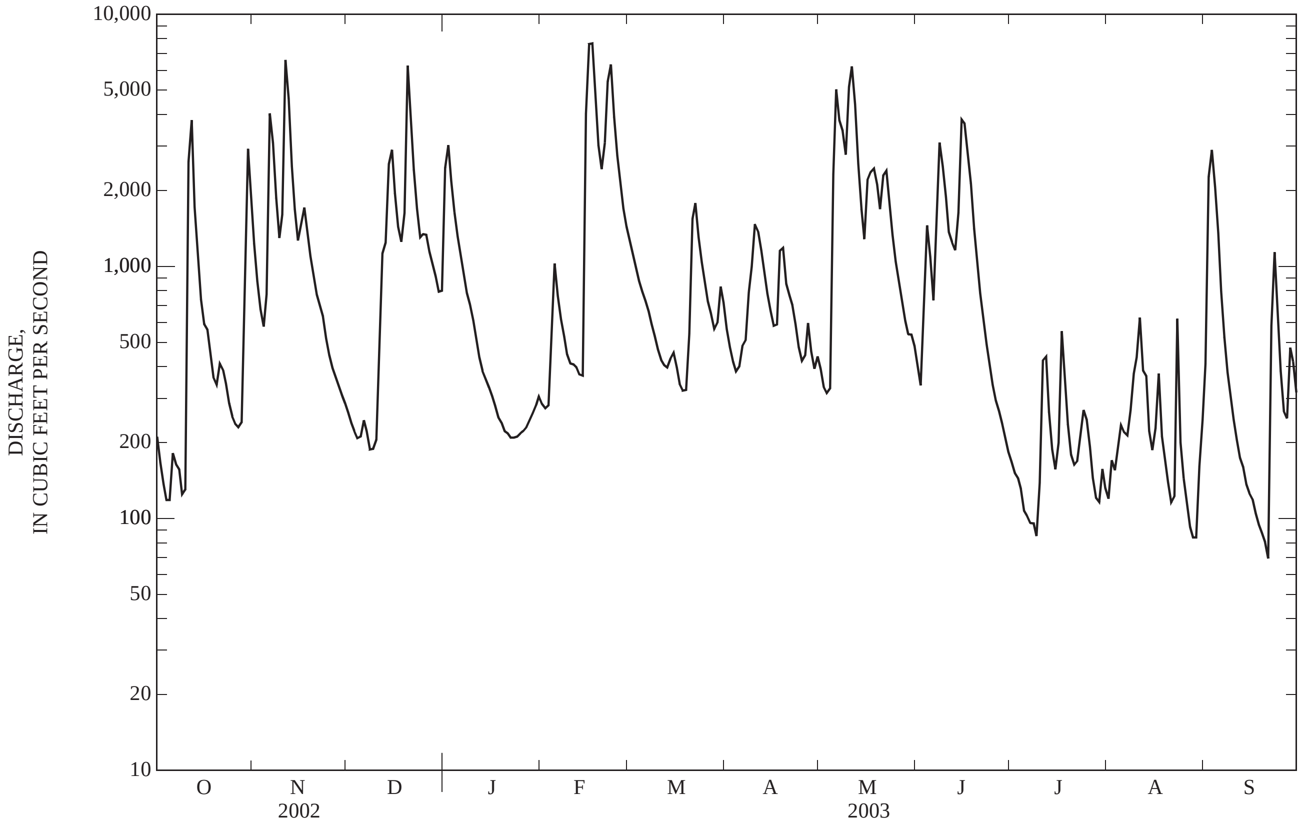
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1916 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	137	335	861	1,106	1,301	1,408	901	688	436	258	175	160
MAX	1,012	1,467	3,138	4,630	4,438	4,309	3,332	3,747	2,686	1,708	963	2,101
(WY)	(1976)	(2003)	(1979)	(1950)	(1989)	(1964)	(1948)	(1983)	(1997)	(1998)	(1992)	(1979)
MIN	5.94	12.1	17.3	33.8	64.5	145	119	51.8	31.7	15.9	17.7	9.21
(WY)	(1944)	(1944)	(1944)	(1944)	(1944)	(1941)	(1918)	(1941)	(1944)	(1944)	(1948)	(1953)

03289500 ELKHORN CREEK NEAR FRANKFORT, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1916 - 2003	
ANNUAL TOTAL	323,123		364,931			
ANNUAL MEAN	885		1,000		645	
HIGHEST ANNUAL MEAN					1,103	1997
LOWEST ANNUAL MEAN					126	1954
HIGHEST DAILY MEAN	13,700	Mar 20	7,660	Feb 17	25,000	Feb 16, 1989
LOWEST DAILY MEAN	23	Aug 9	69	Sep 21	0.00	Jan 7, 1940
ANNUAL SEVEN-DAY MINIMUM	31	Aug 6	97	Sep 15	0.00	Jan 7, 1940
MAXIMUM PEAK FLOW			8,030	Feb 17	35,900	Mar 4, 1997
MAXIMUM PEAK STAGE			9.54	Feb 17	17.96	Mar 3, 1997
ANNUAL RUNOFF (CFSM)	2.20		2.48		1.60	
ANNUAL RUNOFF (INCHES)	29.87		33.74		21.77	
10 PERCENT EXCEEDS	2,210		2,490		1,620	
50 PERCENT EXCEEDS	334		491		209	
90 PERCENT EXCEEDS	47		156		35	

e Estimated



03290500 KENTUCKY RIVER AT LOCK 2, AT LOCKPORT, KY

LOCATION.--Lat 38°26'20", long 84°57'48", Henry County, Hydrologic Unit 05100205, on left bank at lock 2 at Lockport, 0.1 mi downstream from Sixmile Creek and at mile 31.0.

DRAINAGE AREA.--6,180 mi^2, of which about 196 mi^2 does not contribute directly to surface runoff.

PERIOD OF RECORD.--October 1925 to September 1930, March 1931 to September 1931, December 1931 to April 1932, October 1933 to September 1937, and July 1939 to current year. Monthly discharge only for some periods, published in WSP 1305. Monthly discharge only for June to January 1931, published in WSP 1305; figures of daily discharge published in WSP 698 are unreliable.

REVISED RECORDS.--WSP 1385: 1926-29, 1932, 1934-37, 1945. WSP 1555: Drainage area. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder with telemetry. Datum of gage is 433.36 ft above NGVD of 1929. Prior to August 29, 1975, nonrecording gage at same site and datum. Auxiliary: water-stage recorder with telemetry located in the lower pool at Lock 3.

REMARKS.-- Records good. Flow regulated by Herrington Lake beginning November 1925 (station 03286000),Buckhorn Lake beginning December 1960 (station 03280800), Carr Fork Lake beginning January 1976 (station 03277446),and by hydroelectric plant at lock 7.

COOPERATION.--U.S. Army Corps of Engineers, Louisville District.

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

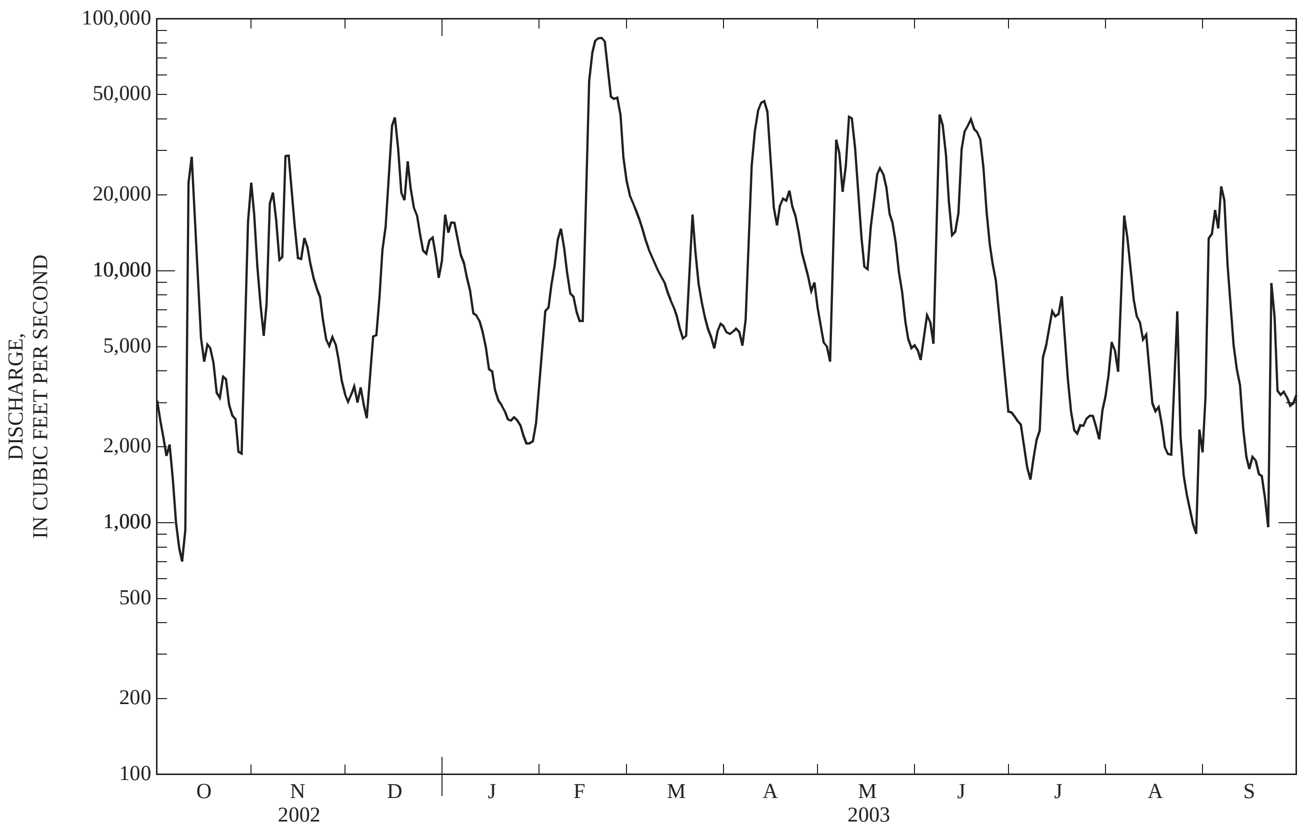
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3,050	16,800	3,020	16,700	5,060	20,000	5,680	6,050	4,820	2,740	3,850	3,140
2	2,530	10,400	3,230	14,100	6,920	18,600	5,600	5,170	4,420	2,640	5,200	13,400
3	2,160	7,320	3,470	15,500	7,130	17,400	5,740	5,000	5,450	2,520	4,840	13,900
4	1,840	5,520	3,000	15,500	8,780	16,100	5,880	4,360	6,670	2,450	3,970	17,400
5	2,040	7,390	3,440	13,400	10,500	14,700	5,730	15,100	6,260	1,990	7,150	14,700
6	1,490	18,400	2,920	11,500	13,300	13,300	5,040	33,100	5,140	1,650	16,500	21,600
7	999	20,400	2,600	10,700	14,600	12,200	6,390	29,100	13,600	1,480	13,500	19,000
8	790	15,900	3,880	9,360	12,300	11,500	13,000	20,600	41,700	1,810	10,100	10,500
9	701	11,000	5,480	8,300	9,860	10,800	26,200	26,000	37,700	2,120	7,650	7,000
10	934	11,300	5,540	6,770	8,120	10,000	35,900	40,700	28,900	2,320	6,610	5,040
11	22,300	28,500	7,920	6,630	7,890	9,500	43,100	40,200	18,900	4,520	6,260	4,070
12	28,300	28,700	12,100	6,330	6,820	9,010	46,300	30,700	13,800	5,050	5,310	3,510
13	14,900	21,000	15,000	5,720	6,320	8,280	47,100	19,700	14,300	5,850	5,560	2,350
14	8,710	15,000	25,200	4,980	6,310	7,690	42,700	13,500	16,900	6,910	4,070	1,820
15	5,410	11,200	37,600	4,070	24,500	7,180	27,100	10,400	30,400	6,570	2,980	1,630
16	4,350	11,100	40,500	3,980	56,600	6,580	17,800	10,100	35,600	6,710	2,760	1,820
17	5,090	13,500	30,600	3,350	73,400	5,900	15,100	14,900	37,400	7,920	2,870	1,760
18	4,930	12,300	20,400	3,060	81,700	5,380	18,000	19,200	39,800	5,400	2,440	1,560
19	4,310	10,600	19,000	2,930	83,700	5,500	19,300	24,000	36,500	3,700	2,000	1,530
20	3,280	9,320	27,100	2,780	83,900	9,770	19,000	25,500	35,400	2,750	1,870	1,250
21	3,130	8,490	21,300	2,570	80,900	16,700	20,700	24,200	33,400	2,320	1,860	959
22	3,800	7,860	17,900	2,540	63,000	11,900	17,900	21,300	25,700	2,260	3,910	8,910
23	3,710	6,390	16,600	2,620	49,000	8,860	16,400	16,800	17,100	2,430	6,870	6,530
24	2,930	5,370	13,800	2,550	48,100	7,480	14,100	15,500	12,700	2,420	2,190	3,340
25	2,660	5,020	12,000	2,440	48,500	6,500	11,800	12,900	10,600	2,590	1,540	3,210
26	2,580	5,450	11,700	2,230	41,500	5,880	10,500	9,860	9,120	2,660	1,280	3,310
27	1,910	5,110	13,200	2,060	28,200	5,460	9,510	8,240	6,720	2,650	1,110	3,140
28	1,870	4,440	13,500	2,060	22,700	4,910	8,300	6,290	4,770	2,400	986	2,900
29	5,820	3,650	11,400	2,100	---	5,730	8,970	5,360	3,520	2,140	902	2,970
30	15,700	3,240	9,360	2,480	---	6,150	7,120	4,930	2,760	2,790	2,340	3,210
31	22,400	---	11,000	3,480	---	6,030	---	5,050	---	3,140	1,900	---
TOTAL	184,624	340,670	423,760	192,790	909,610	304,990	535,960	523,810	560,050	104,900	140,378	185,459
MEAN	5,956	11,360	13,670	6,219	32,490	9,838	17,870	16,900	18,670	3,384	4,528	6,182
MAX	28,300	28,700	40,500	16,700	83,900	20,000	47,100	40,700	41,700	7,920	16,500	21,600
MIN	701	3,240	2,600	2,060	5,060	4,910	5,040	4,360	2,760	1,480	902	959

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	2,301	4,843	10,580	12,980	15,200	18,400	13,850	10,390	5,791	2,811	2,421	2,162
MAX	14,120	13,960	39,510	37,850	40,180	40,410	41,540	34,340	23,380	8,458	8,589	14,740
(WY)	(1990)	(1987)	(1979)	(1974)	(1989)	(1975)	(1972)	(1983)	(1997)	(1998)	(1992)	(1979)
MIN	421	511	668	770	4,073	4,423	2,074	1,518	508	545	307	187
(WY)	(2000)	(2000)	(1966)	(1981)	(1968)	(1983)	(1986)	(1976)	(1988)	(1999)	(1999)	(1999)

03290500 KENTUCKY RIVER AT LOCK 2, AT LOCKPORT, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1961 - 2003	
ANNUAL TOTAL	3,347,407		4,407,001			
ANNUAL MEAN	9,171		12,070		8,446	
HIGHEST ANNUAL MEAN					14,030	1979
LOWEST ANNUAL MEAN					3,891	1988
HIGHEST DAILY MEAN	80,700	Mar 21	83,900	Feb 20	121,000	Dec 11, 1978
LOWEST DAILY MEAN	178	Sep 13	701	Oct 9	112	Sep 16, 1999
ANNUAL SEVEN-DAY MINIMUM	223	Sep 8	1,260	Oct 4	125	Sep 10, 1999
MAXIMUM PEAK FLOW			84,200	Feb 20	123,000	Jan 26, 1937
MAXIMUM PEAK STAGE			39.31	Feb 20	56.85	Jan 24, 1937
10 PERCENT EXCEEDS	27,500		28,400		21,500	
50 PERCENT EXCEEDS	3,890		6,910		3,800	
90 PERCENT EXCEEDS	452		2,180		614	



03291500 EAGLE CREEK AT GLENCOE, KY

LOCATION.--Lat 38°42'18", long 84°49'26", Gallatin County, Hydrologic Unit 05100205, on left bank, at bridge on U.S. Highway 127, 0.6 mi south of Glencoe, 5.8 mi downstream from Tenmile Creek, and at mile 21.6.

DRAINAGE AREA.--437 mi^2.

PERIOD OF RECORD.--April 1915 to September 1918, October 1918 to December 1920 (gage heights only), May 1928 to September 1931, June 1938 to September 1977, December 1988 to current year. Monthly discharge only for May 1915, June 1938, published in WSP 1305.

REVISED RECORDS.--WSP 1275: 1916-17, 1920(M). WSP 1555: Drainage area. WSP 1908: 1939-40(M), 1943(M), 1945(M), 1948(P), 1950(M), 1956-57(P), 1960(M).

GAGE.--Water-stage recorder with telemetry. Datum of gage is 508.52 ft above NGVD of 1929. Prior Oct. 1, 1950, nonrecording gages at same site and datum. Oct. 1, 1950 to Oct. 19, 1960, nonrecording gage 600 ft downstream at same datum.

REMARKS.--Records fair except for those estimated, which are poor.

COOPERATION.--Kentucky Natural Resources and Environmental Protection Cabinet.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 12,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 20	0100	16,900	15.56	May 6	1200	12,500	13.20
Jan 1	1000	15,000	14.58	Jul 10	2110	*25,300	*19.14
Feb 22	2100	17,800	15.98	Sep 2	1300	17,900	16.02

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	114	317	82	10,500	174	612	324	405	156	63	49	369
2	79	196	76	3,410	168	1,770	281	267	131	58	1,640	12,300
3	60	157	70	997	237	938	228	226	179	63	636	4,250
4	50	132	64	579	2,510	483	197	199	2,400	51	406	1,610
5	45	341	66	440	1,480	670	295	6,510	534	45	734	547
6	115	4,640	64	395	408	919	255	10,700	272	46	416	317
7	112	1,300	62	341	252	608	366	3,630	329	40	214	226
8	86	403	62	300	180	382	571	2,410	1,920	e34	283	162
9	66	254	62	269	e150	321	782	799	2,250	e120	151	126
10	55	567	69	232	e140	285	1,750	4,530	576	e750	96	104
11	4,770	5,060	1,740	197	e130	240	651	7,190	313	3,260	1,030	87
12	4,830	1,720	3,110	159	e120	234	379	3,460	298	879	1,330	73
13	617	477	1,440	e140	e110	274	298	755	617	331	363	61
14	258	296	3,270	e130	e100	403	237	425	369	205	214	58
15	152	232	1,590	122	5,520	310	190	323	3,250	137	135	59
16	99	341	538	e110	4,530	274	171	264	5,360	289	95	56
17	75	488	1,000	e100	1,180	250	160	1,420	3,210	135	77	56
18	61	330	3,210	e96	756	226	2,070	4,170	1,110	116	77	54
19	53	233	4,020	e92	414	260	728	1,470	670	98	59	45
20	48	187	11,200	e88	318	1,470	313	643	367	100	50	36
21	47	162	2,320	e82	2,160	1,600	1,980	2,970	256	77	40	35
22	44	171	697	e76	11,400	1,690	1,540	1,400	197	81	423	3,400
23	41	205	419	e72	9,570	606	461	518	161	72	5,270	4,120
24	37	172	319	e71	1,630	421	307	349	135	57	625	699
25	42	142	386	e68	664	323	253	276	112	53	211	227
26	146	125	474	e66	442	279	487	258	97	51	118	125
27	124	114	360	e64	364	252	762	226	97	58	65	2,950
28	90	105	283	e62	329	222	287	191	145	262	45	414
29	1,310	97	249	e60	---	879	493	191	109	142	38	289
30	3,860	90	318	226	---	e640	1,410	199	78	91	4,040	155
31	779	---	2,100	218	---	e450	---	184	---	67	548	---
TOTAL	18,265	19,054	39,720	19,762	45,436	18,291	18,226	56,558	25,698	7,831	19,478	33,010
MEAN	589	635	1,281	637	1,623	590	608	1,824	857	253	628	1,100
MAX	4,830	5,060	11,200	10,500	11,400	1,770	2,070	10,700	5,360	3,260	5,270	12,300
MIN	37	90	62	60	100	222	160	184	78	34	38	35
CFSM	1.35	1.45	2.93	1.46	3.71	1.35	1.39	4.17	1.96	0.58	1.44	2.52
IN.	1.55	1.62	3.38	1.68	3.87	1.56	1.55	4.81	2.19	0.67	1.66	2.81

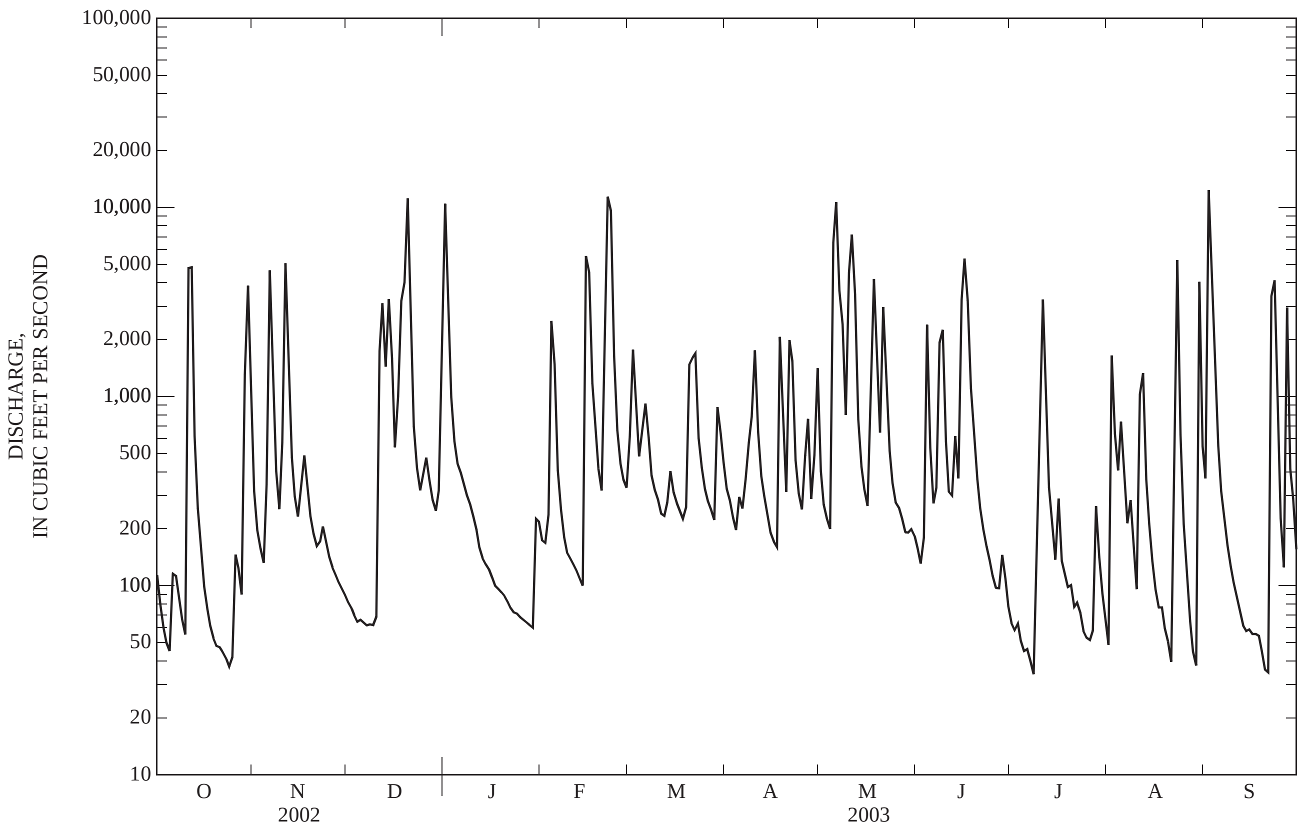
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1916 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	114	341	646	934	1,078	1,263	914	686	474	249	134	122
MAX	1,005	1,641	1,874	3,170	3,295	5,197	2,910	3,190	2,673	1,016	755	1,355
(WY)	(1976)	(1973)	(1952)	(1950)	(1956)	(1964)	(1948)	(1996)	(1997)	(1957)	(1977)	(1965)
MIN	0.000	0.000	0.000	2.85	44.6	120	131	25.5	1.56	0.14	0.000	0.000
(WY)	(1931)	(1931)	(1931)	(1931)	(1954)	(1941)	(1976)	(1930)	(1930)	(1930)	(1930)	(1930)

03291500 EAGLE CREEK AT GLENCOE, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1916 - 2003	
ANNUAL TOTAL	241,093.69		321,329			
ANNUAL MEAN	661		880		576	
HIGHEST ANNUAL MEAN					1,059	1973
LOWEST ANNUAL MEAN					117	1954
HIGHEST DAILY MEAN	12,500	Apr 28	12,300	Sep 2	39,300	Mar 10, 1964
LOWEST DAILY MEAN	0.38	Sep 16	34	Jul 8	0.00	Jul 15, 1930
ANNUAL SEVEN-DAY MINIMUM	0.41	Sep 12	45	Oct 19	0.00	Jul 15, 1930
MAXIMUM PEAK FLOW			25,300	Jul 10	58,300	Mar 2, 1997
MAXIMUM PEAK STAGE			19.14	Jul 10	29.08	Mar 2, 1997
ANNUAL RUNOFF (CFSM)	1.51		2.01		1.32	
ANNUAL RUNOFF (INCHES)	20.52		27.35		17.90	
10 PERCENT EXCEEDS	1,730		2,450		1,310	
50 PERCENT EXCEEDS	187		262		100	
90 PERCENT EXCEEDS	2.2		61		1.3	

e Estimated



03292470 HARRODS CREEK AT HIGHWAY 329 NEAR GOSHEN, KY

LOCATION.--Lat 38°21'42", long 85°34'30", Oldham County, Hydrologic Unit 05140101, on downstream side of bridge on Highway 329 (Covered Bridge Road) 0.8 mi upstream from South Fork, 3.1 mi south of Goshen, and at mile 7.29.

DRAINAGE AREA.--70.3 mi^2.

PERIOD OF RECORD.--December 15, 1998 to current year.

GAGE.--Water-stage recorder with telemetry.

REMARKS.--Records fair except those for estimated, which are poor.

COOPERATION.--Louisville and Jefferson County Metropolitan Sewer District.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov 10	1645	7,390	8.71	May 5	0705	6,850	8.40
Feb 15	0810	3,430	6.28	May 11	1120	4,000	6.64
Feb 22	1930	4,600	7.03	May 17	1245	4,360	6.88
Apr 17	1830	3,730	6.46	Sep 27	0550	*9,540	*10.03

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e21	65	e18	e720	36	160	56	75	31	7.9	e85	e440
2	e22	53	e17	e490	44	133	50	59	27	7.5	e430	e1,995
3	e21	49	e16	e350	47	101	45	51	36	7.6	e260	e510
4	31	50	e15	e260	351	86	43	43	44	7.0	e530	e190
5	72	366	e17	e190	101	83	53	3,890	34	6.4	e85	e90
6	43	292	e19	e160	64	126	50	701	27	6.0	e170	59
7	29	124	e18	e140	56	108	71	370	25	5.2	e45	43
8	21	85	e52	e120	44	86	73	200	31	5.2	e23	36
9	18	73	e130	e104	47	72	60	285	66	6.1	e11	31
10	26	2,120	e400	e93	47	59	62	638	34	57	e6.8	27
11	749	799	e310	e83	45	55	54	1,800	31	84	e7.6	24
12	154	220	e210	e76	43	55	47	329	117	32	e5.1	22
13	78	e120	e290	e70	37	56	42	147	60	18	e3.3	20
14	52	e83	e190	e65	47	53	38	98	45	13	e2.1	19
15	42	e110	e104	e62	1,820	49	37	98	57	11	e1.6	32
16	34	e86	e190	e58	537	47	37	89	43	21	e1.2	28
17	28	e65	e350	e54	199	44	941	1,790	51	15	e1.1	22
18	23	e60	e1,900	e52	117	43	605	503	33	11	e0.96	18
19	22	e56	e1,750	e49	96	78	140	191	26	9.9	e0.88	16
20	23	e46	e440	e47	154	116	89	279	23	8.8	e0.82	16
21	22	e54	e180	e45	891	100	197	490	18	121	e0.76	15
22	20	e45	e130	e44	3,110	85	108	175	16	82	e210	55
23	18	e37	e100	e43	987	69	73	109	14	44	e35	73
24	16	e33	e210	e23	333	60	59	79	13	25	e6.4	38
25	24	e30	e140	e22	190	54	67	69	12	17	e2.6	27
26	50	e27	e110	e20	143	56	398	81	11	12	e1.2	21
27	38	e25	e90	e19	118	54	132	59	15	9.7	e62	3,140
28	37	e23	e77	e18	117	49	84	50	13	9.3	e21	212
29	268	e21	e200	e28	---	93	165	48	10	14	e155	84
30	175	e20	e620	e46	---	93	108	42	9.1	14	e1,100	49
31	92	---	e1,600	e33	---	64	---	36	---	e12	e660	---
TOTAL	2,269	5,237	9,893	3,584	9,821	2,387	3,984	12,874	972.1	699.6	3,924.42	7,352
MEAN	73.2	175	319	116	351	77.0	133	415	32.4	22.6	127	245
MAX	749	2,120	1,900	720	3,110	160	941	3,890	117	121	1,100	3,140
MIN	16	20	15	18	36	43	37	36	9.1	5.2	0.76	15

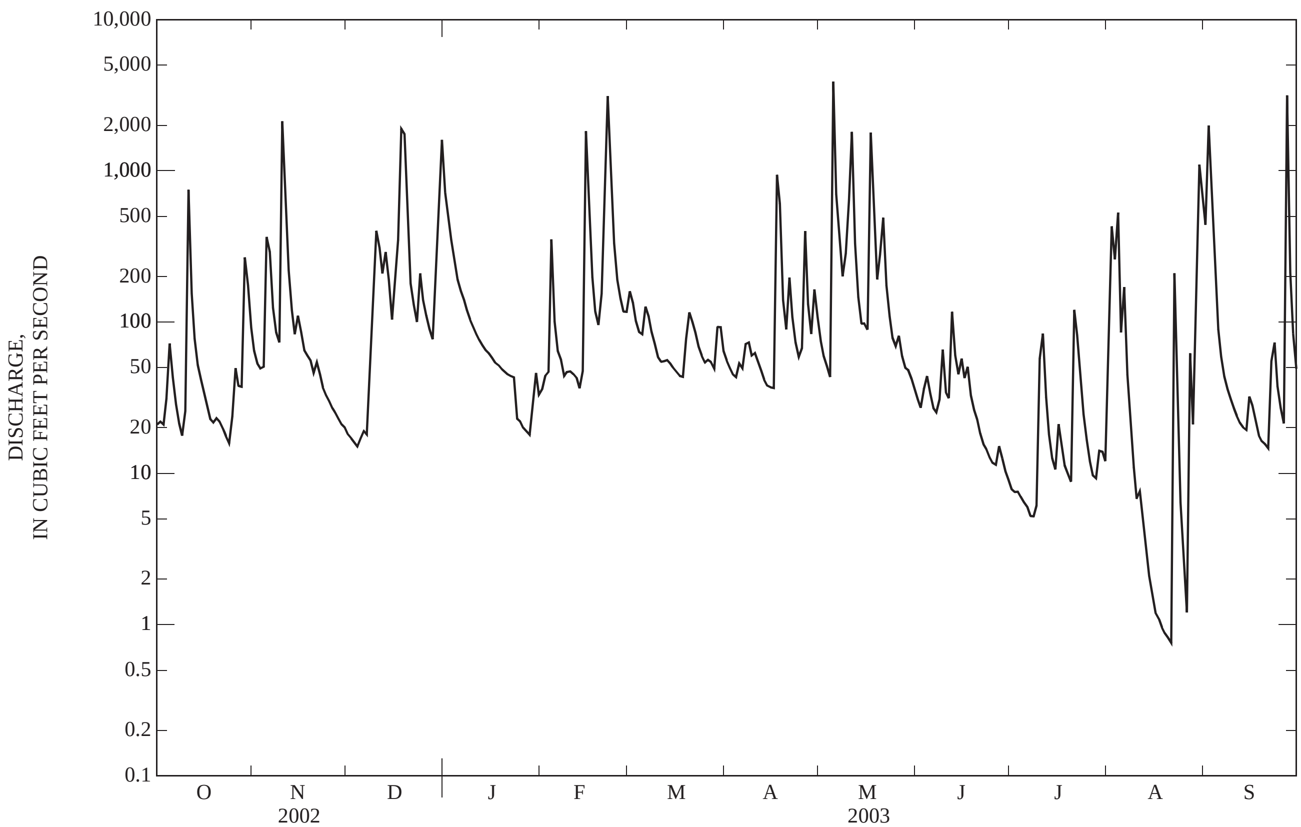
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1999 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	79.1	113	243	174	277	178	125	202	93.2	17.9	30.4	92.0
MAX	233	253	359	289	526	417	242	441	192	29.5	127	245
(WY)	(2002)	(2002)	(2002)	(2000)	(2000)	(2002)	(2002)	(2002)	(2002)	(2001)	(2003)	(2003)
MIN	1.99	3.33	83.5	40.6	121	77.0	25.9	16.5	32.4	6.81	0.29	0.089
(WY)	(2000)	(2000)	(2000)	(2001)	(1999)	(2003)	(2001)	(1999)	(2003)	(1999)	(1999)	(1999)

03292470 HARRODS CREEK AT HIGHWAY 329 NEAR GOSHEN, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1999 - 2003	
ANNUAL TOTAL	74,096.0		62,997.12			
ANNUAL MEAN	203		173		148	
HIGHEST ANNUAL MEAN					226	2002
LOWEST ANNUAL MEAN					75.2	2001
HIGHEST DAILY MEAN	3,890	Mar 26	3,890	May 5	7,360	Feb 18, 2000
LOWEST DAILY MEAN	1.7	Sep 12	0.76	Aug 21	0.00	Sep 2, 1999
ANNUAL SEVEN-DAY MINIMUM	2.3	Aug 29	1.0	Aug 15	0.00	Sep 2, 1999
MAXIMUM PEAK FLOW			9,540	Sep 27	16,500	Feb 18, 2000
MAXIMUM PEAK STAGE			10.03	Sep 27	14.76	Feb 18, 2000
10 PERCENT EXCEEDS	412		357		275	
50 PERCENT EXCEEDS	50		53		30	
90 PERCENT EXCEEDS	4.7		12		3.0	

e Estimated



03292474 GOOSE CREEK AT OLD WESTPORT ROAD NEAR ST. MATTHEWS, KY

LOCATION.--Lat 38°16'33", long 85°36'22", Jefferson County, Hydrologic Unit 05140101, on left downstream side of bridge on Westport Road, 1.2 mile northeast of St. Matthews, 5.0 miles above Little Goose Creek, and at mile 5.5

DRAINAGE AREA.--6.0 mi^2.

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

GAGE.--Water-stage recorder with telemetry and crest-stage gage.

REMARKS.--Records good.

COOPERATION.--Louisville and Jefferson County Metropolitan Sewer District.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 300 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 19	1710	345	3.42	May 11	0420	340	3.39
May 5	1235	323	3.28	Jun 14	2220	*4,050	*6.03
May 10	1710	419	3.92	Sep 27	0425	408	3.84

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.3	4.9	3.4	96	4.0	13	5.5	8.6	5.9	5.2	2.6	34
2	5.4	4.6	3.2	46	3.6	12	4.8	8.8	5.1	4.8	47	77
3	4.7	4.6	3.2	27	5.0	11	4.4	7.9	7.8	4.5	33	41
4	12	4.9	3.2	21	11	9.9	4.1	6.5	6.7	3.8	30	24
5	14	e30	3.4	18	6.9	9.6	6.0	104	5.3	3.4	17	18
6	7.6	14	3.2	15	5.5	9.8	4.5	52	4.6	3.3	13	15
7	5.4	9.7	3.3	13	5.3	8.4	8.7	37	4.9	3.7	11	13
8	4.4	7.8	4.0	12	4.7	7.7	6.0	25	9.5	3.4	8.7	11
9	3.5	6.6	4.4	11	4.6	6.6	6.4	31	6.3	4.5	6.6	9.9
10	6.8	43	4.4	9.3	4.8	5.8	6.4	78	4.5	17	5.9	7.7
11	48	30	18	8.2	4.6	5.7	5.3	110	12	9.5	5.3	6.3
12	16	15	13	7.4	4.2	6.1	4.7	45	16	5.7	4.7	5.6
13	11	12	14	6.8	3.8	6.0	4.2	26	10	4.6	3.8	5.2
14	8.7	10	15	5.9	5.3	5.3	4.1	20	266	3.6	3.5	7.7
15	7.6	11	12	5.3	35	5.1	3.8	18	184	3.9	3.0	10
16	6.6	9.7	11	5.1	25	4.9	3.6	15	52	6.1	2.9	6.5
17	4.5	7.6	15	4.9	18	4.7	20	56	35	3.6	2.8	5.3
18	3.8	6.7	16	4.6	14	5.5	14	32	24	3.0	2.6	4.7
19	3.7	6.2	134	4.3	14	18	9.8	21	20	2.6	2.3	4.4
20	4.5	5.2	118	4.1	17	13	12	21	17	2.4	2.1	4.1
21	3.5	5.8	47	3.9	32	13	26	21	15	3.4	2.0	3.4
22	3.1	5.7	23	3.5	87	11	14	16	13	2.9	4.9	19
23	2.8	4.9	18	3.2	51	9.7	11	14	12	3.9	4.1	12
24	2.5	4.5	19	3.2	31	9.0	9.9	12	10	4.4	2.9	8.3
25	4.3	4.2	19	3.2	23	7.9	27	13	9.1	2.7	2.5	6.7
26	4.1	3.9	14	3.2	19	7.9	32	12	9.8	2.1	2.1	5.8
27	3.2	3.7	13	3.2	16	6.9	16	10	8.9	1.9	2.1	69
28	4.8	3.5	12	3.1	14	6.3	13	9.0	7.0	1.9	3.7	14
29	8.9	3.5	11	3.6	---	11	12	9.1	6.1	2.1	4.1	9.6
30	7.3	3.6	24	3.4	---	7.5	10	8.1	5.4	1.6	53	8.0
31	5.6	---	45	3.1	---	6.3	---	7.2	---	4.2	17	---
TOTAL	234.6	286.8	646.7	361.5	469.3	264.6	309.2	854.2	792.9	129.7	306.2	466.2
MEAN	7.57	9.56	20.9	11.7	16.8	8.54	10.3	27.6	26.4	4.18	9.88	15.5
MAX	48	43	134	96	87	18	32	110	266	17	53	77
MIN	2.5	3.5	3.2	3.1	3.6	4.7	3.6	6.5	4.5	1.6	2.0	3.4
CFSM	1.26	1.59	3.48	1.94	2.79	1.42	1.72	4.59	4.41	0.70	1.65	2.59
IN.	1.45	1.78	4.01	2.24	2.91	1.64	1.92	5.30	4.92	0.80	1.90	2.89

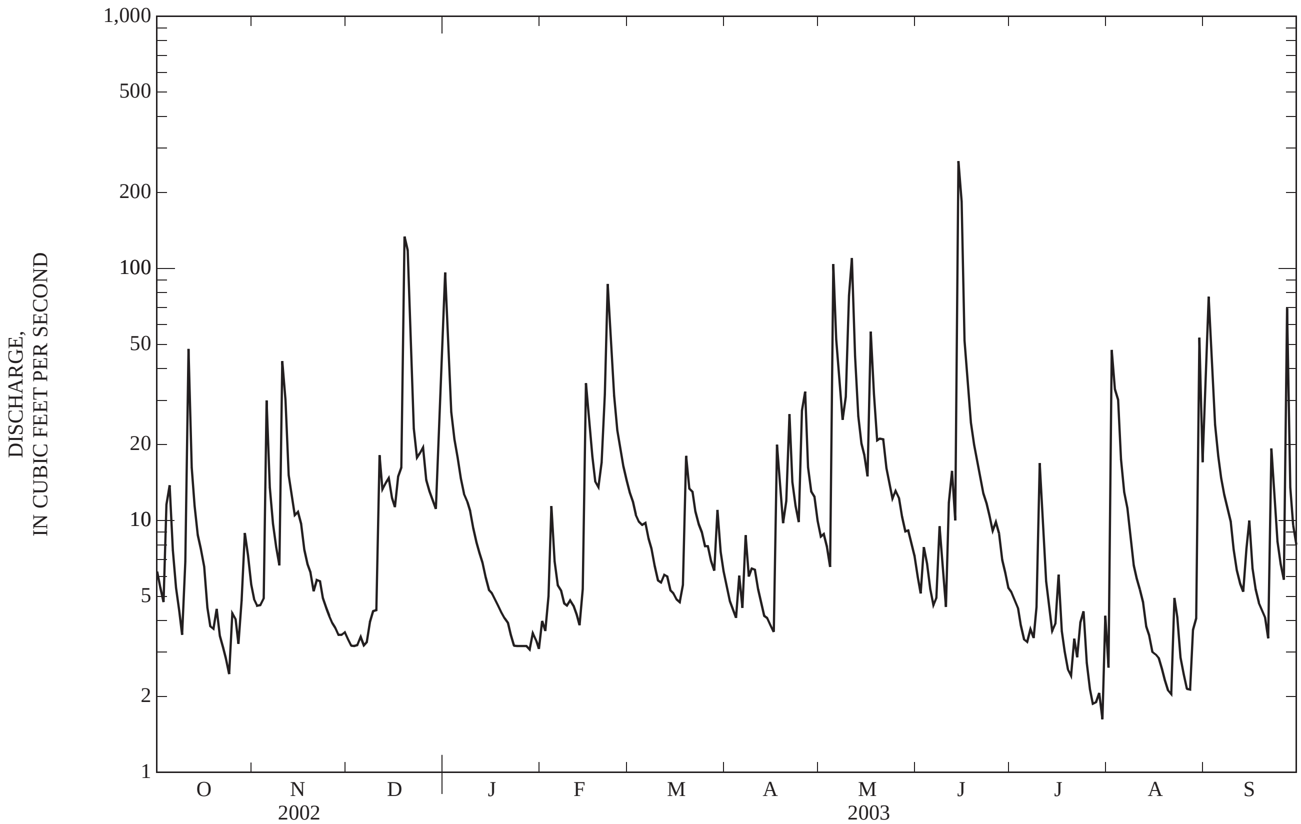
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	3.90	4.35	11.9	11.8	13.8	20.6	8.47	10.6	12.4	4.34	3.42	4.24
MAX	13.4	10.0	21.8	19.4	27.5	77.1	16.5	27.6	26.4	11.0	9.88	15.5
(WY)	(2002)	(2002)	(1997)	(1999)	(2000)	(1997)	(2002)	(2003)	(2003)	(1998)	(2003)	(2003)
MIN	0.57	0.48	3.74	3.16	7.37	6.83	3.56	2.46	2.74	0.84	0.15	0.32
(WY)	(1998)	(2000)	(1999)	(2001)	(2002)	(2001)	(2001)	(1999)	(2001)	(2002)	(1999)	(1999)

03292474 GOOSE CREEK AT OLD WESTPORT ROAD NEAR ST. MATTHEWS, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1997 - 2003	
ANNUAL TOTAL	3,820.53		5,121.9			
ANNUAL MEAN	10.5		14.0		9.13	
HIGHEST ANNUAL MEAN					14.8	1997
LOWEST ANNUAL MEAN					5.00	2001
HIGHEST DAILY MEAN	167	Mar 26	266	Jun 14	800	Mar 2, 1997
LOWEST DAILY MEAN	0.02	Sep 1	1.6	Jul 30	0.01	Aug 16, 1999
ANNUAL SEVEN-DAY MINIMUM	0.04	Aug 29	2.3	Jul 26	0.02	Sep 12, 1999
MAXIMUM PEAK FLOW			4,050	Jun 14	4,050	Jun 14, 2003
MAXIMUM PEAK STAGE			6.03	Jun 14	6.03	Jun 14, 2003
ANNUAL RUNOFF (CFSM)	1.74		2.34		1.52	
ANNUAL RUNOFF (INCHES)	23.69		31.76		20.69	
10 PERCENT EXCEEDS	20		30		19	
50 PERCENT EXCEEDS	4.4		7.0		3.8	
90 PERCENT EXCEEDS	0.28		3.2		0.50	

e Estimated



03292475 GOOSE CREEK AT HIGHWAY 42 AT GLENVIEW ACRES, KY

LOCATION.--Lat 38°18'12", long 85°37'41", Jefferson County, Hydrologic Unit 05140101, on downstream side of of culvert on U.S. Highway 42, 0.5 mi northeast of Glenview Acres, 1.7 mi above Little Goose Creek, and at mile 2.1.

DRAINAGE AREA.--10.1 mi^2.

PERIOD OF RECORD.--November 1999 to current year.

GAGE.--Water-stage recorder with telemetry and crest-stage gage. Datum of gage is 430.06 ft above NGVD of 1929.

REMARKS.--Records good, except those for estimated daily discharges which are rated poor.

COOPERATION.--Louisville and Jefferson County Metropolitan Sewer District.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 19	1740	508	5.50	Jun 14	2320	*1,420	*7.41
May 11	0355	562	5.66	Sep 27	0220	799	6.26

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e9.6	8.8	3.5	164	9.1	31	13	21	9.8	2.7	e3.1	46
2	e8.2	8.3	3.5	89	8.5	28	12	21	8.8	2.6	e47	56
3	e7.2	8.4	3.2	65	11	24	11	19	16	2.4	e33	14
4	e18	8.5	3.3	52	33	22	12	15	12	2.2	e26	7.3
5	e21	36	3.7	44	16	22	17	160	9.6	2.0	e15	4.9
6	e13	27	3.4	36	13	23	12	90	8.3	1.8	e11	3.8
7	e8.5	19	3.4	31	12	19	27	73	8.6	1.9	e8.1	3.1
8	e6.7	15	4.3	29	11	17	17	53	20	1.9	e6.2	2.7
9	e5.4	13	5.1	26	10	15	18	58	13	2.4	e5.0	2.4
10	35	99	5.1	22	11	13	18	121	10	9.8	e4.2	2.0
11	78	50	32	e17	10	12	15	169	28	5.4	e3.5	1.6
12	28	24	20	e15	9.5	14	13	80	37	3.7	e3.1	1.4
13	19	19	21	e14	8.7	14	11	54	22	3.0	e2.7	1.3
14	15	15	22	e13	12	12	10	42	136	2.6	e2.4	2.0
15	13	15	17	e12	85	11	9.9	37	159	2.6	e2.1	2.7
16	11	13	14	e10	64	11	9.3	29	25	3.8	e1.9	1.7
17	7.5	9.6	21	e9.8	46	10	53	90	15	2.8	e1.7	1.4
18	6.1	7.9	24	e9.2	36	12	42	62	11	2.4	e1.6	1.3
19	6.1	7.3	180	e8.5	33	46	28	44	9.0	2.3	e1.5	1.2
20	7.0	6.0	129	e8.0	42	36	24	47	7.5	2.1	e1.4	1.1
21	5.4	6.4	75	e7.6	75	34	60	53	6.6	2.9	e1.3	0.99
22	4.9	6.8	55	e7.2	158	26	36	e36	5.8	2.8	e3.1	7.1
23	4.4	5.5	43	e6.9	100	23	28	e26	5.2	2.6	e2.5	3.4
24	4.1	4.9	43	e6.6	71	21	23	e21	4.7	e3.1	e1.9	2.3
25	9.5	4.5	48	e6.9	55	18	52	e23	4.2	e1.9	e1.6	1.8
26	8.2	4.1	35	e6.4	47	18	75	e20	4.5	e1.4	e1.4	1.5
27	6.2	4.0	31	6.0	40	15	44	e17	4.6	e1.3	e1.3	105
28	11	3.7	28	6.6	35	14	35	e16	3.6	e1.2	e3.8	16
29	19	3.7	25	8.7	---	25	32	e14	3.1	e1.4	7.3	12
30	14	3.8	60	8.2	---	17	25	e12	2.8	e1.1	46	9.8
31	10	---	95	7.5	---	14	---	e11	---	6.8	8.4	---
TOTAL	420.0	457.2	1,056.5	753.1	1,061.8	617	782.2	1,534	610.7	86.9	259.1	317.79
MEAN	13.5	15.2	34.1	24.3	37.9	19.9	26.1	49.5	20.4	2.80	8.36	10.6
MAX	78	99	180	164	158	46	75	169	159	9.8	47	105
MIN	4.1	3.7	3.2	6.0	8.5	10	9.3	11	2.8	1.1	1.3	0.99
CFSM	1.34	1.51	3.37	2.41	3.75	1.97	2.58	4.90	2.02	0.28	0.83	1.05
IN.	1.55	1.68	3.89	2.77	3.91	2.27	2.88	5.65	2.25	0.32	0.95	1.17

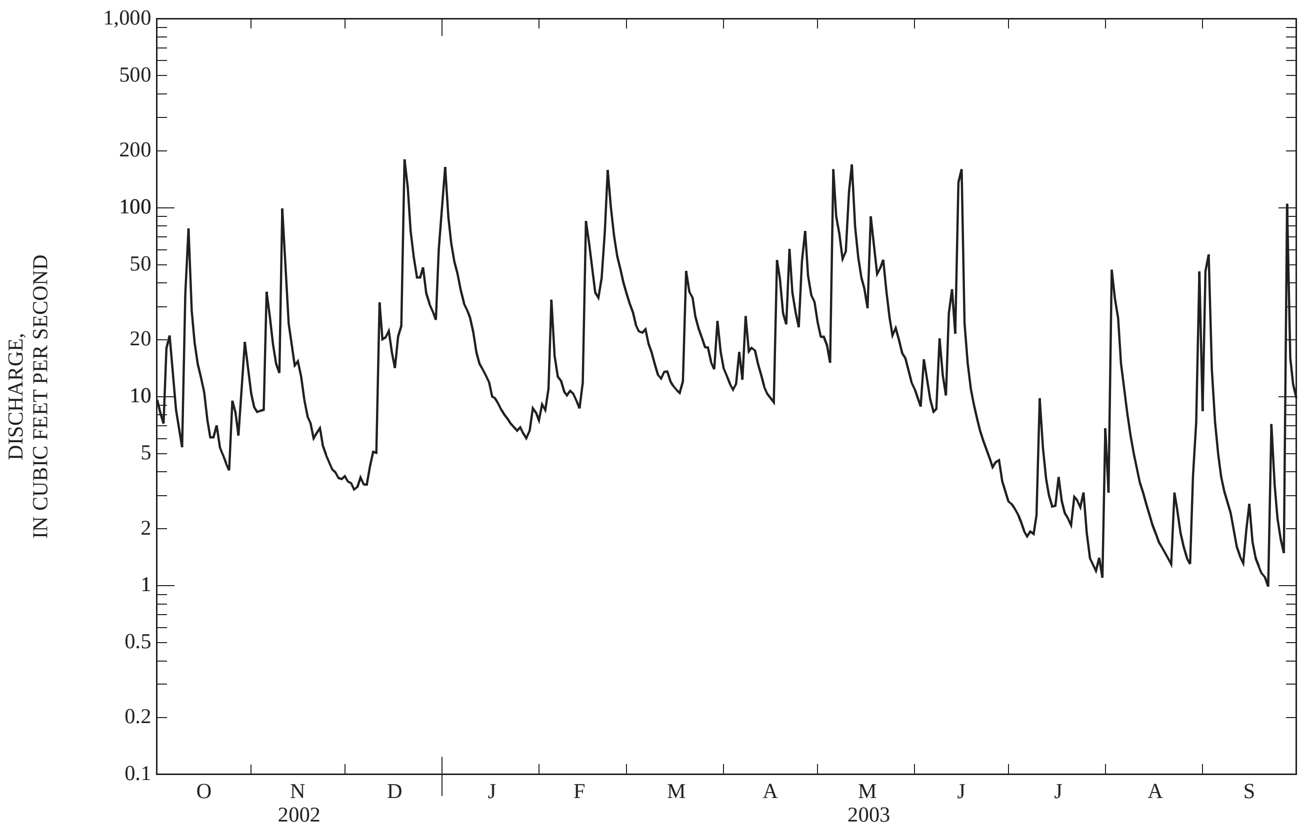
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1999 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	12.5	12.5	23.1	16.8	28.9	20.7	18.9	27.9	12.4	4.13	4.56	13.5
MAX	21.8	15.8	34.1	24.3	41.5	37.2	30.8	49.5	20.4	8.92	8.36	19.4
(WY)	(2002)	(2000)	(2003)	(2003)	(2000)	(2002)	(2002)	(2003)	(2003)	(2001)	(2003)	(2000)
MIN	2.17	4.19	13.5	1.99	15.7	10.3	6.85	5.09	5.23	1.64	0.71	8.66
(WY)	(2001)	(2001)	(2001)	(2001)	(2002)	(2001)	(2001)	(2000)	(2000)	(2002)	(2002)	(2001)

03292475 GOOSE CREEK AT HIGHWAY 42 AT GLENVIEW ACRES, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1999 - 2003	
ANNUAL TOTAL	7,509.41		7,956.29			
ANNUAL MEAN	20.6		21.8		17.0	
HIGHEST ANNUAL MEAN					21.8	2003
LOWEST ANNUAL MEAN					8.28	2001
HIGHEST DAILY MEAN	260	Sep 27	180	Dec 19	560	Feb 18, 2000
LOWEST DAILY MEAN	0.04	Sep 13	0.99	Sep 21	0.04	Sep 13, 2002
ANNUAL SEVEN-DAY MINIMUM	0.08	Aug 29	1.5	Sep 15	0.08	Aug 29, 2002
MAXIMUM PEAK FLOW			1,420	Jun 14	2,460	Jan 24, 2002
MAXIMUM PEAK STAGE			7.41	Jun 14	7.83	Feb 18, 2000
ANNUAL RUNOFF (CFSM)	2.04		2.16		1.68	
ANNUAL RUNOFF (INCHES)	27.66		29.30		22.87	
10 PERCENT EXCEEDS	51		53		46	
50 PERCENT EXCEEDS	7.9		12		6.5	
90 PERCENT EXCEEDS	0.53		2.3		1.1	

e Estimated



03292480 LITTLE GOOSE CREEK NEAR HARRODS CREEK, KY

LOCATION.--Lat 38°18'45", long 85°37'33", Jefferson County, Hydrologic Unit 05140101, at downstream side of culvert on U.S. Highway 42, 1.1 mi south of Harrods Creek, and at mile 2.0.

DRAINAGE AREA.--5.8 mi^2.

PERIOD OF RECORD.--December 1998 to current year.

GAGE.--Water-stage recorder with telemetry and crest-stage gage.

REMARKS.--Records good except for those estimated, which are poor.

COOPERATION.--Louisville and Jefferson County Metropolitan Sewer District.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 250 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov 10	1710	*619	*7.19	May 5	1910	413	6.23
Dec 19	2120	462	6.47	May 10	2310	524	6.76
Jan 1	1100	276	5.53	May 11	0905	540	6.83
Feb 22	1825	258	5.43	Jun 14	2350	613	7.16
Apr 26	0310	270	5.50	Aug 2	0630	474	6.53
May 5	1440	317	5.75				

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.1	4.7	3.7	155	4.8	e10	6.9	5.6	3.4	1.9	1.7	e45
2	5.4	4.0	3.7	56	4.4	e9.1	6.0	5.1	3.0	1.9	88	e55
3	4.5	4.0	3.5	31	4.2	e8.2	5.6	5.5	7.5	1.7	e54	e27
4	20	4.5	3.9	23	24	7.1	6.0	3.8	5.0	1.4	e30	e18
5	20	31	4.7	19	11	7.5	11	157	3.7	1.2	e17	e9.8
6	11	16	4.6	16	7.7	8.5	6.8	54	3.0	1.6	e12	e6.6
7	7.7	9.3	4.8	13	6.8	7.2	16	44	3.6	2.0	e9.0	e4.8
8	5.8	7.2	7.6	12	6.2	6.3	10	21	9.2	1.3	e7.3	e3.7
9	4.0	7.2	8.4	10	5.5	5.8	9.8	22	5.8	1.7	e5.8	e2.9
10	24	150	6.9	8.9	5.5	5.1	9.7	69	3.6	18	e5.0	e2.2
11	50	48	43	7.6	5.9	4.7	7.9	194	13	8.7	e4.3	e1.8
12	18	23	20	6.6	5.3	5.1	6.6	39	16	4.2	e3.8	e1.5
13	12	17	21	6.1	4.7	5.6	5.5	17	7.4	2.9	e3.3	e1.3
14	8.9	14	22	5.9	4.9	4.9	4.8	11	28	2.2	e2.9	e2.7
15	7.4	17	16	5.3	53	4.5	4.4	10	108	1.8	e2.6	e2.2
16	5.9	13	12	4.8	38	4.4	4.0	8.1	19	6.7	e2.3	e1.8
17	4.4	11	15	4.6	25	4.2	40	73	8.7	3.7	e2.0	e1.5
18	3.4	9.2	22	4.2	18	4.1	28	29	6.3	2.5	e1.8	e1.3
19	3.6	8.2	131	4.2	15	24	12	12	5.0	1.9	e1.6	e1.2
20	4.9	7.4	139	4.0	19	20	8.8	11	4.0	1.3	e1.5	e1.1
21	3.5	8.8	34	3.8	38	17	26	30	3.4	2.2	e1.3	e1.0
22	3.0	8.1	24	3.5	123	13	12	12	2.9	1.6	e3.1	e7.0
23	2.7	6.4	18	3.2	68	11	8.6	9.1	2.5	2.9	e2.5	e3.8
24	2.3	5.6	15	3.0	29	9.1	7.0	7.3	2.3	2.7	e1.9	e2.6
25	6.6	5.2	25	3.2	e18	7.4	9.2	9.9	2.8	e1.9	e1.6	e2.0
26	5.3	4.9	16	3.2	e17	8.0	63	8.3	3.4	e1.4	e1.4	e1.6
27	3.4	4.8	13	2.8	e14	7.0	16	6.3	4.6	e1.3	e1.3	e105
28	7.1	4.5	11	3.1	e12	6.1	9.9	5.2	2.7	e1.2	e3.8	e15
29	16	4.4	9.8	4.3	---	12	9.4	6.0	2.3	e1.5	e9.6	e12
30	9.8	4.1	39	4.4	---	9.8	7.2	4.7	2.0	e1.1	e46	e9.9
31	6.9	---	59	3.7	---	8.0	---	4.0	---	3.0	e9.0	---
TOTAL	294.6	462.5	756.6	435.4	587.9	264.7	378.1	893.9	292.1	89.4	337.4	351.3
MEAN	9.50	15.4	24.4	14.0	21.0	8.54	12.6	28.8	9.74	2.88	10.9	11.7
MAX	50	150	139	155	123	24	63	194	108	18	88	105
MIN	2.3	4.0	3.5	2.8	4.2	4.1	4.0	3.8	2.0	1.1	1.3	1.0
CFSM	1.64	2.66	4.21	2.42	3.62	1.47	2.17	4.97	1.68	0.50	1.88	2.02
IN.	1.89	2.97	4.85	2.79	3.77	1.70	2.43	5.73	1.87	0.57	2.16	2.25

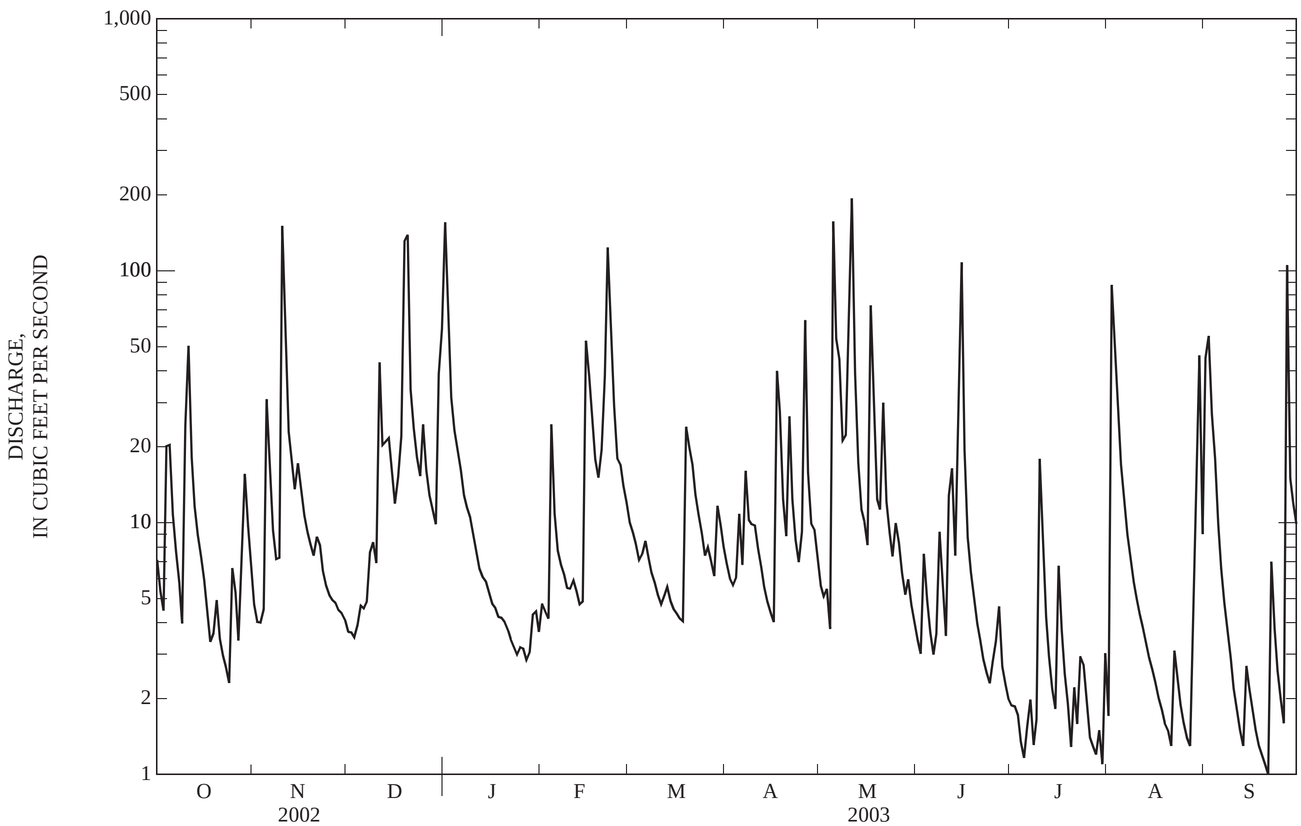
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1999 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	8.02	8.52	19.5	15.9	17.6	15.0	10.9	14.6	9.64	6.59	4.51	8.51
MAX	17.6	15.4	27.4	32.7	26.6	31.1	23.6	28.8	14.9	23.4	10.9	15.0
(WY)	(2002)	(2003)	(2000)	(1999)	(2000)	(2002)	(2002)	(2003)	(2002)	(2001)	(2003)	(2002)
MIN	0.77	3.06	9.84	2.06	12.1	5.08	2.38	3.49	5.52	1.77	0.41	0.75
(WY)	(2001)	(2000)	(1999)	(2001)	(2002)	(2001)	(2001)	(2000)	(2001)	(1999)	(1999)	(1999)

03292480 LITTLE GOOSE CREEK NEAR HARRODS CREEK, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1999 - 2003	
ANNUAL TOTAL	5,788.45		5,143.9			
ANNUAL MEAN	15.9		14.1		12.1	
HIGHEST ANNUAL MEAN					16.2	2002
LOWEST ANNUAL MEAN					7.96	2001
HIGHEST DAILY MEAN	272	Sep 27	194	May 11	322	Feb 18, 2000
LOWEST DAILY MEAN	0.26	Sep 7	1.0	Sep 21	0.00	Aug 31, 1999
ANNUAL SEVEN-DAY MINIMUM	0.46	Sep 4	1.4	Sep 15	0.00	Aug 31, 1999
MAXIMUM PEAK FLOW			619	Nov 10	694	Feb 18, 2000
MAXIMUM PEAK STAGE			7.19	Nov 10	7.54	Feb 18, 2000
ANNUAL RUNOFF (CFSM)	2.73		2.43		2.08	
ANNUAL RUNOFF (INCHES)	37.13		32.99		28.25	
10 PERCENT EXCEEDS	32		29		28	
50 PERCENT EXCEEDS	6.9		6.6		4.5	
90 PERCENT EXCEEDS	1.3		1.9		0.88	

e Estimated



BEARGRASS CREEK BASIN

03292500 SOUTH FORK BEARGRASS CREEK AT LOUISVILLE, KY

LOCATION.--Lat 38°12'41", long 85°42'09", Jefferson County, Hydrologic Unit 05140101, on right bank, 10 ft downstream of Trevilian Way Bridge at Louisville, 4.9 mi upstream from Middle Fork Beargrass, and at mile 6.5.

DRAINAGE AREA.--17.2 mi^2.

PERIOD OF RECORD.--October 1939 to September 1940, August 1944 to September 1953, October 1954 to September 1983 (High water records only, October 1962 to June 1970), and June 1988 to current year. Monthly discharge only for October to December 1939, published in WSP 1305.

REVISED RECORDS.--WSP 1705: Drainage area.

GAGE.--Water-stage recorder with telemetry. Datum of gage is 445.60 ft, Louisville city datum. Prior to Oct. 29, 1953, at datum 5.00 ft higher. Oct. 29, 1953, to June 24, 1970, at datum 3.00 ft higher. Prior to April 8, 1994, gage located 125 ft upstream at same datum.

REMARKS.--Records good except for those estimated which are poor.

COOPERATION.--Louisville and Jefferson County Metropolitan Sewer District.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 19, 1943 reached a stage of 18.1 ft, present datum, from information furnished by U.S. Army Corps of Engineers, Louisville District.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 19	1755	*1,520	*12.50	No other peak greater than base discharge.			

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.7	7.2	5.0	370	5.7	20	e11	18	e7.9	6.5	4.3	95
2	5.4	6.5	5.8	123	4.6	18	e9.5	13	e7.0	6.8	128	440
3	4.8	6.6	6.5	79	16	16	e8.1	12	e31	6.3	140	120
4	68	9.0	5.1	47	30	14	7.9	9.6	e12	5.9	134	45
5	54	95	6.9	34	8.6	e16	28	283	7.0	5.9	31	23
6	11	31	8.0	e23	6.7	e19	14	56	6.7	11	14	15
7	8.1	15	8.0	e18	7.9	e21	42	78	8.6	11	9.8	12
8	6.0	11	12	e16	6.3	e18	14	50	46	7.0	7.9	11
9	5.1	9.5	9.5	e13	7.5	e15	25	138	11	79	6.1	8.3
10	54	82	9.1	e11	8.2	e13	18	85	6.9	125	5.2	7.5
11	251	44	88	e9.5	7.0	e12	12	160	64	40	49	7.2
12	38	17	20	e8.5	5.7	e14	10	50	50	13	16	6.2
13	19	12	29	e7.7	5.4	e12	8.8	31	18	7.1	5.9	5.5
14	13	10	26	7.2	22	e10	10	23	12	5.4	4.4	39
15	10	19	15	6.1	199	e9.0	7.2	27	75	5.0	3.6	23
16	8.1	13	12	6.3	80	e8.3	6.2	18	27	30	3.6	8.6
17	6.5	9.1	69	6.0	43	e8.0	144	191	22	5.0	5.3	6.4
18	5.5	7.5	32	5.5	29	e14	32	50	16	3.9	3.6	5.4
19	8.1	8.4	560	5.3	38	e78	17	28	11	3.8	3.2	4.8
20	16	6.7	231	5.4	64	e38	89	36	8.7	3.3	2.9	4.6
21	6.4	8.2	80	4.6	102	e37	234	32	7.1	17	2.6	4.4
22	4.7	8.5	45	4.5	323	e25	48	e26	6.3	7.3	21	109
23	4.2	5.5	27	4.0	150	e20	25	e20	6.0	6.7	14	18
24	4.1	5.2	56	3.9	88	e17	19	e16	5.3	3.7	3.2	10
25	14	5.0	55	3.8	55	e14	168	e23	4.9	2.4	2.7	7.5
26	6.9	4.5	24	3.8	39	e19	150	e19	57	2.0	2.4	6.4
27	4.3	4.3	19	3.8	27	e14	46	e13	29	1.9	35	89
28	23	3.6	16	4.0	23	e12	28	e12	9.7	2.5	26	12
29	43	3.2	14	8.0	---	e35	21	e12	8.1	9.0	12	9.4
30	15	4.8	104	5.2	---	e16	16	e11	7.2	2.2	86	8.1
31	9.1	---	226	4.7	---	e13	---	e9.0	---	14	57	---
TOTAL	732.0	472.3	1,823.9	851.8	1,401.6	595.3	1,268.7	1,549.6	588.4	449.6	839.7	1,161.3
MEAN	23.6	15.7	58.8	27.5	50.1	19.2	42.3	50.0	19.6	14.5	27.1	38.7
MAX	251	95	560	370	323	78	234	283	75	125	140	440
MIN	4.1	3.2	5.0	3.8	4.6	8.0	6.2	9.0	4.9	1.9	2.4	4.4
CFSM	1.37	0.92	3.42	1.60	2.91	1.12	2.46	2.91	1.14	0.84	1.57	2.25
IN.	1.58	1.02	3.94	1.84	3.03	1.29	2.74	3.35	1.27	0.97	1.82	2.51

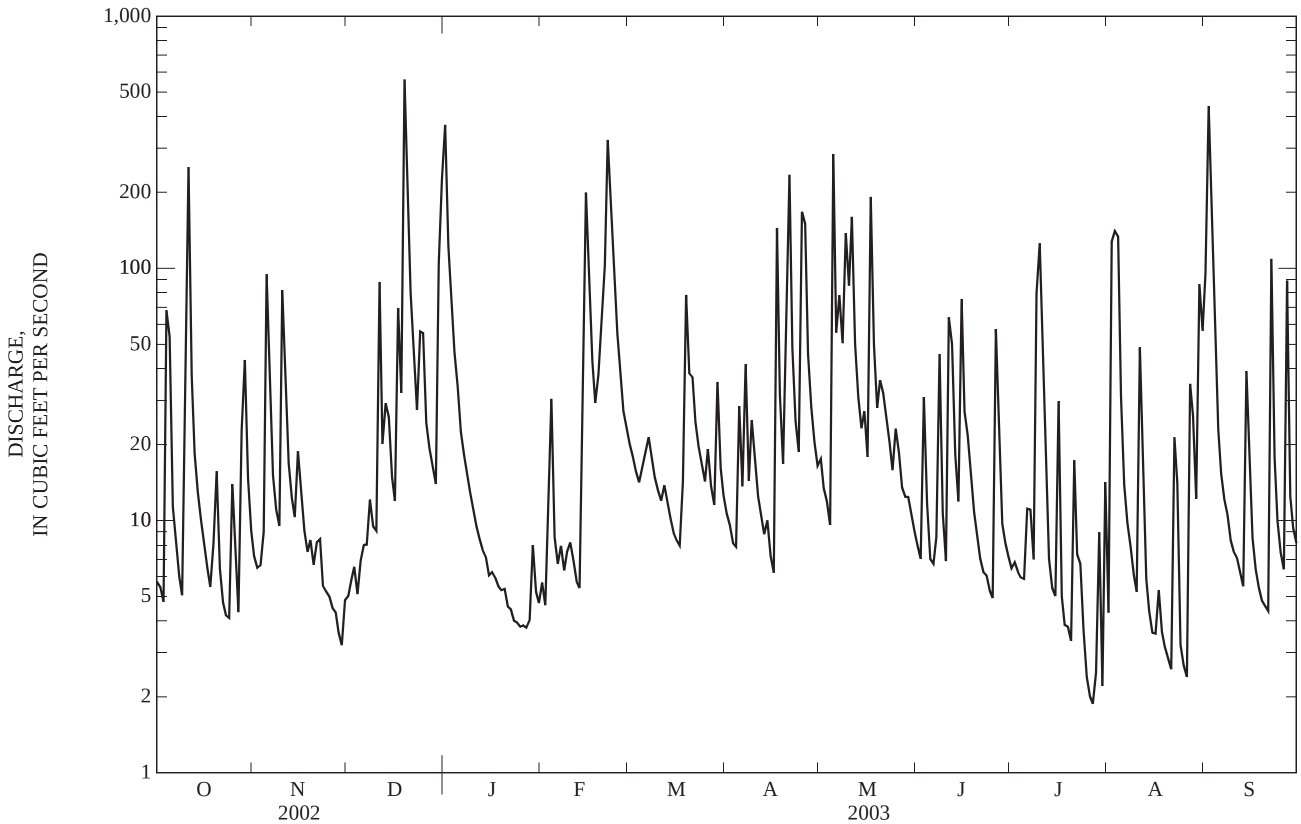
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	8.51	14.1	24.5	31.7	39.4	43.7	32.2	29.1	20.0	15.4	10.4	9.12
MAX	46.7	53.9	73.6	125	107	201	95.2	103	78.3	126	54.7	86.3
(WY)	(1978)	(1974)	(1979)	(1950)	(1989)	(1997)	(1948)	(1961)	(1950)	(1973)	(1974)	(1979)
MIN	0.30	0.84	1.32	0.71	8.52	6.41	3.13	5.51	1.11	0.89	0.23	0.000
(WY)	(1953)	(1953)	(1977)	(1940)	(1953)	(1983)	(1976)	(1962)	(1959)	(1956)	(1952)	(1953)

03292500 SOUTH FORK BEARGRASS CREEK AT LOUISVILLE, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1940 - 2003	
ANNUAL TOTAL	12,711.6		11,734.2			
ANNUAL MEAN	34.8		32.1		23.3	
HIGHEST ANNUAL MEAN					41.6	1997
LOWEST ANNUAL MEAN					9.35	1959
HIGHEST DAILY MEAN	869	Sep 27	560	Dec 19	1,960	Mar 2, 1997
LOWEST DAILY MEAN	1.1	Sep 19	1.9	Jul 27	0.00	Sep 4, 1940
ANNUAL SEVEN-DAY MINIMUM	1.7	Aug 7	3.4	Jul 24	0.00	Sep 4, 1940
MAXIMUM PEAK FLOW			1,520	Dec 19	5,290	Mar 2, 1997
MAXIMUM PEAK STAGE			12.50	Dec 19	17.81	Mar 2, 1997
INSTANTANEOUS LOW FLOW					0.00	Sep 4, 1940
ANNUAL RUNOFF (CFSM)	2.02		1.87		1.35	
ANNUAL RUNOFF (INCHES)	27.49		25.38		18.40	
10 PERCENT EXCEEDS	84		80		50	
50 PERCENT EXCEEDS	9.0		12		7.8	
90 PERCENT EXCEEDS	2.3		4.6		1.2	

e Estimated



03292550 SOUTH FORK BEARGRASS CREEK AT WINTER AVENUE AT LOUISVILLE, KY

LOCATION.--Lat 38°14'04", long 85°45'50", Jefferson County, Hydrologic Unit 05140101, on left bank of floodwall, 150 ft. upstream of Winter Avenue, at Louisville, 1.4 mi above Middle Fork Beargrass Creek, and at mile 3.3

DRAINAGE AREA.--22.6 mi^2.

PERIOD OF RECORD.--October 1998 to current year.

GAGE.--Water-stage recorder with telemetry.

REMARKS.--Records good except for those estimated, which are poor.

COOPERATION.--Louisville and Jefferson County Metropolitan Sewer District.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 19	1905	*2,390	*7.95	No other peak greater than base discharge.			

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	e8.5	5.4	465	7.0	19	e8.2	29	19	8.1	8.9	73
2	12	e8.2	5.6	141	5.4	17	e8.0	24	28	8.5	204	432
3	11	e10	6.1	97	17	16	e14	22	57	7.6	171	86
4	75	e22	5.1	60	40	14	e24	54	22	7.1	140	32
5	66	e76	6.3	46	10	e20	e15	368	19	6.7	41	18
6	17	e28	8.2	34	7.5	e19	e30	71	19	10	19	12
7	11	e18	7.8	26	8.9	e16	e22	97	23	15	14	10
8	7.9	e15	14	22	6.9	e14	e21	105	61	7.0	10	9.9
9	6.6	e14	14	20	8.1	e13	e17	165	21	91	7.1	8.1
10	69	e92	13	17	9.3	e12	e13	130	15	187	5.4	7.1
11	274	e32	112	14	7.3	e14	e9.8	211	91	51	40	6.5
12	56	e23	40	13	5.7	e12	e8.6	68	69	19	23	5.4
13	29	e18	51	12	5.3	e9.8	e7.8	46	30	11	7.1	4.7
14	20	e17	50	11	25	e9.2	e7.3	35	20	8.1	4.7	35
15	16	e18	30	8.5	218	e8.2	e15	41	94	9.8	3.6	27
16	e11	e14	25	8.4	87	e7.8	e82	37	44	41	3.1	8.5
17	e9.4	e12	82	7.8	45	e60	e30	231	33	8.2	6.3	5.4
18	e8.2	e11	56	7.0	30	e80	e14	59	28	6.4	3.8	4.3
19	e7.6	e10	790	7.3	39	e40	14	40	20	6.3	2.4	4.0
20	e15	e9.5	271	6.7	67	e30	245	55	17	5.9	2.1	4.3
21	e9.5	e11	104	5.6	106	e22	170	38	13	27	1.8	4.1
22	e6.5	e10	70	5.4	388	e18	60	27	11	12	14	115
23	e5.7	9.9	48	4.8	167	e16	38	23	11	13	17	22
24	e12	9.4	67	4.6	96	e14	30	21	10	7.0	2.6	13
25	e13	8.7	78	4.5	57	e17	291	52	9.5	5.0	2.0	9.2
26	e8.4	8.0	42	4.5	40	e12	128	28	65	4.3	1.5	7.2
27	e6.6	8.0	34	4.2	27	e11	60	22	41	4.1	21	133
28	e15	6.9	29	4.5	23	e13	42	20	14	4.8	20	15
29	e26	6.1	27	9.9	---	e18	32	20	11	14	14	12
30	e11	5.9	110	6.5	---	e11	26	19	9.0	4.7	83	8.9
31	e9.5	---	252	5.3	---	e9.2	---	19	---	26	46	---
TOTAL	856.9	540.1	2,453.5	1,083.5	1,553.4	592.2	1,482.7	2,177	924.5	636.6	939.4	1,132.6
MEAN	27.6	18.0	79.1	35.0	55.5	19.1	49.4	70.2	30.8	20.5	30.3	37.8
MAX	274	92	790	465	388	80	291	368	94	187	204	432
MIN	5.7	5.9	5.1	4.2	5.3	7.8	7.3	19	9.0	4.1	1.5	4.0

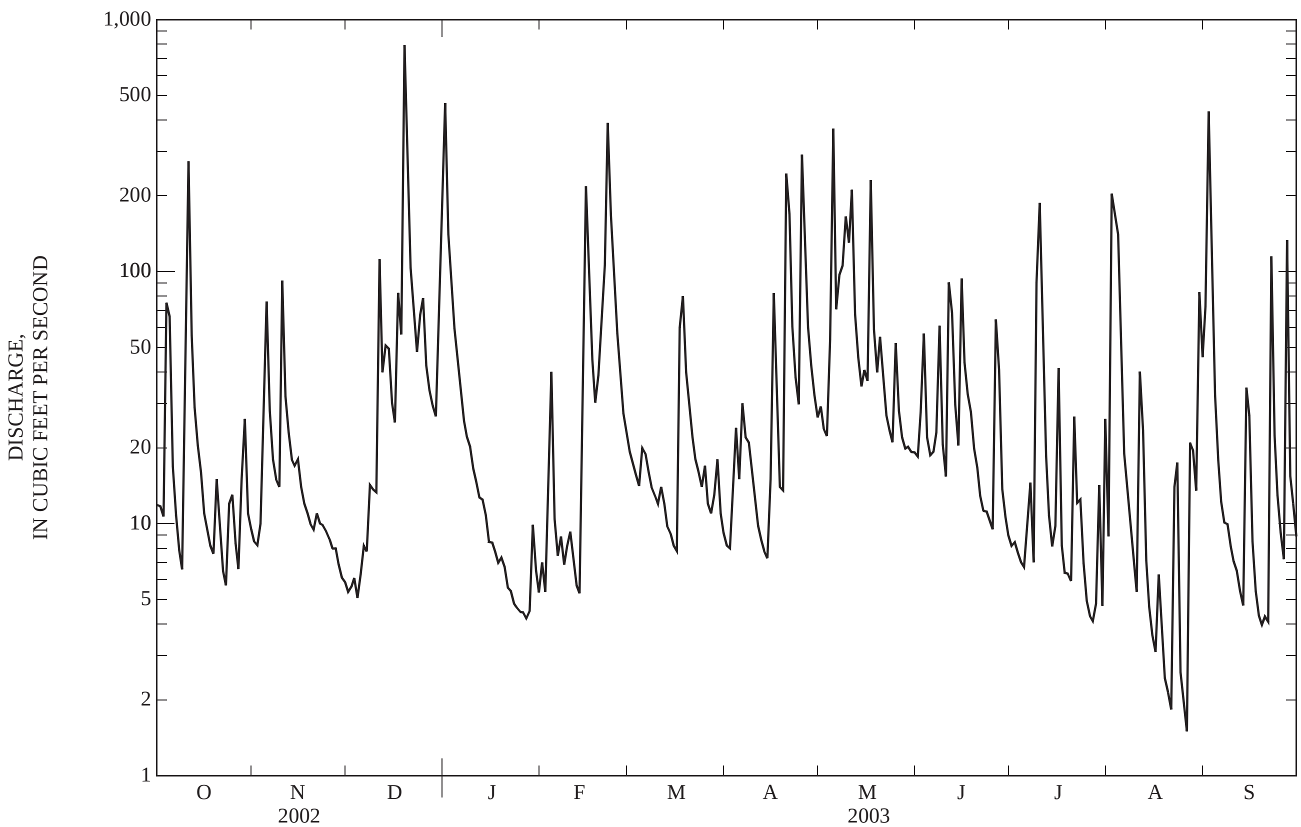
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	21.0	19.0	44.1	46.6	53.2	40.8	39.4	47.9	27.3	15.0	13.8	30.5
MAX	51.6	50.2	79.1	73.5	125	103	83.0	101	41.6	30.1	30.3	65.4
(WY)	(2002)	(2002)	(2003)	(2000)	(2000)	(2002)	(2002)	(2002)	(1999)	(2001)	(2003)	(2002)
MIN	4.80	4.05	17.1	9.40	22.9	19.1	10.1	16.1	13.8	4.55	2.78	3.29
(WY)	(2001)	(2000)	(1999)	(2001)	(1999)	(2003)	(2001)	(1999)	(2001)	(1999)	(1999)	(1999)

03292550 SOUTH FORK BEARGRASS CREEK AT WINTER AVENUE AT LOUISVILLE, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1998 - 2003	
ANNUAL TOTAL	18,225.87		14,372.4			
ANNUAL MEAN	49.9		39.4		33.1	
HIGHEST ANNUAL MEAN					52.5	2002
LOWEST ANNUAL MEAN					20.2	1999
HIGHEST DAILY MEAN	1,550	Sep 27	790	Dec 19	2,230	Feb 18, 2000
LOWEST DAILY MEAN	0.47	Jul 23	1.5	Aug 26	0.47	Jul 23, 2002
ANNUAL SEVEN-DAY MINIMUM	1.6	Jul 22	3.3	Aug 15	1.3	Nov 6, 1999
MAXIMUM PEAK FLOW			2,390	Dec 19	8,470	Feb 18, 2000
MAXIMUM PEAK STAGE			7.95	Dec 19	10.89	Feb 18, 2000
10 PERCENT EXCEEDS	109		91		68	
50 PERCENT EXCEEDS	12		15		9.4	
90 PERCENT EXCEEDS	2.5		5.6		2.6	

e Estimated



03293000 MIDDLE FORK BEARGRASS CREEK AT LOUISVILLE, KY

LOCATION.--Lat 38°14'14", long 85°39'53", Jefferson County, Hydrologic Unit 05140101, on right bank 75 ft downstream from bridge on Old Cannons Lane at Louisville, 1.7 mi downstream from Weicher Creek, and 5.4 mi upstream from mouth.

DRAINAGE AREA.--18.9 mi^2, of which about 0.5 mi^2 does not contribute directly to surface runoff.

PERIOD OF RECORD.--August 1944 to current year.

REVISED RECORDS.--WSP 1625: 1945(M), 1948(M), 1950(P), 1951-52(M), 1954-55(M), 1957(M), drainage area. WRD KY 72-1: 1950(M).

GAGE.--Water-stage recorder with telemetry. Datum of gage is 476.70 ft, Louisville city datum. See WDR KY-90-1 for history of changes prior to July 26, 1971.

REMARKS.--Records good except for those estimated, which are poor.

COOPEARTION.--Louisville and Jefferson County Metropolitan Sewer District.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in March 1943 reached a stage of 9.1 ft, present site and datum, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 600 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 19	1900	*1,400	*6.19
Jan 1	0745	701	4.73
Apr 25	2250	759	4.89
May 5	1410	737	4.83
Jun 15	1635	796	4.99
Sep 2	0055	897	5.22
Sep 2	0955	748	4.86

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	11	5.2	384	6.7	e52	11	22	7.1	3.7	5.3	117
2	15	9.2	5.0	119	6.1	e48	9.8	18	5.9	3.3	152	517
3	13	8.5	4.8	76	19	e39	8.9	14	24	2.8	128	118
4	69	10	5.0	50	35	e31	8.3	11	11	2.5	155	55
5	65	71	6.3	39	13	e25	26	373	7.8	2.2	33	33
6	21	42	6.2	31	9.5	e28	12	91	6.2	5.0	18	22
7	13	25	6.7	25	9.2	e33	40	99	7.7	4.8	14	16
8	11	18	9.2	21	7.8	e25	17	59	26	2.4	11	11
9	7.8	15	11	18	8.6	e20	25	140	12	19	6.5	8.8
10	38	88	9.7	15	11	e15	19	191	6.4	102	4.6	7.0
11	242	69	71	12	6.9	e12	14	291	48	44	7.8	5.8
12	52	33	32	e10	6.1	e14	12	96	54	16	5.2	4.5
13	29	24	35	e8.6	5.4	12	10	57	19	9.5	2.6	4.0
14	21	19	36	e8.2	21	10	8.8	39	39	6.5	2.0	30
15	18	23	25	e7.6	182	8.9	8.0	38	227	4.8	1.7	28
16	12	19	19	e7.0	84	8.3	7.5	26	64	11	1.5	9.7
17	10	14	60	e6.6	51	7.9	126	218	43	5.0	3.0	6.3
18	8.5	12	45	e6.1	36	14	50	67	25	3.1	1.5	4.4
19	8.7	12	546	e5.7	39	84	28	44	18	2.6	1.3	3.6
20	15	9.9	246	e5.4	e49	39	49	50	13	2.1	1.0	3.0
21	8.8	10	84	e5.1	e115	39	163	47	10	8.3	0.96	2.6
22	7.0	11	53	e4.7	e280	25	46	29	8.2	6.3	25	86
23	5.9	8.8	37	e4.4	e208	20	32	22	6.5	5.4	11	27
24	5.3	7.7	47	e4.3	e138	17	24	18	5.3	11	2.5	14
25	14	7.2	54	e4.2	e90	15	130	28	4.3	3.6	1.3	9.7
26	9.5	6.5	32	e4.1	e58	20	157	23	20	2.5	0.89	7.3
27	6.7	6.2	26	e4.0	e40	13	50	15	21	2.0	21	147
28	18	5.6	22	e3.9	e45	12	36	12	7.8	4.1	16	30
29	36	5.3	18	6.8	---	37	43	12	5.6	5.2	10	18
30	21	5.4	91	5.9	---	17	25	10	4.5	2.0	199	14
31	14	---	197	5.7	---	13	---	8.5	---	13	87	---
TOTAL	828.2	606.3	1,845.1	908.3	1,580.3	754.1	1,196.3	2,168.5	757.3	315.7	929.65	1,359.7
MEAN	26.7	20.2	59.5	29.3	56.4	24.3	39.9	70.0	25.2	10.2	30.0	45.3
MAX	242	88	546	384	280	84	163	373	227	102	199	517
MIN	5.3	5.3	4.8	3.9	5.4	7.9	7.5	8.5	4.3	2.0	0.89	2.6
CFSM	1.45	1.10	3.23	1.59	3.07	1.32	2.17	3.80	1.37	0.55	1.63	2.46
IN.	1.67	1.23	3.73	1.84	3.19	1.52	2.42	4.38	1.53	0.64	1.88	2.75

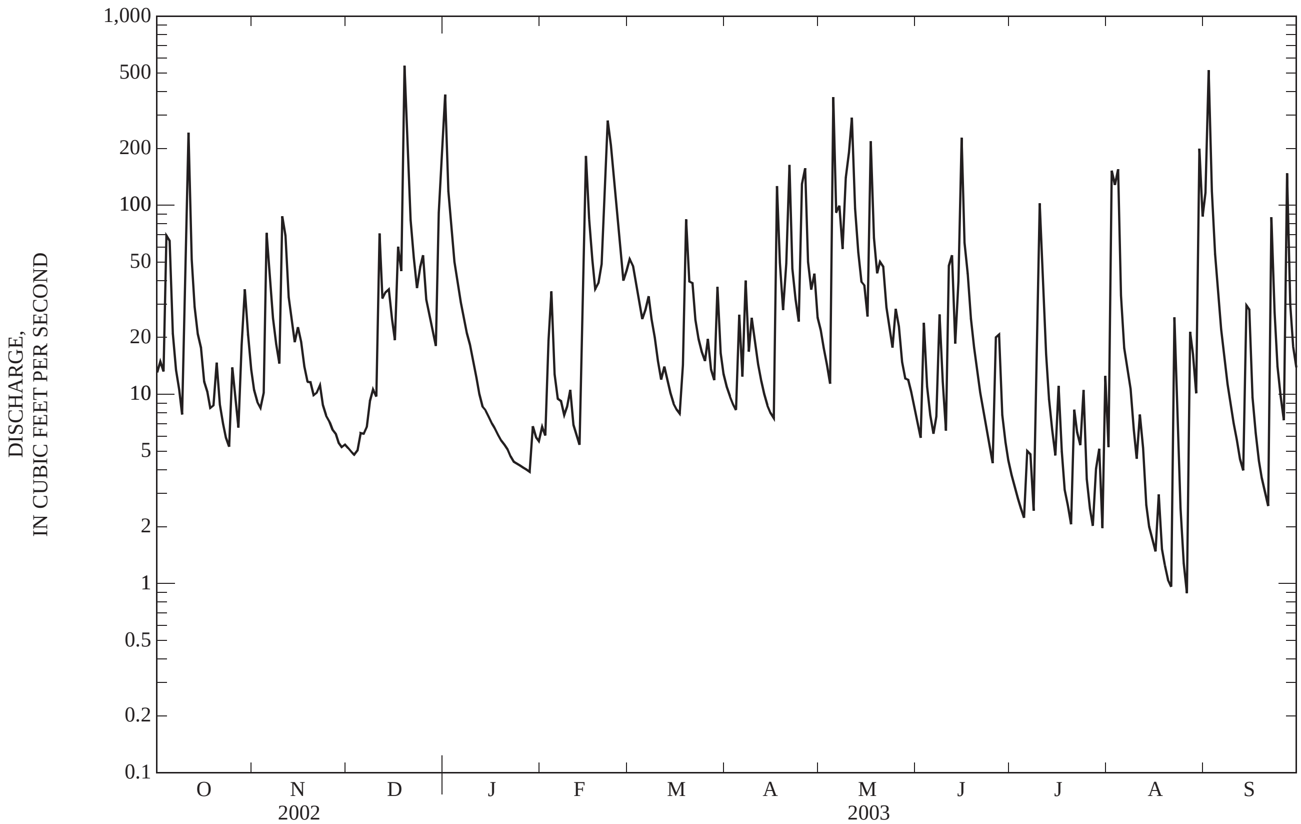
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1944 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	9.12	16.5	27.9	33.9	42.7	49.9	37.8	31.2	20.6	17.4	11.3	10.5
MAX	40.7	54.7	88.9	148	119	195	143	114	83.5	109	42.1	105
(WY)	(1978)	(1974)	(1979)	(1950)	(1956)	(1964)	(1970)	(1961)	(1950)	(1973)	(1978)	(1979)
MIN	0.15	0.71	1.90	3.31	3.44	4.20	5.27	3.04	0.93	0.37	0.52	0.033
(WY)	(1954)	(1954)	(1954)	(1981)	(1954)	(1954)	(1954)	(1954)	(1954)	(1954)	(1999)	(1953)

03293000 MIDDLE FORK BEARGRASS CREEK AT LOUISVILLE, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1944 - 2003	
ANNUAL TOTAL	12,761.92		13,249.45			
ANNUAL MEAN	35.0		36.3		25.7	
HIGHEST ANNUAL MEAN					49.2	1979
LOWEST ANNUAL MEAN					3.76	1954
HIGHEST DAILY MEAN	774	Sep 27	546	Dec 19	2,000	Mar 9, 1964
LOWEST DAILY MEAN	0.16	Sep 7	0.89	Aug 26	0.00	Aug 27, 1952
ANNUAL SEVEN-DAY MINIMUM	0.24	Sep 6	1.6	Aug 15	0.00	Sep 28, 1952
MAXIMUM PEAK FLOW			1,400	Dec 19	5,900	Mar 2, 1997
MAXIMUM PEAK STAGE			6.19	Dec 19	8.70	Mar 2, 1997
INSTANTANEOUS LOW FLOW			0.56	Aug 27	0.00	Aug 27, 1952
ANNUAL RUNOFF (CFSM)	1.90		1.97		1.39	
ANNUAL RUNOFF (INCHES)	25.80		26.79		18.95	
10 PERCENT EXCEEDS	73		87		54	
50 PERCENT EXCEEDS	10		14		10	
90 PERCENT EXCEEDS	0.99		4.4		1.9	

e Estimated



03293530 MUDDY FORK AT MOCKINGBIRD VALLEY ROAD AT LOUISVILLE, KY

LOCATION.--Lat 38°16'35", long 85°41'37", Jefferson County, Hydrologic Unit 05140101, at culvert on Mockingbird Valley Road at Louisville, 0.5 mi east of Indian Hills subdivision, 1.0 mi north of St. Matthews, and at mile 1.5.

DRAINAGE AREA.--6.2 mi^2.

PERIOD OF RECORD.--October 2002 to current year.

GAGE.--Water-stage recorder with telemetry and crest-stage gage.

REMARKS.--Records fair, except for those estimated, which are poor.

COOPERATION.--Louisville and Jefferson County Metropolitan Sewer District.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.3	4.3	e1.9	138	e2.4	e12	5.9	9.0	3.7	2.6	e1.3	79
2	3.7	3.5	e1.7	51	e2.1	e10	5.6	6.5	3.3	2.5	88	175
3	3.2	3.6	e1.7	36	e3.2	9.2	5.4	5.6	6.7	2.6	23	71
4	22	4.0	e1.7	28	e9.9	7.9	6.4	4.8	4.1	2.1	38	44
5	17	22	e1.9	23	e5.0	7.8	13	137	3.5	1.8	7.0	33
6	4.6	17	e1.7	18	e3.7	9.5	6.3	41	3.3	1.6	2.4	27
7	3.8	7.4	e1.8	13	e3.5	6.6	22	37	3.7	2.4	1.7	23
8	2.8	5.9	e2.3	9.8	e2.9	6.3	8.5	28	11	2.6	3.7	22
9	2.4	5.6	e2.7	7.6	e2.8	6.1	10	48	4.2	e2.8	0.76	16
10	7.8	97	e2.7	6.3	e3.0	5.4	8.5	183	3.5	e17	0.53	7.8
11	52	46	e19	5.4	e2.9	5.3	7.3	251	17	e7.7	0.74	4.9
12	10	22	e12	4.9	e2.5	6.1	6.5	57	17	e3.9	0.73	3.2
13	5.5	13	e13	e4.4	e2.2	5.8	5.9	44	6.6	e2.8	0.41	2.1
14	5.0	8.1	e14	e4.0	e3.5	5.5	5.6	31	12	e2.1	0.43	11
15	4.0	9.3	e11	e3.7	e46	5.3	5.4	23	66	e2.3	0.43	15
16	4.6	7.8	e9.8	e3.3	e28	5.4	5.2	16	25	e4.2	0.32	3.0
17	3.0	6.0	e14	e3.0	e18	5.2	56	80	14	e2.1	0.29	0.90
18	2.5	5.7	21	e2.7	e14	6.2	32	35	7.1	e1.6	0.32	0.30
19	2.5	5.3	247	e2.5	e13	30	23	25	5.5	e1.3	0.31	e0.20
20	3.3	e3.4	88	e2.3	e17	21	20	25	5.2	e1.2	0.29	e0.13
21	2.4	e3.9	40	e2.1	43	17	36	23	4.7	e1.9	0.26	e0.10
22	2.1	e3.9	30	e2.0	142	12	18	14	4.3	e1.5	17	e20
23	1.8	e3.1	22	e1.8	71	9.9	11	7.8	4.0	e2.3	3.7	e11
24	2.0	e2.8	23	e1.7	e39	9.2	7.7	6.3	3.8	e2.7	0.61	e6.4
25	5.7	e2.5	26	e1.6	e26	11	46	11	4.0	e1.4	0.41	e4.8
26	3.6	e2.3	17	e1.5	e20	8.2	51	8.0	5.3	e1.0	0.30	e3.9
27	3.3	e2.1	13	e1.5	e16	6.3	27	6.0	5.1	e0.84	0.23	e117
28	5.2	e2.0	10	e1.4	e14	6.2	19	5.2	3.2	e0.85	22	e13
29	14	e2.0	8.1	e2.0	---	14	23	4.9	2.9	e0.96	10	e7.8
30	6.4	e2.0	40	e1.9	---	6.4	12	4.5	2.6	e0.69	136	e6.1
31	5.1	---	75	e1.7	---	5.9	---	4.2	---	e2.5	51	---
TOTAL	215.6	323.5	773.0	386.1	556.6	282.7	509.2	1,181.8	262.3	83.84	412.17	728.63
MEAN	6.95	10.8	24.9	12.5	19.9	9.12	17.0	38.1	8.74	2.70	13.3	24.3
MAX	52	97	247	138	142	30	56	251	66	17	136	175
MIN	1.8	2.0	1.7	1.4	2.1	5.2	5.2	4.2	2.6	0.69	0.23	0.10
CFSM	1.13	1.74	4.03	2.02	3.22	1.48	2.75	6.17	1.41	0.44	2.15	3.93
IN.	1.30	1.95	4.65	2.32	3.35	1.70	3.07	7.11	1.58	0.50	2.48	4.39

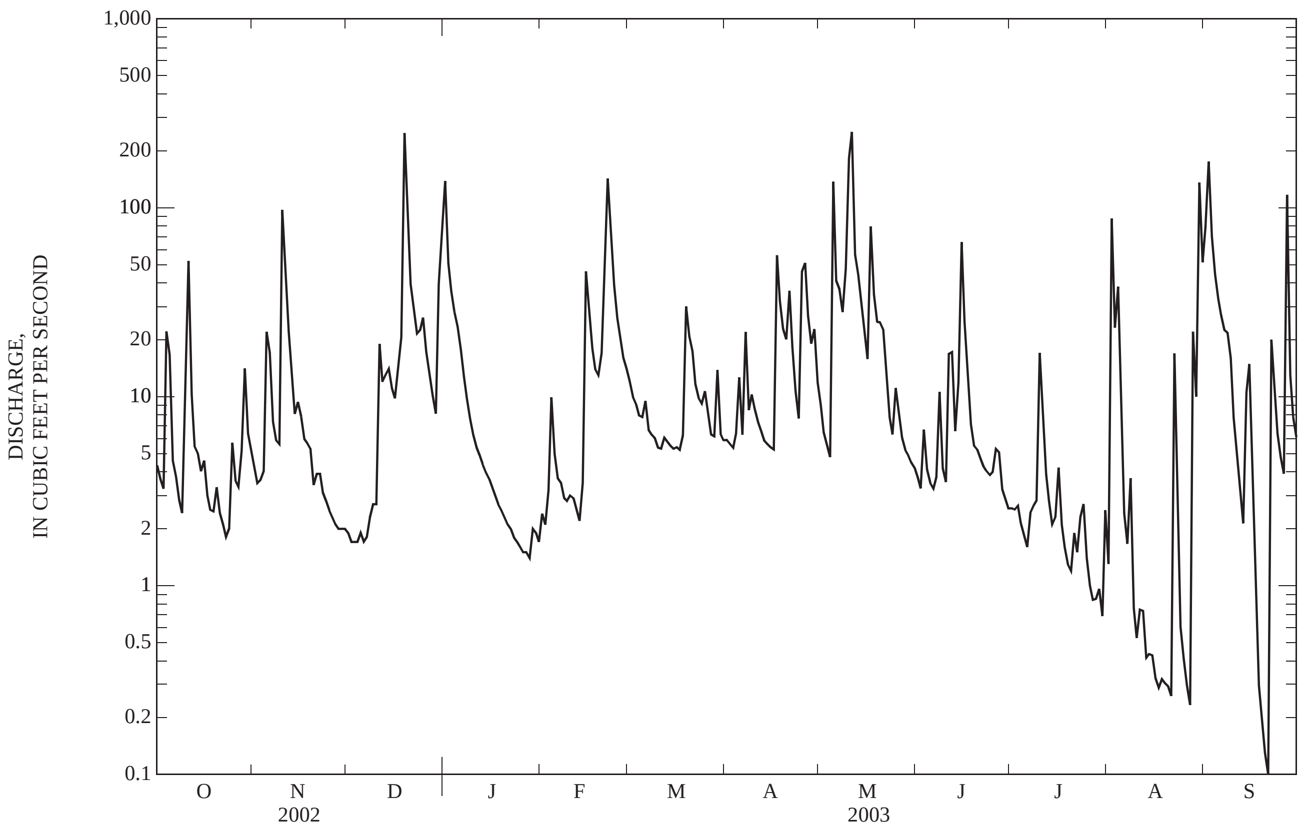
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	4.87	7.05	15.4	12.7	26.1	9.53	15.3	20.1	8.43	5.57	5.70	8.49
MAX	8.58	10.8	27.7	14.9	37.1	14.9	21.6	38.1	17.0	9.96	13.3	24.3
(WY)	(1991)	(2003)	(1991)	(1991)	(1989)	(1989)	(1989)	(2003)	(1990)	(1989)	(2003)	(2003)
MIN	1.29	4.42	2.39	11.0	18.8	6.89	11.0	3.53	1.38	2.70	2.61	1.27
(WY)	(1989)	(1990)	(1990)	(1990)	(1991)	(1990)	(1990)	(1988)	(1988)	(2003)	(1989)	(1988)

03293530 MUDDY FORK AT MOCKINGBIRD VALLEY ROAD AT LOUISVILLE, KY—Continued

SUMMARY STATISTICS	FOR 2003 WATER YEAR		WATER YEARS 1988 - 2003	
ANNUAL TOTAL	5715.44			
ANNUAL MEAN	15.7		12.3	
HIGHEST ANNUAL MEAN			15.7	2003
LOWEST ANNUAL MEAN			10.3	1990
HIGHEST DAILY MEAN	251	May 11	251	May 11, 2003
LOWEST DAILY MEAN	0.10	Sep 21	0.10	Sep 21, 2003
ANNUAL SEVEN-DAY MINIMUM	0.32	Aug 15	0.32	Aug 15, 2003
MAXIMUM PEAK FLOW	730	May 11	730	May 11, 2003
MAXIMUM PEAK STAGE	6.73	May 11	6.73	May 11, 2003
ANNUAL RUNOFF (CFSM)	2.53		2.00	
ANNUAL RUNOFF (INCHES)	34.40		27.11	
10 PERCENT EXCEEDS	37		27	
50 PERCENT EXCEEDS	5.6		4.6	
90 PERCENT EXCEEDS	1.6		1.2	

e Estimated



03294500 OHIO RIVER AT LOUISVILLE, KY

LOCATION.--Lat 38°16'49", long 85°47'57", Jefferson County, Hydrologic Unit 05140101, on left bank at downstream end of lock guide wall in lower pool at McAlpine Locks, at Louisville, 5.3 mi downstream from Beargrass Creek , and at mile 607.3.

DRAINAGE AREA.--91,170 mi^2, approximately.

PERIOD OF RECORD.--January 1928 to current year. Prior to October 1935 monthly discharge only, published in WSP 1305. Gage-height records collected in this vicinity since 1871 are published in reports of National Weather Service.

REVISED RECORDS.--WSP 893: 1939, KY-92-1 peak.

GAGE.--Water-stage recorder with telemetry. Datum of gage is 373.18 ft above NGVD of 1929 or 374.00 ft Ohio River datum. Prior to Oct. 1, 1939, and Oct. 1, 1943 to Sept. 30, 1946, various combinations of gages near Louisville were used. Oct. 1, 1939 to Sept. 30, 1943, water-stage recorders at Louisville and Kosmosdale, downstream from McAlpine Dam (4 mi and 20.1 mi, respectively), were used to determine discharge. Oct. 1, 1946 to Sept. 30, 1961, nonrecording gage at site 0.3 mi upstream at same datum. Oct. 1, 1952 to Sept. 30, 1970, upper nonrecording gage at dam 43, 25.9 mi downstream used as an auxiliary gage. Since Oct. 1, 1970, auxiliary water-stage recorder at Kosmosdale, 19.8 mi downstream. Datum of auxiliary gage is 372.75 ft above NGVD of 1929 or 373.67 ft above Ohio River Datum.

REMARKS.--Records good except for estimated periods and those below 20,000 ft^3/s, which are poor. Flow regulated by Ohio River system of locks, dams, and reserviors.

COOPERATION.--U.S. Army Corps of Engineers, Louisville District.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	50,200	123,000	51,900	243,000	42,400	389,000	143,000	63,900	104,000	e69,900	e117,000	88,600
2	14,600	118,000	54,300	246,000	54,300	321,000	132,000	64,000	91,900	e44,700	131,000	197,000
3	21,200	63,800	69,600	243,000	75,700	e276,000	122,000	62,400	98,600	e62,600	149,000	241,000
4	29,800	62,600	46,100	279,000	84,600	258,000	114,000	70,800	181,000	e73,800	130,000	258,000
5	16,800	50,700	44,200	310,000	111,000	252,000	119,000	135,000	198,000	e81,600	150,000	270,000
6	7,640	66,000	36,600	311,000	122,000	253,000	108,000	190,000	233,000	e95,000	171,000	278,000
7	14,600	126,000	33,900	286,000	185,000	256,000	122,000	217,000	224,000	73,300	176,000	316,000
8	7,190	130,000	e37,000	256,000	189,000	267,000	157,000	226,000	254,000	52,900	118,000	254,000
9	6,290	129,000	49,100	212,000	168,000	280,000	212,000	213,000	248,000	98,400	126,000	131,000
10	15,200	119,000	42,600	177,000	118,000	282,000	230,000	240,000	258,000	162,000	143,000	88,300
11	19,800	128,000	40,900	151,000	69,200	269,000	319,000	322,000	279,000	227,000	149,000	77,100
12	84,100	177,000	50,000	144,000	59,200	259,000	341,000	350,000	198,000	234,000	161,000	70,000
13	53,300	169,000	76,100	127,000	65,300	250,000	343,000	364,000	186,000	239,000	160,000	50,600
14	44,000	155,000	140,000	102,000	e63,200	231,000	343,000	357,000	157,000	e236,000	116,000	37,400
15	35,600	150,000	224,000	72,800	99,900	220,000	323,000	318,000	190,000	180,000	116,000	43,400
16	28,900	114,000	231,000	67,600	170,000	217,000	246,000	274,000	e256,000	146,000	100,000	42,700
17	55,600	123,000	293,000	70,700	263,000	e232,000	203,000	247,000	294,000	87,300	97,800	39,600
18	67,700	128,000	273,000	54,000	369,000	e235,000	179,000	253,000	300,000	76,600	86,600	49,300
19	63,500	126,000	202,000	40,000	423,000	223,000	121,000	267,000	348,000	26,300	108,000	37,600
20	61,000	146,000	235,000	55,300	412,000	e227,000	147,000	251,000	368,000	32,600	84,200	72,100
21	37,600	147,000	235,000	33,600	345,000	223,000	135,000	292,000	365,000	51,400	e80,000	128,000
22	35,600	93,400	246,000	23,800	321,000	e261,000	149,000	268,000	362,000	e56,000	e71,300	153,000
23	31,500	109,000	203,000	40,300	e364,000	258,000	132,000	261,000	256,000	e74,200	e95,700	172,000
24	41,000	114,000	207,000	17,600	415,000	233,000	137,000	246,000	223,000	e131,000	e50,800	138,000
25	23,600	109,000	179,000	22,500	456,000	209,000	116,000	238,000	161,000	e171,000	e42,600	119,000
26	38,300	102,000	154,000	25,100	463,000	201,000	107,000	195,000	118,000	e172,000	31,300	145,000
27	33,300	84,200	144,000	17,500	471,000	161,000	107,000	177,000	81,100	e138,000	35,700	164,000
28	31,000	e74,800	149,000	e15,800	454,000	142,000	69,400	154,000	e70,700	e104,000	45,200	161,000
29	41,900	71,200	146,000	14,200	---	134,000	64,600	137,000	e78,700	e92,400	33,500	130,000
30	91,400	76,000	129,000	24,700	---	134,000	60,500	109,000	e58,800	e121,000	90,000	124,000
31	117,000	---	119,000	25,100	---	130,000	---	97,000	---	e135,000	72,600	---
TOTAL	1,219,220	3,384,700	4,141,300	3,707,600	6,432,800	7,283,000	5,101,500	6,659,100	6,240,800	3,545,000	3,238,300	4,075,700
MEAN	39,330	112,800	133,600	119,600	229,700	234,900	170,000	214,800	208,000	114,400	104,500	135,900
MAX	117,000	177,000	293,000	311,000	471,000	389,000	343,000	364,000	368,000	239,000	176,000	316,000
MIN	6,290	50,700	33,900	14,200	42,400	130,000	60,500	62,400	58,800	26,300	31,300	37,400

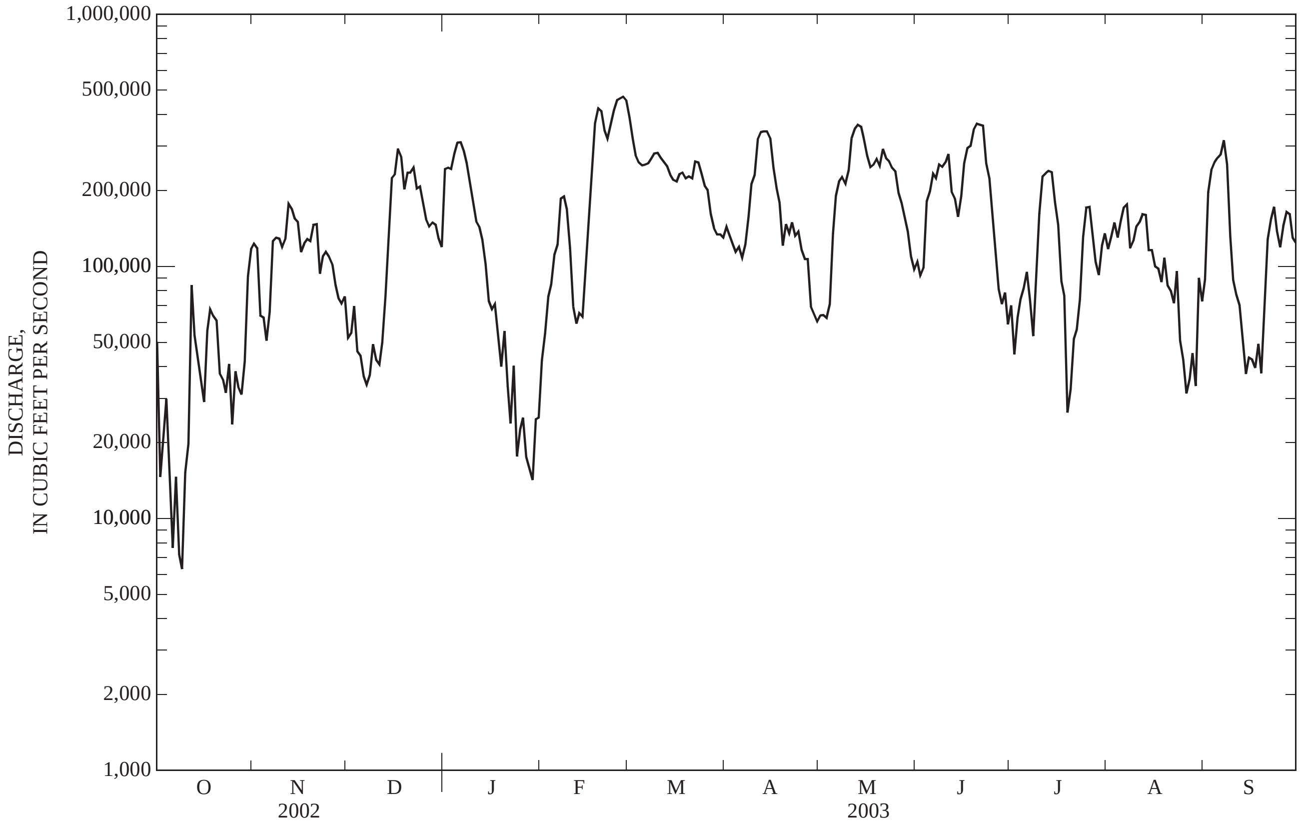
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	37,220	68,260	121,400	163,500	193,600	241,300	203,700	146,400	87,570	56,420	44,400	33,970
MAX	153,500	245,900	321,300	595,800	430,400	524,300	403,300	392,900	234,400	163,400	151,300	166,600
(WY)	(1980)	(1986)	(1973)	(1937)	(1939)	(1945)	(1948)	(1996)	(1981)	(1958)	(1958)	(1979)
MIN	4,377	6,660	14,090	21,630	38,010	69,390	66,480	29,350	16,400	8,035	4,924	6,005
(WY)	(1931)	(1931)	(1931)	(1931)	(1934)	(1969)	(1986)	(1941)	(1988)	(1930)	(1930)	(1930)

03294500 OHIO RIVER AT LOUISVILLE, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1929 - 2003	
ANNUAL TOTAL	43,515,859		55,029,020			
ANNUAL MEAN	119,200		150,800		116,100	
HIGHEST ANNUAL MEAN					176,700	1979
LOWEST ANNUAL MEAN					57,390	1954
HIGHEST DAILY MEAN	516,000	Mar 24	471,000	Feb 27	1,110,000	Jan 27, 1937
LOWEST DAILY MEAN	949	Sep 4	6,290	Oct 9	949	Sep 4, 2002
ANNUAL SEVEN-DAY MINIMUM	3,990	Aug 30	12,500	Oct 5	3,530	Oct 15, 1930
MAXIMUM PEAK FLOW			472,000	Feb 27	1,110,000	Jan 27, 1937
MAXIMUM PEAK STAGE			51.82	Feb 27	85.44	Jan 27, 1937
10 PERCENT EXCEEDS	322,000		281,000		279,000	
50 PERCENT EXCEEDS	69,600		130,000		72,400	
90 PERCENT EXCEEDS	9,890		37,500		16,700	

e Estimated



03294550 MILL CREEK CUTOFF NEAR LOUISVILLE, KY

LOCATION.--Lat 38°10'39", long 85°52'01", Jefferson County, Hydrologic Unit 05140101, on left bank at bridge on Highway 1230, 0.8 mi downstream from Big Run Creek, 1.5 mi upstream from Ohio River, and 6.0 mi southwest of Louisville.

DRAINAGE AREA.--24.4 mi^2.

PERIOD OF RECORD.--May 1988 to January 1995, August 1999 to current year.

GAGE.--Water-stage recorder with telemetry.

REMARKS.--Records fair except those for estimated periods, which are poor.

COOPERATION.--Louisville and Jefferson County Metropolitan Sewer District.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)

No peak greater than base discharge.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.01	0.20	0.00	201	0.00	e1.8	e0.90	e1.0	0.19	0.13	2.9	54
2	0.00	0.00	0.00	18	0.00	e1.9	e0.70	e0.71	0.17	0.14	72	316
3	0.00	0.00	0.00	14	4.7	e1.5	e0.51	e0.70	11	0.19	50	29
4	16	0.00	0.00	4.1	28	e1.3	e0.67	e0.49	1.5	0.46	7.4	5.5
5	23	63	0.00	2.5	0.69	e1.4	e1.6	e149	0.31	0.17	4.1	2.4
6	0.96	16	0.00	1.1	0.00	e2.4	e0.77	e50	0.30	0.09	7.1	1.4
7	0.13	1.6	0.00	0.46	1.1	e1.6	e6.6	e15	0.27	0.09	14	1.6
8	0.00	0.35	0.00	0.40	0.71	e1.2	e2.2	e3.6	0.20	0.64	8.0	1.6
9	0.00	0.06	0.72	0.31	0.31	e0.79	e1.5	e6.1	0.18	2.1	2.3	1.9
10	20	141	0.18	0.09	0.00	e0.65	e1.9	e12	0.26	50	2.0	1.8
11	132	43	59	0.00	0.00	e0.54	e1.5	e51	28	8.6	7.0	1.7
12	5.4	2.7	6.2	e0.05	0.00	e0.62	e1.0	e28	18	1.8	3.0	1.7
13	0.76	0.41	16	e0.04	0.00	e0.82	e0.84	e15	3.2	1.3	1.7	1.6
14	0.22	0.18	15	0.00	11	e0.73	e0.65	e6.1	0.71	1.1	0.64	5.3
15	0.02	0.07	1.8	0.00	226	e0.59	e0.52	e3.6	0.29	1.3	0.64	9.2
16	0.00	0.87	0.32	0.00	29	e0.54	e0.38	e1.9	1.0	15	0.78	1.8
17	0.00	0.15	37	0.00	12	e0.48	e21	e79	28	1.6	0.89	1.5
18	0.00	0.00	e28	0.00	4.1	e0.44	e11	e18	1.8	1.2	0.80	1.3
19	0.00	0.00	e186	0.00	e2.6	e11	e4.8	e7.2	0.90	1.0	0.81	1.6
20	1.4	0.00	e62	0.00	e5.8	e6.6	e0.83	9.2	0.42	0.91	0.87	1.6
21	0.71	0.00	e11	0.00	e20	e3.0	e62	11	0.32	5.9	1.0	1.6
22	0.10	0.00	3.9	0.00	e104	e2.2	e14	2.7	0.30	13	85	93
23	0.00	0.00	1.2	0.00	e34	e1.6	e3.9	0.43	0.27	12	15	6.4
24	0.00	0.00	24	0.00	e10	e1.2	e1.1	0.18	0.26	1.5	2.6	2.2
25	3.7	0.00	25	0.00	e4.2	e0.84	e2.4	5.5	0.32	0.85	1.9	1.8
26	2.9	0.00	4.1	0.00	e3.0	e2.1	e57	4.6	1.6	0.79	1.8	1.7
27	0.28	0.00	1.6	0.00	e2.5	e1.0	e12	0.46	6.3	0.79	1.7	194
28	4.8	0.00	0.82	0.00	e2.2	e0.69	e2.4	0.22	0.36	0.73	1.6	6.1
29	36	0.00	0.52	0.00	---	e2.4	e2.1	0.22	0.21	0.31	1.8	2.4
30	5.1	0.00	78	0.00	---	e1.9	e1.7	0.17	0.16	0.73	39	1.8
31	0.79	---	204	0.00	---	e1.2	---	0.22	---	2.3	48	---
TOTAL	254.28	269.59	766.36	242.05	505.91	55.03	218.47	483.30	106.80	126.72	386.33	753.5
MEAN	8.20	8.99	24.7	7.81	18.1	1.78	7.28	15.6	3.56	4.09	12.5	25.1
MAX	132	141	204	201	226	11	62	149	28	50	85	316
MIN	0.00	0.00	0.00	0.00	0.00	0.44	0.38	0.17	0.16	0.09	0.64	1.3
CFSM	0.34	0.37	1.01	0.32	0.74	0.07	0.30	0.64	0.15	0.17	0.51	1.03
IN.	0.39	0.41	1.17	0.37	0.77	0.08	0.33	0.74	0.16	0.19	0.59	1.15

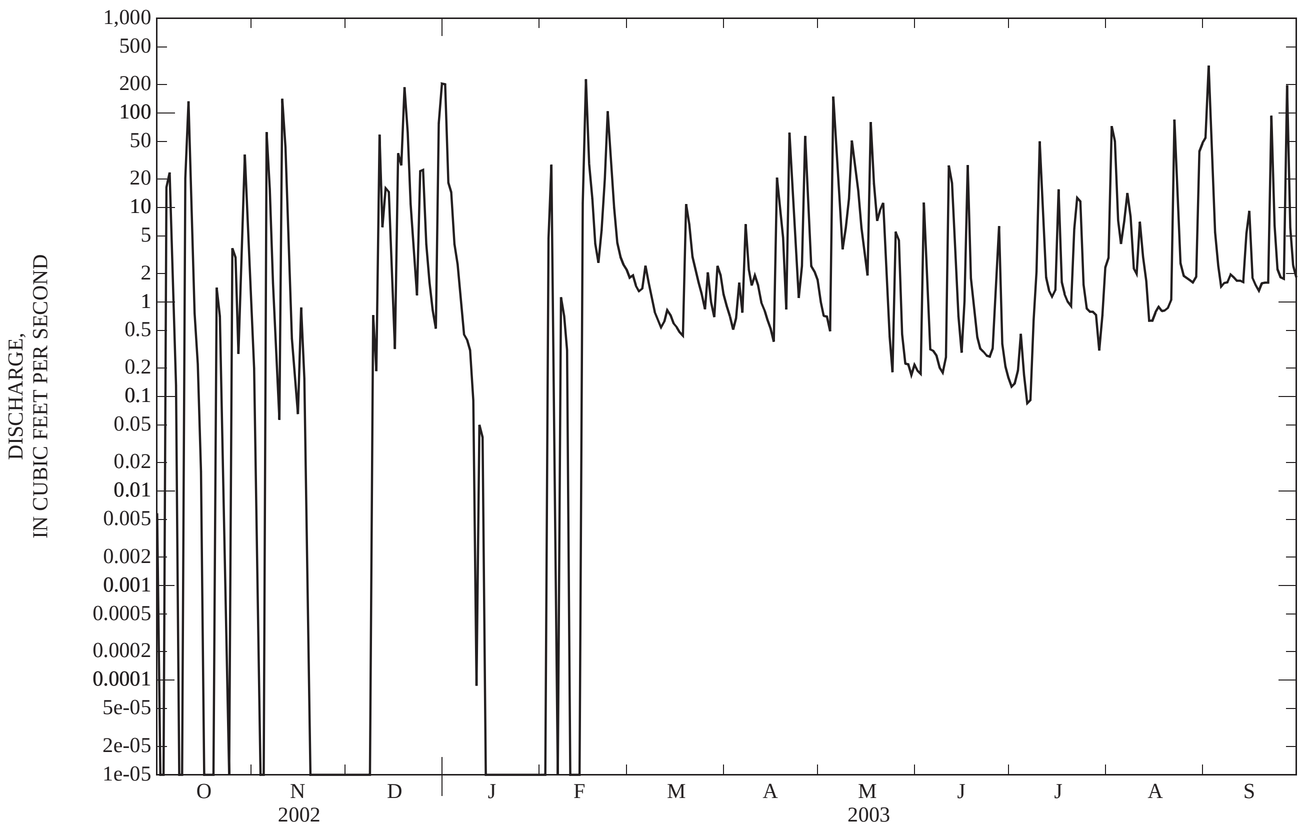
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	6.33	9.58	20.3	22.1	33.7	30.5	13.3	17.9	10.0	7.30	7.16	8.96
MAX	19.4	21.7	73.0	72.3	87.0	89.2	31.6	69.8	49.1	23.5	33.4	28.6
(WY)	(2002)	(2002)	(1991)	(1991)	(1989)	(2002)	(2002)	(1990)	(1990)	(1989)	(1992)	(2002)
MIN	0.18	0.31	1.35	3.26	3.97	1.78	0.93	3.21	0.042	0.18	0.83	0.067
(WY)	(1989)	(2000)	(1990)	(2001)	(1992)	(2003)	(2001)	(2000)	(1988)	(2002)	(2001)	(1988)

03294550 MILL CREEK CUTOFF NEAR LOUISVILLE, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1988 - 2003	
ANNUAL TOTAL	8,299.33		4,168.34			
ANNUAL MEAN	22.7		11.4		15.8	
HIGHEST ANNUAL MEAN					25.5	1991
LOWEST ANNUAL MEAN					7.41	2001
HIGHEST DAILY MEAN	741	Sep 27	316	Sep 2	1,070	Feb 15, 1990
LOWEST DAILY MEAN	0.00	Jan 1	0.00	Oct 2	0.00	May 15, 1988
ANNUAL SEVEN-DAY MINIMUM	0.00	Jan 12	0.00	Nov 18	0.00	May 28, 1988
MAXIMUM PEAK FLOW			1,020	Sep 27	4,310	Aug 8, 1992
MAXIMUM PEAK STAGE			7.94	Sep 27	15.83	Aug 8, 1992
ANNUAL RUNOFF (CFSM)	0.93		0.47		0.65	
ANNUAL RUNOFF (INCHES)	12.65		6.36		8.79	
10 PERCENT EXCEEDS	43		28		29	
50 PERCENT EXCEEDS	0.15		1.3		1.4	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

e Estimated



03294570 MILL CREEK AT ORELL ROAD NEAR LOUISVILLE, KY

LOCATION.--Lat 38°04'41", long 85°53'24", Jefferson County, Hydrologic Unit 05140101, on right bank at bridge on Orell Road, 5.0 mi southwest of Louisville, and at mile 1.5

DRAINAGE AREA.--13.5 mi^2.

PERIOD OF RECORD.--August 1999 to current year.

GAGE.--Water-stage recorder with telemetry and crest-stage gage. Datum of gage is 415 ft above NGVD of 1929 (from topographic map).

REMARKS.--Records fair except for those estimated, which are rated poor.

Cooperation.--Louisville and Jefferson County Metropolitan Sewer District.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.0	4.1	3.3	323	e1.1	e5.2	e4.3	e3.5	2.3	1.9	3.8	38
2	2.5	4.4	3.3	33	1.6	e4.6	e3.4	e2.5	2.3	3.6	25	359
3	4.8	4.3	3.5	19	2.2	e4.1	e2.5	e2.7	12	2.7	69	96
4	8.5	5.1	3.7	9.3	21	e3.6	e3.8	e1.7	7.0	2.1	25	12
5	24	55	4.5	6.0	6.0	e3.2	e7.0	e219	3.7	2.0	8.5	3.6
6	4.9	31	4.1	4.3	3.2	e5.0	e3.1	e104	3.0	2.0	3.1	2.1
7	2.4	7.5	4.1	3.3	2.9	e4.3	e11	e38	3.1	2.7	7.3	1.5
8	1.9	4.7	4.8	3.0	2.7	e3.7	e7.6	e9.4	2.6	2.1	6.5	1.3
9	1.8	4.5	7.5	2.7	2.2	e3.1	e5.2	e10	2.4	1.6	5.0	1.4
10	21	56	5.3	2.4	2.3	e2.6	e5.0	e20	2.5	17	8.3	1.2
11	156	96	44	2.1	2.7	e2.1	e4.9	e74	32	19	7.5	1.2
12	13	13	13	1.8	2.4	e2.5	e4.0	e42	25	3.7	6.2	1.2
13	5.5	6.1	15	1.7	1.9	e3.0	e3.4	e21	13	1.2	2.8	1.0
14	3.4	4.4	23	e1.6	4.2	e3.0	e2.8	e6.8	6.3	0.63	2.9	2.3
15	2.8	4.7	8.1	e1.5	247	e2.6	e2.4	e5.6	3.4	0.69	3.0	8.8
16	2.3	6.2	5.6	e1.4	80	e2.3	e1.8	e3.7	56	16	3.3	2.3
17	2.3	3.9	28	e1.4	e18	e2.0	e35	e127	167	5.1	3.3	1.4
18	2.4	2.9	e23	e1.3	e9.1	e1.8	e19	e56	e40	1.6	3.8	1.2
19	2.7	2.7	e240	e1.3	e6.9	e18	e9.3	e30	e18	0.86	3.4	1.1
20	4.9	2.8	e80	e1.2	e15	e14	e4.0	e14	e5.5	0.70	3.4	1.1
21	3.6	3.0	e25	e1.2	e50	e10	e85	7.5	e1.8	1.7	3.5	0.90
22	2.8	3.8	8.1	e1.2	e146	e8.1	e37	4.5	e1.9	15	14	80
23	2.6	3.4	4.9	e1.2	e64	e6.2	e13	3.1	2.0	25	24	15
24	2.3	2.9	17	e1.1	e25	e4.8	e3.2	2.5	2.1	11	7.6	3.0
25	4.1	2.7	43	e1.1	e9.6	e3.3	e10	4.6	2.1	5.5	3.5	1.2
26	6.6	2.8	9.9	e1.1	e8.0	e5.1	e79	9.0	7.2	4.0	2.9	0.58
27	3.4	2.9	5.6	e1.1	e6.9	e3.9	e35	3.5	13	3.5	2.4	127
28	7.6	2.5	4.1	e1.0	e6.0	e2.8	e6.6	2.8	3.5	3.2	2.7	16
29	29	2.3	3.1	e1.0	---	e8.1	e6.2	2.5	1.9	3.2	5.2	3.0
30	14	2.9	76	e1.0	---	e6.6	e5.0	2.6	1.7	3.0	29	1.4
31	5.4	---	181	e1.0	---	e5.4	---	2.5	---	3.4	23	---
TOTAL	351.5	348.5	901.5	433.3	747.9	155.0	419.5	836.0	444.3	165.68	318.9	785.78
MEAN	11.3	11.6	29.1	14.0	26.7	5.00	14.0	27.0	14.8	5.34	10.3	26.2
MAX	156	96	240	323	247	18	85	219	167	25	69	359
MIN	1.8	2.3	3.1	1.0	1.1	1.8	1.8	1.7	1.7	0.63	2.4	0.58

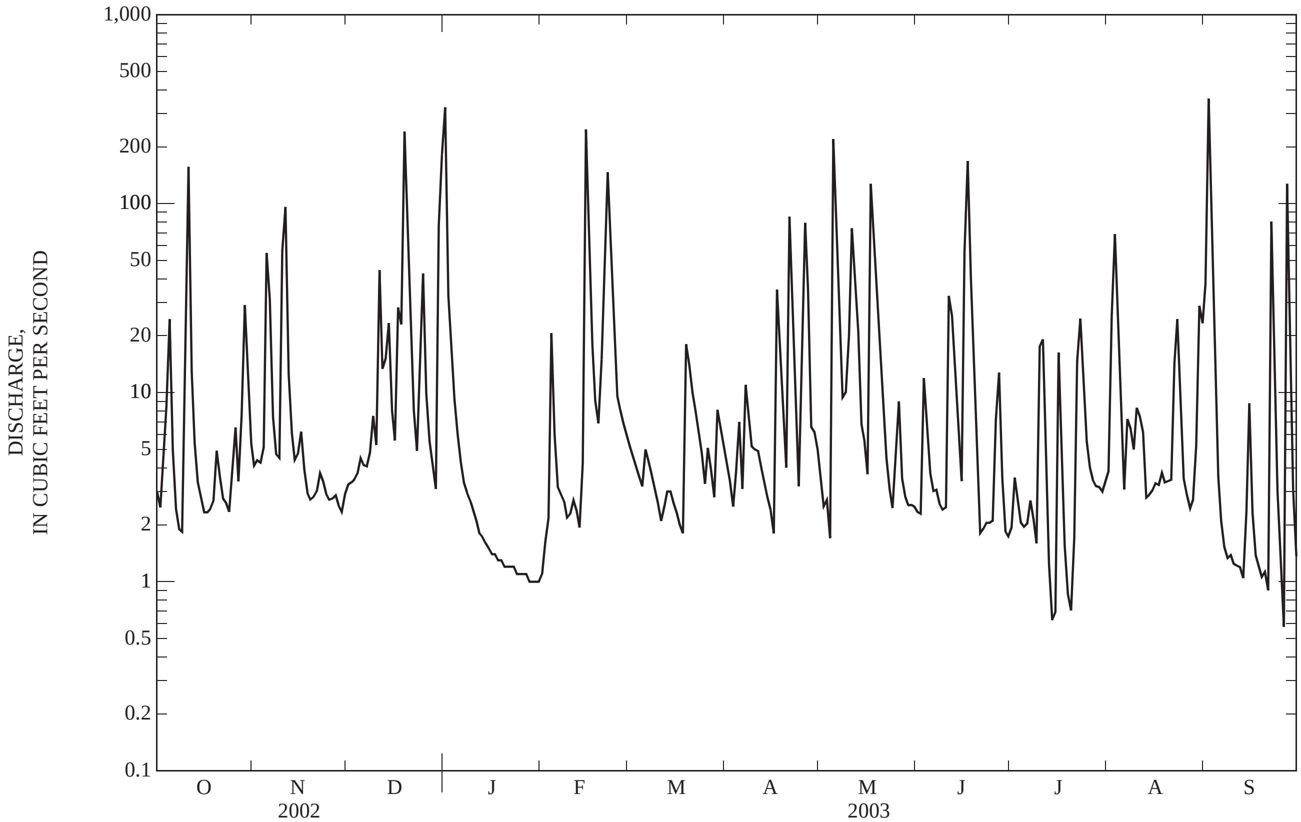
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1999 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	11.7	17.4	31.3	34.2	44.1	36.7	49.8	37.6	8.88	3.63	4.67	19.4
MAX	27.5	40.7	41.4	71.3	75.2	111	121	93.4	14.8	5.55	10.3	51.8
(WY)	(2002)	(2002)	(2002)	(2000)	(2000)	(2002)	(2000)	(2002)	(2003)	(2001)	(2003)	(2002)
MIN	2.15	8.14	18.0	3.28	12.1	5.00	2.16	4.46	4.09	1.60	1.84	3.86
(WY)	(2001)	(2001)	(2000)	(2001)	(2002)	(2003)	(2001)	(2000)	(2001)	(2002)	(2002)	(1999)

03294570 MILL CREEK AT ORELL ROAD NEAR LOUISVILLE, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1999 - 2003	
ANNUAL TOTAL	13,598.88		5,907.86			
ANNUAL MEAN	37.3		16.2		25.2	
HIGHEST ANNUAL MEAN					42.1	2002
LOWEST ANNUAL MEAN					13.8	2001
HIGHEST DAILY MEAN	1,400	Mar 26	359	Sep 2	1,680	Apr 9, 2000
LOWEST DAILY MEAN	0.24	Jan 5	0.58	Sep 26	0.08	Jan 1, 2000
ANNUAL SEVEN-DAY MINIMUM	0.50	Aug 24	1.0	Jan 25	0.15	Dec 26, 1999
MAXIMUM PEAK FLOW			930	Jun 16	7,430	Mar 26, 2002
MAXIMUM PEAK STAGE			5.35	Jun 16	16.53	Feb 19, 2000
10 PERCENT EXCEEDS	59		35		35	
50 PERCENT EXCEEDS	3.6		3.9		2.8	
90 PERCENT EXCEEDS	0.98		1.5		0.68	

e Estimated



03295400 SALT RIVER AT GLENSBORO, KY

LOCATION.--Lat 38°00'07", long 85°03'38", Anderson County, Hydrologic Unit 05140102, on left bank 5 ft downstream from bridge on Highway 53 at Glensboro, 0.9 mi upstream from Timber Creek, 2.0 mi downstream from Indian Creek, and at mile 82.5.

DRAINAGE AREA.--172 mi^2.

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

GAGE.--Water-stage recorder with telemetry. Datum of gage is 593.29 ft above NGVD of 1929.

REMARKS.--Records good except those estimated, which are fair.

COOPERATION.--Kentucky Natural Resources and Environmental Protection Cabinet and U.S. Army Corps of Engineers, Louisville District.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 6,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 11	0700	7,220	9.30	May 9	0300	*8,580	*9.77
Feb 16	0100	8,310	9.68				

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	266	57	1,490	e73	381	159	98	47	31	231	58
2	30	191	e47	1,020	e59	292	134	87	40	25	115	1,590
3	22	153	e41	497	e75	230	115	82	497	22	152	2,430
4	18	132	e34	326	369	192	101	74	333	20	92	2,250
5	17	1,100	e31	243	305	172	120	1,970	159	19	55	816
6	16	2,050	e28	190	166	151	125	3,210	95	17	86	307
7	12	794	e29	154	e122	137	423	1,570	2,070	16	112	172
8	11	370	e32	e122	e106	124	633	1,210	2,260	16	131	117
9	9.1	238	e39	e99	e95	112	551	3,100	817	20	56	88
10	13	1,740	e50	e82	e88	100	1,010	547	364	116	82	70
11	4,580	3,510	968	e68	e79	92	800	1,450	e285	118	50	58
12	1,280	1,120	961	e59	e75	91	418	557	e681	275	36	49
13	419	475	701	e52	e73	93	266	236	338	101	34	43
14	225	273	2,020	e48	e99	89	194	157	516	55	44	38
15	155	210	911	e44	5,180	85	156	805	1,770	39	29	37
16	131	925	415	e41	7,000	80	135	247	1,380	99	25	34
17	212	629	296	e38	4,420	75	420	360	1,220	44	21	31
18	167	347	324	e36	934	73	920	351	604	30	18	28
19	128	236	1,140	e34	588	160	378	282	300	24	15	26
20	140	178	2,380	e33	771	401	217	209	187	21	14	24
21	157	148	834	e31	810	737	186	540	132	22	13	21
22	132	135	379	e29	2,820	402	160	472	100	33	637	1,640
23	104	118	238	e28	1,900	237	136	260	79	75	608	732
24	85	100	251	e27	979	178	116	174	66	32	95	217
25	75	89	920	e26	755	147	109	132	57	29	54	111
26	68	82	379	e26	462	137	168	111	50	25	30	75
27	65	82	246	e29	326	127	275	87	51	21	25	119
28	83	73	199	e36	414	116	159	73	42	19	21	124
29	869	72	167	60	---	248	127	69	40	55	19	100
30	1,120	62	143	133	---	443	111	64	38	131	56	88
31	482	---	143	114	---	213	---	54	---	345	78	---
TOTAL	10,866.1	15,898	14,403	5,215	29,143	6,115	8,822	18,638	14,618	1,895	3,034	11,493
MEAN	351	530	465	168	1,041	197	294	601	487	61.1	97.9	383
MAX	4,580	3,510	2,380	1,490	7,000	737	1,010	3,210	2,260	345	637	2,430
MIN	9.1	62	28	26	59	73	101	54	38	16	13	21
CFSM	2.04	3.08	2.70	0.98	6.05	1.15	1.71	3.50	2.83	0.36	0.57	2.23
IN.	2.35	3.44	3.12	1.13	6.30	1.32	1.91	4.03	3.16	0.41	0.66	2.49

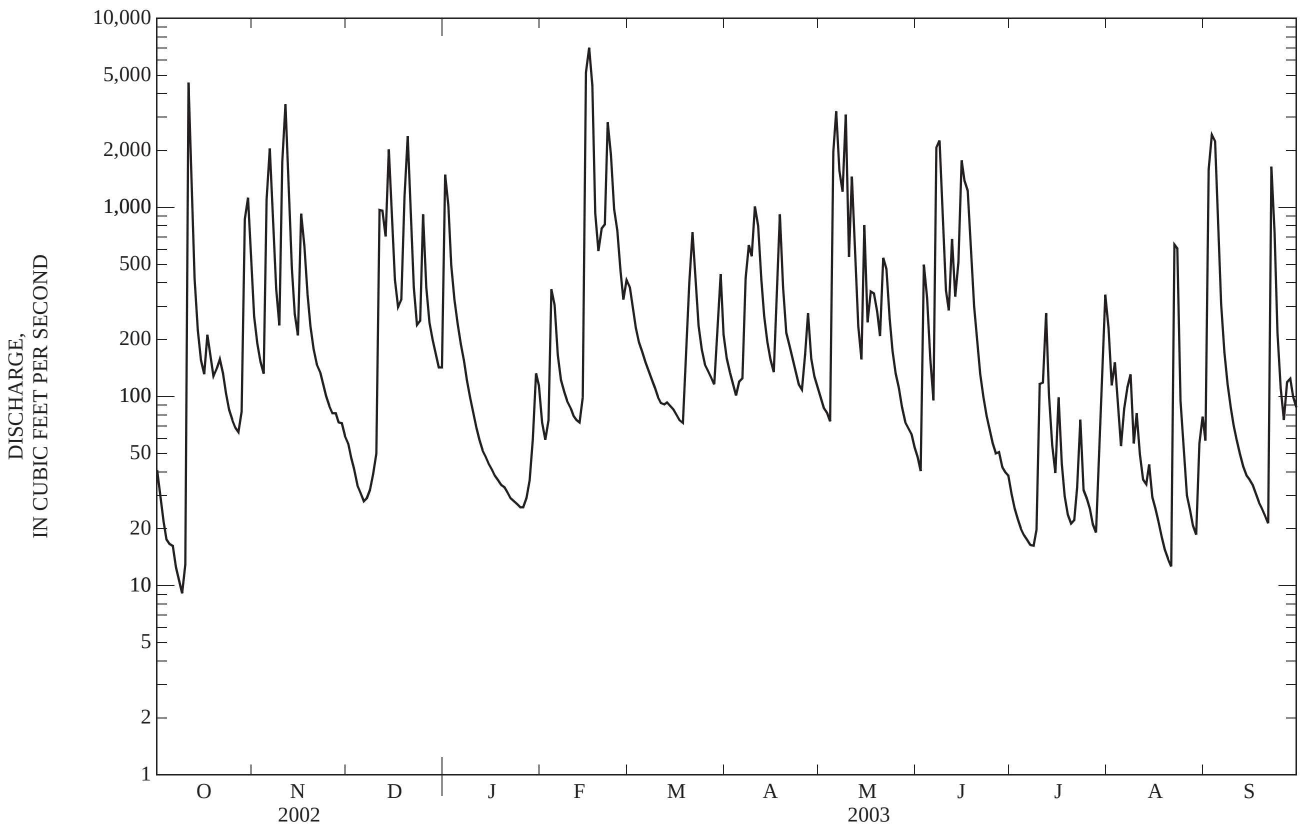
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	74.4	165	342	409	461	562	220	332	282	123	54.5	72.6
MAX	351	530	1,360	675	1,041	1,845	480	925	926	528	137	383
(WY)	(2003)	(2003)	(1991)	(1994)	(2003)	(1997)	(1998)	(1995)	(1997)	(1998)	(1992)	(2003)
MIN	6.13	7.28	29.1	111	124	99.9	71.4	18.4	13.8	4.29	0.53	0.46
(WY)	(1995)	(2000)	(2000)	(2001)	(2002)	(1990)	(1997)	(2000)	(2000)	(2000)	(1999)	(1999)

03295400 SALT RIVER AT GLENSBORO, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1989 - 2003	
ANNUAL TOTAL	113,186.0		140,140.1			
ANNUAL MEAN	310		384		257	
HIGHEST ANNUAL MEAN					403	1997
LOWEST ANNUAL MEAN					103	2000
HIGHEST DAILY MEAN	7,180	Mar 20	7,000	Feb 16	16,400	Mar 2, 1997
LOWEST DAILY MEAN	1.0	Aug 15	9.1	Oct 9	0.00	Aug 5, 1999
ANNUAL SEVEN-DAY MINIMUM	1.6	Aug 10	14	Oct 4	0.00	Sep 6, 1999
MAXIMUM PEAK FLOW			8,580	May 9	22,000	Mar 2, 1997
MAXIMUM PEAK STAGE			9.77	May 9	12.91	Mar 2, 1997
ANNUAL RUNOFF (CFSM)	1.80		2.23		1.49	
ANNUAL RUNOFF (INCHES)	24.48		30.31		20.29	
10 PERCENT EXCEEDS	921		964		560	
50 PERCENT EXCEEDS	68		124		74	
90 PERCENT EXCEEDS	3.3		27		5.1	

e Estimated



03295702 BULLSKIN CREEK NEAR SIMPSONVILLE, KY

LOCATION.--Lat 38°13'07", long 85°18'07", Shelby County, Hydrologic Unit 05140102, at center span on the downstream side of bridge on Highway 60, 2.6 miles east of Simpsonville, 2.6 miles below Fox Run, and at mile 21.7.

DRAINAGE AREA.--54.8 mi^2.

PERIOD OF RECORD.--May 1998 to current year.

GAGE.--Water-stage recorder with telemetry. Datum of gage is 680 ft above NGVD of 1929 (from topographic map).

REMARKS.--Records fair except for those below 2.0 ft^3/s and those estimated, which are poor.

COOPERATION.--City of Simpsonville.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	33	e103	19	1,900	e20	109	46	69	19	8.0	6.1	179
2	23	74	18	367	e22	101	38	53	15	6.6	183	e2,000
3	20	62	17	219	33	81	32	45	23	5.5	146	625
4	19	59	14	154	187	71	29	37	29	4.5	487	284
5	114	329	15	132	84	66	38	864	21	3.9	770	138
6	70	443	19	109	58	66	30	386	13	3.2	123	84
7	45	173	19	91	e48	60	54	539	19	5.2	68	58
8	28	117	17	83	e42	53	49	222	55	4.3	42	43
9	20	88	19	70	e39	47	57	272	67	3.8	26	31
10	38	229	20	56	e37	39	78	1,280	34	25	19	23
11	2,160	579	219	45	e35	38	64	1,220	35	55	22	18
12	372	178	213	e40	e32	38	51	265	63	20	30	14
13	177	119	177	e37	31	40	40	135	54	12	15	11
14	108	91	222	e34	42	38	34	90	72	7.8	10	10
15	78	85	141	e32	1,270	34	30	69	66	5.8	8.0	28
16	60	98	105	e30	393	32	26	57	317	6.3	6.3	15
17	46	79	94	e28	183	30	185	525	952	10	5.1	9.4
18	e35	65	133	e27	117	30	265	240	164	5.9	4.2	7.0
19	e30	59	1,430	e26	95	42	110	128	96	4.5	3.7	6.0
20	36	51	1,300	e25	157	65	82	98	66	3.8	3.1	5.3
21	28	49	260	e24	612	67	1,320	205	44	5.2	2.7	4.9
22	e20	53	161	e23	e2,350	65	233	116	32	26	80	217
23	e17	42	113	e22	586	55	126	82	23	38	157	148
24	15	38	100	e22	251	49	87	60	18	19	31	66
25	e16	34	157	e21	162	42	172	50	14	11	15	40
26	e30	31	112	e21	124	44	506	57	14	6.9	9.7	27
27	e60	30	96	e21	101	36	142	43	52	4.9	6.8	68
28	e150	27	85	e20	96	32	90	40	23	22	5.9	54
29	e330	26	72	e20	---	81	142	35	15	33	9.8	33
30	e400	25	147	e19	---	e74	96	29	11	12	269	23
31	e140	---	871	e19	---	e55	---	24	---	7.8	161	---
TOTAL	4,718	3,436	6,385	3,737	7,207	1,680	4,252	7,335	2,426	386.9	2,725.4	4,269.6
MEAN	152	115	206	121	257	54.2	142	237	80.9	12.5	87.9	142
MAX	2,160	579	1,430	1,900	2,350	109	1,320	1,280	952	55	770	2,000
MIN	15	25	14	19	20	30	26	24	11	3.2	2.7	4.9

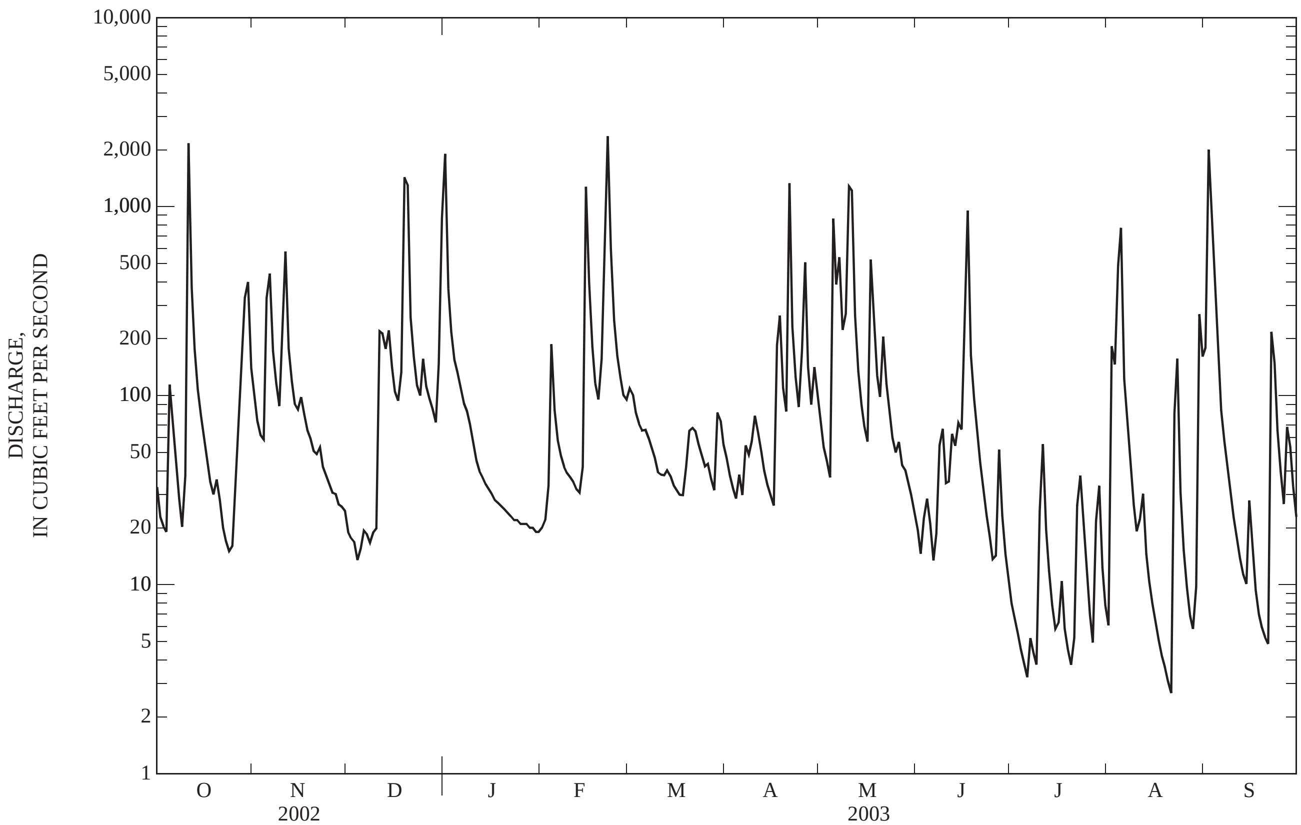
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	34.8	44.9	103	127	177	134	84.4	97.2	85.4	13.8	16.4	37.0
MAX	152	115	206	211	316	296	142	237	293	54.1	87.9	142
(WY)	(2003)	(2003)	(2003)	(2002)	(2000)	(2002)	(2003)	(2003)	(1998)	(1998)	(2003)	(2003)
MIN	0.000	0.18	5.20	44.3	67.4	54.2	28.4	2.61	8.99	0.25	0.000	0.000
(WY)	(2000)	(2000)	(1999)	(2001)	(1999)	(2003)	(1999)	(1999)	(2000)	(2001)	(1999)	(1999)

03295702 BULLSKIN CREEK NEAR SIMPSONVILLE, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1998 - 2003	
ANNUAL TOTAL	47,089.43		48,557.9			
ANNUAL MEAN	129		133		75.3	
HIGHEST ANNUAL MEAN					133	2003
LOWEST ANNUAL MEAN					31.9	1999
HIGHEST DAILY MEAN	3,420	Jan 24	2,350	Feb 22	3,830	Feb 18, 2000
LOWEST DAILY MEAN	0.00	Jul 27	2.7	Aug 21	0.00	Aug 25, 1998
ANNUAL SEVEN-DAY MINIMUM	0.00	Jul 27	4.3	Jul 3	0.00	Sep 5, 1998
MAXIMUM PEAK FLOW			4,670	Dec 19	8,990	Feb 18, 2000
MAXIMUM PEAK STAGE			14.29	Dec 19	21.05	Feb 18, 2000
10 PERCENT EXCEEDS	232		262		146	
50 PERCENT EXCEEDS	39		45		13	
90 PERCENT EXCEEDS	0.00		9.9		0.00	

e Estimated



03295890 BRASHEARS CREEK AT TAYLORSVILLE, KY

LOCATION.--Lat 38°02'13", long 85°20'27", Spencer County, Hydrologic Unit 05140102, on left bank at downstream side of bridge on State Highway 155, at the north edge of Taylorsville, 1.2 mi upstream from Salt River, and at mile 1.2.

DRAINAGE AREA.--259 mi^2

PERIOD OF RECORD.--July 1981 to current year.

GAGE.--Water-stage recorder with telemetry and crest-stage gage. Datum of gage is 466.85 ft above NGVD of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are poor.

COOPEARTION.--Kentucky Natural Resources and Environmental Protection Cabinet and U.S. Army Corps of Engineers, Louisville, District.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 5,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 11	1400	6,460	15.17	May 11	0900	6,200	14.89
Dec 20	0800	*7,810	*16.53	Sep 3	0000	5,110	13.68
Jan 1	1500	6,730	15.45	Sep 22	1800	6,030	14.71
Feb 22	2000	6,900	15.62				

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	150	486	96	5,760	105	454	227	304	116	71	37	351
2	102	352	84	2,440	111	428	196	250	97	59	33	2,660
3	74	273	76	1,300	117	379	168	246	193	48	385	3,690
4	65	247	71	886	350	329	155	203	298	40	408	1,860
5	81	477	75	692	425	302	180	2,380	211	33	1,220	940
6	246	2,060	93	571	e260	283	196	2,870	162	28	544	555
7	161	999	87	465	e200	265	196	1,950	193	24	288	354
8	111	640	81	e360	e160	234	283	1,690	244	22	205	263
9	79	451	67	e280	e140	213	375	2,200	360	28	211	202
10	76	940	81	e230	e140	185	482	2,130	300	568	268	156
11	4,320	2,310	325	e180	e130	166	446	4,300	283	390	147	121
12	2,050	1,130	896	e150	e120	163	356	1,910	461	208	219	96
13	912	701	737	e140	e120	163	289	933	489	120	154	79
14	567	499	919	e130	e130	157	239	597	366	78	93	69
15	410	387	724	e120	2,990	145	204	636	364	59	68	79
16	316	364	550	e110	3,320	134	177	450	697	87	67	117
17	238	319	423	e102	1,400	125	350	689	2,220	53	62	96
18	180	269	426	e86	859	120	1,120	1,250	1,020	42	46	67
19	146	232	1,190	e78	634	151	553	682	580	38	36	53
20	147	209	5,470	e73	723	363	378	499	402	33	28	44
21	144	189	1,650	e70	1,700	352	1,860	706	287	30	24	39
22	122	191	929	e74	5,050	367	1,070	639	213	35	800	3,340
23	98	183	633	e78	4,030	323	618	475	163	74	1,750	e1,650
24	84	155	535	e64	1,620	281	434	357	127	81	594	e1,000
25	74	141	830	e54	1,020	245	360	291	103	76	305	587
26	68	131	645	e46	748	223	1,180	266	85	54	178	350
27	75	122	514	e60	587	207	642	242	176	42	120	267
28	89	117	432	71	498	179	412	202	201	35	86	284
29	304	106	367	78	---	236	338	189	127	31	66	230
30	1,220	102	330	111	---	370	428	166	89	35	61	176
31	702	---	1,090	131	---	265	---	143	---	45	280	---
TOTAL	13,411	14,782	20,426	14,990	27,687	7,807	13,912	29,845	10,627	2,567	8,783	19,775
MEAN	433	493	659	484	989	252	464	963	354	82.8	283	659
MAX	4,320	2,310	5,470	5,760	5,050	454	1,860	4,300	2,220	568	1,750	3,690
MIN	65	102	67	46	105	120	155	143	85	22	24	39
CFSM	1.67	1.90	2.54	1.87	3.82	0.97	1.79	3.72	1.37	0.32	1.09	2.55
IN.	1.93	2.12	2.93	2.15	3.98	1.12	2.00	4.29	1.53	0.37	1.26	2.84

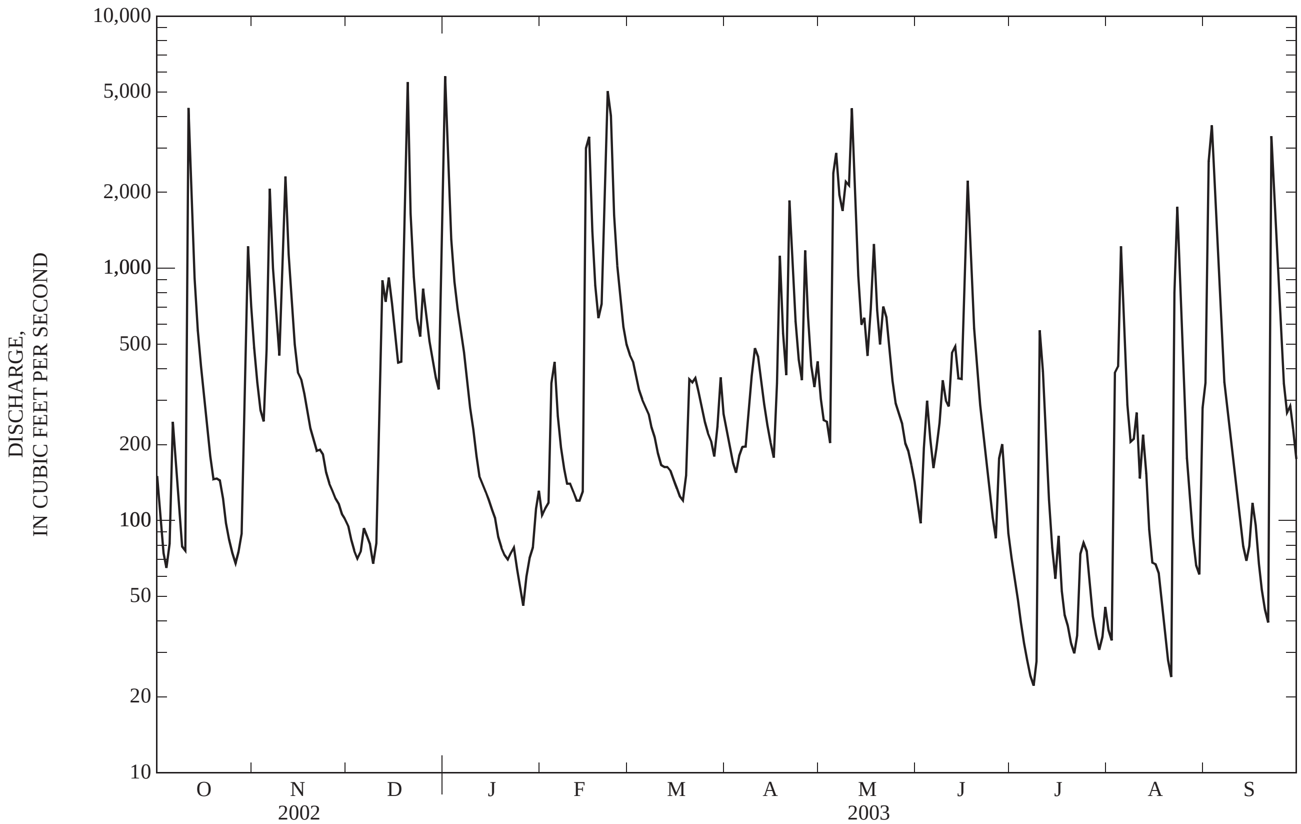
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1981 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	54.1	188	459	545	772	706	441	480	302	93.4	54.7	53.2
MAX	433	586	1,806	1,140	1,984	3,025	841	1,912	1,318	584	291	659
(WY)	(2003)	(1986)	(1991)	(1999)	(1989)	(1997)	(1996)	(1983)	(1997)	(1998)	(1992)	(2003)
MIN	0.012	2.76	51.1	47.0	212	80.5	48.4	37.2	1.90	4.44	0.030	0.001
(WY)	(1989)	(2000)	(2000)	(1986)	(1992)	(1983)	(1986)	(2000)	(1988)	(1994)	(1983)	(1983)

03295890 BRASHEARS CREEK AT TAYLORSVILLE, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1981 - 2003	
ANNUAL TOTAL	184,970.15		184,612			
ANNUAL MEAN	507		506		344	
HIGHEST ANNUAL MEAN					642	1997
LOWEST ANNUAL MEAN					184	2001
HIGHEST DAILY MEAN	8,140	Mar 26	5,760	Jan 1	39,600	Mar 2, 1997
LOWEST DAILY MEAN	0.00	Aug 7	22	Jul 8	0.00	Aug 19, 1983
ANNUAL SEVEN-DAY MINIMUM	0.00	Aug 7	32	Jul 3	0.00	Aug 19, 1983
MAXIMUM PEAK FLOW			7,810	Dec 20	44,800	Mar 2, 1997
MAXIMUM PEAK STAGE			16.53	Dec 20	31.54	Mar 2, 1997
INSTANTANEOUS LOW FLOW					0.08	Oct 1, 1994
ANNUAL RUNOFF (CFSM)	1.96		1.95		1.33	
ANNUAL RUNOFF (INCHES)	26.57		26.52		18.05	
10 PERCENT EXCEEDS	1,190		1,180		838	
50 PERCENT EXCEEDS	159		234		93	
90 PERCENT EXCEEDS	2.1		65		2.2	

e Estimated



03297800 CEDAR CREEK AT HIGHWAY 1442 NEAR SHEPHERDSVILLE, KY

LOCATION.--Lat 37°59'28", long 85°38'28", Bullitt County, Hydrologic Unit 05140102, on upstream side of bridge on Highway 1442, 1.1 mi upstream from Lickskillet Creek, 1.4 mi upstream from the mouth, and 4.2 mi east of Shepherdsville.

DRAINAGE AREA.--12.1 mi^2.

PERIOD OF RECORD.--April 26 to current year.

GAGE.--Water-stage recorder with telemetry.Datum of gage is 410 ft above NGVD of 1929 from topographic map.

REMARKS.--Water year 2002: Records fair except for those estimated, which are poor.
Water year 2003: Records fair except for those estimated, which are poor.

COOPERATION.--Louisville and Jefferson County Metropolitan Sewer District.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

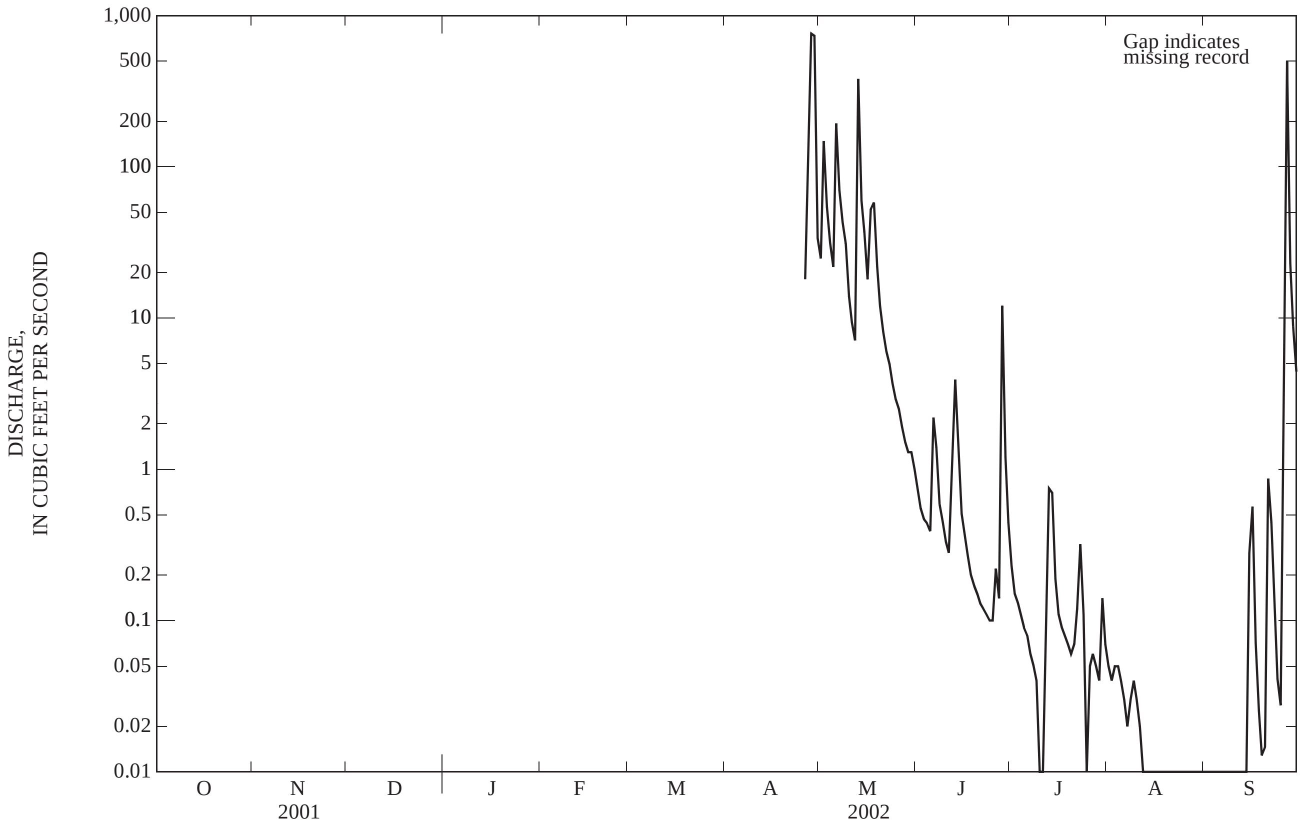
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	25	e0.73	e0.23	e0.05	0.0
2	---	---	---	---	---	---	---	148	e0.55	e0.15	e0.04	0.0
3	---	---	---	---	---	---	---	54	e0.47	e0.13	e0.05	0.0
4	---	---	---	---	---	---	---	31	e0.44	e0.11	e0.05	0.0
5	---	---	---	---	---	---	---	22	e0.39	e0.09	e0.04	0.0
6	---	---	---	---	---	---	---	193	e2.2	e0.08	e0.03	0.0
7	---	---	---	---	---	---	---	e70	e1.4	e0.06	e0.02	0.0
8	---	---	---	---	---	---	---	e43	e0.59	e0.05	e0.03	0.0
9	---	---	---	---	---	---	---	e31	e0.45	e0.04	e0.04	0.0
10	---	---	---	---	---	---	---	e14	e0.33	e0.01	e0.03	0.0
11	---	---	---	---	---	---	---	e9.4	e0.28	e0.01	e0.02	0.0
12	---	---	---	---	---	---	---	e7.1	e1.4	e0.06	e0.01	0.0
13	---	---	---	---	---	---	---	e380	e3.9	e0.75	0.0	0.0
14	---	---	---	---	---	---	---	e60	e1.3	e0.70	0.0	0.0
15	---	---	---	---	---	---	---	e37	e0.51	e0.19	0.0	0.28
16	---	---	---	---	---	---	---	e18	e0.38	e0.11	0.0	0.56
17	---	---	---	---	---	---	---	e52	e0.27	e0.09	0.0	0.07
18	---	---	---	---	---	---	---	e58	e0.20	e0.08	0.0	0.03
19	---	---	---	---	---	---	---	e22	e0.17	e0.07	0.0	0.01
20	---	---	---	---	---	---	---	e12	e0.15	e0.06	0.0	0.01
21	---	---	---	---	---	---	---	e8.1	e0.13	e0.07	0.0	0.86
22	---	---	---	---	---	---	---	e6.0	e0.12	e0.12	0.0	0.45
23	---	---	---	---	---	---	---	e4.9	e0.11	e0.32	0.0	0.10
24	---	---	---	---	---	---	---	e3.7	e0.10	e0.11	0.0	0.04
25	---	---	---	---	---	---	---	e2.9	e0.10	e0.01	0.0	0.03
26	---	---	---	---	---	---	18	e2.5	e0.22	e0.05	0.0	13
27	---	---	---	---	---	---	63	e1.9	e0.14	e0.06	0.0	496
28	---	---	---	---	---	---	758	e1.5	e12	e0.05	0.0	23
29	---	---	---	---	---	---	734	e1.3	e1.2	e0.04	0.0	8.8
30	---	---	---	---	---	---	34	e1.3	e0.45	e0.14	0.0	4.4
31	---	---	---	---	---	---	---	e1.0	---	e0.07	0.0	---
TOTAL	---	---	---	---	---	---	---	1,321.6	30.68	4.11	0.41	547.64
MEAN	---	---	---	---	---	---	---	42.6	1.02	0.13	0.013	18.3
MAX	---	---	---	---	---	---	---	380	12	0.75	0.05	496
MIN	---	---	---	---	---	---	---	1.0	0.10	0.01	0.00	0.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2002 - 2002, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	---	---	---	---	---	---	---	42.6	1.02	0.13	0.013	18.3
MAX	---	---	---	---	---	---	---	42.6	1.02	0.13	0.013	18.3
(WY)	---	---	---	---	---	---	---	(2002)	(2002)	(2002)	(2002)	(2002)
MIN	---	---	---	---	---	---	---	42.6	1.02	0.13	0.013	18.3
(WY)	---	---	---	---	---	---	---	(2002)	(2002)	(2002)	(2002)	(2002)

e Estimated

03297800 CEDAR CREEK AT HIGHWAY 1442 NEAR SHEPHERDSVILLE, KY—Continued



03297800 CEDAR CREEK AT HIGHWAY 1442 NEAR SHEPHERDSVILLE, KY—Continued

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.9	8.7	1.5	e248	5.0	e14	e7.7	6.8	2.2	1.8	8.4	5.8
2	2.1	6.0	1.5	e80	4.2	e12	e6.9	5.8	1.7	1.7	3.7	242
3	1.5	5.6	1.4	e61	10	e10	e5.8	4.9	15	1.4	47	341
4	1.7	6.3	1.2	e47	20	e8.8	5.7	4.1	7.6	1.00	9.3	46
5	3.3	99	2.3	e40	7.7	e7.8	12	267	3.8	0.72	4.4	22
6	1.5	50	2.5	e33	e6.2	e7.0	8.2	36	2.4	2.2	2.3	12
7	1.0	25	1.5	e26	e5.3	e6.6	24	58	9.5	2.8	2.0	8.9
8	0.67	17	2.3	e23	e4.6	e6.3	14	29	8.9	1.2	1.3	6.5
9	0.53	13	4.8	e20	e4.2	e6.0	51	63	7.5	3.9	23	4.4
10	9.8	92	3.8	e16	e3.9	e5.8	60	24	2.9	57	13	3.3
11	262	63	76	e14	e3.7	e5.6	30	107	45	16	83	2.6
12	30	27	35	e12	e3.6	e5.4	20	31	43	4.5	20	2.1
13	14	18	37	e11	e3.4	e5.3	15	19	47	2.3	5.7	1.7
14	7.7	14	34	e10	11	e5.2	12	15	24	1.4	3.0	2.2
15	5.4	13	21	e9.0	341	e5.0	10	16	31	1.0	1.8	3.7
16	3.7	12	16	e8.2	154	e4.9	8.6	13	110	1.1	1.2	1.5
17	2.4	8.9	14	e7.7	55	e4.9	102	38	82	0.89	0.93	0.93
18	1.6	6.7	13	e7.1	39	4.8	41	21	31	0.69	0.76	0.73
19	1.8	6.0	e330	e6.6	45	46	23	13	21	0.50	0.41	0.67
20	16	4.9	e120	e6.2	87	29	17	18	14	0.40	0.30	0.79
21	6.3	5.1	e51	e5.8	125	15	37	32	9.2	0.87	0.25	0.66
22	3.4	5.4	e39	e5.6	571	e12	19	17	6.5	1.8	0.46	61
23	2.3	3.7	e31	e5.4	659	e9.0	14	11	29	0.90	2.4	17
24	1.9	3.3	e50	e5.2	58	e7.4	12	8.2	3.5	0.56	0.55	6.2
25	1.7	2.9	e44	e5.0	40	e6.4	25	8.4	2.7	0.36	0.25	3.4
26	2.2	2.5	e32	e4.8	e30	e5.5	37	8.2	25	0.24	0.19	2.4
27	1.5	2.4	e29	e4.6	e22	e4.9	17	5.8	25	0.18	0.16	3.6
28	4.2	2.1	e27	e4.4	e18	e4.4	13	4.5	6.3	0.14	0.13	2.7
29	45	2.2	e23	e4.1	---	e12	10	4.5	3.6	0.25	0.17	1.7
30	24	2.1	e38	3.7	---	e10	8.6	3.5	2.2	0.28	0.89	1.1
31	13	---	e107	5.6	---	e8.8	---	3.0	---	65	5.3	---
TOTAL	475.10	527.8	1,189.8	740.0	2,336.8	295.8	666.5	895.7	622.5	173.08	242.25	808.58
MEAN	15.3	17.6	38.4	23.9	83.5	9.54	22.2	28.9	20.8	5.58	7.81	27.0
MAX	262	99	330	248	659	46	102	267	110	65	83	341
MIN	0.53	2.1	1.2	3.7	3.4	4.4	5.7	3.0	1.7	0.14	0.13	0.66

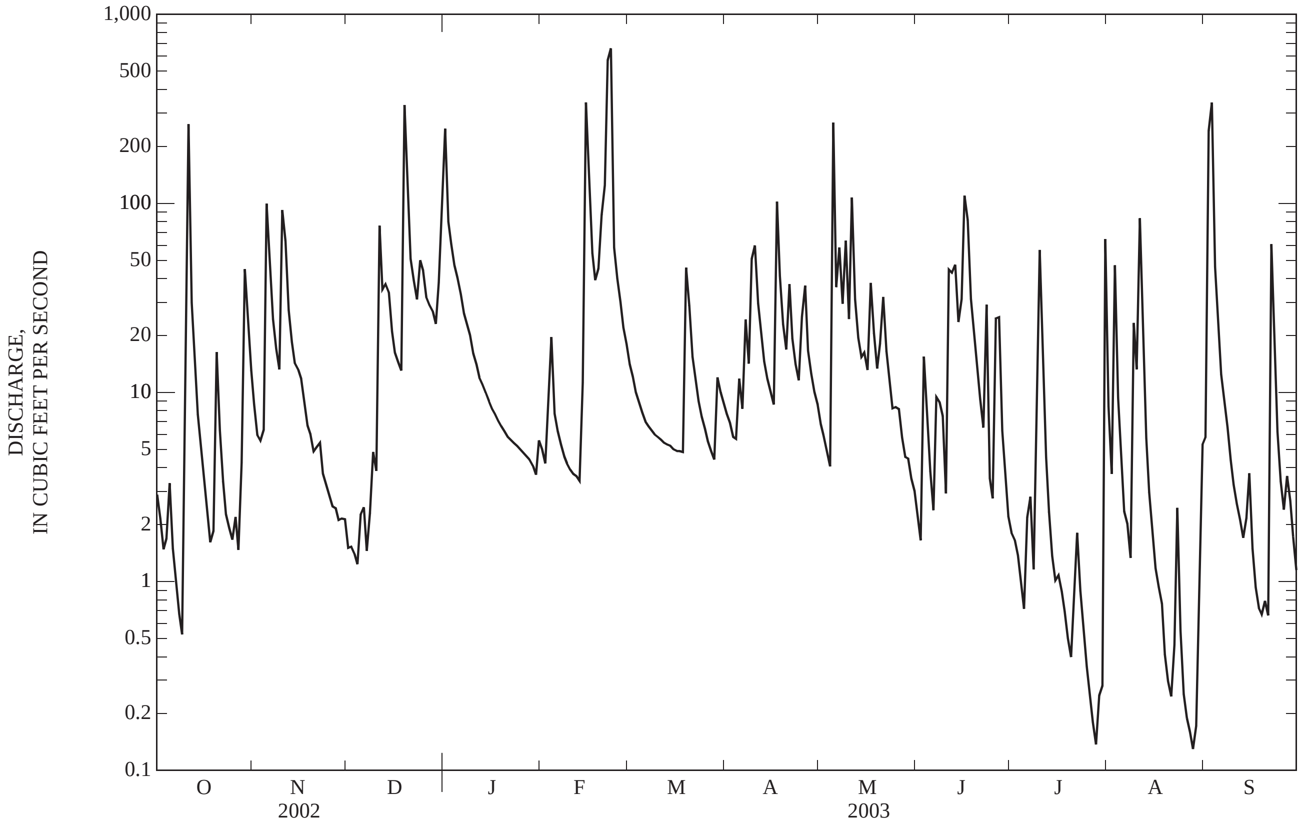
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2002 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	15.3	17.6	38.4	23.9	83.5	9.54	22.2	35.8	10.9	2.86	3.91	22.6
MAX	15.3	17.6	38.4	23.9	83.5	9.54	22.2	42.6	20.7	5.58	7.81	27.0
(WY)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2002)	(2003)	(2003)	(2003)	(2003)
MIN	15.3	17.6	38.4	23.9	83.5	9.54	22.2	28.9	1.02	0.13	0.013	18.3
(WY)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2003)	(2002)	(2002)	(2002)	(2002)

03297800 CEDAR CREEK AT HIGHWAY 1442 NEAR SHEPHERDSVILLE, KY—Continued

SUMMARY STATISTICS	FOR 2003 WATER YEAR		WATER YEARS 2002 - 2003	
ANNUAL TOTAL	73.91			
ANNUAL MEAN	24.6		24.6	
HIGHEST ANNUAL MEAN			24.6	2003
LOWEST ANNUAL MEAN			24.6	2003
HIGHEST DAILY MEAN	659	Feb 23	758	Apr 28, 2002
LOWEST DAILY MEAN	0.13	Aug 28	0.00	Aug 13, 2002
ANNUAL SEVEN-DAY MINIMUM	0.29	Jul 24	0.00	Aug 13, 2002
MAXIMUM PEAK FLOW	1720	May 5	2,260	May 6, 2002
MAXIMUM PEAK STAGE	9.31	May 5	10.95	May 6, 2002
10 PERCENT EXCEEDS	50		50	
50 PERCENT EXCEEDS	6.8		6.8	
90 PERCENT EXCEEDS	1.0		1.0	

e Estimated



03297900 FLOYDS FORK NEAR PEWEE VALLEY, KY

LOCATION.--Lat 38°17'07", long 85°28'03", Oldham County, Hydrologic Unit 05140102, on left bank at downstream side of bridge on State Highway 362, 2.0 mi south of PeWee Valley, 2.2 mi downstream from Curry's Fork, and at mile 44.3.

DRAINAGE AREA.--79.9 mi^2.

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

REVISED RECORDS.--WRD KY-95-1: Drainage area.

GAGE.--Water-stage recorder with telemetry. Datum of gage is 599.892 ft above NGVD of 1929.

REMARKS.--Records fair except for discharges below 5.0 ft^3/s and those estimated, which are poor.

COOPERATION.--Kentucky Natural Resources and Environmental Protection Cabinet.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,600 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 20	0000	*6,400	*18.51	Sep 2	0700	4,660	15.85

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35	77	e22	2,520	58	198	61	104	e25	e8.0	10	495
2	36	56	20	506	e94	171	51	75	e22	6.4	479	2,890
3	35	45	19	311	e210	127	43	66	e30	5.4	472	655
4	57	47	18	216	501	103	40	51	e42	5.0	289	292
5	361	333	18	175	e181	98	57	2,180	e34	4.7	637	130
6	106	570	21	150	e98	131	47	688	e26	4.5	91	74
7	54	176	22	123	e76	128	120	572	e19	5.2	208	43
8	33	111	21	113	e68	100	109	305	e58	4.6	40	29
9	23	76	e50	93	e58	84	83	263	91	4.7	18	19
10	29	452	e130	75	e54	69	104	840	e48	31	9.6	13
11	1,690	1,370	e510	63	e49	63	77	2,200	e38	84	7.7	11
12	377	244	338	e58	e46	61	60	431	130	23	8.9	8.1
13	160	139	225	e50	e43	63	48	193	76	10	5.6	7.2
14	88	98	354	e46	e200	60	40	119	49	7.2	3.3	7.3
15	59	93	170	e43	e1,300	53	36	100	995	5.9	2.3	31
16	46	136	116	e38	e720	49	32	96	1,300	7.9	1.9	19
17	34	97	269	e35	e430	45	517	1,200	1,760	7.1	1.2	8.3
18	29	74	499	e32	231	44	762	522	257	4.8	1.1	6.7
19	21	65	2,220	e30	113	e160	201	225	144	4.5	1.0	6.3
20	25	62	2,110	e29	144	e200	117	192	e96	4.4	e0.92	6.0
21	24	52	347	e27	706	e140	898	653	e70	9.4	e0.86	6.0
22	19	61	205	e26	2,660	95	278	214	e50	32	1.0	65
23	17	50	136	e24	1,100	78	144	128	e39	144	271	140
24	14	42	119	e23	369	63	100	86	e30	33	15	37
25	15	36	244	e22	221	55	89	69	e23	13	3.9	16
26	32	33	141	e20	161	56	809	108	e19	7.4	1.9	10
27	24	31	114	e19	132	51	217	72	e15	5.4	1.3	1,040
28	31	29	99	e18	132	43	119	72	e12	17	75	240
29	257	27	86	e28	---	133	320	54	e11	79	23	98
30	261	e25	447	e46	---	125	169	e39	e9.4	17	1,360	51
31	113	---	1,130	e33	---	76	---	e30	---	10	586	---
TOTAL	4,105	4,707	10,220	4,992	10,155	2,922	5,748	11,947	5,518.4	605.5	4,626.48	6,453.9
MEAN	132	157	330	161	363	94.3	192	385	184	19.5	149	215
MAX	1,690	1,370	2,220	2,520	2,660	200	898	2,200	1,760	144	1,360	2,890
MIN	14	25	18	18	43	43	32	30	9.4	4.4	0.86	6.0
CFSM	1.66	1.96	4.13	2.02	4.54	1.18	2.40	4.82	2.30	0.24	1.87	2.69
IN.	1.91	2.19	4.76	2.32	4.73	1.36	2.68	5.56	2.57	0.28	2.15	3.00

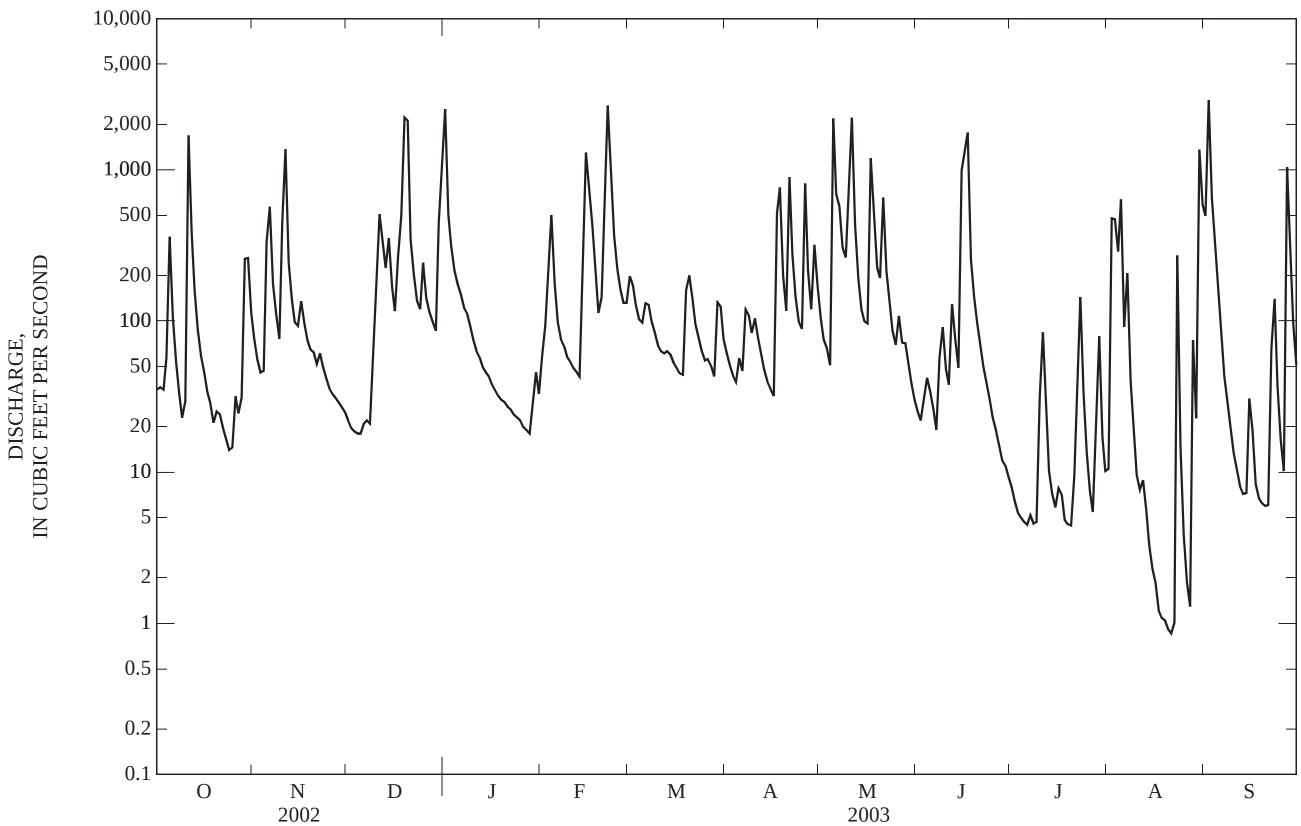
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1991 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	29.0	64.3	140	205	191	246	138	164	130	27.8	33.8	37.8
MAX	132	197	331	320	448	958	306	398	381	66.7	149	215
(WY)	(2003)	(2002)	(1997)	(1996)	(2000)	(1997)	(1996)	(1995)	(1997)	(1995)	(2003)	(2003)
MIN	1.03	3.14	35.8	46.9	43.3	79.0	27.8	12.1	4.07	1.89	0.86	0.091
(WY)	(2000)	(1992)	(1999)	(2001)	(1992)	(2001)	(2001)	(1999)	(1991)	(1991)	(1999)	(1999)

03297900 FLOYDS FORK NEAR PEWEE VALLEY, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1991 - 2003	
ANNUAL TOTAL	66,747.2		72,000.28			
ANNUAL MEAN	183		197		118	
HIGHEST ANNUAL MEAN					198	1997
LOWEST ANNUAL MEAN					57.5	2001
HIGHEST DAILY MEAN	3,480	Jan 24	2,890	Sep 2	10,500	Mar 2, 1997
LOWEST DAILY MEAN	2.5	Sep 19	0.86	Aug 21	0.00	Sep 2, 1999
ANNUAL SEVEN-DAY MINIMUM	3.8	Sep 19	1.1	Aug 16	0.01	Sep 23, 1999
MAXIMUM PEAK FLOW			6,400	Dec 20	18,800	Mar 2, 1997
MAXIMUM PEAK STAGE			18.51	Dec 20	28.60	Mar 2, 1997
ANNUAL RUNOFF (CFSM)	2.29		2.47		1.48	
ANNUAL RUNOFF (INCHES)	31.08		33.52		20.15	
10 PERCENT EXCEEDS	381		500		231	
50 PERCENT EXCEEDS	48		61		31	
90 PERCENT EXCEEDS	7.8		7.8		2.3	

e Estimated



03298000 FLOYDS FORK AT FISHERVILLE, KY

LOCATION.--Lat 38°11'18", long 85°27'37", Jefferson County, Hydrologic Unit 05140102, on left bank on downstream side of bridge on former State Highway 155, at Fisherville, 0.2 mi downstream from Brush Run, 1.4 mi upstream from Pope Lick, and at mile 32.7.

DRAINAGE AREA.--138 mi^2.

PERIOD OF RECORD.--August 1944 to current year. Monthly discharge only for August 1944, published in WSP 1305.

REVISED RECORDS.--WSP 1275: 1946. WSP 1909: 1945(P), 1948(P), 1960(M).

GAGE.--Water-stage recorder with telemetry. Datum of gage is 542.60 ft above NGVD of 1929, from benchmark elevation supplied by Park Aerial Survey.

REMARKS.--Records fair except for discharges below 2.0 ft^3/s and those estimated, which are poor. Diversions by local golf course for irrigation.

COOPERATION.--Louisville and Jefferson County Metropolitan Sewer District.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of January 1937 reached a stage of 16.8 ft, from floodmark.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 6,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 19	2105	*8,070	*11.53	No other peak greater than base discharge.			

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	61	157	41	3,450	87	303	131	190	54	16	18	667
2	42	110	35	806	e258	284	109	148	43	15	720	3,630
3	94	91	33	543	e443	227	95	132	51	13	656	1,010
4	76	91	30	395	654	192	88	106	83	11	468	507
5	615	480	34	324	289	177	126	2,440	66	11	790	287
6	217	920	34	274	170	208	112	885	45	10	246	175
7	105	354	35	223	e125	212	267	915	39	10	343	115
8	54	226	37	201	e102	174	236	531	41	10	135	87
9	34	159	50	175	e88	151	204	597	137	67	189	61
10	84	461	59	143	e80	126	229	1,250	73	154	153	46
11	2,550	1,720	736	117	e78	114	180	2,410	76	192	88	36
12	658	447	600	92	e79	115	145	639	253	68	53	29
13	328	259	412	e78	84	120	119	351	146	32	44	24
14	191	193	591	e69	110	112	103	232	119	20	30	51
15	127	170	344	e63	2,090	103	94	185	1,150	15	31	128
16	95	230	238	e57	948	96	87	176	1,480	16	18	72
17	73	184	363	e53	e540	91	726	1,480	2,340	15	16	39
18	54	141	753	e51	276	90	1,010	725	479	14	15	25
19	43	120	3,050	e48	232	278	389	380	e223	14	14	21
20	51	107	3,080	e46	420	347	413	265	153	13	14	19
21	48	101	599	e44	1,080	250	1,910	774	105	12	13	18
22	39	110	379	43	3,680	210	522	337	72	28	13	243
23	31	95	265	41	1,630	170	309	215	e53	116	267	327
24	26	79	253	41	612	141	217	152	e43	68	76	122
25	25	69	488	e40	409	122	480	129	e50	30	28	66
26	43	60	299	e39	e350	124	1,190	181	e71	20	16	43
27	46	57	226	e38	262	113	427	137	92	14	14	971
28	66	52	195	39	252	97	256	133	39	13	79	389
29	362	48	169	46	---	255	413	101	25	59	117	170
30	503	46	639	89	---	e245	293	89	19	38	1,140	104
31	238	---	1,590	71	---	e160	---	69	---	19	715	---
TOTAL	6,979	7,337	15,657	7,739	15,428	5,407	10,880	16,354	7,620	1,133	6,519	9,482
MEAN	225	245	505	250	551	174	363	528	254	36.5	210	316
MAX	2,550	1,720	3,080	3,450	3,680	347	1,910	2,440	2,340	192	1,140	3,630
MIN	25	46	30	38	78	90	87	69	19	10	13	18
CFSM	1.63	1.77	3.66	1.81	3.99	1.26	2.63	3.82	1.84	0.26	1.52	2.29
IN.	1.88	1.98	4.22	2.09	4.16	1.46	2.93	4.41	2.05	0.31	1.76	2.56

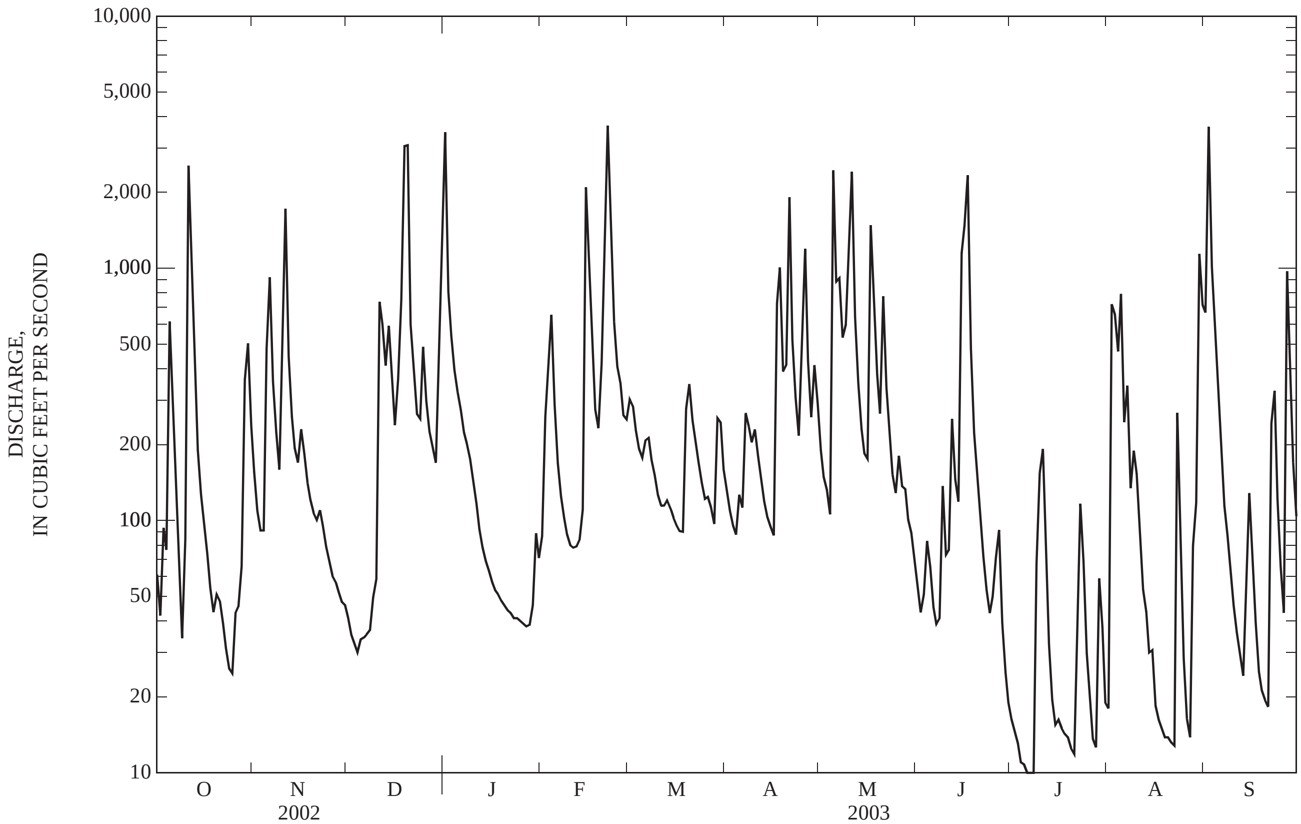
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1944 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	36.9	107	235	295	367	398	277	216	131	63.1	45.7	45.6
MAX	423	485	1,025	1,252	990	1,639	1,021	971	622	331	290	1,020
(WY)	(1978)	(1974)	(1991)	(1950)	(1956)	(1997)	(1970)	(1983)	(1997)	(1973)	(1979)	(1979)
MIN	0.000	0.000	0.000	3.54	12.4	40.3	34.0	12.2	0.90	1.73	0.048	0.000
(WY)	(1949)	(1954)	(1954)	(1977)	(1954)	(1954)	(1959)	(1965)	(1988)	(1954)	(1962)	(1948)

03298000 FLOYDS FORK AT FISHERVILLE, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1944 - 2003	
ANNUAL TOTAL	101,069.9		110,535			
ANNUAL MEAN	277		303		184	
HIGHEST ANNUAL MEAN					382	1979
LOWEST ANNUAL MEAN					29.0	1954
HIGHEST DAILY MEAN	5,960	Jan 24	3,680	Feb 22	20,000	Mar 2, 1997
LOWEST DAILY MEAN	1.2	Jul 9	10	Jul 6	0.00	Sep 7, 1945
ANNUAL SEVEN-DAY MINIMUM	1.6	Aug 8	11	Jul 2	0.00	Sep 7, 1945
MAXIMUM PEAK FLOW			8,070	Dec 19	42,100	Mar 2, 1997
MAXIMUM PEAK STAGE			11.53	Dec 19	17.39	Mar 2, 1997
INSTANTANEOUS LOW FLOW					0.00	Sep 7, 1945
ANNUAL RUNOFF (CFSM)	2.01		2.19		1.33	
ANNUAL RUNOFF (INCHES)	27.24		29.80		18.11	
10 PERCENT EXCEEDS	616		717		379	
50 PERCENT EXCEEDS	81		120		37	
90 PERCENT EXCEEDS	4.2		25		0.50	

e Estimated



03298135 CHENOWETH RUN AT RUCKRIEGAL PARKWAY NEAR JEFFERSONTOWN, KY

LOCATION.--Lat 38°11'41", long 85°33'26", Jefferson County, Hydrologic Unit 05140102, on right downstream bank at bridge on Ruckriegal Parkway, 500 feet south of Penion Drive, near Jeffersontown.

DRAINAGE AREA.--5.47 mi^2.

PERIOD OF RECORD.--May 5, 1993 to February 26, 1998; January 19, 1999 to current year.

GAGE.--Water-stage recorder with telemetry and crest-stage gage.

REMARKS.--Records good except for estimated records which are poor.

COOPERATION.--Louisville and Jefferson County Metropolitan Sewer District.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,100 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Apr 20	2040	*1,270	*6.29	No other peak greater than base discharge.			

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.6	3.5	2.1	129	4.1	5.2	2.6	3.4	2.3	e1.2	1.1	57
2	12	3.5	2.1	22	2.6	4.3	2.3	3.2	2.2	e1.1	44	137
3	3.4	3.6	2.0	19	11	3.7	2.2	2.6	13	e1.0	44	27
4	42	5.8	1.8	11	17	3.5	5.8	4.5	3.4	e0.94	30	11
5	15	48	2.4	9.2	4.4	3.4	11	114	2.3	e0.88	4.1	e9.0
6	4.4	13	3.1	7.1	3.5	6.1	10	10	2.3	7.2	2.0	e7.3
7	3.0	6.9	2.7	5.7	4.2	3.3	19	40	3.7	1.8	1.5	e6.4
8	2.3	5.0	6.1	5.0	3.4	2.9	5.2	30	18	1.1	1.3	e5.8
9	1.7	4.6	6.0	4.4	2.9	2.5	11	40	3.6	22	e1.1	e5.1
10	40	50	3.7	3.7	4.0	2.2	6.2	24	2.0	16	e1.0	e4.7
11	106	19	48	3.0	3.5	2.2	4.0	50	54	10	21	e4.5
12	11	7.7	12	e2.8	2.8	4.2	3.3	9.5	14	2.5	2.7	e4.3
13	6.1	5.6	14	e2.6	2.5	3.4	2.8	6.1	5.4	1.4	1.3	e4.0
14	4.2	4.6	16	e2.5	15	2.5	2.6	4.5	3.1	1.3	e1.1	e19
15	3.5	9.5	8.0	e2.3	92	2.2	2.5	6.6	20	1.3	e1.0	e11
16	2.9	6.4	6.2	e2.2	19	2.1	2.5	3.5	39	2.8	e0.97	e5.4
17	2.5	4.4	48	e2.1	11	1.9	90	95	15	1.1	2.8	e4.7
18	2.3	3.5	19	e1.9	8.3	9.2	11	11	6.3	e0.95	1.1	e4.3
19	4.8	4.1	196	e1.8	13	49	6.6	6.7	3.7	e0.90	e0.96	e4.0
20	7.1	3.2	74	e1.7	36	9.8	127	17	2.6	e0.88	e0.90	e3.9
21	2.6	3.8	16	e1.6	48	11	35	8.3	2.1	6.2	e0.86	e3.7
22	2.4	5.7	11	e1.5	118	5.6	9.6	4.9	1.8	4.2	7.1	e41
23	1.8	3.0	7.6	e1.4	29	4.4	6.4	3.6	1.6	2.8	1.8	e13
24	1.8	2.7	13	e1.4	16	3.5	4.6	3.1	1.5	1.4	0.93	e6.6
25	6.4	2.6	31	e1.3	9.8	3.1	82	14	1.5	1.1	0.80	e5.6
26	2.9	2.5	9.6	e1.2	7.6	6.4	25	5.9	28	0.95	0.80	e4.9
27	2.3	2.7	7.2	e1.6	6.6	3.0	8.9	4.9	5.6	e0.88	1.1	e25
28	13	2.4	6.1	2.0	6.4	2.6	6.2	3.3	1.8	1.9	44	e6.9
29	28	2.4	5.1	6.2	---	20	5.6	4.6	1.5	1.5	5.3	e5.6
30	8.4	2.3	36	2.7	---	4.7	3.8	2.9	1.3	0.94	59	e5.1
31	4.6	---	79	2.5	---	3.2	---	2.6	---	7.0	28	---
TOTAL	351.0	242.0	694.8	262.4	501.6	191.1	514.7	539.7	262.6	105.22	313.62	452.8
MEAN	11.3	8.07	22.4	8.46	17.9	6.16	17.2	17.4	8.75	3.39	10.1	15.1
MAX	106	50	196	129	118	49	127	114	54	22	59	137
MIN	1.7	2.3	1.8	1.2	2.5	1.9	2.2	2.6	1.3	0.88	0.80	3.7

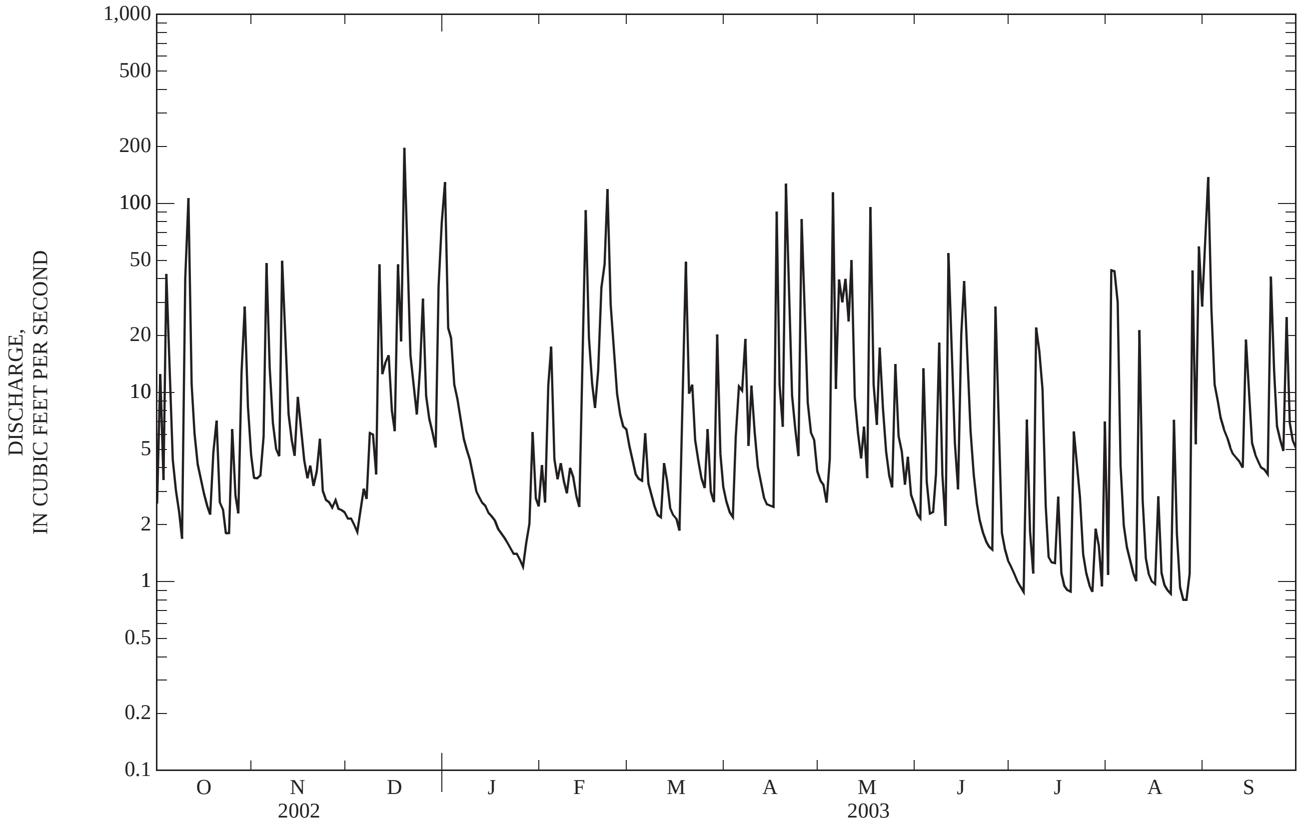
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1999 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	7.64	7.45	16.5	10.0	13.2	11.4	12.4	10.7	6.85	2.08	3.65	7.82
MAX	14.3	15.3	26.0	17.6	21.5	25.6	22.8	20.6	12.3	3.39	10.1	15.1
(WY)	(2002)	(2002)	(2002)	(2002)	(2000)	(2002)	(2002)	(2002)	(1999)	(2003)	(2003)	(2003)
MIN	2.36	1.80	8.57	2.94	7.00	4.56	2.45	3.40	1.44	0.80	0.47	0.31
(WY)	(2001)	(2000)	(2000)	(2001)	(2002)	(2001)	(2001)	(2000)	(2001)	(1999)	(1999)	(1999)

03298135 CHENOWETH RUN AT RUCKRIEGAL PARKWAY NEAR JEFFERSONTOWN, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1999 - 2003	
ANNUAL TOTAL	4,878.75		4,431.54			
ANNUAL MEAN	13.4		12.1		9.46	
HIGHEST ANNUAL MEAN					14.5	2002
LOWEST ANNUAL MEAN					4.37	2001
HIGHEST DAILY MEAN	264	Sep 27	196	Dec 19	402	Feb 18, 2000
LOWEST DAILY MEAN	0.14	Sep 13	0.80	Aug 25	0.02	Jul 17, 2000
ANNUAL SEVEN-DAY MINIMUM	0.21	Sep 7	1.1	Jun 29	0.03	Jul 21, 2000
MAXIMUM PEAK FLOW			1,270	Apr 20	4,680	Mar 1, 1997
MAXIMUM PEAK STAGE			6.29	Apr 20	9.33	Mar 1, 1997
10 PERCENT EXCEEDS	29		30		19	
50 PERCENT EXCEEDS	3.8		4.4		2.6	
90 PERCENT EXCEEDS	0.44		1.4		0.41	

e Estimated



03298150 CHENOWETH RUN AT GELHAUS LANE NEAR FERN CREEK, KY

LOCATION.--Lat 38°09'36", long 85°32'32", Jefferson County, Hydrologic Unit 05140102, at bridge on Gelhaus Lane, 100 ft above Razor Branch, near Fern Creek, and at mile 2.3.

DRAINAGE AREA.--11.6 mi^2.

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

GAGE.--Water-stage recorder with telemetry and crest-stage gage.

REMARKS.--Records good except for periods of estimated records which are poor. Diversions by a package treatment plant about 2.0 miles upstream.

COOPERATION.--Louisville and Jefferson County Metropolitan Sewer District.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Apr 20	2250	*2,030	*9.75	No other peak greater than base discharge.			

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.8	12	9.4	326	13	18	11	12	8.2	7.2	8.1	108
2	22	11	9.3	63	11	16	9.9	11	7.9	6.7	76	262
3	11	11	9.3	50	16	14	9.4	11	19	6.4	79	75
4	68	14	9.0	35	43	12	9.2	9.8	11	6.0	62	34
5	26	93	10	30	17	13	24	226	9.2	5.6	20	20
6	14	39	11	25	14	15	14	38	9.2	13	11	15
7	11	22	12	21	14	12	44	88	11	8.2	9.4	12
8	9.7	16	13	20	13	10	19	56	29	6.5	8.4	11
9	9.2	14	16	17	12	9.7	24	135	12	44	7.9	9.6
10	57	95	13	15	14	8.9	21	70	9.0	36	7.5	9.0
11	259	51	89	13	13	8.6	16	107	95	22	21	8.5
12	33	25	37	13	12	10	13	34	40	10	9.9	8.1
13	19	20	34	12	12	11	11	23	19	7.8	7.6	7.6
14	14	16	40	12	24	9.7	11	18	13	7.3	7.1	38
15	12	22	25	11	208	8.7	10	19	30	7.0	6.8	23
16	11	19	21	e10	60	8.4	10	15	68	10	6.6	10
17	9.5	15	75	e9.6	37	8.2	223	192	38	6.9	10	8.6
18	8.8	13	47	e11	28	8.3	45	40	22	6.4	6.9	7.9
19	9.9	14	396	e9.8	32	84	27	25	15	6.0	6.4	7.7
20	16	12	201	e9.4	71	38	172	31	12	5.6	6.6	7.1
21	9.7	11	32	e8.9	101	30	232	29	9.8	13	6.1	7.1
22	8.9	15	20	e8.4	308	21	41	19	8.8	15	13	82
23	8.1	11	14	e8.0	72	16	27	14	8.4	12	9.3	21
24	7.9	11	17	e7.6	45	14	21	12	7.9	9.0	6.7	12
25	13	10	57	e7.2	32	12	155	20	7.5	6.7	6.2	9.9
26	9.9	10	19	e6.9	26	16	89	19	41	6.2	6.0	8.9
27	8.5	10	14	e6.8	22	12	30	13	17	5.8	6.2	49
28	22	9.8	12	9.2	21	10	20	11	9.0	7.3	67	13
29	56	9.3	10	14	---	34	17	12	7.8	8.4	16	10
30	25	9.6	45	11	---	18	14	9.9	7.4	6.1	78	10
31	16	---	157	9.9	---	13	---	8.9	---	15	50	---
TOTAL	814.9	640.7	1,474.0	810.7	1,291	519.5	1,369.5	1,328.6	602.1	333.1	642.7	905.0
MEAN	26.3	21.4	47.5	26.2	46.1	16.8	45.6	42.9	20.1	10.7	20.7	30.2
MAX	259	95	396	326	308	84	232	226	95	44	79	262
MIN	7.9	9.3	9.0	6.8	11	8.2	9.2	8.9	7.4	5.6	6.0	7.1

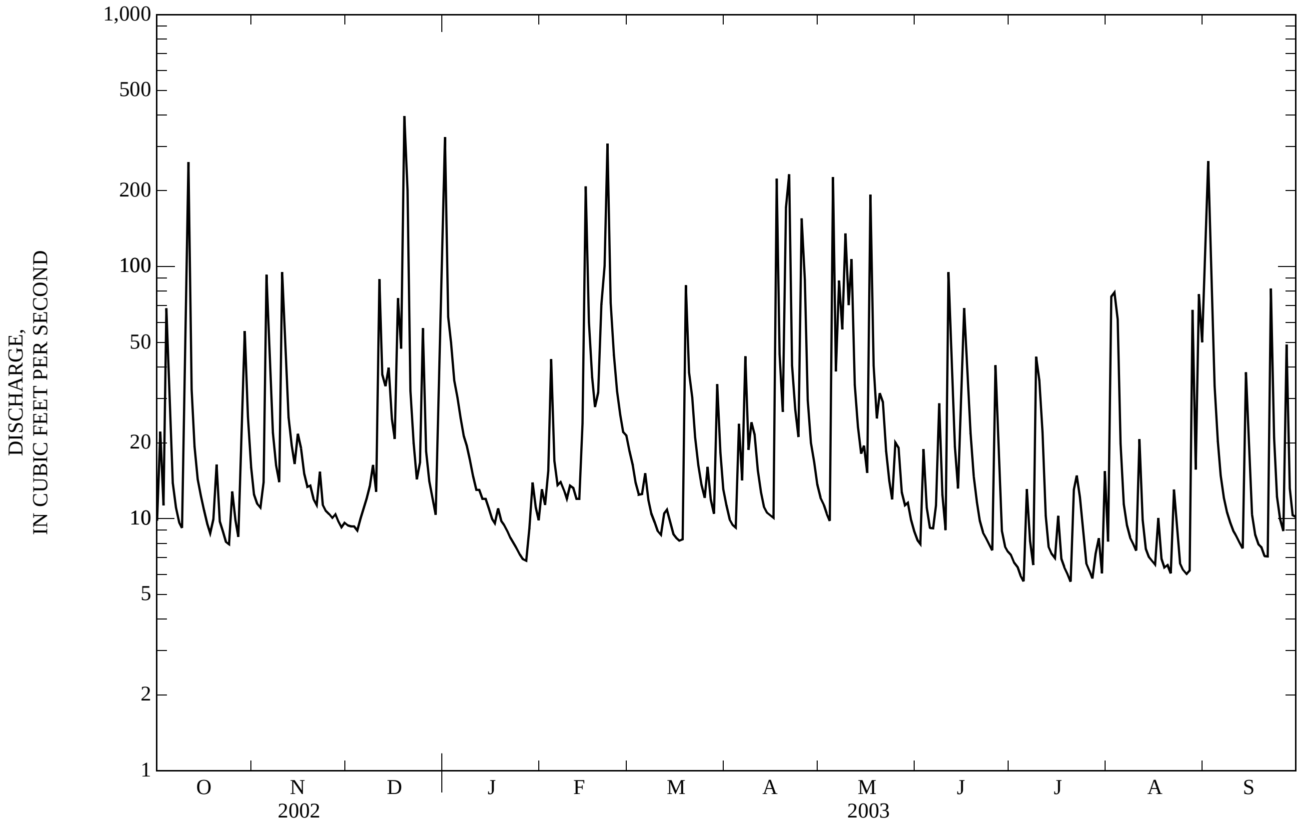
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	12.6	15.0	29.7	32.2	33.8	44.0	32.4	28.6	28.9	9.65	10.6	15.8
MAX	26.3	29.9	47.5	54.1	54.3	119	57.7	53.9	73.4	20.2	20.7	30.2
(WY)	(2003)	(2002)	(2003)	(1999)	(2000)	(1997)	(2002)	(2002)	(1997)	(1998)	(2003)	(2003)
MIN	3.81	7.23	15.6	9.24	17.4	15.7	9.17	11.3	9.29	5.52	4.76	3.73
(WY)	(1998)	(2000)	(1999)	(2001)	(2002)	(2001)	(2001)	(1999)	(2001)	(2002)	(1999)	(1999)

03298150 CHENOWETH RUN AT GELHAUS LANE NEAR FERN CREEK, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1997 - 2003	
ANNUAL TOTAL	11,607.6		10,731.8			
ANNUAL MEAN	31.8		29.4		24.4	
HIGHEST ANNUAL MEAN					32.3	1997
LOWEST ANNUAL MEAN					13.7	2001
HIGHEST DAILY MEAN	578	Jan 24	396	Dec 19	1,590	Mar 1, 1997
LOWEST DAILY MEAN	4.0	Aug 10	5.6	Jul 5	1.9	Mar 10, 2000
ANNUAL SEVEN-DAY MINIMUM	4.2	Aug 7	6.7	Jun 29	2.3	Mar 4, 2000
MAXIMUM PEAK FLOW			2,030	Apr 20	4,810	Mar 2, 1997
MAXIMUM PEAK STAGE			9.75	Apr 20	14.72	Mar 2, 1997
10 PERCENT EXCEEDS	67		67		45	
50 PERCENT EXCEEDS	11		13		9.8	
90 PERCENT EXCEEDS	4.8		7.6		4.3	

e Estimated



03298200 FLOYDS FORK AT BARDSTOWN ROAD NEAR MOUNT WASHINGTON, KY

LOCATION.--Lat 38°05'07", long 85°33'18", Jefferson County, Hydrologic Unit 05140102, on right downstream side of bridge on U.S. Highway 31E, 0.2 mi below Old Mans Run, 2.0 mi north of Mount Washington, and 18.7 miles above the mouth.

DRAINAGE AREA.--213 mi^2.

PERIOD OF RECORD.--November 2000 to current year.

GAGE.--Water-stage recorder with telemetry and crest-stage gage.

REMARKS.--Records fair except for those estimated, which are poor.

COOPERATION.--Louisville and Jefferson County Metropolitan Sewer District.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	119	221	47	7,150	112	415	202	280	92	35	39	950
2	93	153	41	1,380	138	401	170	218	77	30	1,230	7,420
3	120	121	37	765	144	343	146	194	96	26	956	2,790
4	123	119	33	551	717	290	133	159	116	24	707	862
5	640	801	36	457	392	267	202	3,460	107	21	1,140	446
6	318	1,500	46	390	234	280	178	2,030	81	20	372	279
7	167	497	60	328	190	300	404	1,440	79	27	351	197
8	105	317	46	293	149	250	366	774	88	23	222	139
9	75	227	62	259	149	217	325	1,250	148	49	136	107
10	146	734	71	216	145	185	371	1,440	123	511	326	83
11	5,160	2,820	1,020	177	148	168	293	4,300	170	319	304	68
12	1,030	615	866	147	136	171	231	950	449	133	108	56
13	453	374	543	e125	119	180	188	499	246	73	78	46
14	275	273	732	e114	138	170	158	354	160	46	63	60
15	188	235	463	e105	4,070	154	140	440	1,180	34	47	219
16	141	279	331	e94	1,620	144	e128	315	1,680	61	59	110
17	109	244	419	e88	661	136	e2,640	2,520	2,860	36	43	70
18	80	188	920	e82	440	135	1,900	1,210	601	29	32	47
19	65	155	4,150	e76	374	610	563	537	308	26	26	36
20	87	134	6,870	e72	722	569	390	392	208	23	24	31
21	75	124	884	e68	1,640	426	3,990	889	145	28	23	28
22	57	133	533	e64	6,640	352	766	459	106	119	22	463
23	40	120	390	e61	3,320	283	471	314	84	150	176	428
24	30	97	453	e59	899	237	351	233	68	160	133	206
25	30	85	802	e57	611	202	610	201	55	67	57	117
26	39	76	470	e55	482	202	2,480	253	128	42	34	82
27	53	73	354	e53	414	183	639	203	269	32	27	1,140
28	90	66	302	52	393	158	412	187	92	26	344	515
29	448	61	258	77	---	343	435	155	62	28	273	226
30	694	56	690	109	---	389	428	136	44	68	1,510	138
31	335	---	2,870	111	---	253	---	111	---	50	1,410	---
TOTAL	11,385	10,898	24,799	13,635	25,197	8,413	19,710	25,903	9,922	2,316	10,272	17,359
MEAN	367	363	800	440	900	271	657	836	331	74.7	331	579
MAX	5,160	2,820	6,870	7,150	6,640	610	3,990	4,300	2,860	511	1,510	7,420
MIN	30	56	33	52	112	135	128	111	44	20	22	28

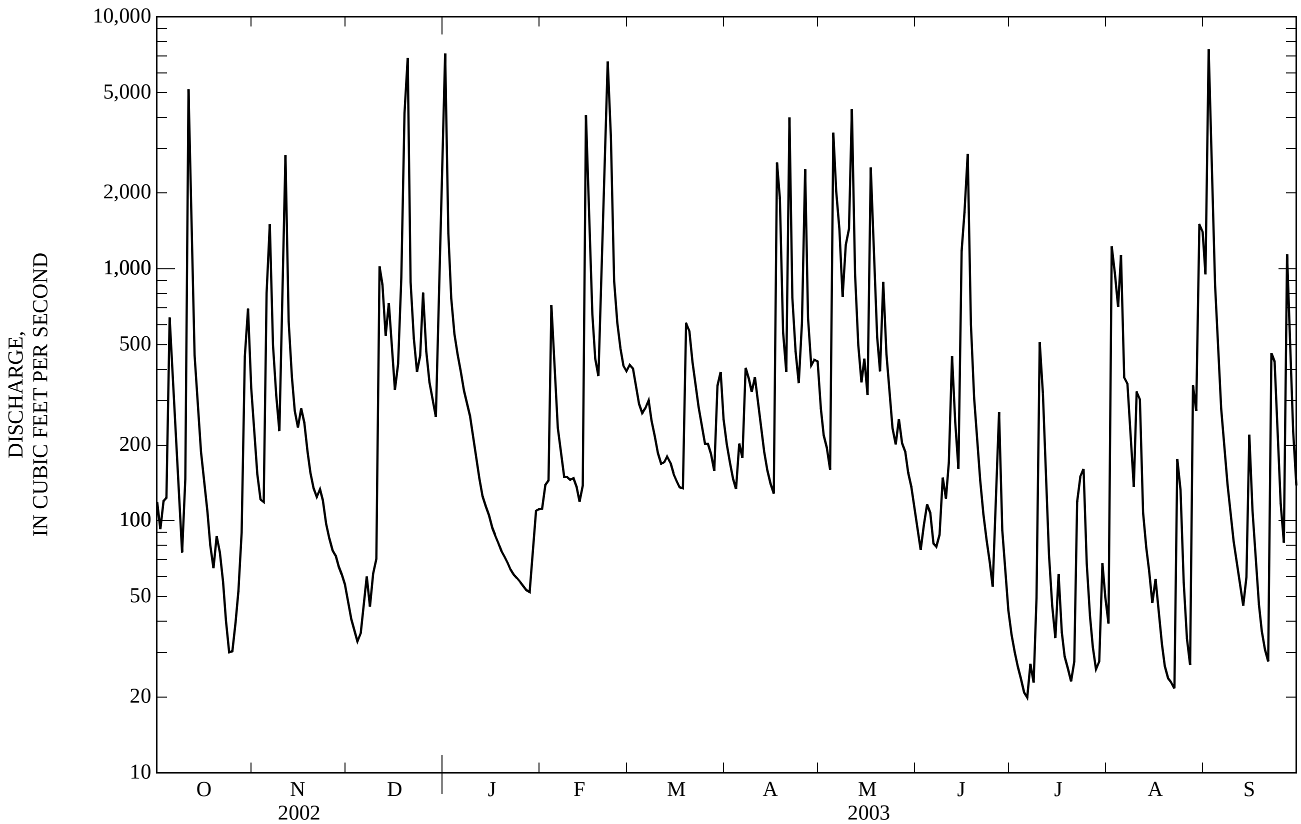
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2001 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	292	301	586	354	536	517	483	589	272	63.0	121	305
MAX	367	445	800	501	900	1,018	676	836	349	79.4	331	579
(WY)	(2003)	(2002)	(2003)	(2002)	(2003)	(2002)	(2002)	(2003)	(2002)	(2001)	(2003)	(2003)
MIN	216	94.1	402	122	186	263	116	166	137	34.8	10.7	11.0
(WY)	(2002)	(2001)	(2001)	(2001)	(2002)	(2001)	(2001)	(2001)	(2001)	(2002)	(2002)	(2001)

03298200 FLOYDS FORK AT BARDSTOWN ROAD NEAR MOUNT WASHINGTON, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 2001 - 2003	
ANNUAL TOTAL	164,980.1		179,809			
ANNUAL MEAN	452		493		459	
HIGHEST ANNUAL MEAN					493	2003
LOWEST ANNUAL MEAN					425	2002
HIGHEST DAILY MEAN	8,710	Mar 26	7,420	Sep 2	8,710	Mar 26, 2002
LOWEST DAILY MEAN	8.1	Aug 12	20	Jul 6	3.0	Sep 30, 2001
ANNUAL SEVEN-DAY MINIMUM	8.7	Aug 20	24	Jul 2	4.1	Sep 13, 2001
MAXIMUM PEAK FLOW			11,300	Dec 20	13,900	Jan 24, 2002
MAXIMUM PEAK STAGE			17.78	Dec 20	19.65	Jan 24, 2002
INSTANTANEOUS LOW FLOW			19	Jul 5	19	Jul 5, 2003
10 PERCENT EXCEEDS	898		1,020		955	
50 PERCENT EXCEEDS	120		185		140	
90 PERCENT EXCEEDS	13		42		21	

e Estimated



03298300 PENNSYLVANIA RUN AT MOUNT WASHINGTON ROAD NEAR LOUISVILLE, KY

LOCATION.--Lat 38°05'15", long 85°38'33", Jefferson County, Hydrologic Unit 05140102, at bridge on Mt. Washington Road, near Louisville, Ky. and at mile 1.9.

DRAINAGE AREA.--6.4 mi^2.

PERIOD OF RECORD.--October 1998 to current year.

GAGE.--Water-stage recorder with telemetry and crest-stage gage. Datum of gage is 430.38 ft above NGVD of 1929.

REMARKS.--Records good except for those estimated, which are rated poor.

COOPERATION.--Louisville and Jefferson County Metropolitan Sewer District.

PEAKS ABOVE BASE.--Peak discharges above base of 400 ft^3/s and maximum*.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 400 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 19	2220	*587	*4.96	No other peak greater than base discharge.			

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.3	3.7	1.2	147	2.3	9.5	3.4	6.4	1.5	0.61	e1.1	e54
2	2.4	2.9	1.1	39	2.2	8.3	3.2	5.2	1.2	0.57	e41	e96
3	2.7	2.8	1.1	27	2.3	6.7	2.9	4.1	2.4	0.61	e34	e56
4	3.6	3.3	1.1	19	8.4	5.7	2.7	3.1	2.7	0.58	e8.8	33
5	7.2	26	1.8	15	5.0	5.3	5.2	86	2.4	0.60	e4.1	19
6	2.4	26	1.3	11	3.5	4.9	3.4	36	2.1	3.0	e2.4	12
7	1.5	10	1.2	8.9	3.6	3.9	16	29	2.4	0.59	e1.7	5.1
8	1.1	6.4	1.4	8.2	2.8	3.4	9.6	21	2.5	0.49	e1.3	4.7
9	0.91	4.8	1.6	7.3	2.6	3.1	7.4	46	2.7	1.0	e0.98	5.1
10	11	24	2.0	5.8	3.0	2.5	9.4	30	1.8	7.0	e0.82	3.9
11	98	31	28	4.2	3.1	2.4	7.4	52	11	2.8	e16	4.0
12	17	12	15	3.3	2.9	2.7	5.7	27	19	1.2	e4.9	3.7
13	6.5	7.2	12	3.1	2.3	3.0	4.3	16	6.3	0.70	e1.6	3.4
14	2.9	5.2	13	3.0	2.6	2.6	3.4	11	3.4	0.48	e1.2	8.3
15	2.0	5.4	8.6	2.5	58	2.4	2.9	32	2.2	0.45	e1.0	14
16	1.6	5.2	6.3	2.3	60	2.5	2.5	28	2.1	e6.4	e0.85	5.1
17	1.1	3.5	28	2.4	26	2.4	31	99	2.4	e2.2	e2.5	3.5
18	0.94	2.7	21	2.1	17	2.6	32	39	2.5	e1.2	e1.5	2.7
19	1.2	2.4	138	2.4	14	17	12	22	1.8	e0.83	e1.2	2.1
20	1.9	2.1	131	2.1	24	20	7.1	15	1.2	e0.56	e1.0	1.7
21	1.3	2.3	28	1.9	42	12	85	20	0.86	e4.7	e0.84	1.9
22	1.1	2.3	18	1.7	127	8.3	27	12	0.75	e3.0	e6.2	27
23	0.92	1.8	12	1.6	67	6.7	16	8.3	0.68	e1.8	e2.6	15
24	0.86	1.6	13	1.4	32	5.6	12	5.7	0.61	e1.1	e1.1	6.1
25	1.1	1.5	39	1.4	21	4.9	23	6.3	0.51	e0.86	e0.95	4.0
26	1.3	1.4	18	1.5	16	5.3	90	6.7	4.1	e0.70	e0.83	3.2
27	1.0	1.4	13	1.5	13	4.3	23	4.3	7.9	e0.61	e0.78	17
28	4.0	1.3	9.8	1.5	11	3.6	14	3.2	2.1	e1.5	e43	5.9
29	19	1.3	8.0	2.2	---	7.8	10	2.7	1.0	e1.0	e4.4	3.0
30	14	1.3	16	2.1	---	6.3	7.7	2.1	0.70	e0.72	e51	2.1
31	6.2	---	66	1.9	---	4.0	---	1.9	---	e5.3	e27	---
TOTAL	218.03	202.8	655.5	334.3	574.6	179.7	479.2	681.0	92.81	53.16	266.65	422.5
MEAN	7.03	6.76	21.1	10.8	20.5	5.80	16.0	22.0	3.09	1.71	8.60	14.1
MAX	98	31	138	147	127	20	90	99	19	7.0	51	96
MIN	0.86	1.3	1.1	1.4	2.2	2.4	2.5	1.9	0.51	0.45	0.78	1.7

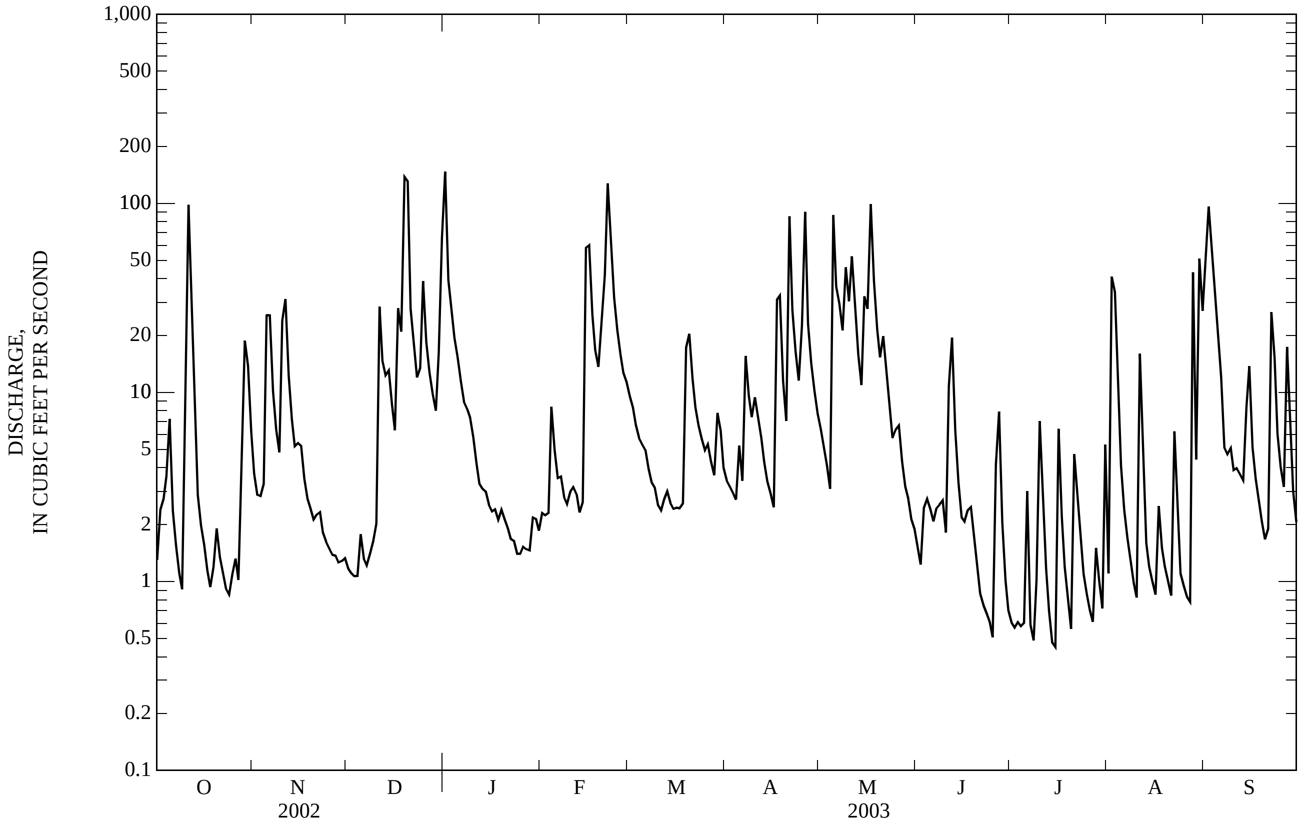
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1999 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	3.90	5.08	11.1	13.0	15.2	13.4	14.4	12.5	5.35	1.12	2.18	4.76
MAX	9.05	13.3	21.1	21.5	24.7	30.6	35.9	28.9	14.9	1.71	8.60	14.1
(WY)	(2002)	(2002)	(2003)	(1999)	(2000)	(2002)	(2002)	(2002)	(1999)	(2003)	(2003)	(2003)
MIN	0.66	0.45	4.34	2.85	6.92	5.80	1.58	0.94	0.92	0.30	0.34	0.66
(WY)	(2000)	(2000)	(2000)	(2001)	(2002)	(2003)	(2001)	(2000)	(2001)	(2002)	(1999)	(2001)

03298300 PENNSYLVANIA RUN AT MOUNT WASHINGTON ROAD NEAR LOUISVILLE, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1999 - 2003	
ANNUAL TOTAL	4,950.14		4,160.25			
ANNUAL MEAN	13.6		11.4		8.47	
HIGHEST ANNUAL MEAN					13.7	2002
LOWEST ANNUAL MEAN					3.69	2001
HIGHEST DAILY MEAN	308	Jan 24	147	Jan 1	353	Feb 18, 2000
LOWEST DAILY MEAN	0.17	Jul 31	0.45	Jul 15	0.17	Jul 31, 2002
ANNUAL SEVEN-DAY MINIMUM	0.22	Jun 20	0.67	Jun 29	0.22	Jun 20, 2002
MAXIMUM PEAK FLOW			587	Dec 19	1,540	Jun 28, 1999
MAXIMUM PEAK STAGE			4.96	Dec 19	8.22	Jun 28, 1999
10 PERCENT EXCEEDS	28		28		18	
50 PERCENT EXCEEDS	2.3		3.5		2.1	
90 PERCENT EXCEEDS	0.34		1.0		0.43	

e Estimated



03298500 SALT RIVER AT SHEPHERDSVILLE, KY

LOCATION.--Lat 37°59'06", long 85°43'03", Bullitt County, Hydrologic Unit 05140102, on downstream side of bridge on State Highway 61 at Shepherdsville, 500 ft downstream from Louisville and Nashville Railroad bridge, 2.6 mi downstream from Floyds Fork, and at mile 22.9.

DRAINAGE AREA.--1,197 mi^2.

PERIOD OF RECORD.--May 1938 to current year.

REVISED RECORDS.--WSP 893: 1937(M). WSP 1435: 1955: WSP 1705: Drainage area.

GAGE.--Water-stage recorder with telemetry. Datum of gage is 406.58 ft above NGVD of 1929. See WDR KY-90-1 for history of changes prior to Oct. 16, 1969. Auxillary gage is a water-stage recorder with telemetry, located at mouth of Floyds Fork 2.6 mi upstream.

REMARKS.--Records good. Flow regulated since January 1983 by Taylorsville Lake (station 03295597). Diversions for water supply by Sheperdsville and other municipalities.

COOPERATION.--U.S. Army Corps of Engineers,Louisville District and Kentucky Natural Resources and Environmental Protection Cabinet.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Jan. 26, 1937, reached a stage of 47.3 ft, from floodmark (backwater from Ohio River).

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,160	2,410	361	17,200	e455	4,110	912	1,360	483	1,170	490	1,880
2	1,280	2,250	338	11,700	498	3,960	805	785	423	439	1,250	8,610
3	e900	2,050	320	4,880	539	3,140	741	597	616	279	2,540	16,100
4	763	1,360	302	4,400	1,270	2,900	710	539	1,050	212	2,160	7,010
5	1,020	2,010	306	3,870	1,670	2,840	850	6,630	1,490	173	2,530	3,820
6	805	5,880	299	3,390	1,750	3,100	918	9,750	1,450	184	2,240	3,730
7	525	3,250	281	2,430	1,660	3,030	1,300	5,330	1,270	204	1,030	3,100
8	348	3,010	332	2,130	1,180	2,940	1,470	4,920	1,650	166	823	2,690
9	259	2,890	346	1,170	1,080	2,850	2,420	7,230	2,770	202	592	2,530
10	256	4,390	365	877	851	2,730	3,580	6,100	2,800	1,240	986	2,440
11	9,990	8,140	2,330	721	737	2,680	3,790	10,100	2,970	2,880	836	2,340
12	7,440	4,470	3,320	585	712	2,650	3,780	8,650	3,650	2,030	596	2,000
13	2,390	3,340	3,350	516	649	2,650	3,640	4,940	3,330	1,790	455	1,090
14	1,430	3,450	4,050	e475	659	2,550	2,280	4,100	2,080	1,060	349	506
15	2,350	3,190	3,290	e440	9,560	1,880	1,100	4,080	2,270	481	270	384
16	2,660	3,170	2,710	e410	e13,000	750	796	4,230	4,420	374	239	400
17	2,560	3,090	3,340	e370	e6,500	484	2,880	5,460	9,910	321	238	347
18	2,410	2,880	3,980	e340	4,840	480	6,260	6,430	5,270	199	201	287
19	1,800	2,390	6,960	e305	4,100	1,290	3,950	4,210	3,480	160	165	240
20	1,530	2,200	20,300	e280	5,590	2,300	3,120	3,520	3,440	140	142	208
21	1,100	1,810	8,180	e255	8,350	1,740	5,940	4,140	2,090	142	130	189
22	680	1,150	3,670	e242	14,400	2,150	4,280	3,880	716	158	138	4,030
23	506	715	3,380	e225	16,700	2,600	2,250	3,300	496	391	1,780	6,930
24	404	574	3,840	216	6,690	2,410	1,350	2,880	399	380	1,520	3,040
25	282	518	6,000	e202	4,260	1,430	1,190	1,500	332	301	717	2,730
26	319	474	4,470	e207	2,910	867	5,800	996	347	242	1,070	2,690
27	320	452	3,780	e249	2,240	755	2,650	865	947	254	1,580	2,700
28	361	421	3,420	285	3,040	695	1,460	742	608	223	1,590	3,360
29	1,160	406	3,190	317	---	901	1,480	682	425	201	1,930	1,980
30	3,030	385	2,880	e370	---	e1,460	1,660	620	315	201	1,630	1,110
31	2,610	---	4,900	e405	---	1,120	---	552	---	693	2,380	---
TOTAL	52,648	72,725	104,590	59,462	115,890	65,442	73,362	119,118	61,497	16,890	32,597	88,471
MEAN	1,698	2,424	3,374	1,918	4,139	2,111	2,445	3,843	2,050	545	1,052	2,949
MAX	9,990	8,140	20,300	17,200	16,700	4,110	6,260	10,100	9,910	2,880	2,540	16,100
MIN	256	385	281	202	455	480	710	539	315	140	130	189

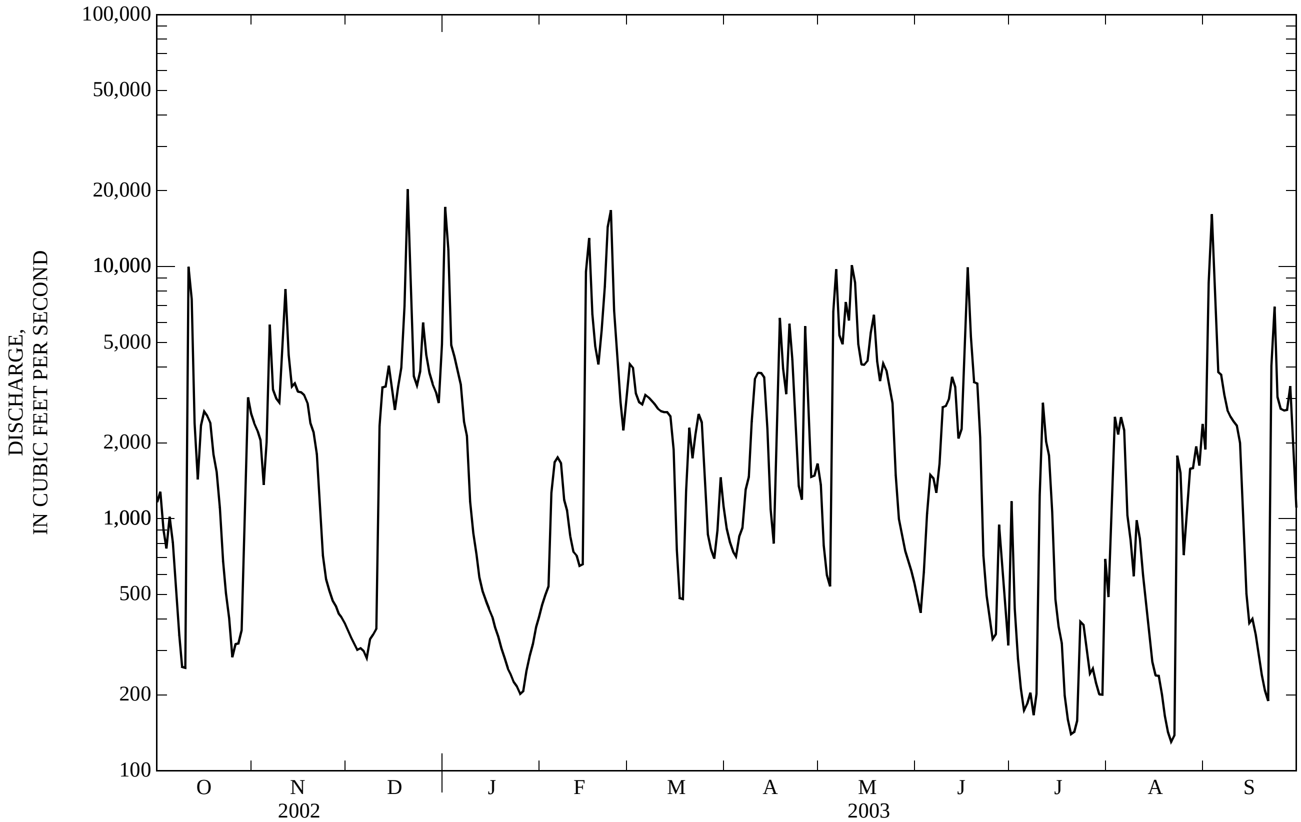
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	326	977	2,037	2,488	3,680	3,269	2,101	2,001	1,438	505	286	353
MAX	1,698	2,424	6,329	5,728	12,370	11,410	3,683	5,768	5,192	1,976	1,052	2,949
(WY)	(2003)	(2003)	(1991)	(1991)	(1989)	(1997)	(2002)	(1995)	(1997)	(1998)	(2003)	(2003)
MIN	25.9	48.1	258	335	996	1,113	377	201	38.9	63.6	29.9	30.6
(WY)	(1989)	(2000)	(1990)	(1986)	(1992)	(1990)	(1986)	(2000)	(1988)	(1994)	(2002)	(1999)

03298500 SALT RIVER AT SHEPHERDSVILLE, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1984 - 2003	
ANNUAL TOTAL	775,361		862,692			
ANNUAL MEAN	2,124		2,364		1,611	
HIGHEST ANNUAL MEAN					2,809	1997
LOWEST ANNUAL MEAN					772	2001
HIGHEST DAILY MEAN	22,000	Mar 20	20,300	Dec 20	65,600	Mar 2, 1997
LOWEST DAILY MEAN	20	Aug 14	130	Aug 21	7.7	Jul 1, 1988
ANNUAL SEVEN-DAY MINIMUM	22	Aug 11	179	Aug 16	9.3	Jun 26, 1988
MAXIMUM PEAK FLOW			22,000	Dec 20	78,200	Mar 10, 1964
MAXIMUM PEAK STAGE			20.11	Feb 23	41.50	Mar 11, 1964
10 PERCENT EXCEEDS	4,960		5,070		4,100	
50 PERCENT EXCEEDS	631		1,490		512	
90 PERCENT EXCEEDS	38		275		45	

e Estimated



03298550 LONG LICK AT CLERMONT, KY

LOCATION.--Lat 37°55'40", long 85°39'13", Bullitt County, Hydrologic Unit 05140102, downstream side of bridge at Jim Beam Distillery, at Clermont, and 10.8 mi upstream from mouth.

DRAINAGE AREA.-- 7.91 mi^2.

PERIOD OF RECORD.--April 1, 1992 to current year.

GAGE.--Water-stage recorder with telemetry. Datum of gage is 450 ft above NGVD of 1929 (from topographic map).

REMARKS.--Records fair except for those estimated, which are poor. Slight regulation from Jim Beam Distillery.

COOPERATION.--Bullitt County.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 800 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 5	1300	969	6.56	Sep 2	1400	*1,110	*7.02

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.15	3.1	2.9	204	0.85	20	7.6	5.0	1.4	0.96	8.0	1.2
2	0.09	5.2	2.8	43	1.00	17	7.1	4.4	0.88	1.3	2.1	e217
3	0.17	8.6	3.2	e22	1.7	13	6.7	3.5	4.0	0.91	23	e81
4	0.52	8.7	2.5	e14	28	9.2	6.3	3.5	5.0	0.33	5.7	12
5	0.33	41	3.1	e9.5	12	8.6	11	145	2.6	0.43	5.9	3.4
6	0.31	38	2.9	e7.2	7.4	7.5	11	33	1.5	1.5	1.5	0.52
7	0.33	9.1	3.0	e5.4	6.4	7.0	22	38	3.1	1.8	1.0	0.24
8	0.30	6.2	2.9	e4.3	4.8	6.4	16	19	5.8	0.79	0.91	0.29
9	0.30	6.7	2.8	e3.4	5.3	6.3	69	18	6.1	0.92	0.80	0.30
10	0.65	24	3.0	e2.8	3.9	4.1	87	11	2.0	3.2	0.62	0.29
11	123	53	44	e2.3	3.9	5.1	29	94	14	6.2	0.96	0.31
12	12	11	25	e1.9	4.0	5.3	18	21	35	1.8	1.2	0.35
13	6.7	6.7	26	e1.7	3.6	6.0	14	10	14	0.90	0.51	0.39
14	3.8	4.5	31	e1.4	4.1	5.6	10	7.4	8.2	0.73	0.39	1.2
15	1.7	3.9	13	e1.2	255	5.0	9.1	6.3	21	0.71	0.37	1.6
16	1.3	5.3	8.3	e1.1	90	6.5	7.9	6.7	51	1.1	0.39	0.83
17	1.5	4.3	7.1	e1.0	34	3.7	67	18	112	0.98	0.41	0.75
18	1.9	2.0	6.0	e0.89	22	4.2	39	14	20	0.82	1.3	1.4
19	3.1	2.7	158	e0.80	22	49	18	6.1	10	0.81	0.37	1.5
20	6.8	2.9	113	e0.72	49	34	13	3.8	6.3	0.87	0.21	1.4
21	4.4	3.1	24	e0.66	75	18	44	16	4.1	2.1	0.22	1.4
22	2.5	3.7	15	e0.60	204	13	18	8.6	3.4	1.8	0.54	25
23	2.9	3.4	11	e0.56	77	11	10	4.8	1.8	0.76	0.85	3.1
24	2.9	3.0	18	e0.52	36	7.6	8.5	3.1	1.1	0.73	0.53	0.24
25	4.1	2.5	70	e0.48	27	6.8	13	3.3	0.98	0.34	0.40	0.24
26	5.1	2.8	22	e0.46	22	6.9	67	3.5	1.3	0.40	0.69	0.04
27	5.0	1.5	15	e0.42	19	6.6	17	1.8	17	0.46	0.65	1.1
28	5.8	2.8	12	e0.40	21	5.8	9.6	0.74	3.0	0.70	0.83	0.33
29	14	3.0	10	1.5	---	19	7.6	1.1	2.0	0.52	1.3	0.29
30	12	2.9	10	0.48	---	17	6.3	0.87	1.3	0.59	1.9	0.60
31	4.9	---	58	0.32	---	6.3	---	1.0	---	61	2.0	---
TOTAL	228.55	275.6	725.5	335.01	1,039.95	341.5	669.7	512.51	359.86	96.46	65.55	358.31
MEAN	7.37	9.19	23.4	10.8	37.1	11.0	22.3	16.5	12.0	3.11	2.11	11.9
MAX	123	53	158	204	255	49	87	145	112	61	23	217
MIN	0.09	1.5	2.5	0.32	0.85	3.7	6.3	0.74	0.88	0.33	0.21	0.04

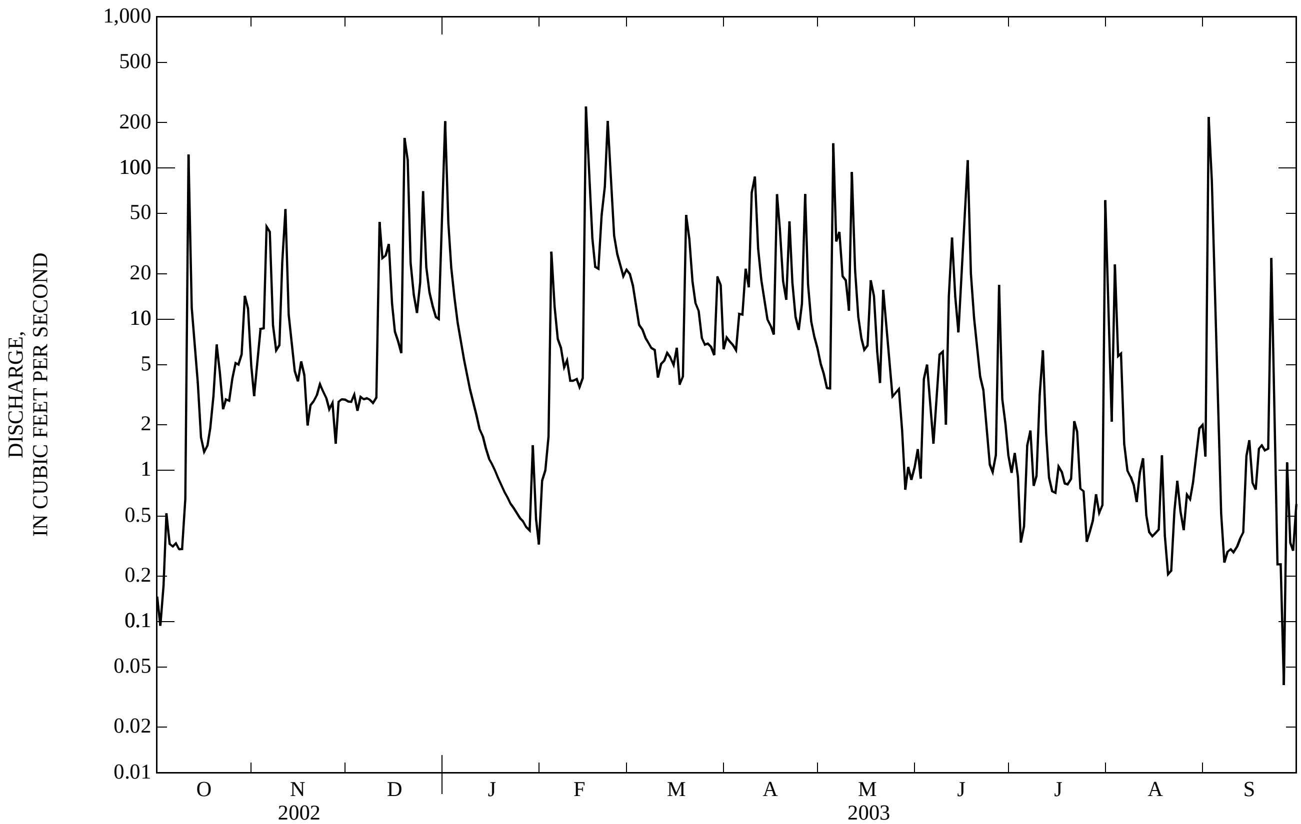
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	2.08	3.91	8.20	16.0	18.7	28.9	19.0	17.7	9.21	1.10	1.44	2.08
MAX	7.37	10.4	23.4	29.2	37.1	101	42.2	47.2	35.0	3.11	9.21	11.9
(WY)	(2003)	(2002)	(2003)	(1996)	(2003)	(1997)	(1998)	(1995)	(1997)	(2003)	(1995)	(2003)
MIN	0.098	0.68	0.83	1.79	6.43	10.0	2.40	1.34	0.054	0.043	0.057	0.13
(WY)	(1998)	(1995)	(1999)	(2001)	(2002)	(2001)	(2001)	(2000)	(2001)	(2001)	(1998)	(1998)

03298550 LONG LICK AT CLERMONT, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1992 - 2003	
ANNUAL TOTAL	5,216.44		5,008.50			
ANNUAL MEAN	14.3		13.7		10.8	
HIGHEST ANNUAL MEAN					19.1	1997
LOWEST ANNUAL MEAN					3.59	2001
HIGHEST DAILY MEAN	339	Mar 26	255	Feb 15	680	Mar 1, 1997
LOWEST DAILY MEAN	0.05	Jan 18	0.04	Sep 26	0.00	Nov 13, 2001
ANNUAL SEVEN-DAY MINIMUM	0.10	Jul 18	0.27	Oct 1	0.01	Aug 20, 1999
MAXIMUM PEAK FLOW			1,110	Sep 2	2,820	May 6, 2002
MAXIMUM PEAK STAGE			7.02	Sep 2	11.44	May 6, 2002
INSTANTANEOUS LOW FLOW			0.01	Sep 26	0.01	Sep 26, 2003
10 PERCENT EXCEEDS	31		33		23	
50 PERCENT EXCEEDS	2.9		4.0		1.5	
90 PERCENT EXCEEDS	0.35		0.46		0.10	

e Estimated



SALT RIVER BASIN

03300400 BEECH FORK AT MAUD, KY

LOCATION.--Lat 37°49'58", long 85°17'46", Nelson County, Hydrologic Unit 05140103, on right bank on downstream side of bridge on State Highway 55, 100 ft upstream from Nealy Run, 0.8 mi north of Maud, 1.7 mi downstream from Chaplin River, and at mile 48.1.

DRAINAGE AREA.--436 mi^2..

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

GAGE.--Water-stage recorder with telemetry. Datum of gage is 530.00 ft above NGVD of 1929.

REMARKS.--Records good except those estimated, which are poor.

COOPERATION.--Kentucky Natural Resources and Environmental Protection Cabinet.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 8,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 11	1800	14,000	19.15	May 6	0600	15,100	17.46
Nov 11	0330	12,200	18.31	Jun 7	2000	9,520	16.96
Dec 20	1130	9,730	17.07	Sep 3	2000	12,100	18.27
Feb 16	0430	*21,400	*22.20	Sep 22	1400	8,950	16.69
Feb 23	0000	10,500	17.46				

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	119	601	136	3,350	e138	1,280	512	292	168	189	425	469
2	76	406	125	3,330	e183	961	416	267	142	104	206	2,820
3	49	307	116	1,350	e223	744	353	228	687	80	229	11,600
4	33	263	109	945	1,030	594	309	206	1,070	71	e164	9,060
5	22	1,340	114	732	1,200	514	347	6,040	473	67	e2,430	2,980
6	16	6,170	111	590	548	458	476	11,900	304	65	e629	762
7	13	2,240	110	475	414	402	1,600	4,080	5,050	e77	e331	446
8	9.8	839	113	410	371	358	2,120	2,310	5,120	e31	e754	318
9	7.1	540	113	375	336	326	1,380	1,710	1,620	e26	e466	243
10	671	4,660	119	332	296	296	4,190	984	778	400	e164	192
11	11,400	10,200	2,190	283	293	269	2,470	3,580	779	1,080	e138	155
12	6,240	3,260	3,030	e249	295	256	1,170	1,940	1,380	910	e116	126
13	1,070	1,040	1,670	e198	304	250	772	683	869	270	e192	105
14	501	634	5,170	e175	318	248	572	453	680	148	e164	90
15	342	497	2,660	e141	12,500	238	465	423	4,890	98	e127	79
16	297	1,950	1,010	e124	18,100	220	395	507	3,410	72	67	71
17	403	1,660	659	e101	10,800	209	799	602	2,580	54	48	60
18	416	844	619	e89	2,960	204	3,620	985	2,830	43	37	51
19	289	573	1,670	e75	1,250	762	1,470	686	955	37	28	44
20	319	440	7,890	e61	1,270	2,150	732	505	574	34	22	36
21	385	365	2,720	e47	1,700	1,490	560	1,050	405	33	18	31
22	337	321	986	e38	5,970	1,200	532	1,540	312	33	304	4,690
23	275	284	635	e35	7,610	712	440	795	253	36	3,390	3,380
24	219	247	571	e35	2,500	526	359	536	208	69	491	654
25	183	218	2,230	e36	1,910	431	337	414	173	50	204	350
26	158	199	1,190	e39	1,310	387	1,100	351	149	65	121	226
27	136	186	687	e47	969	377	1,040	302	165	45	84	215
28	129	173	540	e58	1,280	356	527	260	134	36	82	322
29	1,040	160	461	e72	---	469	387	226	116	846	106	269
30	3,190	148	398	e84	---	1,650	326	202	184	407	331	247
31	1,240	---	377	e101	---	745	---	187	---	297	354	---
TOTAL	29,584.9	40,765	38,529	13,977	76,078	19,082	29,776	44,244	36,458	5,773	12,222	40,091
MEAN	954	1,359	1,243	451	2,717	616	993	1,427	1,215	186	394	1,336
MAX	11,400	10,200	7,890	3,350	18,100	2,150	4,190	11,900	5,120	1,080	3,390	11,600
MIN	7.1	148	109	35	138	204	309	187	116	26	18	31
CFSM	2.19	3.12	2.85	1.03	6.23	1.41	2.28	3.27	2.79	0.43	0.90	3.07
IN.	2.52	3.48	3.29	1.19	6.49	1.63	2.54	3.77	3.11	0.49	1.04	3.42

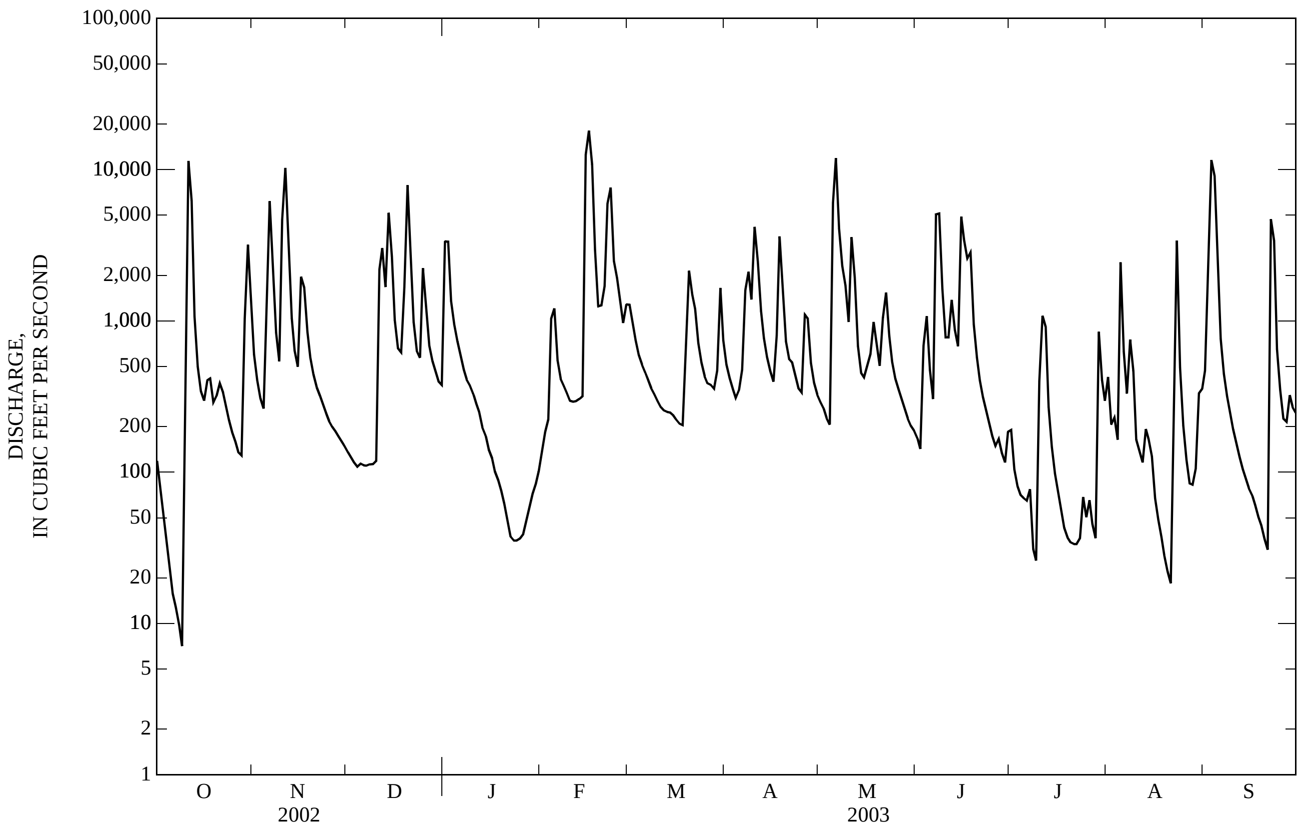
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1973 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	176	491	987	929	1,198	1,232	740	708	500	195	161	258
MAX	1,042	1,699	3,691	2,461	5,071	4,663	2,022	2,359	2,499	764	939	2,284
(WY)	(1976)	(1989)	(1979)	(1974)	(1989)	(1997)	(1979)	(1995)	(1997)	(1998)	(1978)	(1979)
MIN	0.011	0.059	37.2	16.2	203	134	103	43.6	3.32	2.45	0.87	0.018
(WY)	(1988)	(2000)	(2000)	(1981)	(1980)	(1983)	(1986)	(1976)	(1988)	(1975)	(1986)	(1999)

03300400 BEECH FORK AT MAUD, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1973 - 2003	
ANNUAL TOTAL	302,771.6		386,579.9			
ANNUAL MEAN	830		1,059		628	
HIGHEST ANNUAL MEAN					1,243	1979
LOWEST ANNUAL MEAN					256	2000
HIGHEST DAILY MEAN	17,600	Mar 20	18,100	Feb 16	39,800	Mar 2, 1997
LOWEST DAILY MEAN	1.3	Sep 25	7.1	Oct 9	0.00	Oct 8, 1983
ANNUAL SEVEN-DAY MINIMUM	1.4	Sep 8	21	Oct 3	0.00	Oct 23, 1987
MAXIMUM PEAK FLOW			21,400	Feb 16	41,500	Mar 2, 1997
MAXIMUM PEAK STAGE			22.20	Feb 16	27.60	Mar 2, 1997
ANNUAL RUNOFF (CFSM)	1.90		2.43		1.44	
ANNUAL RUNOFF (INCHES)	25.83		32.98		19.58	
10 PERCENT EXCEEDS	2,230		2,760		1,350	
50 PERCENT EXCEEDS	173		365		165	
90 PERCENT EXCEEDS	3.1		59		3.9	

e Estimated



03301000 BEECH FORK AT BARDSTOWN, KY

LOCATION.--Lat 37°47'49", long 85°28'51", Nelson County, Hydrologic Unit 05140103 near center of span on downstream side of bridge on U.S. Highway 31E, 0.1 mile downstream from Rowan Creek, 1 mile southwest of Bardstown, and mile 20.7.

DRAINAGE AREA.--669 mi^2.

PERIOD OF RECORD.--October 1939 to September 1974; converted to a crest-stage partial-record station. Monthly discharge only for October, November 1939, published in WSP 1305. October 1997 to September 1999 and January 2001 to current year.

REVISIONS.--WSP 1705: Drainage area.

GAGE.--Water-stage recorder with telemetry. Datum of gage is 439.3 ft above mean sea level.

REMARKS.--Records good except for periods of estimated, record which are fair. At times during periods of low flow, City of Bardstown diverts flow above station for municipal water supply. Some of this water is returned to stream by sewer outfall 300 ft above gage.

COOPERATION.--City of Bardstown.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 9,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 11	2200	13,000	28.56	May 6	1500	14,600	30.33
Nov 11	0600	12,100	27.53	Jun 18	0500	9,510	23.85
Dec 20	0100	9,100	23.16	Sep 4	0200	18,400	33.69
Feb 16	1600	*23,500	*37.84	Sep 22	1900	11,900	27.11
Feb 23	1000	10,800	25.75				

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	278	1,100	222	6,110	e264	2,130	895	487	248	292	611	732
2	193	764	196	4,160	e339	1,700	703	450	216	204	430	5,290
3	146	588	179	2,350	423	1,320	589	380	712	139	677	14,900
4	123	503	170	1,650	1,270	1,100	505	323	1,640	113	446	13,600
5	113	3,720	183	1,320	1,960	955	670	9,130	804	93	2,100	4,820
6	95	6,740	166	1,090	1,120	847	706	14,200	521	91	1,070	1,840
7	69	3,340	163	902	778	732	2,260	7,340	5,120	103	712	998
8	54	1,460	191	774	600	642	3,250	4,340	6,210	80	1,070	707
9	51	1,150	195	680	514	576	2,660	2,550	2,760	72	754	529
10	5,100	8,800	351	585	512	507	6,390	1,940	1,310	1,580	585	399
11	12,700	11,300	3,780	484	510	457	4,010	5,440	1,530	2,020	504	309
12	6,470	4,110	3,710	401	504	428	2,170	3,610	2,180	1,490	757	247
13	2,260	1,830	3,640	360	490	417	1,390	1,340	1,710	734	666	201
14	1,030	1,190	5,710	e325	587	407	1,060	913	1,500	382	308	167
15	746	1,460	3,460	294	e16,000	387	845	972	4,930	254	208	157
16	635	2,780	1,660	e269	22,500	362	693	989	4,940	194	153	142
17	599	2,480	1,190	e244	16,200	334	2,330	1,230	4,970	157	119	128
18	709	1,430	1,070	228	6,780	328	4,590	1,560	6,240	126	96	115
19	557	1,050	4,360	e211	2,890	2,180	2,860	1,210	2,220	104	75	101
20	659	822	8,100	e194	2,170	3,610	1,350	934	1,200	88	60	92
21	690	692	3,660	e180	2,650	2,510	1,100	1,460	848	108	49	73
22	604	600	1,710	e172	8,430	1,920	936	2,200	626	116	669	8,650
23	483	507	1,180	e164	10,500	1,300	803	1,420	486	101	3,540	4,860
24	384	439	1,580	158	4,530	975	645	967	383	89	1,220	1,640
25	328	379	3,170	e152	3,210	782	738	741	306	110	437	828
26	294	344	1,930	e149	2,390	703	1,600	622	277	94	254	507
27	255	317	1,250	147	1,810	646	1,630	508	314	97	173	584
28	391	287	1,020	154	2,120	605	1,000	424	265	918	137	586
29	2,530	267	860	e170	---	1,070	689	361	203	1,320	163	484
30	3,890	248	739	e182	---	1,840	570	319	176	639	698	372
31	2,020	---	1,280	e212	---	1,360	---	279	---	687	697	---
TOTAL	44,456	60,697	57,075	24,471	112,051	33,130	49,637	68,639	54,845	12,595	19,438	64,058
MEAN	1,434	2,023	1,841	789	4,002	1,069	1,655	2,214	1,828	406	627	2,135
MAX	12,700	11,300	8,100	6,110	22,500	3,610	6,390	14,200	6,240	2,020	3,540	14,900
MIN	51	248	163	147	264	328	505	279	176	72	49	73
CFSM	2.14	3.02	2.75	1.18	5.98	1.60	2.47	3.31	2.73	0.61	0.94	3.19
IN.	2.47	3.38	3.17	1.36	6.23	1.84	2.76	3.82	3.05	0.70	1.08	3.56

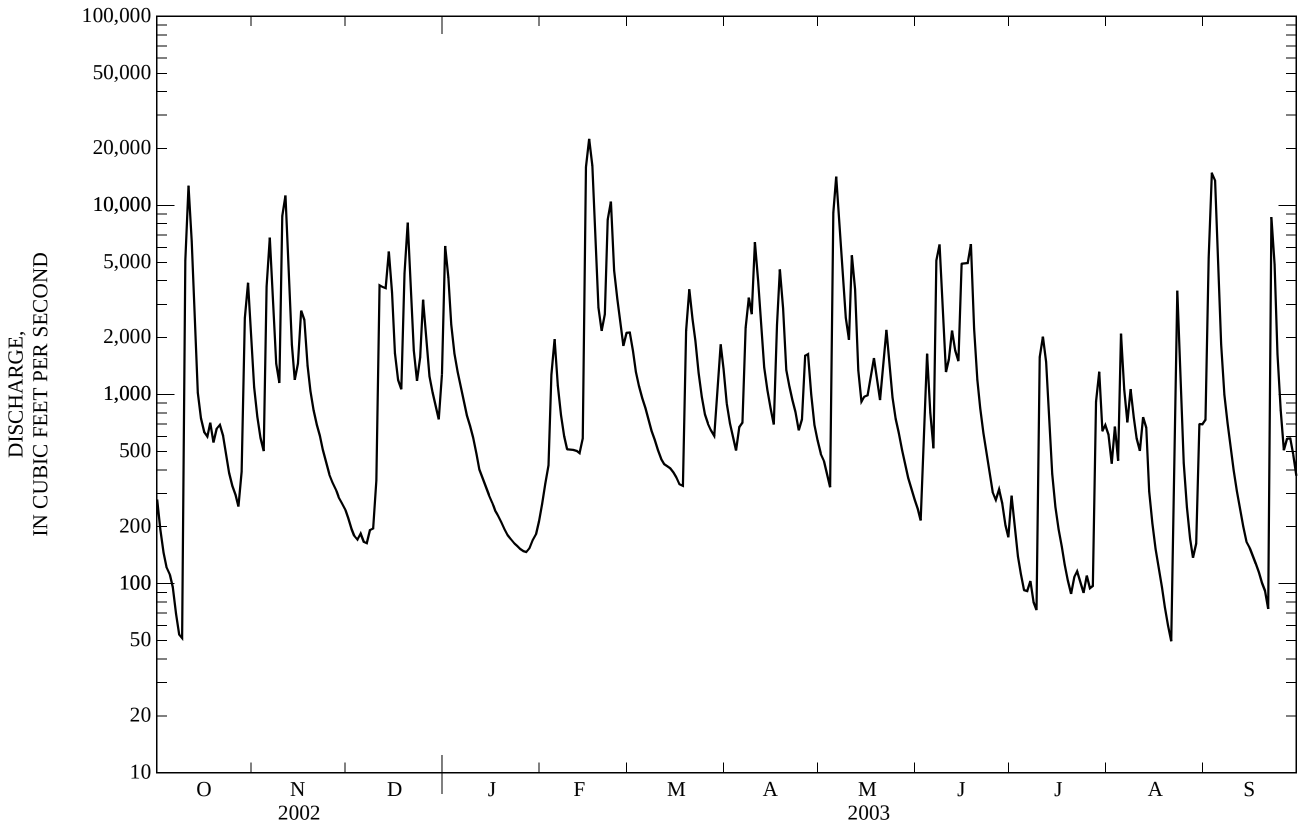
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	135	545	1,106	1,600	1,858	1,983	1,371	929	588	455	202	212
MAX	1,973	2,682	3,631	7,384	5,269	6,277	6,321	3,372	2,565	2,946	1,115	2,206
(WY)	(1963)	(1958)	(1952)	(1950)	(1956)	(1964)	(1972)	(1967)	(1998)	(1958)	(1974)	(1974)
MIN	0.27	0.70	1.40	42.7	123	153	145	46.1	22.2	1.36	3.44	0.39
(WY)	(1954)	(1964)	(1944)	(1944)	(1954)	(1941)	(1963)	(1941)	(1948)	(1954)	(1999)	(1953)

03301000 BEECH FORK AT BARDSTOWN, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1940 - 2003	
ANNUAL TOTAL	503,941.4		601,092			
ANNUAL MEAN	1,381		1,647		923	
HIGHEST ANNUAL MEAN					1,733	1950
LOWEST ANNUAL MEAN					245	1941
HIGHEST DAILY MEAN	22,000	Mar 20	22,500	Feb 16	32,200	Mar 5, 1964
LOWEST DAILY MEAN	7.5	Sep 7	49	Aug 21	0.00	Sep 29, 1948
ANNUAL SEVEN-DAY MINIMUM	7.6	Sep 6	93	Oct 3	0.03	Sep 28, 1948
MAXIMUM PEAK FLOW			23,500	Feb 16	33,900	Mar 5, 1964
MAXIMUM PEAK STAGE			37.84	Feb 16	43.50	Mar 5, 1964
ANNUAL RUNOFF (CFSM)	2.06		2.46		1.38	
ANNUAL RUNOFF (INCHES)	28.02		33.42		18.75	
10 PERCENT EXCEEDS	3,820		4,230		2,120	
50 PERCENT EXCEEDS	439		697		207	
90 PERCENT EXCEEDS	16		147		5.9	

e Estimated



03301500 ROLLING FORK NEAR BOSTON, KY

LOCATION.--Lat 37°46'02", long 85°42'14", Nelson Cty, Hydrologic Unit 05140103, on downstream side of bridge on U.S. Hwy 62 and State Hwy 61, 0.4 mi downstream from Beech Fork, 2.3 mi southwest of Boston, and at mile 19.8.

DRAINAGE AREA.--1,299 mi^2.

PERIOD OF RECORD.--May 1938 to current year.

REVISED RECORDS.--WSP 1705: Drainage area.

GAGE.--Water-stage recorder with telemetry. Datum of gage is 400.42 ft above NGVD of 1929. See WDR KY-90-1 for history of changes prior to Sept. 30, 1971. Datum of Auxilary gage (Rolling Fork at Lebanon Junction) 385.06 ft above sea level.

REMARKS.--Records fair except for those estimated, which are poor.

COOPERATION.--U.S. Army Coprs of Engineers, Louisville District.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in January 1937 reached a stage of 55.2 ft, former site, from floodmarks (backwater from Ohio River).

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 16,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 13	0100	16,800	36.12	May 7	1100	18,400	36.96
Feb 18	1700	*26,200	*42.15	Sep 5	0600	20,800	38.75

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	627	2,280	465	7,000	1,090	5,140	1,900	1,200	558	673	919	1,760
2	426	1,510	420	9,680	943	3,660	1,490	1,050	492	508	923	2,670
3	309	1,160	387	6,900	874	2,570	1,260	906	792	341	1,750	12,700
4	243	962	358	3,530	e1,020	2,060	1,090	777	1,910	276	1,110	17,900
5	219	1,570	367	2,690	e1,280	1,780	1,310	5,610	1,740	240	2,210	20,200
6	200	7,680	372	2,280	e1,200	1,610	1,530	16,200	1,110	247	3,050	12,500
7	173	9,240	350	1,880	e973	1,440	2,980	18,100	3,240	333	1,400	3,100
8	144	4,080	371	1,610	e696	1,300	5,790	14,500	10,200	228	1,400	1,300
9	127	2,000	406	1,430	e610	1,190	5,590	8,730	10,700	198	1,270	923
10	636	4,020	439	1,270	e548	1,080	10,400	4,060	4,930	1,030	851	704
11	12,400	11,300	2,080	1,100	e546	968	11,800	6,840	2,550	3,700	1,110	576
12	16,000	14,600	5,520	933	e589	891	7,820	9,470	3,520	4,640	907	474
13	14,800	10,300	4,910	e696	e720	856	3,810	5,170	3,300	2,170	1,160	396
14	4,260	2,820	6,480	e630	986	816	2,690	3,060	2,260	1,120	689	341
15	1,370	1,880	8,800	e569	e3,850	770	2,150	2,920	4,330	751	454	304
16	1,100	2,810	5,030	e483	e10,600	723	1,690	3,060	7,000	557	344	277
17	950	4,680	2,500	e440	e17,900	679	2,590	2,930	8,710	434	270	241
18	963	3,160	1,970	e400	e25,000	674	e7,000	3,930	9,770	347	227	214
19	912	2,090	2,670	e380	16,100	1,430	e5,240	3,360	8,120	296	190	190
20	879	1,630	11,200	e360	10,100	5,710	e2,840	2,330	3,140	263	161	167
21	949	1,360	12,900	e342	5,960	5,530	e2,230	2,260	2,160	285	143	155
22	935	1,190	6,760	e323	9,040	3,370	2,330	3,210	1,540	314	131	4,350
23	823	1,030	2,600	e306	14,100	2,480	2,120	3,080	1,090	246	2,350	12,600
24	698	897	2,200	e306	15,300	1,850	1,620	2,050	841	236	2,310	6,940
25	596	783	3,760	e289	10,800	1,520	1,610	1,570	686	214	678	1,600
26	538	696	3,880	e289	7,150	1,330	3,210	1,310	588	221	387	1,030
27	487	646	2,510	e272	6,010	1,290	3,260	1,090	652	192	275	852
28	451	592	1,950	e290	5,800	1,230	2,340	924	583	242	218	1,030
29	1,610	547	1,690	420	---	1,540	1,590	795	531	1,900	197	1,200
30	5,050	510	1,500	773	---	2,480	1,300	696	433	1,640	371	876
31	4,760	---	1,470	973	---	2,990	---	626	---	1,090	1,070	---
TOTAL	73,635	98,023	96,315	48,844	169,785	60,957	102,580	131,814	97,476	24,932	28,525	107,570
MEAN	2,375	3,267	3,107	1,576	6,064	1,966	3,419	4,252	3,249	804	920	3,586
MAX	16,000	14,600	12,900	9,680	25,000	5,710	11,800	18,100	10,700	4,640	3,050	20,200
MIN	127	510	350	272	546	674	1,090	626	433	192	131	155
CFSM	1.83	2.52	2.39	1.21	4.67	1.51	2.63	3.27	2.50	0.62	0.71	2.76
IN.	2.11	2.81	2.76	1.40	4.86	1.75	2.94	3.77	2.79	0.71	0.82	3.08

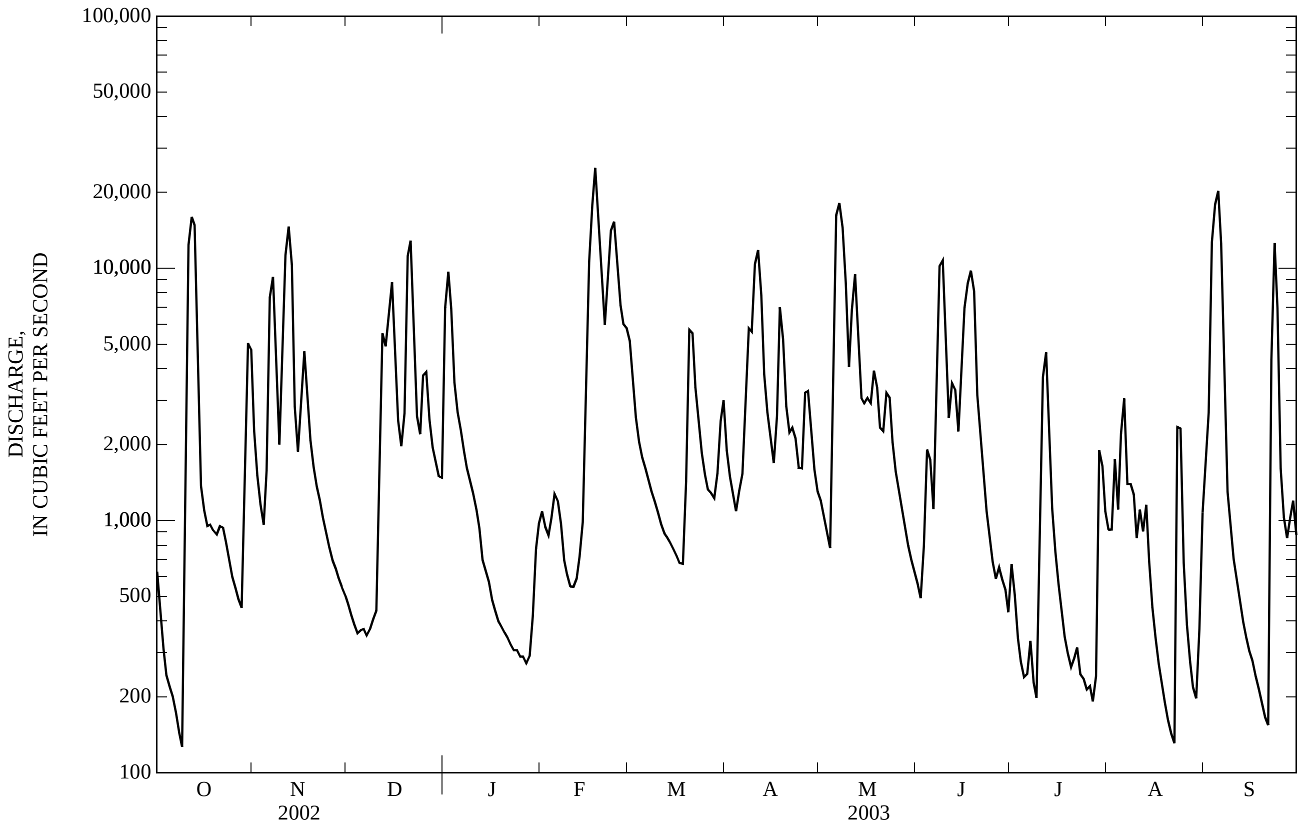
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	325	1,035	2,348	2,947	3,783	3,851	2,759	1,954	1,149	727	410	490
MAX	2,778	5,310	11,050	13,420	16,320	13,540	11,350	11,810	6,865	5,339	2,806	8,265
(WY)	(1976)	(1958)	(1979)	(1950)	(1989)	(1997)	(1972)	(1983)	(1997)	(1958)	(1977)	(1979)
MIN	0.57	4.32	5.84	77.0	288	344	353	150	24.4	6.78	12.9	1.89
(WY)	(1954)	(1944)	(1944)	(1981)	(1954)	(1941)	(1986)	(1941)	(1988)	(1954)	(1999)	(1953)

03301500 ROLLING FORK NEAR BOSTON, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1939 - 2003	
ANNUAL TOTAL	846,741.2		1,040,456			
ANNUAL MEAN	2,320		2,851		1,805	
HIGHEST ANNUAL MEAN					4,268	1979
LOWEST ANNUAL MEAN					473	1941
HIGHEST DAILY MEAN	30,200	Mar 22	25,000	Feb 18	68,400	Mar 4, 1997
LOWEST DAILY MEAN	9.1	Sep 13	127	Oct 9	0.40	Oct 20, 1939
ANNUAL SEVEN-DAY MINIMUM	12	Sep 8	202	Oct 3	0.40	Oct 3, 1953
MAXIMUM PEAK FLOW			26,200	Feb 18	69,800	Mar 3, 1997
MAXIMUM PEAK STAGE			42.15	Feb 18	53.22	Mar 3, 1997
INSTANTANEOUS LOW FLOW					0.40	Oct 20, 1939
ANNUAL RUNOFF (CFSM)	1.79		2.19		1.39	
ANNUAL RUNOFF (INCHES)	24.25		29.80		18.88	
10 PERCENT EXCEEDS	7,780		8,360		4,790	
50 PERCENT EXCEEDS	596		1,290		500	
90 PERCENT EXCEEDS	41		289		26	

e Estimated



03301700 MILL CREEK NEAR FORT KNOX, KY

LOCATION.--Lat 37°53'00", long 85°54'52", Hardin County, Hydrologic Unit 05140104, on wooden bridge on Poorman Road, 2.2 miles southeast of Fort Knox and at mile 8.0.

DRAINAGE AREA.--38.2 mi^2 .

PERIOD OF RECORD.--May 1998 to current year.

GAGE.--Water-stage recorder with telemetry. Elevation of gage is 440 ft above NGVD of 1929 (from topographic map).

REMARKS.--Records good.

COOPERATION.--U.S. Army Corps of Engineers, Louisville District.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	40	11	836	17	82	32	36	17	26	35	18
2	16	31	11	293	18	73	29	31	15	19	20	351
3	13	28	10	184	20	60	26	26	33	14	135	589
4	15	25	10	126	88	54	25	22	27	12	53	255
5	20	205	13	102	49	50	32	864	19	12	54	108
6	11	203	13	80	38	44	27	317	15	11	27	57
7	8.5	95	13	65	36	38	99	695	21	9.9	19	40
8	7.3	64	12	60	36	35	67	287	23	8.7	15	31
9	6.8	48	18	54	34	31	295	644	26	23	13	25
10	113	407	19	44	29	28	471	206	16	49	12	21
11	821	291	189	36	28	26	204	856	235	30	37	16
12	234	127	118	32	26	27	125	322	286	14	14	14
13	88	80	146	30	24	25	86	159	112	9.9	11	12
14	52	59	205	27	31	23	64	113	70	8.3	8.5	13
15	39	52	114	28	1,240	21	52	140	55	7.5	8.0	22
16	31	47	80	24	507	20	44	107	58	11	7.4	12
17	24	38	63	e23	256	20	199	168	194	7.1	6.8	9.7
18	21	31	55	e22	163	25	165	113	74	6.3	6.6	9.2
19	20	28	831	e20	131	249	96	81	51	6.5	6.2	8.6
20	43	24	531	e19	248	175	71	64	40	5.9	5.9	8.1
21	29	24	237	17	313	111	157	62	30	12	6.3	7.1
22	21	24	130	16	858	81	93	52	23	11	18	155
23	17	20	87	e15	411	63	67	44	21	9.3	29	72
24	14	18	205	e15	227	52	55	39	17	7.0	11	39
25	14	16	295	e14	153	45	100	39	14	5.8	7.9	25
26	14	15	144	e14	121	42	187	39	104	5.4	6.9	20
27	12	15	103	e14	100	36	88	29	165	5.2	6.0	21
28	25	13	83	e15	95	32	65	26	49	12	5.8	17
29	126	13	68	16	---	47	52	24	30	9.2	5.4	14
30	98	13	83	21	---	43	43	22	21	5.7	7.5	11
31	56	---	324	15	---	35	---	20	---	91	14	---
TOTAL	2,029.6	2,094	4,221	2,277	5,297	1,693	3,116	5,647	1,861	464.7	612.2	2,000.7
MEAN	65.5	69.8	136	73.5	189	54.6	104	182	62.0	15.0	19.7	66.7
MAX	821	407	831	836	1,240	249	471	864	286	91	135	589
MIN	6.8	13	10	14	17	20	25	20	14	5.2	5.4	7.1

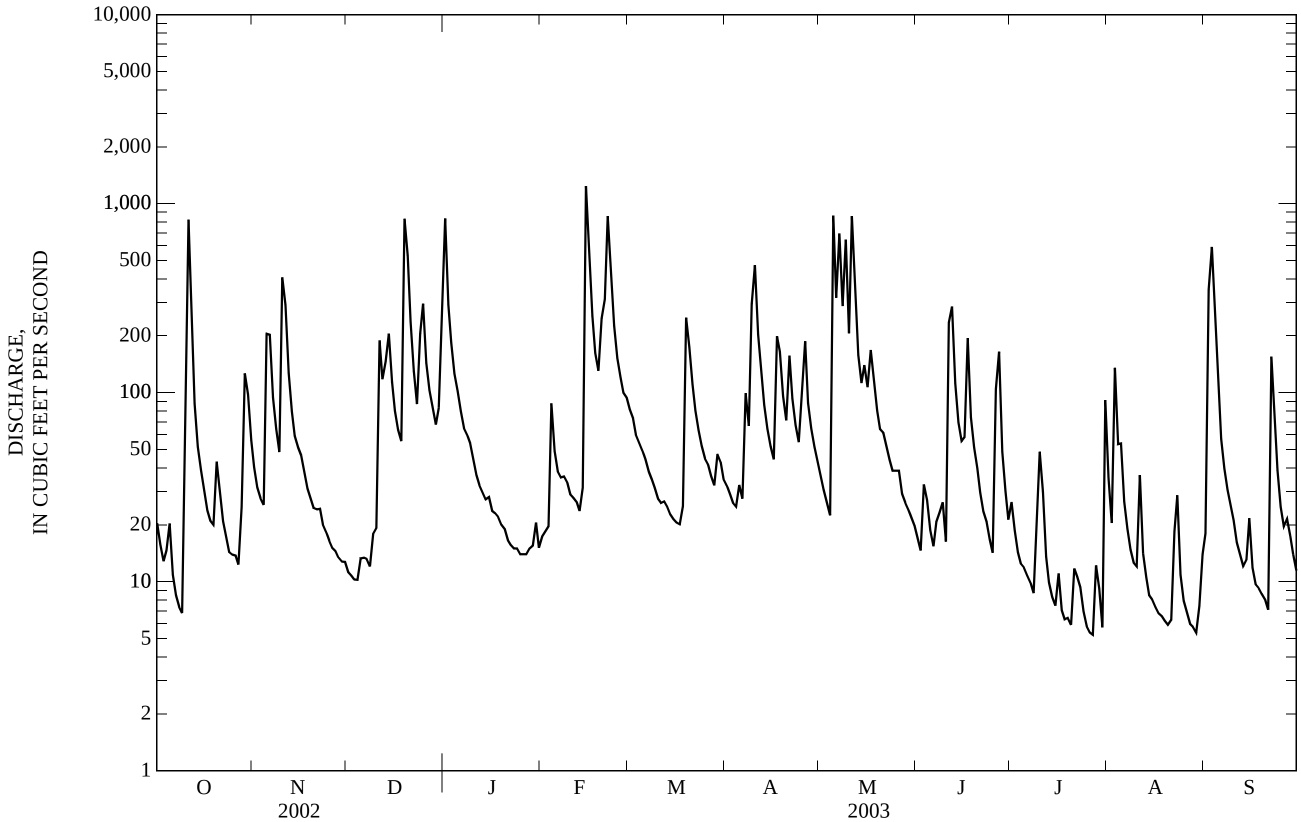
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1999 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	28.3	38.3	77.1	78.7	109	110	95.2	107	22.9	14.1	12.9	32.0
MAX	65.5	90.6	136	119	189	280	207	226	62.0	28.0	25.7	66.7
(WY)	(2003)	(2002)	(2003)	(1999)	(2003)	(2002)	(2002)	(2002)	(2003)	(2001)	(2000)	(2003)
MIN	6.50	4.67	26.4	21.1	50.2	54.6	29.4	16.2	9.16	4.56	3.28	2.99
(WY)	(2001)	(2000)	(1999)	(2001)	(2002)	(2003)	(2001)	(2001)	(2001)	(1999)	(1999)	(1999)

03301700 MILL CREEK NEAR FORT KNOX, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1999 - 2003	
ANNUAL TOTAL	37,258.9		31,313.2			
ANNUAL MEAN	102		85.8		60.2	
HIGHEST ANNUAL MEAN					99.9	2002
LOWEST ANNUAL MEAN					31.6	2001
HIGHEST DAILY MEAN	2,730	Mar 26	1,240	Feb 15	2,730	Mar 26, 2002
LOWEST DAILY MEAN	2.9	Sep 6	5.2	Jul 27	2.4	Sep 11, 1999
ANNUAL SEVEN-DAY MINIMUM	3.3	Sep 5	6.7	Aug 15	2.8	Aug 29, 1999
MAXIMUM PEAK FLOW			3,140	May 11	9,220	Mar 26, 2002
MAXIMUM PEAK STAGE			8.24	May 11	10.29	Jan 4, 2000
10 PERCENT EXCEEDS	205		205		126	
50 PERCENT EXCEEDS	26		31		17	
90 PERCENT EXCEEDS	4.8		9.8		4.4	

e Estimated



03301900 FERN CREEK AT OLD BARDSTOWN ROAD AT LOUISVILLE, KY

LOCATION.--Lat 38°10'32", long 85°36'55", Jefferson County, Hydrologic Unit 05140102, on right upstream wingwall, at bridge on Old Bardstown Road, at Louisville, and at mile 3.2.

DRAINAGE AREA.--3.5 mi^2.

PERIOD OF RECORD.--February 1991 to October 1995, (medium and high flows only), September 1997 to current year.

GAGE.--Water-stage recorder with telemetry and crest-stage gage. Datum of gage 550.74 ft. above NGVD of 1929.

REMARKS.--Records good. Flow partially regulated by sewage treatment plant upstream.

COOPERATION.--Louisville and Jefferson County Metropolitan Sewer District.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 400 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Apr 20	2135	*546	*3.39	No other peak greater than base discharge.			

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

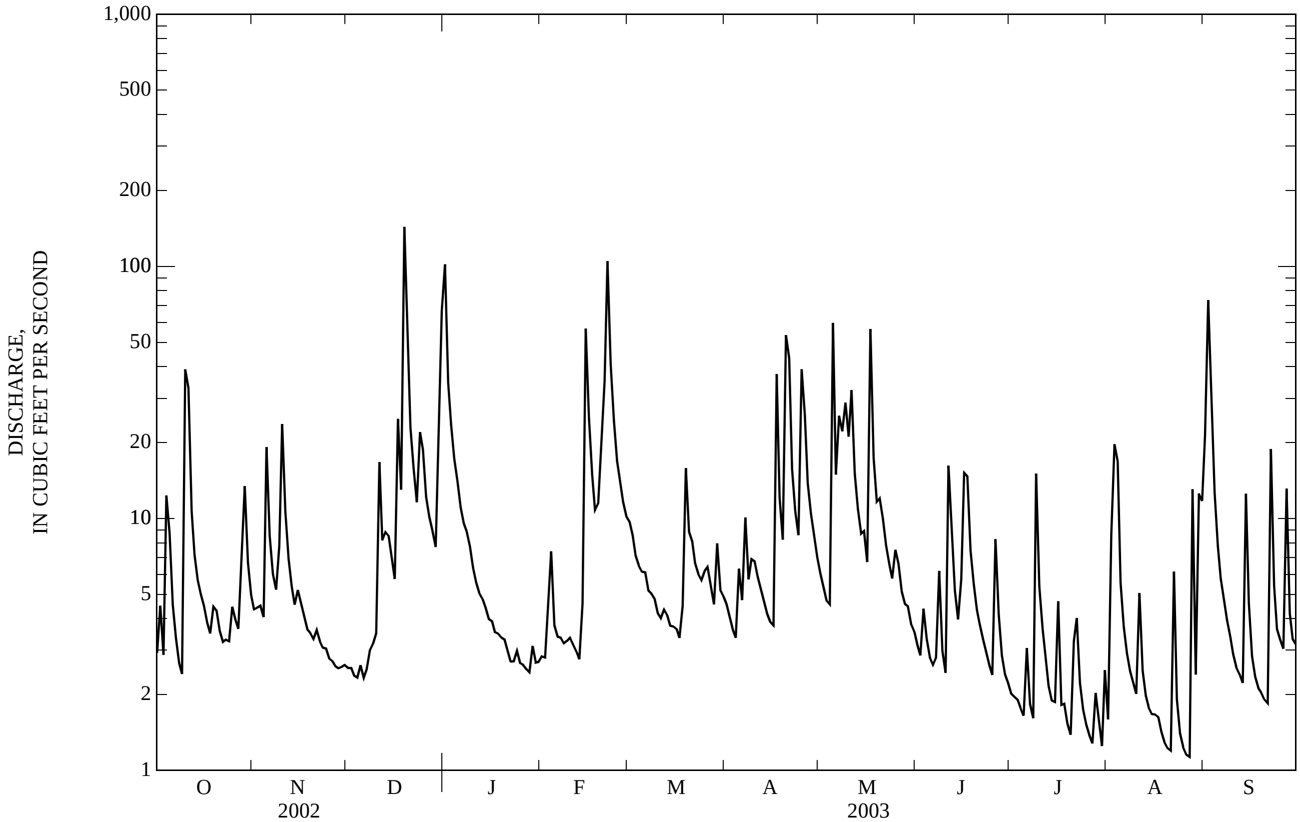
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.9	4.3	2.6	102	2.8	9.7	4.6	6.0	3.1	2.0	1.6	21
2	4.5	4.4	2.5	34	2.8	8.5	4.1	5.4	2.9	2.0	8.6	73
3	2.9	4.5	2.4	24	4.5	7.1	3.6	4.7	4.4	1.9	20	28
4	12	4.1	2.3	17	7.4	6.5	3.4	4.6	3.3	1.8	17	13
5	8.8	19	2.6	14	3.8	6.2	6.3	59	2.8	1.6	5.6	7.8
6	4.5	8.5	2.3	11	3.4	6.1	4.7	15	2.6	3.1	3.7	5.8
7	3.4	6.0	2.5	9.5	3.4	5.2	10	26	2.8	1.8	2.9	4.8
8	2.7	5.2	3.0	8.9	3.2	5.0	5.7	22	6.2	1.6	2.5	3.9
9	2.4	7.8	3.2	7.7	3.3	4.8	6.9	29	3.0	15	2.2	3.4
10	39	24	3.5	6.3	3.4	4.2	6.7	21	2.4	5.4	2.0	2.9
11	33	11	17	5.5	3.2	4.0	5.8	32	16	3.7	5.1	2.6
12	11	6.9	8.2	5.1	3.0	4.4	5.2	15	8.5	2.8	2.5	2.4
13	7.2	5.4	8.8	4.8	2.8	4.2	4.7	11	5.2	2.2	2.0	2.2
14	5.7	4.6	8.5	4.4	4.6	3.7	4.2	8.7	4.0	1.9	1.8	13
15	5.0	5.2	7.0	4.0	56	3.7	3.9	8.9	5.8	1.9	1.7	4.6
16	4.5	4.6	5.7	3.9	25	3.6	3.8	6.7	15	4.7	1.7	2.8
17	3.8	4.1	25	3.5	15	3.4	37	56	15	1.8	1.6	2.4
18	3.5	3.6	13	3.5	11	4.5	12	17	7.5	1.8	1.4	2.1
19	4.5	3.5	143	3.4	11	16	8.2	12	5.5	1.5	1.3	2.0
20	4.3	3.3	55	3.3	22	8.8	53	12	4.3	1.4	1.2	1.9
21	3.6	3.6	23	3.0	35	8.1	43	10	3.8	3.3	1.2	1.8
22	3.2	3.3	16	2.7	105	6.6	16	7.8	3.3	4.0	6.1	19
23	3.3	3.1	12	2.7	41	6.0	11	6.6	3.0	2.2	1.9	5.4
24	3.2	3.1	22	3.0	25	5.7	8.6	5.8	2.6	1.7	1.4	3.6
25	4.5	2.8	19	2.7	17	6.2	39	7.5	2.4	1.5	1.2	3.3
26	4.0	2.7	12	2.6	14	6.4	26	6.6	8.3	1.4	1.2	3.0
27	3.6	2.6	10	2.5	12	5.4	14	5.1	4.2	1.3	1.1	13
28	6.2	2.5	8.9	2.5	10	4.6	10	4.6	2.9	2.0	13	4.2
29	13	2.6	7.7	3.1	---	7.9	8.5	4.5	2.4	1.6	2.4	3.3
30	6.7	2.6	23	2.7	---	5.2	7.0	3.8	2.2	1.2	13	3.2
31	5.0	---	67	2.7	---	4.9	---	3.6	---	2.5	12	---
TOTAL	221.9	168.9	538.7	306.0	450.6	186.6	376.9	437.9	155.4	82.6	140.9	259.4
MEAN	7.16	5.63	17.4	9.87	16.1	6.02	12.6	14.1	5.18	2.66	4.55	8.65
MAX	39	24	143	102	105	16	53	59	16	15	20	73
MIN	2.4	2.5	2.3	2.5	2.8	3.4	3.4	3.6	2.2	1.2	1.1	1.8
CFSM	2.05	1.61	4.96	2.82	4.60	1.72	3.59	4.04	1.48	0.76	1.30	2.47
IN.	2.36	1.80	5.73	3.25	4.79	1.98	4.01	4.65	1.65	0.88	1.50	2.76

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	3.56	4.12	8.28	8.74	9.52	9.37	9.18	8.66	5.29	2.58	2.18	3.61
MAX	7.34	9.22	17.4	11.7	16.1	20.6	16.2	19.5	8.09	5.49	4.55	8.65
(WY)	(2002)	(2002)	(2003)	(2002)	(2003)	(2002)	(2002)	(2002)	(1998)	(1998)	(2003)	(2003)
MIN	1.18	1.74	3.37	1.48	4.92	3.26	2.32	2.31	1.77	1.32	0.75	0.80
(WY)	(1998)	(2000)	(1999)	(2001)	(2001)	(2001)	(2001)	(2000)	(2001)	(2002)	(1999)	(1999)

03301900 FERN CREEK AT OLD BARDSTOWN ROAD AT LOUISVILLE, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1998 - 2003	
ANNUAL TOTAL	3,664.50		3,325.8			
ANNUAL MEAN	10.0		9.11		6.24	
HIGHEST ANNUAL MEAN					9.92	2002
LOWEST ANNUAL MEAN					2.86	2001
HIGHEST DAILY MEAN	143	Dec 19	143	Dec 19	163	Feb 18, 2000
LOWEST DAILY MEAN	0.87	Sep 6	1.1	Aug 27	0.40	Oct 6, 1997
ANNUAL SEVEN-DAY MINIMUM	0.89	Sep 3	1.4	Aug 15	0.61	Oct 3, 1997
MAXIMUM PEAK FLOW			546	Apr 20	933	Jun 28, 2000
MAXIMUM PEAK STAGE			3.39	Apr 20	4.16	Jun 28, 2000
ANNUAL RUNOFF (CFSM)	2.87		2.60		1.78	
ANNUAL RUNOFF (INCHES)	38.95		35.35		24.22	
10 PERCENT EXCEEDS	22		19		13	
50 PERCENT EXCEEDS	3.8		4.5		2.8	
90 PERCENT EXCEEDS	1.1		2.0		1.0	



03301940 NORTHERN DITCH AT OKOLONA, KY

LOCATION.--Lat 38°09'01", long 85°41'37", Jefferson County, Hydrologic Unit 05140102, at Okolona, on bridge on Preston Highway, 0.1 mi above Spring Ditch, and at mile 5.1.

DRAINAGE AREA.--11.1 mi^2.

PERIOD OF RECORD.--June 1974 to Sept. 1976, Mar. 1988 to Feb. 1991, Oct. 1992 to Sept. 1993, Oct. 1994 to Sept. 1995, and Oct. 1997 to current year.

GAGE.--Water-stage recorder with telemetry and crest-stage gage. Datum of gage is 447.32 ft above NGVD of 1929.

REMARKS.--Records good except for periods of estimated records, which are fair.

COOPERATION.--Louisville and Jefferson County Metropolitan Sewer District.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 800 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)

No peak greater than base discharge.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.4	9.0	7.1	213	e8.1	31	11	17	7.0	3.5	4.0	37
2	17	7.3	6.8	84	e8.0	28	9.5	14	6.4	3.4	16	248
3	12	6.9	6.7	67	e8.2	25	8.6	12	11	3.3	62	110
4	33	7.5	6.1	54	30	23	8.0	11	8.0	3.1	67	48
5	45	54	7.5	47	17	22	17	149	6.6	2.7	31	24
6	16	49	7.5	40	13	e19	10	50	5.6	8.0	12	16
7	12	27	7.2	33	13	e16	30	64	6.2	6.4	9.1	13
8	8.9	20	8.5	30	12	e16	16	43	13	3.5	6.7	10
9	7.8	17	10	27	11	e15	18	72	8.5	18	5.6	8.5
10	46	61	9.9	23	12	e13	20	52	5.6	21	5.3	7.1
11	173	57	59	20	12	e12	16	72	31	8.5	8.0	5.9
12	50	31	43	18	11	e13	13	39	38	5.7	7.1	5.2
13	22	23	35	17	13	e7.7	11	27	14	4.3	4.8	4.7
14	12	19	42	16	19	7.5	9.6	22	10	3.6	3.9	20
15	10	20	29	14	88	9.3	8.9	28	14	3.7	3.6	19
16	8.6	18	25	13	92	10	8.2	19	15	31	3.3	7.0
17	7.1	15	48	e12	54	9.6	65	127	37	5.3	3.4	5.4
18	6.1	13	57	e12	41	11	36	52	22	4.3	3.2	4.6
19	6.0	13	e270	e11	37	47	20	34	13	3.8	2.6	4.2
20	8.3	11	e115	e11	49	30	55	28	9.8	3.0	2.4	3.9
21	6.0	11	e58	e10	73	24	166	29	7.6	12	2.3	3.5
22	5.1	14	e46	e10	158	19	52	21	6.3	39	4.9	58
23	4.4	11	e38	e9.6	97	17	37	17	5.7	16	11	17
24	4.1	9.7	e57	e9.3	66	15	28	15	5.3	6.7	3.2	9.1
25	5.0	9.7	e51	8.9	52	14	94	18	4.3	4.9	2.8	7.1
26	5.0	8.4	e39	8.8	44	15	87	18	12	3.7	2.3	6.0
27	4.5	8.4	e36	e8.6	38	13	45	14	17	3.0	2.3	46
28	10	7.9	34	e8.4	35	11	32	11	6.0	3.2	10	12
29	37	7.8	30	e8.3	---	21	25	11	4.7	3.7	12	8.4
30	19	7.9	46	e8.2	---	14	21	9.1	4.0	2.7	32	7.2
31	12	---	106	e8.2	---	12	---	8.2	---	5.5	24	---
TOTAL	622.3	574.5	1,341.3	860.3	1,111.3	540.1	977.8	1,103.3	354.6	246.5	367.8	775.8
MEAN	20.1	19.1	43.3	27.8	39.7	17.4	32.6	35.6	11.8	7.95	11.9	25.9
MAX	173	61	270	213	158	47	166	149	38	39	67	248
MIN	4.1	6.9	6.1	8.2	8.0	7.5	8.0	8.2	4.0	2.7	2.3	3.5

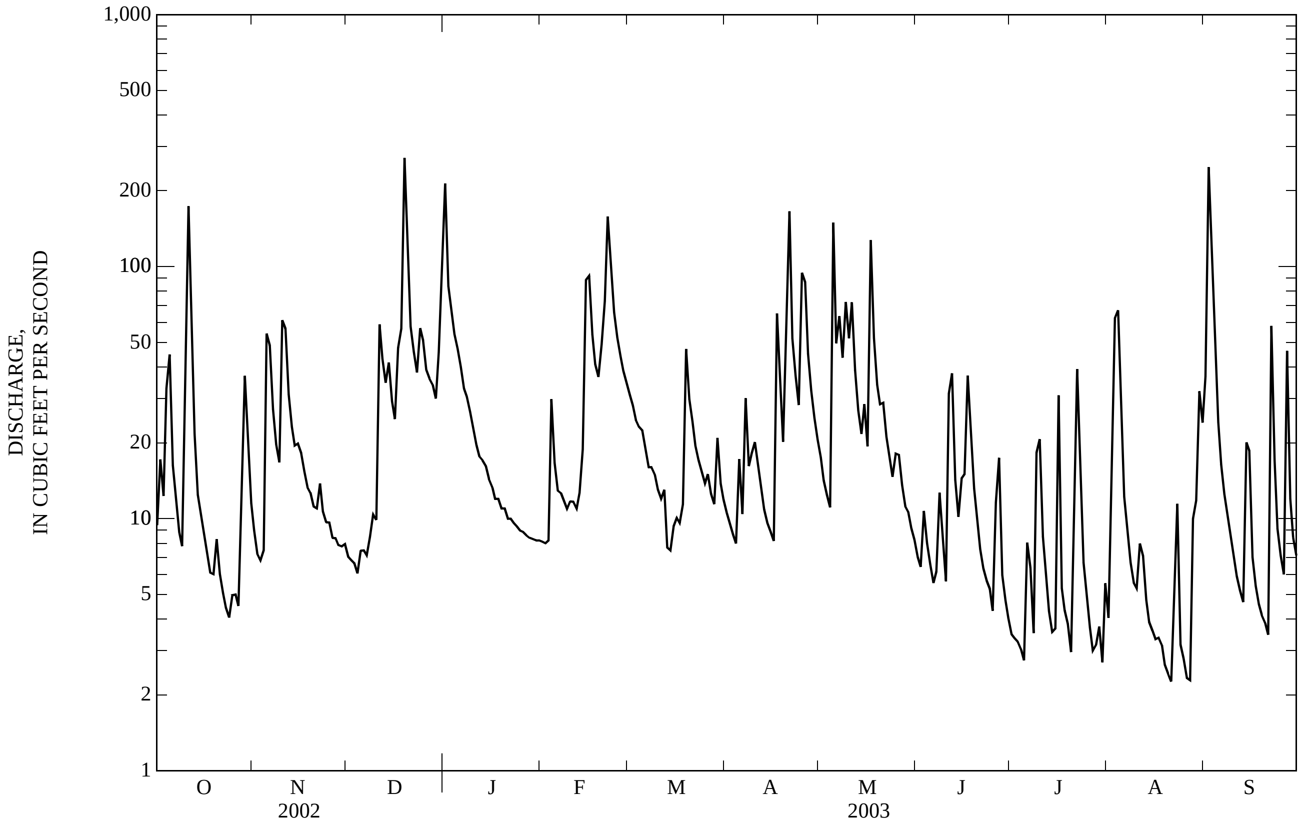
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1975 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	9.13	11.6	21.9	27.7	35.3	25.8	26.9	25.6	17.1	9.78	8.43	9.11
MAX	21.6	21.0	58.7	40.5	75.1	84.5	62.7	59.7	36.9	20.7	25.3	25.9
(WY)	(1991)	(1989)	(1991)	(1976)	(1989)	(1975)	(1975)	(1990)	(1990)	(1989)	(1993)	(2003)
MIN	2.47	3.20	6.39	6.50	12.6	11.1	5.34	4.49	4.08	2.17	0.70	0.61
(WY)	(1998)	(2000)	(1999)	(2001)	(1999)	(1999)	(2001)	(2000)	(2001)	(2002)	(1999)	(1999)

03301940 NORTHERN DITCH AT OKOLONA, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1975 - 2003	
ANNUAL TOTAL	8,668.66		8,875.6			
ANNUAL MEAN	23.7		24.3		18.8	
HIGHEST ANNUAL MEAN					28.6	1975
LOWEST ANNUAL MEAN					8.31	2001
HIGHEST DAILY MEAN	452	Sep 27	270	Dec 19	608	May 18, 1995
LOWEST DAILY MEAN	0.63	Sep 12	2.3	Aug 21	0.18	Aug 16, 1999
ANNUAL SEVEN-DAY MINIMUM	0.67	Sep 6	3.0	Aug 15	0.24	Aug 12, 1999
MAXIMUM PEAK FLOW			711	Apr 21	1,590	Jun 28, 1999
MAXIMUM PEAK STAGE			8.33	Apr 21	13.19	Jun 28, 1999
10 PERCENT EXCEEDS	48		54		41	
50 PERCENT EXCEEDS	9.7		13		8.8	
90 PERCENT EXCEEDS	1.5		4.4		2.4	

e Estimated



03302000 POND CREEK NEAR LOUISVILLE, KY

LOCATION.--Lat 38°07'11", long 85°47'45", Jefferson County, Hydrologic Unit 05140102, on upstream side of bridge on Manslick Rd, right bank, 0.4 mi south of Third Street Rd, 0.6 mi downstream from Bee Lick Creek, 1.5 mi downstream from confluence of Northern and Southern Ditches, 2.4 mi south of Louisville city limits, and at mile 15.4.

DRAINAGE AREA.--64.0 mi^2.

PERIOD OF RECORD.--August 1944 to current year.

REVISED RECORDS.--WSP 1705: Drainage area.

GAGE.--Water-stage recorder with telemetry and crest-stage gage. Datum of gage is 430.38 ft above NGVD of 1929. See WDR KY-90-1 for history of changes prior to Nov. 16, 1962.

REMARKS.--Records good except for those estimated, which are poor.

COOPERATION.--Louisville and Jefferson County Metropolitan Sewer District.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in January 1937 reached a stage of about 23 ft present datum, backwater from Ohio River, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,300 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 11	0150	1,610	12.97	Apr 21	0650	2,270	15.40
Dec 19	1955	*3,430	*18.57	Apr 26	0305	2,080	14.75
Jan 1	1315	1,940	14.24	May 5	1625	1,800	13.73
Feb 22	2035	1,850	13.91	Sep 2	1040	1,500	12.51
Apr 17	2005	1,420	12.16				

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	48	20	19	1,570	40	90	45	54	22	15	26	129
2	61	13	18	473	33	111	41	47	19	13	213	1,160
3	53	13	18	292	33	98	36	38	71	12	293	595
4	187	15	17	185	143	93	34	34	34	12	289	187
5	135	327	20	127	63	64	78	878	24	e11	124	91
6	58	146	23	101	43	67	48	355	20	29	70	54
7	46	82	23	78	44	55	168	273	29	34	45	37
8	41	65	42	70	39	48	99	152	81	16	31	28
9	17	55	43	72	35	44	108	372	50	20	24	30
10	315	270	36	88	40	38	143	193	23	96	22	21
11	757	170	315	48	44	36	95	373	171	37	151	25
12	155	85	122	39	39	43	66	132	246	19	59	21
13	78	62	128	37	33	45	52	96	92	14	27	13
14	71	54	142	36	46	37	45	80	48	12	20	48
15	39	66	84	e33	723	34	40	184	41	12	17	83
16	18	54	64	31	644	36	37	125	67	e120	16	22
17	13	44	191	29	196	35	433	653	67	e18	20	15
18	10	39	151	27	131	34	335	210	63	e15	21	13
19	15	37	1,480	25	121	248	107	122	31	e13	14	12
20	26	32	1,080	25	213	215	68	114	25	e9.8	13	11
21	12	33	260	25	390	121	1,150	131	20	e43	16	9.8
22	9.1	40	153	23	1,080	87	227	73	17	130	65	268
23	8.4	30	e151	21	727	66	121	56	16	88	46	71
24	6.2	26	e233	19	272	59	89	46	15	35	17	38
25	18	24	e207	20	189	49	172	72	13	20	13	22
26	11	23	e155	20	130	67	1,080	72	76	16	12	17
27	7.7	23	e142	18	110	55	216	44	109	14	13	210
28	55	21	85	18	102	48	136	36	27	15	23	53
29	162	20	71	e37	---	111	117	33	18	16	41	30
30	57	20	218	44	---	77	100	29	16	13	143	26
31	30	---	559	64	---	54	---	25	---	36	122	---
TOTAL	2,519.4	1,909	6,250	3,695	5,703	2,265	5,486	5,102	1,551	953.8	2,006	3,339.8
MEAN	81.3	63.6	202	119	204	73.1	183	165	51.7	30.8	64.7	111
MAX	757	327	1,480	1,570	1,080	248	1,150	878	246	130	293	1,160
MIN	6.2	13	17	18	33	34	34	25	13	9.8	12	9.8
CFSM	1.27	0.99	3.15	1.86	3.18	1.14	2.86	2.57	0.81	0.48	1.01	1.74
IN.	1.46	1.11	3.63	2.15	3.31	1.32	3.19	2.97	0.90	0.55	1.17	1.94

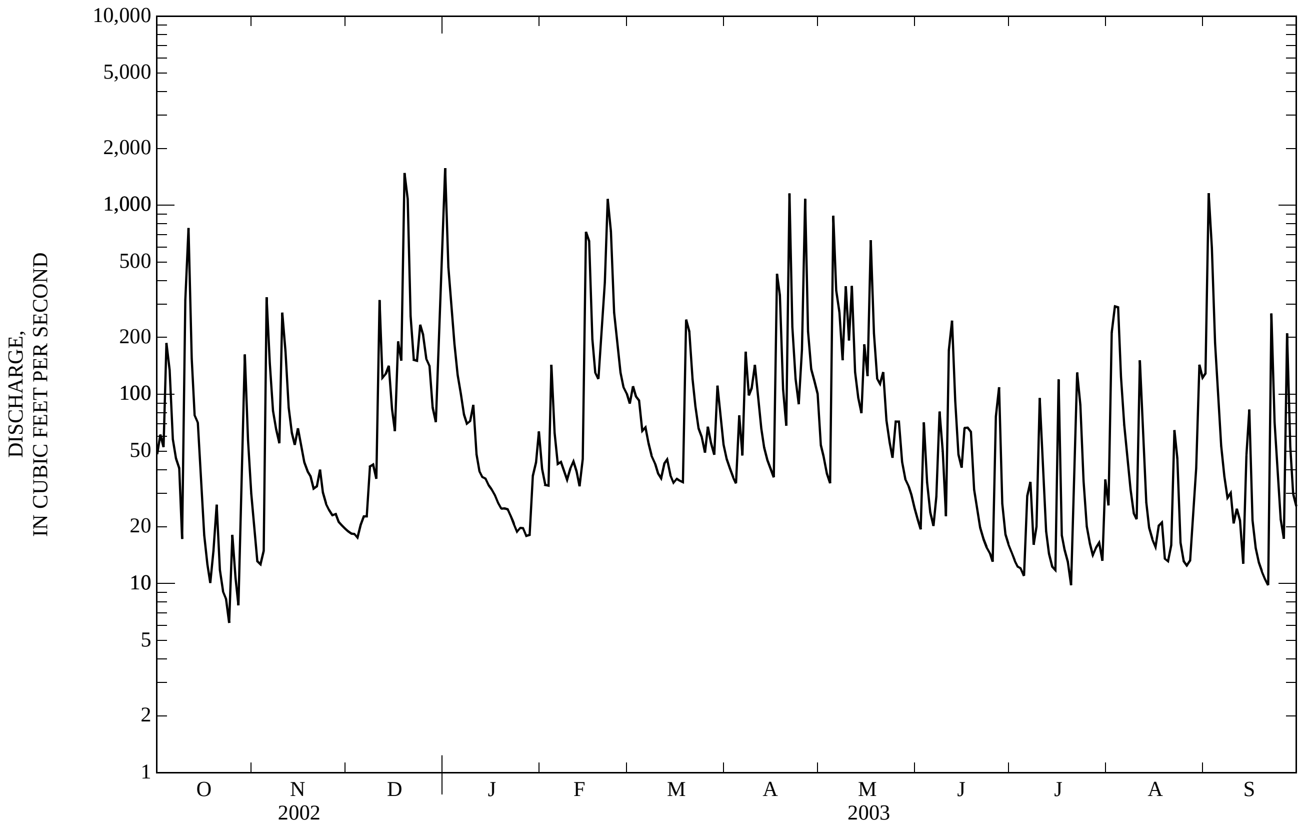
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1944 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	29.4	58.1	99.4	132	156	186	133	112	68.7	45.9	34.5	35.0
MAX	117	256	310	614	454	814	551	505	328	282	186	399
(WY)	(1976)	(1974)	(1979)	(1950)	(1989)	(1997)	(1970)	(1983)	(1997)	(1973)	(1992)	(1979)
MIN	1.76	2.60	4.48	8.52	10.1	11.4	21.2	10.6	4.54	2.96	0.78	1.15
(WY)	(1947)	(1945)	(1954)	(1977)	(1954)	(1954)	(2001)	(1954)	(1954)	(1952)	(1945)	(1945)

03302000 POND CREEK NEAR LOUISVILLE, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1944 - 2003	
ANNUAL TOTAL	46,064.4		40,780.0			
ANNUAL MEAN	126		112		90.5	
HIGHEST ANNUAL MEAN					159	1950
LOWEST ANNUAL MEAN					11.4	1954
HIGHEST DAILY MEAN	2,480	Sep 27	1,570	Jan 1	7,200	Mar 2, 1997
LOWEST DAILY MEAN	4.9	Aug 6	6.2	Oct 24	0.10	Sep 3, 1945
ANNUAL SEVEN-DAY MINIMUM	5.3	Aug 1	10	Oct 21	0.19	Sep 17, 1945
MAXIMUM PEAK FLOW			3,430	Dec 19	8,020	Mar 9, 1964
MAXIMUM PEAK STAGE			18.57	Dec 19	25.74	Mar 2, 1997
INSTANTANEOUS LOW FLOW					0.10	Sep 3, 1945
ANNUAL RUNOFF (CFSM)	1.97		1.75		1.41	
ANNUAL RUNOFF (INCHES)	26.77		23.70		19.22	
10 PERCENT EXCEEDS	294		229		190	
50 PERCENT EXCEEDS	35		46		26	
90 PERCENT EXCEEDS	7.1		15		5.9	

e Estimated



03302030 POND CREEK AT PENDELTON ROAD NEAR LOUISVILLE, KY

LOCATION.--Lat 38°03'15", long 85°52'18", Jefferson County, Hydrologic Unit 05140102, at bridge on Pendleton Road near Louisville, 1.3 mi above Brier Creek and at mile 7.1.

DRAINAGE AREA.--80.3 mi^2.

PERIOD OF RECORD.--December 1998 to current year.

GAGE.--Water-stage recorder with telemetry and crest-stage gage.

REMARKS.--Records good except those estimated, which are poor.

COOPERATION.--Louisville and Jefferson County Metropolitan Sewer District.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)

No peak greater than base discharge.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	74	53	24	2,480	48	e124	49	72	23	17	30	148
2	76	40	23	646	38	e155	42	54	20	15	229	1,790
3	e100	35	23	402	38	109	36	45	64	13	375	1,180
4	e267	41	23	236	185	100	32	42	44	12	348	304
5	278	311	25	150	74	77	67	1,240	27	12	145	e125
6	98	379	30	118	50	74	53	754	22	11	61	e71
7	73	105	28	95	50	64	181	369	27	45	56	e48
8	68	76	38	86	e51	54	123	196	55	19	34	e36
9	52	59	53	85	40	48	101	506	82	23	26	e38
10	131	220	39	100	45	42	177	281	27	79	22	e26
11	1,430	388	468	58	e58	39	112	521	149	56	135	e31
12	261	112	174	46	44	41	76	366	377	22	105	e27
13	116	73	152	45	37	52	62	612	112	16	29	18
14	95	59	224	43	52	42	50	537	e63	13	20	20
15	79	63	108	45	1,490	35	40	389	38	13	17	117
16	45	68	81	37	929	35	33	211	79	134	15	30
17	34	49	215	39	255	34	510	1,010	166	33	13	20
18	30	44	263	36	191	34	808	371	84	18	23	16
19	27	40	1,710	31	e171	252	149	153	48	14	14	15
20	50	36	2,100	32	e312	417	92	115	87	12	11	14
21	35	33	416	30	e594	150	1,780	176	50	42	13	13
22	28	41	210	28	e1,760	106	388	e99	e21	100	57	347
23	25	34	131	24	e1,150	79	159	65	15	139	83	111
24	30	32	185	24	e404	64	109	50	14	38	19	49
25	39	34	591	24	e274	58	187	56	13	21	12	30
26	38	32	175	24	e185	71	1,840	96	25	15	10	22
27	25	31	118	22	e154	61	336	47	193	12	10	276
28	66	30	95	22	e142	52	169	38	34	10	12	75
29	183	28	80	39	---	111	135	32	22	12	40	39
30	135	27	408	47	---	95	114	31	18	11	141	32
31	68	---	1,150	72	---	59	---	26	---	19	136	---
TOTAL	4,056	2,573	9,360	5,166	8,821	2,734	8,010	8,560	1,999	996	2,241	5,068
MEAN	131	85.8	302	167	315	88.2	267	276	66.6	32.1	72.3	169
MAX	1,430	388	2,100	2,480	1,760	417	1,840	1,240	377	139	375	1,790
MIN	25	27	23	22	37	34	32	26	13	10	10	13

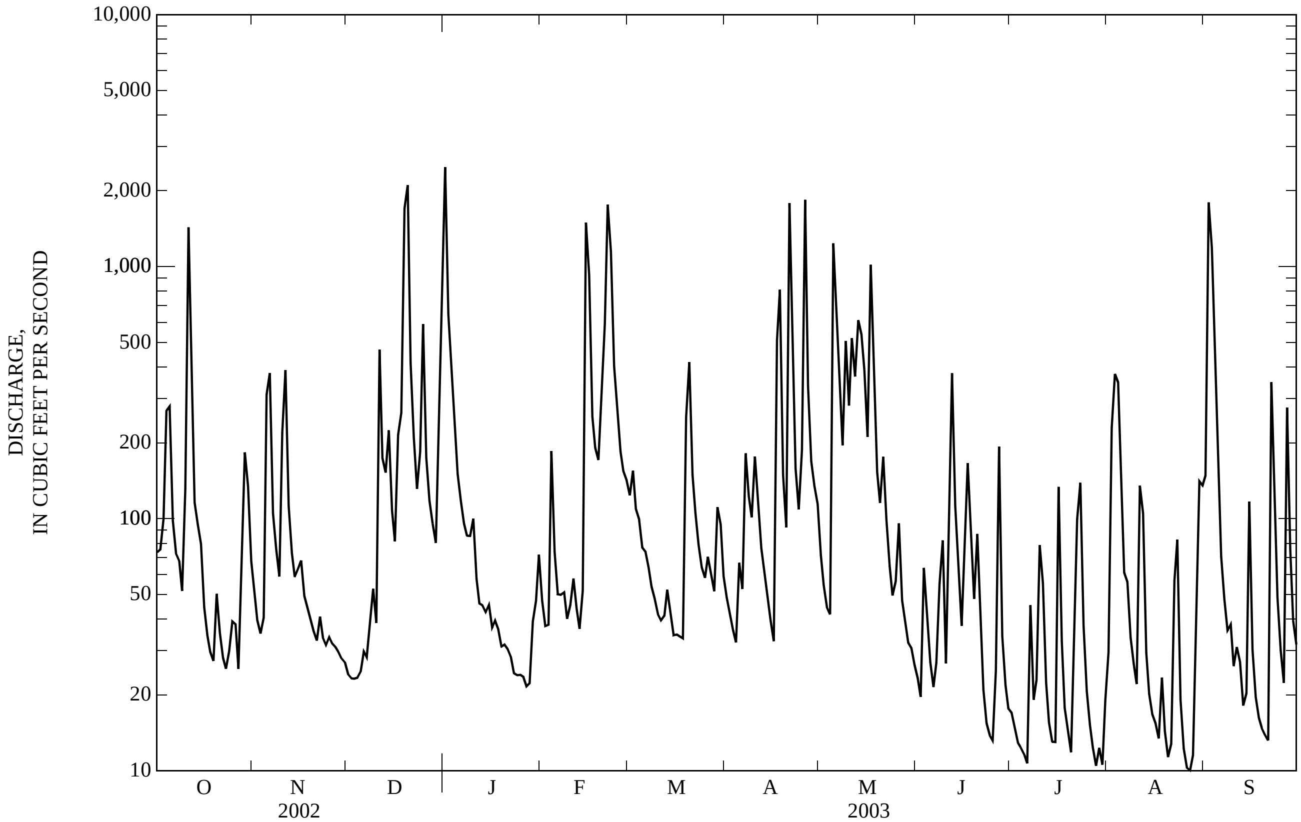
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1999 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	75.6	86.3	187	246	197	188	153	155	77.7	30.6	28.0	91.3
MAX	131	189	302	440	315	451	287	308	187	44.0	72.3	169
(WY)	(2003)	(2002)	(2003)	(1999)	(2003)	(2002)	(2002)	(2002)	(1999)	(1999)	(2003)	(2003)
MIN	26.9	21.3	100	44.0	104	84.8	33.0	23.4	22.0	12.8	11.6	23.8
(WY)	(2001)	(2000)	(2000)	(2001)	(2002)	(2001)	(2001)	(2000)	(2001)	(2002)	(2002)	(1999)

03302030 POND CREEK AT PENDELTON ROAD NEAR LOUISVILLE, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1999 - 2003	
ANNUAL TOTAL	64,747.6		59,584			
ANNUAL MEAN	177		163		126	
HIGHEST ANNUAL MEAN					176	2002
LOWEST ANNUAL MEAN					60.9	2001
HIGHEST DAILY MEAN	3,690	Mar 26	2,480	Jan 1	6,220	Jan 4, 2000
LOWEST DAILY MEAN	4.9	Aug 7	10	Jul 28	1.7	Jul 17, 2001
ANNUAL SEVEN-DAY MINIMUM	6.3	Aug 1	14	Jun 30	4.1	Jul 11, 2001
MAXIMUM PEAK FLOW			3,770	Dec 20	10,500	Jan 4, 2000
MAXIMUM PEAK STAGE			18.11	Dec 20	19.82	Mar 26, 2002
10 PERCENT EXCEEDS	396		376		222	
50 PERCENT EXCEEDS	45		55		35	
90 PERCENT EXCEEDS	9.9		19		10	

e Estimated



03302050 BRIER CREEK AT PENDLETON ROAD NEAR LOUISVILLE, KY

LOCATION.--Lat 38°02'52", long 85°51'26", Jefferson County, Hydrologic Unit 05140102, at bridge on Pendleton Road, 0.4 mi below Headley Hollow, 10 miles south of Louisville, and at mile 1.64

DRAINAGE AREA.--4.01 mi^2.

PERIOD OF RECORD.--January 1999 to current year.

GAGE.--Water-stage recorder with telemetry and crest-stage gage.

REMARKS.--Records fair except those estimated, which are poor.

COOPERATION.--Louisville and Jefferson County Metropolitan Sewer District.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 360 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Apr 17	2010	379	3.85	Apr 25	1955	399	3.91
Apr 20	2300	*488	*4.15	Jul 9	1240	362	3.80

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.4	1.2	2.1	104	2.1	5.6	4.7	3.6	0.74	0.28	0.25	4.2
2	1.4	1.0	2.2	28	2.1	5.1	4.2	2.9	0.70	0.26	0.20	49
3	1.3	1.1	2.0	18	2.4	4.4	3.8	2.1	0.98	0.27	2.7	45
4	1.6	1.2	2.0	12	5.0	4.0	3.5	1.7	0.82	0.35	0.92	9.8
5	1.9	9.7	2.2	9.1	3.8	3.8	4.7	39	0.66	0.36	0.53	e4.4
6	1.6	7.0	2.0	7.1	3.5	3.6	3.8	13	0.56	1.0	0.38	e2.4
7	1.6	2.6	2.0	5.8	3.6	3.2	10	9.9	0.56	0.35	0.34	e1.6
8	1.5	1.8	2.2	5.4	3.1	2.9	8.8	8.1	3.3	0.43	0.28	e1.2
9	1.5	1.8	2.4	4.9	3.2	2.6	8.8	14	1.1	17	0.88	e1.3
10	2.5	13	2.8	4.2	3.5	2.2	12	11	0.98	2.5	0.33	e0.87
11	22	12	12	3.6	3.5	2.1	9.4	20	6.6	1.1	1.9	e1.0
12	4.9	6.0	8.2	3.2	3.3	2.3	7.3	9.1	5.0	0.71	0.94	e0.90
13	3.5	4.4	9.4	3.0	3.0	2.5	5.7	5.7	2.9	0.48	0.48	e0.56
14	2.7	3.8	13	3.0	3.4	2.2	4.9	4.2	2.0	0.36	0.36	e1.1
15	2.3	3.7	7.8	2.6	66	2.0	4.2	8.9	1.5	0.38	0.28	e4.0
16	2.0	3.4	5.9	2.5	51	2.0	3.6	6.0	4.2	0.38	0.23	e0.97
17	1.8	3.1	9.4	2.4	18	1.9	54	27	3.3	0.24	0.19	e0.64
18	1.6	2.9	e8.7	2.1	9.8	2.0	35	20	2.0	0.22	0.16	e0.52
19	1.6	2.8	e74	2.0	8.2	15	14	9.9	1.5	0.19	0.13	e0.48
20	1.6	2.7	e74	2.1	18	18	35	6.9	1.1	0.17	0.11	e0.44
21	1.00	2.8	e15	2.0	32	11	76	6.3	0.84	0.42	0.09	e0.41
22	0.67	2.7	12	1.8	101	7.5	18	4.7	0.68	0.28	2.8	e13
23	0.47	2.5	8.2	1.5	44	5.8	9.7	3.4	0.57	0.22	0.76	e3.6
24	0.31	2.5	9.9	1.2	20	4.9	6.6	2.5	0.47	0.18	0.30	e1.7
25	0.31	2.4	31	1.3	11	4.2	58	2.9	0.41	0.14	0.21	e0.97
26	0.36	2.3	15	1.3	8.4	4.4	43	2.4	0.73	0.13	0.17	e0.73
27	0.33	2.3	11	1.1	6.9	3.9	17	1.8	0.55	0.20	0.15	e10
28	0.61	2.2	8.6	1.2	6.5	4.1	9.8	1.5	0.39	0.25	0.14	e2.5
29	2.1	2.2	7.4	1.8	---	5.9	6.5	1.3	0.34	0.24	0.15	e1.3
30	2.7	2.1	18	1.8	---	5.7	4.8	1.1	0.30	0.19	1.6	e1.1
31	1.8	---	60	1.7	---	5.0	---	0.91	---	0.90	3.3	---
TOTAL	70.96	109.2	440.4	241.7	446.3	149.8	486.8	251.81	45.78	30.18	21.26	165.69
MEAN	2.29	3.64	14.2	7.80	15.9	4.83	16.2	8.12	1.53	0.97	0.69	5.52
MAX	22	13	74	104	101	18	76	39	6.6	17	3.3	49
MIN	0.31	1.0	2.0	1.1	2.1	1.9	3.5	0.91	0.30	0.13	0.09	0.41

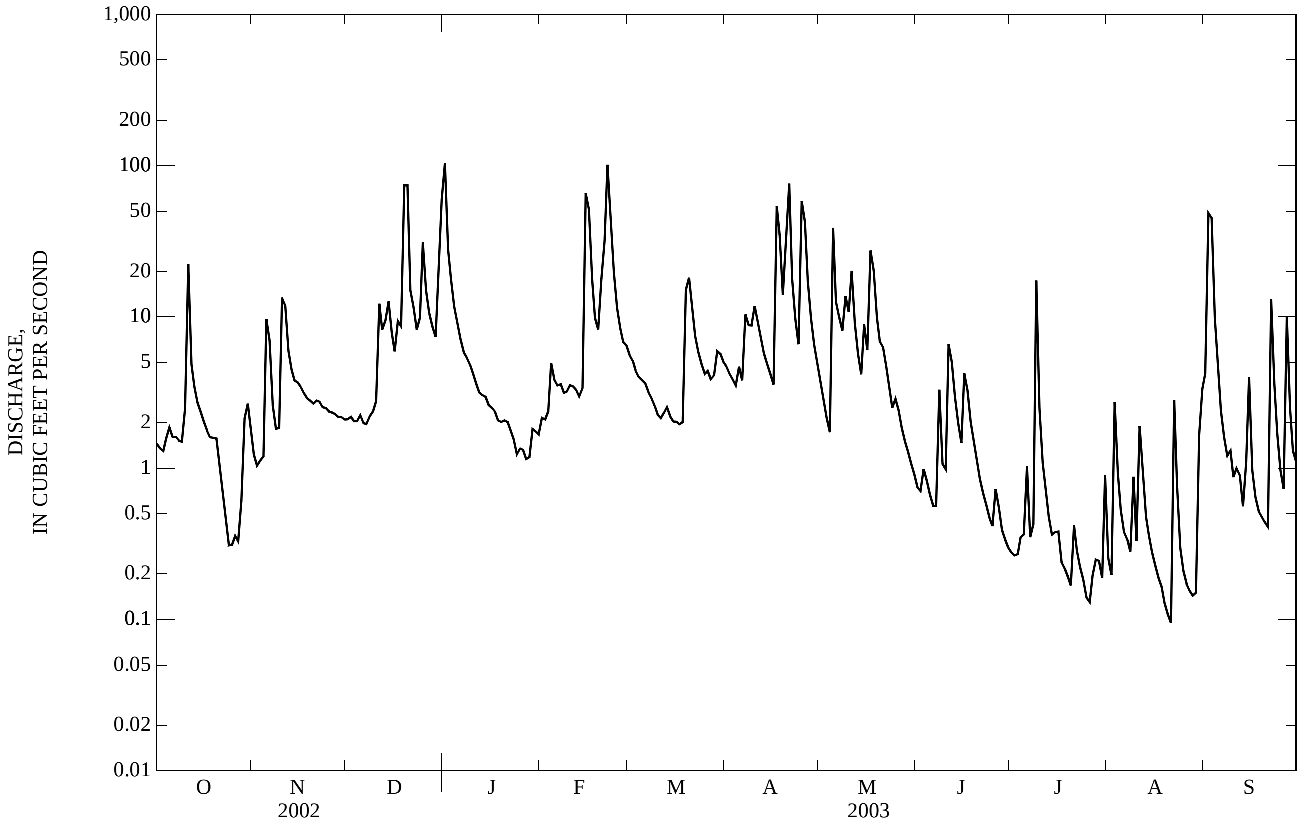
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1999 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1.03	2.89	7.11	11.4	13.2	10.9	9.28	5.43	1.68	0.31	0.19	1.49
MAX	2.29	7.40	14.2	23.2	30.7	25.0	17.2	12.6	4.95	0.97	0.69	5.52
(WY)	(2003)	(2002)	(2003)	(2000)	(2000)	(2002)	(2002)	(2002)	(1999)	(2003)	(2003)	(2003)
MIN	0.001	0.000	0.68	1.32	5.27	4.19	1.91	1.42	0.26	0.027	0.022	0.000
(WY)	(2000)	(2000)	(2000)	(2001)	(2002)	(2001)	(2001)	(2000)	(2001)	(2002)	(2002)	(1999)

03302050 BRIER CREEK AT PENDLETON ROAD NEAR LOUISVILLE, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1999 - 2003	
ANNUAL TOTAL	2,925.70		2,459.88			
ANNUAL MEAN	8.02		6.74		5.64	
HIGHEST ANNUAL MEAN					7.92	2002
LOWEST ANNUAL MEAN					1.76	2001
HIGHEST DAILY MEAN	278	Jan 24	104	Jan 1	685	Feb 18, 2000
LOWEST DAILY MEAN	0.00	Jul 19	0.09	Aug 21	0.00	Aug 21, 1999
ANNUAL SEVEN-DAY MINIMUM	0.00	Jul 19	0.17	Aug 15	0.00	Aug 21, 1999
MAXIMUM PEAK FLOW			488	Apr 20	2,410	Jun 28, 1999
MAXIMUM PEAK STAGE			4.15	Apr 20	7.61	Feb 18, 2000
10 PERCENT EXCEEDS	14		14		9.7	
50 PERCENT EXCEEDS	1.9		2.5		0.95	
90 PERCENT EXCEEDS	0.00		0.33		0.04	

e Estimated



03302110 OTTER CREEK AT OTTER CREEK PARK NEAR ROCK HAVEN, KY

LOCATION.--Lat 37°56'37", long 86°01'47", Meade County, Hydrologic Unit 05140104, at downstream side of bridge on Highway 1638, 1.4 mi east of Rock Haven, and at mile 3.3.

DRAINAGE AREA.--99.2 mi^2.

PERIOD OF RECORD.--January 1999 to current year.

GAGE.--Water-stage recorder with telemetry.

REMARKS.--Records good.

COOPERATION.--Louisville and Jefferson County Metropolitan Sewer District.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,900 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 19	2015	*5,310	*7.91	No other peak greater than base discharge.			

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

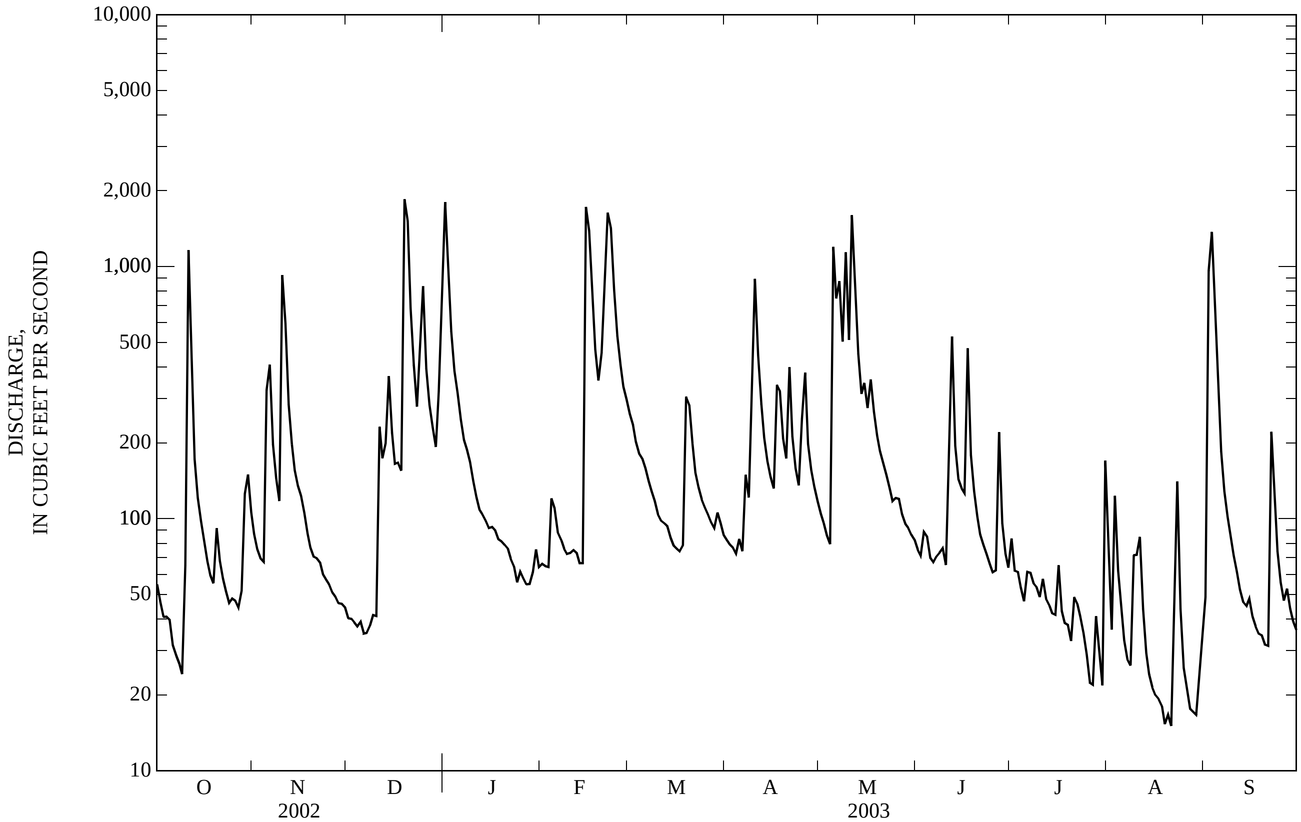
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	55	87	40	1,800	66	260	82	105	75	83	77	49
2	47	76	40	879	65	236	79	96	72	62	36	964
3	41	70	39	554	64	202	77	86	89	61	123	1,370
4	41	67	37	387	120	182	73	79	85	53	62	645
5	40	324	39	315	110	173	83	1,200	70	47	47	302
6	31	408	35	247	89	158	74	748	67	62	33	185
7	29	197	35	204	83	141	150	875	71	61	28	129
8	27	145	38	188	76	129	122	504	73	55	26	102
9	24	117	41	167	73	118	397	1,140	76	53	72	85
10	65	925	41	141	73	104	893	511	66	49	72	72
11	1,160	594	232	121	75	98	445	1,600	176	58	85	62
12	341	284	174	109	73	96	286	808	528	48	44	52
13	173	198	200	104	67	94	210	452	195	46	29	47
14	121	155	368	98	67	85	169	313	143	42	24	45
15	98	135	219	92	1,720	78	146	346	132	42	21	48
16	81	123	165	93	1,390	76	132	275	126	65	20	41
17	68	105	167	90	759	74	340	357	474	43	19	37
18	60	87	155	83	471	78	322	266	179	39	18	35
19	55	77	1,850	81	354	305	208	213	129	38	15	34
20	92	71	1,520	79	457	283	173	185	102	33	17	32
21	68	70	685	76	827	198	399	167	87	49	15	31
22	58	67	408	69	1,630	153	213	149	79	46	45	221
23	51	60	278	65	1,420	133	159	132	72	41	141	130
24	46	57	509	56	808	119	136	117	66	35	44	74
25	48	55	835	62	533	111	249	121	61	29	26	56
26	47	51	394	58	408	104	379	120	62	22	21	47
27	45	49	283	55	334	97	198	104	220	22	18	53
28	52	46	231	55	296	92	156	95	96	41	17	44
29	126	46	193	61	---	106	133	92	73	31	17	39
30	150	45	319	76	---	96	117	86	64	22	24	36
31	106	---	837	64	---	87	---	83	---	170	35	---
TOTAL	3,446	4,791	10,407	6,529	12,508	4,266	6,600	11,425	3,808	1,548	1,271	5,067
MEAN	111	160	336	211	447	138	220	369	127	49.9	41.0	169
MAX	1,160	925	1,850	1,800	1,720	305	893	1,600	528	170	141	1,370
MIN	24	45	35	55	64	74	73	79	61	22	15	31

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1999 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	59.3	94.1	218	193	244	226	184	247	69.5	34.1	28.6	61.5
MAX	111	183	351	324	447	509	391	552	127	49.9	50.4	169
(WY)	(2003)	(2002)	(2002)	(1999)	(2003)	(2002)	(2002)	(2002)	(2003)	(2003)	(2000)	(2003)
MIN	15.5	11.9	58.6	33.4	126	130	45.6	46.7	36.1	21.5	10.9	5.82
(WY)	(2001)	(2000)	(2000)	(2001)	(2002)	(2001)	(2001)	(2001)	(2001)	(1999)	(1999)	(1999)

03302110 OTTER CREEK AT OTTER CREEK PARK NEAR ROCK HAVEN, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1999 - 2003	
ANNUAL TOTAL	78,115		71,666			
ANNUAL MEAN	214		196		142	
HIGHEST ANNUAL MEAN					216	2002
LOWEST ANNUAL MEAN					60.3	2001
HIGHEST DAILY MEAN	3,590	Mar 26	1,850	Dec 19	3,590	Mar 26, 2002
LOWEST DAILY MEAN	12	Aug 31	15	Aug 19	4.9	Sep 6, 1999
ANNUAL SEVEN-DAY MINIMUM	12	Aug 31	18	Aug 15	5.4	Sep 10, 1999
MAXIMUM PEAK FLOW			5,310	Dec 19	8,810	Jan 4, 2000
MAXIMUM PEAK STAGE			7.91	Dec 19	8.63	Mar 26, 2002
10 PERCENT EXCEEDS	590		454		324	
50 PERCENT EXCEEDS	64		86		49	
90 PERCENT EXCEEDS	17		36		14	



03303280 OHIO RIVER AT CANNELTON DAM, KY

LOCATION.--Lat 37°53'58", long 86°42'20", Hancock County, Hydrologic Unit 05140201, at Cannelton Dam, 0.7 mi upstream from Indian Creek, 3.3 mi upstream from Lead Creek, and at mile 720.8.

DRAINAGE AREA.--97,000 mi^2, approximately.

PERIOD OF RECORD.--October 1975 to current year.

GAGE.--Water-stage recorders with telemetry. Datum of headwater gage 0.4 mi upstream is 374.0 ft Ohio River datum. Datum of tailwater gage 0.4 mi downstream is 26.0 ft lower.

REMARKS.--Records good except those below 20,000 ft^3/s, which are poor and extreme events, which can be affected by high flows on the Mississippi River. All extreme high flow periods should be scrutinized for this reason. Daily discharge computed from head, gate openings, and lockages furnished by U.S. Army Corps of Engineers, Louisville District. Flow regulated by Ohio River system of locks, dams, and reservoirs upstream from station.

COOPERATION.--U.S. Army Corps of Engineers, Louisville District.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	57,500	132,000	85,100	219,000	66,800	e416,000	150,000	92,700	128,000	62,600	146,000	108,000
2	36,500	131,000	74,000	267,000	77,700	e386,000	140,000	86,500	120,000	62,200	135,000	166,000
3	30,200	107,000	81,900	261,000	84,900	e344,000	134,000	84,600	132,000	49,700	140,000	251,000
4	38,600	80,000	73,300	259,000	104,000	e303,000	134,000	82,300	159,000	71,700	138,000	277,000
5	33,700	66,800	61,800	276,000	122,000	e285,000	132,000	140,000	188,000	69,700	138,000	280,000
6	12,900	95,400	54,900	278,000	154,000	261,000	129,000	233,000	219,000	78,700	166,000	283,000
7	32,400	131,000	50,300	272,000	178,000	262,000	139,000	265,000	242,000	98,400	174,000	280,000
8	19,200	146,000	50,200	262,000	181,000	264,000	160,000	273,000	253,000	91,200	164,000	276,000
9	14,500	134,000	63,300	237,000	167,000	273,000	199,000	274,000	268,000	106,000	140,000	245,000
10	30,100	145,000	69,200	199,000	145,000	279,000	250,000	260,000	281,000	145,000	141,000	167,000
11	50,100	175,000	68,700	171,000	122,000	278,000	290,000	e356,000	274,000	202,000	147,000	104,000
12	114,000	202,000	85,400	157,000	105,000	270,000	282,000	e379,000	261,000	233,000	172,000	88,300
13	104,000	199,000	113,000	147,000	89,000	264,000	245,000	e407,000	233,000	238,000	163,000	78,200
14	67,100	183,000	149,000	127,000	85,600	252,000	231,000	e415,000	206,000	238,000	155,000	50,500
15	56,900	166,000	194,000	103,000	131,000	236,000	254,000	e411,000	200,000	218,000	134,000	57,100
16	42,300	158,000	248,000	88,200	185,000	228,000	277,000	e387,000	239,000	167,000	113,000	57,900
17	50,300	147,000	274,000	84,300	245,000	227,000	267,000	e340,000	279,000	123,000	106,000	42,000
18	85,600	133,000	275,000	82,400	358,000	234,000	241,000	267,000	363,000	96,700	104,000	60,400
19	90,400	132,000	267,000	59,700	e388,000	239,000	193,000	266,000	384,000	87,200	113,000	65,200
20	82,400	148,000	281,000	61,400	e423,000	238,000	160,000	274,000	403,000	85,700	108,000	64,100
21	54,900	156,000	278,000	64,100	e430,000	248,000	161,000	279,000	409,000	91,900	90,400	120,000
22	41,800	145,000	268,000	49,100	e414,000	261,000	169,000	284,000	397,000	76,500	83,800	149,000
23	41,900	127,000	245,000	58,900	e415,000	266,000	161,000	285,000	369,000	74,300	62,800	175,000
24	51,700	123,000	244,000	52,700	e429,000	259,000	158,000	277,000	256,000	100,000	93,400	177,000
25	40,200	123,000	242,000	37,900	e442,000	236,000	152,000	261,000	209,000	143,000	42,400	142,000
26	47,200	115,000	212,000	54,900	e457,000	214,000	154,000	230,000	150,000	172,000	46,100	140,000
27	48,200	100,000	182,000	53,700	e471,000	193,000	137,000	195,000	118,000	177,000	43,800	158,000
28	44,900	95,600	173,000	35,700	e475,000	175,000	118,000	181,000	82,300	152,000	55,700	160,000
29	45,700	84,800	172,000	37,400	---	164,000	97,700	158,000	69,700	128,000	64,800	138,000
30	87,600	89,000	167,000	50,200	---	159,000	95,100	131,000	71,500	114,000	84,300	128,000
31	128,000	---	164,000	63,500	---	160,000	---	118,000	---	136,000	94,100	---
TOTAL	1,680,800	3,969,600	4,966,100	4,169,100	6,945,000	7,874,000	5,409,800	7,692,100	6,963,500	3,888,500	3,558,600	4,487,700
MEAN	54,220	132,300	160,200	134,500	248,000	254,000	180,300	248,100	232,100	125,400	114,800	149,600
MAX	128,000	202,000	281,000	278,000	475,000	416,000	290,000	415,000	409,000	238,000	174,000	283,000
MIN	12,900	66,800	50,200	35,700	66,800	159,000	95,100	82,300	69,700	49,700	42,400	42,000

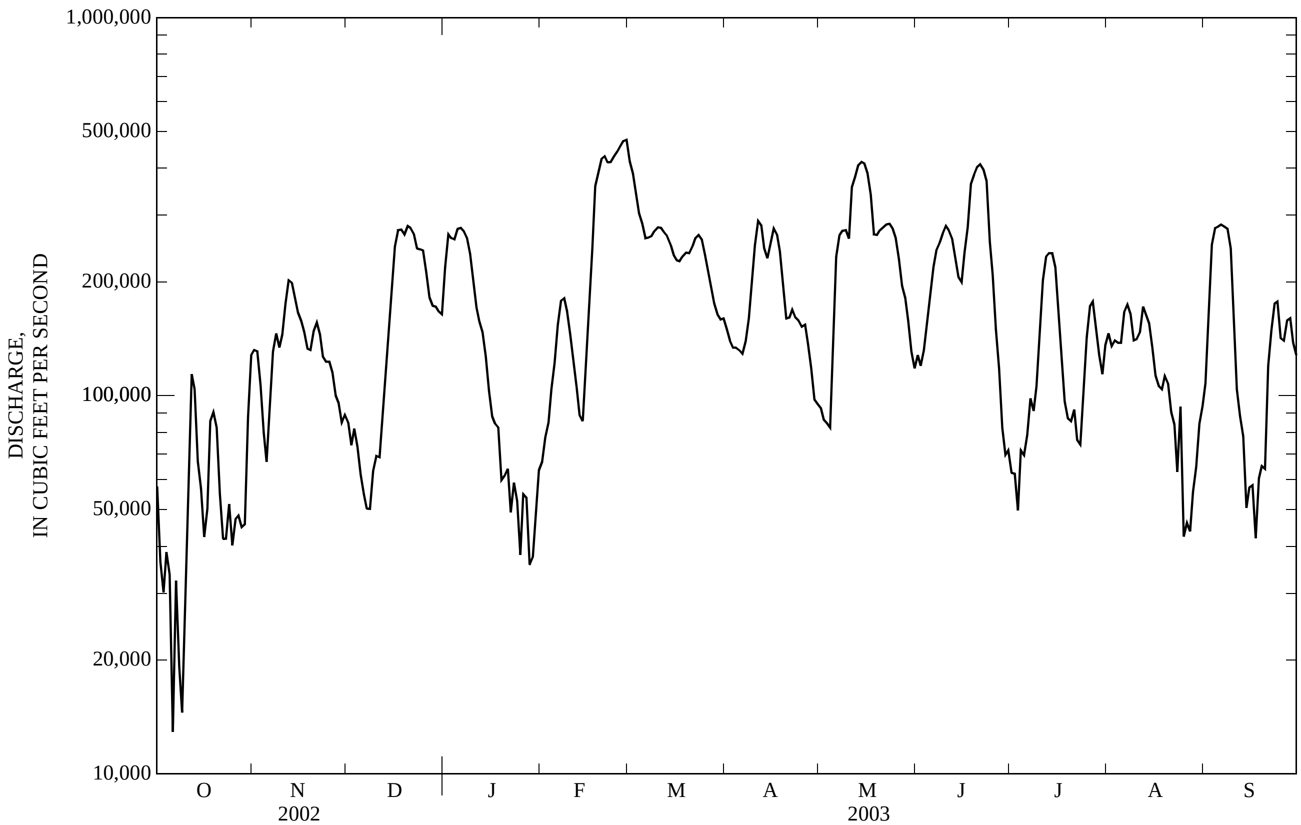
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1976 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	55,500	89,110	152,100	161,500	204,100	234,800	202,500	169,100	109,900	68,650	54,770	45,740
MAX	155,800	222,400	334,000	368,700	358,600	443,300	360,400	415,100	235,400	125,500	148,200	186,600
(WY)	(1980)	(1986)	(1979)	(1991)	(1994)	(1997)	(1994)	(1996)	(1981)	(1998)	(1980)	(1979)
MIN	13,980	24,350	47,120	36,500	94,740	125,500	72,990	46,020	16,490	18,760	13,130	11,630
(WY)	(1992)	(1999)	(1999)	(1977)	(1992)	(1983)	(1986)	(1976)	(1988)	(1988)	(1988)	(1999)

03303280 OHIO RIVER AT CANNELTON DAM, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1976 - 2003	
ANNUAL TOTAL	49,721,450		61,604,800			
ANNUAL MEAN	136,200		168,800		128,600	
HIGHEST ANNUAL MEAN					188,900	1979
LOWEST ANNUAL MEAN					72,150	1988
HIGHEST DAILY MEAN	542,000	Mar 25	475,000	Feb 28	735,000	Mar 8, 1997
LOWEST DAILY MEAN	4,780	Aug 17	12,900	Oct 6	3,180	Aug 28, 1995
ANNUAL SEVEN-DAY MINIMUM	10,800	Sep 8	25,900	Oct 4	7,650	Jul 12, 1988
MAXIMUM PEAK FLOW					736,000	Mar 8, 1997
MAXIMUM PEAK STAGE			41.56	Feb 28	52.42	Mar 8, 1997
10 PERCENT EXCEEDS	387,000		280,000		282,000	
50 PERCENT EXCEEDS	85,800		147,000		91,900	
90 PERCENT EXCEEDS	17,900		54,900		23,000	

e Estimated



03303280 OHIO RIVER AT CANNELTON DAM, KY—Continued

(National stream-quality accounting network station)

WATER-QUALITY RECORDS

LOCATION.--Samples are collected 2.0 mi^2 upstream from discharge station.

PERIOD OF RECORD.--Water years 1975 to 1986 and 1996 to current water year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE.--October 1974 to September 1986 (discontinued).
WATER TEMPERATURES.--October 1974 to September 1986 (discontinued).

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

COOPERATION.--U.S. Army Corps of Engineers, Louisville District.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE.--Maximum daily recorded, 691 microsiemens, Nov. 14, 1978; minimum daily recorded, 176 microsiemens, Dec. 15, 1978.
WATER TEMPERATURES.--Maximum daily recorded, 30.0°C, July 23, 24, 1977, Aug. 5, 1982, several days in July and August, 1983; minimum daily recorded, 0.0°C, on several days during most winter months.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Sample type	Instan- taneous dis- charge, cfs (00061)	Turbid- ity, wat unf lab, Hach 2100AN NTU (99872)	UV absorb- ance, 254 nm, wat flt units /cm (50624)	UV absorb- ance, 280 nm, wat flt units /cm (61726)	Dis- solved oxygen, mg/L (00300)	Dis- solved oxygen, percent of sat- uration (00301)	pH, water, unfltrd field, std units (00400)	Specif. conduc- tance, wat unf uS/cm 25 degC (00095)	Temper- ature, water, deg C (00010)	Hard- ness, water, unfltrd mg/L as CaCO3 (00900)
DEC												
10...	1220	Environmental	61,800	7.8	0.060	0.045	10.9	82	7.3	229	5.0	130
10...	1228	Field Blank	--	--	0.004	0.004	--	--	--	--	--	--
23...	1250	Environmental	244,000	180	0.110	0.084	12.6	103	7.6	216	6.1	110
JAN												
21...	1310	Environmental	64,500	13	0.058	0.043	13.6	101	7.5	237	2.2	130
FEB												
11...	1200	Environmental	121,000	34	0.054	0.041	15.4	114	7.5	269	1.9	150
11...	1210	Replicate	--	34	0.053	0.040	--	--	--	--	--	150
MAR												
03...	1430	Environmental	335,000	160	0.069	0.052	13.4	104	7.6	180	3.5	110
03...	1438	Field Blank	--	--	--	--	--	--	--	--	--	--
21...	1200	Environmental	249,000	67	0.062	0.047	11.5	98	7.6	360	7.8	130
APR												
08...	1320	Environmental	165,000	29	--	--	11.6	109	7.6	335	12.3	130
08...	1330	Replicate	--	26	0.057	0.042	--	--	--	--	--	130
22...	1210	Environmental	169,000	62	0.068	0.051	9.2	92	7.4	292	14.0	110
MAY												
12...	1215	Environmental	380,000	190	0.110	0.084	7.5	80	7.5	308	18.1	130
27...	1400	Environmental	198,000	79	0.094	0.070	8.7	92	7.3	288	18.0	110
JUN												
10...	1200	Environmental	274,000	120	0.077	0.056	8.2	90	7.3	333	19.4	110
10...	1210	Other QA	--	100	--	--	--	--	--	--	--	130
24...	1210	Environmental	260,000	200	0.091	0.067	8.1	92	7.4	261	21.4	110
JUL												
17...	1240	Environmental	131,000	45	0.103	0.076	6.1	77	7.5	330	26.1	130
17...	1248	Field Blank	--	--	--	--	--	--	--	--	--	--
AUG												
12...	1230	Environmental	155,000	52	0.120	0.089	6.3	79	7.4	313	25.9	130
12...	1238	Field Blank	--	--	<0.004	<0.004	--	--	--	--	--	--
SEP												
17...	1200	Environmental	39,000	18	0.108	0.079	6.5	87	7.3	352	24.7	140

03303280 OHIO RIVER AT CANNELTON DAM, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnes-ium, water, fltrd, mg/L (00925)	Potas-sium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	Alka-linity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicar-bonate, wat flt incrm. titr., field, mg/L (00453)	Chlor-ide, water, fltrd, mg/L (00940)	Fluor-ide, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 180degC wat flt mg/L (70300)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia + org-N, water, unfltrd mg/L as N (00625)
DEC													
10...	34.9	9.92	2.69	18.7	62	75	22.7	<0.17	5.23	62.1	221	0.26	0.29
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
23...	32.6	7.67	2.16	11.6	65	80	16.6	<0.17	5.59	36.9	174	0.27	0.99
JAN													
21...	35.0	9.57	1.99	16.4	61	74	24.4	<0.17	6.14	49.6	203	0.28	0.30
FEB													
11...	39.2	11.9	2.27	24.4	65	79	34.5	0.16	5.48	66.0	254	0.27	0.49
11...	39.6	11.9	2.27	25.9	--	--	34.1	0.16	5.48	65.8	254	0.26	0.47
MAR													
03...	29.4	7.79	1.95	15.7	54	66	23.1	0.11	5.71	40.2	175	0.20	0.81
03...	0.02	<0.008	<0.01	<0.09	--	--	0.06	<0.01	<0.13	<0.01	--	--	--
21...	34.8	9.68	1.99	17.5	55	67	30.3	0.14	5.41	51.4	214	0.31	0.57
APR													
08...	34.9	9.97	1.87	15.3	64	78	25.0	0.15	4.87	47.5	204	0.20	0.43
08...	35.1	9.94	1.83	15.2	--	--	24.9	0.16	4.90	47.3	208	0.21	0.42
22...	31.5	8.76	2.01	11.9	63	77	15.8	<0.17	5.78	47.1	179	0.22	0.45
MAY													
12...	36.5	8.98	2.62	10.5	78	95	13.3	<0.2	5.33	41.0	187	0.23	1.2
27...	29.3	8.41	2.13	10.1	64	78	12.9	<0.2	6.21	41.4	180	0.23	0.64
JUN													
10...	31.1	8.87	2.06	14.9	65	79	19.8	<0.2	5.09	54.7	201	0.21	0.72
10...	35.2	9.50	2.38	15.4	--	--	19.3	<0.2	5.77	54.1	199	0.21	0.69
24...	28.2	8.45	2.27	9.66	58	70	11.0	<0.2	6.84	40.3	166	0.24	0.25
JUL													
17...	35.5	10.6	2.94	13.6	77	93	17.1	<0.2	5.63	46.7	201	0.26	0.44
17...	0.03	E.003	E.004	0.16	--	--	1.27	<0.01	0.05	<0.01	--	--	--
AUG													
12...	35.6	10.2	3.06	14.6	59	72	17.3	<0.2	5.65	45.2	195	0.24	0.49
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
17...	36.8	10.9	3.04	12.9	87	107	16.4	0.2	6.26	52.9	206	0.30	0.36

03303280 OHIO RIVER AT CANNELTON DAM, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Ortho-phos-phate, water, fltrd, mg/L as P (00671)	Partic-ulate nitro-gen, susp, water, mg/L (49570)	Phos-phorus, water, fltrd, mg/L (00666)	Phos-phorus, water, unfltrd mg/L (00665)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inor-ganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)	Pheo-phytin a, phyto-plank-ton, ug/L (62360)	Chloro-phyll a phyto-plank-ton, fluoro, ug/L (70953)
DEC													
10...	0.07	1.18	0.009	0.038	0.04	0.045	0.061	0.2	<0.1	0.2	2.4	--	--
10...	--	--	--	--	0.02	--	--	0.1	<0.1	<0.1	0.6	--	--
23...	E.02	1.15	E.005	0.047	0.56	0.057	0.41	6.7	<0.1	6.6	3.4	8.8	2.8
JAN													
21...	0.08	1.72	0.010	0.024	0.09	0.029	0.057	0.5	<0.1	0.5	2.1	1.0	1.0
FEB													
11...	0.08	1.36	0.013	0.024	0.15	0.034	0.106	1.5	<0.1	1.5	1.9	4.8	4.1
11...	0.08	1.31	0.013	0.023	0.17	0.034	0.108	1.6	<0.1	1.6	1.9	4.0	3.9
MAR													
03...	0.05	1.20	0.010	0.013	0.48	0.019	0.26	6.1	<0.1	6.0	2.3	4.7	2.8
03...	<0.015	<0.022	<0.002	<0.007	--	--	--	--	--	--	--	--	--
21...	0.08	1.65	0.021	0.026	0.28	0.036	0.161	2.6	<0.1	2.5	2.5	--	--
APR													
08...	0.04	1.38	0.024	0.020	0.15	0.028	0.088	1.4	<0.1	1.4	2.1	3.7	4.3
08...	E.03	1.37	0.023	0.019	0.13	0.028	0.092	1.4	<0.1	1.4	2.3	3.5	4.2
22...	<0.04	0.94	0.020	0.018	0.22	0.026	0.147	2.5	<0.1	2.4	2.3	4.9	3.8
MAY													
12...	<0.04	1.16	0.029	0.044	0.67	0.057	0.46	7.5	0.2	7.2	3.4	8.0	4.7
27...	<0.04	1.05	0.008	0.025	0.35	0.037	0.18	4.0	<0.1	3.9	3.1	3.6	1.7
JUN													
10...	<0.04	0.94	<0.008	0.027	0.41	0.034	0.27	3.8	<0.1	3.8	2.6	10.2	5.3
10...	<0.04	0.96	<0.008	0.030	--	0.034	0.25	--	--	--	--	--	--
24...	<0.04	1.03	<0.008	0.020	0.36	0.028	0.030	4.0	0.2	3.8	3.6	4.3	1.5
JUL													
17...	<0.04	1.41	<0.008	0.043	0.18	0.013	0.125	1.8	<0.1	1.8	3.3	3.8	2.7
17...	<0.015	E.012	<0.002	<0.007	--	--	--	--	--	--	--	--	--
AUG													
12...	<0.04	1.03	<0.008	0.042	0.18	0.055	0.151	1.5	<0.1	1.5	3.9	1.7	1.3
12...	--	--	--	--	<0.02	--	--	0.2	<0.1	E.2	0.7	--	--
SEP													
17...	<0.04	0.89	0.012	0.037	0.07	0.052	0.080	0.6	<0.1	0.6	3.8	1.4	2.2

03303280 OHIO RIVER AT CANNELTON DAM, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Arsenic water, fltrd, ug/L (01000)	Boron, water, fltrd, ug/L (01020)	Iron, water, fltrd, ug/L (01046)	Lithium water, fltrd, ug/L (01130)	Selen-ium, water, fltrd, ug/L (01145)	Stront-ium, water, fltrd, ug/L (01080)	Vanad-ium, water, fltrd, ug/L (01085)	2,6-Di-ethyl-aniline water fltrd 0.7u GF ug/L (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)
DEC													
10...	0.5	46	E9	5.5	E.4	235	0.4	<0.006	E.011	<0.006	<0.004	<0.005	0.035
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
23...	0.4	33	24	2.6	E.4	156	0.7	<0.006	E.010	<0.006	<0.004	<0.005	0.036
JAN													
21...	0.3	30	17	3.3	E.5	195	0.3	<0.006	E.015	E.005	<0.004	<0.005	0.028
FEB													
11...	0.4	37	17	5.7	0.5	254	0.8	<0.006	E.012	<0.006	<0.004	<0.005	0.121
11...	0.4	38	17	5.8	0.6	253	0.9	<0.006	E.012	<0.006	<0.004	<0.005	0.125
MAR													
03...	0.4	26	25	2.8	E.4	155	0.4	<0.006	E.012	<0.006	<0.004	<0.005	0.028
03...	<0.3	<7	<10	<0.5	<0.5	<0.20	<0.1	--	--	--	--	--	--
21...	0.4	31	15	3.8	E.4	217	0.3	<0.006	<0.006	<0.010	<0.004	<0.005	0.044
APR													
08...	0.4	35	E9	4.1	E.4	201	0.6	<0.006	E.014	0.007	<0.004	<0.005	0.063
08...	0.4	35	102	4.0	E.3	200	0.6	<0.006	E.013	0.007	<0.004	<0.005	0.066
22...	0.4	32	14	4.4	<0.5	167	1.0	<0.006	E.009	0.011	<0.004	<0.005	0.081
MAY													
12...	0.7	30	15	3.6	E.4	183	1.0	<0.006	E.057	0.246	0.010	<0.005	1.56
27...	0.5	28	E8	3.4	E.3	174	0.4	<0.006	E.049	0.101	0.005	<0.005	0.855
JUN													
10...	0.6	37	E4	4.4	E.3	189	0.5	<0.006	E.040	0.052	0.005	<0.005	0.451
10...	0.5	39	E5	4.5	E.4	193	0.5	--	--	--	--	--	--
24...	0.5	32	9	3.5	E.3	165	0.6	<0.006	E.069	0.086	E.004	<0.005	0.483
JUL													
17...	0.8	39	E4	4.2	E.3	258	0.8	<0.006	E.064	0.088	0.014	<0.005	0.399
17...	<0.3	<7	<8	<0.5	<0.5	<0.20	<0.1	--	--	--	--	--	--
AUG													
12...	0.9	46	E5	4.1	E.5	201	1.0	<0.006	E.026	0.023	E.003	<0.005	0.124
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
17...	0.9	46	<8	4.2	0.5	229	0.9	<0.006	E.023	0.030	<0.004	<0.005	0.091

03303280 OHIO RIVER AT CANNELTON DAM, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Azin-phos-methyl, water, fltrd 0.7u GF ug/L (82686)	Ben-flur-alin, water, fltrd 0.7u GF ug/L (82673)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd 0.7u GF ug/L (82680)	Carbo-furan, water, fltrd 0.7u GF ug/L (82674)	Chlor-pyrifos water, fltrd, ug/L (38933)	cis-Per-methrin water fltrd 0.7u GF ug/L (82687)	Cyana-zine, water, fltrd, ug/L (04041)	DCPA, water fltrd 0.7u GF ug/L (82682)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	Disul-foton, water, fltrd 0.7u GF ug/L (82677)	EPTC, water, fltrd 0.7u GF ug/L (82668)
DEC													
10...	<0.050	<0.010	<0.002	E.003	<0.020	<0.005	<0.006	<0.018	<0.003	<0.005	<0.005	<0.02	<0.002
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
23...	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.005	<0.005	<0.02	<0.002
JAN													
21...	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	0.005	<0.005	<0.02	<0.002
FEB													
11...	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.005	<0.005	<0.02	<0.002
11...	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.005	<0.005	<0.02	<0.002
MAR													
03...	<0.050	<0.010	<0.002	E.004	<0.020	<0.005	<0.006	<0.018	<0.003	<0.005	<0.005	<0.02	<0.002
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
21...	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.005	<0.005	<0.02	<0.002
APR													
08...	<0.050	<0.010	<0.002	E.006	<0.020	<0.005	<0.006	<0.018	<0.003	<0.005	<0.005	<0.02	<0.002
08...	<0.050	<0.010	<0.002	E.007	<0.020	<0.005	<0.006	<0.018	<0.003	<0.005	<0.005	<0.02	<0.002
22...	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.005	<0.005	<0.02	<0.002
MAY													
12...	<0.050	<0.010	<0.002	E.006	<0.020	<0.005	<0.006	<0.018	<0.003	0.009	<0.005	<0.02	<0.002
27...	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	0.011	<0.005	<0.02	<0.002
JUN													
10...	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	0.006	<0.005	<0.02	<0.002
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
24...	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.005	<0.005	<0.02	<0.002
JUL													
17...	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.005	<0.005	<0.02	<0.002
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
12...	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	E.003	<0.005	<0.02	<0.002
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
17...	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	0.005	<0.010	<0.02	<0.002

03303280 OHIO RIVER AT CANNELTON DAM, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ethal-flur-alin, water, fltrd 0.7u GF ug/L (82663)	Etho-prop, water, fltrd 0.7u GF ug/L (82672)	Fonofos water, fltrd, ug/L (04095)	Lindane water, fltrd, ug/L (39341)	Linuron water fltrd 0.7u GF ug/L (82666)	Mala-thion, water, fltrd, ug/L (39532)	Methyl para-thion, water, fltrd 0.7u GF ug/L (82667)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Moli-nate, water, fltrd 0.7u GF ug/L (82671)	Naprop-amide, water, fltrd 0.7u GF ug/L (82684)	p,p-' DDE, water, fltrd, ug/L (34653)	Para-thion, water, fltrd, ug/L (39542)
DEC													
10...	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	E.008	<0.006	<0.002	<0.007	<0.003	<0.010
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
23...	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	0.017	<0.006	<0.002	<0.007	<0.003	<0.010
JAN													
21...	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	0.019	<0.006	<0.002	<0.007	<0.003	<0.010
FEB													
11...	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	0.315	<0.006	<0.002	<0.007	<0.003	<0.010
11...	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	0.322	<0.006	<0.002	<0.007	<0.003	<0.010
MAR													
03...	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	0.016	<0.006	<0.002	<0.007	<0.003	<0.010
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
21...	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	0.030	<0.006	<0.002	<0.007	<0.003	<0.010
APR													
08...	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	0.038	<0.006	<0.002	<0.007	<0.003	<0.010
08...	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	0.039	<0.006	<0.002	<0.007	<0.003	<0.010
22...	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	0.016	<0.006	<0.002	<0.007	<0.003	<0.010
MAY													
12...	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	0.213	0.013	<0.002	<0.007	<0.003	<0.010
27...	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	0.151	0.006	<0.002	<0.007	<0.003	<0.010
JUN													
10...	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	0.070	<0.006	<0.002	<0.007	<0.003	<0.010
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
24...	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	0.107	<0.006	<0.002	<0.007	<0.003	<0.010
JUL													
17...	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	0.197	0.008	<0.002	<0.007	<0.003	<0.010
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
12...	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	0.045	<0.006	<0.002	<0.007	<0.003	<0.010
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
17...	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	0.038	<0.006	<0.002	<0.007	<0.003	<0.010

03303280 OHIO RIVER AT CANNELTON DAM, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Peb-ulate, water, fltrd 0.7u GF ug/L (82669)	Pendi-meth-alin, water, fltrd 0.7u GF ug/L (82683)	Phorate water fltrd 0.7u GF ug/L (82664)	Prome-ton, water, fltrd, ug/L (04037)	Pron-amide, water, fltrd 0.7u GF ug/L (82676)	Propa-chlor, water, fltrd, ug/L (04024)	Pro-panil, water, fltrd 0.7u GF ug/L (82679)	Propar-gite, water, fltrd 0.7u GF ug/L (82685)	Sima-zine, water, fltrd, ug/L (04035)	Tebu-thiuron water fltrd 0.7u GF ug/L (82670)	Terba-cil, water, fltrd 0.7u GF ug/L (82665)	Terbu-fos, water, fltrd 0.7u GF ug/L (82675)	Thio-bencarb water fltrd 0.7u GF ug/L (82681)
DEC													
10...	<0.004	<0.022	<0.011	M	<0.004	<0.010	<0.011	<0.02	0.010	<0.02	<0.034	<0.02	<0.005
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
23...	<0.004	<0.022	<0.011	<0.01	<0.004	<0.010	<0.011	<0.02	0.011	<0.02	<0.034	<0.02	<0.005
JAN													
21...	<0.004	<0.022	<0.011	M	<0.004	<0.010	<0.011	<0.02	0.011	<0.02	<0.034	<0.02	<0.005
FEB													
11...	<0.004	<0.022	<0.011	<0.01	<0.004	<0.010	<0.011	<0.02	0.110	<0.02	<0.034	<0.02	<0.005
11...	<0.004	<0.022	<0.011	<0.01	<0.004	<0.010	<0.011	<0.02	0.110	<0.02	<0.034	<0.02	<0.005
MAR													
03...	<0.004	<0.022	<0.011	<0.01	<0.004	<0.010	<0.011	<0.02	0.006	<0.02	<0.034	<0.02	<0.005
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
21...	<0.004	<0.022	<0.011	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005
APR													
08...	<0.004	<0.022	<0.011	M	<0.004	<0.010	<0.011	<0.02	0.016	<0.02	<0.034	<0.02	<0.005
08...	<0.004	<0.022	<0.011	M	<0.004	<0.010	<0.011	<0.02	0.016	<0.02	<0.034	<0.02	<0.005
22...	<0.004	<0.022	<0.011	<0.01	<0.004	<0.010	<0.011	<0.02	0.027	<0.02	<0.034	<0.02	<0.005
MAY													
12...	<0.004	<0.022	<0.011	0.02	<0.004	<0.010	<0.011	<0.02	0.250	<0.02	<0.034	<0.02	<0.005
27...	<0.004	<0.022	<0.011	E.01	<0.004	<0.010	<0.011	<0.02	0.140	<0.02	<0.034	<0.02	<0.005
JUN													
10...	<0.004	<0.022	<0.011	E.01	<0.004	<0.010	<0.011	<0.02	0.092	<0.02	<0.034	<0.02	<0.005
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
24...	<0.004	<0.022	<0.011	<0.01	<0.004	<0.010	<0.011	<0.02	0.059	<0.02	<0.034	<0.02	<0.005
JUL													
17...	<0.004	<0.022	<0.011	E.01	<0.004	<0.010	<0.011	<0.02	0.060	<0.02	<0.034	<0.02	<0.005
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
12...	<0.004	<0.022	<0.011	E.01	<0.004	<0.010	<0.011	<0.02	0.018	<0.02	<0.034	<0.02	<0.005
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
17...	<0.004	<0.022	<0.011	E.01	<0.004	<0.010	<0.011	<0.02	0.018	<0.02	<0.034	<0.02	<0.005

03303280 OHIO RIVER AT CANNELTON DAM, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Tri-allate, water, fltrd 0.7u GF ug/L (82678)	Tri-flur-alin, water, fltrd 0.7u GF ug/L (82661)	Suspnd. sedi-ment, sieve diametr percent <.063mm (70331)	Sus-pended sedi-ment concen-tration mg/L (80154)
DEC				
10...	<0.002	<0.009	100	7
10...	--	--	--	--
23...	<0.002	<0.009	97	250
JAN				
21...	<0.002	<0.009	100	12
FEB				
11...	<0.002	<0.009	99	46
11...	<0.002	<0.009	100	48
MAR				
03...	<0.002	<0.009	90	264
03...	--	--	--	--
21...	<0.002	<0.009	95	93
APR				
08...	<0.002	<0.009	98	42
08...	<0.002	<0.009	98	47
22...	<0.002	<0.009	99	89
MAY				
12...	<0.002	<0.009	88	343
27...	<0.002	<0.009	99	121
JUN				
10...	<0.002	<0.009	89	219
10...	--	--	--	--
24...	<0.002	<0.009	97	281
JUL				
17...	<0.002	<0.009	99	52
17...	--	--	--	--
AUG				
12...	<0.002	<0.009	100	63
12...	--	--	--	--
SEP				
17...	<0.002	<0.009	100	15

Other QA--Grab sample at center vertical (surface only).
E--Laboratory estimated value.
M--Presence of material verified but not quantified.
<--Numeric result is less than the value shown.

03306000 GREEN RIVER NEAR CAMPBELLSVILLE, KY

LOCATION.--Lat 37°14'25", long 85°20'50", Taylor County, Hydrologic Unit 05110001, on right bank on downstream side of pier of bridge on State Highway 55, 0.6 mi downstream from Green River Dam, 0.8 mi upstream from Pinch Creek, 6.9 mi south of Campbellsville, and at mile 305.1.

DRAINAGE AREA.--669 mi^2 (1,733 sq km).

WATER-QUALITY RECORDS

GAGE.--Water-temperature recorder with telemetry.

REMARKS.--Records fair.

COOPERATION.--Nature Conservency and U.S. Army Corps of Engineers, Louisville District.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum recorded, 31.0°C, August. 3-5, 1964; minimum recorded, 0.0°C, on many days.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum recorded, 24.7°C, Aug. 24, minimum recorded, 3.8°C, Jan. 1-31, Feb. 1, 2.

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	---	---	---	16.7	16.4	16.6	11.8	11.5	11.6	7.2	6.9	7.1
2	---	---	---	16.4	16.2	16.3	11.5	11.3	11.4	8.6	7.2	7.6
3	---	---	---	16.2	16.0	16.1	11.3	10.4	10.9	8.8	8.6	8.7
4	---	---	---	16.0	15.8	15.9	10.4	10.1	10.3	8.7	8.5	8.6
5	---	---	---	15.8	15.6	15.7	10.1	10.0	10.1	8.5	7.2	7.9
6	---	---	---	15.7	15.6	15.7	10.0	9.7	9.8	7.2	6.6	6.9
7	---	---	---	15.6	14.8	15.2	9.7	9.6	9.7	6.6	6.4	6.5
8	---	---	---	14.8	14.6	14.7	10.9	9.6	10.2	6.5	6.4	6.4
9	20.1	20.0	20.0	14.6	14.5	14.6	10.9	10.8	10.8	6.8	6.5	6.6
10	20.1	19.8	20.0	14.6	14.5	14.5	10.8	10.4	10.6	6.8	6.7	6.8
11	19.8	19.8	19.8	14.7	14.5	14.6	11.4	10.4	10.6	6.7	6.6	6.7
12	19.8	16.6	18.5	14.7	14.6	14.6	11.4	11.3	11.4	6.7	6.6	6.7
13	17.9	16.3	17.1	14.6	14.3	14.4	11.3	9.4	10.7	7.4	6.5	6.9
14	18.5	17.8	18.1	14.3	14.1	14.2	9.4	8.7	8.9	7.4	7.3	7.4
15	18.8	18.5	18.6	14.1	14.1	14.1	8.7	8.4	8.6	7.3	7.1	7.2
16	18.8	18.1	18.5	14.1	14.0	14.1	8.4	8.1	8.3	7.2	6.9	7.1
17	18.1	17.7	17.9	14.0	13.9	13.9	8.1	8.0	8.0	7.2	6.9	7.0
18	17.7	17.4	17.5	13.9	13.6	13.7	8.0	7.9	7.9	6.9	6.6	6.8
19	17.4	17.2	17.3	13.6	13.3	13.4	9.1	7.9	8.1	6.6	6.4	6.5
20	17.2	17.0	17.1	13.3	13.1	13.2	9.6	8.3	9.1	6.4	6.3	6.3
21	17.0	16.9	16.9	13.1	13.0	13.0	8.3	7.9	8.0	6.3	6.0	6.2
22	17.6	16.7	17.1	13.0	12.8	12.9	7.9	7.7	7.8	6.0	5.8	5.9
23	17.9	17.6	17.8	12.8	12.5	12.6	7.7	7.7	7.7	5.8	5.5	5.6
24	17.8	17.7	17.8	12.5	12.5	12.5	8.1	7.7	7.8	5.5	5.3	5.3
25	17.7	17.6	17.7	12.5	12.4	12.4	9.1	8.0	8.5	5.3	5.2	5.2
26	17.6	17.5	17.6	12.4	12.3	12.3	9.1	9.0	9.1	5.2	5.1	5.1
27	17.5	17.4	17.5	12.3	12.2	12.2	9.0	7.9	8.6	5.1	4.8	4.9
28	17.4	17.2	17.3	12.3	12.1	12.2	7.9	7.0	7.5	4.8	4.7	4.8
29	17.3	17.3	17.3	12.2	12.0	12.1	7.0	6.9	6.9	4.8	4.7	4.8
30	17.3	17.0	17.1	12.0	11.7	11.9	6.9	6.8	6.8	4.7	4.0	4.4
31	17.0	16.7	16.8	---	---	---	6.9	6.8	6.9	4.0	3.8	3.8
MONTH	20.1	16.3	17.9	16.7	11.7	14.0	11.8	6.8	9.1	8.8	3.8	6.4

03306000 GREEN RIVER NEAR CAMPBELLSVILLE, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	3.8	3.8	3.8	4.3	4.2	4.3	9.3	9.0	9.1	12.4	12.1	12.2
2	---	---	---	4.4	4.3	4.3	9.3	8.9	9.1	12.7	12.4	12.5
3	---	---	---	4.4	4.4	4.4	9.5	9.2	9.4	13.4	12.7	12.8
4	---	---	---	4.5	4.4	4.4	10.0	9.5	9.8	14.1	13.4	13.8
5	---	---	---	4.6	4.5	4.5	10.4	9.9	10.1	14.1	13.6	13.9
6	---	---	---	4.7	4.6	4.6	10.9	10.4	10.7	13.6	13.4	13.5
7	---	---	---	4.8	4.7	4.7	10.9	10.7	10.8	13.6	13.3	13.5
8	---	---	---	4.9	4.8	4.8	11.0	10.3	10.8	13.4	13.3	13.4
9	---	---	---	5.0	4.9	4.9	10.8	10.0	10.4	13.3	13.3	13.3
10	---	---	---	5.3	5.0	5.2	10.8	10.8	10.8	13.3	12.8	13.2
11	---	---	---	5.3	5.3	5.3	10.8	10.7	10.7	12.8	12.4	12.6
12	4.1	4.0	4.0	5.4	5.3	5.4	10.9	10.8	10.8	12.5	12.2	12.3
13	4.0	3.9	4.0	5.5	5.4	5.4	11.1	10.8	11.0	13.6	12.4	12.6
14	4.3	4.0	4.1	5.9	5.5	5.7	11.1	11.1	11.1	15.2	13.6	14.6
15	5.5	4.3	4.9	6.2	5.9	6.1	11.1	10.9	11.0	15.8	15.2	15.5
16	5.8	5.5	5.7	6.5	6.2	6.4	---	---	10.8	16.1	14.5	15.6
17	5.8	5.5	5.7	6.7	6.5	6.6	10.9	10.7	10.8	14.5	13.6	13.9
18	5.5	4.8	5.2	6.7	6.6	6.7	11.4	10.7	11.0	15.0	13.6	14.1
19	4.8	4.3	4.5	6.9	6.7	6.8	11.6	11.4	11.5	15.6	15.0	15.3
20	4.3	4.1	4.2	6.9	6.8	6.8	11.7	11.6	11.7	15.8	15.6	15.7
21	4.3	4.1	4.2	6.8	6.7	6.8	11.9	11.7	11.8	16.1	15.8	16.0
22	4.7	4.3	4.5	7.3	6.8	7.1	12.0	11.5	11.8	16.2	15.9	16.1
23	4.8	4.7	4.8	7.5	7.0	7.3	11.5	11.3	11.4	16.0	15.4	15.8
24	4.8	4.7	4.8	7.6	7.5	7.5	11.4	11.3	11.3	16.6	16.0	16.3
25	4.8	4.6	4.7	7.7	7.5	7.6	11.5	11.3	11.4	17.0	16.6	16.8
26	4.6	4.3	4.4	8.7	7.6	8.3	11.7	11.4	11.5	17.3	17.0	17.1
27	4.3	4.2	4.2	9.1	8.7	8.9	11.6	11.5	11.6	17.4	17.2	17.3
28	4.2	4.2	4.2	9.0	8.8	8.9	11.6	11.1	11.4	17.4	17.3	17.3
29	---	---	---	9.1	8.8	8.9	11.8	11.0	11.3	17.4	17.3	17.4
30	---	---	---	---	---	---	12.1	11.8	12.0	17.6	17.4	17.5
31	---	---	---	---	---	---	---	---	---	17.7	17.5	17.5
MONTH	5.8	3.8	4.5	9.1	4.2	6.2	12.1	8.9	10.9	17.7	12.1	14.8
		JUNE			JULY			AUGUST			SEPTEMBER	
1	17.9	17.6	17.7	20.9	20.6	20.7	23.2	23.1	23.1	24.2	24.1	24.2
2	18.1	17.9	18.0	21.4	20.9	21.1	23.2	23.1	23.1	24.3	24.2	24.3
3	18.1	17.9	18.0	21.3	21.1	21.2	23.2	23.1	23.1	24.2	19.6	22.5
4	17.9	17.8	17.9	21.4	21.2	21.3	23.2	23.1	23.1	19.6	18.7	18.9
5	18.0	17.7	17.8	21.4	21.3	21.4	23.4	23.1	23.2	18.7	18.5	18.6
6	18.3	18.0	18.1	21.5	21.4	21.4	23.5	23.3	23.3	18.8	18.7	18.7
7	---	---	---	21.4	21.3	21.3	23.5	23.3	23.4	18.8	18.1	18.6
8	---	---	---	21.5	21.3	21.4	23.5	23.3	23.4	20.6	17.9	18.8
9	---	---	---	21.5	21.4	21.4	23.6	23.4	23.5	21.8	20.6	21.2
10	---	---	---	21.5	21.4	21.4	23.7	23.5	23.6	22.2	21.7	21.8
11	---	---	---	21.7	21.4	21.5	23.7	23.5	23.6	22.5	22.1	22.2
12	17.3	17.0	17.1	21.8	21.7	21.7	23.8	23.2	23.5	22.6	22.4	22.5
13	17.6	17.3	17.4	22.2	21.8	22.0	23.8	23.6	23.8	22.6	20.7	21.7
14	17.8	17.6	17.6	22.4	22.2	22.3	23.9	23.7	23.8	22.0	20.5	21.2
15	17.9	17.7	17.8	22.4	22.3	22.4	23.9	23.6	23.8	22.0	20.9	21.6
16	18.1	17.9	17.9	22.5	22.2	22.3	23.9	23.7	23.8	22.2	21.8	21.9
17	18.2	18.0	18.1	22.7	22.5	22.6	24.0	23.7	23.8	22.4	22.1	22.2
18	18.3	18.2	18.2	22.6	22.5	22.5	24.2	23.9	24.0	22.5	22.2	22.3
19	18.5	18.3	18.4	22.8	22.5	22.6	24.2	23.9	24.1	22.5	22.1	22.3
20	18.6	18.3	18.5	22.9	22.8	22.8	24.2	24.0	24.1	22.2	21.8	22.0
21	18.3	17.9	18.1	22.8	22.4	22.6	24.4	24.2	24.3	22.2	21.8	22.0
22	17.9	17.2	17.7	22.6	22.4	22.5	24.4	24.3	24.3	22.1	21.8	21.9
23	17.3	17.0	17.1	22.6	22.4	22.5	24.6	24.2	24.4	21.8	21.4	21.6
24	18.6	17.2	17.7	22.4	22.3	22.4	24.7	24.5	24.6	21.8	21.5	21.7
25	19.5	18.6	19.1	22.8	22.4	22.6	24.6	24.5	24.6	21.9	21.7	21.8
26	19.6	19.5	19.6	22.9	22.7	22.8	24.6	24.4	24.5	21.9	21.7	21.7
27	20.0	19.6	19.7	22.9	22.8	22.8	24.6	24.5	24.5	21.7	21.5	21.6
28	20.2	19.9	20.0	22.9	22.8	22.8	24.6	24.4	24.5	21.7	21.4	21.5
29	20.5	20.2	20.3	23.1	22.8	22.9	24.5	24.3	24.3	21.4	20.4	21.0
30	20.7	20.5	20.6	23.1	23.0	23.0	24.3	24.1	24.2	20.4	19.8	20.0
31	---	---	---	23.1	23.0	23.1	24.3	24.2	24.2	---	---	---
MONTH	20.7	17.0	18.3	23.1	20.6	22.1	24.7	23.1	23.9	24.3	17.9	21.4
YEAR	24.7	3.8	14.4									

03306500 GREEN RIVER AT GREENSBURG, KY

LOCATION.--Lat 37°15'12", long 85°03'11", Green County, Hydrologic Unit 05110001, at bridge on State Highway 61 and 70, 300 ft upstream from Clover Lick Creek, 0.25 mi south of Greensburg, 2.6 mi upstream from Russell Creek, and at mile 279.7.

DRAINAGE AREA.--736 mi^2.

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--Water-temperature: December 22, 1999 to September 30, 2000.

GAGE.--Water-tempertaure recorder with telemetry.

REMARKS.-Records good.

COOPERATION.--Green County and U.S. Army Corps of Engineers, Louisville District.

EXTREMES FOR PERIOD OF DAILY RECORD.--Maximum water-temperature discharge, 31.2°C , July 25, 2001; minimum water-temperature, 0.0°C , many days in January and February.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum recorded, 29.1°C, Aug. 17, minimum recorded, 0.6°C, Jan. 24-28.

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	21.1	20.6	20.8	13.5	12.9	13.3	9.2	7.4	8.1	7.7	7.5	7.6
2	21.8	20.7	21.2	12.9	11.8	12.2	7.4	6.8	7.1	7.6	7.1	7.2
3	22.1	21.1	21.6	12.4	11.9	12.2	8.5	7.1	7.5	7.2	6.6	7.0
4	21.9	21.3	21.5	12.8	12.4	12.6	9.5	8.5	9.3	6.6	5.8	6.2
5	21.3	20.4	20.8	13.4	12.8	13.0	9.5	9.2	9.4	7.2	6.3	6.7
6	20.4	18.8	19.6	13.4	12.8	13.2	9.2	8.6	8.9	7.1	6.2	6.5
7	19.9	19.2	19.6	12.8	12.2	12.6	8.8	8.0	8.4	6.6	5.7	6.1
8	19.2	17.9	18.5	14.0	12.6	13.1	8.4	7.8	8.1	7.0	6.4	6.6
9	18.4	17.9	18.2	15.3	14.0	14.8	8.2	7.1	7.5	7.1	6.7	6.8
10	18.4	18.0	18.3	15.7	15.0	15.3	7.3	6.9	7.1	6.7	5.9	6.3
11	18.7	17.9	18.2	15.5	14.9	15.1	7.9	7.1	7.5	5.9	5.1	5.3
12	19.5	18.4	18.9	15.1	14.5	14.7	8.1	7.8	8.0	5.1	4.4	4.6
13	19.5	15.8	18.2	14.6	14.2	14.4	8.4	7.9	8.1	4.8	4.2	4.5
14	17.9	15.8	17.2	14.4	13.8	14.1	8.4	7.9	8.0	4.7	4.0	4.5
15	18.7	17.9	18.3	14.2	13.8	13.9	8.1	7.3	7.7	4.0	3.1	3.4
16	18.6	17.9	18.4	13.8	12.6	13.4	8.3	7.4	7.8	3.3	2.7	3.1
17	17.9	16.8	17.3	12.6	11.9	12.2	---	---	---	2.7	2.0	2.4
18	16.8	15.5	15.9	11.9	10.9	11.4	---	---	---	2.0	1.1	1.5
19	16.1	15.8	16.0	13.0	11.9	12.6	---	---	---	1.9	1.0	1.5
20	16.0	15.7	16.0	13.4	11.9	12.5	---	---	---	3.6	1.9	2.7
21	16.1	15.3	15.7	13.5	12.9	13.2	---	---	---	4.1	3.6	3.8
22	16.1	15.4	15.8	13.1	12.5	12.7	---	---	---	3.7	2.6	3.2
23	15.8	14.6	15.3	12.5	11.9	12.2	---	---	---	2.6	0.9	1.5
24	16.2	15.1	15.6	12.7	11.9	12.3	---	---	---	0.9	0.6	0.8
25	16.7	16.1	16.3	12.6	11.7	12.1	7.6	6.5	7.1	0.9	0.6	0.7
26	16.8	16.6	16.7	11.7	11.1	11.4	6.5	5.8	6.0	0.8	0.6	0.7
27	16.6	16.0	16.3	11.1	10.5	10.8	5.8	5.0	5.4	0.8	0.6	0.7
28	16.0	15.4	15.6	10.5	9.2	9.8	6.4	5.5	5.9	1.7	0.6	1.0
29	16.1	15.4	15.7	9.4	8.4	8.9	7.1	6.3	6.7	3.1	1.7	2.5
30	15.9	14.3	15.1	9.6	9.2	9.4	7.3	6.8	7.1	3.5	3.1	3.3
31	14.3	13.5	13.8	---	---	---	7.5	7.1	7.3	3.8	3.1	3.4
MONTH	22.1	13.5	17.6	15.7	8.4	12.6	9.5	5.0	7.6	7.7	0.6	3.9

03306500 GREEN RIVER AT GREENSBURG, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	3.9	3.8	3.9	5.2	4.8	5.0	12.9	10.0	11.4	16.0	14.8	15.4
2	4.3	3.5	3.8	5.1	4.9	5.0	15.2	12.5	13.8	15.8	15.1	15.4
3	5.0	4.3	4.5	5.3	4.8	5.0	16.8	14.5	15.6	15.4	14.7	15.0
4	5.1	4.6	5.0	5.6	4.8	5.1	16.9	15.8	16.3	15.0	14.1	14.6
5	4.6	3.6	3.9	5.5	5.3	5.4	16.2	14.0	15.0	17.0	14.9	15.8
6	3.8	3.5	3.7	5.4	5.3	5.4	14.0	11.5	12.5	17.5	15.9	17.0
7	3.8	3.4	3.7	5.9	5.2	5.5	13.3	11.3	12.0	15.9	14.5	14.8
8	3.4	2.0	2.5	6.2	5.2	5.7	13.4	12.6	13.0	15.1	14.1	14.6
9	2.9	1.7	2.4	6.1	5.7	5.9	12.6	10.1	11.3	15.3	14.3	14.8
10	3.4	2.8	3.1	6.3	5.4	5.8	11.8	11.5	11.7	15.6	14.5	15.0
11	4.0	3.2	3.6	6.6	5.8	6.2	12.7	11.6	12.1	16.3	15.6	16.0
12	4.0	3.4	3.7	6.8	5.9	6.4	12.9	11.7	12.3	16.1	15.2	15.7
13	4.1	3.1	3.6	6.8	6.1	6.5	13.3	11.8	12.5	15.2	14.2	14.7
14	4.3	3.7	3.9	7.3	6.5	6.8	13.5	12.1	12.7	16.7	14.9	15.7
15	6.9	4.3	6.1	8.0	7.0	7.5	13.5	12.2	12.8	17.7	16.4	17.0
16	7.2	6.9	7.0	8.2	6.8	7.6	13.0	11.7	12.4	18.8	17.3	18.0
17	7.2	6.2	7.0	8.2	7.4	7.8	12.7	11.8	12.2	18.8	15.8	17.3
18	6.2	5.5	5.7	8.1	7.6	7.8	13.0	11.8	12.1	16.6	15.1	15.5
19	5.5	4.9	5.1	8.5	7.8	8.1	13.9	12.7	13.2	17.8	16.6	17.2
20	4.9	4.5	4.7	9.3	8.4	8.8	13.8	13.0	13.4	17.7	17.1	17.4
21	5.0	4.4	4.6	9.3	7.7	8.9	14.0	13.3	13.6	17.5	17.1	17.2
22	7.2	5.0	6.3	9.0	6.9	7.9	14.0	12.7	13.3	17.9	17.3	17.5
23	7.0	5.7	6.0	9.3	7.3	8.3	12.8	11.5	12.2	17.8	16.9	17.2
24	5.7	5.4	5.6	9.5	8.0	8.8	12.8	11.6	12.1	17.8	16.3	17.0
25	5.4	4.6	4.9	10.0	9.0	9.5	13.0	12.1	12.4	17.8	17.4	17.6
26	4.6	4.3	4.5	11.9	10.0	10.9	13.5	12.7	13.1	18.5	17.1	17.8
27	4.6	4.3	4.4	12.5	10.0	11.3	13.6	12.7	13.1	19.9	18.0	18.8
28	4.9	4.6	4.7	14.6	12.2	13.4	13.9	12.7	13.3	20.3	19.1	19.7
29	---	---	---	---	---	---	15.0	13.9	14.5	20.1	19.1	19.4
30	---	---	---	---	---	---	15.3	14.2	14.7	20.1	18.6	19.3
31	---	---	---	---	---	---	---	---	---	20.8	19.6	20.1
MONTH	7.2	1.7	4.6	14.6	4.8	7.4	16.9	10.0	13.0	20.8	14.1	16.7
		JUNE			JULY			AUGUST			SEPTEMBER	
1	20.5	19.4	20.0	24.6	23.6	24.1	26.8	25.1	25.8	25.7	24.4	25.1
2	20.0	18.8	19.3	24.5	22.9	23.7	26.4	25.5	26.0	---	---	---
3	19.3	18.7	19.0	25.7	23.5	24.6	26.2	25.1	25.6	24.3	23.7	23.9
4	19.2	18.4	18.8	26.9	25.0	25.9	26.1	25.1	25.6	24.0	20.7	22.9
5	19.7	17.8	18.6	26.7	25.5	26.2	26.3	24.9	25.6	20.7	19.6	19.9
6	20.7	18.9	19.8	26.3	25.6	25.9	26.0	25.2	25.6	19.7	19.2	19.5
7	20.5	19.0	19.3	26.8	25.0	25.8	26.2	24.9	25.5	19.7	19.2	19.4
8	19.6	18.4	19.0	28.1	25.7	26.8	---	---	---	19.9	19.2	19.5
9	19.6	17.6	18.3	27.8	26.7	27.2	---	---	---	20.9	18.9	19.8
10	18.8	18.1	18.5	26.7	25.7	26.1	---	---	---	22.2	20.4	21.2
11	18.8	18.3	18.5	26.4	24.4	25.3	---	---	---	23.5	21.8	22.6
12	19.0	18.1	18.5	25.9	24.5	25.2	---	---	---	23.8	22.6	23.2
13	19.3	18.6	18.9	25.6	24.6	25.2	26.0	24.8	25.4	24.3	22.9	23.6
14	19.5	19.0	19.2	25.8	24.2	25.0	27.3	24.7	26.2	24.0	21.7	22.7
15	19.8	19.1	19.4	26.0	24.7	25.4	28.2	26.5	27.3	21.7	20.8	21.2
16	20.3	19.3	19.7	27.3	25.6	26.3	28.6	27.1	27.8	21.5	20.1	20.8
17	20.3	19.4	19.7	27.1	25.7	26.4	29.1	27.5	28.2	21.5	20.1	20.9
18	19.8	19.5	19.7	26.4	25.2	25.6	28.8	27.3	28.1	---	---	---
19	20.6	19.7	20.1	26.3	24.6	25.3	28.2	26.7	27.5	21.9	21.1	21.5
20	20.7	19.8	20.3	26.8	25.0	25.9	28.0	26.6	27.4	---	---	---
21	20.5	19.1	19.7	---	---	---	28.4	27.0	27.6	21.6	19.9	20.8
22	19.7	18.3	19.0	---	---	---	28.2	27.1	27.7	21.2	20.2	20.8
23	19.4	18.4	18.9	24.0	23.2	23.5	27.4	26.3	26.8	20.4	19.3	19.9
24	19.9	18.9	19.3	24.5	22.5	23.4	26.8	25.4	26.2	20.3	18.8	19.6
25	22.3	19.5	20.8	25.4	23.2	24.2	26.9	25.1	26.0	20.3	19.3	19.6
26	24.2	22.2	23.1	26.2	24.3	25.2	27.6	25.8	26.7	21.2	19.5	20.2
27	24.5	23.2	23.8	27.0	25.2	26.1	28.1	26.5	27.3	21.5	21.0	21.2
28	24.1	22.5	23.3	26.6	25.6	25.9	28.0	26.9	27.5	21.1	19.4	20.2
29	24.7	22.6	23.6	25.6	24.9	25.3	27.6	26.3	26.9	19.4	18.1	18.5
30	25.0	23.6	24.3	26.1	24.3	25.2	26.9	25.9	26.3	18.2	17.2	17.8
31	---	---	---	26.0	25.3	25.6	26.2	25.5	25.9	---	---	---
MONTH	25.0	17.6	20.0	28.1	22.5	25.4	29.1	24.7	26.6	25.7	17.2	21.0
YEAR	29.1	0.6	14.7									

03307000 RUSSELL CREEK NEAR COLUMBIA, KY

LOCATION.--Lat 37°07'09", long 85°23'38", Adair County, Hydrologic Unit 05110001, on left bank at downstream side of bridge on State Highway 61, 0.3 mi upstream from Butlers Fork, 5.0 mi west of Columbia, and at mile 26.9. Records include flow of Butlers Fork.

DRAINAGE AREA.--188 mi^2 (includes Butlers Fork), of which about 15 mi^2 does not contribute directly to surface runoff.

WATER DISCHARGE RECORDS

PERIOD OF RECORD.--October 1939 to current year. Prior to December 1939, monthly discharge only, published in WSP 1305.

REVISED RECORDS.--WSP 1275: 1940. WSP 1335: 1953. WSP 1555: Drainage area. WRD KY-75-1: 1949(M), 1952(M), 1955(M), 1962(M), 1967(M), 1974(M).

GAGE.--Water-stage recorder with telemetry. Datum of gage is 610.96 ft above NGVD of 1929. Prior to June 25, 1953, nonrecording gage at same site and datum.

REMARKS.--Records fair except for those estimated, which are poor.

COOPERATION.--Kentucky Natural Resources and Environmental Protection Cabinet and U.S. Army Corps of Engineers, Louisville District.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in Jan. 1937 reached a stage of about 23 ft, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb 15	1200	5,840	14.99	Jun 7	1600	8,250	16.93
Feb 16	1800	*12,600	*18.96				

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	55	308	72	585	155	434	190	87	71	87	294	1,010
2	44	235	65	555	e146	381	162	88	63	88	127	309
3	37	192	63	443	e130	320	143	105	78	83	128	475
4	34	172	65	346	757	277	130	88	129	83	189	1,230
5	33	727	646	282	507	254	182	126	88	73	636	521
6	32	1,540	481	223	320	236	222	157	87	65	280	288
7	32	678	288	173	290	206	1,180	251	5,950	62	171	192
8	26	409	245	158	212	184	706	477	1,290	58	117	145
9	24	283	232	149	e192	170	717	341	844	67	107	117
10	650	336	223	132	e176	152	1,380	206	537	303	81	95
11	1,560	1,220	1,330	111	e160	141	1,140	185	1,030	471	65	78
12	596	651	878	94	e149	136	688	175	1,510	153	107	69
13	353	392	959	e84	142	132	483	122	806	97	81	61
14	231	269	1,780	e78	297	127	354	100	643	90	60	56
15	179	632	e915	e71	4,380	118	281	119	994	86	51	52
16	429	1,430	e690	e66	9,520	114	234	266	718	66	44	48
17	313	743	e463	e62	3,460	110	679	439	1,090	61	43	43
18	206	458	343	e58	1,100	108	1,280	1,070	1,650	52	39	40
19	151	324	311	e54	761	397	594	473	1,070	48	35	38
20	139	247	972	e51	698	771	377	299	611	46	32	36
21	152	196	591	e48	650	386	388	341	413	45	30	35
22	132	171	406	e46	2,340	266	302	338	308	63	29	652
23	108	144	283	e44	2,590	211	212	263	242	76	28	714
24	89	123	282	e42	1,200	179	167	193	197	56	36	282
25	79	110	542	e41	887	157	183	153	163	47	31	171
26	76	101	370	e39	697	159	208	134	139	41	27	125
27	75	97	275	e38	594	159	145	117	139	37	25	250
28	289	89	231	56	520	142	118	104	138	35	24	348
29	726	82	193	143	---	334	103	94	107	580	23	196
30	728	79	166	333	---	392	95	90	92	183	117	137
31	437	---	153	181	---	232	---	81	---	131	552	---
TOTAL	8,015	12,438	14,513	4,786	33,030	7,385	13,043	7,082	21,197	3,433	3,609	7,813
MEAN	259	415	468	154	1,180	238	435	228	707	111	116	260
MAX	1,560	1,540	1,780	585	9,520	771	1,380	1,070	5,950	580	636	1,230
MIN	24	79	63	38	130	108	95	81	63	35	23	35
CFSM	1.49	2.40	2.71	0.89	6.82	1.38	2.51	1.32	4.08	0.64	0.67	1.51
IN.	1.72	2.67	3.12	1.03	7.10	1.59	2.80	1.52	4.56	0.74	0.78	1.68

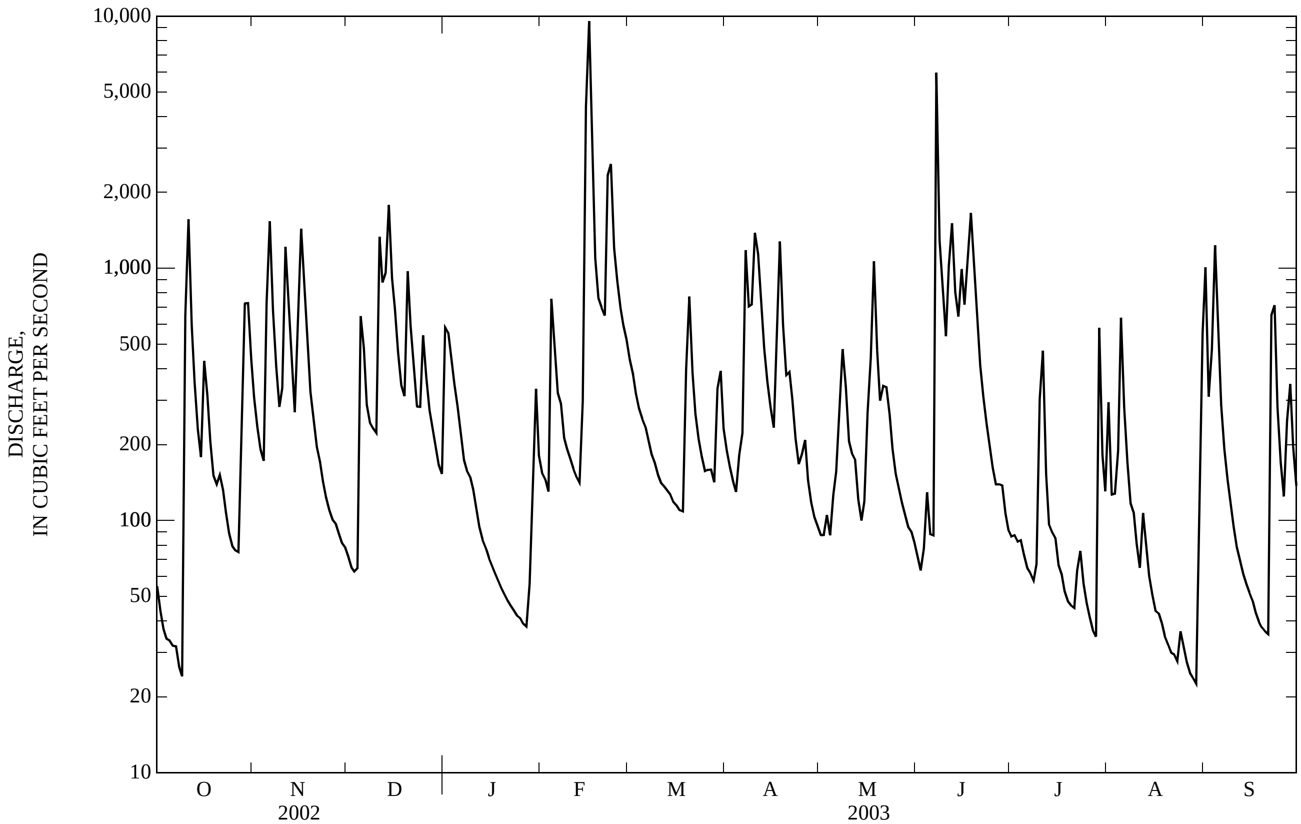
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	73.5	203	400	470	580	576	388	276	204	124	85.6	109
MAX	636	1,047	2,540	1,779	1,588	1,787	856	1,464	800	751	502	1,114
(WY)	(1976)	(1952)	(1979)	(1950)	(1989)	(1975)	(1972)	(1983)	(1950)	(1967)	(1967)	(1979)
MIN	1.38	8.92	18.6	26.5	61.1	91.0	70.1	39.8	14.6	10.0	4.25	2.09
(WY)	(1954)	(1954)	(1954)	(1981)	(1941)	(1941)	(1986)	(1941)	(1988)	(1944)	(1991)	(1953)

03307000 RUSSELL CREEK NEAR COLUMBIA, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1940 - 2003	
ANNUAL TOTAL	105,996.0		136,344			
ANNUAL MEAN	290		374		289	
HIGHEST ANNUAL MEAN					651	1979
LOWEST ANNUAL MEAN					118	1941
HIGHEST DAILY MEAN	7,780	May 18	9,520	Feb 16	25,000	Dec 9, 1978
LOWEST DAILY MEAN	4.5	Sep 13	23	Aug 29	0.40	Sep 25, 1952
ANNUAL SEVEN-DAY MINIMUM	5.2	Sep 8	28	Aug 23	0.47	Oct 19, 1953
MAXIMUM PEAK FLOW			12,600	Feb 16	40,600	Sep 1, 1982
MAXIMUM PEAK STAGE			18.96	Feb 16	26.12	Sep 1, 1982
INSTANTANEOUS LOW FLOW					5.7	Sep 2, 1993
ANNUAL RUNOFF (CFSM)	1.68		2.16		1.67	
ANNUAL RUNOFF (INCHES)	22.79		29.32		22.71	
10 PERCENT EXCEEDS	692		765		628	
50 PERCENT EXCEEDS	105		173		100	
90 PERCENT EXCEEDS	15		46		15	

e Estimated



03307000 RUSSELL CREEK NEAR COLUMBIA, KY—Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--December 22, 1999 to current year.

GAGE.--Water-temperature recorder with telemetry.

REMARKS.-Records good.

COOPERATION.--U.S. Army Corps of Engineers, Louisville District.

EXTREMES FOR CURRENT YEAR.--Maximum recorded water-temperature discharge, 27.4°C, July 8, minimum recorded water-temperature, 0.0°C, several days in Jan.

EXTREMES FOR PERIOD OF DAILY RECORD.--Maximum recorded water-temperature, 31.3°C, Sept. 10, 2003, minimum recorded 0.0°C, many days in Dec. and Jan.

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	21.3	20.0	20.6	12.0	10.7	11.6	4.9	3.4	4.0	9.4	8.7	9.1
2	22.6	19.9	21.2	10.7	9.5	9.9	3.9	2.9	3.4	9.0	8.2	8.5
3	23.2	20.6	21.9	9.9	9.4	9.7	3.6	2.9	3.2	8.2	6.1	7.2
4	22.2	21.6	21.9	10.1	9.7	9.9	3.0	1.5	2.2	6.1	5.3	5.7
5	22.0	19.4	20.8	12.5	10.0	11.0	3.5	2.1	2.7	7.0	5.8	6.4
6	20.6	17.4	19.1	12.4	11.5	12.1	3.6	3.0	3.3	6.9	5.7	6.6
7	19.4	16.8	18.5	11.5	10.9	11.3	3.0	2.0	2.5	5.7	4.7	5.1
8	18.2	15.2	16.6	11.4	10.4	11.0	3.6	2.2	2.9	5.8	4.6	5.2
9	17.8	16.5	17.2	13.1	11.3	12.2	3.9	2.7	3.4	6.9	5.7	6.3
10	18.5	17.4	17.9	15.8	13.1	14.6	4.5	3.7	4.1	6.6	4.8	5.8
11	18.6	18.0	18.3	15.5	14.5	15.2	6.4	4.4	5.5	4.8	2.4	3.6
12	19.3	18.4	18.8	14.5	12.6	13.5	7.1	6.4	6.8	2.4	1.1	1.6
13	19.3	17.4	18.7	12.6	11.3	11.9	7.4	6.7	7.0	1.8	0.6	1.1
14	17.4	15.6	16.2	11.3	10.3	10.8	7.4	7.2	7.3	1.8	1.0	1.4
15	15.7	15.3	15.5	11.0	10.0	10.4	---	---	7.1	1.0	0.2	0.6
16	15.4	14.3	14.8	11.1	10.3	10.8	---	---	---	0.7	0.2	0.5
17	14.3	13.2	13.7	10.3	8.8	9.6	---	---	---	0.4	0.0	0.1
18	13.6	12.3	13.0	9.0	7.9	8.5	9.7	8.9	9.3	0.1	0.0	0.0
19	13.9	13.1	13.5	10.7	9.0	9.9	10.5	9.7	10.0	0.2	0.0	0.0
20	14.0	13.7	13.9	10.6	9.4	10.1	10.4	8.7	9.7	0.7	0.0	0.3
21	14.4	13.3	13.8	11.1	9.9	10.5	8.7	7.5	7.8	1.4	0.6	0.9
22	14.6	13.3	13.9	10.5	8.8	9.7	8.1	7.5	7.8	1.2	0.0	0.6
23	14.2	12.6	13.4	8.8	7.4	7.9	7.5	6.6	6.8	0.3	0.0	0.1
24	14.4	13.3	13.8	8.1	6.7	7.4	6.8	6.4	6.6	0.2	0.0	0.0
25	14.9	14.2	14.5	7.5	7.0	7.3	6.7	4.9	5.8	0.3	0.0	0.1
26	15.1	14.6	14.9	7.2	6.5	7.0	4.9	4.0	4.4	0.1	0.0	0.0
27	15.2	14.4	14.7	6.5	5.6	6.1	4.2	3.4	3.9	0.1	0.0	0.0
28	14.7	13.9	14.4	5.6	4.4	5.1	4.8	3.6	4.2	0.2	0.0	0.1
29	15.3	14.3	14.8	5.5	3.8	4.7	5.7	4.3	5.1	0.2	0.1	0.1
30	15.1	13.2	14.2	6.4	4.9	5.6	7.4	5.5	6.4	0.7	0.1	0.3
31	13.2	12.0	12.5	---	---	---	8.7	7.4	7.9	3.0	0.7	1.7
MONTH	23.2	12.0	16.4	15.8	3.8	9.8	10.5	1.5	5.6	9.4	0.0	2.5

03307000 RUSSELL CREEK NEAR COLUMBIA, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	4.0	3.0	3.6	8.0	7.1	7.5	12.1	10.3	10.9	19.5	18.3	18.8
2	---	---	---	8.2	7.7	8.1	14.1	12.1	12.9	19.4	18.3	18.7
3	---	---	---	7.7	7.1	7.4	15.7	13.9	14.6	18.6	17.8	18.1
4	7.6	6.5	7.2	8.0	6.8	7.4	16.6	15.5	16.0	17.8	16.6	17.1
5	6.5	4.5	5.2	9.1	8.0	8.5	16.7	16.1	16.5	17.8	16.8	17.2
6	4.5	4.0	4.2	9.1	8.5	8.9	16.1	12.8	14.2	18.5	17.6	17.9
7	4.1	2.7	3.8	8.8	8.0	8.4	13.2	11.7	12.2	18.4	18.1	18.2
8	2.7	1.3	1.9	9.4	8.2	8.7	13.3	12.8	13.2	18.3	17.6	17.9
9	2.2	0.7	1.6	9.7	9.3	9.5	12.8	10.0	11.6	19.0	17.8	18.2
10	2.8	2.1	2.5	9.4	8.4	8.8	10.0	9.3	9.5	20.3	18.9	19.4
11	4.2	2.7	3.4	8.8	7.9	8.4	12.0	9.8	10.5	20.9	20.0	20.4
12	4.5	3.2	3.8	9.5	8.3	8.8	13.2	11.7	12.3	20.6	19.3	19.8
13	4.4	2.7	3.6	10.3	9.4	9.8	13.9	12.6	13.2	19.3	18.0	18.6
14	5.9	3.8	4.3	10.8	10.1	10.4	14.7	13.1	13.8	18.8	18.1	18.5
15	7.7	5.9	7.1	12.3	10.8	11.3	15.8	14.2	14.9	18.7	18.2	18.4
16	7.1	5.1	5.6	13.7	12.0	12.7	16.5	15.2	15.8	18.2	17.4	17.9
17	6.4	5.5	6.1	14.4	13.5	13.8	16.6	15.9	16.3	18.8	18.0	18.4
18	5.9	5.4	5.5	14.8	14.2	14.4	15.9	14.2	14.7	18.8	17.9	18.2
19	5.8	5.4	5.5	14.8	14.1	14.6	16.3	14.4	15.1	18.4	17.7	18.1
20	6.7	5.8	6.2	---	---	13.4	17.2	16.3	16.6	18.4	18.2	18.3
21	8.2	6.7	7.4	---	---	13.1	17.8	16.9	17.3	18.2	17.0	17.6
22	10.4	8.2	8.9	12.9	12.1	12.5	17.4	15.3	16.2	17.0	16.4	16.6
23	10.4	6.9	8.1	12.9	11.9	12.4	15.3	14.0	14.6	17.0	16.1	16.5
24	7.0	6.8	6.9	13.4	12.2	12.8	14.8	13.7	14.0	17.4	16.2	16.8
25	6.8	6.0	6.2	14.1	12.9	13.5	15.0	13.6	14.1	17.4	16.7	17.0
26	6.0	5.7	5.8	14.7	14.1	14.3	15.1	14.1	14.6	17.0	16.1	16.5
27	6.2	5.8	5.9	14.5	13.3	14.0	15.6	14.3	14.9	17.9	16.3	17.0
28	7.1	6.2	6.5	15.4	14.2	14.7	16.5	15.0	15.6	18.4	17.0	17.7
29	---	---	---	---	---	---	17.9	16.4	16.9	18.2	17.6	17.9
30	---	---	---	---	---	---	18.9	17.6	18.0	18.8	17.0	17.9
31	---	---	---	---	---	---	---	---	---	19.2	18.3	18.7
MONTH	10.4	0.7	5.3	15.4	6.8	11.0	18.9	9.3	14.4	20.9	16.1	18.0
		JUNE			JULY			AUGUST			SEPTEMBER	
1	19.1	17.9	18.5	22.5	21.8	22.0	24.2	23.1	23.6	23.8	22.8	23.2
2	18.5	17.1	17.7	22.9	21.2	22.0	23.8	23.0	23.4	23.2	23.0	23.1
3	18.5	17.6	17.9	24.0	21.8	22.7	24.4	22.6	23.3	23.0	22.7	22.9
4	18.4	17.5	17.9	25.2	22.8	23.8	24.2	23.2	23.7	23.0	22.1	22.5
5	18.7	16.7	17.6	25.6	23.7	24.6	23.7	22.0	22.8	22.1	21.1	21.4
6	19.3	17.6	18.4	26.2	24.3	25.2	22.7	22.0	22.4	21.2	20.2	20.7
7	19.1	17.2	17.7	26.5	24.6	25.4	23.4	22.2	22.7	20.7	19.8	20.2
8	17.2	16.7	16.9	27.4	25.0	26.1	23.9	22.1	22.9	21.1	19.9	20.4
9	17.4	16.8	17.1	26.9	25.5	26.1	24.4	22.6	23.4	21.8	20.0	20.8
10	17.5	16.9	17.3	26.2	24.0	25.1	24.4	22.9	23.6	22.1	20.5	21.3
11	18.4	17.4	17.8	24.0	22.8	23.4	24.2	23.2	23.7	22.6	20.9	21.7
12	17.9	17.4	17.6	23.6	22.5	23.1	24.0	22.9	23.4	22.7	21.0	21.8
13	18.6	17.6	18.0	23.8	22.5	23.1	24.1	23.0	23.5	23.0	21.0	21.8
14	19.9	18.3	18.6	24.4	22.4	23.3	25.7	23.3	24.3	22.1	21.4	21.7
15	20.1	19.3	19.7	24.4	22.9	23.6	26.5	24.5	25.4	22.4	20.4	21.4
16	20.3	19.4	19.7	26.1	24.0	24.8	26.9	24.9	25.8	21.3	18.1	19.8
17	20.3	19.0	19.4	26.3	24.0	25.0	27.1	25.2	26.0	21.0	17.4	19.3
18	19.2	18.8	19.0	25.0	23.5	24.3	26.9	24.4	25.5	21.0	17.7	19.4
19	19.1	18.3	18.7	26.1	23.4	24.5	26.4	23.2	24.8	20.4	17.8	19.4
20	20.1	18.8	19.4	26.8	24.0	25.2	26.5	23.8	25.1	20.5	17.5	19.1
21	19.7	18.2	19.0	25.6	23.5	24.2	27.2	24.6	25.8	20.2	17.6	19.1
22	19.6	18.1	18.9	24.2	23.1	23.5	26.9	24.1	25.3	20.1	19.3	19.7
23	20.4	18.5	19.4	23.9	21.9	22.9	25.8	23.1	24.4	19.3	18.5	18.8
24	21.2	19.3	20.2	23.7	20.6	22.1	25.8	22.0	24.0	18.5	17.5	18.1
25	22.1	20.2	21.1	24.6	21.0	22.7	25.7	22.0	23.9	18.2	17.7	17.9
26	22.4	21.2	21.8	25.4	21.7	23.5	26.5	23.1	24.8	18.9	17.5	18.1
27	22.4	21.4	21.9	25.9	23.0	24.4	26.6	23.5	25.2	19.3	18.7	18.9
28	22.5	20.6	21.5	24.7	23.8	24.4	26.1	24.0	25.1	18.9	17.0	18.0
29	23.1	20.7	21.8	24.3	22.2	23.0	25.6	23.1	24.5	17.0	15.6	16.2
30	22.7	21.6	22.2	23.7	22.4	23.0	26.2	23.8	25.0	15.6	14.3	15.0
31	---	---	---	24.2	23.1	23.4	25.4	23.7	24.2	---	---	---
MONTH	23.1	16.7	19.1	27.4	20.6	23.9	27.2	22.0	24.2	23.8	14.3	20.1
YEAR	27.4	0.0	14.4									

03308500 GREEN RIVER AT MUNFORDVILLE, KY

LOCATION.--Lat 37°16'05", long 85°53'10", Hart County, Hydrologic Unit 05110001, on right, bank at downstream side of pier of bridge on U.S. Highway 31W at Munfordville, and at mile 225.9.

DRAINAGE AREA.--1,673 mi^2, of which about 180 mi^2 does not contribute directly to surface runoff.

WATER DISCHARGE RECORDS

PERIOD OF RECORD.--February 1915 to December 1922, October to September 1931, December 1936 to February 1937 (in WSP 838), October 1937 to current year. Monthly discharge only October 1937 to March 1938, published in WSP 1305. Gage- height records collected at same site since 1924 are contained in reports of National Weather Service.

REVISED RECORDS.--WSP 1555: 1916(M), drainage area, WSP 1909: 1937.

GAGE.--Water-stage recorder with telemetry. Datum of gage is 451.70 ft above NGVD of 1929. See WRD-KY-90-1 for history of changes prior to Nov. 29, 1940.

REMARKS.-Records good except for estimated daily discharges, which are poor. Flow regulated by Green River Lake beginning February 1969 (station 03305990).

COOPERATION.--U.S. Army Corps of Engineers, Louisville District.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of January 1913 reached a stage of 54.0 ft at former site, discharge, 67,000 ft/s.

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

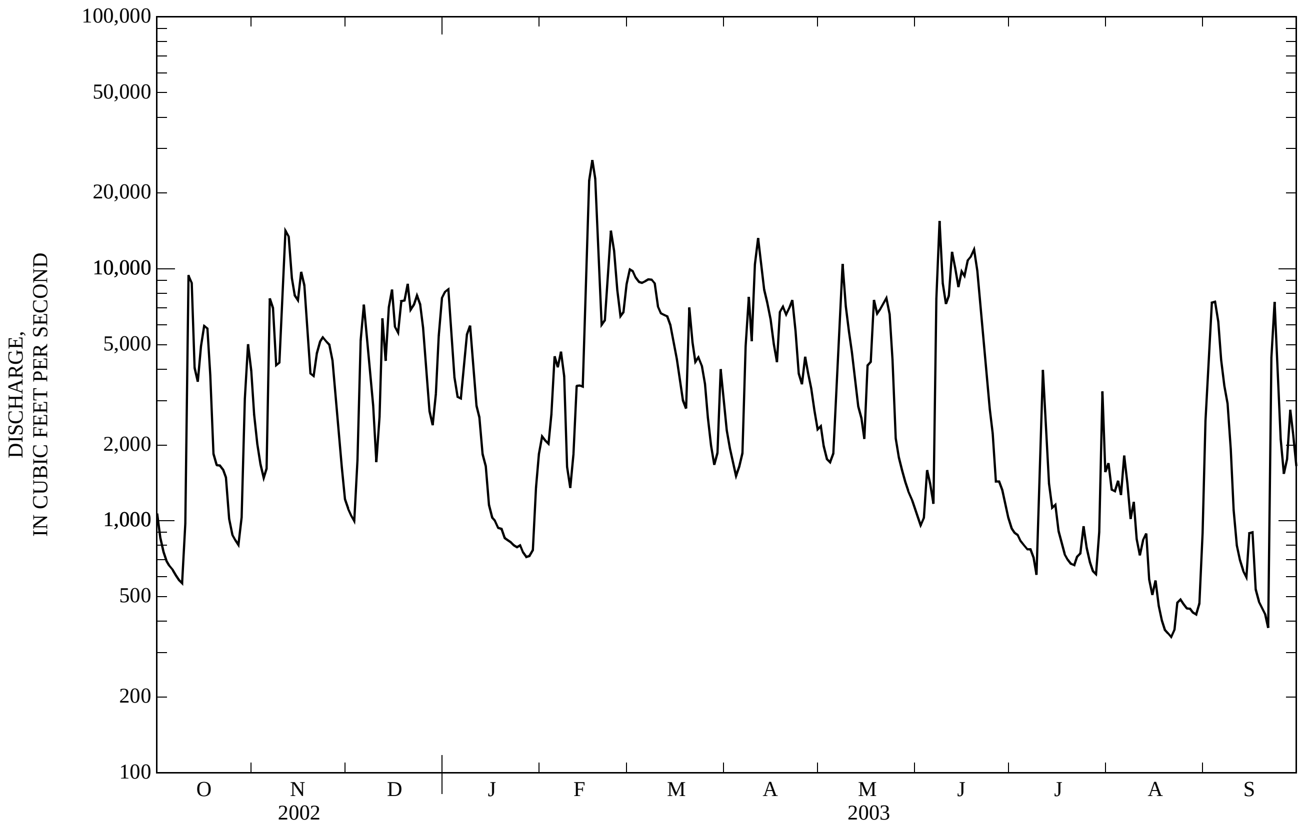
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,070	2,640	1,120	8,100	2,160	9,950	2,290	2,380	1,040	935	1,690	2,490
2	855	2,020	1,050	8,300	2,080	9,770	1,940	1,980	957	896	1,330	4,610
3	751	1,670	1,000	5,670	2,020	9,210	1,690	1,760	1,020	875	1,310	7,330
4	695	1,480	1,740	3,720	2,650	8,870	1,510	1,710	1,590	830	1,440	7,390
5	659	1,610	5,210	3,100	4,490	8,790	1,640	1,850	1,390	797	1,270	6,180
6	637	7,620	7,210	3,050	4,060	8,930	1,850	2,960	1,170	770	1,820	4,350
7	607	6,970	5,490	4,050	4,690	9,070	4,930	4,980	7,600	771	1,410	3,430
8	581	4,140	3,990	5,490	3,740	9,060	7,740	10,500	15,400	713	1,020	2,920
9	565	4,230	2,870	5,940	1,640	8,740	5,160	7,110	8,770	609	1,190	1,920
10	974	8,380	1,700	4,100	1,350	7,110	10,400	5,620	7,260	1,530	846	1,100
11	9,450	14,200	2,580	2,850	1,840	6,650	13,200	4,680	7,800	3,960	729	797
12	8,820	13,500	6,360	2,570	3,430	6,540	10,300	3,660	11,700	2,430	837	697
13	4,050	9,200	4,310	1,840	3,450	6,470	8,250	2,840	10,100	1,410	888	633
14	3,560	7,840	7,030	1,640	3,400	5,960	7,290	2,540	8,460	1,130	585	597
15	4,940	7,520	8,270	1,160	9,900	5,100	6,300	2,120	9,770	1,160	508	892
16	5,940	9,730	5,910	1,030	22,400	4,380	5,030	4,140	9,370	908	579	901
17	5,800	8,600	5,600	1,000	27,000	3,640	4,270	4,270	10,800	813	459	534
18	3,770	5,540	7,450	939	22,800	3,010	6,720	7,520	11,200	738	400	479
19	1,840	3,850	7,490	930	10,300	2,790	7,080	6,620	11,900	699	369	454
20	1,660	3,760	8,720	854	5,980	7,030	6,580	6,870	9,830	674	357	428
21	1,660	4,600	6,860	835	6,240	5,110	7,000	7,240	7,520	667	345	376
22	1,600	5,130	7,170	821	8,820	4,260	7,510	7,640	5,270	722	367	4,440
23	1,480	5,330	7,830	799	14,100	4,460	5,650	6,600	3,770	743	473	7,370
24	1,020	5,150	7,210	784	11,800	4,140	3,840	4,340	2,770	950	487	4,010
25	881	5,010	5,850	798	8,210	3,490	3,480	2,120	2,230	779	466	2,110
26	835	4,320	4,130	749	6,460	2,570	4,480	1,780	1,430	683	449	1,530
27	802	3,180	2,720	719	6,710	1,980	3,870	1,580	1,430	632	447	1,760
28	1,030	2,360	2,400	724	8,700	1,670	3,350	1,420	1,320	614	433	2,750
29	3,050	1,630	3,190	761	---	1,860	2,740	1,320	1,160	902	425	2,210
30	5,010	1,220	5,430	1,360	---	4,000	2,310	1,230	1,030	3,250	470	1,650
31	3,950	---	7,640	1,840	---	3,000	---	1,130	---	1,560	892	---
TOTAL	78,542	162,430	155,530	76,523	210,420	177,610	158,400	122,510	175,057	34,150	24,291	76,338
MEAN	2,534	5,414	5,017	2,468	7,515	5,729	5,280	3,952	5,835	1,102	784	2,545
MAX	9,450	14,200	8,720	8,300	27,000	9,950	13,200	10,500	15,400	3,960	1,820	7,390
MIN	565	1,220	1,000	719	1,350	1,670	1,510	1,130	957	609	345	376

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1,273	2,425	4,014	4,501	5,455	4,985	3,665	3,270	2,401	1,053	844	1,221
MAX	5,337	5,414	12,800	12,130	13,610	12,040	8,632	13,250	7,209	3,132	3,642	6,104
(WY)	(1976)	(2003)	(1979)	(1974)	(1989)	(1975)	(1994)	(1983)	(1997)	(1973)	(1977)	(1979)
MIN	193	210	545	255	1,952	1,066	552	487	214	280	202	152
(WY)	(2001)	(1972)	(1981)	(1981)	(1992)	(1983)	(1986)	(1988)	(1988)	(1993)	(1993)	(1999)

03308500 GREEN RIVER AT MUNFORDVILLE, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1970 - 2003	
ANNUAL TOTAL	1,055,024		1,451,801			
ANNUAL MEAN	2,890		3,978		2,912	
HIGHEST ANNUAL MEAN					5,285	1979
LOWEST ANNUAL MEAN					1,233	2000
HIGHEST DAILY MEAN	21,400	Mar 21	27,000	Feb 17	62,800	May 8, 1984
LOWEST DAILY MEAN	186	Sep 25	345	Aug 21	136	Oct 4, 2001
ANNUAL SEVEN-DAY MINIMUM	197	Sep 15	396	Aug 17	142	Sep 9, 1999
MAXIMUM PEAK FLOW			27,700	Feb 17	76,800	Mar 1, 1962
MAXIMUM PEAK STAGE			32.99	Feb 17	57.72	Mar 1, 1962
INSTANTANEOUS LOW FLOW					157	Jul 8, 1988
10 PERCENT EXCEEDS	7,460		8,750		7,030	
50 PERCENT EXCEEDS	1,070		2,790		1,430	
90 PERCENT EXCEEDS	324		696		281	



03308500 GREEN RIVER AT MUNFORDVILLE, KY—Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--WATER-TEMPERATURE; Water years 1950-77, 1980, 1983-90, August 1992 to September 1994, December 22, 1999 to September 30, 2000.

GAGE.--Water-temperture recorder with telemetry.

REMARKS.-Records fair.

COOPERATION.--U.S. Army Corps of Engineers, Louisville District.

EXTREMES FOR PERIOD OF DAILY RECORD.--Maximum daily, 29°C, July 13-17, 1980; minimum daily 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--Maximum recorded water temperature 27.9°C, Sept. 2, minimum recorded, 3.9°C, Feb. 13-15.

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	21.8	21.7	21.8	14.9	14.4	14.7	9.9	9.1	9.5	8.0	7.8	7.8
2	21.9	21.7	21.8	14.4	13.4	13.8	9.1	8.7	8.9	8.3	8.0	8.2
3	21.8	21.8	21.8	13.4	12.8	13.1	8.7	8.4	8.6	8.4	8.2	8.4
4	21.8	21.5	21.6	12.8	12.5	12.6	8.4	7.9	8.3	8.4	8.3	8.3
5	21.5	21.4	21.5	12.5	12.4	12.5	8.5	7.7	8.0	8.3	8.1	8.1
6	21.4	21.3	21.4	12.9	12.5	12.7	8.6	8.2	8.4	8.4	8.2	8.3
7	21.3	21.1	21.2	13.0	12.8	12.9	8.2	7.8	7.9	8.3	7.7	8.0
8	21.1	20.4	20.6	12.8	12.4	12.5	7.9	7.8	7.8	7.7	7.3	7.5
9	20.4	20.1	20.2	12.6	12.4	12.4	7.9	7.8	7.9	7.3	7.2	7.2
10	20.1	19.9	20.1	13.8	12.6	13.0	8.1	7.9	8.0	7.4	7.3	7.4
11	20.5	19.7	20.1	14.2	13.8	14.0	8.1	7.9	8.0	7.4	7.2	7.3
12	20.8	20.5	20.7	14.2	13.8	14.0	8.1	7.9	7.9	7.2	6.7	6.9
13	20.9	20.7	20.8	13.8	13.4	13.6	8.6	8.1	8.3	6.7	6.2	6.4
14	20.8	19.8	20.3	13.4	13.1	13.2	8.8	8.6	8.7	6.2	6.2	6.2
15	19.8	19.1	19.3	13.1	12.9	13.0	8.7	8.6	8.6	6.2	6.1	6.2
16	19.5	19.1	19.3	12.9	12.4	12.7	8.8	8.6	8.7	6.2	6.2	6.2
17	19.5	19.1	19.3	12.4	11.9	12.1	9.0	8.8	8.9	6.2	6.1	6.2
18	19.1	18.3	18.5	11.9	11.3	11.6	9.2	9.0	9.1	6.3	6.2	6.2
19	18.3	17.7	18.0	11.4	11.2	11.3	9.4	9.2	9.3	6.3	6.1	6.2
20	17.7	17.3	17.5	11.5	11.4	11.4	9.7	9.4	9.5	6.1	6.1	6.1
21	17.3	17.0	17.1	12.0	11.5	11.7	9.9	9.7	9.8	6.2	6.1	6.1
22	17.0	16.7	16.8	12.1	12.0	12.0	9.8	9.3	9.6	6.1	6.0	6.1
23	16.8	16.4	16.6	12.0	11.5	11.7	9.3	8.8	9.1	6.0	5.8	5.9
24	16.5	16.2	16.3	11.5	11.3	11.4	8.8	8.6	8.7	5.8	5.7	5.7
25	16.3	16.2	16.3	11.4	11.4	11.4	8.6	8.5	8.6	5.8	5.8	5.8
26	16.3	16.2	16.2	11.4	11.2	11.3	8.5	8.1	8.3	5.8	5.7	5.8
27	16.3	16.1	16.2	11.2	10.8	11.0	8.1	7.9	8.0	5.8	5.6	5.8
28	16.1	15.9	16.0	10.8	10.4	10.6	7.9	7.8	7.8	5.7	5.5	5.6
29	16.1	15.9	16.0	10.4	9.9	10.1	7.8	7.6	7.8	5.5	5.2	5.4
30	16.0	15.7	15.8	9.9	9.9	9.9	7.8	7.6	7.7	5.2	5.2	5.2
31	15.7	14.9	15.3	---	---	---	7.9	7.8	7.9	5.2	5.0	5.1
MONTH	21.9	14.9	18.9	14.9	9.9	12.3	9.9	7.6	8.5	8.4	5.0	6.6

03308500 GREEN RIVER AT MUNFORDVILLE, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	5.0	4.9	5.0	6.5	6.4	6.4	12.6	12.3	12.4	16.1	15.7	15.9
2	5.1	5.0	5.0	6.4	6.3	6.3	12.6	12.3	12.5	16.4	16.1	16.2
3	5.3	5.0	5.1	6.4	6.3	6.3	13.1	12.6	12.8	16.6	16.4	16.5
4	5.7	5.3	5.6	6.4	6.3	6.3	13.5	13.1	13.3	16.6	16.6	16.6
5	5.7	5.5	5.6	6.7	6.4	6.5	14.1	13.5	13.8	16.6	16.5	16.5
6	5.5	5.0	5.3	6.8	6.7	6.8	14.4	14.1	14.3	16.5	16.5	16.5
7	5.0	4.4	4.6	6.8	6.7	6.8	14.4	14.1	14.3	16.7	16.5	16.6
8	4.4	4.0	4.2	6.9	6.7	6.7	14.1	13.8	13.9	16.8	16.7	16.7
9	4.2	4.1	4.1	7.0	6.9	6.9	13.9	13.8	13.8	16.7	16.6	16.7
10	4.2	4.1	4.1	7.3	7.0	7.2	13.8	13.2	13.6	16.8	16.6	16.7
11	4.3	4.1	4.2	7.4	7.3	7.3	13.2	12.8	13.0	17.0	16.8	16.9
12	4.3	4.1	4.2	7.6	7.4	7.5	13.0	12.8	12.9	17.3	17.0	17.1
13	4.1	3.9	4.0	7.9	7.6	7.8	13.4	13.0	13.1	17.4	17.3	17.3
14	3.9	3.9	3.9	8.1	7.9	8.0	13.6	13.4	13.5	17.5	17.4	17.4
15	4.9	3.9	4.4	8.3	8.1	8.2	13.9	13.6	13.8	17.5	17.4	17.4
16	5.3	4.9	5.1	8.9	8.3	8.7	14.3	13.9	14.1	17.4	17.4	17.4
17	5.3	4.8	5.0	9.5	8.9	9.2	14.6	14.3	14.5	17.5	17.4	17.5
18	4.8	4.5	4.7	10.0	9.5	9.7	14.8	14.6	14.8	17.7	17.5	17.6
19	5.0	4.5	4.7	10.3	10.0	10.2	15.0	14.8	14.9	17.8	17.7	17.8
20	5.7	5.0	5.4	11.0	10.3	10.6	15.0	15.0	15.0	17.8	17.8	17.8
21	6.1	5.7	5.9	11.6	11.0	11.3	15.1	15.0	15.1	18.0	17.8	17.9
22	6.6	6.1	6.3	11.6	11.6	11.6	15.2	15.1	15.1	17.9	17.8	17.9
23	7.1	6.6	6.9	11.7	11.4	11.6	15.2	14.9	15.1	17.9	17.7	17.8
24	7.2	7.1	7.2	11.4	11.3	11.3	15.0	14.9	15.0	17.8	17.8	17.8
25	7.2	7.1	7.2	11.5	11.4	11.4	14.9	14.8	14.9	17.9	17.8	17.8
26	7.1	6.9	7.0	11.9	11.5	11.7	14.8	14.8	14.8	17.8	17.7	17.8
27	7.0	6.8	6.9	12.3	11.9	12.1	15.0	14.8	14.9	17.7	17.7	17.7
28	6.8	6.5	6.7	12.7	12.3	12.5	15.3	15.0	15.2	17.8	17.7	17.8
29	---	---	---	13.1	12.7	12.9	15.5	15.3	15.4	17.9	17.8	17.8
30	---	---	---	---	---	---	15.7	15.5	15.6	18.1	17.9	18.0
31	---	---	---	---	---	---	---	---	---	18.1	18.1	18.1
MONTH	7.2	3.9	5.3	13.1	6.3	9.0	15.7	12.3	14.2	18.1	15.7	17.3

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	18.3	18.1	18.2	21.1	20.9	21.0	24.0	23.4	23.7	25.8	25.6	25.7
2	18.4	18.3	18.3	21.1	21.1	21.1	24.9	23.9	24.4	27.9	25.8	26.7
3	18.4	18.3	18.3	21.1	21.0	21.0	25.4	24.9	25.3	27.2	26.5	26.9
4	18.3	18.3	18.3	21.1	21.0	21.1	25.4	25.2	25.3	26.5	26.0	26.2
5	18.5	18.3	18.4	21.1	21.1	21.1	25.3	25.2	25.2	26.2	25.9	26.1
6	18.5	18.4	18.4	21.3	21.1	21.2	25.3	25.3	25.3	26.0	24.9	25.2
7	18.7	18.4	18.5	21.4	21.3	21.3	25.4	25.3	25.4	24.9	24.2	24.4
8	18.9	18.7	18.8	21.6	21.4	21.5	25.5	25.4	25.5	24.3	23.9	24.1
9	19.0	18.9	19.0	21.7	21.6	21.6	25.5	25.3	25.4	24.0	23.7	23.9
10	19.1	19.0	19.1	21.9	21.7	21.8	25.5	25.3	25.4	23.7	23.4	23.5
11	19.1	19.1	19.1	22.3	21.9	22.1	25.4	25.3	25.4	23.4	23.1	23.3
12	19.3	19.1	19.2	22.5	22.3	22.4	25.3	25.2	25.2	23.1	22.9	23.0
13	19.4	19.3	19.4	22.5	22.4	22.5	25.2	25.1	25.1	22.9	22.7	22.8
14	19.6	19.4	19.5	22.4	22.4	22.4	25.2	25.1	25.1	22.7	22.5	22.6
15	19.7	19.6	19.7	22.5	22.4	22.5	25.2	25.1	25.2	22.6	22.4	22.5
16	20.0	19.7	19.9	22.5	22.4	22.4	25.3	25.1	25.2	22.5	22.4	22.4
17	20.2	20.0	20.1	22.5	22.4	22.5	25.4	25.3	25.3	22.4	22.3	22.4
18	20.4	20.2	20.3	22.5	22.5	22.5	25.4	25.3	25.3	22.3	22.0	22.1
19	20.4	20.4	20.4	22.6	22.5	22.6	25.5	25.4	25.5	22.0	21.7	21.8
20	20.4	20.4	20.4	22.6	22.6	22.6	25.6	25.5	25.5	21.7	21.3	21.5
21	20.5	20.4	20.5	22.7	22.5	22.6	25.7	25.5	25.6	21.3	21.0	21.1
22	20.5	20.4	20.5	22.7	22.6	22.6	25.7	25.7	25.7	21.4	20.9	21.1
23	20.5	20.4	20.4	22.7	22.6	22.6	25.9	25.7	25.8	21.3	21.1	21.2
24	20.4	20.4	20.4	22.7	22.7	22.7	25.9	25.9	25.9	21.2	20.9	21.0
25	20.5	20.3	20.5	22.7	22.6	22.7	26.0	25.9	25.9	21.0	20.6	20.8
26	20.5	20.5	20.5	22.7	22.6	22.7	26.0	26.0	26.0	20.7	20.2	20.4
27	20.7	20.5	20.6	22.7	22.6	22.6	---	---	---	20.2	20.1	20.2
28	20.8	20.7	20.7	22.7	22.6	22.7	25.8	25.7	25.8	20.3	20.1	20.2
29	20.9	20.8	20.8	22.7	22.7	22.7	25.8	25.7	25.8	20.3	19.3	19.8
30	20.9	20.9	20.9	23.2	22.7	22.9	25.8	25.7	25.7	19.3	18.5	18.8
31	---	---	---	23.4	23.2	23.3	25.7	25.6	25.6	---	---	---
MONTH	20.9	18.1	19.6	23.4	20.9	22.2	26.0	23.4	25.4	27.9	18.5	22.7
YEAR	27.9	3.9	15.2									

03310300 NOLIN RIVER AT WHITE MILLS, KY

LOCATION.--Lat 37°33'03", long 86°02'43", Hardin County, Hydrologic Unit 05110001, on right bank, 0.8 mi southwest of White Mills, 1.6 mi downstream from bridge on State Highway 84, and at mile 78.7.

DRAINAGE AREA.--357 mi^2, of which about 120 mi^2 does not contribute directly to surface runoff.

PERIOD OF RECORD.--October 1959 to current year.

GAGE.--Water-stage recorder with telemetry. Datum of gage is 583.08 ft above NGVD of 1929. Prior to Jan. 8, 1960, nonrecording gage at same site and datum.

REMARKS.--Records fair except for those estimated, which are poor.

COOPERATION.--Kentucky Natural Resources and Environmental Protection Cabinet.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 11	1500	3,970	13.14	Apr 10	1200	4,190	13.74
Dec 20	0700	3,900	12.97	May 6	0700	4,750	15.21
Jan 1	1100	3,020	10.54	May 7	1600	4,010	13.26
Feb 16	1500	*8,090	*22.80	Aug 3	1700	2,550	9.47
Feb 23	0700	4,790	15.31				

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	408	572	252	2,610	261	1,240	435	565	e266	e289	377	e233
2	336	491	239	1,880	262	1,120	411	508	e252	e290	172	e353
3	282	442	229	1,390	256	1,000	385	468	e264	e266	1,280	e1,030
4	249	411	223	1,100	338	906	373	426	e800	240	721	e3,820
5	234	787	223	950	390	844	487	1,680	e325	223	931	e4,690
6	214	1,860	222	825	337	787	545	4,280	e288	260	509	e2,760
7	192	1,060	207	718	326	728	804	3,370	e1,020	628	311	e925
8	176	823	203	666	309	673	1,020	e2,420	e3,610	e300	247	e534
9	161	696	206	620	285	633	1,070	e1,470	e5,070	e240	213	e403
10	246	1,130	215	560	284	587	3,800	e1,000	e2,220	e900	231	e278
11	3,170	2,080	484	502	291	554	2,750	e1,470	e1,030	e1,520	351	e223
12	3,010	1,170	610	454	289	529	1,640	e2,470	e1,630	e1,790	230	e204
13	1,310	837	682	423	279	514	1,240	e1,130	e1,560	e327	182	e191
14	944	706	1,200	403	274	489	1,020	e487	e1,090	e282	154	e184
15	754	651	922	380	3,320	463	873	e430	e1,200	e286	137	e241
16	648	843	768	356	7,580	441	774	e675	e2,420	e270	126	e242
17	557	730	662	343	5,170	422	819	e690	e3,750	e246	115	e170
18	487	625	591	323	2,580	412	1,470	e1,580	e4,350	e212	107	e158
19	432	555	1,230	307	1,860	559	941	e1,270	e2,220	e204	97	e153
20	415	505	3,330	296	1,730	1,000	775	e870	e1,180	e199	91	e147
21	405	473	1,660	287	1,790	781	729	e984	e1,010	e198	83	e135
22	361	446	1,170	297	3,100	698	755	e1,550	e794	e209	84	e593
23	326	404	931	264	4,380	625	637	e1,460	e527	e213	83	e2,760
24	300	372	966	242	2,580	573	569	e776	428	e251	81	e1,090
25	280	348	1,540	235	1,910	534	547	e635	389	e220	75	e802
26	268	327	1,020	232	1,590	510	1,600	e382	362	e201	70	e346
27	255	311	850	221	1,370	494	979	e354	489	e90	e151	e380
28	251	293	766	210	1,380	459	733	e329	405	87	e148	e514
29	457	281	692	236	---	461	640	e312	334	110	e146	e442
30	1,090	269	633	310	---	562	577	e298	300	102	e156	e364
31	738	---	736	279	---	476	---	e281	---	110	e173	---
TOTAL	18,956	20,498	23,662	17,919	44,521	20,074	29,398	34,620	39,583	10,763	7,832	24,365
MEAN	611	683	763	578	1,590	648	980	1,117	1,319	347	253	812
MAX	3,170	2,080	3,330	2,610	7,580	1,240	3,800	4,280	5,070	1,790	1,280	4,690
MIN	161	269	203	210	256	412	373	281	252	87	70	135
CFSM	2.58	2.88	3.22	2.44	6.71	2.73	4.13	4.71	5.57	1.46	1.07	3.43
IN.	2.98	3.22	3.71	2.81	6.99	3.15	4.61	5.43	6.21	1.69	1.23	3.82

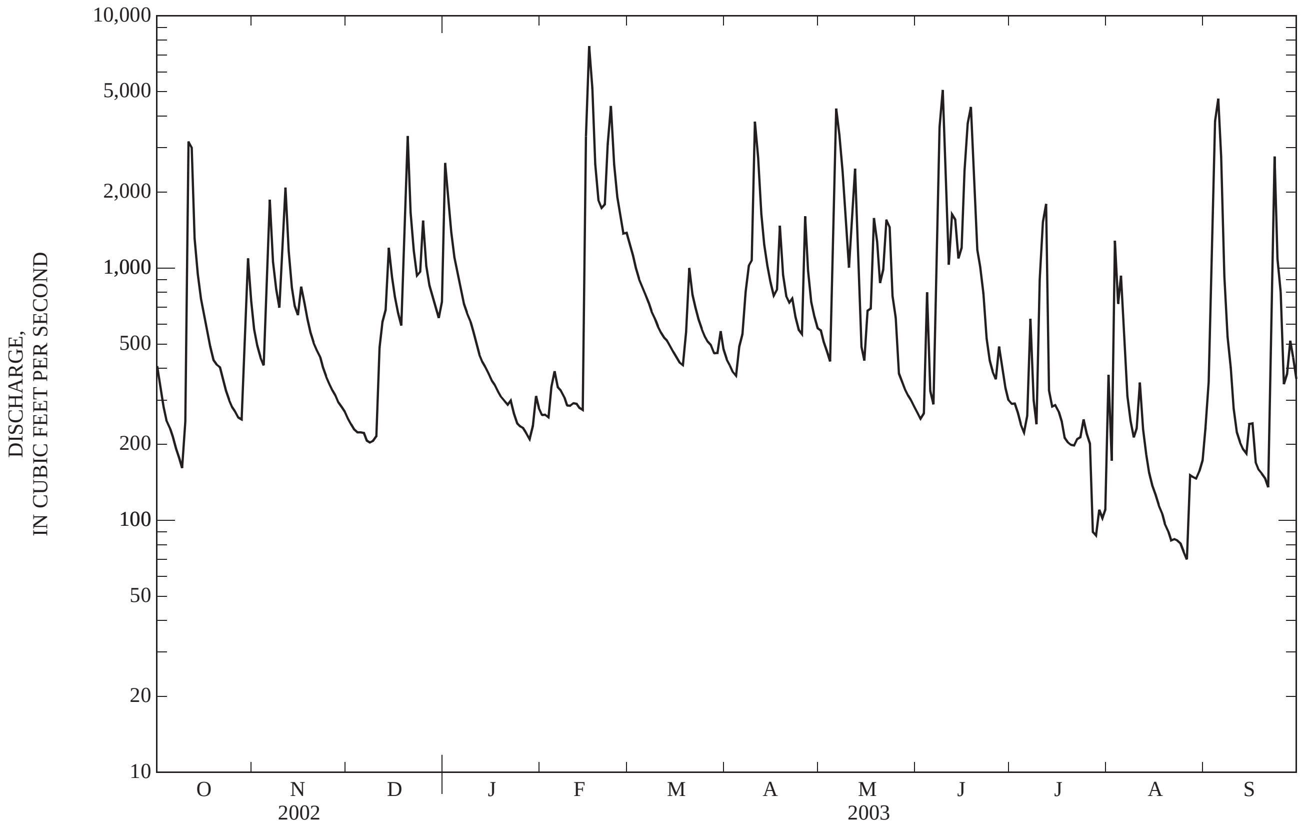
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	159	283	613	665	879	979	758	593	364	242	171	205
MAX	692	1,206	2,356	1,603	3,807	3,353	2,447	2,715	1,630	972	966	2,258
(WY)	(1978)	(1989)	(1979)	(1974)	(1989)	(1997)	(1972)	(1983)	(1997)	(1967)	(1967)	(1979)
MIN	37.0	44.3	44.7	55.5	156	228	200	131	71.9	83.2	48.6	35.6
(WY)	(1970)	(2000)	(1964)	(1981)	(1964)	(1983)	(1986)	(1976)	(1988)	(1994)	(1999)	(1999)

03310300 NOLIN RIVER AT WHITE MILLS, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1960 - 2003	
ANNUAL TOTAL	219,468		292,191			
ANNUAL MEAN	601		801		491	
HIGHEST ANNUAL MEAN					971	1979
LOWEST ANNUAL MEAN					217	1999
HIGHEST DAILY MEAN	7,810	Mar 21	7,580	Feb 16	20,000	Mar 2, 1997
LOWEST DAILY MEAN	46	Aug 16	70	Aug 26	27	Oct 23, 1998
ANNUAL SEVEN-DAY MINIMUM	49	Aug 11	81	Aug 20	31	Oct 17, 1998
MAXIMUM PEAK FLOW			8,090	Feb 16	24,500	Mar 2, 1997
MAXIMUM PEAK STAGE			22.80	Feb 16	36.46	Mar 2, 1997
INSTANTANEOUS LOW FLOW			68	Aug 26	31	Oct 1, 1959
ANNUAL RUNOFF (CFSM)	2.54		3.38		2.07	
ANNUAL RUNOFF (INCHES)	34.45		45.86		28.13	
10 PERCENT EXCEEDS	1,280		1,700		1,070	
50 PERCENT EXCEEDS	354		487		242	
90 PERCENT EXCEEDS	103		199		60	

e Estimated



03311000 NOLIN RIVER AT KYROCK, KY

LOCATION.--Lat 37°16'42", long 86°14'51", Edmonson County, Hydrologic Unit 05110001, in intake structure of Nolin River Dam on Nolin River, 0.3 mi upstream from Dismal Creek, 1.1 mi northeast of Kyrock, and at mile 7.8.

DRAINAGE AREA.--703 mi^2, of which about 223 mi^2 does not contribute directly to surface runoff. Area at site used Oct. 1, 1960, to Sept. 30, 1973, 707 mi^2.

PERIOD OF RECORD.--October 1930 to March 1932, July 1939 to September 1950, October 1960 to current year.

GAGE.--Water-stage recorder with telemetry and outflow gate dials. Datum of gage is 400 ft above NGVD of 1929. See WDR KY-90-1 for history of changes prior to Sept. 30, 1973.

REMARKS.-Water-discharge records not rated, (see COOPERATION). Maximum gage height for period of record affected by backwater from the Green River. Flow regulated since March 1963 by Nolin Lake (station 03310900). Discharge records computed using gate openings.

COOPERATION.--Record of discharge furnished by U.S. Army Corps of Engineers, Louisville District.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known since 1854, 26.35 ft, in January 1937, from floodmarks, at site and datum used in 1939-50.

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

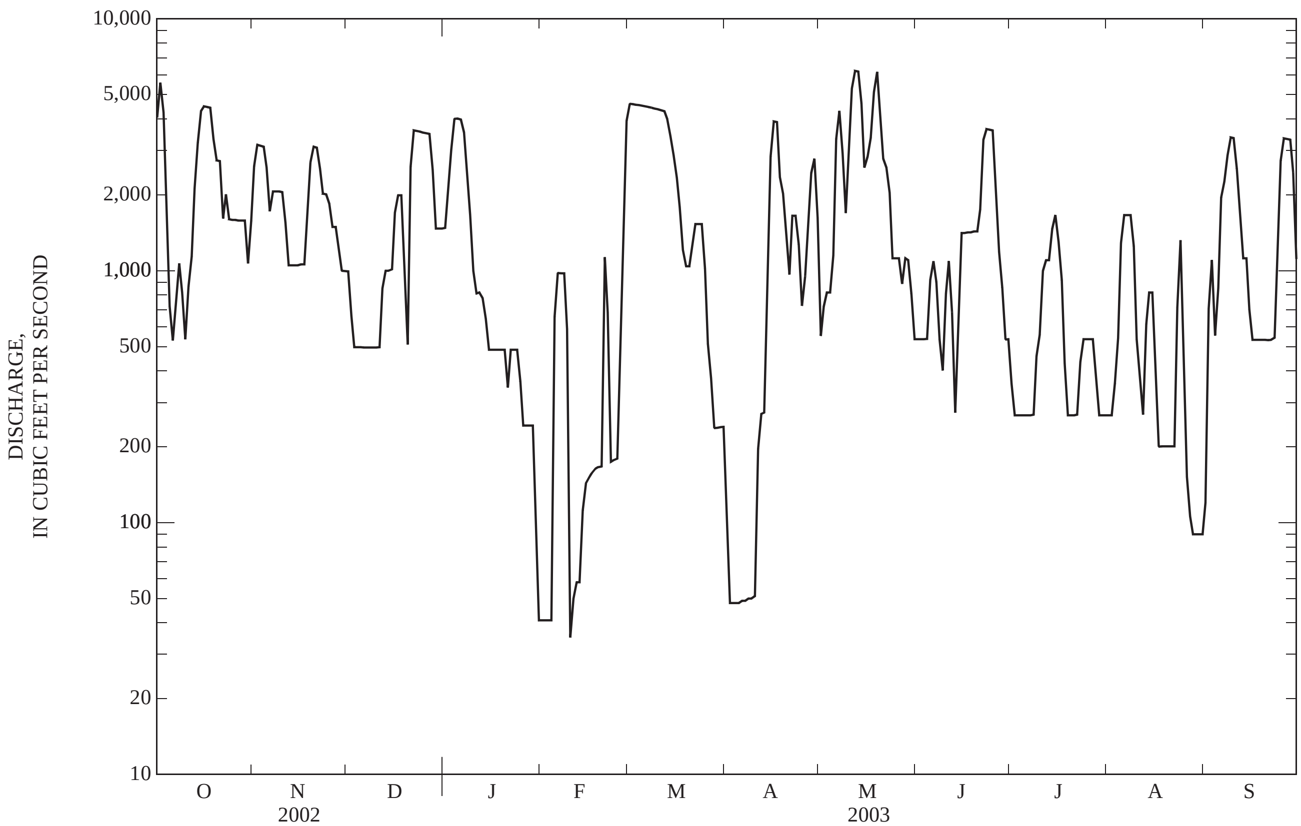
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4,050	2,600	994	1,480	41	4,590	112	551	535	356	267	120
2	5,570	3,160	662	2,110	41	4,580	48	718	535	267	267	706
3	4,240	3,130	497	3,020	41	4,560	48	819	535	267	358	1,100
4	1,830	3,110	497	4,010	41	4,540	48	819	536	267	539	552
5	723	2,570	497	4,020	656	4,510	48	1,150	921	267	1,290	851
6	529	1,720	496	3,980	979	4,490	49	3,330	1,090	267	1,660	1,950
7	727	2,060	496	3,530	977	4,460	49	4,310	903	267	1,660	2,260
8	1,070	2,060	496	2,410	975	4,430	50	2,930	535	268	1,660	2,870
9	822	2,060	496	1,670	585	4,400	50	1,690	402	458	1,250	3,380
10	533	2,050	496	998	35	4,370	51	3,240	813	557	534	3,360
11	865	1,550	497	811	50	4,340	196	5,280	1,090	995	367	2,540
12	1,140	1,050	851	819	58	4,300	270	6,200	684	1,100	268	1,630
13	2,120	1,050	998	779	58	3,990	273	6,180	273	1,100	614	1,120
14	3,220	1,050	1,000	644	112	3,420	1,070	4,610	700	1,460	820	1,120
15	4,280	1,050	1,010	486	143	2,870	2,840	2,560	1,410	1,660	819	703
16	4,490	1,060	1,700	486	151	2,340	3,910	2,830	1,410	1,300	394	532
17	4,460	1,060	1,990	486	158	1,790	3,890	3,370	1,420	919	200	532
18	4,430	1,780	1,990	486	163	1,210	2,350	5,120	1,420	428	201	532
19	3,330	2,690	1,140	486	166	1,040	2,020	6,160	1,430	267	201	531
20	2,740	3,110	509	486	167	1,040	1,440	4,340	1,430	267	201	531
21	2,720	3,080	2,580	344	1,130	1,290	964	2,780	1,750	267	201	530
22	1,610	2,540	3,600	486	681	1,530	1,650	2,560	3,300	268	201	532
23	2,010	2,020	3,580	486	174	1,530	1,650	2,040	3,650	435	715	541
24	1,600	2,010	3,560	486	177	1,530	1,270	1,120	3,630	535	1,320	1,110
25	1,590	1,840	3,530	364	179	1,020	724	1,120	3,610	535	572	2,730
26	1,590	1,490	3,510	243	675	513	950	1,120	2,170	534	152	3,350
27	1,580	1,490	3,490	243	1,940	374	1,500	886	1,190	534	106	3,330
28	1,580	1,240	2,520	243	3,930	237	2,440	1,120	855	381	90	3,310
29	1,580	999	1,470	243	---	238	2,780	1,100	533	267	90	2,460
30	1,070	997	1,470	102	---	239	1,620	810	534	267	90	1,110
31	1,580	---	1,470	41	---	240	---	534	---	267	90	---
TOTAL	69,679	57,676	48,092	36,478	14,483	80,011	34,360	81,397	39,294	17,027	17,197	45,923
MEAN	2,248	1,923	1,551	1,177	517	2,581	1,145	2,626	1,310	549	555	1,531
MAX	5,570	3,160	3,600	4,020	3,930	4,590	3,910	6,200	3,650	1,660	1,660	3,380
MIN	529	997	496	41	35	237	48	534	273	267	90	120

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	938	1,326	1,229	1,465	1,565	1,226	879	1,090	826	493	293	511
MAX	4,959	3,393	4,491	4,852	4,541	5,533	4,777	4,161	4,437	2,009	1,335	2,266
(WY)	(1980)	(1973)	(1978)	(1979)	(1985)	(1989)	(1975)	(1984)	(1983)	(1967)	(1967)	(1982)
MIN	0.000	452	1.50	122	91.4	203	0.63	0.39	0.000	0.000	0.000	0.000
(WY)	(1976)	(1964)	(1985)	(1981)	(1992)	(1983)	(1966)	(1964)	(1964)	(1964)	(1964)	(1975)

03311000 NOLIN RIVER AT KYROCK, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1964 - 2003	
ANNUAL TOTAL	400,442		541,617			
ANNUAL MEAN	1,097		1,484		983	
HIGHEST ANNUAL MEAN					1,880	1989
LOWEST ANNUAL MEAN					456	2001
HIGHEST DAILY MEAN	5,570	Oct 2	6,200	May 12	10,300	May 28, 1983
LOWEST DAILY MEAN	42	Mar 19	35	Feb 10	0.00	May 2, 1964
ANNUAL SEVEN-DAY MINIMUM	52	Aug 6	49	Apr 2	0.00	May 2, 1964
MAXIMUM PEAK FLOW					22,700	Jan 30, 1932
MAXIMUM PEAK STAGE			37.30	Feb 18	59.27	Mar 2, 1962
10 PERCENT EXCEEDS	3,110		3,620		2,520	
50 PERCENT EXCEEDS	499		1,050		476	
90 PERCENT EXCEEDS	173		178		52	



03311500 GREEN RIVER AT LOCK 6,AT BROWNSVILLE, KY

LOCATION.--Lat 37°12'25", long 85°15'40", Edmonson County, Hydrologic Unit 05110001, on right bank 200 ft upstream from lock and Dam 6, 0.8 mi downstream from Indian Creek, 1.0 mi northeast of Brownsville, 1.8 mi downstream from Nolin River, and at mile 181.7.

DRAINAGE AREA.--2,762 mi^2, of which about 600 mi^2 does not contribute directly to surface runoff.

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--December 1999 to current year.

INSTRUMENTATION.--Water-temperature recorder with telemetry since December 1999.

COOPERATION.--U. S. Army Corps of Engineers, Louisville District and Nature Conservency.

EXTREMES FOR PERIOD OF DAILY RECORD.--Maximum 29.0°C, July 7, 2002, minimum 2.0°C, Jan. 3, 4, 2001.

EXTREMES FOR CURRENT YEAR.--Maximum 25.0°C , Aug. 22; minimum 3.9°C , Jan. 28.

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	18.1	17.3	17.7	15.1	14.7	14.8	9.7	9.3	9.5	8.2	7.7	7.9
2	---	---	---	15.0	14.7	14.8	9.3	8.8	9.1	8.5	8.2	8.4
3	20.0	18.5	19.1	14.7	14.5	14.6	8.8	8.3	8.6	8.5	8.5	8.5
4	19.2	18.5	18.8	14.5	14.4	14.4	8.3	7.9	8.1	8.5	8.3	8.4
5	19.2	18.3	18.7	14.4	13.3	14.1	7.9	6.9	7.4	8.3	8.2	8.2
6	20.0	18.7	19.2	13.3	12.8	13.0	7.4	6.3	6.8	8.2	8.1	8.2
7	20.3	19.9	20.1	13.1	12.8	12.9	7.4	7.2	7.3	8.1	8.0	8.0
8	20.1	18.7	19.4	13.3	13.1	13.2	7.2	7.0	7.1	8.0	7.8	7.9
9	18.7	18.6	18.6	13.4	13.2	13.3	7.1	7.0	7.1	7.8	7.5	7.6
10	18.6	17.8	18.4	13.9	13.2	13.4	7.3	7.1	7.2	7.5	7.5	7.5
11	17.8	15.8	16.3	14.5	13.9	14.3	7.5	7.2	7.3	7.5	7.3	7.4
12	17.5	16.2	17.1	14.6	14.4	14.5	7.9	7.5	7.8	7.3	7.0	7.1
13	17.8	17.4	17.6	14.4	13.8	14.1	7.7	7.5	7.6	7.0	6.6	6.8
14	18.1	17.6	17.8	13.8	13.3	13.5	8.6	7.7	8.2	6.6	6.4	6.5
15	18.1	17.9	18.0	13.3	13.0	13.1	8.7	8.5	8.6	6.4	6.2	6.2
16	17.9	17.4	17.6	13.0	12.7	12.9	8.5	8.5	8.5	6.2	5.9	6.1
17	17.6	17.4	17.6	12.7	12.1	12.4	8.6	8.5	8.5	5.9	5.7	5.8
18	17.7	17.5	17.6	12.1	11.8	11.9	8.7	8.6	8.7	5.7	5.3	5.5
19	17.7	17.4	17.5	12.1	11.8	11.9	9.0	8.7	8.8	5.3	5.1	5.3
20	17.4	17.3	17.3	12.0	11.9	12.0	9.4	9.0	9.2	5.2	5.0	5.1
21	17.3	17.1	17.2	12.0	11.9	12.0	9.4	9.1	9.2	5.2	5.1	5.1
22	17.2	15.7	16.7	12.0	11.9	12.0	9.2	9.0	9.1	5.3	5.1	5.2
23	16.8	16.5	16.6	11.9	11.7	11.7	9.0	8.4	8.7	5.2	5.0	5.1
24	16.6	16.3	16.4	11.7	11.4	11.5	8.4	8.1	8.2	5.0	4.8	4.9
25	16.7	16.5	16.6	11.4	11.2	11.3	8.1	7.8	7.9	4.8	4.6	4.7
26	16.7	16.6	16.6	11.2	11.1	11.1	7.8	7.6	7.7	4.7	4.2	4.4
27	16.6	16.5	16.5	11.1	10.8	11.0	7.6	7.3	7.4	4.2	4.0	4.1
28	16.5	16.0	16.3	10.8	10.4	10.6	7.3	7.2	7.2	4.0	3.9	3.9
29	16.0	15.4	15.8	10.4	10.0	10.2	7.3	7.3	7.3	4.1	4.0	4.0
30	15.4	14.7	15.0	10.0	9.7	9.9	7.5	7.3	7.4	4.3	4.0	4.1
31	14.8	14.7	14.8	---	---	---	7.7	7.5	7.6	4.9	4.3	4.5
MONTH	20.3	14.7	17.4	15.1	9.7	12.7	9.7	6.3	8.0	8.5	3.9	6.2

03311500 GREEN RIVER AT LOCK 6,AT BROWNSVILLE, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	5.1	4.9	5.0	7.0	6.6	6.7	12.0	11.4	11.7	14.2	13.5	13.8
2	5.0	4.8	4.9	6.6	6.4	6.5	11.8	11.5	11.6	14.5	14.2	14.4
3	5.3	5.0	5.1	6.5	6.3	6.4	12.3	11.8	11.9	14.5	14.3	14.4
4	5.8	5.3	5.6	6.3	6.2	6.3	12.8	12.3	12.5	14.5	14.4	14.5
5	6.1	5.8	6.0	6.4	6.2	6.3	13.2	12.8	13.0	14.8	14.4	14.6
6	6.2	6.1	6.1	6.5	6.4	6.4	13.4	12.9	13.1	14.8	14.6	14.8
7	6.2	5.9	6.1	6.5	6.4	6.5	13.5	13.3	13.4	14.6	14.5	14.5
8	5.9	5.1	5.5	6.5	6.4	6.4	13.4	13.1	13.3	14.5	14.5	14.5
9	5.1	4.9	5.0	6.6	6.5	6.5	13.1	12.6	12.8	14.6	14.5	14.6
10	4.9	4.9	4.9	6.7	6.6	6.6	12.6	12.2	12.4	14.7	14.6	14.7
11	5.2	4.9	5.0	6.8	6.7	6.7	12.2	11.6	11.9	15.0	14.7	14.8
12	5.4	5.2	5.2	6.9	6.8	6.8	11.6	11.5	11.5	15.1	14.9	15.0
13	5.4	5.2	5.3	7.1	6.9	7.0	11.8	11.5	11.6	15.2	15.0	15.1
14	5.3	5.2	5.2	7.3	7.1	7.2	12.2	11.8	12.0	15.4	15.2	15.3
15	6.5	5.3	5.7	7.5	7.3	7.4	12.2	12.2	12.2	15.5	15.1	15.4
16	7.3	6.5	7.0	7.8	7.5	7.7	12.2	12.2	12.2	15.7	15.1	15.4
17	7.5	7.3	7.4	8.3	7.8	8.0	12.3	12.2	12.2	15.7	15.7	15.7
18	7.4	7.0	7.2	8.7	8.3	8.5	12.6	12.3	12.4	15.8	15.6	15.7
19	7.0	6.9	6.9	9.1	8.7	8.9	12.9	12.6	12.8	15.9	15.7	15.8
20	7.3	6.9	7.1	9.8	9.1	9.4	13.1	12.9	13.0	16.1	15.9	16.0
21	7.5	7.3	7.4	10.4	9.8	10.1	---	---	---	16.1	16.1	16.1
22	7.6	7.3	7.4	10.5	10.4	10.5	---	---	---	16.1	16.0	16.0
23	8.2	7.6	7.9	10.6	10.5	10.6	---	---	---	16.0	16.0	16.0
24	8.5	8.2	8.4	10.7	10.4	10.6	---	---	---	16.1	15.6	15.8
25	8.5	8.3	8.4	10.5	10.3	10.4	13.0	13.0	13.0	15.7	15.5	15.6
26	8.3	8.0	8.2	10.7	10.5	10.6	13.0	13.0	13.0	15.6	15.4	15.4
27	8.0	7.5	7.7	11.0	10.7	10.8	13.1	13.0	13.1	15.8	15.4	15.5
28	7.5	7.0	7.3	11.6	11.0	11.2	13.2	13.1	13.2	15.9	15.5	15.7
29	---	---	---	11.8	11.6	11.7	13.3	13.2	13.2	15.9	15.7	15.8
30	---	---	---	12.1	11.8	11.9	13.5	13.3	13.4	16.0	15.8	15.9
31	---	---	---	12.3	12.0	12.1	---	---	---	16.3	16.0	16.1
MONTH	8.5	4.8	6.4	12.3	6.2	8.5	13.5	11.4	12.6	16.3	13.5	15.3
		JUNE			JULY			AUGUST			SEPTEMBER	
1	16.4	16.3	16.3	19.6	19.4	19.5	22.7	22.5	22.5	24.4	23.6	24.1
2	16.4	16.3	16.4	20.0	19.6	19.8	22.7	22.5	22.6	23.6	22.8	23.1
3	16.6	16.4	16.5	20.5	20.0	20.2	22.5	22.3	22.3	22.8	21.6	22.2
4	16.6	16.5	16.6	21.0	20.5	20.7	22.3	22.2	22.3	21.6	21.1	21.3
5	16.7	16.4	16.5	21.3	21.0	21.1	22.2	21.7	22.0	21.1	20.8	20.9
6	16.7	16.5	16.6	21.7	21.3	21.4	21.7	21.3	21.5	20.8	20.6	20.7
7	17.1	16.7	16.9	22.2	21.7	21.8	21.3	21.1	21.1	20.6	20.5	20.6
8	17.2	17.1	17.1	22.5	22.2	22.3	21.1	21.1	21.1	20.5	20.3	20.4
9	17.1	16.9	17.0	22.7	22.4	22.5	21.1	21.0	21.1	20.3	20.3	20.3
10	16.9	16.8	16.8	22.7	22.6	22.6	21.4	21.0	21.2	20.4	20.3	20.4
11	17.0	16.8	16.9	22.7	22.4	22.6	21.6	21.4	21.5	20.5	20.4	20.5
12	17.1	17.0	17.1	22.4	21.5	22.0	22.1	21.6	21.8	20.6	20.5	20.6
13	17.2	16.9	17.1	21.5	21.0	21.2	22.2	22.1	22.1	20.6	20.6	20.6
14	17.0	16.9	16.9	21.0	20.7	20.8	22.2	22.0	22.1	20.6	20.6	20.6
15	17.4	16.9	17.0	20.7	20.5	20.6	22.0	21.8	21.9	20.7	20.6	20.7
16	17.5	17.3	17.4	20.5	20.4	20.5	22.5	22.0	22.1	20.7	20.5	20.6
17	17.6	17.3	17.5	20.9	20.5	20.7	23.5	22.5	22.9	20.6	20.4	20.5
18	17.8	17.6	17.7	21.3	20.9	21.1	24.0	23.5	23.7	20.7	20.5	20.6
19	17.8	17.7	17.7	22.0	21.3	21.6	24.2	23.6	23.9	20.8	20.6	20.6
20	17.8	17.7	17.7	22.6	22.0	22.2	24.5	23.9	24.1	20.6	20.2	20.4
21	17.7	17.7	17.7	22.7	22.3	22.5	24.9	24.3	24.5	20.4	20.1	20.2
22	17.7	17.7	17.7	22.3	22.1	22.2	25.0	24.6	24.8	20.8	19.9	20.2
23	17.7	17.6	17.7	22.3	21.8	22.1	24.7	24.2	24.4	19.9	19.1	19.5
24	17.7	17.6	17.6	21.8	21.3	21.5	24.3	23.2	23.7	19.2	19.0	19.1
25	17.8	17.7	17.7	21.4	21.2	21.3	23.2	22.5	22.8	19.1	19.0	19.1
26	17.8	17.7	17.8	21.4	21.2	21.3	23.7	22.9	23.1	19.3	19.1	19.2
27	18.0	17.8	17.9	21.6	21.3	21.4	24.4	23.7	23.9	19.5	19.3	19.4
28	18.3	18.0	18.2	21.9	21.6	21.7	24.6	24.1	24.3	19.5	19.3	19.4
29	18.8	18.3	18.5	22.4	21.9	22.1	24.7	24.3	24.5	19.4	19.2	19.3
30	19.4	18.8	19.1	22.6	22.3	22.4	24.7	24.5	24.6	19.3	19.0	19.2
31	---	---	---	22.6	22.5	22.5	24.5	24.2	24.3	---	---	---
MONTH	19.4	16.3	17.3	22.7	19.4	21.5	25.0	21.0	22.9	24.4	19.0	20.5
YEAR	25.0	3.9	14.2									

03313700 WEST FORK DRAKES CREEK NEAR FRANKLIN, KY

LOCATION.--Lat 36°43'24", long 86°33'08", Simpson County, Hydrologic Unit 05110002, near left bank at upstream side of city of Franklin pumping plant intake, 20 ft upstream from dam, 0.8 mi downstream from bridge on State Highways 73 and 100, 1.5 mi east of Franklin, 3.3 mi downstream from Sharps Branch, and at mile 46.7.

DRAINAGE AREA.--110 mi^2, of which about 19 mi^2 does not contribute directly to surface runoff.

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

GAGE.--Water-stage recorder with telemetry and broad-crested weir. Datum of gage is 581.54 ft above NGVD of 1929. Prior to Oct. 1, 1981, at site 0.8 mi upstream at datum 8.05 ft lower.

REMARKS.--Records good except for those estimated, which are fair. Subsequent to Apr. 24, 1976, records of daily discharge less than about 300 ft^3/s does not include approximately 3 ft^3/s which is diverted by city of Franklin for municipal supply.

COOPERATION.--Kentucky Natural Resources and Environmental Protection Cabinet.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb 15	0500	3,060	9.66	Jun 18	1400	2,750	9.50
Feb 16	0400	3,780	9.99	Sep 22	1530	*5,010	*10.52
May 7	2100	3,420	9.83				

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	96	69	68	415	112	352	156	60	52	85	203	71
2	79	61	63	407	106	310	140	72	50	78	107	59
3	65	57	59	336	104	261	124	86	53	72	471	181
4	66	59	65	271	246	222	116	69	57	73	314	161
5	148	237	419	238	254	205	129	268	52	60	615	91
6	160	668	350	202	203	191	139	613	51	55	302	63
7	115	342	236	170	184	168	497	1,880	289	53	183	49
8	90	240	206	158	155	151	469	1,470	173	49	129	40
9	78	190	195	152	141	142	332	799	117	169	109	34
10	941	474	190	136	139	128	321	474	103	301	94	30
11	1,370	713	606	114	129	119	337	581	1,110	113	77	32
12	711	401	484	100	134	115	269	370	1,270	76	66	33
13	403	278	581	94	125	110	216	256	579	224	59	30
14	275	216	703	92	506	106	179	199	392	254	54	78
15	217	261	445	85	2,430	101	156	171	404	106	48	83
16	178	538	349	83	3,140	95	143	149	354	310	45	53
17	143	394	275	83	1,420	95	167	152	459	186	42	41
18	116	284	221	82	942	95	173	142	1,570	108	44	32
19	105	221	254	76	678	122	133	131	1,210	82	39	28
20	105	185	1,000	71	798	183	114	116	655	69	35	24
21	104	162	517	75	675	144	108	110	411	90	33	23
22	89	143	364	77	1,640	123	98	104	287	e119	33	2,630
23	76	122	266	68	1,350	109	88	94	212	88	31	1,020
24	70	108	237	60	1,090	101	88	86	164	69	28	460
25	65	118	255	58	849	96	95	88	135	58	26	281
26	62	105	199	59	643	146	93	81	116	49	23	186
27	60	90	174	57	514	145	83	74	158	45	23	138
28	61	82	161	57	415	128	72	64	126	44	21	110
29	72	76	149	81	---	172	72	62	103	82	19	84
30	86	73	141	127	---	213	66	63	89	68	18	74
31	77	---	144	117	---	180	---	58	---	143	40	---
TOTAL	6,283	6,967	9,376	4,201	19,122	4,828	5,173	8,942	10,801	3,378	3,331	6,219
MEAN	203	232	302	136	683	156	172	288	360	109	107	207
MAX	1,370	713	1,000	415	3,140	352	497	1,880	1,570	310	615	2,630
MIN	60	57	59	57	104	95	66	58	50	44	18	23
CFSM	2.23	2.55	3.32	1.49	7.50	1.71	1.89	3.17	3.96	1.20	1.18	2.28
IN.	2.57	2.85	3.83	1.72	7.82	1.97	2.11	3.66	4.42	1.38	1.36	2.54

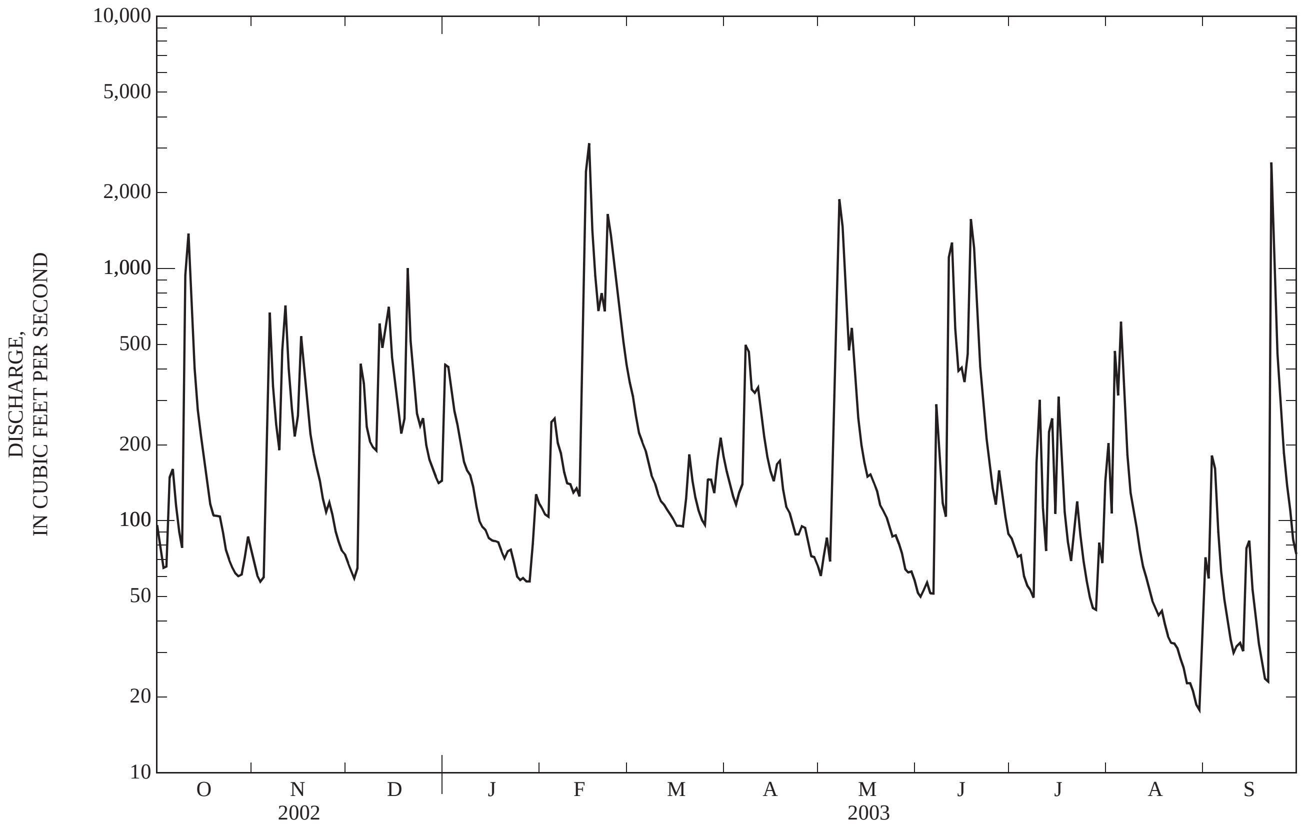
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	45.6	128	281	287	363	374	247	217	159	64.8	34.8	61.5
MAX	219	474	971	867	1,356	1,412	568	982	795	251	142	677
(WY)	(1976)	(1980)	(1979)	(1974)	(1989)	(1975)	(1979)	(1983)	(1998)	(1989)	(1971)	(1979)
MIN	1.87	6.95	11.8	10.4	138	113	38.3	22.8	18.8	5.47	2.80	2.01
(WY)	(1988)	(2000)	(1981)	(1981)	(1980)	(1998)	(1986)	(1988)	(1985)	(1985)	(1986)	(2000)

03313700 WEST FORK DRAKES CREEK NEAR FRANKLIN, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1968 - 2003	
ANNUAL TOTAL	71,432.5		88,621			
ANNUAL MEAN	196		243		188	
HIGHEST ANNUAL MEAN					351	1989
LOWEST ANNUAL MEAN					63.5	2000
HIGHEST DAILY MEAN	2,100	Mar 20	3,140	Feb 16	12,800	Mar 12, 1975
LOWEST DAILY MEAN	3.3	Aug 10	18	Aug 30	0.00	Sep 19, 1985
ANNUAL SEVEN-DAY MINIMUM	3.4	Aug 8	23	Aug 24	0.00	Aug 13, 1988
MAXIMUM PEAK FLOW			5,010	Sep 22	27,300	Mar 12, 1975
MAXIMUM PEAK STAGE			10.52	Sep 22	23.20	Mar 12, 1975
ANNUAL RUNOFF (CFSM)	2.15		2.67		2.07	
ANNUAL RUNOFF (INCHES)	29.20		36.23		28.06	
10 PERCENT EXCEEDS	502		525		425	
50 PERCENT EXCEEDS	85		124		71	
90 PERCENT EXCEEDS	10		52		8.1	

e Estimated



03314500 BARREN RIVER AT BOWLING GREEN, KY

LOCATION.--Lat 37°00'04", long 86°25'51", Warren County, Hydrologic Unit 05110002, near center of downstream side of abandoned College Street bridge, 700 ft upstream from bridge on U.S. Highways 31W and 68 at Bowling Green, 6.0 mi downstream from Drakes Creek, 8.9 mi upstream from Jennings Creek, and at mile 37.6.

DRAINAGE AREA.--1,849 mi^2, of which about 490 mi^2 does not contribute directly to surface runoff.

PERIOD OF RECORD.--June 1938 to September 1994, March 2002 to current year. Gage-height records collected in vicinity since 1901 are published in reports of National Weather Service (prior to 1940 records are for site about 7 mi downstream and are fragmentary prior to July 1924).

REVISED RECORDS.--WSP 1385; 1943, 1945, 1946(M). WRD KY-80-1; Drainage area.

GAGE.--Water-stage recorder with telemetry. Datum of gage is 409.83 ft above NGVD of 1929. Prior to June 21, 1944, nonrecording gage at same site and datum.

REMARKS.-Records good except those estimated, which are fair. Flow regulated by Barren River Lake beginning March 1964.

COOPERATION.--U.S. Army Corps of Engineers, Louisville District and National Streamflow Infornation Program.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Jan. 8, 1913 reached a stage of 52.2 ft, from floodmarks.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,990	3,340	3,080	3,520	1,920	6,050	3,390	928	887	3,750	965	748
2	2,840	3,250	3,040	5,170	1,970	5,810	2,930	939	860	3,710	1,280	1,880
3	3,120	3,200	3,280	5,210	1,960	5,580	2,400	1,170	884	3,670	1,540	2,530
4	3,030	3,170	3,340	5,420	2,130	5,380	2,230	1,250	886	3,620	3,270	3,840
5	1,900	3,470	3,740	5,270	2,900	5,250	2,250	1,300	877	3,580	2,820	4,070
6	1,580	6,210	4,770	5,000	3,450	5,140	2,250	2,350	861	3,540	3,160	3,400
7	1,660	5,570	4,290	3,570	3,480	5,000	3,750	3,860	1,670	4,220	2,860	3,130
8	3,310	4,600	4,050	2,540	3,370	4,880	4,920	11,000	4,110	3,810	2,640	2,970
9	3,060	4,210	3,970	2,360	e3,240	4,780	4,060	7,220	3,850	3,620	1,810	2,870
10	3,790	5,560	3,900	2,240	2,660	4,670	4,350	5,510	3,940	2,840	1,510	2,250
11	11,700	7,510	3,740	2,100	1,980	4,610	4,640	4,930	4,900	2,910	1,110	1,840
12	8,590	6,680	5,980	1,970	1,920	4,670	5,350	4,880	13,200	1,960	928	1,790
13	5,710	5,230	5,840	1,570	2,430	4,670	5,010	4,670	6,860	609	928	1,760
14	5,090	4,600	7,690	1,410	2,610	4,610	4,610	4,450	3,270	1,460	905	1,350
15	4,670	4,560	6,930	1,370	10,600	4,560	3,160	4,300	3,580	2,570	842	981
16	4,420	6,000	5,930	1,070	e17,700	4,530	2,260	4,190	5,030	2,440	809	823
17	4,240	6,010	5,410	929	e21,100	4,490	2,160	4,280	6,320	2,510	776	716
18	4,080	5,060	5,070	895	10,200	4,440	2,370	4,230	6,180	1,730	756	669
19	3,390	4,510	5,080	994	5,750	3,960	2,150	4,120	6,870	1,150	695	638
20	3,120	4,200	5,140	1,060	5,590	4,110	2,410	4,050	5,420	834	656	618
21	3,060	4,000	5,420	1,060	6,410	4,160	3,030	4,030	4,820	946	642	607
22	3,640	3,830	5,930	1,060	7,140	4,490	2,790	4,040	4,450	4,380	640	5,090
23	3,740	3,660	5,640	1,040	10,900	4,500	2,530	3,960	4,200	2,580	692	15,500
24	3,680	3,520	5,350	1,020	7,540	4,420	2,370	3,890	4,030	3,080	699	6,180
25	3,640	3,420	5,310	1,010	5,530	3,860	2,300	3,820	4,070	3,590	667	4,010
26	3,610	3,350	5,170	983	4,490	3,310	2,000	3,210	4,040	3,700	641	4,500
27	3,570	3,280	4,950	982	6,200	3,390	1,700	2,210	4,060	3,600	625	4,480
28	3,640	3,210	4,830	817	6,310	2,860	1,160	1,520	4,130	2,890	518	4,290
29	3,740	3,160	4,740	790	---	2,470	994	1,010	3,940	1,430	594	4,090
30	3,630	3,130	4,610	1,490	---	e3,220	983	909	3,820	940	623	3,930
31	3,480	---	3,130	2,330	---	e3,540	---	911	---	723	676	---
TOTAL	120,720	131,500	149,350	66,250	161,480	137,410	86,507	109,137	122,015	82,392	37,277	91,550
MEAN	3,894	4,383	4,818	2,137	5,767	4,433	2,884	3,521	4,067	2,658	1,202	3,052
MAX	11,700	7,510	7,690	5,420	21,100	6,050	5,350	11,000	13,200	4,380	3,270	15,500
MIN	1,580	3,130	3,040	790	1,920	2,470	983	909	860	609	518	607

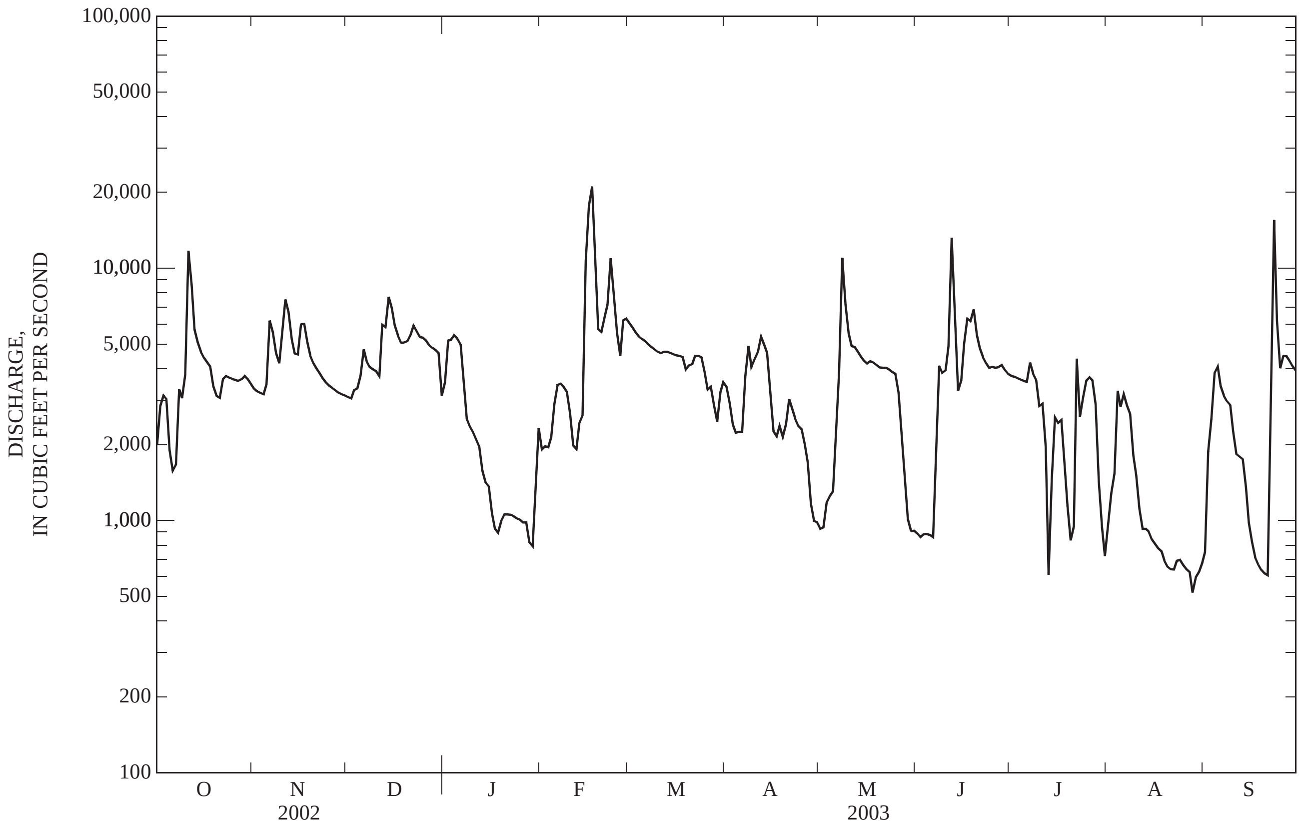
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1,850	3,140	3,938	4,299	4,820	4,096	3,045	2,806	2,125	1,533	859	1,230
MAX	4,027	6,097	9,210	9,141	9,830	10,450	8,368	9,408	5,825	5,059	3,468	5,358
(WY)	(1975)	(1980)	(1979)	(1979)	(1989)	(1975)	(1979)	(1983)	(1981)	(1989)	(1971)	(1979)
MIN	381	286	573	228	1,624	1,128	379	247	102	118	110	251
(WY)	(1977)	(1977)	(1981)	(1981)	(1992)	(1981)	(1986)	(1988)	(1988)	(1988)	(1991)	(1993)

03314500 BARREN RIVER AT BOWLING GREEN, KY—Continued

SUMMARY STATISTICS	FOR 2003 WATER YEAR		WATER YEARS 1965 - 2003	
ANNUAL TOTAL	1295588			
ANNUAL MEAN	3550		2,806	
HIGHEST ANNUAL MEAN			5,001	1979
LOWEST ANNUAL MEAN			1,292	1988
HIGHEST DAILY MEAN	21,100	Feb 17	57,500	Mar 13, 1975
LOWEST DAILY MEAN	518	Aug 28	75	Jul 9, 1988
ANNUAL SEVEN-DAY MINIMUM	621	Aug 25	76	Jul 6, 1988
MAXIMUM PEAK FLOW			85,000	Feb 28, 1962
MAXIMUM PEAK STAGE			49.55	Feb 28, 1962
INSTANTANEOUS LOW FLOW			44	Sep 19, 1954
10 PERCENT EXCEEDS	5,670		5,970	
50 PERCENT EXCEEDS	3,520		2,080	
90 PERCENT EXCEEDS	2901		295	

e Estimated



03316500 GREEN RIVER AT PARADISE, KY

LOCATION.--Lat 37°15'50", long 86°58'40", Muhlenberg County, Hydrologic Unit 05110003, on left bank of reservation of Tennessee Valley Authority generating plant, 0.4 mi southeast of Paradise, 1.1 mi downstream from Jacobs Creek, 2.8 mi upstream from Pond Creek, and at mile 98.8.

DRAINAGE AREA.--6,183 mi^2, of which about 1,380 mi^2 does not contribute directly to surface runoff.

PERIOD OF RECORD.--October 1939 to September 1950 (published as "at Green River"), October 1959 to September 1960 (low-water records only), October 1960 to September 1981 and July 1991 to current year.

GAGE.--Water-stage recorder with telemetry. Datum of gage is 363.19 ft above NGVD of 1929 (levels by Tennessee Valley Authority). See WDR KY-81-1 for history of changes prior to October 31, 1979. Auxiliary water-stage recorder on U.S. Highway 62 bridge at Rockport, 4.4 mi downstream.

REMARKS.--Records fair except for those below 2000 ft^3/s, which are poor. Flow regulated by Nolin River Lake beginning March 1963, Barren River Lake beginning March 1964 and Green River Lake beginning February 1969, .

COOPERATION.--Kentucky Natural Resources and Environmental Protection Cabinet.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13,400	12,400	6,850	25,500	4,940	25,000	8,570	9,110	e4,700	5,590	3,490	2,670
2	11,800	11,100	6,350	e32,200	5,240	24,700	7,730	7,270	e4,600	5,230	3,320	4,970
3	12,200	9,940	6,050	e32,500	5,230	24,200	6,590	6,300	e4,590	4,920	4,610	13,200
4	11,000	9,710	5,820	e30,600	6,020	22,900	5,690	5,660	e4,600	4,740	6,160	17,200
5	8,940	9,890	5,890	27,400	6,770	21,800	6,130	8,130	e4,650	4,630	7,150	17,700
6	6,180	15,700	7,280	20,600	8,290	20,800	7,070	10,600	e5,000	4,550	7,060	16,100
7	4,530	18,900	10,600	14,800	9,680	20,200	11,600	18,300	e5,500	4,540	6,900	13,900
8	4,190	19,400	11,500	12,800	10,000	19,700	15,100	30,300	e6,900	5,070	6,620	11,700
9	4,940	15,600	10,300	11,500	9,840	19,600	16,800	31,800	e11,000	5,120	6,080	10,000
10	7,410	14,300	9,430	11,200	8,300	19,300	21,400	28,500	15,400	4,870	5,340	9,240
11	25,300	21,700	11,800	9,430	6,400	18,000	24,300	24,200	13,800	4,570	4,280	8,110
12	32,000	27,600	14,600	9,120	5,450	16,600	25,400	22,700	20,600	5,760	3,470	6,840
13	e32,200	28,100	17,000	8,070	5,520	16,300	23,600	20,400	26,000	6,140	3,100	5,750
14	e26,800	24,200	21,600	7,210	e7,500	15,800	19,300	17,100	23,900	4,560	3,050	4,980
15	e21,500	19,400	22,500	6,380	e19,000	15,000	16,300	13,700	18,000	3,800	3,050	4,640
16	e18,400	20,300	21,700	5,770	e29,500	13,700	14,500	11,300	17,100	4,460	2,880	4,150
17	16,100	21,600	19,100	5,250	e34,500	12,700	14,400	13,400	18,800	4,500	2,590	3,550
18	15,300	20,800	16,500	4,800	e37,500	11,400	15,500	17,700	20,800	4,120	2,150	3,030
19	13,600	17,600	e19,400	4,570	e39,500	e11,200	14,100	18,900	22,700	3,400	1,900	2,560
20	10,900	14,900	e30,000	4,470	e41,000	10,600	13,900	18,300	22,200	2,600	1,740	2,280
21	9,460	e13,500	e39,500	4,570	e42,700	e12,500	16,000	17,400	19,600	2,190	1,620	2,130
22	8,620	13,100	38,400	4,550	39,400	13,500	18,000	15,800	16,200	3,150	1,590	3,260
23	8,110	12,400	35,000	4,510	40,400	12,400	16,800	15,200	14,400	5,390	2,480	14,000
24	7,820	11,900	31,700	4,350	40,800	11,800	14,700	14,100	13,000	5,070	4,080	24,000
25	7,310	11,700	31,600	4,090	40,600	11,200	13,400	12,100	11,300	4,710	4,120	e18,000
26	6,910	11,200	29,300	3,790	37,000	10,200	14,200	9,750	10,200	4,680	3,320	e14,000
27	6,660	10,300	24,300	3,330	30,600	8,650	13,300	8,100	9,500	4,660	2,690	11,800
28	6,980	9,640	17,400	2,970	26,300	7,460	11,600	6,630	8,150	4,520	2,260	e11,400
29	9,360	8,480	13,600	2,930	---	7,490	9,970	e5,600	7,150	4,070	1,930	10,800
30	13,100	7,570	12,500	3,350	---	e7,600	9,760	e5,000	6,230	3,340	1,780	10,100
31	13,300	---	14,400	4,050	---	e8,000	---	e4,400	---	3,220	2,020	---
TOTAL	394,320	462,930	561,970	326,660	597,980	470,300	425,710	447,750	386,570	138,170	112,830	282,060
MEAN	12,720	15,430	18,130	10,540	21,360	15,170	14,190	14,440	12,890	4,457	3,640	9,402
MAX	32,200	28,100	39,500	32,500	42,700	25,000	25,400	31,800	26,000	6,140	7,150	24,000
MIN	4,190	7,570	5,820	2,930	4,940	7,460	5,690	4,400	4,590	2,190	1,590	2,130

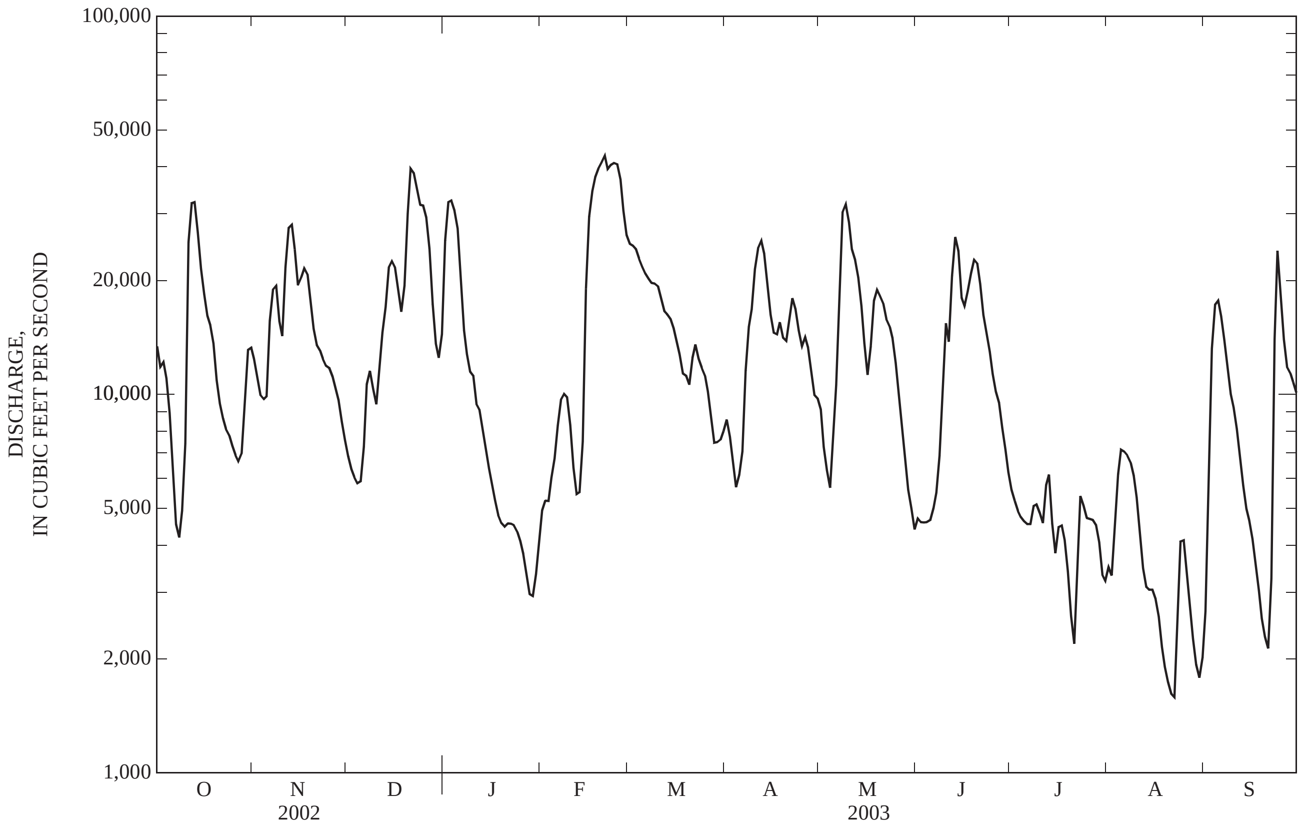
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	5,097	8,071	13,120	15,320	15,860	17,170	13,290	10,360	7,727	3,812	2,655	3,751
MAX	16,950	19,310	42,250	36,020	26,410	41,520	34,210	25,950	20,190	8,811	8,743	22,540
(WY)	(1980)	(1980)	(1979)	(1974)	(1994)	(1997)	(1979)	(1995)	(1981)	(1973)	(1971)	(1979)
MIN	1,750	2,548	2,103	954	6,083	6,150	4,345	1,881	1,523	1,270	524	512
(WY)	(2001)	(2000)	(1981)	(1981)	(1977)	(1981)	(2001)	(2001)	(1999)	(2000)	(1999)	(1999)

03316500 GREEN RIVER AT PARADISE, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1970 - 2003	
ANNUAL TOTAL	3,803,693		4,607,250			
ANNUAL MEAN	10,420		12,620		9,700	
HIGHEST ANNUAL MEAN					18,460	1979
LOWEST ANNUAL MEAN					4,432	2001
HIGHEST DAILY MEAN	43,900	Mar 23	42,700	Feb 21	83,800	Mar 7, 1997
LOWEST DAILY MEAN	460	Sep 15	1,590	Aug 22	228	Oct 4, 2001
ANNUAL SEVEN-DAY MINIMUM	478	Sep 10	2,010	Aug 17	320	Sep 8, 1995
MAXIMUM PEAK FLOW					107,000	Mar 5, 1962
MAXIMUM PEAK STAGE					40.46	Mar 5, 1962
INSTANTANEOUS LOW FLOW					228	Oct 4, 2001
10 PERCENT EXCEEDS	25,000		25,100		22,700	
50 PERCENT EXCEEDS	7,160		10,600		5,920	
90 PERCENT EXCEEDS	1,190		3,530		1,330	

e Estimated



03319000 ROUGH RIVER NEAR DUNDEE, KY

LOCATION.--Lat 37°32'51", long 86°43'18", Ohio County, Hydrologic Unit 05110004,on right bank, 150 ft downstream from bridge on State Highway 919, 1.5 mi downstream from Caney Creek, 3 mi southeast of Dundee, and at mi 62.5.

DRAINAGE AREA.--7,57 mi^2, of which about 120 mi^2 does not contribute directly to surface runoff.

PERIOD OF RECORD.--October 1939 to September 1992 and March 2002 to current year. October 1939 to January 1940 monthly discharge only, published in WSP 1305.

REVISED RECORDS.--WSP 1555: Drainage area.

GAGE.--Water-stage recorder with telemetry. Datum of gage is 393.18 ft above NGVD of 1929. See WDR KY-90-1 for history of changes prior to Aug. 14, 1979.

REMARKS.--Records fair except for those estimated, which are poor. Flow regulated by Rough River Lake (Station 03318005) beginning October 1959.

COOPERATION.--U.S. Army Corps of Engineers, Louisville District and National Streamflow Information Program.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of 1937 reached a stage of 31.8 ft, from floodmarks.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,230	1,630	2,000	7,540	690	2,300	623	1,620	2,260	159	187	799
2	1,170	1,640	1,960	e7,500	695	2,710	559	934	2,250	154	335	2,400
3	1,540	1,610	1,670	e4,800	690	2,840	517	710	2,250	151	1,580	5,090
4	1,830	1,580	1,050	e2,600	1,470	2,790	492	478	2,250	147	1,710	4,640
5	1,120	2,070	613	2,520	1,320	2,740	1,630	3,040	e2,240	144	1,260	1,280
6	1,670	3,070	481	2,900	1,490	2,680	1,440	3,210	e2,360	174	1,150	1,510
7	1,910	2,340	460	2,790	1,530	2,610	1,940	3,350	e2,440	1,160	1,060	1,800
8	2,140	1,120	275	2,840	945	2,560	1,580	2,860	e2,450	452	685	1,830
9	2,260	1,570	224	2,790	693	2,510	1,490	1,320	e2,410	482	316	1,790
10	e2,740	1,920	256	2,750	699	2,460	5,600	1,050	e2,110	463	153	1,790
11	e4,320	2,770	2,430	2,670	727	2,430	3,910	4,370	e1,960	462	200	2,010
12	e4,020	2,390	e2,170	2,580	617	2,530	1,480	4,570	4,700	354	277	2,040
13	e2,920	1,900	1,900	2,520	516	2,600	920	1,180	1,730	290	240	2,100
14	e2,850	1,740	3,020	2,480	563	2,590	1,590	1,750	1,240	153	178	2,100
15	e1,900	1,750	1,770	2,440	6,280	2,300	2,040	2,050	1,050	120	158	1,850
16	e800	1,960	1,760	2,400	10,200	1,860	2,360	2,420	1,560	119	151	1,300
17	e1,000	1,850	2,120	2,370	9,240	1,680	2,910	2,480	1,720	117	147	514
18	1,150	1,720	2,360	2,330	6,440	1,430	3,340	2,840	1,810	117	142	332
19	1,420	1,650	4,010	2,300	e2,770	1,360	2,540	2,800	1,930	117	137	241
20	1,570	1,590	7,920	2,270	e1,900	1,700	1,900	2,850	1,940	117	113	218
21	1,600	1,560	e6,400	2,260	e1,730	897	1,790	2,900	1,900	159	56	215
22	1,560	1,530	e3,300	2,220	5,170	1,310	1,510	2,850	1,880	210	263	526
23	1,520	1,500	e1,900	2,150	8,030	1,630	1,040	2,320	1,820	137	1,990	811
24	1,510	1,470	2,220	1,740	5,980	1,570	783	1,990	1,450	126	1,020	757
25	1,500	1,450	4,670	1,370	2,440	1,230	1,140	2,030	895	121	1,110	1,080
26	1,500	1,660	e4,000	989	1,250	868	2,830	2,120	379	94	1,160	1,120
27	1,490	1,990	e3,200	615	1,460	603	1,480	2,100	471	51	727	1,120
28	1,580	2,070	3,040	519	1,970	509	1,420	1,100	755	47	200	1,120
29	1,960	2,060	2,840	584	---	845	1,660	1,550	299	49	75	1,060
30	2,460	2,030	2,880	734	---	e973	1,720	e2,060	170	56	335	507
31	1,750	---	3,910	693	---	720	---	2,230	---	54	408	---
TOTAL	57,990	55,190	76,809	77,264	77,505	57,835	54,234	69,132	52,679	6,556	17,523	43,950
MEAN	1,871	1,840	2,478	2,492	2,768	1,866	1,808	2,230	1,756	211	565	1,465
MAX	4,320	3,070	7,920	7,540	10,200	2,840	5,600	4,570	4,700	1,160	1,990	5,090
MIN	800	1,120	224	519	516	509	492	478	170	47	56	215

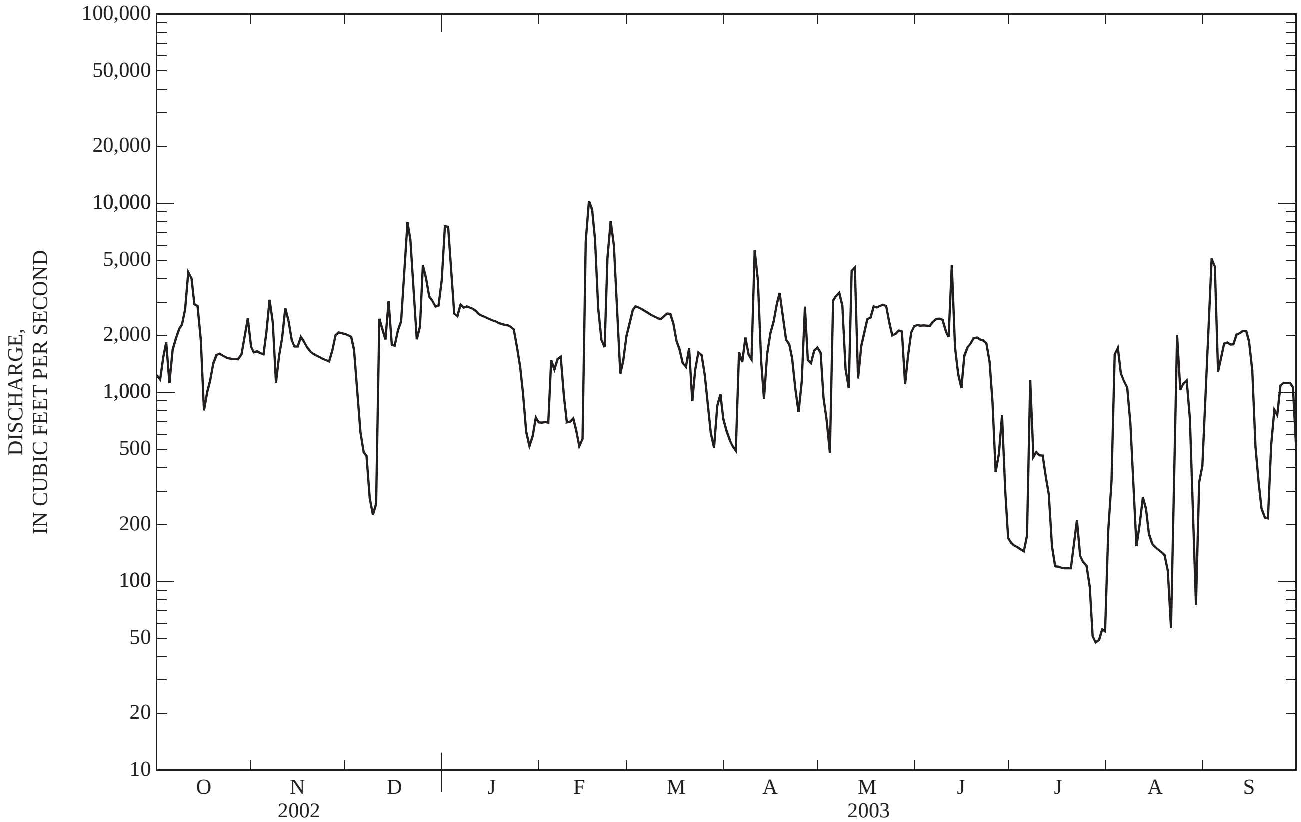
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	771	1,199	1,647	1,771	2,272	1,864	1,423	1,298	744	388	245	467
MAX	1,871	3,187	4,041	3,488	5,717	4,420	4,602	4,658	1,999	1,670	1,050	3,832
(WY)	(2003)	(1980)	(1979)	(1978)	(1989)	(1989)	(1979)	(1983)	(1983)	(1967)	(1979)	(1979)
MIN	26.1	223	60.4	167	331	520	134	111	50.2	46.8	53.5	55.9
(WY)	(1961)	(1981)	(1964)	(1977)	(1964)	(1981)	(1986)	(1988)	(1988)	(2002)	(1960)	(1983)

03319000 ROUGH RIVER NEAR DUNDEE, KY—Continued

SUMMARY STATISTICS	FOR 2003 WATER YEAR		WATER YEARS 1960 - 2003	
ANNUAL TOTAL	646667			
ANNUAL MEAN	1772		1,163	
HIGHEST ANNUAL MEAN			2,274	1979
LOWEST ANNUAL MEAN			593	1963
HIGHEST DAILY MEAN	10200	Feb 16	19,100	Feb 15, 1989
LOWEST DAILY MEAN	47	Jul 28	14	Sep 30, 1960
ANNUAL SEVEN-DAY MINIMUM	67	Jul 25	18	Sep 27, 1960
MAXIMUM PEAK FLOW	10600	Feb 16	22,200	Sep 22, 1979
MAXIMUM PEAK STAGE	27.80	Feb 16	29.05	Sep 22, 1979
10 PERCENT EXCEEDS	2900		2,700	
50 PERCENT EXCEEDS	1630		660	
90 PERCENT EXCEEDS	200		74	

e Estimated



03320000 GREEN RIVER AT LOCK 2, AT CALHOUN, KY

LOCATION.--Lat 37°32'02", long 87°15'50", McLean County, Hydrologic Unit 05110005, 870 ft upstream from Lock and Dam 2, on right bank 0.2 mi downstream from bridge on State Highway 81 at Calhoun, 0.2 mi upstream from Long Falls Creek, and at mile 63.3.

DRAINAGE AREA.--7,566 mi^2, of which about 1,540 mi^2 does not contribute directly to surface runoff.

PERIOD OF RECORD.--March 1930 to current year. Prior to October 1958, published as "at Livermore."

REVISED RECORDS.--WSP 1385: 1939. WDR KY-82-1: Drainage area.

GAGE.--Water-stage recorder with telemetry. Datum of gage is 353.95 ft above NGVD of 1929. Auxiliary water-stage recorder at Livermore, 8.0 mi upstream at datum 360.11 ft above NGVD of 1929. See WDR KY-88-1 for history of changes prior to Sept. 30, 1958.

REMARKS.--Records good except for those estimated and discharges below 2,000 ft^3/s, which are fair. Flow regulated by Rough River Lake, October 1959, Nolin Lake beginning March 1963, Barren River Lake beginning March 1964, and Green River Lake beginning February 1969.

COOPERATION.--U.S. Army Corps of Engineers, Louisville District.

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

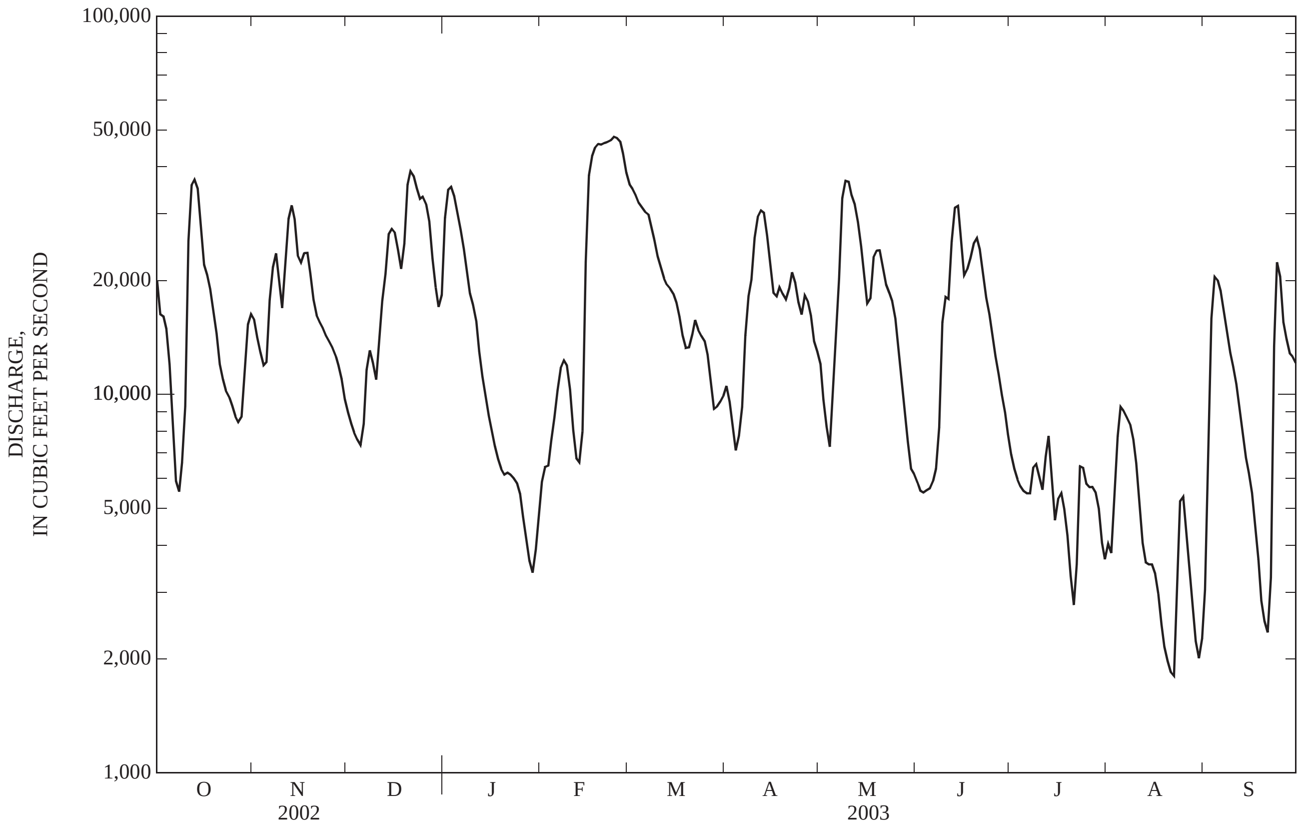
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20,000	15,800	8,950	29,300	5,880	35,900	10,500	12,000	5,860	6,940	4,030	3,040
2	16,300	14,200	8,370	34,800	6,430	34,900	9,550	9,700	5,570	6,360	3,810	7,260
3	16,100	12,900	7,940	35,400	6,480	33,700	8,210	8,210	5,500	5,960	5,180	15,900
4	14,900	11,900	7,600	33,400	7,540	32,100	7,120	7,270	5,570	5,720	7,750	20,400
5	12,000	12,200	7,350	30,200	8,690	31,200	7,780	11,200	5,640	5,560	9,270	20,000
6	8,320	17,800	8,370	27,200	10,300	30,400	9,280	15,300	5,910	5,480	9,050	18,700
7	5,900	21,700	11,600	24,200	11,700	29,900	14,300	20,200	6,360	5,480	8,700	16,500
8	5,530	23,600	13,100	21,300	12,300	27,800	18,200	33,000	8,180	6,400	8,340	14,600
9	6,600	20,000	12,100	18,500	11,900	25,500	20,100	36,700	15,500	6,550	7,600	12,900
10	9,300	16,900	10,900	17,200	10,300	23,100	25,900	36,500	18,100	6,040	6,580	11,800
11	25,500	21,800	13,800	15,600	8,050	21,700	29,500	33,600	17,900	5,590	5,060	10,600
12	35,700	29,100	17,700	13,000	6,780	20,200	30,600	31,800	25,300	6,850	4,060	9,150
13	36,900	31,600	20,800	11,200	6,630	19,500	30,200	28,600	31,100	7,760	3,600	7,830
14	34,900	29,100	26,500	9,880	7,990	19,000	26,300	24,600	31,500	5,940	3,560	6,810
15	27,200	23,300	27,400	8,780	22,400	18,400	21,900	20,600	25,500	4,650	3,560	6,210
16	22,000	22,300	26,700	7,950	37,900	17,400	18,600	17,400	20,600	5,290	3,360	5,500
17	20,600	23,600	24,100	7,300	42,600	16,100	18,200	17,900	21,400	5,480	2,970	4,510
18	19,000	23,700	21,500	6,740	44,800	14,300	19,200	23,000	23,000	4,980	2,460	3,660
19	16,700	20,900	25,000	6,360	45,900	13,300	18,400	24,000	25,000	4,240	2,150	2,850
20	14,500	17,800	35,900	6,130	45,800	13,300	17,800	24,100	25,800	3,320	1,970	2,510
21	12,000	16,200	38,900	6,210	46,100	14,400	19,000	21,800	24,100	2,780	1,840	2,350
22	10,900	15,500	37,800	6,130	46,500	15,700	21,000	19,500	20,800	3,550	1,800	3,280
23	10,200	15,000	35,000	6,000	46,900	14,800	19,700	18,600	18,000	6,450	2,770	13,400
24	9,860	14,300	32,800	5,830	47,900	14,300	17,500	17,600	16,300	6,390	5,210	22,300
25	9,330	13,800	33,300	5,450	47,600	13,800	16,300	15,900	14,500	5,810	5,350	20,400
26	8,750	13,300	31,900	4,760	46,500	12,700	18,300	13,200	12,600	5,690	4,210	15,600
27	8,450	12,700	28,600	4,180	43,200	10,800	17,700	10,900	11,300	5,700	3,370	14,000
28	8,720	11,900	22,900	3,630	38,500	9,140	16,200	9,070	9,960	5,510	2,740	12,800
29	11,200	11,000	19,200	3,380	---	9,300	13,800	7,500	8,960	4,990	2,230	12,600
30	15,300	9,700	17,000	3,900	---	9,560	13,000	6,360	7,850	4,050	2,010	12,100
31	16,300	---	18,300	4,720	---	9,880	---	6,150	---	3,670	2,270	---
TOTAL	488,960	543,600	651,380	418,630	723,570	612,080	534,140	582,260	473,660	169,180	136,860	329,560
MEAN	15,770	18,120	21,010	13,500	25,840	19,740	17,800	18,780	15,790	5,457	4,415	10,990
MAX	36,900	31,600	38,900	35,400	47,900	35,900	30,600	36,700	31,500	7,760	9,270	22,300
MIN	5,530	9,700	7,350	3,380	5,880	9,140	7,120	6,150	5,500	2,780	1,800	2,350

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	5,621	10,290	16,420	18,250	21,820	19,960	15,500	13,350	8,802	4,545	2,828	4,241
MAX	19,100	22,770	46,530	41,100	52,100	53,330	42,430	50,460	23,850	12,260	8,763	27,360
(WY)	(1980)	(1980)	(1979)	(1974)	(1989)	(1997)	(1979)	(1983)	(1981)	(1989)	(1971)	(1979)
MIN	1,875	2,737	2,496	1,223	7,116	7,479	2,260	1,706	541	1,235	362	354
(WY)	(2000)	(2000)	(1981)	(1981)	(1977)	(1981)	(1986)	(1988)	(1988)	(2000)	(1999)	(1999)

03320000 GREEN RIVER AT LOCK 2, AT CALHOUN, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1970 - 2003	
ANNUAL TOTAL	4,686,493		5,663,880			
ANNUAL MEAN	12,840		15,520		11,750	
HIGHEST ANNUAL MEAN					22,070	1979
LOWEST ANNUAL MEAN					5,345	2000
HIGHEST DAILY MEAN	46,800	Mar 23	47,900	Feb 24	85,200	Mar 7, 1997
LOWEST DAILY MEAN	412	Sep 14	1,800	Aug 22	162	Sep 6, 1999
ANNUAL SEVEN-DAY MINIMUM	484	Sep 9	2,280	Aug 17	186	Sep 5, 1999
MAXIMUM PEAK FLOW					208,000	Jan 27, 1937
MAXIMUM PEAK STAGE					42.40	Jan 30, 1937
INSTANTANEOUS LOW FLOW					107	Sep 14, 1999
10 PERCENT EXCEEDS	31,900		31,500		29,700	
50 PERCENT EXCEEDS	8,750		13,100		7,120	
90 PERCENT EXCEEDS	1,230		4,400		1,400	



03320500 POND RIVER NEAR APEX, KY

LOCATION.--Lat 37°07'20", long 87°19'10", Muhlenberg County, Hydrologic Unit 05110006, on downstream side of bridge near right bank on State Highway 189, 1.1 mi downstream from Coal Creek, 2.1 mi northeast of Apex, 5.7 mi upstream from West Fork, and at mile 62.8.

DRAINAGE AREA.--194 mi^2.

PERIOD OF RECORD.--August 1940 to current year. October 1953 to September 1971, published as "East Fork Pond River near Apex."

REVISED RECORDS.--WSP 1083: 1942-46. WSP 1555: 1945-46(P), drainage area, WRD KY-93: 1989-91(P), WRD KY-97: 1989-96(P).

GAGE.--Water-stage recorder with telemetry. Datum of gage is 384.53 ft above NGVD of 1929. Prior to Aug. 21, 1942, nonrecording gage at same site. Prior to Oct. 1, 1974, at datum 6.11 ft higher.

REMARKS.--Records fair except for those estimated, which are poor.

COOPERATION.--Kentucky Natural Resources and Environmental Protection Cabinet.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,700 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 11	0100	4,430	18.02	Feb 22	1800	4,340	17.96
Dec 20	0000	*4,600	*18.16	May 7	1700	4,060	17.75
Jan 1	0600	3,350	17.16	Jun 12	0100	2,900	16.73

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	836	186	57	e3,000	155	637	305	790	31	13	59	164
2	495	134	54	e2,100	156	541	222	605	28	11	118	177
3	277	109	52	e1,500	154	423	179	526	27	9.2	764	877
4	169	97	52	e1,100	181	325	152	360	27	8.2	465	e680
5	122	303	70	e850	244	272	242	1,110	27	7.8	349	e370
6	91	953	117	e680	224	244	446	1,130	26	11	246	212
7	73	e700	123	515	e190	226	e1,600	3,260	26	8.4	151	132
8	60	e420	129	368	e160	201	e1,300	e3,000	24	5.6	82	73
9	49	246	180	278	e150	181	e1,100	e1,900	22	12	51	49
10	1,340	179	308	224	e140	161	e1,900	e1,300	22	28	36	43
11	3,860	162	e910	183	e150	145	e1,600	1,130	1,150	9.6	28	30
12	e2,400	166	e1,140	153	e180	137	e1,100	769	e2,500	5.1	23	21
13	e1,400	139	1,320	136	e200	131	e760	490	e1,700	3.6	19	15
14	e900	117	e1,720	128	372	124	e550	303	e1,100	2.7	16	12
15	e600	130	e1,300	119	e1,130	118	390	205	e760	2.1	15	10
16	e400	245	e900	e100	e2,010	114	273	163	e480	2.0	14	9.1
17	235	236	e700	e100	e1,920	112	603	305	291	1.4	13	6.9
18	e140	177	e560	e92	e1,470	111	848	461	187	0.84	10	5.4
19	e84	142	2,250	e86	e1,160	289	585	295	143	0.48	8.5	4.8
20	e56	120	e3,600	e78	e1,180	685	385	203	98	0.38	7.0	4.2
21	e46	107	e2,100	e76	1,240	498	866	161	66	21	5.5	3.8
22	e48	96	e1,500	e74	3,000	289	886	135	49	189	6.7	65
23	e45	86	e1,200	e72	e3,200	208	559	112	37	112	112	239
24	e41	79	e896	e70	e2,000	172	353	93	30	52	149	167
25	e38	74	e790	e70	e1,500	145	850	79	25	32	57	97
26	e36	70	e720	e68	e1,100	142	e1,300	70	22	21	30	55
27	e40	67	e610	e70	855	152	e990	60	25	13	18	36
28	e100	63	e444	e76	724	144	e720	51	27	8.2	19	26
29	289	61	313	91	---	610	e500	45	22	174	50	19
30	472	60	264	129	---	e740	820	38	17	176	40	13
31	307	---	824	154	---	470	---	35	---	102	141	---
TOTAL	15,049	5,724	25,203	12,740	25,145	8,747	22,384	19,184	8,989	1,042.60	3,102.7	3,616.2
MEAN	485	191	813	411	898	282	746	619	300	33.6	100	121
MAX	3,860	953	3,600	3,000	3,200	740	1,900	3,260	2,500	189	764	877
MIN	36	60	52	68	140	111	152	35	17	0.38	5.5	3.8
CFSM	2.50	0.98	4.19	2.12	4.63	1.45	3.85	3.19	1.54	0.17	0.52	0.62
IN.	2.89	1.10	4.83	2.44	4.82	1.68	4.29	3.68	1.72	0.20	0.59	0.69

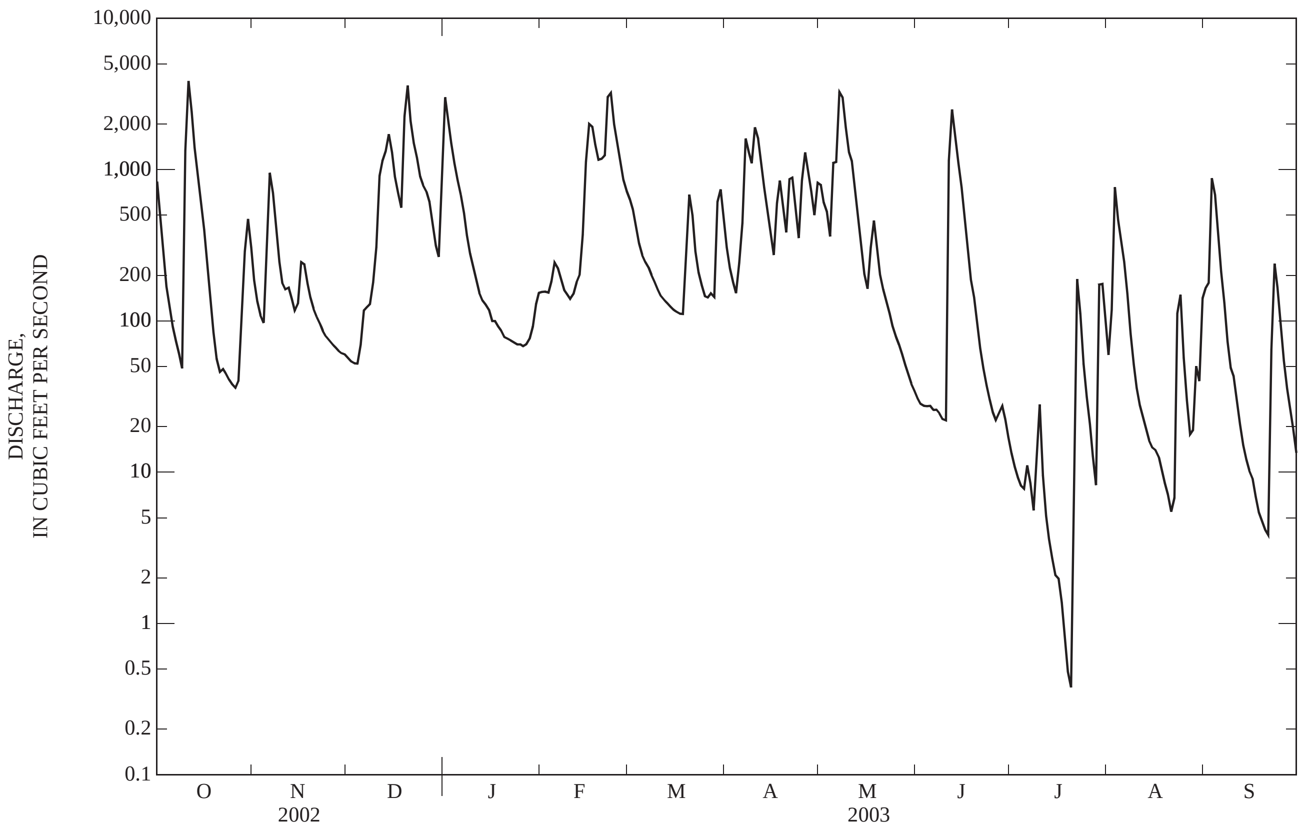
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	30.5	173	406	449	616	602	436	329	119	58.0	31.0	62.6
MAX	485	1,430	2,167	2,024	3,988	2,519	1,822	2,607	900	440	239	988
(WY)	(2003)	(1958)	(1979)	(1950)	(1989)	(1997)	(1979)	(1984)	(1969)	(1989)	(1984)	(1979)
MIN	0.000	0.000	0.000	3.56	42.6	35.2	39.2	6.46	1.37	0.44	0.19	0.000
(WY)	(1954)	(1954)	(1964)	(1981)	(1941)	(1941)	(1986)	(1941)	(1964)	(1964)	(1993)	(1953)

03320500 POND RIVER NEAR APEX, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1941 - 2003	
ANNUAL TOTAL	151,092.10		150,926.50			
ANNUAL MEAN	414		413		274	
HIGHEST ANNUAL MEAN					643	1979
LOWEST ANNUAL MEAN					59.8	1941
HIGHEST DAILY MEAN	5,010	Mar 20	3,860	Oct 11	28,400	Feb 15, 1989
LOWEST DAILY MEAN	0.28	Sep 15	0.38	Jul 20	0.00	Oct 21, 1940
ANNUAL SEVEN-DAY MINIMUM	0.32	Sep 11	1.4	Jul 14	0.00	Oct 21, 1940
MAXIMUM PEAK FLOW			4,600	Dec 20	35,700	May 7, 1984
MAXIMUM PEAK STAGE			18.16	Dec 20	26.81	Nov 19, 1957
ANNUAL RUNOFF (CFSM)	2.13		2.13		1.41	
ANNUAL RUNOFF (INCHES)	28.97		28.94		19.21	
10 PERCENT EXCEEDS	1,270		1,150		733	
50 PERCENT EXCEEDS	109		151		48	
90 PERCENT EXCEEDS	2.1		14		0.80	

e Estimated



03321060 POND RIVER NEAR MADISONVILLE, KY

LOCATION.--Lat 37°19'02", long 87°22'09", Hopkins County, Hydrologic Unit 05110006, on left bank 3 ft downstream from bridge on State Highway 70, 4.2 mi downstream from Flat Creek, 5.0 mi upstream from Earle Creek, 6.3 mi east of Madisonville, and at mile 25.9.

DRAINAGE AREA.--469 mi^2.

PERIOD OF RECORD.--July 1991 to September 1996 discharge records. October 1996 to current year, gage height only.

GAGE.--Water-stage recorder with telemetry. Datum of gage is 361.80 ft above NGVD of 1929.

REMARKS.--Records good.

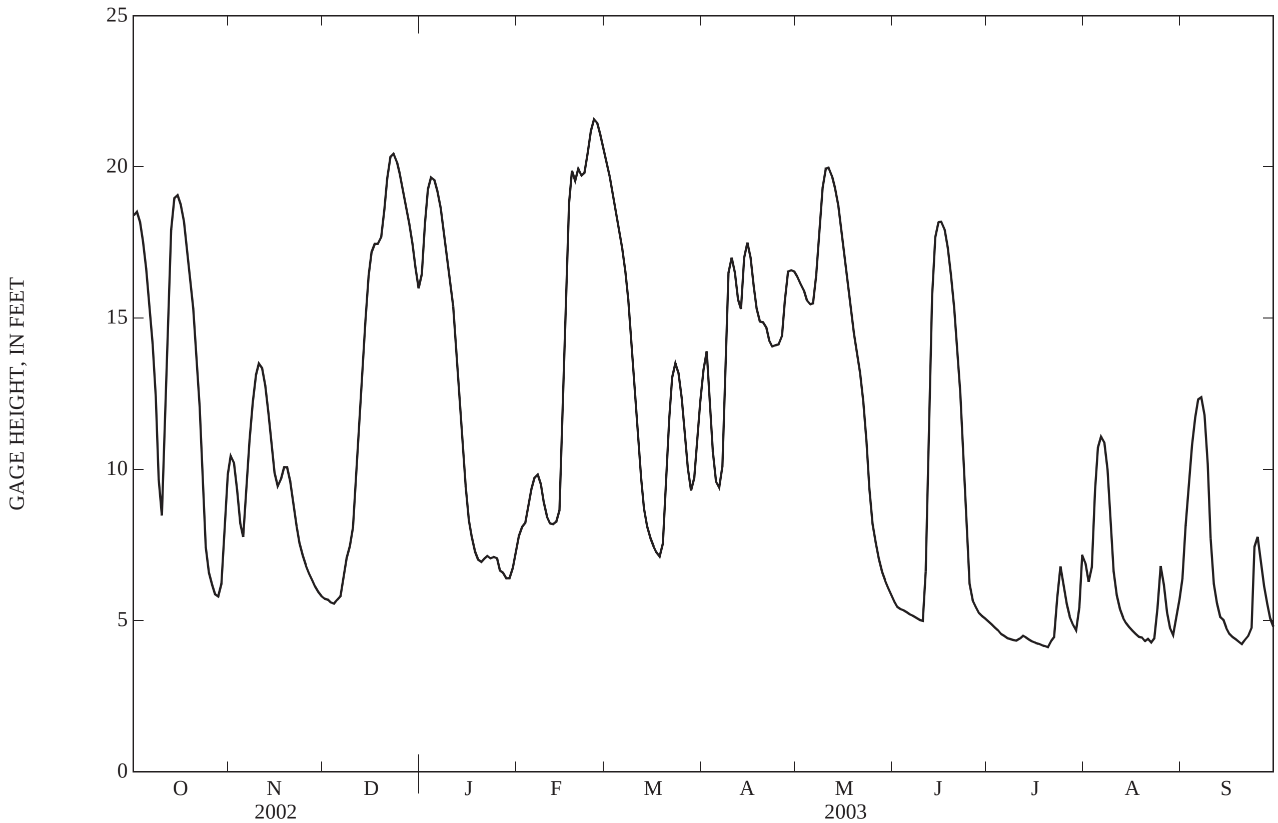
COOPERATION.--Kentucky Natural Resources and Environmental Protection Cabinet.

GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18.39	10.45	5.72	16.45	7.79	20.17	e13.30	16.35	5.62	4.98	6.91	6.39
2	18.51	10.22	5.69	18.15	8.08	19.68	e13.90	16.14	5.45	4.88	6.29	8.15
3	18.16	9.32	5.60	19.25	8.22	19.16	e12.20	15.93	5.38	4.77	6.77	9.43
4	17.54	8.21	5.56	19.66	8.75	18.60	e10.60	15.58	5.33	4.69	9.30	10.80
5	16.63	7.76	5.69	19.56	9.33	17.99	e9.60	15.45	5.27	4.56	10.71	11.72
6	15.51	9.27	e5.81	19.18	9.73	17.31	e9.40	15.48	5.20	4.50	11.09	12.30
7	14.16	10.98	6.40	18.64	9.82	16.53	e10.10	16.42	5.15	4.42	10.89	12.37
8	12.39	12.21	7.05	18.00	9.50	15.60	e13.10	17.96	5.09	4.39	9.99	11.80
9	9.68	13.12	7.45	17.24	8.91	14.32	e16.50	19.30	5.02	4.36	8.20	10.17
10	8.47	13.50	8.08	16.38	8.44	12.83	e17.00	19.94	4.99	4.34	6.63	7.72
11	11.79	13.35	9.70	15.39	8.21	11.20	e16.50	19.97	6.62	4.40	5.83	6.22
12	14.60	12.77	11.31	14.18	8.18	9.73	e15.60	19.71	12.13	4.50	5.37	5.56
13	17.92	11.85	12.90	12.78	8.26	8.71	e15.30	19.28	15.71	4.45	5.08	5.12
14	18.96	10.83	14.93	11.15	8.65	8.11	e17.00	18.72	17.68	4.37	4.91	5.02
15	19.06	9.88	16.42	9.44	11.89	7.74	e17.50	18.00	18.17	4.31	4.78	4.76
16	18.75	9.44	17.18	8.31	15.99	7.46	e17.00	17.12	18.19	4.26	4.66	4.56
17	18.19	9.67	17.46	7.76	18.80	7.26	16.03	16.25	17.94	4.23	4.56	4.46
18	17.40	10.07	17.45	e7.29	19.86	7.12	15.31	15.35	17.33	4.19	4.46	4.38
19	16.42	10.07	17.67	7.02	19.54	7.54	14.89	14.48	16.41	4.16	4.44	4.31
20	15.32	9.59	18.58	e6.94	19.94	9.61	14.87	13.83	15.33	4.11	4.32	4.22
21	13.90	8.85	19.62	e7.05	19.72	11.69	14.69	13.19	14.09	4.31	4.39	4.37
22	12.07	8.12	20.33	7.14	19.80	13.03	14.27	12.25	12.53	4.44	4.27	4.49
23	9.53	7.55	20.44	e7.05	20.45	13.49	14.06	10.93	10.28	5.76	4.40	4.75
24	7.43	7.16	20.17	e7.10	21.18	13.17	14.11	9.37	7.81	6.79	5.40	7.44
25	6.58	6.82	19.77	e7.05	21.56	12.35	14.13	8.20	6.22	6.15	6.80	7.77
26	6.18	6.55	19.24	6.66	21.44	11.25	14.40	7.57	5.67	5.53	6.19	6.97
27	5.87	6.34	18.68	e6.58	21.08	10.04	15.57	7.03	5.45	5.13	5.26	6.15
28	5.80	6.13	18.11	6.40	20.64	9.30	16.53	6.60	5.25	4.87	4.78	5.56
29	6.21	5.95	17.44	6.40	---	9.71	16.57	6.34	5.14	4.69	4.52	5.07
30	8.22	5.81	16.68	6.72	---	10.93	16.53	6.08	5.07	5.44	5.12	4.81
31	9.84	---	15.98	7.23	---	12.26	---	5.84	---	7.17	5.71	---
MEAN	13.21	9.39	13.65	11.55	14.06	12.38	14.55	14.02	9.52	4.81	6.19	6.89
MAX	19.06	13.50	20.44	19.66	21.56	20.17	17.50	19.97	18.19	7.17	11.09	12.37
MIN	5.80	5.81	5.56	6.40	7.79	7.12	9.40	5.84	4.99	4.11	4.27	4.22

e Estimated

03321060 POND RIVER NEAR MADISONVILLE, KY—Continued



03378500 WABASH RIVER AT NEW HARMONY, IN

(National stream-quality accounting network station)

LOCATION.-- Lat 38°07'55', long 87°56'25", Posey County, Hydrologic Unit 05120113, at bridge on U.S. Highway 66 at New Harmony, and at mile 51.5.

DRAINAGE AREA.--29,234 mi^2.

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL ANALYSES.--October 1974 to 1986, 1997 to current water year.
SEDIMENT DISCHARGE.--Partial record station--October 1974 to 1985.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE.--October 1974 to September 1980.
WATER TEMPERATURES.--October 1974 to September 1980.

REMARKS.--Water discharge obtained from station Wabash River at Mount Carmel, IL. (03377500).

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE.--Maximum daily recorded, 805 microsiemens, Feb. 15, 1977; minimum daily recorded, 200 microsiemens, Mar. 3, 1979.
WATER TEMPERATURES.--Maximum daily recorded, 32.0°C, June 28, 1978, July 14-18, 1980; minimum daily recorded, freezing point on many days during the winter period.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Sample type	Instan-taneous dis-charge, cfs (00061)	Turbid-ity, wat unf lab, Hach 2100AN NTU (99872)	UV absorb-ance, 254 nm, wat flt units /cm (50624)	UV absorb-ance, 280 nm, wat flt units /cm (61726)	Dis-solved oxygen, mg/L (00300)	Dis-solved oxygen, percent of sat-uration (00301)	pH, water, unfltrd field, std units (00400)	Specif. conduc-tance, wat unf uS/cm 25 degC (00095)	Temper-ature, water, deg C (00010)	Hard-ness, water, unfltrd mg/L as CaCO3 (00900)
NOV												
05...	1240	Environmental	9,100	41	0.096	0.072	10.4	95	8.2	584	10.0	230
DEC												
17...	1220	Environmental	11,500	30	0.087	0.066	12.4	101	7.8	704	6.0	300
17...	1228	Field Blank	--	--	--	--	--	--	--	--	--	--
FEB												
11...	1250	Environmental	14,700	27	0.074	0.055	14.2	107	8.2	679	3.0	270
11...	1258	Field Blank	--	--	0.001	0.001	--	--	--	--	--	--
25...	1240	Environmental	52,600	180	0.126	0.098	12.8	92	7.8	315	2.0	120
MAR												
11...	1150	Environmental	41,000	--	--	--	12.2	98	7.9	446	5.5	180
11...	1200	Replicate	--	--	--	--	--	--	--	--	--	180
25...	1140	Environmental	38,900	110	0.111	0.083	9.6	92	7.8	481	13.0	210
APR												
08...	1140	Environmental	26,000	56	0.095	0.070	9.8	92	7.9	533	12.5	240
22...	1210	Environmental	20,500	58	0.085	0.063	11.3	119	8.4	590	17.5	270
22...	1218	Field Blank	--	--	--	--	--	--	--	--	--	--
MAY												
05...	1230	Environmental	28,600	190	0.118	0.088	7.1	78	8.0	456	18.5	190
05...	1240	Replicate	--	190	0.119	0.089	--	--	--	--	--	130
19...	1230	Environmental	101,000	50	0.185	0.139	6.0	67	7.3	404	20.0	180
JUN												
04...	1320	Environmental	27,300	57	0.111	0.081	8.4	90	8.1	539	18.0	230
04...	1320	Field Blank	--	--	--	--	--	--	--	--	--	--
24...	1230	Environmental	27,700	E69	0.131	0.098	8.1	97	7.8	312	24.0	220
JUL												
15...	1250	Environmental	68,800	58	0.175	0.132	7.8	102	7.7	321	29.0	130
15...	1258	Field Blank	--	--	<0.004	<0.004	--	--	--	--	--	--
AUG												
12...	1200	Environmental	22,300	52	0.132	0.097	8.5	93	8.1	517	19.0	240
12...	1210	Other QA	--	48	0.134	0.099	--	--	--	--	--	240
SEP												
08...	1210	Environmental	62,600	77	0.173	0.129	7.7	99	7.7	323	28.5	140

03378500 WABASH RIVER AT NEW HARMONY, IN—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnes-ium, water, fltrd, mg/L (00925)	Potas-sium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	Alka-linity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicar-bonate, wat flt incrm. titr., field, mg/L (00453)	Chlor-ide, water, fltrd, mg/L (00940)	Fluor-ide, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 180degC wat flt mg/L (70300)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia + org-N, water, unfltrd mg/L as N (00625)
NOV													
05...	62.0	19.4	4.02	26.5	173	211	34.1	0.2	5.34	70.5	348	0.32	0.73
DEC													
17...	78.6	25.4	3.41	35.2	194	237	42.8	0.26	5.52	97.8	443	0.29	0.57
17...	0.05	<0.008	0.03	<0.09	--	--	0.27	<0.01	<0.13	0.03	--	--	--
FEB													
11...	70.6	22.2	3.11	34.4	194	237	53.5	0.22	5.88	66.8	403	0.33	0.58
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
25...	33.2	9.90	2.97	13.2	83	101	21.9	0.13	5.22	35.0	189	0.48	1.2
MAR													
11...	49.5	14.3	2.46	18.5	124	151	30.6	0.14	6.34	43.6	260	--	--
11...	49.4	14.6	2.33	18.9	125	153	30.6	0.15	6.42	43.9	259	--	--
25...	57.5	17.2	2.82	16.5	140	171	26.3	0.17	6.20	45.6	286	0.43	1.0
APR													
08...	63.8	18.5	2.68	16.9	168	205	30.0	0.18	5.40	50.2	324	0.31	0.69
22...	70.0	22.4	2.71	21.3	188	230	34.0	0.20	0.68	62.7	352	0.32	1.3
22...	0.03	<0.008	<0.01	<0.09	--	--	<0.01	<0.01	<0.13	<0.01	--	--	--
MAY													
05...	50.2	16.5	3.31	15.6	140	171	26.0	0.18	4.06	49.8	276	0.36	1.6
05...	32.8	10.8	2.04	9.95	138	169	25.5	0.18	2.77	49.7	277	0.37	1.6
19...	49.5	13.9	4.41	8.80	125	152	17.9	0.2	7.68	28.5	244	0.62	0.90
JUN													
04...	60.1	18.5	2.83	14.9	176	214	26.4	0.2	5.30	50.1	318	0.34	1.1
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
24...	58.8	17.7	3.67	12.2	164	200	22.1	0.2	7.67	38.4	280	E.43	E.98
JUL													
15...	37.5	9.66	4.34	6.27	105	128	12.4	<0.2	6.81	18.1	196	0.46	0.99
15...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
12...	62.7	19.9	4.11	16.7	176	214	25.4	0.2	5.88	41.8	311	0.37	1.1
12...	62.7	19.8	4.02	16.7	--	--	25.1	0.2	5.76	41.9	300	0.39	1.1
SEP													
08...	38.3	11.9	4.42	7.32	113	137	13.4	0.2	7.86	21.2	210	0.46	1.1

03378500 WABASH RIVER AT NEW HARMONY, IN—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Ortho-phos-phate, water, fltrd, mg/L as P (00671)	Partic-ulate nitro-gen, susp, water, mg/L (49570)	Phos-phorus, water, fltrd, mg/L (00666)	Phos-phorus, water, unfltrd mg/L (00665)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inor-ganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)	Pheo-phytin a, phyto-plank-ton, ug/L (62360)	Chloro-phyll a phyto-plank-ton, fluoro, ug/L (70953)
NOV													
05...	<0.04	1.77	0.008	0.072	0.33	0.086	0.19	3.5	<0.1	3.5	3.7	24.5	19.1
DEC													
17...	<0.04	2.44	E.006	0.104	0.24	0.119	0.19	2.0	<0.1	1.9	3.2	7.3	19.7
17...	0.029	<0.022	<0.002	<0.007	--	--	--	--	--	--	--	--	--
FEB													
11...	0.05	2.93	0.016	0.096	0.19	0.110	0.19	1.7	<0.1	1.7	2.7	3.7	9.4
11...	--	--	--	--	<0.02	--	--	<0.1	<0.1	<0.1	0.5	--	--
25...	0.14	1.91	0.011	0.089	0.63	0.105	0.41	6.3	0.4	6.0	4.3	--	--
MAR													
11...	--	--	--	--	--	--	--	--	--	--	--	4.5	5.7
11...	--	--	--	--	--	--	--	--	--	--	--	4.2	5.6
25...	E.03	3.57	0.028	0.072	0.52	0.086	0.29	5.3	0.1	5.2	3.8	10.1	14.3
APR													
08...	<0.04	3.48	0.015	0.057	0.35	0.072	0.17	3.1	<0.1	3.1	3.4	12.4	7.8
22...	<0.04	2.36	0.009	0.011	0.77	0.025	0.21	5.4	<0.1	5.3	3.0	57.4	47.0
22...	<0.015	<0.022	<0.002	<0.007	--	--	--	--	--	--	--	--	--
MAY													
05...	<0.04	1.65	0.014	0.038	0.92	0.050	--	7.5	0.1	7.4	3.9	33.5	31.5
05...	E.02	1.64	0.014	0.037	0.96	0.049	--	7.6	0.2	7.4	3.9	34.3	33.1
19...	<0.04	4.68	0.074	0.076	0.27	0.097	0.21	2.3	<0.1	2.2	5.6	5.0	5.4
JUN													
04...	<0.015	3.33	0.010	0.060	0.63	0.079	0.23	5.3	<0.1	5.3	3.3	30.7	32.1
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
24...	<0.04	E4.45	E.017	E.074	0.62	E.089	E.26	5.8	0.7	5.0	4.0	16.6	27.3
JUL													
15...	<0.04	2.98	0.052	0.095	0.42	0.111	0.29	3.7	<0.1	3.7	5.0	13.4	12.7
15...	--	--	--	--	0.05	--	--	0.3	<0.1	0.3	E.3	--	--
AUG													
12...	<0.04	1.71	0.009	0.083	0.46	0.097	0.24	3.5	<0.1	3.5	3.9	29.7	30.0
12...	<0.04	1.72	0.012	0.082	0.45	0.100	0.21	3.4	0.6	2.8	4.1	--	--
SEP													
08...	<0.04	1.41	0.014	0.102	0.38	0.122	0.34	4.0	<0.1	3.9	5.0	13.3	10.6

03378500 WABASH RIVER AT NEW HARMONY, IN—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Alum-inum, water, fltrd, ug/L (01106)	Anti-mony, water, fltrd, ug/L (01095)	Arsenic water, fltrd, ug/L (01000)	Barium, water, fltrd, ug/L (01005)	Beryll-ium, water, fltrd, ug/L (01010)	Boron, water, fltrd, ug/L (01020)	Cadmium water, fltrd, ug/L (01025)	Chrom-ium, water, fltrd, ug/L (01030)	Cobalt water, fltrd, ug/L (01035)	Copper, water, fltrd, ug/L (01040)	Iron, water, fltrd, ug/L (01046)	Lead, water, fltrd, ug/L (01049)	Lithium water, fltrd, ug/L (01130)
NOV													
05...	--	--	1.4	--	--	136	--	--	--	--	<10	--	4.8
DEC													
17...	--	--	1.4	--	--	144	--	--	--	--	E7	--	5.9
17...	--	--	<0.3	--	--	<7	--	--	--	--	<10	--	<0.5
FEB													
11...	--	--	1.2	--	--	111	--	--	--	--	E5	--	4.0
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	0.6	--	--	41	--	--	--	--	23	--	1.4
MAR													
11...	--	--	0.7	--	--	43	--	--	--	--	11	--	1.8
11...	--	--	0.7	--	--	44	--	--	--	--	E10	--	1.8
25...	--	--	1.0	--	--	53	--	--	--	--	10	--	2.2
APR													
08...	--	--	1.1	--	--	59	--	--	--	--	E7	--	2.5
22...	--	--	1.1	--	--	78	--	--	--	--	<10	--	3.0
22...	--	--	<0.3	--	--	<7	--	--	--	--	<10	--	<0.5
MAY													
05...	--	--	0.9	--	--	70	--	--	--	--	<10	--	2.5
05...	--	--	0.6	--	--	44	--	--	--	--	E5	--	1.6
19...	--	--	1.3	--	--	45	--	--	--	--	E8	--	1.3
JUN													
04...	3	<0.30	1.3	45	<0.06	71	E.03	<0.8	0.28	2.0	<8	<0.08	2.4
04...	--	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	1.4	--	--	58	--	--	--	--	<8	--	1.6
JUL													
15...	--	--	1.4	--	--	44	--	--	--	--	13	--	1.0
15...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
12...	--	--	1.9	--	--	87	--	--	--	--	E5	--	2.3
12...	--	--	1.9	--	--	86	--	--	--	--	<8	--	2.3
SEP													
08...	--	--	1.4	--	--	53	--	--	--	--	13	--	1.4

03378500 WABASH RIVER AT NEW HARMONY, IN—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Manganese, water, fltrd, ug/L (01056)	Molybdenum, water, fltrd, ug/L (01060)	Nickel, water, fltrd, ug/L (01065)	Selenium, water, fltrd, ug/L (01145)	Silver, water, fltrd, ug/L (01075)	Strontium, water, fltrd, ug/L (01080)	Vanadium, water, fltrd, ug/L (01085)	Zinc, water, fltrd, ug/L (01090)	2,6-Diethylaniline water fltrd 0.7u GF ug/L (82660)	CIAT, water, fltrd, ug/L (04040)	Acetochlor, water, fltrd, ug/L (49260)	Alachlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)
NOV													
05...	--	--	--	0.6	--	231	1.4	--	<0.006	E.063	0.025	<0.004	<0.005
DEC													
17...	--	--	--	1.1	--	254	1.3	--	<0.006	E.034	0.142	<0.004	<0.005
17...	--	--	--	<0.5	--	<0.20	<0.1	--	--	--	--	--	--
FEB													
11...	--	--	--	1.0	--	248	3.0	--	<0.006	E.034	0.008	<0.004	<0.005
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
25...	--	--	--	0.5	--	102	0.9	--	<0.006	E.035	0.017	<0.004	<0.005
MAR													
11...	--	--	--	0.6	--	146	0.7	--	--	--	--	--	--
11...	--	--	--	0.7	--	149	0.8	--	--	--	--	--	--
25...	--	--	--	0.9	--	178	2.0	--	<0.006	E.045	0.012	0.005	<0.005
APR													
08...	--	--	--	1.0	--	209	2.9	--	<0.006	E.040	0.010	E.004	<0.005
22...	--	--	--	1.1	--	240	2.9	--	<0.006	E.049	0.083	<0.004	<0.005
22...	--	--	--	<0.5	--	<0.20	E.1	--	--	--	--	--	--
MAY													
05...	--	--	--	0.6	--	134	1.1	--	<0.006	E.196	0.115	<0.004	<0.005
05...	--	--	--	E.3	--	86.6	0.7	--	<0.006	E.234	0.112	<0.004	<0.005
19...	--	--	--	0.7	--	138	1.1	--	<0.006	E.624	2.12	0.072	<0.005
JUN													
04...	2.9	4.1	2.03	0.8	<0.20	210	1.3	M	<0.006	E.311	0.728	0.046	<0.005
04...	--	--	--	--	--	--	--	--	<0.006	<0.006	<0.006	<0.004	<0.005
24...	--	--	--	0.7	--	175	1.5	--	<0.006	E.520	E.462	E.030	<0.005
JUL													
15...	--	--	--	0.5	--	112	1.9	--	<0.006	E.220	0.302	0.026	<0.005
15...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
12...	--	--	--	0.6	--	229	2.3	--	<0.006	E.103	0.058	<0.004	<0.005
12...	--	--	--	0.7	--	225	2.3	--	--	--	--	--	--
SEP													
08...	--	--	--	E.4	--	109	2.0	--	<0.006	E.075	0.042	0.006	<0.005

03378500 WABASH RIVER AT NEW HARMONY, IN—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Atrazine, water, fltrd, ug/L (39632)	Azinphos-methyl, water, fltrd 0.7u GF ug/L (82686)	Benfluralin, water, fltrd 0.7u GF ug/L (82673)	Butylate, water, fltrd, ug/L (04028)	Carbaryl, water, fltrd 0.7u GF ug/L (82680)	Carbofuran, water, fltrd 0.7u GF ug/L (82674)	Chlorpyrifos water, fltrd, ug/L (38933)	cis-Permethrin water fltrd 0.7u GF ug/L (82687)	Cyanazine, water, fltrd, ug/L (04041)	DCPA, water fltrd 0.7u GF ug/L (82682)	Diazinon, water, fltrd, ug/L (39572)	Dieldrin, water, fltrd, ug/L (39381)	Disulfoton, water, fltrd 0.7u GF ug/L (82677)
NOV													
05...	0.205	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.005	<0.005	<0.02
DEC													
17...	0.267	<0.050	<0.010	<0.002	E.017	<0.020	<0.005	<0.006	<0.018	<0.003	<0.006	<0.005	<0.02
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
11...	0.092	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.005	<0.005	<0.02
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
25...	0.099	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.005	<0.005	<0.02
MAR													
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
25...	0.132	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.005	<0.005	<0.02
APR													
08...	0.158	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.005	<0.005	<0.02
22...	0.843	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.005	<0.005	<0.02
22...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
05...	4.62	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.005	<0.005	<0.02
05...	4.64	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.005	<0.005	<0.02
19...	11.9	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.005	<0.005	<0.02
JUN													
04...	5.81	<0.050	<0.010	<0.002	<0.041	E.030	0.005	<0.006	<0.018	<0.003	E.004	<0.005	<0.02
04...	<0.007	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.005	<0.005	<0.02
24...	E3.52	<0.050	<0.010	<0.002	<0.041	E.006	<0.005	<0.006	<0.018	<0.003	<0.005	<0.005	<0.02
JUL													
15...	1.89	<0.050	<0.010	<0.002	E.002	E.006	<0.005	<0.006	<0.018	<0.003	0.006	0.010	<0.02
15...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
12...	0.522	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	E.002	<0.005	<0.02
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
08...	0.293	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	0.006	<0.005	<0.02

03378500 WABASH RIVER AT NEW HARMONY, IN—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	EPTC, water, fltrd 0.7u GF ug/L (82668)	Ethal-flur-alin, water, fltrd 0.7u GF ug/L (82663)	Etho-prop, water, fltrd 0.7u GF ug/L (82672)	Fonofos water, fltrd, ug/L (04095)	Lindane water, fltrd, ug/L (39341)	Linuron water fltrd 0.7u GF ug/L (82666)	Mala-thion, water, fltrd, ug/L (39532)	Methyl para-thion, water, fltrd 0.7u GF ug/L (82667)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Moli-nate, water, fltrd 0.7u GF ug/L (82671)	Naprop-amide, water, fltrd 0.7u GF ug/L (82684)	p,p'-DDE, water, fltrd, ug/L (34653)
NOV													
05...	<0.002	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	0.103	0.006	<0.002	<0.007	<0.003
DEC													
17...	<0.002	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	0.042	0.050	<0.002	<0.007	<0.003
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
11...	<0.002	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	0.037	<0.006	<0.002	<0.007	<0.003
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
25...	<0.002	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	0.048	0.015	<0.002	<0.007	<0.003
MAR													
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
25...	<0.002	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	0.145	0.013	<0.005	<0.007	<0.003
APR													
08...	<0.002	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	0.052	<0.006	<0.002	<0.007	<0.003
22...	<0.002	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	0.121	<0.006	<0.002	<0.007	<0.003
22...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
05...	<0.002	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	0.938	0.009	<0.002	<0.007	<0.003
05...	<0.002	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	0.937	<0.010	<0.002	<0.007	<0.003
19...	<0.002	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	2.80	0.035	<0.002	<0.007	<0.003
JUN													
04...	<0.002	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	1.11	0.020	<0.002	<0.007	<0.003
04...	<0.002	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	<0.013	<0.006	<0.002	<0.020	<0.003
24...	<0.002	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	E1.22	E.020	<0.002	<0.007	<0.003
JUL													
15...	<0.002	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	0.749	0.015	<0.002	<0.007	<0.003
15...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
12...	<0.002	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	0.261	<0.006	<0.002	<0.007	<0.003
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
08...	<0.002	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	0.168	<0.006	<0.002	<0.007	<0.003

03378500 WABASH RIVER AT NEW HARMONY, IN—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Parathion, water, fltrd, ug/L (39542)	Pebulate, water, fltrd 0.7u GF ug/L (82669)	Pendimethalin, water, fltrd 0.7u GF ug/L (82683)	Phorate water fltrd 0.7u GF ug/L (82664)	Prometon, water, fltrd, ug/L (04037)	Pronamide, water, fltrd 0.7u GF ug/L (82676)	Propachlor, water, fltrd, ug/L (04024)	Propanil, water, fltrd 0.7u GF ug/L (82679)	Propargite, water, fltrd 0.7u GF ug/L (82685)	Simazine, water, fltrd, ug/L (04035)	Tebuthiuron water fltrd 0.7u GF ug/L (82670)	Terbacil, water, fltrd 0.7u GF ug/L (82665)	Terbufos, water, fltrd 0.7u GF ug/L (82675)
NOV													
05...	<0.010	<0.004	<0.022	<0.011	0.02	<0.004	<0.010	<0.011	<0.02	0.185	<0.02	<0.034	<0.02
DEC													
17...	<0.010	<0.004	<0.022	<0.011	E.01	<0.004	<0.010	<0.011	<0.02	0.841	<0.02	<0.034	<0.02
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
11...	<0.010	<0.004	<0.022	<0.011	<0.01	<0.004	<0.010	<0.011	<0.02	0.296	<0.02	<0.034	<0.02
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
25...	<0.010	<0.004	<0.022	<0.011	<0.01	<0.004	<0.010	<0.011	<0.02	1.34	<0.02	<0.034	<0.02
MAR													
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
25...	<0.010	<0.004	<0.022	<0.011	E.01	<0.004	<0.010	<0.011	<0.02	0.304	<0.02	<0.034	<0.02
APR													
08...	<0.010	<0.004	<0.022	<0.011	<0.01	<0.004	<0.010	<0.011	<0.02	0.144	<0.02	<0.034	<0.02
22...	<0.010	<0.004	<0.022	<0.011	0.02	<0.004	<0.010	<0.011	<0.02	0.250	<0.02	<0.034	<0.02
22...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
05...	<0.010	<0.004	<0.022	<0.011	0.02	<0.004	<0.010	<0.011	<0.02	1.00	<0.02	<0.034	<0.02
05...	<0.010	<0.004	<0.022	<0.011	0.02	<0.004	<0.010	<0.011	<0.02	0.985	<0.02	<0.034	<0.02
19...	<0.010	<0.004	<0.022	<0.011	E.02	<0.004	<0.010	<0.011	<0.02	0.837	<0.02	<0.034	<0.02
JUN													
04...	<0.010	<0.004	<0.022	<0.011	0.02	<0.004	<0.010	<0.011	<0.02	0.336	<0.02	<0.034	<0.02
04...	<0.010	<0.004	<0.022	<0.011	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02
24...	<0.010	<0.004	<0.022	<0.011	E.03	<0.004	<0.010	<0.011	<0.02	E.334	<0.02	<0.034	<0.02
JUL													
15...	<0.010	<0.004	<0.022	<0.011	0.04	<0.004	<0.010	<0.011	<0.02	0.085	<0.02	<0.034	<0.02
15...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
12...	<0.010	<0.004	<0.022	<0.011	0.04	<0.004	<0.010	<0.011	<0.02	0.044	<0.02	<0.034	<0.02
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
08...	<0.010	<0.004	<0.022	<0.011	0.02	<0.004	<0.010	<0.011	<0.02	0.026	<0.02	<0.034	<0.02

03378500 WABASH RIVER AT NEW HARMONY, IN—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Thio- bencarb water fltrd 0.7u GF ug/L (82681)	Tri- allate, water, fltrd 0.7u GF ug/L (82678)	Tri- flur- alin, water, fltrd 0.7u GF ug/L (82661)	Uranium natural water, fltrd, ug/L (22703)	Suspnd. sedi- ment, sieve diametr percent <.063mm (70331)	Sus- pended sedi- ment concen- tration mg/L (80154)
NOV						
05...	<0.005	<0.002	<0.009	--	97	69
DEC						
17...	<0.005	<0.002	<0.009	--	99	41
17...	--	--	--	--	--	--
FEB						
11...	<0.005	<0.002	<0.009	--	97	48
11...	--	--	--	--	--	--
25...	<0.005	<0.002	<0.009	--	92	370
MAR						
11...	--	--	--	--	89	133
11...	--	--	--	--	89	135
25...	<0.005	<0.002	<0.009	--	96	191
APR						
08...	<0.005	<0.002	<0.009	--	97	109
22...	<0.005	<0.002	<0.009	--	97	113
22...	--	--	--	--	--	--
MAY						
05...	<0.005	<0.002	<0.009	--	99	431
05...	<0.005	<0.002	<0.009	--	98	439
19...	<0.005	<0.002	<0.009	--	84	96
JUN						
04...	<0.005	<0.002	<0.009	1.22	97	125
04...	<0.005	<0.002	<0.009	--	--	--
24...	<0.005	<0.002	<0.009	--	95	163
JUL						
15...	<0.005	<0.002	<0.009	--	89	172
15...	--	--	--	--	--	--
AUG						
12...	<0.005	<0.002	<0.009	--	99	101
12...	--	--	--	--	--	--
SEP						
08...	<0.005	<0.002	<0.009	--	89	207

Other QA--Grab sample at center vertical (surface only).
E--Laboratory estimated value.
M--Presence of material verified but not quantified.
<--Numeric result is less than the value shown.

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03383000 TRADEWATER RIVER AT OLNEY, KY

LOCATION.--Lat 37°13'26", long 87°46'53", Caldwell County, Hydrologic Unit 05140205, on left bank at downstream side of bridge on State Highway 1220 at Olney, 0.9 mi upstream from Cave Creek, 5.4 mi downstream from Flynn Creek, 9.5 mi northeast of Princeton, and at mile 72.7.

DRAINAGE AREA.--255 mi^2, of which about 9 mi^2 does not contribute directly to surface runoff.

PERIOD OF RECORD.--August 1940 to May 1984, March 1985 to current year.

GAGE.--Water-stage recorder with telemetry. Datum of gage is 362.80 ft above NGVD of 1929. Prior to July 31, 1942, nonrecording gage at same site and datum.

REMARKS.--Records good except for those estimated, which are poor.

COOPERATION.--Kentucky Natural Resources and Environmental Protection Cabinet.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of January 1937 reached a stage of 19.27 ft, from floodmarks, discharge, 17,000 ft^3/s, by slope-area measurement from U.S. Army Corp of Engineers.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 21	0300	2,370	13.86	Apr 27	0500	2,260	13.55
Jan 2	2200	2,360	13.83	Apr 30	0200	2,020	12.79
Feb 17	0600	2,540	14.19	May 9	0300	2,010	12.74
Feb 23	1900	*2,600	*14.28	Jun 13	0900	2,050	12.96

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	218	180	46	1,890	151	855	340	e1,600	46	27	74	24
2	66	126	43	2,320	154	537	248	e1,100	40	23	54	26
3	43	98	41	e2,300	154	394	204	776	37	21	57	37
4	31	85	39	e2,200	214	309	172	482	35	19	147	158
5	26	121	44	e1,800	287	263	177	836	35	17	94	150
6	23	638	57	e1,300	251	234	254	1,450	32	16	57	103
7	21	915	72	e800	215	211	1,010	1,660	31	16	40	64
8	20	560	84	531	190	192	1,390	1,910	30	14	30	43
9	18	280	101	298	168	173	e1,300	2,000	28	13	23	31
10	127	192	169	238	162	153	e1,100	e1,900	32	13	18	23
11	1,410	203	609	199	173	139	1,210	e1,700	470	12	15	18
12	e1,600	261	1,010	166	205	129	e1,000	e1,300	1,810	12	13	16
13	e1,500	204	1,030	147	205	123	e600	e900	2,040	11	10	12
14	e1,300	158	1,520	136	364	120	356	510	e1,800	10	8.0	9.5
15	e1,000	147	e1,400	125	1,720	114	255	212	e1,300	10	6.4	7.7
16	e700	210	e1,200	116	2,360	109	204	165	e940	13	5.5	6.5
17	e360	228	e700	110	e2,500	104	215	165	e640	12	5.4	5.9
18	146	201	419	87	e2,300	101	555	235	e480	11	5.8	5.5
19	109	162	1,270	102	e2,100	291	559	235	324	11	5.5	5.7
20	104	134	2,180	98	e1,900	1,060	331	179	207	11	4.6	4.9
21	114	115	2,360	102	e1,800	1,020	294	159	152	11	4.2	4.1
22	116	104	e2,200	108	e2,100	634	571	144	116	12	4.0	5.7
23	98	90	e1,900	86	2,510	403	388	130	90	14	3.9	7.5
24	78	80	e1,700	89	e2,500	308	237	111	71	15	19	11
25	63	71	e1,500	84	e2,300	234	866	92	58	13	85	12
26	55	63	e1,200	77	e2,000	212	2,030	108	49	11	45	12
27	48	58	e700	73	e1,700	232	2,250	102	45	9.2	27	13
28	48	54	439	73	e1,500	218	e2,100	81	41	8.2	17	11
29	62	51	305	87	---	303	e1,700	68	36	9.1	12	9.0
30	224	50	248	121	---	600	e1,900	61	30	9.5	23	7.6
31	279	---	476	141	---	538	---	54	---	43	29	---
TOTAL	10,007	5,839	25,062	16,004	32,183	10,313	23,816	20,425	11,045	447.0	942.3	843.6
MEAN	323	195	808	516	1,149	333	794	659	368	14.4	30.4	28.1
MAX	1,600	915	2,360	2,320	2,510	1,060	2,250	2,000	2,040	43	147	158
MIN	18	50	39	73	151	101	172	54	28	8.2	3.9	4.1
CFSM	1.31	0.79	3.29	2.10	4.67	1.35	3.23	2.68	1.50	0.06	0.12	0.11
IN.	1.51	0.88	3.79	2.42	4.87	1.56	3.60	3.09	1.67	0.07	0.14	0.13

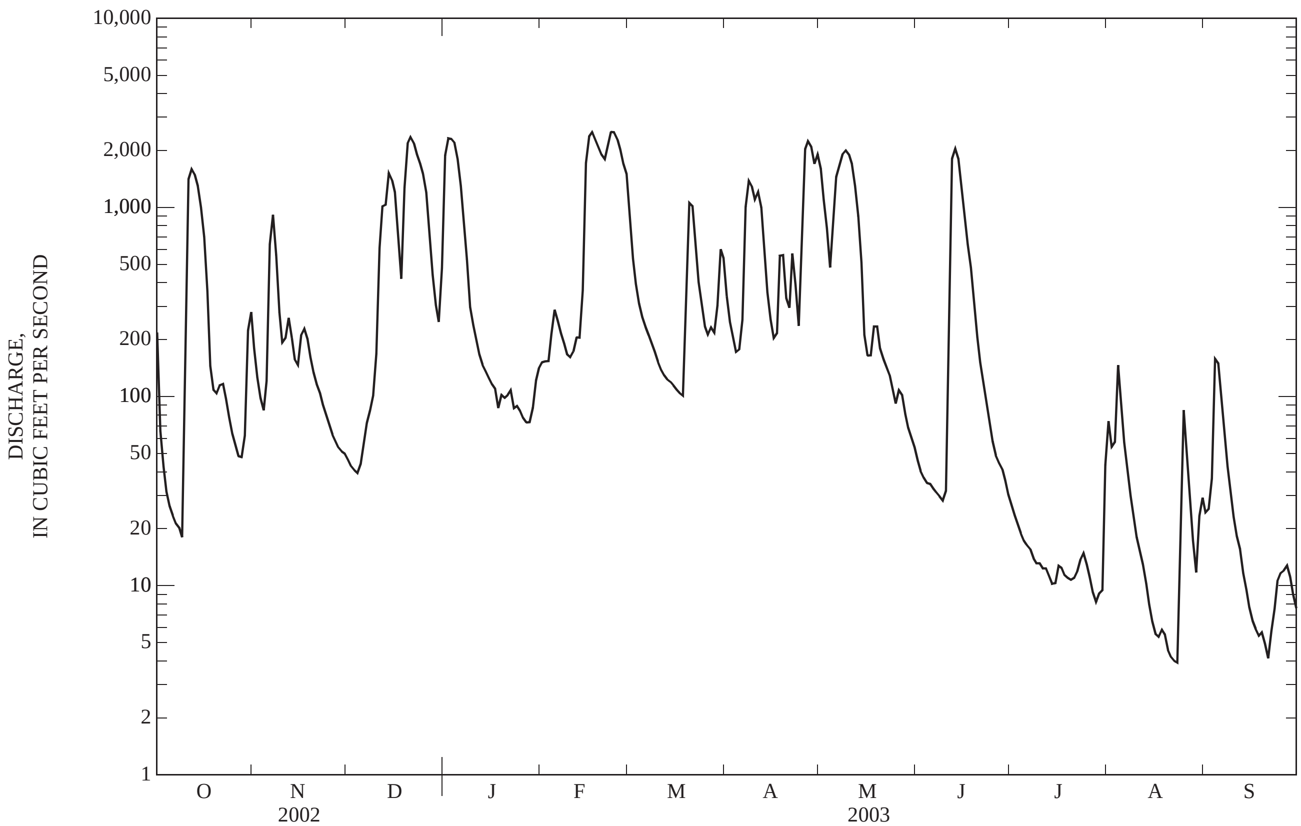
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	36.7	203	462	556	731	761	590	401	152	87.1	34.9	48.9
MAX	324	2,178	1,963	2,268	3,529	2,360	1,851	1,878	949	946	275	798
(WY)	(1997)	(1958)	(1979)	(1950)	(1989)	(1997)	(1979)	(1983)	(1969)	(1989)	(1985)	(1950)
MIN	0.000	0.000	0.96	4.85	19.2	61.9	53.7	7.09	1.18	0.003	0.000	0.000
(WY)	(1941)	(1954)	(1964)	(1964)	(1964)	(1941)	(1986)	(1941)	(1944)	(1952)	(1952)	(1953)

03383000 TRADEWATER RIVER AT OLNEY, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1941 - 2003	
ANNUAL TOTAL	152,075.33		156,926.9			
ANNUAL MEAN	417		430		333	
HIGHEST ANNUAL MEAN					701	1989
LOWEST ANNUAL MEAN					61.6	1941
HIGHEST DAILY MEAN	2,630	Mar 21	2,510	Feb 23	14,000	Feb 16, 1989
LOWEST DAILY MEAN	0.35	Sep 14	3.9	Aug 23	0.00	Oct 1, 1940
ANNUAL SEVEN-DAY MINIMUM	0.43	Sep 9	4.8	Aug 17	0.00	Oct 1, 1940
MAXIMUM PEAK FLOW			2,600	Feb 23	14,600	Feb 16, 1989
MAXIMUM PEAK STAGE			14.28	Feb 23	18.85	Feb 16, 1989
ANNUAL RUNOFF (CFSM)	1.69		1.75		1.35	
ANNUAL RUNOFF (INCHES)	23.00		23.73		18.39	
10 PERCENT EXCEEDS	1,520		1,620		1,120	
50 PERCENT EXCEEDS	127		130		60	
90 PERCENT EXCEEDS	2.6		11		1.1	

e Estimated



03399800 OHIO RIVER AT SMITHLAND DAM, SMITHLAND, KY

LOCATION.--Lat 37°09'30", long 88°25'34", Livingston County, Hydrologic Unit 05140203, at Smithland Dam, 1.1 mi upstream from Cumberland Island, 1.8 mi northwest of Smithland, and at mile 919.0

DRAINAGE AREA.--144,000 mi^2, approximately.

PERIOD OF RECORD.--October 1993 to current year.

GAGE.--Gate opening, and water-stage recorders with telemetry. Datum of headwater gage is 311.22 ft above NGVD of 1929. Datum of tailwater gage 0.8 mi downstream is 289.28 ft above NGVD of 1929.

REMARKS.--Records fair. Daily discharge computed from tailwater elevation, head, gate openings, and lockages. Flow regulated by Ohio River system of locks, dams, and reservoir upstream from station.

COOPERATION.--U.S. Army Corps of Engineers, Louisville District.

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

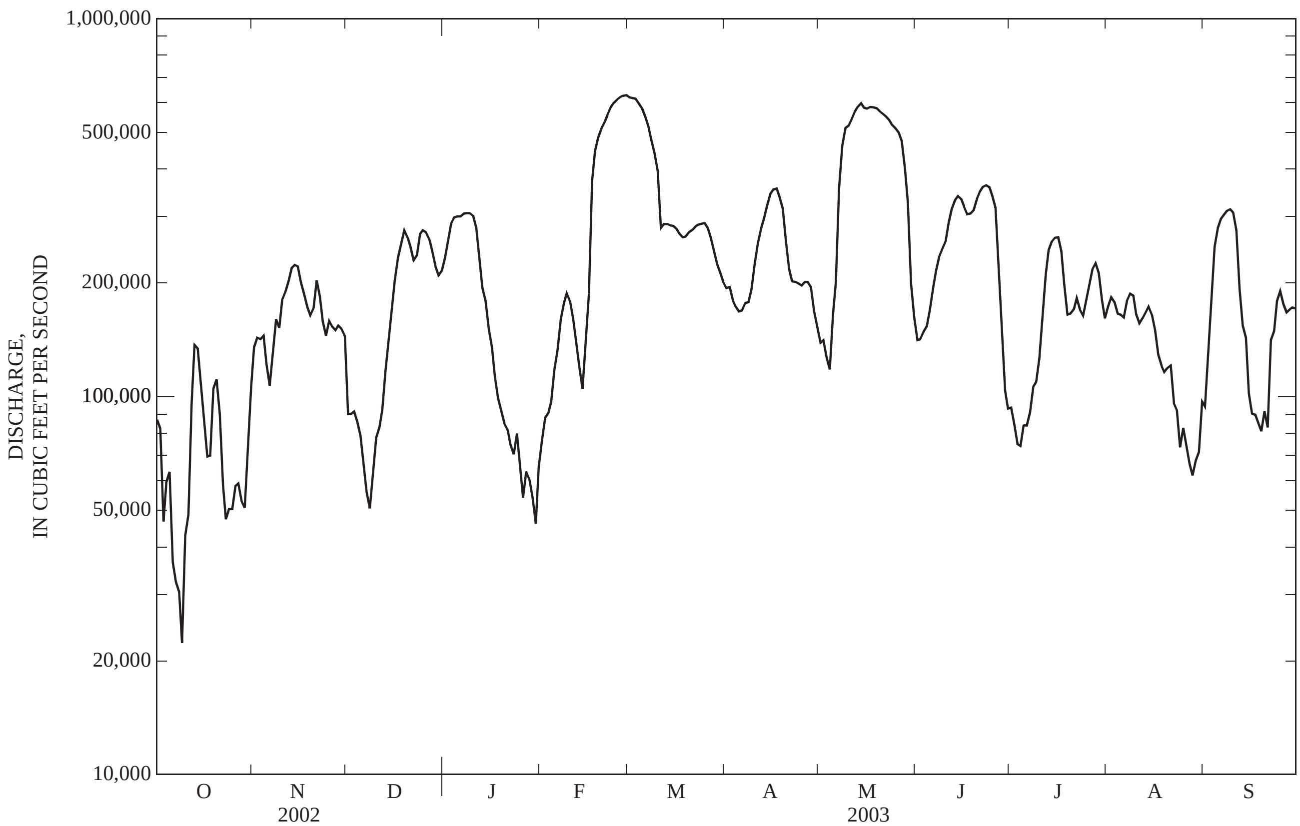
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	86,800	135,000	90,000	233,000	76,400	619,000	194,000	139,000	141,000	93,500	173,000	94,300
2	82,300	143,000	89,900	259,000	87,700	617,000	195,000	141,000	142,000	84,400	183,000	138,000
3	46,700	142,000	91,100	286,000	90,300	614,000	180,000	127,000	148,000	74,900	178,000	186,000
4	59,400	145,000	85,600	298,000	96,800	597,000	173,000	118,000	153,000	74,000	166,000	249,000
5	63,200	122,000	78,600	300,000	118,000	579,000	168,000	165,000	170,000	84,000	165,000	279,000
6	36,500	107,000	65,700	300,000	133,000	551,000	169,000	201,000	194,000	83,800	162,000	294,000
7	32,300	132,000	55,900	305,000	160,000	519,000	177,000	357,000	215,000	90,900	179,000	302,000
8	30,400	160,000	50,600	306,000	177,000	478,000	178,000	461,000	234,000	106,000	187,000	310,000
9	22,300	152,000	63,100	306,000	188,000	441,000	192,000	513,000	246,000	109,000	185,000	313,000
10	42,900	180,000	77,800	301,000	179,000	396,000	224,000	521,000	257,000	126,000	165,000	307,000
11	48,800	189,000	82,900	279,000	160,000	279,000	254,000	540,000	287,000	165,000	156,000	276,000
12	96,100	202,000	92,300	233,000	138,000	286,000	278,000	566,000	313,000	210,000	161,000	193,000
13	137,000	219,000	117,000	194,000	120,000	286,000	295,000	585,000	330,000	244,000	167,000	154,000
14	134,000	223,000	140,000	179,000	105,000	284,000	320,000	598,000	339,000	257,000	173,000	143,000
15	106,000	221,000	170,000	151,000	136,000	283,000	343,000	582,000	333,000	263,000	165,000	102,000
16	86,000	200,000	203,000	135,000	187,000	278,000	353,000	578,000	318,000	264,000	150,000	90,100
17	69,400	186,000	233,000	113,000	373,000	270,000	355,000	584,000	304,000	242,000	129,000	89,600
18	69,800	172,000	253,000	98,900	446,000	264,000	337,000	583,000	305,000	198,000	121,000	84,800
19	105,000	164,000	276,000	91,800	484,000	265,000	314,000	579,000	312,000	165,000	116,000	80,900
20	111,000	171,000	264,000	84,800	511,000	272,000	257,000	569,000	333,000	166,000	119,000	91,600
21	90,000	203,000	249,000	81,700	532,000	276,000	217,000	561,000	348,000	170,000	121,000	82,900
22	58,500	184,000	229,000	74,400	556,000	281,000	202,000	551,000	359,000	182,000	96,200	141,000
23	47,400	158,000	236,000	70,400	582,000	285,000	201,000	539,000	362,000	170,000	92,200	149,000
24	50,400	145,000	269,000	79,900	599,000	287,000	199,000	524,000	358,000	164,000	73,400	179,000
25	50,400	159,000	275,000	65,200	611,000	288,000	197,000	513,000	340,000	181,000	82,800	190,000
26	58,000	153,000	272,000	54,100	620,000	280,000	201,000	501,000	316,000	199,000	73,900	176,000
27	58,900	150,000	261,000	63,400	625,000	263,000	201,000	474,000	222,000	217,000	66,300	167,000
28	53,000	154,000	241,000	60,500	627,000	243,000	195,000	401,000	154,000	225,000	61,900	170,000
29	50,800	151,000	220,000	54,000	---	224,000	168,000	327,000	104,000	212,000	67,700	172,000
30	70,000	145,000	209,000	46,100	---	212,000	153,000	199,000	92,900	180,000	71,300	171,000
31	106,000	---	215,000	65,100	---	201,000	---	162,000	---	161,000	97,000	---
TOTAL	2,159,300	4,967,000	5,255,500	5,168,300	8,718,200	11,018,000	6,890,000	13,259,000	7,729,900	5,161,500	4,103,700	5,375,200
MEAN	69,650	165,600	169,500	166,700	311,400	355,400	229,700	427,700	257,700	166,500	132,400	179,200
MAX	137,000	223,000	276,000	306,000	627,000	619,000	355,000	598,000	362,000	264,000	187,000	313,000
MIN	22,300	107,000	50,600	46,100	76,400	201,000	153,000	118,000	92,900	74,000	61,900	80,900

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

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	59,810	103,400	177,700	205,400	312,800	354,500	287,500	313,300	206,800	98,410	73,150	52,960
MAX	107,500	226,400	379,200	311,000	536,200	700,900	594,100	562,200	376,000	203,600	132,400	179,200
(WY)	(1997)	(1994)	(1997)	(1999)	(1994)	(1997)	(1994)	(1996)	(1997)	(1998)	(2003)	(2003)
MIN	24,530	34,800	59,450	89,880	213,000	216,300	150,000	112,600	60,070	43,110	19,190	12,490
(WY)	(2000)	(1999)	(1999)	(2001)	(1995)	(2000)	(1995)	(2000)	(1999)	(1999)	(1999)	(1999)

03399800 OHIO RIVER AT SMITHLAND DAM, SMITHLAND, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1994 - 2003	
ANNUAL TOTAL	69,292,700		79,805,600			
ANNUAL MEAN	189,800		218,600		186,500	
HIGHEST ANNUAL MEAN					247,000	1994
LOWEST ANNUAL MEAN					120,900	2000
HIGHEST DAILY MEAN	607,000	May 24	627,000	Feb 28	831,000	Mar 12, 1997
LOWEST DAILY MEAN	9,160	Sep 10	22,300	Oct 9	3,090	Aug 5, 1999
ANNUAL SEVEN-DAY MINIMUM	13,400	Sep 9	39,500	Oct 5	10,200	Sep 1, 1999
MAXIMUM PEAK FLOW			629,000	Feb 28	832,000	Mar 12, 1997
MAXIMUM PEAK STAGE			44.08	Feb 28	51.44	Mar 12, 1997
10 PERCENT EXCEEDS	495,000		476,000		447,000	
50 PERCENT EXCEEDS	136,000		179,000		129,000	
90 PERCENT EXCEEDS	25,300		72,600		30,200	



03400798 MARTINS FORK LAKE AT MARTINS FORK DAM NEAR SMITH, KY

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1979 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1979 to current year.
pH: October 1979 to current year.
WATER TEMPERATURE: October 1979 to current year.
DISSOLVED OXYGEN: October 1979 to current year.

INSTRUMENTATION.--Water-quality monitor since October 1979.

REMARKS.--Four submersible pumps are located on Martins Fork Dam, at four different elevations referenced to sea level. Pump 1 is located near the bottom of the lake, at an elevation of 1,272 ft; pump 2 is at an elevation of 1,285 ft; pump 3 at an elevation of 1,298 ft; and pump 4 at an elevation of 1,308 ft, occasional operation. Each lake level is sampled once every four hours, or six times per day. A maximum and minimum value for pH and a maximum, minimum, and mean value for temperature, specific conductance, and dissolved oxygen are determined for each level. The monitor was shut down Nov. 24 to Mar. 23.

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	209	206	207	158	141	154	---	---	---	---	---	---
2	---	---	---	155	143	148	---	---	---	---	---	---
3	215	213	214	151	148	150	---	---	---	---	---	---
4	218	208	214	155	150	153	---	---	---	---	---	---
5	211	207	209	153	152	153	---	---	---	---	---	---
6	215	206	210	152	148	151	---	---	---	---	---	---
7	213	210	212	153	146	148	---	---	---	---	---	---
8	214	212	213	---	---	---	---	---	---	---	---	---
9	214	213	214	---	---	---	---	---	---	---	---	---
10	214	213	213	---	---	---	---	---	---	---	---	---
11	216	213	215	---	---	---	---	---	---	---	---	---
12	219	214	216	---	---	---	---	---	---	---	---	---
13	219	215	218	---	---	---	---	---	---	---	---	---
14	218	216	217	---	---	---	---	---	---	---	---	---
15	216	215	216	---	---	---	---	---	---	---	---	---
16	220	215	218	---	---	---	---	---	---	---	---	---
17	224	216	219	---	---	---	---	---	---	---	---	---
18	221	217	219	---	---	---	---	---	---	---	---	---
19	224	218	220	---	---	---	---	---	---	---	---	---
20	218	216	218	---	---	---	---	---	---	---	---	---
21	220	217	219	---	---	---	---	---	---	---	---	---
22	218	217	217	---	---	---	---	---	---	---	---	---
23	219	215	217	---	---	---	---	---	---	---	---	---
24	217	214	215	---	---	---	---	---	---	---	---	---
25	220	213	216	---	---	---	---	---	---	---	---	---
26	219	216	217	---	---	---	---	---	---	---	---	---
27	218	213	216	---	---	---	---	---	---	---	---	---
28	215	212	214	---	---	---	---	---	---	---	---	---
29	215	211	213	---	---	---	---	---	---	---	---	---
30	215	198	210	---	---	---	---	---	---	---	---	---
31	163	159	161	---	---	---	---	---	---	---	---	---
MONTH	224	159	213	158	141	151	---	---	---	---	---	---

03400798 MARTINS FORK LAKE AT MARTINS FORK DAM NEAR SMITH, KY—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	---	---	---	107	105	106
2	---	---	---	---	---	---	---	---	---	107	105	106
3	---	---	---	---	---	---	---	---	---	107	105	106
4	---	---	---	---	---	---	---	---	---	107	107	107
5	---	---	---	---	---	---	---	---	---	109	107	107
6	---	---	---	---	---	---	---	---	---	115	109	112
7	---	---	---	---	---	---	---	---	---	113	109	111
8	---	---	---	---	---	---	---	---	---	109	104	107
9	---	---	---	---	---	---	---	---	---	107	98	103
10	---	---	---	---	---	---	---	---	---	108	104	107
11	---	---	---	---	---	---	---	---	---	108	107	107
12	---	---	---	---	---	---	---	---	---	107	103	105
13	---	---	---	---	---	---	---	---	---	108	104	106
14	---	---	---	---	---	---	---	---	---	111	106	107
15	---	---	---	---	---	---	---	---	---	115	109	112
16	---	---	---	---	---	---	---	---	---	110	101	106
17	---	---	---	---	---	---	101	99	100	103	101	102
18	---	---	---	---	---	---	100	97	98	105	104	104
19	---	---	---	---	---	---	101	99	100	111	105	108
20	---	---	---	---	---	---	102	100	101	112	110	111
21	---	---	---	---	---	---	104	101	102	113	112	112
22	---	---	---	---	---	---	103	101	102	114	112	113
23	---	---	---	---	---	---	102	101	101	114	113	113
24	---	---	---	---	---	---	101	100	100	117	115	116
25	---	---	---	---	---	---	100	100	100	117	116	117
26	---	---	---	---	---	---	103	101	102	118	117	118
27	---	---	---	---	---	---	108	103	106	119	117	118
28	---	---	---	---	---	---	105	101	103	122	120	121
29	---	---	---	---	---	---	105	101	103	123	122	122
30	---	---	---	---	---	---	105	103	104	129	123	125
31	---	---	---	---	---	---	---	---	---	124	122	123
MONTH	---	---	---	---	---	---	108	97	102	129	98	111

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	123	121	122	110	108	109	127	125	126	151	149	150
2	120	119	120	112	110	111	127	126	126	150	147	148
3	119	117	118	116	113	114	130	128	129	147	145	146
4	118	115	117	118	116	117	130	129	130	147	145	146
5	115	113	114	122	119	120	132	130	131	148	146	147
6	114	111	112	123	121	122	134	132	133	153	146	148
7	111	110	111	126	124	125	136	134	135	156	154	155
8	---	---	---	136	127	130	137	136	137	159	156	157
9	---	---	---	131	129	130	138	136	137	157	155	156
10	---	---	---	131	130	131	140	137	138	160	156	158
11	---	---	---	132	130	131	146	138	142	159	155	157
12	---	---	---	132	130	131	142	140	141	157	155	157
13	107	103	106	126	117	123	141	140	141	156	150	152
14	110	102	107	119	109	113	143	142	142	153	144	147
15	115	110	112	109	106	108	144	142	143	144	141	143
16	118	115	117	109	106	108	144	142	143	146	142	145
17	120	118	119	111	108	110	145	143	144	144	142	143
18	122	120	121	111	109	111	145	143	144	157	140	149
19	122	116	119	112	111	112	145	144	145	165	159	161
20	110	104	109	114	113	113	146	144	144	163	158	160
21	107	99	104	114	113	114	142	140	141	161	157	159
22	103	101	102	116	114	115	142	140	141	161	157	159
23	109	98	103	117	115	116	143	140	141	161	158	159
24	101	100	100	119	118	118	148	144	146	165	161	162
25	107	102	104	121	119	120	150	148	149	163	158	161
26	110	107	108	122	121	121	151	148	150	165	157	161
27	111	105	108	122	122	122	150	149	149	165	162	164
28	106	105	105	124	123	124	151	148	150	168	162	165
29	106	105	106	125	123	124	152	150	151	167	163	165
30	109	107	107	125	124	124	154	148	152	168	164	166
31	---	---	---	125	124	124	151	150	151	---	---	---
MONTH	123	98	111	136	106	119	154	125	141	168	140	155
YEAR	224	97	140									

03400798 MARTINS FORK LAKE AT MARTINS FORK DAM NEAR SMITH, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	23.2	22.8	23.0	20.0	19.8	19.9	---	---	---	---	---	---
2	23.1	22.8	23.0	19.7	19.4	19.6	---	---	---	---	---	---
3	23.1	22.8	23.0	19.4	19.3	19.4	---	---	---	---	---	---
4	23.0	22.6	22.9	19.3	18.9	19.1	---	---	---	---	---	---
5	23.0	22.7	22.9	18.9	18.8	18.9	---	---	---	---	---	---
6	23.5	22.6	22.9	18.8	18.5	18.7	---	---	---	---	---	---
7	23.2	22.6	22.9	18.7	18.4	18.5	---	---	---	---	---	---
8	23.1	22.7	22.9	---	---	---	---	---	---	---	---	---
9	22.9	22.8	22.9	---	---	---	---	---	---	---	---	---
10	22.9	22.8	22.8	---	---	---	---	---	---	---	---	---
11	22.8	22.7	22.8	---	---	---	---	---	---	---	---	---
12	22.9	22.7	22.7	---	---	---	---	---	---	---	---	---
13	22.8	22.6	22.7	---	---	---	---	---	---	---	---	---
14	22.6	22.4	22.5	---	---	---	---	---	---	---	---	---
15	22.4	22.2	22.3	---	---	---	---	---	---	---	---	---
16	22.2	22.0	22.1	---	---	---	---	---	---	---	---	---
17	21.8	21.6	21.7	---	---	---	---	---	---	---	---	---
18	21.5	21.4	21.4	---	---	---	---	---	---	---	---	---
19	21.2	21.2	21.2	---	---	---	---	---	---	---	---	---
20	21.2	20.9	21.0	---	---	---	---	---	---	---	---	---
21	20.5	20.3	20.4	---	---	---	---	---	---	---	---	---
22	20.2	20.1	20.2	---	---	---	---	---	---	---	---	---
23	20.2	20.0	20.1	---	---	---	---	---	---	---	---	---
24	20.0	20.0	20.0	---	---	---	---	---	---	---	---	---
25	20.1	19.9	20.0	---	---	---	---	---	---	---	---	---
26	20.1	19.9	20.0	---	---	---	---	---	---	---	---	---
27	20.0	20.0	20.0	---	---	---	---	---	---	---	---	---
28	20.0	20.0	20.0	---	---	---	---	---	---	---	---	---
29	20.0	19.9	20.0	---	---	---	---	---	---	---	---	---
30	20.1	20.0	20.0	---	---	---	---	---	---	---	---	---
31	20.1	20.0	20.0	---	---	---	---	---	---	---	---	---
MONTH	23.5	19.9	21.6	20.0	18.4	19.2	---	---	---	---	---	---
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	---	---	---	16.0	15.5	15.7
2	---	---	---	---	---	---	---	---	---	16.1	15.6	15.8
3	---	---	---	---	---	---	---	---	---	16.0	15.6	15.8
4	---	---	---	---	---	---	---	---	---	16.1	16.0	16.0
5	---	---	---	---	---	---	---	---	---	16.6	15.9	16.2
6	---	---	---	---	---	---	---	---	---	17.3	16.2	16.7
7	---	---	---	---	---	---	---	---	---	17.2	16.8	17.0
8	---	---	---	---	---	---	---	---	---	17.3	17.1	17.2
9	---	---	---	---	---	---	---	---	---	17.6	16.8	17.2
10	---	---	---	---	---	---	---	---	---	17.4	16.8	17.0
11	---	---	---	---	---	---	---	---	---	17.4	16.8	17.1
12	---	---	---	---	---	---	---	---	---	18.1	16.9	17.3
13	---	---	---	---	---	---	---	---	---	18.1	17.4	17.7
14	---	---	---	---	---	---	---	---	---	18.1	17.7	17.9
15	---	---	---	---	---	---	---	---	---	18.4	17.8	18.1
16	---	---	---	---	---	---	---	---	---	17.7	17.4	17.6
17	---	---	---	---	---	---	13.6	13.3	13.4	18.1	17.3	17.6
18	---	---	---	---	---	---	14.0	13.7	13.8	18.1	17.5	17.8
19	---	---	---	---	---	---	14.5	13.8	14.0	18.6	17.7	18.1
20	---	---	---	---	---	---	14.8	14.1	14.5	18.7	18.4	18.6
21	---	---	---	---	---	---	15.2	14.4	14.8	19.0	18.7	18.8
22	---	---	---	---	---	---	15.6	14.4	14.9	18.9	18.5	18.8
23	---	---	---	---	---	---	15.3	14.6	14.9	19.0	18.4	18.7
24	---	---	---	---	---	---	15.2	14.9	15.1	19.1	18.7	19.0
25	---	---	---	---	---	---	15.4	15.0	15.2	19.2	18.8	19.0
26	---	---	---	---	---	---	15.7	15.2	15.4	19.2	19.1	19.2
27	---	---	---	---	---	---	15.9	15.1	15.6	19.4	18.9	19.0
28	---	---	---	---	---	---	15.8	15.3	15.5	19.2	18.8	18.9
29	---	---	---	---	---	---	15.8	15.4	15.6	19.2	18.8	19.0
30	---	---	---	---	---	---	15.9	15.4	15.7	19.3	18.8	19.1
31	---	---	---	---	---	---	---	---	---	19.5	19.0	19.2
MONTH	---	---	---	---	---	---	15.9	13.3	14.9	19.5	15.5	17.8

03400798 MARTINS FORK LAKE AT MARTINS FORK DAM NEAR SMITH, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	19.4	19.1	19.2	20.2	19.8	20.0	22.4	22.1	22.2	23.7	23.3	23.5
2	19.4	19.1	19.2	20.6	19.9	20.2	22.6	22.4	22.4	23.7	23.2	23.4
3	19.6	19.3	19.5	20.5	20.2	20.4	22.5	22.3	22.4	23.4	23.3	23.4
4	19.7	19.3	19.4	20.8	20.4	20.6	22.7	22.4	22.5	23.4	23.3	23.3
5	19.6	19.3	19.5	20.9	20.6	20.7	22.7	22.5	22.6	23.3	23.1	23.2
6	19.7	19.2	19.4	20.9	20.7	20.8	22.7	22.5	22.6	23.5	23.0	23.2
7	19.1	19.0	19.1	20.9	20.7	20.8	22.7	22.3	22.6	23.7	23.4	23.6
8	---	---	---	20.8	20.6	20.7	22.6	22.5	22.6	23.7	23.5	23.6
9	18.7	18.6	18.6	20.9	20.6	20.8	22.8	22.6	22.7	23.8	23.4	23.6
10	---	---	---	21.3	20.8	21.0	22.7	22.5	22.6	23.9	23.4	23.6
11	---	---	---	22.0	21.2	21.6	22.8	22.6	22.7	23.7	23.5	23.6
12	---	---	---	21.8	21.6	21.7	22.8	22.5	22.7	23.6	23.5	23.6
13	19.2	18.9	19.0	22.0	21.7	21.8	22.8	11.6	22.7	23.6	23.3	23.4
14	19.4	19.0	19.2	22.4	21.9	22.0	22.8	22.6	22.7	23.5	23.2	23.3
15	19.5	19.1	19.3	22.2	21.9	22.0	22.8	22.7	22.8	23.2	23.1	23.2
16	19.5	19.3	19.4	22.0	21.7	21.8	23.0	22.9	22.9	23.3	23.1	23.2
17	19.6	19.4	19.6	21.9	21.7	21.8	23.0	22.8	22.9	23.3	23.2	23.2
18	19.9	19.7	19.8	22.0	21.8	21.9	23.0	22.7	22.8	23.8	23.1	23.4
19	20.0	19.8	19.9	22.0	21.7	21.8	23.0	22.7	22.9	24.1	23.6	23.8
20	20.0	19.8	20.0	21.9	21.7	21.8	23.0	22.8	22.9	24.0	23.6	23.8
21	20.1	19.9	20.0	22.0	21.7	21.8	22.6	22.0	22.3	23.8	23.7	23.7
22	20.4	19.9	20.1	22.1	21.8	22.0	22.3	22.2	22.3	23.8	23.6	23.7
23	20.1	19.8	20.0	22.0	21.7	21.9	22.7	22.3	22.4	23.7	23.6	23.7
24	20.0	19.8	20.0	22.0	21.8	21.9	22.8	22.4	22.6	23.7	23.5	23.6
25	20.2	19.9	20.1	22.1	21.8	21.9	23.3	22.9	23.1	23.6	23.5	23.6
26	20.4	20.1	20.2	22.1	21.8	21.9	23.4	23.1	23.2	23.7	23.5	23.6
27	20.3	20.0	20.2	22.2	21.8	22.0	23.4	23.0	23.2	23.6	23.6	23.6
28	20.1	19.8	20.0	22.2	21.8	22.0	23.5	23.0	23.2	23.6	23.5	23.6
29	20.2	19.9	20.0	22.3	22.0	22.1	23.8	23.0	23.3	23.5	23.4	23.5
30	20.1	19.9	20.0	22.2	21.9	22.1	23.7	23.3	23.4	23.4	23.2	23.3
31	---	---	---	22.2	22.0	22.1	23.4	23.2	23.4	---	---	---
MONTH	20.4	18.6	19.6	22.4	19.8	21.5	23.8	11.6	22.8	24.1	23.0	23.5
YEAR	24.1	11.6	20.7									

03400798 MARTINS FORK LAKE AT MARTINS FORK DAM NEAR SMITH, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	24.6	23.6	23.9	20.5	20.4	20.4	---	---	---	---	---	---
2	25.3	23.9	24.3	20.3	20.1	20.2	---	---	---	---	---	---
3	24.6	24.0	24.2	20.1	20.0	20.0	---	---	---	---	---	---
4	25.0	24.4	24.6	20.0	19.7	19.9	---	---	---	---	---	---
5	24.9	24.2	24.5	19.7	19.5	19.6	---	---	---	---	---	---
6	24.6	24.1	24.3	19.5	19.4	19.4	---	---	---	---	---	---
7	24.5	24.0	24.2	19.4	19.1	19.3	---	---	---	---	---	---
8	23.9	23.6	23.7	---	---	---	---	---	---	---	---	---
9	23.6	23.4	23.5	---	---	---	---	---	---	---	---	---
10	23.4	23.3	23.3	---	---	---	---	---	---	---	---	---
11	23.3	23.2	23.2	---	---	---	---	---	---	---	---	---
12	23.6	23.1	23.3	---	---	---	---	---	---	---	---	---
13	23.4	23.1	23.2	---	---	---	---	---	---	---	---	---
14	23.4	22.8	23.0	---	---	---	---	---	---	---	---	---
15	22.7	22.5	22.6	---	---	---	---	---	---	---	---	---
16	22.4	22.2	22.3	---	---	---	---	---	---	---	---	---
17	22.2	21.9	22.0	---	---	---	---	---	---	---	---	---
18	22.0	21.6	21.8	---	---	---	---	---	---	---	---	---
19	21.7	21.4	21.5	---	---	---	---	---	---	---	---	---
20	21.4	21.3	21.4	---	---	---	---	---	---	---	---	---
21	21.0	20.8	20.8	---	---	---	---	---	---	---	---	---
22	20.8	20.6	20.6	---	---	---	---	---	---	---	---	---
23	20.6	20.5	20.6	---	---	---	---	---	---	---	---	---
24	20.5	20.5	20.5	---	---	---	---	---	---	---	---	---
25	20.5	20.2	20.4	---	---	---	---	---	---	---	---	---
26	20.5	20.4	20.4	---	---	---	---	---	---	---	---	---
27	20.5	20.0	20.4	---	---	---	---	---	---	---	---	---
28	20.5	20.5	20.5	---	---	---	---	---	---	---	---	---
29	20.5	20.5	20.5	---	---	---	---	---	---	---	---	---
30	20.5	20.5	20.5	---	---	---	---	---	---	---	---	---
31	20.5	20.5	20.5	---	---	---	---	---	---	---	---	---
MONTH	25.3	20.0	22.3	20.5	19.1	19.8	---	---	---	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	---	---	---	17.9	16.8	17.5
2	---	---	---	---	---	---	---	---	---	18.0	17.5	17.7
3	---	---	---	---	---	---	---	---	---	18.0	17.2	17.7
4	---	---	---	---	---	---	---	---	---	18.7	17.7	18.3
5	---	---	---	---	---	---	---	---	---	19.8	17.9	18.7
6	---	---	---	---	---	---	---	---	---	19.7	18.0	19.0
7	---	---	---	---	---	---	---	---	---	19.0	18.1	18.6
8	---	---	---	---	---	---	---	---	---	19.6	18.1	18.6
9	---	---	---	---	---	---	---	---	---	21.0	18.6	19.5
10	---	---	---	---	---	---	---	---	---	21.4	18.5	19.8
11	---	---	---	---	---	---	---	---	---	21.6	18.6	20.0
12	---	---	---	---	---	---	---	---	---	19.3	18.7	19.0
13	---	---	---	---	---	---	---	---	---	20.6	18.7	19.6
14	---	---	---	---	---	---	---	---	---	20.6	19.6	20.0
15	---	---	---	---	---	---	---	---	---	20.2	19.1	19.7
16	---	---	---	---	---	---	---	---	---	20.9	20.6	20.8
17	---	---	---	---	---	---	15.5	14.0	14.8	20.2	19.2	19.7
18	---	---	---	---	---	---	15.4	14.8	15.2	19.9	18.8	19.5
19	---	---	---	---	---	---	15.9	15.0	15.6	20.0	19.5	19.7
20	---	---	---	---	---	---	18.4	15.4	16.4	20.3	19.7	20.0
21	---	---	---	---	---	---	19.1	15.7	17.0	20.4	19.8	20.1
22	---	---	---	---	---	---	17.0	15.8	16.4	20.6	20.0	20.3
23	---	---	---	---	---	---	17.2	15.9	16.6	20.6	19.9	20.2
24	---	---	---	---	---	---	17.6	16.8	17.0	21.0	20.1	20.5
25	---	---	---	---	---	---	17.5	16.0	16.6	20.8	20.4	20.6
26	---	---	---	---	---	---	17.0	16.4	16.7	20.5	20.4	20.5
27	---	---	---	---	---	---	17.2	16.4	16.8	20.8	20.2	20.6
28	---	---	---	---	---	---	18.8	16.9	17.4	21.1	20.5	20.7
29	---	---	---	---	---	---	17.4	16.3	17.0	21.0	20.4	20.6
30	---	---	---	---	---	---	17.4	16.8	17.1	21.0	20.1	20.6
31	---	---	---	---	---	---	---	---	---	21.0	19.7	20.4
MONTH	---	---	---	---	---	---	19.1	14.0	16.5	21.6	16.8	19.6

03400798 MARTINS FORK LAKE AT MARTINS FORK DAM NEAR SMITH, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	20.5	20.3	20.4	21.7	21.5	21.6	24.1	23.6	23.8	25.5	25.4	25.4
2	20.7	20.3	20.4	21.8	21.4	21.7	24.1	23.4	23.8	25.5	25.2	25.3
3	20.5	20.4	20.4	21.9	21.5	21.6	24.1	23.7	23.9	25.1	25.1	25.1
4	20.9	20.1	20.5	22.4	21.4	21.9	24.2	23.8	23.9	25.1	24.8	25.0
5	20.6	20.4	20.4	22.3	21.8	22.0	24.3	23.8	24.2	25.1	24.4	24.6
6	20.6	20.3	20.5	22.4	22.2	22.3	24.6	23.9	24.3	24.7	24.1	24.4
7	20.6	20.4	20.5	22.9	22.3	22.6	24.4	24.0	24.2	24.8	24.9	25.0
8	---	---	---	23.0	22.4	22.7	24.6	24.0	24.4	25.0	24.8	24.9
9	18.9	18.8	18.9	23.4	22.6	22.9	24.6	24.0	24.4	24.8	24.6	24.8
10	19.0	18.4	18.9	23.9	22.4	23.0	24.4	24.2	24.3	24.8	24.8	24.8
11	---	---	---	23.2	22.3	22.8	25.2	24.0	24.6	24.8	24.8	24.8
12	---	---	---	23.2	22.4	22.8	24.5	24.2	24.4	24.8	24.5	24.7
13	19.6	19.6	19.6	23.0	22.6	22.8	24.6	24.4	24.4	24.5	24.3	24.4
14	20.4	19.6	19.9	23.3	22.7	23.0	24.7	24.4	24.5	24.2	23.9	24.0
15	20.3	19.8	20.0	23.6	23.0	23.3	24.6	24.4	24.5	24.1	23.8	23.9
16	20.6	20.0	20.2	23.3	23.0	23.2	25.1	24.5	24.7	24.0	23.8	23.9
17	20.4	20.1	20.3	23.3	23.0	23.2	24.9	24.2	24.6	24.0	23.9	24.0
18	20.6	20.2	20.4	23.5	23.2	23.4	24.8	24.6	24.7	24.3	23.7	24.0
19	20.6	20.5	20.6	23.7	23.4	23.5	24.9	24.6	24.7	24.4	24.2	24.3
20	20.7	20.4	20.5	23.8	23.4	23.6	25.0	24.5	24.8	24.3	24.2	24.2
21	20.8	20.4	20.6	24.8	23.5	23.9	25.8	24.4	25.1	24.2	24.2	24.2
22	21.0	20.6	20.8	24.2	23.7	23.9	25.5	25.0	25.3	24.2	24.2	24.2
23	21.2	20.8	21.0	23.7	23.2	23.6	25.5	25.1	25.4	24.1	24.0	24.1
24	21.3	21.0	21.2	23.9	23.4	23.8	25.5	25.4	25.4	24.1	24.0	24.0
25	21.4	20.8	21.1	23.8	23.6	23.7	25.6	24.1	25.2	24.0	23.9	24.0
26	22.0	21.0	21.2	23.8	23.5	23.6	25.5	25.3	25.4	24.0	23.9	24.0
27	21.9	21.2	21.6	24.2	23.4	23.8	25.5	25.4	25.4	23.9	23.9	23.9
28	22.0	21.2	21.6	24.1	23.0	23.8	25.5	25.3	25.4	23.8	23.8	23.8
29	22.1	21.4	21.6	24.1	23.8	24.0	25.8	25.3	25.5	23.7	23.6	23.7
30	21.8	21.5	21.6	24.4	24.0	24.1	25.7	25.4	25.6	23.6	23.4	23.5
31	---	---	---	24.1	24.0	24.0	25.5	25.3	25.4	---	---	---
MONTH	22.1	18.4	20.5	24.8	21.4	23.1	25.8	23.4	24.7	25.5	23.4	24.4
YEAR	25.8	14.0	22.0									

03400798 MARTINS FORK LAKE AT MARTINS FORK DAM NEAR SMITH, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	---	---	---	20.9	19.2	20.2
2	---	---	---	---	---	---	---	---	---	20.6	20.2	20.4
3	---	---	---	---	---	---	---	---	---	20.7	19.8	20.2
4	---	---	---	---	---	---	---	---	---	20.8	19.4	20.1
5	---	---	---	---	---	---	---	---	---	20.5	20.1	20.2
6	---	---	---	---	---	---	---	---	---	19.9	19.5	19.7
7	---	---	---	---	---	---	---	---	---	19.9	19.4	19.6
8	---	---	---	---	---	---	---	---	---	21.6	19.6	20.2
9	---	---	---	---	---	---	---	---	---	22.0	20.5	21.3
10	---	---	---	---	---	---	---	---	---	22.2	20.9	21.4
11	---	---	---	---	---	---	---	---	---	22.2	21.5	21.7
12	---	---	---	---	---	---	---	---	---	21.5	21.1	21.3
13	---	---	---	---	---	---	---	---	---	21.0	20.5	20.8
14	---	---	---	---	---	---	---	---	---	21.0	20.3	20.7
15	---	---	---	---	---	---	---	---	---	20.8	20.3	20.6
16	---	---	---	---	---	---	---	---	---	21.0	20.0	20.4
17	---	---	---	---	---	---	17.8	17.0	17.5	21.2	20.5	20.7
18	---	---	---	---	---	---	18.6	17.4	17.8	20.7	20.4	20.6
19	---	---	---	---	---	---	20.1	17.8	18.8	21.7	20.5	21.0
20	---	---	---	---	---	---	19.8	18.8	19.2	21.6	20.6	21.1
21	---	---	---	---	---	---	20.2	19.1	19.5	21.5	21.2	21.4
22	---	---	---	---	---	---	19.5	18.2	18.8	22.2	20.7	21.3
23	---	---	---	---	---	---	18.7	17.2	17.9	22.2	21.2	21.8
24	---	---	---	---	---	---	18.3	16.9	17.5	22.3	21.1	21.6
25	---	---	---	---	---	---	18.4	17.8	18.1	21.9	21.0	21.3
26	---	---	---	---	---	---	18.3	17.6	18.0	21.6	21.1	21.3
27	---	---	---	---	---	---	19.8	17.4	18.2	21.2	20.7	20.9
28	---	---	---	---	---	---	19.9	18.1	19.0	21.3	20.6	20.9
29	---	---	---	---	---	---	20.9	18.6	19.5	21.2	20.9	21.0
30	---	---	---	---	---	---	21.1	19.5	20.2	21.2	19.6	20.7
31	---	---	---	---	---	---	---	---	---	21.1	20.6	20.9
MONTH	---	---	---	---	---	---	21.1	16.9	18.6	22.3	19.2	20.8

03400798 MARTINS FORK LAKE AT MARTINS FORK DAM NEAR SMITH, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	21.1	20.5	20.7	23.6	23.4	23.5	25.1	24.6	24.9	25.8	25.7	25.7
2	21.3	20.2	20.7	23.3	23.0	23.1	25.1	24.6	24.8	25.8	25.7	25.7
3	21.1	20.8	20.9	24.5	22.8	23.4	25.0	24.6	24.7	25.6	25.5	25.5
4	20.8	20.7	20.8	24.8	23.9	24.2	25.2	24.5	24.8	25.4	25.3	25.3
5	21.7	20.5	20.9	24.9	23.9	24.4	25.8	24.9	25.3	25.2	25.1	25.1
6	22.2	20.7	21.4	24.9	24.2	24.5	25.5	24.8	25.1	25.4	24.9	24.9
7	22.0	21.1	21.6	25.1	24.3	24.7	25.3	24.9	25.1	25.2	25.2	25.2
8	---	---	---	25.5	24.6	25.0	25.4	24.7	25.0	25.0	25.0	25.0
9	19.7	19.4	19.6	25.4	25.0	25.2	25.6	24.8	25.1	25.4	27.4	25.0
10	19.6	19.3	19.4	25.3	24.7	25.0	25.5	24.9	25.1	25.3	25.0	25.2
11	---	---	---	25.0	24.5	24.8	25.3	24.8	25.1	25.2	24.9	25.0
12	---	---	---	24.9	24.3	24.6	25.7	24.8	25.2	25.1	24.9	25.0
13	22.9	22.3	22.6	24.7	24.3	24.4	25.6	24.9	25.3	24.9	24.6	24.7
14	22.8	22.6	22.6	25.1	24.1	24.5	25.8	25.0	25.4	24.6	24.4	24.4
15	22.6	22.3	22.5	25.2	24.5	24.9	26.0	25.2	25.6	24.3	24.2	24.3
16	22.7	22.4	22.5	24.9	24.6	24.7	26.0	25.6	25.7	24.4	24.2	24.3
17	23.0	22.6	22.7	25.7	24.4	24.8	25.5	25.3	25.4	24.4	24.2	24.3
18	23.1	21.9	22.2	25.2	24.4	24.8	25.7	25.1	25.3	24.6	24.1	24.4
19	22.0	21.6	21.8	25.6	24.7	25.0	25.8	25.1	25.4	24.5	24.3	24.4
20	22.0	21.2	21.5	25.8	24.7	25.2	26.0	25.2	25.6	24.6	24.3	24.4
21	22.3	21.7	22.1	25.3	24.9	25.1	26.8	25.8	26.2	24.4	24.3	24.4
22	22.4	20.7	22.0	24.9	24.6	24.7	26.7	26.2	26.4	24.4	24.2	24.3
23	24.0	22.2	22.8	24.5	24.2	24.4	26.5	26.5	26.2	24.2	24.1	24.1
24	24.5	22.9	23.6	24.4	24.0	24.2	26.4	25.7	26.0	24.2	24.0	24.1
25	24.3	23.4	23.7	24.8	23.9	24.3	26.4	25.6	26.1	24.1	23.9	24.0
26	24.4	23.5	23.9	24.9	24.2	24.5	26.8	26.2	26.2	24.1	23.9	24.0
27	24.2	21.1	23.4	25.0	24.4	24.7	26.5	26.2	26.2	24.0	23.9	24.0
28	24.3	23.0	23.5	25.0	24.5	24.8	26.3	26.1	26.1	23.9	23.8	23.8
29	24.6	23.6	24.1	25.0	24.6	24.8	26.2	26.1	26.1	23.8	23.7	23.7
30	24.2	23.8	24.0	25.8	24.5	25.0	26.1	26.0	26.0	23.8	23.5	23.6
31	---	---	---	25.7	24.8	25.0	26.0	25.8	25.8	---	---	---
MONTH	24.6	19.3	22.1	25.8	22.8	24.6	26.8	24.5	25.5	25.8	23.5	24.6
YEAR	26.8	16.9	23.1									

03400798 MARTINS FORK LAKE AT MARTINS FORK DAM NEAR SMITH, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	1.4	1.3	1.3	5.8	5.1	5.5	---	---	---	---	---	---
2	---	---	---	6.0	5.9	5.9	---	---	---	---	---	---
3	---	---	---	6.2	6.0	6.1	---	---	---	---	---	---
4	1.6	1.4	1.5	6.3	6.1	6.2	---	---	---	---	---	---
5	1.5	1.2	1.4	6.1	5.1	5.7	---	---	---	---	---	---
6	1.8	1.2	1.5	6.0	5.0	5.6	---	---	---	---	---	---
7	1.6	1.4	1.5	7.0	5.8	6.4	---	---	---	---	---	---
8	1.3	1.0	1.2	---	---	---	---	---	---	---	---	---
9	1.2	1.0	1.1	---	---	---	---	---	---	---	---	---
10	1.2	1.1	1.2	---	---	---	---	---	---	---	---	---
11	1.2	0.7	0.9	---	---	---	---	---	---	---	---	---
12	0.7	0.6	0.6	---	---	---	---	---	---	---	---	---
13	0.6	0.6	0.6	---	---	---	---	---	---	---	---	---
14	0.5	0.4	0.5	---	---	---	---	---	---	---	---	---
15	0.5	0.5	0.5	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	1.0	0.8	0.9	---	---	---	---	---	---	---	---	---
26	1.0	0.9	1.0	---	---	---	---	---	---	---	---	---
27	1.1	1.0	1.0	---	---	---	---	---	---	---	---	---
28	1.1	1.0	1.0	---	---	---	---	---	---	---	---	---
29	1.0	0.9	0.9	---	---	---	---	---	---	---	---	---
30	1.0	0.9	1.0	---	---	---	---	---	---	---	---	---
31	5.2	2.1	4.5	---	---	---	---	---	---	---	---	---
MONTH	5.2	0.4	1.2	7.0	5.0	5.9	---	---	---	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	---	---	---	7.4	7.0	7.2
2	---	---	---	---	---	---	---	---	---	8.1	7.4	7.6
3	---	---	---	---	---	---	---	---	---	8.2	7.5	7.8
4	---	---	---	---	---	---	---	---	---	8.5	7.6	8.1
5	---	---	---	---	---	---	---	---	---	9.5	8.4	8.9
6	---	---	---	---	---	---	---	---	---	9.4	8.1	9.0
7	---	---	---	---	---	---	---	---	---	9.5	8.8	9.2
8	---	---	---	---	---	---	---	---	---	9.4	9.1	9.3
9	---	---	---	---	---	---	---	---	---	10.0	8.5	9.0
10	---	---	---	---	---	---	---	---	---	9.2	8.1	8.3
11	---	---	---	---	---	---	---	---	---	7.8	7.2	7.5
12	---	---	---	---	---	---	---	---	---	8.3	7.1	7.6
13	---	---	---	---	---	---	---	---	---	8.4	7.4	7.9
14	---	---	---	---	---	---	---	---	---	8.1	6.7	7.6
15	---	---	---	---	---	---	---	---	---	7.5	6.3	7.2
16	---	---	---	---	---	---	---	---	---	6.0	5.2	5.7
17	---	---	---	---	---	---	11.2	10.8	11.0	5.7	5.1	5.3
18	---	---	---	---	---	---	11.6	10.9	11.2	5.2	4.8	4.9
19	---	---	---	---	---	---	12.3	11.8	12.0	6.2	4.5	5.5
20	---	---	---	---	---	---	12.0	11.3	11.7	7.0	5.9	6.4
21	---	---	---	---	---	---	10.3	9.6	9.9	6.8	5.5	6.3
22	---	---	---	---	---	---	9.7	9.3	9.6	6.6	4.8	5.7
23	---	---	---	---	---	---	10.6	10.1	10.3	4.8	4.3	4.5
24	---	---	---	---	---	---	11.2	10.5	10.9	5.6	4.4	4.8
25	---	---	---	---	---	---	11.7	10.9	11.3	4.7	4.2	4.5
26	---	---	---	---	---	---	11.9	10.9	11.4	4.7	4.1	4.3
27	---	---	---	---	---	---	11.7	11.0	11.4	4.6	2.9	3.9
28	---	---	---	---	---	---	11.4	11.0	11.2	3.6	2.7	2.9
29	---	---	---	---	---	---	11.2	7.5	8.3	2.6	2.2	2.4
30	---	---	---	---	---	---	8.6	7.5	7.7	3.2	2.1	2.7
31	---	---	---	---	---	---	---	---	---	3.7	3.1	3.4
MONTH	---	---	---	---	---	---	12.3	7.5	10.6	10.0	2.1	6.3

03400798 MARTINS FORK LAKE AT MARTINS FORK DAM NEAR SMITH, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	4.0	3.3	3.7	3.2	2.9	3.0	1.2	1.1	1.2	0.8	0.8	0.8
2	4.2	3.4	3.8	4.3	2.4	3.0	1.1	0.9	1.0	0.9	0.8	0.8
3	4.8	4.4	4.6	4.6	3.7	4.0	0.8	0.7	0.8	1.0	0.9	0.9
4	5.3	4.4	4.8	4.4	3.3	3.8	1.2	0.7	0.9	1.1	1.0	1.0
5	5.5	5.0	5.2	3.9	3.5	3.7	0.9	0.8	0.8	1.2	1.0	1.1
6	5.9	5.2	5.6	3.8	3.1	3.5	1.4	0.8	1.0	1.5	1.1	1.2
7	5.2	5.0	5.1	3.3	2.1	2.8	0.9	0.8	0.8	1.5	1.3	1.4
8	---	---	---	2.0	1.7	1.8	0.8	0.8	1.1	1.5	1.1	1.3
9	8.8	7.9	8.2	1.6	1.4	1.5	1.6	1.0	1.2	1.2	1.0	1.1
10	---	---	---	2.5	1.5	1.8	1.5	0.9	1.0	1.0	0.9	1.0
11	---	---	---	3.5	2.4	3.0	1.2	1.0	1.1	1.1	0.9	1.0
12	---	---	---	3.5	2.9	3.2	---	---	---	1.2	1.0	1.1
13	7.8	7.7	7.8	3.9	3.0	3.4	---	---	---	1.1	1.0	1.1
14	8.0	7.2	7.6	4.6	3.5	4.1	---	---	---	1.2	1.1	1.2
15	7.8	7.0	7.2	5.0	3.9	4.4	---	---	---	1.4	1.2	1.3
16	6.9	6.6	6.8	4.3	3.1	3.8	---	---	---	1.4	1.3	1.4
17	7.1	5.7	6.3	3.0	2.2	2.6	---	---	---	1.5	1.4	1.5
18	6.7	5.9	6.2	2.5	2.1	2.2	---	---	---	1.6	0.6	1.1
19	6.0	5.7	5.8	2.0	1.5	1.7	---	---	---	0.6	0.5	0.5
20	7.3	6.1	6.8	1.2	1.0	1.1	---	---	---	0.7	0.7	0.7
21	7.3	6.9	7.1	1.1	0.9	1.0	---	---	---	0.7	0.6	0.6
22	7.3	6.7	7.0	1.0	0.9	1.0	---	---	---	0.7	0.6	0.6
23	7.4	6.6	6.9	1.0	0.9	1.0	---	---	---	0.7	0.6	0.7
24	6.7	6.1	6.4	1.0	1.0	1.0	---	---	---	0.6	0.5	0.5
25	6.4	5.8	6.1	1.1	0.9	1.0	0.8	0.8	0.8	0.5	0.4	0.5
26	6.4	5.6	6.0	1.2	1.0	1.1	0.8	0.7	0.8	0.5	0.5	0.5
27	5.9	4.8	5.4	1.5	1.0	1.2	0.7	0.6	0.6	0.6	0.5	0.5
28	5.0	3.9	4.3	1.2	0.6	0.9	0.7	0.6	0.6	0.6	0.5	0.5
29	4.2	3.5	3.8	0.8	0.6	0.7	0.9	0.7	0.7	0.7	0.6	0.6
30	3.6	3.3	3.5	1.4	1.0	1.1	0.9	0.7	0.8	0.7	0.6	0.6
31	---	---	---	1.4	0.8	1.0	0.8	0.7	0.8	---	---	---
MONTH	8.8	3.3	5.8	5.0	0.6	2.2	1.6	0.6	0.9	1.6	0.4	0.9
YEAR	12.3	0.4	3.8									

03400798 MARTINS FORK LAKE AT MARTINS FORK DAM NEAR SMITH, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	1.7	1.6	1.6	5.9	5.3	5.6	---	---	---	---	---	---
2	---	---	---	6.3	5.9	6.0	---	---	---	---	---	---
3	---	---	---	6.2	6.1	6.2	---	---	---	---	---	---
4	---	---	---	6.3	6.2	6.2	---	---	---	---	---	---
5	2.5	1.1	1.9	6.3	6.0	6.1	---	---	---	---	---	---
6	2.1	1.3	1.6	6.4	5.8	6.2	---	---	---	---	---	---
7	2.1	1.1	1.4	7.0	5.9	6.5	---	---	---	---	---	---
8	1.6	1.0	1.3	---	---	---	---	---	---	---	---	---
9	1.2	1.0	1.1	---	---	---	---	---	---	---	---	---
10	1.3	1.0	1.1	---	---	---	---	---	---	---	---	---
11	1.1	0.5	0.8	---	---	---	---	---	---	---	---	---
12	0.6	0.5	0.5	---	---	---	---	---	---	---	---	---
13	0.6	0.5	0.5	---	---	---	---	---	---	---	---	---
14	1.0	0.4	0.5	---	---	---	---	---	---	---	---	---
15	2.3	0.5	1.7	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	3.4	2.5	3.0	---	---	---	---	---	---	---	---	---
26	4.6	2.2	3.4	---	---	---	---	---	---	---	---	---
27	3.0	2.7	2.9	---	---	---	---	---	---	---	---	---
28	3.9	2.7	3.4	---	---	---	---	---	---	---	---	---
29	3.7	1.6	2.7	---	---	---	---	---	---	---	---	---
30	4.1	2.5	3.5	---	---	---	---	---	---	---	---	---
31	5.5	4.8	5.2	---	---	---	---	---	---	---	---	---
MONTH	5.5	0.4	2.0	7.0	5.3	6.1	---	---	---	---	---	---
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	---	---	---	9.0	8.0	8.6
2	---	---	---	---	---	---	---	---	---	9.1	8.5	8.8
3	---	---	---	---	---	---	---	---	---	9.2	8.4	8.9
4	---	---	---	---	---	---	---	---	---	9.4	8.8	9.1
5	---	---	---	---	---	---	---	---	---	10.1	8.5	9.3
6	---	---	---	---	---	---	---	---	---	10.3	9.1	9.6
7	---	---	---	---	---	---	---	---	---	10.5	9.2	9.7
8	---	---	---	---	---	---	---	---	---	9.9	9.4	9.6
9	---	---	---	---	---	---	---	---	---	10.5	9.0	9.6
10	---	---	---	---	---	---	---	---	---	9.4	8.6	9.0
11	---	---	---	---	---	---	---	---	---	9.2	8.6	8.9
12	---	---	---	---	---	---	---	---	---	9.4	7.9	8.7
13	---	---	---	---	---	---	---	---	---	9.0	8.7	8.9
14	---	---	---	---	---	---	---	---	---	8.9	8.5	8.6
15	---	---	---	---	---	---	---	---	---	9.1	7.6	8.3
16	---	---	---	---	---	---	---	---	---	7.5	6.8	7.2
17	---	---	---	---	---	---	11.1	10.4	10.8	8.4	7.0	7.6
18	---	---	---	---	---	---	11.9	10.8	11.3	7.7	6.3	7.0
19	---	---	---	---	---	---	12.0	11.1	11.6	8.5	6.8	7.6
20	---	---	---	---	---	---	12.1	11.3	11.5	8.3	7.5	7.8
21	---	---	---	---	---	---	10.3	9.8	10.1	8.4	7.3	7.8
22	---	---	---	---	---	---	9.8	9.4	9.6	8.1	6.6	7.5
23	---	---	---	---	---	---	10.3	10.0	10.1	7.4	6.5	6.9
24	---	---	---	---	---	---	10.8	9.9	10.4	7.2	6.4	6.8
25	---	---	---	---	---	---	11.0	10.4	10.8	7.0	6.4	6.7
26	---	---	---	---	---	---	11.2	10.5	10.9	7.0	6.4	6.7
27	---	---	---	---	---	---	11.3	10.6	11.0	7.0	5.5	6.1
28	---	---	---	---	---	---	11.3	10.5	11.0	6.0	5.2	5.5
29	---	---	---	---	---	---	10.8	8.8	9.2	5.9	4.5	5.2
30	---	---	---	---	---	---	9.2	8.5	8.9	5.9	4.2	5.2
31	---	---	---	---	---	---	---	---	---	6.5	5.1	5.7
MONTH	---	---	---	---	---	---	12.1	8.5	10.5	10.5	4.2	7.8

03400798 MARTINS FORK LAKE AT MARTINS FORK DAM NEAR SMITH, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	6.2	5.3	5.7	5.8	4.8	5.4	1.1	1.0	1.0	0.9	0.8	0.8
2	6.0	5.3	5.6	6.4	4.8	5.6	1.8	0.8	1.0	0.9	0.8	0.8
3	6.5	5.7	6.1	6.2	5.4	5.8	1.8	1.0	1.4	0.9	0.9	0.9
4	6.4	6.0	6.2	6.0	5.3	5.7	3.2	1.6	2.2	1.0	1.0	1.0
5	6.6	5.8	6.1	6.0	5.3	5.5	2.7	2.0	2.4	1.1	1.0	1.1
6	6.4	5.9	6.1	5.6	5.1	5.3	3.3	2.3	2.7	1.3	1.1	1.2
7	5.9	5.7	5.8	5.3	4.4	5.0	3.2	1.0	2.4	1.4	1.2	1.3
8	---	---	---	4.5	3.4	4.4	2.8	1.5	2.0	1.4	0.7	1.1
9	8.4	8.1	8.2	4.0	2.5	3.5	2.8	1.2	1.9	0.9	0.8	0.8
10	---	---	---	4.6	3.1	3.7	2.1	1.1	1.7	1.0	0.9	1.0
11	---	---	---	5.8	4.2	4.8	1.8	1.0	1.5	1.1	0.9	1.0
12	---	---	---	4.9	4.2	4.6	---	---	---	1.1	1.0	1.1
13	8.0	7.2	7.7	5.5	4.2	5.1	---	---	---	1.2	1.0	1.1
14	7.8	7.4	7.6	6.2	5.4	5.8	---	---	---	1.2	1.1	1.2
15	7.7	7.1	7.5	6.0	5.8	5.9	---	---	---	1.3	1.2	1.2
16	7.3	6.9	7.2	5.8	4.9	5.3	---	---	---	1.4	1.3	1.4
17	7.1	6.5	6.8	5.3	4.6	5.1	---	---	---	1.5	1.4	1.4
18	6.7	6.3	6.5	5.1	4.7	4.8	---	---	---	1.5	0.6	1.1
19	6.8	6.6	6.7	4.6	3.7	4.1	---	---	---	1.0	0.5	0.7
20	7.6	6.9	7.2	3.9	2.8	3.6	---	---	---	1.0	0.6	0.7
21	7.7	7.1	7.4	3.8	1.6	3.1	---	---	---	0.7	0.7	0.7
22	7.8	7.1	7.5	3.6	2.5	3.1	---	---	---	0.7	0.6	0.6
23	7.6	6.9	7.3	3.2	2.0	2.6	---	---	---	0.7	0.6	0.7
24	7.4	6.9	7.1	2.8	1.8	2.3	---	---	---	0.6	0.4	0.5
25	7.3	6.6	7.0	2.6	1.6	2.0	0.6	0.4	0.6	0.5	0.4	0.5
26	7.3	6.7	7.0	2.1	1.4	1.8	0.6	0.6	0.6	1.1	0.5	0.6
27	6.9	6.3	6.7	2.0	1.2	1.6	0.7	0.6	0.6	0.6	0.5	0.5
28	6.4	5.5	6.1	1.7	0.6	1.2	0.8	0.6	0.6	0.5	0.5	0.5
29	6.5	5.5	6.0	1.4	0.6	1.0	0.8	0.7	0.8	0.6	0.6	0.6
30	6.2	5.3	5.8	1.2	0.8	0.9	0.9	0.8	0.8	1.3	0.6	0.8
31	---	---	---	1.1	0.7	0.8	0.9	0.8	0.8	---	---	---
MONTH	8.4	5.3	6.7	6.4	0.6	3.9	3.3	0.4	1.4	1.5	0.4	0.9
YEAR	12.1	0.4	4.6									

03400798 MARTINS FORK LAKE AT MARTINS FORK DAM NEAR SMITH, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	5.7	4.4	5.1	5.8	5.3	5.5	---	---	---	---	---	---
2	---	---	---	6.4	5.8	6.0	---	---	---	---	---	---
3	---	---	---	6.4	6.1	6.2	---	---	---	---	---	---
4	7.6	6.5	7.3	6.5	6.3	6.4	---	---	---	---	---	---
5	7.4	6.3	7.0	6.4	6.2	6.3	---	---	---	---	---	---
6	7.6	6.6	7.1	6.5	6.2	6.4	---	---	---	---	---	---
7	7.0	5.2	6.4	7.1	6.4	6.6	---	---	---	---	---	---
8	5.3	4.8	5.0	---	---	---	---	---	---	---	---	---
9	4.8	4.5	4.7	---	---	---	---	---	---	---	---	---
10	4.5	4.1	4.3	---	---	---	---	---	---	---	---	---
11	4.3	3.9	4.1	---	---	---	---	---	---	---	---	---
12	5.6	3.8	4.4	---	---	---	---	---	---	---	---	---
13	4.7	3.4	3.9	---	---	---	---	---	---	---	---	---
14	3.9	2.3	2.8	---	---	---	---	---	---	---	---	---
15	3.5	3.2	3.4	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	4.7	4.1	4.5	---	---	---	---	---	---	---	---	---
26	5.1	4.6	4.8	---	---	---	---	---	---	---	---	---
27	5.3	4.3	4.6	---	---	---	---	---	---	---	---	---
28	5.3	4.4	4.9	---	---	---	---	---	---	---	---	---
29	5.1	4.7	4.9	---	---	---	---	---	---	---	---	---
30	4.8	4.6	4.7	---	---	---	---	---	---	---	---	---
31	5.5	5.0	5.3	---	---	---	---	---	---	---	---	---
MONTH	7.6	2.3	5.0	7.1	5.3	6.2	---	---	---	---	---	---
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	---	---	---	10.2	9.0	9.5
2	---	---	---	---	---	---	---	---	---	10.6	9.6	10.2
3	---	---	---	---	---	---	---	---	---	10.9	10.1	10.6
4	---	---	---	---	---	---	---	---	---	11.3	10.5	10.8
5	---	---	---	---	---	---	---	---	---	11.2	9.6	10.6
6	---	---	---	---	---	---	---	---	---	10.6	9.8	10.2
7	---	---	---	---	---	---	---	---	---	10.3	9.7	10.0
8	---	---	---	---	---	---	---	---	---	10.7	9.9	10.2
9	---	---	---	---	---	---	---	---	---	10.7	9.9	10.2
10	---	---	---	---	---	---	---	---	---	10.9	9.8	10.2
11	---	---	---	---	---	---	---	---	---	10.2	9.2	9.7
12	---	---	---	---	---	---	---	---	---	10.5	9.8	10.1
13	---	---	---	---	---	---	---	---	---	10.9	9.1	10.0
14	---	---	---	---	---	---	---	---	---	9.9	9.2	9.6
15	---	---	---	---	---	---	---	---	---	9.9	9.1	9.5
16	---	---	---	---	---	---	---	---	---	9.0	8.5	8.8
17	---	---	---	---	---	---	10.7	10.0	10.4	9.9	8.7	9.3
18	---	---	---	---	---	---	11.2	9.5	10.9	9.8	9.0	9.4
19	---	---	---	---	---	---	11.4	10.9	11.2	10.3	9.2	9.8
20	---	---	---	---	---	---	11.2	10.8	11.0	10.5	9.7	10.2
21	---	---	---	---	---	---	11.6	9.4	10.1	10.2	9.2	9.8
22	---	---	---	---	---	---	10.2	9.3	9.6	10.0	9.5	9.7
23	---	---	---	---	---	---	10.4	9.8	10.2	10.1	9.3	9.8
24	---	---	---	---	---	---	10.6	9.8	10.3	9.8	8.3	9.3
25	---	---	---	---	---	---	10.7	10.4	10.5	9.6	8.7	9.2
26	---	---	---	---	---	---	10.8	10.5	10.6	10.0	8.8	9.3
27	---	---	---	---	---	---	10.8	10.3	10.6	9.5	9.0	9.2
28	---	---	---	---	---	---	11.1	10.1	10.6	9.5	9.0	9.2
29	---	---	---	---	---	---	10.8	9.4	10.0	9.3	8.5	9.0
30	---	---	---	---	---	---	9.8	9.3	9.6	9.5	8.3	8.7
31	---	---	---	---	---	---	---	---	---	8.9	7.0	8.1
MONTH	---	---	---	---	---	---	11.6	9.3	10.4	11.3	7.0	9.7

03400798 MARTINS FORK LAKE AT MARTINS FORK DAM NEAR SMITH, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	9.1	8.0	8.6	10.0	8.4	9.5	7.1	5.8	6.4	5.7	5.4	5.6
2	9.1	8.0	8.7	10.3	7.8	9.5	7.2	5.5	6.2	5.6	5.1	5.3
3	8.9	8.3	8.7	11.3	7.7	9.4	6.7	5.3	6.1	5.6	5.3	5.4
4	9.1	7.6	8.4	10.8	10.0	10.6	7.4	5.2	6.1	6.0	5.4	5.6
5	9.3	8.2	8.5	12.2	10.0	10.9	6.8	5.0	6.0	5.8	5.6	5.7
6	9.0	8.2	8.7	11.2	10.6	10.9	7.8	5.2	6.7	5.8	5.6	5.6
7	9.0	8.8	8.9	11.1	10.2	10.6	7.3	5.9	6.6	5.5	5.2	5.3
8	---	---	---	10.7	9.3	10.0	6.8	6.3	6.7	5.8	5.4	5.6
9	8.3	7.6	7.9	10.1	8.8	9.4	7.5	6.0	6.9	5.9	5.1	5.6
10	8.1	7.6	7.8	9.4	7.8	8.6	7.4	6.6	7.0	5.8	4.5	5.4
11	---	---	---	8.8	7.6	8.2	7.8	6.2	6.8	5.9	4.9	5.6
12	---	---	---	7.9	7.3	7.7	---	---	---	5.8	4.8	5.5
13	7.4	7.2	7.3	8.0	7.3	7.9	---	---	---	5.9	4.3	5.1
14	7.4	6.8	7.0	9.1	7.1	7.9	---	---	---	6.1	4.4	5.2
15	7.4	6.6	6.8	8.3	7.3	7.7	---	---	---	5.5	3.2	4.8
16	7.2	6.4	6.6	8.3	7.4	7.8	---	---	---	4.8	3.2	4.2
17	6.7	6.2	6.4	8.8	7.7	8.1	---	---	---	4.2	3.1	3.7
18	6.9	6.0	6.5	8.7	7.8	8.2	---	---	---	4.2	2.5	3.6
19	7.2	6.5	6.8	8.4	7.2	8.0	---	---	---	6.0	2.7	3.8
20	7.3	6.6	7.0	8.5	7.7	8.0	---	---	---	4.9	3.1	4.2
21	7.3	6.9	7.2	8.5	7.1	7.9	---	---	---	5.5	4.1	4.5
22	8.0	6.8	7.3	8.5	7.3	8.0	---	---	---	5.2	3.4	4.1
23	7.8	7.2	7.6	8.3	6.3	7.3	---	---	---	4.6	3.6	4.2
24	8.5	7.4	8.0	8.3	6.5	7.3	---	---	---	3.2	2.8	3.0
25	8.7	7.0	7.8	8.2	6.7	7.2	6.9	6.9	6.9	4.7	2.7	3.4
26	10.7	7.4	8.2	7.8	6.4	7.2	7.2	6.7	6.9	4.8	3.0	3.7
27	10.4	7.3	9.5	7.7	6.1	7.3	7.3	6.7	7.0	4.3	2.8	3.4
28	10.9	7.7	9.1	7.6	6.4	7.0	7.7	6.7	7.1	4.3	3.6	3.9
29	11.7	8.0	9.8	6.6	6.4	6.5	7.3	6.1	6.8	3.9	3.4	3.7
30	10.7	8.7	9.7	7.6	6.3	6.8	6.5	6.0	6.2	3.7	2.7	2.9
31	---	---	---	7.2	6.6	7.0	5.8	5.4	5.6	---	---	---
MONTH	11.7	6.0	8.0	12.2	6.1	8.3	7.8	5.0	6.6	6.1	2.5	4.6
YEAR	12.2	2.3	7.4									

03400798 MARTINS FORK LAKE AT MARTINS FORK DAM NEAR SMITH, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	---	---	---	9.5	8.8	9.1
2	---	---	---	---	---	---	---	---	---	10.2	9.0	9.5
3	---	---	---	---	---	---	---	---	---	10.4	9.8	10.1
4	---	---	---	---	---	---	---	---	---	10.7	9.6	10.3
5	---	---	---	---	---	---	---	---	---	10.5	10.2	10.3
6	---	---	---	---	---	---	---	---	---	10.5	9.8	10.2
7	---	---	---	---	---	---	---	---	---	10.4	9.8	10.2
8	---	---	---	---	---	---	---	---	---	10.6	9.8	10.2
9	---	---	---	---	---	---	---	---	---	11.5	9.8	10.2
10	---	---	---	---	---	---	---	---	---	10.3	9.4	9.9
11	---	---	---	---	---	---	---	---	---	10.2	9.2	9.6
12	---	---	---	---	---	---	---	---	---	9.5	8.9	9.2
13	---	---	---	---	---	---	---	---	---	9.5	9.0	9.2
14	---	---	---	---	---	---	---	---	---	9.3	8.4	8.9
15	---	---	---	---	---	---	---	---	---	9.1	8.4	8.7
16	---	---	---	---	---	---	---	---	---	9.0	8.6	8.8
17	---	---	---	---	---	---	10.4	9.9	10.2	9.4	8.5	9.0
18	---	---	---	---	---	---	11.3	10.2	10.6	9.6	8.6	9.0
19	---	---	---	---	---	---	10.9	10.6	10.7	10.0	9.1	9.4
20	---	---	---	---	---	---	11.0	10.3	10.6	9.5	9.1	9.3
21	---	---	---	---	---	---	9.9	9.3	9.5	9.4	8.5	9.0
22	---	---	---	---	---	---	9.8	9.1	9.5	9.4	8.8	9.2
23	---	---	---	---	---	---	10.6	9.8	10.0	9.1	8.8	9.0
24	---	---	---	---	---	---	10.7	10.3	10.4	9.4	8.5	9.0
25	---	---	---	---	---	---	10.7	10.1	10.5	8.9	8.6	8.8
26	---	---	---	---	---	---	10.9	10.4	10.6	8.8	7.8	8.5
27	---	---	---	---	---	---	11.2	10.4	10.7	9.1	8.4	8.8
28	---	---	---	---	---	---	10.7	10.2	10.6	9.4	8.3	8.6
29	---	---	---	---	---	---	10.6	9.1	9.6	9.1	8.5	8.8
30	---	---	---	---	---	---	9.3	8.8	9.1	9.4	7.6	8.6
31	---	---	---	---	---	---	---	---	---	8.8	8.2	8.6
MONTH	---	---	---	---	---	---	11.3	8.8	10.2	11.5	7.6	9.3

03400798 MARTINS FORK LAKE AT MARTINS FORK DAM NEAR SMITH, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	9.1	8.7	8.9	10.9	10.5	10.6	7.2	6.9	7.1	6.2	5.9	6.1
2	9.1	8.4	8.8	10.7	9.6	10.4	7.3	6.9	7.1	6.1	5.8	5.9
3	8.8	8.3	8.6	11.5	9.6	10.5	7.5	7.0	7.2	6.1	5.8	5.9
4	9.2	8.5	8.7	9.9	8.1	8.9	7.6	6.7	7.1	6.4	5.7	6.0
5	9.3	8.6	8.9	8.8	8.1	8.5	7.2	6.6	7.0	6.5	6.1	6.2
6	9.0	8.4	8.7	8.3	7.7	8.0	7.8	7.1	7.5	6.6	6.1	6.3
7	8.5	8.1	8.3	7.7	7.3	7.5	7.7	7.1	7.4	6.3	5.8	6.1
8	---	---	---	7.7	7.0	7.3	7.8	7.0	7.4	6.2	5.6	6.0
9	6.5	6.0	6.2	7.4	6.7	7.1	7.9	6.8	7.4	6.8	5.8	6.2
10	---	---	---	7.1	6.4	6.8	7.7	6.7	7.0	7.2	6.4	6.7
11	---	---	---	6.8	6.4	6.6	6.8	6.5	6.6	6.6	6.2	6.4
12	---	---	---	6.8	6.5	6.7	---	---	---	6.7	6.2	6.5
13	8.6	8.4	8.5	7.4	6.4	6.8	---	---	---	6.7	6.0	6.4
14	9.0	8.0	8.5	7.4	6.9	7.2	---	---	---	6.6	6.2	6.4
15	8.7	8.2	8.5	7.6	7.0	7.3	---	---	---	6.4	5.8	6.1
16	9.0	8.7	8.8	8.0	6.8	7.3	---	---	---	5.4	4.5	5.1
17	8.9	8.3	8.6	7.8	7.3	7.6	---	---	---	5.6	4.6	5.1
18	8.9	7.9	8.4	8.2	7.4	7.8	---	---	---	5.7	5.4	5.5
19	8.6	7.9	8.3	8.0	7.3	7.6	---	---	---	6.4	4.0	4.9
20	8.8	7.5	8.2	7.6	7.0	7.3	---	---	---	6.3	5.2	5.9
21	9.1	8.3	8.8	7.6	6.9	7.3	---	---	---	6.7	5.9	6.2
22	9.9	8.2	9.4	7.4	6.8	7.1	---	---	---	6.6	5.0	6.0
23	9.5	8.4	9.0	8.0	6.7	7.3	---	---	---	5.3	4.4	4.8
24	9.6	8.6	9.2	7.6	7.3	7.5	---	---	---	4.9	3.4	4.2
25	10.4	8.2	9.3	7.6	7.0	7.4	7.6	6.7	7.1	5.2	3.4	4.2
26	9.5	8.1	8.8	7.8	7.0	7.2	7.1	6.7	6.8	5.3	4.5	4.9
27	9.8	8.8	9.3	7.5	6.8	7.2	7.2	6.6	6.9	5.0	4.5	4.7
28	10.3	9.5	10.0	7.7	6.4	7.0	7.1	6.7	6.9	4.7	4.1	4.4
29	10.3	9.2	9.7	7.5	6.2	6.6	7.5	6.7	6.9	4.7	3.8	4.3
30	11.2	9.5	10.1	7.1	6.9	7.0	6.7	6.5	6.6	4.3	3.1	3.6
31	---	---	---	7.1	6.8	7.0	6.4	6.2	6.3	---	---	---
MONTH	11.2	6.0	8.8	11.5	6.2	7.6	7.9	6.2	7.0	7.2	3.1	5.6
YEAR	11.5	3.1	7.9									

03400798 MARTINS FORK LAKE AT MARTINS FORK DAM NEAR SMITH, KY—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	170	161	165	158	155	157	---	---	---	---	---	---
2	---	---	---	156	153	154	---	---	---	---	---	---
3	171	166	168	156	154	155	---	---	---	---	---	---
4	166	154	162	157	155	156	---	---	---	---	---	---
5	164	160	162	157	156	157	---	---	---	---	---	---
6	163	159	162	157	151	156	---	---	---	---	---	---
7	163	161	162	156	148	152	---	---	---	---	---	---
8	163	161	162	---	---	---	---	---	---	---	---	---
9	162	161	161	---	---	---	---	---	---	---	---	---
10	162	159	160	---	---	---	---	---	---	---	---	---
11	162	160	161	---	---	---	---	---	---	---	---	---
12	170	160	162	---	---	---	---	---	---	---	---	---
13	167	162	165	---	---	---	---	---	---	---	---	---
14	169	164	167	---	---	---	---	---	---	---	---	---
15	174	165	169	---	---	---	---	---	---	---	---	---
16	174	164	167	---	---	---	---	---	---	---	---	---
17	172	164	168	---	---	---	---	---	---	---	---	---
18	176	165	169	---	---	---	---	---	---	---	---	---
19	178	164	171	---	---	---	---	---	---	---	---	---
20	172	162	167	---	---	---	---	---	---	---	---	---
21	173	164	169	---	---	---	---	---	---	---	---	---
22	168	162	164	---	---	---	---	---	---	---	---	---
23	164	161	162	---	---	---	---	---	---	---	---	---
24	163	162	163	---	---	---	---	---	---	---	---	---
25	163	159	161	---	---	---	---	---	---	---	---	---
26	163	158	161	---	---	---	---	---	---	---	---	---
27	163	160	162	---	---	---	---	---	---	---	---	---
28	162	160	161	---	---	---	---	---	---	---	---	---
29	161	157	160	---	---	---	---	---	---	---	---	---
30	161	159	160	---	---	---	---	---	---	---	---	---
31	162	159	161	---	---	---	---	---	---	---	---	---
MONTH	178	154	164	158	148	155	---	---	---	---	---	---
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	---	---	---	113	108	110
2	---	---	---	---	---	---	---	---	---	112	108	110
3	---	---	---	---	---	---	---	---	---	111	107	109
4	---	---	---	---	---	---	---	---	---	111	110	110
5	---	---	---	---	---	---	---	---	---	113	108	110
6	---	---	---	---	---	---	---	---	---	122	111	117
7	---	---	---	---	---	---	---	---	---	123	106	113
8	---	---	---	---	---	---	---	---	---	109	101	105
9	---	---	---	---	---	---	---	---	---	117	98	106
10	---	---	---	---	---	---	---	---	---	110	96	100
11	---	---	---	---	---	---	---	---	---	115	98	105
12	---	---	---	---	---	---	---	---	---	133	100	110
13	---	---	---	---	---	---	---	---	---	130	112	120
14	---	---	---	---	---	---	---	---	---	130	115	123
15	---	---	---	---	---	---	---	---	---	136	121	127
16	---	---	---	---	---	---	---	---	---	121	105	115
17	---	---	---	---	---	---	102	98	100	121	105	110
18	---	---	---	---	---	---	104	98	101	119	108	113
19	---	---	---	---	---	---	109	101	104	122	111	116
20	---	---	---	---	---	---	112	101	106	119	115	117
21	---	---	---	---	---	---	108	102	104	122	116	119
22	---	---	---	---	---	---	104	100	102	120	114	118
23	---	---	---	---	---	---	104	101	102	121	113	116
24	---	---	---	---	---	---	104	99	101	124	116	120
25	---	---	---	---	---	---	104	99	101	125	119	122
26	---	---	---	---	---	---	106	102	104	125	120	123
27	---	---	---	---	---	---	115	106	111	125	116	119
28	---	---	---	---	---	---	112	103	107	121	117	118
29	---	---	---	---	---	---	109	104	106	121	118	119
30	---	---	---	---	---	---	109	106	108	127	119	122
31	---	---	---	---	---	---	---	---	---	127	121	123
MONTH	---	---	---	---	---	---	115	98	104	136	96	115

03400798 MARTINS FORK LAKE AT MARTINS FORK DAM NEAR SMITH, KY—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	122	120	121	112	106	109	116	114	115	128	124	126
2	120	118	119	118	108	111	116	114	116	131	128	129
3	123	118	121	118	113	116	117	114	115	137	134	136
4	127	118	120	123	116	118	115	110	112	137	136	137
5	122	115	120	125	119	122	112	108	111	136	133	134
6	123	113	118	124	122	123	110	109	110	138	134	136
7	115	112	113	125	122	124	115	109	111	134	132	134
8	---	---	---	133	124	127	114	110	112	135	133	134
9	106	100	102	128	126	127	115	112	113	135	132	134
10	---	---	---	130	128	129	114	113	113	134	131	133
11	---	---	---	136	131	133	115	113	114	136	134	135
12	---	---	---	133	113	126	115	112	114	136	135	135
13	121	110	116	117	108	113	115	112	113	138	135	137
14	124	114	119	124	106	110	114	111	113	141	137	139
15	124	118	120	111	105	107	117	112	114	141	138	140
16	123	121	122	108	105	106	117	113	115	142	138	140
17	122	121	122	108	105	106	119	113	115	141	140	141
18	123	118	122	107	105	106	118	113	116	143	139	141
19	123	110	117	111	107	108	122	115	118	145	131	138
20	134	111	117	110	107	108	119	114	117	145	134	140
21	141	112	120	109	107	108	117	109	112	144	134	140
22	122	110	116	111	108	109	117	110	112	146	135	140
23	124	106	115	109	107	108	116	111	113	145	141	143
24	114	110	113	110	108	109	121	115	118	153	142	148
25	119	111	115	111	110	110	121	119	120	151	145	148
26	121	113	118	113	111	111	124	117	120	144	140	142
27	120	108	114	114	112	113	124	118	121	142	141	142
28	111	105	108	114	112	113	123	117	121	142	139	141
29	111	106	108	116	111	113	124	118	122	143	140	142
30	108	105	108	114	113	113	126	118	122	144	138	140
31	---	---	---	116	113	114	127	124	125	---	---	---
MONTH	141	100	116	136	105	115	127	108	116	153	124	138
YEAR	178	96	127									

03400798 MARTINS FORK LAKE AT MARTINS FORK DAM NEAR SMITH, KY—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	162	160	161	160	158	158	---	---	---	---	---	---
2	162	161	162	157	155	156	---	---	---	---	---	---
3	168	163	165	157	156	157	---	---	---	---	---	---
4	163	162	162	157	157	157	---	---	---	---	---	---
5	163	161	162	159	158	158	---	---	---	---	---	---
6	161	160	160	158	158	158	---	---	---	---	---	---
7	163	160	161	159	156	157	---	---	---	---	---	---
8	164	163	164	---	---	---	---	---	---	---	---	---
9	164	163	163	---	---	---	---	---	---	---	---	---
10	163	162	163	---	---	---	---	---	---	---	---	---
11	164	163	163	---	---	---	---	---	---	---	---	---
12	163	162	162	---	---	---	---	---	---	---	---	---
13	163	162	162	---	---	---	---	---	---	---	---	---
14	163	162	162	---	---	---	---	---	---	---	---	---
15	165	163	164	---	---	---	---	---	---	---	---	---
16	165	164	165	---	---	---	---	---	---	---	---	---
17	165	164	165	---	---	---	---	---	---	---	---	---
18	166	163	164	---	---	---	---	---	---	---	---	---
19	168	164	166	---	---	---	---	---	---	---	---	---
20	165	164	164	---	---	---	---	---	---	---	---	---
21	164	163	163	---	---	---	---	---	---	---	---	---
22	163	163	163	---	---	---	---	---	---	---	---	---
23	164	163	163	---	---	---	---	---	---	---	---	---
24	164	164	164	---	---	---	---	---	---	---	---	---
25	165	164	164	---	---	---	---	---	---	---	---	---
26	163	162	163	---	---	---	---	---	---	---	---	---
27	163	159	162	---	---	---	---	---	---	---	---	---
28	163	161	162	---	---	---	---	---	---	---	---	---
29	162	162	162	---	---	---	---	---	---	---	---	---
30	162	161	162	---	---	---	---	---	---	---	---	---
31	162	161	162	---	---	---	---	---	---	---	---	---
MONTH	168	159	163	160	155	157	---	---	---	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	---	---	---	113	112	112
2	---	---	---	---	---	---	---	---	---	113	113	113
3	---	---	---	---	---	---	---	---	---	117	114	115
4	---	---	---	---	---	---	---	---	---	118	115	116
5	---	---	---	---	---	---	---	---	---	117	113	115
6	---	---	---	---	---	---	---	---	---	139	114	119
7	---	---	---	---	---	---	---	---	---	134	112	124
8	---	---	---	---	---	---	---	---	---	124	114	119
9	---	---	---	---	---	---	---	---	---	126	120	123
10	---	---	---	---	---	---	---	---	---	133	122	128
11	---	---	---	---	---	---	---	---	---	142	124	133
12	---	---	---	---	---	---	---	---	---	138	131	135
13	---	---	---	---	---	---	---	---	---	137	128	133
14	---	---	---	---	---	---	---	---	---	134	132	133
15	---	---	---	---	---	---	---	---	---	137	134	135
16	---	---	---	---	---	---	---	---	---	127	127	127
17	---	---	---	---	---	---	109	104	108	129	127	128
18	---	---	---	---	---	---	109	106	108	131	123	127
19	---	---	---	---	---	---	108	99	104	127	123	126
20	---	---	---	---	---	---	107	102	105	127	124	126
21	---	---	---	---	---	---	108	105	106	128	126	127
22	---	---	---	---	---	---	110	104	107	131	125	128
23	---	---	---	---	---	---	109	105	107	131	126	128
24	---	---	---	---	---	---	109	107	108	129	125	127
25	---	---	---	---	---	---	109	106	108	129	127	128
26	---	---	---	---	---	---	111	107	109	133	130	132
27	---	---	---	---	---	---	113	111	112	134	131	132
28	---	---	---	---	---	---	112	110	111	132	132	132
29	---	---	---	---	---	---	113	111	112	135	132	134
30	---	---	---	---	---	---	113	112	112	141	134	137
31	---	---	---	---	---	---	---	---	---	137	126	134
MONTH	---	---	---	---	---	---	113	99	108	142	112	127

03400798 MARTINS FORK LAKE AT MARTINS FORK DAM NEAR SMITH, KY—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	137	133	135	128	126	128	140	134	137	144	142	143
2	135	134	134	129	127	128	139	128	134	144	137	141
3	134	134	134	129	127	128	133	128	132	137	134	136
4	135	133	134	130	127	129	139	135	138	137	135	136
5	135	133	134	132	130	131	143	137	142	141	136	140
6	134	133	134	133	130	132	143	139	142	142	139	140
7	134	134	134	135	133	134	142	138	141	144	141	142
8	---	---	---	144	136	140	145	136	142	143	142	142
9	108	105	107	151	141	146	143	136	142	143	139	141
10	112	107	109	149	138	145	146	139	142	141	133	138
11	---	---	---	148	140	144	152	133	143	139	135	138
12	---	---	---	149	140	144	144	136	140	139	135	137
13	119	118	119	146	144	145	144	136	140	139	134	136
14	123	116	119	146	143	145	142	138	140	139	134	137
15	123	120	121	145	141	143	140	136	138	140	135	138
16	127	123	124	150	142	146	143	136	139	140	135	138
17	126	123	125	148	143	145	142	128	137	139	136	137
18	130	125	128	148	142	146	143	134	139	139	133	137
19	145	130	134	150	142	148	141	137	139	138	134	136
20	132	122	125	149	145	148	144	136	139	138	136	138
21	133	126	130	151	140	145	141	136	138	138	137	138
22	132	126	129	148	145	146	140	130	135	139	136	138
23	133	130	132	144	135	141	139	130	135	138	137	137
24	133	131	132	142	137	140	144	137	142	139	137	138
25	133	130	132	140	137	139	144	138	142	140	139	139
26	133	129	132	141	137	139	143	135	140	140	138	139
27	139	130	134	141	134	138	142	137	141	140	138	139
28	129	125	128	141	137	139	143	134	139	139	137	138
29	127	126	127	140	136	139	145	135	141	139	138	138
30	128	126	127	142	138	140	146	137	144	143	139	141
31	---	---	---	139	137	138	144	136	141	---	---	---
MONTH	145	105	128	151	126	140	152	128	139	144	133	139
YEAR	168	99	138									

03400798 MARTINS FORK LAKE AT MARTINS FORK DAM NEAR SMITH, KY—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	---	---	---	114	112	113
2	---	---	---	---	---	---	---	---	---	113	112	113
3	---	---	---	---	---	---	---	---	---	114	113	113
4	---	---	---	---	---	---	---	---	---	116	114	115
5	---	---	---	---	---	---	---	---	---	117	114	115
6	---	---	---	---	---	---	---	---	---	117	114	115
7	---	---	---	---	---	---	---	---	---	118	117	117
8	---	---	---	---	---	---	---	---	---	120	118	118
9	---	---	---	---	---	---	---	---	---	121	120	120
10	---	---	---	---	---	---	---	---	---	123	121	122
11	---	---	---	---	---	---	---	---	---	123	124	125
12	---	---	---	---	---	---	---	---	---	128	126	127
13	---	---	---	---	---	---	---	---	---	130	128	129
14	---	---	---	---	---	---	---	---	---	134	131	132
15	---	---	---	---	---	---	---	---	---	135	135	135
16	---	---	---	---	---	---	---	---	---	139	126	132
17	---	---	---	---	---	---	109	107	108	128	126	127
18	---	---	---	---	---	---	107	106	106	125	125	125
19	---	---	---	---	---	---	108	107	107	125	125	125
20	---	---	---	---	---	---	109	108	108	126	124	125
21	---	---	---	---	---	---	109	108	108	125	124	124
22	---	---	---	---	---	---	109	108	108	125	124	125
23	---	---	---	---	---	---	111	108	109	125	125	125
24	---	---	---	---	---	---	110	108	109	127	125	126
25	---	---	---	---	---	---	110	109	110	128	126	127
26	---	---	---	---	---	---	110	109	109	128	128	128
27	---	---	---	---	---	---	112	110	110	132	127	131
28	---	---	---	---	---	---	112	111	111	134	131	132
29	---	---	---	---	---	---	113	110	111	134	134	134
30	---	---	---	---	---	---	112	111	112	145	134	137
31	---	---	---	---	---	---	---	---	---	137	136	136
MONTH	---	---	---	---	---	---	113	106	109	145	112	125

03400798 MARTINS FORK LAKE AT MARTINS FORK DAM NEAR SMITH, KY—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	136	136	136	124	123	123	144	144	144	146	145	146
2	136	136	136	124	124	124	144	143	144	146	145	145
3	136	135	136	127	124	125	144	143	144	144	143	144
4	135	134	134	129	128	128	144	143	144	144	140	142
5	135	134	134	131	129	130	145	143	144	142	141	142
6	136	135	135	132	131	132	145	145	145	142	141	141
7	136	130	134	135	132	133	145	144	145	144	142	142
8	---	---	---	141	135	137	147	146	146	144	142	143
9	118	113	116	138	137	137	146	145	146	143	142	142
10	115	107	111	139	137	138	147	146	146	143	141	142
11	---	---	---	138	137	138	153	141	147	141	138	140
12	---	---	---	140	139	140	148	147	147	141	138	140
13	129	129	127	141	140	140	148	146	147	141	138	140
14	131	131	130	144	142	143	147	146	146	139	138	139
15	132	132	132	144	143	143	146	146	146	140	137	139
16	134	134	133	143	143	143	147	146	147	139	135	137
17	132	132	131	145	143	144	146	145	146	137	136	136
18	132	132	131	144	143	144	146	144	145	137	136	136
19	132	132	130	144	143	144	147	146	146	138	136	137
20	131	129	130	144	143	144	147	144	146	139	138	138
21	133	131	132	144	142	143	143	141	142	139	137	138
22	134	133	133	144	143	144	142	141	141	138	136	138
23	134	132	133	145	143	144	141	141	141	138	137	138
24	134	133	134	144	142	142	146	142	144	139	138	138
25	135	130	132	144	142	143	147	140	145	139	138	138
26	134	131	132	144	143	144	145	144	144	139	138	138
27	132	126	129	144	143	144	146	144	145	139	138	139
28	127	125	126	146	144	145	146	145	145	139	138	139
29	126	125	126	146	144	145	146	145	146	139	138	139
30	126	123	124	146	144	145	146	146	146	142	140	141
31	---	---	---	146	142	144	146	146	146	---	---	---
MONTH	136	107	130	146	123	139	153	140	145	146	135	140
YEAR	153	106	134									

03400798 MARTINS FORK LAKE AT MARTINS FORK DAM NEAR SMITH, KY—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	6.9	6.9	7.2	7.1	---	---	---	---	---	---	---	---
2	6.9	6.8	7.2	7.1	---	---	---	---	---	---	---	---
3	6.9	6.8	7.2	7.1	---	---	---	---	---	---	---	---
4	6.9	6.6	7.2	7.1	---	---	---	---	---	---	---	---
5	7.0	6.9	7.1	7.0	---	---	---	---	---	---	---	---
6	7.0	7.0	7.1	7.0	---	---	---	---	---	---	---	---
7	7.1	7.0	7.2	7.0	---	---	---	---	---	---	---	---
8	7.1	7.1	---	---	---	---	---	---	---	---	---	---
9	7.1	7.0	---	---	---	---	---	---	---	---	---	---
10	7.0	7.0	---	---	---	---	---	---	---	---	---	---
11	7.1	6.8	---	---	---	---	---	---	---	---	---	---
12	6.8	6.8	---	---	---	---	---	---	---	---	---	---
13	6.8	6.8	---	---	---	---	---	---	---	---	---	---
14	6.8	6.8	---	---	---	---	---	---	---	---	---	---
15	6.9	6.9	---	---	---	---	---	---	---	---	---	---
16	6.9	6.9	---	---	---	---	---	---	---	---	---	---
17	6.9	6.9	---	---	---	---	---	---	---	---	---	---
18	6.9	6.9	---	---	---	---	---	---	---	---	---	---
19	6.9	6.9	---	---	---	---	---	---	---	---	---	---
20	6.9	6.9	---	---	---	---	---	---	---	---	---	---
21	7.0	6.9	---	---	---	---	---	---	---	---	---	---
22	7.0	7.0	---	---	---	---	---	---	---	---	---	---
23	7.0	7.0	---	---	---	---	---	---	---	---	---	---
24	7.0	7.0	---	---	---	---	---	---	---	---	---	---
25	7.0	6.9	---	---	---	---	---	---	---	---	---	---
26	7.0	7.0	---	---	---	---	---	---	---	---	---	---
27	7.0	7.0	---	---	---	---	---	---	---	---	---	---
28	7.0	7.0	---	---	---	---	---	---	---	---	---	---
29	7.0	7.0	---	---	---	---	---	---	---	---	---	---
30	7.0	7.0	---	---	---	---	---	---	---	---	---	---
31	7.1	7.0	---	---	---	---	---	---	---	---	---	---
MONTH	7.1	6.6	7.2	7.0	---	---	---	---	---	---	---	---
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	6.9	6.8	6.7	6.6	6.9	6.9	6.8	6.8	6.9	6.8
2	---	---	6.9	6.8	6.8	6.7	6.9	6.9	6.8	6.8	6.9	6.8
3	---	---	6.8	6.8	6.8	6.8	7.0	6.9	6.8	6.8	6.9	6.8
4	---	---	7.0	6.9	6.8	6.8	7.0	7.0	6.9	6.8	6.9	6.8
5	---	---	7.0	6.9	6.8	6.8	7.0	7.0	6.9	6.9	7.0	6.9
6	---	---	7.1	7.0	6.8	6.8	7.0	7.0	6.9	6.9	7.0	6.9
7	---	---	7.1	7.0	6.9	6.9	7.0	6.9	6.9	6.9	7.0	7.0
8	---	---	7.1	7.0	---	---	7.0	6.9	7.0	6.8	7.0	6.7
9	---	---	7.2	7.0	6.9	6.8	7.0	7.0	7.1	7.0	6.8	6.8
10	---	---	7.1	7.0	---	---	7.0	7.0	7.1	7.0	6.8	6.7
11	---	---	7.0	7.0	---	---	7.1	7.0	7.3	6.8	6.8	6.7
12	---	---	7.1	7.0	---	---	7.2	7.1	6.8	6.8	6.7	6.6
13	---	---	7.1	7.1	6.9	6.9	7.2	7.2	6.9	6.9	6.8	6.6
14	---	---	7.2	7.1	6.9	6.8	7.2	6.8	6.9	6.9	6.8	6.8
15	---	---	7.2	7.1	6.9	6.8	6.9	6.8	6.9	6.9	6.8	6.8
16	---	---	7.0	6.7	6.8	6.8	6.9	6.8	7.0	7.0	6.8	6.8
17	7.1	7.0	6.7	6.7	6.8	6.8	6.8	6.8	7.0	7.0	6.8	6.8
18	7.1	7.0	6.7	6.7	6.8	6.8	6.8	6.8	7.0	7.0	6.9	6.8
19	7.0	7.0	6.8	6.7	6.9	6.8	6.8	6.8	7.1	7.1	6.9	6.9
20	7.0	7.0	6.9	6.8	6.9	6.9	6.8	6.8	7.1	6.8	6.9	6.8
21	7.1	6.9	6.9	6.9	7.0	6.9	6.9	6.8	6.9	6.8	6.8	6.7
22	7.0	6.9	6.9	6.8	6.9	6.9	6.9	6.9	6.9	6.9	6.8	6.7
23	7.0	6.9	6.8	6.8	7.0	6.9	6.9	6.9	6.9	6.9	6.8	6.7
24	6.9	6.8	6.8	6.8	6.9	6.9	6.9	6.9	7.0	6.9	6.7	6.7
25	6.9	6.8	6.8	6.8	7.0	6.9	6.9	6.9	7.0	6.9	6.8	6.7
26	6.9	6.8	6.8	6.8	6.9	6.9	7.0	6.9	7.0	6.9	6.7	6.7
27	6.9	6.8	6.9	6.9	6.9	6.9	7.1	7.0	6.9	6.8	6.8	6.7
28	6.9	6.8	6.9	6.8	6.9	6.8	7.1	6.7	6.9	6.8	6.8	6.7
29	6.9	6.8	6.9	6.8	6.9	6.8	6.8	6.8	6.8	6.7	6.8	6.7
30	6.9	6.8	6.8	6.6	7.0	6.9	6.8	6.7	6.8	6.8	6.8	6.6
31	---	---	6.6	6.6	---	---	6.8	6.8	6.9	6.8	---	---
MONTH	7.1	6.8	7.2	6.6	7.0	6.6	7.2	6.7	7.3	6.7	7.0	6.6
YEAR	7.3	6.6										

03400798 MARTINS FORK LAKE AT MARTINS FORK DAM NEAR SMITH, KY—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	7.0	6.9	7.2	7.1	---	---	---	---	---	---	---	---
2	7.0	6.9	7.2	7.1	---	---	---	---	---	---	---	---
3	7.0	6.9	7.2	7.1	---	---	---	---	---	---	---	---
4	7.3	6.7	7.2	7.1	---	---	---	---	---	---	---	---
5	7.0	6.9	7.1	7.1	---	---	---	---	---	---	---	---
6	7.1	6.9	7.1	7.0	---	---	---	---	---	---	---	---
7	7.0	6.9	7.2	7.0	---	---	---	---	---	---	---	---
8	7.0	6.9	---	---	---	---	---	---	---	---	---	---
9	6.9	6.9	---	---	---	---	---	---	---	---	---	---
10	6.9	6.9	---	---	---	---	---	---	---	---	---	---
11	6.9	6.7	---	---	---	---	---	---	---	---	---	---
12	6.8	6.7	---	---	---	---	---	---	---	---	---	---
13	6.8	6.7	---	---	---	---	---	---	---	---	---	---
14	6.8	6.8	---	---	---	---	---	---	---	---	---	---
15	6.9	6.9	---	---	---	---	---	---	---	---	---	---
16	7.0	6.9	---	---	---	---	---	---	---	---	---	---
17	7.0	6.9	---	---	---	---	---	---	---	---	---	---
18	7.0	6.9	---	---	---	---	---	---	---	---	---	---
19	7.0	6.9	---	---	---	---	---	---	---	---	---	---
20	7.0	6.9	---	---	---	---	---	---	---	---	---	---
21	7.0	7.0	---	---	---	---	---	---	---	---	---	---
22	7.1	7.1	---	---	---	---	---	---	---	---	---	---
23	7.1	7.1	---	---	---	---	---	---	---	---	---	---
24	7.1	7.1	---	---	---	---	---	---	---	---	---	---
25	7.1	6.7	---	---	---	---	---	---	---	---	---	---
26	7.0	6.9	---	---	---	---	---	---	---	---	---	---
27	7.0	7.0	---	---	---	---	---	---	---	---	---	---
28	7.0	7.0	---	---	---	---	---	---	---	---	---	---
29	7.0	6.9	---	---	---	---	---	---	---	---	---	---
30	7.0	7.0	---	---	---	---	---	---	---	---	---	---
31	7.1	7.1	---	---	---	---	---	---	---	---	---	---
MONTH	7.3	6.7	7.2	7.0	---	---	---	---	---	---	---	---
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	7.0	6.9	6.8	6.7	7.0	6.9	6.8	6.7	6.8	6.8
2	---	---	7.0	6.9	6.8	6.8	6.9	6.9	6.7	6.7	6.8	6.8
3	---	---	6.9	6.9	6.9	6.8	7.0	6.9	6.8	6.7	6.9	6.8
4	---	---	7.1	7.0	6.9	6.8	7.0	7.0	6.9	6.7	6.9	6.8
5	---	---	7.1	7.0	6.9	6.8	7.0	7.0	6.9	6.8	7.0	7.0
6	---	---	7.3	7.0	6.9	6.8	7.0	7.0	6.9	6.8	7.0	7.0
7	---	---	7.2	7.1	6.9	6.9	7.0	7.0	6.9	6.9	7.0	6.9
8	---	---	7.2	7.1	---	---	7.1	7.0	6.9	6.8	6.9	6.7
9	---	---	7.3	7.1	6.9	6.9	7.1	7.0	7.0	6.9	6.8	6.7
10	---	---	7.2	7.1	---	---	7.1	7.0	7.0	7.0	6.7	6.7
11	---	---	7.2	7.1	---	---	7.2	7.1	7.0	6.7	6.7	6.7
12	---	---	7.3	7.1	---	---	7.2	7.1	6.7	6.7	6.7	6.7
13	---	---	7.3	7.2	6.9	6.9	7.3	7.2	6.8	6.8	6.8	6.7
14	---	---	7.3	7.3	6.9	6.9	7.2	6.9	6.8	6.8	6.8	6.8
15	---	---	7.4	7.2	6.9	6.9	6.9	6.9	6.8	6.8	6.9	6.9
16	---	---	7.2	6.8	6.9	6.9	6.9	6.8	6.9	6.9	6.9	6.9
17	7.1	7.1	6.9	6.8	6.9	6.8	6.9	6.9	6.9	6.9	6.9	6.9
18	7.1	7.1	6.9	6.8	6.9	6.8	6.9	6.9	6.9	6.9	6.9	6.9
19	7.1	7.0	7.0	6.8	6.9	6.9	6.9	6.8	7.1	7.0	6.9	6.7
20	7.1	7.0	7.1	7.0	7.0	6.9	6.9	6.8	7.1	6.7	6.9	6.8
21	7.1	7.0	7.1	7.0	7.0	6.9	6.9	6.8	6.8	6.7	6.8	6.7
22	7.1	7.0	7.0	6.9	7.0	6.9	7.0	6.9	6.9	6.8	6.9	6.7
23	7.1	7.0	7.0	6.9	7.0	6.9	6.9	6.9	6.8	6.8	6.8	6.8
24	7.0	6.9	7.0	6.9	6.9	6.9	6.9	6.9	6.9	6.8	6.9	6.8
25	7.0	6.9	7.0	7.0	6.9	6.9	6.9	6.9	6.9	6.8	6.9	6.8
26	7.0	6.9	7.0	7.0	6.9	6.9	7.0	6.9	6.8	6.7	6.9	6.8
27	7.0	6.9	7.1	7.0	6.9	6.9	7.0	7.0	6.8	6.6	6.9	6.8
28	7.0	6.9	7.0	7.0	6.9	6.8	7.0	6.7	6.7	6.6	6.9	6.8
29	7.0	6.9	7.0	6.9	7.0	6.8	6.7	6.6	6.8	6.7	6.9	6.8
30	7.0	6.9	7.0	6.7	7.0	6.9	6.8	6.6	6.8	6.7	6.8	6.6
31	---	---	6.8	6.7	---	---	6.8	6.7	6.8	6.8	---	---
MONTH	7.1	6.9	7.4	6.7	7.0	6.7	7.3	6.6	7.1	6.6	7.0	6.6
YEAR	7.4	6.6										

03400798 MARTINS FORK LAKE AT MARTINS FORK DAM NEAR SMITH, KY—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	7.2	7.1	7.1	7.1	---	---	---	---	---	---	---	---
2	7.3	7.1	7.2	7.1	---	---	---	---	---	---	---	---
3	7.3	7.2	7.2	7.2	---	---	---	---	---	---	---	---
4	7.3	7.3	7.2	7.2	---	---	---	---	---	---	---	---
5	7.4	7.3	7.2	7.1	---	---	---	---	---	---	---	---
6	7.5	7.4	7.1	7.1	---	---	---	---	---	---	---	---
7	7.4	7.2	7.2	7.1	---	---	---	---	---	---	---	---
8	7.2	7.2	---	---	---	---	---	---	---	---	---	---
9	7.2	7.2	---	---	---	---	---	---	---	---	---	---
10	7.2	7.1	---	---	---	---	---	---	---	---	---	---
11	7.1	6.9	---	---	---	---	---	---	---	---	---	---
12	7.0	6.9	---	---	---	---	---	---	---	---	---	---
13	6.9	6.9	---	---	---	---	---	---	---	---	---	---
14	6.9	6.8	---	---	---	---	---	---	---	---	---	---
15	7.0	7.0	---	---	---	---	---	---	---	---	---	---
16	7.0	7.0	---	---	---	---	---	---	---	---	---	---
17	7.0	7.0	---	---	---	---	---	---	---	---	---	---
18	7.1	7.0	---	---	---	---	---	---	---	---	---	---
19	7.0	7.0	---	---	---	---	---	---	---	---	---	---
20	7.0	7.0	---	---	---	---	---	---	---	---	---	---
21	7.0	6.9	---	---	---	---	---	---	---	---	---	---
22	7.0	7.0	---	---	---	---	---	---	---	---	---	---
23	7.0	7.0	---	---	---	---	---	---	---	---	---	---
24	7.1	7.0	---	---	---	---	---	---	---	---	---	---
25	7.1	7.0	---	---	---	---	---	---	---	---	---	---
26	7.1	7.1	---	---	---	---	---	---	---	---	---	---
27	7.1	6.9	---	---	---	---	---	---	---	---	---	---
28	7.1	7.1	---	---	---	---	---	---	---	---	---	---
29	7.1	7.0	---	---	---	---	---	---	---	---	---	---
30	7.1	7.0	---	---	---	---	---	---	---	---	---	---
31	7.1	7.1	---	---	---	---	---	---	---	---	---	---
MONTH	7.5	6.8	7.2	7.1	---	---	---	---	---	---	---	---
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	7.2	7.0	7.1	7.0	7.3	7.2	7.1	6.9	7.1	7.1
2	---	---	7.3	7.2	7.2	7.1	7.4	7.1	7.0	6.8	7.1	7.0
3	---	---	7.4	7.2	7.2	7.2	7.4	7.1	7.0	6.9	7.1	7.0
4	---	---	7.5	7.3	7.3	7.1	7.6	7.1	7.0	6.9	7.0	7.0
5	---	---	7.5	7.4	7.3	7.2	7.6	7.4	7.0	6.9	7.1	7.0
6	---	---	7.5	7.3	7.3	7.1	7.6	7.5	7.0	6.9	7.1	7.1
7	---	---	7.4	7.3	7.3	7.3	7.6	7.4	7.0	6.9	7.1	7.1
8	---	---	7.5	7.3	---	---	7.6	7.5	7.0	6.9	7.1	7.1
9	---	---	7.6	7.3	6.9	6.9	7.6	7.5	7.1	7.0	7.1	6.9
10	---	---	7.6	7.4	6.9	6.9	7.5	7.4	7.1	7.1	7.0	6.8
11	---	---	7.5	7.4	---	---	7.5	7.4	7.2	6.9	7.0	6.9
12	---	---	7.5	7.4	---	---	7.5	7.4	7.1	7.0	6.9	6.8
13	---	---	7.6	7.4	6.9	6.9	7.5	7.5	7.1	7.0	6.9	6.8
14	---	---	7.6	7.5	7.0	6.9	7.5	7.1	7.1	7.1	6.9	6.8
15	---	---	7.6	7.5	7.0	6.9	7.2	7.1	7.1	7.1	6.9	6.8
16	---	---	7.4	7.3	7.0	6.9	7.1	7.1	7.2	7.0	6.9	6.8
17	7.2	7.1	7.3	7.1	7.0	6.9	7.2	7.2	7.2	7.1	6.8	6.8
18	7.2	7.2	7.2	7.0	7.0	6.9	7.2	7.2	7.1	7.1	6.8	6.8
19	7.1	7.1	7.3	7.2	7.0	6.9	7.2	7.2	7.2	7.1	6.9	6.8
20	7.3	7.1	7.5	7.3	6.9	6.9	7.2	7.2	7.2	7.1	6.9	6.8
21	7.4	7.1	7.4	7.4	7.0	6.9	7.3	7.2	7.2	7.1	6.9	6.9
22	7.2	7.1	7.5	7.4	7.0	6.9	7.3	7.2	7.2	7.2	6.9	6.9
23	7.2	7.1	7.4	7.4	7.0	7.0	7.2	7.1	7.2	7.1	6.9	6.9
24	7.3	7.2	7.4	7.3	7.1	7.0	7.2	7.1	7.2	7.1	6.9	6.8
25	7.2	7.0	7.4	7.3	7.1	7.0	7.2	7.2	7.2	7.2	6.9	6.8
26	7.2	7.0	7.4	7.3	7.3	7.0	7.3	7.2	7.2	7.2	6.9	6.8
27	7.2	7.0	7.5	7.4	7.4	7.0	7.4	7.2	7.2	7.2	6.9	6.8
28	7.2	7.1	7.5	7.4	7.4	7.1	7.3	7.0	7.2	7.2	6.9	6.8
29	7.2	7.0	7.4	7.3	7.5	7.0	7.0	7.0	7.2	7.1	6.9	6.8
30	7.2	7.1	7.4	7.2	7.4	7.2	7.0	7.0	7.2	7.2	6.8	6.7
31	---	---	7.2	6.9	---	---	7.1	7.0	7.1	7.1	---	---
MONTH	7.4	7.0	7.6	6.9	7.5	6.9	7.6	7.0	7.2	6.8	7.1	6.7
YEAR	7.6	6.7										

03400798 MARTINS FORK LAKE AT MARTINS FORK DAM NEAR SMITH, KY—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	7.4	7.3	7.3	7.2	8.2	8.1	7.2	7.1	7.3	7.2
2	---	---	7.5	7.3	7.3	7.3	8.2	8.1	7.1	7.1	7.2	7.2
3	---	---	7.5	7.4	7.4	7.3	8.1	7.9	7.1	7.1	7.2	7.2
4	---	---	7.6	7.5	7.4	7.3	8.0	7.8	7.2	7.1	7.2	7.2
5	---	---	7.6	7.5	7.4	7.3	7.9	7.8	7.2	7.1	7.3	7.2
6	---	---	7.6	7.5	7.4	7.3	7.8	7.8	7.2	7.1	7.2	7.2
7	---	---	7.6	7.5	7.5	7.4	7.8	7.7	7.2	7.1	7.2	7.2
8	---	---	7.6	7.5	---	---	7.8	7.7	7.1	7.1	7.2	7.0
9	---	---	7.6	7.5	6.9	6.8	7.7	7.6	7.2	7.1	7.1	7.0
10	---	---	7.6	7.6	6.9	6.9	7.7	7.6	7.2	7.2	7.1	7.1
11	---	---	7.6	7.6	---	---	7.6	7.6	7.3	7.2	7.1	7.0
12	---	---	7.6	7.5	---	---	7.7	7.6	7.2	7.2	7.0	7.0
13	---	---	7.6	7.5	7.4	7.3	7.7	7.6	7.3	7.3	7.1	7.0
14	---	---	7.7	7.6	7.4	7.3	7.6	7.3	7.3	7.2	7.1	7.0
15	---	---	7.7	7.6	7.4	7.3	7.3	7.3	7.3	7.2	7.0	7.0
16	---	---	7.6	7.1	7.5	7.4	7.4	7.3	7.3	7.3	7.0	6.9
17	7.4	7.3	7.4	7.3	7.5	7.4	7.4	7.3	7.3	7.3	6.9	6.9
18	7.4	7.3	7.4	7.3	7.4	7.2	7.4	7.3	7.3	7.3	7.0	6.9
19	7.4	7.3	7.4	7.4	7.3	7.2	7.3	7.3	7.4	7.3	7.0	6.9
20	7.5	7.4	7.6	7.4	7.3	7.1	7.3	7.3	7.3	7.2	7.0	7.0
21	7.5	7.4	7.6	7.5	7.3	7.2	7.4	7.3	7.2	7.2	7.0	7.0
22	7.4	7.3	7.6	7.5	7.4	7.3	7.4	7.4	7.2	7.2	7.0	7.0
23	7.4	7.2	7.6	7.5	7.6	7.4	7.4	7.3	7.2	7.2	7.0	6.9
24	7.3	7.2	7.6	7.5	7.6	7.5	7.4	7.3	7.3	7.2	6.9	6.9
25	7.3	7.3	7.5	7.5	7.8	7.5	7.4	7.3	7.3	7.2	6.9	6.9
26	7.3	7.3	7.6	7.5	7.8	7.5	7.4	7.3	7.3	7.2	6.9	6.9
27	7.3	7.3	7.6	7.6	8.1	7.5	7.5	7.4	7.3	7.3	7.0	6.9
28	7.4	7.3	7.6	7.5	8.1	7.8	7.5	7.1	7.3	7.3	6.9	6.9
29	7.4	7.3	7.6	7.5	8.0	7.8	7.2	7.1	7.4	7.3	6.9	6.9
30	7.3	7.3	7.5	7.3	8.3	8.0	7.2	7.1	7.4	7.3	6.9	6.7
31	---	---	7.3	7.2	---	---	7.2	7.2	7.3	7.3	---	---
MONTH	7.5	7.2	7.7	7.1	8.3	6.8	8.2	7.1	7.4	7.1	7.3	6.7
YEAR	8.3	6.7										

03400798 MARTINS FORK LAKE AT MARTINS FORK DAM NEAR SMITH, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	19.5	19.1	19.3	19.6	19.3	19.5	---	---	---	---	---	---
2	19.7	19.0	19.2	19.3	19.1	19.2	---	---	---	---	---	---
3	19.0	19.0	19.0	19.0	18.9	19.0	---	---	---	---	---	---
4	19.0	19.0	19.0	18.9	18.6	18.7	---	---	---	---	---	---
5	19.1	19.0	19.0	18.5	18.4	18.4	---	---	---	---	---	---
6	19.2	19.0	19.1	18.4	18.2	18.3	---	---	---	---	---	---
7	19.1	19.0	19.0	18.3	18.2	18.2	---	---	---	---	---	---
8	19.1	19.0	19.0	---	---	---	---	---	---	---	---	---
9	19.1	19.0	19.0	---	---	---	---	---	---	---	---	---
10	19.1	19.1	19.1	---	---	---	---	---	---	---	---	---
11	19.2	19.1	19.2	---	---	---	---	---	---	---	---	---
12	19.2	19.2	19.2	---	---	---	---	---	---	---	---	---
13	19.2	19.2	19.2	---	---	---	---	---	---	---	---	---
14	19.2	19.2	19.2	---	---	---	---	---	---	---	---	---
15	19.2	19.2	19.2	---	---	---	---	---	---	---	---	---
16	19.3	19.2	19.2	---	---	---	---	---	---	---	---	---
17	19.3	19.2	19.2	---	---	---	---	---	---	---	---	---
18	19.3	19.2	19.2	---	---	---	---	---	---	---	---	---
19	19.4	19.2	19.3	---	---	---	---	---	---	---	---	---
20	19.5	19.0	19.4	---	---	---	---	---	---	---	---	---
21	19.0	18.9	18.9	---	---	---	---	---	---	---	---	---
22	19.0	18.9	18.9	---	---	---	---	---	---	---	---	---
23	19.0	18.9	19.0	---	---	---	---	---	---	---	---	---
24	19.0	19.0	19.0	---	---	---	---	---	---	---	---	---
25	19.0	19.0	19.0	---	---	---	---	---	---	---	---	---
26	19.1	19.0	19.0	---	---	---	---	---	---	---	---	---
27	19.1	19.1	19.1	---	---	---	---	---	---	---	---	---
28	19.2	19.1	19.1	---	---	---	---	---	---	---	---	---
29	19.2	19.1	19.2	---	---	---	---	---	---	---	---	---
30	19.3	19.2	19.2	---	---	---	---	---	---	---	---	---
31	19.7	19.6	19.6	---	---	---	---	---	---	---	---	---
MONTH	19.7	18.9	19.1	19.6	18.2	18.8	---	---	---	---	---	---
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	---	---	---	15.1	14.9	15.0
2	---	---	---	---	---	---	---	---	---	15.3	15.0	15.1
3	---	---	---	---	---	---	---	---	---	15.3	15.1	15.2
4	---	---	---	---	---	---	---	---	---	15.5	15.2	15.3
5	---	---	---	---	---	---	---	---	---	15.9	15.4	15.5
6	---	---	---	---	---	---	---	---	---	16.1	15.6	15.9
7	---	---	---	---	---	---	---	---	---	16.4	16.0	16.2
8	---	---	---	---	---	---	---	---	---	16.6	16.3	16.4
9	---	---	---	---	---	---	---	---	---	16.8	16.3	16.5
10	---	---	---	---	---	---	---	---	---	16.4	16.2	16.2
11	---	---	---	---	---	---	---	---	---	16.3	16.2	16.3
12	---	---	---	---	---	---	---	---	---	16.9	16.3	16.5
13	---	---	---	---	---	---	---	---	---	17.1	16.7	16.9
14	---	---	---	---	---	---	---	---	---	17.2	16.9	17.0
15	---	---	---	---	---	---	---	---	---	17.3	16.9	17.1
16	---	---	---	---	---	---	---	---	---	16.8	16.6	16.7
17	---	---	---	---	---	---	13.3	13.2	13.2	16.7	16.6	16.7
18	---	---	---	---	---	---	13.5	13.2	13.3	16.8	16.6	16.7
19	---	---	---	---	---	---	13.6	13.3	13.4	17.5	16.8	17.1
20	---	---	---	---	---	---	13.7	13.6	13.6	17.8	17.6	17.6
21	---	---	---	---	---	---	14.3	13.8	14.0	18.0	17.7	17.9
22	---	---	---	---	---	---	14.3	13.9	14.1	18.1	17.6	17.9
23	---	---	---	---	---	---	14.3	13.9	14.1	17.8	17.6	17.7
24	---	---	---	---	---	---	14.3	14.0	14.2	18.1	17.8	18.0
25	---	---	---	---	---	---	14.4	14.2	14.3	18.1	18.0	18.1
26	---	---	---	---	---	---	14.5	14.4	14.5	18.2	18.1	18.2
27	---	---	---	---	---	---	14.9	14.5	14.8	18.2	18.0	18.1
28	---	---	---	---	---	---	14.8	14.6	14.7	18.0	17.6	17.9
29	---	---	---	---	---	---	14.9	14.7	14.8	18.0	17.9	18.0
30	---	---	---	---	---	---	14.9	14.8	14.9	18.2	18.0	18.1
31	---	---	---	---	---	---	---	---	---	18.4	18.3	18.4
MONTH	---	---	---	---	---	---	14.9	13.2	14.1	18.4	14.9	16.9

03400798 MARTINS FORK LAKE AT MARTINS FORK DAM NEAR SMITH, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	18.5	18.4	18.4	19.4	19.4	19.4	21.0	20.9	21.0	22.4	22.3	22.4
2	18.6	18.5	18.5	19.7	19.4	19.5	21.2	21.0	21.1	22.6	22.5	22.5
3	18.9	18.7	18.8	19.9	19.7	19.8	21.3	21.2	21.3	22.7	22.6	22.7
4	18.9	18.6	18.8	20.1	19.9	20.0	21.3	21.2	21.3	23.0	22.7	22.8
5	18.9	18.8	18.9	20.2	20.0	20.1	21.3	21.2	21.2	23.1	22.9	23.0
6	18.9	18.7	18.8	20.3	20.1	20.2	21.4	21.2	21.3	23.4	22.5	23.1
7	18.7	18.6	18.6	20.3	20.2	20.2	21.4	21.3	21.4	22.4	22.2	22.3
8	---	---	---	20.2	20.1	20.1	21.4	21.2	21.3	22.0	22.0	22.1
9	18.0	17.9	17.9	20.1	20.0	20.1	21.3	21.1	21.2	22.4	22.2	22.3
10	---	---	---	20.5	20.0	20.1	21.4	21.3	21.4	22.5	22.4	22.4
11	---	---	---	21.0	20.5	20.7	21.5	21.4	21.4	22.6	22.5	22.5
12	---	---	---	21.1	20.9	21.0	21.5	21.4	21.4	22.8	22.6	22.6
13	18.7	18.6	18.6	21.3	21.1	21.2	21.6	21.3	21.5	23.0	22.8	22.9
14	18.9	18.5	18.7	21.4	21.3	21.4	21.6	21.6	21.6	23.3	23.2	23.2
15	18.9	18.7	18.8	21.5	21.3	21.4	21.7	21.6	21.6	23.5	23.4	23.4
16	18.9	18.8	18.9	21.4	21.2	21.3	21.7	21.3	21.5	23.4	23.2	23.3
17	19.1	18.9	19.0	21.2	21.1	21.1	21.8	21.5	21.7	23.3	23.1	23.2
18	19.4	19.0	19.2	21.2	21.1	21.1	21.8	21.8	21.8	23.4	22.7	23.0
19	19.4	19.3	19.3	21.2	21.1	21.2	21.9	21.8	21.9	22.8	22.7	22.7
20	19.5	19.3	19.4	21.2	21.1	21.2	22.0	21.8	21.9	22.9	22.8	22.8
21	19.7	19.4	19.5	21.2	21.2	21.2	21.2	20.7	20.9	23.0	22.9	22.9
22	19.6	19.4	19.5	21.2	21.2	21.2	20.9	20.8	20.8	23.0	22.9	23.0
23	19.6	19.3	19.5	21.2	21.1	21.2	21.2	20.9	21.1	23.1	23.0	23.0
24	19.4	19.3	19.3	21.2	21.1	21.1	21.4	21.2	21.3	23.1	23.0	23.0
25	19.6	19.4	19.5	21.2	21.1	21.2	21.7	21.5	21.6	23.2	23.1	23.1
26	19.7	19.6	19.6	21.2	21.2	21.2	21.9	21.7	21.8	23.2	23.1	23.1
27	19.7	19.5	19.6	21.2	21.1	21.2	22.0	21.9	22.0	23.1	23.1	23.1
28	19.4	19.4	19.4	21.2	21.1	21.1	22.1	22.0	22.1	23.1	23.1	23.1
29	19.4	19.4	19.4	21.2	21.1	21.2	22.2	22.0	22.1	23.1	23.0	23.1
30	19.4	19.4	19.4	21.2	21.1	21.1	22.2	22.1	22.1	23.1	23.0	23.0
31	---	---	---	21.4	21.1	21.2	22.3	22.2	22.3	---	---	---
MONTH	19.7	17.9	19.1	21.5	19.4	20.8	22.3	20.7	21.5	23.5	22.0	22.9
YEAR	23.5	13.2	19.6									

03400800 MARTINS FORK NEAR SMITH, KY

LOCATION.--Lat 36°45'08", long 83°15'27", Harlan County, Hydrologic Unit 05130101, on left bank 150 ft downstream from State Highway 987 bridge, 0.3 mi downstream from Martins Fork Dam, 0.7 mi downstream from Crane Creek, 1.0 mi north of Smith, and at mile 15.3.

DRAINAGE AREA.--55.8 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1968-71, and annual maximums, water years 1968-70. April 1971 to current year.

GAGE.--Water-stage recorder with telemetry. Datum of gage is 1,259.00 ft above NGVD of 1929. July 25, 1967 to Apr. 9, 1971, crest-stage gage at site 30 ft downstream at same datum, and Apr. 10, 1971 to Sept. 30, 1977, water-stage recorder at site 0.8 mi downstream at same datum.

REMARKS.--Records good. Flow regulated by Martins Fork Dam (station 03400798) beginning January 1979.

COOPERATION.--U.S. Army Corps of Engineers, Nashville District.

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

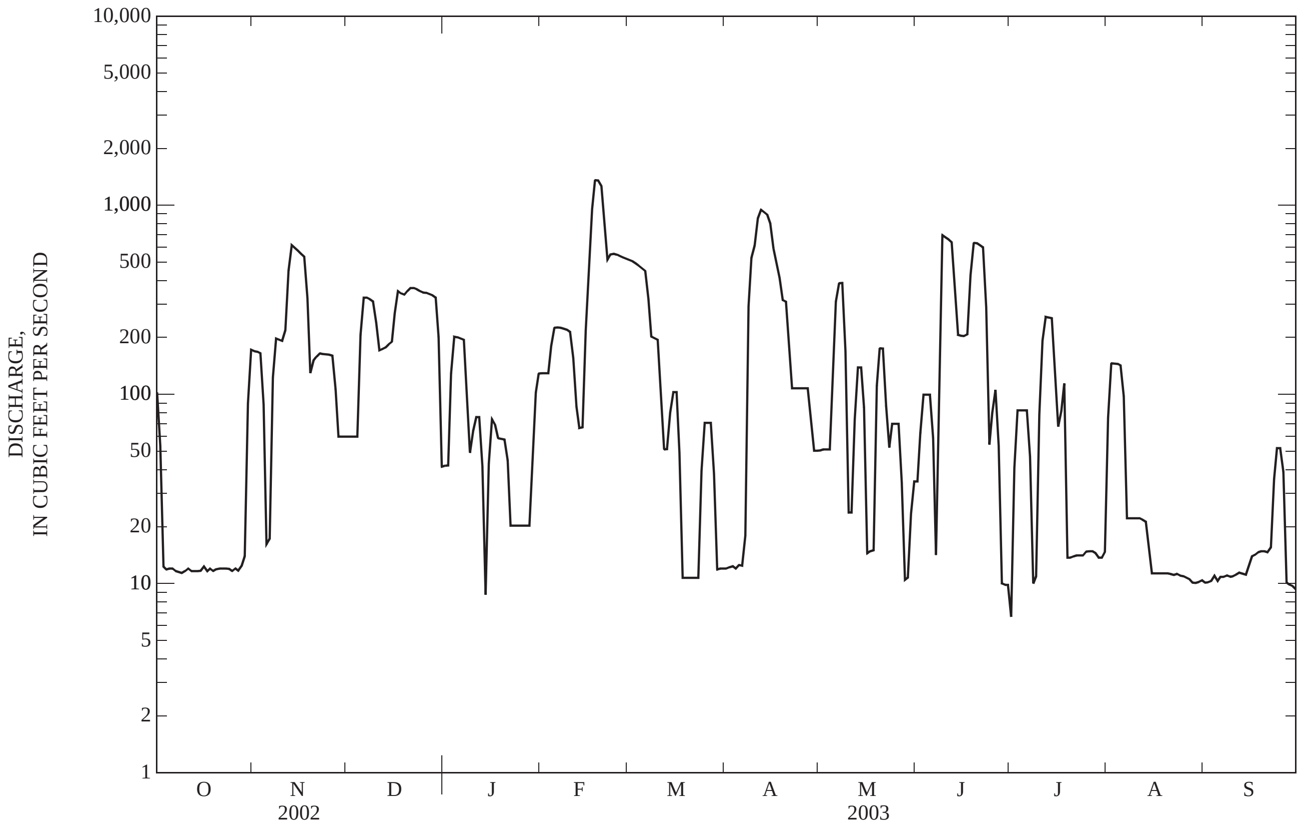
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	102	170	60	42	129	513	12	51	35	6.7	75	10
2	54	168	60	42	129	504	12	51	62	41	146	10
3	12	165	60	129	129	493	12	51	100	82	146	10
4	12	88	60	202	180	480	12	51	100	82	145	11
5	12	16	206	200	225	465	13	120	100	82	142	10
6	12	17	325	197	226	451	12	310	59	82	98	11
7	12	123	324	194	225	320	18	388	14	47	22	11
8	12	197	319	113	223	202	292	388	68	10	22	11
9	11	194	311	49	220	198	526	168	695	11	22	11
10	12	192	240	64	214	195	611	24	677	78	22	11
11	12	218	171	76	156	107	851	24	659	193	22	11
12	12	452	174	76	86	51	945	74	638	257	22	11
13	12	616	177	42	67	52	924	139	373	255	21	11
14	12	597	184	8.7	67	80	896	139	206	253	16	11
15	12	577	190	43	218	103	799	85	204	137	11	12
16	12	554	269	74	442	103	589	14	204	68	11	14
17	12	535	352	70	954	49	493	15	208	82	11	14
18	12	324	342	59	1,360	11	414	15	428	115	11	15
19	12	129	336	58	1,350	11	314	111	633	14	11	15
20	12	151	353	58	1,270	11	309	176	630	14	11	15
21	12	159	366	45	806	11	187	175	616	14	11	15
22	12	165	365	20	514	11	108	87	599	14	11	16
23	12	164	360	20	549	11	108	52	288	14	11	36
24	12	163	352	20	553	39	108	70	54	14	11	52
25	12	162	346	20	547	71	108	70	80	15	11	52
26	12	161	344	20	537	71	108	70	106	15	11	39
27	12	107	339	20	528	71	108	34	54	15	11	10
28	12	60	334	20	520	38	74	10	10	14	10	9.8
29	14	60	325	44	---	12	50	11	9.8	14	10	9.7
30	89	60	201	102	---	12	50	24	9.8	14	10	9.3
31	172	---	42	129	---	12	---	35	---	15	10	---
TOTAL	742	6,744	7,887	2,256.7	12,424	4,758	9,063	3,032	7,919.6	2,067.7	1,104	483.8
MEAN	23.9	225	254	72.8	444	153	302	97.8	264	66.7	35.6	16.1
MAX	172	616	366	202	1,360	513	945	388	695	257	146	52
MIN	11	16	42	8.7	67	11	12	10	9.8	6.7	10	9.3

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1980 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	49.1	102	144	172	208	201	133	121	70.3	26.0	30.4	24.3
MAX	181	226	452	357	481	413	428	322	267	75.3	117	117
(WY)	(1990)	(1997)	(1992)	(1982)	(1994)	(2002)	(1998)	(1983)	(1989)	(1990)	(1996)	(1989)
MIN	11.0	28.9	16.4	10.1	66.9	33.5	12.4	36.7	12.5	9.34	9.43	9.49
(WY)	(1998)	(1981)	(1981)	(1981)	(1999)	(1988)	(1986)	(1987)	(1988)	(1988)	(1988)	(1984)

03400800 MARTINS FORK NEAR SMITH, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1980 - 2003	
ANNUAL TOTAL	45,978.9		58,481.8			
ANNUAL MEAN	126		160		106	
HIGHEST ANNUAL MEAN					173	1994
LOWEST ANNUAL MEAN					58.0	1988
HIGHEST DAILY MEAN	1,880	Mar 19	1,360	Feb 18	1,880	Mar 19, 2002
LOWEST DAILY MEAN	4.3	Mar 9	6.7	Jul 1	4.3	Mar 9, 2002
ANNUAL SEVEN-DAY MINIMUM	4.4	Mar 8	10	Aug 28	4.4	Mar 8, 2002
MAXIMUM PEAK FLOW			1,550	Feb 17	9,000	Apr 4, 1977
MAXIMUM PEAK STAGE			13.89	Feb 17	24.24	Apr 4, 1977
INSTANTANEOUS LOW FLOW					0.10	Oct 30, 1978
10 PERCENT EXCEEDS	356		493		292	
50 PERCENT EXCEEDS	13		70		45	
90 PERCENT EXCEEDS	9.7		11		11	



03400800 MARTINS FORK NEAR SMITH, KY

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1971 to current.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE.--October 1971 to current water year.
pH.--December 1979 to current water year.
WATER TEMPERATURES.--October 1971 to current water year.
DISSOLVED OXYGEN.--October 1971 to current water year.

INSTRUMENTATION.--Water-quality monitor with telemetry.

EXTREMES FOR PERIOD OF RECORD.--
SPECIFIC CONDUCTANCE.--(water years 1972-77, 1980 to current water year)Maximum recorded, 561 microsiemens, Feb. 12, 1972; minimum recorded 49 microsiemens, Feb 26, 1985.
pH.--Maximum recorded, 8.2 units, July 2, 1980; minimum recorded, 5.9 units, Jan. 6, 7, 1996, Sept. 20, 1998.
WATER TEMPERATURE.--Maximum recorded, 32.5°C, Aug. 6, 1982; minimum recorded, 0.0°C, on many days during the winter months.
DISSOLVED OXYGEN.--Maximum recorded, 15.6 mg/L, Jan. 20, 21, 1985; minimum recorded, 4.6 mg/L, Aug. 10, 1994.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum recorded, 178 microsiemens, Oct. 19; minimum recorded 79 microsiemens, Jun. 8.
pH: Maximum recorded, 7.6 units, Nov. 10; minimum recorded, 6.2 units, Dec. 29.
WATER TEMPERATURE: Maximum recorded, 28.4°C, Aug. 26, 28, 29; minimum recorded, 3.2°C, Jan. 23, 24.
DISSOLVED OXYGEN: Maximum recorded, 13.3, Jan. 17, 18; minimum recorded, 5.2 Aug. 29.

COOPERATION.--U.S. Army Corps of Engineers, Nashville District.

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	171	166	169	165	150	159	135	133	134	112	107	110
2	172	170	170	160	149	156	135	134	134	123	108	116
3	171	168	169	159	151	155	135	135	135	120	108	113
4	169	163	165	163	159	161	136	134	135	109	107	108
5	167	165	166	164	159	161	135	133	134	113	109	111
6	166	164	165	164	160	162	135	127	132	113	112	112
7	166	165	165	160	150	155	127	113	119	113	108	111
8	167	165	166	152	141	146	118	113	116	111	109	110
9	167	165	166	147	131	138	120	116	118	111	111	111
10	166	165	166	150	133	143	120	117	118	112	111	111
11	167	166	167	152	135	143	118	115	116	113	111	111
12	170	167	168	139	120	129	125	116	122	113	112	113
13	170	168	169	122	117	119	124	113	119	116	113	115
14	172	168	170	128	121	124	114	106	109	117	115	116
15	173	170	172	126	115	121	109	104	106	117	114	115
16	175	172	174	123	120	122	110	104	107	114	113	114
17	176	173	175	127	118	122	113	103	108	115	114	114
18	177	174	175	138	127	130	117	105	113	118	115	117
19	178	172	176	139	130	135	107	103	105	119	116	117
20	173	171	172	137	130	135	106	101	103	121	118	119
21	172	169	170	141	133	137	103	100	101	121	120	120
22	169	168	169	140	132	137	108	103	106	125	120	122
23	169	167	168	143	140	141	109	108	108	126	123	125
24	168	166	167	144	142	143	112	109	110	126	124	125
25	167	164	165	142	131	138	113	109	111	126	123	125
26	168	165	166	136	128	130	115	109	111	130	126	129
27	167	165	166	136	128	131	117	113	116	130	129	130
28	166	164	165	133	132	133	114	111	113	131	129	130
29	167	158	164	133	132	132	111	105	108	150	126	133
30	165	157	161	134	133	133	109	106	107	131	124	128
31	169	155	165	---	---	---	109	108	108	130	126	128
MONTH	178	155	168	165	115	139	136	100	116	150	107	118

03400800 MARTINS FORK NEAR SMITH, KY—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	129	120	125	99	87	94	123	120	121	110	106	108
2	124	119	122	101	87	95	126	123	125	111	108	109
3	123	111	120	97	87	92	128	125	126	110	108	109
4	121	109	115	96	85	89	128	125	126	109	108	109
5	122	120	121	96	83	89	128	123	127	113	108	110
6	121	110	114	100	89	92	130	126	127	121	112	117
7	117	110	113	100	90	95	134	129	131	117	109	112
8	116	112	114	101	93	97	130	103	121	114	106	109
9	118	113	116	105	93	97	109	93	103	113	101	105
10	114	112	113	103	95	99	104	84	92	104	99	102
11	118	113	115	110	97	100	98	86	91	102	99	100
12	118	117	118	112	99	107	96	89	93	112	99	102
13	118	117	118	115	102	109	100	93	96	111	101	106
14	125	118	119	110	103	106	103	100	102	115	101	106
15	123	114	119	108	103	107	106	101	103	115	102	108
16	126	80	104	108	105	107	103	98	100	103	101	102
17	93	80	86	112	106	109	102	99	101	113	99	104
18	92	84	87	111	110	111	103	99	101	111	108	109
19	97	88	94	112	110	111	104	100	102	117	108	112
20	104	94	102	112	111	111	105	101	103	118	114	116
21	111	101	106	113	111	112	102	101	102	119	116	117
22	118	84	108	113	112	113	102	101	102	122	115	118
23	104	84	94	113	112	112	102	100	101	117	115	116
24	100	87	93	114	111	112	101	99	99	121	117	119
25	107	92	99	115	112	113	101	99	99	120	119	119
26	97	90	94	116	114	115	104	101	102	120	117	118
27	97	86	89	116	113	114	109	103	106	120	118	119
28	100	92	97	119	114	117	105	101	103	121	119	121
29	---	---	---	119	117	118	105	101	103	123	119	121
30	---	---	---	120	118	119	107	104	105	123	121	122
31	---	---	---	121	120	121	---	---	---	122	121	121
MONTH	129	80	108	121	83	106	134	84	107	123	99	112
		JUNE			JULY			AUGUST			SEPTEMBER	
1	121	120	120	122	116	118	133	123	127	131	128	130
2	120	118	118	125	117	121	125	121	124	131	129	129
3	120	117	119	123	120	121	126	123	124	132	129	130
4	120	116	117	125	122	123	128	123	125	133	121	131
5	117	115	116	126	124	125	129	121	124	131	130	131
6	118	113	115	126	124	125	124	118	122	132	130	131
7	135	83	113	129	126	127	123	120	121	132	130	131
8	143	79	122	130	129	130	123	120	121	133	131	132
9	98	84	92	134	105	130	122	119	120	133	131	132
10	105	94	101	133	128	131	123	120	121	132	130	131
11	117	105	108	133	129	130	122	119	121	132	130	131
12	118	110	113	131	109	125	122	120	121	132	130	131
13	118	113	115	119	107	114	123	121	121	133	131	132
14	118	110	115	110	101	106	122	121	122	134	131	132
15	119	114	117	104	95	99	122	121	121	134	130	132
16	120	117	119	114	96	103	123	120	121	131	130	131
17	122	119	121	118	112	114	122	120	121	134	130	132
18	124	120	122	126	113	119	123	121	122	134	132	133
19	125	114	119	129	126	127	123	121	122	138	132	135
20	122	110	113	129	126	127	125	121	123	142	138	140
21	118	107	113	131	124	128	126	122	125	141	139	140
22	116	107	113	130	127	128	126	121	124	143	133	140
23	118	100	109	129	125	127	127	125	126	146	141	143
24	102	100	101	128	126	127	128	125	126	147	144	146
25	109	102	106	128	126	127	127	124	126	147	144	146
26	114	109	111	127	125	126	128	125	126	145	141	143
27	116	112	114	128	126	127	128	126	127	146	139	144
28	114	113	114	129	127	128	128	126	127	145	144	145
29	115	114	114	130	128	129	130	126	128	145	144	144
30	116	115	115	131	129	130	130	125	129	148	144	146
31	---	---	---	134	123	130	131	128	129	---	---	---
MONTH	143	79	114	134	95	123	133	118	124	148	121	136
YEAR	178	79	123									

03400800 MARTINS FORK NEAR SMITH, KY—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	7.3	7.3	7.2	7.0	7.2	7.2	7.1	6.5	7.2	6.8	7.0	6.9
2	7.3	7.2	7.3	7.1	7.2	7.0	7.2	7.1	7.3	6.6	6.9	6.8
3	7.3	7.0	7.3	6.8	7.2	6.9	7.1	6.5	7.3	6.8	6.9	6.8
4	7.3	6.9	7.3	6.8	7.2	6.9	7.1	7.1	7.3	7.0	7.0	6.7
5	7.3	6.9	7.2	6.8	7.2	6.9	7.1	6.8	7.3	7.3	7.0	6.8
6	7.3	6.8	7.2	6.7	7.2	7.1	7.1	6.7	7.3	7.0	7.0	6.9
7	7.1	6.9	7.2	6.9	7.2	6.9	7.1	6.9	7.3	6.7	7.0	6.7
8	7.2	6.9	7.3	6.6	7.3	7.0	7.2	7.1	7.3	6.9	7.0	6.7
9	7.2	6.9	7.4	6.8	7.3	6.7	7.2	6.3	7.4	6.9	7.0	6.9
10	6.9	6.9	7.6	7.0	7.3	6.7	7.2	7.0	7.5	6.7	6.9	6.8
11	7.1	6.6	7.5	7.3	7.2	6.9	7.1	7.0	7.5	7.3	7.1	6.9
12	7.1	6.6	7.4	7.3	7.3	6.7	7.1	7.0	7.5	7.3	7.3	6.8
13	7.0	6.6	7.3	6.9	7.2	7.0	7.1	6.9	7.5	7.2	7.3	7.0
14	7.0	6.6	7.3	7.0	7.0	6.9	7.1	6.8	7.3	7.0	7.3	7.2
15	7.0	6.6	7.2	6.9	7.1	6.5	7.1	7.0	---	---	7.3	7.1
16	7.0	6.6	---	---	7.1	6.3	7.1	6.8	7.3	6.6	7.3	6.9
17	7.0	6.8	7.1	6.9	7.0	6.5	7.1	6.8	7.4	7.2	7.2	6.9
18	7.0	6.8	7.1	6.8	7.1	6.9	7.2	7.1	7.4	7.4	7.2	7.0
19	6.9	6.6	7.2	7.0	7.1	7.0	7.2	7.2	7.4	7.4	7.2	7.0
20	7.0	6.6	7.2	6.8	7.1	6.8	7.2	6.9	7.5	7.0	7.2	7.0
21	7.0	6.6	7.2	7.1	7.1	7.1	7.2	6.9	7.1	6.8	7.1	7.0
22	7.0	6.6	7.3	6.9	7.1	6.9	7.2	6.8	7.0	6.9	7.1	7.0
23	7.2	6.6	7.1	6.8	7.1	7.0	7.3	7.0	7.0	6.8	7.1	6.9
24	7.2	6.7	7.1	6.6	7.1	7.0	7.3	7.3	7.0	6.9	7.4	6.8
25	7.3	6.8	7.0	6.8	7.0	6.8	7.3	7.2	7.0	7.0	7.4	6.6
26	7.5	6.9	7.0	6.8	7.1	7.0	7.3	7.1	---	---	7.5	6.9
27	7.5	7.2	7.0	6.9	7.2	6.9	7.3	7.2	---	---	7.3	6.8
28	7.2	6.9	7.1	7.0	7.2	6.7	7.3	7.3	7.0	6.8	7.4	7.0
29	7.1	6.9	7.2	7.0	7.2	6.2	---	---	---	---	7.2	6.8
30	7.2	6.9	7.2	7.1	7.2	6.3	7.1	6.8	---	---	6.8	6.6
31	7.1	7.0	---	---	7.2	6.5	7.2	7.0	---	---	6.9	6.8
MONTH	7.5	6.6	7.6	6.6	7.3	6.2	7.3	6.3	7.5	6.6	7.5	6.6

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	6.9	6.8	7.1	6.8	7.0	6.9	7.1	6.9	7.2	7.0	7.0	6.9
2	7.0	6.9	7.1	7.0	7.0	6.9	7.2	6.9	7.1	7.0	7.0	6.9
3	7.1	6.9	7.1	7.0	6.9	6.9	7.0	6.9	7.0	6.9	7.0	6.9
4	7.1	7.0	7.0	7.0	7.1	6.9	7.0	6.9	7.0	6.9	7.0	6.9
5	7.0	6.9	7.1	7.0	7.1	7.0	7.0	6.9	7.0	6.9	7.1	7.0
6	7.0	6.8	7.2	7.0	7.1	7.0	7.0	6.9	7.1	7.0	7.1	7.0
7	7.1	6.9	7.2	7.1	7.3	7.1	7.0	6.9	7.1	7.1	7.1	7.0
8	7.0	6.9	7.2	7.1	7.1	7.0	7.0	6.8	7.2	7.1	7.1	7.0
9	7.1	6.9	7.1	7.0	7.2	7.0	7.0	6.8	7.2	7.2	7.1	7.0
10	7.1	6.8	7.1	6.9	7.2	7.1	6.9	6.8	7.2	7.2	7.1	7.0
11	6.9	6.8	7.1	7.0	7.2	7.1	7.0	6.9	7.2	7.1	7.1	7.0
12	7.0	6.8	7.1	7.0	7.1	7.0	6.9	6.9	7.2	7.1	7.1	7.0
13	6.9	6.8	7.0	6.9	7.1	7.0	6.9	6.9	7.1	7.0	7.1	7.0
14	6.9	6.8	7.0	6.9	7.1	7.0	6.9	6.9	7.2	7.0	7.1	7.0
15	6.9	6.8	7.0	6.9	7.0	7.0	7.0	6.9	7.1	7.0	7.1	7.0
16	6.9	6.8	7.0	6.9	7.0	7.0	7.2	6.9	7.2	7.0	7.0	6.9
17	6.9	6.8	7.1	6.9	7.0	7.0	7.1	7.0	7.1	7.0	7.0	6.9
18	6.9	6.8	7.0	6.9	7.0	6.9	7.2	7.0	7.1	7.0	7.0	6.9
19	6.9	6.8	7.0	6.9	7.0	6.9	7.3	7.2	7.1	7.0	7.1	6.9
20	6.9	6.9	7.0	6.9	7.1	7.0	7.3	7.2	7.0	6.9	7.0	6.9
21	6.9	6.8	7.0	7.0	7.1	7.0	7.3	7.2	7.0	6.9	7.0	6.8
22	6.9	6.7	7.1	7.0	7.0	7.0	7.2	7.1	7.1	7.0	7.0	6.9
23	6.9	6.8	7.0	7.0	7.0	7.0	7.2	7.1	7.0	6.9	7.0	6.8
24	6.9	6.8	7.1	7.0	7.0	6.9	7.2	7.1	7.1	6.9	7.0	6.9
25	6.9	6.8	7.0	7.0	6.9	6.8	7.2	7.1	7.0	6.9	7.0	6.9
26	6.9	6.8	7.0	7.0	6.9	6.8	7.2	7.1	7.0	6.9	7.1	7.0
27	7.0	6.8	7.1	7.0	7.0	6.8	7.2	7.1	7.0	6.9	7.2	7.0
28	6.9	6.8	7.0	6.9	7.0	6.9	7.3	7.1	7.0	6.9	7.2	7.1
29	6.9	6.8	7.0	6.9	6.9	6.9	7.2	7.1	7.0	6.9	7.2	7.1
30	7.0	6.8	7.0	6.9	6.9	6.9	7.2	7.1	7.0	7.0	7.2	7.1
31	---	---	7.0	6.9	---	---	7.2	7.1	7.0	6.9	---	---
MONTH	7.1	6.7	7.2	6.8	7.3	6.8	7.3	6.8	7.2	6.9	7.2	6.8
YEAR	7.6	6.2										

03400800 MARTINS FORK NEAR SMITH, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	25.0	24.0	24.5	17.4	16.6	17.1	8.3	7.9	8.1	6.8	6.3	6.6
2	26.9	24.4	25.4	16.6	15.8	16.3	7.9	7.6	7.8	6.9	6.5	6.7
3	27.0	24.8	25.7	15.8	15.4	15.6	7.8	7.3	7.6	6.9	6.6	6.8
4	25.8	24.3	25.0	15.6	14.7	15.3	7.3	6.8	7.0	6.8	6.4	6.6
5	25.7	23.7	24.7	15.1	14.6	14.9	6.8	6.5	6.7	6.7	6.4	6.5
6	26.1	23.5	24.5	15.1	14.1	14.6	6.5	6.0	6.3	6.4	6.0	6.2
7	25.0	23.2	24.1	14.3	13.7	14.0	6.1	5.7	5.9	6.2	5.8	5.9
8	25.0	22.7	23.7	14.0	13.4	13.2	5.8	5.6	5.7	6.3	5.6	5.9
9	24.5	23.2	23.8	14.0	12.9	13.4	6.0	5.6	5.8	6.4	5.7	6.0
10	23.9	23.5	23.6	14.4	13.3	13.8	5.9	5.7	5.8	6.2	5.8	6.0
11	23.7	22.8	23.2	14.4	13.4	13.8	6.1	5.9	6.0	5.8	5.3	5.6
12	24.3	22.7	23.2	14.1	13.7	13.9	6.0	5.9	6.0	5.3	5.0	5.2
13	23.5	21.7	22.8	14.0	13.8	13.9	6.5	5.9	6.2	5.9	4.5	5.1
14	23.7	20.9	21.9	13.9	13.6	13.8	6.6	6.3	6.5	5.0	4.3	4.6
15	21.9	21.1	21.4	13.6	13.2	13.4	7.1	6.4	6.7	4.5	3.3	4.0
16	21.8	20.2	21.0	13.2	12.7	13.0	6.8	6.7	6.7	4.3	3.9	4.1
17	21.3	19.9	20.4	12.7	12.1	12.5	6.9	6.6	6.7	4.0	3.5	3.7
18	21.8	19.5	20.2	12.3	11.8	12.0	7.2	6.8	6.9	4.2	3.5	3.7
19	20.3	18.9	19.7	12.0	11.5	11.8	8.1	7.2	7.5	4.1	3.5	3.8
20	19.9	19.5	19.7	11.5	11.0	11.1	8.4	7.9	8.2	4.3	3.7	3.9
21	20.0	19.1	19.6	11.8	11.0	11.2	8.4	8.1	8.2	4.1	3.6	3.9
22	20.8	18.9	19.4	11.6	10.9	11.3	8.1	7.9	8.0	4.8	3.5	3.9
23	21.0	18.5	19.3	10.9	10.5	10.7	8.0	7.7	7.8	3.8	3.2	3.5
24	20.0	18.5	19.0	10.7	10.3	10.5	7.8	7.6	7.7	4.5	3.2	3.7
25	19.4	18.6	18.9	10.5	9.8	10.2	7.7	7.1	7.4	4.6	3.7	4.0
26	19.6	18.6	19.0	10.3	9.7	9.8	7.1	6.8	6.9	4.7	3.6	4.0
27	20.1	18.3	18.9	10.3	9.3	9.7	6.9	6.5	6.7	4.7	3.3	4.0
28	18.9	18.3	18.6	9.4	8.8	9.1	6.7	6.3	6.5	4.6	3.8	4.2
29	18.9	18.5	18.7	9.0	8.6	8.8	6.4	6.1	6.2	4.6	4.3	4.4
30	18.8	17.9	18.3	8.9	8.3	8.6	6.2	5.9	6.1	4.3	4.2	4.2
31	17.9	17.4	17.7	---	---	---	6.7	6.0	6.3	4.3	4.1	4.2
MONTH	27.0	17.4	21.5	17.4	8.3	12.6	8.4	5.6	6.8	6.9	3.2	4.9

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	4.3	4.1	4.1	10.7	9.8	10.2	14.8	10.8	12.6	16.3	14.7	15.4
2	4.6	4.1	4.3	10.6	10.2	10.4	16.0	12.4	13.8	15.8	15.1	15.4
3	4.9	4.4	4.7	10.9	10.2	10.5	16.0	12.3	13.8	16.3	15.0	15.5
4	5.2	4.5	4.9	12.0	10.3	11.0	15.4	12.7	13.8	16.4	15.0	15.6
5	5.5	4.8	5.2	12.1	11.4	11.7	15.5	12.5	13.8	16.3	15.4	15.7
6	5.5	5.2	5.3	12.0	10.9	11.6	14.9	11.9	13.0	17.3	15.9	16.7
7	5.3	4.8	5.1	12.5	10.7	11.4	13.4	12.8	13.1	17.6	16.9	17.1
8	4.8	4.5	4.7	13.2	10.6	11.8	13.8	13.0	13.4	18.0	17.2	17.6
9	4.6	4.3	4.5	12.9	11.5	12.3	13.8	13.3	13.7	19.6	16.8	18.0
10	4.4	4.2	4.3	11.9	10.2	11.1	13.7	12.2	13.1	19.1	16.6	17.4
11	4.5	4.2	4.3	11.3	9.4	10.3	12.8	12.2	12.4	18.9	16.4	17.3
12	4.8	4.0	4.4	11.2	9.1	10.2	12.6	12.0	12.2	18.3	16.0	17.0
13	4.6	3.9	4.2	11.5	9.8	10.7	12.4	12.0	12.2	18.2	17.0	17.7
14	4.4	4.0	4.2	11.2	10.1	10.7	12.4	12.1	12.3	18.4	17.4	17.8
15	5.3	4.4	4.8	11.2	10.4	10.8	12.7	12.2	12.4	18.4	17.2	17.9
16	7.0	5.3	6.1	11.5	10.6	11.0	12.8	12.2	12.6	19.7	16.8	17.8
17	7.0	6.2	6.6	13.6	10.6	11.7	12.8	12.5	12.7	19.2	17.0	17.8
18	6.6	6.4	6.5	12.5	10.9	11.4	13.3	12.7	12.9	18.4	17.0	17.6
19	6.6	6.4	6.5	12.8	10.9	11.5	13.5	12.9	13.2	18.7	17.0	18.0
20	7.6	6.3	7.0	13.1	10.8	11.5	14.2	13.1	13.5	18.9	18.3	18.6
21	7.9	7.5	7.7	12.1	10.8	11.3	14.3	12.9	13.7	19.1	18.8	18.9
22	10.1	7.7	8.4	13.7	10.6	11.8	14.3	13.1	13.6	20.1	18.2	19.2
23	10.1	9.0	9.5	13.6	10.2	11.5	14.8	13.2	13.9	19.4	18.1	18.6
24	9.8	9.0	9.4	13.9	10.2	11.2	14.5	13.5	14.0	20.0	18.5	19.1
25	9.3	9.0	9.2	12.5	10.9	11.6	14.9	14.0	14.3	19.8	18.6	19.1
26	10.8	9.1	9.3	11.9	11.2	11.6	14.8	14.3	14.5	19.8	18.9	19.2
27	10.2	9.6	9.7	12.6	11.4	11.9	15.6	14.3	15.0	21.3	18.6	19.5
28	9.9	9.6	9.8	15.0	11.7	13.0	15.9	14.4	15.0	21.1	18.1	19.4
29	---	---	---	12.3	11.0	11.7	15.8	14.6	15.1	19.4	18.2	18.8
30	---	---	---	11.9	10.6	11.3	16.1	14.7	15.2	19.9	18.1	18.9
31	---	---	---	12.7	10.3	11.5	---	---	---	20.3	18.8	19.3
MONTH	10.8	3.9	6.2	15.0	9.1	11.3	16.1	10.8	13.5	21.3	14.7	17.8

03400800 MARTINS FORK NEAR SMITH, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	20.6	18.7	19.4	22.1	19.6	20.7	26.5	23.8	24.6	28.2	25.3	26.5
2	20.8	18.7	19.4	21.2	20.1	20.5	24.5	23.8	24.1	28.2	25.3	26.4
3	19.8	19.5	19.7	21.2	20.0	20.5	24.5	23.9	24.1	26.1	25.2	25.6
4	19.9	19.4	19.7	21.4	20.3	20.6	24.8	24.0	24.3	27.6	25.0	25.9
5	20.3	19.5	19.8	21.6	20.4	20.9	24.7	24.0	24.3	27.7	24.4	25.6
6	20.6	19.4	19.8	21.5	20.5	20.9	25.3	24.1	24.5	26.9	24.2	25.3
7	21.0	19.2	20.2	24.5	20.6	21.8	26.0	24.2	24.8	26.8	24.6	25.3
8	18.9	18.3	18.6	24.2	20.6	22.0	25.9	24.1	24.8	27.4	24.7	25.6
9	18.7	18.4	18.5	23.8	20.6	21.6	26.3	24.1	24.8	28.0	24.7	25.9
10	18.7	18.4	18.6	21.7	20.3	21.0	26.1	24.1	24.8	27.6	24.6	25.7
11	19.2	18.5	18.8	22.1	21.0	21.6	26.5	24.3	24.9	27.7	24.8	25.9
12	19.3	18.7	18.9	22.4	21.6	22.1	26.2	24.2	25.0	27.9	24.4	25.9
13	19.3	18.9	19.0	22.4	22.0	22.2	26.3	24.4	25.1	28.1	25.0	26.1
14	19.2	18.6	18.9	22.9	22.2	22.5	27.9	24.5	25.7	27.4	25.2	26.0
15	19.3	18.8	19.1	23.4	22.1	22.6	28.0	24.8	25.8	26.5	24.6	25.6
16	19.5	19.1	19.3	24.1	22.0	22.8	27.6	24.8	25.7	26.8	24.1	25.2
17	19.8	19.3	19.6	25.9	23.4	23.9	27.2	24.8	25.5	27.3	24.3	25.5
18	20.3	19.6	20.0	24.7	23.5	24.1	27.9	24.7	25.6	25.7	23.7	24.8
19	20.6	20.2	20.4	27.5	24.4	25.5	27.9	24.4	25.8	26.1	23.3	24.4
20	20.6	20.0	20.3	27.4	24.4	25.5	27.3	24.5	25.6	26.0	23.7	24.5
21	20.5	19.9	20.3	26.7	24.4	25.0	28.0	24.8	26.0	25.3	23.8	24.4
22	20.7	19.8	20.3	25.4	24.3	24.7	27.4	24.9	25.8	24.0	23.6	23.8
23	21.1	19.4	20.3	26.4	23.9	24.8	28.0	24.8	25.9	24.8	23.6	24.0
24	20.8	19.4	19.9	27.4	23.8	25.1	28.1	24.7	25.9	24.8	23.6	24.0
25	20.8	19.5	20.0	27.8	23.7	25.2	28.0	24.5	25.9	25.1	23.6	24.1
26	21.0	19.8	20.3	27.6	24.0	25.4	28.4	24.9	26.2	25.2	23.4	24.4
27	20.9	19.8	20.4	27.0	24.4	25.4	28.1	25.3	26.3	23.9	22.7	23.3
28	23.5	19.6	21.0	26.6	24.4	25.2	28.4	25.4	26.5	24.2	21.7	22.9
29	22.8	19.7	20.8	26.4	24.6	25.2	28.4	25.4	26.5	24.0	21.4	22.4
30	21.6	19.8	20.3	28.0	24.6	25.8	28.2	25.3	26.4	24.4	21.2	22.4
31	---	---	---	25.3	24.8	25.0	27.9	25.4	26.1	---	---	---
MONTH	23.5	18.3	19.7	28.0	19.6	23.2	28.4	23.8	25.4	28.2	21.2	24.9
YEAR	28.4	3.2	15.7									

03400800 MARTINS FORK NEAR SMITH, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	6.3	6.1	6.2	10.0	9.4	9.7	11.6	10.8	11.2	11.7	11.5	11.6
2	7.4	6.1	6.7	10.4	10.0	10.1	11.3	10.9	11.1	11.6	11.4	11.5
3	7.6	6.9	7.3	10.5	9.8	10.1	11.6	11.3	11.5	11.6	11.3	11.5
4	7.4	6.8	7.1	10.1	9.9	10.0	11.6	11.2	11.4	11.7	11.5	11.6
5	7.5	6.8	7.2	10.1	9.7	9.9	11.6	11.3	11.4	11.7	11.5	11.6
6	7.6	6.9	7.3	10.3	9.7	10.1	11.8	11.5	11.7	11.8	11.6	11.7
7	7.7	7.0	7.3	10.8	10.3	10.5	11.8	11.5	11.6	12.3	11.8	12.0
8	7.6	7.1	7.4	11.0	10.3	10.6	12.0	11.7	11.9	12.4	11.8	12.1
9	7.6	7.1	7.3	11.2	10.1	11.1	12.0	11.6	11.8	12.4	11.9	12.3
10	7.2	7.0	7.1	10.8	10.1	10.6	11.7	11.4	11.5	12.5	11.9	12.3
11	7.6	7.0	7.3	11.0	10.3	10.8	11.5	11.3	11.4	12.8	12.1	12.5
12	7.8	7.1	7.4	10.6	10.3	10.5	11.4	11.1	11.3	12.9	12.6	12.8
13	7.9	7.1	7.4	10.8	10.5	10.6	11.3	11.0	11.1	13.0	12.3	12.6
14	8.1	7.4	7.7	10.8	10.1	10.3	11.5	11.2	11.3	12.8	12.5	12.6
15	8.0	7.4	7.7	10.6	10.2	10.3	11.5	11.3	11.4	13.2	12.8	13.0
16	8.0	7.5	7.7	10.6	10.0	10.2	11.6	11.2	11.4	13.2	12.7	13.1
17	8.2	7.7	8.0	10.4	10.1	10.3	11.6	11.4	11.5	13.3	12.7	13.0
18	8.4	7.8	8.1	10.6	10.3	10.4	11.4	11.2	11.3	13.3	13.1	13.2
19	8.5	8.0	8.2	10.6	10.2	10.5	11.4	11.1	11.3	13.2	12.8	13.1
20	8.3	8.0	8.1	10.9	10.5	10.7	11.3	11.1	11.2	13.2	12.9	13.0
21	8.3	7.9	8.1	10.5	10.2	10.3	11.3	11.0	11.1	13.1	12.7	12.9
22	8.3	7.9	8.1	10.8	10.2	10.4	11.3	10.9	11.2	13.0	12.8	12.9
23	8.3	8.1	8.2	11.0	10.5	10.8	11.5	11.1	11.3	13.2	12.9	13.1
24	8.5	8.2	8.4	10.9	10.5	10.7	11.4	11.1	11.2	13.1	12.6	12.8
25	8.6	8.1	8.4	11.0	10.3	10.8	11.6	11.1	11.4	12.8	12.7	12.8
26	8.9	8.1	8.4	11.0	10.5	10.7	11.7	11.5	11.6	12.9	12.7	12.8
27	9.0	8.2	8.6	11.2	10.7	10.9	11.7	11.4	11.6	13.0	12.7	12.8
28	9.0	8.6	8.7	11.4	10.9	11.2	11.9	11.6	11.7	13.0	12.7	12.8
29	9.0	8.6	8.8	11.4	10.8	11.0	12.0	11.8	11.9	13.0	12.3	12.7
30	9.6	8.6	9.0	11.2	10.7	11.0	12.0	11.6	11.8	13.0	12.7	12.9
31	9.9	9.3	9.7	---	---	---	11.8	11.6	11.7	12.9	12.8	12.8
MONTH	9.9	6.1	7.8	11.4	9.4	10.5	12.0	10.8	11.4	13.3	11.3	12.5
	FEBRUARY			MARCH			APRIL			MAY		
1	13.0	12.7	12.8	11.4	10.4	10.9	10.6	10.1	10.2	9.8	9.4	9.6
2	12.9	12.5	12.6	11.6	10.1	11.2	10.4	10.0	10.2	9.6	9.2	9.5
3	12.6	12.4	12.5	11.3	10.2	10.9	10.3	9.7	10.1	9.6	9.2	9.4
4	12.7	12.3	12.6	11.6	9.9	10.9	10.3	9.7	10.0	9.7	9.3	9.5
5	12.8	12.5	12.7	10.9	10.4	10.7	10.1	9.7	9.9	9.5	8.9	9.3
6	12.7	12.5	12.6	10.5	9.8	10.2	10.1	9.8	10.0	9.3	8.9	9.1
7	12.7	12.5	12.6	11.1	9.8	10.7	10.0	9.6	9.8	9.4	9.1	9.3
8	12.9	12.7	12.8	10.4	9.8	10.1	10.3	9.7	10.0	9.5	9.1	9.3
9	12.9	12.6	12.8	10.6	10.0	10.2	10.6	10.3	10.4	9.3	9.1	9.2
10	12.8	12.6	12.7	11.3	10.1	10.7	10.7	10.5	10.6	9.5	9.1	9.3
11	12.8	12.5	12.7	11.6	10.7	11.2	10.8	10.5	10.6	9.5	9.2	9.3
12	12.7	12.5	12.6	11.6	11.0	11.3	10.7	10.5	10.6	9.6	9.2	9.4
13	12.7	12.6	12.7	11.6	10.9	11.2	10.7	10.5	10.6	9.5	9.2	9.3
14	12.7	12.4	12.6	11.4	11.0	11.2	10.7	10.5	10.6	9.4	9.1	9.3
15	12.5	12.3	12.4	11.4	11.0	11.2	10.5	10.3	10.4	9.3	7.2	9.0
16	12.3	11.6	12.0	11.2	10.8	11.0	10.7	10.2	10.4	9.4	8.8	9.1
17	12.0	11.6	11.8	11.2	10.5	10.8	10.7	10.5	10.6	9.2	7.8	9.0
18	12.0	11.8	11.9	10.8	10.3	10.6	10.8	10.5	10.6	9.1	8.8	8.9
19	12.1	11.9	12.0	10.7	10.5	10.6	10.8	10.4	10.7	9.2	8.8	9.0
20	12.3	11.8	12.1	10.7	10.4	10.6	10.6	10.4	10.5	10.5	9.2	9.9
21	12.3	11.7	12.0	10.6	10.2	10.5	10.6	10.2	10.4	10.2	9.3	10
22	11.9	10.9	11.4	10.5	10.1	10.3	10.5	10.1	10.3	11.0	9.5	10.2
23	11.6	10.9	11.3	10.6	10.2	10.5	10.5	10.2	10.4	11.4	9.4	10.3
24	11.4	10.9	11.0	11.0	10.3	10.7	10.4	9.8	10.1	11.7	10.3	11.0
25	11.8	11.0	11.3	11.0	10.7	10.9	10.2	9.8	10	11.6	9.8	10.9
26	11.6	11.3	11.4	10.9	10.7	10.8	10.0	9.8	9.9	11.3	9.3	10.5
27	11.9	10.2	11.0	10.9	10.7	10.8	10.0	9.6	9.9	10.4	8.3	9.4
28	11.4	10.5	10.8	10.8	10.2	10.5	9.9	9.7	9.8	8.5	8.2	8.3
29	---	---	---	10.7	10.2	10.4	9.9	9.6	9.8	8.5	8.1	8.3
30	---	---	---	10.5	10.2	10.4	9.8	9.6	9.7	8.8	8.1	8.5
31	---	---	---	10.6	10.3	10.5	---	---	---	8.8	8.6	8.7
MONTH	13.0	10.2	12.1	11.6	9.8	10.7	10.8	9.6	10.2	11.7	7.2	9.4

03400800 MARTINS FORK NEAR SMITH, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	8.9	8.6	8.8	9.8	8.1	8.8	7.6	7.0	7.4	6.9	5.3	6.4
2	9.1	8.4	8.7	10.9	9.3	10.3	7.5	7.3	7.4	6.9	5.3	6.5
3	9.4	8.4	8.8	11.0	10.2	10.6	7.4	7.1	7.2	6.8	6.5	6.7
4	9.3	8.9	9.0	10.6	9.8	10.2	7.2	7.0	7.1	6.9	6.5	6.7
5	9.5	8.8	9.1	10.5	9.0	10.0	7.2	7.0	7.2	6.9	6.6	6.7
6	9.1	8.3	8.9	10.2	8.7	9.6	7.3	7.0	7.2	6.9	6.7	6.8
7	9.2	6.7	7.5	10.2	7.5	9.2	7.3	7.0	7.1	7.1	6.7	6.9
8	8.2	6.8	7.6	7.8	7.2	7.5	7.4	7.1	7.2	7.0	6.5	6.8
9	10.1	8.1	9.2	7.6	7.1	7.3	7.5	7.2	7.4	7.2	6.6	6.9
10	11.1	9.1	9.5	7.8	6.8	7.4	7.6	7.4	7.4	7.4	6.8	7.1
11	10.6	9.0	9.6	7.7	7.5	7.6	8.0	7.4	7.7	7.5	6.9	7.1
12	11.4	8.9	9.6	7.7	7.4	7.5	8.2	7.7	8.0	7.6	6.9	7.3
13	10.5	8.8	9.6	7.7	7.5	7.6	9.2	7.7	8.1	7.6	7.1	7.3
14	10.1	9.4	9.8	8.2	7.6	7.8	8.9	7.2	8.0	7.6	7.1	7.3
15	9.8	9.3	9.7	8.7	8.0	8.3	8.4	7.1	7.6	7.6	7.1	7.4
16	9.8	9.3	9.6	8.6	8.1	8.4	8.0	7.0	7.5	7.6	7.3	7.5
17	9.6	9.1	9.4	8.5	8.1	8.4	7.6	6.9	7.1	7.4	7.0	7.2
18	9.5	8.7	9.1	8.3	7.4	8.0	7.6	6.8	7.2	7.2	6.8	7.0
19	9.2	8.8	9.1	7.9	7.4	7.6	7.5	6.8	7.2	7.3	6.8	7.0
20	9.4	9.1	9.2	7.8	7.3	7.5	7.7	6.8	7.2	7.2	6.8	7.0
21	9.5	8.9	9.3	7.8	7.2	7.5	7.9	6.8	7.3	7.0	6.7	6.9
22	9.3	8.2	9.1	7.6	7.2	7.4	7.7	6.8	7.2	7.0	6.7	6.8
23	9.7	8.6	9.2	7.7	7.3	7.5	7.6	6.8	7.1	7.4	6.7	7.1
24	9.6	8.5	9.1	7.7	7.3	7.5	7.3	6.8	7.0	7.3	6.9	7.1
25	10.0	8.3	9.3	7.6	7.2	7.4	7.4	6.8	7.1	7.1	6.8	6.9
26	9.4	8.2	9.0	7.7	7.2	7.4	7.7	7.0	7.3	7.0	6.3	6.8
27	8.9	7.6	8.4	7.6	7.2	7.4	7.5	6.9	7.2	6.6	6.4	6.5
28	8.4	8.2	8.3	7.7	7.2	7.4	7.6	6.7	7.0	7.0	6.6	6.8
29	8.6	8.2	8.4	8.0	7.3	7.6	6.9	5.2	6.4	7.2	7.0	7.1
30	8.8	8.1	8.3	7.7	7.2	7.4	6.8	5.5	6.4	7.5	6.9	7.3
31	---	---	---	7.4	7.1	7.2	7.1	5.5	6.6	---	---	---
MONTH	11.4	6.7	9.0	11.0	6.8	8.1	9.2	5.2	7.3	7.6	5.3	7.0
YEAR	13.3	5.2	9.7									

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03401000 CUMBERLAND RIVER NEAR HARLAN, KY

LOCATION.--Lat 36°50'48", long 83°21'21", Harlan County, Hydrologic Unit 05130101, on right downstream side of bridge on State Highway 840 at Loyall, 1.6 mi upstream from Fourmile Branch, 1.8 mi west of Harlan, 2.3 mi downstream from confluence of Poor and Clover Forks, and at mile 691.9.

DRAINAGE AREA.--374 mi^2.

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

REVISED RECORDS.--WSP 953: 1940(M). WSP 1173: 1947(M).

GAGE.--Water-stage recorder with telemetry. Datum of gage is 1,139.10 ft above NGVD of 1929. Prior to Aug. 28, 1984, datum of gage 1.00 ft higher. Prior to Nov. 4, 1941, nonrecording gage at same site and datum.

REMARKS.--Records good. Flow slightly regulated by Martins Fork Dam (station 03400798) beginning January 1979.

COOPERATION.--U.S. Army Corps of Engineers, Nashville District.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 23,200 ft^3/s, Feb. 16, gage height, 20.81 ft.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	158	350	377	679	712	1,780	385	533	516	368	896	302
2	144	301	347	652	655	1,640	450	569	443	369	663	189
3	89	276	334	668	636	1,430	484	551	482	424	823	172
4	76	275	344	752	1,480	1,310	460	483	612	368	866	727
5	85	187	1,810	744	1,560	1,190	541	1,030	572	337	727	601
6	88	541	1,690	728	1,170	1,140	544	1,390	503	320	740	299
7	76	573	1,170	683	1,020	994	4,160	1,260	3,250	315	1,090	228
8	68	586	951	649	847	797	4,430	1,150	2,390	257	691	193
9	68	494	829	541	753	753	8,840	1,360	1,620	267	449	167
10	75	467	747	519	751	704	8,760	1,000	1,380	420	334	153
11	96	2,920	1,080	e470	695	645	8,650	803	1,250	713	383	142
12	94	1,480	1,220	e440	583	529	4,020	647	1,280	661	421	133
13	85	1,290	1,240	e410	509	520	2,720	651	1,030	586	289	127
14	79	1,080	1,980	e380	552	535	2,110	591	723	527	244	122
15	80	956	1,590	e360	5,150	530	1,780	594	1,050	509	215	124
16	162	935	1,250	e350	16,000	516	1,480	581	1,360	343	203	118
17	204	963	1,140	e335	5,070	499	1,320	736	1,950	316	229	114
18	148	911	1,000	e325	3,430	430	2,470	1,250	2,810	319	235	106
19	114	692	935	e320	2,680	410	2,050	961	3,730	247	199	101
20	111	773	2,980	e315	2,230	390	1,540	869	2,280	193	176	99
21	114	846	1,990	e365	1,870	381	1,280	1,050	1,670	189	164	95
22	102	920	1,430	e315	7,580	358	995	1,150	1,380	201	157	245
23	93	825	1,170	e300	5,410	340	866	877	1,120	232	182	367
24	91	724	1,130	e295	2,890	324	769	773	626	222	152	202
25	88	631	1,310	e285	2,160	370	721	650	535	181	138	167
26	98	578	1,270	e285	1,850	382	895	592	536	163	133	156
27	97	562	1,150	e280	1,710	381	772	519	529	151	125	136
28	99	441	1,040	e275	1,790	360	693	430	384	156	123	151
29	162	413	947	428	---	319	611	474	339	261	142	122
30	516	402	844	746	---	369	573	495	371	362	161	102
31	431	---	605	751	---	386	---	537	---	824	362	---
TOTAL	3,991	22,392	35,900	14,645	71,743	20,712	65,369	24,556	36,721	10,801	11,712	5,960
MEAN	129	746	1,158	472	2,562	668	2,179	792	1,224	348	378	199
MAX	516	2,920	2,980	752	16,000	1,780	8,840	1,390	3,730	824	1,090	727
MIN	68	187	334	275	509	319	385	430	339	151	123	95
CFSM	0.34	2.00	3.10	1.26	6.85	1.79	5.83	2.12	3.27	0.93	1.01	0.53
IN.	0.40	2.23	3.57	1.46	7.14	2.06	6.50	2.44	3.65	1.07	1.16	0.59

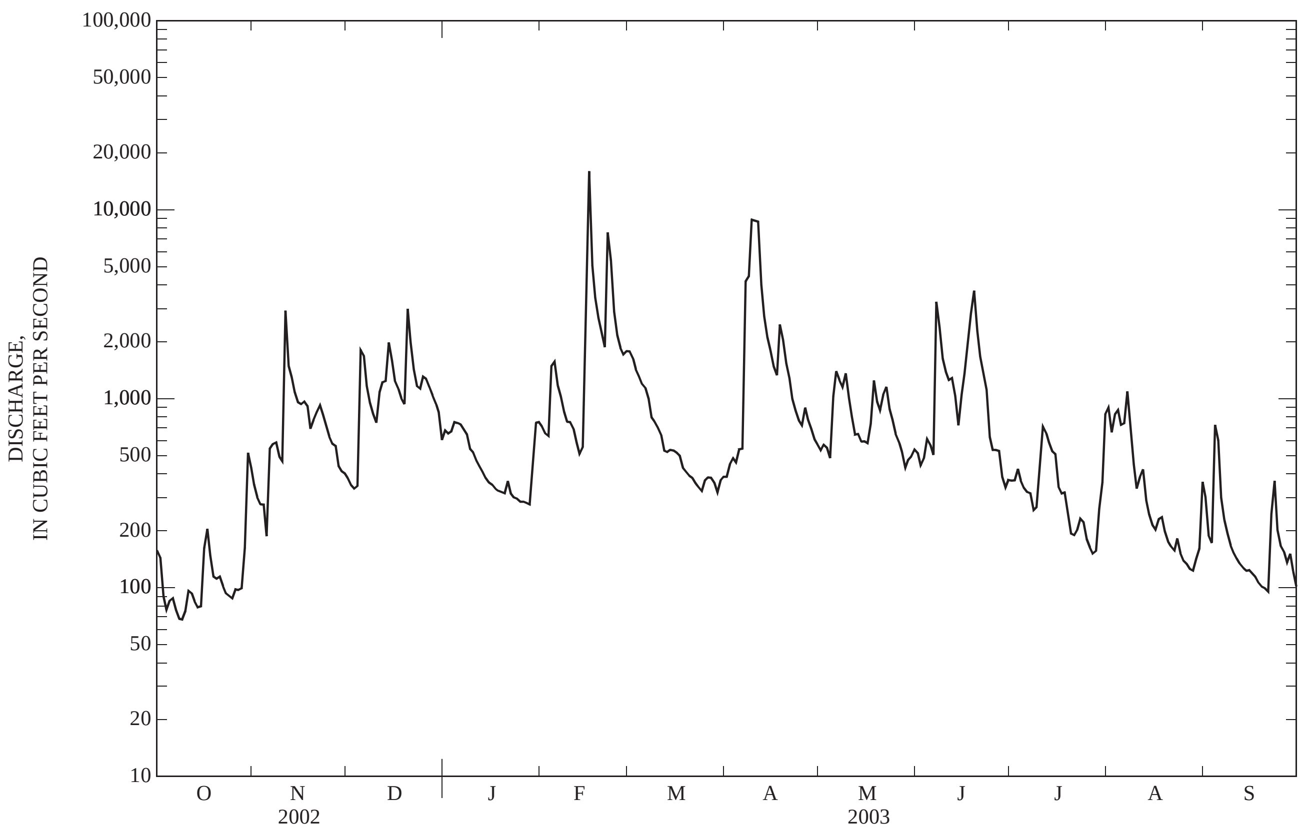
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1980 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	186	463	821	987	1,303	1,293	1,061	837	476	242	218	161
MAX	1,129	1,532	2,704	1,783	3,259	2,684	2,986	2,003	1,789	453	534	864
(WY)	(1990)	(1997)	(1992)	(1994)	(1994)	(1994)	(1998)	(1984)	(1989)	(1991)	(1996)	(1989)
MIN	30.0	51.1	88.9	63.5	554	334	211	330	96.1	57.3	52.7	38.3
(WY)	(1998)	(1999)	(1981)	(1981)	(1988)	(1988)	(1986)	(1982)	(1988)	(1988)	(1988)	(1999)

03401000 CUMBERLAND RIVER NEAR HARLAN, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1980 - 2003	
ANNUAL TOTAL	240,889		324,502			
ANNUAL MEAN	660		889		667	
HIGHEST ANNUAL MEAN					1,130	1994
LOWEST ANNUAL MEAN					333	1988
HIGHEST DAILY MEAN	21,300	Mar 18	16,000	Feb 16	21,300	Mar 18, 2002
LOWEST DAILY MEAN	33	Sep 11	68	Oct 8	16	Oct 9, 1997
ANNUAL SEVEN-DAY MINIMUM	37	Sep 8	77	Oct 4	17	Oct 4, 1997
MAXIMUM PEAK FLOW			23,200	Feb 16	64,500	Apr 5, 1977
MAXIMUM PEAK STAGE			20.81	Feb 16	30.20	Apr 5, 1977
INSTANTANEOUS LOW FLOW					3.0	Oct 9, 1953
ANNUAL RUNOFF (CFSM)	1.76		2.38		1.78	
ANNUAL RUNOFF (INCHES)	23.96		32.28		24.24	
10 PERCENT EXCEEDS	1,280		1,740		1,490	
50 PERCENT EXCEEDS	347		535		361	
90 PERCENT EXCEEDS	68		131		67	

e Estimated



03402000 YELLOW CREEK NEAR MIDDLESBORO, KY

LOCATION.--Lat 36°40'05", long 83°41'19", Bell County, Hydrologic Unit 05130101, on left bank 35 ft downstream from bridge on U.S. Highway 25E, 1.2 mi downstream from Browne Branch, 4.6 mi north of Middlesboro, and at mile 11.4.

DRAINAGE AREA.--60.6 mi^2. See WRD-KY-98-1 for history of changes.

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

REVISED RECORDS.--WSP 953: 1941(M). WSP 973: 1942(M). WSP 1436: Drainage area. WRD KY 1969: 1965(M), 1967(M).

GAGE.--Water-stage recorder with telemetry and crest-stage gages. Datum of gage is 1,097.99 ft above NGVD of 1929. See WDR KY-90-1 for history of changes prior to Sept. 30, 1973.

REMARKS.--Flows affected by channelization work above gage during the current year. Records good except those estimated, which are poor. Occasional regulation from Fern Lake.

COOPERATION.--U.S. Army Corps of Engineers, Nashville District and Kentucky Natural Resources and Enviromental Protection Cabinet.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb 16	0700	*6,710	*19.39	Apr 10	1900	3,690	13.86
Apr 9	0800	3,150	12.82				

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	25	31	240	105	232	87	62	47	74	295	29
2	13	21	30	201	89	203	82	58	40	73	124	23
3	12	21	30	175	82	165	77	54	40	60	234	148
4	12	28	62	135	222	137	73	48	54	45	293	100
5	22	75	684	119	181	124	136	197	41	132	179	51
6	14	123	294	102	150	124	115	155	36	133	120	36
7	11	67	161	87	145	98	1,510	170	1,040	64	121	30
8	10	46	109	e75	105	90	882	166	435	49	87	27
9	10	37	86	e68	90	84	2,230	208	196	104	69	25
10	13	65	76	e62	97	77	2,300	121	108	184	59	23
11	43	1,020	224	e56	87	73	1,430	147	83	295	203	22
12	26	153	185	e52	80	70	531	95	104	126	128	21
13	18	80	350	e49	73	74	309	76	70	82	70	20
14	14	61	619	e47	168	71	221	67	65	68	56	19
15	13	53	295	e46	2,290	66	173	65	187	56	49	20
16	31	56	196	e44	4,200	64	141	66	181	51	45	19
17	20	45	139	e42	1,040	63	363	79	272	46	46	18
18	14	38	107	e40	477	64	882	127	448	40	44	17
19	13	50	109	e38	307	83	355	92	505	36	35	17
20	18	46	621	e37	238	113	236	74	253	34	32	17
21	17	75	287	e46	197	91	197	97	150	37	31	16
22	13	85	189	e40	1,630	82	147	84	103	321	29	348
23	12	69	133	e35	848	76	117	87	79	275	28	127
24	14	59	171	e32	407	72	99	72	67	116	26	48
25	18	50	261	e31	297	67	90	65	56	76	24	35
26	25	46	212	e30	264	66	124	61	51	57	23	30
27	16	48	165	e29	253	62	86	55	57	48	23	34
28	19	38	130	e28	255	59	76	51	49	43	25	40
29	48	35	105	138	---	82	69	73	42	56	25	27
30	48	34	90	162	---	112	64	58	54	44	28	23
31	32	---	80	120	---	90	---	60	---	495	31	---
TOTAL	604	2,649	6,231	2,406	14,377	2,934	13,202	2,890	4,913	3,320	2,582	1,410
MEAN	19.5	88.3	201	77.6	513	94.6	440	93.2	164	107	83.3	47.0
MAX	48	1,020	684	240	4,200	232	2,300	208	1,040	495	295	348
MIN	10	21	30	28	73	59	64	48	36	34	23	16
CFSM	0.32	1.46	3.32	1.28	8.47	1.56	7.26	1.54	2.70	1.77	1.37	0.78
IN.	0.37	1.63	3.82	1.48	8.83	1.80	8.10	1.77	3.02	2.04	1.58	0.87

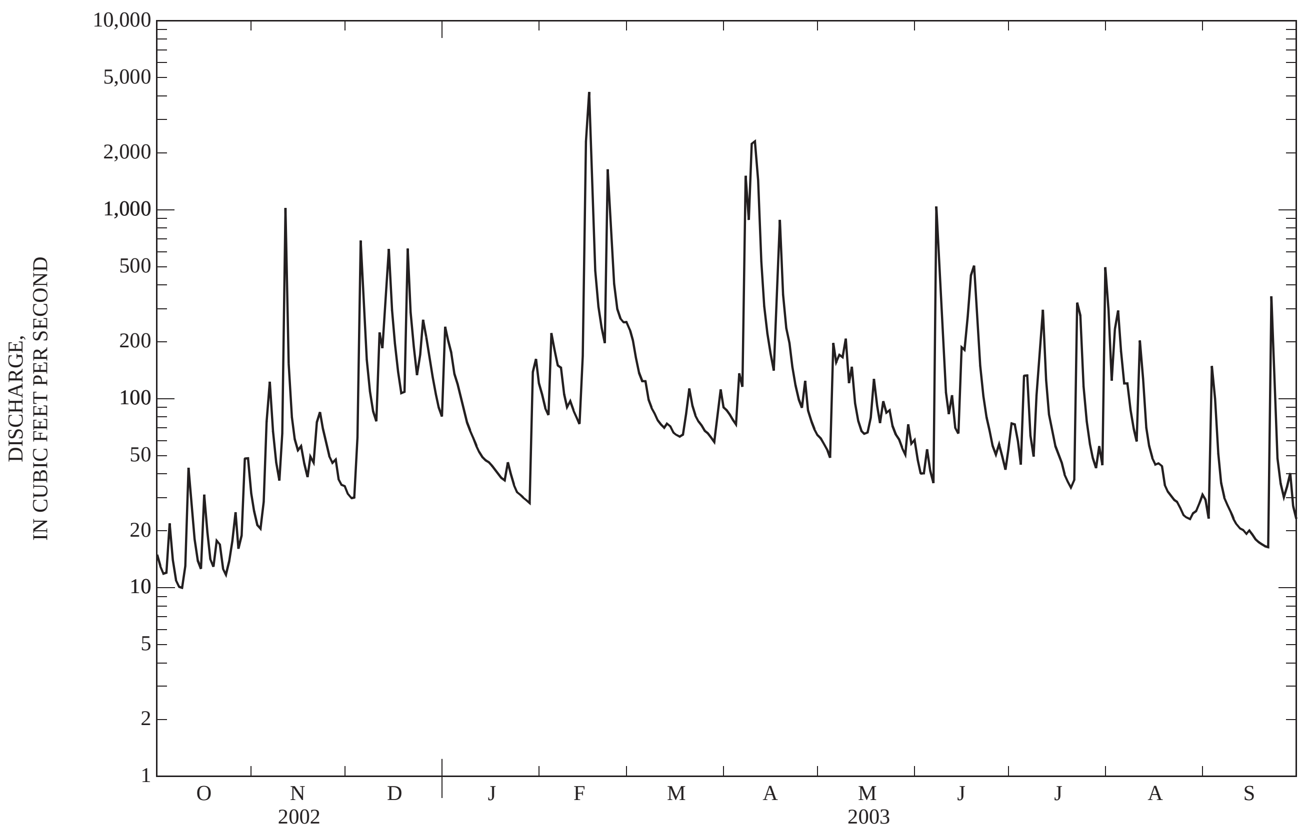
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	24.1	75.8	159	206	232	250	183	116	66.6	51.5	35.9	19.9
MAX	155	416	609	551	677	610	569	539	298	345	197	109
(WY)	(1978)	(1974)	(1991)	(1974)	(1991)	(1975)	(1998)	(1984)	(1989)	(1967)	(1942)	(1982)
MIN	3.05	5.35	7.34	14.4	14.9	47.6	34.9	17.2	13.8	4.26	6.00	3.02
(WY)	(1954)	(1941)	(1966)	(1981)	(1941)	(1988)	(1986)	(1941)	(1988)	(1944)	(1951)	(1954)

03402000 YELLOW CREEK NEAR MIDDLESBORO, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1941 - 2003	
ANNUAL TOTAL	35,750.7		57,518			
ANNUAL MEAN	97.9		158		118	
HIGHEST ANNUAL MEAN					219	1991
LOWEST ANNUAL MEAN					49.5	1941
HIGHEST DAILY MEAN	3,960	Mar 18	4,200	Feb 16	7,000	Apr 4, 1977
LOWEST DAILY MEAN	4.0	Sep 13	10	Oct 8	1.2	Oct 7, 1952
ANNUAL SEVEN-DAY MINIMUM	4.3	Sep 7	13	Oct 3	1.6	Sep 17, 1955
MAXIMUM PEAK FLOW			6,710	Feb 16	11,700	Apr 4, 1977
MAXIMUM PEAK STAGE			19.39	Feb 16	23.35	Apr 4, 1977
INSTANTANEOUS LOW FLOW					0.00	Sep 26, 1952
ANNUAL RUNOFF (CFSM)	1.62		2.60		1.95	
ANNUAL RUNOFF (INCHES)	21.95		35.31		26.44	
10 PERCENT EXCEEDS	165		289		250	
50 PERCENT EXCEEDS	34		72		45	
90 PERCENT EXCEEDS	7.0		22		7.7	

e Estimated



03402900 CUMBERLAND RIVER AT PINE STREET BRIDGE AT PINEVILLE, KY

LOCATION.--Lat 36°45'47", long 83°41'31", Bell County, Hydrologic Unit 05130101, on pier near right bank on Pine St. bridge at Pineville, 0.2 mi downstream from Straight Creek, and at mile 654.4.

DRAINAGE AREA.--770 mi^2.

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

GAGE.--Water-stage recorder with telemetry. Datum of gage is 970.00 ft above sea level, Sandy Hook datum.

REMARKS.--Records good except those estimated, which are poor. Flow slightly regulated by Martins Fork Dam (station 03400798) beginning January 1979.

COOPERATION.--U.S. Army Corps of Engineers, Nashville District.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 39,300 ft^3/s, Feb. 16, gage height, 43.22 ftt.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	287	562	525	1,520	1,560	3,480	952	1,030	984	756	3,400	667
2	243	462	478	1,680	1,400	3,190	936	1,030	805	718	1,580	593
3	218	405	469	1,570	1,280	2,730	975	1,080	749	736	2,080	857
4	172	406	477	1,540	2,290	2,370	948	919	964	682	2,490	2,040
5	149	446	4,050	1,500	3,280	2,170	1,100	1,530	1,030	678	1,800	1,800
6	160	867	3,960	1,430	2,420	2,040	1,240	2,710	839	836	1,390	930
7	155	1,060	2,350	1,310	2,070	1,850	9,420	2,380	5,080	637	1,970	629
8	137	907	1,780	e1,200	1,700	1,550	8,980	2,270	6,520	563	1,590	498
9	126	784	1,480	e1,060	1,450	1,410	20,700	2,200	3,020	512	1,070	416
10	132	690	1,310	e970	1,400	1,310	18,700	2,080	2,340	886	775	353
11	201	5,780	2,000	e906	1,330	1,220	22,800	1,650	1,940	1,690	722	314
12	242	2,870	2,480	e828	1,180	1,090	10,100	1,380	2,030	1,370	1,070	287
13	209	1,970	2,800	e760	1,020	1,000	5,370	1,130	1,750	1,030	687	267
14	175	1,570	5,670	e700	1,040	1,020	3,940	1,060	1,350	875	538	252
15	160	1,320	3,870	e650	9,710	963	3,190	988	2,460	769	463	251
16	215	1,270	2,660	e620	34,600	937	2,680	1,100	3,570	730	445	245
17	326	1,260	2,160	e600	22,000	914	2,530	1,230	4,930	626	477	228
18	324	1,290	1,840	e570	8,340	869	5,220	2,460	4,820	530	476	219
19	248	1,080	1,650	e550	5,120	809	4,490	1,990	7,220	524	416	208
20	216	1,140	5,010	e530	4,000	866	3,180	1,580	4,860	401	357	205
21	218	1,230	4,290	e604	3,380	788	2,620	1,790	3,110	366	319	198
22	213	1,410	2,820	e560	10,700	740	2,090	2,170	2,360	545	295	743
23	192	1,300	2,170	e500	14,200	687	1,760	1,840	1,950	838	279	1,310
24	173	1,120	2,050	e460	6,490	654	1,540	1,510	1,400	571	294	648
25	174	965	2,600	e440	4,520	629	1,410	1,250	1,020	456	252	438
26	179	837	2,600	e430	3,780	680	1,730	1,080	887	374	233	359
27	188	807	2,260	e420	3,380	687	1,620	929	916	323	222	403
28	186	686	1,970	e410	3,470	654	1,410	800	830	303	211	524
29	216	585	1,740	779	---	675	1,240	929	675	386	228	393
30	534	559	1,550	1,760	---	859	1,130	1,040	651	520	359	311
31	674	---	1,290	1,720	---	992	---	980	---	2,290	545	---
TOTAL	7,042	35,638	72,359	28,577	157,110	39,833	144,001	46,115	71,060	22,521	27,033	16,586
MEAN	227	1,188	2,334	922	5,611	1,285	4,800	1,488	2,369	726	872	553
MAX	674	5,780	5,670	1,760	34,600	3,480	22,800	2,710	7,220	2,290	3,400	2,040
MIN	126	405	469	410	1,020	629	936	800	651	303	211	198
CFSM	0.30	1.54	3.03	1.20	7.29	1.67	6.23	1.93	3.08	0.94	1.13	0.72
IN.	0.34	1.72	3.50	1.38	7.59	1.92	6.96	2.23	3.43	1.09	1.31	0.80

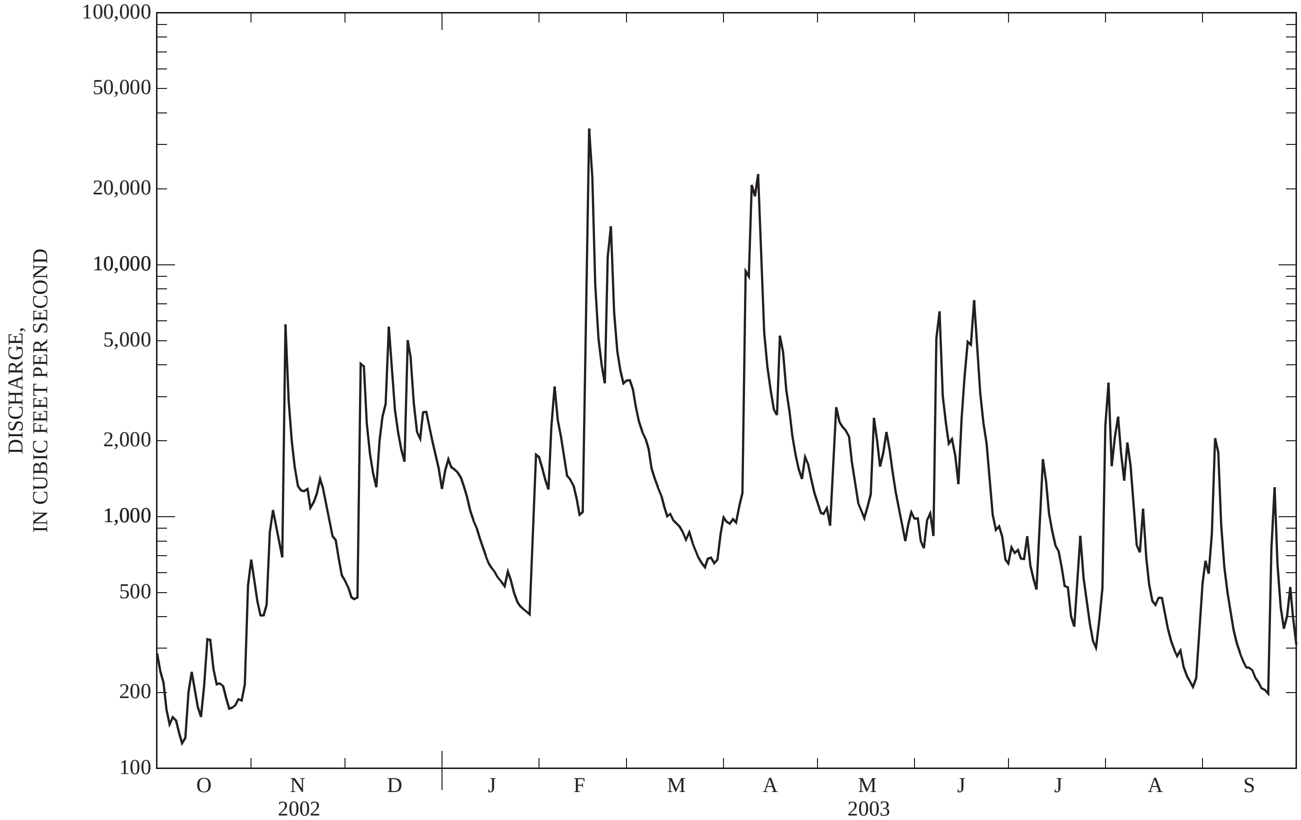
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	212	696	1,743	2,162	2,582	3,029	2,463	1,533	907	411	448	233
MAX	670	3,009	5,204	4,201	6,720	5,367	5,977	3,091	2,369	726	923	553
(WY)	(1997)	(1997)	(1992)	(1994)	(1994)	(1994)	(1998)	(1995)	(2003)	(2003)	(1996)	(2003)
MIN	87.4	104	342	640	964	1,285	817	796	245	176	107	59.7
(WY)	(1999)	(1999)	(2000)	(2000)	(2002)	(2003)	(1995)	(1993)	(2002)	(1993)	(1995)	(1999)

03402900 CUMBERLAND RIVER AT PINE STREET BRIDGE AT PINEVILLE, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1992 - 2003	
ANNUAL TOTAL	453,540		667,875			
ANNUAL MEAN	1,243		1,830		1,362	
HIGHEST ANNUAL MEAN					2,241	1994
LOWEST ANNUAL MEAN					792	2000
HIGHEST DAILY MEAN	41,500	Mar 18	34,600	Feb 16	41,500	Mar 18, 2002
LOWEST DAILY MEAN	53	Sep 13	126	Oct 9	48	Sep 20, 1999
ANNUAL SEVEN-DAY MINIMUM	59	Sep 8	147	Oct 4	49	Sep 16, 1999
MAXIMUM PEAK FLOW			39,300	Feb 16	46,700	Mar 18, 2002
MAXIMUM PEAK STAGE			43.22	Feb 16	47.32	Mar 18, 2002
INSTANTANEOUS LOW FLOW					47	Sep 20, 1999
ANNUAL RUNOFF (CFSM)	1.61		2.38		1.77	
ANNUAL RUNOFF (INCHES)	21.91		32.27		24.04	
10 PERCENT EXCEEDS	2,330		3,470		2,950	
50 PERCENT EXCEEDS	515		1,000		651	
90 PERCENT EXCEEDS	107		250		119	

e Estimated



03403500 CUMBERLAND RIVER AT BARBOURVILLE, KY

LOCATION.--Lat 36°51'45", long 83°53'31", Knox County, Hydrologic Unit 05130101, on right bank 100 ft upstream from bridge on State Highway 11, at Barbourville, 0.4 mi upstream from Richland Creek, and at mile 635.2.

DRAINAGE AREA.-960 mi^2.

PERIOD OF RECORD.--October 1922 to September 1931, April 1948 to July 2, 1993, October 1995 to current year. Monthly discharge only April to June 1948, published in WSP 1306.

REVISED RECORDS.--WSP 603: 1923-24. WSP 1336: 1923(M). 1927, 1929, 1950-51. WSP 1436: Drainage area.

GAGE.--Water-stage recorder with telemetry. Datum of gage is 942.97 ft above NGVD of 1929. See WRD KY-90-1 for history of changes prior to Oct. 17, 1975.

REMARKS.--Records fair except for those estimated, which are poor. Flow slightly regulated by Martins Fork Dam (station 03400798) beginning January 1979. Diversions by City of Barbourville for municipal water supply.

COOPERATION.--U.S. Army Corps of Engineers, Nashville District.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 35,300 ft/3s, Feb. 17, gage height, 36.36.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	355	689	545	1,540	2,230	4,130	1,310	1,290	1,330	862	4,380	986
2	301	564	493	2,270	1,970	3,920	1,250	1,330	1,110	903	2,120	711
3	264	476	443	2,080	1,710	3,460	1,240	1,450	959	862	1,980	855
4	231	450	473	1,940	2,550	2,990	1,230	1,230	1,140	840	3,410	2,680
5	174	501	3,260	1,870	4,290	2,740	1,370	1,580	1,310	731	2,720	2,700
6	162	850	5,860	1,770	3,430	2,560	1,690	3,200	1,120	1,000	1,870	1,420
7	168	1,370	3,310	1,610	2,780	2,400	8,390	2,980	3,010	795	2,080	868
8	162	1,150	2,180	1,470	2,340	2,090	14,300	3,030	9,640	680	2,160	632
9	141	989	1,690	e1,300	1,950	1,840	18,900	2,770	4,770	684	1,440	520
10	135	802	1,390	e1,190	1,830	1,700	24,300	2,730	2,980	1,100	1,050	438
11	202	3,770	1,910	e1,060	1,770	1,570	28,500	2,160	2,460	2,310	833	380
12	291	4,530	3,120	e960	1,560	1,430	24,500	1,940	2,620	1,950	1,180	341
13	297	2,380	3,040	e898	1,360	1,240	15,100	1,460	2,350	1,410	946	321
14	252	1,880	7,510	e840	1,280	1,280	8,340	1,310	2,510	1,150	682	305
15	208	1,510	7,190	e810	6,310	1,190	4,390	1,180	3,860	979	563	298
16	236	1,410	3,850	e740	24,900	1,140	3,330	1,390	5,130	921	498	298
17	326	1,390	2,660	e700	33,900	1,110	3,020	1,500	8,120	791	563	288
18	403	1,420	2,160	e670	25,200	1,080	5,600	2,930	8,580	664	521	266
19	340	1,290	1,820	e640	15,100	984	6,030	2,890	9,690	589	526	250
20	297	1,180	3,660	e620	8,680	1,050	4,250	2,180	8,970	544	431	238
21	282	1,290	5,570	e710	4,830	971	3,370	2,360	4,890	428	e380	233
22	278	1,500	3,640	e600	8,400	918	2,810	3,040	3,100	472	e350	461
23	260	1,500	2,660	e560	19,100	845	2,360	2,650	2,500	1,020	e320	1,900
24	229	1,290	2,350	e530	14,100	791	2,060	2,130	1,960	790	e360	1,030
25	209	1,060	3,210	e515	8,180	754	1,860	1,770	1,360	591	e310	584
26	206	919	3,520	e500	5,100	772	2,200	1,500	1,140	471	e294	456
27	222	840	2,910	e490	4,180	816	2,240	1,300	1,150	400	276	491
28	236	779	2,410	e480	4,100	776	1,860	1,120	1,160	351	262	761
29	250	614	2,060	860	---	796	1,620	1,130	874	416	254	588
30	383	567	1,780	2,620	---	1,060	1,430	1,440	807	553	325	455
31	811	---	1,490	2,620	---	1,310	---	1,290	---	1,240	689	---
TOTAL	8,311	38,960	88,164	35,463	213,130	49,713	198,850	60,260	100,600	26,497	33,773	21,754
MEAN	268	1,299	2,844	1,144	7,612	1,604	6,628	1,944	3,353	855	1,089	725
MAX	811	4,530	7,510	2,620	33,900	4,130	28,500	3,200	9,690	2,310	4,380	2,700
MIN	135	450	443	480	1,280	754	1,230	1,120	807	351	254	233
CFSM	0.28	1.35	2.96	1.19	7.93	1.67	6.90	2.02	3.49	0.89	1.13	0.76
IN.	0.32	1.51	3.42	1.37	8.26	1.93	7.71	2.34	3.90	1.03	1.31	0.84

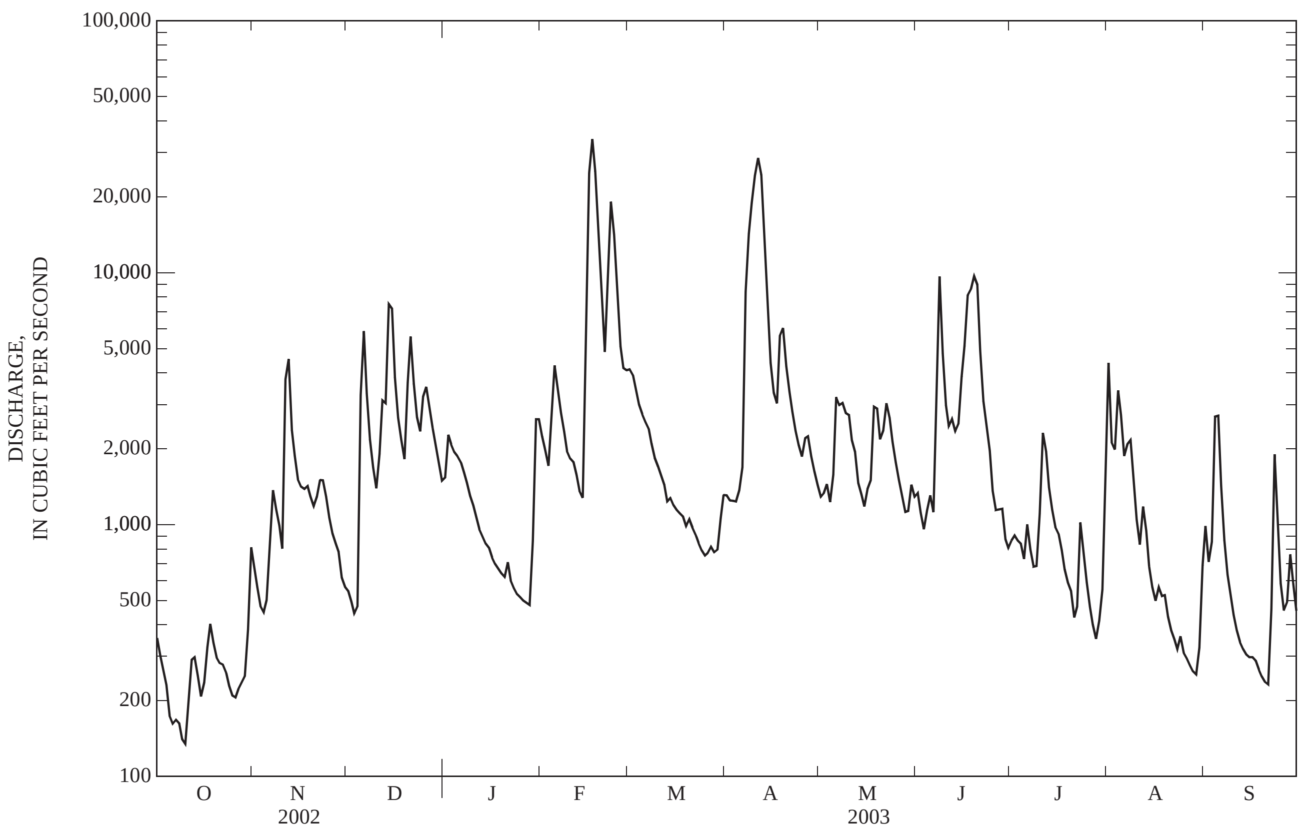
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1980 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	429	1,156	2,080	2,511	3,183	3,278	2,777	2,028	1,250	548	470	405
MAX	3,058	3,816	5,837	5,582	7,612	6,208	8,578	6,782	5,524	1,071	1,089	1,894
(WY)	(1990)	(1997)	(1992)	(1982)	(2003)	(1997)	(1998)	(1984)	(1989)	(1989)	(2003)	(1989)
MIN	87.9	117	193	135	1,220	791	549	635	201	141	124	60.5
(WY)	(1981)	(1999)	(1981)	(1981)	(1999)	(1988)	(1986)	(1986)	(1988)	(1988)	(1999)	(1999)

03403500 CUMBERLAND RIVER AT BARBOURVILLE, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1980 - 2003	
ANNUAL TOTAL	601,417		875,475			
ANNUAL MEAN	1,648		2,399		1,667	
HIGHEST ANNUAL MEAN					2,417	1989
LOWEST ANNUAL MEAN					824	1988
HIGHEST DAILY MEAN	38,000	Mar 19	33,900	Feb 17	41,600	May 8, 1984
LOWEST DAILY MEAN	51	Sep 13	135	Oct 10	50	Sep 19, 1999
ANNUAL SEVEN-DAY MINIMUM	57	Sep 9	163	Oct 5	53	Sep 16, 1999
MAXIMUM PEAK FLOW			35,300	Feb 17	56,100	Apr 6, 1977
MAXIMUM PEAK STAGE			36.36	Feb 17	45.91	Apr 6, 1977
INSTANTANEOUS LOW FLOW					0.20	Oct 5, 1930
ANNUAL RUNOFF (CFSM)	1.72		2.50		1.74	
ANNUAL RUNOFF (INCHES)	23.30		33.92		23.60	
10 PERCENT EXCEEDS	3,100		4,380		3,660	
50 PERCENT EXCEEDS	583		1,290		823	
90 PERCENT EXCEEDS	108		303		124	

e Estimated



03403910 CLEAR FORK AT SAXTON, KY

LOCATION.--Lat 36°38'02",long 84°06'42", Whitley County, Hydrologic Unit 05130101, on State Highway 1804 bridge, at Saxton, 100 ft upstream from CSX Railroad bridge, 150 ft downstream from unnamed stream. 7.2 mi southeast of Williamsburg, and at mile 12.2.

DRAINAGE AREA.--331 mi^2.

PERIOD OF RECORD.--July 1968 to September 1990, October 1995 to current year.

GAGE.--Water-stage recorder with telemetry and crest-stage gage. Datum of gage is 921.83 ft above NGVD of 1929.

REMARKS.--Records good except for those estimated, which are poor.

COOPERATION.--U.S. Army Corps of Engineers, Nashville District.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 5,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb 16	unknown	*14,000	32.26	Apr 11	unknown	10,900	27.73
Apr 7	1700	7,250	21.78	Apr 18	0730	5,780	19.24

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	92	151	136	577	641	e1,150	472	1,300	228	662	1,610	253
2	75	120	123	668	536	e1,020	433	601	191	476	698	129
3	65	99	121	638	468	e870	385	467	175	378	1,420	674
4	57	95	141	561	984	e720	352	371	240	281	2,560	2,630
5	58	142	2,900	515	1,040	652	484	863	217	264	1,300	1,210
6	64	670	1,920	470	815	628	653	1,420	173	386	805	532
7	58	573	974	407	747	556	5,310	1,540	1,190	242	708	354
8	52	374	698	373	592	484	3,650	1,480	1,280	195	535	269
9	51	256	551	e330	494	449	5,370	1,030	676	352	396	704
10	51	203	476	e295	494	410	e5,600	743	436	1,500	310	341
11	75	2,470	1,170	e260	478	377	e9,900	672	339	2,870	396	234
12	116	1,130	1,180	e235	447	351	e3,500	577	419	1,130	842	187
13	96	587	1,420	e210	408	337	1,600	426	336	634	385	158
14	78	382	3,550	e190	462	340	1,120	352	299	458	272	137
15	70	281	1,640	e170	4,580	307	892	319	991	344	220	143
16	79	285	1,030	e160	e11,600	289	750	419	1,310	276	191	133
17	104	249	758	e150	e10,700	277	996	766	3,510	243	226	114
18	86	219	592	e145	3,330	279	4,610	1,940	2,050	199	234	103
19	76	209	501	e140	e1,500	287	1,980	1,080	2,390	171	172	95
20	71	225	1,170	e135	e1,050	405	1,240	742	1,310	150	142	89
21	75	228	985	e188	e720	376	1,010	852	814	141	129	85
22	77	288	769	e170	e3,900	345	827	946	576	253	141	905
23	71	285	608	e145	e5,200	314	682	778	438	416	117	1,780
24	69	256	643	e130	e2,000	290	580	628	344	419	104	632
25	79	226	977	e120	e1,400	269	525	497	278	292	94	392
26	87	199	935	e115	e1,190	260	592	428	236	201	87	285
27	86	197	767	e110	e1,150	254	489	359	286	158	82	420
28	82	173	643	e105	e1,260	235	409	299	298	151	78	843
29	96	153	546	344	---	291	367	323	231	220	87	432
30	190	146	466	963	---	492	443	306	747	193	128	296
31	197	---	412	766	---	501	---	253	---	1,410	159	---
TOTAL	2,583	10,871	28,802	9,785	58,186	13,815	55,221	22,777	22,008	15,065	14,628	14,559
MEAN	83.3	362	929	316	2,078	446	1,841	735	734	486	472	485
MAX	197	2,470	3,550	963	11,600	1,150	9,900	1,940	3,510	2,870	2,560	2,630
MIN	51	95	121	105	408	235	352	253	173	141	78	85
CFSM	0.25	1.09	2.81	0.95	6.28	1.35	5.56	2.22	2.22	1.47	1.43	1.47
IN.	0.29	1.22	3.24	1.10	6.54	1.55	6.21	2.56	2.47	1.69	1.64	1.64

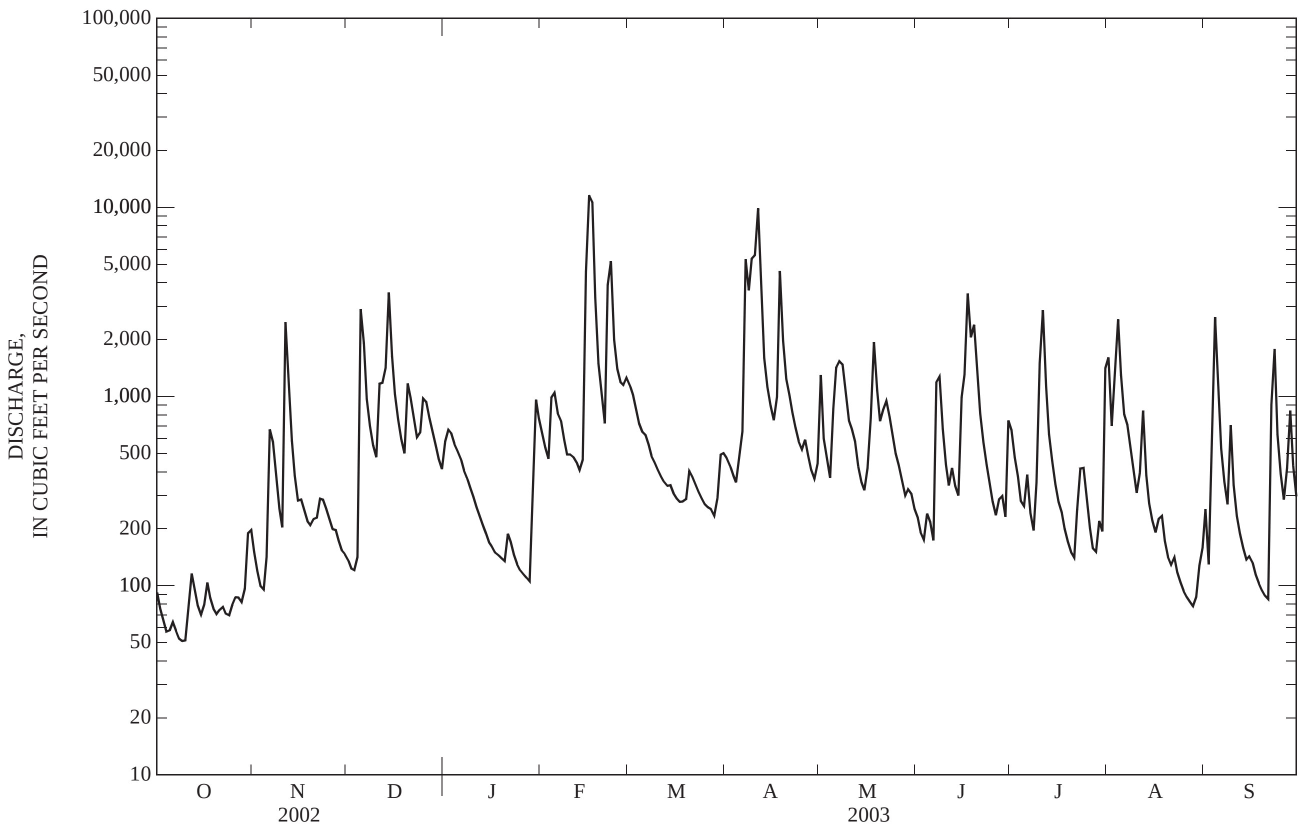
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	162	419	624	885	934	1,003	850	653	397	202	184	137
MAX	1,472	1,624	1,824	2,534	2,078	3,356	2,193	2,087	1,923	659	557	707
(WY)	(1990)	(1974)	(1973)	(1974)	(2003)	(1975)	(1998)	(1984)	(1989)	(1971)	(1985)	(1989)
MIN	6.07	15.0	53.7	41.0	327	300	147	122	31.1	44.0	34.3	16.0
(WY)	(2001)	(2001)	(1981)	(1981)	(2002)	(1988)	(1986)	(1985)	(1988)	(1970)	(1997)	(2000)

03403910 CLEAR FORK AT SAXTON, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1968 - 2003	
ANNUAL TOTAL	158,112		268,300			
ANNUAL MEAN	433		735		536	
HIGHEST ANNUAL MEAN					894	1973
LOWEST ANNUAL MEAN					233	1988
HIGHEST DAILY MEAN	9,800	Mar 19	11,600	Feb 16	19,400	May 28, 1973
LOWEST DAILY MEAN	11	Sep 13	51	Oct 9	3.3	Aug 19, 1988
ANNUAL SEVEN-DAY MINIMUM	12	Sep 8	56	Oct 4	4.5	Oct 11, 2000
MAXIMUM PEAK FLOW			14,000	Feb 16	22,800	Apr 5, 1977
MAXIMUM PEAK STAGE			32.26	Feb 16	41.51	Apr 5, 1977
ANNUAL RUNOFF (CFSM)	1.31		2.22		1.62	
ANNUAL RUNOFF (INCHES)	17.77		30.15		22.00	
10 PERCENT EXCEEDS	798		1,420		1,150	
50 PERCENT EXCEEDS	141		385		249	
90 PERCENT EXCEEDS	25		98		34	

e Estimated



03404000 CUMBERLAND RIVER AT WILLIAMSBURG, KY

LOCATION.--Lat 36°44'36", long 84°09'22", Whitley County, Hydrologic Unit 05130101, on right bank 100 ft upstream from bridge on State Highway 296E at Williamsburg, 2.0 mi downstream from Clear Fork, and at mile 590.4.

DRAINAGE AREA.--1,607 mi^2.

PERIOD OF RECORD.--October 1950 to current year. Gage-height records collected in this vicinity since 1908 are published in reports of National Weather Service.

REVISED RECORDS.--WSP 1436: Drainage area.

GAGE.--Water-stage recorder with telemetry and crest-stage gages. Datum of gage is 891.52 ft above NGVD of 1929. See WDR KY-90-1 for history of changes prior to June 26, 1990.

REMARKS.--Records good except for those estimated, which are poor. Flow slightly regulated by Martins Fork Dam (station 03400798) beginning January 1979.

COOPERATION.--U.S. Army Corps of Engineers, Nashville District and Kentucky Natural Resources and Environmental Protection Cabinet.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 33,300 ft/3s, Feb. 18, gage height, 28.90 ft.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	689	1,050	912	2,550	3,660	6,400	1,910	2,850	1,620	1,900	7,070	1,140
2	524	876	853	3,310	3,070	6,120	1,840	2,080	1,530	1,510	5,120	1,170
3	433	732	800	3,580	2,630	5,520	1,750	1,990	1,330	1,390	3,210	1,290
4	373	647	801	3,230	3,490	4,680	1,700	1,860	1,290	1,250	6,430	5,360
5	342	673	4,340	2,930	5,750	4,060	1,760	1,870	1,530	1,150	6,030	5,770
6	308	1,370	9,010	2,750	5,830	3,730	2,320	3,990	1,510	1,270	3,800	3,280
7	282	1,990	7,080	2,520	4,630	3,470	9,740	5,200	2,800	1,300	2,810	1,860
8	275	1,980	4,310	2,270	3,830	3,060	18,400	5,410	8,720	1,040	3,080	1,260
9	263	1,530	3,140	e2,000	3,080	2,640	21,900	4,980	9,260	983	2,500	1,430
10	251	1,280	2,570	e1,850	2,700	2,390	26,400	4,070	4,930	2,320	1,800	1,060
11	286	3,110	3,440	e1,700	2,640	2,200	31,800	3,520	3,400	4,840	1,410	790
12	414	7,280	4,920	e1,520	2,470	2,040	31,400	3,020	3,110	4,290	1,910	670
13	505	4,500	5,620	e1,350	2,230	1,880	27,500	2,390	3,170	2,600	1,680	587
14	470	2,950	11,100	e1,250	2,070	1,770	21,800	1,880	2,830	1,890	1,290	530
15	403	2,320	11,800	e1,200	8,140	1,740	12,200	1,680	6,220	1,570	992	487
16	380	2,060	8,270	e1,150	25,200	1,640	5,600	1,730	7,080	1,550	841	483
17	429	1,980	5,050	e1,100	31,900	1,580	4,560	2,330	10,500	1,260	764	452
18	515	1,900	3,770	e1,040	32,700	1,540	9,620	4,460	12,600	1,060	877	420
19	553	1,890	3,090	e1,000	29,600	1,520	10,100	4,980	13,500	891	771	391
20	498	1,780	3,730	e960	23,000	1,540	7,780	3,830	12,500	790	720	372
21	452	1,730	6,980	e920	13,400	1,580	5,730	3,360	9,440	743	616	354
22	432	1,870	6,450	e1,050	11,800	1,460	4,670	4,310	5,430	743	574	744
23	415	2,060	4,570	e950	20,600	1,360	3,690	4,350	3,740	1,330	531	3,840
24	385	1,940	3,760	e860	19,800	1,260	3,030	3,500	2,920	1,840	485	2,720
25	363	1,690	4,610	e830	17,400	1,180	2,610	2,740	2,180	1,340	460	1,510
26	350	1,500	5,470	e800	10,800	1,140	2,870	2,260	1,660	946	444	993
27	356	1,360	4,980	e780	7,120	1,170	3,370	1,930	1,520	738	400	817
28	365	1,280	4,090	e770	6,520	1,170	2,800	1,680	1,660	642	375	1,680
29	388	1,150	3,430	1,030	---	1,190	2,310	1,720	1,450	1,050	364	1,400
30	519	976	2,940	3,080	---	1,520	2,060	1,730	1,510	999	399	1,000
31	794	---	2,570	4,250	---	1,850	---	1,760	---	2,270	588	---
TOTAL	13,012	57,454	144,456	54,580	306,060	74,400	283,220	93,460	140,940	47,495	58,341	43,860
MEAN	420	1,915	4,660	1,761	10,930	2,400	9,441	3,015	4,698	1,532	1,882	1,462
MAX	794	7,280	11,800	4,250	32,700	6,400	31,800	5,410	13,500	4,840	7,070	5,770
MIN	251	647	800	770	2,070	1,140	1,700	1,680	1,290	642	364	354
CFSM	0.26	1.19	2.90	1.10	6.80	1.49	5.87	1.88	2.92	0.95	1.17	0.91
IN.	0.30	1.33	3.34	1.26	7.08	1.72	6.56	2.16	3.26	1.10	1.35	1.02

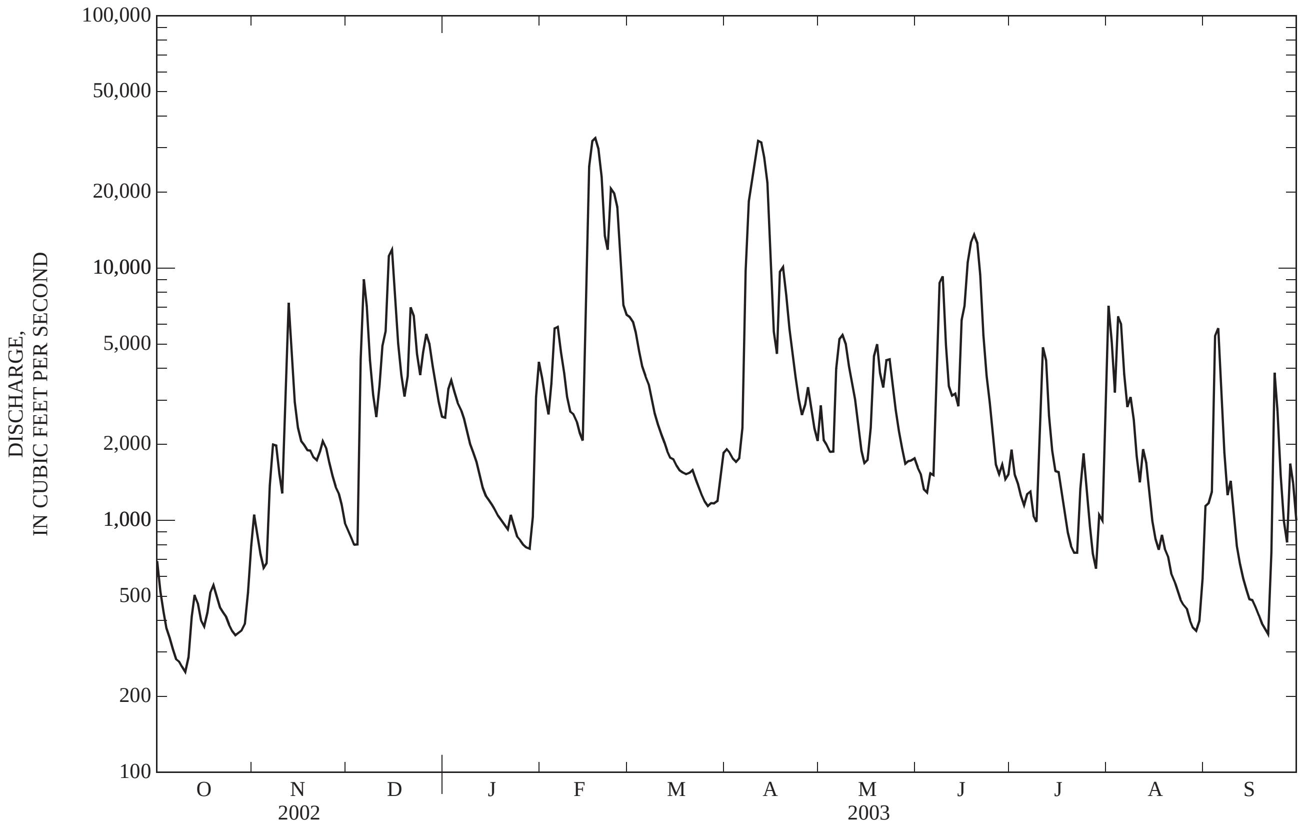
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1980 - 2003, BY WATER YEAR (WY)

MEAN	598	1,584	3,188	3,983	5,088	5,177	4,140	3,069	1,868	797	742	624
MAX	4,413	4,923	9,751	8,015	12,920	10,400	11,520	9,572	8,305	1,684	1,882	3,280
(WY)	(1990)	(1997)	(1992)	(1994)	(1994)	(1994)	(1998)	(1984)	(1989)	(1989)	(2003)	(1989)
MIN	107	141	300	203	1,803	1,193	730	943	277	211	191	86.2
(WY)	(1981)	(1999)	(1981)	(1981)	(1988)	(1988)	(1986)	(1986)	(1988)	(1988)	(2002)	(1999)

03404000 CUMBERLAND RIVER AT WILLIAMSBURG, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1980 - 2003	
ANNUAL TOTAL	878,138		1,317,278			
ANNUAL MEAN	2,406		3,609		2,558	
HIGHEST ANNUAL MEAN					4,390	1994
LOWEST ANNUAL MEAN					1,159	1988
HIGHEST DAILY MEAN	34,600	Mar 20	32,700	Feb 18	38,500	Feb 13, 1994
LOWEST DAILY MEAN	67	Sep 14	251	Oct 10	62	Oct 18, 1980
ANNUAL SEVEN-DAY MINIMUM	76	Sep 9	287	Oct 5	63	Oct 17, 1980
MAXIMUM PEAK FLOW			33,300	Feb 18	49,700	Jan 31, 1957
MAXIMUM PEAK STAGE			28.90	Feb 18	35.03	Apr 7, 1977
INSTANTANEOUS LOW FLOW					6.1	Oct 23, 1953
ANNUAL RUNOFF (CFSM)	1.50		2.25		1.59	
ANNUAL RUNOFF (INCHES)	20.33		30.49		21.63	
10 PERCENT EXCEEDS	4,730		7,180		5,820	
50 PERCENT EXCEEDS	864		1,870		1,210	
90 PERCENT EXCEEDS	174		486		192	

e Estimated



03404500 CUMBERLAND RIVER AT CUMBERLAND FALLS, KY

LOCATION.--Lat 36°50'14", long 84°26'36", McCreary County, Hydrologic Unit 05130101, on left bank 0.1 mi downstream from bridge on State Highway 90, 0.2 upstream from Cumberland Falls, and at mile 562.4.

DRAINAGE AREA.--1,977 mi^2.

PERIOD OF RECORD.--August 1907 to December 1911, October 1914 to September 1994, October 2002 to current year. Monthly discharges only for October 1914 to March 1915 and October 1931 to July 1932, published in WSP 1306.

REVISED RECORDS.--WSP 1436: 1919. WSP 1436: Drainage area.

GAGE.--Water-stage recorder with telemetry. Datum of gage is 825.28 ft above NGVD of 1929. Aug. 15, 1907 to Dec. 10, 1911, nonrecording gage at site 300 ft downstream at different datum. Apr. 3, 1915 to Sept. 1, 1933, nonreecording gage at site 500 ft downstream at same datum.

REMARKS.--Records good except for those estimated, which are poor. Flow slightly regulated by Martins Fork Dam (station 03400798) beginning January 1979.

COOPERATION.--U.S. Army Corps of Engineers, Nashville District.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e900	1,220	e1,150	2,960	4,280	7,440	2,140	2,920	1,930	2,380	9,760	1,000
2	760	1,190	1,060	3,460	3,550	7,130	2,130	2,640	1,830	1,840	7,750	1,540
3	597	982	1,010	3,920	3,080	6,460	2,020	2,360	1,680	1,730	4,490	2,500
4	491	874	1,000	3,660	4,760	5,580	1,950	2,240	1,610	1,520	7,930	7,430
5	418	875	5,780	3,270	6,640	4,690	2,020	2,210	1,750	1,390	7,920	7,620
6	369	1,790	10,700	3,110	7,010	4,260	2,420	3,830	1,790	1,420	4,830	4,910
7	333	2,610	8,590	2,860	5,730	3,890	13,600	5,640	3,120	1,510	3,660	2,610
8	306	2,510	5,490	2,600	4,600	3,510	20,400	6,880	8,270	1,340	3,390	1,850
9	294	2,080	3,970	2,430	3,670	3,050	27,800	6,690	10,600	1,160	3,110	1,560
10	296	1,690	3,180	2,220	3,200	2,710	e31,000	5,090	6,330	1,760	2,210	1,640
11	348	2,710	5,270	e2,050	3,060	2,520	e36,000	4,340	4,290	4,570	1,820	1,140
12	453	7,380	6,520	e1,880	2,910	2,340	e35,000	3,620	4,940	5,470	2,030	951
13	622	6,120	7,270	e1,730	2,650	2,190	e28,000	3,040	4,570	3,460	1,990	809
14	627	3,580	15,500	e1,550	2,480	2,060	22,700	2,400	4,570	2,670	1,650	718
15	551	2,800	13,700	e1,450	10,500	2,010	15,200	2,130	8,280	2,000	1,280	671
16	521	2,760	10,300	e1,380	37,100	1,910	7,120	2,250	9,410	3,520	1,070	637
17	528	2,620	6,560	e1,300	35,900	1,850	5,380	2,730	11,900	2,240	978	595
18	582	2,430	4,670	e1,220	34,100	1,820	10,300	4,890	14,000	1,540	997	541
19	642	2,320	3,690	e1,150	31,000	1,800	11,900	5,960	16,400	1,260	1,000	482
20	657	2,240	4,010	e1,100	25,200	1,760	9,510	4,880	14,100	1,080	909	449
21	591	2,050	6,820	e1,050	17,800	1,830	6,810	4,210	11,300	1,000	819	425
22	548	2,100	7,570	e1,250	16,700	1,730	5,610	5,370	6,520	996	725	1,110
23	510	2,260	5,510	e1,100	25,000	1,600	4,430	5,410	4,550	1,300	687	5,180
24	479	2,210	4,520	e980	21,900	1,500	3,590	4,440	3,450	2,790	614	3,930
25	453	1,950	5,740	e940	19,500	1,420	3,150	3,350	2,740	2,040	561	2,390
26	444	1,770	6,490	e910	13,700	1,380	3,760	2,830	2,050	1,410	538	1,560
27	440	1,650	6,000	e900	8,620	1,370	3,970	2,410	1,830	1,070	500	1,260
28	452	1,500	5,010	e880	7,670	1,390	3,560	2,100	1,890	900	453	1,700
29	517	1,400	4,110	1,130	---	1,420	2,850	2,190	1,800	1,430	428	1,880
30	726	1,250	3,450	2,690	---	1,610	2,540	2,090	1,560	1,690	433	1,500
31	919	---	2,990	4,580	---	2,000	---	2,100	---	5,500	603	---
TOTAL	16,374	68,921	177,630	61,710	362,310	86,230	326,860	113,240	169,060	63,986	75,135	60,588
MEAN	528	2,297	5,730	1,991	12,940	2,782	10,900	3,653	5,635	2,064	2,424	2,020
MAX	919	7,380	15,500	4,580	37,100	7,440	36,000	6,880	16,400	5,500	9,760	7,620
MIN	294	874	1,000	880	2,480	1,370	1,950	2,090	1,560	900	428	425

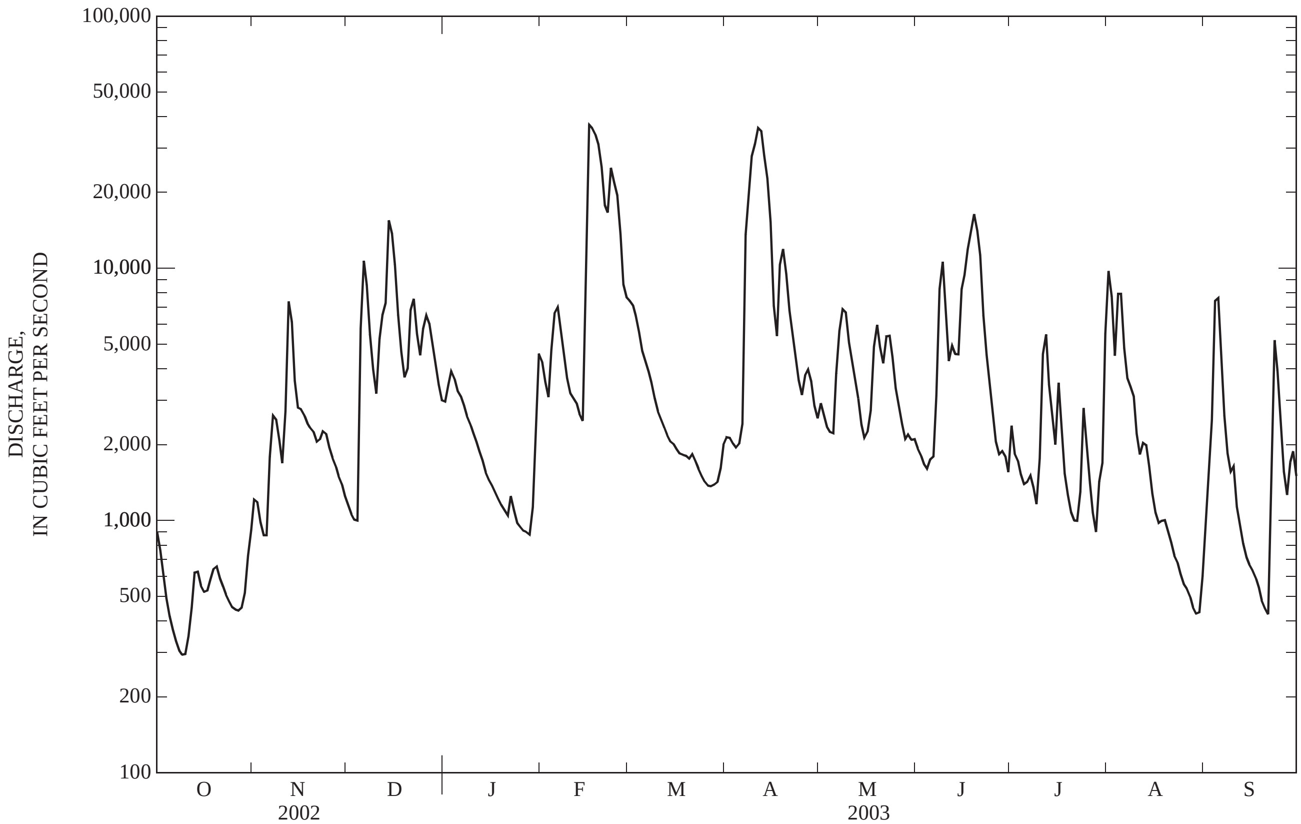
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1908 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	684	1,846	3,874	5,771	6,403	7,025	5,097	3,282	1,782	1,346	943	573
MAX	5,330	7,963	17,620	17,570	15,740	18,510	11,390	11,230	8,954	6,379	4,171	4,410
(WY)	(1990)	(1978)	(1927)	(1937)	(1939)	(1917)	(1977)	(1984)	(1989)	(1941)	(1942)	(1989)
MIN	10.5	44.2	141	227	462	1,572	987	417	103	47.5	37.3	23.0
(WY)	(1954)	(1940)	(1940)	(1981)	(1941)	(1988)	(1963)	(1936)	(1936)	(1944)	(1925)	(1925)

03404500 CUMBERLAND RIVER AT CUMBERLAND FALLS, KY—Continued

SUMMARY STATISTICS	FOR 2003 WATER YEAR		WATER YEARS 1908 - 2003	
ANNUAL TOTAL	1582044			
ANNUAL MEAN	4334		3,204	
HIGHEST ANNUAL MEAN			5,196	1927
LOWEST ANNUAL MEAN			1,324	1988
HIGHEST DAILY MEAN	37100	Feb 16	57,500	Jan 28, 1918
LOWEST DAILY MEAN	294	Oct 9	4.0	Sep 19, 1954
ANNUAL SEVEN-DAY MINIMUM	338	Oct 5	7.1	Oct 23, 1953
MAXIMUM PEAK FLOW	43100	Feb 16	59,600	Jan 28, 1918
MAXIMUM PEAK STAGE	12.46	Feb 16	15.50	Jan 28, 1918
INSTANTANEOUS LOW FLOW			4.0	Sep 19, 1954
10 PERCENT EXCEEDS	8940		7,950	
50 PERCENT EXCEEDS	2250		1,420	
90 PERCENT EXCEEDS	619		159	

e Estimated



03404900 LYNN CAMP CREEK AT CORBIN, KY

LOCATION.--Lat 36°57'05", long 84°05'37", Whitley County, Hydrologic Unit 05130101, on left bank 40 ft downstream from bridge on State Highway 312, (East Masters Street) at Corbin, 0.8 mi downstream from East Fork Lynn Camp Creek, and at mile 3.9.

DRAINAGE AREA.--53.8 mi^2.

PERIOD OF RECORD.--Annual maximums, water years 1957-73, October 1973 to current year.

GAGE.--Water-stage recorder with telemetry. Datum of gage is 1,049.00 ft above NGVD of 1929 (levels by U.S. Army Corps of Engineers).

REMARKS.--Records good except for discharges below 2.0 ft^3/s, which are fair and for those estimated, which are poor.

COOPERATION.--U.S. Army Corps of Engineers, Nashville District.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb 16	1400	*3,200	*10.10	Apr 11	0100	1,770	7.87
Feb 22	1900	1,660	7.66	Jul 23	2000	1,510	7.39

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35	56	26	268	76	125	24	40	20	44	174	26
2	30	43	23	182	64	112	24	61	14	32	96	23
3	23	37	23	148	58	95	22	53	23	24	283	166
4	19	47	36	113	503	79	19	37	54	19	744	229
5	22	160	610	96	204	73	43	117	28	17	347	70
6	19	313	248	82	126	78	65	75	20	28	189	34
7	15	139	131	71	122	63	724	114	410	27	218	23
8	13	92	102	e63	85	54	615	177	142	17	240	19
9	11	70	85	e57	71	50	1,170	87	65	61	95	15
10	24	58	75	e51	83	45	1,140	61	40	228	94	12
11	100	213	395	e47	83	43	1,090	192	34	324	55	11
12	56	110	211	e41	75	40	304	84	55	78	45	9.7
13	43	75	437	e37	63	41	174	52	223	58	31	9.2
14	34	59	897	e34	112	43	122	41	387	64	25	7.1
15	29	64	291	e32	1,070	37	93	57	378	46	19	8.9
16	102	118	168	e30	2,570	35	74	81	222	64	16	8.9
17	60	87	121	e29	1,070	34	160	75	394	44	15	6.4
18	41	72	98	e28	322	34	296	77	261	32	14	5.4
19	31	75	90	e27	206	35	138	53	466	28	12	4.7
20	35	67	265	e26	220	35	99	41	202	24	9.6	4.3
21	41	59	137	e40	170	32	87	72	107	23	8.3	3.9
22	31	62	105	e32	1,130	28	65	57	72	27	7.5	231
23	24	49	85	e28	785	24	53	44	55	383	7.7	166
24	21	42	195	e25	296	24	44	37	44	356	6.7	45
25	23	39	291	e24	199	22	53	29	36	88	5.6	27
26	35	38	167	e23	160	23	384	27	29	59	4.6	20
27	27	46	122	e22	147	25	117	23	46	47	4.6	29
28	44	39	98	e21	159	22	74	21	36	41	4.2	48
29	147	33	83	133	---	47	58	27	24	88	3.9	23
30	131	31	72	138	---	e45	48	25	43	62	11	17
31	75	---	68	88	---	28	---	26	---	228	31	---
TOTAL	1,341	2,393	5,755	2,036	10,229	1,471	7,379	1,963	3,930	2,661	2,816.7	1,302.5
MEAN	43.3	79.8	186	65.7	365	47.5	246	63.3	131	85.8	90.9	43.4
MAX	147	313	897	268	2,570	125	1,170	192	466	383	744	231
MIN	11	31	23	21	58	22	19	21	14	17	3.9	3.9
CFSM	0.80	1.48	3.45	1.22	6.79	0.88	4.57	1.18	2.43	1.60	1.69	0.81
IN.	0.93	1.65	3.98	1.41	7.07	1.02	5.10	1.36	2.72	1.84	1.95	0.90

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1974 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	28.5	78.3	115	149	157	157	115	88.5	56.8	38.8	28.5	28.4
MAX	133	267	378	372	365	458	413	387	203	110	90.9	100
(WY)	(1990)	(1974)	(1991)	(1974)	(2003)	(1975)	(1998)	(1983)	(1997)	(1978)	(2003)	(1982)
MIN	1.35	5.15	10.4	5.13	56.9	41.9	16.5	9.47	2.39	2.11	2.50	0.32
(WY)	(1981)	(1999)	(1981)	(1981)	(1977)	(1988)	(1986)	(1986)	(1988)	(1975)	(1976)	(1999)

03404900 LYNN CAMP CREEK AT CORBIN, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1974 - 2003	
ANNUAL TOTAL	32,205.04		43,277.2			
ANNUAL MEAN	88.2		119		86.4	
HIGHEST ANNUAL MEAN					141	1994
LOWEST ANNUAL MEAN					36.5	1988
HIGHEST DAILY MEAN	2,810	Mar 18	2,570	Feb 16	4,530	Apr 17, 1998
LOWEST DAILY MEAN	0.72	Aug 14	3.9	Aug 29	0.02	Jun 24, 1988
ANNUAL SEVEN-DAY MINIMUM	1.2	Sep 7	5.3	Aug 23	0.02	Jun 24, 1988
MAXIMUM PEAK FLOW			3,200	Feb 16	9,000	Jan 29, 1957
MAXIMUM PEAK STAGE			10.10	Feb 16	22.50	Jan 29, 1957
INSTANTANEOUS LOW FLOW					0.02	Jun 24, 1988
ANNUAL RUNOFF (CFSM)	1.64		2.20		1.61	
ANNUAL RUNOFF (INCHES)	22.27		29.92		21.82	
10 PERCENT EXCEEDS	191		263		192	
50 PERCENT EXCEEDS	34		54		35	
90 PERCENT EXCEEDS	3.0		19		3.2	

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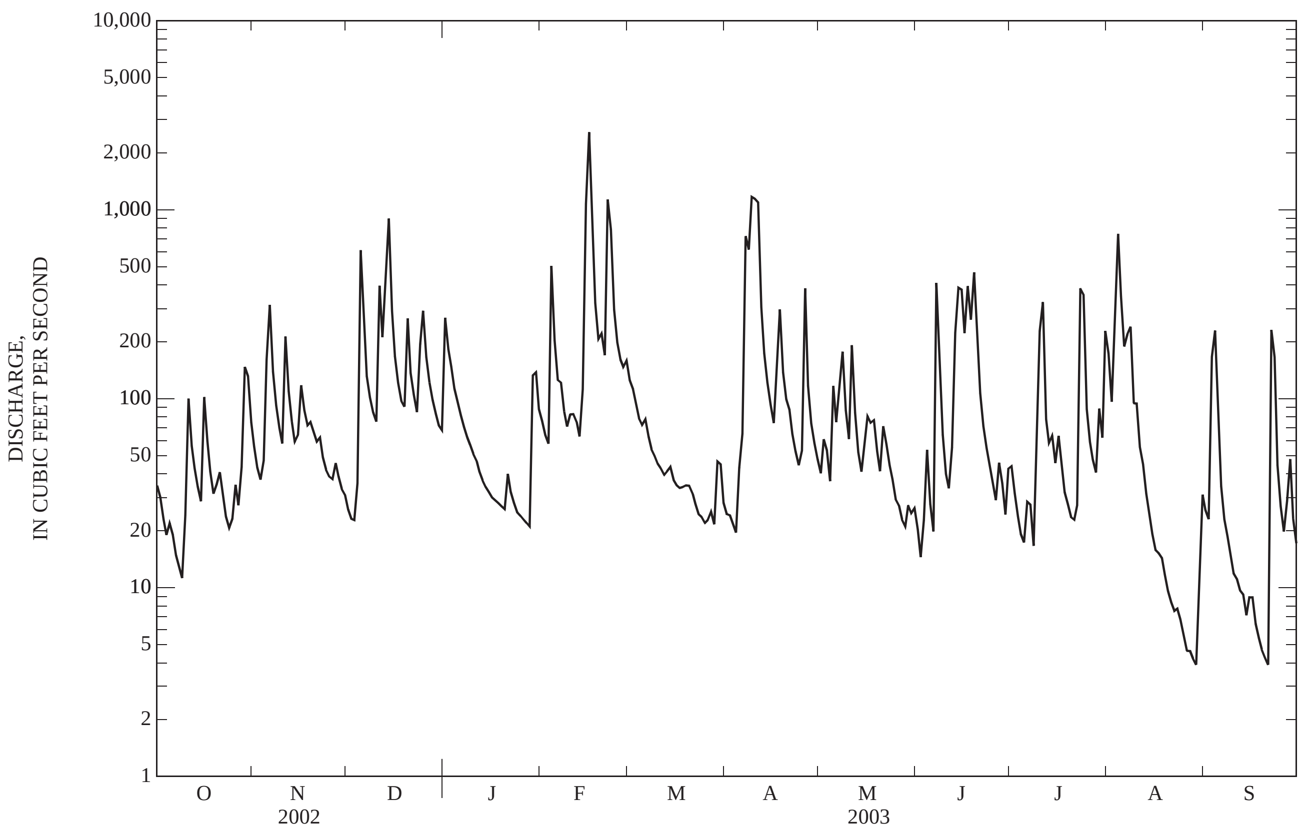


03406500 ROCKCASTLE RIVER AT BILLOWS, KY

LOCATION.--Lat 37°10'16", long 84°17'46", Laurel County, Hydrologic Unit 05130102, on left bank 200 ft upstream from bridge on State Highway 80 at Billows, 0.9 mi upstream from Pine Creek, 1.1 mi downstream from Hawk Creek, 13 mi west of London, and at mile 24.4.

DRAINAGE AREA.--604 mi^2.

PERIOD OF RECORD.--July 1936 to current year.

REVISED RECORDS.--WSP 1436: Drainage area.

GAGE.--Water-stage recorder with telemetry. Datum of gage is 802.90 ft above NGVD of 1929. Prior to Nov. 19, 1940, nonrecording gage at same site and datum.

REMARKS.--Records good except for those estimated, which are poor.

COOPERATION.--U.S. Army Corps of Engineers, Nashville District and Kentucky Natural Resources and Environmental Protection Cabinet.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 10,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 14	1500	11,300	19.85	Feb 23	0730	11,400	19.98
Feb 17	0600	*29,200	*34.48	Aug 5	0130	11,000	19.52

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	155	1,210	345	788	789	1,470	479	417	247	211	505	1,300
2	115	813	308	1,250	749	1,340	456	424	215	191	453	1,050
3	85	597	283	1,140	690	1,190	429	440	210	176	1,440	576
4	72	501	274	1,110	1,390	1,030	406	363	255	159	5,690	4,530
5	64	564	e9,000	1,010	2,320	936	463	504	335	147	6,960	3,770
6	56	3,920	e5,000	927	1,560	862	637	2,350	255	e130	1,880	1,310
7	52	2,650	e3,000	806	1,310	775	2,690	1,480	2,460	121	1,170	767
8	48	1,590	e1,900	724	1,080	677	3,990	2,350	4,990	193	872	530
9	46	1,110	e1,350	e640	873	599	3,120	1,770	1,750	159	627	403
10	75	861	886	e560	839	538	5,300	1,350	1,110	200	456	314
11	1,190	2,750	2,110	e500	820	480	8,490	1,000	825	610	364	249
12	1,260	2,730	3,920	e440	786	448	4,320	830	1,850	604	582	207
13	602	1,520	2,810	e385	730	423	2,510	598	2,130	867	378	180
14	447	1,110	9,320	e360	697	405	1,730	469	2,920	635	283	158
15	348	918	5,360	e340	5,970	384	1,320	462	7,210	441	228	144
16	307	2,080	2,750	e320	21,600	365	1,070	2,540	6,970	1,190	227	132
17	433	2,050	1,850	e310	26,200	352	1,170	1,360	7,620	548	213	117
18	382	1,550	1,410	e290	7,150	374	6,270	2,410	3,520	351	185	105
19	291	1,220	1,140	e280	2,930	454	3,640	1,970	3,560	257	156	93
20	244	1,080	2,090	e270	2,210	877	2,190	1,400	2,490	201	143	79
21	238	903	2,240	e260	1,830	982	2,080	1,070	1,430	182	118	69
22	246	812	1,680	e290	4,240	861	2,190	930	949	191	101	285
23	229	698	1,320	e260	9,740	738	1,570	776	684	197	89	1,820
24	191	582	1,140	e235	4,310	651	1,240	638	518	230	79	886
25	167	512	1,940	e225	2,790	587	1,040	520	408	317	69	526
26	162	465	1,950	e220	2,120	539	923	434	336	225	61	389
27	164	453	1,560	e215	1,750	504	805	382	302	170	54	356
28	722	431	1,320	e210	1,600	464	635	346	289	149	48	577
29	4,370	383	1,120	270	---	453	533	312	258	160	47	514
30	6,300	362	936	822	---	581	468	295	230	350	155	380
31	2,150	---	814	846	---	520	---	283	---	254	278	---
TOTAL	21,211	36,425	71,126	16,303	109,073	20,859	62,164	30,473	56,326	9,816	23,911	21,816
MEAN	684	1,214	2,294	526	3,895	673	2,072	983	1,878	317	771	727
MAX	6,300	3,920	9,320	1,250	26,200	1,470	8,490	2,540	7,620	1,190	6,960	4,530
MIN	46	362	274	210	690	352	406	283	210	121	47	69
CFSM	1.13	2.01	3.80	0.87	6.45	1.11	3.43	1.63	3.11	0.52	1.28	1.20
IN.	1.31	2.24	4.38	1.00	6.72	1.28	3.83	1.88	3.47	0.60	1.47	1.34

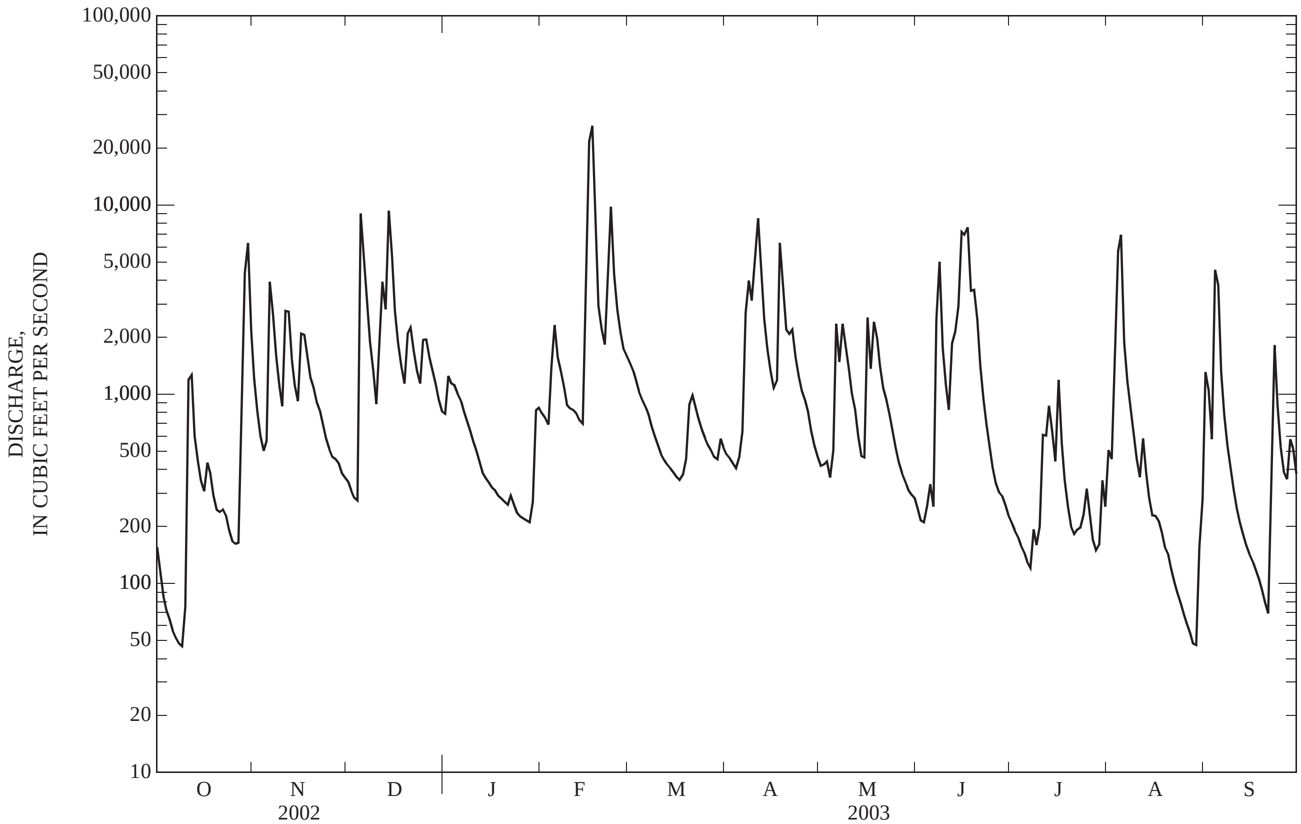
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1936 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	198	559	1,240	1,654	1,912	1,973	1,474	978	582	351	206	157
MAX	2,887	2,374	5,279	5,990	5,236	5,860	4,051	4,207	2,862	1,830	1,263	1,052
(WY)	(1990)	(1987)	(1991)	(1937)	(1956)	(1975)	(1972)	(1983)	(1947)	(1941)	(1977)	(1974)
MIN	3.18	11.5	16.5	56.9	208	507	188	115	37.9	10.8	10.1	4.95
(WY)	(1954)	(1954)	(1954)	(1981)	(1941)	(1983)	(1986)	(1941)	(1988)	(1944)	(1957)	(1936)

03406500 ROCKCASTLE RIVER AT BILLOWS, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1936 - 2003	
ANNUAL TOTAL	412,246		479,503			
ANNUAL MEAN	1,129		1,314		936	
HIGHEST ANNUAL MEAN					1,575	1979
LOWEST ANNUAL MEAN					345	1954
HIGHEST DAILY MEAN	15,700	May 3	26,200	Feb 17	46,200	Dec 9, 1978
LOWEST DAILY MEAN	11	Sep 12	46	Oct 9	0.90	Sep 9, 1957
ANNUAL SEVEN-DAY MINIMUM	12	Sep 8	59	Oct 4	1.4	Sep 11, 1964
MAXIMUM PEAK FLOW			29,200	Feb 17	50,000	Dec 9, 1978
MAXIMUM PEAK STAGE			34.48	Feb 17	47.17	Dec 9, 1978
INSTANTANEOUS LOW FLOW					0.80	Sep 9, 1957
ANNUAL RUNOFF (CFSM)	1.87		2.18		1.55	
ANNUAL RUNOFF (INCHES)	25.39		29.53		21.06	
10 PERCENT EXCEEDS	2,680		2,800		2,140	
50 PERCENT EXCEEDS	383		599		328	
90 PERCENT EXCEEDS	33		160		24	

e Estimated



03410500 SOUTH FORK CUMBERLAND RIVER NEAR STEARNS, KY

LOCATION.--Lat 36°37'47", long 84°31'55", McCreary County, Hydrologic Unit 05130104, on right bank, 400 ft upstream from Salt Branch, 1,000 ft downstream from Bear Creek, 5.3 mi southwest of Stearns, and at mile 49.4.

DRAINAGE AREA.--954 mi^2.

PERIOD OF RECORD.--September 1942 to current year.

REVISED RECORDS.--WSP 1113: 1946(M). WSP 1436: Drainage area, WDR KY-96-1 Latitude and longitude.

GAGE--Water-stage recorder with telemetry. Datum of gage is 763.83 ft above NGVD of 1929; prior to Oct. 1, 1980 at site 1,000 ft upstream at datum 0.98 ft higher.

REMARKS.--Records fair except for those estimated, which are poor.

COOPERATION.--Kentucky Natural Resources and Environmental Protection Cabinet, National Park Service, and U.S. Army Corps of Engineers, Nashville District.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of March 1929 reached a stage of 52.9 ft from information by local residents.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 22,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb 16	1600	*54,700	*34.00	Apr 11	0400	36,700	27.40
Feb 23	0000	32,200	25.56	Sep 4	1600	26,400	22.94

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	379	832	579	1,360	2,210	3,450	967	1,550	600	451	1,310	590
2	283	610	534	1,290	1,870	3,040	919	1,280	517	464	1,290	645
3	228	472	499	1,190	1,610	2,600	863	1,200	470	654	1,540	3,600
4	190	404	534	1,120	2,960	2,150	807	1,040	475	682	2,540	23,200
5	174	463	13,200	1,020	4,790	1,880	868	2,000	498	493	1,980	10,300
6	165	1,850	9,550	959	3,220	1,730	1,450	11,300	463	417	1,760	3,250
7	147	2,690	4,310	895	2,640	1,660	12,400	14,800	685	426	1,150	1,870
8	152	1,680	2,800	e820	2,160	1,460	10,700	14,900	4,070	349	852	1,280
9	149	1,140	2,090	e760	1,730	1,320	17,600	6,640	1,990	307	654	993
10	143	897	1,740	e710	1,620	1,220	19,200	3,790	1,180	583	492	778
11	199	6,730	5,080	e660	1,590	1,100	27,400	2,690	1,750	1,580	514	611
12	231	6,010	6,200	e620	1,540	1,030	9,350	3,020	2,720	1,780	750	491
13	314	2,640	4,870	e580	1,540	968	5,190	2,070	2,250	1,080	680	417
14	351	1,740	13,600	e550	1,550	919	3,490	1,570	2,180	1,070	492	366
15	298	1,330	7,140	e520	16,300	871	2,630	1,270	4,700	e860	375	342
16	319	1,790	4,250	e500	48,300	815	2,120	1,410	5,370	680	313	325
17	347	2,080	3,000	e480	28,000	778	2,080	2,120	8,490	500	292	310
18	405	1,630	2,300	e460	8,940	759	9,570	5,620	6,620	413	319	272
19	340	1,330	1,880	e450	5,160	775	6,080	4,270	8,130	348	417	236
20	295	1,240	2,950	e440	3,810	765	3,710	2,710	5,280	294	283	212
21	266	1,170	4,280	e430	3,130	851	2,870	2,570	2,860	258	227	198
22	255	1,200	3,060	e560	13,300	791	2,920	4,080	1,830	243	195	1,610
23	245	1,220	2,350	e660	20,100	721	2,310	3,210	1,290	264	172	10,900
24	231	1,060	2,170	e515	7,730	669	1,880	2,410	966	541	168	3,870
25	224	912	4,370	e460	4,980	636	1,610	1,810	741	385	157	2,080
26	221	818	4,280	e430	3,800	618	1,520	1,440	590	303	157	1,380
27	209	774	3,140	e420	3,500	604	1,460	1,210	545	246	137	1,090
28	203	745	2,480	e410	3,660	585	1,180	972	568	209	136	1,360
29	225	665	2,040	693	---	600	1,000	830	535	276	116	1,420
30	923	612	1,710	2,470	---	815	1,350	765	433	256	157	1,000
31	1,220	---	1,480	2,750	---	1,020	---	687	---	1,050	220	---
TOTAL	9,331	46,734	118,466	25,182	201,740	37,200	155,494	105,234	68,796	17,462	19,845	74,996
MEAN	301	1,558	3,821	812	7,205	1,200	5,183	3,395	2,293	563	640	2,500
MAX	1,220	6,730	13,600	2,750	48,300	3,450	27,400	14,900	8,490	1,780	2,540	23,200
MIN	143	404	499	410	1,540	585	807	687	433	209	116	198
CFSM	0.32	1.63	4.01	0.85	7.55	1.26	5.43	3.56	2.40	0.59	0.67	2.62
IN.	0.36	1.82	4.62	0.98	7.87	1.45	6.06	4.10	2.68	0.68	0.77	2.92

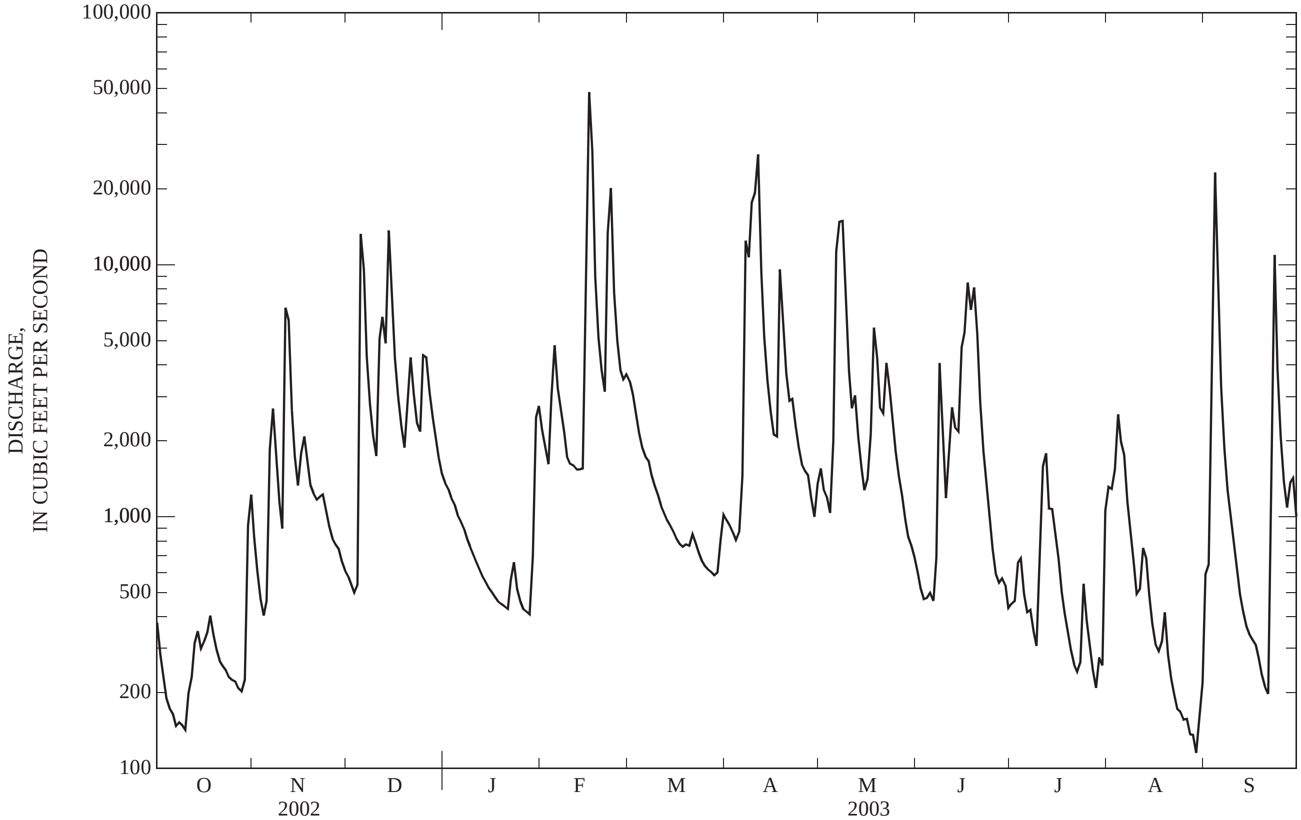
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1943 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	373	1,207	2,578	3,287	3,533	3,609	2,588	1,745	991	602	406	379
MAX	2,553	4,556	7,388	9,615	8,747	10,580	6,038	6,555	5,152	3,772	2,997	2,983
(WY)	(1990)	(1958)	(1991)	(1950)	(1956)	(1975)	(1977)	(1984)	(1989)	(1967)	(1971)	(1982)
MIN	20.8	30.6	150	145	725	1,200	568	224	72.8	34.5	65.4	29.6
(WY)	(1954)	(1954)	(1964)	(1981)	(1968)	(2003)	(1986)	(1948)	(1988)	(1944)	(1951)	(1953)

03410500 SOUTH FORK CUMBERLAND RIVER NEAR STEARNS, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1943 - 2003	
ANNUAL TOTAL	641,194		880,480			
ANNUAL MEAN	1,757		2,412		1,767	
HIGHEST ANNUAL MEAN					3,023	1973
LOWEST ANNUAL MEAN					810	1988
HIGHEST DAILY MEAN	50,800	Mar 18	48,300	Feb 16	80,200	Mar 13, 1975
LOWEST DAILY MEAN	20	Sep 13	116	Aug 29	11	Sep 18, 1954
ANNUAL SEVEN-DAY MINIMUM	23	Sep 9	147	Aug 24	12	Sep 13, 1954
MAXIMUM PEAK FLOW			54,700	Feb 16	93,200	May 28, 1973
MAXIMUM PEAK STAGE			34.00	Feb 16	46.29	May 28, 1973
INSTANTANEOUS LOW FLOW					11	Oct 4, 1948
ANNUAL RUNOFF (CFSM)	1.84		2.53		1.85	
ANNUAL RUNOFF (INCHES)	25.00		34.33		25.16	
10 PERCENT EXCEEDS	3,300		5,170		4,030	
50 PERCENT EXCEEDS	631		1,050		705	
90 PERCENT EXCEEDS	70		257		80	

e Estimated



03410500 SOUTH FORK CUMBERLAND RIVER NEAR STEARNS, KY

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1960-72, 1979 to 1990; July 1999 to Aug. 2000. Oct. 10, 2001 to current water year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE.--May 1980 to Sept. 1990, July 1999 to Aug. 22, 2000, Oct. 10, 2001 to current water year.
pH.--May 1980 to Sept. 1990, July 1999 to Aug. 22, 2000, Oct. 10, 2001 to current water year.
WATER TEMPERATURES.--May 1980 to Sept. 1990, July 1999 to Aug. 22, 2000. Oct. 10, 2001 to current water year.
DISSOLVED OXYGEN.--May 1980 to Sept. 1990, Oct. 10, 2001 to current water year.
TURBIDITY.--May 1980 to Sept. 1987 (discontinued).
SUSPENDED SEDIMENT DISCHARGE.--May 1980 to Sept. 1990 (discontinued).
INSTRUMENTATION.--Five parameter water-quality monitor and sediment pumping sampler May 1980 to Sept. 1990. Three parameter water-quality monitor from July 1999 to Aug. 22, 2000. Four parameter water-quality monitor with telemetry since Oct. 10, 2001.

REMARKS.--Miscellaneous samples prior to 1979. Miscellaneous measurements values may fall outside the range observed for that day by the water-quality monitor due to minor differences in sampling location.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE.--Maximum recorded, 434 microsiemens, July 17, 1985; minimum recorded, 40 microsiemens, May 7, 1984.
pH.--Maximum recorded, 8.6 units, Aug. 10, 1989; minimum recorded, 5.2 units, May 19, 1980 and Nov. 24, 1980.
WATER TEMPERATURES.--Maximum recorded, 34.6°C, Aug. 31, Sept. 1, 1989; minimum recorded, 0.0 mg/L, Jan. 29, 2002 and Jan. 24-27, 2003.
SEDIMENT CONCENTRATIONS.--Maximum daily mean, 1980 mg/L, Aug. 9,1981; minimum daily mean, 0.0 mg/L, on several days in 1983-84, 1987-88.
SEDIMENT LOADS.--Maximum daily, 200,000 tons, Sept. 2, 1982; minimum daily, 0.04 tons, Nov. 25, 1987.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE:Maximum recorded, 249 microsiemens, Nov. 1; minimum recorded 48 microsiemens, Sept. 3.
pH:Maximum 8.0 units, Oct. 5; minimum recorded, 6.5 units, Feb. 15, 16.
WATER TEMPERATURES:Maximum recorded, 28.9°C, Aug. 27; minimum recorded, 0.0°C, Jan. 24-27.
DISSOLVED OXYGEN:Maximum recorded, 15.6 mg/L, Jan. 31 and Feb. 1; minimum recorded, 5.5 mg/L, Aug. 30.

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	219	209	212	249	240	243	135	133	134	108	106	107
2	232	214	226	243	236	241	134	133	133	111	108	109
3	234	232	233	236	206	221	133	133	133	113	111	111
4	232	225	228	206	187	195	133	129	132	115	113	115
5	225	210	218	187	173	180	129	65	95	119	115	117
6	212	198	206	175	144	159	83	65	67	121	119	120
7	201	191	196	159	129	146	68	65	66	121	121	121
8	191	183	187	177	159	170	69	68	68	124	121	122
9	183	176	179	170	148	157	71	69	70	127	124	125
10	176	170	173	148	140	144	73	71	73	127	126	127
11	170	165	167	140	64	120	73	64	69	127	126	126
12	166	156	161	104	84	92	72	64	69	129	127	128
13	156	144	152	105	92	99	72	66	71	132	129	131
14	144	138	140	109	105	107	80	66	75	132	131	132
15	149	139	144	110	109	110	87	77	84	131	130	131
16	159	149	155	111	110	110	90	87	88	132	130	131
17	162	157	159	111	101	106	94	90	92	130	129	129
18	197	162	177	106	101	103	97	94	96	131	129	130
19	217	197	210	112	106	109	100	97	99	134	131	132
20	218	216	217	115	112	113	104	99	100	135	132	134
21	216	211	213	120	115	116	127	104	120	136	132	133
22	211	209	209	125	120	123	117	104	108	138	136	137
23	210	208	208	133	125	127	104	103	104	140	136	137
24	210	209	210	146	133	141	104	102	103	146	140	144
25	212	210	211	146	145	146	104	102	102	146	145	146
26	211	206	209	145	142	144	108	104	106	150	146	148
27	206	196	201	143	139	141	105	99	102	154	150	152
28	196	185	190	139	136	136	99	98	99	155	154	155
29	185	179	181	136	133	134	100	99	99	154	150	151
30	180	169	175	135	134	134	101	100	100	151	122	139
31	248	169	199	---	---	---	106	101	104	151	122	141
MONTH	248	138	192	249	64	142	135	64	96	155	106	131

03410500 SOUTH FORK CUMBERLAND RIVER NEAR STEARNS, KY—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	140	125	135	102	98	101	158	147	153	169	117	137
2	125	108	114	102	100	101	159	157	158	173	115	148
3	108	104	106	100	99	99	159	157	158	127	115	123
4	104	90	97	100	99	100	157	150	154	127	113	121
5	99	89	95	101	100	100	150	136	142	120	111	112
6	102	98	101	103	101	102	136	107	131	120	70	81
7	99	94	95	107	103	105	107	59	79	75	65	72
8	100	94	96	113	107	110	76	68	72	68	61	64
9	100	98	99	115	113	114	68	60	63	73	68	71
10	98	97	97	120	115	117	61	52	58	78	73	76
11	98	97	98	124	120	122	60	55	57	83	78	81
12	116	98	104	125	124	124	70	60	65	92	83	88
13	117	110	113	125	125	125	77	70	74	95	92	93
14	110	105	109	125	125	125	82	77	80	100	95	98
15	105	76	88	126	125	125	87	82	84	102	100	101
16	76	58	64	127	125	126	91	87	89	103	102	102
17	69	62	64	130	127	128	93	82	91	121	102	106
18	77	69	73	130	128	128	129	81	97	147	117	130
19	83	77	80	131	129	130	88	80	81	121	93	98
20	88	83	85	133	131	132	85	81	83	95	92	93
21	91	88	90	137	133	135	89	85	86	101	95	98
22	91	67	80	137	137	137	95	89	92	106	101	103
23	78	64	68	151	137	144	100	95	97	103	100	102
24	75	67	71	152	151	151	101	100	101	103	99	101
25	81	75	78	157	152	155	102	101	101	99	99	99
26	87	81	84	160	157	158	103	100	102	101	99	100
27	92	87	89	160	157	159	106	103	105	104	101	102
28	98	92	94	157	153	155	110	106	107	107	104	106
29	---	---	---	153	148	151	111	110	110	110	107	109
30	---	---	---	148	144	147	117	111	113	114	110	111
31	---	---	---	148	146	147	---	---	---	117	114	115
MONTH	140	58	92	160	98	128	159	52	99	173	61	101
		JUNE			JULY			AUGUST			SEPTEMBER	
1	121	117	119	129	123	127	---	---	---	138	101	123
2	127	121	124	138	128	133	---	---	---	144	123	133
3	129	127	128	142	138	140	---	---	---	145	48	104
4	129	128	128	145	142	144	---	---	---	88	51	65
5	131	128	129	160	145	150	---	---	---	61	51	56
6	135	130	132	194	160	178	---	---	---	71	61	66
7	140	133	136	199	194	198	---	---	---	75	71	73
8	235	128	186	198	192	194	---	---	---	77	75	76
9	175	121	132	198	193	196	---	---	---	79	77	78
10	124	121	122	197	166	189	---	---	---	83	79	81
11	125	76	112	176	145	157	---	---	---	85	83	84
12	91	70	75	178	147	166	---	---	---	88	85	87
13	95	80	86	---	---	---	127	121	124	91	88	90
14	93	81	87	---	---	---	127	120	125	94	91	92
15	100	86	96	---	---	---	120	116	117	96	94	95
16	89	69	78	---	---	---	120	119	119	98	96	97
17	111	73	84	---	---	---	119	118	118	100	98	99
18	89	77	82	---	---	---	123	119	121	102	100	101
19	86	64	78	---	---	---	130	123	127	106	102	104
20	80	73	76	---	---	---	137	130	134	108	106	106
21	78	71	75	---	---	---	142	137	139	109	108	108
22	81	78	79	---	---	---	146	142	144	114	73	101
23	86	81	84	---	---	---	148	146	147	117	52	87
24	95	85	89	---	---	---	153	148	150	76	73	74
25	97	95	96	---	---	---	159	153	156	79	75	78
26	101	97	98	---	---	---	166	159	163	83	79	81
27	103	101	103	---	---	---	168	166	167	86	83	84
28	103	99	102	---	---	---	168	164	166	89	85	87
29	106	102	103	---	---	---	164	159	162	104	89	95
30	129	106	117	---	---	---	159	148	155	112	104	110
31	---	---	---	---	---	---	149	138	144	---	---	---
MONTH	235	64	105	199	123	164	168	116	141	145	48	90
YEAR	249	48	121									

03410500 SOUTH FORK CUMBERLAND RIVER NEAR STEARNS, KY—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	7.7	7.5	7.8	7.8	7.9	7.8	---	---	7.0	7.0	7.1	7.0
2	7.8	7.5	7.9	7.8	7.8	7.8	---	---	7.0	6.9	7.1	7.1
3	7.9	7.6	7.8	7.8	7.9	7.8	---	---	7.0	6.9	7.1	7.1
4	7.9	7.6	7.8	7.7	7.8	7.8	---	---	6.9	6.8	7.1	7.1
5	8.0	7.6	7.7	7.6	7.8	7.4	---	---	6.9	6.9	7.2	7.1
6	7.8	7.6	7.6	7.6	7.4	7.3	---	---	6.9	6.9	7.1	7.0
7	7.7	7.5	7.6	7.6	7.3	7.3	---	---	6.9	6.9	7.1	7.0
8	7.8	7.5	7.7	7.6	7.4	7.3	---	---	6.9	6.9	7.1	7.1
9	7.7	7.5	7.7	7.6	7.5	7.4	---	---	6.9	6.9	7.2	7.1
10	7.6	7.4	7.6	7.6	7.5	7.5	---	---	6.9	6.9	7.2	7.1
11	7.6	7.4	7.6	7.1	7.5	7.4	---	---	7.0	6.9	7.3	7.2
12	7.6	7.4	7.4	7.2	7.4	7.3	---	---	7.0	6.9	7.3	7.2
13	7.5	7.4	7.4	7.3	7.4	7.3	---	---	7.0	7.0	7.3	7.2
14	7.7	7.4	7.5	7.4	7.4	7.4	---	---	7.0	7.0	7.3	7.2
15	7.6	7.5	7.5	7.5	7.4	7.2	---	---	7.0	6.5	7.3	7.2
16	7.7	7.5	7.5	7.5	7.2	7.2	---	---	6.7	6.5	7.3	7.2
17	7.7	7.6	7.6	7.5	7.2	7.2	---	---	6.7	6.6	7.4	7.2
18	7.8	7.6	7.6	7.5	7.2	7.2	---	---	6.8	6.7	7.3	7.2
19	7.9	7.7	7.6	7.6	7.2	7.1	---	---	6.8	6.8	7.3	7.2
20	7.8	7.7	7.6	7.6	7.1	7.1	---	---	6.9	6.8	7.4	7.3
21	7.9	7.7	7.7	7.6	7.2	7.1	---	---	6.9	6.9	7.4	7.3
22	7.9	7.7	7.7	7.7	7.2	7.2	---	---	6.9	6.8	7.5	7.3
23	7.9	7.7	7.8	7.7	7.2	7.2	---	---	6.9	6.8	7.5	7.3
24	7.9	7.7	7.8	7.8	7.2	7.2	---	---	6.8	6.8	7.5	7.4
25	7.8	7.7	7.8	7.8	7.2	7.2	---	---	6.9	6.8	7.5	7.4
26	7.8	7.7	7.8	7.8	7.2	7.2	---	---	6.9	6.9	7.5	7.4
27	7.9	7.7	7.8	7.8	7.3	7.2	---	---	7.0	6.9	7.6	7.4
28	7.8	7.7	7.8	7.8	7.3	7.3	---	---	7.0	7.0	7.6	7.5
29	7.7	7.6	7.8	7.8	7.3	7.2	---	---	---	---	7.6	7.5
30	7.7	7.6	7.8	7.8	---	---	7.1	7.0	---	---	7.5	7.4
31	7.8	7.6	---	---	---	---	7.0	6.9	---	---	7.5	7.4
MONTH	8.0	7.4	7.9	7.1	7.9	7.1	7.1	6.9	7.0	6.5	7.6	7.0
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	7.6	7.5	7.6	7.4	7.8	7.4	7.8	7.4	---	---	7.4	7.3
2	7.6	7.5	7.6	7.3	7.8	7.5	7.7	7.5	---	---	7.5	7.3
3	7.6	7.5	7.5	7.4	7.7	7.5	7.8	7.5	---	---	7.4	6.8
4	7.6	7.5	7.5	7.4	7.7	7.5	7.8	7.5	---	---	7.1	6.9
5	7.5	7.4	7.4	7.4	7.9	7.5	7.9	7.5	---	---	7.1	6.9
6	7.5	7.1	7.4	7.0	7.9	7.6	7.9	7.6	---	---	7.1	7.1
7	7.1	6.9	7.0	6.9	7.7	7.3	7.9	7.6	---	---	7.2	7.1
8	7.0	6.9	6.9	6.8	7.7	7.5	7.9	7.6	---	---	7.3	7.2
9	6.9	6.8	7.0	6.9	7.7	7.5	7.9	7.6	---	---	7.3	7.1
10	6.9	6.7	7.1	7.0	7.6	7.5	7.8	7.7	---	---	7.4	7.2
11	6.7	6.6	7.2	7.1	7.6	7.0	7.7	7.5	---	---	7.5	7.2
12	6.9	6.7	7.4	7.2	7.2	7.0	7.6	7.5	---	---	7.5	7.3
13	7.0	6.9	7.4	7.3	7.3	7.1	---	---	7.8	7.6	7.7	7.3
14	7.1	7.0	7.4	7.3	7.4	7.3	---	---	7.8	7.6	7.6	7.4
15	7.2	7.1	7.4	7.3	7.5	7.3	---	---	7.8	7.5	7.7	7.4
16	7.2	7.1	7.4	7.3	7.3	7.2	---	---	7.9	7.5	7.8	7.4
17	7.2	7.0	7.4	7.3	7.4	7.2	---	---	7.8	7.5	7.8	7.4
18	7.3	7.0	7.4	7.3	7.2	7.1	---	---	7.9	7.5	7.8	7.5
19	7.1	7.1	7.4	7.2	7.3	7.2	---	---	7.9	7.4	7.8	7.5
20	7.2	7.1	7.3	7.2	7.3	7.2	---	---	7.9	7.5	7.7	7.5
21	7.2	7.1	7.3	7.3	7.2	7.2	---	---	7.8	7.4	7.6	7.4
22	7.3	7.2	7.4	7.3	7.2	7.0	---	---	7.8	7.5	7.5	7.0
23	7.4	7.3	7.4	7.3	7.0	6.9	---	---	7.8	7.5	7.3	7.0
24	7.4	7.3	7.5	7.3	7.1	6.9	---	---	7.8	7.5	7.2	7.2
25	7.4	7.3	7.3	7.3	7.1	7.0	---	---	7.8	7.6	7.3	7.2
26	7.4	7.3	7.4	7.3	7.3	7.1	---	---	7.9	7.6	7.3	7.2
27	7.4	7.3	7.5	7.3	7.4	7.3	---	---	7.8	7.6	7.3	7.3
28	7.4	7.3	7.6	7.4	7.5	7.4	---	---	7.8	7.5	7.4	7.3
29	7.4	7.3	7.5	7.4	7.7	7.5	---	---	7.7	7.5	7.6	7.4
30	7.5	7.3	7.6	7.3	7.9	7.6	---	---	7.6	7.4	7.7	7.5
31	---	---	7.6	7.4	---	---	---	---	7.5	7.4	---	---
MONTH	7.6	6.6	7.6	6.8	7.9	6.9	7.9	7.4	7.9	7.4	7.8	6.8
YEAR	8.0	6.5										

03410500 SOUTH FORK CUMBERLAND RIVER NEAR STEARNS, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	21.0	20.5	20.7	14.3	13.3	13.9	5.3	4.5	4.8	6.0	4.7	5.4
2	21.9	20.8	21.3	13.3	12.5	12.8	4.5	4.0	4.2	6.6	5.9	6.2
3	22.5	21.2	21.8	12.5	12.0	12.2	4.0	3.7	3.8	6.6	6.4	6.6
4	22.1	21.6	21.9	12.0	11.6	11.9	3.7	2.5	3.2	6.4	6.1	6.2
5	22.7	21.7	22.0	11.6	11.3	11.5	6.3	2.5	4.4	6.2	5.9	6.1
6	22.4	20.8	21.6	11.4	10.5	11.1	6.4	5.8	6.3	5.9	5.2	5.6
7	21.9	20.8	21.4	10.8	10.4	10.6	5.8	4.7	5.2	5.2	4.8	4.9
8	21.1	20.0	20.5	10.6	10.2	10.5	4.7	4.0	4.2	4.8	4.4	4.7
9	20.7	20.3	20.4	11.1	10.5	10.8	4.1	3.7	3.9	4.8	4.3	4.6
10	20.5	20.2	20.3	12.1	11.0	11.5	3.9	3.7	3.8	4.7	4.1	4.3
11	20.4	20.1	20.3	14.4	12.1	12.9	5.5	3.7	4.5	4.1	3.2	3.5
12	20.7	20.1	20.4	14.4	13.3	13.8	6.1	5.5	5.9	3.2	2.4	2.6
13	20.6	19.6	20.2	13.3	12.4	12.9	6.7	6.1	6.3	2.4	2.0	2.1
14	19.6	18.7	19.1	12.4	11.3	11.8	7.2	6.7	7.0	2.1	1.8	1.9
15	18.9	18.3	18.5	11.3	10.4	10.9	7.2	6.6	6.9	1.8	1.1	1.3
16	18.3	17.4	18.0	10.4	9.5	10.1	6.6	6.4	6.5	1.1	0.6	0.8
17	17.4	16.5	16.9	9.5	8.6	9.1	7.0	6.4	6.7	0.6	0.1	0.4
18	16.7	15.8	16.2	8.6	8.0	8.2	7.5	6.9	7.1	0.1	0.1	0.1
19	16.1	15.6	15.9	8.2	7.9	8.1	8.2	7.5	7.8	0.2	0.1	0.1
20	15.9	15.6	15.8	8.2	7.6	7.9	8.5	8.2	8.4	0.7	0.1	0.4
21	15.6	15.4	15.5	8.9	8.2	8.5	8.4	7.8	8.1	0.8	0.5	0.6
22	16.1	15.2	15.5	8.9	8.5	8.6	7.8	6.9	7.3	0.5	0.2	0.4
23	15.7	14.8	15.3	8.5	8.0	8.2	6.9	6.3	6.5	0.2	0.1	0.2
24	15.5	15.1	15.3	8.1	7.7	7.8	6.4	6.1	6.2	0.0	0.0	0.0
25	15.4	15.1	15.3	7.7	7.4	7.5	6.3	5.8	6.0	0.3	0.0	0.1
26	15.8	15.3	15.5	7.5	7.2	7.4	5.8	5.1	5.4	0.0	0.0	0.0
27	16.0	15.4	15.6	7.2	6.5	6.9	5.1	4.1	4.5	0.0	0.0	0.0
28	15.6	15.3	15.5	6.5	5.7	6.1	4.1	3.5	3.7	0.4	0.2	0.1
29	15.8	15.3	15.6	5.7	5.2	5.5	3.6	3.2	3.4	0.3	0.2	0.2
30	15.7	14.9	15.3	5.6	5.3	5.4	3.9	3.5	3.7	0.2	0.2	0.2
31	14.9	14.3	14.6	---	---	---	4.7	3.9	4.3	0.9	0.2	0.5
MONTH	22.7	14.3	18.1	14.4	5.2	9.8	8.5	2.5	5.5	6.6	0.0	2.3
		FEBRUARY			MARCH			APRIL			MAY	
1	2.1	0.9	1.3	6.9	5.6	6.2	12.4	11.1	11.8	18.5	17.6	18.0
2	3.3	2.1	2.7	7.6	6.9	7.3	12.9	11.5	12.1	18.3	16.9	17.8
3	4.4	3.3	3.8	7.9	7.2	7.5	13.7	12.1	12.8	18.1	16.8	17.3
4	5.6	4.4	5.1	7.6	6.8	7.2	14.2	13.1	13.6	18.0	17.1	17.5
5	5.6	5.1	5.4	8.0	7.5	7.7	15.4	13.8	14.6	17.9	17.6	17.7
6	5.1	4.3	4.7	8.2	7.9	8.1	14.8	12.9	14.4	17.6	15.3	16.0
7	4.3	3.5	4.0	8.7	7.7	8.2	12.9	11.9	12.3	15.3	15.0	15.1
8	3.5	2.7	3.0	8.7	8.0	8.4	12.3	12.0	12.1	15.7	14.9	15.2
9	2.7	2.1	2.3	9.2	8.6	8.8	12.3	10.7	11.5	16.9	15.7	16.2
10	2.2	1.9	2.1	8.7	7.9	8.4	10.7	9.5	9.9	18.4	16.8	17.5
11	2.5	1.9	2.1	8.8	8.0	8.3	10.2	9.4	9.7	19.4	18.1	18.7
12	2.6	2.1	2.3	9.0	7.8	8.4	11.0	10.0	10.4	19.6	18.5	19.0
13	2.6	2.0	2.3	9.5	8.5	9.0	12.0	10.9	11.4	18.8	17.7	18.3
14	2.8	2.4	2.6	10.2	9.3	9.7	13.0	11.5	12.2	18.5	17.8	18.0
15	6.3	2.8	4.5	11.2	10.1	10.6	14.1	12.5	13.2	18.2	17.7	17.9
16	7.2	6.3	6.9	12.0	10.9	11.4	14.6	13.6	14.0	18.0	17.3	17.6
17	7.2	6.1	6.7	12.6	11.6	12.1	14.6	13.9	14.4	17.9	17.5	17.7
18	6.1	5.0	5.4	12.9	12.2	12.5	14.3	13.5	14.0	17.8	16.8	17.2
19	5.1	4.8	4.9	13.5	12.6	13.0	14.4	13.4	13.8	16.8	16.5	16.6
20	5.8	5.1	5.4	14.3	12.9	13.5	15.6	14.3	15.0	17.7	16.6	17.1
21	6.6	5.8	6.2	14.5	13.8	14.1	16.7	15.5	16.0	17.7	17.4	17.5
22	8.8	6.6	7.5	14.9	13.9	14.3	16.6	16.1	16.4	17.4	16.9	17.1
23	8.9	7.6	8.4	15.0	13.7	14.3	16.1	15.0	15.5	17.3	16.8	17.0
24	7.6	6.3	6.8	15.2	13.5	14.3	15.3	14.2	14.6	17.5	16.6	17.0
25	6.3	5.5	5.9	14.9	13.7	14.3	14.5	14.1	14.3	17.3	16.6	16.9
26	5.5	4.8	5.1	14.6	13.9	14.2	14.1	13.9	14.0	16.9	16.5	16.8
27	4.8	4.7	4.8	14.8	13.1	14.0	15.2	13.7	14.4	17.3	16.2	16.7
28	5.6	4.8	5.1	15.1	13.6	14.4	16.0	14.5	15.2	17.9	16.7	17.3
29	---	---	---	14.8	13.8	14.3	16.8	15.5	16.1	17.9	17.6	17.8
30	---	---	---	13.8	12.9	13.4	17.8	16.7	17.2	18.9	17.3	18.0
31	---	---	---	12.4	11.5	11.9	---	---	---	19.1	18.0	18.5
MONTH	8.9	0.9	4.5	15.2	5.6	11.0	17.8	9.4	13.6	19.6	14.9	17.3

03410500 SOUTH FORK CUMBERLAND RIVER NEAR STEARNS, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	19.6	17.9	18.7	23.4	22.8	23.1	---	---	---	27.0	26.2	26.5
2	19.2	18.0	18.7	23.5	22.5	22.9	---	---	---	26.9	25.9	26.4
3	19.2	18.6	18.8	24.0	22.6	23.3	---	---	---	26.4	21.6	24.1
4	19.0	18.6	18.8	25.0	23.3	24.1	---	---	---	22.7	21.1	21.4
5	20.2	18.2	19.1	25.5	23.8	24.6	---	---	---	21.1	20.6	20.8
6	20.6	18.7	19.7	25.7	24.5	25.1	---	---	---	20.8	20.4	20.6
7	20.2	19.0	19.7	26.1	24.8	25.3	---	---	---	20.5	19.8	20.1
8	19.9	18.6	19.5	27.1	25.2	26.0	---	---	---	20.6	20.1	20.3
9	19.5	18.1	18.8	27.8	25.9	26.7	---	---	---	21.1	20.0	20.5
10	20.1	19.0	19.5	27.2	26.0	26.5	---	---	---	21.8	20.5	21.1
11	20.5	18.2	19.5	26.6	25.7	26.1	---	---	---	22.3	20.9	21.5
12	19.2	17.5	18.1	25.7	24.7	25.2	---	---	---	22.4	21.2	21.8
13	19.8	18.9	19.4	---	---	---	24.8	23.8	24.4	23.0	21.5	22.2
14	20.5	19.7	20.1	---	---	---	25.7	23.9	24.7	22.4	22.0	22.2
15	20.8	20.0	20.4	---	---	---	26.0	24.6	25.3	23.0	21.9	22.3
16	20.2	19.6	19.8	---	---	---	26.3	25.2	25.7	22.7	21.1	21.9
17	20.0	19.2	19.5	---	---	---	26.6	25.5	26.0	22.7	21.1	21.8
18	19.2	18.6	18.9	---	---	---	27.0	25.6	26.2	22.8	21.1	21.9
19	18.6	18.4	18.5	---	---	---	27.3	25.6	26.4	22.7	21.3	22.0
20	19.0	18.4	18.6	---	---	---	27.7	26.1	26.9	22.4	21.7	22.0
21	19.8	18.4	19.0	---	---	---	27.9	26.6	27.3	22.3	21.3	21.8
22	19.9	18.7	19.3	---	---	---	28.4	26.9	27.6	22.0	19.4	21.0
23	20.7	19.4	20.0	---	---	---	28.3	26.6	27.5	19.9	18.4	18.9
24	21.6	19.8	20.6	---	---	---	28.5	26.6	27.5	18.4	18.0	18.2
25	22.5	21.0	21.7	---	---	---	28.5	26.3	27.4	18.5	17.6	18.0
26	23.5	21.6	22.4	---	---	---	28.8	26.9	27.8	18.9	18.3	18.6
27	23.1	22.3	22.6	---	---	---	28.9	27.4	28.1	18.8	18.5	18.6
28	23.7	22.0	22.7	---	---	---	28.8	27.3	28.0	18.7	18.1	18.4
29	23.8	22.3	23.1	---	---	---	28.4	27.3	27.8	18.1	17.1	17.6
30	23.8	23.1	23.4	---	---	---	28.1	27.1	27.5	17.1	16.3	16.8
31	---	---	---	---	---	---	27.5	26.6	27.1	---	---	---
MONTH	23.8	17.5	20.0	27.8	22.5	24.9	28.9	23.8	26.8	27.0	16.3	21.0
YEAR	28.9	0.0	13.6									

03410500 SOUTH FORK CUMBERLAND RIVER NEAR STEARNS, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	9.5	9.0	9.3	10.6	10.0	10.4	13.9	13.5	13.7	12.0	11.4	11.6
2	9.5	8.9	9.2	10.9	10.4	10.7	14.3	13.8	14.0	11.6	10.9	11.2
3	9.6	8.6	9.1	11.1	10.7	10.9	14.5	14.1	14.3	11.2	10.9	11.0
4	9.1	8.4	8.8	11.1	10.7	10.9	15.1	14.3	14.6	11.2	11.0	11.1
5	9.1	8.2	8.6	11.4	10.8	11.1	15.1	12.3	14.0	11.3	11.0	11.2
6	8.7	8.0	8.3	11.9	11.1	11.4	14.5	13.4	14.3	11.6	11.2	11.3
7	8.4	8.0	8.2	12.0	11.8	11.9	14.7	14.3	14.5	11.9	11.5	11.7
8	9.0	7.9	8.4	12.2	11.9	12.1	15.0	14.7	14.9	11.9	11.6	11.8
9	8.5	7.9	8.2	12.1	11.9	12.0	15.1	14.8	14.9	11.9	11.7	11.8
10	8.5	7.7	8.0	12.0	11.6	11.8	14.9	14.7	14.8	---	---	---
11	8.8	8.0	8.3	11.7	10.3	11.2	15.0	14.6	14.7	---	---	---
12	9.1	8.2	8.6	11.4	10.1	11.1	14.8	14.1	14.5	---	---	---
13	8.8	8.1	8.5	11.3	11.0	11.2	14.3	13.8	14.0	---	---	---
14	9.1	8.4	8.7	11.4	11.2	11.3	14.1	10.8	12.6	---	---	---
15	9.1	8.4	8.7	12.0	11.3	11.8	11.6	10.6	11.0	---	---	---
16	9.3	8.6	8.9	12.4	11.9	12.1	11.4	10.8	11.0	---	---	---
17	9.6	8.8	9.2	12.6	12.4	12.5	11.6	10.9	11.2	---	---	---
18	10.1	9.3	9.7	12.9	12.5	12.7	11.3	10.5	10.9	---	---	---
19	10.1	9.5	9.8	12.9	12.7	12.8	11.2	10.6	10.9	---	---	---
20	9.9	9.6	9.7	13.0	12.6	12.8	11.0	10.2	10.6	---	---	---
21	10.1	9.4	9.7	12.8	12.3	12.5	11.0	10.3	10.5	---	---	---
22	10.1	9.5	9.8	12.5	12.2	12.4	10.9	10.5	10.7	---	---	---
23	10.1	9.4	9.8	12.5	12.3	12.4	11.5	10.7	11.2	---	---	---
24	9.9	9.4	9.7	12.9	12.4	12.7	11.6	10.9	11.4	---	---	---
25	9.8	9.3	9.5	13.0	12.8	12.9	12.2	11.4	11.7	---	---	---
26	9.6	8.9	9.3	12.9	12.8	12.8	12.5	12.0	12.3	---	---	---
27	10.0	9.1	9.5	13.3	12.8	13.1	12.6	12.2	12.5	---	---	---
28	10.0	9.3	9.6	13.7	13.2	13.5	12.9	12.4	12.6	---	---	---
29	10.0	9.7	9.9	13.8	13.4	13.6	12.7	12.3	12.5	---	---	---
30	9.9	9.6	9.7	13.7	13.4	13.5	12.5	12.1	12.4	14.5	11.5	13.3
31	10.2	9.6	10.0	---	---	---	12.5	11.9	12.1	15.6	13.6	14.5
MONTH	10.2	7.7	9.1	13.8	10.0	12.1	15.1	10.2	12.8	15.6	10.9	11.9

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	15.6	14.3	15.1	12.9	12.1	12.5	10.2	9.8	10.0	9.0	8.7	8.9
2	14.5	13.6	14.1	12.2	11.5	11.8	10.1	9.8	10	8.7	8.4	8.5
3	13.8	13.0	13.3	11.7	11.3	11.5	9.8	9.6	9.7	8.7	8.6	8.7
4	13.4	11.8	12.6	11.8	11.2	11.5	9.6	9.2	9.4	8.8	8.6	8.7
5	11.9	10.6	11.0	11.3	11.0	11.2	9.3	9.1	9.2	8.9	8.6	8.7
6	11.2	10.5	10.9	11.1	10.7	10.9	9.7	9.0	9.2	10.0	8.9	9.6
7	11.8	11.0	11.3	11.6	10.7	11.0	10.3	9.6	10	10.1	9.9	10.0
8	12.2	11.6	11.8	11.7	11.2	11.5	10.2	9.8	10.0	10.1	9.8	10.0
9	13.2	12.1	12.6	11.5	11.0	11.2	10.4	9.8	10.2	9.8	9.4	9.6
10	12.9	12.4	12.7	11.5	11.0	11.3	11.4	10.4	10.7	9.4	9.0	9.2
11	13.1	12.4	12.8	11.4	11.0	11.2	11.6	10.9	11.3	9.0	8.8	8.9
12	13.0	12.3	12.7	11.2	10.7	11.0	11.0	10.7	10.9	9.0	8.8	8.9
13	12.9	12.4	12.6	11.0	10.6	10.8	10.8	10.5	10.6	9.1	8.8	9.0
14	12.9	12.1	12.4	11.0	10.3	10.5	10.5	10.2	10.4	9.1	8.8	8.9
15	13.7	11.8	12.7	10.3	9.6	10.0	10.2	9.8	10.1	9.0	8.8	8.9
16	14.9	12.1	14.4	9.8	9.3	9.6	9.9	9.6	9.8	9.1	8.8	8.9
17	14.8	14.3	14.6	9.5	9.1	9.3	9.6	9.3	9.5	9.0	8.8	8.9
18	15.2	14.3	14.6	9.3	8.9	9.1	10.3	9.5	9.9	9.4	8.7	9.1
19	15.2	14.7	14.9	9.4	8.9	9.2	10.2	10.0	10.1	9.4	9.2	9.3
20	14.8	14.1	14.5	9.4	8.6	8.9	10.1	9.6	9.8	9.2	9.0	9.1
21	14.2	13.5	13.9	10.0	9.2	9.7	9.6	9.3	9.5	9.1	8.9	9.0
22	13.6	12.7	13.1	10.1	9.7	9.9	9.3	9.2	9.3	9.2	9.0	9.1
23	13.3	12.9	13.1	9.9	9.2	9.6	9.7	9.3	9.5	9.2	8.9	9.0
24	13.6	12.8	13.2	9.4	9.0	9.2	9.8	9.5	9.7	9.0	8.9	9.0
25	13.5	13.2	13.3	9.4	8.8	9.1	9.8	9.6	9.7	9.0	8.9	8.9
26	13.8	13.3	13.6	9.3	8.9	9.0	9.7	9.5	9.6	9.2	8.8	9.0
27	13.6	13.3	13.4	9.4	9.0	9.2	9.8	9.6	9.7	9.3	9.0	9.1
28	13.4	12.8	13.1	9.2	8.8	9.0	9.7	9.4	9.6	9.2	8.8	9.0
29	---	---	---	9.3	8.9	9.1	9.4	9.1	9.3	8.8	8.3	8.5
30	---	---	---	9.7	9.1	9.3	9.3	9.0	9.1	8.6	8.2	8.4
31	---	---	---	9.9	9.7	9.8	---	---	---	8.5	8.1	8.3
MONTH	15.6	10.5	13.2	12.9	8.6	10.2	11.6	9.0	9.9	10.1	8.1	9.0

03410500 SOUTH FORK CUMBERLAND RIVER NEAR STEARNS, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	8.6	8.1	8.3	8.0	7.6	7.8	---	---	---	7.4	6.1	6.8
2	8.6	8.1	8.3	8.1	7.5	7.8	---	---	---	7.2	6.8	6.9
3	8.4	8.0	8.2	8.3	7.4	7.8	---	---	---	8.7	6.8	7.6
4	8.4	8.0	8.2	8.0	7.5	7.8	---	---	---	9.7	8.3	9.1
5	8.5	8.1	8.3	8.0	7.4	7.6	---	---	---	9.6	8.9	9.2
6	8.3	7.9	8.1	7.9	7.3	7.5	---	---	---	9.1	8.7	8.9
7	8.2	7.7	8.0	7.8	7.0	7.4	---	---	---	8.8	8.4	8.7
8	8.3	8.0	8.2	7.5	6.9	7.2	---	---	---	8.7	8.3	8.5
9	8.4	8.1	8.2	7.2	6.8	7.0	---	---	---	8.7	8.1	8.5
10	8.1	7.9	8.1	7.5	6.8	7.2	---	---	---	8.4	7.8	8.1
11	8.6	7.9	8.1	7.5	7.1	7.3	---	---	---	8.0	7.5	7.7
12	8.5	8.1	8.4	7.4	7.2	7.3	---	---	---	7.8	7.2	7.5
13	8.1	7.9	8.0	---	---	---	---	---	---	7.6	6.9	7.3
14	7.9	7.7	7.9	---	---	---	---	---	---	7.4	6.8	7.1
15	8.1	7.8	7.9	---	---	---	---	---	---	7.7	6.7	7.1
16	8.3	7.6	8.2	---	---	---	---	---	---	7.7	7.0	7.3
17	8.6	8.1	8.3	---	---	---	---	---	---	7.6	6.7	7.1
18	8.4	8.2	8.3	---	---	---	---	---	---	7.3	6.7	6.9
19	8.7	8.4	8.5	---	---	---	---	---	---	7.2	6.4	6.8
20	8.8	8.5	8.6	---	---	---	---	---	---	7.2	6.5	6.8
21	8.5	8.1	8.4	---	---	---	---	---	---	7.1	6.5	6.8
22	8.6	8.2	8.4	---	---	---	7.8	7.0	7.5	8.1	6.4	7.1
23	8.5	8.3	8.4	---	---	---	8.0	6.9	7.4	9.2	8.0	8.9
24	8.4	8.0	8.3	---	---	---	7.8	7.1	7.4	9.1	8.9	9.0
25	8.3	7.8	8.1	---	---	---	7.7	6.8	7.2	9.1	8.8	8.9
26	8.0	7.6	7.8	---	---	---	7.8	6.7	7.1	9.3	8.8	9.0
27	7.7	7.2	7.5	---	---	---	7.0	6.4	6.7	9.0	8.7	8.8
28	7.9	7.2	7.6	---	---	---	7.3	6.2	6.7	9.1	8.6	8.8
29	8.4	7.3	7.8	---	---	---	6.8	5.8	6.2	9.3	8.7	9.0
30	8.2	7.7	7.9	---	---	---	7.0	5.5	6.2	9.6	8.9	9.2
31	---	---	---	---	---	---	6.9	6.2	6.6	---	---	---
MONTH	8.8	7.2	8.1	8.3	6.8	7.5	8.0	5.5	6.9	9.7	6.1	8.0
YEAR	15.6	5.5	10.1									

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03410600 SOUTH FORK CUMBERLAND RIVER AT YAMACRAW, KY

LOCATION.--Lat 36°43'32", long 84°32'38", McCreary County, Hydrologic Unit 05130104, on left bank 200 ft upstream of bridge on State Highway 92 at Yamacraw, 700 feet upstream from Wolf Creek, 0.6 mile downstream from Rock Creek, and at mile 40.3.

DRAINAGE AREA.--1,083 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1999 to September 30, 2000, October 1, 2002 to current year.

GAGE.--Water-stage recorder with telemetry. Datum of gage is 711.166 ft above NGVD of 1929.

REMARKS.--Records poor.

COOPERATION.--Kentucky Natural Resources and Environmental Protection Cabinet.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	487	990	660	e1,800	2,650	e4,000	e1,200	e1,800	e700	e560	e1,600	622
2	369	724	609	e1,600	2,240	e3,500	e1,100	e1,500	e600	e580	e1,500	950
3	302	570	568	e1,400	1,910	e3,000	e1,000	e1,400	e500	e780	e1,800	7,240
4	259	492	584	e1,300	3,630	e2,600	e960	e1,200	e520	e820	e3,000	24,400
5	233	520	13,800	e1,200	6,110	e2,200	e1,000	e2,600	e560	e600	e2,300	15,100
6	223	1,880	13,000	e1,100	4,060	e1,950	e2,000	e17,000	e500	e500	e2,100	5,970
7	208	3,250	5,530	e1,050	3,240	e1,850	17,600	22,000	e750	e540	e1,500	e2,700
8	198	1,990	3,470	e970	2,650	e1,700	18,000	23,100	e5,000	e440	e1,000	e1,700
9	206	1,380	2,570	e940	2,080	e1,550	22,600	e8,000	e2,350	e390	e800	e1,400
10	193	1,070	2,100	e880	1,920	e1,400	24,900	e4,400	e1,400	e650	e620	e1,100
11	214	6,650	6,750	e800	1,880	e1,300	30,300	e3,200	e1,800	e1,800	e600	e900
12	e280	8,080	8,300	e730	1,800	e1,200	e11,000	e3,600	e3,200	e2,100	e900	e780
13	e400	3,310	6,230	e660	1,780	e1,100	e6,000	e2,400	e2,600	e1,250	e820	e700
14	e440	2,080	17,400	e630	1,770	e1,050	e4,000	e1,800	e2,500	e1,170	e620	e620
15	e400	1,570	10,000	e600	15,600	e1,000	e3,000	e1,500	e5,400	e900	e480	e600
16	393	2,100	5,530	e570	35,300	e950	e2,800	e1,600	e6,200	e740	e400	e580
17	426	2,580	3,780	e610	e24,000	e920	e2,700	e2,400	e10,000	e620	e370	e550
18	462	2,010	2,850	e560	e11,000	e900	e13,000	e7,000	e8,500	e520	e400	e460
19	418	1,630	2,300	e540	e6,500	e880	e7,000	e5,000	e9,500	e430	e540	e400
20	365	1,470	3,240	e530	e4,600	e900	e4,000	e3,200	e6,000	e360	e370	356
21	332	1,390	5,470	e510	e3,600	e1,000	e3,200	e3,000	e3,400	e320	e290	314
22	316	1,360	3,860	e620	e18,000	e950	e3,400	e5,000	e2,200	e310	e260	1,810
23	307	1,430	2,970	e740	31,600	e870	e2,600	e3,800	e1,500	e330	e230	14,700
24	291	e1,250	2,740	e630	e12,000	e800	e2,100	e2,800	e1,100	e700	e220	5,350
25	288	1,070	5,590	e530	e7,000	e750	e1,850	e2,000	e850	e500	e210	2,700
26	297	957	5,990	e500	e4,900	e730	e1,800	e1,600	e700	e380	e200	1,760
27	284	896	4,490	e490	e4,200	e710	e1,750	e1,300	e650	e300	e180	1,370
28	275	866	e3,400	e480	e4,500	e700	e1,500	e1,100	e700	e260	e180	1,670
29	296	772	e2,800	760	---	e690	e1,200	e950	e650	e350	154	1,750
30	876	704	e2,400	2,670	---	e750	e1,500	e850	e550	e320	166	1,230
31	1,410	---	e2,200	3,320	---	e1,300	---	e800	---	e1,200	300	---
TOTAL	11,448	55,041	151,181	29,720	220,520	43,200	195,060	137,900	80,880	20,720	24,110	99,782
MEAN	369	1,835	4,877	959	7,876	1,394	6,502	4,448	2,696	668	778	3,326
MAX	1,410	8,080	17,400	3,320	35,300	4,000	30,300	23,100	10,000	2,100	3,000	24,400
MIN	193	492	568	480	1,770	690	960	800	500	260	154	314
CFSM	0.34	1.69	4.50	0.89	7.27	1.29	6.00	4.11	2.49	0.62	0.72	3.07
IN.	0.39	1.89	5.19	1.02	7.57	1.48	6.70	4.74	2.78	0.71	0.83	3.43

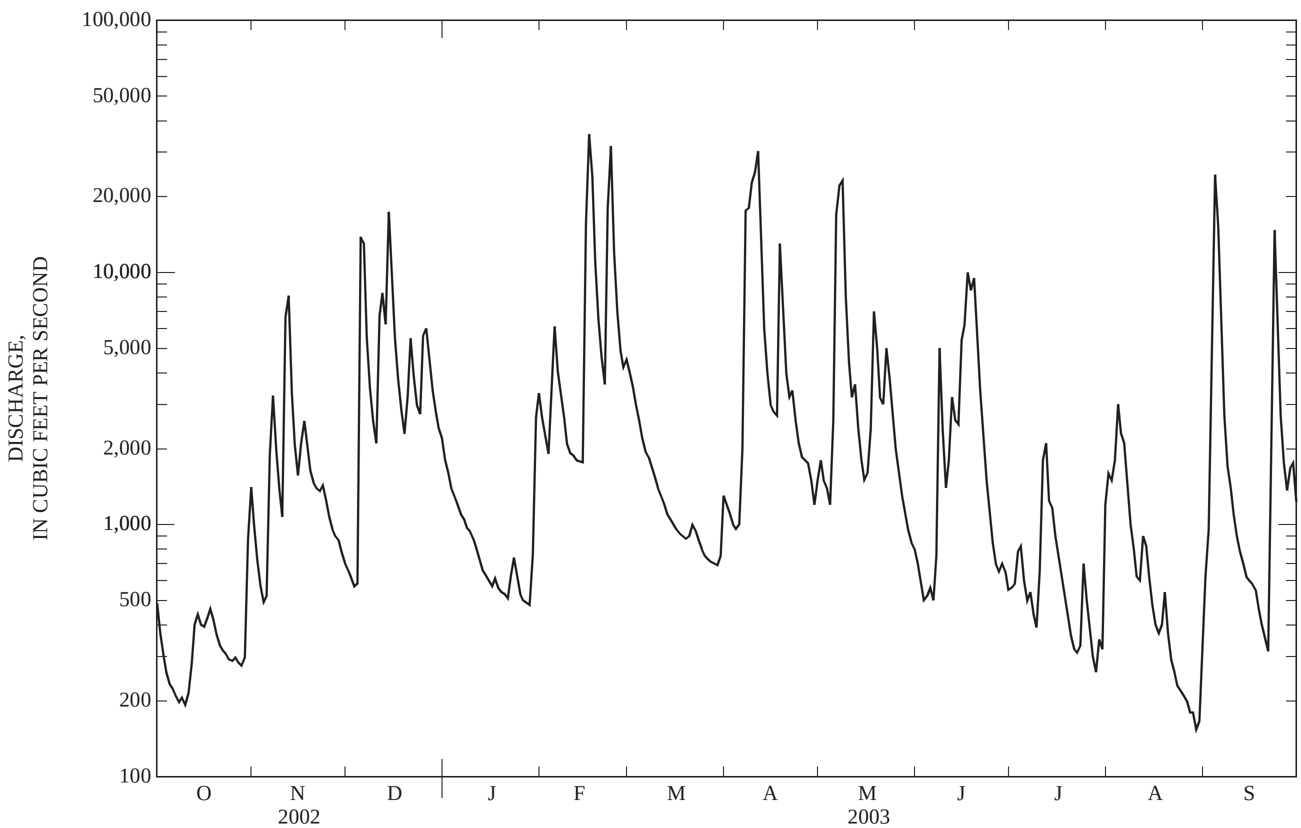
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1999 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	222	986	2,591	969	4,953	1,949	5,512	3,162	1,763	1,005	399	1,144
MAX	369	1,835	4,877	979	7,876	2,504	6,502	4,448	2,696	2,092	778	3,326
(WY)	(2003)	(2003)	(2003)	(2000)	(2003)	(2000)	(2003)	(2003)	(2003)	(1999)	(2003)	(2003)
MIN	75.6	137	305	959	2,131	1,394	4,523	1,875	718	255	180	40.3
(WY)	(2000)	(2000)	(2000)	(2003)	(2000)	(2003)	(2000)	(2000)	(2000)	(2000)	(1999)	(1999)

03410600 SOUTH FORK CUMBERLAND RIVER AT YAMACRAW, KY—Continued

SUMMARY STATISTICS	FOR 2003 WATER YEAR		WATER YEARS 1999 - 2003	
ANNUAL TOTAL	1069562			
ANNUAL MEAN	2930		2,036	
HIGHEST ANNUAL MEAN			2,930	2003
LOWEST ANNUAL MEAN			1,143	2000
HIGHEST DAILY MEAN	35,300	Feb 16	35,300	Feb 16, 2003
LOWEST DAILY MEAN	154	Aug 29	25	Sep 27, 1999
ANNUAL SEVEN-DAY MINIMUM	187	Aug 24	25	Sep 26, 1999
MAXIMUM PEAK FLOW	37,900	Feb 16	37,900	Feb 16, 2003
MAXIMUM PEAK STAGE	32.57	Feb 16	32.57	Feb 16, 2003
ANNUAL RUNOFF (CFSM)	2.71		1.88	
ANNUAL RUNOFF (INCHES)	36.74		25.54	
10 PERCENT EXCEEDS	6,560		4,500	
50 PERCENT EXCEEDS	1,250		780	
90 PERCENT EXCEEDS	331		78	

e Estimated



03410600 SOUTH FORK CUMBERLAND RIVER AT YAMACRAW, KY—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Oct. 1, 2002 to current water year.

INSTRUMENTATION.--Four parameter water-quality monitor with telemetry since Oct. 1, 2002.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE:Maximum recorded, 235 microsiemens, Oct. 1; minimum recorded 53 microsiemens, Feb. 16.
pH:Maximum 8.0 units, Nov. 26; minimum recorded, 6.6 units, July 7.
WATER TEMPERATURES:Maximum recorded, 28.8°C, Aug. 27; minimum recorded, 0.0°C, Jan. 18-20 and 23-29.
DISSOLVED OXYGEN:Maximum recorded, 14.8 mg/L, Jan. 31; minimum recorded, 4.3 mg/L, July 23.

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	235	218	226	232	172	212	---	---	---	103	101	102
2	221	207	212	231	225	226	---	---	---	105	103	104
3	218	207	211	228	224	227	---	---	---	107	105	107
4	226	218	221	224	206	216	---	---	---	113	107	110
5	229	224	227	206	180	192	---	---	---	115	113	114
6	229	227	228	180	137	160	---	---	---	119	115	117
7	227	222	225	142	119	130	---	---	---	121	119	121
8	222	213	217	160	142	149	---	---	---	122	120	121
9	213	209	211	161	145	155	---	---	---	122	120	121
10	210	200	206	145	133	138	---	---	---	125	122	124
11	200	199	200	147	89	127	---	---	---	125	124	125
12	---	---	---	145	96	106	79	73	77	126	124	125
13	---	---	---	106	97	102	83	72	81	129	125	128
14	---	---	---	111	106	109	77	68	73	131	129	130
15	---	---	---	116	111	113	75	74	74	132	130	131
16	148	145	147	117	109	113	80	75	77	131	130	131
17	157	148	152	110	104	108	84	80	82	131	130	131
18	162	157	160	104	101	102	89	84	87	132	130	131
19	176	161	165	110	104	107	93	89	91	133	131	132
20	202	176	190	114	110	112	95	91	93	134	132	133
21	212	202	208	117	114	116	125	93	111	140	134	137
22	213	197	210	124	117	120	124	98	107	134	132	133
23	211	205	208	128	124	126	98	97	97	136	134	135
24	207	205	205	---	---	---	98	93	97	141	136	138
25	205	204	205	150	148	149	93	92	92	145	141	143
26	205	203	204	150	148	149	102	93	98	146	145	145
27	204	203	203	148	144	150	102	96	98	150	145	147
28	203	200	201	144	141	143	96	94	95	152	150	150
29	200	194	197	149	131	142	95	94	94	152	138	151
30	194	168	181	---	---	---	97	95	96	138	128	133
31	172	161	164	---	---	---	101	97	99	141	117	129
MONTH	235	145	199	232	89	143	125	68	91	152	101	128

03410600 SOUTH FORK CUMBERLAND RIVER AT YAMACRAW, KY—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	138	129	131	99	92	96	147	143	146	124	111	118
2	129	108	118	100	99	100	153	147	151	167	124	143
3	108	103	105	100	98	99	154	152	153	170	119	134
4	110	86	97	99	98	99	155	152	154	137	123	133
5	102	86	93	100	99	99	152	139	147	133	103	127
6	107	100	104	101	100	100	139	128	132	109	74	86
7	103	99	101	104	101	103	130	66	83	119	82	103
8	104	98	100	109	104	106	82	77	80	120	111	115
9	110	103	106	114	109	111	77	63	69	136	120	129
10	111	105	107	116	114	115	65	57	62	147	136	141
11	115	104	109	122	116	119	62	57	59	154	147	151
12	120	111	115	125	122	124	71	62	66	158	154	156
13	132	120	127	126	124	125	77	71	74	159	158	159
14	132	121	125	126	125	126	82	77	79	160	156	158
15	122	68	88	127	126	126	86	82	84	161	159	160
16	68	53	57	127	126	127	89	85	87	160	158	159
17	64	58	60	129	126	127	94	89	92	158	149	156
18	72	64	68	131	129	130	116	79	92	149	138	143
19	79	72	75	131	129	130	102	89	92	145	132	139
20	81	79	80	133	130	132	94	89	90	132	105	119
21	87	85	86	133	131	132	96	94	95	105	102	104
22	88	64	77	136	133	135	96	95	96	106	103	104
23	73	61	65	138	136	137	103	96	100	103	98	101
24	70	63	67	149	138	143	108	100	104	105	96	100
25	77	70	74	152	149	151	109	107	108	106	105	106
26	82	77	79	155	152	154	108	106	107	107	106	106
27	87	82	85	157	155	156	108	104	106	107	105	106
28	92	87	90	158	155	157	113	107	110	110	106	108
29	---	---	---	155	152	154	115	110	113	110	104	108
30	---	---	---	152	145	148	115	111	113	109	106	108
31	---	---	---	143	142	142	---	---	---	113	109	111
MONTH	138	53	92	158	92	126	155	57	101	170	74	126
		JUNE			JULY			AUGUST			SEPTEMBER	
1	117	113	115	---	---	---	131	87	112	163	139	153
2	120	117	119	---	---	---	153	82	120	139	102	120
3	125	120	122	---	---	---	125	96	109	---	---	---
4	129	125	127	134	130	132	175	100	129	---	---	---
5	129	127	128	136	133	135	196	142	168	---	---	---
6	131	128	129	137	134	135	160	120	135	---	---	---
7	133	130	131	160	136	146	162	106	128	---	---	---
8	211	126	158	178	160	170	150	140	145	---	---	---
9	210	125	160	180	167	178	148	139	144	---	---	---
10	126	121	123	175	168	173	176	130	146	---	---	---
11	124	94	120	170	135	156	196	143	165	---	---	---
12	94	80	83	153	127	139	200	107	151	---	---	---
13	97	82	90	151	121	139	174	102	126	---	---	---
14	91	87	89	129	118	121	199	174	192	---	---	---
15	102	91	95	135	124	130	200	123	149	110	109	109
16	103	80	88	127	120	125	137	119	125	110	109	109
17	100	84	93	120	106	112	139	124	132	112	111	111
18	---	---	---	106	103	104	142	126	134	115	112	114
19	99	90	94	103	100	101	137	126	131	117	115	116
20	102	93	99	105	100	102	151	128	139	121	117	122
21	99	96	97	107	102	105	155	132	142	124	122	123
22	101	97	100	108	106	107	169	142	148	137	91	118
23	106	100	104	111	108	110	155	148	150	---	---	---
24	113	104	109	113	109	111	159	151	153	---	---	---
25	114	111	112	115	111	113	162	155	157	---	---	---
26	118	113	115	119	115	117	164	157	160	---	---	---
27	119	116	118	127	119	121	168	159	162	---	---	---
28	123	119	122	129	125	127	173	164	167	---	---	---
29	125	122	124	134	128	130	176	170	171	---	---	---
30	129	125	127	130	122	124	---	---	---	115	100	108
31	---	---	---	135	64	115	172	163	167	---	---	---
MONTH	211	80	113	180	64	128	200	82	145	163	91	118
YEAR	235	53	127									

03410600 SOUTH FORK CUMBERLAND RIVER AT YAMACRAW, KY—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	7.4	7.3	7.9	7.8	7.9	7.7	7.5	7.4	7.4	7.3	7.2	7.1
2	7.4	7.2	7.9	7.9	7.9	7.8	7.5	7.5	7.4	7.3	7.2	7.2
3	7.4	7.2	7.9	7.9	7.8	7.7	7.5	7.5	7.3	7.3	7.2	7.2
4	7.5	7.3	7.9	7.8	7.8	7.7	7.6	7.5	7.6	7.3	7.2	7.2
5	7.5	7.3	7.8	7.8	7.8	7.6	7.6	7.5	7.3	7.3	7.2	7.2
6	7.6	7.4	7.8	7.7	7.7	7.6	7.6	7.5	7.3	7.3	7.2	7.2
7	7.5	7.4	7.8	7.7	7.7	7.6	7.6	7.6	7.3	7.3	7.2	7.2
8	7.6	7.4	7.7	7.7	7.7	7.7	7.6	7.4	7.3	7.2	7.2	7.2
9	7.5	7.3	7.8	7.7	7.7	7.7	7.5	7.3	7.2	7.2	7.2	7.2
10	7.5	7.4	7.8	7.7	7.7	7.7	7.5	7.3	7.2	7.2	7.3	7.2
11	7.5	7.5	7.8	7.6	7.8	7.7	7.5	7.4	7.3	7.2	7.3	7.3
12	---	---	7.7	7.6	7.7	7.1	7.4	7.3	7.3	7.2	7.3	7.3
13	---	---	7.7	7.7	7.5	7.3	7.4	7.3	7.3	7.2	7.3	7.3
14	---	---	7.7	7.7	7.4	7.3	7.4	7.3	7.3	7.3	7.3	7.3
15	---	---	7.7	7.7	7.4	7.3	7.4	7.4	7.4	7.2	7.3	7.3
16	7.6	7.6	7.7	7.7	7.4	7.3	7.4	7.4	7.2	6.9	7.3	7.3
17	7.7	7.6	7.7	7.7	7.4	7.4	7.4	7.4	7.0	6.9	7.3	7.3
18	7.7	7.6	7.7	7.7	7.5	7.4	7.4	7.2	7.1	7.0	7.3	7.2
19	7.8	7.7	7.7	7.7	7.5	7.4	7.3	7.2	7.1	7.0	7.3	7.3
20	7.7	7.6	7.7	7.6	7.6	7.5	7.3	7.3	7.1	7.1	7.3	7.3
21	7.8	7.7	7.7	7.7	7.7	7.6	7.3	7.2	7.1	7.1	7.4	7.3
22	7.8	7.7	7.8	7.7	7.7	7.6	7.3	7.2	7.2	7.1	7.4	7.3
23	7.8	7.7	7.8	7.7	7.6	7.5	7.3	7.2	7.2	7.1	7.4	7.3
24	7.8	7.7	---	---	7.6	7.5	7.3	7.2	7.1	7.1	7.4	7.3
25	7.8	7.7	7.8	7.8	7.6	7.5	7.2	7.1	7.1	7.1	7.4	7.3
26	7.8	7.7	8.0	7.8	7.5	7.5	7.2	7.1	7.1	7.0	7.4	7.1
27	7.8	7.7	7.9	7.8	7.5	7.5	7.2	7.1	7.1	7.0	7.5	7.3
28	7.8	7.7	7.8	7.7	7.5	7.4	7.2	7.1	7.1	7.1	7.5	7.4
29	7.8	7.8	7.8	7.7	7.5	7.4	7.1	7.0	---	---	7.5	7.4
30	7.9	7.7	7.7	7.7	7.5	7.4	7.3	7.1	---	---	7.5	7.4
31	7.9	7.8	---	---	7.5	7.4	7.3	7.3	---	---	7.5	7.5
MONTH	7.9	7.2	8.0	7.6	7.9	7.1	7.6	7.0	7.6	6.9	7.5	7.1

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	7.6	7.5	7.2	7.0	7.1	7.1	---	---	7.3	7.0	7.5	7.2
2	7.6	7.5	7.2	7.1	7.2	7.1	---	---	7.5	7.2	7.5	7.2
3	7.5	7.5	7.2	7.2	7.2	7.1	---	---	7.4	7.3	7.2	6.7
4	7.5	7.5	7.2	7.0	7.1	7.0	7.0	6.8	7.4	7.4	7.5	6.7
5	7.5	7.4	7.2	7.0	7.1	7.1	7.0	6.7	7.4	7.4	7.3	7.2
6	7.6	7.5	7.3	7.1	7.2	7.1	7.0	6.7	7.5	7.4	7.3	7.2
7	7.7	7.1	7.1	7.1	7.1	7.1	6.8	6.6	7.5	7.4	7.3	7.2
8	7.1	7.1	7.1	6.9	7.4	7.1	6.9	6.7	7.5	7.4	7.4	7.3
9	7.2	7.0	6.9	6.9	7.4	7.2	7.0	6.8	7.5	7.4	7.3	7.3
10	7.0	6.9	7.0	6.9	7.2	7.1	7.0	6.9	7.4	7.3	7.3	7.3
11	6.9	6.9	7.0	6.9	7.3	6.9	7.2	7.0	7.4	7.3	7.3	7.2
12	7.0	6.9	7.1	7.0	6.9	6.7	7.3	7.2	7.5	7.3	7.2	7.1
13	7.0	7.0	7.1	7.0	6.9	6.8	7.3	7.2	7.4	6.8	---	---
14	7.0	7.0	7.0	7.0	6.9	6.9	7.2	7.1	7.0	6.8	---	---
15	7.0	7.0	7.0	7.0	7.0	6.9	7.3	7.2	7.1	7.0	7.2	7.2
16	7.1	7.0	7.1	7.0	7.0	6.9	7.3	7.1	7.1	6.9	7.2	7.2
17	7.1	7.0	7.2	7.0	7.0	6.9	7.2	7.0	7.1	6.8	7.3	7.3
18	7.3	7.0	7.4	7.2	---	---	7.0	6.9	7.0	6.7	7.3	7.3
19	7.3	7.1	7.4	7.1	7.0	6.9	7.0	6.7	7.0	6.8	7.3	7.2
20	7.1	7.1	7.1	7.1	7.0	7.0	7.1	6.9	7.2	6.8	7.3	7.2
21	7.1	7.0	7.2	7.1	7.0	7.0	7.1	6.9	7.2	7.0	7.3	7.2
22	7.1	7.1	7.3	7.2	7.0	6.8	7.1	6.9	7.2	6.9	7.2	7.1
23	7.2	7.1	7.3	7.2	7.0	6.8	7.1	6.9	7.3	7.1	7.2	6.9
24	7.2	7.1	7.2	7.2	6.9	6.8	7.1	6.8	7.4	7.2	7.2	6.9
25	7.1	7.0	7.2	7.1	6.9	6.8	7.2	7.1	7.4	7.3	7.0	6.9
26	7.1	7.0	7.1	7.1	6.9	6.8	7.1	7.0	7.5	7.3	7.0	7.0
27	7.1	7.0	7.2	7.1	6.9	6.8	7.1	6.9	7.4	7.3	7.0	7.0
28	7.0	6.9	7.1	7.0	7.0	6.9	7.1	6.9	7.6	7.4	7.0	6.9
29	7.0	6.9	7.1	7.0	7.0	6.9	7.1	6.9	7.6	7.3	7.1	6.9
30	7.1	6.9	7.1	7.1	7.1	6.9	7.1	6.8	7.4	7.2	7.1	7.0
31	---	---	7.1	7.1	---	---	7.2	6.9	7.4	7.2	---	---
MONTH	7.7	6.9	7.4	6.9	7.4	6.7	7.3	6.6	7.6	6.7	7.5	6.7
YEAR	8.0	6.6										

03410600 SOUTH FORK CUMBERLAND RIVER AT YAMACRAW, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	20.9	20.5	20.8	14.0	13.2	13.7	5.5	4.5	4.9	6.0	5.0	5.5
2	21.7	20.7	21.2	13.2	12.5	12.8	4.5	4.1	4.2	6.5	6.0	6.2
3	22.5	21.3	21.9	12.5	12.0	12.2	4.1	3.7	3.9	6.5	6.1	6.3
4	22.5	22.0	22.3	12.0	11.8	11.9	3.7	2.8	3.2	6.1	5.8	6.0
5	22.9	21.8	22.2	11.8	11.6	11.7	5.9	2.8	4.0	6.1	5.7	5.9
6	22.7	21.1	21.7	11.8	10.8	11.3	6.3	5.8	6.1	5.9	5.3	5.7
7	21.9	20.8	21.4	10.8	10.4	10.6	5.8	4.7	5.2	5.3	4.7	5.0
8	20.9	19.8	20.4	10.8	10.1	10.5	4.7	4.0	4.2	4.9	4.3	4.7
9	20.3	19.8	20.0	11.3	10.3	10.8	4.1	3.7	3.9	5.1	4.4	4.8
10	20.2	20.0	20.1	12.6	11.3	12.0	3.9	3.7	3.8	4.9	4.3	4.6
11	20.0	19.9	19.9	14.1	12.5	12.9	5.3	3.8	4.5	4.3	3.2	3.7
12	---	---	---	14.2	13.3	13.8	6.0	5.3	5.8	3.2	2.3	2.6
13	---	---	---	13.3	12.3	12.9	6.8	6.0	6.2	2.3	1.7	2.1
14	---	---	---	12.3	11.4	11.9	7.1	6.8	6.9	2.1	1.7	1.9
15	---	---	---	11.4	10.7	11.0	7.1	6.7	6.9	1.8	1.1	1.4
16	18.3	17.3	17.8	10.7	9.7	10.2	6.7	6.3	6.5	1.3	0.5	0.9
17	17.3	16.2	16.7	9.7	8.6	9.1	6.9	6.5	6.7	1.0	0.3	0.5
18	16.4	15.5	16.0	8.6	8.0	8.3	7.3	6.8	7.1	0.5	0.0	0.2
19	15.9	15.5	15.7	8.5	7.9	8.2	8.2	7.3	7.8	0.4	0.0	0.2
20	15.8	15.6	15.7	8.4	7.9	8.2	8.5	8.1	8.3	0.8	0.0	0.4
21	15.7	15.4	15.5	9.0	8.2	8.6	8.1	7.7	8.0	0.9	0.5	0.7
22	16.2	15.2	15.6	8.9	8.3	8.6	7.7	7.0	7.4	0.9	0.1	0.4
23	16.3	15.1	15.6	8.3	7.8	8.1	7.0	6.3	6.6	0.3	0.0	0.0
24	15.7	15.3	15.5	---	---	---	6.3	6.2	6.3	0.3	0.0	0.0
25	15.6	15.3	15.5	7.7	7.6	7.7	6.3	5.7	6.0	0.2	0.0	0.0
26	16.0	15.5	15.7	7.6	7.3	7.5	5.7	5.0	5.4	0.0	0.0	0.0
27	16.2	15.5	15.8	7.3	6.5	6.9	5.0	4.2	4.6	0.1	0.0	0.0
28	15.6	15.4	15.5	6.5	5.8	6.1	4.2	3.5	3.9	0.0	0.0	0.0
29	15.7	15.2	15.5	5.8	5.1	5.5	3.8	3.4	3.6	0.2	0.0	0.0
30	15.6	14.7	15.2	6.0	5.5	5.6	4.2	3.4	3.7	0.4	0.1	0.3
31	14.7	14.0	14.3	---	---	---	5.0	4.0	4.4	0.8	0.1	0.4
MONTH	22.9	14.0	17.9	14.2	5.1	10.0	8.5	2.8	5.5	6.5	0.0	2.3

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	1.4	0.8	1.1	6.4	5.1	5.6	12.8	11.4	12.0	18.4	17.5	17.9
2	2.9	1.4	2.2	7.0	6.4	6.8	13.4	12.0	12.7	18.5	18.2	18.4
3	4.3	2.8	3.4	7.4	7.0	7.1	14.1	12.6	13.3	18.4	17.4	17.8
4	5.3	4.3	4.9	7.5	7.0	7.2	14.4	13.7	14.0	17.8	17.4	17.6
5	5.2	4.8	5.0	7.9	7.2	7.5	15.2	14.2	14.7	18.0	17.7	17.8
6	4.8	4.2	4.5	8.0	7.9	7.9	14.9	13.5	14.3	17.9	15.6	16.5
7	4.2	3.3	3.8	8.0	7.5	7.8	13.5	12.0	12.3	15.6	15.2	15.3
8	3.3	2.4	2.8	8.4	8.0	8.2	12.2	12.1	12.1	15.7	15.0	15.3
9	2.5	1.8	2.2	8.7	8.4	8.5	12.2	10.9	11.6	16.9	15.7	16.2
10	2.2	1.9	2.0	8.5	8.0	8.3	10.9	9.6	10.1	18.4	16.8	17.4
11	2.4	1.8	2.1	8.2	7.9	8.1	10.3	9.6	9.8	19.3	18.2	18.7
12	2.6	1.9	2.3	8.7	8.2	8.4	11.1	10.2	10.6	19.3	18.6	19.0
13	2.8	1.7	2.2	9.2	8.6	9.0	12.2	11.0	11.5	19.2	18.3	18.7
14	2.9	2.3	2.5	9.9	9.2	9.6	13.0	11.7	12.1	18.7	18.2	18.4
15	6.1	2.9	4.2	10.9	9.9	10.4	13.7	12.8	13.1	18.6	17.9	18.1
16	6.9	6.1	6.6	11.5	10.9	11.2	14.4	13.7	14.1	18.3	17.9	18.1
17	6.9	6.0	6.6	12.3	11.5	11.9	14.6	14.4	14.5	18.2	17.7	18.0
18	6.0	4.9	5.3	12.8	12.3	12.5	14.6	13.7	14.2	18.0	17.2	17.6
19	5.0	4.6	4.8	13.2	12.6	12.9	14.6	13.5	13.9	17.2	16.8	17.0
20	5.3	5.0	5.0	13.8	13.0	13.4	15.7	14.4	14.8	17.7	16.7	17.1
21	6.3	5.8	6.1	14.0	13.7	13.9	16.6	15.6	15.9	17.8	17.4	17.6
22	8.5	6.3	7.2	14.4	13.7	14.0	16.6	16.2	16.4	17.4	17.1	17.3
23	8.6	7.6	8.2	14.3	13.8	14.1	16.2	15.7	15.8	17.4	16.9	17.1
24	7.6	6.3	6.9	14.5	13.6	14.0	15.8	14.8	15.2	17.8	16.7	17.2
25	6.3	5.4	5.8	14.7	13.9	14.4	14.8	14.4	14.6	17.6	17.0	17.2
26	5.4	4.8	5.0	14.7	14.1	14.5	14.8	14.2	14.5	17.1	16.6	16.8
27	4.8	4.6	4.6	14.4	13.5	14.0	14.7	14.2	14.3	17.4	16.6	16.9
28	5.1	4.6	4.8	15.1	14.1	14.6	15.3	14.7	15.1	18.0	17.1	17.4
29	---	---	---	15.1	14.0	14.7	16.4	15.3	16.0	18.0	17.8	17.9
30	---	---	---	14.0	12.7	13.3	17.9	16.4	17.0	18.4	17.7	18.0
31	---	---	---	12.0	11.4	11.8	---	---	---	19.0	18.4	18.7
MONTH	8.6	0.8	4.4	15.1	5.1	10.8	17.9	9.6	13.7	19.3	15.0	17.5

03410600 SOUTH FORK CUMBERLAND RIVER AT YAMACRAW, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	19.2	18.6	18.9	---	---	---	22.2	21.3	21.7	27.1	26.0	26.6
2	19.0	18.8	18.9	---	---	---	22.9	21.9	22.2	27.1	24.3	25.9
3	19.0	18.9	18.9	---	---	---	22.4	21.9	22.1	24.3	21.2	22.5
4	18.9	18.7	18.9	24.7	24.0	24.3	23.4	22.2	22.6	22.0	20.9	21.2
5	19.3	18.4	18.8	25.1	24.6	24.7	23.6	23.2	23.4	21.0	20.6	20.8
6	20.0	19.2	19.6	25.1	24.7	24.9	23.3	22.7	23.0	20.8	20.2	20.5
7	20.4	19.9	20.2	26.0	25.1	25.6	23.1	22.6	22.9	20.6	20.0	20.2
8	20.6	19.4	20.0	26.4	25.6	25.9	23.1	22.6	22.9	20.7	19.9	20.2
9	19.9	18.7	19.2	27.0	26.1	26.5	23.6	23.0	23.2	21.3	20.2	20.7
10	20.3	19.2	19.6	26.7	26.3	26.5	23.9	23.6	23.7	21.7	20.7	21.2
11	20.4	18.6	20.1	26.7	25.9	26.3	23.9	22.7	23.6	22.1	21.2	21.6
12	18.6	17.7	18.1	26.4	25.0	25.4	23.2	21.7	22.3	22.0	21.4	22.8
13	19.6	18.6	19.2	25.0	22.9	24.1	23.8	23.1	23.4	---	---	---
14	20.2	19.5	19.8	23.8	22.8	23.1	24.8	23.7	24.1	---	---	---
15	20.7	19.9	20.2	23.9	23.3	23.6	25.6	24.7	25.1	22.5	21.8	22.2
16	20.5	19.6	20.0	24.2	23.8	23.9	25.9	25.5	25.6	22.0	21.8	21.9
17	20.2	19.4	19.9	24.8	24.1	24.3	26.0	25.3	25.6	22.4	21.3	22.0
18	---	---	---	25.2	24.7	24.9	26.3	25.4	25.8	22.7	21.4	22.0
19	18.9	18.6	18.8	25.7	25.1	25.4	26.8	25.9	26.2	22.8	21.5	22.1
20	19.2	18.5	18.8	26.2	25.4	25.8	27.0	26.2	26.6	22.2	21.7	22.2
21	19.7	18.5	18.9	26.5	25.9	26.1	27.5	26.6	26.9	22.3	21.3	21.8
22	19.8	19.2	19.4	26.0	25.2	25.5	27.9	26.7	27.2	22.0	19.6	21.1
23	20.4	19.7	19.9	25.2	24.5	24.7	27.9	26.6	27.2	19.8	18.5	19.1
24	20.8	20.4	20.7	25.0	24.0	24.4	27.9	26.5	27.2	18.7	18.0	18.3
25	21.7	20.8	21.3	25.1	24.4	24.8	28.0	26.3	27.1	18.4	17.8	18.1
26	22.5	21.7	22.1	25.6	25.0	25.2	28.4	26.7	27.5	19.3	18.3	18.7
27	22.8	22.5	22.7	26.4	25.4	25.8	28.8	27.2	27.9	19.2	18.6	18.8
28	22.8	22.6	22.7	26.7	25.9	26.3	28.7	27.1	27.8	18.6	18.2	18.3
29	23.2	22.6	22.9	26.5	25.2	25.8	28.2	27.1	27.7	18.2	17.3	17.7
30	23.6	23.2	23.4	25.4	24.6	25.0	27.7	26.9	27.2	17.4	16.3	16.9
31	---	---	---	25.4	21.4	24.0	27.2	26.5	26.8	---	---	---
MONTH	23.6	17.7	20.1	27.0	21.4	25.1	28.8	21.3	25.0	27.1	16.3	20.9
YEAR	28.8	0.0	14.3									

03410600 SOUTH FORK CUMBERLAND RIVER AT YAMACRAW, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	8.1	7.4	7.9	10.2	9.9	10.1	---	---	---	11.2	10.8	11.0
2	8.3	7.2	7.8	10.3	10.0	10.1	---	---	---	10.9	10.8	10.8
3	8.2	7.6	7.8	---	---	---	---	---	---	11.0	10.7	10.8
4	10.7	7.5	8.1	10.3	10.0	10.2	---	---	---	11.2	11.0	11.1
5	8.1	7.4	7.7	10.3	10.0	10.1	---	---	---	11.3	11.2	11.2
6	8.8	7.6	8.0	---	---	---	---	---	---	11.7	11.3	11.4
7	8.2	7.7	7.9	---	---	---	---	---	---	11.9	11.6	11.8
8	9.1	7.9	8.3	---	---	---	---	---	---	12.5	11.9	12.2
9	8.6	7.6	8.2	---	---	---	---	---	---	12.5	11.7	12.1
10	7.7	7.3	7.5	10.2	9.9	10.0	---	---	---	12.7	11.9	12.3
11	7.6	7.5	7.6	10.2	9.7	9.9	---	---	---	13.1	12.4	12.8
12	---	---	---	10.2	8.9	9.6	11.7	10.6	11.3	13.3	12.4	13.0
13	---	---	---	9.2	8.2	8.6	11.7	10.4	10.9	13.5	12.4	13.1
14	---	---	---	9.4	8.5	8.9	11.9	11.5	11.7	13.2	12.4	12.8
15	---	---	---	9.7	9.1	9.4	11.7	10.7	11.3	13.7	12.8	13.1
16	8.9	8.5	8.6	10.1	9.6	9.8	11.4	10.2	10.7	13.5	12.5	13.0
17	9.3	8.7	8.9	---	---	---	10.6	9.3	10.0	14.3	12.4	13.1
18	9.5	9.0	9.2	---	---	---	9.9	9.1	9.5	13.9	11.0	12.1
19	9.6	9.0	9.3	---	---	---	9.5	8.8	9.1	14.0	12.1	12.8
20	9.3	9.0	9.2	---	---	---	10.5	8.8	9.2	14.5	12.0	13.1
21	9.4	8.9	9.3	---	---	---	10.3	9.5	10.0	13.7	13.2	13.5
22	9.6	9.2	9.3	---	---	---	10.0	9.5	9.7	13.7	11.6	12.9
23	9.6	9.2	9.4	---	---	---	10.3	9.7	9.9	13.0	12.3	12.7
24	9.5	9.0	9.3	---	---	---	10.3	9.8	10.0	13.5	10.9	12.1
25	9.3	9.0	9.2	---	---	---	11.1	9.9	10.5	11.9	10.5	11.4
26	9.3	8.8	9.1	---	---	---	11.4	10.8	11.1	12.8	10.6	11.8
27	9.6	8.9	9.2	---	---	---	11.6	10.9	11.1	12.9	10.8	11.7
28	9.3	8.9	9.1	---	---	---	11.6	11.1	11.4	13.5	11.1	12.1
29	9.2	8.8	9.0	---	---	---	11.6	11.5	11.6	12.7	10.4	11.6
30	10.1	8.8	9.4	---	---	---	11.7	11.5	11.6	13.9	12.3	13.3
31	10.3	9.8	10.0	---	---	---	11.5	11.2	11.4	14.8	12.9	13.7
MONTH	10.7	7.2	8.7	10.3	8.2	9.7	11.9	8.8	10.6	14.8	10.4	12.3

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	14.6	13.4	14.0	13.4	11.8	12.6	11.8	11.1	11.5	8.2	7.3	7.8
2	13.7	12.4	13.0	12.7	11.4	11.9	11.8	10.6	11.1	7.6	6.7	7.4
3	12.9	11.6	12.3	12.6	11.3	11.7	11.3	10.3	10.7	7.8	7.2	7.5
4	14.0	11.6	12.4	12.4	11.4	11.7	10.7	9.9	10.3	7.8	6.9	7.4
5	---	---	---	12.4	11.2	11.5	10.9	9.7	10.1	8.4	7.0	7.5
6	---	---	---	12.0	11.1	11.3	11.3	9.6	10.5	10.8	8.4	9.9
7	---	---	---	11.8	11.2	11.3	15.3	11.3	14.6	11.1	10.1	10.6
8	---	---	---	11.6	11.0	11.2	15.7	13.4	14.5	12.0	10.4	11.3
9	---	---	---	11.4	10.9	11.0	15.3	13.5	14.6	11.9	9.3	10.4
10	---	---	---	11.4	10.9	11.1	16.0	14.2	15.1	9.7	8.1	9.0
11	---	---	---	11.6	11.0	11.2	16.5	14.6	15.7	8.8	7.7	8.2
12	---	---	---	11.6	10.8	11.0	14.7	12.6	13.7	8.4	7.8	8.0
13	---	---	---	11.3	10.6	10.9	13.3	11.8	12.4	8.2	7.7	7.9
14	---	---	---	11.3	10.5	10.7	12.0	11.3	11.7	8.2	7.3	7.7
15	14.4	12.2	13.3	10.8	10.1	10.4	11.3	10.5	11.0	7.7	7.1	7.5
16	15.4	14.4	14.9	11.0	9.8	10.1	10.6	9.1	10.0	7.8	7.2	7.5
17	15.2	13.4	14.6	10.0	9.5	9.8	9.8	8.6	9.5	8.2	7.7	7.9
18	14.3	12.6	13.3	10.0	9.3	9.5	11.6	9.6	10.6	9.5	7.9	8.7
19	13.5	12.2	12.6	9.5	9.1	9.3	11.0	9.9	10.5	9.2	7.9	8.4
20	12.7	11.9	12.3	9.6	8.9	9.2	10.2	9.3	9.8	8.1	7.1	7.7
21	11.6	11.1	11.3	9.7	9.2	9.3	9.4	8.6	9.0	7.8	7.0	7.3
22	12.8	11.0	11.7	9.7	9.2	9.3	9.1	8.7	8.9	8.1	7.6	7.8
23	13.8	12.6	13.1	9.7	9.0	9.3	9.2	8.7	8.9	8.4	7.9	8.2
24	13.4	11.6	12.5	9.5	9.1	9.3	9.4	8.8	9.1	8.9	7.9	8.3
25	13.8	11.9	12.6	9.4	8.7	9.2	9.4	8.7	9.1	9.0	8.0	8.5
26	13.9	12.2	12.7	11.3	8.5	9.7	9.4	8.8	9.1	9.4	8.2	8.8
27	14.1	12.4	13.0	11.6	9.5	10.2	9.4	8.6	9.1	9.6	8.6	9.1
28	13.9	12.4	12.9	11.2	9.8	10.4	9.0	8.1	8.7	9.5	7.9	8.6
29	---	---	---	10.8	9.8	10.3	8.6	6.7	8.0	10.1	8.1	8.7
30	---	---	---	11.8	10.0	10.7	8.2	6.5	7.8	9.8	8.2	8.8
31	---	---	---	12.1	11.3	11.6	---	---	---	9.5	8.0	8.8
MONTH	15.4	11.0	12.9	13.4	8.5	10.5	16.5	6.5	10.9	12.0	6.7	8.4

03410600 SOUTH FORK CUMBERLAND RIVER AT YAMACRAW, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	9.8	7.6	8.7	---	---	---	---	---	---	8.2	6.5	7.5
2	10.1	8.0	9.1	---	---	---	---	---	---	8.3	7.3	7.9
3	9.9	7.7	8.7	---	---	---	---	---	---	---	---	---
4	9.2	7.7	8.6	8.8	5.8	7.0	---	---	---	---	---	---
5	9.2	7.9	8.5	8.3	4.9	6.6	---	---	---	---	---	---
6	9.8	7.9	8.9	7.2	4.9	6.2	---	---	---	---	---	---
7	9.5	8.2	8.7	7.2	4.8	5.8	---	---	---	---	---	---
8	11.5	9.3	10.4	6.7	4.6	5.7	---	---	---	---	---	---
9	10.8	8.6	9.9	7.1	4.9	5.8	---	---	---	---	---	---
10	9.7	8.0	8.9	7.0	5.0	5.9	---	---	---	---	---	---
11	10.3	8.1	8.8	8.4	6.2	7.1	---	---	---	---	---	---
12	10.6	9.2	9.7	8.6	7.2	7.9	---	---	---	---	---	---
13	9.5	8.7	9.0	8.1	6.1	7.5	---	---	---	---	---	---
14	10.4	8.4	9.0	8.7	7.0	7.7	---	---	---	---	---	---
15	11.8	9.2	10.8	8.9	7.1	7.9	---	---	---	8.4	8.1	8.2
16	11.8	9.4	11.0	8.2	5.8	7.0	---	---	---	8.2	8.1	8.1
17	11.3	9.4	10.6	7.6	5.3	6.4	---	---	---	8.4	8.2	8.3
18	---	---	---	7.2	5.4	6.4	---	---	---	8.3	8.0	8.2
19	10.8	9.7	10.1	7.2	4.8	6.0	---	---	---	8.3	8.0	8.1
20	10.2	9.1	9.5	7.9	4.9	6.2	---	---	---	8.2	7.8	8.0
21	9.9	9.1	9.4	7.4	4.8	6.1	---	---	---	8.2	7.8	7.9
22	9.3	8.7	9.0	6.3	4.7	5.6	---	---	---	8.4	7.7	7.9
23	8.9	8.1	8.6	6.7	4.3	5.5	---	---	---	---	---	---
24	8.7	7.8	8.3	7.1	5.5	6.1	---	---	---	---	---	---
25	8.9	7.1	8.0	7.6	5.2	6.2	---	---	---	---	---	---
26	9.0	6.7	8.0	6.8	4.9	5.7	---	---	---	---	---	---
27	9.8	7.0	8.4	6.7	4.5	5.4	---	---	---	---	---	---
28	10.5	7.8	8.9	6.2	4.7	5.4	---	---	---	---	---	---
29	10.2	7.7	8.8	6.4	4.9	5.6	---	---	---	---	---	---
30	9.9	7.7	8.7	6.1	4.8	5.5	---	---	---	9.0	8.7	8.9
31	---	---	---	---	---	---	8.0	6.7	7.3	---	---	---
MONTH	11.8	6.7	9.1	8.9	4.3	6.3	8.0	6.7	7.3	9.0	6.5	8.1
YEAR	16.5	4.3	9.8									

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03413200 BEAVER CREEK NEAR MONTICELLO, KY

LOCATION.--Lat 36°47'51", long 84°53'46", Wayne County, Hydrologic Unit 05130103, on left bank upstream of bridge on State Highway 200, 0.6 mi downstream from unnamed tributary, 0.8 mi northeast of Bethesda, 0.9 mi upstream from unnamed tributary, 3.8 mi southwest of Monticello, and at mile 24.0.

DRAINAGE AREA.--43.4 mi^2.

PERIOD OF RECORD.--October 1968 to September 1983, October 1989 to current year.

REVISED RECORDS.--WDR-98-1: Peak discharges and annual maximum.

GAGE.--Water-stage recorder with telemetry. Datum of gage is 804.72 ft above NGVD of 1929.

REMARKS.--Records good except for those estimated, which are poor.

COOPERATION.--Kentucky Natural Resources and Environmental Protection Cabinet and U.S. Army Corps of Engineers, Nashville District.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of 1946 reached a stage of 10.8 ft from information by local residents.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb 16	0100	*2,680	*7.91	Aug 2	2300	1,720	6.16
Jul 31	1700	1,560	5.91	Sep 22	1600	1,640	6.04

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.4	17	9.1	43	51	83	27	20	9.6	11	289	257
2	5.0	13	8.5	39	44	74	25	18	8.4	11	405	100
3	4.2	10	7.8	48	40	62	24	18	10	9.5	837	393
4	3.4	9.6	15	44	427	56	23	16	10	8.4	228	299
5	3.6	48	465	41	157	52	27	22	8.1	7.7	155	141
6	3.2	114	155	35	97	49	90	26	7.8	7.3	91	81
7	3.0	41	85	30	77	44	805	72	74	6.8	63	53
8	2.9	22	63	e27	61	39	271	131	43	6.6	47	38
9	2.8	17	52	e24	54	36	374	64	22	7.6	36	30
10	4.2	14	47	e22	52	31	939	42	16	14	44	25
11	24	36	485	e20	51	29	595	84	59	50	36	20
12	20	26	202	e19	50	28	234	56	88	18	30	18
13	14	16	225	e18	42	27	140	36	37	14	23	16
14	11	12	465	e17	82	25	99	28	27	14	19	14
15	7.7	27	195	e16	1,020	24	75	25	168	9.6	16	13
16	7.1	143	115	e15	e2,200	23	61	22	91	8.2	15	12
17	6.3	74	78	e14	718	22	145	50	62	7.2	14	10
18	5.2	47	59	e13	254	21	220	49	69	6.6	13	9.6
19	4.6	35	53	e13	152	27	113	34	196	6.3	11	8.7
20	4.3	30	228	e12	164	44	82	26	91	6.0	10	8.0
21	4.1	27	117	e17	135	36	74	26	56	6.2	9.5	7.6
22	3.8	23	82	e15	803	25	63	26	38	6.6	8.2	657
23	3.4	19	61	e14	413	23	52	23	28	6.7	7.4	297
24	3.3	17	104	e12	233	21	45	20	23	6.9	7.2	109
25	3.4	15	184	e11	159	20	40	17	18	5.7	6.6	62
26	3.9	14	110	e10	123	20	35	16	16	4.9	6.2	44
27	4.1	13	83	e9.6	106	19	29	14	15	4.6	5.9	34
28	4.4	11	67	e9.4	99	19	26	13	14	4.9	5.6	28
29	45	10	56	94	---	35	23	13	12	151	5.3	21
30	56	10	47	95	---	42	21	12	11	62	5.5	18
31	26	---	41	60	---	29	---	11	---	624	98	---
TOTAL	300.3	910.6	3,964.4	857.0	7,864	1,085	4,777	1,030	1,327.9	1,113.3	2,547.4	2,823.9
MEAN	9.69	30.4	128	27.6	281	35.0	159	33.2	44.3	35.9	82.2	94.1
MAX	56	143	485	95	2,200	83	939	131	196	624	837	657
MIN	2.8	9.6	7.8	9.4	40	19	21	11	7.8	4.6	5.3	7.6
CFSM	0.22	0.70	2.95	0.64	6.47	0.81	3.67	0.77	1.02	0.83	1.89	2.17
IN.	0.26	0.78	3.40	0.73	6.74	0.93	4.09	0.88	1.14	0.95	2.18	2.42

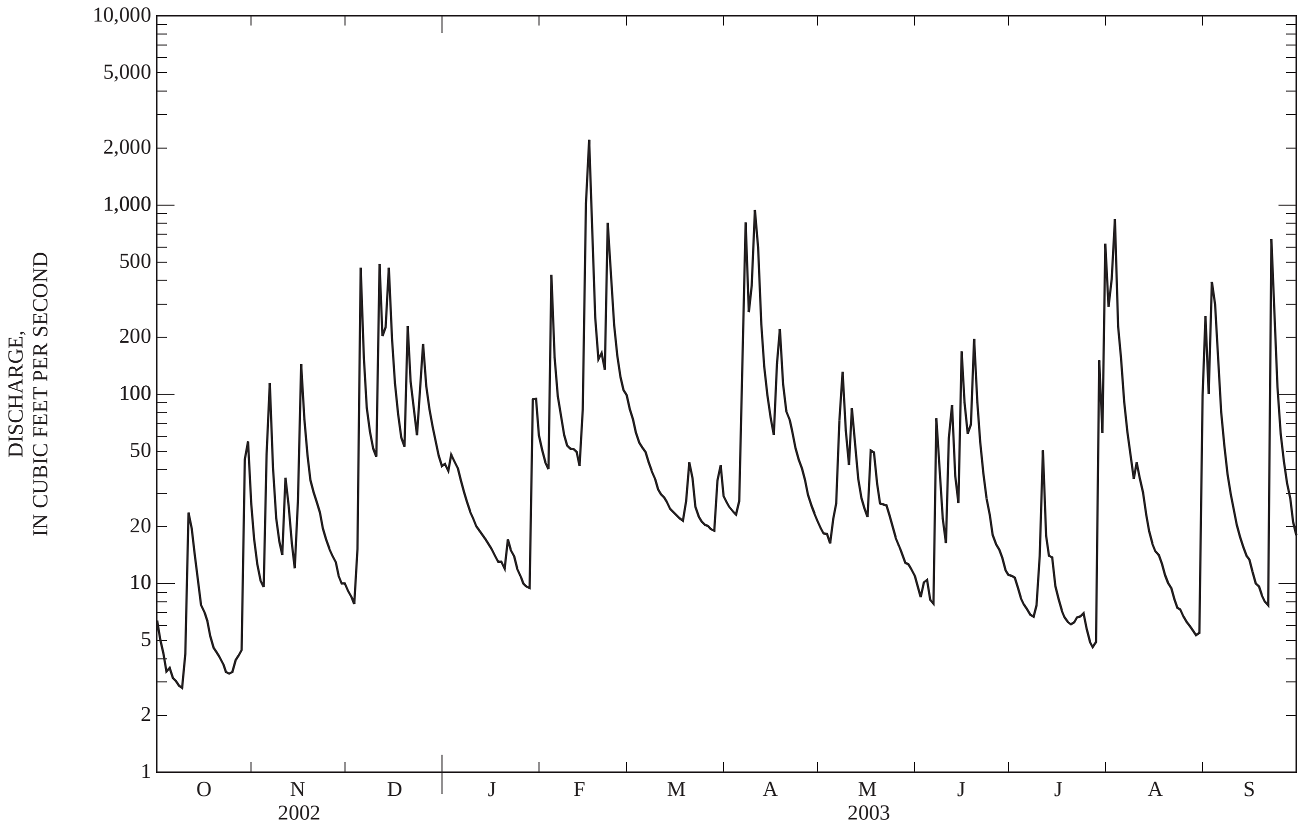
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	17.2	23.6	76.5	90.4	117	123	82.7	45.2	37.9	12.4	13.0	12.3
MAX	164	78.6	306	155	281	299	242	114	151	37.5	82.2	94.1
(WY)	(1990)	(1997)	(1991)	(1994)	(2003)	(1997)	(1998)	(1995)	(1998)	(2001)	(2003)	(2003)
MIN	1.49	2.08	8.31	26.7	42.4	35.0	21.4	11.0	7.98	3.89	1.91	1.77
(WY)	(2000)	(2001)	(1998)	(2000)	(2002)	(2003)	(1995)	(2001)	(1991)	(1990)	(1990)	(2000)

03413200 BEAVER CREEK NEAR MONTICELLO, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1990 - 2003	
ANNUAL TOTAL	21,310.7		28,600.8			
ANNUAL MEAN	58.4		78.4		53.9	
HIGHEST ANNUAL MEAN					78.4	2003
LOWEST ANNUAL MEAN					24.7	2000
HIGHEST DAILY MEAN	1,830	Mar 18	2,200	Feb 16	2,200	Feb 16, 2003
LOWEST DAILY MEAN	1.5	Aug 9	2.8	Oct 9	1.2	Sep 6, 1995
ANNUAL SEVEN-DAY MINIMUM	1.5	Aug 9	3.3	Oct 3	1.2	Oct 23, 1999
MAXIMUM PEAK FLOW			2,680	Feb 16	3,180	Mar 18, 2002
MAXIMUM PEAK STAGE			7.91	Feb 16	8.79	Mar 18, 2002
INSTANTANEOUS LOW FLOW					0.50	Oct 2, 1968
ANNUAL RUNOFF (CFSM)	1.35		1.81		1.24	
ANNUAL RUNOFF (INCHES)	18.27		24.51		16.89	
10 PERCENT EXCEEDS	119		161		119	
50 PERCENT EXCEEDS	18		26		17	
90 PERCENT EXCEEDS	2.1		6.6		2.3	

e Estimated



03438000 LITTLE RIVER NEAR CADIZ, KY

LOCATION.--Lat 36°46'40", long 87°43'18", Trigg County, Hydrologic Unit 05130205, on right bank at upstream side of bridge on State Highway 1253, 50 ft downstream from Casey Creek, 8.8 mi southeast of Cadiz, and at mile 34.3.

DRAINAGE AREA.--244 mi^2, of which about 94 mi^2 does not contribute directly to surface runoff.

WATER DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1173: 1942-43, 1946(M), 1949. WSP 1306: 1940(M). WSP 1626: Drainage area.

GAGE.--Water-stage recorder with telemetry. Datum of gage is 391.45 ft above NGVD of 1929. Prior to July 31, 1945, nonrecording gage at same site and datum.

REMARKS.--Records good except for those estimated, which are fair.

COOPERATION.--U.S. Army Corps of Engineer, Nashville District and Kentucky Natural Resources and Environmental Protection Cabinet.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 11	1000	3,990	11.53	Feb 23	0300	5,260	13.50
Dec 19	2030	*7,030	*15.72	May 5	0400	4,410	12.19
Jan 1	1800	3,590	10.89	May 7	0430	6,290	14.86
Feb 15	1430	4,310	12.02				

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	711	359	150	2,930	213	988	437	904	216	154	565	296
2	594	323	143	2,090	213	893	392	770	209	149	514	372
3	514	296	138	1,420	209	797	e347	689	205	131	1,790	1,580
4	452	278	141	1,130	215	724	e316	591	200	124	724	755
5	437	325	167	964	245	673	e390	2,450	188	117	593	548
6	384	816	234	825	225	633	e1,300	1,320	178	111	538	440
7	344	651	227	713	211	558	e1,400	5,170	172	105	364	372
8	318	532	214	648	200	527	929	3,470	164	99	285	325
9	291	465	239	597	189	492	710	1,850	154	95	234	288
10	1,090	426	310	538	184	453	1,580	1,340	168	103	204	260
11	3,250	489	732	480	185	426	1,310	1,080	1,280	110	180	236
12	1,760	466	817	432	202	405	e900	910	2,570	97	163	217
13	1,180	384	786	399	217	387	e770	770	1,180	87	147	203
14	870	348	1,330	375	775	367	e640	675	734	96	133	189
15	720	338	989	348	3,710	350	e510	603	549	87	123	176
16	617	426	778	331	3,480	334	e460	540	454	85	115	164
17	533	420	659	313	2,430	323	880	754	383	76	105	153
18	463	369	584	294	1,600	316	916	775	346	68	97	143
19	414	335	2,930	278	1,340	416	632	583	318	65	91	135
20	395	309	5,210	265	1,480	792	695	508	280	61	86	125
21	385	289	2,230	256	1,310	542	2,130	458	250	59	81	119
22	346	269	1,540	248	3,060	443	1,210	418	224	68	285	139
23	313	245	1,150	236	4,010	382	842	382	208	157	1,340	263
24	287	227	982	221	2,250	340	690	347	193	86	546	171
25	269	212	1,080	209	1,650	313	940	325	180	66	385	136
26	252	200	900	200	1,340	351	1,220	303	171	56	305	121
27	237	186	763	191	1,170	352	939	284	166	51	251	113
28	237	174	682	184	1,080	324	724	267	158	47	214	117
29	320	164	621	186	---	504	610	e250	149	e46	186	101
30	472	158	575	214	---	742	1,240	e237	141	e45	252	94
31	415	---	923	224	---	497	---	230	---	e400	381	---
TOTAL	18,870	10,479	28,224	17,739	33,393	15,644	26,059	29,253	11,788	3,101	11,277	8,351
MEAN	609	349	910	572	1,193	505	869	944	393	100	364	278
MAX	3,250	816	5,210	2,930	4,010	988	2,130	5,170	2,570	400	1,790	1,580
MIN	237	158	138	184	184	313	316	230	141	45	81	94
CFSM	2.49	1.43	3.73	2.35	4.89	2.07	3.56	3.87	1.61	0.41	1.49	1.14
IN.	2.88	1.60	4.30	2.70	5.09	2.39	3.97	4.46	1.80	0.47	1.72	1.27

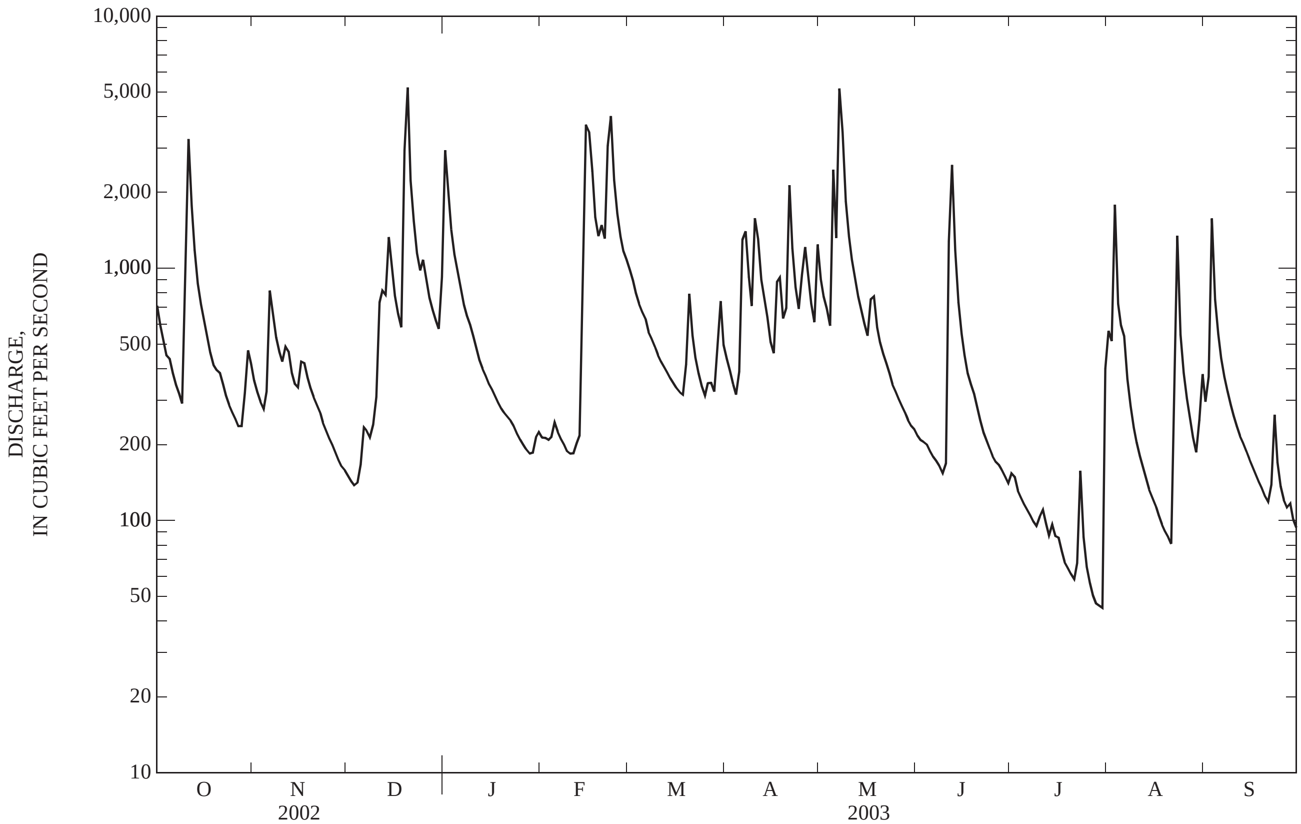
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	75.9	214	469	553	690	759	551	440	227	145	95.7	103
MAX	609	1,677	1,985	2,168	2,130	3,653	1,924	1,875	1,498	790	381	925
(WY)	(2003)	(1958)	(1979)	(1950)	(1989)	(1997)	(1979)	(1984)	(1998)	(1989)	(1950)	(1950)
MIN	12.3	14.1	14.2	27.3	39.6	28.1	37.5	21.4	34.0	29.6	23.9	15.7
(WY)	(1944)	(1941)	(1964)	(1963)	(1963)	(1941)	(1941)	(1941)	(1963)	(1988)	(1952)	(1941)

03438000 LITTLE RIVER NEAR CADIZ, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1940 - 2003	
ANNUAL TOTAL	201,226		214,178			
ANNUAL MEAN	551		587		359	
HIGHEST ANNUAL MEAN					757	1997
LOWEST ANNUAL MEAN					58.9	1941
HIGHEST DAILY MEAN	7,510	Sep 27	5,210	Dec 20	24,300	Mar 2, 1997
LOWEST DAILY MEAN	31	Sep 1	45	Jul 30	3.6	Oct 3, 1941
ANNUAL SEVEN-DAY MINIMUM	35	Aug 29	57	Jul 24	7.0	Oct 24, 1940
MAXIMUM PEAK FLOW			7,030	Dec 19	37,600	Mar 1, 1997
MAXIMUM PEAK STAGE			15.72	Dec 19	26.44	Mar 1, 1997
INSTANTANEOUS LOW FLOW					1.0	Oct 3, 1941
ANNUAL RUNOFF (CFSM)	2.26		2.40		1.47	
ANNUAL RUNOFF (INCHES)	30.68		32.65		19.98	
10 PERCENT EXCEEDS	1,150		1,300		838	
50 PERCENT EXCEEDS	310		350		141	
90 PERCENT EXCEEDS	50		120		28	

e Estimated



03438000 LITTLE RIVER NEAR CADIZ, KY—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 2003 to current year.

COOPERATION.--Kentucky Department of Agriculture.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: April 2003 to current year.
pH: April 2003 to current year.
WATER TEMPERATURES: April 2003 to current year.
DISSOLVED OXYGEN: April 2003 to current year.
TURBIDITY: April 2003 to current year.

INSTRUMENTATION.--Water-quality monitor with telemetry.

REMARKS.--
SPECIFIC CONDUCTANCE: Records good.
pH: Records good.
WATER TEMPERATURES: Records good.
DISSOLVED OXYGEN: Records poor.
TURBIDITY: Records poor.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum recorded, 513 microsiemens, July 25, 2003 ; minimum recorded, 157 microsiemens, May 7, 2003.
pH: Maximum recorded, 8.1 units, June 5, 2003; minimum recorded, 6.8 units, May 7, 2003.
WATER TEMPERATURES: Maximum recorded, 24.9°C, July 16, 2003; minimum recorded, 9.9°C, Apr. 11, 2003.
DISSOLVED OXYGEN: Maximum recorded, 10.9 mg/L, May 27-29, 2003; minimum recorded, 6.6 mg/L, July 23, 2003.
TURBIDITY: Maximum recorded, 950 NTU, May 5, 2003; minimum recorded, 0.0 NTU, Sep. 27-30, 2003.

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	---	---	---	---	---	---	---	---	---	---	---	---
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31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

03438000 LITTLE RIVER NEAR CADIZ, KY—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	---	---	---	296	238	273
2	---	---	---	---	---	---	---	---	---	314	296	306
3	---	---	---	---	---	---	---	---	---	324	308	317
4	---	---	---	---	---	---	---	---	---	338	324	331
5	---	---	---	---	---	---	---	---	---	329	239	276
6	---	---	---	---	---	---	---	---	---	285	243	262
7	---	---	---	---	---	---	---	---	---	285	157	213
8	---	---	---	---	---	---	264	233	249	257	175	213
9	---	---	---	---	---	---	313	239	289	277	257	270
10	---	---	---	---	---	---	318	220	295	290	277	286
11	---	---	---	---	---	---	283	212	262	297	290	294
12	---	---	---	---	---	---	---	---	289	300	296	298
13	---	---	---	---	---	---	---	---	---	304	300	302
14	---	---	---	---	---	---	---	---	---	309	304	306
15	---	---	---	---	---	---	---	---	---	312	308	310
16	---	---	---	---	---	---	---	---	---	316	312	314
17	---	---	---	---	---	---	---	---	---	315	301	309
18	---	---	---	---	---	---	---	---	---	307	272	287
19	---	---	---	---	---	---	---	---	---	288	274	283
20	---	---	---	---	---	---	---	---	---	302	287	295
21	---	---	---	---	---	---	---	---	---	311	302	307
22	---	---	---	---	---	---	---	---	---	318	310	315
23	---	---	---	---	---	---	---	---	---	322	317	319
24	---	---	---	---	---	---	---	---	---	323	320	322
25	---	---	---	---	---	---	---	---	353	325	323	324
26	---	---	---	---	---	---	336	268	290	326	324	325
27	---	---	---	---	---	---	310	282	295	327	324	326
28	---	---	---	---	---	---	330	309	319	328	326	327
29	---	---	---	---	---	---	342	330	338	---	---	327
30	---	---	---	---	---	---	366	192	298	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	366	192	298	338	157	298
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	---	---	---	291	252	263	369	295	345
2	---	---	398	---	---	435	297	270	286	380	298	366
3	398	395	397	445	435	439	279	223	236	305	211	254
4	398	395	396	446	434	444	---	---	243	277	215	247
5	402	397	399	434	418	423	---	---	297	318	277	300
6	401	395	397	423	419	422	353	292	320	346	318	334
7	397	393	395	433	422	429	312	292	300	364	346	356
8	397	393	395	439	432	436	353	312	333	377	364	370
9	400	394	397	438	430	433	---	---	367	387	377	383
10	411	380	394	440	431	433	---	---	387	400	387	391
11	383	208	311	442	436	438	407	393	401	401	394	398
12	304	160	197	453	442	449	415	406	409	406	399	403
13	253	215	237	460	453	458	416	413	414	413	405	409
14	289	253	271	460	448	453	424	416	421	415	412	413
15	315	289	304	448	441	444	429	423	428	419	415	417
16	326	315	321	445	438	441	435	428	431	424	419	422
17	364	323	340	447	436	441	440	434	436	426	421	424
18	371	359	365	439	436	437	441	438	440	423	419	421
19	379	364	369	446	436	441	444	440	442	422	418	420
20	385	374	380	452	446	448	449	444	447	422	418	420
21	394	371	382	452	450	451	454	445	447	422	411	419
22	403	383	394	454	450	451	453	186	434	412	405	409
23	407	394	401	476	452	462	---	---	---	438	412	422
24	412	401	406	507	476	489	---	---	---	446	390	429
25	415	408	410	513	480	503	---	---	---	400	387	393
26	417	415	416	480	451	463	---	---	---	400	395	397
27	417	414	415	451	440	446	328	306	323	395	382	387
28	418	413	416	441	416	428	352	328	340	396	380	386
29	---	---	---	---	---	---	368	352	360	409	396	401
30	---	---	---	---	---	---	375	353	371	415	409	412
31	---	---	---	---	---	278	357	264	293	---	---	---
MONTH	418	160	367	513	416	440	454	186	366	446	211	385
YEAR	513	157	365									

03438000 LITTLE RIVER NEAR CADIZ, KY—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	---	---	---	---	---	---	---	---	---	---	---	---
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31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	---	---	---	7.4	7.3	7.4
2	---	---	---	---	---	---	---	---	---	7.5	7.4	7.5
3	---	---	---	---	---	---	---	---	---	7.6	7.5	7.5
4	---	---	---	---	---	---	---	---	---	7.6	7.6	7.6
5	---	---	---	---	---	---	---	---	---	7.6	6.9	7.3
6	---	---	---	---	---	---	---	---	---	7.3	7.2	7.3
7	---	---	---	---	---	---	---	---	---	7.3	6.8	7.0
8	---	---	---	---	---	---	---	---	---	7.2	7.0	7.1
9	---	---	---	---	---	---	---	---	---	7.3	7.2	7.3
10	---	---	---	---	---	---	---	---	e7.6	7.4	7.3	7.4
11	---	---	---	---	---	---	7.5	7.5	7.5	7.5	7.4	7.4
12	---	---	---	---	---	---	---	---	e7.6	7.5	7.5	7.5
13	---	---	---	---	---	---	---	---	---	7.6	7.5	7.5
14	---	---	---	---	---	---	---	---	---	7.6	7.6	7.6
15	---	---	---	---	---	---	---	---	---	7.6	7.6	7.6
16	---	---	---	---	---	---	---	---	e7.7	7.6	7.6	7.6
17	---	---	---	---	---	---	7.7	7.5	7.5	7.6	7.6	7.6
18	---	---	---	---	---	---	7.5	7.4	7.4	7.6	7.5	7.5
19	---	---	---	---	---	---	7.5	7.4	7.5	7.6	7.5	7.5
20	---	---	---	---	---	---	7.6	7.5	7.5	7.6	7.6	7.6
21	---	---	---	---	---	---	7.5	7.3	7.3	7.7	7.6	7.7
22	---	---	---	---	---	---	7.4	7.3	7.3	7.8	7.7	7.7
23	---	---	---	---	---	---	7.5	7.4	7.5	7.8	7.7	7.8
24	---	---	---	---	---	---	7.6	7.5	7.5	7.8	7.8	7.8
25	---	---	---	---	---	---	7.6	7.3	7.5	7.8	7.8	7.8
26	---	---	---	---	---	---	7.4	7.3	7.4	7.9	7.8	7.8
27	---	---	---	---	---	---	7.5	7.4	7.4	8.0	7.8	7.9
28	---	---	---	---	---	---	7.6	7.4	7.5	8.0	7.9	7.9
29	---	---	---	---	---	---	7.6	7.5	7.6	---	---	e7.9
30	---	---	---	---	---	---	7.6	7.3	7.4	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	7.7	7.3	7.5	8.0	6.8	7.6

03438000 LITTLE RIVER NEAR CADIZ, KY—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS—CONTINUED
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	---	---	---	---	---	e7.6	7.4	7.3	7.4
2	---	---	e8.0	---	---	e7.8	---	---	e7.6	---	---	e7.4
3	8.0	7.9	7.9	7.8	7.8	7.8	7.6	7.5	7.5	7.4	7.2	7.3
4	8.0	7.9	7.9	7.8	7.7	7.8	---	---	e7.7	7.4	7.2	7.3
5	8.1	8.0	8.0	7.8	7.7	7.7	---	---	e7.4	7.5	7.4	7.4
6	8.0	7.9	8.0	7.8	7.7	7.7	7.5	7.4	7.4	7.6	7.5	7.6
7	8.0	7.9	7.9	7.8	7.7	7.7	7.5	7.4	7.5	7.6	7.6	7.6
8	8.0	7.9	7.9	7.8	7.7	7.7	7.8	7.4	7.6	7.7	7.6	7.7
9	8.0	7.9	7.9	7.8	7.7	7.7	---	---	e7.7	7.8	7.7	7.8
10	7.9	7.7	7.8	7.8	7.7	7.7	---	---	e7.8	7.8	7.7	7.8
11	7.7	7.2	7.5	7.8	7.7	7.8	7.8	7.8	7.8	7.8	7.7	7.8
12	7.4	7.2	7.2	7.8	7.7	7.7	---	---	e7.8	7.8	7.7	7.8
13	7.4	7.2	7.3	7.8	7.7	7.8	7.8	7.8	7.8	7.8	7.7	7.8
14	7.5	7.4	7.4	7.8	7.7	7.8	7.8	7.8	7.8	7.8	7.8	7.8
15	7.6	7.5	7.5	7.8	7.7	7.7	7.8	7.8	7.8	7.8	7.8	7.8
16	7.6	7.6	7.6	7.7	7.6	7.7	7.8	7.7	7.8	7.8	7.8	7.8
17	7.7	7.5	7.6	7.7	7.6	7.6	7.8	7.8	7.8	7.9	7.8	7.8
18	7.7	7.6	7.6	7.7	7.6	7.6	7.9	7.8	7.8	7.9	7.8	7.9
19	7.6	7.5	7.6	7.7	7.6	7.6	7.8	7.8	7.8	7.9	7.8	7.9
20	7.6	7.4	7.5	7.7	7.6	7.7	7.8	7.8	7.8	7.9	7.8	7.9
21	---	---	---	7.7	7.6	7.6	7.9	7.8	7.8	7.9	7.9	7.9
22	---	---	---	7.7	7.6	7.6	7.8	7.2	7.8	7.9	7.8	7.8
23	---	---	---	7.8	7.7	7.7	7.2	7.0	7.1	7.8	7.8	7.8
24	---	---	---	7.7	7.7	7.7	7.1	7.0	7.0	7.8	7.8	7.8
25	---	---	---	7.7	7.7	7.7	7.3	7.0	7.2	7.8	7.8	7.8
26	---	---	---	7.7	7.7	7.7	7.4	7.3	7.3	7.9	7.8	7.8
27	---	---	---	7.7	7.6	7.7	7.6	7.3	7.5	7.8	7.8	7.8
28	---	---	---	---	---	e7.6	7.7	7.6	7.6	---	---	e7.8
29	---	---	---	---	---	---	7.7	7.7	7.7	---	---	e7.8
30	---	---	---	---	---	---	7.8	7.6	7.7	---	---	e7.8
31	---	---	---	---	---	e7.5	7.6	7.3	7.4	---	---	---
MONTH	8.1	7.2	7.7	7.8	7.6	7.7	7.9	7.0	7.6	7.9	7.2	7.7
YEAR	8.1	6.8	7.6									

e Estimated

03438000 LITTLE RIVER NEAR CADIZ, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	---	---	---	17.5	16.8	17.2
2	---	---	---	---	---	---	---	---	---	17.3	16.6	17.0
3	---	---	---	---	---	---	---	---	---	17.2	16.3	16.8
4	---	---	---	---	---	---	---	---	---	16.9	15.8	16.1
5	---	---	---	---	---	---	---	---	---	17.1	16.0	16.6
6	---	---	---	---	---	---	---	---	---	17.3	16.7	17.0
7	---	---	---	---	---	---	---	---	---	18.0	16.7	17.5
8	---	---	---	---	---	---	13.8	12.5	13.2	17.8	16.9	17.4
9	---	---	---	---	---	---	13.4	11.9	12.6	17.9	16.8	17.3
10	---	---	---	---	---	---	11.9	10.2	11.2	18.2	17.3	17.7
11	---	---	---	---	---	---	12.7	9.9	11.3	18.2	17.5	17.8
12	---	---	---	---	---	---	---	---	12.5	17.5	16.6	17.0
13	---	---	---	---	---	---	---	---	---	17.0	15.9	16.5
14	---	---	---	---	---	---	---	---	---	16.8	16.3	16.5
15	---	---	---	---	---	---	---	---	---	17.0	16.2	16.6
16	---	---	---	---	---	---	---	---	---	17.0	16.4	16.7
17	---	---	---	---	---	---	---	---	---	17.2	16.6	16.9
18	---	---	---	---	---	---	---	---	---	18.0	17.2	17.6
19	---	---	---	---	---	---	---	---	---	17.9	17.3	17.7
20	---	---	---	---	---	---	---	---	---	17.8	17.0	17.4
21	---	---	---	---	---	---	---	---	---	17.0	16.4	16.7
22	---	---	---	---	---	---	---	---	---	16.9	16.0	16.6
23	---	---	---	---	---	---	---	---	---	17.1	16.1	16.7
24	---	---	---	---	---	---	---	---	---	17.1	16.3	16.7
25	---	---	---	---	---	---	---	---	14.6	17.1	15.9	16.5
26	---	---	---	---	---	---	15.0	14.0	14.5	16.4	15.4	16.0
27	---	---	---	---	---	---	15.8	14.4	15.1	17.0	16.0	16.6
28	---	---	---	---	---	---	16.5	14.9	15.7	17.0	16.5	16.8
29	---	---	---	---	---	---	17.3	15.7	16.4	---	---	16.7
30	---	---	---	---	---	---	18.0	16.5	17.2	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	18.0	9.9	14.0	18.2	15.4	16.9

03438000 LITTLE RIVER NEAR CADIZ, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	---	---	---	---	---	21.8	21.2	20.2	20.8
2	---	---	16.5	---	---	20.4	---	---	21.4	---	---	21.2
3	16.5	16.2	16.3	21.8	19.9	20.8	21.6	20.4	21.2	22.0	19.6	21.1
4	16.5	16.0	16.2	22.8	20.7	21.7	---	---	21.2	21.5	20.1	20.6
5	17.2	15.7	16.4	23.2	21.5	22.3	---	---	21.1	20.1	18.7	19.2
6	17.4	16.7	17.0	23.2	21.8	22.5	21.3	20.3	20.9	19.1	18.1	18.6
7	17.9	16.9	17.4	23.7	21.9	22.8	21.2	20.6	21.0	18.6	17.8	18.1
8	18.2	17.4	17.7	24.4	22.5	23.5	21.4	20.6	21.0	18.2	17.6	17.9
9	18.6	17.2	17.9	24.5	23.1	23.8	---	---	20.9	18.7	17.9	18.3
10	18.1	17.7	17.9	24.1	23.3	23.7	---	---	20.8	19.0	18.2	18.6
11	17.9	17.2	17.6	24.1	22.6	23.3	21.1	20.4	20.7	19.2	18.4	18.8
12	19.5	17.9	19.0	23.6	22.2	22.9	---	---	20.6	19.5	18.6	19.0
13	19.4	18.6	19.0	24.0	22.3	23.1	21.3	20.6	20.9	19.6	18.6	19.1
14	19.3	18.7	18.9	23.9	22.3	23.1	22.1	20.6	21.2	19.6	19.2	19.3
15	19.0	18.2	18.7	23.8	22.2	23.1	22.7	21.2	21.8	19.4	18.5	18.9
16	19.0	18.6	18.8	24.9	22.9	23.8	23.1	21.6	22.2	18.8	17.8	18.2
17	19.1	18.3	18.7	24.4	23.1	23.8	23.4	22.0	22.6	18.7	17.4	18.0
18	18.9	18.3	18.6	23.6	22.4	22.9	23.6	22.1	22.8	19.1	18.0	18.4
19	19.1	18.1	18.6	23.2	21.8	22.4	23.8	22.2	22.9	18.4	17.5	18.2
20	19.6	18.7	19.1	23.6	21.8	22.7	23.8	22.3	23.0	18.0	16.8	17.3
21	19.5	18.4	18.9	24.0	22.6	23.2	24.3	22.4	23.3	17.3	16.6	17.0
22	19.7	18.4	19.0	23.7	22.8	23.3	24.7	22.4	23.7	18.4	17.0	17.6
23	20.1	18.7	19.3	23.0	21.6	22.3	22.4	21.0	21.5	18.1	17.4	17.7
24	20.7	19.2	19.8	22.6	20.9	21.7	21.5	20.7	21.2	18.4	17.4	17.9
25	21.1	19.7	20.3	22.8	21.0	22.0	21.3	19.9	20.4	18.8	17.6	18.1
26	20.9	20.4	20.6	23.4	21.3	22.3	20.6	19.8	20.2	18.7	17.5	18.0
27	21.1	19.8	20.4	23.5	21.8	22.7	21.1	20.4	20.7	18.9	18.0	18.4
28	---	---	20.1	---	---	23.4	21.6	20.6	21.0	18.2	16.6	17.4
29	---	---	---	---	---	---	21.8	20.8	21.2	---	---	16.1
30	---	---	---	---	---	---	21.5	20.8	21.2	15.8	14.7	15.3
31	---	---	---	---	---	22.4	21.0	20.4	20.7	---	---	---
MONTH	21.1	15.7	18.5	24.9	19.9	22.7	24.7	19.8	21.5	22.0	14.7	18.4
YEAR	24.9	9.9	19.2									

03438000 LITTLE RIVER NEAR CADIZ, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	---	---	---	8.8	8.0	8.6
2	---	---	---	---	---	---	---	---	---	9.1	8.8	9.0
3	---	---	---	---	---	---	---	---	---	9.5	8.9	9.2
4	---	---	---	---	---	---	---	---	---	9.7	9.3	9.5
5	---	---	---	---	---	---	---	---	---	9.7	8.1	8.9
6	---	---	---	---	---	---	---	---	---	8.8	8.3	8.6
7	---	---	---	---	---	---	---	---	---	9.1	7.4	8.3
8	---	---	---	---	---	---	---	---	---	8.8	7.6	8.3
9	---	---	---	---	---	---	---	---	---	9.1	8.7	8.8
10	---	---	---	---	---	---	---	---	---	9.1	8.7	8.9
11	---	---	---	---	---	---	10.7	10.0	10.4	9.1	8.8	8.9
12	---	---	---	---	---	---	---	---	10.1	9.6	9.1	9.4
13	---	---	---	---	---	---	---	---	---	10.0	9.5	9.7
14	---	---	---	---	---	---	---	---	---	9.8	9.6	9.7
15	---	---	---	---	---	---	---	---	---	9.9	9.6	9.7
16	---	---	---	---	---	---	---	---	---	10.0	9.3	9.8
17	---	---	---	---	---	---	---	---	---	9.9	9.2	9.6
18	---	---	---	---	---	---	---	---	---	9.2	8.6	8.8
19	---	---	---	---	---	---	---	---	---	9.1	8.7	9.0
20	---	---	---	---	---	---	---	---	---	9.4	9.1	9.2
21	---	---	---	---	---	---	---	---	---	9.9	9.3	9.7
22	---	---	---	---	---	---	---	---	---	10.0	9.7	9.9
23	---	---	---	---	---	---	---	---	---	10.4	9.7	10
24	---	---	---	---	---	---	---	---	---	10.4	9.8	10.1
25	---	---	---	---	---	---	---	---	9.0	10.2	9.6	9.8
26	---	---	---	---	---	---	9.4	9.0	9.2	10.8	9.9	10.3
27	---	---	---	---	---	---	10.4	9.1	9.9	10.9	10.0	10.6
28	---	---	---	---	---	---	10.3	9.7	10.0	10.9	10.0	10.5
29	---	---	---	---	---	---	10.2	9.6	9.9	---	---	10.3
30	---	---	---	---	---	---	9.7	7.1	8.7	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	10.7	7.1	9.7	10.9	7.4	9.4

03438000 LITTLE RIVER NEAR CADIZ, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	8.5	---	---	---	---	---	---
3	---	---	---	---	---	8.6	---	---	---	---	---	---
4	---	---	---	9.2	7.7	8.5	---	---	---	---	---	---
5	---	---	---	8.9	8.0	8.3	---	---	---	---	---	---
6	---	---	---	8.7	7.8	8.1	---	---	---	---	---	---
7	---	---	---	---	---	8.3	---	---	---	---	---	---
8	---	---	---	9.0	7.8	8.3	---	---	8.7	---	---	---
9	---	---	---	8.6	7.6	8.0	---	---	8.7	---	---	---
10	---	---	---	8.4	7.4	7.8	---	---	8.9	---	---	---
11	---	---	---	8.8	7.7	8.1	9.3	8.9	9.1	---	---	---
12	---	---	---	9.0	7.7	8.3	---	---	8.9	---	---	---
13	---	---	---	9.0	7.8	8.3	9.1	7.6	8.3	---	---	---
14	---	---	---	9.2	7.8	8.4	9.6	7.9	9.2	---	---	---
15	---	---	---	9.3	7.9	8.5	9.6	8.6	9.1	---	---	---
16	---	---	---	9.0	7.2	8.1	9.7	8.3	9.1	---	---	---
17	---	---	---	8.6	7.4	7.8	9.5	8.1	8.8	---	---	9.4
18	---	---	---	7.9	7.2	7.6	9.1	7.4	8.4	9.8	9.2	9.4
19	---	---	---	8.5	7.2	7.9	9.2	7.9	8.4	9.5	9.2	9.3
20	---	---	---	8.7	7.5	8.0	8.4	7.4	7.9	10.1	9.2	9.6
21	---	---	---	8.4	7.0	7.4	9.8	7.4	8.4	10.0	9.5	9.8
22	---	---	---	7.8	6.8	7.3	9.9	7.6	8.7	9.5	9.0	9.3
23	---	---	---	8.6	6.6	7.8	---	---	8.5	9.6	9.0	9.3
24	---	---	---	---	0.8	7.7	---	---	---	9.4	8.9	9.1
25	---	---	---	---	---	---	---	---	---	9.6	8.9	9.1
26	---	---	---	---	---	---	---	---	---	9.8	9.0	9.3
27	---	---	---	---	---	---	---	---	---	9.2	8.6	8.9
28	---	---	---	---	---	---	---	---	---	---	---	8.9
29	---	---	---	---	---	---	---	---	---	---	---	9.5
30	---	---	---	---	---	---	---	---	---	---	---	9.9
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	9.3	0.8	8.1	9.9	7.4	8.7	10.1	8.6	9.3
YEAR	10.9	0.8	9.0									

03438000 LITTLE RIVER NEAR CADIZ, KY—Continued

TURBIDITY, WATER, UNFILTERED, NEPHELOMETRIC TURBIDITY UNITS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	---	---	---	190	48	110
2	---	---	---	---	---	---	---	---	---	59	40	45
3	---	---	---	---	---	---	---	---	---	58	34	42
4	---	---	---	---	---	---	---	---	---	46	23	28
5	---	---	---	---	---	---	---	---	---	950	46	250
6	---	---	---	---	---	---	---	---	---	200	63	120
7	---	---	---	---	---	---	---	---	---	640	63	340
8	---	---	---	---	---	---	---	---	---	270	64	120
9	---	---	---	---	---	---	---	---	---	64	46	53
10	---	---	---	---	---	---	---	---	---	46	35	40
11	---	---	---	---	---	---	---	---	---	37	27	31
12	---	---	---	---	---	---	---	---	---	32	21	27
13	---	---	---	---	---	---	---	---	---	23	18	21
14	---	---	---	---	---	---	---	---	---	19	14	16
15	---	---	---	---	---	---	---	---	---	14	11	13
16	---	---	---	---	---	---	---	---	---	12	9.0	10
17	---	---	---	---	---	---	---	---	---	15	9.0	11
18	---	---	---	---	---	---	---	---	---	17	9.0	11
19	---	---	---	---	---	---	---	---	---	14	9.0	12
20	---	---	---	---	---	---	---	---	---	13	8.0	9.4
21	---	---	---	---	---	---	---	---	---	11	9.0	9.9
22	---	---	---	---	---	---	---	---	---	10	8.0	9.5
23	---	---	---	---	---	---	---	---	---	10	8.0	9.2
24	---	---	---	---	---	---	---	---	---	9.0	6.0	7.6
25	---	---	---	---	---	---	---	---	72	10	7.0	8.1
26	---	---	---	---	---	---	230	70	130	9.0	7.0	7.9
27	---	---	---	---	---	---	70	41	54	8.0	7.0	7.2
28	---	---	---	---	---	---	41	29	35	12	7.0	9.6
29	---	---	---	---	---	---	30	25	27	---	---	11
30	---	---	---	---	---	---	440	23	140	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	440	23	76	950	6.0	48

03438000 LITTLE RIVER NEAR CADIZ, KY—Continued

TURBIDITY, WATER, UNFILTERED, NEPHELOMETRIC TURBIDITY UNITS—CONTINUED
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	6.2	4.4	5.0	---	---	---	250	6.0	24
2	---	---	5.0	7.0	3.0	4.1	---	---	---	230	4.0	53
3	15	4.0	5.4	7.0	2.0	4.0	---	---	---	240	75	160
4	6.0	3.0	4.0	8.0	3.0	4.0	---	---	---	110	21	41
5	4.0	3.0	3.3	7.0	3.0	4.2	---	---	---	100	11	26
6	11	3.0	4.1	13	3.0	4.8	---	---	---	40	1.0	14
7	8.0	3.0	3.9	12	3.0	6.0	---	---	---	40	2.0	16
8	6.0	3.0	3.9	60	3.0	15	---	---	15	35	3.0	15
9	8.0	3.0	4.4	180	4.0	68	12	9.0	10	39	2.0	18
10	29	3.0	8.3	95	3.0	20	12	8.0	9.2	39	1.0	12
11	440	10	160	230	4.0	60	10	8.0	8.7	34	4.0	14
12	360	100	210	160	5.0	51	8.0	7.0	7.7	28	3.0	13
13	100	48	71	280	11	120	12	7.0	7.8	---	---	11
14	51	22	35	470	4.0	170	26	6.0	7.9	---	---	5.5
15	23	13	18	470	6.0	180	9.0	5.0	6.9	---	---	---
16	18	11	13	470	10	150	12	5.0	7.1	---	---	---
17	18	5.0	12	---	---	220	10	6.0	7.1	---	---	7.6
18	8.0	4.0	5.1	---	---	89	21	6.0	7.6	9.0	6.0	7.0
19	8.0	2.0	4.8	240	17	70	460	5.0	6.9	9.0	5.0	6.6
20	6.0	2.0	3.2	110	8.0	48	12	5.0	6.5	12	5.0	6.3
21	5.0	1.0	2.5	140	4.0	64	20	5.0	7.3	11	5.0	6.5
22	3.0	1.0	2.1	35	6.0	15	---	---	6.6	18	8.0	10
23	3.0	1.0	1.8	77	16	29	---	---	---	18	8.0	13
24	3.0	1.0	1.6	110	12	23	---	---	---	9.0	5.0	6.8
25	3.0	1.0	1.8	370	---	---	---	---	---	8.0	5.0	6.3
26	2.0	1.0	1.7	390	---	---	---	---	---	9.0	5.0	6.5
27	5.0	1.0	2.5	480	---	---	---	---	9.8	9.0	0.0	7.3
28	7.0	1.0	3.2	---	---	---	16	10	13	8.0	0.0	4.2
29	7.0	6.0	6.0	---	---	---	11	3.0	5.8	10	0.0	4.2
30	6.8	5.2	5.9	---	---	---	200	2.0	11	10	0.0	5.2
31	---	---	---	---	---	---	45	20	32	---	---	---
MONTH	440	1.0	21	480	2.0	59	460	2.0	9.7	250	0.0	19
YEAR	950	0.0	34									

03438220 CUMBERLAND RIVER NEAR GRAND RIVERS, KY

WATER-QUALITY RECORDS

LOCATION.--Lat 3701'18", long 8813'16", Lyon County, Hydrologic Unit 05130205, on right bank in powerhouse at Barkley Dam, 0.7 mi upstream from bridge on U.S. Highway 62 and 641, 1.5 mi northeast of Grand Rivers, and at mile 30.6.

PERIOD OF RECORD.--Water years 1969 to 1986, September 1995 to September 1996, November 1998 to current year.

INSTRUMENTATION.--Water-quality monitor with telemetry.

REMARKS.--Flow regulated by Barkley Dam and reservoirs above station. Periods of missing record were due to instrument malfunctions. Supersaturation of oxygen may occur due to local hydraulic conditions.

COOPERATION.--U.S. Army Corps of Engineers, Nashville District.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 948 microsiemens, June 13, 1996; minimum 160 microsiemens, Dec. 6, 8, 2001.
pH: Maximum, 9.7 units, June 20, 1996; minimum, 6.0 units, Sept. 12, 1995.
WATER TEMPERATURE: Maximum, 32.4°C, July 30, 1999; minimum, 0.5°C, Feb. 6, 1995.
DISSOLVED OXYGEN: Maximum, 20.6 mg/L, Jan. 13, 2001; minimum, 1.8 mg/L, August 11, 14, 2001.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 278 microsiemens, Nov. 9, Feb. 16; minimum 156 microsiemens, Oct. 10.
pH: Maximum, 9.0 units, July 7-19; minimum, 7.2 units, Sept. 19.
WATER TEMPERATURE: Maximum, 30.3°C, Aug. 26; minimum, 1.3°C, Jan. 27.
DISSOLVED OXYGEN: Maximum, 17.4 mg/L, Jan. 20; minimum, 5.0 mg/L, Mar. 28, 29.

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	203	187	193	208	187	194	242	219	224	255	235	247
2	193	182	186	217	188	198	241	219	229	260	243	254
3	190	180	185	253	213	225	256	231	242	250	233	242
4	185	171	178	255	230	245	271	232	251	251	233	244
5	183	171	179	255	208	224	258	228	237	247	227	237
6	180	171	176	233	217	223	273	252	264	244	226	234
7	189	177	184	246	226	235	273	269	271	245	228	238
8	186	164	176	264	234	246	275	259	267	247	229	240
9	185	167	175	278	245	260	275	246	261	250	213	234
10	177	156	169	273	229	259	261	238	249	256	217	236
11	202	175	184	275	242	259	255	232	245	265	227	249
12	223	199	211	266	245	258	257	246	254	265	230	246
13	237	219	234	270	258	266	251	239	244	261	231	245
14	242	200	225	269	254	260	245	234	241	254	225	241
15	254	215	236	258	233	240	257	245	249	252	222	239
16	215	197	205	254	238	246	255	248	252	249	218	233
17	208	195	204	263	246	253	254	250	253	250	209	231
18	210	191	201	262	237	253	254	229	251	249	216	237
19	234	202	214	246	233	239	251	234	246	245	226	236
20	237	207	229	243	228	235	257	249	254	250	221	240
21	225	201	210	248	213	233	256	253	255	251	244	249
22	209	189	201	251	226	235	253	228	237	248	225	241
23	203	184	194	240	227	233	232	219	224	246	224	238
24	189	182	185	245	228	239	225	211	221	239	216	230
25	188	176	181	251	226	238	227	212	219	237	202	219
26	207	179	192	248	232	239	239	225	232	240	203	222
27	226	204	212	242	223	230	249	236	241	241	232	238
28	241	209	221	230	212	219	250	240	247	240	216	228
29	224	205	213	226	212	218	255	233	248	239	220	235
30	223	190	205	268	224	247	257	244	251	238	217	231
31	196	186	190	---	---	---	258	233	247	234	217	225
MONTH	254	156	198	278	187	238	275	211	245	265	202	237

03438220 CUMBERLAND RIVER NEAR GRAND RIVERS, KY—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS—CONTINUED
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	237	223	234	217	215	216	---	---	---	---	---	---
2	236	234	235	218	215	217	---	---	---	---	---	---
3	235	229	234	220	210	216	---	---	---	---	---	---
4	235	215	227	212	206	209	---	---	225	---	---	---
5	232	219	227	219	206	213	226	223	225	---	---	---
6	235	224	231	221	214	217	226	223	225	---	---	---
7	235	221	229	224	211	216	228	224	226	---	---	---
8	241	228	234	220	210	214	230	227	228	---	---	---
9	240	229	236	226	212	218	230	228	229	---	---	---
10	240	231	236	216	208	212	231	220	228	---	---	---
11	242	219	232	235	207	214	231	220	226	---	---	---
12	239	222	232	236	208	219	231	218	226	---	---	---
13	240	220	231	227	206	215	230	227	228	---	---	---
14	244	214	235	234	203	215	231	225	228	---	---	---
15	254	223	247	239	204	217	230	228	229	---	---	---
16	278	254	262	230	200	206	230	223	229	---	---	---
17	262	218	234	229	198	207	227	224	226	---	---	---
18	218	209	211	---	---	208	226	222	225	---	---	---
19	213	204	206	211	202	208	226	216	221	---	---	---
20	214	207	211	211	198	207	224	214	220	---	---	---
21	230	214	219	---	---	209	228	210	221	---	---	---
22	233	228	230	---	---	---	227	211	220	---	---	---
23	233	217	225	---	---	---	224	213	219	---	---	---
24	217	200	211	---	---	212	225	202	220	---	---	---
25	200	196	198	215	185	199	222	198	213	---	---	---
26	221	200	210	216	195	207	219	217	218	---	---	---
27	215	213	214	216	197	206	219	215	218	---	---	---
28	227	213	217	220	178	203	217	204	210	---	---	---
29	---	---	---	219	206	215	214	193	206	---	---	---
30	---	---	---	---	---	213	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	278	196	227	239	178	212	231	193	223	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	---	---	---	---	---	182	223	204	214	198	183	191
2	---	---	172	196	172	187	224	213	218	207	185	196
3	186	171	178	184	168	177	---	---	---	193	175	184
4	177	163	167	176	163	171	---	---	---	193	178	185
5	170	157	161	171	160	165	---	---	---	193	179	186
6	180	163	169	169	156	164	---	---	---	194	178	187
7	190	178	183	181	158	167	---	---	---	198	182	189
8	197	175	184	192	178	184	---	---	---	189	169	176
9	202	195	199	196	180	190	---	---	---	176	164	169
10	203	186	197	197	170	181	---	---	---	179	164	169
11	202	163	184	192	176	183	---	---	---	179	168	174
12	206	184	196	180	161	167	---	---	---	186	177	181
13	206	205	206	189	164	176	---	---	---	204	182	193
14	212	202	206	200	173	183	---	---	---	209	184	197
15	213	200	208	180	163	172	---	---	---	213	192	207
16	207	182	194	181	170	174	208	178	190	196	170	183
17	194	179	188	184	163	173	192	183	186	194	171	181
18	216	178	200	186	164	173	192	176	186	198	175	185
19	222	206	216	177	164	168	194	174	182	202	173	188
20	217	197	208	191	176	181	191	174	181	196	180	188
21	211	192	199	193	168	178	188	177	182	228	189	218
22	213	195	206	182	168	174	188	177	182	233	223	229
23	217	201	209	187	168	179	198	174	189	232	220	228
24	210	194	203	199	173	185	206	193	199	233	226	230
25	207	189	197	200	183	189	205	180	194	226	204	216
26	211	195	204	192	178	183	189	176	184	204	192	196
27	210	191	202	186	176	181	---	---	---	193	187	191
28	213	197	205	---	---	---	---	---	---	195	184	188
29	221	211	218	---	---	---	---	---	---	192	187	189
30	---	---	220	214	184	196	191	174	183	193	183	187
31	---	---	---	217	186	202	190	172	181	---	---	---
MONTH	222	157	196	217	156	179	224	172	190	233	164	193
YEAR	278	156	214									

03438220 CUMBERLAND RIVER NEAR GRAND RIVERS, KY—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	7.6	7.3	7.4	7.6	7.5	7.5	8.0	7.9	7.9	7.6	7.5	7.6
2	7.6	7.2	7.4	7.7	7.5	7.6	8.1	7.8	7.9	7.6	7.5	7.5
3	7.6	7.4	7.5	7.7	7.6	7.6	8.1	7.9	8.0	7.6	7.5	7.5
4	7.7	7.3	7.5	7.9	7.7	7.8	8.1	7.9	8.0	7.6	7.5	7.5
5	7.6	7.3	7.3	7.8	7.6	7.7	8.1	7.9	8.0	7.6	7.4	7.5
6	7.4	7.3	7.3	7.8	7.6	7.7	8.2	8.1	8.2	7.5	7.4	7.4
7	7.4	7.2	7.3	8.0	7.7	7.8	8.2	8.1	8.1	7.6	7.4	7.5
8	7.5	7.2	7.3	8.3	7.8	8.0	8.1	8.0	8.0	7.6	7.4	7.5
9	7.5	7.2	7.3	8.3	8.0	8.1	8.1	7.9	8.0	7.5	7.3	7.4
10	7.3	7.2	7.2	8.2	8.0	8.1	8.0	7.7	7.8	7.5	7.3	7.4
11	7.4	7.2	7.3	8.3	8.0	8.1	7.8	7.7	7.7	7.5	7.3	7.4
12	7.3	7.2	7.3	8.2	8.0	8.1	7.8	7.6	7.7	7.6	7.3	7.4
13	7.5	7.3	7.4	8.2	8.0	8.1	7.7	7.6	7.7	7.6	7.4	7.4
14	7.5	7.3	7.4	8.2	8.0	8.1	7.7	7.6	7.6	8.4	7.3	7.9
15	7.5	7.3	7.4	8.0	7.9	7.9	7.7	7.6	7.7	8.5	8.3	8.4
16	7.4	7.2	7.3	8.0	7.9	7.9	7.9	7.6	7.7	8.4	8.1	8.2
17	7.4	7.2	7.3	8.0	7.9	7.9	7.8	7.8	7.8	8.3	8.0	8.2
18	7.5	7.2	7.3	8.0	7.8	7.9	7.9	7.8	7.9	8.5	8.2	8.3
19	7.4	7.2	7.3	8.0	7.8	7.9	7.9	7.7	7.8	8.6	8.2	8.3
20	7.6	7.3	7.3	8.1	7.9	8.0	7.8	7.8	7.8	8.6	8.2	8.4
21	7.5	7.2	7.3	8.1	7.9	8.0	7.8	7.7	7.8	8.6	8.4	8.5
22	7.9	7.2	7.5	8.2	8.0	8.1	7.8	7.6	7.6	8.6	8.4	8.5
23	8.0	7.6	7.7	8.3	8.1	8.2	7.6	7.5	7.5	8.6	8.4	8.5
24	7.8	7.6	7.7	8.3	8.0	8.1	7.5	7.5	7.5	8.6	8.3	8.5
25	7.7	7.4	7.6	8.2	7.9	8.0	7.5	7.4	7.4	8.6	8.3	8.4
26	7.5	7.4	7.5	8.1	8.0	8.0	7.5	7.4	7.5	8.5	8.2	8.4
27	7.7	7.5	7.6	8.1	7.9	8.0	7.6	7.5	7.5	8.6	8.4	8.5
28	7.8	7.6	7.7	8.0	7.8	7.9	7.6	7.5	7.6	8.6	8.3	8.5
29	7.7	7.6	7.6	8.0	7.7	7.8	7.7	7.6	7.6	8.5	8.4	8.4
30	7.6	7.5	7.6	8.0	7.8	8.0	7.7	7.6	7.7	8.9	8.4	8.6
31	7.5	7.5	7.5	---	---	---	7.6	7.5	7.6	8.8	8.6	8.7
MONTH	8.0	7.2	7.4	8.3	7.5	7.9	8.2	7.4	7.8	8.9	7.3	8.0
	FEBRUARY			MARCH			APRIL			MAY		
1	8.8	8.5	8.7	7.7	7.6	7.7	---	---	---	---	---	---
2	8.9	8.7	8.8	7.7	7.6	7.7	---	---	---	---	---	8.7
3	8.9	8.7	8.8	7.7	7.7	7.7	---	---	---	---	---	---
4	8.9	8.6	8.7	7.7	7.7	7.7	---	---	8.8	---	---	---
5	8.9	8.7	8.8	7.8	7.7	7.7	8.8	8.7	8.7	---	---	---
6	8.8	8.6	8.7	7.8	7.7	7.8	8.8	8.7	8.7	---	---	---
7	8.8	8.4	8.5	7.8	7.8	7.8	8.7	8.5	8.6	---	---	---
8	8.6	8.4	8.5	7.9	7.7	7.8	8.5	8.4	8.5	---	---	---
9	8.6	8.4	8.5	8.0	7.8	7.8	8.4	8.3	8.3	---	---	---
10	8.6	8.4	8.5	7.9	7.8	7.9	8.5	8.2	8.3	---	---	---
11	8.7	8.4	8.5	8.1	7.9	8.0	8.5	8.3	8.4	---	---	---
12	8.7	8.3	8.5	8.2	8.0	8.1	8.5	8.3	8.4	---	---	---
13	8.8	8.4	8.6	8.3	8.1	8.2	8.6	8.3	8.4	---	---	---
14	8.6	8.4	8.5	8.4	8.2	8.3	8.6	8.3	8.5	---	---	---
15	8.5	8.4	8.5	8.6	8.3	8.4	8.6	8.4	8.5	---	---	---
16	8.4	7.9	8.2	8.8	8.5	8.6	8.6	8.4	8.5	---	---	---
17	7.9	7.6	7.7	9.0	8.6	8.8	8.5	8.3	8.4	---	---	---
18	7.6	7.5	7.6	---	---	8.2	8.5	8.3	8.4	---	---	---
19	7.5	7.5	7.5	8.7	8.4	8.6	8.4	8.2	8.3	---	---	---
20	7.5	7.5	7.5	8.6	8.3	8.5	8.3	8.1	8.2	---	---	---
21	7.6	7.5	7.5	---	---	8.0	8.4	8.1	8.2	---	---	---
22	7.7	7.6	7.6	---	---	---	8.5	8.2	8.4	---	---	---
23	7.7	7.7	7.7	---	---	---	8.6	8.3	8.4	---	---	---
24	7.7	7.6	7.6	---	---	8.3	8.5	8.2	8.4	---	---	---
25	7.6	7.6	7.6	8.4	8.2	8.3	8.4	8.1	8.3	---	---	---
26	7.6	7.6	7.6	8.6	8.3	8.4	8.4	8.3	8.3	---	---	---
27	7.6	7.6	7.6	8.8	8.4	8.6	8.6	8.3	8.4	---	---	---
28	7.7	7.6	7.6	8.7	8.2	8.5	8.6	8.3	8.5	---	---	---
29	---	---	---	8.6	8.5	8.6	8.7	8.1	8.5	---	---	---
30	---	---	---	---	---	8.6	---	---	8.3	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	8.9	7.5	8.2	9.0	7.6	8.2	8.8	8.1	8.4	---	---	8.7

03438220 CUMBERLAND RIVER NEAR GRAND RIVERS, KY—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS—CONTINUED
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	---	---	8.0	8.8	8.2	8.5	8.4	7.8	8.1
2	---	---	8.3	8.5	8.0	8.2	8.8	8.3	8.5	8.2	7.6	7.9
3	8.3	8.0	8.1	8.7	8.0	8.3	---	---	---	7.8	7.6	7.7
4	8.0	7.8	7.9	8.6	8.2	8.4	---	---	---	8.2	7.5	7.8
5	8.1	7.7	7.8	8.6	8.2	8.4	---	---	---	8.4	7.6	8.0
6	8.2	7.8	8.0	8.8	8.2	8.5	---	---	---	8.5	7.7	8.1
7	8.5	7.8	8.1	9.2	8.4	8.7	---	---	---	8.5	7.8	8.1
8	8.4	8.1	8.2	9.2	8.7	8.9	---	---	---	8.3	7.6	7.8
9	8.4	8.2	8.3	9.2	8.8	9.0	---	---	---	7.8	7.5	7.6
10	8.3	8.0	8.2	9.1	8.6	8.8	---	---	---	7.8	7.4	7.6
11	8.0	7.6	7.7	8.9	8.4	8.6	---	---	---	7.8	7.5	7.7
12	7.8	7.5	7.7	8.6	8.2	8.4	---	---	---	8.0	7.7	7.9
13	7.9	7.6	7.7	8.8	8.3	8.5	---	---	---	8.1	7.5	7.8
14	7.9	7.6	7.7	8.9	8.6	8.8	---	---	---	7.7	7.4	7.6
15	8.1	7.6	7.8	8.8	8.2	8.5	---	---	---	7.8	7.4	7.6
16	8.1	7.5	7.7	8.5	7.9	8.1	8.7	8.0	8.3	7.7	7.4	7.5
17	8.2	7.6	7.8	8.7	8.0	8.4	8.7	7.9	8.2	7.7	7.4	7.5
18	8.0	7.6	7.8	8.5	7.9	8.2	8.5	8.0	8.2	7.7	7.4	7.5
19	7.8	7.6	7.7	8.0	7.7	7.8	8.6	8.0	8.4	7.6	7.2	7.4
20	7.7	7.4	7.6	8.5	7.6	7.9	8.7	8.0	8.4	7.4	7.3	7.3
21	8.0	7.4	7.6	8.4	7.6	8.0	8.4	8.0	8.2	7.6	7.3	7.5
22	8.3	7.6	7.9	8.4	8.0	8.2	8.6	8.0	8.3	7.9	7.6	7.7
23	8.3	7.8	8.1	8.3	7.9	8.1	8.7	8.0	8.2	8.4	7.9	8.2
24	8.4	7.8	8.1	8.6	8.1	8.3	8.8	8.2	8.5	8.5	8.2	8.4
25	8.3	7.9	8.1	8.5	8.1	8.3	8.7	8.1	8.5	8.5	7.9	8.2
26	8.2	7.8	8.1	8.4	8.1	8.3	8.7	8.2	8.4	8.2	7.7	7.9
27	8.0	7.7	7.8	8.7	8.1	8.3	---	---	8.3	8.0	7.6	7.8
28	8.1	7.6	7.8	---	---	---	---	---	---	8.0	7.6	7.8
29	8.2	7.6	8.0	---	---	---	---	---	8.3	8.3	7.7	8.0
30	---	---	8.0	8.8	8.1	8.5	8.5	7.8	8.1	8.2	7.7	7.9
31	---	---	---	8.7	8.2	8.5	8.3	7.7	8.0	---	---	---
MONTH	8.5	7.4	7.9	9.2	7.6	8.4	8.8	7.7	8.3	8.5	7.2	7.8
YEAR	9.2	7.2	8.0									

03438220 CUMBERLAND RIVER NEAR GRAND RIVERS, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	23.8	23.5	23.7	15.6	15.0	15.3	9.0	8.2	8.7	8.2	8.0	8.1
2	24.2	23.4	23.8	15.1	14.1	14.5	8.6	8.0	8.3	8.1	7.9	8.0
3	24.4	23.8	24.1	14.5	13.6	14.0	8.3	7.4	8.0	7.9	6.9	7.5
4	24.4	23.7	24.0	14.0	13.2	13.7	7.8	5.8	6.8	7.5	6.6	7.1
5	23.8	23.4	23.6	14.1	13.1	13.7	7.2	5.4	6.7	7.5	7.1	7.3
6	23.6	22.9	23.2	13.9	13.0	13.5	6.1	5.4	5.8	7.5	6.8	7.3
7	22.9	22.3	22.5	13.4	12.4	13.1	6.3	5.6	6.0	7.3	6.5	6.9
8	22.5	21.8	22.1	13.5	12.4	13.0	7.0	6.0	6.5	7.6	6.8	7.2
9	21.9	21.7	21.8	13.9	13.1	13.4	7.0	6.4	6.7	7.8	7.2	7.5
10	21.7	20.8	21.3	14.9	13.9	14.4	6.8	6.3	6.7	7.5	7.1	7.3
11	21.0	20.5	20.8	14.9	14.4	14.6	6.7	6.2	6.5	7.1	6.7	6.9
12	20.5	20.3	20.4	14.5	13.7	14.1	6.4	6.0	6.2	6.7	5.7	6.3
13	20.4	19.7	20.0	14.3	13.5	13.9	6.7	6.2	6.4	6.3	5.8	6.1
14	19.7	19.0	19.4	14.0	13.6	13.8	7.2	6.3	6.8	6.1	5.7	6.0
15	19.5	19.1	19.3	13.9	13.6	13.7	7.4	6.8	7.1	5.8	4.9	5.5
16	19.2	18.7	18.9	13.6	12.1	12.8	7.6	7.1	7.3	5.7	5.0	5.4
17	18.8	18.2	18.5	12.4	11.6	12.0	8.5	7.6	8.0	5.2	4.2	4.9
18	18.4	17.9	18.2	11.9	11.3	11.7	9.2	8.5	8.9	4.4	2.8	3.8
19	18.0	17.2	17.6	12.3	11.6	12.0	9.4	9.1	9.2	4.1	3.0	3.7
20	17.3	16.7	17.0	12.2	11.6	11.9	9.3	8.7	9.0	4.2	3.4	3.8
21	17.6	16.9	17.2	12.3	11.8	12.0	8.9	8.2	8.6	4.2	3.9	4.0
22	17.9	16.8	17.4	11.8	10.6	11.3	9.1	8.7	9.0	4.1	3.5	3.8
23	17.6	16.9	17.4	11.2	10.4	10.8	9.0	8.7	8.9	3.7	2.3	3.1
24	17.4	17.1	17.3	11.5	10.8	11.1	8.9	8.3	8.6	2.8	2.2	2.5
25	17.4	17.0	17.3	11.2	10.5	10.9	8.5	6.9	7.7	2.7	2.1	2.4
26	17.4	16.9	17.1	10.6	9.9	10.2	7.4	6.6	6.9	2.3	1.8	2.1
27	16.9	16.2	16.5	10.3	9.5	9.9	7.0	6.5	6.8	1.8	1.3	1.6
28	16.4	15.6	16.1	9.9	9.4	9.7	7.1	6.6	6.8	2.5	1.5	2.0
29	16.5	15.9	16.3	9.7	9.3	9.5	7.5	6.7	7.1	3.0	2.5	2.8
30	16.3	15.8	16.0	9.5	8.8	9.1	8.1	7.4	7.8	3.2	2.6	2.9
31	15.9	15.5	15.7	---	---	---	8.3	8.0	8.2	3.2	2.8	3.0
MONTH	24.4	15.5	19.5	15.6	8.8	12.5	9.4	5.4	7.5	8.2	1.3	5.1

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	4.0	3.1	3.7	6.7	6.4	6.5	---	---	---	---	---	---
2	4.8	3.8	4.2	6.8	6.6	6.7	---	---	---	---	---	19.4
3	5.8	4.7	5.2	7.2	6.3	6.7	---	---	---	---	---	---
4	5.4	5.0	5.2	7.6	6.7	7.1	---	---	15.4	---	---	---
5	5.4	4.7	5.1	7.6	7.4	7.5	15.5	15.0	15.2	---	---	---
6	5.3	4.9	5.2	7.5	7.0	7.3	15.2	14.2	14.8	---	---	---
7	5.0	4.3	4.8	7.9	6.7	7.3	14.6	13.9	14.2	---	---	---
8	4.8	3.7	4.3	8.7	7.4	8.0	14.8	14.6	14.7	---	---	---
9	4.6	4.0	4.3	8.5	8.0	8.3	14.6	13.4	13.9	---	---	---
10	4.5	4.0	4.3	8.2	7.3	7.8	13.6	12.8	13.2	---	---	---
11	5.1	4.1	4.6	8.5	7.5	8.0	14.1	13.4	13.7	---	---	---
12	5.4	4.5	4.9	8.9	8.1	8.5	14.5	13.6	14.0	---	---	---
13	5.7	4.7	5.2	9.6	8.8	9.2	15.4	13.9	14.6	---	---	---
14	6.0	5.4	5.7	9.8	9.2	9.5	15.9	14.7	15.2	---	---	---
15	6.8	6.0	6.3	10.4	9.5	9.9	16.6	15.5	16.0	---	---	---
16	6.2	5.6	5.9	11.2	10.2	10.6	16.6	16.1	16.3	---	---	---
17	6.4	5.8	6.1	11.3	10.8	11.1	16.3	16.0	16.1	---	---	---
18	7.0	6.4	6.7	---	---	11.2	16.6	16.0	16.2	---	---	---
19	6.8	6.7	6.8	13.0	11.4	12.1	16.8	16.1	16.5	---	---	---
20	6.9	6.7	6.8	12.9	12.1	12.5	17.2	16.5	16.9	---	---	---
21	7.2	6.8	7.0	---	---	12.5	17.1	16.6	16.9	---	---	---
22	7.2	7.0	7.2	---	---	---	17.0	16.4	16.7	---	---	---
23	7.1	6.8	6.9	---	---	---	17.4	16.4	16.9	---	---	---
24	7.3	6.9	7.1	---	---	13.4	16.9	16.4	16.6	---	---	---
25	7.0	6.4	6.7	14.7	13.2	14.0	16.8	16.3	16.6	---	---	---
26	6.4	6.2	6.2	14.8	13.8	14.2	16.7	16.1	16.4	---	---	---
27	6.4	6.2	6.3	15.0	14.0	14.6	17.8	16.4	17.0	---	---	---
28	6.5	6.3	6.4	15.5	14.7	14.9	18.2	16.9	17.6	---	---	---
29	---	---	---	14.7	14.2	14.6	19.1	17.7	18.4	---	---	---
30	---	---	---	---	---	14.0	---	---	19.0	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	7.3	3.1	5.7	15.5	6.3	10.3	19.1	12.8	15.9	---	---	19.4

03438220 CUMBERLAND RIVER NEAR GRAND RIVERS, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	---	---	26.8	29.6	29.0	29.2	29.5	28.9	29.2
2	---	---	20.9	27.5	26.4	26.9	29.2	28.6	28.8	29.2	28.5	28.9
3	20.8	20.5	20.6	27.8	26.8	27.3	---	---	---	28.7	28.2	28.4
4	20.6	20.4	20.5	28.2	27.3	27.7	---	---	---	28.3	27.8	28.1
5	22.0	20.4	20.8	28.1	27.8	28.0	---	---	---	27.8	27.2	27.5
6	21.3	20.7	21.0	28.8	27.7	28.2	---	---	---	27.3	26.7	27.0
7	22.2	20.5	21.2	29.2	28.0	28.5	---	---	---	27.1	26.4	26.7
8	21.8	21.1	21.5	29.4	28.4	28.9	---	---	---	27.1	26.4	26.7
9	21.8	21.1	21.4	29.5	28.7	29.1	---	---	---	27.2	26.4	26.8
10	22.1	21.2	21.7	29.2	28.7	28.9	---	---	---	27.2	26.5	26.9
11	21.8	21.5	21.6	29.1	28.4	28.8	---	---	---	27.3	26.6	26.9
12	22.3	21.6	21.9	28.9	28.4	28.7	---	---	---	27.1	26.5	26.9
13	22.8	21.9	22.2	29.0	28.3	28.7	---	---	---	26.7	26.1	26.4
14	23.1	22.1	22.5	29.4	28.5	28.9	---	---	---	26.5	26.1	26.2
15	23.7	22.7	23.1	29.4	28.6	29.0	---	---	---	26.1	25.8	25.9
16	24.2	23.1	23.6	29.3	28.5	28.9	29.4	28.2	28.6	26.2	25.6	25.9
17	24.5	23.6	24.0	29.8	29.1	29.3	29.2	28.4	28.7	26.1	25.6	25.9
18	24.4	23.6	24.1	29.4	28.8	29.2	29.6	28.7	29.0	26.2	25.5	25.9
19	24.5	23.5	23.9	29.4	28.5	29.0	29.7	28.9	29.2	26.2	25.2	25.7
20	24.4	23.8	24.2	29.9	29.0	29.2	29.7	28.9	29.3	25.3	24.8	25.0
21	25.0	23.8	24.4	29.5	29.0	29.2	29.8	29.2	29.5	24.9	24.1	24.5
22	25.5	24.1	24.8	29.1	28.8	29.0	30.3	29.4	29.7	24.4	24.0	24.2
23	25.8	24.7	25.2	28.9	28.5	28.7	30.0	29.3	29.6	24.1	23.5	23.8
24	26.4	25.1	25.7	29.0	27.9	28.5	29.9	29.2	29.5	24.3	23.4	23.9
25	26.8	25.8	26.3	29.0	28.3	28.7	29.8	29.1	29.4	24.3	23.6	23.9
26	26.7	26.1	26.4	29.3	28.6	28.9	30.3	29.4	29.8	24.3	23.5	23.9
27	26.4	25.6	26.0	29.4	28.5	28.9	---	---	---	24.0	23.5	23.8
28	26.3	25.8	26.0	---	---	---	---	---	---	23.5	22.6	23.2
29	26.6	25.8	26.1	---	---	---	---	---	---	22.6	22.0	22.3
30	---	---	26.2	29.3	28.6	29.0	29.9	29.2	29.6	22.0	21.4	21.8
31	---	---	---	29.5	28.8	29.1	29.7	29.1	29.4	---	---	---
MONTH	26.8	20.4	23.4	29.9	26.4	28.6	30.3	28.2	29.3	29.5	21.4	25.7
YEAR	30.3	1.3	16.1									

03438220 CUMBERLAND RIVER NEAR GRAND RIVERS, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	6.4	5.8	6.1	9.7	8.8	9.2	10.8	10.2	10.4	10.8	10.6	10.7
2	7.1	6.3	6.6	9.9	9.1	9.6	10.9	10.2	10.5	11.0	10.8	10.9
3	7.4	6.2	6.8	9.9	9.3	9.6	11.1	10.2	10.4	11.2	10.9	11.0
4	7.6	6.2	6.8	10.6	9.3	9.9	11.2	10.1	10.7	11.4	11.1	11.2
5	7.4	6.0	6.4	10.4	9.5	9.9	11.2	9.9	10.3	11.6	11.2	11.4
6	7.8	6.6	7.2	10.5	9.4	9.9	11.6	10.6	11.0	11.7	11.5	11.6
7	7.2	6.3	7.0	11.2	9.9	10.5	11.5	10.6	10.9	12.0	11.7	11.8
8	8.0	6.6	7.3	11.0	9.8	10.4	10.9	10.2	10.6	12.2	11.9	12.1
9	8.3	6.9	7.4	10.3	9.6	9.9	11.0	10.0	10.4	12.4	12.2	12.3
10	7.3	6.8	7.0	10.6	9.6	10.0	10.6	9.9	10.2	12.6	12.3	12.5
11	7.5	6.8	7.0	11.2	9.8	10.2	10.5	9.7	10.1	12.9	12.6	12.7
12	7.3	6.8	7.1	10.4	9.9	10.1	10.5	9.8	10.1	13.1	12.8	12.9
13	8.2	7.0	7.5	10.6	9.8	10.1	10.3	9.8	10.0	13.3	13.0	13.1
14	8.6	7.6	8.1	10.6	9.7	10.1	10.2	9.6	9.9	14.3	13.0	13.5
15	8.6	7.5	8.0	10.6	10.2	10.4	10.2	9.6	9.9	15.2	13.4	14.1
16	8.5	7.5	8.0	10.9	10.5	10.6	9.9	8.9	9.3	15.2	13.5	14.2
17	8.7	7.9	8.2	11.0	10.5	10.7	9.0	8.7	8.9	16.1	14.2	15.0
18	8.9	7.9	8.4	11.0	10.6	10.8	9.1	8.8	9.0	16.8	15.4	16.0
19	8.7	8.4	8.5	11.1	10.7	10.9	9.1	8.9	9.0	17.2	15.1	15.9
20	9.6	8.3	8.7	11.4	10.7	11.0	9.2	8.9	9.0	17.4	15.3	16.2
21	9.6	8.5	8.9	11.1	10.7	10.9	9.3	9.1	9.2	17.2	16.3	16.7
22	9.3	8.0	8.7	11.0	10.5	10.8	9.2	8.9	9.1	16.7	15.9	16.3
23	9.3	7.9	8.3	11.4	10.5	10.9	9.1	8.9	9.0	16.6	15.9	16.1
24	9.0	8.0	8.3	11.8	10.4	11.0	9.3	8.9	9.1	17.0	15.9	16.5
25	8.9	8.0	8.5	11.8	10.7	11.2	9.4	9.2	9.3	16.9	15.8	16.2
26	8.9	8.6	8.8	11.4	10.8	11.0	9.5	9.3	9.4	16.2	15.6	15.9
27	9.3	8.7	9.0	11.3	10.5	10.8	9.7	9.4	9.6	16.3	15.6	16.0
28	9.8	8.8	9.2	11.0	10.2	10.5	10.1	9.7	9.9	16.2	15.6	15.9
29	10.1	8.7	8.9	10.8	10.2	10.4	10.3	10.0	10.1	16.2	15.8	16.0
30	9.0	8.6	8.8	11.0	10.3	10.6	10.5	10.2	10.4	16.6	14.8	15.9
31	9.2	8.6	8.8	---	---	---	10.7	10.5	10.6	15.8	14.4	15.0
MONTH	10.1	5.8	7.9	11.8	8.8	10.4	11.6	8.7	9.9	17.4	10.6	14.1
		FEBRUARY			MARCH			APRIL			MAY	
1	15.6	14.3	14.8	14.7	14.6	14.7	---	---	---	---	---	---
2	16.0	15.0	15.4	14.7	14.5	14.6	---	---	---	---	---	---
3	15.5	14.2	14.8	14.8	14.7	14.7	---	---	---	---	---	---
4	14.2	13.3	13.6	14.8	14.6	14.7	---	---	10.3	---	---	---
5	14.8	13.4	14.0	14.8	14.6	14.7	10.0	9.3	9.5	---	---	---
6	14.1	13.3	13.7	14.7	12.9	13.6	9.5	9.3	9.4	---	---	---
7	14.0	12.8	13.2	13.4	13.0	13.2	9.4	9.0	9.3	---	---	---
8	13.8	12.8	13.2	13.3	13.0	13.2	9.7	9.0	9.3	---	---	---
9	13.8	12.8	13.2	13.3	12.9	13.1	9.8	9.3	9.5	---	---	---
10	13.8	12.8	13.2	13.4	13.0	13.2	10.8	9.7	10.1	---	---	---
11	13.7	12.7	13.1	13.7	13.1	13.4	10.8	10.1	10.5	---	---	---
12	14.0	12.6	13.1	13.9	13.3	13.5	11.3	10.3	10.8	---	---	---
13	14.3	12.7	13.4	13.6	13.3	13.4	11.9	10.5	11.2	---	---	---
14	13.6	12.8	13.2	13.7	13.0	13.3	12.0	10.8	11.4	---	---	---
15	13.6	12.9	13.3	13.9	13.1	13.5	12.0	11.2	11.5	---	---	---
16	13.4	12.5	13.1	14.2	13.5	13.8	11.4	10.4	11.0	---	---	---
17	12.6	12.0	12.2	14.6	13.5	14.1	11.1	9.9	10.3	---	---	---
18	12.0	11.9	11.9	---	---	14.1	10.7	9.8	10.2	---	---	---
19	11.9	11.8	11.9	13.0	10.3	11.1	10.4	9.8	10.1	---	---	---
20	12.0	11.9	12.0	10.8	9.8	10.2	10.2	9.4	9.8	---	---	---
21	14.0	11.9	12.3	---	---	9.6	11.9	9.4	9.9	---	---	---
22	14.2	14.0	14.1	---	---	---	11.3	9.9	10.2	---	---	---
23	14.3	14.2	14.2	---	---	---	11.4	9.9	10.3	---	---	---
24	14.2	14.1	14.2	---	---	11.9	11.1	9.9	10.3	---	---	---
25	14.4	14.2	14.3	11.6	9.2	10.6	11.6	10.0	10.4	---	---	---
26	14.5	14.4	14.4	10.0	7.4	8.4	10.6	10.2	10.3	---	---	---
27	14.4	14.4	14.4	7.6	5.9	6.7	10.9	10.2	10.4	---	---	---
28	14.8	14.4	14.5	5.9	5.0	5.4	10.7	10.3	10.5	---	---	---
29	---	---	---	5.4	5.0	5.2	10.9	10.4	10.6	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	16.0	11.8	13.5	14.8	5.0	12.1	12.0	9.0	10.3	---	---	---

03438220 CUMBERLAND RIVER NEAR GRAND RIVERS, KY—Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	---	---	---	8.9	6.9	7.6	7.9	5.1	6.4
2	---	---	11.0	---	---	---	8.0	6.3	7.2	6.9	4.6	5.7
3	10.2	9.5	9.9	---	---	---	---	---	---	7.1	5.2	6.0
4	9.6	9.1	9.4	---	---	---	---	---	---	8.0	5.5	6.5
5	10.2	8.9	9.4	---	---	---	---	---	---	8.6	5.3	6.9
6	11.3	9.3	10.0	---	---	---	---	---	---	9.9	6.1	7.8
7	14.2	10.3	11.9	---	---	---	---	---	---	10.4	7.0	8.4
8	13.0	11.9	12.5	8.2	7.0	7.4	---	---	---	8.4	6.4	7.3
9	13.7	12.3	13.0	7.6	6.8	7.2	---	---	---	---	---	---
10	12.6	11.6	12.2	7.1	6.5	6.8	---	---	---	---	---	---
11	11.8	11.1	11.4	7.2	6.2	6.7	---	---	---	---	---	---
12	11.7	10.8	11.2	7.0	6.3	6.6	---	---	---	---	---	---
13	12.0	10.7	11.2	7.3	6.4	6.9	---	---	---	---	---	---
14	12.0	10.7	11.1	8.1	7.0	7.4	---	---	---	---	---	---
15	12.6	10.7	11.5	7.9	6.8	7.3	---	---	---	---	---	---
16	12.9	10.7	11.5	7.6	6.0	6.8	10.4	7.6	8.7	---	---	---
17	13.0	10.9	11.8	8.4	7.1	7.6	10.0	7.3	8.1	11.1	7.1	8.7
18	12.0	10.9	11.5	7.6	7.0	7.3	9.5	7.5	8.4	10.8	8.3	9.5
19	11.3	10.4	10.8	7.3	6.3	6.8	10.0	7.9	8.9	11.0	7.0	8.8
20	11.0	9.9	10.5	9.5	6.3	7.2	10.8	8.0	9.2	9.4	7.3	8.1
21	12.3	9.9	10.9	8.2	6.1	7.4	9.3	7.8	8.6	10.3	8.1	8.9
22	13.8	10.9	12.1	8.9	7.0	7.7	9.7	7.6	8.5	8.7	6.8	7.8
23	13.9	11.4	12.6	8.8	7.2	7.9	9.6	7.2	8.0	10.4	8.3	9.2
24	14.1	11.0	12.7	---	---	---	10.4	7.4	8.7	10.1	8.2	9.2
25	13.5	11.5	12.4	---	---	---	10.9	8.3	9.4	10.3	7.7	8.6
26	12.6	10.5	11.6	---	---	---	10.5	8.3	9.3	8.9	7.2	7.8
27	10.9	9.9	10.2	---	---	---	---	---	8.7	8.0	6.7	7.2
28	11.6	9.7	10.4	---	---	---	---	---	---	7.3	6.2	6.8
29	---	---	---	---	---	---	---	---	8.6	7.8	6.1	7.0
30	---	---	---	9.0	6.9	7.8	9.1	6.4	7.6	8.1	6.5	7.1
31	---	---	---	8.5	6.8	7.6	8.1	6.2	7.0	---	---	---
MONTH	14.2	8.9	11.3	9.5	6.0	7.2	10.9	6.2	8.4	11.1	4.6	7.7
YEAR	17.4	4.6	10.5									

03438500 CUMBERLAND RIVER AT SMITHLAND, KY

(National stream-quality accounting network station)

WATER-QUALITY RECORDS

LOCATION.--Lat 37°08' 55", long 88°23' 57", Livingston County, Hydrologic Unit 05130205, 1.0 mi (1.6 km) downstream from McCormick Creek, 27.8 mi (44.7 km) downstream from gaging station near Grand Rivers, and at mile 2.8 (4.5 km).

PERIOD OF RECORD.--Water years 1950-65, 1968-1980, 2002 to current water year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES.--October 1949 to July 1966, July 1967 to August 1980.

REMARKS.--Records of daily discharge are published for gaging station near Grand Rivers (station 03438220). Flow is completely regulated. Barkley-Kentucky Canal (station 03438190) diverts waters from or to Kentucky Lake in the Tennessee River Basin.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Sample type	Instantaneous discharge, cfs (00061)	Turbidity, wat unf lab, Hach 2100AN NTU (99872)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
DEC												
11...	1350	Environmental	22,500	7.4	0.055	0.041	8.9	74	8.0	150	7.0	100
11...	1358	Field Blank	--	--	<0.004	<0.004	--	--	--	--	--	--
FEB												
26...	1400	Environmental	98,500	71	0.063	0.048	13.7	110	7.7	205	6.0	99
26...	1410	Replicate	--	68	0.062	0.047	--	--	--	--	--	98
MAR												
27...	1110	Environmental	34,900	14	0.047	0.036	12.2	121	8.7	200	14.5	90
MAY												
07...	1230	Environmental	83,500	32	0.051	0.038	11.5	125	8.5	210	19.0	94
07...	1238	Field Blank	--	--	--	--	--	--	--	--	--	--
JUN												
26...	1300	Environmental	58,400	E12	0.070	0.052	7.1	93	7.6	199	29.5	91
26...	1310	Other QA	--	--	0.071	0.052	--	--	--	--	--	91
SEP												
10...	1240	Environmental	41,200	19	0.043	0.027	7.5	97	7.9	171	28.9	69

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	Alkalinity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicarbonate, wat flt incrm. titr., field, mg/L (00453)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 180degC wat flt mg/L (70300)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia + org-N, water, unfltrd mg/L as N (00625)
DEC													
11...	33.0	5.13	1.67	6.18	85	104	6.08	<0.17	4.43	17.2	135	0.18	0.28
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
26...	32.6	4.14	1.51	2.98	82	--	5.19	0.08	4.59	15.4	123	0.15	0.46
26...	32.4	4.12	1.33	2.96	--	--	5.37	0.09	4.56	15.4	124	0.14	0.46
MAR													
27...	27.6	4.99	1.40	4.96	66	77	5.74	0.08	2.15	20.7	115	0.13	0.37
MAY													
07...	28.9	5.13	1.52	4.03	74	90	4.87	<0.17	0.90	21.7	122	0.10	0.53
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
26...	29.5	4.09	1.94	3.78	77	94	5.22	<0.2	3.60	13.4	112	E.28	E.74
26...	29.7	4.12	1.93	3.79	--	--	5.25	<0.2	3.65	13.6	107	E.28	E.42
SEP													
10...	19.9	4.74	1.70	5.33	53	65	6.33	<0.2	5.07	15.6	104	0.16	0.49

03438500 CUMBERLAND RIVER AT SMITHLAND, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Ortho-phos-phate, water, fltrd, mg/L as P (00671)	Partic-ulate nitro-gen, susp, water, mg/L (49570)	Phos-phorus, water, fltrd, mg/L (00666)	Phos-phorus, water, unfltrd mg/L (00665)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inor-ganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)	Pheo-phytin a, phyto-plank-ton, ug/L (62360)	Chloro-phyll a phyto-plank-ton, fluoro, ug/L (70953)
DEC													
11...	<0.04	0.63	<0.008	0.034	0.13	0.043	0.099	0.7	<0.1	0.7	2.1	6.7	8.9
11...	--	--	--	--	<0.02	--	--	<0.1	<0.1	<0.1	<0.3	--	--
FEB													
26...	E.03	0.92	<0.008	0.035	0.28	0.043	0.23	2.2	<0.1	2.2	2.2	8.8	5.2
26...	E.04	0.93	<0.008	0.036	0.29	0.042	0.23	2.1	<0.1	2.1	2.2	6.1	4.0
MAR													
27...	<0.04	0.51	E.006	<0.007	0.29	0.005	0.058	1.5	<0.1	1.5	1.8	10.2	26.2
MAY													
07...	<0.04	0.41	E.006	<0.007	0.32	0.007	0.107	1.7	<0.1	1.7	1.9	21.6	12.5
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
26...	E.07	E.31	E.015	E.008	0.25	E.021	E.088	1.4	<0.1	1.4	2.4	15.2	15.9
26...	E.06	E.31	E.016	E.008	0.22	E.021	E.075	1.3	<0.1	1.3	2.5	--	--
SEP													
10...	<0.04	0.15	<0.008	0.031	0.29	0.042	0.113	1.6	<0.1	1.6	2.3	13.6	26.2

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Alum-inum, water, fltrd, ug/L (01106)	Anti-mony, water, fltrd, ug/L (01095)	Arsenic water, fltrd, ug/L (01000)	Barium, water, fltrd, ug/L (01005)	Beryll-ium, water, fltrd, ug/L (01010)	Boron, water, fltrd, ug/L (01020)	Cadmium water, fltrd, ug/L (01025)	Chrom-ium, water, fltrd, ug/L (01030)	Cobalt water, fltrd, ug/L (01035)	Copper, water, fltrd, ug/L (01040)	Iron, water, fltrd, ug/L (01046)	Lead, water, fltrd, ug/L (01049)	Lithium water, fltrd, ug/L (01130)
DEC													
11...	2	<0.30	0.6	23	<0.06	23	<0.04	<0.8	0.11	0.9	E7	<0.08	1.1
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
26...	4	<0.30	0.5	21	<0.06	11	<0.04	<0.8	0.15	0.6	14	<0.08	0.6
26...	4	<0.30	0.3	21	<0.06	16	<0.04	<0.8	0.14	0.5	13	<0.08	0.7
MAR													
27...	--	--	0.3	--	--	17	--	--	--	--	10	--	1.3
MAY													
07...	4	<0.30	0.4	21	<0.06	20	<0.04	<0.8	0.15	0.7	<10	<0.08	1.2
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
26...	3	<0.30	0.7	22	<0.06	17	<0.04	1.0	0.10	0.8	E4	<0.08	0.7
26...	4	<0.30	0.7	22	<0.06	19	<0.04	<0.8	0.11	0.8	E4	E.07	0.7
SEP													
10...	--	--	1.1	--	--	21	--	--	--	--	<8	--	0.9

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Mangan-ese, water, fltrd, ug/L (01056)	Molyb-denum, water, fltrd, ug/L (01060)	Nickel, water, fltrd, ug/L (01065)	Selen-ium, water, fltrd, ug/L (01145)	Silver, water, fltrd, ug/L (01075)	Stront-ium, water, fltrd, ug/L (01080)	Vanad-ium, water, fltrd, ug/L (01085)	Zinc, water, fltrd, ug/L (01090)	2,6-Di-ethyl-aniline water fltrd 0.7u GF ug/L (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)
DEC													
11...	1.8	1.2	1.50	<0.5	<0.20	99.7	0.7	16	<0.006	E.021	<0.006	<0.004	<0.005
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
26...	2.9	0.4	1.86	E.3	<0.20	94.8	0.9	M	<0.006	E.031	<0.006	<0.004	<0.005
26...	2.8	0.4	1.89	<0.5	<0.20	91.8	0.9	<1	<0.006	E.029	<0.006	<0.004	<0.005
MAR													
27...	--	--	--	<0.5	--	91.0	1.0	--	<0.006	E.030	<0.006	<0.004	<0.005
MAY													
07...	0.4	0.5	1.09	<0.5	<0.20	99.2	1.0	<1	<0.006	E.067	0.025	<0.004	<0.005
07...	--	--	--	--	--	--	--	--	<0.006	<0.006	<0.006	<0.004	<0.005
JUN													
26...	0.3	0.6	1.26	E.3	<0.20	86.0	0.8	<1	<0.006	E.053	E.007	<0.004	<0.005
26...	0.3	0.6	1.28	E.3	<0.20	86.7	0.8	<1	--	--	--	--	--
SEP													
10...	--	--	--	<0.5	--	80.6	1.2	--	<0.006	E.008	<0.006	<0.004	<0.005

03438500 CUMBERLAND RIVER AT SMITHLAND, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Atrazine, water, fltrd, ug/L (39632)	Azinphos-methyl, water, fltrd 0.7u GF ug/L (82686)	Benfluralin, water, fltrd 0.7u GF ug/L (82673)	Butylate, water, fltrd, ug/L (04028)	Carbaryl, water, fltrd 0.7u GF ug/L (82680)	Carbofuran, water, fltrd 0.7u GF ug/L (82674)	Chlorpyrifos water, fltrd, ug/L (38933)	cis-Permethrin water fltrd 0.7u GF ug/L (82687)	Cyanazine, water, fltrd, ug/L (04041)	DCPA, water fltrd 0.7u GF ug/L (82682)	Diazinon, water, fltrd, ug/L (39572)	Dieldrin, water, fltrd, ug/L (39381)	Disulfoton, water, fltrd 0.7u GF ug/L (82677)
DEC													
11...	0.045	<0.050	<0.010	<0.002	E.003	<0.020	<0.005	<0.006	<0.018	<0.003	<0.006	<0.005	<0.02
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
26...	0.040	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.005	<0.005	<0.02
26...	0.036	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.005	<0.005	<0.02
MAR													
27...	0.074	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.005	<0.005	<0.02
MAY													
07...	0.573	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.005	<0.005	<0.02
07...	<0.007	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.005	<0.005	<0.02
JUN													
26...	E.331	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	E.009	<0.005	<0.02
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
10...	0.071	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.005	<0.005	<0.02

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	EPTC, water, fltrd 0.7u GF ug/L (82668)	Ethalfluralin, water, fltrd 0.7u GF ug/L (82663)	Ethoprop, water, fltrd 0.7u GF ug/L (82672)	Fonofos water, fltrd, ug/L (04095)	Lindane water, fltrd, ug/L (39341)	Linuron water fltrd 0.7u GF ug/L (82666)	Malathion, water, fltrd, ug/L (39532)	Methyl parathion, water, fltrd 0.7u GF ug/L (82667)	Metolachlor, water, fltrd, ug/L (39415)	Metribuzin, water, fltrd, ug/L (82630)	Molinate, water, fltrd 0.7u GF ug/L (82671)	Napropamide, water, fltrd 0.7u GF ug/L (82684)	p,p'-DDE, water, fltrd, ug/L (34653)
DEC													
11...	<0.002	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	E.004	<0.006	<0.002	<0.007	<0.003
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
26...	<0.002	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	E.008	<0.006	<0.002	<0.007	<0.003
26...	<0.002	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	E.007	<0.006	<0.002	<0.007	<0.003
MAR													
27...	<0.002	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	E.005	<0.006	<0.005	<0.007	<0.003
MAY													
07...	<0.002	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	0.022	<0.006	<0.002	<0.007	<0.003
07...	<0.002	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	<0.013	<0.006	<0.002	<0.007	<0.003
JUN													
26...	<0.002	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	E.028	<0.006	<0.002	<0.007	<0.003
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
10...	<0.002	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	E.011	<0.006	<0.002	<0.007	<0.003

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Parathion, water, fltrd, ug/L (39542)	Pebulate, water, fltrd 0.7u GF ug/L (82669)	Pendimethalin, water, fltrd 0.7u GF ug/L (82683)	Phorate water fltrd 0.7u GF ug/L (82664)	Prometon, water, fltrd, ug/L (04037)	Pronamide, water, fltrd 0.7u GF ug/L (82676)	Propachlor, water, fltrd, ug/L (04024)	Propanil, water, fltrd 0.7u GF ug/L (82679)	Propargite, water, fltrd 0.7u GF ug/L (82685)	Simazine, water, fltrd, ug/L (04035)	Tebuthiuron water fltrd 0.7u GF ug/L (82670)	Terbacil, water, fltrd 0.7u GF ug/L (82665)	Terbufos, water, fltrd 0.7u GF ug/L (82675)
DEC													
11...	<0.010	<0.004	<0.022	<0.011	E.01	<0.004	<0.010	<0.011	<0.02	0.018	E.01	<0.034	<0.02
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
26...	<0.010	<0.004	<0.022	<0.011	<0.01	<0.004	<0.010	<0.011	<0.02	0.056	<0.02	<0.034	<0.02
26...	<0.010	<0.004	<0.022	<0.011	<0.01	<0.004	<0.010	<0.011	<0.02	0.052	E.01	<0.034	<0.02
MAR													
27...	<0.010	<0.004	<0.022	<0.011	M	<0.004	<0.010	<0.011	<0.02	0.029	E.01	<0.034	<0.02
MAY													
07...	<0.010	<0.004	<0.022	<0.011	E.01	<0.004	<0.010	<0.011	<0.02	0.110	<0.02	<0.034	<0.02
07...	<0.010	<0.004	<0.022	<0.011	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02
JUN													
26...	<0.010	<0.004	<0.022	<0.011	E.01	<0.004	<0.010	<0.011	<0.02	E.034	E.01	<0.034	<0.02
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
10...	<0.010	<0.004	<0.022	<0.011	E.01	<0.004	<0.010	<0.011	<0.02	0.011	E.01	<0.034	<0.02

03438500 CUMBERLAND RIVER AT SMITHLAND, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Thio- bencarb water fltrd 0.7u GF ug/L (82681)	Tri- allate, water, fltrd 0.7u GF ug/L (82678)	Tri- flur- alin, water, fltrd 0.7u GF ug/L (82661)	Uranium natural water, fltrd, ug/L (22703)	Suspnd. sedi- ment, sieve diametr percent <.063mm (70331)	Sus- pended sedi- ment concen- tration mg/L (80154)
DEC						
11...	<0.005	<0.002	<0.009	0.25	52	20
11...	--	--	--	--	--	--
FEB						
26...	<0.005	<0.002	<0.009	0.23	99	82
26...	<0.005	<0.002	<0.009	0.25	99	91
MAR						
27...	<0.005	<0.002	<0.009	--	99	15
MAY						
07...	<0.005	<0.002	<0.009	0.22	90	41
07...	<0.005	<0.002	<0.009	--	--	--
JUN						
26...	<0.005	<0.002	<0.009	0.18	89	24
26...	--	--	--	0.18	--	--
SEP						
10...	<0.005	<0.002	<0.009	--	97	25

Other QA--Grab sample at center vertical (surface only).
E--Laboratory estimated value.
M--Presence of material verified but not quantified.
<--Numeric result is less than the value shown.

03609750 TENNESSEE RIVER AT HIGHWAY 60 NEAR PADUCAH, KY

(National stream-quality accounting network)

LOCATION.--Lat 37°02'16", long 88°31'46", McCracken County, Hydrologic Unit 06040006, at auxiliary gaging station at bridge on U.S. Highway 60, 16.3 mi downstream from gaging station, 2.4 mi east of Paducah, and at mile 5.3.

DRAINAGE AREA.--40,330 mi^2; 40,200 mi^2 at gaging station.

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1950, 1952, 1967-72, 1974-86, 1997 to current water year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE.--November 1973 to September 1981.
WATER TEMPERATURES.--November 1973 to September 1981.

REMARKS.--Records of daily discharge are published for gaging station near Paducah (station 03609500) 16.3 mi upstream. Flow is completely regulated. Barkley-Kentucky Canal (station 03438190) diverts water from or to Lake Barkley in the Cumberland River Basin.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Sample type	Instantaneous discharge, cfs (00061)	Turbidity, wat unf lab, Hach 2100AN NTU (99872)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
NOV												
07...	1140	Environmental	34,200	3.9	0.060	0.044	9.3	90	7.6	177	14.0	64
FEB												
13...	1210	Environmental	65,500	9.0	0.049	0.037	14.4	113	8.3	196	5.0	75
13...	1218	Field Blank	--	--	--	--	--	--	--	--	--	--
MAR												
13...	1240	Environmental	96,800	--	--	--	14.3	125	7.7	135	9.5	57
13...	1248	Field Blank	--	--	--	--	--	--	--	--	--	--
APR												
24...	1250	Environmental	27,000	4.6	0.058	0.045	9.5	101	7.8	162	18.0	64
24...	1300	Replicate	--	6.6	0.055	0.041	--	--	--	--	--	64
MAY												
21...	1155	Environmental	67,200	12	0.076	0.057	10.8	--	6.9	142	--	57
JUL												
17...	1300	Environmental	62,100	14	0.056	0.041	6.9	90	7.6	142	29.0	51
17...	1310	Other QA	--	3.9	--	--	--	--	--	--	--	50

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnesium, water, fltrd, mg/L (00925)	Potassium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	Alkalinity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicarbonate, wat flt incrm. titr., field, mg/L (00453)	Chloride, water, fltrd, mg/L (00940)	Fluoride, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 180degC wat flt mg/L (70300)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia + org-N, water, unfltrd mg/L as N (00625)
NOV													
07...	18.2	4.47	1.97	8.63	55	68	8.43	<0.2	6.24	13.8	98	0.22	0.25
FEB													
13...	23.5	4.04	1.49	7.18	67	82	9.17	0.07	3.45	14.2	110	0.14	0.32
13...	0.02	<0.008	<0.01	<0.09	--	--	0.04	<0.01	<0.13	<0.01	--	--	--
MAR													
13...	18.0	2.92	1.42	3.87	48	59	4.63	0.07	4.40	8.9	79	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
24...	20.1	3.37	1.48	5.66	55	67	6.28	<0.17	2.38	10.1	100	0.21	0.32
24...	20.3	3.35	1.47	5.49	55	--	6.27	<0.17	2.35	10.1	90	0.23	0.31
MAY													
21...	17.5	3.11	1.83	3.36	50	61	4.20	<0.2	3.20	8.6	88	0.21	0.30
JUL													
17...	14.8	3.34	1.71	5.43	45	55	6.57	<0.2	1.24	9.7	72	0.21	0.54
17...	14.6	3.33	1.72	5.33	--	--	6.18	<0.2	1.24	9.6	73	0.23	0.39

03609750 TENNESSEE RIVER AT HIGHWAY 60 NEAR PADUCAH, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Ortho-phos-phate, water, fltrd, mg/L as P (00671)	Partic-ulate nitro-gen, susp, water, mg/L (49570)	Phos-phorus, water, fltrd, mg/L (00666)	Phos-phorus, water, unfltrd mg/L (00665)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inor-ganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)	Pheo-phytin a, phyto-plank-ton, ug/L (62360)	Chloro-phyll a phyto-plank-ton, fluoro, ug/L (70953)
NOV													
07...	E.03	0.48	0.028	0.054	0.04	0.063	0.079	0.3	<0.1	0.3	2.7	2.2	1.6
FEB													
13...	<0.04	0.56	E.006	0.013	0.14	0.016	0.051	0.8	<0.1	0.8	1.7	5.2	11.9
13...	<0.015	<0.022	<0.002	<0.007	--	--	--	--	--	--	--	--	--
MAR													
13...	--	--	--	--	--	--	--	--	--	--	--	1.7	3.7
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
24...	E.03	0.35	E.006	0.011	0.08	0.020	0.035	0.4	<0.1	0.4	1.9	3.9	1.6
24...	E.03	0.35	E.006	0.011	0.10	0.021	0.038	0.4	<0.1	0.4	2.0	3.3	1.1
MAY													
21...	E.02	0.42	0.027	0.036	0.07	0.047	0.087	0.4	<0.1	0.4	2.9	2.5	1.2
JUL													
17...	E.04	0.10	E.007	0.019	0.13	0.028	0.059	0.7	<0.1	0.7	2.3	8.0	10.8
17...	E.03	0.10	0.008	0.018	--	0.026	0.050	--	--	--	--	4.7	6.9

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Alum-inum, water, fltrd, ug/L (01106)	Anti-mony, water, fltrd, ug/L (01095)	Arsenic water, fltrd, ug/L (01000)	Barium, water, fltrd, ug/L (01005)	Beryll-ium, water, fltrd, ug/L (01010)	Boron, water, fltrd, ug/L (01020)	Cadmium water, fltrd, ug/L (01025)	Chrom-ium, water, fltrd, ug/L (01030)	Cobalt water, fltrd, ug/L (01035)	Copper, water, fltrd, ug/L (01040)	Iron, water, fltrd, ug/L (01046)	Lead, water, fltrd, ug/L (01049)	Lithium water, fltrd, ug/L (01130)
NOV													
07...	3	E.22	0.9	22	<0.06	29	<0.04	<0.8	0.09	1.2	E6	<0.08	1.5
FEB													
13...	4	<0.30	0.5	20	<0.06	19	<0.04	<0.8	0.12	0.8	12	<0.08	1.2
13...	--	--	<0.3	--	--	<7	--	--	--	--	<10	--	<0.5
MAR													
13...	6	<0.30	0.3	18	<0.06	11	<0.04	<0.8	0.09	0.8	22	<0.08	0.7
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
24...	4	<0.30	0.5	20	<0.06	12	<0.04	<0.8	0.09	0.7	E8	<0.08	1.0
24...	4	<0.30	0.5	20	<0.06	12	<0.04	<0.8	0.09	0.7	E7	<0.08	0.9
MAY													
21...	--	--	0.6	--	--	19	--	--	--	--	<10	--	0.7
JUL													
17...	6	E.15	1.0	20	<0.06	19	<0.04	<0.8	0.07	0.8	E6	<0.08	0.6
17...	5	<0.30	1.0	20	<0.06	20	E.04	<0.8	0.08	0.8	E7	<0.08	0.7

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Mangan-ese, water, fltrd, ug/L (01056)	Molyb-denum, water, fltrd, ug/L (01060)	Nickel, water, fltrd, ug/L (01065)	Selen-ium, water, fltrd, ug/L (01145)	Silver, water, fltrd, ug/L (01075)	Stront-ium, water, fltrd, ug/L (01080)	Vanad-ium, water, fltrd, ug/L (01085)	Zinc, water, fltrd, ug/L (01090)	2,6-Di-ethyl-aniline water fltrd 0.7u GF ug/L (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)
NOV													
07...	1.3	1.6	0.84	<0.5	<0.20	67.4	1.0	2	<0.006	E.008	<0.006	<0.004	<0.005
FEB													
13...	4.5	0.7	1.25	<0.5	<0.20	67.5	1.2	M	<0.006	E.008	<0.006	<0.004	<0.005
13...	--	--	--	<0.5	--	<0.20	E.1	--	--	--	--	--	--
MAR													
13...	6.4	0.4	0.79	<0.5	<0.20	53.9	0.4	8	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
24...	0.9	0.5	1.03	<0.5	<0.20	59.3	0.8	M	<0.006	E.010	<0.006	<0.004	<0.005
24...	0.8	0.5	1.06	<0.5	<0.20	59.5	0.8	M	<0.006	E.011	<0.006	<0.004	<0.005
MAY													
21...	--	--	--	<0.5	--	53.7	0.7	--	<0.006	E.021	0.006	0.005	<0.005
JUL													
17...	0.4	1.0	0.67	<0.5	<0.20	55.0	0.9	M	<0.006	E.014	<0.006	<0.004	<0.005
17...	0.3	1.0	0.69	<0.5	<0.20	54.6	0.9	<1	--	--	--	--	--

03609750 TENNESSEE RIVER AT HIGHWAY 60 NEAR PADUCAH, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Atra-zine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF ug/L (82686)	Ben-flur-alin, water, fltrd 0.7u GF ug/L (82673)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd 0.7u GF ug/L (82680)	Carbo-furan, water, fltrd 0.7u GF ug/L (82674)	Chlor-pyrifos water, fltrd, ug/L (38933)	cis-Per-methrin water fltrd 0.7u GF ug/L (82687)	Cyana-zine, water, fltrd, ug/L (04041)	DCPA, water fltrd 0.7u GF ug/L (82682)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	Disul-foton, water, fltrd 0.7u GF ug/L (82677)
NOV													
07...	0.023	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.005	<0.005	<0.02
FEB													
13...	0.018	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.005	<0.005	<0.02
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
24...	0.095	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.005	<0.005	<0.02
24...	0.099	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.005	<0.005	<0.02
MAY													
21...	0.488	<0.050	<0.010	<0.002	E.004	<0.020	<0.005	<0.006	<0.018	<0.003	0.007	<0.005	<0.02
JUL													
17...	0.146	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.005	<0.005	<0.02
17...	--	--	--	--	--	--	--	--	--	--	--	--	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	EPTC, water, fltrd 0.7u GF ug/L (82668)	Ethal-flur-alin, water, fltrd 0.7u GF ug/L (82663)	Etho-prop, water, fltrd 0.7u GF ug/L (82672)	Fonofos water, fltrd, ug/L (04095)	Lindane water, fltrd, ug/L (39341)	Linuron water fltrd 0.7u GF ug/L (82666)	Mala-thion, water, fltrd, ug/L (39532)	Methyl para-thion, water, fltrd 0.7u GF ug/L (82667)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Moli-nate, water, fltrd 0.7u GF ug/L (82671)	Naprop-amide, water, fltrd 0.7u GF ug/L (82684)	p,p'-DDE, water, fltrd, ug/L (34653)
NOV													
07...	<0.002	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	E.005	<0.006	<0.002	<0.007	<0.003
FEB													
13...	<0.002	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	<0.013	<0.006	<0.002	<0.007	<0.003
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
24...	<0.002	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	E.008	<0.006	<0.002	<0.007	<0.003
24...	<0.002	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	E.008	<0.006	<0.002	<0.007	<0.003
MAY													
21...	<0.002	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	0.045	<0.006	<0.002	<0.007	<0.003
JUL													
17...	<0.002	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	0.019	<0.006	<0.002	<0.007	<0.003
17...	--	--	--	--	--	--	--	--	--	--	--	--	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Para-thion, water, fltrd, ug/L (39542)	Peb-ulate, water, fltrd 0.7u GF ug/L (82669)	Pendi-meth-alin, water, fltrd 0.7u GF ug/L (82683)	Phorate water fltrd 0.7u GF ug/L (82664)	Prome-ton, water, fltrd, ug/L (04037)	Pron-amide, water, fltrd 0.7u GF ug/L (82676)	Propa-chlor, water, fltrd, ug/L (04024)	Pro-panil, water, fltrd 0.7u GF ug/L (82679)	Propar-gite, water, fltrd 0.7u GF ug/L (82685)	Sima-zine, water, fltrd, ug/L (04035)	Tebu-thiuron water fltrd 0.7u GF ug/L (82670)	Terba-cil, water, fltrd 0.7u GF ug/L (82665)	Terbu-fos, water, fltrd 0.7u GF ug/L (82675)
NOV													
07...	<0.010	<0.004	<0.022	<0.011	E.01	<0.004	<0.010	<0.011	<0.02	0.011	0.02	<0.034	<0.02
FEB													
13...	<0.010	<0.004	<0.022	<0.011	<0.01	<0.004	<0.010	<0.011	<0.02	0.021	<0.02	<0.034	<0.02
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
24...	<0.010	<0.004	<0.022	<0.011	E.01	<0.004	<0.010	<0.011	<0.02	0.030	E.02	<0.034	<0.02
24...	<0.010	<0.004	<0.022	<0.011	E.01	<0.004	<0.010	<0.011	<0.02	0.031	E.02	<0.034	<0.02
MAY													
21...	<0.010	<0.004	<0.022	<0.011	E.01	<0.004	<0.010	<0.011	<0.02	0.047	E.01	<0.034	<0.02
JUL													
17...	<0.010	<0.004	<0.022	<0.011	E.01	<0.004	<0.010	<0.011	<0.02	0.022	E.01	<0.034	<0.02
17...	--	--	--	--	--	--	--	--	--	--	--	--	--

03609750 TENNESSEE RIVER AT HIGHWAY 60 NEAR PADUCAH, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Thio-bencarb water fltrd 0.7u GF ug/L (82681)	Tri-allate, water, fltrd 0.7u GF ug/L (82678)	Tri-flur-alin, water, fltrd 0.7u GF ug/L (82661)	Uranium natural water, fltrd, ug/L (22703)	Suspnd. sedi-ment, sieve diametr percent <.063mm (70331)	Sus-pended sedi-ment concen-tration mg/L (80154)
NOV						
07...	<0.005	<0.002	<0.009	0.15	99	4
FEB						
13...	<0.005	<0.002	<0.009	0.18	99	6
13...	--	--	--	--	--	--
MAR						
13...	--	--	--	0.09	99	10
13...	--	--	--	--	--	--
APR						
24...	<0.005	<0.002	<0.009	0.14	99	5
24...	<0.005	<0.002	<0.009	0.15	100	5
MAY						
21...	<0.005	<0.002	<0.009	--	100	13
JUL						
17...	<0.005	<0.002	<0.009	0.06	97	10
17...	--	--	--	0.06	--	--

Other QA--Grab sample at center vertical (surface only).
E--Laboratory estimated value.
M--Presence of material verified but not quantified.
<--Numeric result is less than the value shown.

03610200 CLARKS RIVER AT ALMO, KY

LOCATION.--Lat 36°41'30", long 88°16'25", Calloway County, Hydrologic Unit 06040006, on left bank at downstream side of bridge on State Highway 464, 0.3 mi southeast of Almo, 5.1 mi upstream from Rockhouse Creek, and at mile 53.5.

DRAINAGE AREA.--134 mi^2.

PERIOD OF RECORD.--October 1982 to current year.

GAGE.--Water-stage recorder with telemetry and crest-stage gage. Datum of gage is 413.46 ft above NGVD of 1929.

REMARKS.--Records fair except those estimated record, which are poor.

COOPERATION.--Kentucky Natural Resources and Environmental Protection Cabinet.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 11	0500	6,040	14.66	Feb 22	unknown	4,790	14.02
Dec 20	unknown	*8,770	*15.69	May 5	2100	6,080	14.68
Jan 1	unknown	4,620	13.92	May 7	2030	5,680	14.49
Feb 15	0300	6,340	14.80	Jun 11	2000	5,400	14.35

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	74	44	34	2,350	43	280	53	43	33	27	66	44
2	63	42	34	467	41	164	47	42	32	26	200	192
3	56	42	35	434	39	109	44	42	35	24	246	485
4	73	42	64	162	65	91	43	43	32	22	52	47
5	115	524	488	111	45	80	76	5,020	30	20	68	29
6	58	353	136	85	42	77	206	1,040	28	19	36	28
7	54	105	89	68	47	67	720	4,080	28	19	30	23
8	47	74	97	62	41	63	160	1,520	26	18	35	20
9	45	61	81	59	38	59	94	250	24	17	20	19
10	2,740	59	74	54	42	54	111	140	30	23	18	17
11	3,230	56	120	49	74	52	84	108	2,900	18	17	16
12	281	57	94	46	246	51	61	84	1,390	16	16	15
13	141	50	512	44	106	49	52	64	217	16	15	14
14	103	48	535	44	2,780	47	48	56	107	15	14	14
15	89	56	154	42	4,480	45	45	52	79	15	13	13
16	75	54	101	42	1,810	43	43	48	65	14	13	12
17	64	50	82	41	583	42	170	863	56	14	31	12
18	56	47	71	39	258	42	75	254	793	15	100	12
19	54	46	5,220	37	822	213	49	118	1,190	20	24	11
20	60	45	4,590	37	663	133	55	95	122	15	17	11
21	48	44	373	39	698	69	466	74	70	13	14	11
22	43	41	189	37	e3,440	55	99	59	52	13	14	50
23	40	40	129	34	1,660	48	55	51	45	12	31	20
24	39	39	124	31	409	45	53	47	41	11	15	14
25	38	38	146	30	207	45	559	48	38	11	13	13
26	36	38	100	30	165	465	327	45	36	11	12	11
27	34	37	84	29	159	103	101	42	36	10	11	11
28	68	36	77	30	354	65	63	40	32	11	11	e10
29	60	35	72	45	---	228	52	38	29	17	11	e9.3
30	52	36	74	47	---	107	46	37	28	62	162	e9.6
31	47	---	1,410	40	---	60	---	35	---	580	397	---
TOTAL	7,983	2,239	15,389	4,665	19,357	3,051	4,057	14,478	7,624	1,124	1,722	1,192.9
MEAN	258	74.6	496	150	691	98.4	135	467	254	36.3	55.5	39.8
MAX	3,230	524	5,220	2,350	4,480	465	720	5,020	2,900	580	397	485
MIN	34	35	34	29	38	42	43	35	24	10	11	9.3
CFSM	1.92	0.56	3.70	1.12	5.16	0.73	1.01	3.49	1.90	0.27	0.41	0.30
IN.	2.22	0.62	4.27	1.30	5.37	0.85	1.13	4.02	2.12	0.31	0.48	0.33

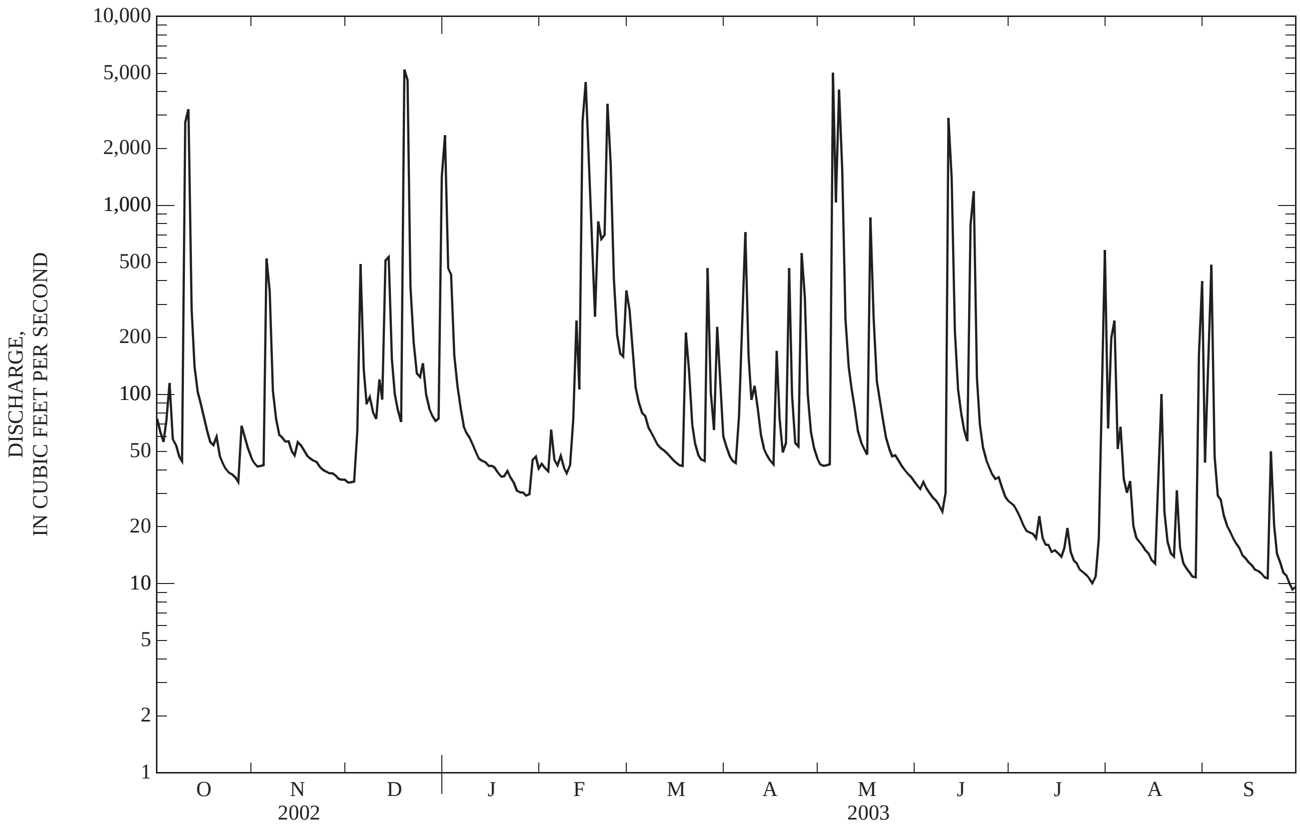
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	58.3	184	349	220	412	276	234	259	125	67.5	43.1	42.8
MAX	258	1,039	1,097	583	1,693	1,336	623	925	667	264	377	357
(WY)	(2003)	(2002)	(2002)	(1999)	(1989)	(1997)	(1983)	(1983)	(1998)	(1989)	(1995)	(2002)
MIN	2.96	7.43	24.4	27.1	65.5	61.7	21.6	12.4	3.88	4.95	2.40	2.36
(WY)	(1988)	(2000)	(1996)	(2001)	(1996)	(1995)	(1986)	(1988)	(1988)	(1986)	(1983)	(1983)

03610200 CLARKS RIVER AT ALMO, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1983 - 2003	
ANNUAL TOTAL	103,629.3		82,881.9			
ANNUAL MEAN	284		227		188	
HIGHEST ANNUAL MEAN					405	2002
LOWEST ANNUAL MEAN					69.8	1987
HIGHEST DAILY MEAN	6,350	May 18	5,220	Dec 19	14,000	Mar 2, 1997
LOWEST DAILY MEAN	4.5	Sep 2	9.3	Sep 29	1.6	Aug 29, 1983
ANNUAL SEVEN-DAY MINIMUM	5.3	Aug 31	11	Sep 24	1.7	Aug 31, 1983
MAXIMUM PEAK FLOW			8,770	Dec 20	23,300	Mar 2, 1997
MAXIMUM PEAK STAGE			15.69	Dec 20	18.35	Mar 2, 1997
ANNUAL RUNOFF (CFSM)	2.12		1.69		1.40	
ANNUAL RUNOFF (INCHES)	28.77		23.01		19.06	
10 PERCENT EXCEEDS	517		419		315	
50 PERCENT EXCEEDS	56		48		32	
90 PERCENT EXCEEDS	11		15		5.8	

e Estimated



03611260 MASSAC CREEK NEAR PADUCAH, KY

LOCATION.--Lat 37°02'29", long 88°42'39", McCracken County, Hyrologic Unit 05140206, on left upstream wingwall of bridge on U.S. Highway 62, 1.2 mi upstream from Middle Fork, 6.9 mi west of post office in Paducah, and at mile 8.3.

DRAINAGE AREA.--14.6 mi^2.

PERIOD OF RECORD.--October 1971 to current year.

REVISED RECORDS.--1983 (M), 1984 (M).

GAGE.--Water-stage recorder with telemetry. Datum of gage is 345.53 ft above NGVD of 1929.

REMARKS.--Records fair except for those estimated, which are poor.

COOPERATION.--Kentucky Natural Resources and Environmental Protection Cabinet.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 17	0900	*2,150	*12.08	Jun 11	1045	1,650	11.10

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e0.48	0.88	e0.80	279	8.9	13	2.6	16	1.2	6.7	1.2	0.59
2	e0.46	e0.86	e1.0	73	6.2	11	2.1	26	1.3	2.4	3.4	96
3	e0.42	e0.84	1.2	43	6.7	8.6	1.7	12	3.0	1.7	0.97	30
4	3.0	e0.82	2.4	26	14	8.1	1.7	66	1.2	1.2	0.66	7.0
5	1.4	27	4.0	20	4.9	7.2	6.6	30	0.76	193	0.60	2.2
6	1.3	10	e2.4	15	5.6	5.7	71	12	0.67	30	0.60	1.4
7	e0.90	e2.2	e2.0	12	7.2	3.9	147	123	0.71	8.5	0.59	1.1
8	e0.80	e1.5	e1.8	12	5.0	3.6	24	109	0.59	3.8	0.58	1.3
9	e0.70	e22	e2.0	11	4.3	2.6	16	37	0.50	2.5	0.56	0.90
10	81	142	e10	7.6	6.2	1.8	13	17	13	1.9	0.56	0.70
11	14	37	35	6.0	25	1.8	10	15	711	1.4	0.55	0.67
12	2.5	6.5	9.7	e4.5	16	1.7	8.0	8.8	90	1.0	0.51	0.68
13	1.1	2.7	173	e4.0	10	2.6	5.8	6.3	27	0.91	0.52	0.97
14	0.77	1.3	59	e3.5	360	1.9	4.5	5.1	24	0.69	0.51	1.3
15	e0.66	6.8	17	2.4	259	2.5	3.6	4.5	13	0.60	0.50	0.70
16	e0.60	2.8	9.8	3.2	141	2.3	3.5	4.3	15	0.57	0.53	0.63
17	e0.50	e1.2	7.0	e2.1	40	2.1	26	654	6.6	0.53	2.2	0.64
18	e0.50	e0.80	4.4	e1.8	32	1.7	6.8	89	6.5	11	2.9	0.67
19	3.1	e0.78	527	e1.7	216	133	4.5	48	5.4	3.6	0.47	0.70
20	7.0	e0.72	82	e1.8	62	27	3.8	27	3.2	0.89	0.45	0.65
21	1.2	e0.66	34	e4.0	61	24	2.8	20	2.1	0.60	0.43	1.4
22	0.80	e0.60	29	e1.7	e320	13	1.9	13	1.5	0.59	0.47	56
23	0.71	e0.58	21	e1.4	e90	9.3	1.6	8.8	1.2	0.53	0.56	3.7
24	e0.66	e0.56	40	e1.2	39	7.2	44	5.6	0.98	0.51	0.55	1.4
25	e0.64	e0.54	30	e1.1	22	5.8	218	62	0.67	0.50	0.43	0.92
26	e0.62	e0.52	19	e1.0	17	5.6	72	20	1.2	0.47	0.44	0.76
27	e0.60	e0.50	16	e0.96	18	4.0	19	9.2	0.87	0.48	0.45	3.2
28	2.1	e0.50	14	e1.1	18	4.4	11	4.9	0.55	1.6	0.88	0.97
29	7.5	e0.52	12	e12	---	11	11	3.6	0.45	6.8	0.46	0.77
30	3.0	e0.70	e20	6.5	---	4.4	41	2.5	26	0.71	4.6	0.80
31	1.1	---	e400	5.8	---	3.1	---	2.0	---	7.3	0.66	---
TOTAL	140.12	274.38	1,586.50	566.36	1,815.0	333.9	784.5	1,461.6	960.15	292.98	28.79	218.72
MEAN	4.52	9.15	51.2	18.3	64.8	10.8	26.1	47.1	32.0	9.45	0.93	7.29
MAX	81	142	527	279	360	133	218	654	711	193	4.6	96
MIN	0.42	0.50	0.80	0.96	4.3	1.7	1.6	2.0	0.45	0.47	0.43	0.59
CFSM	0.31	0.63	3.51	1.25	4.44	0.74	1.79	3.23	2.19	0.65	0.06	0.50
IN.	0.36	0.70	4.04	1.44	4.62	0.85	2.00	3.72	2.45	0.75	0.07	0.56

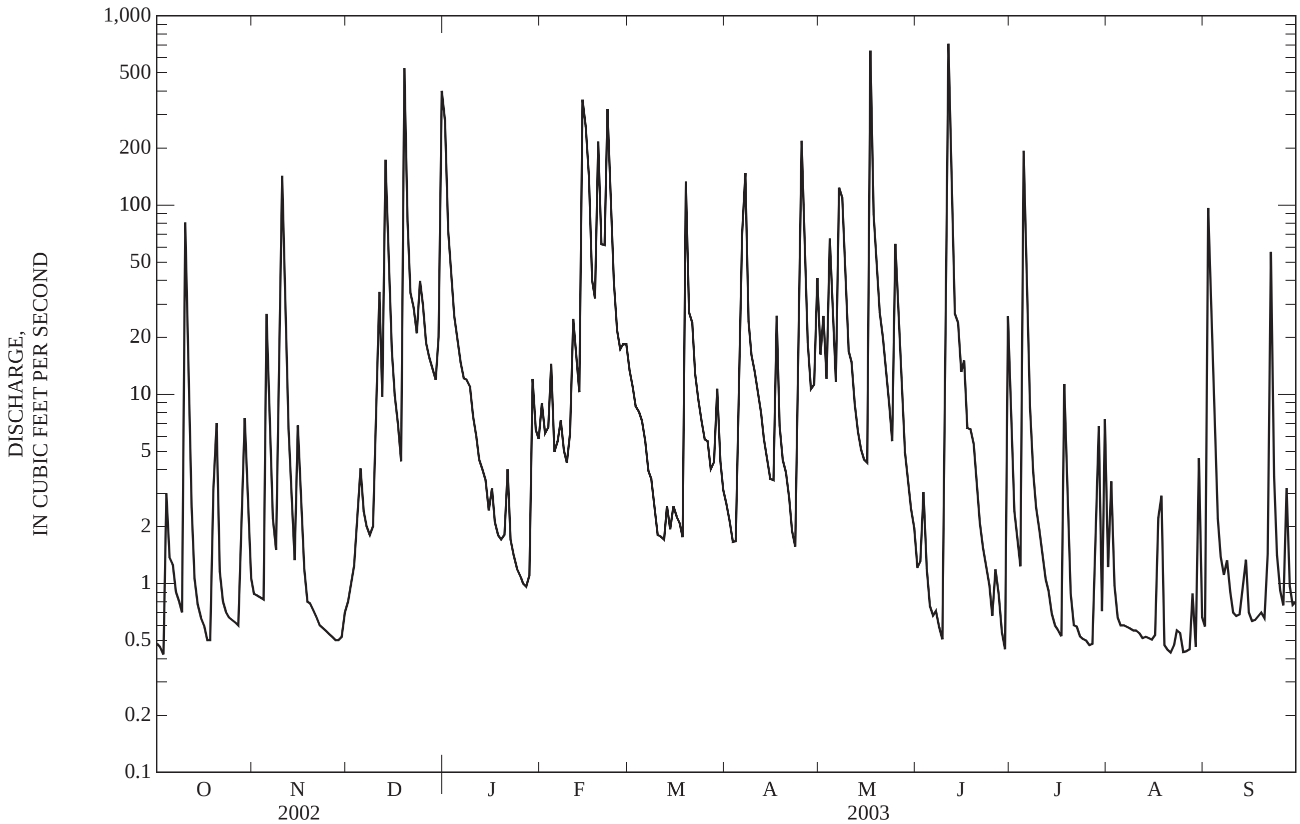
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1972 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	3.55	15.0	28.8	23.3	36.1	30.9	30.3	20.6	10.0	8.29	2.84	4.24
MAX	19.4	70.8	105	65.8	160	109	121	102	53.8	37.3	13.9	50.1
(WY)	(1986)	(1997)	(1983)	(2000)	(1989)	(1997)	(1973)	(2002)	(1998)	(1983)	(1982)	(1985)
MIN	0.25	0.37	0.71	0.58	4.19	8.37	2.14	1.17	0.32	0.37	0.30	0.23
(WY)	(1982)	(1972)	(1977)	(1977)	(1996)	(1987)	(1986)	(1992)	(1972)	(1974)	(1980)	(1976)

03611260 MASSAC CREEK NEAR PADUCAH, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1972 - 2003	
ANNUAL TOTAL	10,709.90		8,463.00			
ANNUAL MEAN	29.3		23.2		17.7	
HIGHEST ANNUAL MEAN					37.9	1979
LOWEST ANNUAL MEAN					6.54	1987
HIGHEST DAILY MEAN	1,300	May 17	711	Jun 11	1,910	Jan 3, 2000
LOWEST DAILY MEAN	0.28	Sep 1	0.42	Oct 3	0.09	Nov 13, 1971
ANNUAL SEVEN-DAY MINIMUM	0.32	Aug 29	0.48	Aug 20	0.10	Nov 10, 1971
MAXIMUM PEAK FLOW			2,150	May 17	5,990	Sep 5, 1985
MAXIMUM PEAK STAGE			12.08	May 17	15.86	Sep 5, 1985
INSTANTANEOUS LOW FLOW					0.06	Nov 14, 1971
ANNUAL RUNOFF (CFSM)	2.01		1.59		1.21	
ANNUAL RUNOFF (INCHES)	27.29		21.56		16.50	
10 PERCENT EXCEEDS	53		42		28	
50 PERCENT EXCEEDS	3.0		3.1		2.3	
90 PERCENT EXCEEDS	0.44		0.56		0.45	

e Estimated



03611500 OHIO RIVER AT METROPOLIS, IL

LOCATION.--Lat 37°08'51", long 88°44'27", Massac County IL., Hydrologic Unit 05140206, near center of span on downstream side of pier of Paducah & Illinois Railroad bridge at Metropolis, 9.5 mi downstream from Tennessee River, 37 mi upstream from mouth, and at mile 944.1.

DRAINAGE AREA.--203,000 mi^2, approximately.

PERIOD OF RECORD.--January 1928 to current year. Prior to April 1928 monthly discharge only, published in WSP 1305. Gage-height records collected 9.6 mi upstream at Paducah since 1890 are contained in reports of National Weather Service. Occasional discharge measurements 1881 to 1924 in reports of Mississippi River Commission.

GAGE.--Water-stage recorder with telemetry. Datum of gage is 276.27 ft above NGVD of 1929. Prior to Dec. 22, 1936, water-stage recorders (temporary installations) at Paducah, Ky., Metropolis and Joppa, Il., and Dam 52. Auxiliary water-stage recorder near Grand Chain, 0.5 mi upstream from Dam 53, and 18 mi downstream from base gage. Prior to May 29, 1936, auxiliary nonrecording gage at Dam 53.

REMARKS.--Records fair except discharges below 100,000 ft^3/s and for periods of estimated record, which are poor. Flow regulated by many dams and reservoirs. Maximum daily discharge includes overflow through Bay Creek and Cache River Valleys.

COOPERATION.--Kentucky Natural Resources and Environmental Protection Cabinet and U.S. Army Corps of Engineers, Louisville District and National Stream Quality Accounting Network.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	217,000	206,000	161,000	485,000	143,000	986,000	286,000	228,000	e180,000	180,000	238,000	195,000
2	206,000	229,000	164,000	499,000	153,000	985,000	270,000	232,000	e150,000	190,000	267,000	e280,000
3	179,000	235,000	198,000	486,000	162,000	978,000	237,000	249,000	209,000	192,000	278,000	294,000
4	175,000	228,000	204,000	508,000	193,000	944,000	223,000	235,000	230,000	183,000	263,000	337,000
5	126,000	190,000	194,000	517,000	232,000	920,000	216,000	242,000	247,000	192,000	286,000	485,000
6	110,000	166,000	191,000	517,000	268,000	882,000	218,000	326,000	274,000	193,000	293,000	511,000
7	82,700	189,000	179,000	519,000	296,000	827,000	231,000	556,000	295,000	201,000	304,000	519,000
8	89,000	234,000	173,000	526,000	316,000	751,000	239,000	727,000	329,000	218,000	329,000	498,000
9	86,400	280,000	204,000	516,000	332,000	699,000	267,000	805,000	387,000	231,000	331,000	498,000
10	105,000	309,000	208,000	473,000	325,000	630,000	323,000	799,000	399,000	224,000	302,000	487,000
11	125,000	336,000	223,000	407,000	307,000	578,000	412,000	828,000	453,000	268,000	268,000	442,000
12	136,000	354,000	263,000	312,000	279,000	561,000	463,000	875,000	501,000	319,000	278,000	293,000
13	237,000	428,000	306,000	268,000	245,000	553,000	491,000	895,000	514,000	387,000	292,000	169,000
14	244,000	443,000	340,000	280,000	245,000	538,000	518,000	902,000	513,000	433,000	279,000	208,000
15	230,000	422,000	377,000	284,000	e353,000	515,000	554,000	856,000	496,000	411,000	273,000	194,000
16	192,000	384,000	428,000	239,000	e560,000	502,000	568,000	851,000	473,000	393,000	248,000	154,000
17	150,000	372,000	515,000	198,000	e668,000	477,000	569,000	869,000	453,000	356,000	232,000	169,000
18	129,000	345,000	537,000	183,000	758,000	440,000	536,000	873,000	450,000	286,000	229,000	165,000
19	183,000	290,000	587,000	162,000	812,000	437,000	497,000	871,000	472,000	227,000	217,000	160,000
20	204,000	275,000	625,000	173,000	853,000	444,000	443,000	857,000	506,000	203,000	222,000	161,000
21	165,000	278,000	641,000	168,000	881,000	453,000	351,000	850,000	530,000	227,000	234,000	154,000
22	114,000	294,000	659,000	167,000	918,000	424,000	305,000	838,000	548,000	272,000	215,000	205,000
23	115,000	291,000	647,000	177,000	949,000	430,000	310,000	818,000	553,000	250,000	166,000	e300,000
24	108,000	271,000	602,000	204,000	972,000	441,000	317,000	790,000	551,000	244,000	171,000	365,000
25	112,000	254,000	576,000	181,000	990,000	423,000	341,000	769,000	530,000	265,000	181,000	358,000
26	99,000	253,000	562,000	141,000	1,000,000	424,000	367,000	746,000	486,000	297,000	176,000	311,000
27	109,000	238,000	564,000	147,000	1,010,000	392,000	350,000	693,000	359,000	313,000	175,000	277,000
28	111,000	196,000	547,000	142,000	1,000,000	349,000	341,000	573,000	e250,000	336,000	167,000	279,000
29	113,000	181,000	505,000	121,000	---	303,000	292,000	463,000	e100,000	318,000	168,000	293,000
30	131,000	177,000	476,000	118,000	---	277,000	268,000	370,000	e140,000	275,000	139,000	288,000
31	175,000	---	471,000	136,000	---	284,000	---	e220,000	---	237,000	160,000	---
TOTAL	4,558,100	8,348,000	12,327,000	9,254,000	15,220,000	17,847,000	10,803,000	20,206,000	11,578,000	8,321,000	7,381,000	9,049,000
MEAN	147,000	278,300	397,600	298,500	543,600	575,700	360,100	651,800	385,900	268,400	238,100	301,600
MAX	244,000	443,000	659,000	526,000	1,010,000	986,000	569,000	902,000	553,000	433,000	331,000	519,000
MIN	82,700	166,000	161,000	118,000	143,000	277,000	216,000	220,000	100,000	180,000	139,000	154,000

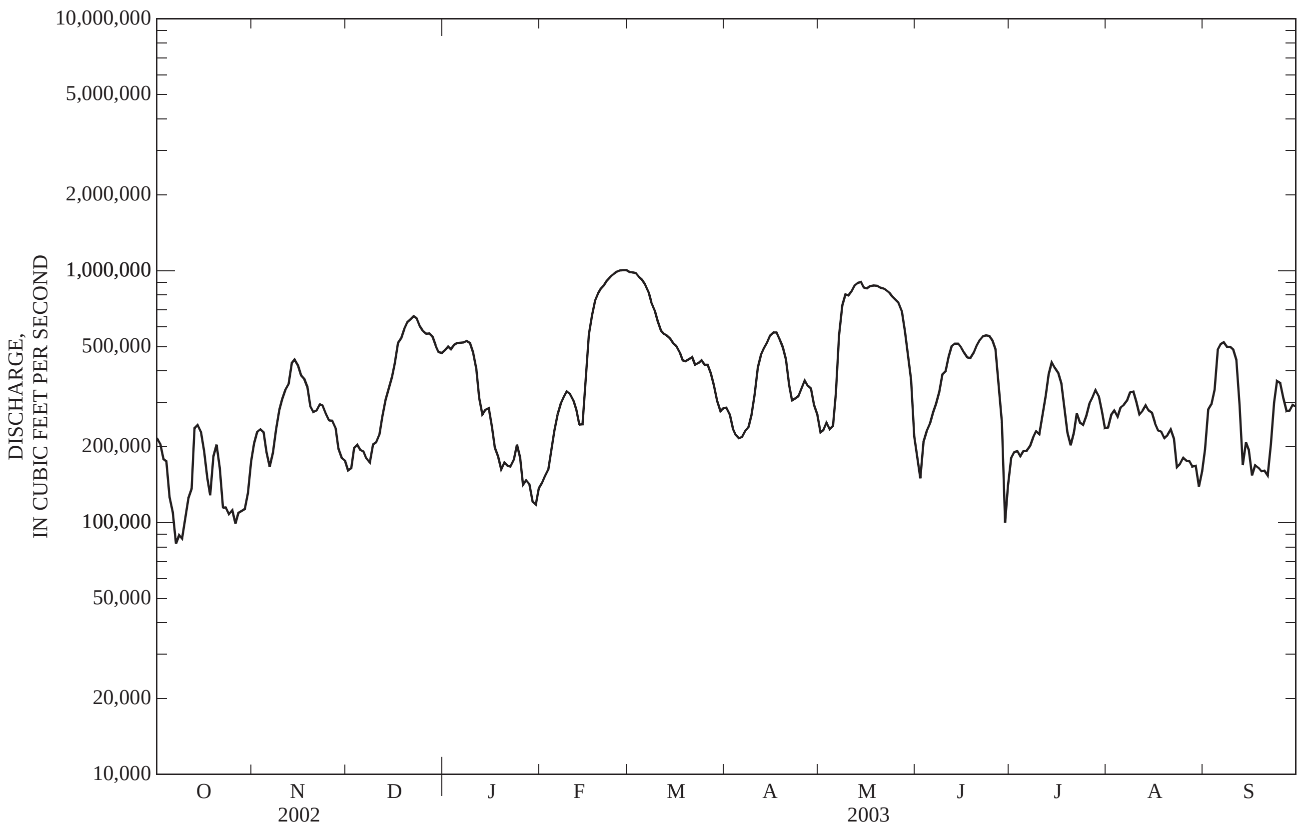
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	104,400	164,700	291,100	392,200	468,500	522,600	454,200	344,100	221,700	154,700	123,300	102,000
MAX	335,600	450,300	717,500	1,022,000	1,217,000	1,039,000	896,400	917,800	596,400	441,200	331,100	383,500
(WY)	(1980)	(1986)	(1973)	(1937)	(1937)	(1997)	(1994)	(1983)	(1997)	(1928)	(1958)	(1979)
MIN	22,710	33,400	48,610	71,650	77,380	154,700	129,900	75,180	53,840	23,350	25,390	29,330
(WY)	(1931)	(1931)	(1931)	(1940)	(1934)	(1941)	(1986)	(1941)	(1936)	(1930)	(1930)	(1930)

03611500 OHIO RIVER AT METROPOLIS, IL—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1928 - 2003	
ANNUAL TOTAL	110,021,700		134,892,100			
ANNUAL MEAN	301,400		369,600		277,000	
HIGHEST ANNUAL MEAN					436,600	1979
LOWEST ANNUAL MEAN					120,300	1931
HIGHEST DAILY MEAN	940,000	Mar 26	1,010,000	Feb 27	1,850,000	Feb 1, 1937
LOWEST DAILY MEAN	30,500	Sep 15	82,700	Oct 7	15,000	Jul 20, 1930
ANNUAL SEVEN-DAY MINIMUM	38,500	Sep 10	103,000	Oct 5	16,600	Jul 20, 1930
MAXIMUM PEAK FLOW			1,010,000	Feb 26	1,850,000	Feb 1, 1937
MAXIMUM PEAK STAGE			52.01	May 14	66.60	Feb 2, 1937
10 PERCENT EXCEEDS	719,000		748,000		638,000	
50 PERCENT EXCEEDS	197,000		293,000		190,000	
90 PERCENT EXCEEDS	67,300		161,000		68,600	

e Estimated



03611800 BAYOU CREEK NEAR HEATH, KY

LOCATION.--Lat 37°05'58", long 88°49'27", McCracken County, Hydrologic Unit 05140206, on left downstream wingwall of bridge on Dyke Road, 1.0 mi southwest of Paducah Gaseous Diffusion Plant, 2.0 mi northwest of Heath, 3.0 mi upstream from Brushy Creek, and at mile 7.3.

DRAINAGE AREA.--6.55 mi^2.

PERIOD OF RECORD.--October 1990 to November 1991, June 1993 to current year.

GAGE.--Water-stage recorder with telemetry. Datum of gage is 366.06 ft above NGVD of 1929 (levels by U.S. Department of Energy).

REMARKS.--Records fair except those estimated, which are poor.

COOPERATION.--Kentucky Cabinet for Health Services.

EXTREMES FOR CURRENT YEAR.--No peak discharges greater than base discharge of 900 ft^3/s and maximum (*):

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 900 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)

No peak greater than base discharge.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.05	0.61	0.23	101	2.4	4.2	2.1	16	0.91	0.33	0.31	1.5
2	0.08	0.78	0.25	29	1.6	2.9	1.8	11	0.94	0.32	0.40	19
3	0.09	1.0	0.25	17	4.9	2.0	1.8	4.0	1.3	0.30	0.36	2.5
4	0.46	1.1	0.47	7.5	8.6	1.7	1.8	7.9	1.1	0.28	0.31	0.40
5	0.22	4.8	0.44	4.7	1.8	1.5	2.1	7.9	0.87	0.32	0.35	0.19
6	0.52	2.1	0.41	2.4	1.9	e1.1	36	2.8	0.79	0.32	0.36	0.17
7	0.30	1.3	0.44	1.7	2.2	e0.63	46	e11	0.74	0.30	1.0	0.20
8	0.29	1.0	0.69	1.6	1.9	0.68	4.4	6.5	0.69	0.26	0.69	0.21
9	0.55	30	1.2	1.3	1.8	0.55	2.7	3.8	0.60	0.26	0.32	0.21
10	17	12	3.4	0.81	4.5	0.44	2.0	2.2	1.1	0.29	0.33	0.19
11	0.64	1.9	12	0.57	16	0.71	1.6	47	178	0.27	0.38	0.20
12	0.03	0.17	2.5	0.55	e8.4	0.47	1.3	2.9	7.1	0.27	0.37	0.25
13	0.02	0.08	42	0.52	3.0	1.2	1.0	1.7	2.3	0.27	0.36	0.32
14	0.03	0.06	8.2	0.48	145	0.89	0.88	1.4	1.4	0.28	0.35	0.32
15	0.03	0.21	1.0	0.41	91	0.79	0.91	1.4	0.87	0.28	0.38	0.33
16	0.03	0.16	0.24	0.46	51	0.67	1.4	1.2	0.57	0.27	0.41	0.34
17	0.03	0.12	0.08	0.54	16	0.58	21	95	0.40	0.30	0.43	0.35
18	0.04	0.09	39	0.52	43	0.74	2.8	5.9	0.35	0.42	0.42	0.37
19	0.23	0.10	185	0.50	97	48	1.9	6.3	0.52	0.38	0.41	0.37
20	0.37	0.10	22	0.59	25	10	1.6	4.8	0.64	0.36	0.43	0.38
21	0.25	0.10	5.9	0.97	22	11	1.4	2.8	0.26	0.38	0.42	0.46
22	0.18	0.10	3.9	0.71	176	4.6	1.2	1.8	0.22	0.40	0.42	0.35
23	0.22	0.10	1.9	0.73	36	3.2	1.0	1.4	0.21	0.39	0.45	0.17
24	0.24	0.09	23	0.73	21	2.5	4.2	1.2	0.21	0.40	0.48	0.18
25	0.29	0.08	12	0.70	11	2.2	84	51	0.20	0.42	0.50	0.18
26	0.32	0.16	2.9	0.68	10	3.0	20	4.9	0.69	0.44	0.46	0.21
27	0.41	0.15	1.8	0.71	7.2	2.1	3.8	2.2	0.32	0.44	0.54	0.55
28	0.70	0.19	1.6	0.64	6.2	2.8	2.3	1.7	0.26	0.71	0.52	0.15
29	2.6	0.24	1.3	0.63	---	6.0	17	1.4	0.22	0.46	0.48	0.15
30	1.2	0.23	15	0.69	---	3.1	68	1.2	0.28	3.5	0.84	0.18
31	0.77	---	147	1.4	---	2.4	---	1.1	---	1.1	e0.47	---
TOTAL	28.19	59.12	536.10	180.74	816.4	122.65	337.99	311.4	204.06	14.72	13.95	30.38
MEAN	0.91	1.97	17.3	5.83	29.2	3.96	11.3	10.0	6.80	0.47	0.45	1.01
MAX	17	30	185	101	176	48	84	95	178	3.5	1.0	19
MIN	0.02	0.06	0.08	0.41	1.6	0.44	0.88	1.1	0.20	0.26	0.31	0.15
CFSM	0.14	0.30	2.64	0.89	4.45	0.60	1.72	1.53	1.04	0.07	0.07	0.15
IN.	0.16	0.34	3.04	1.03	4.64	0.70	1.92	1.77	1.16	0.08	0.08	0.17

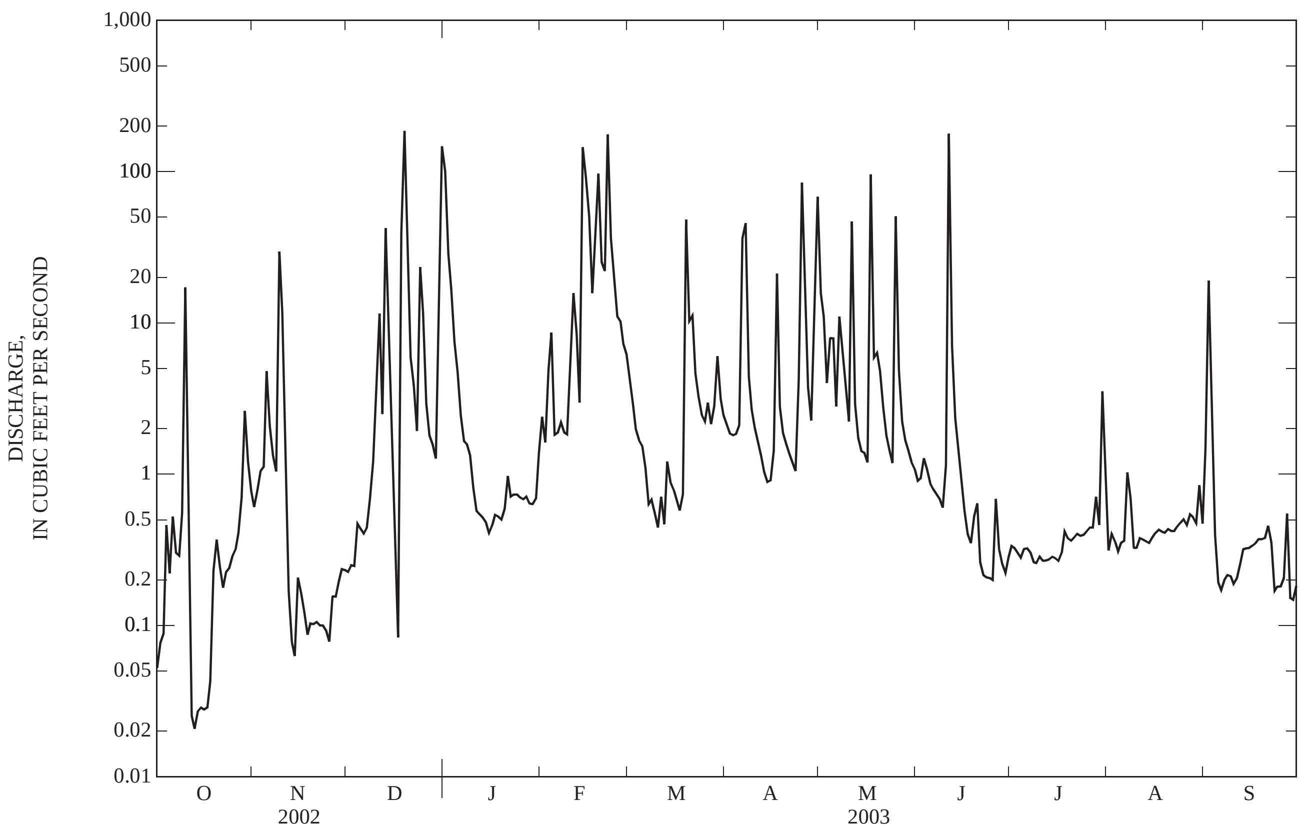
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1991 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1.83	5.43	11.7	10.1	12.1	10.6	8.81	9.58	4.33	2.62	1.43	0.91
MAX	9.97	22.8	37.2	24.4	29.2	34.9	16.6	31.2	16.6	7.59	8.31	2.73
(WY)	(2002)	(1997)	(1991)	(1999)	(2003)	(1997)	(1994)	(2002)	(1998)	(1998)	(1998)	(2002)
MIN	0.21	0.21	0.50	0.89	0.60	3.26	3.47	0.56	0.17	0.089	0.12	0.15
(WY)	(1998)	(2000)	(1998)	(2001)	(1996)	(1995)	(2001)	(1994)	(1994)	(1993)	(1993)	(1998)

03611800 BAYOU CREEK NEAR HEATH, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1991 - 2003	
ANNUAL TOTAL	3,463.16		2,655.70			
ANNUAL MEAN	9.49		7.28		6.67	
HIGHEST ANNUAL MEAN					13.2	2002
LOWEST ANNUAL MEAN					3.60	2001
HIGHEST DAILY MEAN	411	May 17	185	Dec 19	710	Mar 1, 1997
LOWEST DAILY MEAN	0.02	Oct 13	0.02	Oct 13	0.02	Oct 13, 2002
ANNUAL SEVEN-DAY MINIMUM	0.03	Oct 12	0.03	Oct 12	0.03	Oct 12, 2002
MAXIMUM PEAK FLOW			841	Jun 11	1,870	Mar 1, 1997
MAXIMUM PEAK STAGE			5.66	Jun 11	9.90	Mar 1, 1997
ANNUAL RUNOFF (CFSM)	1.45		1.11		1.02	
ANNUAL RUNOFF (INCHES)	19.67		15.08		13.83	
10 PERCENT EXCEEDS	12		16		6.9	
50 PERCENT EXCEEDS	0.58		0.71		0.49	
90 PERCENT EXCEEDS	0.09		0.19		0.15	

e Estimated



03611850 BAYOU CREEK NEAR GRAHAMVILLE, KY

LOCATION.--Lat 37°08'41", long 88°49'38", McCracken County, Hydrologic Unit 05140206, near right bank on downstream side of bridge on State Highway 358, 750 ft downstream of Brushy Creek, 1.4 mi north of Paducah Gaseous Diffusion Plant, 3.6 mi northwest of Grahamville, and at mile 4.1.

DRAINAGE AREA.--14.9 mi^2.

PERIOD OF RECORD.--October 1990 to November 1991, June 1993 to current year.

GAGE.--Water-stage recorder with telemetry. Datum of gage is 330 ft above NGVD of 1929 (from topographic map).

REMARKS.--Records fair except for those estimated, which are poor.

COOPERATION.--Kentucky Cabinet for Health Services.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 19	0145	*1,340	*10.77	May 11	0330	1,120	9.70
Apr 7	0030	1,160	9.88	May 17	0645	1,170	9.95
Apr 25	1430	1,050	9.31	Jun 11	0900	1,260	10.38

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.2	6.9	6.7	343	8.9	13	9.0	73	e8.0	e7.0	e25	e30
2	6.7	7.0	6.6	72	7.7	12	8.7	44	e8.0	e7.0	e30	186
3	6.6	7.3	6.0	37	17	11	8.4	16	e10	e8.0	e20	e50
4	11	7.0	7.5	18	23	10	8.3	118	e7.0	e8.0	e15	e18
5	6.8	17	8.3	14	8.2	10	8.3	51	e6.0	e7.0	e18	7.8
6	11	8.2	6.8	11	8.4	10	91	15	e6.0	e8.0	e20	7.6
7	7.0	7.2	6.6	9.9	8.4	10	234	294	e7.0	e8.0	e40	7.6
8	6.8	6.7	7.0	9.2	7.9	9.8	18	24	e6.0	e9.0	e30	8.1
9	8.2	102	6.8	8.7	7.4	9.8	12	e15	e6.0	e9.0	e15	8.0
10	115	68	10	8.2	11	9.8	10	e8.0	e6.0	e9.0	e12	7.7
11	11	18	28	7.8	29	9.6	9.8	271	486	e8.0	e30	7.5
12	8.4	8.1	11	7.7	18	9.2	9.4	e15	62	e8.0	e20	8.0
13	8.0	7.2	176	7.6	9.9	10	9.1	e10	e20	e8.0	e15	8.9
14	7.6	7.3	50	7.6	416	9.6	8.8	e8.0	e10	e9.0	e16	8.5
15	7.0	8.2	12	7.6	263	9.1	8.4	e8.0	e9.0	e9.0	e16	7.8
16	7.1	7.6	9.0	8.2	138	8.7	8.6	e7.0	e8.0	e8.0	e18	7.8
17	7.2	7.0	8.5	8.0	34	8.4	98	340	e6.0	e8.0	e16	8.3
18	7.2	7.7	99	8.1	103	8.3	9.8	31	e6.0	e10	e25	8.1
19	10	7.9	568	7.8	281	171	9.0	e20	e7.0	e9.0	e14	8.0
20	7.5	7.1	64	7.9	63	28	8.4	e20	e10	e9.0	e12	7.7
21	7.0	6.3	22	8.4	45	36	8.3	e18	e8.0	e8.0	e12	7.9
22	7.7	6.6	19	7.9	496	13	8.2	e16	e7.0	e8.0	e14	13
23	7.7	6.6	12	8.0	104	11	8.1	e16	e7.0	e8.0	e14	7.9
24	6.8	6.6	56	8.0	51	10	13	e14	e8.0	e7.0	e12	7.7
25	6.9	6.8	29	7.9	e20	10	380	179	e6.0	e8.0	e14	7.3
26	7.0	7.0	13	7.8	e16	11	114	28	e15	e8.0	e15	6.8
27	7.4	6.8	11	7.9	14	10	13	e15	e6.0	e9.0	e40	8.0
28	7.9	6.6	9.4	8.0	14	12	11	e12	e6.0	e12	e30	6.1
29	10	6.5	8.7	12	---	16	71	e10	e6.0	e10	e14	6.1
30	6.5	6.7	28	9.5	---	10	306	e8.0	e6.0	87	e42	6.2
31	6.7	---	480	8.7	---	9.4	---	e8.0	---	e30	e20	---
TOTAL	347.9	389.9	1,785.9	703.4	2,222.8	525.7	1,519.6	1,712.0	769.0	361.0	634	488.4
MEAN	11.2	13.0	57.6	22.7	79.4	17.0	50.7	55.2	25.6	11.6	20.5	16.3
MAX	115	102	568	343	496	171	380	340	486	87	42	186
MIN	6.2	6.3	6.0	7.6	7.4	8.3	8.1	7.0	6.0	7.0	12	6.1
CFSM	0.75	0.87	3.87	1.52	5.33	1.14	3.40	3.71	1.72	0.78	1.37	1.09
IN.	0.87	0.97	4.46	1.76	5.55	1.31	3.79	4.27	1.92	0.90	1.58	1.22

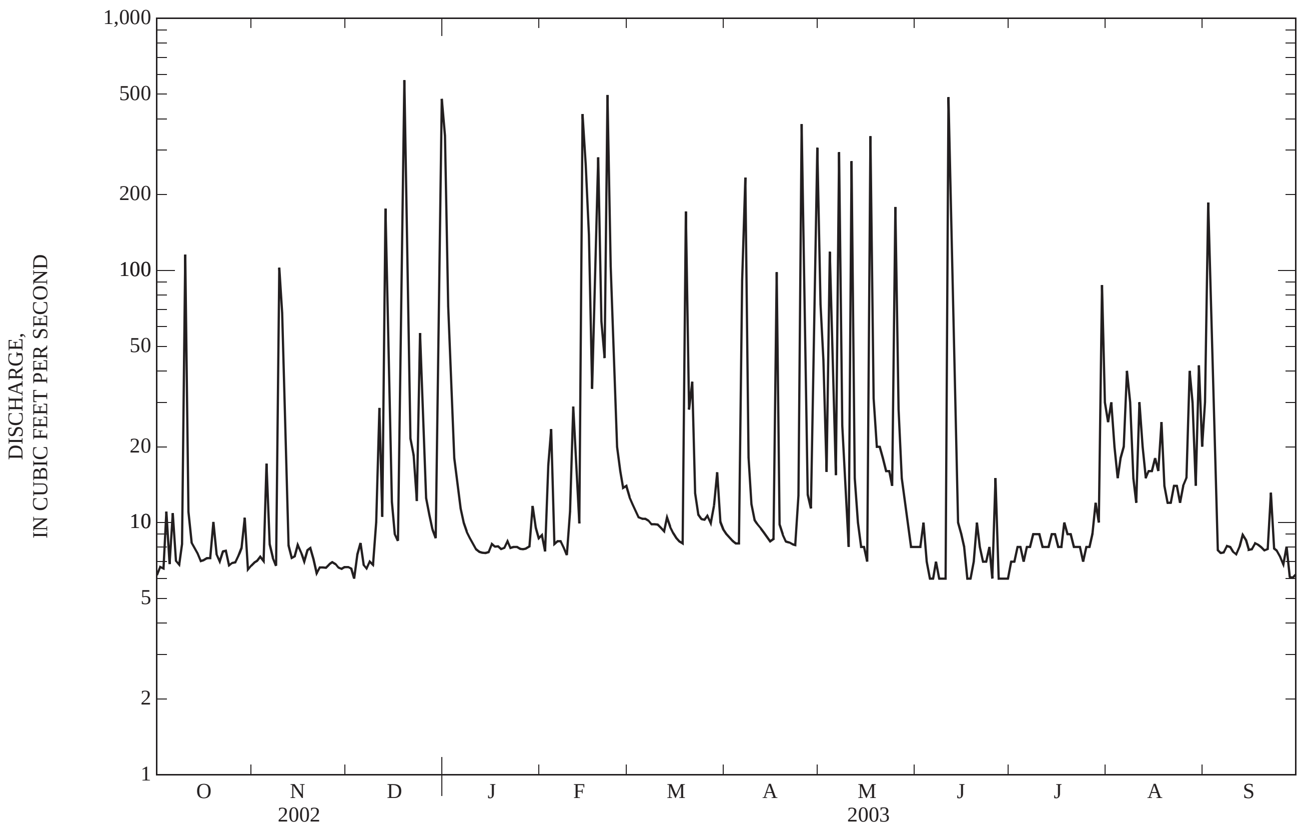
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1991 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	10.7	19.0	31.9	27.9	34.1	30.2	29.7	29.3	17.7	13.5	12.0	9.72
MAX	29.0	56.7	85.9	55.8	79.4	77.5	50.7	69.6	32.4	27.4	21.4	16.4
(WY)	(2002)	(1997)	(2002)	(1999)	(2003)	(1997)	(2003)	(2002)	(1998)	(2001)	(1998)	(2002)
MIN	4.87	4.32	6.66	7.02	6.13	15.0	12.4	8.86	7.56	6.37	6.51	5.11
(WY)	(2001)	(2000)	(1996)	(2001)	(1996)	(1995)	(2001)	(2001)	(1991)	(1994)	(1993)	(1997)

03611850 BAYOU CREEK NEAR GRAHAMVILLE, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1991 - 2003	
ANNUAL TOTAL	10,825.0		11,459.6			
ANNUAL MEAN	29.7		31.4		22.3	
HIGHEST ANNUAL MEAN					36.8	2002
LOWEST ANNUAL MEAN					14.7	2001
HIGHEST DAILY MEAN	693	May 17	568	Dec 19	923	Mar 1, 1997
LOWEST DAILY MEAN	5.0	Sep 8	6.0	Dec 3	1.9	Oct 9, 1996
ANNUAL SEVEN-DAY MINIMUM	5.2	Sep 3	6.3	Jun 4	2.7	Oct 2, 1997
MAXIMUM PEAK FLOW					1,750	Mar 1, 1997
MAXIMUM PEAK STAGE					12.60	Mar 1, 1997
ANNUAL RUNOFF (CFSM)	1.99		2.11		1.49	
ANNUAL RUNOFF (INCHES)	27.03		28.61		20.31	
10 PERCENT EXCEEDS	46		58		30	
50 PERCENT EXCEEDS	9.0		9.0		8.9	
90 PERCENT EXCEEDS	6.4		6.8		5.0	

e Estimated



03611900 LITTLE BAYOU CREEK NEAR GRAHAMVILLE, KY

LOCATION.--Lat 37°08'22", long 88°47'26", McCracken County, Hydrologic Unit 05140206, on left bank on reservation of Tennessee Valley Authority Shawnee Steam Plant, 30 ft upstream of bridge on unnamed county road, 1.1 mi southwest of Shawnee Steam Plant, 2.2 mi upstream from Bayou Creek, and 2.3 mi north of Grahamville.

DRAINAGE AREA.--5.78 mi^2.

PERIOD OF RECORD.--October 1990 to November 1991, June 1993 to current year.

GAGE.--Water-stage recorder with telemetry. Datum of gage is 324.80 ft above NGVD of 1929 (levels by U.S. Department of Energy).

REMARKS.--Records fair except for those estimated, which are poor. Some regulation from Paducah Gaseous Diffusion Plant, 0.4 mi upstream.

COOPERATION.--Kentucky Cabinet for Health Services.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 400 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 19	0200	405	6.27	May 17	0700	*524	*7.12

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.75	1.8	e0.90	90	1.7	e3.6	1.4	13	1.1	1.3	1.4	8.4
2	e0.70	1.9	0.94	16	1.3	e2.8	1.2	14	1.1	1.2	2.0	34
3	e0.75	2.2	1.4	9.0	2.4	2.1	1.1	5.0	1.7	1.1	1.3	9.6
4	e2.1	2.2	2.6	4.3	4.1	2.3	1.1	24	1.2	1.1	1.3	2.4
5	0.87	4.3	2.9	3.1	1.7	3.1	1.4	15	1.1	1.1	1.4	1.5
6	1.8	1.7	2.4	2.1	1.9	2.4	20	3.6	1.0	1.1	1.5	1.5
7	1.3	1.9	1.9	1.6	2.0	1.3	77	68	1.0	1.1	2.4	1.4
8	0.89	2.8	1.6	1.5	1.6	1.2	7.0	9.8	1.0	1.1	1.8	1.4
9	0.94	15	1.7	1.3	1.5	1.3	3.6	5.3	1.0	1.1	1.3	1.5
10	15	9.3	2.1	1.1	2.5	1.8	2.6	2.7	2.3	1.1	1.3	1.5
11	1.8	3.2	4.8	1.0	5.1	1.9	1.9	72	133	1.1	2.0	1.5
12	0.73	1.4	1.7	0.98	4.5	1.2	1.6	4.4	16	1.0	1.6	1.5
13	0.62	1.3	25	0.99	2.3	1.9	1.4	e2.8	3.4	1.00	1.3	1.7
14	0.63	e1.3	7.6	0.88	96	1.3	1.2	e2.2	1.9	1.0	1.3	1.7
15	e0.60	e1.7	1.7	0.99	67	1.2	1.1	e2.0	1.5	1.5	1.3	1.5
16	e0.60	e1.3	1.5	1.2	30	1.2	1.4	2.4	1.4	1.2	1.3	1.6
17	e0.62	e1.2	1.6	1.6	12	1.8	31	122	1.3	1.1	1.3	1.6
18	e0.60	e1.2	14	1.6	19	1.8	4.3	11	1.3	2.6	1.6	1.6
19	e1.6	e1.2	148	1.6	74	40	2.3	4.9	1.3	1.9	1.4	1.6
20	e1.4	e1.2	15	1.5	20	11	1.7	4.9	1.3	1.5	1.3	1.7
21	1.1	e1.1	3.1	1.5	12	14	1.5	4.1	1.1	1.5	1.4	1.8
22	1.1	e1.0	2.5	1.4	132	4.3	1.4	2.8	1.1	1.5	1.4	3.8
23	1.2	e1.0	1.4	1.4	31	2.5	1.4	1.5	1.1	1.5	1.5	1.6
24	1.1	e0.98	9.2	1.4	13	1.9	3.5	1.3	1.1	1.5	1.5	1.6
25	1.4	e0.92	7.0	1.4	8.1	1.6	66	37	1.1	1.5	1.5	1.5
26	1.4	e0.90	2.2	1.4	e7.0	2.5	35	8.0	3.1	1.5	1.5	0.64
27	1.4	e0.88	1.4	1.4	e6.0	1.7	4.7	3.2	1.4	1.5	4.1	1.7
28	2.1	e0.98	1.2	1.4	e5.2	2.0	2.3	2.1	1.1	2.4	3.4	0.63
29	3.3	e0.92	1.0	2.1	---	4.6	4.7	1.3	1.0	2.2	1.5	0.64
30	1.5	e0.90	4.8	2.0	---	2.2	58	1.2	1.4	26	6.6	0.68
31	1.5	---	109	2.0	---	1.6	---	1.2	---	4.5	1.6	---
TOTAL	51.40	67.68	382.14	159.74	564.9	124.1	342.8	452.7	188.4	70.80	56.1	93.79
MEAN	1.66	2.26	12.3	5.15	20.2	4.00	11.4	14.6	6.28	2.28	1.81	3.13
MAX	15	15	148	90	132	40	77	122	133	26	6.6	34
MIN	0.60	0.88	0.90	0.88	1.3	1.2	1.1	1.2	1.0	1.0	1.3	0.63
CFSM	0.29	0.39	2.13	0.89	3.49	0.69	1.98	2.53	1.09	0.40	0.31	0.54
IN.	0.33	0.44	2.46	1.03	3.64	0.80	2.21	2.91	1.21	0.46	0.36	0.60

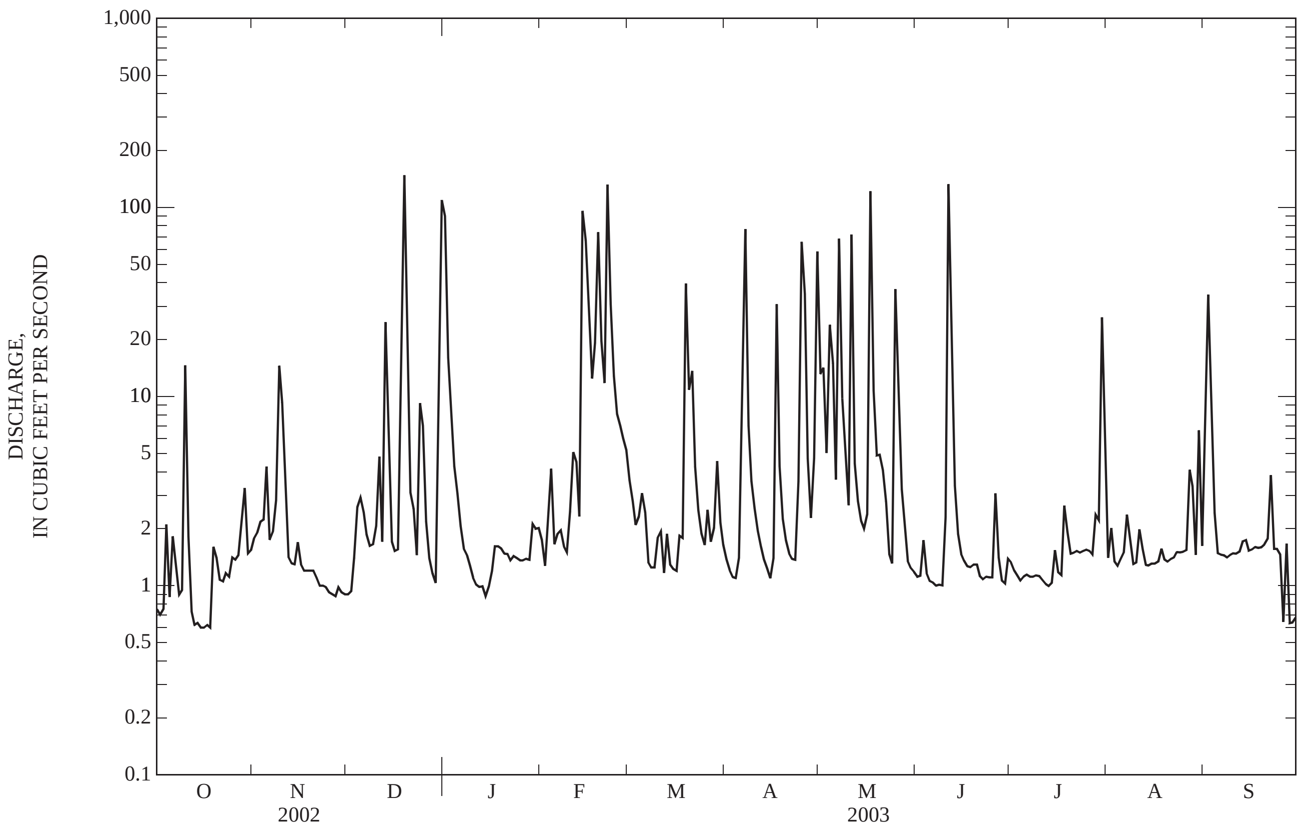
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1991 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	2.55	5.56	10.6	9.84	10.6	10.7	9.47	10.1	4.18	2.92	2.03	1.64
MAX	7.45	18.3	33.5	20.4	20.2	32.5	19.2	31.3	12.4	8.74	8.11	3.13
(WY)	(2002)	(1997)	(1991)	(1999)	(2003)	(1997)	(1994)	(2002)	(1998)	(2001)	(1998)	(2003)
MIN	1.16	0.71	1.26	1.17	1.02	3.79	2.25	1.48	0.91	0.82	0.72	0.78
(WY)	(2001)	(2000)	(1996)	(2001)	(1996)	(1995)	(2001)	(1994)	(2002)	(1991)	(1996)	(1998)

03611900 LITTLE BAYOU CREEK NEAR GRAHAMVILLE, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1991 - 2003	
ANNUAL TOTAL	3,385.60		2,554.55			
ANNUAL MEAN	9.28		7.00		6.73	
HIGHEST ANNUAL MEAN					12.4	2002
LOWEST ANNUAL MEAN					3.75	2001
HIGHEST DAILY MEAN	329	May 13	148	Dec 19	506	Mar 1, 1997
LOWEST DAILY MEAN	0.60	Oct 15	0.60	Oct 15	0.02	May 25, 1995
ANNUAL SEVEN-DAY MINIMUM	0.63	Oct 12	0.63	Oct 12	0.35	Aug 2, 2001
MAXIMUM PEAK FLOW					1,300	Mar 1, 1997
MAXIMUM PEAK STAGE					11.26	Mar 1, 1997
ANNUAL RUNOFF (CFSM)	1.60		1.21		1.16	
ANNUAL RUNOFF (INCHES)	21.79		16.44		15.82	
10 PERCENT EXCEEDS	14		13		9.4	
50 PERCENT EXCEEDS	1.4		1.6		1.3	
90 PERCENT EXCEEDS	0.71		1.0		0.70	

e Estimated



03612500 OHIO RIVER AT LOCK AND DAM 53, NEAR GRAND CHAIN, IL

(National stream-quality accounting network station)

WATER-QUALITY RECORDS

LOCATION.--Lat 37°12'11", long 89°02'30", Pulaski County, Hydrologic Unit 05140206, at auxilliary gaging station, 0.5 mi upstream from Gar Creek, 3.0 mi southwest of Grand Chain, IL, 18.1 mi downstream from gaging station at Metropolis, and at mile 962.2.

DRAINAGE AREA.--203,100 mi^2, approximately.

PERIOD OF RECORD.--Water years 1955 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE.--October 1954 to September 1970, January 1973 to September 1990.
WATER TEMPERATURES.--October 1954 to September 1970, January 1973 to September 1990.
REMARKS.--Records of daily discharge are published for gaging station at Metropolis, IL (station 03611500). Flow regulated by many dams and reservoirs.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE.--Maximum daily recorded, 693 microsiemens, Nov. 25, 1968; minimum daily recorded, 170 microsiemens, Feb. 9, 1957.
WATER TEMPERATURES.--Maximum daily recorded, 30.0°C, July 15, 1964, July 17-21, 25, 1977; minimum daily recorded, 0.0°C, on several days during most winter months.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Sample type	Instantaneous discharge, cfs (00061)	Turbidity, wat unf lab, Hach 2100AN NTU (99872)	UV absorbance, 254 nm, wat flt units /cm (50624)	UV absorbance, 280 nm, wat flt units /cm (61726)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Hardness, water, unfltrd mg/L as CaCO3 (00900)
NOV												
06...	1440	Environmental	173,000	12	0.074	0.055	9.5	91	7.8	330	13.5	120
06...	1448	Field Blank	--	--	<0.004	<0.004	--	--	--	--	--	--
DEC												
10...	1200	Environmental	209,000	11	0.063	0.047	7.8	63	8.0	179	6.5	120
FEB												
12...	1310	Environmental	277,000	37	0.051	0.039	14.5	108	8.1	361	3.5	140
12...	1320	Replicate	--	37	0.050	0.037	--	--	--	--	--	130
27...	1510	Environmental	1,000,000	140	0.077	0.059	13.3	103	7.7	248	4.5	87
MAR												
12...	1230	Environmental	538,000	--	--	--	13.2	108	7.7	309	6.5	120
12...	1238	Field Blank	--	--	--	--	--	--	--	--	--	--
26...	1220	Environmental	413,000	76	0.074	0.056	11.0	100	7.7	332	11.0	130
APR												
09...	1310	Environmental	243,000	47	0.068	0.051	9.5	90	7.9	334	12.5	140
09...	1320	Replicate	--	47	0.067	0.050	--	--	--	--	--	140
23...	1300	Environmental	313,000	67	0.067	0.050	9.8	100	7.8	281	16.0	120
23...	1308	Field Blank	--	--	0.001	0.001	--	--	--	--	--	--
MAY												
06...	1320	Environmental	260,000	42	0.089	0.066	9.0	98	7.7	278	19.0	110
20...	1120	Environmental	857,000	63	0.110	0.082	7.2	80	7.2	285	20.5	110
JUN												
05...	1400	Environmental	252,000	36	0.087	0.064	8.1	--	7.8	--	20.0	120
25...	1320	Environmental	507,000	E86	0.084	0.062	7.4	87	7.6	289	24.0	110
25...	1328	Field Blank	--	--	--	--	--	--	--	--	--	--
JUL												
16...	1350	Environmental	381,000	99	0.084	0.062	10.4	133	7.7	298	28.0	110
16...	1358	Field Blank	--	--	--	--	--	--	--	--	--	--
AUG												
13...	1330	Environmental	278,000	36	0.081	0.059	9.3	117	7.8	327	27.5	140
SEP												
09...	1500	Environmental	487,000	180	0.113	0.085	7.8	102	7.6	294	29.0	120
09...	1510	Other QA	--	120	0.111	0.082	--	--	--	--	--	110

03612500 OHIO RIVER AT LOCK AND DAM 53, NEAR GRAND CHAIN, IL—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Calcium water, fltrd, mg/L (00915)	Magnes-ium, water, fltrd, mg/L (00925)	Potas-sium, water, fltrd, mg/L (00935)	Sodium, water, fltrd, mg/L (00930)	Alka-linity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicar-bonate, wat flt incrm. titr., field, mg/L (00453)	Chlor-ide, water, fltrd, mg/L (00940)	Fluor-ide, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue on evap. at 180degC wat flt mg/L (70300)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia + org-N, water, unfltrd mg/L as N (00625)
NOV													
06...	33.0	8.57	2.76	17.2	79	96	19.7	<0.2	5.09	47.3	189	0.23	0.35
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
10...	34.2	7.71	2.04	12.3	83	101	12.8	<0.17	5.16	36.6	180	0.22	0.30
FEB													
12...	37.9	10.1	2.05	18.7	89	109	28.2	0.13	4.78	48.2	214	0.24	0.54
12...	36.6	9.64	2.09	17.7	88	107	26.1	0.13	4.62	46.2	206	0.30	0.53
27...	25.6	5.59	1.71	8.44	65	79	12.9	0.09	4.84	25.5	134	0.23	0.61
MAR													
12...	32.6	8.54	1.80	15.9	67	82	24.2	0.13	5.61	42.5	186	--	--
12...	0.08	<0.008	0.05	E.07	--	--	0.44	<0.01	<0.13	0.06	--	--	--
26...	36.1	9.35	2.15	15.8	75	91	23.8	0.12	5.37	43.7	202	0.24	0.62
APR													
09...	38.3	10.2	2.46	12.8	89	109	19.2	0.13	4.01	45.4	206	0.16	0.57
09...	37.5	10.1	2.04	12.7	--	--	19.2	0.13	3.95	47.9	203	0.16	0.53
23...	32.5	8.24	1.96	10.2	74	90	12.2	<0.17	4.23	37.3	168	0.20	0.62
23...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
06...	30.9	8.00	2.12	9.19	74	90	12.2	<0.17	3.93	35.0	165	0.22	0.50
20...	32.1	7.54	2.66	8.76	77	93	18.1	<0.2	4.76	28.6	166	0.31	0.61
JUN													
05...	32.8	8.91	2.08	9.66	91	111	13.0	<0.2	5.08	38.4	187	0.22	0.59
25...	31.0	7.86	2.42	9.79	76	93	12.7	<0.2	5.80	37.9	164	E.23	E.53
25...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
16...	30.8	8.88	2.64	11.1	78	95	14.3	<0.2	4.82	36.5	167	0.20	0.79
16...	0.05	E.004	<0.008	0.26	--	--	0.02	0.01	0.40	<0.01	--	--	--
AUG													
13...	38.4	10.6	2.90	14.9	79	96	17.9	<0.2	4.87	45.5	127	0.22	0.46
SEP													
09...	33.6	8.54	3.10	10.6	85	103	13.9	<0.2	6.44	33.8	180	0.19	1.0
09...	32.2	8.21	2.97	10.3	--	--	13.7	<0.2	6.22	33.6	175	0.23	0.78

03612500 OHIO RIVER AT LOCK AND DAM 53, NEAR GRAND CHAIN, IL—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Ortho-phos-phate, water, fltrd, mg/L as P (00671)	Partic-ulate nitro-gen, susp, water, mg/L (49570)	Phos-phorus, water, fltrd, mg/L (00666)	Phos-phorus, water, unfltrd mg/L (00665)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inor-ganic carbon, suspnd sedimnt total, mg/L (00688)	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)	Pheo-phytin a, phyto-plank-ton, ug/L (62360)	Chloro-phyll a phyto-plank-ton, fluoro, ug/L (70953)
NOV													
06...	<0.04	1.02	0.022	0.048	0.11	0.058	0.10	0.7	<0.1	0.7	2.8	5.3	4.6
06...	--	--	--	--	<0.02	--	--	<0.1	<0.1	<0.1	E.2	--	--
DEC													
10...	0.05	0.86	E.004	0.036	0.08	0.045	0.08	0.6	<0.1	0.6	2.2	4.4	8.2
FEB													
12...	0.09	1.35	0.011	0.025	0.26	0.029	0.12	2.1	<0.1	2.1	1.9	5.2	9.9
12...	0.09	1.33	0.011	0.023	0.24	0.029	0.12	2.0	<0.1	2.0	1.8	4.9	10.5
27...	0.06	0.97	E.004	0.029	--	0.035	0.25	--	--	--	2.7	--	--
MAR													
12...	--	--	--	--	--	--	--	--	--	--	--	4.1	4.4
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
26...	E.03	1.67	0.024	0.028	0.30	0.037	0.17	2.5	<0.1	2.5	2.6	4.6	6.6
APR													
09...	<0.04	1.51	0.021	0.023	0.24	0.033	0.14	2.1	<0.1	2.1	2.5	6.8	3.2
09...	<0.04	1.51	0.021	0.025	0.24	0.034	0.14	2.2	<0.1	2.2	2.5	6.6	3.1
23...	<0.04	0.93	0.014	0.016	0.33	0.025	0.15	3.6	<0.1	3.6	2.4	9.6	5.7
23...	--	--	--	--	<0.02	--	--	<0.1	<0.1	<0.1	E.2	--	--
MAY													
06...	E.02	0.84	0.011	0.019	0.30	0.027	0.10	1.5	<0.1	1.5	2.9	--	--
20...	<0.04	1.29	0.017	0.041	0.27	0.051	0.17	2.3	<0.1	2.3	3.4	6.3	3.3
JUN													
05...	<0.015	1.25	0.009	0.027	0.20	0.039	0.13	1.8	<0.1	1.7	4.3	9.5	6.7
25...	<0.04	E1.31	E.005	E.030	0.38	E.039	E.20	4.5	<0.1	4.4	2.7	6.5	5.9
25...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
16...	<0.04	1.35	<0.008	0.039	0.39	0.047	0.24	4.6	<0.1	4.6	2.9	10.3	8.4
16...	<0.015	<0.022	<0.002	<0.007	--	--	--	--	--	--	--	--	--
AUG													
13...	<0.04	0.83	E.006	0.038	0.17	0.049	0.12	1.3	<0.1	1.3	2.7	11.1	13.1
SEP													
09...	<0.04	0.88	<0.008	0.054	0.77	0.064	0.49	9.4	0.2	9.2	3.5	27.6	<0.6
09...	<0.04	0.86	<0.008	0.053	0.48	0.064	0.30	4.3	<0.1	4.2	3.4	--	--

03612500 OHIO RIVER AT LOCK AND DAM 53, NEAR GRAND CHAIN, IL—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Alum-inum, water, fltrd, ug/L (01106)	Anti-mony, water, fltrd, ug/L (01095)	Arsenic water, fltrd, ug/L (01000)	Barium, water, fltrd, ug/L (01005)	Beryll-ium, water, fltrd, ug/L (01010)	Boron, water, fltrd, ug/L (01020)	Cadmium water, fltrd, ug/L (01025)	Chrom-ium, water, fltrd, ug/L (01030)	Cobalt water, fltrd, ug/L (01035)	Copper, water, fltrd, ug/L (01040)	Iron, water, fltrd, ug/L (01046)	Lead, water, fltrd, ug/L (01049)	Lithium water, fltrd, ug/L (01130)
NOV													
06...	--	--	1.0	--	--	53	--	--	--	--	<10	--	3.8
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
10...	--	--	0.7	--	--	37	--	--	--	--	E6	--	2.4
FEB													
12...	--	--	0.5	--	--	42	--	--	--	--	E7	--	3.7
12...	--	--	0.5	--	--	41	--	--	--	--	E9	--	3.6
27...	6	<0.30	0.4	25	<0.06	16	<0.04	<0.8	0.16	1.0	23	<0.08	1.5
MAR													
12...	--	--	0.4	--	--	24	--	--	--	--	10	--	2.6
12...	--	--	<0.3	--	--	<7	--	--	--	--	<10	--	<0.5
26...	--	--	0.6	--	--	28	--	--	--	--	16	--	3.0
APR													
09...	--	--	0.5	--	--	31	--	--	--	--	11	--	3.1
09...	--	--	0.5	--	--	31	--	--	--	--	10	--	3.1
23...	--	--	0.5	--	--	26	--	--	--	--	E5	--	2.6
23...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
06...	--	--	0.6	--	--	34	--	--	--	--	E8	--	2.0
20...	--	--	0.7	--	--	32	--	--	--	--	<10	--	2.3
JUN													
05...	8	<0.30	0.8	31	<0.06	33	<0.04	<0.8	0.16	1.7	E5	<0.08	2.5
25...	--	--	0.8	--	--	29	--	--	--	--	<8	--	2.4
25...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
16...	--	--	0.9	--	--	37	--	--	--	--	E4	--	3.0
16...	--	--	<0.3	--	--	<7	--	--	--	--	<8	--	<0.5
AUG													
13...	7	E.19	1.0	36	<0.06	49	<0.04	<0.8	0.13	1.5	<8	<0.08	3.4
SEP													
09...	--	--	1.1	--	--	40	--	--	--	--	11	--	2.9
09...	--	--	1.0	--	--	40	--	--	--	--	E6	--	2.8

03612500 OHIO RIVER AT LOCK AND DAM 53, NEAR GRAND CHAIN, IL—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Manganese, water, fltrd, ug/L (01056)	Molybdenum, water, fltrd, ug/L (01060)	Nickel, water, fltrd, ug/L (01065)	Selenium, water, fltrd, ug/L (01145)	Silver, water, fltrd, ug/L (01075)	Strontium, water, fltrd, ug/L (01080)	Vanadium, water, fltrd, ug/L (01085)	Zinc, water, fltrd, ug/L (01090)	2,6-Diethylaniline water fltrd 0.7u GF ug/L (82660)	CIAT, water, fltrd, ug/L (04040)	Acetochlor, water, fltrd, ug/L (49260)	Alachlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)
NOV													
06...	--	--	--	E.5	--	161	0.7	--	<0.006	E.023	<0.006	<0.004	<0.005
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
10...	--	--	--	E.3	--	147	0.7	--	<0.006	E.018	<0.006	<0.004	<0.005
FEB													
12...	--	--	--	E.4	--	179	1.5	--	<0.006	E.013	<0.006	<0.004	<0.005
12...	--	--	--	0.5	--	172	1.5	--	<0.006	E.014	<0.006	<0.004	<0.005
27...	8.1	0.7	1.96	E.3	<0.20	95.5	0.7	M	<0.006	E.016	<0.006	<0.004	<0.005
MAR													
12...	--	--	--	E.4	--	155	0.5	--	--	--	--	--	--
12...	--	--	--	<0.5	--	E.16	<0.1	--	--	--	--	--	--
26...	--	--	--	0.6	--	178	1.0	--	<0.006	E.022	0.007	<0.004	<0.005
APR													
09...	--	--	--	E.3	--	174	1.4	--	<0.006	E.036	0.021	<0.004	<0.005
09...	--	--	--	E.5	--	176	1.5	--	<0.006	E.042	0.022	<0.004	<0.005
23...	--	--	--	E.4	--	150	1.3	--	<0.006	E.034	0.054	<0.004	<0.005
23...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
06...	--	--	--	E.3	--	110	1.1	--	<0.006	E.093	0.077	<0.004	<0.005
20...	--	--	--	E.3	--	138	0.7	--	<0.006	E.154	0.357	0.013	<0.005
JUN													
05...	1.0	1.6	1.42	E.4	<0.20	145	0.8	M	--	--	--	--	--
25...	--	--	--	0.6	--	159	0.8	--	<0.006	E.149	E.132	E.011	<0.005
25...	--	--	--	--	--	--	--	--	<0.006	<0.006	<0.006	<0.004	<0.005
JUL													
16...	--	--	--	0.5	--	178	1.2	--	<0.006	E.080	0.093	0.014	<0.005
16...	--	--	--	<0.5	--	<0.20	<0.1	--	--	--	--	--	--
AUG													
13...	0.3	2.4	2.07	E.4	<0.20	176	1.3	<1	<0.006	E.035	0.015	<0.004	<0.005
SEP													
09...	--	--	--	E.4	--	158	1.3	--	<0.006	E.024	0.012	<0.004	<0.005
09...	--	--	--	E.3	--	157	1.3	--	--	--	--	--	--

03612500 OHIO RIVER AT LOCK AND DAM 53, NEAR GRAND CHAIN, IL—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Atrazine, water, fltrd, ug/L (39632)	Azinphos-methyl, water, fltrd 0.7u GF ug/L (82686)	Benflur-alin, water, fltrd 0.7u GF ug/L (82673)	Butylate, water, fltrd, ug/L (04028)	Carbaryl, water, fltrd 0.7u GF ug/L (82680)	Carbofuran, water, fltrd 0.7u GF ug/L (82674)	Chlorpyrifos water, fltrd, ug/L (38933)	cis-Permethrin water fltrd 0.7u GF ug/L (82687)	Cyanazine, water, fltrd, ug/L (04041)	DCPA, water fltrd 0.7u GF ug/L (82682)	Diazinon, water, fltrd, ug/L (39572)	Dieldrin, water, fltrd, ug/L (39381)	Disulfoton, water, fltrd 0.7u GF ug/L (82677)
NOV													
06...	0.067	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	E.002	<0.005	<0.02
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
10...	0.051	<0.050	<0.010	<0.002	E.003	<0.020	<0.005	<0.006	<0.018	<0.003	<0.007	<0.005	<0.02
FEB													
12...	0.033	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.005	<0.005	<0.02
12...	0.035	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.005	<0.005	<0.02
27...	0.081	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.005	<0.005	<0.02
MAR													
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
26...	0.090	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.005	<0.005	<0.02
APR													
09...	0.495	<0.050	<0.010	<0.002	<0.041	E.007	<0.005	<0.006	<0.018	<0.003	<0.005	<0.005	<0.02
09...	0.507	<0.050	<0.010	<0.002	<0.041	E.006	<0.005	<0.006	<0.018	<0.003	<0.005	<0.005	<0.02
23...	0.906	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.005	<0.005	<0.02
23...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
06...	2.07	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	E.003	<0.005	<0.02
20...	2.83	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.005	<0.005	<0.02
JUN													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
25...	E.938	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	E.005	<0.005	<0.02
25...	<0.007	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.005	<0.005	<0.02
JUL													
16...	0.593	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	E.004	<0.005	<0.02
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
13...	0.186	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	E.005	<0.005	<0.02
SEP													
09...	0.098	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.005	<0.005	<0.02
09...	--	--	--	--	--	--	--	--	--	--	--	--	--

03612500 OHIO RIVER AT LOCK AND DAM 53, NEAR GRAND CHAIN, IL—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	EPTC, water, fltrd 0.7u GF ug/L (82668)	Ethal-flur-alin, water, fltrd 0.7u GF ug/L (82663)	Etho-prop, water, fltrd 0.7u GF ug/L (82672)	Fonofos water, fltrd, ug/L (04095)	Lindane water, fltrd, ug/L (39341)	Linuron water fltrd 0.7u GF ug/L (82666)	Mala-thion, water, fltrd, ug/L (39532)	Methyl para-thion, water, fltrd 0.7u GF ug/L (82667)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Moli-nate, water, fltrd 0.7u GF ug/L (82671)	Naprop-amide, water, fltrd 0.7u GF ug/L (82684)	p,p'-DDE, water, fltrd, ug/L (34653)
NOV													
06...	<0.002	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	0.016	<0.006	<0.002	<0.007	<0.003
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
10...	<0.002	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	E.010	<0.006	<0.002	<0.007	<0.003
FEB													
12...	<0.002	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	0.015	<0.006	<0.002	<0.007	<0.003
12...	<0.002	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	0.015	<0.006	<0.002	<0.007	<0.003
27...	<0.002	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	0.061	<0.006	<0.002	<0.007	<0.003
MAR													
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
26...	<0.002	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	0.033	<0.006	<0.005	<0.007	<0.003
APR													
09...	<0.002	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	0.038	<0.006	<0.002	<0.007	<0.003
09...	<0.002	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	0.035	<0.006	<0.002	<0.007	<0.003
23...	<0.002	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	0.156	<0.006	<0.002	<0.007	<0.003
23...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
06...	<0.002	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	0.267	<0.006	<0.002	<0.007	<0.003
20...	<0.002	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	0.531	0.010	<0.002	<0.007	<0.003
JUN													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
25...	<0.002	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	E.267	E.007	<0.002	<0.007	<0.003
25...	<0.002	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	<0.013	<0.006	<0.002	<0.007	<0.003
JUL													
16...	<0.002	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	0.197	<0.006	<0.002	<0.007	<0.003
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
13...	<0.002	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	0.063	<0.006	<0.002	<0.007	<0.003
SEP													
09...	<0.002	<0.009	<0.005	<0.003	<0.004	<0.035	<0.027	<0.006	0.036	<0.006	<0.002	<0.007	<0.003
09...	--	--	--	--	--	--	--	--	--	--	--	--	--

03612500 OHIO RIVER AT LOCK AND DAM 53, NEAR GRAND CHAIN, IL—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Parathion, water, fltrd, ug/L (39542)	Pebulate, water, fltrd 0.7u GF ug/L (82669)	Pendimethalin, water, fltrd 0.7u GF ug/L (82683)	Phorate water fltrd 0.7u GF ug/L (82664)	Prometon, water, fltrd, ug/L (04037)	Pronamide, water, fltrd 0.7u GF ug/L (82676)	Propachlor, water, fltrd, ug/L (04024)	Propanil, water, fltrd 0.7u GF ug/L (82679)	Propargite, water, fltrd 0.7u GF ug/L (82685)	Simazine, water, fltrd, ug/L (04035)	Tebuthiuron water fltrd 0.7u GF ug/L (82670)	Terbacil, water, fltrd 0.7u GF ug/L (82665)	Terbufos, water, fltrd 0.7u GF ug/L (82675)
NOV													
06...	<0.010	<0.004	<0.022	<0.011	E.01	<0.004	<0.010	<0.011	<0.02	0.049	E.01	<0.034	<0.02
06...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
10...	<0.010	<0.004	<0.022	<0.011	E.01	<0.004	<0.010	<0.011	<0.02	0.022	E.01	<0.034	<0.02
FEB													
12...	<0.010	<0.004	<0.022	<0.011	<0.01	<0.004	<0.010	<0.011	<0.02	0.023	<0.02	<0.034	<0.02
12...	<0.010	<0.004	<0.022	<0.011	<0.01	<0.004	<0.010	<0.011	<0.02	0.023	<0.02	<0.034	<0.02
27...	<0.010	<0.004	<0.022	<0.011	<0.01	<0.004	<0.010	<0.011	<0.02	0.145	<0.02	<0.034	<0.02
MAR													
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
26...	<0.010	<0.004	<0.022	<0.011	<0.01	<0.004	<0.010	<0.011	<0.02	0.081	<0.02	<0.034	<0.02
APR													
09...	<0.010	<0.004	<0.022	<0.011	<0.01	<0.004	<0.010	<0.011	<0.02	0.099	<0.02	<0.034	<0.02
09...	<0.010	<0.004	<0.022	<0.011	<0.01	<0.004	<0.010	<0.011	<0.02	0.102	<0.02	<0.034	<0.02
23...	<0.010	<0.004	<0.022	<0.011	E.01	<0.004	<0.010	<0.011	<0.02	0.144	E.01	<0.034	<0.02
23...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
06...	<0.010	<0.004	<0.022	<0.011	E.01	<0.004	<0.010	<0.011	<0.02	0.446	<0.02	<0.034	<0.02
20...	<0.010	<0.004	<0.022	<0.011	E.01	<0.004	<0.010	<0.011	<0.02	0.297	<0.02	<0.034	<0.02
JUN													
05...	--	--	--	--	--	--	--	--	--	--	--	--	--
25...	<0.010	<0.004	<0.022	<0.011	E.01	<0.004	<0.010	<0.011	<0.02	E.116	<0.02	<0.034	<0.02
25...	<0.010	<0.004	<0.022	<0.011	<0.01	<0.004	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02
JUL													
16...	<0.010	<0.004	<0.022	<0.011	0.02	<0.004	<0.010	<0.011	<0.02	0.048	<0.02	<0.034	<0.02
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
13...	<0.010	<0.004	<0.022	<0.011	0.02	<0.004	<0.010	<0.011	<0.02	0.024	<0.02	<0.034	<0.02
SEP													
09...	<0.010	<0.004	<0.022	<0.011	0.02	<0.004	<0.010	<0.011	<0.02	0.014	<0.02	<0.034	<0.02
09...	--	--	--	--	--	--	--	--	--	--	--	--	--

03612500 OHIO RIVER AT LOCK AND DAM 53, NEAR GRAND CHAIN, IL—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Thio-bencarb water fltrd 0.7u GF ug/L (82681)	Tri-allate, water, fltrd 0.7u GF ug/L (82678)	Tri-flur-alin, water, fltrd 0.7u GF ug/L (82661)	Uranium natural water, fltrd, ug/L (22703)	Suspnd. sedi-ment, sieve diametr percent <.063mm (70331)	Sus-pended sedi-ment concen-tration mg/L (80154)
NOV						
06...	<0.005	<0.002	<0.009	--	97	18
06...	--	--	--	--	--	--
DEC						
10...	<0.005	<0.002	<0.009	--	93	12
FEB						
12...	<0.005	<0.002	<0.009	--	97	66
12...	<0.005	<0.002	<0.009	--	97	65
27...	<0.005	<0.002	<0.009	0.20	81	194
MAR						
12...	--	--	--	--	88	117
12...	--	--	--	--	--	--
26...	<0.005	<0.002	<0.009	--	93	97
APR						
09...	<0.005	<0.002	<0.009	--	98	73
09...	<0.005	<0.002	<0.009	--	97	73
23...	<0.005	<0.002	<0.009	--	97	93
23...	--	--	--	--	--	--
MAY						
06...	<0.005	<0.002	<0.009	--	98	46
20...	<0.005	<0.002	<0.009	--	94	90
JUN						
05...	--	--	--	0.43	98	56
25...	<0.005	<0.002	<0.009	--	96	138
25...	<0.005	<0.002	<0.009	--	--	--
JUL						
16...	<0.005	<0.002	<0.009	--	88	189
16...	--	--	--	--	--	--
AUG						
13...	<0.005	<0.002	<0.009	0.34	95	48
SEP						
09...	<0.005	<0.002	<0.009	--	96	316
09...	--	--	--	--	--	--

Other QA--Grab sample at center vertical (surface only).
E--Laboratory estimated value.
M--Presence of material verified but not quantified.
<--Numeric result is less than the value shown.

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07024000 BAYOU DE CHIEN NEAR CLINTON, KY

LOCATION.--Lat 36°37'43", long 88°57'50", Hickman County, Hydrologic Unit 08010201, on right bank at downstream side of bridge on U.S. Highway 51, 1.1 mi upstream from Cane Creek, 3.2 mi southeast of Clinton, and at mile 15.1.

DRAINAGE AREA.--68.7 mi^2.

PERIOD OF RECORD.--October 1939 to September 1950 (monthly discharge only for some periods, published in WSP 1311), October 1950 to September 1978, September 1984 to current year. Published as "Bayou du Chien near Clinton," October 1954 to September 1968.

REVISED RECORDS.--WSP 1311: 1940 (M), 1942-44 (M). WSP 1711: Drainage area. WDR-KY-89: 1985-89 (m).

GAGE.--Water-Stage recorder with telemetry. Datum of gage is 307.71 ft above NGVD of 1929. Prior to Aug. 2, 1951, nonrecording gage at same site and datum.

REMARKS.-- Records fair except for those estimated, which are poor. Minium flow affected by backwater from the Mississippi River.

COOPERATION.--Kentucky Natural Resources and Environmental Protection Cabinet.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 20	0100	4,500	16.27	May 17	2330	*6,240	*16.79
Feb 15	2130	2,180	15.39	Jun 12	1700	2,940	15.34

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	25	26	718	49	111	35	42	32	29	26	28
2	22	24	26	191	42	79	34	74	32	23	28	402
3	22	26	27	132	49	63	34	46	35	21	28	230
4	27	26	55	75	112	58	36	40	33	20	28	39
5	23	235	161	59	43	56	111	693	31	32	42	28
6	21	77	51	46	47	51	222	132	31	23	25	25
7	21	38	42	41	51	47	557	884	31	21	23	24
8	20	32	44	43	e36	46	103	562	30	19	22	23
9	20	30	37	41	e37	43	66	125	28	19	22	23
10	903	39	37	36	49	40	62	75	96	20	22	22
11	1,170	34	44	33	123	40	52	181	893	19	21	22
12	170	29	35	31	131	40	46	66	2,130	18	21	22
13	42	28	412	34	64	42	42	55	820	21	21	22
14	33	29	176	34	828	39	40	52	114	19	21	25
15	30	40	56	e32	1,740	40	38	51	56	19	21	21
16	29	34	42	e30	1,510	39	38	62	55	22	21	21
17	28	30	38	e32	534	38	71	2,080	40	19	21	21
18	27	30	94	e32	127	40	43	3,660	241	25	20	21
19	29	32	2,100	e30	592	576	40	607	65	27	20	21
20	33	29	3,380	e36	333	130	44	124	34	20	20	21
21	26	29	662	42	512	75	40	89	27	20	19	32
22	24	28	96	31	1,130	62	36	61	26	21	21	407
23	23	27	45	e28	1,370	48	35	51	25	19	63	43
24	23	27	44	e25	277	43	43	44	24	19	22	26
25	26	27	35	28	96	40	294	45	22	18	20	23
26	26	27	26	e28	83	39	106	42	22	19	20	22
27	25	27	23	e24	92	37	52	39	22	19	20	22
28	36	26	23	e28	130	38	43	36	21	18	20	22
29	36	27	22	54	---	45	41	37	20	30	19	21
30	28	29	25	40	---	37	43	36	20	34	67	22
31	26	---	412	43	---	36	---	36	---	130	33	---
TOTAL	2,991	1,141	8,296	2,077	10,187	2,118	2,447	10,127	5,056	783	797	1,701
MEAN	96.5	38.0	268	67.0	364	68.3	81.6	327	169	25.3	25.7	56.7
MAX	1,170	235	3,380	718	1,740	576	557	3,660	2,130	130	67	407
MIN	20	24	22	24	36	36	34	36	20	18	19	21
CFSM	1.40	0.55	3.90	0.98	5.30	0.99	1.19	4.76	2.45	0.37	0.37	0.83
IN.	1.62	0.62	4.49	1.12	5.52	1.15	1.33	5.48	2.74	0.42	0.43	0.92

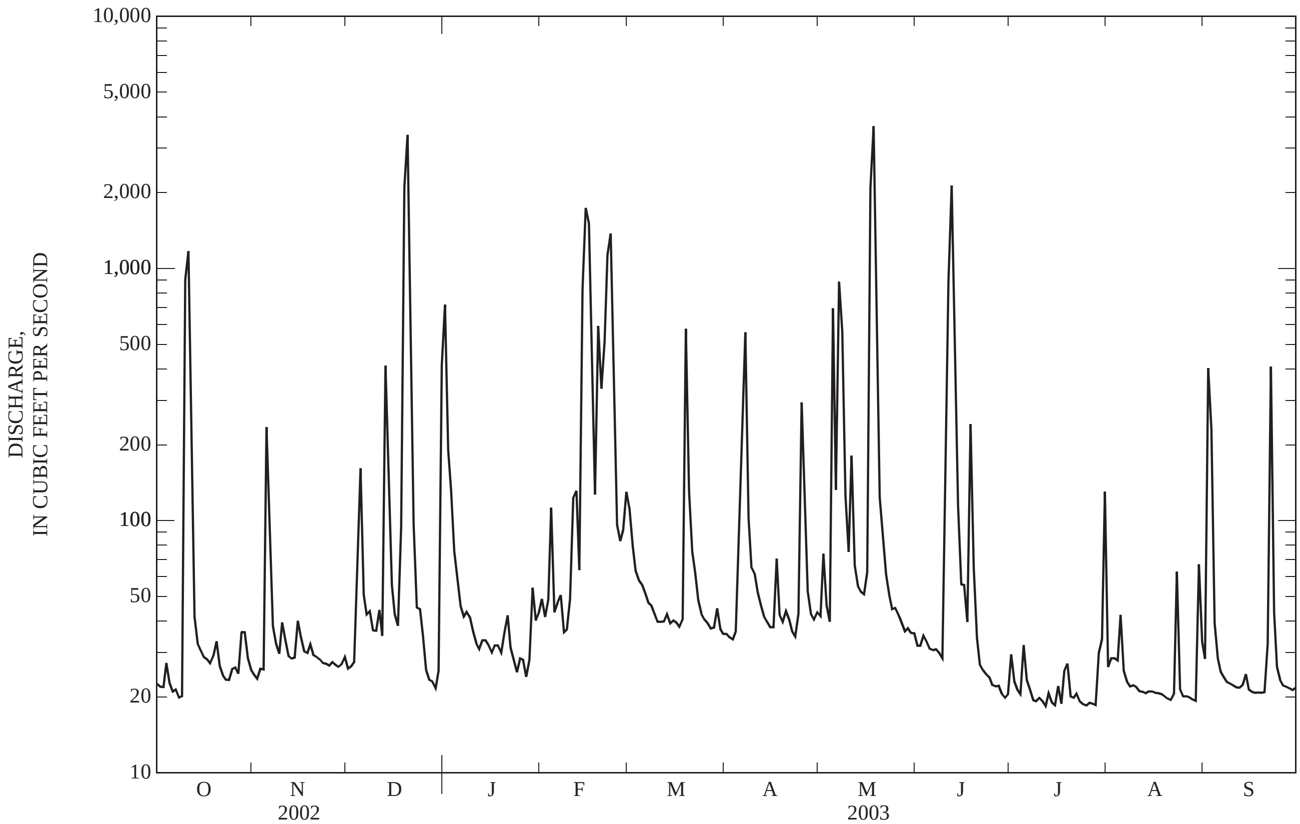
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2003, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	33.9	81.3	133	150	188	207	135	109	76.0	57.0	39.2	35.2
MAX	165	520	557	586	672	1,138	335	470	419	397	206	268
(WY)	(1985)	(1958)	(1991)	(1950)	(1989)	(1975)	(1970)	(1978)	(1976)	(1976)	(1977)	(1977)
MIN	7.27	9.41	12.1	12.7	16.2	14.2	18.6	12.1	11.7	10.7	9.43	8.74
(WY)	(1944)	(1944)	(1944)	(1944)	(1941)	(1941)	(1986)	(1969)	(1952)	(1943)	(1953)	(1941)

07024000 BAYOU DE CHIEN NEAR CLINTON, KY—Continued

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1940 - 2003	
ANNUAL TOTAL	40,760		47,721			
ANNUAL MEAN	112		131		103	
HIGHEST ANNUAL MEAN					268	1976
LOWEST ANNUAL MEAN					18.7	1941
HIGHEST DAILY MEAN	3,380	Dec 20	3,660	May 18	7,150	Jan 2, 1966
LOWEST DAILY MEAN	16	Aug 22	18	Jul 12	4.0	May 29, 1943
ANNUAL SEVEN-DAY MINIMUM	16	Sep 4	19	Jul 22	4.7	Jun 20, 1942
MAXIMUM PEAK FLOW			6,240	May 17	9,460	Jan 2, 1966
MAXIMUM PEAK STAGE			16.79	May 17	16.79	May 17, 2003
ANNUAL RUNOFF (CFSM)	1.63		1.90		1.50	
ANNUAL RUNOFF (INCHES)	22.07		25.84		20.42	
10 PERCENT EXCEEDS	178		203		187	
50 PERCENT EXCEEDS	36		35		24	
90 PERCENT EXCEEDS	18		21		11	

e Estimated



DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

As the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the U.S. Geological Survey collects limited streamflow data at sites other than stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. Data collected at these partial-record stations are usable in low-flow or floodflow analyses, depending on the type of data collected. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Crest-stage partial-record stations

The following table contains annual maximum discharges for crest-stage stations. A crest-stage gage is a device which will register the peak stage occurring between inspections of the gage. At a few of these stations crest stages are determined from continuous water-stage recorder graphs. A stage-discharge relation for each gage is developed from discharge measurements made by indirect measurements of peak flow or by current meter. The date of the maximum discharge is not always certain but is usually determined by comparison with nearby continuous record stations, weather records, or local inquiry. Only the maximum discharge for each water year is given. Information on some lower floods may have been obtained but is not published herein. The years given in the period of record represent water years for which the annual maximum has been determined.

Annual maximum discharge at crest-stage partial-record stations during water year 2003

Station number	Station name	Location	Drainage area (mi^2)	Period of record	Annual maximum: Date	Gage height (feet)	Discharge (ft^3/s)
		GOOSE CREEK BASIN					
03292474	Goose Creek at Old Westport Road nr St. Matthews, Ky.	Lat 38°16’33”, long 85°36’22”, Jefferson County, Hydrologic Unit 05140101, on downstream side of bridge on Westport Road, left bank, 1.2 mile northeast of St. Matthews, 5.0 miles above Little Goose Creek, and at mile 5.5.	6.0	†1993-96	06-11-93	4.23	460
					08-29-94	3.79	850
					05-18-95	3.72	383
					05-11-96	3.47	349
03292475	Goose Creek at U.S. HWY. 42 near Glenview Acres, Ky.	Lat 38°18’12”, long 85°37’41”, Jefferson County, Hydrologic Unit 05140101, at culvert on U.S. Highway 42, 1.7 mi above Little Goose Creek,and mile 2.1.	10.1	†1993-98	06-11-93	5.71	609
					11-17-93	7.83	1,710
					05-18-95	4.76	410
					01-24-96	8.02	1,850
					03-02-97	u	u
					07-30-98	4.87	392
					06-02-99	4.42	300
03292480	Little Goose Creek near Harrods Creek, Ky.	Lat 38°18’45”, long 85°37’33”, Jefferson County, Hydrologic Unit 05140101, at bridge on Hwy 42, and at mile 1.8.	5.8	†1993-98	06-11-93	6.45	225
					12-04-94	13.92	2,530
					05-18-95	6.98	278
					05-11-96	6.84	263
					03-02-97	u	u
					07-15-98	7.51	338

Annual maximum discharge at crest-stage partial-record stations during water year 2003

Station number	Station name	Location	Drainage area (mi^2)	Period of record	Annual maximum Date	Annual maximum Gage height (feet)	Annual maximum Discharge (ft^3/s)
		BEARGRASS CREEK BASIN					
03292550	South Fork Beargrass Creek at Winter Avenue at Louisville, Ky.	Lat 38°14’04”, long 85°45’50”, Jefferson County, Hydrologic Unit 05140101, at bridge on Winter Avenue, 1.4 mi above Middle Fork Beargrass Creek, and at mile 3.3.	22.6	†1993-98	07-14-93	8.04	2,180
					01-07-94	6.32	1,090
					05-18-95	7.78	2,000
					10-05-95	8.53	2,540
					03-02-97	u	u
					08-09-97	7.41	1,780
					06-10-98	9.08	2,920
03293200	Middle Fork Beargrass Creek at Scenic Loop at Louisville, Ky.	Lat 38°14’32”, long 85°41’57”, Jefferson County, Hydrologic Unit 05140101, at bridge on Scenic Loop and at mile 1.9.	22.7	1993-96, †1997-2003	07-14-93	8.30	1,560
					01-28-94	7.31	1,200
					05-17-95	10.83	2,800
					05-11-96	11.33	3,030
					03-02-97	u	u
					08-09-97	9.25	1,960
					05-23-98	8.11	1,490
					06-02-99	7.22	1,170
					01-03-00	11.32	3,020
					12-16-00	10.20	2,400
					07-18-01	9.33	1,990
					09-27-03	9.21	1,940
03293530	Muddy Fork at Mockingbird Valley Road at Louisville, Ky.	Lat 38°16’35”, long 85°41’37”, Jefferson County, Hydrologic Unit 05140101, at culvert on Mockingbird Valley Road and at mile 1.5.	6.2	†1993-2003	07-14-93	4.88	286
					01-28-94	8.09	948
					05-18-95	8.33	1,080
					10-05-95	6.27	465
					03-02-97	u	u
					05-23-98	4.99	294
					04-28-99	4.67	270
					01-03-00	7.46	728
					12-16-00	5.61	369
					12-17-01	6.79	559
		MILL CREEK BASIN					
03294570	Mill Creek at Orell Road near Louisville, Ky.	Lat 38°04’41”, long 85°53’24”, Jefferson County, Hydrologic Unit 05140101, at bridge on on Orell Road, and at mile 1.5.	13.5	†1993-99	08-17-93	5.61	883
					01-28-94	6.68	1,610
					01-28-95	6.74	1,650
					03-19-96	9.08	3,060
					03-02-97	u	u
					06-18-97	9.67	3,430
					04-16-98	11.38	3,910
					01-23-99	10.35	3,890

Annual maximum discharge at crest-stage partial-record stations during water year 2003

Station number	Station name	Location	Drainage area (mi^2)	Period of record	Annual maximum Date	Gage height (feet)	Discharge (ft^3/s)
		SALT RIVER BASIN					
03297980	Long Run near Fisherville, Ky.	Lat 38°13’10”, long 85°26’56”, Jefferson County, Hydrologic Unit 05140101, at bridge on State Highway 1531, 0.7 mi below South Long Run and mile 2.4.	22.5	†1993-2003	07-14-93	9.38	4,270
					01-28-94	7.42	2,350
					08-05-95	8.21	3,050
					02-20-96	7.98	2,800
					03-02-97	11.35	6,640
					06-10-98	8.00	2,850
					02-18-00	9.58	4,500
					12-16-00	7.40	2,350
					01-24-02	9.76	4,710
03298100	Pope Lick at Pope Lick Road near Middletown, Ky.	Lat 38°13’09”, long 85°31’07”, Jefferson County, Hydrologic Unit 05140102, at culvert on Pope Lick Road, and at mile 3.2.	2.9	†1993-2003	04-30-94	6.78	238
					05-18-95	8.04	374
					07-15-96	8.74	473
					03-02-97	u	u
					12-01-97	8.49	438
					04-29-99	8.61	455
					02-19-00	8.50	439
					01-24-02	8.63	458
03298150	Chenoweth Run at Gelhaus Lane near Fern Creek, Ky.	Lat 38°09’36”, long 85°32’32”, Jefferson County, Hydrologic Unit 05140102, at bridge on Gelhaus Lane, 100 ft above Razor Branch, and at mile 2.3.	11.6	†1993-95	06-04-93	9.24	1,830
					05-07-94	8.19	1,410
					08-08-95	9.20	1,820
03298200	Floyds Fork near Mount Washington, Ky.	Lat 38°05’07”, long 85°33’18”, Jefferson County, Hydrologic Unit 05140102, at bridge on U.S. Highway 31E, 0.2 mi below Old Mans Run, and at mile 18.7.	213	1993-96, †1999-2000	07-14-93	20.58	6,860
					02-22-94	20.50	6,800
					05-18-95	20.37	6,690
					01-24-96	15.94	3,960
					03-02-97	u	u
					06-29-99	18.13	5,280
					02-19-00	23.00	8,640
03298250	Cedar Creek at Thixton Road near Louisville, Ky.	Lat 38°04’45”, long 85°36’58”, Jefferson County, Hydrologic Unit 05140102, at culvert on Thixton Road, 4.2 mi above Pennsylvania Run, at mile 7.4.	11.1	†1993-98	05-18-93	3.22	982
					04-30-94	2.49	595
					05-18-95	2.63	663
					05-26-96	4.40	1,770
					03-02-97	8.21	6,390
					08-08-98	3.42	1,100
03298300	Pennsylvania Run at Mount Washington Road near Louisville, Ky.	Lat 38°05’15”, long 85°38’33”, Jefferson County, Hydrologic Unit 05140102, at bridge on Mt. Washington Road, and at mile 1.9.	6.4	†1993-98	06-04-93	4.21	358
					04-30-94	4.47	408
					05-18-95	4.73	462
					05-26-96	7.92	1,420
					03-02-97	12.09	3,770
					07-07-98	3.91	305

Annual maximum discharge at crest-stage partial-record stations during water year 2003

Station number	Station name	Location	Drainage area (mi^2)	Period of record	Annual maximum Date	Annual maximum Gage height (feet)	Annual maximum Discharge (ft^3/s)
		SALT RIVER BASIN—*Continued*					
03301880	Southern Ditch at Minors Lane near Okolona, Ky.	Lat 38°08'04", long 85°42'34", Jefferson County, Hydrologic Unit 05140102, at bridge on Minors Lane, 0.2 mi below Mud Creek, and at mile 4.2.	12.8	†1993-2003	06-04-93	5.29	1,560
					04-30-94	4.29	981
					05-18-95	7.57	3,810
					05-26-96	10.65	10,300
					03-02-97	10.72	10,500
					07-07-98	7.11	3,230
					06-29-99	11.41	13,000
					01-04-00	8.82	5,850
					03-26-02	7.32	3,490
					02-22-03	5.67	1,840
03301940	Northern Ditch at Okolona, Ky.	Lat 38°09'01", long 85°41'37", Jefferson County, Hydrologic Unit 05140102, at bridge on Preston Highway, 0.1 mi above Spring Ditch, and at mile 5.1.	11.1	†1993-97	06-04-93	6.24	332
					04-30-94	6.34	340
					05-18-95	9.57	902
					01-24-96	6.60	555
					03-02-97	u	u
					06-18-97	9.26	870
03301950	Spring Ditch at Private Drive near Okolona, Ky..	Lat 38°09'27", long 85°40'57", Jefferson County, Hydrologic Unit 05140102, at culvert on Private Drive, and at mile 1.0.	1.6	†1993-2003	06-04-93	3.04	102
					04-30-94	4.06	179
					05-18-95	6.17	379
					07-15-96	8.01	571
					03-02-97	8.09	581
					06-23-98	5.22	279
					06-29-99	7.60	525
					02-19-00	7.64	529
					07-18-01	4.53	218
					04-28-02	5.03	263
					05-05-03	4.39	206
03302030	Pond Creek at Pendleton Road near Louisville, Ky.	Lat 38°03'15", long 85°52'18", Jefferson County, Hydrologic Unit 05140102, at bridge on Pendleton Road, 1.3 above Brier Crakk at mile 7.1.	80.3	†1993-98	08-17-93	13.88	2,810
					05-07-94	[b]16.06	4,870
					05-18-95	[b]19.94	10,880
					01-24-96	[b]19.62	10,240
					03-02-97	[b]26.19	u
					04-16-98	17.14	6,190

Annual maximum discharge at crest-stage partial-record stations during water year 2003

Station number	Station name	Location	Drainage area (mi^2)	Period of record	Annual maximum Date	Annual maximum Gage height (feet)	Annual maximum Discharge (ft^3/s)
		CUMBERLAND RIVER BASIN					
03400500	Poor Fork at Cumberlamd, Ky.	Lat 36°58’26”, long 82°59’38”, Harlan County, Hydrologic Unit 05130101, at left upstream side of New York Avenue bridge at Cumberland, 250 ft upstream from Cloverlick Creek, 0.6 mi downstream from Looney Creek, and at mile 718.8.	82.3	†1941-92, 1993-2003	02-16-03 [d]	10.73	5,820
03438220	Laurel River at Municipal Dam, near Corbin, Ky.	Lat 36°58’13”, long 84°07’11”, Jefferson County, Hydrologic Unit 05140101, at bridge on State Highway 1531, 0.7 mi below South Long Run and mile 2.4.	140	†1974-92, 1993-2003	02-16-03 [d]	24.90	8,170

[†]Converted to a continuous-record gaging station
[u]Unknown
[b]Possible backwater from Ohio River
[d]Discontinued

Discharge measurements made at miscellaneous sites during water year 2003

Station no.	Station name	Location	Period of record	Date	Discharge (ft^3/s)
		HARRODS CREEK BASIN			
0329247337	Inflow to Pond at 5 Wolf Pen Lane near Prospect, Ky.	Lat 38°19’05”, Long 85°35’09”, Jefferson County, Hydrologic Unit 05140101, at inflow to pond.	2003	05-22-03	1.27
				05-30-03	.67
				06-01-03	.44
				06-03-03	.61
				06-06-03	.39
				06-09-03	.30
				06-12-03	.58
				06-16-03	.95
				06-19-03	.79
				06-23-03	.35
				06-23-03	.38
				06-30-03	.17
0329247338	Ouflow to Pond at 5 Wolf Pen Lane near Prospect, Ky.	Lat 38°19’04”, Long 85°35’20”, Jefferson County, Hydrologic Unit 05140101, at outflow to pond.	2003	05-22-03	1.06
				05-30-03	.48
				06-01-03	.55
				06-03-03	.49
				06-06-03	.17
				06-09-03	.17
				06-12-03	.35
				06-16-03	.38
				06-19-03	.25
				06-23-03	.11
				06-30-03	.10
0329247339	Outflow of Pond at 6 Wolf Pen Lane near Prospect, Ky.	Lat 38°19’11”, Long 85°35’25”, Jefferson County, Hydrologic Unit 05140101, at outflow of Pond at 6 Wolf Pen Lane.	2003	05-22-03	.61
				05-30-03	.25
				06-01-03	.42
				06-03-03	1.06
				06-06-03	.28
				06-09-03	.92
				06-12-03	.57
				06-16-03	.62
				06-19-03	.30
				06-23-03	.19
				06-30-03	.00
0329247341	Outflow to Pond at 2 Wolf Pen Lane near Prospect, Ky.	Lat 38°19’23”, Long 85°35’28”, Jefferson County, Hydrologic Unit 05140101, at outflow of pond at 2 Wolf Pen Lane.	2003	05-22-03	.35
				05-30-03	.17
				06-01-03	.19
				06-03-03	.29
				06-06-03	.17
				06-09-03	.17
0329247342	Pond Drainage Below Spring at 2 Wolf Pen Lane near Prospect, Ky.	Lat 38°19’25”, Long 85°35’29”, Jefferson County, Hydrologic Unit 05140101, at Drainage Below Spring at 2 Wolf Pen Lane.	2003	05-20-03	.93
				06-01-03	.67
				06-03-03	1.02
				06-06-03	.85
				06-09-03	.90

Discharge measurements made at miscellaneous sites during water year 2003

Station no.	Station name	Location	Period of record	Date	Discharge (ft^3/s)
		HARRODS CREEK BASIN—*Continued*			
0329247343	Unnamed Tributary Below Spring Inflow at 2 Wolf Pen Lane near Prospect. Ky.	Lat 38°19’27”, Long 85°35’28”, Jefferson County, HydrologicUnit 05140101, at Unnamed Tributary Below Spring Inflow.	2003	05-30-03	0.07
				06-01-03	.05
				06-03-03	.05
				06-06-03	.02
				06-09-03	.01
0329247344	Ouflow of Pond 4 at 8116 Wolf Pen Lane near Prospect, Ky.	Lat 38°19’33”, Long 85°35’32”, Jefferson County, HydrologicUnit 05140101, at outflow of Pond 4 at 8116 Wolf Pen Lane.	2003	05-30-03	.93
				06-01-03	.81
				06-03-03	1.09
				06-06-03	.79
				06-09-03	.78
0329247345	Outflow of Pond at Bridge above Wolf Pen Branch near Prospect, Ky.	Lat 38°19’39”, Long 85°35’35”, Jefferson County, HydrologicUnit 05140101, at outflow of Pond at Bridge above Wolf Pen Branch.	2003	05-22-03	2.83
				05-30-03	1.00
				06-01-03	.91
				06-03-03	1.20
				06-06-03	.78
				06-09-03	.89
				06-12-03	.91
				06-16-03	1.93
				06-19-03	.66
				06-23-03	.44
				06-30-03	.20
0329247350	Wolf Pen Branch above Pond Outflow near Prospect, Ky.	Lat 38°19’41”, Long 85°35’36”, Jefferson County, HydrologicUnit 05140101, at Wolf Pen Branch above Pond outflow.	2003	05-22-03	3.91
				05-30-03	1.66
				06-01-03	1.34
				06-03-03	2.12
				06-06-03	.87
				06-09-03	1.27
				06-12-03	3.21
				06-16-03	3.66
				06-19-03	1.51
				06-23-03	.87
				06-30-03	.59
0329247355	Unnamed Tributary at Culvert UTZ near Prospect, Ky.	Lat 38°19’39”, Long 85°35’41”, Jefferson County, HydrologicUnit 05140101, Unnamed Tributary at Unnamed Tributary at Culvert at UTZ sampling site.	2003	05-30-03	.30
				06-01-03	.41
				06-03-03	.43
				06-06-03	.18
				06-09-03	.18
				06-12-03	.22
0329247360	Wolf Pen Branch at Sample Site 7 near Prospect, Ky.	Lat 38°19’42”, Long 85°35’42”, Jefferson County, Hydrologic Unit 05140101, on Wolf Pen Branch at Sample Site 7.	2003	05-30-03	2.88
				06-01-03	2.25
				06-03-03	3.29
				06-06-03	1.70
				06-09-03	2.61
				06-12-03	3.54
				06-16-03	5.39
				06-19-03	2.18
				06-23-03	1.34
				06-30-03	1.06

Discharge measurements made at miscellaneous sites during water year 2003

Station no.	Station name	Location	Period of record	Date	Discharge (ft^3/s)
		GREEN RIVER BASIN			
03316000	Mud River near Lewisburg, Ky.	Lat 37°00’15”, Long 86°54’26”, Logan County, Hydrologic Unit 05110003, at upstream side of bridge on State Highway 106, 2.5 mi northeast of Lewisburg, 7.5 mi downstream from Motts Lick Creek, and 14.0 mi upstream from Wolf Lick Creek.	2001-03	10-06-02	20.1
				03-05-03	175
				07-08-03	29.8
		CUMBERLAND RIVER BASIN			
03410540	White Oak Creek above Cabin Branch at Co-operative, Ky.	Lat 36°41’27”, Long 84°37’24”, McCreary County, Hydrologic Unit 05130104, 20 ft upstream of mouth of Cabin Branch, 400 ft downstream of Old Kidds Grocery, and 1,650 ft upstream of Boarding Hollow.	2002-03	10-29-02	2.80
				11-18-02	2.32
				12-17-02	8.28
				01-28-03	.862
				02-25-03	13.2
				03-24-03	2.16
				04-28-03	5.34
				05-19-03	4.50
				06-26-03	1.03
				07-21-03	.700
				08-25-03	.430
				09-23-03	6.59
03410542	Cabin Branch at Mouth at Co-operative. Ky.	Lat 36°41’28”, Long 84°37’25”, McCreary County, Hydrologic Unit 05130104, 20 ft upstream of State Highway 1363, 40 ft upstream of Rock Creek, and 1,600 ft above Boarding House Hollow.	2002-03	10-29-02	.240
				11-18-02	.751
				12-17-02	1.49
				01-28-03	.382
				02-25-03	3.62
				03-24-03	1.23
				04-28-03	2.63
				05-19-03	1.20
				06-25-03	.336
				07-21-03	.252
				08-25-03	.100
				09-23-03	1.68

Discharge measurements made at miscellaneous sites during water year 2003

Station no.	Station name	Location	Period of record	Date	Discharge (ft^3/s)
		CUMBERLAND RIVER BASIN—*Continued*			
03410545	Unnamed Tributary at Mouth Below Boarding House Hollow at Co-operative, Ky.	Lat 36°41’36”, Long 84°36’56”, McCreary County, Hydrologic Unit 05130104, 10 ft downstream of State Highway 1363, 10 ft upstream of Rock Creek, and 1,000 ft above Unnamed Tributary at Co-operative.	2002-03	10-29-02	0.380
				11-18-02	1.12
				12-17-02	1.07
				01-28-03	.063
				02-25-03	1.84
				03-24-03	.090
				04-28-03	2.55
				05-19-03	.285
				06-25-03	.135
				07-21-03	.033
				08-25-03	.220
				09-23-03	1.77
03410547	Unnamed Tributary to White Oak Creek at Culvert at Co-operative, Ky.	Lat 36°41’36”, Long 84°36’37”, McCreary County, Hydrologic Unit 05130104, 10 ft downstream of State Highway 1363, 20 ft upstream of Rock Creek, and 1,000 ft below Boarding House Hollow.	2002-03	10-29-02	.150
				11-18-02	1.50
				12-17-02	.363
				01-28-03	.351
				02-25-03	1.93
				03-24-03	.490
				04-28-03	.440
				05-19-03	.620
				06-25-03	.320
				07-21-03	.100
				08-25-03	.210
				09-23-03	.260
03410552	White Oak Creek above Jones Branch at White Oak Junction, Ky.	Lat 36°42’06”, Long 84°35’52”, McCreary County, Hydrologic Unit 05130104, 20 ft above Mouth of Jones Branch, 220 ft upstream of Bridge near Mouth of White Oak Creek, and 240 ft upstream of Rock Creek.	2002-03	10-29-02	0
				11-18-02	3.73
				12-17-02	13.3
				01-28-03	2.03
				02-25-03	24.0
				03-24-03	2.68
				04-28-03	9.28
				05-19-03	7.56
				06-25-03	.870
				07-21-03	1.85
				08-25-03	.800
				09-23-03	24.8
03410555	Jones Branch above Unnamed Tributary at White Oak Junction, Ky.	Lat 36°42’29”, Long 84°36’33”, McCreary County, Hydrologic Unit 05130104, 20 ft downstream of Forest Service Road 821, 2,000 ft upstream of State Highway 1363, and 2,050 ft upstream of Mouth of Jones Branch.	2002-03	10-29-02	.570
				11-18-02	.560
				12-17-02	3.29
				01-28-03	---
				02-25-03	6.67
				03-24-03	2.43
				04-28-03	1.32
				05-19-03	1.72
				06-25-03	.374
				07-21-03	.178
				08-25-03	.130
				09-23-03	4.80

Discharge measurements made at miscellaneous sites during water year 2003

Station no.	Station name	Location	Period of record	Date	Discharge (ft^3/s)
		CUMBERLAND RIVER BASIN—*Continued*			
03410557	White Oak Creek at Mouth at White Oak Junction, Ky.	Lat 36°42’09”, Long 84°35’47”, McCreary County, Hydrologic Unit 05130104, 20 ft upstream of bridge near Mouth of White Oak Creek, 40 ft upstream of Rock Creek, and 200 ft below Mouth of Jones Branch.	2002-03	10-29-02	0
				11-18-02	3.37
				12-17-02	18.0
				01-28-03	2.51
				02-25-03	19.6
				03-24-03	4.75
				04-28-03	8.34
				05-19-03	8.28
				06-25-03	1.46
				07-21-03	1.02
				08-25-03	1.61
				09-23-03	22.6
03410559	Rock Creek above White Oak Creek at White Oak Junction, Ky.	Lat 36°42’09”, Long 84°35’43”, McCreary County, Hydrologic Unit 05130104, 250 ft upstream of confluence with White Oak Creek, 1.0 mile upstream of Mouth of Roberts Hollow, and at mile 2.85.	2002-03	10-29-02	2.02
				11-18-02	102
				12-17-02	^{e}175
				01-28-03	22.0
				02-25-03	^{e}350
				03-24-03	27.0
				04-28-03	47.6
				05-19-03	69.3
				06-25-03	24.5
				07-21-03	11.7
				08-25-03	16.1
				09-23-03	^{e}200
03410561	Jones Branch at White Oak Junction, Ky.	Lat 36°42’19”, Long 84°35’41”, McCreary County, HydrologicUnit 05130104, at culvert, on Highway 1363, 150 ft northeast of intersection with Road 821 at White Oak Junction, Ky.	2002-03	10-29-02	.060
				11-18-02	.030
				12-17-02	.104
				01-28-03	.011
				02-25-03	.207
				03-24-03	.350
				04-28-03	.180
				05-19-03	.120
				06-25-03	.080
				07-21-03	.017
				08-25-03	.030
				09-23-03	.037
03410563	White Oak Spring at White Oak Junction, Ky.	Lat 36°42’12”, Long 84°35’51”, McCreary County, HydrologicUnit 05130104, 20 ft from left bank of Rock Creek, 0.3 mi northeast of intersection of Highway 1363, and Road 821 at White Oak Junction, Ky.	2002-03	10-29-02	1.02
				11-18-02	.152
				12-17-02	1.35
				01-28-03	.093
				02-25-03	.339
				03-24-03	1.70
				04-28-03	.280
				05-19-03	.150
				06-25-03	.172
				07-21-03	.198
				08-25-03	.190
				09-23-03	.189

Discharge measurements made at miscellaneous sites during water year 2003

Station no.	Station name	Location	Period of record	Date	Discharge (ft^3/s)
		CUMBERLAND RIVER BASIN—*Continued*			
03410569	Rock Creek above Roberts Hollow at White Oak Junction, Ky.	Lat 36°42’35”, Long 84°35’03”, McCreary County, Hydrologic Unit 05130104, 500 ft above Mouth of Roberts Hollow, 4,600 ft downstream of White Oak Junction, and at mile 3.75.	2002-03	10-29-02	16.9
				11-18-02	111
				12-17-02	191
				01-28-03	26.3
				02-25-03	e380
				03-24-03	47.0
				04-28-03	63.1
				05-19-03	92.6
				06-25-03	29.2
				07-21-03	18.6
				08-25-03	13.2
				09-23-03	e230
03410570	Roberts Hollow at Mouth at Paint Cliff, Ky.	Lat 36°42’37”, Long 84°35’02”, McCreary County, Hydrologic Unit 05130104, 20 ft upstream of Rock Creek, 30 ft downstream of State Highway 1363, and 75 ft above Unnamed Tributary Below Roberts Hollow.	2002-03	10-29-02	.260
				11-18-02	.460
				12-17-02	2.27
				01-28-03	.186
				02-25-03	2.89
				03-24-03	1.41
				04-28-03	1.38
				05-19-03	.732
				06-25-03	.370
				07-21-03	.043
				08-25-03	1.10
				09-23-03	3.40
03410571	Unnamed Tributary at Culvert Below Roberts Hollow at Paint Cliff, Ky.	Lat 36°42’36”, Long 84°34’57”, McCreary County, Hydrologic Unit 05130104, 20 ft upstream of State Highway 1363, 20 ft upstream of Rock Creek, and 75 ft downstream of Mouth of Roberts Hollow.	2002-03	10-29-02	.200
				11-18-02	.438
				12-17-02	.895
				01-28-03	.370
				02-25-03	.925
				03-24-03	.800
				04-28-03	1.03
				05-19-03	.825
				06-25-03	.840
				07-21-03	.380
				08-25-03	.030
				09-23-03	.376
03410575	Paint Cliff Discharge at Paint Cliff, Ky.	Lat 36°42’25”, Long 84°34’36”, McCreary County, Hydrologic Unit 05130104, 20 ft upstream of State Highway 1363, 150 ft upstream of Rock Creek, and 1,800 ft above mouth of Poplar Spring Hollow.	2002-03	10-29-02	.270
				11-18-02	.030
				12-17-02	.335
				01-28-03	e.200
				02-25-03	.771
				03-24-03	1.36
				04-28-03	.05
				05-19-03	1.19
				06-25-03	.277
				07-21-03	.076
				08-25-03	.090
				09-23-03	.600

Discharge measurements made at miscellaneous sites during water year 2003

Station no.	Station name	Location	Period of record	Date	Discharge (ft^3/s)
		CUMBERLAND RIVER BASIN—*Continued*			
03410578	Poplar Spring Hollow at Mouth at Plaint Cliff, Ky.	Lat 36°42’22”, Long 84°34’06”, McCreary County, Hydrologic Unit 05130104, 20 ft downstream of State Highway 1363, 40 ft upstream of Rock Creek, and 50 ft downstream of Old Kentucky and Tennessee Railroad Grade.	2002-03	10-29-02	0.140
				11-18-02	.309
				12-17-02	1.45
				01-28-03	.039
				02-25-03	1.73
				03-24-03	1.32
				04-28-03	.540
				05-19-03	.270
				06-26-03	.185
				07-21-03	.118
				08-25-03	.050
				09-23-03	1.21
03410580	Rock Creek Below Poplar Spring Hollow at Paint Cliff, Ky.	Lat 36°42’11”, Long 84°33’50”, McCreary County, Hydrologic Unit 05130104, 75 ft upstream of Forest Service Road 1271, 1,100 ft downstream of Mouth of Polpar Spring Hollow, and at mile 1.7.	2002-03	10-29-02	19.4
				11-18-02	105
				12-17-02	^{e}210
				01-28-03	22.0
				02-25-03	^{e}400
				03-24-03	52.0
				04-28-03	55.1
				05-19-03	104
				06-25-03	26.3
				07-21-03	19.9
				08-25-03	20.0
				09-23-03	^{e}240
03410585	Koger Fork above Mouth at Paint Cliff, Ky.	Lat 36°42’03”, Long 84°32’49”, McCreary County, Hydrologic Unit 05130104, 10 ft upstream of Rock Creek, 60 ft above Forest Service Road 1271, and 1,400 ft downstream of Forks of Koger Fork.	2002-03	10-29-02	.730
				11-18-02	.828
				12-17-02	3.50
				01-28-03	.610
				02-25-03	4.30
				03-24-03	1.09
				04-28-03	.850
				05-19-03	.520
				06-25-03	.919
				07-21-03	.119
				08-25-03	.090
				09-23-03	7.62

Discharge measurements made at miscellaneous sites during water year 2003

Station no.	Station name	Location	Period of record	Date	Discharge (ft^3/s)
		CUMBERLAND RIVER BASIN—*Continued*			
03410597	Rock Creek Below Grassy Fork at Yamacraw, Ky.	Lat 36°42’36”, Long 84°32’49”, McCreary County, Hydrologic Unit 05130104, 20 ft below Mouth of Grassy Rock, 1,000 ft downstream from Mouth of Water Tank Hollow, and at mile 0.35.	2002-03	10-29-02	18.8
				11-18-02	114
				12-17-02	230
				01-28-03	25.9
				02-25-03	0
				03-24-03	45.3
				04-28-03	[b]12.0
				05-19-03	85.7
				06-25-03	39
				07-21-03	20.5
				08-25-03	18.0
				09-23-03	[e]250

[b]Backwater
[e]Estimated

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03437400 NORTH FORK LITTLE RIVER AT GARY LANE BRIDGE NEAR HOPKINSVILLE, KY

WATER-QUALITY RECORDS

LOCATION.--Lat 36°48'07", long 87°30'49", Christian County, Hydrologic Unit 05130205.

DRAINAGE AREA.--67 mi^2.

PERIOD OF RECORD.--March 2003 to current water year.

COOPERATION.--Kentucky Department of Agriculture and the Kentucky Environmental and Public Protection Cabinet.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Sample type	Instan- taneous dis- charge, cfs (00061)	Dis- solved oxygen, mg/L (00300)	Dis- solved oxygen, percent of sat- uration (00301)	pH, water, unfltrd field, std units (00400)	Specif. conduc- tance, wat unf uS/cm 25 degC (00095)	Temper- ature, water, deg C (00010)	Alka- linity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicar- bonate, wat flt incrm. titr., field, mg/L (00453)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)
MAR												
20...	1400	Environmental	220	10.0	100	7.6	276	14.5	85	103	0.04	1.33
APR												
02...	1330	Environmental	68	10.8	109	7.7	385	--	141	172	<0.04	2.44
MAY												
01...	0945	Environmental	269	--	82	7.4	292	17.5	96	117	0.07	2.31
08...	1750	Environmental	791	8.6	91	7.3	231	18.0	84	102	0.08	1.65
JUN												
18...	1550	Environmental	54	7.3	82	7.5	399	20.4	--	--	<0.04	2.99
JUL												
08...	1440	Environmental	12	6.7	83	7.7	647	25.6	176	214	0.05	4.94
08...	1448	Field Blank	--	--	--	--	--	--	--	--	--	--
AUG												
20...	1550	Environmental	14	12.3	150	7.7	652	25.4	161	197	E.02	3.63
26...	1450	Environmental	36	6.1	83	7.8	428	31.5	137	--	E.04	2.21
26...	1458	Field Blank	--	--	--	--	--	--	--	--	<0.04	<0.06
SEP												
16...	1430	Environmental	22	8.9	103	7.6	491	22.3	133	162	<0.04	2.14

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ortho- phos- phate, water, fltrd, mg/L as P (00671)	Phos- phorus, water, unfltrd mg/L (00665)	1,4- Naphth- oquin- one, water, fltrd, ug/L (61611)	1-Naph- thol, water, fltrd 0.7u GF ug/L (49295)	2-(4-t- Butyl- phenoxy)cyclo- hexanol wat flt ug/L (61637)	2,5-Di- chloro- aniline water, fltrd, ug/L (61614)	2,6-Di- ethyl- aniline water fltrd 0.7u GF ug/L (82660)	2-[(2- Et-6-Me -Ph)- -amino] propan- 1-ol, ug/L (61615)	2Amino- N-iso- propyl- benz- amide, wat flt ug/L (61617)	CIAT, water, fltrd, ug/L (04040)	2-Ethyl -6- methyl- aniline water, fltrd, ug/L (61620)	3-(Tri- fluoro- methyl) aniline water, fltrd, ug/L (61630)	3,4-Di- chloro- aniline water fltrd, ug/L (61625)
MAR													
20...	0.057	0.194	<0.05	<0.09	<0.01	<0.03	<0.006	<0.1	<0.005	E.042	<0.004	<0.01	0.007
APR													
02...	0.087	0.138	<0.05	<0.09	<0.01	<0.03	<0.006	<0.1	<0.005	E.090	<0.004	<0.01	0.013
MAY													
01...	0.067	0.195	<0.05	<0.09	<0.01	<0.03	<0.006	<0.1	<0.005	E.397	<0.004	<0.01	0.018
08...	0.048	0.24	<0.05	<0.09	<0.01	<0.03	<0.006	<0.1	<0.005	E.450	<0.004	<0.01	<0.004
JUN													
18...	0.335	0.37	<0.05	<0.09	<0.01	<0.03	<0.006	<0.1	<0.005	E.167	<0.004	<0.01	0.032
JUL													
08...	1.07	1.23	<0.05	<0.09	<0.01	0.04	<0.006	<0.1	<0.005	E.095	<0.004	<0.01	0.149
08...	--	--	<0.05	<0.09	<0.01	<0.03	<0.006	<0.1	<0.005	<0.006	<0.004	<0.01	<0.004
AUG													
20...	0.790	0.87	<0.05	<0.09	<0.01	0.05	<0.006	<0.1	<0.005	E.178	<0.004	<0.01	0.217
26...	0.483	0.59	<0.05	--	<0.01	E.01	<0.006	<0.1	<0.005	E.107	<0.004	<0.01	0.071
26...	<0.007	<0.004	--	--	--	--	--	--	--	--	--	--	--
SEP													
16...	0.97	1.11	<0.05	--	<0.01	<0.03	<0.006	<0.1	<0.005	E.114	<0.004	<0.01	0.113

03437400 NORTH FORK LITTLE RIVER AT GARY LANE BRIDGE NEAR HOPKINSVILLE, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	3,5-Di-chloro-aniline water, fltrd, ug/L (61627)	3-Phen-oxy-benzyl alcohol water, fltrd, ug/L (61629)	4-(MeOH)-pendi-meth-alin, wat flt ug/L (61665)	4,4-Di'chloro-benzo-phen-one, wat flt ug/L (61631)	4Chloro 2methyl phenol, water, fltrd, ug/L (61633)	4Chloro phenyl-methyl sulfone water, fltrd, ug/L (61634)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-Endo-sulfan, water, fltrd, ug/L (34362)	alpha-HCH, water, fltrd, ug/L (34253)	alpha-HCH-d6, sur2002 /9002, wat unf percent recovry (99224)	alpha-HCH-d6, surrog, wat flt 0.7u GF percent recovry (91065)	Atra-zine, water, fltrd, ug/L (39632)
MAR													
20...	<0.005	<0.05	<0.1	<0.003	<0.006	<0.03	<0.006	<0.004	<0.005	<0.005	88.5	90.3	0.598
APR													
02...	<0.005	<0.05	<0.1	<0.003	<0.006	<0.03	<0.006	<0.004	<0.005	<0.005	93.8	88.2	0.578
MAY													
01...	<0.005	<0.05	<0.1	<0.003	<0.006	<0.03	0.511	0.008	<0.005	<0.005	91.1	101	8.77
08...	<0.005	<0.05	<0.1	<0.003	<0.006	<0.03	0.226	<0.004	<0.005	<0.005	95.0	103	4.89
JUN													
18...	<0.005	<0.05	<0.1	<0.016	<0.006	<0.03	0.033	<0.004	<0.005	<0.005	108	92.7	1.52
JUL													
08...	<0.005	<0.05	<0.1	<0.003	<0.006	<0.03	<0.006	<0.004	<0.005	<0.005	88.7	100	0.349
08...	<0.005	<0.05	<0.1	<0.003	<0.006	<0.03	<0.006	<0.004	<0.005	<0.005	85.8	82.2	<0.007
AUG													
20...	<0.005	--	--	<0.003	<0.006	<0.03	0.008	<0.004	<0.005	<0.005	84.4	89.3	0.890
26...	<0.005	--	--	<0.003	<0.006	<0.03	0.010	<0.004	<0.005	<0.005	95.4	94.5	0.418
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
16...	<0.005	--	--	<0.003	<0.006	<0.03	0.007	<0.004	<0.005	<0.005	94.8	103	0.545

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Azin-phos-methyl oxon, water, fltrd, ug/L (61635)	Azin-phos-methyl, water, fltrd 0.7u GF ug/L (82686)	Ben-flur-alin, water, fltrd 0.7u GF ug/L (82673)	beta-Endo-sulfan, water, fltrd, ug/L (34357)	Bifen-thrin, water, fltrd, ug/L (61580)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd 0.7u GF ug/L (82680)	Carbo-furan, water, fltrd 0.7u GF ug/L (82674)	Chlor-pyrifos oxon, water, fltrd, ug/L (61636)	Chlor-pyrifos water, fltrd, ug/L (38933)	cis-Per-methrin water fltrd 0.7u GF ug/L (82687)	cis-Propi-cona-zole, water, fltrd, ug/L (79846)	Cyana-zine, water, fltrd, ug/L (04041)
MAR													
20...	<0.02	<0.050	<0.010	<0.01	<0.005	0.015	<0.041	<0.020	<0.06	<0.005	<0.006	<0.008	<0.018
APR													
02...	<0.02	<0.050	<0.010	<0.01	<0.005	0.013	<0.041	E.006	<0.06	<0.005	<0.006	<0.008	<0.018
MAY													
01...	<0.02	<0.050	<0.010	<0.01	<0.005	<0.009	E.014	<0.020	<0.06	<0.005	<0.006	<0.008	<0.018
08...	<0.02	<0.050	<0.010	<0.01	<0.005	E.006	E.007	<0.020	<0.06	<0.005	<0.006	<0.008	<0.018
JUN													
18...	<0.02	<0.050	<0.010	<0.01	<0.005	0.004	E.005	<0.020	<0.02	<0.005	<0.006	<0.008	<0.018
JUL													
08...	<0.02	<0.050	<0.010	<0.01	<0.005	0.006	E.003	<0.025	<0.06	<0.005	<0.006	<0.008	<0.018
08...	<0.02	<0.050	<0.010	<0.01	<0.005	0.006	<0.041	<0.025	<0.06	<0.005	<0.006	<0.008	<0.018
AUG													
20...	<0.02	<0.050	<0.010	<0.01	<0.005	<0.020	<0.041	E.035	<0.06	<0.005	<0.006	<0.008	<0.018
26...	<0.02	<0.050	<0.010	<0.01	<0.005	<0.010	E.012	E.033	<0.06	<0.005	<0.006	<0.008	<0.018
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
16...	<0.02	<0.050	<0.010	<0.01	<0.005	0.012	<0.041	E.015	<0.06	<0.005	E.003	<0.008	<0.018

03437400 NORTH FORK LITTLE RIVER AT GARY LANE BRIDGE NEAR HOPKINSVILLE, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Cyclo-ate, water, fltrd, ug/L (04031)	lambda-Cyhalo-thrin, water, fltrd, ug/L (61595)	Cyper-methrin water, fltrd, ug/L (61586)	DCPA, water fltrd 0.7u GF ug/L (82682)	Diazi-non, water, fltrd, ug/L (39572)	Dicro-tophos, water fltrd, ug/L (38454)	Diel-drin, water, fltrd, ug/L (39381)	Dimeth-oate, water, fltrd 0.7u GF ug/L (82662)	Disulf-oton sulfone water, fltrd, ug/L (61640)	Disulf-oton sulf-oxide, water, fltrd, ug/L (61641)	Disul-foton, water, fltrd 0.7u GF ug/L (82677)	e-Di-metho-morph, water, fltrd, ug/L (79844)	Endo-sulfan ether, water, fltrd, ug/L (61642)
MAR													
20...	<0.005	<0.009	<0.009	<0.003	<0.005	<0.08	<0.005	<0.006	E.01	<0.002	<0.02	<0.02	<0.004
APR													
02...	<0.005	<0.009	<0.009	<0.003	E.003	<0.08	0.006	<0.006	<0.02	<0.002	<0.02	<0.02	<0.004
MAY													
01...	<0.005	<0.009	<0.009	<0.003	0.026	<0.08	E.005	<0.006	<0.02	<0.002	<0.02	<0.02	<0.004
08...	<0.005	<0.009	<0.009	<0.003	0.015	<0.08	<0.005	<0.006	E.01	<0.002	<0.02	<0.02	<0.004
JUN													
18...	<0.005	<0.009	<0.016	<0.003	<0.005	<0.08	0.007	<0.006	E.06	E.066	<0.02	<0.02	<0.004
JUL													
08...	<0.005	<0.009	<0.009	<0.025	<0.06	<0.005	E.009	<0.006	<0.02	<0.002	<0.02	<0.02	<0.004
08...	<0.005	<0.009	<0.009	<0.025	<0.06	<0.08	<0.005	<0.006	<0.02	<0.002	<0.02	<0.02	<0.004
AUG													
20...	<0.005	<0.009	<0.009	<0.003	0.022	<0.08	0.007	<0.006	<0.02	<0.002	<0.02	<0.02	<0.004
26...	<0.005	<0.009	<0.009	<0.003	0.077	<0.08	0.010	<0.006	<0.02	<0.002	<0.02	<0.02	<0.004
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
16...	<0.005	<0.009	<0.009	<0.003	0.014	<0.08	0.008	<0.006	<0.02	<0.002	<0.02	<0.02	<0.004

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	EPTC, water, fltrd 0.7u GF ug/L (82668)	Ethal-flur-alin, water, fltrd 0.7u GF ug/L (82663)	Ethion monoxon water, fltrd, ug/L (61644)	Ethion, water, fltrd, ug/L (82346)	Etho-prop, water, fltrd 0.7u GF ug/L (82672)	Fenami-phos sulfone water, fltrd, ug/L (61645)	Fenami-phos sulf-oxide, water, fltrd, ug/L (61646)	Fenami-phos, water, fltrd, ug/L (61591)	Fen-thion sulf-oxide, water, fltrd, ug/L (61647)	Flume-tralin, water, fltrd, ug/L (61592)	Fonofos oxon, water, fltrd, ug/L (61649)	Fonofos water, fltrd, ug/L (04095)	Hexa-zinone, water, fltrd, ug/L (04025)
MAR													
20...	0.016	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.004	<0.002	<0.003	<0.013
APR													
02...	0.009	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.004	<0.002	<0.003	<0.013
MAY													
01...	0.007	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.004	<0.002	<0.003	<0.013
08...	0.007	<0.009	<0.03	<0.004	<0.005	<0.031	<0.03	<0.03	<0.008	<0.004	<0.002	<0.003	<0.013
JUN													
18...	0.004	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.004	<0.002	<0.003	<0.013
JUL													
08...	0.007	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.004	<0.002	<0.003	<0.013
08...	0.007	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.004	<0.002	<0.003	<0.013
AUG													
20...	0.012	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.004	<0.002	<0.003	<0.013
26...	<0.010	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.004	<0.002	<0.003	<0.013
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
16...	0.004	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.004	<0.002	<0.003	<0.013

03437400 NORTH FORK LITTLE RIVER AT GARY LANE BRIDGE NEAR HOPKINSVILLE, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ipro- dione, water, fltrd, ug/L (61593)	Isofen- phos, water, fltrd, ug/L (61594)	Lindane water, fltrd, ug/L (39341)	Linuron water fltrd 0.7u GF ug/L (82666)	Mala- oxon, water, fltrd, ug/L (61652)	Mala- thion, water, fltrd, ug/L (39532)	Meta- laxyl, water, fltrd, ug/L (61596)	Methi- althion water, fltrd, ug/L (61598)	c-Per- methric acid methyl ester, wat flt ug/L (79842)	Methyl para- oxon, water, fltrd, ug/L (61664)	Methyl para- thion, water, fltrd 0.7u GF ug/L (82667)	t-Per- methric acid methyl ester, wat flt ug/L (79843)	Metola- chlor, water, fltrd, ug/L (39415)
MAR													
20...	<1	<0.003	<0.004	<0.035	<0.008	<0.027	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	E.013
APR													
02...	<1	<0.003	<0.004	<0.035	<0.008	<0.027	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	0.016
MAY													
01...	<1	<0.003	<0.004	<0.035	<0.008	<0.027	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	0.023
08...	<1	<0.003	<0.004	<0.035	<0.008	<0.027	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	0.013
JUN													
18...	<1	<0.003	<0.004	<0.035	<0.008	<0.027	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	0.027
JUL													
08...	<1	<0.003	<0.004	<0.035	<0.008	<0.027	0.018	<0.006	<0.04	<0.03	<0.006	<0.03	0.019
08...	<1	<0.003	<0.004	<0.035	<0.008	<0.027	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	<0.013--
AUG													
20...	<1	<0.003	<0.004	<0.035	<0.008	<0.027	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	0.020
26...	<1	<0.003	<0.004	<0.035	<0.008	<0.027	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	0.017
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
16...	<1	<0.003	<0.004	<0.035	<0.008	<0.027	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	0.015

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Metri- buzin, water, fltrd, ug/L (82630)	Moli- nate, water, fltrd 0.7u GF ug/L (82671)	Myclo- butanil water, fltrd, ug/L (61599)	Naprop- amide, water, fltrd 0.7u GF ug/L (82684)	O-Et-O- Me-S-Pr -phos- phoro- thioate wat flt ug/L (61660)	Oxy- fluor- fen, water, fltrd, ug/L (61600)	p,p'- DDE, water, fltrd, ug/L (34653)	Para- oxon, water, fltrd, ug/L (61663)	Para- thion, water, fltrd, ug/L (39542)	Peb- ulate, water, fltrd 0.7u GF ug/L (82669)	Pendi- meth- alin, water, fltrd 0.7u GF ug/L (82683)	Phorate oxon, water, fltrd, ug/L (61666)	Phorate water fltrd 0.7u GF ug/L (82664)
MAR													
20...	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011
APR													
02...	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011
MAY													
01...	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007	<0.003	<0.008	<0.010	<0.004	E.012	<0.10	<0.011
08...	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011
JUN													
18...	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007	<0.003	<0.016	<0.010	<0.004	<0.022	<0.10	<0.011
JUL													
08...	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011
08...	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011
AUG													
20...	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011
26...	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
16...	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011

03437400 NORTH FORK LITTLE RIVER AT GARY LANE BRIDGE NEAR HOPKINSVILLE, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Phosmet oxon, water, fltrd, ug/L (61668)	Phosmet water, fltrd, ug/L (61601)	Phoste-bupirim water, fltrd, ug/L (61602)	Pro-fenofos water, fltrd, ug/L (61603)	Prome-ton, water, fltrd, ug/L (04037)	Prome-tryn, water, fltrd, ug/L (04036)	Pron-amide, water, fltrd 0.7u GF ug/L (82676)	Propa-chlor, water, fltrd, ug/L (04024)	Pro-panil, water, fltrd 0.7u GF ug/L (82679)	Propar-gite, water, fltrd 0.7u GF ug/L (82685)	Propet-amphos, water, fltrd, ug/L (61604)	Sima-zine, water, fltrd, ug/L (04035)	Sulfo-tepp, water, fltrd, ug/L (61605)
MAR													
20...	<0.06	<0.008	<0.005	<0.006	<0.01	<0.005	<0.004	<0.010	<0.011	<0.02	<0.004	0.459	<0.003
APR													
02...	<0.06	<0.008	<0.005	<0.006	M	<0.005	<0.004	<0.010	<0.011	<0.02	<0.004	0.415	<0.003
MAY													
01...	<0.06	<0.008	<0.005	<0.006	0.02	<0.005	<0.004	<0.010	<0.011	<0.02	<0.004	0.768	<0.003
08...	<0.06	<0.008	<0.005	<0.006	E.01	<0.005	<0.004	<0.010	<0.011	<0.02	<0.004	0.371	<0.003
JUN													
18...	<0.06	<0.008	<0.005	<0.006	0.02	<0.005	<0.004	<0.010	<0.011	<0.02	<0.004	0.082	<0.003
JUL													
08...	<0.06	<0.008	<0.005	<0.006	0.06	<0.005	<0.004	<0.010	<0.011	<0.02	<0.004	0.034	<0.003
08...	<0.06	<0.008	<0.005	<0.006	<0.015	<0.005	<0.004	<0.010	<0.011	<0.02	<0.004	<0.005	<0.003
AUG													
20...	<0.06	<0.008	<0.005	<0.006	0.10	<0.005	<0.010	<0.010	<0.015	<0.02	<0.004	0.071	<0.003
26...	<0.06	<0.008	<0.005	<0.006	E.01	<0.005	<0.004	<0.010	<0.011	<0.02	<0.004	0.064	<0.003
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
16...	<0.06	<0.008	<0.005	<0.006	0.03	<0.005	<0.004	<0.010	<0.011	<0.02	<0.004	0.054	<0.003

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Sulpro-fos, water, fltrd, ug/L (38716)	Tebu-pirim-phos oxon, water, fltrd, ug/L (61669)	Tebu-thiuron water fltrd 0.7u GF ug/L (82670)	Teflu-thrin metab-olite R119365 wat flt ug/L (61671)	Teflu-thrin metab-olite R152913 wat flt ug/L (61672)	Teflu-thrin, water, fltrd, ug/L (61606)	Teme-phos, water, fltrd, ug/L (61607)	Terba-cil, water, fltrd 0.7u GF ug/L (82665)	Ter-bufos oxon sulfone water, fltrd, ug/L (61674)	Terbu-fos, water, fltrd 0.7u GF ug/L (82675)	Ter-buthyl-azine, water, fltrd, ug/L (04022)	Thio-bencarb water fltrd 0.7u GF ug/L (82681)	trans-Propi-cona-zole, water, fltrd, ug/L (79847)
MAR													
20...	<0.02	<0.006	<0.02	<0.02	<0.01	<0.008	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	<0.01
APR													
02...	<0.02	<0.006	<0.02	--	--	<0.008	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	<0.01
MAY													
01...	<0.02	<0.006	<0.02	--	--	<0.008	<0.3	<0.034	<0.07	<0.02	M	<0.005	<0.01
08...	<0.02	<0.006	<0.02	--	--	<0.008	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	<0.01
JUN													
18...	<0.02	<0.006	<0.02	--	--	<0.008	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	<0.01
JUL													
08...	<0.02	<0.006	<0.02	--	--	<0.008	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	<0.01
08...	<0.02	<0.006	<0.02	--	--	<0.008	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	<0.01
AUG													
20...	<0.02	<0.006	E.01	--	--	<0.008	<0.3	<0.050	<0.07	<0.02	<0.01	<0.005	<0.01
26...	<0.02	<0.006	M	--	--	<0.008	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	<0.01
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
16...	<0.02	<0.006	<0.02	--	--	<0.008	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	<0.01

03437400 NORTH FORK LITTLE RIVER AT GARY LANE BRIDGE NEAR HOPKINSVILLE, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Tri-allate, water, fltrd 0.7u GF ug/L (82678)	Tribu-phos, water, fltrd, ug/L (61610)	Tri-flur-alin, water, fltrd 0.7u GF ug/L (82661)	z-Di-metho-morph, water, fltrd, ug/L (79845)	Di-chlor-vos, water fltrd, ug/L (38775)	Sus-pended sedi-ment concen-tration mg/L (80154)
MAR						
20...	<0.002	<0.004	<0.009	<0.05	<0.01	63
APR						
02...	<0.002	<0.004	<0.009	<0.05	<0.01	13
MAY						
01...	<0.002	<0.004	<0.009	<0.05	<0.01	74
08...	<0.002	<0.004	<0.009	<0.05	<0.01	162
JUN						
18...	<0.002	<0.004	<0.009	<0.05	<0.01	8
JUL						
08...	<0.002	<0.004	<0.009	<0.05	<0.01	2
08...	<0.002	<0.004	<0.009	<0.05	<0.01	--
AUG						
20...	<0.002	<0.004	<0.009	<0.05	<0.01	--
26...	<0.002	<0.004	<0.009	<0.05	<0.01	9
26...	--	--	--	--	--	--
SEP						
16...	<0.002	<0.004	<0.009	<0.05	<0.01	7

E--Laboratory estimated value.
<--Numeric result is less than the value shown.
M--Presence of material verified but not quantified.

03437600 SOUTH FORK LITTLE RIVER AT KY 107 NEAR HOPKINSVILLE, KY

WATER-QUALITY RECORDS

LOCATION.--Lat 36°47'52", long 87°30'52", Christian County, Hydrologic Unit 05130205.

DRAINAGE AREA.--68 mi^2.

PERIOD OF RECORD.--March 2003 to current water year.

COOPERATION.--Kentucky Department of Agriculture and the Kentucky Environmental and Public Protection Cabinet.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Sample type	Instan-taneous dis-charge, cfs (00061)	Dis-solved oxygen, mg/L (00300)	Dis-solved oxygen, percent of sat-uration (00301)	pH, water, unfltrd field, std units (00400)	Specif. conduc-tance, wat unf uS/cm 25 degC (00095)	Temper-ature, water, deg C (00010)	Alka-linity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicar-bonate, wat flt incrm. titr., field, mg/L (00453)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)
MAR												
20...	1650	Environmental	144	9.4	80	7.8	324	7.5	112	137	0.60	3.39
APR												
02...	1620	Environmental	84	12.3	123	8.0	427	15.5	168	205	<0.04	4.53
02...	1630	Replicate	--	--	--	--	--	--	--	--	<0.04	4.59
MAY												
01...	1345	Environmental	191	9.0	94	7.6	332	17.0	112	136	<0.04	4.36
08...	1430	Environmental	560	9.3	95	7.4	323	16.0	125	153	<0.04	4.11
JUN												
18...	1330	Environmental	70	8.6	93	7.7	454	18.9	--	--	<0.04	4.88
JUL												
08...	1250	Environmental	12	8.8	105	7.9	499	23.7	185	225	<0.04	4.04
AUG												
20...	0930	Environmental	15	11.4	132	7.8	502	22.4	175	213	<0.04	3.90
26...	1240	Environmental	27	7.7	88	7.9	478	22.2	188	--	<0.04	3.48
SEP												
16...	1230	Environmental	22	9.0	101	7.8	519	21.1	194	--	<0.04	3.65
16...	1238	Field Blank	--	--	--	--	--	--	--	--	<0.015	<0.022

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ortho-phos-phate, water, fltrd, mg/L as P (00671)	Phos-phorus, water, unfltrd mg/L (00665)	1,4-Naphth-oquin-one, water, fltrd, ug/L (61611)	1-Naph-thol, water, fltrd 0.7u GF ug/L (49295)	2-(4-t-Butyl-phenoxy)cyclo-hexanol wat flt ug/L (61637)	2,5-Di-chloro-aniline water, fltrd, ug/L (61614)	2,6-Di-ethyl-aniline water fltrd 0.7u GF ug/L (82660)	2-[(2-Et-6-Me -Ph)- -amino] propan-1-ol, ug/L (61615)	2Amino-N-iso-propyl-benz-amide, wat flt ug/L (61617)	CIAT, water, fltrd, ug/L (04040)	2-Ethyl -6-methyl-aniline water, fltrd, ug/L (61620)	3-(Tri-fluoro-methyl) aniline water, fltrd, ug/L (61630)	3,4-Di-chloro-aniline water fltrd, ug/L (61625)
MAR													
20...	0.249	0.39	<0.05	<0.09	<0.01	<0.03	<0.006	<0.1	<0.005	E.290	<0.004	<0.01	<0.004
APR													
02...	0.008	0.024	<0.05	<0.09	<0.01	<0.03	<0.006	<0.1	<0.005	E.280	<0.004	<0.01	<0.004
02...	0.009	0.024	<0.05	<0.09	<0.01	<0.03	<0.006	<0.1	<0.005	E.277	<0.004	<0.01	<0.004
MAY													
01...	0.043	0.132	<0.05	<0.09	<0.01	<0.03	<0.006	<0.1	<0.005	E.609	<0.004	<0.01	<0.004
08...	0.039	0.146	<0.05	<0.09	<0.01	<0.03	<0.006	<0.1	<0.005	E.454	<0.004	<0.01	<0.004
JUN													
18...	0.025	0.046	<0.05	<0.09	<0.01	<0.03	<0.006	<0.1	<0.005	E.293	<0.004	<0.01	<0.004
JUL													
08...	0.022	0.039	<0.05	<0.09	<0.01	<0.03	<0.006	<0.1	<0.005	E.219	<0.004	<0.01	<0.004
AUG													
20...	0.018	0.040	<0.05	<0.09	<0.01	<0.03	<0.006	<0.1	<0.005	E.231	<0.004	<0.01	<0.004
26...	0.046	0.076	<0.05	--	<0.01	<0.03	<0.006	<0.1	<0.005	E.211	<0.004	<0.01	<0.004
SEP													
16...	0.026	0.042	<0.05	--	<0.01	<0.03	<0.006	<0.1	<0.005	E.224	<0.004	<0.01	<0.004
16...	<0.007	--	--	--	--	--	--	--	--	--	--	--	--

03437600 SOUTH FORK LITTLE RIVER AT KY 107 NEAR HOPKINSVILLE, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	3,5-Di-chloro-aniline water, fltrd, ug/L (61627)	3-Phen-oxy-benzyl alcohol water, fltrd, ug/L (61629)	4-(MeOH)-pendi-meth-alin, wat flt ug/L (61665)	4,4-Di' chloro-benzo-phen-one, wat flt ug/L (61631)	4Chloro 2methyl phenol, water, fltrd, ug/L (61633)	4Chloro phenyl-methyl sulfone water, fltrd, ug/L (61634)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-Endo-sulfan, water, fltrd, ug/L (34362)	alpha-HCH, water, fltrd, ug/L (34253)	alpha-HCH-d6, sur2002 /9002, wat unf percent recovry (99224)	alpha-HCH-d6, surrog, wat flt 0.7u GF percent recovry (91065)	Atra-zine, water, fltrd, ug/L (39632)
MAR													
20...	<0.005	<0.05	<0.1	<0.003	<0.006	<0.03	<0.006	<0.004	<0.005	<0.005	90.3	91.8	11.4
APR													
02...	<0.005	<0.05	<0.1	<0.003	<0.006	<0.03	<0.006	<0.004	<0.005	<0.005	101	94.6	1.55
02...	<0.005	<0.05	<0.1	<0.003	<0.006	<0.03	<0.006	E.003	<0.005	<0.005	96.4	83.2	1.50
MAY													
01...	<0.005	<0.05	<0.1	<0.003	<0.006	<0.03	2.47	0.008	<0.005	<0.005	89.4	90.3	15.0
08...	<0.005	<0.05	<0.1	<0.003	<0.006	<0.03	0.464	<0.004	<0.005	<0.005	87.7	92.1	2.13
JUN													
18...	<0.005	<0.05	<0.1	<0.016	<0.006	<0.03	0.033	<0.004	<0.005	<0.005	108	90.0	0.456
JUL													
08...	<0.005	<0.05	<0.1	<0.003	<0.006	<0.03	0.030	<0.004	<0.005	<0.005	91.2	94.7	0.306
AUG													
20...	<0.005	--	--	<0.003	<0.006	<0.03	0.019	<0.004	<0.005	<0.005	85.8	85.4	0.221
26...	<0.005	--	--	<0.003	<0.006	<0.03	0.019	<0.004	<0.005	<0.005	94.5	101	0.197
SEP													
16...	<0.005	--	--	<0.003	<0.006	<0.03	0.015	<0.010	<0.005	<0.005	92.9	103	0.167
16...	--	--	--	--	--	--	--	--	--	--	--	--	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Azin-phos-methyl oxon, water, fltrd, ug/L (61635)	Azin-phos-methyl, water, fltrd 0.7u GF ug/L (82686)	Ben-flur-alin, water, fltrd 0.7u GF ug/L (82673)	beta-Endo-sulfan, water, fltrd, ug/L (34357)	Bifen-thrin, water, fltrd, ug/L (61580)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd 0.7u GF ug/L (82680)	Carbo-furan, water, fltrd 0.7u GF ug/L (82674)	Chlor-pyrifos oxon, water, fltrd, ug/L (61636)	Chlor-pyrifos water, fltrd, ug/L (38933)	cis-Per-methrin water fltrd 0.7u GF ug/L (82687)	cis-Propi-cona-zole, water, fltrd, ug/L (79846)	Cyana-zine, water, fltrd, ug/L (04041)
MAR													
20...	<0.02	<0.050	<0.010	<0.01	<0.005	<0.002	<0.041	<0.020	<0.06	<0.005	<0.006	<0.008	<0.018
APR													
02...	<0.02	<0.050	<0.010	<0.01	<0.005	<0.002	<0.041	<0.020	<0.06	<0.005	<0.006	<0.008	<0.018
02...	<0.02	<0.050	<0.010	<0.01	<0.005	<0.002	<0.041	<0.020	<0.06	<0.005	<0.006	<0.008	<0.018
MAY													
01...	<0.02	<0.050	<0.010	<0.01	<0.005	<0.002	E.037	<0.020	<0.06	<0.005	<0.006	<0.008	<0.018
08...	<0.02	<0.050	<0.010	<0.01	<0.005	<0.002	E.005	<0.020	<0.06	<0.005	<0.006	<0.008	<0.018
JUN													
18...	<0.02	<0.050	<0.010	<0.01	<0.005	<0.002	<0.041	<0.020	<0.02	<0.005	<0.006	<0.008	<0.018
JUL													
08...	<0.02	<0.050	<0.010	<0.01	<0.005	<0.002	<0.041	<0.020	<0.06	<0.005	<0.006	<0.008	<0.018
AUG													
20...	<0.02	<0.050	<0.010	<0.01	<0.005	<0.002	<0.041	E.013	<0.06	<0.005	<0.006	<0.008	<0.018
26...	<0.02	<0.050	<0.010	<0.01	<0.005	<0.002	E.008	E.006	<0.06	<0.005	<0.006	<0.008	<0.018
SEP													
16...	<0.02	<0.050	<0.010	<0.01	<0.005	<0.002	<0.041	<0.020	<0.06	<0.005	<0.006	<0.008	<0.018
16...	--	--	--	--	--	--	--	--	--	--	--	--	--

03437600 SOUTH FORK LITTLE RIVER AT KY 107 NEAR HOPKINSVILLE, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Cyclo-ate, water, fltrd, ug/L (04031)	lambda-Cyhalo-thrin, water, fltrd, ug/L (61595)	Cyper-methrin water, fltrd, ug/L (61586)	DCPA, water fltrd 0.7u GF ug/L (82682)	Diazi-non, water, fltrd, ug/L (39572)	Dicro-tophos, water fltrd, ug/L (38454)	Diel-drin, water, fltrd, ug/L (39381)	Dimeth-oate, water, fltrd 0.7u GF ug/L (82662)	Disulf-oton sulfone water, fltrd, ug/L (61640)	Disulf-oton sulf-oxide, water, fltrd, ug/L (61641)	Disul-foton, water, fltrd 0.7u GF ug/L (82677)	e-Di-metho-morph, water, fltrd, ug/L (79844)	Endo-sulfan ether, water, fltrd, ug/L (61642)
MAR													
20...	<0.005	<0.009	<0.009	<0.003	<0.005	<0.08	<0.005	<0.006	0.10	E.079	<0.02	<0.02	<0.004
APR													
02...	<0.005	<0.009	<0.009	<0.003	<0.005	<0.08	<0.005	<0.006	E.01	<0.002	<0.02	<0.02	<0.004
02...	<0.005	<0.009	<0.009	<0.003	<0.005	<0.08	<0.005	<0.006	E.01	<0.002	<0.02	<0.02	<0.004
MAY													
01...	<0.005	<0.009	<0.009	<0.003	0.010	<0.08	E.003	<0.006	<0.02	<0.002	<0.02	<0.02	<0.004
08...	<0.005	<0.009	<0.009	<0.003	0.005	<0.08	<0.005	<0.006	E.01	<0.002	<0.02	<0.02	<0.004
JUN													
18...	<0.005	<0.009	<0.016	<0.003	<0.006	<0.08	0.005	<0.006	<0.02	<0.002	<0.02	<0.02	<0.004
JUL													
08...	<0.005	<0.009	<0.009	<0.003	<0.005	<0.08	0.005	<0.006	<0.02	<0.002	<0.02	<0.02	<0.004
AUG													
20...	<0.005	<0.009	<0.009	<0.003	0.005	<0.08	0.005	<0.006	<0.02	<0.002	<0.02	<0.02	<0.004
26...	<0.005	<0.009	<0.009	<0.003	0.024	<0.08	0.007	<0.006	<0.02	<0.002	<0.02	<0.02	<0.004
SEP													
16...	<0.005	<0.009	<0.009	<0.003	<0.005	<0.08	<0.010	<0.006	<0.02	<0.002	<0.02	<0.02	<0.004
16...	--	--	--	--	--	--	--	--	--	--	--	--	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	EPTC, water, fltrd 0.7u GF ug/L (82668)	Ethal-flur-alin, water, fltrd 0.7u GF ug/L (82663)	Ethion monoxon water, fltrd, ug/L (61644)	Ethion, water, fltrd, ug/L (82346)	Etho-prop, water, fltrd 0.7u GF ug/L (82672)	Fenami-phos sulfone water, fltrd, ug/L (61645)	Fenami-phos sulf-oxide, water, fltrd, ug/L (61646)	Fenami-phos, water, fltrd, ug/L (61591)	Fen-thion sulf-oxide, water, fltrd, ug/L (61647)	Flume-tralin, water, fltrd, ug/L (61592)	Fonofos oxon, water, fltrd, ug/L (61649)	Fonofos water, fltrd, ug/L (04095)	Hexa-zinone, water, fltrd, ug/L (04025)
MAR													
20...	<0.002	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.004	<0.002	<0.003	<0.013
APR													
02...	<0.002	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.004	<0.002	<0.003	<0.013
02...	<0.002	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.004	<0.002	<0.003	<0.013
MAY													
01...	<0.002	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.004	<0.002	<0.003	<0.013
08...	<0.002	<0.009	<0.03	<0.004	<0.005	<0.031	<0.03	<0.03	<0.008	<0.004	<0.002	<0.003	<0.013
JUN													
18...	<0.002	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.004	<0.002	<0.003	<0.013
JUL													
08...	<0.002	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.004	<0.002	<0.003	<0.013
AUG													
20...	<0.015	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.004	<0.002	<0.003	<0.013
26...	<0.002	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.004	<0.002	<0.003	<0.013
SEP													
16...	<0.002	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.004	<0.002	<0.003	<0.013
16...	--	--	--	--	--	--	--	--	--	--	--	--	--

03437600 SOUTH FORK LITTLE RIVER AT KY 107 NEAR HOPKINSVILLE, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Iprodione, water, fltrd, ug/L (61593)	Isofenphos, water, fltrd, ug/L (61594)	Lindane water, fltrd, ug/L (39341)	Linuron water fltrd 0.7u GF ug/L (82666)	Malaoxon, water, fltrd, ug/L (61652)	Malathion, water, fltrd, ug/L (39532)	Metalaxyl, water, fltrd, ug/L (61596)	Methialthion water, fltrd, ug/L (61598)	c-Permethric acid methyl ester, wat flt ug/L (79842)	Methyl paraoxon, water, fltrd, ug/L (61664)	Methyl parathion, water, fltrd 0.7u GF ug/L (82667)	t-Permethric acid methyl ester, wat flt ug/L (79843)	Metolachlor, water, fltrd, ug/L (39415)
MAR													
20...	<1	<0.003	<0.004	<0.035	<0.008	<0.027	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	0.015
APR													
02...	<1	<0.003	<0.004	<0.035	<0.008	<0.027	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	0.016
02...	<1	<0.003	<0.004	<0.035	<0.008	<0.027	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	0.015
MAY													
01...	<1	<0.003	<0.004	<0.035	<0.008	E.006	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	0.324
08...	<1	<0.003	<0.004	<0.035	<0.008	<0.027	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	0.040
JUN													
18...	<1	<0.003	<0.004	<0.035	<0.008	<0.027	0.008	<0.006	<0.04	<0.03	<0.006	<0.03	0.024
JUL													
08...	<1	<0.003	<0.004	<0.035	<0.008	<0.027	0.005	<0.006	<0.04	<0.03	<0.006	<0.03	0.018
AUG													
20...	<1	<0.003	<0.004	<0.035	<0.008	<0.027	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	0.015
26...	<1	<0.003	<0.004	<0.035	<0.008	<0.027	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	0.024
SEP													
16...	<1	<0.003	<0.004	<0.035	<0.008	<0.027	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	0.017
16...	--	--	--	--	--	--	--	--	--	--	--	--	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Metribuzin, water, fltrd, ug/L (82630)	Molinate, water, fltrd 0.7u GF ug/L (82671)	Myclobutanil water, fltrd, ug/L (61599)	Napropamide, water, fltrd 0.7u GF ug/L (82684)	O-Et-O-Me-S-Pr-phosphorothioate wat flt ug/L (61660)	Oxyfluorfen, water, fltrd, ug/L (61600)	p,p'-DDE, water, fltrd, ug/L (34653)	Paraoxon, water, fltrd, ug/L (61663)	Parathion, water, fltrd, ug/L (39542)	Pebulate, water, fltrd 0.7u GF ug/L (82669)	Pendimethalin, water, fltrd 0.7u GF ug/L (82683)	Phorate oxon, water, fltrd, ug/L (61666)	Phorate water fltrd 0.7u GF ug/L (82664)
MAR													
20...	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011
APR													
02...	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011
02...	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011
MAY													
01...	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011
08...	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011
JUN													
18...	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007	<0.003	<0.016	<0.010	<0.004	<0.022	<0.10	<0.011
JUL													
08...	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011
AUG													
20...	0.006	<0.002	<0.008	<0.007	<0.008	<0.007	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011
26...	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011
SEP													
16...	0.008	<0.002	<0.008	<0.007	<0.008	<0.007	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011
16...	--	--	--	--	--	--	--	--	--	--	--	--	--

03437600 SOUTH FORK LITTLE RIVER AT KY 107 NEAR HOPKINSVILLE, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Phosmet oxon, water, fltrd, ug/L (61668)	Phosmet water, fltrd, ug/L (61601)	Phoste-bupirim water, fltrd, ug/L (61602)	Pro-fenofos water, fltrd, ug/L (61603)	Prome-ton, water, fltrd, ug/L (04037)	Prome-tryn, water, fltrd, ug/L (04036)	Pron-amide, water, fltrd 0.7u GF ug/L (82676)	Propa-chlor, water, fltrd, ug/L (04024)	Pro-panil, water, fltrd 0.7u GF ug/L (82679)	Propar-gite, water, fltrd 0.7u GF ug/L (82685)	Propet-amphos, water, fltrd, ug/L (61604)	Sima-zine, water, fltrd, ug/L (04035)	Sulfo-tepp, water, fltrd, ug/L (61605)
MAR													
20...	<0.06	<0.008	<0.005	<0.006	<0.01	<0.005	<0.004	<0.010	<0.011	<0.02	<0.004	3.91	<0.003
APR													
02...	<0.06	<0.008	<0.005	<0.006	M	<0.005	<0.004	<0.010	<0.011	<0.02	<0.004	0.206	<0.003
02...	<0.06	<0.008	<0.005	<0.006	M	<0.005	<0.004	<0.010	<0.011	<0.02	<0.004	0.207	<0.003
MAY													
01...	<0.06	<0.008	<0.005	<0.006	0.02	<0.005	<0.004	<0.010	<0.011	<0.02	<0.004	0.582	<0.003
08...	<0.06	<0.008	<0.005	<0.006	E.01	<0.005	<0.004	<0.010	<0.011	<0.02	<0.004	0.231	<0.003
JUN													
18...	<0.06	<0.008	<0.005	<0.006	E.01	<0.005	<0.004	<0.010	<0.011	<0.02	<0.004	0.049	<0.003
JUL													
08...	<0.06	<0.008	<0.005	<0.006	E.02	<0.005	<0.004	<0.010	<0.011	<0.02	<0.004	0.048	<0.003
AUG													
20...	<0.06	<0.008	<0.005	<0.006	E.01	<0.005	<0.004	<0.010	<0.011	<0.02	<0.004	0.040	<0.003
26...	<0.06	<0.008	<0.005	<0.006	0.02	<0.005	<0.004	<0.010	<0.011	<0.03	<0.004	0.037	<0.003
SEP													
16...	<0.06	<0.008	<0.005	<0.006	E.01	<0.005	<0.004	<0.010	<0.011	<0.04	<0.004	0.031	<0.003
16...	--	--	--	--	--	--	--	--	--	--	--	--	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Sulpro-fos, water, fltrd, ug/L (38716)	Tebu-pirim-phos oxon, water, fltrd, ug/L (61669)	Tebu-thiuron water fltrd 0.7u GF ug/L (82670)	Teflu-thrin metab-olite R119365 wat flt ug/L (61671)	Teflu-thrin metab-olite R152913 wat flt ug/L (61672)	Teflu-thrin, water, fltrd, ug/L (61606)	Teme-phos, water, fltrd, ug/L (61607)	Terba-cil, water, fltrd 0.7u GF ug/L (82665)	Ter-bufos oxon sulfone water, fltrd, ug/L (61674)	Terbu-fos, water, fltrd 0.7u GF ug/L (82675)	Ter-buthyl-azine, water, fltrd, ug/L (04022)	Thio-bencarb water fltrd 0.7u GF ug/L (82681)	trans-Propi-cona-zole, water, fltrd, ug/L (79847)
MAR													
20...	<0.02	<0.006	<0.02	<0.02	<0.01	<0.008	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	<0.01
APR													
02...	<0.02	<0.006	<0.02	--	--	<0.008	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	<0.01
02...	<0.02	<0.006	<0.02	--	--	<0.008	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	<0.01
MAY													
01...	<0.02	<0.006	E.01	--	--	<0.008	<0.3	<0.034	<0.07	<0.02	0.01	<0.005	<0.01
08...	<0.02	<0.006	<0.02	--	--	<0.008	<0.3	E.008	<0.07	<0.02	<0.01	<0.005	<0.01
JUN													
18...	<0.02	<0.006	<0.02	--	--	<0.008	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	<0.01
JUL													
08...	<0.02	<0.006	<0.02	--	--	<0.008	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	<0.01
AUG													
20...	<0.02	<0.006	E.01	--	--	<0.008	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	<0.01
26...	<0.02	<0.006	E.01	--	--	<0.008	<0.3	E.018	<0.07	<0.02	<0.01	<0.005	<0.01
SEP													
16...	<0.02	<0.006	E.01	--	--	<0.008	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	<0.01
16...	--	--	--	--	--	--	--	--	--	--	--	--	--

03437600 SOUTH FORK LITTLE RIVER AT KY 107 NEAR HOPKINSVILLE, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Tri-allate, water, fltrd 0.7u GF ug/L (82678)	Tribu-phos, water, fltrd, ug/L (61610)	Tri-flur-alin, water, fltrd 0.7u GF ug/L (82661)	z-Di-metho-morph, water, fltrd, ug/L (79845)	Di-chlor-vos, water fltrd, ug/L (38775)	Sus-pended sedi-ment concen-tration mg/L (80154)
MAR						
20...	<0.002	<0.004	<0.009	<0.05	<0.01	81
APR						
02...	<0.002	<0.004	<0.009	<0.05	<0.01	4
02...	<0.002	<0.004	<0.009	<0.05	<0.01	5
MAY						
01...	<0.002	<0.004	<0.009	<0.05	<0.01	47
08...	<0.002	<0.004	<0.009	<0.05	<0.01	106
JUN						
18...	<0.002	<0.004	<0.009	<0.05	<0.01	9
JUL						
08...	<0.002	<0.004	<0.009	<0.05	<0.01	1
AUG						
20...	<0.002	<0.004	<0.009	<0.05	<0.01	--
26...	<0.002	<0.004	<0.009	<0.05	<0.01	6
SEP						
16...	<0.002	<0.004	<0.009	<0.05	<0.01	5
16...	--	--	--	--	--	--

E--Laboratory estimated value.
<--Numeric result is less than the value shown.
M--Presence of material verified but not quantified.

03437680 LITTLE RIVER AT KY 345 NEAR CADIZ, KY

WATER-QUALITY RECORDS

LOCATION.--Lat 36°47'02", long 87°32'50", Christian County, Hydrologic Unit 05130205.

PERIOD OF RECORD.--May 1, 2003 and Aug. 20, 2003.

COOPERATION.--Kentucky Department of Agriculture and the Kentucky Environmental and Public Protection Cabinet.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Sample type	Instan- taneous dis- charge, cfs (00061)	Dis- solved oxygen, mg/L (00300)	Dis- solved oxygen, percent of sat- uration (00301)	pH, water, unfltrd field, std units (00400)	Specif. conduc- tance, wat unf uS/cm 25 degC (00095)	Temper- ature, water, deg C (00010)	Alka- linity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicar- bonate, wat flt incrm. titr., field, mg/L (00453)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)
MAY												
01...	1220	Environmental	564	8.2	86	7.4	298	17.2	112	136	E.03	3.14
AUG												
20...	1340	Environmental	33	13.6	160	7.7	534	23.7	164	200	<0.04	3.80
20...	1348	Field Blank	--	--	--	--	--	--	--	--	<0.04	<0.06

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ortho- phos- phate, water, fltrd, mg/L as P (00671)	Phos- phorus, water, unfltrd mg/L (00665)	1,4- Naphth- oquin- one, water, fltrd, ug/L (61611)	1-Naph- thol, water, fltrd 0.7u GF ug/L (49295)	2-(4-t- Butyl- phenoxy)cyclo- hexanol wat flt ug/L (61637)	2,5-Di- chloro- aniline water, fltrd, ug/L (61614)	2,6-Di- ethyl- aniline water fltrd 0.7u GF ug/L (82660)	2-[(2- Et-6-Me -Ph)- -amino] propan- 1-ol, ug/L (61615)	2Amino- N-iso- propyl- benz- amide, wat flt ug/L (61617)	CIAT, water, fltrd, ug/L (04040)	2-Ethyl -6- methyl- aniline water, fltrd, ug/L (61620)	3-(Tri- fluoro- methyl) aniline water, fltrd, ug/L (61630)	3,4-Di- chloro- aniline water fltrd, ug/L (61625)
MAY													
01...	0.054	0.175	<0.05	<0.09	<0.01	<0.03	<0.006	<0.1	<0.005	E.537	<0.004	<0.01	<0.004
AUG													
20...	0.308	0.391	<0.05	<0.09	<0.01	<0.03	<0.006	<0.1	<0.005	E.206	<0.004	<0.01	0.036
20...	<0.007	<0.004	--	--	--	--	--	--	--	--	--	--	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	3,5-Di- chloro- aniline water, fltrd, ug/L (61627)	3-Phen- oxy- benzyl alcohol water, fltrd, ug/L (61629)	4- (MeOH)- pendi- meth- alin, wat flt ug/L (61665)	4,4-Di' chloro- benzo- phen- one, wat flt ug/L (61631)	4Chloro 2methyl phenol, water, fltrd, ug/L (61633)	4Chloro phenyl- methyl sulfone water, fltrd, ug/L (61634)	Aceto- chlor, water, fltrd, ug/L (49260)	Ala- chlor, water, fltrd, ug/L (46342)	alpha- Endo- sulfan, water, fltrd, ug/L (34362)	alpha- HCH, water, fltrd, ug/L (34253)	alpha- HCH-d6, sur2002 /9002, wat unf percent recovry (99224)	alpha- HCH-d6, surrog, wat flt 0.7u GF percent recovry (91065)	Atra- zine, water, fltrd, ug/L (39632)
MAY													
01...	<0.005	<0.05	<0.1	<0.003	<0.006	<0.03	1.83	0.008	<0.005	<0.005	91.5	94.0	14.2
AUG													
20...	<0.005	--	--	<0.003	<0.006	<0.03	0.008	<0.004	<0.005	<0.005	83.9	85.5	0.417
20...	--	--	--	--	--	--	--	--	--	--	--	--	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Azin- phos- methyl oxon, water, fltrd, ug/L (61635)	Azin- phos- methyl, water, fltrd 0.7u GF ug/L (82686)	Ben- flur- alin, water, fltrd 0.7u GF ug/L (82673)	beta- Endo- sulfan, water, fltrd, ug/L (34357)	Bifen- thrin, water, fltrd, ug/L (61580)	Butyl- ate, water, fltrd, ug/L (04028)	Car- baryl, water, fltrd 0.7u GF ug/L (82680)	Carbo- furan, water, fltrd 0.7u GF ug/L (82674)	Chlor- pyrifos oxon, water, fltrd, ug/L (61636)	Chlor- pyrifos water, fltrd, ug/L (38933)	cis- Per- methrin water fltrd 0.7u GF ug/L (82687)	cis- Propi- cona- zole, water, fltrd, ug/L (79846)	Cyana- zine, water, fltrd, ug/L (04041)
MAY													
01...	<0.02	<0.050	<0.010	<0.01	<0.005	<0.002	E.025	<0.020	<0.06	<0.005	<0.006	<0.008	<0.018
AUG													
20...	<0.02	<0.050	<0.010	<0.01	<0.005	<0.002	<0.041	<0.020	<0.06	<0.005	<0.006	<0.008	<0.018
20...	--	--	--	--	--	--	--	--	--	--	--	--	--

03437680 LITTLE RIVER AT KY 345 NEAR CADIZ, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Cyclo-ate, water, fltrd, ug/L (04031)	lambda-Cyhalo-thrin, water, fltrd, ug/L (61595)	Cyper-methrin water, fltrd, ug/L (61586)	DCPA, water fltrd 0.7u GF ug/L (82682)	Diazi-non, water, fltrd, ug/L (39572)	Dicro-tophos, water fltrd, ug/L (38454)	Diel-drin, water, fltrd, ug/L (39381)	Dimeth-oate, water, fltrd 0.7u GF ug/L (82662)	Disulf-oton sulfone water, fltrd, ug/L (61640)	Disulf-oton sulf-oxide, water, fltrd, ug/L (61641)	Disul-foton, water, fltrd 0.7u GF ug/L (82677)	e-Di-metho-morph, water, fltrd, ug/L (79844)	Endo-sulfan ether, water, fltrd, ug/L (61642)
MAY													
01...	<0.005	<0.009	<0.009	<0.003	0.019	<0.08	E.004	<0.006	<0.02	<0.002	<0.02	<0.02	<0.004
AUG													
20...	<0.005	<0.009	<0.009	<0.003	0.009	<0.08	0.005	<0.006	<0.02	<0.002	<0.02	<0.02	<0.004
20...	--	--	--	--	--	--	--	--	--	--	--	--	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	EPTC, water, fltrd 0.7u GF ug/L (82668)	Ethal-flur-alin, water, fltrd 0.7u GF ug/L (82663)	Ethion monoxon water, fltrd, ug/L (61644)	Ethion, water, fltrd, ug/L (82346)	Etho-prop, water, fltrd 0.7u GF ug/L (82672)	Fenami-phos sulfone water, fltrd, ug/L (61645)	Fenami-phos sulf-oxide, water, fltrd, ug/L (61646)	Fenami-phos, water, fltrd, ug/L (61591)	Fen-thion sulf-oxide, water, fltrd, ug/L (61647)	Flume-tralin, water, fltrd, ug/L (61592)	Fonofos oxon, water, fltrd, ug/L (61649)	Fonofos water, fltrd, ug/L (04095)	Hexa-zinone, water, fltrd, ug/L (04025)
MAY													
01...	0.004	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.004	<0.002	<0.003	<0.013
AUG													
20...	<0.010	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.004	<0.002	<0.003	<0.013
20...	--	--	--	--	--	--	--	--	--	--	--	--	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ipro-dione, water, fltrd, ug/L (61593)	Isofen-phos, water, fltrd, ug/L (61594)	Lindane water, fltrd, ug/L (39341)	Linuron water fltrd 0.7u GF ug/L (82666)	Mala-oxon, water, fltrd, ug/L (61652)	Mala-thion, water, fltrd, ug/L (39532)	Meta-laxyl, water, fltrd, ug/L (61596)	Methi-althion water, fltrd, ug/L (61598)	c-Per-methric acid methyl ester, wat flt ug/L (79842)	Methyl para-oxon, water, fltrd, ug/L (61664)	Methyl para-thion, water, fltrd 0.7u GF ug/L (82667)	t-Per-methric acid methyl ester, wat flt ug/L (79843)	Metola-chlor, water, fltrd, ug/L (39415)
MAY													
01...	<1	<0.003	<0.004	<0.035	<0.008	E.005	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	0.214
AUG													
20...	<1	<0.003	<0.004	<0.035	<0.008	<0.027	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	0.015
20...	--	--	--	--	--	--	--	--	--	--	--	--	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Metri-buzin, water, fltrd, ug/L (82630)	Moli-nate, water, fltrd 0.7u GF ug/L (82671)	Myclo-butanil water, fltrd, ug/L (61599)	Naprop-amide, water, fltrd 0.7u GF ug/L (82684)	O-Et-O-Me-S-Pr -phos-phoro-thioate wat flt ug/L (61660)	Oxy-fluor-fen, water, fltrd, ug/L (61600)	p,p'-DDE, water, fltrd, ug/L (34653)	Para-oxon, water, fltrd, ug/L (61663)	Para-thion, water, fltrd, ug/L (39542)	Peb-ulate, water, fltrd 0.7u GF ug/L (82669)	Pendi-meth-alin, water, fltrd 0.7u GF ug/L (82683)	Phorate oxon, water, fltrd, ug/L (61666)	Phorate water fltrd 0.7u GF ug/L (82664)
MAY													
01...	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011
AUG													
20...	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011
20...	--	--	--	--	--	--	--	--	--	--	--	--	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Phosmet oxon, water, fltrd, ug/L (61668)	Phosmet water, fltrd, ug/L (61601)	Phoste-bupirim water, fltrd, ug/L (61602)	Pro-fenofos water, fltrd, ug/L (61603)	Prome-ton, water, fltrd, ug/L (04037)	Prome-tryn, water, fltrd, ug/L (04036)	Pron-amide, water, fltrd 0.7u GF ug/L (82676)	Propa-chlor, water, fltrd, ug/L (04024)	Pro-panil, water, fltrd 0.7u GF ug/L (82679)	Propar-gite, water, fltrd 0.7u GF ug/L (82685)	Propet-amphos, water, fltrd, ug/L (61604)	Sima-zine, water, fltrd, ug/L (04035)	Sulfo-tepp, water, fltrd, ug/L (61605)
MAY													
01...	<0.06	<0.008	<0.005	<0.006	0.02	<0.005	<0.004	<0.010	<0.011	<0.02	<0.004	0.744	<0.003
AUG													
20...	<0.06	<0.008	<0.005	<0.006	E.01	<0.005	<0.004	<0.010	<0.011	<0.02	<0.004	0.048	<0.003
20...	--	--	--	--	--	--	--	--	--	--	--	--	--

03437680 LITTLE RIVER AT KY 345 NEAR CADIZ, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Sulprofos, water, fltrd, ug/L (38716)	Tebupirimphos oxon, water, fltrd, ug/L (61669)	Tebuthiuron water fltrd 0.7u GF ug/L (82670)	Tefluthrin, water, fltrd, ug/L (61606)	Temephos, water, fltrd, ug/L (61607)	Terbacil, water, fltrd 0.7u GF ug/L (82665)	Terbufos oxon sulfone water, fltrd, ug/L (61674)	Terbufos, water, fltrd 0.7u GF ug/L (82675)	Terbuthylazine, water, fltrd, ug/L (04022)	Thiobencarb water fltrd 0.7u GF ug/L (82681)	trans-Propiconazole, water, fltrd, ug/L (79847)	Triallate, water, fltrd 0.7u GF ug/L (82678)	Tribuphos, water, fltrd, ug/L (61610)
MAY													
01...	<0.02	<0.006	<0.02	<0.008	<0.3	<0.034	<0.07	<0.02	0.01	<0.005	<0.01	<0.002	<0.004
AUG													
20...	<0.02	<0.006	<0.02	<0.008	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	<0.01	<0.002	<0.004
20...	--	--	--	--	--	--	--	--	--	--	--	--	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Trifluralin, water, fltrd 0.7u GF ug/L (82661)	z-Dimethomorph, water, fltrd, ug/L (79845)	Dichlorvos, water fltrd, ug/L (38775)	Suspended sediment concentration mg/L (80154)
MAY				
01...	<0.009	<0.05	<0.01	68
AUG				
20...	<0.009	<0.05	<0.01	--
20...	--	--	--	--

E--Laboratory estimated value.
<--Numeric result is less than the value shown.
M--Presence of material verified but not quantified.

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03437990 CASEY CREEK AT KY 525 NEAR CADIZ, KY

WATER-QUALITY RECORDS

LOCATION.--Lat 36°45'21", long 87°43'31", Trigg County, Hydrologic Unit 05130205.

DRAINAGE AREA.--306 mi^2.

PERIOD OF RECORD.--May 1, 2003 and Aug. 19, 2003.

COOPERATION.--Kentucky Department of Agriculture and the Kentucky Environmental and Public Protection Cabinet.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Sample type	Instantaneous discharge, cfs (00061)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Alkalinity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicarbonate, wat flt incrm. titr., field, mg/L (00453)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)
MAY												
01...	1630	Environmental	57	8.2	81	7.3	224	14.5	94	115	<0.04	2.18
AUG												
19...	1520	Environmental	5.2	10.4	114	7.7	356	19.4	168	204	<0.04	2.38

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	1,4-Naphthoquinone, water, fltrd, ug/L (61611)	1-Naphthol, water, fltrd 0.7u GF ug/L (49295)	2-(4-t-Butylphenoxy)cyclohexanol wat flt ug/L (61637)	2,5-Dichloroaniline water, fltrd, ug/L (61614)	2,6-Diethylaniline water fltrd 0.7u GF ug/L (82660)	2-[(2-Et-6-Me-Ph)--amino]propan-1-ol, ug/L (61615)	2Amino-N-isopropylbenzamide, wat flt ug/L (61617)	CIAT, water, fltrd, ug/L (04040)	2-Ethyl-6-methylaniline water, fltrd, ug/L (61620)	3-(Trifluoromethyl) aniline water, fltrd, ug/L (61630)	3,4-Dichloroaniline water fltrd, ug/L (61625)
MAY													
01...	0.026	0.069	<0.05	<0.09	<0.01	<0.03	<0.006	<0.1	<0.005	E.420	<0.004	<0.01	<0.004
AUG													
19...	0.020	0.027	<0.05	<0.09	<0.01	<0.03	<0.006	<0.1	<0.005	E.150	<0.004	<0.01	<0.004

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	3,5-Dichloroaniline water, fltrd, ug/L (61627)	3-Phenoxybenzyl alcohol water, fltrd, ug/L (61629)	4-(MeOH)-pendimethalin, wat flt ug/L (61665)	4,4-Di'chlorobenzophenone, wat flt ug/L (61631)	4Chloro 2methyl phenol, water, fltrd, ug/L (61633)	4Chloro phenylmethyl sulfone water, fltrd, ug/L (61634)	Acetochlor, water, fltrd, ug/L (49260)	Alachlor, water, fltrd, ug/L (46342)	alpha-Endosulfan, water, fltrd, ug/L (34362)	alpha-HCH, water, fltrd, ug/L (34253)	alpha-HCH-d6, sur2002 /9002, wat unf percent recovry (99224)	alpha-HCH-d6, surrog, wat flt 0.7u GF percent recovry (91065)	Atrazine, water, fltrd, ug/L (39632)
MAY													
01...	<0.005	<0.05	<0.1	<0.003	<0.006	<0.03	0.398	<0.004	<0.005	<0.005	89.7	91.4	4.73
AUG													
19...	<0.005	--	--	<0.003	<0.006	<0.03	<0.006	<0.004	<0.005	<0.005	103	81.6	0.094

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Azinphosmethyl oxon, water, fltrd, ug/L (61635)	Azinphosmethyl, water, fltrd 0.7u GF ug/L (82686)	Benfluralin, water, fltrd 0.7u GF ug/L (82673)	beta-Endosulfan, water, fltrd, ug/L (34357)	Bifenthrin, water, fltrd, ug/L (61580)	Butylate, water, fltrd, ug/L (04028)	Carbaryl, water, fltrd 0.7u GF ug/L (82680)	Carbofuran, water, fltrd 0.7u GF ug/L (82674)	Chlorpyrifos oxon, water, fltrd, ug/L (61636)	Chlorpyrifos water, fltrd, ug/L (38933)	cis-Permethrin water fltrd 0.7u GF ug/L (82687)	cis-Propiconazole, water, fltrd, ug/L (79846)	Cyanazine, water, fltrd, ug/L (04041)
MAY													
01...	<0.02	<0.050	<0.010	<0.01	<0.005	<0.002	<0.041	<0.020	<0.06	<0.005	<0.006	<0.008	<0.018
AUG													
19...	<0.02	<0.050	<0.010	<0.01	<0.005	<0.002	<0.041	<0.020	<0.06	<0.005	<0.006	<0.008	<0.018

03437990 CASEY CREEK AT KY 525 NEAR CADIZ, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Cyclo-ate, water, fltrd, ug/L (04031)	lambda-Cyhalo-thrin, water, fltrd, ug/L (61595)	Cyper-methrin water, fltrd, ug/L (61586)	DCPA, water fltrd 0.7u GF ug/L (82682)	Diazi-non, water, fltrd, ug/L (39572)	Dicro-tophos, water fltrd, ug/L (38454)	Diel-drin, water, fltrd, ug/L (39381)	Dimeth-oate, water, fltrd 0.7u GF ug/L (82662)	Disulf-oton sulfone water, fltrd, ug/L (61640)	Disulf-oton sulf-oxide, water, fltrd, ug/L (61641)	Disul-foton, water, fltrd 0.7u GF ug/L (82677)	e-Di-metho-morph, water, fltrd, ug/L (79844)	Endo-sulfan ether, water, fltrd, ug/L (61642)
MAY													
01...	<0.005	<0.009	<0.009	<0.003	<0.005	<0.08	<0.005	<0.006	<0.02	<0.002	<0.02	<0.02	<0.004
AUG													
19...	<0.005	<0.009	<0.009	<0.003	<0.005	<0.08	<0.005	<0.006	<0.02	<0.002	<0.02	<0.02	<0.004

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	EPTC, water, fltrd 0.7u GF ug/L (82668)	Ethal-flur-alin, water, fltrd 0.7u GF ug/L (82663)	Ethion monoxon water, fltrd, ug/L (61644)	Ethion, water, fltrd, ug/L (82346)	Etho-prop, water, fltrd 0.7u GF ug/L (82672)	Fenami-phos sulfone water, fltrd, ug/L (61645)	Fenami-phos sulf-oxide, water, fltrd, ug/L (61646)	Fenami-phos, water, fltrd, ug/L (61591)	Fen-thion sulf-oxide, water, fltrd, ug/L (61647)	Flume-tralin, water, fltrd, ug/L (61592)	Fonofos oxon, water, fltrd, ug/L (61649)	Fonofos water, fltrd, ug/L (04095)	Hexa-zinone, water, fltrd, ug/L (04025)
MAY													
01...	<0.002	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.004	<0.002	<0.003	<0.013
AUG													
19...	<0.002	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.004	<0.002	<0.003	<0.013

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ipro-dione, water, fltrd, ug/L (61593)	Isofen-phos, water, fltrd, ug/L (61594)	Lindane water, fltrd, ug/L (39341)	Linuron water fltrd 0.7u GF ug/L (82666)	Mala-oxon, water, fltrd, ug/L (61652)	Mala-thion, water, fltrd, ug/L (39532)	Meta-laxyl, water, fltrd, ug/L (61596)	Methi-althion water, fltrd, ug/L (61598)	c-Per-methric acid methyl ester, wat flt ug/L (79842)	Methyl para-oxon, water, fltrd, ug/L (61664)	Methyl para-thion, water, fltrd 0.7u GF ug/L (82667)	t-Per-methric acid methyl ester, wat flt ug/L (79843)	Metola-chlor, water, fltrd, ug/L (39415)
MAY													
01...	<1	<0.003	<0.004	<0.035	<0.008	<0.027	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	0.029
AUG													
19...	<1	<0.003	<0.004	<0.035	<0.008	<0.027	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	<0.013

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Metri-buzin, water, fltrd, ug/L (82630)	Moli-nate, water, fltrd 0.7u GF ug/L (82671)	Myclo-butanil water, fltrd, ug/L (61599)	Naprop-amide, water, fltrd 0.7u GF ug/L (82684)	O-Et-O-Me-S-Pr -phos-phoro-thioate wat flt ug/L (61660)	Oxy-fluor-fen, water, fltrd, ug/L (61600)	p,p'-DDE, water, fltrd, ug/L (34653)	Para-oxon, water, fltrd, ug/L (61663)	Para-thion, water, fltrd, ug/L (39542)	Peb-ulate, water, fltrd 0.7u GF ug/L (82669)	Pendi-meth-alin, water, fltrd 0.7u GF ug/L (82683)	Phorate oxon, water, fltrd, ug/L (61666)	Phorate water fltrd 0.7u GF ug/L (82664)
MAY													
01...	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011
AUG													
19...	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Phosmet oxon, water, fltrd, ug/L (61668)	Phosmet water, fltrd, ug/L (61601)	Phoste-bupirim water, fltrd, ug/L (61602)	Pro-fenofos water, fltrd, ug/L (61603)	Prome-ton, water, fltrd, ug/L (04037)	Prome-tryn, water, fltrd, ug/L (04036)	Pron-amide, water, fltrd 0.7u GF ug/L (82676)	Propa-chlor, water, fltrd, ug/L (04024)	Pro-panil, water, fltrd 0.7u GF ug/L (82679)	Propar-gite, water, fltrd 0.7u GF ug/L (82685)	Propet-amphos, water, fltrd, ug/L (61604)	Sima-zine, water, fltrd, ug/L (04035)	Sulfo-tepp, water, fltrd, ug/L (61605)
MAY													
01...	<0.06	<0.008	<0.005	<0.006	<0.01	<0.005	<0.004	<0.010	<0.011	<0.02	<0.004	0.143	<0.003
AUG													
19...	<0.06	<0.008	<0.005	<0.006	<0.01	<0.005	<0.004	<0.010	<0.011	<0.02	<0.004	0.011	<0.003

03437990 CASEY CREEK AT KY 525 NEAR CADIZ, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Sulprofos, water, fltrd, ug/L (38716)	Tebupirimphos oxon, water, fltrd, ug/L (61669)	Tebuthiuron water fltrd 0.7u GF ug/L (82670)	Tefluthrin, water, fltrd, ug/L (61606)	Temephos, water, fltrd, ug/L (61607)	Terbacil, water, fltrd 0.7u GF ug/L (82665)	Terbufos oxon sulfone water, fltrd, ug/L (61674)	Terbufos, water, fltrd 0.7u GF ug/L (82675)	Terbuthylazine, water, fltrd, ug/L (04022)	Thiobencarb water fltrd 0.7u GF ug/L (82681)	trans-Propiconazole, water, fltrd, ug/L (79847)	Triallate, water, fltrd 0.7u GF ug/L (82678)	Tribuphos, water, fltrd, ug/L (61610)
MAY													
01...	<0.02	<0.006	<0.02	<0.008	<0.3	<0.034	<0.07	<0.02	M	<0.005	<0.01	<0.002	<0.004
AUG													
19...	<0.02	<0.006	<0.02	<0.008	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	<0.01	<0.002	<0.004

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Trifluralin, water, fltrd 0.7u GF ug/L (82661)	z-Dimethomorph, water, fltrd, ug/L (79845)	Dichlorvos, water fltrd, ug/L (38775)	Suspended sediment concentration mg/L (80154)
MAY				
01...	<0.009	<0.05	<0.01	--
AUG				
19...	<0.009	<0.05	<0.01	--

E--Laboratory estimated value.
<--Numeric result is less than the value shown.
M--Presence of material verified but not quantified.

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03438000 LITTLE RIVER NEAR CADIZ, KY

WATER-QUALITY RECORDS

PERIOD OF RECORD.--March 2003 to current water year.

COOPERATION.--Kentucky Department of Agriculture and the Kentucky Environmental and Public Protection Cabinet.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Sample type	Instantaneous discharge, cfs (00061)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Alkalinity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicarbonate, wat flt incrm. titr., field, mg/L (00453)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)
MAR												
19...	1320	Environmental	544	10.0	101	7.6	209	15.0	100	122	0.11	2.81
APR												
01...	1200	Environmental	500	11.6	110	7.8	298	13.0	123	151	<0.04	3.30
01...	1208	Field Blank	--	--	--	--	--	--	--	--	--	--
MAY												
01...	1400	Environmental	857	8.7	91	7.5	268	17.0	105	128	E.04	3.04
09...	1340	Environmental	1,990	8.8	92	7.3	270	17.0	106	129	E.02	3.16
JUN												
17...	1530	Environmental	--	--	--	7.6	338	--	--	--	<0.04	3.73
17...	1540	Replicate	--	--	--	--	--	--	--	--	<0.04	3.70
JUL												
09...	1340	Environmental	91	8.8	106	7.8	434	24.2	175	212	<0.04	4.20
09...	1348	Field Blank	--	--	--	--	--	--	--	--	E.011	<0.022
AUG												
19...	1300	Environmental	92	9.1	107	7.9	427	23.1	179	218	<0.04	3.84
27...	1400	Environmental	247	8.5	96	7.5	324	21.2	138	--	<0.04	2.66
SEP												
17...	1320	Environmental	154	9.4	99	7.8	408	18.1	167	--	<0.04	3.58
17...	1328	Field Blank	--	--	--	--	--	--	--	--	<0.015	<0.022

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	1,4-Naphthoquinone, water, fltrd, ug/L (61611)	1-Naphthol, water, fltrd 0.7u GF ug/L (49295)	2-(4-t-Butylphenoxy)cyclohexanol wat flt ug/L (61637)	2,5-Dichloroaniline water, fltrd, ug/L (61614)	2,6-Diethylaniline water fltrd 0.7u GF ug/L (82660)	2-[(2-Et-6-Me-Ph)-amino]propan-1-ol, ug/L (61615)	2Amino-N-isopropylbenzamide, wat flt ug/L (61617)	CIAT, water, fltrd, ug/L (04040)	2-Ethyl-6-methylaniline water, fltrd, ug/L (61620)	3-(Trifluoromethyl)aniline water, fltrd, ug/L (61630)	3,4-Dichloroaniline water fltrd, ug/L (61625)
MAR													
19...	0.053	0.23	<0.05	<0.09	<0.01	<0.03	<0.006	<0.1	<0.005	E.259	<0.004	<0.01	<0.004
APR													
01...	0.034	0.079	<0.05	<0.09	<0.01	<0.03	<0.006	<0.1	<0.005	E.276	<0.004	<0.01	<0.004
01...	--	--	<0.05	<0.09	<0.01	<0.03	<0.006	<0.1	<0.005	<0.006	<0.004	<0.01	<0.004
MAY													
01...	0.070	0.31	<0.05	<0.09	<0.01	<0.03	<0.006	<0.1	<0.005	E.558	<0.004	<0.01	<0.004
09...	0.042	0.173	<0.05	<0.09	<0.01	<0.03	<0.006	<0.1	<0.005	E.439	<0.004	<0.01	<0.004
JUN													
17...	0.052	0.111	<0.05	<0.09	<0.01	<0.03	<0.006	<0.1	<0.005	E.297	<0.004	<0.01	<0.004
17...	0.053	0.110	<0.05	<0.09	<0.01	<0.03	<0.006	<0.1	<0.005	E.306	<0.004	<0.01	<0.004
JUL													
09...	0.060	0.080	<0.05	<0.09	<0.01	<0.03	<0.006	<0.1	<0.005	E.176	<0.004	<0.01	E.003
09...	<0.007	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
19...	0.059	0.083	<0.05	<0.09	<0.01	<0.03	<0.006	<0.1	<0.005	E.196	<0.004	<0.01	0.008
27...	0.103	0.165	<0.05	--	<0.01	<0.03	<0.006	<0.1	<0.005	E.210	<0.004	<0.01	0.006
SEP													
17...	0.080	0.114	<0.05	--	<0.01	<0.03	<0.006	<0.1	<0.005	E.241	<0.004	<0.01	0.005
17...	<0.007	--	--	--	--	--	--	--	--	--	--	--	--

03438000 LITTLE RIVER NEAR CADIZ, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	3,5-Di- chloro- aniline water, fltrd, ug/L (61627)	3-Phen- oxy- benzyl alcohol water, fltrd, ug/L (61629)	4- (MeOH)- pendi- meth- alin, wat flt ug/L (61665)	4,4-Di' chloro- benzo- phen- one, wat flt ug/L (61631)	4Chloro 2methyl phenol, water, fltrd, ug/L (61633)	4Chloro phenyl- methyl sulfone water, fltrd, ug/L (61634)	Aceto- chlor, water, fltrd, ug/L (49260)	Ala- chlor, water, fltrd, ug/L (46342)	alpha- Endo- sulfan, water, fltrd, ug/L (34362)	alpha- HCH, water, fltrd, ug/L (34253)	alpha- HCH-d6, sur2002 /9002, wat unf percent recovry (99224)	alpha- HCH-d6, surrog, wat flt 0.7u GF percent recovry (91065)	Atra- zine, water, fltrd, ug/L (39632)
MAR													
19...	<0.005	<0.05	<0.1	<0.003	<0.006	<0.03	<0.006	<0.004	<0.005	<0.005	86.8	87.6	9.57
APR													
01...	<0.005	<0.05	<0.1	<0.003	<0.006	<0.03	<0.006	<0.004	<0.005	<0.005	92.7	90.4	2.17
01...	<0.005	<0.05	<0.1	<0.003	<0.006	<0.03	<0.006	<0.004	<0.005	<0.005	92.9	85.4	<0.007
MAY													
01...	<0.005	<0.05	<0.1	<0.003	<0.006	<0.03	4.14	<0.004	<0.005	<0.005	94.9	94.0	14.8
09...	<0.005	<0.05	<0.1	<0.003	<0.006	<0.03	0.192	<0.004	<0.005	<0.005	98.2	96.5	2.86
JUN													
17...	<0.005	<0.05	<0.1	<0.016	<0.006	<0.03	0.019	<0.004	<0.005	<0.005	106	86.8	0.897
17...	<0.005	<0.05	<0.1	<0.016	<0.006	<0.03	0.018	<0.004	<0.005	<0.005	107	98.2	0.951
JUL													
09...	<0.005	<0.05	<0.1	<0.003	<0.006	<0.03	0.012	<0.004	<0.005	<0.005	89.4	91.9	0.226
09...	--	--	--	--	--	--	--	--	--	--	--		
AUG													
19...	<0.005	--	--	<0.003	<0.006	<0.03	E.005	<0.004	<0.005	<0.005	97.4	78.3	0.193
27...	<0.005	--	--	<0.003	<0.006	<0.03	0.008	<0.004	<0.005	<0.005	96.4	102	0.248
SEP													
17...	<0.005	--	--	<0.003	<0.006	<0.03	0.007	<0.004	<0.005	<0.005	91.0	101	0.210
17...	--	--	--	--	--	--	--	--	--	--	--	--	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Azin- phos- methyl oxon, water, fltrd, ug/L (61635)	Azin- phos- methyl, water, fltrd 0.7u GF ug/L (82686)	Ben- flur- alin, water, fltrd 0.7u GF ug/L (82673)	beta- Endo- sulfan, water, fltrd, ug/L (34357)	Bifen- thrin, water, fltrd, ug/L (61580)	Butyl- ate, water, fltrd, ug/L (04028)	Car- baryl, water, fltrd 0.7u GF ug/L (82680)	Carbo- furan, water, fltrd 0.7u GF ug/L (82674)	Chlor- pyrifos oxon, water, fltrd, ug/L (61636)	Chlor- pyrifos water, fltrd, ug/L (38933)	cis- Per- methrin water fltrd 0.7u GF ug/L (82687)	cis- Propi- cona- zole, water, fltrd, ug/L (79846)	Cyana- zine, water, fltrd, ug/L (04041)
MAR													
19...	<0.02	<0.050	<0.010	<0.01	<0.005	<0.002	<0.041	<0.020	<0.06	<0.005	<0.006	<0.008	<0.018
APR													
01...	<0.02	<0.050	<0.010	<0.01	<0.005	0.003	<0.041	<0.020	<0.06	<0.005	<0.006	<0.008	<0.018
01...	<0.02	<0.050	<0.010	<0.01	<0.005	<0.002	<0.041	<0.020	<0.06	<0.005	<0.006	<0.008	<0.018
MAY													
01...	<0.02	<0.050	<0.010	<0.01	<0.005	<0.002	E.031	<0.020	<0.06	<0.005	<0.006	<0.008	<0.018
09...	<0.02	<0.050	<0.010	<0.01	<0.005	<0.002	E.005	<0.020	<0.06	<0.005	<0.006	<0.008	<0.018
JUN													
17...	<0.02	<0.050	<0.010	<0.01	<0.005	<0.002	E.003	<0.020	<0.02	<0.005	<0.006	<0.008	<0.018
17...	<0.02	<0.050	<0.010	<0.01	<0.005	<0.002	E.003	<0.020	<0.02	<0.005	<0.006	<0.008	<0.018
JUL													
09...	<0.02	<0.050	<0.010	<0.01	<0.005	<0.002	<0.041	<0.020	<0.06	<0.005	<0.006	<0.008	<0.018
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
19...	<0.02	<0.050	<0.010	<0.01	<0.005	<0.002	<0.041	<0.020	<0.06	<0.005	<0.006	<0.008	<0.018
27...	<0.02	<0.050	<0.010	<0.01	<0.005	<0.002	E.010	E.006	<0.06	<0.005	<0.006	<0.008	<0.018
SEP													
17...	<0.02	<0.050	<0.010	<0.01	<0.005	<0.002	<0.041	<0.020	<0.06	<0.005	<0.006	<0.008	<0.018
17...	--	--	--	--	--	--	--	--	--	--	--	--	--

03438000 LITTLE RIVER NEAR CADIZ, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Cyclo- ate, water, fltrd, ug/L (04031)	lambda- Cyhalo- thrin, water, fltrd, ug/L (61595)	Cyper- methrin water, fltrd, ug/L (61586)	DCPA, water fltrd 0.7u GF ug/L (82682)	Diazi- non, water, fltrd, ug/L (39572)	Dicro- tophos, water fltrd, ug/L (38454)	Diel- drin, water, fltrd, ug/L (39381)	Dimeth- oate, water, fltrd 0.7u GF ug/L (82662)	Disulf- oton sulfone water, fltrd, ug/L (61640)	Disulf- oton sulf- oxide, water, fltrd, ug/L (61641)	Disul- foton, water, fltrd 0.7u GF ug/L (82677)	e-Di- metho- morph, water, fltrd, ug/L (79844)	Endo- sulfan ether, water, fltrd, ug/L (61642)
MAR													
19...	<0.005	<0.009	<0.009	<0.003	<0.005	<0.08	<0.005	<0.006	<0.02	<0.002	<0.02	<0.02	<0.004
APR													
01...	<0.005	<0.009	<0.009	<0.003	<0.005	<0.08	<0.005	<0.006	0.03	<0.002	<0.02	<0.02	<0.004
01...	<0.005	<0.009	<0.009	<0.003	<0.005	<0.08	<0.005	<0.006	<0.02	<0.002	<0.02	<0.02	<0.004
MAY													
01...	<0.005	<0.009	<0.009	<0.003	0.031	<0.08	<0.005	<0.006	<0.02	<0.002	<0.02	<0.02	<0.004
09...	<0.005	<0.009	<0.009	<0.003	0.006	<0.08	<0.005	<0.006	E.01	<0.002	<0.02	<0.02	<0.004
JUN													
17...	<0.005	<0.009	<0.016	<0.003	<0.005	<0.08	<0.005	<0.006	<0.02	<0.002	<0.02	<0.02	<0.004
17...	<0.005	<0.009	<0.016	<0.003	<0.005	<0.08	<0.005	<0.006	<0.02	<0.002	<0.02	<0.02	<0.004
JUL													
09...	<0.005	<0.009	<0.009	<0.003	E.005	<0.08	<0.005	<0.006	<0.02	<0.002	<0.02	<0.02	<0.004
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
19...	<0.005	<0.009	<0.009	<0.003	<0.005	<0.08	<0.005	<0.006	<0.02	<0.002	<0.02	<0.02	<0.004
27...	<0.005	<0.009	<0.009	<0.003	0.022	<0.08	<0.005	<0.006	<0.02	<0.002	<0.02	<0.02	<0.004
SEP													
17...	<0.005	<0.009	<0.009	<0.003	E.004	<0.08	E.004	<0.006	<0.02	<0.002	<0.02	<0.02	<0.004
17...	--	--	--	--	--	--	--	--	--	--	--	--	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	EPTC, water, fltrd 0.7u GF ug/L (82668)	Ethal- flur- alin, water, fltrd 0.7u GF ug/L (82663)	Ethion monoxon water, fltrd, ug/L (61644)	Ethion, water, fltrd, ug/L (82346)	Etho- prop, water, fltrd 0.7u GF ug/L (82672)	Fenami- phos sulfone water, fltrd, ug/L (61645)	Fenami- phos sulf- oxide, water, fltrd, ug/L (61646)	Fenami- phos, water, fltrd, ug/L (61591)	Fen- thion sulf- oxide, water, fltrd, ug/L (61647)	Flume- tralin, water, fltrd, ug/L (61592)	Fonofos oxon, water, fltrd, ug/L (61649)	Fonofos water, fltrd, ug/L (04095)	Hexa- zinone, water, fltrd, ug/L (04025)
MAR													
19...	<0.002	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.004	<0.002	<0.003	<0.013
APR													
01...	0.003	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.004	<0.002	<0.003	<0.013
01...	<0.002	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.004	<0.002	<0.003	<0.013
MAY													
01...	<0.002	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.004	<0.002	<0.003	<0.013
09...	0.003	<0.009	<0.03	<0.004	<0.005	<0.031	<0.03	<0.03	<0.008	<0.004	<0.002	<0.003	<0.013
JUN													
17...	<0.002	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.004	<0.002	<0.003	<0.013
17...	<0.002	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.004	<0.002	<0.003	<0.013
JUL													
09...	<0.002	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.004	<0.002	<0.003	<0.013
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
19...	<0.002	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.004	<0.002	<0.003	<0.013
27...	<0.002	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.004	<0.002	<0.003	<0.013
SEP													
17...	<0.002	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.004	<0.002	<0.003	<0.013
17...	--	--	--	--	--	--	--	--	--	--	--	--	--

03438000 LITTLE RIVER NEAR CADIZ, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Iprodione, water, fltrd, ug/L (61593)	Isofenphos, water, fltrd, ug/L (61594)	Lindane water, fltrd, ug/L (39341)	Linuron water fltrd 0.7u GF ug/L (82666)	Malaoxon, water, fltrd, ug/L (61652)	Malathion, water, fltrd, ug/L (39532)	Metalaxyl, water, fltrd, ug/L (61596)	Methialthion water, fltrd, ug/L (61598)	c-Permethric acid methyl ester, wat flt ug/L (79842)	Methyl paraoxon, water, fltrd, ug/L (61664)	Methyl parathion, water, fltrd 0.7u GF ug/L (82667)	t-Permethric acid methyl ester, wat flt ug/L (79843)	Metolachlor, water, fltrd, ug/L (39415)
MAR													
19...	<1	<0.003	<0.004	<0.035	<0.008	<0.027	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	0.013
APR													
01...	<1	<0.003	<0.004	<0.035	<0.008	<0.027	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	0.014
01...	<1	<0.003	<0.004	<0.035	<0.008	<0.027	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	<0.013
MAY													
01...	<1	<0.003	<0.004	<0.035	<0.008	<0.027	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	0.163
09...	<1	<0.003	<0.004	<0.035	<0.008	<0.027	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	0.018
JUN													
17...	<1	<0.003	<0.004	<0.035	<0.008	<0.027	0.010	<0.006	<0.04	<0.03	<0.006	<0.03	0.016
17...	<1	<0.003	<0.004	<0.035	<0.008	<0.027	0.010	<0.006	<0.04	<0.03	<0.006	<0.03	0.016
JUL													
09...	<1	<0.003	<0.004	<0.035	<0.008	<0.027	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	0.016
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
19...	<1	<0.003	<0.004	<0.035	<0.008	<0.027	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	E.011
27...	<1	<0.003	<0.004	<0.035	<0.008	<0.027	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	0.016
SEP													
17...	<1	<0.003	<0.004	<0.035	<0.008	<0.027	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	E.012
17...	--	--	--	--	--	--	--	--	--	--	--	--	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Metribuzin, water, fltrd, ug/L (82630)	Molinate, water, fltrd 0.7u GF ug/L (82671)	Myclobutanil water, fltrd, ug/L (61599)	Napropamide, water, fltrd 0.7u GF ug/L (82684)	O-Et-O-Me-S-Pr -phosphorothioate wat flt ug/L (61660)	Oxyfluorfen, water, fltrd, ug/L (61600)	p,p'-DDE, water, fltrd, ug/L (34653)	Paraoxon, water, fltrd, ug/L (61663)	Parathion, water, fltrd, ug/L (39542)	Pebulate, water, fltrd 0.7u GF ug/L (82669)	Pendimethalin, water, fltrd 0.7u GF ug/L (82683)	Phorate oxon, water, fltrd, ug/L (61666)	Phorate water fltrd 0.7u GF ug/L (82664)
MAR													
19...	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011
APR													
01...	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011
01...	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011
MAY													
01...	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011
09...	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011
JUN													
17...	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007	<0.003	<0.016	<0.010	<0.004	<0.022	<0.10	<0.011
17...	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007	<0.003	<0.016	<0.010	<0.004	<0.022	<0.10	<0.011
JUL													
09...	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
19...	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011
27...	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011
SEP													
17...	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011
17...	--	--	--	--	--	--	--	--	--	--	--	--	--

03438000 LITTLE RIVER NEAR CADIZ, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Phosmet oxon, water, fltrd, ug/L (61668)	Phosmet water, fltrd, ug/L (61601)	Phoste-bupirim water, fltrd, ug/L (61602)	Pro-fenofos water, fltrd, ug/L (61603)	Prome-ton, water, fltrd, ug/L (04037)	Prome-tryn, water, fltrd, ug/L (04036)	Pron-amide, water, fltrd 0.7u GF ug/L (82676)	Propa-chlor, water, fltrd, ug/L (04024)	Pro-panil, water, fltrd 0.7u GF ug/L (82679)	Propar-gite, water, fltrd 0.7u GF ug/L (82685)	Propet-amphos, water, fltrd, ug/L (61604)	Sima-zine, water, fltrd, ug/L (04035)	Sulfo-tepp, water, fltrd, ug/L (61605)
MAR													
19...	<0.06	<0.008	<0.005	<0.006	<0.01	<0.005	<0.004	<0.010	<0.011	<0.02	<0.004	3.14	<0.003
APR													
01...	<0.06	<0.008	<0.005	<0.006	<0.01	<0.005	<0.004	<0.010	<0.011	<0.02	<0.004	0.674	<0.003
01...	<0.06	<0.008	<0.005	<0.006	<0.01	<0.005	<0.004	<0.010	<0.011	<0.02	<0.004	<0.005	<0.003
MAY													
01...	<0.06	<0.008	<0.005	<0.006	E.01	<0.005	<0.004	<0.010	<0.011	<0.02	<0.004	0.688	<0.003
09...	<0.06	<0.008	<0.005	<0.006	E.01	<0.005	<0.004	<0.010	<0.011	<0.02	<0.004	0.237	<0.003
JUN													
17...	<0.06	<0.008	<0.005	<0.006	E.01	<0.005	<0.004	<0.010	<0.011	<0.02	<0.004	0.065	<0.003
17...	<0.06	<0.008	<0.005	<0.006	E.01	<0.005	<0.004	<0.010	<0.011	<0.02	<0.06	0.069	<0.003
JUL													
09...	<0.06	<0.008	<0.005	<0.006	E.01	<0.005	<0.004	<0.010	<0.011	<0.02	<0.004	0.031	<0.003
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
19...	<0.06	<0.008	<0.005	<0.006	E.01	<0.005	<0.004	<0.010	<0.011	<0.02	<0.004	0.025	<0.003
27...	<0.06	<0.008	<0.005	<0.006	E.01	<0.005	<0.004	<0.010	<0.011	<0.02	<0.004	0.057	<0.003
SEP													
17...	<0.06	<0.008	<0.005	<0.006	E.01	<0.005	<0.004	<0.010	<0.011	<0.02	<0.004	0.038	<0.003
17...	--	--	--	--	--	--	--	--	--	--	--	--	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Sulpro-fos, water, fltrd, ug/L (38716)	Tebu-pirim-phos oxon, water, fltrd, ug/L (61669)	Tebu-thiuron water fltrd 0.7u GF ug/L (82670)	Teflu-thrin metab-olite R119365 wat flt ug/L (61671)	Teflu-thrin metab-olite R152913 wat flt ug/L (61672)	Teflu-thrin, water, fltrd, ug/L (61606)	Teme-phos, water, fltrd, ug/L (61607)	Terba-cil, water, fltrd 0.7u GF ug/L (82665)	Ter-bufos oxon sulfone water, fltrd, ug/L (61674)	Terbu-fos, water, fltrd 0.7u GF ug/L (82675)	Ter-buthyl-azine, water, fltrd, ug/L (04022)	Thio-bencarb water fltrd 0.7u GF ug/L (82681)	trans-Propi-cona-zole, water, fltrd, ug/L (79847)
MAR													
19...	<0.02	<0.006	<0.02	<0.02	<0.01	<0.008	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	<0.01
APR													
01...	<0.02	<0.006	<0.02	--	--	<0.008	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	<0.01
01...	<0.02	<0.006	<0.02	--	--	<0.008	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	<0.01
MAY													
01...	<0.02	<0.006	<0.02	--	--	<0.008	<0.3	<0.034	<0.07	<0.02	E.01	<0.005	<0.01
09...	<0.02	<0.006	<0.02	--	--	<0.008	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	<0.01
JUN													
17...	<0.02	<0.006	<0.02	--	--	<0.008	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	<0.01
17...	<0.02	<0.006	<0.02	--	--	<0.008	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	<0.01
JUL													
09...	<0.02	<0.006	<0.02	--	--	<0.008	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	<0.01
09...	--	--	--	--	--	--	--	--	--	--	--	<0.005	--
AUG													
19...	<0.02	<0.006	<0.02	--	--	<0.008	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	<0.01
27...	<0.02	<0.006	<0.02	--	--	<0.008	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	<0.01
SEP													
17...	<0.02	<0.006	<0.02	--	--	<0.008	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	<0.01
17...	--	--	--	--	--	--	--	--	--	--	--	--	--

03438000 LITTLE RIVER NEAR CADIZ, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Tri-allate, water, fltrd 0.7u GF ug/L (82678)	Tribu-phos, water, fltrd, ug/L (61610)	Tri-flur-alin, water, fltrd 0.7u GF ug/L (82661)	z-Di-metho-morph, water, fltrd, ug/L (79845)	Di-chlor-vos, water fltrd, ug/L (38775)	Sus-pended sedi-ment concen-tration mg/L (80154)
MAR						
19...	<0.002	<0.004	<0.009	<0.05	<0.01	161
APR						
01...	<0.002	<0.004	<0.009	<0.05	<0.01	10
01...	<0.002	<0.004	<0.009	<0.05	<0.01	--
MAY						
01...	<0.002	<0.004	<0.009	<0.05	<0.01	175
09...	<0.002	<0.004	<0.009	<0.05	<0.01	128
JUN						
17...	<0.002	<0.004	<0.009	<0.05	<0.01	26
17...	<0.002	<0.004	<0.009	<0.05	<0.01	26
JUL						
09...	<0.002	<0.004	<0.009	<0.05	<0.01	6
09...	--	--	--	--	--	--
AUG						
19...	<0.002	<0.004	<0.009	<0.05	<0.01	9
27...	<0.002	<0.004	<0.009	<0.05	<0.01	25
SEP						
17...	<0.002	<0.004	<0.009	<0.05	<0.01	13
17...	--	--	--	--	--	--

E--Laboratory estimated value.
<--Numeric result is less than the value shown.
M--Presence of material verified but not quantified.

03438024 MUDDY FORK NEAR HOPKINSVILLE, KY

WATER-QUALITY RECORDS

LOCATION.--Lat 36°53'12", long 87°35'02", Christian County, Hydrologic Unit 05130205.

PERIOD OF RECORD.--Apr. 30, 2003 and Aug. 21, 2003.

COOPERATION.--Kentucky Department of Agriculture and the Kentucky Environmental and Public Protection Cabinet.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Sample type	Instantaneous discharge, cfs (00061)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Alkalinity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicarbonate, wat flt incrm. titr., field, mg/L (00453)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)
APR												
30...	1105	Environmental	78	8.5	86	7.2	189	15.9	67	81	E.02	2.01
30...	1113	Field Blank	--	--	--	--	--	--	--	--	--	--
AUG												
21...	0940	Environmental	0.41	3.3	33	7.2	469	16.2	192	234	<0.04	4.68

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	1,4-Naphthoquinone, water, fltrd, ug/L (61611)	1-Naphthol, water, fltrd 0.7u GF ug/L (49295)	2-(4-t-Butylphenoxy)cyclohexanol wat flt ug/L (61637)	2,5-Dichloroaniline water, fltrd, ug/L (61614)	2,6-Diethylaniline water fltrd 0.7u GF ug/L (82660)	2-[(2-Et-6-Me-Ph)-amino]propan-1-ol, ug/L (61615)	2Amino-N-isopropylbenzamide, wat flt ug/L (61617)	CIAT, water, fltrd, ug/L (04040)	2-Ethyl-6-methylaniline water, fltrd, ug/L (61620)	3-(Trifluoromethyl)aniline water, fltrd, ug/L (61630)	3,4-Dichloroaniline water fltrd, ug/L (61625)
APR													
30...	0.059	0.404	<0.05	<0.09	<0.01	<0.03	<0.006	<0.1	<0.005	E.278	<0.004	<0.01	<0.004
30...	--	--	<0.05	<0.09	<0.01	<0.03	<0.006	<0.1	<0.005	<0.006	<0.004	<0.01	<0.004
AUG													
21...	0.029	0.045	<0.05	<0.09	<0.01	<0.03	<0.006	<0.1	<0.005	E.269	<0.004	<0.01	<0.004

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	3,5-Dichloroaniline water, fltrd, ug/L (61627)	3-Phenoxybenzyl alcohol water, fltrd, ug/L (61629)	4-(MeOH)-pendimethalin, wat flt ug/L (61665)	4,4-Di'chlorobenzophenone, wat flt ug/L (61631)	4Chloro 2methyl phenol, water, fltrd, ug/L (61633)	4Chloro phenylmethyl sulfone water, fltrd, ug/L (61634)	Acetochlor, water, fltrd, ug/L (49260)	Alachlor, water, fltrd, ug/L (46342)	alpha-Endosulfan, water, fltrd, ug/L (34362)	alpha-HCH, water, fltrd, ug/L (34253)	alpha-HCH-d6, sur2002 /9002, wat unf percent recovry (99224)	alpha-HCH-d6, surrog, wat flt 0.7u GF percent recovry (91065)	Atrazine, water, fltrd, ug/L (39632)
APR													
30...	<0.005	<0.05	<0.1	<0.003	<0.006	<0.03	0.048	0.008	<0.005	<0.005	91.7	97.5	10.4
30...	<0.005	<0.05	<0.1	<0.003	<0.006	<0.03	<0.006	<0.004	<0.005	<0.005	92.4	96.6	<0.007
AUG													
21...	<0.005	--	--	<0.003	<0.006	<0.03	E.006	<0.004	<0.005	<0.005	87.1	95.2	0.125

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Azinphosmethyl oxon, water, fltrd, ug/L (61635)	Azinphosmethyl, water, fltrd 0.7u GF ug/L (82686)	Benfluralin, water, fltrd 0.7u GF ug/L (82673)	beta-Endosulfan, water, fltrd, ug/L (34357)	Bifenthrin, water, fltrd, ug/L (61580)	Butylate, water, fltrd, ug/L (04028)	Carbaryl, water, fltrd 0.7u GF ug/L (82680)	Carbofuran, water, fltrd 0.7u GF ug/L (82674)	Chlorpyrifos oxon, water, fltrd, ug/L (61636)	Chlorpyrifos water, fltrd, ug/L (38933)	cis-Permethrin water fltrd 0.7u GF ug/L (82687)	cis-Propiconazole, water, fltrd, ug/L (79846)	Cyanazine, water, fltrd, ug/L (04041)
APR													
30...	<0.02	<0.050	<0.010	<0.01	<0.005	<0.002	E.006	<0.020	<0.06	<0.005	<0.006	0.027	<0.018
30...	<0.02	<0.050	<0.010	<0.01	<0.005	<0.002	<0.041	<0.020	<0.06	<0.005	<0.006	<0.008	<0.018
AUG													
21...	<0.02	<0.050	<0.010	<0.01	<0.005	<0.002	<0.041	<0.020	<0.06	<0.005	<0.006	<0.008	<0.018

03438024 MUDDY FORK NEAR HOPKINSVILLE, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Cycloate, water, fltrd, ug/L (04031)	lambda-Cyhalothrin, water, fltrd, ug/L (61595)	Cypermethrin water, fltrd, ug/L (61586)	DCPA, water fltrd 0.7u GF ug/L (82682)	Diazinon, water, fltrd, ug/L (39572)	Dicrotophos, water fltrd, ug/L (38454)	Dieldrin, water, fltrd, ug/L (39381)	Dimethoate, water, fltrd 0.7u GF ug/L (82662)	Disulfoton sulfone water, fltrd, ug/L (61640)	Disulfoton sulfoxide, water, fltrd, ug/L (61641)	Disulfoton, water, fltrd 0.7u GF ug/L (82677)	e-Dimethomorph, water, fltrd, ug/L (79844)	Endosulfan ether, water, fltrd, ug/L (61642)
APR													
30...	<0.005	<0.009	<0.009	0.003	0.011	<0.08	<0.005	<0.006	E.01	E.019	<0.02	<0.02	<0.004
30...	<0.005	<0.009	<0.009	<0.003	<0.005	<0.08	<0.005	<0.006	<0.02	<0.002	<0.02	<0.02	<0.004
AUG													
21...	<0.005	<0.009	<0.009	<0.003	0.007	<0.08	<0.005	<0.006	<0.02	<0.002	<0.02	<0.02	<0.004

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	EPTC, water, fltrd 0.7u GF ug/L (82668)	Ethalfluralin, water, fltrd 0.7u GF ug/L (82663)	Ethion monoxon water, fltrd, ug/L (61644)	Ethion, water, fltrd, ug/L (82346)	Ethoprop, water, fltrd 0.7u GF ug/L (82672)	Fenamiphos sulfone water, fltrd, ug/L (61645)	Fenamiphos sulfoxide, water, fltrd, ug/L (61646)	Fenamiphos, water, fltrd, ug/L (61591)	Fenthion sulfoxide, water, fltrd, ug/L (61647)	Flumetralin, water, fltrd, ug/L (61592)	Fonofos oxon, water, fltrd, ug/L (61649)	Fonofos water, fltrd, ug/L (04095)	Hexazinone, water, fltrd, ug/L (04025)
APR													
30...	<0.009	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.004	<0.002	<0.003	<0.013
30...	<0.002	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.004	<0.002	<0.003	<0.013
AUG													
21...	<0.004	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.004	<0.002	<0.003	<0.013

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Iprodione, water, fltrd, ug/L (61593)	Isofenphos, water, fltrd, ug/L (61594)	Lindane water, fltrd, ug/L (39341)	Linuron water fltrd 0.7u GF ug/L (82666)	Malaoxon, water, fltrd, ug/L (61652)	Malathion, water, fltrd, ug/L (39532)	Metalaxyl, water, fltrd, ug/L (61596)	Methialthion water, fltrd, ug/L (61598)	c-Permethric acid methyl ester, wat flt ug/L (79842)	Methyl paraoxon, water, fltrd, ug/L (61664)	Methyl parathion, water, fltrd 0.7u GF ug/L (82667)	t-Permethric acid methyl ester, wat flt ug/L (79843)	Metolachlor, water, fltrd, ug/L (39415)
APR													
30...	<1	<0.003	<0.004	<0.035	<0.008	0.033	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	0.034
30...	<1	<0.003	<0.004	<0.035	<0.008	<0.027	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	<0.013
AUG													
21...	<1	<0.003	<0.004	<0.035	<0.008	<0.027	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	0.019

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Metribuzin, water, fltrd, ug/L (82630)	Molinate, water, fltrd 0.7u GF ug/L (82671)	Myclobutanil water, fltrd, ug/L (61599)	Napropamide, water, fltrd 0.7u GF ug/L (82684)	O-Et-O-Me-S-Pr-phosphorothioate wat flt ug/L (61660)	Oxyfluorfen, water, fltrd, ug/L (61600)	p,p'-DDE, water, fltrd, ug/L (34653)	Paraoxon, water, fltrd, ug/L (61663)	Parathion, water, fltrd, ug/L (39542)	Pebulate, water, fltrd 0.7u GF ug/L (82669)	Pendimethalin, water, fltrd 0.7u GF ug/L (82683)	Phorate oxon, water, fltrd, ug/L (61666)	Phorate water fltrd 0.7u GF ug/L (82664)
APR													
30...	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011
30...	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011
AUG													
21...	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Phosmet oxon, water, fltrd, ug/L (61668)	Phosmet water, fltrd, ug/L (61601)	Phostebupirim water, fltrd, ug/L (61602)	Profenofos water, fltrd, ug/L (61603)	Prometon, water, fltrd, ug/L (04037)	Prometryn, water, fltrd, ug/L (04036)	Pronamide, water, fltrd 0.7u GF ug/L (82676)	Propachlor, water, fltrd, ug/L (04024)	Propanil, water, fltrd 0.7u GF ug/L (82679)	Propargite, water, fltrd 0.7u GF ug/L (82685)	Propetamphos, water, fltrd, ug/L (61604)	Simazine, water, fltrd, ug/L (04035)	Sulfotepp, water, fltrd, ug/L (61605)
APR													
30...	<0.06	<0.008	<0.005	<0.006	E.01	<0.005	<0.004	<0.010	<0.011	<0.02	<0.004	0.505	<0.003
30...	<0.06	<0.008	<0.005	<0.006	<0.01	<0.005	<0.004	<0.010	<0.011	<0.02	<0.004	<0.005	<0.003
AUG													
21...	<0.06	<0.008	<0.005	<0.006	E.01	<0.005	<0.004	<0.010	<0.011	<0.02	<0.004	0.046	<0.003

03438024 MUDDY FORK NEAR HOPKINSVILLE, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Sulprofos, water, fltrd, ug/L (38716)	Tebupirimphos oxon, water, fltrd, ug/L (61669)	Tebuthiuron water fltrd 0.7u GF ug/L (82670)	Tefluthrin, water, fltrd, ug/L (61606)	Temephos, water, fltrd, ug/L (61607)	Terbacil, water, fltrd 0.7u GF ug/L (82665)	Terbufos oxon sulfone water, fltrd, ug/L (61674)	Terbufos, water, fltrd 0.7u GF ug/L (82675)	Terbuthylazine, water, fltrd, ug/L (04022)	Thiobencarb water fltrd 0.7u GF ug/L (82681)	trans-Propiconazole, water, fltrd, ug/L (79847)	Triallate, water, fltrd 0.7u GF ug/L (82678)	Tribuphos, water, fltrd, ug/L (61610)
APR													
30...	<0.02	<0.006	<0.02	<0.008	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	0.04	<0.002	<0.004
30...	<0.02	<0.006	<0.02	<0.008	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	<0.01	<0.002	<0.004
AUG													
21...	<0.02	<0.006	<0.02	<0.008	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	<0.01	<0.002	<0.004

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Trifluralin, water, fltrd 0.7u GF ug/L (82661)	z-Dimethomorph, water, fltrd, ug/L (79845)	Dichlorvos, water fltrd, ug/L (38775)	Suspended sediment concentration mg/L (80154)
APR				
30...	<0.009	<0.05	<0.01	74
30...	<0.009	<0.05	<0.01	--
AUG				
21...	<0.009	<0.05	<0.01	--

E--Laboratory estimated value.
<--Numeric result is less than the value shown.
M--Presence of material verified but not quantified.

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03438028 SINKING FORK NEAR HOPKINSVILLE, KY

WATER-QUALITY RECORDS

LOCATION.--Lat 36°52'01", long 87°36'28", Christian County, Hydrologic Unit 05130205.

PERIOD OF RECORD.--Apr. 30, 2003 and Aug. 21, 2003.

COOPERATION.--Kentucky Department of Agriculture and the Kentucky Environmental and Public Protection Cabinet.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Sample type	Instantaneous discharge, cfs (00061)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Alkalinity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicarbonate, wat flt incrm. titr., field, mg/L (00453)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)
APR												
30...	1620	Environmental	443	8.4	88	7.3	191	16.5	73	90	<0.04	1.92
30...	1630	Replicate	--	--	--	--	--	--	73	90	E.03	1.92
AUG												
21...	1340	Environmental	0.90	6.1	72	7.6	419	24.2	180	219	E.02	3.10

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	1,4-Naphthoquinone, water, fltrd, ug/L (61611)	1-Naphthol, water, fltrd 0.7u GF ug/L (49295)	2-(4-t-Butylphenoxy)cyclohexanol wat flt ug/L (61637)	2,5-Dichloroaniline water, fltrd, ug/L (61614)	2,6-Diethylaniline water fltrd 0.7u GF ug/L (82660)	2-[(2-Et-6-Me-Ph)-amino]propan-1-ol, ug/L (61615)	2Amino-N-isopropylbenzamide, wat flt ug/L (61617)	CIAT, water, fltrd, ug/L (04040)	2-Ethyl-6-methylaniline water, fltrd, ug/L (61620)	3-(Trifluoromethyl)aniline water, fltrd, ug/L (61630)	3,4-Dichloroaniline water fltrd, ug/L (61625)
APR													
30...	0.092	0.297	<0.05	<0.09	<0.01	<0.03	<0.006	<0.1	<0.005	E.370	<0.004	<0.01	<0.004
30...	0.090	0.297	<0.05	<0.09	<0.01	<0.03	<0.006	<0.1	<0.005	E.341	<0.004	<0.01	<0.004
AUG													
21...	0.014	0.037	<0.05	<0.09	<0.01	<0.03	<0.006	<0.1	<0.005	E.257	<0.004	<0.01	<0.004

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	3,5-Dichloroaniline water, fltrd, ug/L (61627)	3-Phenoxybenzyl alcohol water, fltrd, ug/L (61629)	4-(MeOH)-pendimethalin, wat flt ug/L (61665)	4,4-Di'chlorobenzophenone, wat flt ug/L (61631)	4Chloro 2methyl phenol, water, fltrd, ug/L (61633)	4Chloro phenylmethyl sulfone water, fltrd, ug/L (61634)	Acetochlor, water, fltrd, ug/L (49260)	Alachlor, water, fltrd, ug/L (46342)	alpha-Endosulfan, water, fltrd, ug/L (34362)	alpha-HCH, water, fltrd, ug/L (34253)	alpha-HCH-d6, sur2002/9002, wat unf percent recovry (99224)	alpha-HCH-d6, surrog, wat flt 0.7u GF percent recovry (91065)	Atrazine, water, fltrd, ug/L (39632)
APR													
30...	<0.005	<0.05	<0.1	<0.003	<0.006	<0.03	0.058	0.015	<0.005	<0.005	95.5	98.5	3.28
30...	<0.005	<0.05	<0.1	<0.003	<0.006	<0.03	0.053	0.015	<0.005	<0.005	89.8	86.7	3.30
AUG													
21...	<0.005	--	--	<0.003	<0.006	<0.03	E.004	<0.004	<0.005	<0.005	91.4	93.1	0.141

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Azinphos-methyl oxon, water, fltrd, ug/L (61635)	Azinphos-methyl, water, fltrd 0.7u GF ug/L (82686)	Benfluralin, water, fltrd 0.7u GF ug/L (82673)	beta-Endosulfan, water, fltrd, ug/L (34357)	Bifenthrin, water, fltrd, ug/L (61580)	Butylate, water, fltrd, ug/L (04028)	Carbaryl, water, fltrd 0.7u GF ug/L (82680)	Carbofuran, water, fltrd 0.7u GF ug/L (82674)	Chlorpyrifos oxon, water, fltrd, ug/L (61636)	Chlorpyrifos water, fltrd, ug/L (38933)	cis-Permethrin water fltrd 0.7u GF ug/L (82687)	cis-Propiconazole, water, fltrd, ug/L (79846)	Cyanazine, water, fltrd, ug/L (04041)
APR													
30...	<0.02	<0.050	<0.010	<0.01	<0.005	<0.002	E.017	<0.020	<0.06	<0.005	<0.006	<0.008	<0.018
30...	<0.02	<0.050	<0.010	<0.01	<0.005	<0.002	E.016	<0.020	<0.06	<0.005	<0.006	<0.008	<0.018
AUG													
21...	<0.02	<0.050	<0.010	<0.01	<0.005	<0.002	<0.041	<0.020	<0.06	<0.005	<0.006	<0.008	<0.018

03438028 SINKING FORK NEAR HOPKINSVILLE, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Cyclo-ate, water, fltrd, ug/L (04031)	lambda-Cyhalo-thrin, water, fltrd, ug/L (61595)	Cyper-methrin water, fltrd, ug/L (61586)	DCPA, water fltrd 0.7u GF ug/L (82682)	Diazi-non, water, fltrd, ug/L (39572)	Dicro-tophos, water fltrd, ug/L (38454)	Diel-drin, water, fltrd, ug/L (39381)	Dimeth-oate, water, fltrd 0.7u GF ug/L (82662)	Disulf-oton sulfone water, fltrd, ug/L (61640)	Disulf-oton sulf-oxide, water, fltrd, ug/L (61641)	Disul-foton, water, fltrd 0.7u GF ug/L (82677)	e-Di-metho-morph, water, fltrd, ug/L (79844)	Endo-sulfan ether, water, fltrd, ug/L (61642)
APR													
30...	<0.005	<0.009	<0.009	<0.003	0.020	<0.08	<0.005	<0.006	0.05	<0.002	<0.02	<0.02	<0.004
30...	<0.005	<0.009	<0.009	<0.003	0.016	<0.08	<0.005	<0.006	0.04	<0.002	<0.02	<0.02	<0.004
AUG													
21...	<0.005	<0.009	<0.009	<0.003	<0.005	<0.08	<0.005	<0.006	<0.02	<0.002	<0.02	<0.02	<0.004

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	EPTC, water, fltrd 0.7u GF ug/L (82668)	Ethal-flur-alin, water, fltrd 0.7u GF ug/L (82663)	Ethion monoxon water, fltrd, ug/L (61644)	Ethion, water, fltrd, ug/L (82346)	Etho-prop, water, fltrd 0.7u GF ug/L (82672)	Fenami-phos sulfone water, fltrd, ug/L (61645)	Fenami-phos sulf-oxide, water, fltrd, ug/L (61646)	Fenami-phos, water, fltrd, ug/L (61591)	Fen-thion sulf-oxide, water, fltrd, ug/L (61647)	Flume-tralin, water, fltrd, ug/L (61592)	Fonofos oxon, water, fltrd, ug/L (61649)	Fonofos water, fltrd, ug/L (04095)	Hexa-zinone, water, fltrd, ug/L (04025)
APR													
30...	0.009	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.004	<0.002	<0.003	<0.013
30...	0.007	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.004	<0.002	<0.003	<0.013
AUG													
21...	<0.007	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.004	<0.002	<0.003	<0.013

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ipro-dione, water, fltrd, ug/L (61593)	Isofen-phos, water, fltrd, ug/L (61594)	Lindane water, fltrd, ug/L (39341)	Linuron water fltrd 0.7u GF ug/L (82666)	Mala-oxon, water, fltrd, ug/L (61652)	Mala-thion, water, fltrd, ug/L (39532)	Meta-laxyl, water, fltrd, ug/L (61596)	Methi-althion water, fltrd, ug/L (61598)	c-Per-methric acid methyl ester, wat flt ug/L (79842)	Methyl para-oxon, water, fltrd, ug/L (61664)	Methyl para-thion, water, fltrd 0.7u GF ug/L (82667)	t-Per-methric acid methyl ester, wat flt ug/L (79843)	Metola-chlor, water, fltrd, ug/L (39415)
APR													
30...	<1	<0.003	<0.004	<0.035	<0.008	E.007	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	0.064
30...	<1	<0.003	<0.004	<0.035	<0.008	E.009	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	0.062
AUG													
21...	<1	<0.003	<0.004	<0.035	<0.008	<0.027	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	E.007

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Metri-buzin, water, fltrd, ug/L (82630)	Moli-nate, water, fltrd 0.7u GF ug/L (82671)	Myclo-butanil water, fltrd, ug/L (61599)	Naprop-amide, water, fltrd 0.7u GF ug/L (82684)	O-Et-O-Me-S-Pr -phos-phoro-thioate wat flt ug/L (61660)	Oxy-fluor-fen, water, fltrd, ug/L (61600)	p,p'-DDE, water, fltrd, ug/L (34653)	Para-oxon, water, fltrd, ug/L (61663)	Para-thion, water, fltrd, ug/L (39542)	Peb-ulate, water, fltrd 0.7u GF ug/L (82669)	Pendi-meth-alin, water, fltrd 0.7u GF ug/L (82683)	Phorate oxon, water, fltrd, ug/L (61666)	Phorate water fltrd 0.7u GF ug/L (82664)
APR													
30...	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011
30...	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011
AUG													
21...	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Phosmet oxon, water, fltrd, ug/L (61668)	Phosmet water, fltrd, ug/L (61601)	Phoste-bupirim water, fltrd, ug/L (61602)	Pro-fenofos water, fltrd, ug/L (61603)	Prome-ton, water, fltrd, ug/L (04037)	Prome-tryn, water, fltrd, ug/L (04036)	Pron-amide, water, fltrd 0.7u GF ug/L (82676)	Propa-chlor, water, fltrd, ug/L (04024)	Pro-panil, water, fltrd 0.7u GF ug/L (82679)	Propar-gite, water, fltrd 0.7u GF ug/L (82685)	Propet-amphos, water, fltrd, ug/L (61604)	Sima-zine, water, fltrd, ug/L (04035)	Sulfo-tepp, water, fltrd, ug/L (61605)
APR													
30...	<0.06	<0.008	<0.005	<0.006	0.12	<0.005	<0.004	<0.010	<0.011	<0.02	<0.004	0.356	<0.003
30...	<0.06	<0.008	<0.005	<0.006	0.11	<0.005	<0.004	<0.010	<0.011	<0.02	<0.004	0.346	<0.003
AUG													
21...	<0.06	<0.008	<0.005	<0.006	E.01	<0.005	<0.004	<0.010	<0.011	<0.02	<0.004	0.027	<0.003

03438028 SINKING FORK NEAR HOPKINSVILLE, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Sulprofos, water, fltrd, ug/L (38716)	Tebupirimphos oxon, water, fltrd, ug/L (61669)	Tebuthiuron water fltrd 0.7u GF ug/L (82670)	Tefluthrin, water, fltrd, ug/L (61606)	Temephos, water, fltrd, ug/L (61607)	Terbacil, water, fltrd 0.7u GF ug/L (82665)	Terbufos oxon sulfone water, fltrd, ug/L (61674)	Terbufos, water, fltrd 0.7u GF ug/L (82675)	Terbuthylazine, water, fltrd, ug/L (04022)	Thiobencarb water fltrd 0.7u GF ug/L (82681)	trans-Propiconazole, water, fltrd, ug/L (79847)	Triallate, water, fltrd 0.7u GF ug/L (82678)	Tribuphos, water, fltrd, ug/L (61610)
APR													
30...	<0.02	<0.006	<0.02	<0.008	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	E.01	<0.002	<0.004
30...	<0.02	<0.006	<0.02	<0.008	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	E.01	<0.002	<0.004
AUG													
21...	<0.02	<0.006	<0.02	<0.008	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	<0.01	<0.002	<0.004

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Trifluralin, water, fltrd 0.7u GF ug/L (82661)	z-Dimethomorph, water, fltrd, ug/L (79845)	Dichlorvos, water fltrd, ug/L (38775)	Suspended sediment concentration mg/L (80154)
APR				
30...	<0.009	<0.05	<0.01	161
30...	<0.009	<0.05	<0.01	--
AUG				
21...	<0.009	<0.05	<0.01	--

E--Laboratory estimated value.
<--Numeric result is less than the value shown.
M--Presence of material verified but not quantified.

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03438040 SINKING CREEK AT KINGS CHAPEL ROAD NEAR CADIZ, KY

WATER-QUALITY RECORDS

LOCATION.--Lat 36°50'26", long 87°44'27", Christian County, Hydrologic Unit 05130205.

DRAINAGE AREA.--107 mi^2.

PERIOD OF RECORD.--March 2003 to current water year.

COOPERATION.--Kentucky Department of Agriculture and the Kentucky Environmental and Public Protection Cabinet.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Sample type	Instantaneous discharge, cfs (00061)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Alkalinity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicarbonate, wat flt incrm. titr., field, mg/L (00453)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)
MAR												
19...	1700	Environmental	297	9.7	96	7.4	362	14.0	136	166	0.10	5.29
19...	1718	Field Blank	--	--	--	--	--	--	--	--	<0.015	<0.022
APR												
01...	1510	Environmental	150	11.8	115	7.7	358	14.0	137	167	<0.04	4.69
30...	1330	Environmental	1,950	7.7	79	7.2	112	16.5	36	43	0.04	1.24
MAY												
09...	1700	Environmental	631	8.7	91	7.3	299	17.0	114	139	E.02	4.27
JUN												
17...	1830	Environmental	182	9.1	95	7.4	361	17.6	--	--	<0.04	5.32
JUL												
09...	1540	Environmental	35	9.3	104	7.7	405	20.4	163	199	<0.04	5.69
AUG												
20...	1430	Environmental	11	8.2	92	7.7	435	20.7	185	225	E.02	4.60
27...	1640	Environmental	68	7.4	82	7.3	310	20.6	137	162	<0.04	2.66
27...	1650	Replicate	--	--	--	--	--	--	--	--	<0.04	2.71
SEP												
17...	1520	Environmental	34	8.2	91	7.7	396	20.6	171	--	<0.04	3.74

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	1,4-Naphthoquinone, water, fltrd, ug/L (61611)	1-Naphthol, water, fltrd 0.7u GF ug/L (49295)	2-(4-t-Butylphenoxy)cyclohexanol wat flt ug/L (61637)	2,5-Dichloroaniline water, fltrd, ug/L (61614)	2,6-Diethylaniline water fltrd 0.7u GF ug/L (82660)	2-[(2-Et-6-Me-Ph)-amino]propan-1-ol, ug/L (61615)	2Amino-N-isopropylbenzamide, wat flt ug/L (61617)	CIAT, water, fltrd, ug/L (04040)	2-Ethyl-6-methylaniline water, fltrd, ug/L (61620)	3-(Trifluoromethyl)aniline water, fltrd, ug/L (61630)	3,4-Dichloroaniline water fltrd, ug/L (61625)
MAR													
19...	0.060	0.176	<0.05	<0.09	<0.01	<0.03	<0.006	<0.1	<0.005	E.379	<0.004	<0.01	<0.004
19...	<0.007	--	--	--	--	--	--	--	--	--	--	--	--
APR													
01...	0.018	0.042	<0.05	<0.09	<0.01	<0.03	<0.006	<0.1	<0.005	E.348	<0.004	<0.01	<0.004
30...	0.126	1.04	<0.05	<0.09	<0.01	<0.03	<0.006	<0.1	<0.005	E.554	<0.004	<0.01	<0.004
MAY													
09...	0.042	0.136	<0.05	<0.09	<0.01	<0.03	<0.006	<0.1	<0.005	E.493	<0.004	<0.01	<0.004
JUN													
17...	0.033	0.068	<0.05	<0.09	<0.01	<0.03	<0.006	<0.1	<0.005	E.419	<0.004	<0.01	<0.004
JUL													
09...	0.026	0.044	<0.05	<0.09	<0.01	<0.03	<0.006	<0.1	<0.005	E.300	<0.004	<0.01	<0.004
AUG													
20...	0.037	0.058	<0.05	<0.09	<0.01	<0.03	<0.006	<0.1	<0.005	E.243	<0.004	<0.01	<0.004
27...	0.144	0.197	<0.05	--	<0.01	<0.03	<0.006	<0.1	<0.005	E.204	<0.004	<0.01	<0.004
27...	0.144	0.198	<0.05	--	<0.01	<0.03	<0.006	<0.1	<0.005	E.199	<0.004	<0.01	<0.004
SEP													
17...	0.044	0.066	<0.05	--	<0.01	<0.03	<0.006	<0.1	<0.005	E.269	<0.004	<0.01	<0.004

03438040 SINKING CREEK AT KINGS CHAPEL ROAD NEAR CADIZ, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	3,5-Di-chloro-aniline water, fltrd, ug/L (61627)	3-Phen-oxy-benzyl alcohol water, fltrd, ug/L (61629)	4-(MeOH)-pendi-meth-alin, wat flt ug/L (61665)	4,4-Di' chloro-benzo-phen-one, wat flt ug/L (61631)	4Chloro 2methyl phenol, water, fltrd, ug/L (61633)	4Chloro phenyl-methyl sulfone water, fltrd, ug/L (61634)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-Endo-sulfan, water, fltrd, ug/L (34362)	alpha-HCH, water, fltrd, ug/L (34253)	alpha-HCH-d6, sur2002 /9002, wat unf percent recovry (99224)	alpha-HCH-d6, surrog, wat flt 0.7u GF percent recovry (91065)	Atra-zine, water, fltrd, ug/L (39632)
MAR													
19...	<0.005	<0.05	<0.1	<0.003	<0.006	<0.03	<0.006	<0.004	<0.005	<0.005	87.7	88.1	14.3
19...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
01...	<0.005	<0.05	<0.1	<0.003	<0.006	<0.03	0.008	E.003	<0.005	<0.005	97.3	88.5	1.50
30...	<0.005	<0.05	<0.1	<0.003	<0.006	<0.03	0.251	0.008	<0.005	<0.005	87.6	93.0	7.73
MAY													
09...	<0.005	<0.05	<0.1	<0.003	<0.006	<0.03	0.053	0.005	<0.005	<0.005	99.1	99.1	1.19
JUN													
17...	<0.005	<0.05	<0.1	<0.016	<0.006	<0.03	0.009	<0.004	<0.005	<0.005	105	85.7	2.05
JUL													
09...	<0.005	<0.05	<0.1	<0.003	<0.006	<0.03	<0.006	<0.004	<0.005	<0.005	87.9	86.2	0.200
AUG													
20...	<0.005	--	--	<0.003	<0.006	<0.03	0.008	<0.004	<0.005	<0.005	95.5	81.3	0.101
27...	<0.005	--	--	<0.003	<0.006	<0.03	0.007	<0.004	<0.005	<0.005	95.6	92.9	0.152
27...	<0.005	--	--	<0.003	<0.006	<0.03	0.006	<0.004	<0.005	<0.005	98.2	93.8	0.172
SEP													
17...	<0.005	--	--	<0.003	<0.006	<0.03	<0.006	<0.004	<0.005	<0.005	95.5	97.3	0.125

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Azin-phos-methyl oxon, water, fltrd, ug/L (61635)	Azin-phos-methyl, water, fltrd 0.7u GF ug/L (82686)	Ben-flur-alin, water, fltrd 0.7u GF ug/L (82673)	beta-Endo-sulfan, water, fltrd, ug/L (34357)	Bifen-thrin, water, fltrd, ug/L (61580)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd 0.7u GF ug/L (82680)	Carbo-furan, water, fltrd 0.7u GF ug/L (82674)	Chlor-pyrifos oxon, water, fltrd, ug/L (61636)	Chlor-pyrifos water, fltrd, ug/L (38933)	cis-Per-methrin water fltrd 0.7u GF ug/L (82687)	cis-Propi-cona-zole, water, fltrd, ug/L (79846)	Cyana-zine, water, fltrd, ug/L (04041)
MAR													
19...	<0.02	<0.050	<0.010	<0.01	<0.005	<0.002	<0.041	<0.020	<0.06	<0.005	<0.006	<0.008	<0.018
19...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
01...	<0.02	<0.050	<0.010	<0.01	<0.005	<0.002	<0.041	<0.020	<0.06	<0.005	<0.006	<0.008	<0.018
30...	<0.02	<0.050	<0.010	<0.01	<0.005	<0.002	E.036	<0.020	<0.06	<0.005	<0.006	0.022	<0.018
MAY													
09...	<0.02	<0.050	<0.010	<0.01	<0.005	<0.002	<0.041	<0.020	<0.06	<0.005	<0.006	E.006	<0.018
JUN													
17...	<0.02	<0.050	<0.010	<0.01	<0.005	<0.002	<0.041	<0.020	<0.02	<0.005	<0.006	<0.008	<0.018
JUL													
09...	<0.02	<0.050	<0.010	<0.01	<0.005	<0.002	<0.041	<0.020	<0.06	<0.005	<0.006	<0.008	<0.018
AUG													
20...	<0.02	<0.050	<0.010	<0.01	<0.005	<0.002	<0.041	<0.020	<0.06	<0.005	<0.006	<0.008	<0.018
27...	<0.02	<0.050	<0.010	<0.01	<0.005	<0.002	<0.041	<0.020	<0.06	<0.005	<0.006	<0.008	<0.018
27...	<0.02	<0.050	<0.010	<0.01	<0.005	<0.002	E.007	<0.020	<0.06	<0.005	<0.006	<0.008	<0.018
SEP													
17...	<0.02	<0.050	<0.010	<0.01	<0.005	<0.002	<0.041	<0.020	<0.06	<0.005	<0.006	<0.008	<0.018

03438040 SINKING CREEK AT KINGS CHAPEL ROAD NEAR CADIZ, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Cyclo-ate, water, fltrd, ug/L (04031)	lambda-Cyhalo-thrin, water, fltrd, ug/L (61595)	Cyper-methrin water, fltrd, ug/L (61586)	DCPA, water fltrd 0.7u GF ug/L (82682)	Diazi-non, water, fltrd, ug/L (39572)	Dicro-tophos, water fltrd, ug/L (38454)	Diel-drin, water, fltrd, ug/L (39381)	Dimeth-oate, water, fltrd 0.7u GF ug/L (82662)	Disulf-oton sulfone water, fltrd, ug/L (61640)	Disulf-oton sulf-oxide, water, fltrd, ug/L (61641)	Disul-foton, water, fltrd 0.7u GF ug/L (82677)	e-Di-metho-morph, water, fltrd, ug/L (79844)	Endo-sulfan ether, water, fltrd, ug/L (61642)
MAR													
19...	<0.005	<0.009	<0.009	<0.003	<0.005	<0.08	<0.005	<0.006	0.04	<0.002	<0.02	<0.02	<0.004
19...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
01...	<0.005	<0.009	<0.009	<0.003	<0.005	<0.08	<0.005	<0.006	0.02	<0.002	<0.02	<0.02	<0.004
30...	<0.005	<0.009	<0.009	0.004	0.020	<0.08	<0.005	<0.006	0.06	<0.002	<0.02	<0.02	<0.004
MAY													
09...	<0.005	<0.009	<0.009	<0.003	<0.005	<0.08	<0.005	<0.006	0.03	<0.002	<0.02	<0.02	<0.004
JUN													
17...	<0.005	<0.009	<0.016	<0.003	<0.005	<0.08	<0.005	<0.006	<0.02	<0.002	<0.02	<0.02	<0.004
JUL													
09...	<0.005	<0.009	<0.009	<0.003	<0.005	<0.08	<0.005	<0.006	<0.02	<0.002	<0.02	<0.02	<0.004
AUG													
20...	<0.005	<0.009	<0.009	<0.003	<0.005	<0.08	<0.005	<0.006	<0.02	<0.002	<0.02	<0.02	<0.004
27...	<0.005	<0.009	<0.009	<0.003	0.022	<0.08	<0.005	<0.006	<0.02	<0.002	<0.02	<0.02	<0.004
27...	<0.005	<0.009	<0.009	<0.003	0.022	<0.08	<0.005	<0.006	<0.02	<0.002	<0.02	<0.02	<0.004
SEP													
17...	<0.005	<0.009	<0.009	<0.003	<0.005	<0.08	<0.005	<0.006	<0.02	<0.002	<0.02	<0.02	<0.004

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	EPTC, water, fltrd 0.7u GF ug/L (82668)	Ethal-flur-alin, water, fltrd 0.7u GF ug/L (82663)	Ethion monoxon water, fltrd, ug/L (61644)	Ethion, water, fltrd, ug/L (82346)	Etho-prop, water, fltrd 0.7u GF ug/L (82672)	Fenami-phos sulfone water, fltrd, ug/L (61645)	Fenami-phos sulf-oxide, water, fltrd, ug/L (61646)	Fenami-phos, water, fltrd, ug/L (61591)	Fen-thion sulf-oxide, water, fltrd, ug/L (61647)	Flume-tralin, water, fltrd, ug/L (61592)	Fonofos oxon, water, fltrd, ug/L (61649)	Fonofos water, fltrd, ug/L (04095)	Hexa-zinone, water, fltrd, ug/L (04025)
MAR													
19...	<0.002	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.004	<0.002	<0.003	<0.013
19...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
01...	<0.002	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.004	<0.002	<0.003	<0.013
30...	<0.002	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.004	<0.002	<0.003	<0.013
MAY													
09...	<0.002	<0.009	<0.03	<0.004	<0.005	<0.031	<0.03	<0.03	<0.008	<0.004	<0.002	<0.003	<0.013
JUN													
17...	<0.002	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.004	<0.002	<0.003	<0.013
JUL													
09...	<0.002	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.004	<0.002	<0.003	<0.013
AUG													
20...	<0.002	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.004	<0.002	<0.003	<0.013
27...	<0.002	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.004	<0.002	<0.003	<0.013
27...	<0.002	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.004	<0.002	<0.003	<0.013
SEP													
17...	<0.002	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.004	<0.002	<0.003	<0.013

03438040 SINKING CREEK AT KINGS CHAPEL ROAD NEAR CADIZ, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Iprodione, water, fltrd, ug/L (61593)	Isofenphos, water, fltrd, ug/L (61594)	Lindane water, fltrd, ug/L (39341)	Linuron water fltrd 0.7u GF ug/L (82666)	Malaoxon, water, fltrd, ug/L (61652)	Malathion, water, fltrd, ug/L (39532)	Metalaxyl, water, fltrd, ug/L (61596)	Methialthion water, fltrd, ug/L (61598)	c-Permethric acid methyl ester, wat flt ug/L (79842)	Methyl paraoxon, water, fltrd, ug/L (61664)	Methyl parathion, water, fltrd 0.7u GF ug/L (82667)	t-Permethric acid methyl ester, wat flt ug/L (79843)	Metolachlor, water, fltrd, ug/L (39415)
MAR													
19...	<1	<0.003	<0.004	<0.035	<0.008	<0.027	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	0.046
19...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
01...	<1	<0.003	<0.004	<0.035	<0.008	<0.027	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	0.033
30...	<1	<0.003	<0.004	<0.035	<0.008	E.010	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	0.133
MAY													
09...	<1	<0.003	<0.004	<0.035	<0.008	<0.027	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	0.060
JUN													
17...	<1	<0.003	<0.004	<0.035	<0.008	<0.027	0.014	<0.006	<0.04	<0.03	<0.006	<0.03	0.025
JUL													
09...	<1	<0.003	<0.004	<0.035	<0.008	<0.027	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	0.019
AUG													
20...	<1	<0.003	<0.004	<0.035	<0.008	<0.027	0.010	<0.006	<0.04	<0.03	<0.006	<0.03	0.037
27...	<1	<0.003	<0.004	<0.035	<0.008	<0.027	0.017	<0.006	<0.04	<0.03	<0.006	<0.03	0.023
27...	<1	<0.003	<0.004	<0.035	<0.008	<0.027	0.018	<0.006	<0.04	<0.03	<0.006	<0.03	0.026
SEP													
17...	<1	<0.003	<0.004	<0.035	<0.008	<0.027	E.005	<0.006	<0.04	<0.03	<0.006	<0.03	0.025

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Metribuzin, water, fltrd, ug/L (82630)	Molinate, water, fltrd 0.7u GF ug/L (82671)	Myclobutanil water, fltrd, ug/L (61599)	Napropamide, water, fltrd 0.7u GF ug/L (82684)	O-Et-O-Me-S-Pr-phosphorothioate wat flt ug/L (61660)	Oxyfluorfen, water, fltrd, ug/L (61600)	p,p'-DDE, water, fltrd, ug/L (34653)	Paraoxon, water, fltrd, ug/L (61663)	Parathion, water, fltrd, ug/L (39542)	Pebulate, water, fltrd 0.7u GF ug/L (82669)	Pendimethalin, water, fltrd 0.7u GF ug/L (82683)	Phorate oxon, water, fltrd, ug/L (61666)	Phorate water fltrd 0.7u GF ug/L (82664)
MAR													
19...	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011
19...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
01...	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011
30...	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007	<0.015	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011
MAY													
09...	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011
JUN													
17...	<0.006	<0.002	<0.008	E.003	<0.008	<0.007	<0.003	<0.016	<0.010	<0.004	<0.022	<0.10	<0.011
JUL													
09...	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011
AUG													
20...	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011
27...	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011
27...	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011
SEP													
17...	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011

03438040 SINKING CREEK AT KINGS CHAPEL ROAD NEAR CADIZ, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Phosmet oxon, water, fltrd, ug/L (61668)	Phosmet water, fltrd, ug/L (61601)	Phoste- bupirim water, fltrd, ug/L (61602)	Pro- fenofos water, fltrd, ug/L (61603)	Prome- ton, water, fltrd, ug/L (04037)	Prome- tryn, water, fltrd, ug/L (04036)	Pron- amide, water, fltrd 0.7u GF ug/L (82676)	Propa- chlor, water, fltrd, ug/L (04024)	Pro- panil, water, fltrd 0.7u GF ug/L (82679)	Propar- gite, water, fltrd 0.7u GF ug/L (82685)	Propet- amphos, water, fltrd, ug/L (61604)	Sima- zine, water, fltrd, ug/L (04035)	Sulfo- tepp, water, fltrd, ug/L (61605)
MAR													
19...	<0.06	<0.008	<0.005	<0.006	<0.01	<0.005	<0.004	<0.010	<0.011	<0.02	<0.004	E6.08	<0.003
19...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
01...	<0.06	<0.008	<0.005	<0.006	<0.01	<0.005	<0.004	<0.010	<0.011	<0.02	<0.004	0.610	<0.003
30...	<0.06	<0.008	<0.005	<0.006	0.16	<0.005	<0.004	<0.010	<0.011	<0.02	<0.004	0.818	<0.003
MAY													
09...	<0.06	<0.008	<0.005	<0.006	E.01	<0.005	<0.004	<0.010	<0.011	<0.02	<0.004	0.288	<0.003
JUN													
17...	<0.06	<0.008	<0.005	<0.006	M	<0.005	<0.004	<0.010	<0.011	<0.02	<0.004	0.710	<0.003
JUL													
09...	<0.06	<0.008	<0.005	<0.006	<0.01	<0.005	<0.004	<0.010	<0.011	<0.02	<0.004	0.085	<0.003
AUG													
20...	<0.06	<0.008	<0.005	<0.006	M	<0.005	<0.004	<0.010	<0.011	<0.02	<0.004	0.029	<0.003
27...	<0.06	<0.008	<0.005	<0.006	0.02	<0.005	<0.004	<0.010	<0.011	<0.06	<0.004	0.054	<0.003
27...	<0.06	<0.008	<0.005	<0.006	0.02	<0.005	<0.004	<0.010	<0.011	<0.02	<0.004	0.055	<0.003
SEP													
17...	<0.06	<0.008	<0.005	<0.006	E.01	<0.005	<0.004	<0.010	<0.011	<0.02	<0.004	0.045	<0.003

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Sulpro- fos, water, fltrd, ug/L (38716)	Tebu- pirim- phos oxon, water, fltrd, ug/L (61669)	Tebu- thiuron water fltrd 0.7u GF ug/L (82670)	Teflu- thrin metab- olite R119365 wat flt ug/L (61671)	Teflu- thrin metab- olite R152913 wat flt ug/L (61672)	Teflu- thrin, water, fltrd, ug/L (61606)	Teme- phos, water, fltrd, ug/L (61607)	Terba- cil, water, fltrd 0.7u GF ug/L (82665)	Ter- bufos oxon sulfone water, fltrd, ug/L (61674)	Terbu- fos, water, fltrd 0.7u GF ug/L (82675)	Ter- buthyl- azine, water, fltrd, ug/L (04022)	Thio- bencarb water fltrd 0.7u GF ug/L (82681)	trans- Propi- cona- zole, water, fltrd, ug/L (79847)
MAR													
19...	<0.02	<0.006	<0.02	<0.02	<0.01	<0.008	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	<0.01
19...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
01...	<0.02	<0.006	<0.02	--	--	<0.008	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	<0.01
30...	<0.02	<0.006	<0.02	--	--	<0.008	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	0.03
MAY													
09...	<0.02	<0.006	<0.02	--	--	<0.008	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	E.01
JUN													
17...	<0.02	<0.006	<0.02	--	--	<0.008	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	<0.01
JUL													
09...	<0.02	<0.006	<0.02	--	--	<0.008	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	<0.01
AUG													
20...	<0.02	<0.006	<0.02	--	--	<0.008	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	<0.01
27...	<0.02	<0.006	M	--	--	<0.008	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	<0.01
27...	<0.02	<0.006	<0.02	--	--	<0.008	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	<0.01
SEP													
17...	<0.02	<0.006	<0.02	--	--	<0.008	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	<0.01

03438040 SINKING CREEK AT KINGS CHAPEL ROAD NEAR CADIZ, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Tri-allate, water, fltrd 0.7u GF ug/L (82678)	Tribu-phos, water, fltrd, ug/L (61610)	Tri-flur-alin, water, fltrd 0.7u GF ug/L (82661)	z-Di-metho-morph, water, fltrd, ug/L (79845)	Di-chlor-vos, water fltrd, ug/L (38775)	Sus-pended sedi-ment concen-tration mg/L (80154)
MAR						
19...	<0.002	<0.004	<0.009	<0.05	<0.01	111
19...	--	--	--	--	--	--
APR						
01...	<0.002	<0.004	<0.009	<0.05	<0.01	12
30...	<0.002	<0.004	<0.009	<0.05	<0.01	1,020
MAY						
09...	<0.002	<0.004	<0.009	<0.05	<0.01	84
JUN						
17...	<0.002	<0.004	<0.009	<0.05	<0.01	19
JUL						
09...	<0.002	<0.004	<0.009	<0.05	<0.01	4
AUG						
20...	<0.002	<0.004	<0.009	<0.05	<0.01	2
27...	<0.002	<0.004	<0.009	<0.05	<0.01	16
27...	<0.002	<0.004	<0.009	<0.05	<0.01	17
SEP						
17...	<0.002	<0.004	<0.009	<0.05	<0.01	5

E--Laboratory estimated value.
<--Numeric result is less than the value shown.
M--Presence of material verified but not quantified.

03438080 LITTLE RIVER AT CRUTE ROAD BRIDGE NEAR CADIZ, KY

WATER-QUALITY RECORDS

LOCATION.--Lat 36°50'35", long 87°47'07", Trigg County, Hydrologic Unit 05130205.

DRAINAGE AREA.--400 mi^2.

PERIOD OF RECORD.--Apr. 30, 2003 and Aug. 20, 2003.

COOPERATION.--Kentucky Department of Agriculture and the Kentucky Environmental and Public Protection Cabinet.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Sample type	Instantaneous discharge, cfs (00061)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specif. conductance, wat unf uS/cm 25 degC (00095)	Temperature, water, deg C (00010)	Alkalinity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicarbonate, wat flt incrm. titr., field, mg/L (00453)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)
APR 30...	1650	Environmental	3,350	8.1	84	7.5	234	17.0	88	107	0.05	2.84
AUG 20...	1230	Environmental	108	8.1	95	7.8	434	22.9	177	216	<0.04	3.70

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	1,4-Naphthoquinone, water, fltrd, ug/L (61611)	1-Naphthol, water, fltrd 0.7u GF ug/L (49295)	2-(4-t-Butylphenoxy)cyclohexanol wat flt ug/L (61637)	2,5-Dichloroaniline water, fltrd, ug/L (61614)	2,6-Diethylaniline water fltrd 0.7u GF ug/L (82660)	2-[(2-Et-6-Me-Ph)--amino]propan-1-ol, ug/L (61615)	2Amino-N-isopropylbenzamide, wat flt ug/L (61617)	CIAT, water, fltrd, ug/L (04040)	2-Ethyl-6-methylaniline water, fltrd, ug/L (61620)	3-(Trifluoromethyl)aniline water, fltrd, ug/L (61630)	3,4-Dichloroaniline water fltrd, ug/L (61625)
APR 30...	0.110	0.630	<0.05	<0.09	<0.01	<0.03	<0.006	<0.1	<0.005	E.452	<0.004	<0.01	<0.004
AUG 20...	0.050	0.077	<0.05	<0.09	<0.01	<0.03	<0.006	<0.1	<0.005	E.184	<0.004	<0.01	<0.004

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	3,5-Dichloroaniline water, fltrd, ug/L (61627)	3-Phenoxybenzyl alcohol water, fltrd, ug/L (61629)	4-(MeOH)-pendimethalin, wat flt ug/L (61665)	4,4-Di'chlorobenzophenone, wat flt ug/L (61631)	4Chloro 2methyl phenol, water, fltrd, ug/L (61633)	4Chloro phenylmethyl sulfone water, fltrd, ug/L (61634)	Acetochlor, water, fltrd, ug/L (49260)	Alachlor, water, fltrd, ug/L (46342)	alpha-Endosulfan, water, fltrd, ug/L (34362)	alpha-HCH, water, fltrd, ug/L (34253)	alpha-HCH-d6, sur2002 /9002, wat unf percent recovry (99224)	alpha-HCH-d6, surrog, wat flt 0.7u GF percent recovry (91065)	Atrazine, water, fltrd, ug/L (39632)
APR 30...	<0.005	<0.05	<0.1	<0.003	<0.006	<0.03	0.294	0.008	<0.005	<0.005	89.8	97.3	4.63
AUG 20...	<0.005	--	--	<0.003	<0.006	<0.03	E.005	<0.004	<0.005	<0.005	99.1	83.2	0.177

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Azinphosmethyl oxon, water, fltrd, ug/L (61635)	Azinphosmethyl, water, fltrd 0.7u GF ug/L (82686)	Benfluralin, water, fltrd 0.7u GF ug/L (82673)	beta-Endosulfan, water, fltrd, ug/L (34357)	Bifenthrin, water, fltrd, ug/L (61580)	Butylate, water, fltrd, ug/L (04028)	Carbaryl, water, fltrd 0.7u GF ug/L (82680)	Carbofuran, water, fltrd 0.7u GF ug/L (82674)	Chlorpyrifos oxon, water, fltrd, ug/L (61636)	Chlorpyrifos water, fltrd, ug/L (38933)	cis-Permethrin water fltrd 0.7u GF ug/L (82687)	cis-Propiconazole, water, fltrd, ug/L (79846)	Cyanazine, water, fltrd, ug/L (04041)
APR 30...	<0.02	<0.050	<0.010	<0.01	<0.005	<0.002	E.018	<0.020	<0.06	<0.005	<0.006	0.014	<0.018
AUG 20...	<0.02	<0.050	<0.010	<0.01	<0.005	<0.002	<0.041	<0.020	<0.06	<0.005	<0.006	<0.008	<0.018

03438080 LITTLE RIVER AT CRUTE ROAD BRIDGE NEAR CADIZ, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Cyclo-ate, water, fltrd, ug/L (04031)	lambda-Cyhalo-thrin, water, fltrd, ug/L (61595)	Cyper-methrin water, fltrd, ug/L (61586)	DCPA, water fltrd 0.7u GF ug/L (82682)	Diazi-non, water, fltrd, ug/L (39572)	Dicro-tophos, water fltrd, ug/L (38454)	Diel-drin, water, fltrd, ug/L (39381)	Dimeth-oate, water, fltrd 0.7u GF ug/L (82662)	Disulf-oton sulfone water, fltrd, ug/L (61640)	Disulf-oton sulf-oxide, water, fltrd, ug/L (61641)	Disul-foton, water, fltrd 0.7u GF ug/L (82677)	e-Di-metho-morph, water, fltrd, ug/L (79844)	Endo-sulfan ether, water, fltrd, ug/L (61642)
APR 30...	<0.005	<0.009	<0.009	0.003	0.016	<0.08	<0.005	<0.006	0.03	<0.002	<0.02	<0.02	<0.004
AUG 20...	<0.005	<0.009	<0.009	<0.003	<0.005	<0.08	<0.005	<0.006	<0.02	<0.002	<0.02	<0.02	<0.004

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	EPTC, water, fltrd 0.7u GF ug/L (82668)	Ethal-flur-alin, water, fltrd 0.7u GF ug/L (82663)	Ethion monoxon water, fltrd, ug/L (61644)	Ethion, water, fltrd, ug/L (82346)	Etho-prop, water, fltrd 0.7u GF ug/L (82672)	Fenami-phos sulfone water, fltrd, ug/L (61645)	Fenami-phos sulf-oxide, water, fltrd, ug/L (61646)	Fenami-phos, water, fltrd, ug/L (61591)	Fen-thion sulf-oxide, water, fltrd, ug/L (61647)	Flume-tralin, water, fltrd, ug/L (61592)	Fonofos oxon, water, fltrd, ug/L (61649)	Fonofos water, fltrd, ug/L (04095)	Hexa-zinone, water, fltrd, ug/L (04025)
APR 30...	0.002	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.004	<0.002	<0.003	<0.013
AUG 20...	<0.002	<0.009	<0.03	<0.004	<0.005	<0.008	<0.03	<0.03	<0.008	<0.004	<0.002	<0.003	<0.013

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Ipro-dione, water, fltrd, ug/L (61593)	Isofen-phos, water, fltrd, ug/L (61594)	Lindane water, fltrd, ug/L (39341)	Linuron water fltrd 0.7u GF ug/L (82666)	Mala-oxon, water, fltrd, ug/L (61652)	Mala-thion, water, fltrd, ug/L (39532)	Meta-laxyl, water, fltrd, ug/L (61596)	Methi-althion water, fltrd, ug/L (61598)	c-Per-methric acid methyl ester, wat flt ug/L (79842)	Methyl para-oxon, water, fltrd, ug/L (61664)	Methyl para-thion, water, fltrd 0.7u GF ug/L (82667)	t-Per-methric acid methyl ester, wat flt ug/L (79843)	Metola-chlor, water, fltrd, ug/L (39415)
APR 30...	<1	<0.003	<0.004	<0.035	<0.008	E.006	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	0.085
AUG 20...	<1	<0.003	<0.004	<0.035	<0.008	<0.027	<0.005	<0.006	<0.04	<0.03	<0.006	<0.03	E.010

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Metri-buzin, water, fltrd, ug/L (82630)	Moli-nate, water, fltrd 0.7u GF ug/L (82671)	Myclo-butanil water, fltrd, ug/L (61599)	Naprop-amide, water, fltrd 0.7u GF ug/L (82684)	O-Et-O-Me-S-Pr -phos-phoro-thioate wat flt ug/L (61660)	Oxy-fluor-fen, water, fltrd, ug/L (61600)	p,p'-DDE, water, fltrd, ug/L (34653)	Para-oxon, water, fltrd, ug/L (61663)	Para-thion, water, fltrd, ug/L (39542)	Peb-ulate, water, fltrd 0.7u GF ug/L (82669)	Pendi-meth-alin, water, fltrd 0.7u GF ug/L (82683)	Phorate oxon, water, fltrd, ug/L (61666)	Phorate water fltrd 0.7u GF ug/L (82664)
APR 30...	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011
AUG 20...	<0.006	<0.002	<0.008	<0.007	<0.008	<0.007	<0.003	<0.008	<0.010	<0.004	<0.022	<0.10	<0.011

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Phosmet oxon, water, fltrd, ug/L (61668)	Phosmet water, fltrd, ug/L (61601)	Phoste-bupirim water, fltrd, ug/L (61602)	Pro-fenofos water, fltrd, ug/L (61603)	Prome-ton, water, fltrd, ug/L (04037)	Prome-tryn, water, fltrd, ug/L (04036)	Pron-amide, water, fltrd 0.7u GF ug/L (82676)	Propa-chlor, water, fltrd, ug/L (04024)	Pro-panil, water, fltrd 0.7u GF ug/L (82679)	Propar-gite, water, fltrd 0.7u GF ug/L (82685)	Propet-amphos, water, fltrd, ug/L (61604)	Sima-zine, water, fltrd, ug/L (04035)	Sulfo-tepp, water, fltrd, ug/L (61605)
APR 30...	<0.06	<0.008	<0.005	<0.006	0.08	<0.005	<0.004	<0.010	<0.011	<0.02	<0.004	0.555	<0.003
AUG 20...	<0.06	<0.008	<0.005	<0.006	E.01	<0.005	<0.004	<0.010	<0.011	<0.02	<0.004	0.026	<0.003

03438080 LITTLE RIVER AT CRUTE ROAD BRIDGE NEAR CADIZ, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Sulprofos, water, fltrd, ug/L (38716)	Tebupirimphos oxon, water, fltrd, ug/L (61669)	Tebuthiuron water fltrd 0.7u GF ug/L (82670)	Tefluthrin, water, fltrd, ug/L (61606)	Temephos, water, fltrd, ug/L (61607)	Terbacil, water, fltrd 0.7u GF ug/L (82665)	Terbufos oxon sulfone water, fltrd, ug/L (61674)	Terbufos, water, fltrd 0.7u GF ug/L (82675)	Terbuthylazine, water, fltrd, ug/L (04022)	Thiobencarb water fltrd 0.7u GF ug/L (82681)	trans-Propiconazole, water, fltrd, ug/L (79847)	Triallate, water, fltrd 0.7u GF ug/L (82678)	Tribuphos, water, fltrd, ug/L (61610)
APR													
30...	<0.02	<0.006	<0.02	<0.008	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	0.02	<0.002	<0.004
AUG													
20...	<0.02	<0.006	<0.02	<0.008	<0.3	<0.034	<0.07	<0.02	<0.01	<0.005	<0.01	<0.002	<0.004

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Trifluralin, water, fltrd 0.7u GF ug/L (82661)	z-Dimethomorph, water, fltrd, ug/L (79845)	Dichlorvos, water fltrd, ug/L (38775)	Suspended sediment concentration mg/L (80154)
APR				
30...	<0.009	<0.05	<0.01	518
AUG				
20...	<0.009	<0.05	<0.01	11

E--Laboratory estimated value.
<--Numeric result is less than the value shown.
M--Presence of material verified but not quantified.

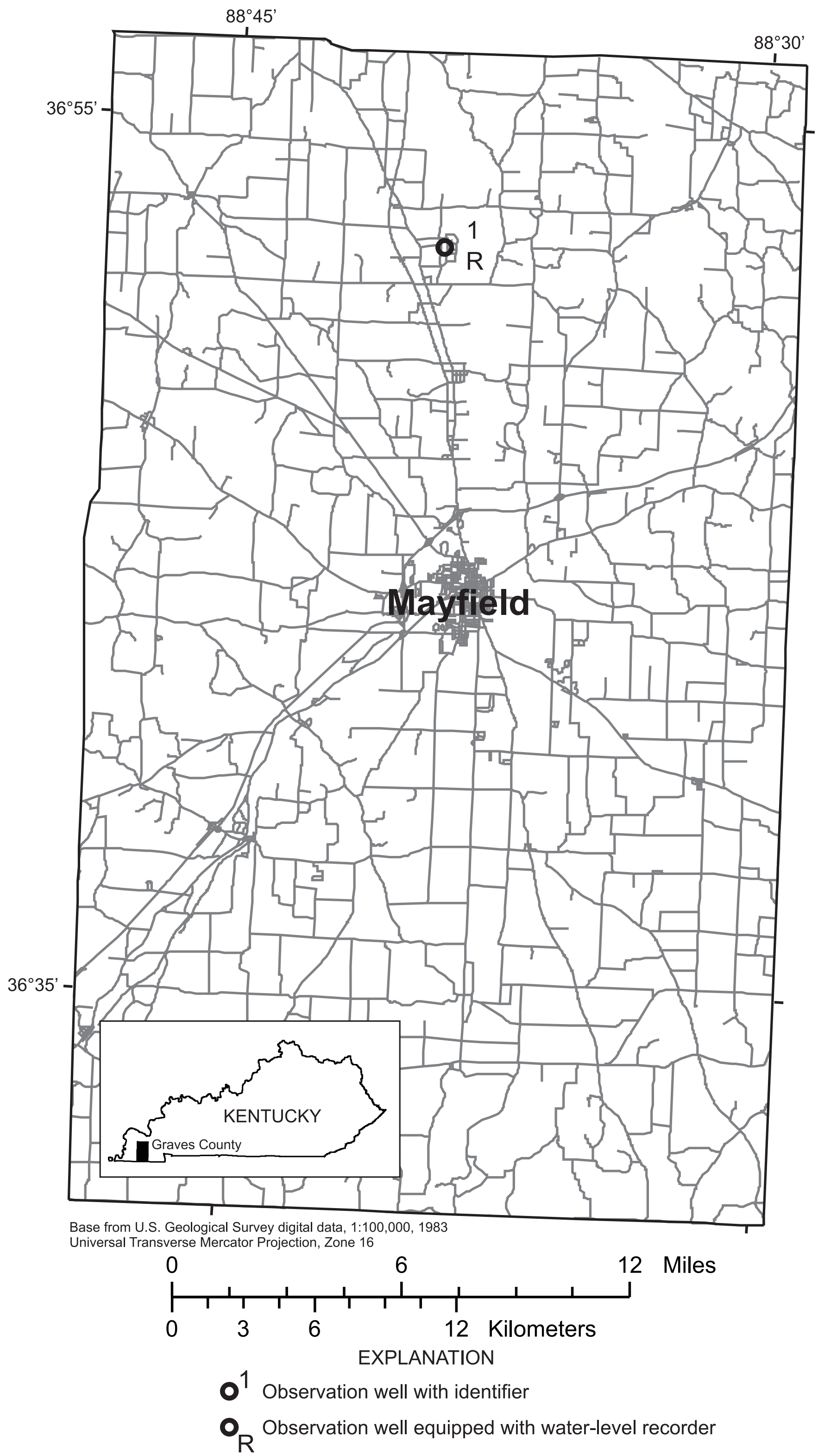
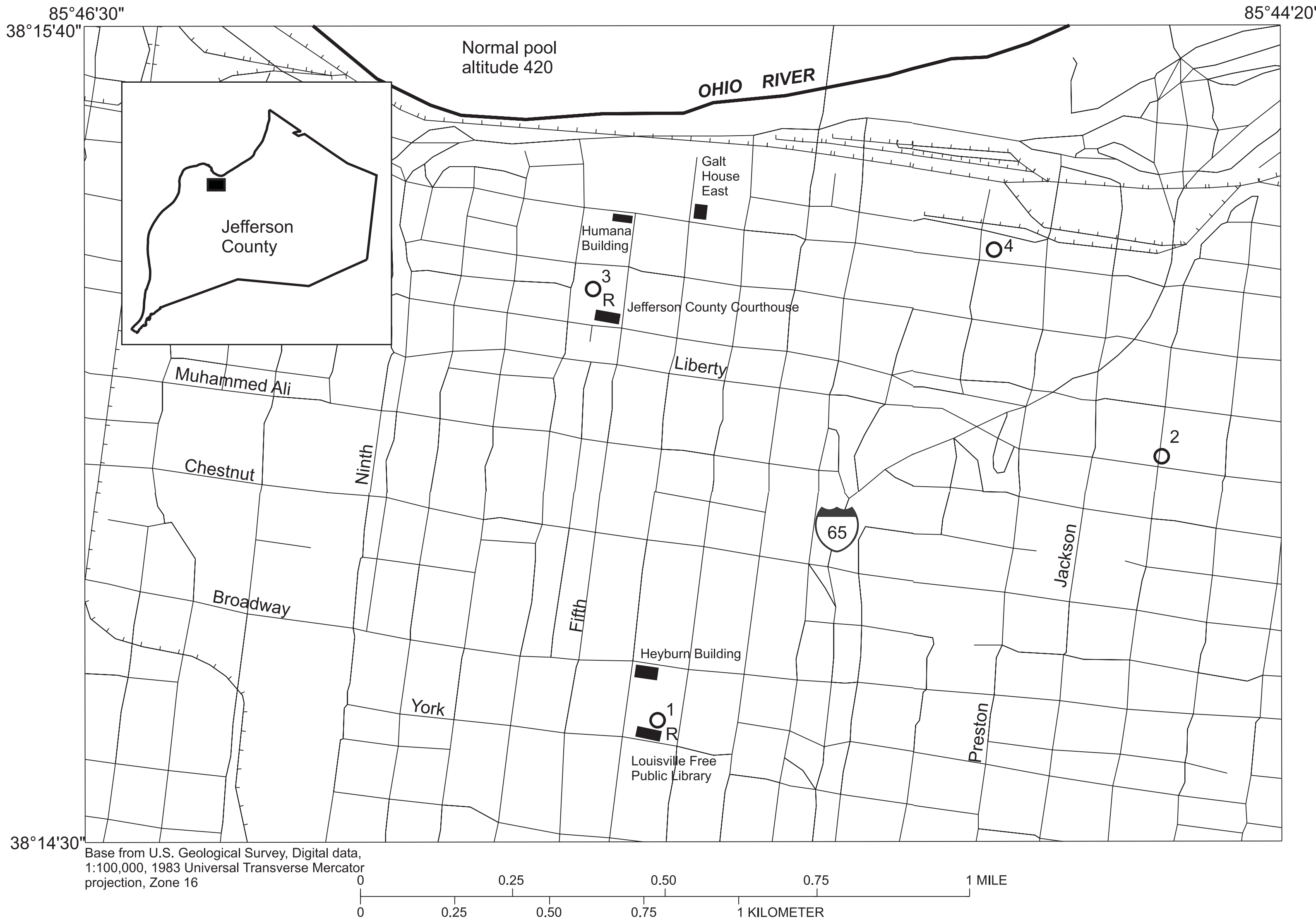


Figure 9. Location of observation wells in Graves County, Kentucky.



EXPLANATION

O[1] Observation well with identifier

O_R Observation well equipped with water-level recorder

Figure 10. Location of observation wells in downtown Louisville, Kentucky.

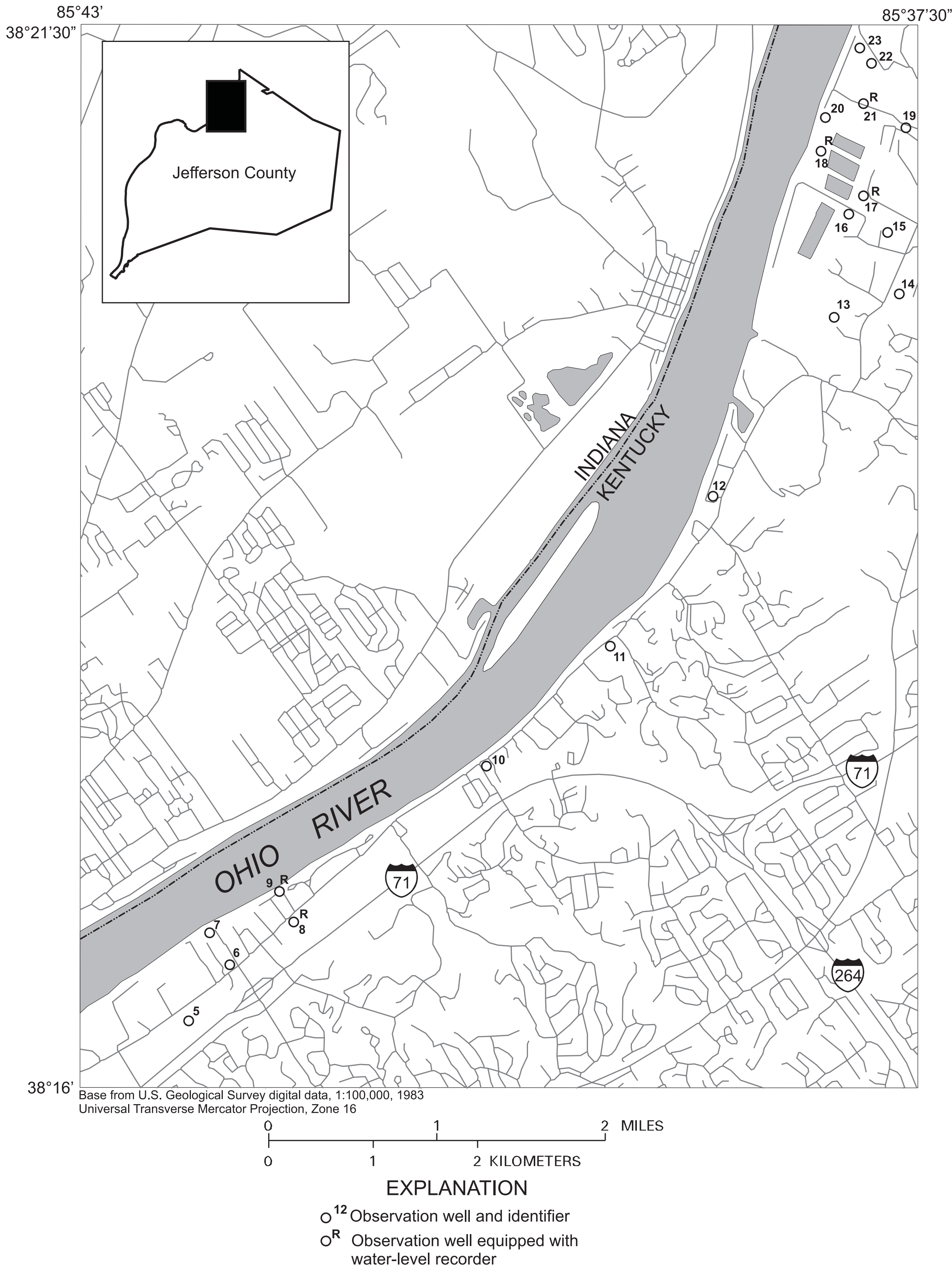


Figure 11. Location of observation wells in northeastern Jefferson County, Kentucky.

GRAVES COUNTY

365210088391301. (Viola well), map number 1.

LOCATION.--Lat 36°52'10", long 88°39'13", Hydrologic Unit 08010201, County Code 083, Hickory quadrangle, in a cultivated field, 200 ft east of a private road, 1.2 mi northwest of Viola. Owner: J. Whittemore.

AQUIFER.--Sand of Claiborne Group of Eocene age. Aquifer code: 124 CLBR.

WELL CHARACTERISTICS.--Drilled unused artesian well, diameter 10 in., depth 105 ft, cased to 85 ft, screened 85-105 ft.

INSTRUMENTATION.--Continuous water level recorder with telemetry, 60 minute interval.

DATUM.--Elevation of land-surface datum is 405.65 ft above NGVD of 1929. Measuring point: Floor of shelter, 4.03 ft above land-surface datum.

PERIOD OF RECORD.--February 1951 to September 1984 and October 1988 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 6.79 ft below land-surface datum, June 19, 2003: lowest measured, 19.24 ft below land-surface datum, Jan. 10, 1975.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

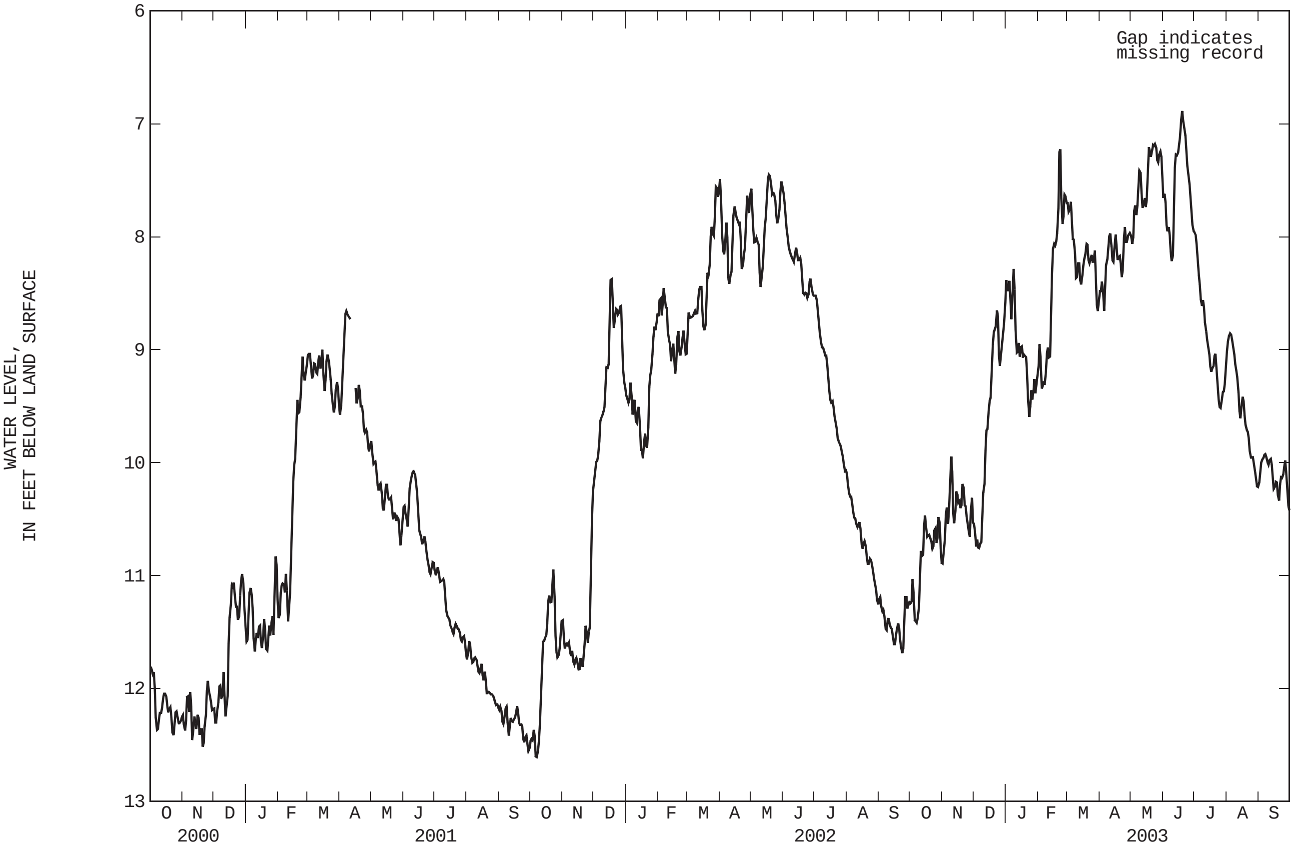
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11.24	10.94	10.69	8.42	9.26	7.68	8.46	7.95	7.66	7.97	9.07	10.21
2	11.25	10.84	10.39	8.35	9.03	7.72	8.50	8.02	7.65	7.95	8.95	10.14
3	11.21	10.68	10.82	8.54	8.87	7.84	8.46	8.10	7.59	8.01	8.90	10.03
4	10.85	10.68	10.66	8.42	9.26	7.69	8.33	7.91	7.80	8.12	8.86	9.97
5	11.44	10.25	10.70	8.36	9.43	7.69	8.67	7.63	7.99	8.30	8.85	9.98
6	11.35	10.54	10.80	8.75	9.21	7.97	8.64	7.81	7.91	8.37	8.88	9.94
7	11.45	10.54	10.71	8.71	9.35	8.07	8.26	7.80	7.92	8.48	8.94	9.92
8	11.38	10.29	10.72	8.32	9.27	7.98	8.24	7.64	8.05	8.62	8.99	9.93
9	11.37	10.06	10.69	8.25	9.12	8.31	8.16	7.46	8.21	8.60	9.09	9.97
10	11.19	9.83	10.34	8.69	8.95	8.42	8.05	7.36	8.22	8.52	9.17	10.02
11	10.84	10.33	10.19	8.95	9.01	8.29	7.94	7.50	8.11	8.72	9.19	10.01
12	10.72	10.55	10.18	9.10	9.13	8.18	8.00	7.73	7.51	8.79	9.29	9.94
13	10.93	10.52	9.61	8.93	8.99	8.29	8.17	7.76	7.27	8.88	9.46	9.99
14	10.70	10.33	9.82	8.95	8.52	8.47	8.24	7.65	7.27	8.94	9.62	10.04
15	10.42	10.18	9.59	9.17	8.14	8.37	8.20	7.66	7.29	8.99	9.59	10.23
16	10.51	10.37	9.49	8.78	8.08	8.31	8.01	7.81	7.23	9.09	9.44	10.24
17	10.62	10.34	9.42	9.16	8.04	8.19	7.95	7.54	7.15	9.21	9.39	10.19
18	10.69	10.34	9.43	8.98	8.11	8.20	8.22	7.21	7.09	9.18	9.52	10.15
19	10.60	10.46	9.06	9.10	7.98	8.12	8.19	7.20	6.83	9.15	9.64	10.20
20	10.68	10.29	8.85	9.01	7.96	8.00	8.17	7.29	6.94	9.14	9.69	10.37
21	10.65	10.09	8.84	9.12	7.54	8.14	8.17	7.29	7.00	8.97	9.73	10.30
22	10.75	10.36	8.80	9.31	6.96	8.27	8.31	7.18	7.05	9.10	9.72	10.08
23	10.78	10.39	8.79	9.56	7.49	8.20	8.40	7.19	7.15	9.25	9.84	10.18
24	10.71	10.38	8.51	9.63	7.83	8.19	8.19	7.20	7.31	9.40	9.95	10.09
25	10.49	10.57	8.90	9.37	7.94	8.13	7.83	7.16	7.43	9.48	9.96	10.12
26	10.67	10.53	9.18	9.35	7.69	8.31	8.00	7.27	7.44	9.53	9.95	9.95
27	10.75	10.69	9.10	9.53	7.56	8.13	8.09	7.37	7.63	9.50	9.95	10.01
28	10.58	10.62	8.98	9.21	7.72	8.11	8.00	7.31	7.70	9.38	10.07	10.15
29	10.38	10.25	8.94	9.31	---	8.54	7.98	7.24	7.86	9.37	10.09	10.36
30	10.69	10.37	8.79	9.46	---	8.66	7.98	7.25	7.93	9.37	10.20	10.41
31	10.83	---	8.75	9.18	---	8.65	---	7.33	---	9.24	10.22	---
MAX	11.45	10.94	10.82	9.63	9.43	8.66	8.67	8.10	8.22	9.53	10.22	10.41
MIN	10.38	9.83	8.51	8.25	6.96	7.68	7.83	7.16	6.83	7.95	8.85	9.92

WTR YR 2003 HIGH 6.83 LOW 11.45

GRAVES COUNTY

365210088391301. Viola well, map number 1.--Continued.



JEFFERSON COUNTY

381441085452701. (Lib A-2), map number 1.

LOCATION.--Lat 38°14'41", long 85°45'27", Hydrologic Unit 05140101, County Code 111, Louisville West quadrangle, at the Louisville Free Public Library, 301 West York Street, on east side of building at base of the TV-radio tower, in Louisville. Owner: City of Louisville.

AQUIFER.--Glacial sand and gravel of Quaternary age. Aquifer code: 112OTSH.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 8 in., depth 105 ft, cased and screened.

INSTRUMENTATION.--Continuous recorder, 30 minute interval.

DATUM.--Elevation of land-surface datum is 454.23 ft above NGVD of 1929. Measuring point: Top of casing, 1.00 ft above land-surface datum.

REMARKS.--Water-quality sample collected May 8, 1956.

PERIOD OF RECORD.--February 1937 to current year. February 1937 to September 1976 published in hydrograph form and on file at district office.

EXTREMES FOR PERIOD OF RECORD.--Highest water level observed, 27.51 ft below land-surface datum, June 1, 1997; lowest, 77.82 ft below land-surface datum, Sept. 18, 1955.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

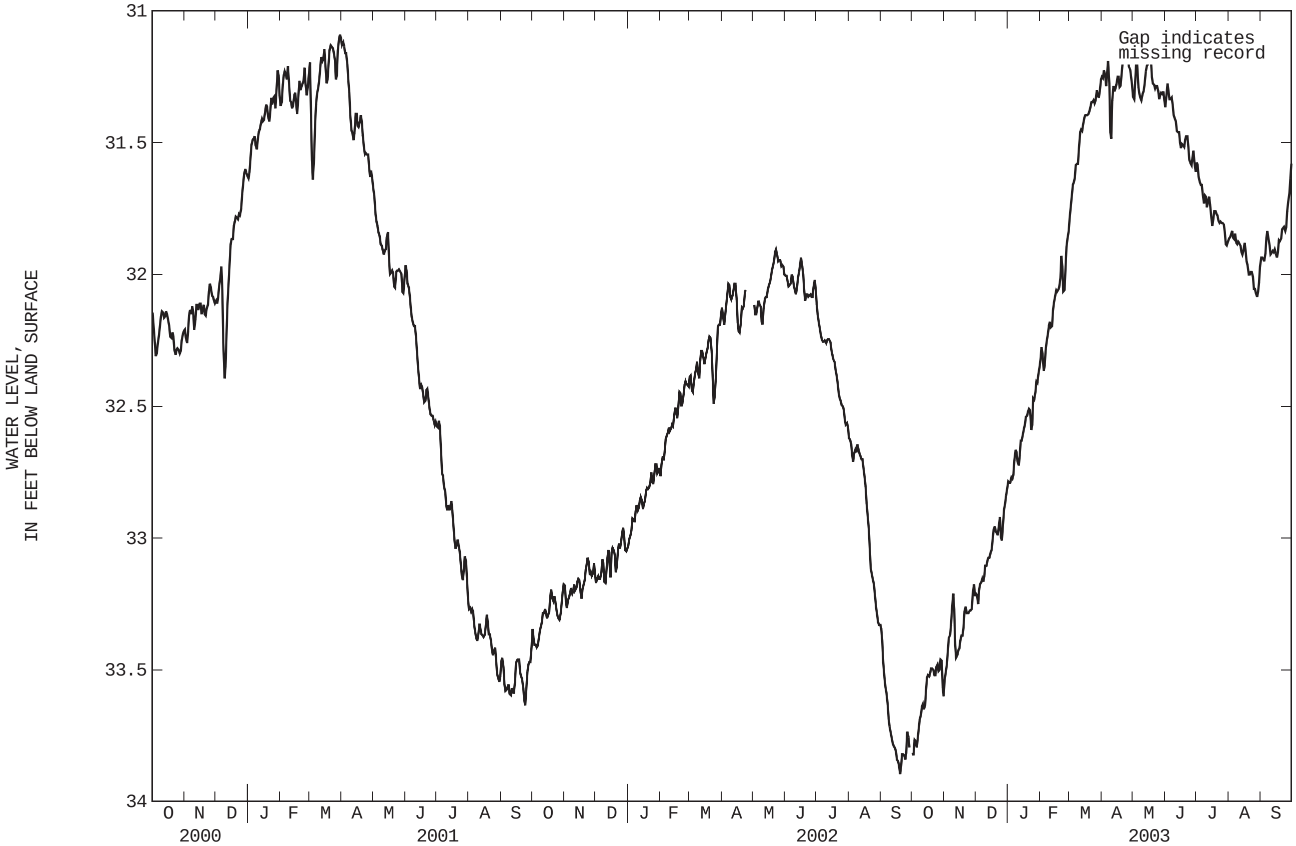
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	33.79	33.56	33.26	32.79	32.35	31.81	31.23	31.29	31.37	31.61	31.87	31.94
2	33.84	33.52	33.16	32.78	32.29	31.76	31.27	31.36	31.36	31.54	31.86	31.93
3	33.81	33.49	33.27	32.80	32.26	31.74	31.24	31.31	31.26	31.63	31.86	31.94
4	33.72	33.47	33.23	32.78	32.34	31.68	31.21	31.24	31.29	31.63	31.84	31.94
5	33.82	33.38	33.16	32.76	32.39	31.64	31.28	31.15	31.32	31.67	31.83	31.96
6	33.77	33.38	33.19	32.79	32.30	31.66	31.29	31.26	31.35	31.65	31.89	31.88
7	33.74	33.36	33.15	32.73	32.27	31.61	31.18	31.32	31.32	31.67	31.84	31.84
8	33.70	33.30	33.16	32.68	32.24	31.56	31.20	31.31	31.34	31.72	31.85	31.83
9	33.68	33.24	33.17	32.65	32.21	31.60	31.35	31.35	31.37	31.74	31.91	31.89
10	33.66	33.18	33.12	32.70	32.18	31.56	31.57	31.33	31.42	31.66	31.86	31.89
11	33.62	33.36	33.09	32.72	32.18	31.48	31.40	31.30	31.40	31.75	31.89	31.96
12	33.64	33.45	33.12	32.73	32.22	31.44	31.28	31.31	31.44	31.74	31.87	31.88
13	33.66	33.46	33.05	32.64	32.17	31.46	31.29	31.25	31.47	31.70	31.91	31.94
14	33.61	33.43	33.10	32.62	32.10	31.45	31.32	31.21	31.45	31.71	31.92	31.89
15	33.54	33.42	33.05	32.64	32.11	31.41	31.27	31.21	31.47	31.76	31.93	31.92
16	33.52	33.42	33.06	32.57	32.06	31.40	31.29	31.20	31.53	31.81	31.89	31.92
17	33.52	33.36	33.03	32.60	32.06	31.39	31.21	31.17	31.51	31.82	31.87	31.95
18	33.53	33.38	32.99	32.54	32.07	31.40	31.29	31.16	31.50	31.76	31.95	31.88
19	33.49	33.36	32.95	32.54	32.05	31.39	31.29	31.21	31.52	31.76	31.95	31.86
20	33.50	33.32	32.96	32.53	32.05	31.39	31.28	31.29	31.51	31.76	31.98	31.89
21	33.49	33.24	32.99	32.51	31.98	31.37	31.19	31.26	31.47	31.78	32.02	31.84
22	33.51	33.28	32.97	32.51	31.88	31.36	31.19	31.30	31.48	31.77	31.98	31.82
23	33.53	33.29	33.01	32.52	32.06	31.33	31.20	31.29	31.47	31.82	32.00	31.83
24	33.51	33.28	32.89	32.66	32.07	31.36	31.19	31.28	31.56	31.79	31.98	31.81
25	33.47	33.29	32.95	32.48	32.05	31.32	31.11	31.29	31.57	31.81	32.04	31.86
26	33.49	33.26	33.04	32.46	31.92	31.38	31.14	31.32	31.58	31.80	32.07	31.78
27	33.52	33.29	32.98	32.49	31.87	31.30	31.21	31.35	31.59	31.81	32.04	31.74
28	33.48	33.25	32.89	32.40	31.86	31.30	31.21	31.29	31.52	31.81	32.10	31.71
29	33.44	33.17	32.89	32.41	---	31.34	31.23	31.33	31.54	31.87	32.07	31.67
30	33.49	33.18	32.85	32.41	---	31.32	31.27	31.30	31.61	31.90	32.06	31.60
31	33.64	---	32.83	32.35	---	31.29	---	31.31	---	31.88	32.00	---
MAX	33.84	33.56	33.27	32.80	32.39	31.81	31.57	31.36	31.61	31.90	32.10	31.96
MIN	33.44	33.17	32.83	32.35	31.86	31.29	31.11	31.15	31.26	31.54	31.83	31.60

WTR YR 2003 HIGH 31.11 LOW 33.84

JEFFERSON COUNTY

381441085452701.(Lib A-2), map number 1--Continued.



JEFFERSON COUNTY

381504085443202. Local number (CP7A), map number 2.

LOCATION.--Lat 38°15'04", long 85°44'32", Hydrologic Unit 05140101, County Code 111, Jeffersonville quadrangle, at the southwest corner of east Louisville Park, 13.7 ft west of a tennis court fence, 16.5 ft east of curb on south Hancock Street, 58.2 ft north of curb on east Liberty Street, in Louisville. Owner: City of Louisville.

AQUIFER.--Glacial sand and gravel of Quaternary age. Aquifer code: 1120TSH.

WELL CHARACTERISTICS.--Augered observation water-table well, diameter 1.5 in., depth 84.6 ft, screened 71.1-74.1 ft.

INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.

DATUM.--Elevation of land-surface datum is 467.19 ft above NGVD of 1929. Measuring point: Top of casing, at land-surface datum.

REMARKS.--Replaces destroyed well 381504085443201 (CP7), which was 10 ft north.

PERIOD OF RECORD.--July 1980 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 42.41 ft below land-surface datum, May 6, 1997: lowest measured, 49.44 ft below land-surface datum, Oct. 21, 2002.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Water Level	Date	Water Level
Oct. 21, 2002	49.44	Dec. 30, 2002	48.42
Nov. 04, 2002	49.41	Jan. 13, 2003	47.82
Dec. 09, 2002	49.10	Mar. 10, 2003	46.00

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JEFFERSON COUNTY

381518085453402. Local number 86-11 (Courthouse Annex), map number 3.

LOCATION.--Lat 38°15'18", long 85°45'34", Hydrologic Unit 05140101, County Code 111, New Albany quadrangle, at northwest corner behind Courthouse Annex building between 5th and 6th Streets, east of walkway to parking garage. Owner: City of Louisville.

AQUIFER.--Glacial sand and gravel of Quaternary age. Aquifer code: 112OTSH.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 2.5 in., depth 102 ft, screened 42-44 ft, 61-63 ft, 99-101 ft.

INSTRUMENTATION.--Continuous recorder, 30 minute interval.

DATUM.--Elevation of land-surface datum is 461.63 ft above NGVD of 1929. Measuring point: Top of casing, 3.0 ft above land-surface datum.

REMARKS.--Water levels affected by Ohio River stage and pumping from nearby wells.

PERIOD OF RECORD.--November 1986 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 37.49 ft below land-surface datum, March 8, 1998; lowest, 46.82 ft below land-surface datum, July 27, 1991.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

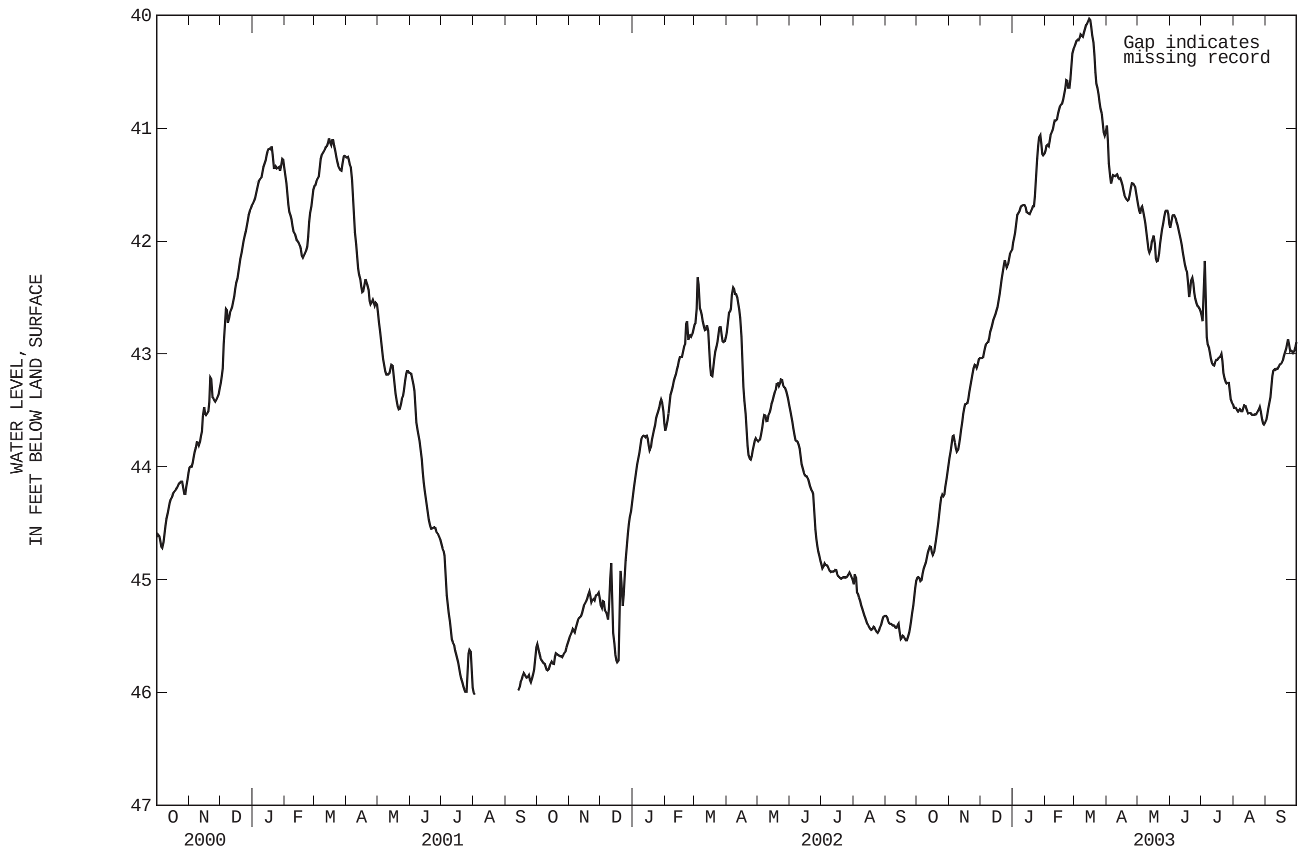
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	44.99	43.95	43.05	42.05	41.22	40.29	40.99	41.64	41.90	42.64	43.46	43.60
2	44.97	43.89	43.02	41.97	41.18	40.26	40.96	41.70	41.86	42.68	43.49	43.57
3	44.98	43.82	43.05	41.97	41.13	40.24	41.26	41.76	41.78	42.74	43.46	43.51
4	44.99	43.76	43.01	41.88	41.16	40.21	41.36	41.75	41.77	42.22	43.49	43.46
5	45.03	43.70	42.96	41.78	41.16	40.22	41.48	41.67	41.77	42.13	43.50	43.42
6	44.97	43.75	42.93	41.75	41.07	40.22	41.50	41.72	41.77	42.80	43.52	43.34
7	44.92	43.82	42.90	41.76	41.05	40.18	41.41	41.77	41.82	42.90	43.48	43.23
8	44.89	43.85	42.90	41.72	41.03	40.16	41.42	41.81	41.85	42.93	43.50	43.16
9	44.87	43.88	42.89	41.69	40.99	40.20	41.42	41.87	41.87	42.96	43.51	43.13
10	44.83	43.82	42.83	41.69	40.94	40.18	41.43	41.96	41.93	43.02	43.50	43.14
11	44.78	43.78	42.78	41.68	40.92	40.13	41.40	42.05	41.97	43.06	43.46	43.14
12	44.75	43.71	42.76	41.68	40.94	40.10	41.42	42.10	42.01	43.09	43.45	43.12
13	44.72	43.64	42.71	41.68	40.90	40.07	41.46	42.11	42.06	43.10	43.47	43.14
14	44.69	43.56	42.69	41.71	40.85	40.08	41.44	42.04	42.13	43.10	43.50	43.09
15	44.73	43.50	42.66	41.77	40.83	40.03	41.45	41.98	42.19	43.05	43.52	43.10
16	44.78	43.46	42.63	41.73	40.79	40.03	41.49	41.99	42.23	43.05	43.53	43.08
17	44.78	43.43	42.60	41.78	40.79	40.05	41.53	41.91	42.26	43.05	43.51	43.07
18	44.73	43.45	42.57	41.74	40.77	40.15	41.58	42.14	42.27	43.03	43.53	43.04
19	44.67	43.42	42.50	41.74	40.73	40.20	41.60	42.17	42.49	43.03	43.54	43.00
20	44.62	43.37	42.43	41.69	40.68	40.28	41.62	42.19	42.50	43.01	43.54	42.98
21	44.54	43.30	42.37	41.69	40.61	40.42	41.64	42.16	42.37	42.99	43.54	42.93
22	44.45	43.25	42.30	41.69	40.54	40.58	41.64	42.06	42.33	43.13	43.53	42.89
23	44.37	43.20	42.26	41.51	40.62	40.63	41.62	41.99	42.32	43.20	43.54	42.85
24	44.30	43.15	42.16	41.33	40.66	40.67	41.56	41.93	42.42	43.24	43.51	42.97
25	44.25	43.11	42.17	41.21	40.62	40.73	41.49	41.87	42.49	43.25	43.50	42.98
26	44.24	43.08	42.24	41.11	40.50	40.81	41.48	41.81	42.53	43.27	43.48	42.96
27	44.28	43.12	42.23	41.05	40.38	40.84	41.50	41.76	42.57	43.24	43.46	42.99
28	44.21	43.12	42.18	41.07	40.30	40.90	41.49	41.73	42.58	43.27	43.56	42.99
29	44.14	43.07	42.14	41.20	---	41.00	41.54	41.73	42.58	43.38	43.60	42.95
30	44.07	43.02	42.09	41.25	---	41.07	41.59	41.73	42.61	43.42	43.63	42.93
31	44.01	---	42.10	41.23	---	41.06	---	41.80	---	43.43	43.62	---
MAX	45.03	43.95	43.05	42.05	41.22	41.07	41.64	42.19	42.61	43.43	43.63	43.60
MIN	44.01	43.02	42.09	41.05	40.30	40.03	40.96	41.64	41.77	42.13	43.45	42.85

WTR YR 2003 HIGH 40.03 LOW 45.03

JEFFERSON COUNTY

381518085453402. Local number 86-11 (Courthouse Annex), map number 3--Continued.



JEFFERSON COUNTY

381522085445201 (Louisville Scrap Metal), map number 4.

LOCATION.--Lat 38°15'22", long 85°50'26", Hydrologic Unit 05140101, County Code 111, Jeffersonville quadrangle, at northeast corner of Floyd and Main Streets behind Louisville Scrap Metal Office. Owner: Louisville Scrap Metal.

AQUIFER.--Glacial sand and gravel of Quaternary age. Aquifer code: 112OTSH.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 10 in. with 2" PVC casing and screen inserted for measurement access, depth 90.0 ft, screened 85.0-90.0 ft.

INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.

DATUM.--Elevation of land-surface datum is 460.04 ft above NGVD of 1929. Measuring point: Top of 2" coupling 1.11 ft above land-surface datum.

PERIOD OF RECORD.--May 1991 to June 1993 and May 1996 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 34.22 ft below land-surface datum, Mar. 7, 1997: lowest measured, 42.54 ft below land-surface, datum, Oct. 7, 2002.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Water Level	Date	Water Level
Oct. 07, 2002	42.54	Dec. 30, 2002	40.92
Nov. 04, 2002	42.09	Jan. 13, 2003	40.36
Dec. 09, 2002	41.73	Mar. 10, 2003	38.46

381613085422801. (Edith Lane Landfill), map number 5.

LOCATION.--Lat 38°16'13", long 85°42'28", Hydrologic Unit 05140101, County Code 111, Jeffersonville quadrangle, 50 feet east of landfill, 200 feet south of River Road. Owner: City of Louisville.

AQUIFER.--Glacial sand and gravel of Quaternary age. Aquifer code: 112OTSH.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 2 in., depth 60.9, screen: unknown.

INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.

DATUM.--Elevation of land-surface datum is 433.66 ft above NGVD of 1929. Measuring point: Top of pvc casing, 68 ft land-surface datum.

REMARKS.-- Unused landfill monitoring well.

PERIOD OF RECORD.--March 2001 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 8.23 ft below land-surface datum, Mar. 29, 2002; lowest measured, 14.29 ft below land-surface datum, Sept. 25, 2002.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Water Level	Date	Water Level
Dec. 27, 2002	13.00	Jun. 30, 2003	12.55
Mar. 20, 2003	11.54		

381638085415801. Local number (WC-4), map number 6.

LOCATION.--Lat 38°16'38", long 85°41'58", Hydrologic Unit 05140101, County Code 111, Jeffersonville quadrangle, at the northwest corner of River Road and Zorn Avenue, in Louisville. Owner: Louisville Water Company.

AQUIFER.--Glacial sand and gravel of Quaternary age. Aquifer code: 112OTSH.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 4 in., depth 104 ft, screened 98-100 ft.

INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.

DATUM.--Elevation of land-surface datum is 435.79 ft above NGVD of 1929. Measuring point: Floor of recorder shelter, 4.41 ft above land-surface datum.

REMARKS.-- Water levels affected by Ohio River, which causes level to rise above land-surface and nearby pumpage. Water-quality sample collected July 10, 1979.

PERIOD OF RECORD.--October 1946 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level observed, 3.71 ft above land-surface datum, Mar. 13, 1967; lowest, 19.61 ft below land-surface datum, Feb. 13, 1948.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Water Level	Date	Water Level
Dec. 27, 2002	14.14	Jun. 30, 2003	13.85
Mar. 20, 2003	12.91		

JEFFERSON COUNTY

381648085421201. Local number (WC-5), map number 7.

LOCATION.--Lat 38°16'48", long 85°42'12", Hydrologic Unit 05140101, County Code 111, Jeffersonville quadrangle, 200 ft west of Louisville Water Company pump house, 200 ft south of the Ohio River, 0.2 mi northwest of junction of River Road and Zorn Avenue, in Louisville. Owner: Louisville Water Company.

AQUIFER.--Glacial sand and gravel of Quaternary age. Aquifer code: 112OTSH.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 4 in., depth 98 ft, screened 96-98 ft.

INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.

DATUM.--Elevation of land-surface datum is 435.11 ft above NGVD of 1929. Measuring point: Top of pipe flange, 2.21 ft above land-surface datum.

REMARKS.-- Water levels affected by Ohio River, which causes level to rise above land-surface. Water-quality collected Apr. 30, 1948.

PERIOD OF RECORD.--May 1946 to current year. May 1946 to April 1977 published in hydrograph form and on file at the district office.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.04 ft above land-surface datum, Jan. 17, 1950: lowest measured, 18.31 ft below land-surface datum, Nov. 6, 1946.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002

Date	Water Level	Date	Water Level
Dec. 27, 2002	13.99	Jun. 30, 2003	12.38
Mar. 20, 2003	11.98		

JEFFERSON COUNTY

381653085413302. Local number (WC-9A), map number 8.

LOCATION.--Lat 38°16'53", long 85°41'33", Hydrologic Unit 05140101, County Code 111, Jeffersonville quadrangle, 45 ft east of River Road at Wagner Lane, opposite the southwest corner of Cox Park, in Louisville. Owner: Louisville Water Company.

AQUIFER.--Glacial sand and gravel of Quaternary age. Aquifer code: 112OTSH.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 1.5 in., depth 90 ft, screened 76-78 ft, 88-90 ft.

INSTRUMENTATION.--Continuous recorder, 30 minute interval.

DATUM.--Elevation of land-surface datum is 437.65 ft above NGVD of 1929. Measuring point: Top of casing, 3.00 ft above land-surface datum.

PERIOD OF RECORD.--December 1979 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 6.40 ft below land-surface datum, May 20, 1996; lowest measured, 19.04 ft below land-surface datum, July 21, 1980.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

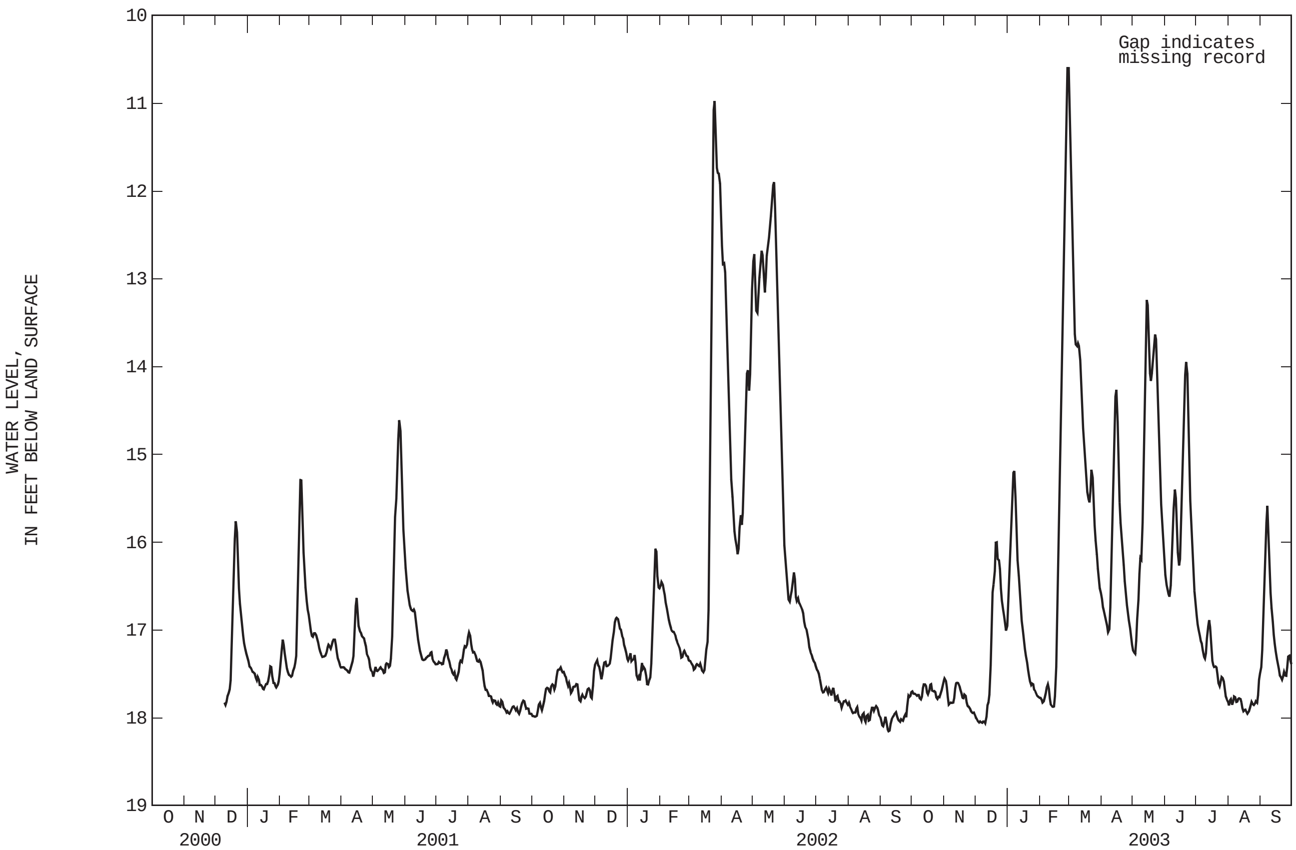
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17.68	17.56	18.00	16.85	17.78	10.76	16.59	17.20	16.29	16.76	17.84	17.46
2	17.72	17.54	18.00	16.50	17.76	11.55	16.70	17.26	16.45	16.90	17.88	17.38
3	17.73	17.61	18.02	16.47	17.82	12.18	16.78	17.25	16.52	16.97	17.73	17.08
4	17.72	17.69	18.06	16.07	17.83	12.72	16.79	17.29	16.56	17.02	17.85	16.66
5	17.74	17.84	18.04	15.61	17.79	13.18	16.92	16.95	16.62	17.11	17.85	16.28
6	17.76	17.86	18.04	15.30	17.75	13.53	16.89	16.80	16.62	17.14	17.78	15.94
7	17.72	17.81	18.06	15.12	17.70	13.72	17.01	16.51	16.36	17.17	17.73	15.62
8	17.76	17.84	18.06	15.26	17.62	13.78	17.05	16.21	16.18	17.29	17.80	15.55
9	17.79	17.82	18.02	15.79	17.62	13.76	16.94	16.14	15.78	17.31	17.84	16.15
10	17.79	17.83	18.06	16.10	17.72	13.71	16.55	16.25	15.45	17.34	17.79	16.48
11	17.73	17.72	18.06	16.30	17.84	13.83	15.82	15.31	15.35	17.18	17.78	16.67
12	17.60	17.61	17.91	16.47	17.86	14.02	15.27	14.56	15.65	17.01	17.78	16.82
13	17.64	17.60	17.81	16.66	17.88	14.26	14.83	13.87	16.02	16.91	17.79	16.99
14	17.60	17.60	17.84	16.83	17.87	14.59	14.46	13.36	16.21	16.86	17.86	17.12
15	17.67	17.61	17.63	16.96	17.87	14.82	14.22	13.12	16.32	17.07	17.92	17.19
16	17.75	17.65	17.18	17.07	17.63	15.06	14.31	13.48	16.06	17.31	17.93	17.29
17	17.71	17.70	16.70	17.17	17.21	15.18	14.95	13.98	15.48	17.39	17.89	17.37
18	17.67	17.75	16.44	17.26	16.32	15.36	15.39	14.17	15.09	17.41	17.92	17.41
19	17.58	17.79	16.52	17.32	15.43	15.49	15.70	14.15	14.64	17.43	17.94	17.48
20	17.66	17.76	16.13	17.42	14.68	15.53	15.85	14.00	14.23	17.40	17.97	17.55
21	17.72	17.71	15.88	17.49	14.29	15.56	16.10	13.84	13.96	17.45	17.89	17.53
22	17.68	17.79	16.12	17.56	14.00	15.26	16.16	13.65	13.93	17.56	17.90	17.60
23	17.71	17.86	16.26	17.61	13.72	15.09	16.36	13.62	14.23	17.64	17.81	17.46
24	17.70	17.87	16.15	17.65	13.20	15.44	16.52	13.76	14.85	17.63	17.82	17.49
25	17.83	17.87	16.46	17.57	12.48	15.72	16.67	14.36	15.37	17.54	17.87	17.54
26	17.74	17.91	16.59	17.67	11.58	15.90	16.76	14.79	15.69	17.53	17.84	17.50
27	17.78	17.93	16.74	17.69	10.76	16.05	16.84	15.15	16.02	17.56	17.84	17.35
28	17.75	17.94	16.80	17.71	10.44	16.23	16.94	15.44	16.29	17.62	17.78	17.26
29	17.71	17.95	16.88	17.74	---	16.36	17.02	15.70	16.47	17.73	17.88	17.33
30	17.66	17.93	16.96	17.76	---	16.47	17.13	15.95	16.64	17.78	17.60	17.36
31	17.61	---	17.05	17.76	---	16.58	---	16.12	---	17.79	17.53	---
MAX	17.83	17.95	18.06	17.76	17.88	16.58	17.13	17.29	16.64	17.79	17.97	17.60
MIN	17.58	17.54	15.88	15.12	10.44	10.76	14.22	13.12	13.93	16.76	17.53	15.55

WTR YR 2003 HIGH 10.44 LOW 18.06

JEFFERSON COUNTY

381653085413302. Local number (WC-9A), map number 8.--Continued.



JEFFERSON COUNTY

381701085414002. Local number (WC-8A), map number 9.

LOCATION.--Lat 38°17'01", long 85°41'40", Hydrologic Unit 05140101, County Code 111, Jeffersonville quadrangle, on the south bank of the Ohio River at the northwest corner of Cox Park, in Louisville. Owner: Louisville Water Company.

AQUIFER.--Glacial sand and gravel of Quaternary age. Aquifer code: 112OTSH.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 1.5 in., depth 86.8 ft, screened 86.8-90.8 ft.

INSTRUMENTATION.--Continuous recorder, 30 minute interval.

DATUM.--Elevation of land-surface datum is 432.62 ft above NGVD of 1929. Measuring point: Top of casing, 2.65 ft above land-surface datum.

REMARKS.--Replaces well 381702085414001 (WC-8) which was 100 ft north. Water levels affected by Ohio River.

PERIOD OF RECORD.--August 1979 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 1.74 ft below land-surface datum, Feb. 23, 2000; lowest measured, 14.35 ft below land-surface datum, Oct. 18, 1991.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

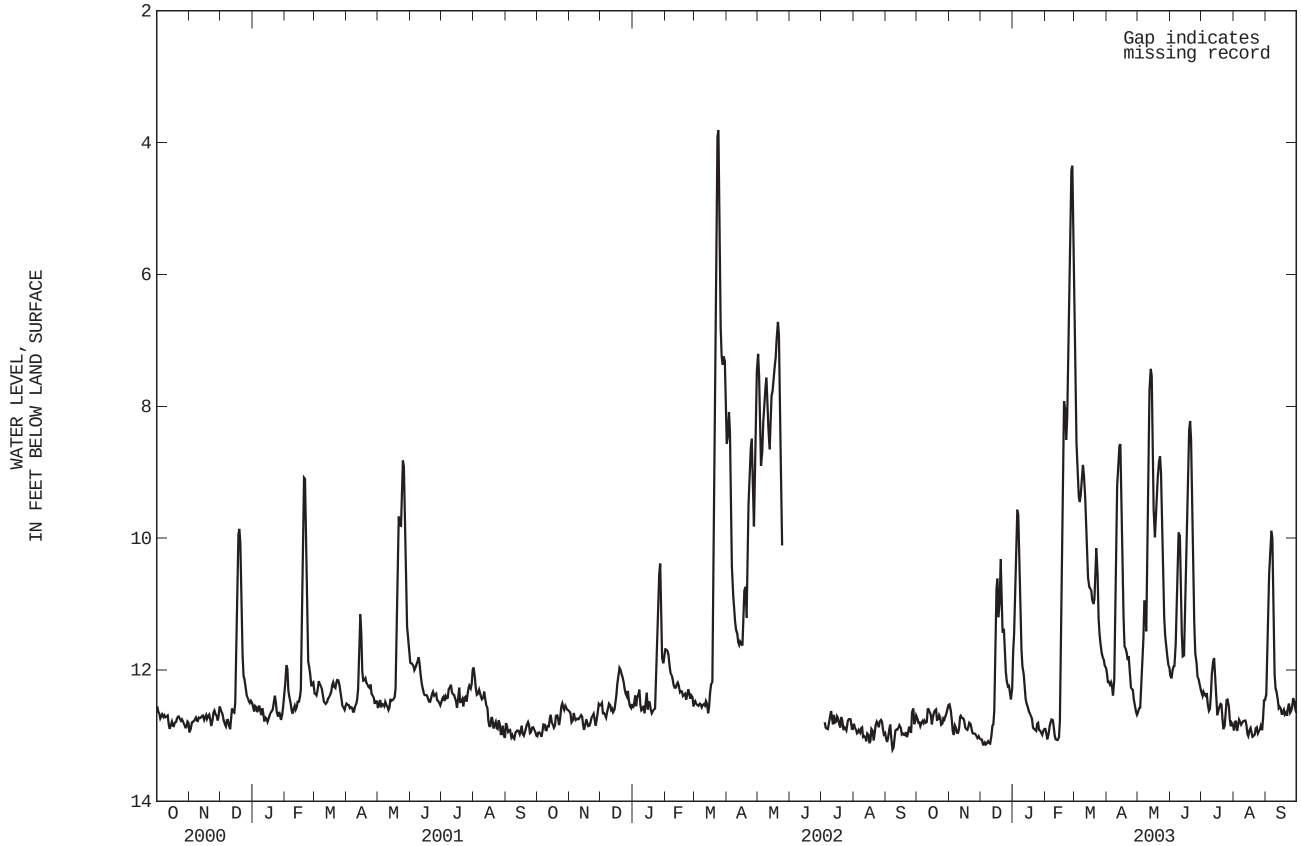
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12.63	12.50	13.08	12.09	12.91	5.96	11.94	12.67	12.01	12.27	12.88	12.42
2	12.84	12.55	13.03	11.37	12.88	7.35	12.15	12.62	12.15	12.43	12.96	12.33
3	12.77	12.68	13.08	11.54	13.07	8.25	12.21	12.55	12.11	12.36	12.62	11.43
4	12.83	12.81	13.19	10.38	13.04	8.90	12.14	12.60	11.91	12.30	12.95	10.76
5	12.88	13.03	13.08	9.66	12.89	9.28	12.31	11.83	12.00	12.45	12.90	10.32
6	12.73	12.95	13.12	9.48	12.82	9.44	12.07	11.95	11.89	12.34	12.78	10.04
7	12.82	12.73	13.14	9.81	12.78	9.47	12.44	11.11	11.32	12.36	12.72	9.74
8	12.79	13.01	13.08	10.60	12.73	9.23	12.34	10.79	11.04	12.67	12.85	10.26
9	12.74	12.90	13.09	11.49	12.80	8.90	11.95	11.23	10.07	12.58	12.82	11.87
10	12.87	13.01	13.13	11.90	12.94	8.88	10.96	11.61	9.76	12.61	12.79	12.26
11	12.72	12.77	13.11	12.00	13.07	9.19	9.48	8.98	10.16	12.14	12.78	12.31
12	12.48	12.67	12.90	12.13	13.04	9.55	8.94	8.01	11.17	11.97	12.77	12.36
13	12.71	12.72	12.81	12.35	13.09	9.92	8.71	7.50	11.74	11.78	12.77	12.55
14	12.58	12.74	12.86	12.53	13.03	10.55	8.51	7.36	11.86	11.87	12.91	12.62
15	12.80	12.73	12.39	12.49	13.03	10.65	8.64	7.72	11.71	12.26	13.03	12.50
16	12.86	12.82	11.06	12.65	12.54	10.84	9.44	9.08	10.71	12.68	12.98	12.67
17	12.59	12.91	10.46	12.61	11.36	10.68	10.91	10.05	9.70	12.70	12.84	12.69
18	12.70	12.89	10.77	12.70	9.32	10.90	11.50	9.93	9.17	12.56	12.92	12.58
19	12.53	12.93	11.63	12.67	8.12	10.97	11.78	9.54	8.54	12.59	12.98	12.63
20	12.67	12.80	10.29	12.83	7.73	11.03	11.55	9.19	8.18	12.44	13.05	12.73
21	12.85	12.81	10.35	12.91	8.39	10.82	11.95	8.95	8.27	12.61	12.96	12.58
22	12.65	12.84	11.47	12.88	8.63	10.18	11.75	8.72	8.75	12.86	13.01	12.81
23	12.71	12.94	11.41	12.93	7.68	10.12	11.84	8.80	9.58	12.94	12.76	12.34
24	12.72	12.98	11.34	12.92	6.99	11.04	12.17	9.22	10.89	12.75	12.98	12.68
25	12.95	12.95	11.96	12.72	5.96	11.40	12.35	10.46	11.71	12.52	12.96	12.63
26	12.68	12.99	12.08	12.89	4.72	11.52	12.23	11.02	11.77	12.41	12.91	12.62
27	12.79	12.97	12.26	12.93	4.11	11.69	12.38	11.38	12.01	12.50	12.90	12.48
28	12.72	13.05	12.25	12.92	4.59	11.82	12.52	11.58	12.18	12.60	12.80	12.38
29	12.70	13.02	12.24	12.99	---	11.80	12.58	11.68	12.08	12.90	13.03	12.60
30	12.61	13.00	12.44	12.98	---	11.87	12.69	11.94	12.32	12.81	12.43	12.61
31	12.57	---	12.46	12.88	---	11.99	---	11.90	---	12.79	12.50	---
MAX	12.95	13.05	13.19	12.99	13.09	11.99	12.69	12.67	12.32	12.94	13.05	12.81
MIN	12.48	12.50	10.29	9.48	4.11	5.96	8.51	7.36	8.18	11.78	12.43	9.74

WTR 2003 HIGH 4.11 LOW 13.19

JEFFERSON COUNTY

381701085414002. Local number (WC-8A), map number 9.--Continued



JEFFERSON COUNTY

381742085402001. Local number (WC-13), map number 10.

LOCATION.--Lat 38°17'42", long 85°40'20", Hydrologic Unit 05140101, County Code 111, Jeffersonville quadrangle, 30 ft east of River Road, 300 ft northeast of junction of River Road and Blankenbaker Lane, in Louisville. Owner: Louisville Water Company.

AQUIFER.--Glacial sand and gravel of Quaternary age. Aquifer code: 112OTSH.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 4 in., depth 106 ft, screened 104-106 ft.

INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.

DATUM.--Elevation of land-surface datum is 438.87 ft above NGVD of 1929. Measuring point: Top of plug, 3.07 ft above land-surface datum.

PERIOD OF RECORD.--June 1946 to current year. June 1946 to November 1976 published in hydrograph form and on file at the district office.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 3.28 ft below land-surface datum, Jan. 18, 1950: lowest measured, 19.75 ft below land-surface datum, Jan. 29, 1954.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Water Level	Date	Water Level
Dec. 27, 2002	17.59	Jun. 30, 2003	16.28
Mar. 20, 2003	16.48		

381827085392401. Local number (WC-26), map number 11.

LOCATION.--Lat 38°18'27", long 85°39'24", Hydrologic Unit 05140101, County Code 111, Jeffersonville quadrangle, 20 ft east of River Road, opposite River Valley Club in Louisville. Owner: Louisville Water Company.

AQUIFER.--Glacial sand and gravel of Quaternary age. Aquifer code: 112OTSH.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 4 in., depth 130 ft, screened 128-130 ft.

INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.

DATUM.--Elevation of land-surface datum is 455.94 ft above NGVD of 1929. Measuring point: Top of plug, 4.68 ft above land-surface datum.

PERIOD OF RECORD.--July 1946 to current year. July 1946 to November 1976 published in hydrograph form and on file at the district office.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 19.93 ft below land-surface datum, Jan. 18, 1950: lowest measured, 38.53 ft below land-surface datum, Feb. 3, 1948.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Water Level	Date	Water Level
Dec. 27, 2002	32.66	Jun. 30, 2003	33.38
Mar. 20, 2003	32.33		

381904085384801. Local number (WC-27), map number 12.

LOCATION.--Lat 38°19'04", long 85°38'48", Hydrologic Unit 05140101, County Code 111, Jeffersonville quadrangle, 30 ft west of River Road, 250 ft north of north end of bridge over Goose Creek, in Louisville. Owner: Louisville Water Company.

AQUIFER.--Glacial sand and gravel of Quaternary age. Aquifer code: 112OTSH.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 4 in., depth 96 ft, screened 94-96 ft.

INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.

DATUM.--Elevation of land-surface datum is 438.46 ft above NGVD of 1929. Measuring point: Top of plug, 2.29 ft above land-surface datum.

PERIOD OF RECORD.--August 1946 to current year. August 1946 to November 1976 published in hydrograph form and on file at the district office.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.84 ft above land-surface datum, Jan. 17, 1950: lowest measured, 20.97 ft below land-surface datum, Feb. 3, 1948.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Water Level	Date	Water Level
Dec. 27, 2002	17.51	Jun. 30, 2003	17.93
Mar. 20, 2003	16.25		

JEFFERSON COUNTY

381958085380201. (Thompson well), map number 13.

LOCATION.--Lat 38°19'58", long 85°37'52", Hydrologic Unit 05140101, County Code 111, Jeffersonville quadrangle, at 6600 Upper River Road, in well house next to drive, near horse barn. Owner: Thompson.

AQUIFER.--Glacial sand and gravel of Quaternary age. Aquifer code: 112OTSH.

WELL CHARACTERISTICS.--Drilled used water-table well, diameter 6 in., depth 53 ft, screen: unknown.

INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.

DATUM.--Elevation of land-surface datum is 461.44 above NGVD of 1929. Measuring point: Top of well seal, 7.00 ft below land-surface datum.

REMARKS.--Water levels affected by pumping.

PERIOD OF RECORD.--March 1997 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 35.58 ft below land-surface datum, Mar. 28, 2002; lowest measured, 42.05 ft below land-surface datum, Sept. 28, 2001.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Water Level	Date	Water Level
Dec. 27, 2002	39.37	Jun. 30, 2003	38.99
Mar. 20, 2003	37.55	Aug. 12, 2003	40.91

382007085373801. (Bird Man), map number 14.

LOCATION.--Lat 38°20'07", long 85°37'38", Hydrologic Unit 05140101, County Code 111, Jeffersonville quadrangle, at 7105 Upper River Road, in well house next to drive, near main house. Owner: Bird Man.

AQUIFER.--Glacial sand and gravel of Quaternary age. Aquifer code: 112OTSH.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 6 in., depth 61.5 ft, screen: unknown.

INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.

DATUM.--Elevation of land-surface datum is 453.83 ft above NGVD of 1929. Measuring point: Top of casing, at land-surface datum.

REMARKS.--Water levels affected by pumping.

PERIOD OF RECORD.--March 1999 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 28.02 ft below land-surface datum, May 5, 2002; lowest measured, 33.99 ft below land-surface datum, Sept. 28, 2001.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Water Level	Date	Water Level
Dec. 27, 2002	31.68	Jun. 30, 2003	30.98
Mar. 20, 2003	29.53	Aug. 12, 2003	32.77

382026085374301. (Little Dean), map number 15.

LOCATION.--Lat 38°20'26", long 85°37'43", Hydrologic Unit 05140101, County Code 111, Jeffersonville quadrangle, at 6203 Mason Road, well is next to drive, 50 ft. northwest of house. Owner: Little Dean.

AQUIFER.--Glacial sand and gravel of Quaternary age. Aquifer code: 112OTSH.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 6 in., depth 90 ft, screen: unknown.

INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.

DATUM.--Elevation of land-surface datum is 460.26 ft above NGVD of 1929. Measuring point: Top of well seal, 1.30 ft above land-surface datum.

REMARKS.--Water levels affected by pumping.

PERIOD OF RECORD.--March 1999 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 31.68 ft below land-surface datum, Jun. 28, 2002; lowest measured, 34.84 ft below land-surface datum, Sept. 28, 2001.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Water Level	Date	Water Level
Dec. 27, 2002	33.75	Jun. 30, 2003	32.70
Mar. 20, 2003	33.15	Aug. 12, 2003	33.35

JEFFERSON COUNTY

382032085375601. (Staples), map number 16.

LOCATION.--Lat 38°20'32", long 85°37'56", Hydrologic Unit 05140101, County Code 111, Jeffersonville quadrangle, at 6301 Mayfair Road, in concrete well pit next to drive, 15ft. north of garage. Owner: Staples.

AQUIFER.--Glacial sand and gravel of Quaternary age. Aquifer code: 112OTSH.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 6 in., depth 73 ft, screen: unknown.

INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.

DATUM.--Elevation of land-surface datum is 459.07 ft above NGVD of 1929 . Measuring point: Top of concrete slab above hole in well seal at land-surface datum.

REMARKS.--Water levels affected by pumping.

PERIOD OF RECORD.--March 1999 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 32.35 ft below land-surface datum, Mar. 25, 1999; lowest measured, 42.30 ft below land-surface datum, Jan. 04, 2002.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Water Level	Date	Water Level
Dec. 27, 2002	38.77	Jun. 30, 2003	38.23
Mar. 20, 2003	36.18	Aug. 12, 2003	39.89

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JEFFERSON COUNTY

382039085375201. (WP-7), map number 17.
LOCATION.--Lat 38°20'39", long 85°37'52", Hydrologic Unit 05140101, County Code 111, Jeffersonville quadrangle, at Louisville Water Company B.E. Payne treatment plant. Owner: Louisville Water Company.
AQUIFER.--Glacial sand and gravel of Quaternary age. Aquifer code: 112OTSH.
WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 2.0 in., depth 83.5 ft, screen: unknown.
INSTRUMENTATION.--Continuous recorder, 30 minute interval.
DATUM.--Elevation of land-surface datum is 462.66 ft above NGVD of 1929. Measuring point: Top of casing, 3.80 ft above land-surface datum.
REMARKS.--Water levels affected by pumping.
PERIOD OF RECORD.--December 1997 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 34.44 ft below land-surface datum, May 12, 1998; lowest measured, 48.10 ft below land-surface datum, Jan. 15, 2002.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

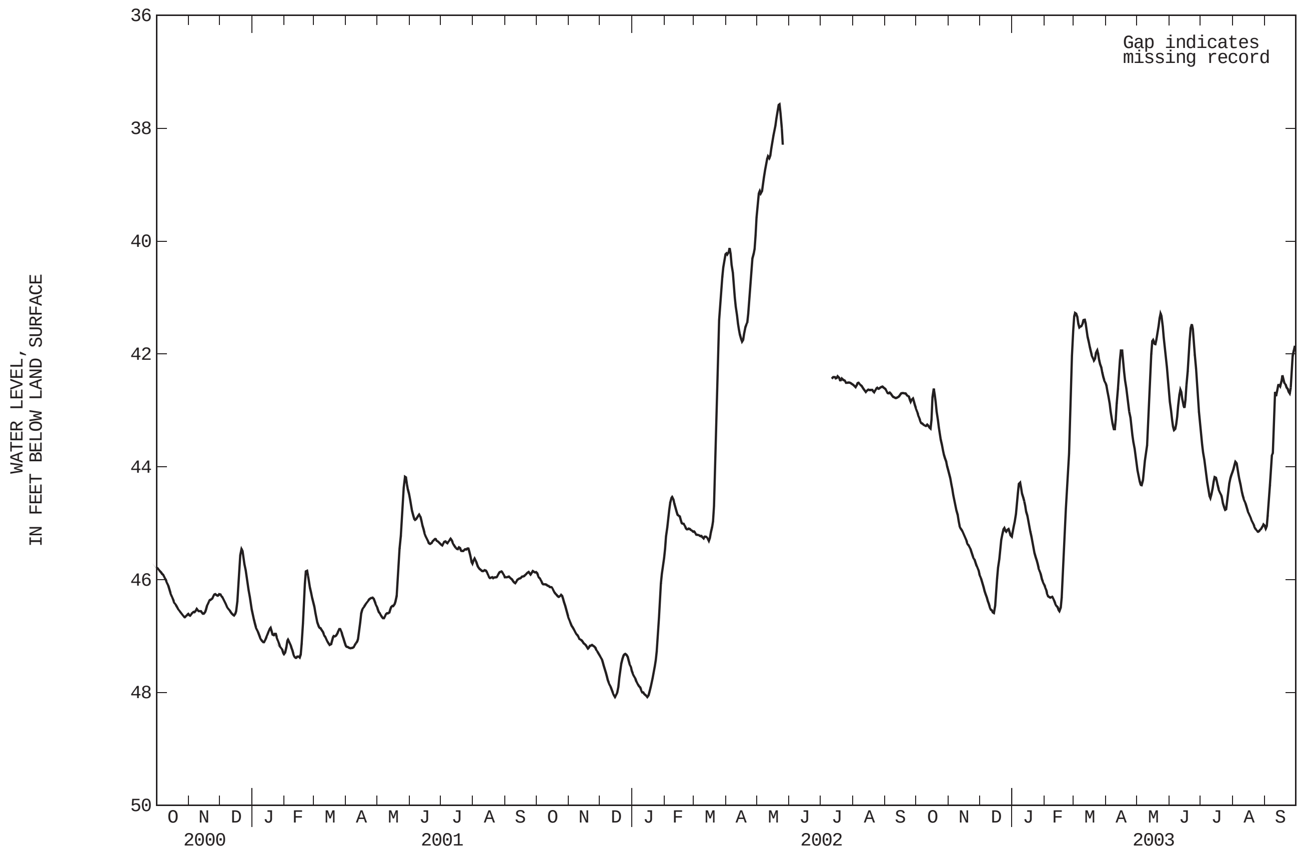
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	42.98	44.09	45.93	45.22	46.11	41.40	42.52	43.99	42.75	43.33	44.06	45.06
2	43.04	44.16	45.95	45.07	46.14	41.27	42.61	44.13	42.93	43.52	44.01	45.13
3	43.11	44.25	46.05	45.03	46.19	41.28	42.71	44.22	43.08	43.68	43.93	44.98
4	43.12	44.36	46.10	44.92	46.28	41.29	42.78	44.30	43.24	43.81	43.88	44.73
5	43.22	44.42	46.17	44.74	46.31	41.40	42.97	44.33	43.33	43.94	43.99	44.46
6	43.22	44.57	46.23	44.58	46.30	41.53	43.07	44.31	43.36	44.07	44.10	44.17
7	43.24	44.65	46.28	44.35	46.33	41.53	43.17	44.16	43.29	44.20	44.19	43.89
8	43.25	44.73	46.35	44.25	46.29	41.49	43.30	43.98	43.19	44.34	44.28	43.71
9	43.27	44.82	46.40	44.30	46.31	41.52	43.36	43.80	43.03	44.46	44.40	43.81
10	43.28	44.89	46.45	44.43	46.35	41.42	43.30	43.73	42.80	44.55	44.47	42.58
11	43.27	45.03	46.51	44.52	46.40	41.37	43.01	43.50	42.64	44.55	44.54	42.76
12	43.23	45.06	46.55	44.58	46.45	41.41	42.73	43.08	42.62	44.42	44.59	42.73
13	43.30	45.11	46.52	44.64	46.47	41.51	42.48	42.60	42.73	44.32	44.64	42.55
14	43.30	45.13	46.63	44.74	46.49	41.65	42.22	42.17	42.86	44.20	44.70	42.55
15	43.34	45.17	46.54	44.85	46.57	41.74	41.99	41.83	42.96	44.16	44.76	42.55
16	42.98	45.21	46.37	44.89	46.54	41.85	41.88	41.72	42.94	44.22	44.81	42.59
17	42.55	45.25	46.09	45.03	46.44	41.91	41.99	41.79	42.67	44.29	44.85	42.38
18	42.67	45.31	45.86	45.09	46.18	41.99	42.23	41.84	42.43	44.37	44.89	42.37
19	42.76	45.37	45.70	45.21	45.80	42.05	42.39	41.80	42.17	44.43	44.94	42.52
20	42.94	45.38	45.56	45.29	45.36	42.09	42.53	41.69	41.88	44.47	44.97	42.51
21	43.09	45.40	45.34	45.39	44.93	42.14	42.68	41.58	41.62	44.50	45.03	42.57
22	43.24	45.47	45.24	45.48	44.55	42.04	42.81	41.42	41.47	44.60	45.07	42.62
23	43.36	45.52	45.17	45.57	44.43	41.92	42.97	41.31	41.47	44.69	45.10	42.60
24	43.47	45.57	45.05	45.64	44.03	41.95	43.06	41.26	41.64	44.74	45.13	42.72
25	43.57	45.62	45.12	45.68	43.50	42.05	43.19	41.40	41.89	44.78	45.16	42.67
26	43.67	45.65	45.14	45.76	42.91	42.16	43.37	41.62	42.12	44.72	45.14	42.52
27	43.75	45.72	45.16	45.83	42.29	42.20	43.50	41.80	42.38	44.50	45.13	42.08
28	43.83	45.75	45.07	45.87	41.77	42.28	43.61	41.95	42.64	44.34	45.09	41.98
29	43.86	45.78	45.14	45.96	---	42.38	43.74	42.14	42.90	44.23	45.08	41.88
30	43.96	45.87	45.17	46.01	---	42.43	43.89	42.33	43.14	44.18	45.03	41.82
31	44.02	---	45.25	46.05	---	42.49	---	42.53	---	44.12	45.01	---
MAX	44.02	45.87	46.63	46.05	46.57	42.49	43.89	44.33	43.36	44.78	45.16	45.13
MIN	42.55	44.09	45.05	44.25	41.77	41.27	41.88	41.26	41.47	43.33	43.88	41.82

WTR 2003 HIGH 41.26 LOW 46.63

JEFFERSON COUNTY

382039085375201. (WP-7), map number 17.--Continued



JEFFERSON COUNTY

382051085380801. (LWC-1), map number 18.
LOCATION.--Lat 38°20'51", long 85°37'08", Hydrologic Unit 05140101, County Code 111, Jeffersonville quadrangle, at Louisville Water Company B.E. Payne treatment plant, 300 ft. west of lagoon #2, 100 ft. north of Mayfair road, along treeline. Owner: Louisville Water Company.
AQUIFER.--Glacial sand and gravel of Quaternary age. Aquifer code: 112OTSH.
WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 2 in., depth 76.5 ft, screened: 66-76 ft.
INSTRUMENTATION.--Continuous recorder, 30 minute interval.
DATUM.--Elevation of land-surface datum is 434.26 ft above NGVD of 1929. Measuring point: Top of casing, 3.40 ft above land-surface datum.
REMARKS.--Water levels affected by pumping.
PERIOD OF RECORD.--March 2000 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 11.44 ft below land-surface datum, Mar. 24, 2002; lowest measured, 25.19 ft below land-surface datum, Nov. 26, 2002.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

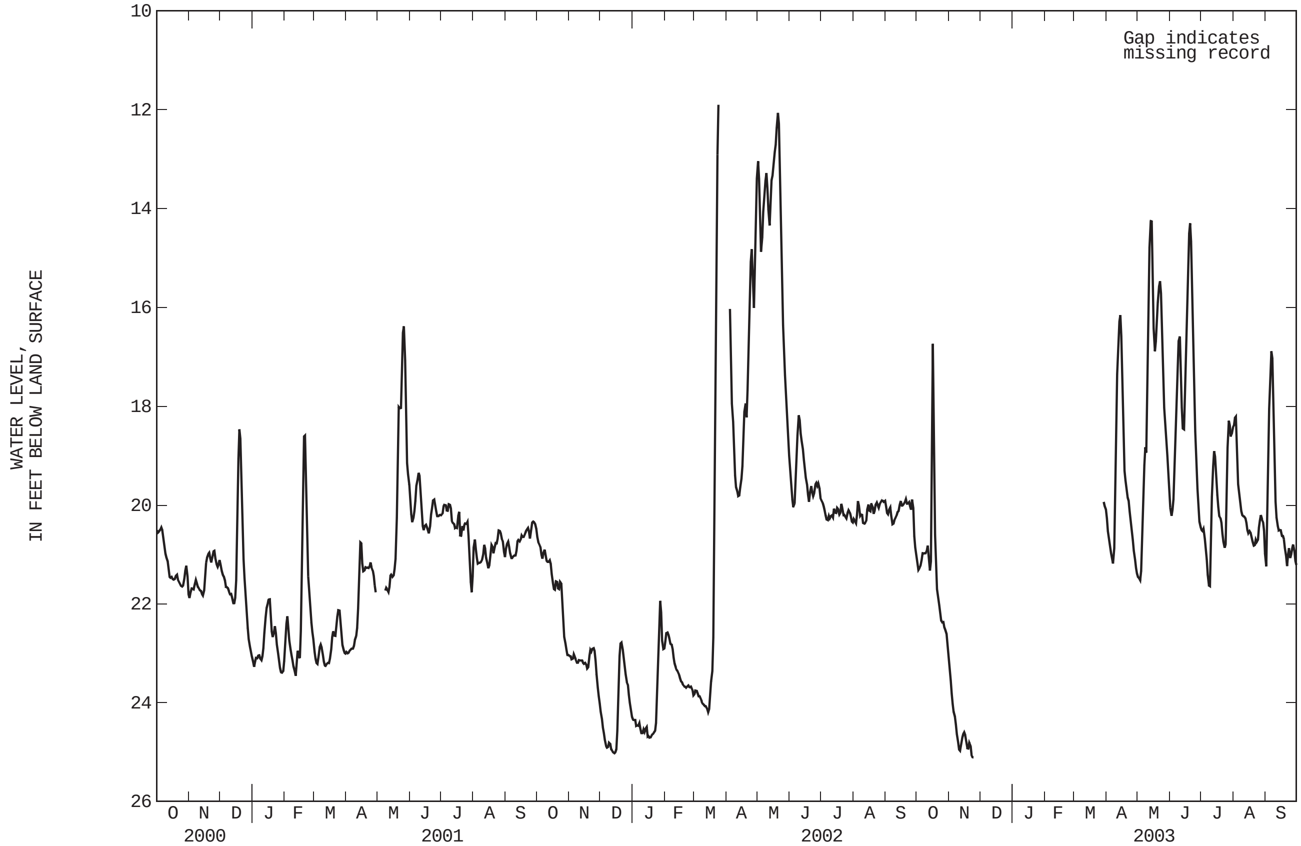
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21.05	23.16	---	---	---	---	20.11	21.41	19.89	20.39	18.36	21.18
2	21.31	23.40	---	---	---	---	20.42	21.49	20.22	20.62	18.42	21.30
3	21.32	23.70	---	---	---	---	20.63	21.47	20.21	20.43	18.06	19.72
4	21.25	23.93	---	---	---	---	20.68	21.56	19.98	20.53	18.37	18.47
5	21.23	24.12	---	---	---	---	21.01	21.10	19.78	20.83	19.41	17.64
6	20.99	24.25	---	---	---	---	20.93	20.63	19.14	20.96	19.74	17.07
7	20.95	24.32	---	---	---	---	21.22	19.51	18.41	21.23	19.76	16.70
8	21.01	24.56	---	---	---	---	21.14	18.88	18.00	21.58	20.07	17.36
9	20.93	24.70	---	---	---	---	20.60	18.78	16.92	21.68	20.18	18.98
10	21.01	24.89	---	---	---	---	19.48	19.10	16.45	21.60	20.23	19.73
11	20.84	25.00	---	---	---	---	17.81	16.68	16.73	20.20	20.21	20.13
12	20.79	24.94	---	---	---	---	16.90	15.15	17.72	19.47	20.25	20.37
13	21.30	24.78	---	---	---	---	16.45	14.43	18.35	18.97	20.28	20.47
14	21.34	24.64	---	---	---	---	16.12	14.07	18.55	18.85	20.43	20.56
15	20.93	24.64	---	---	---	---	16.19	14.45	18.39	19.19	20.58	20.44
16	16.45	24.56	---	---	---	---	16.97	15.94	17.40	19.63	20.56	20.58
17	17.02	24.74	---	---	---	---	18.32	16.92	16.24	19.95	20.49	20.67
18	20.29	24.86	---	---	---	---	19.11	16.86	15.55	20.12	20.63	20.58
19	20.92	24.97	---	---	---	---	19.49	16.50	14.75	20.31	20.67	20.80
20	21.54	24.87	---	---	---	---	19.50	16.07	14.26	20.21	20.80	20.92
21	21.85	24.73	---	---	---	---	19.89	15.72	14.34	20.50	20.85	21.14
22	21.93	25.00	---	---	---	---	19.81	15.43	14.99	20.65	20.77	21.32
23	22.12	25.10	---	---	---	---	20.02	15.51	15.95	20.83	20.63	20.69
24	22.22	25.09	---	---	---	---	20.23	15.92	17.21	20.89	20.87	21.05
25	22.44	25.11	---	---	---	---	20.46	17.10	18.28	20.69	20.54	21.09
26	22.30	---	---	---	---	---	20.61	17.82	18.74	19.28	20.37	20.90
27	22.43	---	---	---	---	---	20.81	18.24	19.40	18.40	20.25	20.85
28	22.52	---	---	---	---	---	21.03	18.47	19.94	18.19	20.16	20.75
29	22.53	---	---	---	---	19.91	21.18	18.75	20.15	18.58	20.43	21.10
30	22.69	---	---	---	---	19.97	21.36	19.27	20.51	18.64	20.25	21.16
31	22.94	---	---	---	---	20.07	---	19.61	---	18.49	20.78	---
MAX	22.94	---	---	---	---	---	21.36	21.56	20.51	21.68	20.87	21.32
MIN	16.45	---	---	---	---	---	16.12	14.07	14.26	18.19	18.06	16.70

WTR YR 2003 HIGH 14.07 LOW 25.11

JEFFERSON COUNTY

382051085380801. Local number (LWC-1), map number 18.--Continued



JEFFERSON COUNTY

382058085373501. (Shirley Avenue), map number 19.

LOCATION.--Lat 38°20'58", long 85°37'35", Hydrologic Unit 05140101, County Code 111, Jeffersonville quadrangle, at 6401 Shirley Avenue, 50 ft. to rear of house. Owner: Resident.

AQUIFER.--Glacial sand and gravel of Quaternary age. Aquifer code: 112OTSH.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 6 in., depth 45 ft, screen: unknown.

INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.

DATUM.--Elevation of land-surface datum is 463.40 ft above NGVD of 1929. Measuring point: Under hand pump thru hole in side of casing, at land-surface datum.

REMARKS.--Water levels affected by pumping.

PERIOD OF RECORD.--July 1999 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 39.40 ft below land-surface datum, Jul. 7, 1999; lowest measured, 44.03 ft below land-surface datum, Mar. 26, 2001.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Water Level	Date	Water Level
Dec. 27, 2002	43.66	Jun. 30, 2003	40.84
Mar. 20, 2003	42.44	Aug. 12, 2003	41.10

382102085380701. (WP-19), map number 20.

LOCATION.--Lat 38°21'02", long 85°38'07", Hydrologic Unit 05140101, County Code 111, Jeffersonville quadrangle, at Louisville Water Company B.E. Payne treatment plant, 200 ft. east of collector well. Owner: Louisville Water Company.

AQUIFER.--Glacial sand and gravel of Quaternary age. Aquifer code: 112OTSH.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 2 in., depth 106 ft, screen: unknown.

INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.

DATUM.--Elevation of land-surface datum is 434.48 ft above NGVD of 1929. Measuring point: Top of casing, 2.28 ft above land-surface datum.

REMARKS.--Water levels affected by pumping.

PERIOD OF RECORD.--March 1999 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 13.25 ft below land-surface datum, Mar. 1, 1999; lowest measured, 49.70 ft below land-surface datum, Mar. 26, 2001.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Water Level	Date	Water Level
Dec. 27, 2002	52.14	Jun. 30, 2003	44.12
Mar. 20, 2003	46.98	Aug. 12, 2003	41.65

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JEFFERSON COUNTY

382105085375101. (Hays-Kennedy), map number 21.

LOCATION.--Lat 38°21'05", long 85°37'51", Hydrologic Unit 05140101, County Code 111, Jeffersonville quadrangle, at Hays Kennedy Park, 20 ft. south of Bass Road, along west edge of parking lot for picnic shelter. Owner: County Parks Dept.

AQUIFER.--Glacial sand and gravel of Quaternary age. Aquifer code: 112OTSH.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 2 in., depth 76.5 ft, screened: 66-76 ft.

INSTRUMENTATION.--Continuous recorder, 30 minute interval.

DATUM.--Elevation of land-surface datum is 439.68 ft above NGVD of 1929. Measuring point: Top of casing, 0.27 ft below land-surface datum.

REMARKS.--Water levels affected by pumping.

PERIOD OF RECORD.--March 2000 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 20.16 ft below land-surface datum, May 21, 2002; lowest measured, 32.04 ft below land-surface datum, Feb. 14, 2003.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

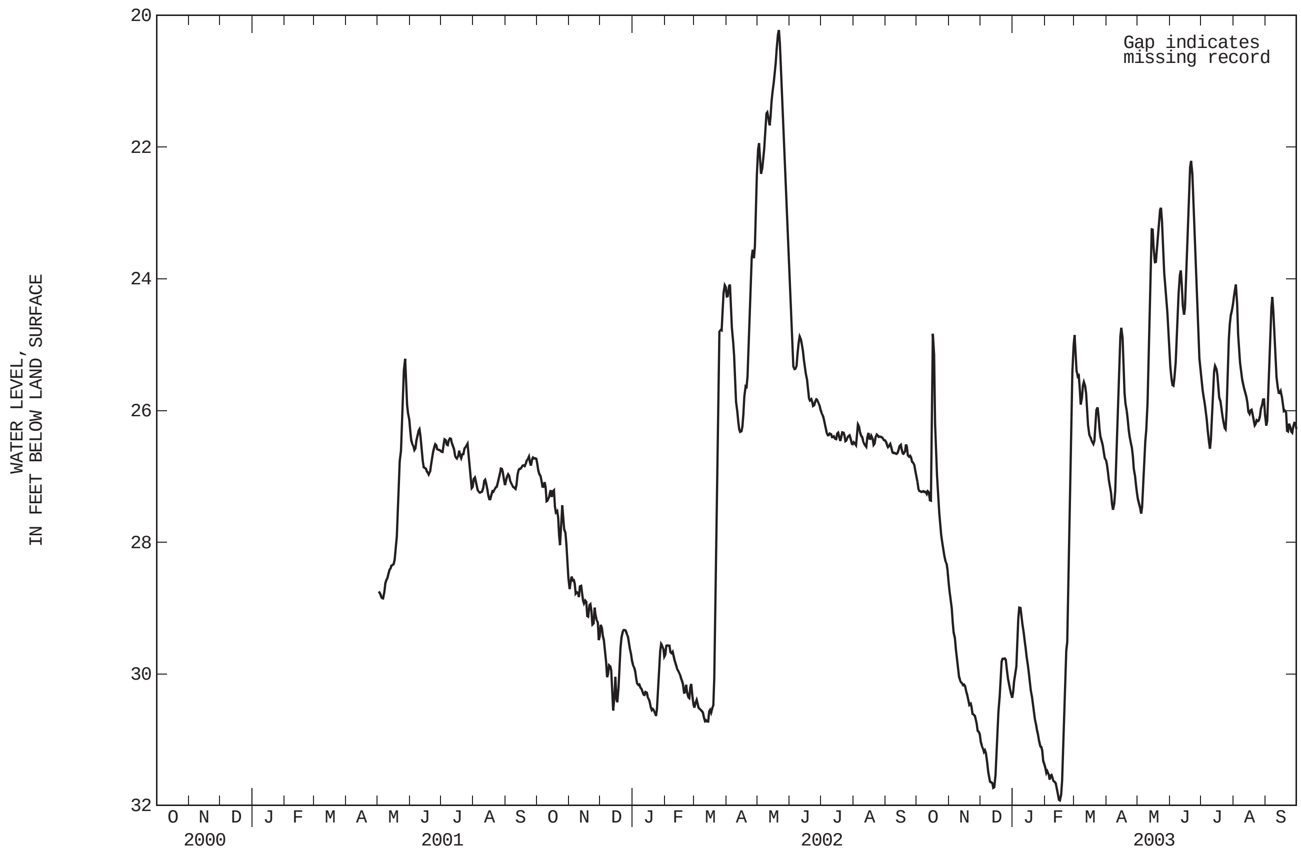
DAILY OBSERVATION AT 1200 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27.02	28.67	31.00	30.38	31.36	24.79	26.76	27.29	25.21	25.45	24.30	26.18
2	27.15	28.80	31.07	30.17	31.51	24.92	26.87	27.41	25.44	25.64	24.23	26.28
3	27.22	28.96	31.10	30.05	31.51	25.34	26.98	27.45	25.60	25.73	24.11	26.03
4	27.22	29.03	31.17	29.97	31.44	25.44	27.13	27.51	25.62	25.84	24.06	25.58
5	27.23	29.38	31.20	29.80	31.60	25.52	27.21	27.62	25.62	25.97	24.71	25.02
6	27.25	29.36	31.13	29.28	31.61	25.41	27.30	27.30	25.38	26.06	24.98	24.59
7	27.21	29.56	31.28	29.04	31.48	25.90	27.54	26.95	25.14	26.21	25.18	24.29
8	27.24	29.69	31.42	28.94	31.59	25.92	27.47	26.59	24.84	26.39	25.36	24.26
9	27.24	29.80	31.55	29.05	31.60	25.69	27.35	26.33	24.42	26.56	25.50	24.72
10	27.23	30.02	31.58	29.18	31.66	25.55	27.09	26.25	24.03	26.60	25.58	25.04
11	27.30	30.07	31.70	29.31	31.62	25.59	26.42	25.52	23.85	26.27	25.62	25.35
12	27.15	30.11	31.59	29.43	31.70	25.67	25.87	24.68	23.90	25.86	25.72	25.63
13	27.33	30.14	31.73	29.56	31.81	25.81	25.42	23.96	24.28	25.50	25.77	25.67
14	27.39	30.15	31.73	29.65	31.85	26.12	25.01	23.37	24.52	25.31	25.82	25.79
15	27.34	30.19	31.71	29.82	31.97	26.32	24.74	23.12	24.57	25.32	25.94	25.68
16	25.34	30.14	31.34	29.91	31.87	26.41	24.75	23.38	24.29	25.40	26.09	25.73
17	24.33	30.23	30.93	30.06	31.80	26.38	25.06	23.69	23.72	25.50	26.01	25.86
18	25.97	30.33	30.76	30.19	31.45	26.50	25.59	23.80	23.31	25.76	25.99	25.95
19	26.42	30.33	30.38	30.30	31.12	26.44	25.86	23.68	22.84	25.85	25.99	26.07
20	26.74	30.47	30.29	30.40	30.68	26.57	25.93	23.47	22.43	25.88	26.11	25.93
21	27.22	30.47	29.88	30.52	29.54	26.34	26.08	23.28	22.18	26.05	26.19	26.13
22	27.45	30.43	29.75	30.64	29.75	26.10	26.18	23.02	22.24	26.11	26.27	26.48
23	27.65	30.58	29.79	30.73	29.28	25.89	26.39	22.90	22.56	26.22	26.14	26.15
24	27.78	30.63	29.75	30.83	28.47	26.01	26.40	22.94	23.03	26.31	26.15	26.25
25	27.99	30.60	29.78	30.90	27.52	26.18	26.59	23.29	23.56	26.25	26.17	26.26
26	28.05	30.67	29.79	30.96	26.56	26.39	26.54	23.78	23.92	25.74	26.12	26.37
27	28.17	30.70	30.05	31.07	25.62	26.42	26.83	24.03	24.37	25.06	26.07	26.30
28	28.24	30.81	30.10	31.13	25.22	26.52	26.94	24.19	24.76	24.77	25.89	26.21
29	28.31	30.91	30.20	31.09	---	26.54	27.05	24.36	25.08	24.60	25.94	26.16
30	28.33	30.85	30.25	31.25	---	26.69	27.22	24.67	25.34	24.52	25.72	26.22
31	28.52	---	30.34	31.40	---	26.74	---	24.95	---	24.47	25.94	---
MAX	28.52	30.91	31.73	31.40	31.97	26.74	27.54	27.62	25.62	26.60	26.27	26.48
MIN	24.33	28.67	29.75	28.94	25.22	24.79	24.74	22.90	22.18	24.47	24.06	24.26

WTR YR 2003 HIGH 22.18 LOW 31.97

JEFFERSON COUNTY

38105085375101. (Hays-Kennedy), map number 21,--Continued



JEFFERSON COUNTY

382120085374701. (River Fields), map number 22.

LOCATION.--Lat 38°21'20", long 85°37'47", Hydrologic Unit 05140101, County Code 111, Jeffersonville quadrangle, at Garvin-Brown Preserve, 1000 ft. north of Bass Road, along tree line separating Garvin-Brown Preserve from Hays-Kennedy Park. Owner: River Fields.

AQUIFER.--Glacial sand and gravel of Quaternary age. Aquifer code: 112OTSH.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 2 in., depth 71.5 ft, screened: 61-71 ft.

INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.

DATUM.--Elevation of land-surface datum is 440.05 ft above NGVD of 1929. Measuring point: Top of casing, 0.19 ft below land-surface datum.

REMARKS.--Water levels affected by pumping.

PERIOD OF RECORD.--May 2000 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 19.27 ft below land-surface datum, May 28, 2002; lowest measured, 23.76 ft below land-surface datum, Jan. 04, 2002.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Water Level	Date	Water Level
Dec. 27, 2002	23.23	Jun. 30, 2003	20.61
Mar. 20, 2003	20.87	Aug. 12, 2003	21.22

382124085375401. (Abell), map number 23.

LOCATION.--Lat 38°21'24", long 85°37'54", Hydrologic Unit 05140101, County Code 111, Jeffersonville quadrangle, at 7222 Beechland Road, in well pit 200 ft. east of road Owner: Abell.

AQUIFER.--Glacial sand and gravel of Quaternary age. Aquifer code: 112OTSH.

WELL CHARACTERISTICS.--Drilled used water-table well, diameter 4 in., depth 45 ft, screen: unknown.

INSTRUMENTATION.--Quarterly measurement with chalked tape by USGS personnel.

DATUM.--Elevation of land-surface datum is 438.58 ft above NGVD of 1929. Measuring point: Top of well seal 3.66 ft below land-surface datum.

REMARKS.--Water levels affected by pumping.

PERIOD OF RECORD.--March 1999 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 15.04 ft below land-surface datum, Mar. 28, 2002; lowest measured, 20.81 ft below land-surface datum, Jan. 04, 2002.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Water Level	Date	Water Level
Dec. 27, 2002	20.13	Jun. 30, 2003	19.00
Mar. 20, 2003	18.11	Aug. 12, 2003	19.09

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CHEMICAL QUALITY OF PRECIPITATION

380706083324900 - CLARK STATE FISH HATCHERY, ROWAN COUNTY, KY

(National Atmospheric Deposition Program network station)

LOCATION.--Lat 38°06'58", Long 83°33'18", Rowan County, Hydrologic Unit 05100101 at Clark State Fish Hatchery, 0.9 mi southwest of Clark State Fish Hatchery office, 1.2 mi west of Cave Run Reservoir Dam.

PERIOD OF RECORD.--September 1983 to current year.

INSTRUMENTATION.--Wet/dry precipitation collector, weighing bucket type recording rain gage.

REMARKS.--Samples collected on weekly basis by observer.

COOPERATION.--Chemical quality data were provided by the National Atmospheric Deposition Program.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Atm dep wet, liters (83177)	Precip-itation total for defined period, inches (00193)	pH, wet atm dep unfltrd field, std units (83106)	Specif. conduc-tance, wet dep unfltrd field, uS/cm (83154)	Calcium wet atm dep fltrd, mg/L (82932)	Magnes-ium, wet atm dep fltrd, mg/L (83002)	Potas-sium, wet atm dep fltrd, mg/L (83120)	Sodium, wet atm dep fltrd, mg/L (83138)	Chlor-ide, wet atm dep fltrd, mg/L (82944)	Sulfate wet atm dep fltrd, mg/L (83160)	Ammonia wet atm dep fltrd, mg/L as NH4 (83047)	Nitrate wet atm dep fltrd, mg/L (83071)	Ortho-phos-phate, wet atm dep fltrd, mg/L (83111)
OCT 01-08	0.408	0.25	5.10	10.5	0.29	0.04	0.05	0.09	0.17	1.35	0.240	1.29	<0.009
OCT 08-15	5.617	3.17	4.98	9.5	0.03	M	M	0.01	0.02	0.94	0.110	0.56	<0.009
OCT 15-22	1.404	0.80	6.64	16.6	0.11	0.05	0.56	0.02	0.09	2.04	0.990	1.53	0.256
OCT 22-29	0.763	0.45	8.14	16.6	0.29	0.08	1.02	0.15	0.20	2.42	0.970	1.45	0.541
OCT 29-NOV 05	1.836	1.15	6.33	15.7	0.04	M	M	0.01	0.04	1.71	0.110	0.80	<0.009
NOV 05-12	4.944	2.75	7.48	7.5	0.06	0.01	0.01	0.05	0.09	0.77	0.120	0.55	<0.009
NOV 12-19	1.286	0.74	4.56	25.6	0.03	0.01	0.01	0.03	0.21	2.17	0.260	2.29	<0.009
NOV 19-26	0.380	0.20	7.89	33.6	0.68	0.10	1.27	0.15	0.24	2.50	4.38	3.82	0.459
NOV 26-DEC 03	0.164	0.10	4.20	43.5	0.59	0.05	0.06	0.08	0.42	5.13	1.03	4.99	0.009
DEC 03-10	1.072	0.59	6.58	9.6	0.09	0.01	M	0.01	0.06	0.55	0.050	1.07	<0.009
DEC 10-17	3.051	1.71	5.07	14.1	0.05	0.01	M	0.01	0.08	1.00	0.070	0.95	<0.009
DEC 17-24	1.290	0.77	5.00	13.6	0.25	0.03	0.01	0.15	0.25	1.68	0.190	2.14	<0.009
DEC 24-31	0.333	0.17	4.62	23.2	0.26	0.01	0.01	0.03	0.13	2.04	0.170	1.85	<0.009
JDEC 31 - JAN 07	2.152	1.25	4.37	23.4	0.21	0.03	0.02	0.18	0.44	3.45	0.520	4.06	<0.009
JAN 14-21	0.214	0.15	4.71	28.5	0.69	0.07	0.02	0.17	0.57	1.47	0.660	5.99	<0.009
JAN 21-28	0.209	0.15	4.96	26.8	0.18	0.03	0.01	0.11	0.76	0.44	0.150	3.43	<0.009
JAN 28-FEB 04	1.545	0.90	4.70	23.7	0.17	0.01	0.02	0.05	0.10	2.06	0.370	2.23	<0.009
FEB 04-11	0.687	0.47	5.25	26.7	0.09	0.01	0.01	0.04	0.16	1.54	0.420	3.78	<0.009
FEB 11-18	8.002	4.65	6.02	13.7	<0.01	<0.003	<0.003	<0.003	0.04	1.54	0.050	0.71	<0.009
FEB 18-25	2.270	1.30	5.21	15.0	0.07	0.07	0.21	0.21	0.16	1.75	0.160	1.17	0.540
FEB 25-MAR 04	0.529	0.12	4.35	37.6	0.15	0.02	0.01	0.12	0.40	3.73	0.540	2.89	<0.009
MAR 04-11	0.125	0.07	4.78	30.6	1.18	0.10	0.07	0.22	0.22	5.19	0.870	4.52	<0.009
MAR 11-18	1.302	0.75	4.45	34.4	0.25	0.02	0.03	0.07	0.11	4.05	0.780	2.26	<0.009
MAR 18-25	2.275	1.35	4.58	11.6	0.67	0.10	0.52	0.07	0.14	2.04	0.310	1.27	0.044
MAR 25-APR 01	0.817	0.47	4.80	20.7	0.11	0.02	0.03	0.09	0.14	2.33	0.420	1.76	<0.009
APR 01-08	2.507	1.40	5.22	12.3	0.12	0.02	0.05	0.07	0.13	1.18	0.150	0.72	<0.009
APR 08-15	1.729	1.02	4.53	34.0	0.15	0.02	0.01	0.02	0.12	2.97	0.250	2.41	<0.009

380706083324900 - CLARK STATE FISH HATCHERY, ROWAN COUNTY, KY—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Atm dep wet, liters (83177)	Precip-itation total for defined period, inches (00193)	pH, wet atm dep unfltrd field, std units (83106)	Specif. conduc-tance, wet dep unfltrd field, uS/cm (83154)	Calcium wet atm dep fltrd, mg/L (82932)	Magnes-ium, wet atm dep fltrd, mg/L (83002)	Potas-sium, wet atm dep fltrd, mg/L (83120)	Sodium, wet atm dep fltrd, mg/L (83138)	Chlor-ide, wet atm dep fltrd, mg/L (82944)	Sulfate wet atm dep fltrd, mg/L (83160)	Ammonia wet atm dep fltrd, mg/L as NH4 (83047)	Nitrate wet atm dep fltrd, mg/L (83071)	Ortho-phos-phate, wet atm dep fltrd, mg/L (83111)
APR 15-22	1.322	0.72	5.54	10.1	0.27	0.03	0.10	0.06	0.08	1.23	0.250	0.92	<0.009
APR 22-29	0.754	0.37	6.06	72.7	5.13	0.30	2.21	0.42	0.56	6.24	12.3	2.31	3.85
MAY 13-20	2.339	2.45	5.13	14.7	0.10	0.02	0.03	0.08	0.15	1.46	0.350	1.15	<0.009
MAY 20-27	1.935	1.00	4.88	18.3	0.12	0.01	0.02	0.04	0.11	1.87	0.280	1.12	<0.009
MAY 27-JUN 03	1.379	1.10	5.48	23.6	1.37	0.14	0.23	0.10	0.23	4.38	0.820	2.72	0.049
JUN 10-17	2.695	1.52	5.30	11.5	0.05	0.01	0.04	0.04	0.07	1.20	0.310	1.11	<0.009
JUN 17-24	2.457	1.40	4.70	22.2	0.08	0.01	0.02	0.01	0.07	3.13	0.490	1.39	<0.009
JUN 24-JUL 01	0.182	0.10	4.54	49.2	0.67	0.09	0.07	0.05	0.19	6.59	1.09	3.90	<0.009
JUL 01-08	0.648	0.37	5.58	15.0	1.01	0.08	0.12	0.03	0.17	2.61	0.220	1.81	<0.009
JUL 08-15	1.879	1.02	5.56	10.1	0.16	0.02	0.02	0.03	0.06	0.97	0.190	0.96	<0.009
JUL 15-22	2.620	1.50	4.94	16.7	0.19	0.02	0.02	0.03	0.07	2.00	0.240	1.11	<0.009
JUL 22-29	1.173	0.65	4.62	24.7	0.28	0.03	0.03	0.04	0.14	3.73	0.590	2.13	<0.009
JUL 29-AUG 05	2.200	1.27	5.20	14.0	0.07	0.01	0.01	0.01	0.05	1.10	0.230	1.16	<0.009
AUG 05-12	3.260	1.84	4.95	42.7	0.12	0.02	0.18	M	0.14	4.70	0.280	1.96	<0.009
AUG 12-19	0.672	0.35	5.03	23.1	0.68	0.09	0.45	0.01	0.11	3.85	0.400	1.91	0.009
AUG 19-26	1.046	0.60	5.14	21.6	0.34	0.03	0.03	0.03	0.08	2.44	0.560	2.09	<0.009
AUG 26-SEP 02	3.672	2.12	5.16	16.3	0.10	0.01	0.02	0.03	0.08	1.88	0.290	1.08	<0.009
SEP 02-09	0.826	0.50	5.44	11.9	0.02	0.01	0.01	0.03	0.08	1.26	0.150	0.40	<0.009
SEP 16-23	1.576	0.94	5.62	6.4	0.06	0.01	<0.003	0.01	0.03	0.35	<0.020	0.31	<0.009
SEP 23-30	1.595	0.92	5.21	17.3	0.09	0.01	0.01	0.01	0.05	1.90	0.310	0.89	<0.009
SEP 30-OCT 07	0.762	0.45	4.98	19.2	0.19	0.02	0.02	0.01	0.05	2.19	0.300	1.54	<0.009

<--Numeric result is less than the value shown.
M--Presence of material verified but not quantified.

DISCONTINUED SURFACE-WATER DISCHARGE OR STAGE-ONLY STATIONS

STATION NAME AND LOCATION	STATION NUMBER	DRAINAGE AREA (MI^2)	PERIOD OF RECORD	COMPLETE FLOW	COM-PLETE STAGE	PEAK FLOW	LOW FLOW	MISC FLOW MEAS
CARD CR AT MOUTHCARD, KY	03207845	4.18	1973-75	E	E			
FEDS CR AT FEDS CR, KY	03207875	11.60	1973-75	E	E			
BIG CR AT DUNLAP, KY	03207905	9.55	1974-76	E	E			
ELKFOOT BRANCH NR NIGH, KY	03207915	.70	1980-84	E	E			
ISLAND CR NR PHYLLIS, KY	03207925	2.42	1974	E	E			
LICK CR AT LICK CR, KY	03207935	6.70	1973-76	E	E			
MILLERS CR NR PHYLLIS, KY	03207940	1.68	1973-75	E	E			
DICKS FK AT PHYLLIS, KY	03207962	.82	1975-84	E	E			
GRAPEVINE CR NR PHYLLIS, KY	03207965	6.20	1974-82	E		E	E	
			1989-92					
LEVISA FK BELOW FISHTRAP DAM, NR MILLARD, KY	03208000	392	1938-92*	E		C	E	
RUSSELL FORK AT ELKHORN CITY, KY	03209300	554.00	1960-92	E	E		E	
ELKHORN CR NR ELKHORN CITY, KY	03209400	48.80	1967-72	E		E	E	
SHELBY CR AT DORTON, KY	03209440	12.60	1971-76*	E	E	E	E	
SHELBY CR AT SHELBIANA, KY	03209460	112.00	1965				E	
			1972-81					
MUD CR AT HAROLD, KY	03209545	51.90	1975-81				E	
BILL D BR NR KITE, KY	03209575	3.17	1976-86			E		
RIGHT FK BEAVER CR AT WAYLAND, KY	03209600	73.90	1959-75				E	
BEAVER CR AT MARTIN, KY	03209700	228.00	1953-72				E	
LEVISA FK AT PRESTONSBURG, KY	03209800	1702.00	1964-81		E			
MIDDLE CR NR PRESTONSBURG, KY	03209890	62.10	1975-81				E	
RACCOON CR NR ZEBULON, KY	03210040	14.80	1974-75*	E	E			
CANEY FK NR GULNARE, KY	03210160	3.74	1974-75*	E	E	E		
BRUSHY FK AT HEENON, KY	03210310	20.40	1974-76	E	E			
BUFFALO CR NR ENDICOTT, KY	03210420	6.21	1974-75*	E	E			
JOHNS CR NR PRESTONSBURG KY	03210500	197.00	1938-40		E			
JOHNS CR NR VAN LEAR, KY	03211500	206	1939-92*	E		C	E	
OPEN FK PAINT CR NR RELIEF, KY	03211945	25.50	1975-81				E	
PAINT CR NR STAFFORDSVILLE, KY	03212000	103.00	1950-75*	E	E	E	E	
KERSHAW BR NR HURLEY, VA	03213577	.60	1981-82		E			
CAMP CR NR ARGO, KY	03213594	1.60	1981-82		E			
KNOX CR AT ARGO, KY	03213600	95.90	1958-72				E	
R FK HURRICANE CR NR STOPOVER, KY	03213630	.82	1980-83		E			
BIG CR NR HATFIELD, KY	03213790	59.10	1975-81				E	
WOLF CR AT PILGRIM, KY	03214400	62.80	1975-81				E	
ROCKCASTLE CR AT CLIFFORD, KY	03214730	121.00	1965-65					E
			1972-81					
BIG SANDY R AUXILIARY AT LOUISA, KY	03214980	3885.00	1938-76		E			
BIG SANDY R AT LOUISA, KY	03215000	3897.00	1939-77		E			E
BLAINE CR ABOVE CAINS CR NR BLAINE, KY	03215362	64.70	1975-81				E	
BLAINE CR NR BLAINE, KY	03215410	119.00	1972-76				E	
BLAINE CR AT YATESVILLE, KY	03215500	217.00	1915-75*	E	E	E	E	
OHIO R AT ASHLAND, KY	03216000	60750.00	1939-75		E			
LITTLE SANDY R AT SANDY HOOK, KY	03216190	35.70	1970-74				E	
LITTLE SANDY R NR SANDY HOOK, KY	03216200	60.40	1954-69				E	
LITTLE SANDY R BELOW GRAYSON DAM NR LEON, KY	03216350	196	1966-92	E		C	E	
LITTLE SANDY R AT LEON, KY	03216400	255.00	1962-80		C			
LITTLE FK LITTLE SANDY R NR WILLARD, KY	03216438	58.10	1975-81				E	
LITTLE FK LITTLE SANDY R NR GRAYSON, KY	03216480	132.00	1965-65					E
			1972-81					
BECKWITH BR TRIBUTARY NR GRAYSON, KY	03216505	.51	1977-86			E		
E FK LITTLE SANDY R NR FALLSBURG, KY	03216540	12.20	1972-91	E	E	E	E	
E FK LITTLE SANDY R NR CANNNONSBURG, KY	03216550	38.20	1980-81		E		E	
MILE BRANCH NR RUSH, KY	03216563	.94	1976-90			E		
MILE BR NR COALTON, KY	03216564	1.61	1977-86			E		
E FK LITTLE SANDY R NR ARGILLITE, KY	03216570	138.00	1968-76				E	
TYGARTS CREEK AT OLIVE HILL, KY	03216800	59.6	1957-94	E	E	E	E	
TROUGH CAMP CR TRIB NR OLIVE HILL, KY	03216901	1.11	1976-86			E		
TYGARTS CR NR KEHOE, KY	03216935	124.00	1963-74		E			E
BUFFALO CR BELOW GRASSY CR AT KEHOE, KY	03216965	54.60	1975-81				E	
KINNICONICK CR NR KINNICONICK, KY	03237225	60.10	1975-81				E	
KINNICONICK CR NR RUGLESS, KY	03237230	109.00	1954-72				E	
LAUREL FK NR CAMP DIX, KY	03237246	57.00	1975-81				E	
INDIAN RUN TRIB NR TOLLESBORO, KY	03237895	.23	1975-86					
CABIN CR NR TOLLESBORO, KY	03237900	22.40	1972-91	E	E	E	E	
CABIN CR NR PLUMVILLE, KY	03237985	57.60	1975-78				E	
			1980-81					
OHIO R AT MAYSVILLE, KY	03238000	70130.00	1939-80		E	E		
LAWRENCE CR NR MAYSVILLE, KY	03238030	1.90	1975-86			E		
BRACKEN CR NR AUGUSTA, KY	03238620	28.80	1975-78				E	

DISCONTINUED SURFACE-WATER DISCHARGE OR STAGE-ONLY STATIONS

STATION NAME AND LOCATION	STATION NUMBER	DRAINAGE AREA (MI^2)	PERIOD OF RECORD	COMPLETE FLOW	COM-PLETE STAGE	PEAK FLOW	LOW FLOW	MISC FLOW MEAS
			1980-81					
LOCUST CR NR AUGUSTA, KY	03238660	41.70	1975-78				E	
			1980-81					
TWELVEMILE CR AT HWY 1997 NR ALEXANDRIA, KY	03238745	39.0	2001	E	E	E	E	
TWELVEMILE CR NR CALIFORNIA, KY	03238750	44.30	1975-81				E	
FOURMILE CR AT HWY 547 NR ALEXANDRIA, KY	03238780	5.3	1999-2001	E	E	E	E	
DUCK CR AT COLD SPRING, KY	03238795	.49	1975-78			E		
LICKING R AT FREDVILLE, KY	03248170	40.30	1973-76				E	
LICKING R AT ROYALTON, KY	03248250	76.70	1973-76				E	
LICKING R NR SALYERSVILLE, KY	03248500	140	1939-92,	E	E	E	E	
			1994-97					
ELK FK NR LENOX, KY	03248685	59.40	1958-73				E	
CANEY CR NR W LIBERTY, KY	03248730	41.40	1973-75				E	
GRASSY CR NR W LIBERTY, KY	03248765	46.10	1974-79				E	
			1981					
BLACKWATER CR NR EZEL, KY	03248815	38.30	1974-81				E	
N FK LICKING R NR WRIGLEY, KY	03248855	33.70	1974-81				E	
LICKING R AT YALE, KY	03249000	714.00	1937-42		E			
LICKING R AT FARMERS, KY	03249500	827	1915-20		E			
			1928-31	E	E			
			1936-87	E	E			
			1938-94	E	E	E	E	
TRIPLETT CR AT MOREHEAD, KY	03250000	47.5	1941-82	E		E	E	
			1989-92					
JACKS BRANCH NR MOREHEAD, KY	03250080	.19	1976-86			E		
N FK TRIPLETT CR AT MOREHEAD, KY	03250100	84.7	1967-94	E	E	E	E	
INDIAN CR NR OWINGSVILLE, KY	03250150	2.43	1975-90			E		
SLATE CR NR JEFFERSNVILLE, KY	03250185	56.70	1973-81				E	
SLATE CR NR OWINGSVILLE, KY	03250240	185.00	1954-72				E	
ROSE RUN TRIB NR OLYMPIA, KY	03250243	.70	1975-86			E		
ROCK LICK CR NR SHARKEY, KY	03250320	4.01	1973-82		E			
FOX CR NR HILLSBORO, KY	03250330	110.00	1953-72					E
FLEMING CR NR HILL TOP, KY	03250470	77.20	1954-72				E	
LICKING R AT BLUE LICK SPRINGS, KY	03250500	1785.00	1938-59*	E	E	E		
JOHNSON CR TRIB NR FAIRVIEW, KY	03250620	.33	1976-86			E		
JOHNSON CR AT PIQUA, KY	03250640	72.40	1973-74				E	
N FK LICKING R NR LEWISBURG, KY	03251000	119.00	1946-91	E	E	E	E	
WELLS CR TRIB NR WASHINGTON, KY	03251008	.96	1977-86		E	E		
LEES CR TRIB AT MAYS LICK, KY	03251015	.45	1975-86		E	E		
N FK LICKING R NR MILFORD, KY	03251400	286.00	1954-72				E	
LICKING R AT MCKINNEYSBURG, KY	03251500	2326.00	1924-26	E	E	E	E	
			1939-94					
STONER CR NR N MIDDLETOWN, KY	03251665	51.60	1974-81				E	
STRODES CR NR N MIDDLETOWN, KY	03251790	53.60	1973-81				E	
STONER CR AT PARIS, KY	03252000	239.00	1953-91	E	E	E	E	
GRASSY LICK CR NR SHARPSBURG, KY	03252188	40.60	1973-74			E		
HINKSTON CR NR SHARPSBURG, KY	03252190	78.90	1973-77			E		
HINKSTON CR NR CARLISLE, KY	03252300	154.00	1968-76			E		
S FK LICKING R AT CYNTHIANA, KY	03252500	621.00	1938-94	E		E	E	
RAVEN CR NR BERRY, KY	03252770	46.60	1973-81				E	
FK LICK CR AT MORGAN, KY	03252940	50.20	1973-81				E	
SF LICKING R AT HAYES, KY	03253000	920.00	1915-31			E		
LICKING R AT BUTLER, KY	03254000	3385.00	1938-42			E		E
N FK GRASSY CR NR PINER, KY	03254400	13.60	1967-83		E			
GRASSY CR AT DEMOSSVILLE, KY	03254460	119.00	1950-72				E	
LICKING R AT MORNING VIEW, KY	03254500	3539.00	1914-16		E			
BANKLICK CR NR S FT MITCHELL, KY	03254680	54.60	1974-81			E		
OHIO R AT CINCINNATI, OH	03255000	76580.00	1936-76		E	E		
FOWLERS FORK AT UNION, KY	03277070	1.54	1976-90			E		
PLEASANT RUN CR AT CRESENT SPRINGS, KY	03260010	.68	1973-86			E		
PLEASANT RUN CR TRIB AT FT MITCHELL, KY	03260012	1.62	1973-90			E		
GUNPOWDER CR NR UNION, KY	03277100	50.20	1975-81				E	
CRAIGS CR TRIB NR WARSAW, KY	03277185	.68	1976-86					
OHIO R AT MARKLAND D NR WARSAW, KY	03277210	83170.00	1915-65					
BOTTOM FK NR MAYKING, KY	03277290	3.03	1976-87			E		
N FK KENTUCKY R AT WHITESBURG, KY	03277300	66.40	1953-75		E	E		
N FK KENTUCKY R AT BLACKEY, KY	03277340	131.00	1965-65				E	

DISCONTINUED SURFACE-WATER DISCHARGE OR STAGE-ONLY STATIONS

STATION NAME AND LOCATION	STATION NUMBER	DRAINAGE AREA (MI^2)	PERIOD OF RECORD	COMPLETE FLOW	COM-PLETE STAGE	PEAK FLOW	LOW FLOW	MISC FLOW MEAS
			1972-81					
ROCKHOUSE CR NR FLETCHER, KY	03277360	51.60	1958-67				E	
LINE FK AT DEFEATED CR, KY	03277370	40.80	1958-76				E	
LEATHERWOOD CR AT DAISY, KY	03277400	40.9	1964-74, 1991-98	E	E	E	E	
N FK KENTUCKY R AT CORNETTSVILLE, KY	03277411	322.00	1958-72				E	
BREEDING CR NR ISOM, KY	03277437	.69	1977-85			E		
CARR FORK NR SASSAFRAS, KY	03277450	60.6	1963-94	E	E	E	E	
N FK KENTUCKY R AT HAZARD, KY	03277500	466	1940-92	E		E	E	
BRIAR FK NR HAZARD, KY	03277630	1.32	1976-85			E		
TROUBLESOME CR AT DRAWF, KY	03277835	59.90	1958-67				E	
BALLS FK AT ARY, KY	03277915	45.40	1959-75				E	
BEAR BR NR NOBLE, KY	03278000	2.21	1955-73*		E	E		
TROUBLESOME CR AT NOBLE, KY	03278500	177.00	1950-81		E			
TROUBLESOME CR NR CLAYHOLE, KY	03279000	187.00	1928-31		E			
QUICKSAND CR AT LUNAH, KY	03279400	101.00	1958-72				E	
QUICKSAND CR NR JACKSON, KY	03279500	153.00	1928-31		E			
N FK KENTUCKY R NR AIRDALE, KY	03280500	1294.00	1928-42		E			
MIDDLE FK KENTUCKY R AT ASHER, KY	03280551	70.60	1958-76				E	
GREASY CR AT NAPIER, KY	03280570	37.70	1975-81				E	
GREASY CR AT HOSKINSTON, KY	03280590	95.00	1958-67				E	
MIDDLE FK KENTUCKY R NR HYDEN, KY	03280600	202	1957-92	E		E	E	
BULL CR NR HYDEN, KY	03280728	1.84	1976-86			E		
MIDDLE FK KENTUCKY R AT BUCKHORN, KY	03280900	420.00	1957-75*	E	E	E		
STAMPER FK AT CANOE, KY	03280935	1.57	1975-87			E		
RED BIRD R NR SPRING CR, KY	03281016	52.70	1976-81				E	
RED BIRD R AT BIG CR, KY	03281030	125.00	1954-72				E	
RED BIRD RIVER NR BIG CREEK	03281040	155	1973-00	E	E	E	E	
GOOSE CR AT GOOSEROCK, KY	03281065	49.60	1976-81				E	
COLLINS FK AT BLUEHOLE, KY	03281080	67.40	1958-76				E	
PACES CR NR GARRARD, KY	03281090	.47	1976-85			E		
S FK KENTUCKY R AT ONEIDA, KY	03281200	486.00	1958-82			E		
SEXTON CR AT TAFT, KY	03281350	71.00	1959-64 1967 1975-77 1979-81				E	
STURGEON CR NR HEIDELBERG, KY	03282045	96.40	1942-72				E	
BIG SINKING CR NR CRYSTAL, KY	03282075	23.4	1988-89*	E	E			
FURNACE FK NR CRYSTAL, KY	03282100	9.94	1988-89*	E	E			
S FK STATION CAMP CR NR DRIP ROCK, KY	03282135	41.40	1959-76				E	
STATION CAMP CR AT WAGERSVILLE, KY	03282170	115.00	1954-72				E	
REDLICK CR NR STATION CAMP, KY	03282190	69.50	1959-76				E	
CLEAR CR TRIB NR WEST IRVINE, KY	03282198	.59	1975-86			E		
STILLWATER CR AT STILLWATER, KY	03283000	24.00	1954-73*	E	E	E		
RED R NR PINE RIDGE, KY	03283100	142.00	1969-76				E	
M FK RED R AT ZACHARIAH, KY	03283305	.58	1975-86			E		
CAT CR NR STANTON, KY	03283370	8.30	1987-89*	E	E			
LULBEGRUD CR TRIB AT WESTBEND, KY	03283610	.33	1975-86					
LULBEGRUD CR AT LOG LICK, KY	03283630	49.30	1973-81				E	
MUDDY CR AT DOYLESVILLE, KY	03283830	63.80	1973-77 1979-81				E	
OTTER CR NR FORD, KY	03283995	63.50	1973-77				E	
BOONE CR AT GRIMES MILL RD NR LOCUST GROVE, KY	03284100	41.80	1967-74				E	
SILVER CR NR KINGSTON, KY	03284300	28.60	1967-83		E			
SILVER CR NR BEREA, KY	03284310	53.40	1975-83			E	E	
OLD TOWN BR TR NR RICHMOND, KY	03284340	1.83	1976-85			E		
SILVER CR NR RICHMOND, KY	03284350	98.50	1972-77 1979-81				E	
PAINT LICK CR AT PAINT LICK, KY	03284415	54.40	1973-74				E	
PAINT LICK CR NR MCCREARY, KY	03284450	97.60	1954-74				E	
SUGAR CR NR BUCKEYE, KY	03284495	41.50	1975-77				E	
KENTUCKY R AT LOCK 8 NR CAMP NELSON, KY	03284500	4414.00	1910-71*	E	E	E		
W HICKMAN CR AT JONESTOWN, KY	03284550	11.00	1975-84		E			
KENTUCKY R AT CAMP NELSON, KY	03284600	4528.00	1940-71		E	E		
DIX R AB COPPER CR NR CRAB ORCHARD, KY	03284720	44.40	1973-76				E	
DIX R BL COPPER CR NR CRAB ORCHARD, KY	03284750	70.60	1973-76				E	
DIX R NR STANFORD, KY	03284800	160.00	1973-76				E	
HANGING FK CR NR STANFORD, KY	03284935	46.90	1973-74				E	

DISCONTINUED SURFACE-WATER DISCHARGE OR STAGE-ONLY STATIONS

STATION NAME AND LOCATION	STATION NUMBER	DRAINAGE AREA (MI^2)	PERIOD OF RECORD	COMPLETE FLOW	COM-PLETE STAGE	PEAK FLOW	LOW FLOW	MISC FLOW MEAS
HANGING FK CR NR HUBBLE, KY	03284995	91.10	1973-74				E	
BALLS BR TRIB NR DANVILLE, KY	03285100	.13	1976-86			E		
CLARKS RUN NR DANVILLE, KY	03285200	26.4	1992-97		E	E	E	
DIX R NR BURGIN, KY	03285500	395.00	1909-22		E			
KENTUCKY R AT L7 AT HIGHBRIDGE, KY	03286500	5036.00	1901-27		E			
TANNERS CREEK AT MORTONSVILLE, KY	03287128	1.49	1976-88, 90			E		
CLEAR CR NR MORTONSVILLE, KY	03287130	61.60	1973-77				E	
GILBERT CR TR NR SALVISA, KY	03287160	.81	1975-78			E		
S BENSON CR NR FRANKFORT, KY	03287534	4.47	1976-86			E		
BENSON CR NR FRANKFORT, KY	03287550	107.00	1943-72				E	
N ELKHORN CR NR GEORGETOWN, KY	03288000	119	1950-84	E	E	E	E	
			1989-99					
CANE RUN NR GEORGETOWN, KY	03288260	45.40	1973-74				E	
N ELKHORN CR AT SWITZER, KY	03288450	265.00	1972-77				E	
CAVE CR NR FORT SPRING, KY	03288500	2.53	1953-72*	E	E	E	E	
S ELKHORN CR AT FORT SPRING, KY	03289000	24.0	1950-92	E		E	E	
WOLF RUN AT CAMBRIDGE DR AT LEXINGTON, KY	03289190	5.30	1976-88			E		
S ELKHORN CR NR WOODLAKE, KY	03289410	156.00	1972-81				E	
FLAT CR NR FRANKFORT, KY	03290000	5.63	1952-71		E	E		
SIX MILE NR DEFOE, KY	03290420	42.60	1973-74				E	
SIX MILE CR NR LOCKPORT, KY	03290490	76.50	1973-74				E	
TOWN CR AT NEW CASTLE, KY	03290580	5.62	1976-86			E		
DRENNON CR AT DRENNON SP, KY	03290675	82.50	1973-74				E	
EAGLE CR AT SADIEVILLE, KY	03291000	42.90	1941-75*	E	E	E	E	
S RAYS FK TRIB NR CORINTH, KY	03291050	0.58	1976-86			E		
EAGLE CR NR NEW COLUMBUS, KY	03291110	124.00	1972-74				E	
EAGLE CR NR HOLBROOK, KY	03291270	258.00	1954				E	
			1957					
			1962					
			1972-81					
TEN MILE CR NR FOLSOM, KY	03291490	68.40	1973-76				E	
LITTLE KY R NR BEDFORD, KY	03291700	73.20	1950-72				E	
CORN CR NR BEDFORD, KY	03292100	27.50	1975-81				E	
JEFF BR NR SLIGO, KY	03292200	.87	1976-86			E		
HARRODS CR NR LAGRANGE, KY	03292460	24.1	1967-94	E	E	E	E	
HARRODS CR NR SKYLIGHT, KY	03292467	60.30	1972-74				E	
S FK HARRODS CR NR CRESTWOOD, KY	03292472	.97	1975-88			E		
MILL CREEK CUTOFF NR LOUISVILLE, KY	03294550	24.4	1988-94	E	E	E	E	
SALT R NR HARRODSBURG, KY	03295000	41.40	1953-73*	E	E	E		
SALT R AT FOX CR, KY	03295290	131.00	1972-76				E	
SALT R NR VAN BUREN, KY	03295500	196.00	1938-82		E			
BEECH CR NR TAYOLORSVILLE, KY	03295580	53.20	1974-76				E	
SALT R AT TAYLORSVILLE, KY	03295610	359.00	1937-75				E	
			1972-76					
BULLSKIN CR AT FINCHVILLE, KY	03295705		1974-75		E		E	
BRASHEARS CR NR FINCHVILLE, KY	03295800	147.00	1953-72				E	
BRADSHAW CR NR SHELBYVILLE, KY	03295845	1.36	1976-86			E		
SIMPSON CR NR TAYLORSVILLE, KY	03295985	57.30	1974-76			E		
PLUM CR SUBWATER SHED NO 4 NR SIMPSONVILLE, KY	03296000	1.55	1955-64*		E			
PLUM CR NR WILSONVILLE, KY	03296500	19.10	1954-61*	E	E	E	E	
PLUM CR SWS N 15 NR WILSONVILLE, KY	03296700	1.03	1957-61*		E			
PLUM CR SWS N 17 NR WATERFORD, KY	03296800	.52	1957-61*		E			
LITTLE PLUM CR NR WATERFORD, KY	03297000	5.15	1954-61*	E	E	E		
PLUM CR AT WATERFORD, KY	03297500	31.80	1954-74*	E	E	E		
COX CR NR HIGHGROVE, KY	03297700	95.80	1968-72				E	
FLOYDS FK NR CRESTWOOD, KY	03297845	46.70	1979-91	E	E	E	E	
LONG RUN NR EASTWOOD, KY	03297970	15.20	1974-77*	E	E	E		
FLOYDS FK NR GAP IN KNOB, KY	03298390	259.00	1972-76				E	
ELM LICK CR NR CLERMONT, KY	03298535	.68	1976-86			E		
N ROLLING FK NR GRAVEL SWITCH, KY	03298710	66.20	1974-81				E	
N ROLLING FK AT BRADSFORDVILLE, KY	03298760	95.70	1972-77				E	
BIG S FK AT BRADSFORDVILLE, KY	03298865	59.60	1974-81				E	
ROLLING FK NR LEBANON, KY	03299000	239	1938-92	E		E	E	
POTTINGER CR NR NEW HOPE, KY	03299445	43.50	1974-78				E	
			1980-81					
BEECH FK NR SPRINGFIELD, KY	03300000	85.90	1953-72		E	E		
N PRONG NR WILLISBURG, KY	03300065	1.71	1975-89			E		

DISCONTINUED SURFACE-WATER DISCHARGE OR STAGE-ONLY STATIONS

STATION NAME AND LOCATION	STATION NUMBER	DRAINAGE AREA (MI^2)	PERIOD OF RECORD	COMPLETE FLOW	COM- PLETE STAGE	PEAK FLOW	LOW FLOW	MISC FLOW MEAS
CHAPLIN R AT SHARPSVILLE, KY	03300300	140.00	1954-72				E	
CHAPLIN R NR CHAPLIN, KY	03300390	262.00	1972-77				E	
CARTWRIGHT CR AT FREDRICKTOWN, KY	03300498	82.30	1972-77				E	
BEECH FK AT FREDERICKTOWN, KY	03300500	542.00	1929-32		E			
HARDINS CR NR HOLY CROSS, KY	03300780	57.80	1975-78				E	
			1980-81					
TOWN CR TRIB AT BARDSTOWN, KY	03300990	.32	1975-86					
BEECH FK AT BARDSTOWN, KY	03301000	669.00	1939-74	E	E	E		
WILSON CR AT HARRISON FK RD NR DEATSVILLE, KY	033015075	5.7	1999-2001	E	E	E	E	
WILSON CR NR DEATSVILLE, KY	03301580	27.7	1991-96	E	E	E	E	
SLOP DITCH NR OKOLONA, KY	03301885	1.4	1994-96	E	E	E	E	
NORTHERN DITCH AT OKOLONA, KY	03301940	11.10	1974-79		E			
OTTER CR TRIB NR VINE GROVE, KY	03302085	.90	1975-86					
OTTER CR AT GRAHAMTON, KY	03302100	88.40	1953-72				E	
DOE RUN NR BRANDENBURG STATION, KY	03302150	52.70	1953-72				E	
SINKING CR AT ROSETTA, KY	03303195	36.00	1970-76				E	
SINKING CR DENTS BR NR IRVINGTON, KY	03303198	66.10	1970-76				E	
SINKING CR NR IRVINGTON, KY	03303200	86.70	1953-72				E	
SINKING CR NR LODIBURG, KY	03303205	125.00	1971-77				E	
SINKING CR AT SAMPLE, KY	03303210	222.00	1953-70				E	
BLACKFORD CR NR MACEO, KY	03303450	111.00	1953-74				E	
OHIO R AT OWENSBORO, KY	03303500	97200.00	1940-54*	E	E	E		
MCGILLS CR NR MCKINNEY, KY	03304500	2.14	1951-71*	E		E		
GREEN R NR MCKINNEY, KY	03305000	22.40	1951-73*	E	E	E		
GREEN R NR MOUNT SALEM, KY	03305500	36.30	1954-61*	E	E	E		
GREEN R AT MIDDLEBURG KY	03305520	66.50	1972-74				E	
CARPENTER CR TRIB NR HUSTONVILLE, KY	03305559	.88	1976-86					
GREEN R NR DUNNVILLE, KY	03305660	221.00	1972-77				E	
S FK NR DUNNVILLE, KY	03305720	71.00	1972-78				E	
IRVIN BRANCH NR SALEM, KY	03305725	1.37	1976-86			E		
GOOSE CR AT DUNNVILLE, KY	03305760	51.60	1972-77				E	
GREEN R AT NEATSVILLE, KY	03305800	399.00	1953-73				E	
GUM LICK TRIB NR CLEMENTSVILLE, KY	03305835	.71	1976-90			E		
CASEY CR AT CASEY CR, KY	03305865	74.70	1972-77				E	
ROBINSON CR AT ACTON, KY	03305945	48.40	1974-81				E	
GREEN R AT CAMPBELLSVILLE, KY	03306000	682	1930-32	E	E			
			1963-94	E	E	E	E	
GREEN R AT GREENSBURG, KY	03306500	736.00	1939-75*	E	E	E		
WHITE OAK CR TR NR MONTPELIER, KY	03306640	.50	1976-86	E		E		
RUSSELL CR NR JOPPA, KY	03306690	62.90	1974-81				E	
RUSSELL CR AT COLUMBIA, KY	03306850		1972-74				E	
RUSSELL CR NR GRESHAM, KY	03307100	265.00	1965-75*	E	E	E	E	
BIG PITMAN CR NR BENGAL, KY	03307215	47.70	1974-78				E	
			1980-81					
LITTLE PITTMAN CR NR CAMPBELLSVILLE, KY	03307260	19.3	1990-95	E	E	E	E	
BIG PITMAN CR NR SUMMERSVILLE, KY	03307295	126.00	1953-72				E	
BIG BRUSH CR NR SUMMERSVILLE, KY	03307400	45.70	1974-78				E	
			1980-81					
S FK LITTLE BARREN R AT EDMONTON, KY	03307500	18.30	1941-72*	E	E	E		
S FK LITTLE BARREN R AT SULPHUR WELL, KY	03307600	79.60	1975-81				E	
PRICES CR NR GRADYVILLE, KY	03307670	2.53	1976-86			E		
E FK LITTLE BARREN R NR SULPHUR WELL, KY	03307730	87.40	1975-81				E	
LITTLE BARREN R NR MONROE, KY	03307800	244.00	1960-76				E	
ECHO R OUTLET AT MAMMOTH CAVE, KY	03308950		1953-74				E	
GREEN R AT MAMMOTH CAVE, KY	03309000	1983.00	1938-50	E	E	E		
WET PRONG BUFFALO CR NR MAMMOTH CAVE, KY	03309100	2.26	1962-74				E	
MCDOUGAL CR NR HODGENVILLE, KY	03309500	5.34	1953-71*	E	E	E	E	
N FK NOLIN R AT HODGENVILLE, KY	03310000	36.40	1941-73*	E	E	E		
S FK NOLIN R AT MATHERS MILL, KY	03310078	49.60	1974-78				E	
NOLIN R NR GLENDALE, KY	03310160	185.00	1972-73				E	
VALLEY CR NR GLENDALE, KY	03310270	90.10	1973-81				E	
BACON CR AT HIGHWAY 31W AT BONNIEVILLE, KY	03310380	53.50	1974-81				E	
BACON CR TRIB NR UPTON, KY	03310385	.56	1975-90			E		
BACON CR NR PRICEVILLE, KY	03310400	85.4	1959-94	E	E	E	E	
NOLIN R AT WAX, KY	03310500	600.00	1935-62*	E	E	E		
DOG CR NR MAMMOTH CAVE, KY	03310600	8.12	1961-74				E	
BRIER CR TRIB NR OLLIE, KY	03310880	.31	1976-86			E		

DISCONTINUED SURFACE-WATER DISCHARGE OR STAGE-ONLY STATIONS

STATION NAME AND LOCATION	STATION NUMBER	DRAINAGE AREA (MI^2)	PERIOD OF RECORD	COMPLETE FLOW	COM-PLETE STAGE	PEAK FLOW	LOW FLOW	MISC FLOW MEAS
BYLEW CR NR MAMMOTH CAVE, KY	03311100	5.16	1961-74				E	
GREEN R AT LOCK 6 AT BROWNSVILLE, KY	03311500	2762	1925-31	E		E	E	
			1936-92					
BEAVERDAM CR NR RHODA, KY	03311600	10.9	1961-72				E	
			1972-94	E	E	E	E	
BEAR CR NR LEITCHFIELD, KY	03312000	30.80	1950-71*	E	E	E		
BEAR CR NR ROUNDHILL, KY	03312100	137.00	1953-72				E	
BARREN R NR PAGEVILLE, KY	03312500	531.00	1939-63	E	E	E		
BEAVER CR AT HWY 31 NR GLASGOW, KY	03312765	49.6	1992-2002	E	E	E	E	E
LITTLE BEAVER CR NR GLASGOW, KY	03312795	.89	1976-86			E		
BARREN R NR FINNEY, KY	03313000	942	1941-50	E	E	E	E	
			1960-94	E	E	E	E	
SOLOMON CR TRIB NR SCOTTSVILLE, KY	03313020	.24	1976-90			E		
W BAYS FK AT SCOTTSVILLE, KY	03313500	7.47	1951-72		E	E		
LICK CR NR FRANKLIN, KY	03313800	21.60	1959-83			E		
TRAMMEL CR NR SCOTTSVILLE, KY	03313900	93.40	1953-72				E	
DRAKES CR NR ALVATON, KY	03314000	478.00	1940-71	E	C	E	E	
BARREN R AT BOWLING GREEN, KY	03314500	1,849	1938-94	E	E	E	E	
LOST R BLUE HOLE NR BOWLING GREEN, KY	03314670		1985-86	E	E	E	E	
LOST R RISE AT LAMPKIN PK AT BOWLING GREEN, KY	03314675		1985-86	E	E	E	E	
BARREN R TRIB NR BOWLING GREEN, KY	03314750	.50	1976-90			E		
BARREN R AT LOCK 1 AT GREENCASTLE, KY	03315000	1968.00	1923-37	E	E	E		
GASPER R NR RICHELIEU, KY	03315265		1972-77				E	
GREEN R AT WOODBURY, LOCK #4, KY	03315500	5404.00	1936-92	E		E	E	
GASPER R AT HADLEY, KY	03315300	190.00	1953-72				E	
MUDDY CR AT DUNBAR, KY	03315810	94.30	1953-74				E	
POINDEXTER BR TRIB NR RUSSELLVILLE, KY	03315885	.25	1976-86			E		
MUD R NR LEWISBURG, KY	03316000	90.50	1940-72*	E	E	E		
WOLFLICK CR NR LEWISBURG, KY	03316200	116.00	1953-72				E	
MUD RIVER NR HUNTSVILLE, KY	03316275	268.00	1991-94	E	E	E	E	
GREEN R NR PARADISE, KY	03316500	6182.00	1940-81		E			
			1961-81					
MUD R NR HUNTSVILLE, KY	03316275	268	1974-80				E	
			1991-94	E	E	E	E	
ROUGH R NR MADRID, KY	03317000	225.00	1936-59	E	E	E		
N FK ROUGH T NR WESTVIEW, KY	03317500	42.00	1954-73*	E	E	E		
LONG LICK CR TRIB NR AXTEL, KY	03317965	.38	1975-86			E		
ROUGH R NR FALLS OF ROUGH, KY	03318000	454.00	1940-51		E			
ROCK LICK CR NR GLEN DEAN, KY	03318200	20.10	1957-71*	E	E		E	
ROUGH R AT FALLS OF ROUGH, KY	03318500	504	1939-94	E	E	E	E	
PLEASANT RUN TRIB NR FALLS OF ROUGH, KY	03318505	.22	1975-90			E		
CANEY CR NR HORSE BRANCH, KY	03318800	124	1956-92	E	E	E	E	
ROUGH R NR DUNDEE, KY	03319000	757	1939-92	E		E	E	
W FK ADAMS FK NR FORDSVILLE, KY	03319520	.26	1976-86			E		
ROUGH RIVER AT HARTFORD, KY	03319600	880.00	1991-94	E	E	E	E	
POND R NR WHITE PLAINS, KY	03321000	343.00	1927-40	E	E	E		
CYPRESS CR NR CALHOUN, KY	03321210	142	1979-81	E	E			
			1990-94	E	E	E	E	
CYPRESS CR NR RUMSEY, KY	03321215	149.00	1972-76				E	
E FK DEER CR TRIB NR ONTON, KY	03321275	.95	1976-86			E		
S FK PANTHER CR NR WHITESVILLE, KY	03321350	58.20	1968-83		E			
S FK PANTHER CR NR MASONVILLE, KY	03321370	109.00	1954-72				E	
N FK PANTHER CR NR MASONVILLE, KY	03321410	88.30	1954-72				E	
RHODES CR TRIB NR OWENSBORO, KY	03321465	.29	1975-86			E		
GREEN R AT LOCK AND DAM 1 AT SPOTTSVILLE, KY	03321500	9181.00	1928-31		E			
OHIO R AT MOUNT VERNON, KY	03322250		1977-80		E			
HIGHLAND CR NR WAVERLY, KY	03322350	62.30	1975-77				E	
BEAVERDAM CREEK NR CORYDON, KY	03322360	14.3	1972-94	E	E	E	E	
HIGHLAND CR NR UNIONTOWN, KY	03322400	166.00	1953-77				E	
OHIO R UNIONTOWN DAM	03322420	108000.00	1985-93	E	E	E	E	
WARD CR AT LEWISTOWN, KY	03382975	.91	1975-86			E		
TRADEWATER R NR DALTON, KY	03383500	283.00	1927-40		E	E		
W FK DONALDSON CR NR FREDONIA, KY	03383605	2.52	1975-86			E		
CLEAR CR NR RICHLAND, KY	03383755	17.0	1966-80				E	
			1991-94		E			
ROSE CR AT NEBO, KY	03384000	2.10	1952-70*	E	E	E		
TRADEWATER R	03384180	861	1975-80					E

DISCONTINUED SURFACE-WATER DISCHARGE OR STAGE-ONLY STATIONS

STATION NAME AND LOCATION	STATION NUMBER	DRAINAGE AREA (MI^2)	PERIOD OF RECORD	COMPLETE FLOW	COM-PLETE STAGE	PEAK FLOW	LOW FLOW	MISC FLOW MEAS
			1980-81	E	E			
OHIO R AT DAM 51 AT GOLCONDA, IL	03384500	143900.00	1941-52		C			
POOR FK AT HARLAN, KY	03400000	51.70	1940-43		E			
POOR FK AT CUMBERLAND, KY	03400500	82.3	1940-92	E		C	E	
POOR FK AT ROSSPOINT, KY	03400585	142.00	1972-77				E	
CLOVER FK AT EVARTS, KY	03400700	82.40	1959-87, 90			E		
MARTINS FK ABOVE SMITH, KY	03400785	23.80	1985-90*	E	E	E	E	
CRANE CR NR SMITH, KY	03400796	1.63	1976-77		E			
MARTINS FK AT HARLAN, KY	03400985	116.00	1960					E
CLOVER FK AT HARLAN, KY	03400990	222	1977-92	E	E	E	E	
PEARL BR AT WALLINS CR, KY	03401040	1.40	1976-85			E		
LITTLE YELLOW CR AT MIDDLESBORO, KY	03401400	10.80	1959-66					E
BENNETTS FORK AT MIDDLESBORO, KY	03401428	60.6	1985-94	E	E	E	E	
YELLOW CR BYPASS AT MIDDLESBORO, KY	03401500	35.30	1941-83			E		
SHILALAN CR NR PAGE, KY	03402020	2.96	1976-86			E		
YELLOW CR NR FERNDALE, KY	03402230	99.50	1972-81				E	
CLEAR CR AT CLEAR CR SPRINGS, KY	03402480	38.50	1975-81				E	
CUMBERLAND R AT PINEVILLE, KY	03402500	676.00	1928-31		E			
LEFT FK STRAIGHT CR AT CARY, KY	03402850	33.70	1958-76				E	
STRAIGHT CR AT STRAIGHT CR, KY	03402852	89.80	1953-67				E	
CUMBERLAND RIVER NR PINEVILLE, KY	03403000	809.00	1938-92	E	E	E	E	
STINKING CR AT DEWITT, KY	03403180	49.10	1961-75				E	
ROAD E CR AT DEWITT, KY	03403255	25.20	1961-75				E	
RICHLAND CR NR BARBOURVILLE, KY	03403530	27.70	1961-76				E	
LITTLE RICHLAND CR NR HINKLE, KY	03403538	11.60	1974-83			E		
CLEAR FK AT SAXTON, KY	03403910	331.00	1968-90*	E	E	E	E	
JELLICO CR NR WILLIAMSBURG, KY	03404200	103.00	1953-72				E	
MARSH CR NR WHITELY CITY, KY	03404390	72.00	1960-61				E	
			1974-81					
CUMBERLAND R AT CUMBERLAND FALLS, KY	03404500	1,977	1907-11	E	E			
			1914-94	E	E	E	E	
LAUREL R NR LILY, KY	03404688	52.30	1974-81				E	
LITTLE LAUREL R NR LILY, KY	03404810	42.40	1975-81				E	
LAUREL R AT MUNICIPAL DAM NR CORBIN, KY	03404820	140	1973-92	E		C	E	
GOZEY HOLLOW NR CORBIN, KY	03404867	.31	1976-85			E		
LAUREL R AT CORBIN, KY	03405000	201.00	1910-73	E	E	E		
LAUREL R NR VOX, KY	03405500	245.00	1929-31		E			
S FK ROCKCASTLE R NR PEOPLES, KY	03405700	95.10	1961-72				E	
MIDDLE FK ROCKCASTLE R NR PARROT, KY	03405818	79.00	1975-81				E	
HORSE LICK CR NR LAMERO, KY	03405842	61.70	1975-81				E	
BIG HURRICANE BR AT CONWAY, KY	03405854	1.91	1976-85			E		
ROUNDSTONE CR AT HOMMEL, KY	03405868	52.90	1975-81				E	
ROUNDSTONE CR AT LIVINGSTON, KY	03405900	144.00	1953-76				E	
WOOD CR NR LONDON, KY	03406000	3.89	1954-71*	E	E		E	
			1972-87, 90			E		
SKEGG CR NR BILLOWS, KY	03406330	55.90	1975-81				E	
ROCKCASTLE R AT ROCKCASTLE SPRINGS, KY	03407000	745.00	1921-31	E	E	E		
CANE BR NR PARKERS LAKE, KY	03407100	.67	1956-87		E	E		
W FK CANE BR NR PARKERS LAKE, KY	03407200	.26	1956-86			E		
HELTON BR AT GREENWOOD, KY	03407300	.85	1956-74		E	E		
BUCK CR NR WOODSTOCK, KY	03407425	73.00	1975-81				E	
BUCK CR NR SHOPVILLE, KY	03407500	165.00	1952-91	E	E	E	E	
BUCK CR AT DYKES, KY	03407640	253.00	1972-81				E	
ROCK CR NR YAMACRAW, KY	03410590	58.90	1965				E	
			1975-81					
LITTLE S FK CUMBERLAND R NR GRIFFIN, KY	03410825	56.40	1975-81				E	
LITTLE S FK CUMBERLAND R NR OIL VALLEY, KY	03410900	98.20	1953-72				E	
S FK CUMBERLAND R AT NEVELSVILLE, KY	03411000	1271.00	1915-50		E	E		
CUMBERLAND R AT BURNSIDE, KY	03411500	4865.00	1925-50		E	E		
LAKE CUMBERLAND AT BURNSIDE, KY	03411700	4869.00	1951-70					
PITMAN CR NR SOMERSET, KY	03412000	26.30	1949-53		E			
PITMAN CR AT SOMERSET, KY	03412500	31.30	1953-72*	E	E	E		
FISHING CR NR HOGUE, KY	03412700	59.80	1968-77				E	
CUMBERLAND R NR JAMESTOWN, KY	03413000	5331.00	1937-40		E			
BEAVER CR NR MONTICELLO, KY	03413200	43.40	1968-83		E			
ELK SPRING CR NR SPANN, KY	03413202	0.57	1976-87, 90			E		
OTTER CR NR SUSIE, KY	03413345	67.10	1953-66				E	

DISCONTINUED SURFACE-WATER DISCHARGE OR STAGE-ONLY STATIONS

STATION NAME AND LOCATION	STATION NUMBER	DRAINAGE AREA (MI^2)	PERIOD OF RECORD	COMPLETE FLOW	COM-PLETE STAGE	PEAK FLOW	LOW FLOW	MISC FLOW MEAS
WILLIAMS CR TRIB NR CARTWRIGHT, KY	03413425	.76	1976-86			E		
CUMBERLAND R NR ROWENA, KY	03414000	5790	1939-92	E	E	E	E	
CROCUS CR NR BAKERTON, KY	03414080	108.00	1972-76				E	
BEAR CR NR BURKESVILLE, KY	03414102	3.52	1976-87, 90			E		
MARROWBONE CR AT GRIDER, KY	03414175	80.70	1975-81				E	
RED R NR ADAIRVILLE, KY	03435100	229.00	1957-72				E	
WHIPPOORILL CR NR CLAYMOUR, KY	03435140	20.80	1973-91	E	E	E	E	
ELBOW CR TRIB NR CANTON, KY	03437380	.83	1975-86			E		
LICK CR NR CANTON, KY	03437390	.39	1977-86			E		
S FK LITTLE R TRIB NR HOPKINSVILLE, KY	03437490	2.62	1977-87, 90			E		
S FK LITTLE R AT HOPKINSVILLE, KY	03437500	46.50	1950-73*	E	E	E		
WHITE CR TR NR HOPKINSVILLE, KY	03437610	.19	1975-76		E			
MUDDY R NR DERULEAN, KY	03438070	30.50	1968-83		E			
N FK DRYDEN CR TRIB NR CONFEDERATE, KY	03438120	.10	1975-90			E		
DRY CR NR LAMASCO, KY	03438167	34.60	1968-72			E	E	
EDDY CR NR LAMASCO, KY	03438170	71.70	1968-74				E	
BARKLEY-KENTUCKY CANAL NR GRAND RIVERS, KY	03438190		1966-97	E	E	E	E	
KENTUCKY-BARKLEY CANAL NR GRAND RS, KY	03438191		1971-74		E			
CUMBERLAND R AT EUREKA, KY	03438200	17594.00	1939-64		E			
CUMBERLAND RIVER NR GRAND RIVERS	03438220	17598.00	1939-97	E	E	E	E	
LIVINGSTON CR NR DYCUSBURG, KY	03438470	112.00	1954-74				E	
TENNESSEE R AT SHANNON DAM SITE NR MURRAY, KY	03608000	39780.00	1931-37		E			
TENNESSEE R AT AURORA LANDING, KY	03608500	40010.00	1930-32		E			
TENNESSEE R NR PADUCAH, KY	03609500	40200.00	1941-89	E		E		
CLARKS R AT MURRAY, KY	03610000	89.70	1952-71*	E	E	E		
YORK CR NR BENTON, KY	03610470	.96	1975-90			E		
CLARKS R NR BENTON, KY	03610500	227.00	1938-73*	E	E	E		
CHESTNUT CR NR BENTON, KY	03610503	.82	1975-86			E		
WEST FK CLARKS R NR BREWERS, KY	03610545	68.7	1968-83	E	E	E	E	
			1988-94	E	E	E	E	
CLARKS R TRIB NR REIDLAND, KY	03610820	.13	1975-86			E		
OHIO R AT PADUCAH, KY	03611000	202800.00	1873-75		C			
LITTLE BAYOU CR NR GRAHAMVILLE, KY	03611600	5.78	1990-91	E	E	E	E	
BAYOU CR NR HEATH, KY	03611800	6.55	1990-91	E	E	E	E	
BAYOU CR NR GRAHAMVILLE, KY	03611850	14.90	1990-91	E	E	E	E	
HUMPHREY CR AT LACENTER, KY	03613000	44.20	1953-72				E	
PERRY CR NR MAYFIELD, KY	07022500	1.72	1953-65*	E	E		E	
			1968-72					
			1973-90			E		
LICK CR TRIB NR KERBYTON, KY	07023040	.53	1975-90			E		
MAYFIELD CR NR BLANDVILLE, KY	07023100	295	1938-72					
			1991-94		E			
MAYFIELD CR AT MAYFIELD, KY	07022600	95.10	1954-72				E	
MAYFIELD CR AT LOVELACEVILLE, KY	07023000	204.00	1938-72*	E	E	E		
MISSISSIPPI R AT COLUMBUS, KY	07023200	921900.00	1843-58			E		
OBION CR AT PRYORSBURG, KY	07023500	36.30	1951-73	E	E	E		
OBION CR NR ARLINGTON, KY	07023700	203.00	1953-72				E	
S FK BAYOU de CHIEN TRIB AT WATER VALLEY, KY	07023935	.23	1975-90			E		
MISSISSIPPI R AT HICKMAN, KY	07024070	922500.00	1926-58			E		

* Period of complete flow only
C Currently operated
E Eliminated

DISCONTINUED SURFACE-WATER-QUALITY STATIONS

STATION NAME AND NUMBER	STATION NUMBER	DRAINAGE AREA (MI^2)	PERIOD OF RECORD	BIO. AC-TIVE STA-TUS	PHY. AC-TIVE STA-TUS	SED. AC-TIVE STA-TUS	CHEM-ICAL AC-TIVE STA-TUS
BRUSHY FK AT THOMAS, KY	03201400		1980-82		N	N	N
CARD CR AT MOUTHCARD, KY	03207845	4.18	1974-80		N	N	N
FEDS CR AT FEDS CREEK, KY	03207875	11.60	1972-75		N	N	N
BIG CR AT DUNLAP, KY	03207905	9.55	1974-76		N	N	N
ELKFOOT BRANCH NR NIGH, KY	03207915	.70	1980-84			N	
ISLAND CR NR PHYLLIS, KY	03207925	2.42	1974-80		N	N	N
LICK CR AT LICK CREEK, KY	03207935	6.70	1972-76		N	N	N
MILLERS CR NR PHYLLIS, KY	03207940	1.68	1973-81		N	N	N
DICKS FK AT PHYLLIS, KY	03207962	.82	1975-79			N	
			1982-84			N	
LEVISA FK BELOW FISHTRAP DAM, KY	03208000	392.00	1965-79		N	N	N
RUSSELL FK AT ELKHORN CITY, KY	03209300	554.00	1961-83		N	N	N
ELKHORN CR NR ELKHORN CITY, KY	03209402		1980-82		N	N	N
MARROWBONE CR AT WOLFPIT, KY	03209420		1980-82		N	N	N
GREASY CR NR SUTTON, KY	03209430		1980-82		N	N	N
DORTON CR NR DORTON, KY	03209438		1980-82		N	N	N
LONG FK NR VIRGIE, KY	03209453		1980-82		N	N	N
ROBINSON CR AT ROBINSON CREEK, KY	03209457		1980-82		N	N	N
SHELBY CR AT SHELBIANA, KY	03209460	112.00	1965-79		N	N	N
MUD CR NR GRETHEL, KY	03209530		1980-82		N	N	N
TOLLAR CR NR HAROLD, KY	03209540		1980-82		N	N	N
MUD CR AT HAROLD, KY	03209545	51.90	1978-80		N	N	N
RIGHT FK BEAVER CR AT TOPMOST, KY	03209585		1980-82		N	N	N
CANEY FK BEAVER CR NR RAVEN, KY	03209590		1980-82		N	N	N
RIGHT FK BEAVER CR AT WAYLAND, KY	03209600	73.90	1978-80		N		N
JONES FK AT BETTY, KY	03209603		1980-82		N	N	N
SALTLICK CR NR BOSCO, KY	03209607		1980-82		N	N	N
LEFT FK BEAVER CR AT DRIFT, KY	03209650	58.50	1978-80		N		N
LEFT FK BEAVER CR AT PRINTER, KY	03209680		1980-82		N	N	N
BEAVER CR AT MARTIN, KY	03209700	228.00	1961-71		N		N
LEVISA FK AT PRESTONSBURG, KY	03209800	1702.00	1976-79		N	N	N
MIDDLE CR NR PRESTONSBURG, KY	03209850		1980-82		N	N	N
LEFT FK MIDDLE CR NR GOODLOE, KY	03209870		1980-82		N	N	N
MIDDLE CR NR PRESTONBURG, KY	03209890	62.10	1978-80		N	N	N
ABBOTT CR NR PRESTONSBURG, KY	03209910		1980-82		N	N	N
RACCOON CR NR ZEBULON, KY	03210040	14.80	1973-80		N	N	N
RACKOON CR NR ZEBULLON, KY	03210060		1980-82		N	N	N
CANEY FK NR GULNARE, KY	03210160	3.74	1973-80		N	N	N
BRUSHY FK AT HEENON, KY	03210310	20.40	1973-76		N	N	N
BUFFALO CR NR ENDICOTT, KY	03210420	6.21	1973-80		N	N	N
BUFFALO CR NR GERMAN, KY	03210450		1980-82		N	N	N
DANIELS CR NR ODDS, KY	03211690		1980-82		N	N	N
DANIELS CR AT MOUTH NR VAN LEAR, KY	03211700	12.00	1978-80		N		N
LEVISA FK ABOVE PAINT CR AT PAINTSVILLE, KY	03211800	1975.00	1974-79		N		N
PAINT CR NR ELNA, KY	03211970	79.30	1967		N		N
PAINT CR ABOVE BARNETTS CR NR STAFFORDSVILLE, KY	03211997		1971-72		N		N
GREASY CR NR OFFUTT, KY	03212510		1980-82		N	N	N
TOMS CR NR TUTOR KEY, KY	03212520		1980-82		N	N	N
GEORGES CR NR ULYSSES, KY	03212530		1980-82		N	N	N
RIGHT FK CR NR CHARLEY, KY	03212535		1980-82		N	N	N
RIGHT FK HURRICANE CR NR STOPOVER, KY	03213630	.82	1980-84			N	
LEFT FK PETER CR AT JAMBOREE, KY	03213670		1980-82		N	N	N
RIGHT FK PETER CR NR PHELPS, KY	03213680		1980-82		N	N	N
BLACKBERRY CR AT RANSOM, KY	03213690		1980-82		N	N	N
POND CR NR TOLER, KY	03213698		1980-82		N	N	N
BIG CR NR HATFIELD, KY	03213750		1980-82		N	N	N
WOLF CR NR MCCLURE, KY	03214300		1980-82		N	N	N
MIDDLE FK ROCKCASTLE CR AT INEZ, KY	03214600	33.34	1980-82		N	N	N
COLDWATER FK NR INEZ, KY	03214650	17.85	1980-82		N	N	N
ROCKCASTLE CR AT INEZ, KY	03214700	63.10	1970-72	N	N	N	N
ROCKHOUSE FK NR MILO, KY	03214720		1980-82		N	N	N
ROCKCASTLE CR AT CLIFFORD, KY	03214730	121.00	1965-75		N		N

DISCONTINUED SURFACE-WATER-QUALITY STATIONS

STATION NAME AND NUMBER	STATION NUMBER	DRAINAGE AREA (MI^2)	PERIOD OF RECORD	BIO. ACTIVE STATUS	PHY. ACTIVE STATUS	SED. ACTIVE STATUS	CHEMICAL ACTIVE STATUS
BIG SANDY R AT LOUISA, KY	03215000	3897	1950, 1966-72, 1974-92	N	N	N	N
LEFT FK BLAINE CR NR MARTHA, KY	03215250		1980-82		N	N	N
LOWER LAUREL CR NR FLATGAP, KY	03215320		1967		N		N
CAINES CR NR BLAINE, KY	03215367		1980-82		N	N	N
BLAINE CR AT HWY 32 BR AT BLAINE, KY	03215370	73.80	1978-80		N		N
HOOD CR AT BLAINE, KY	03215380		1980-82		N	N	N
BRUSHY CR NR CORDELL, KY	03215420		1980-82		N	N	N
BLAINE CR BELOW BRUSHY CR NR BLAINE, KY	03215430	151.00	1971-80		N		N
RICH CR NR ADAMS, KY	03215440		1971-72		N		N
LITTLE BLAINE CR NR EVERGREEN, KY	03215470		1980-82		N	N	N
LITTLE BLAINE CR AT EVERGREEN, KY	03215480	23.00	1971-80		N		N
BLAINE CR NR YATESVILLE, KY	03215490	206.00	1971-72		N		N
BLAINE CR AT YATESVILLE, KY	03215500	217.00	1965-79		Y		N
CAT FK CR AT FALLSBURG, KY	03215550		1980-82		N	N	N
BIG SANDY R AT CATLETTSBURG, KY	03215700	4281.00	1955-75		N		N
LITTLE SANDY R AT SANDY HOOK, KY	03216180		1980-82		N	N	N
BIG CANEY CR NR STARK, KY	03216230		1980-82		N	N	N
LITTLE SANDY R BELOW GRAYSON DAM NR LEON, KY	03216350	196.00	1966-79		N		N
BIG SINKING CR NR ADEN, KY	03216370		1980-82		N	N	N
LITTLE SANDY R AT LEON, KY	03216400	255.00	1978-80		N		
LITTLE SANDY R AT DOBBINS, KY	03216430		1980-82		N	N	N
DRY FK AT WILLARD, KY	03216450		1980-82		N	N	N
LITTLE FK LITTLE SANDY R NR GRAYSON, KY	03216480	132.00	1973-75		N		N
BERET CR NR GRAYSON, KY	03216520		1980-82		N	N	N
E FK LITTLE SANDY R NR FALLSBURG, KY	03216540	12.20	1978-83		N		
E FK LITTLE SANDY R NR CANNONSBURG, KY	03216558		1980-82		N	N	N
WILLIAMS CR AT PRINCESS, KY	03216567		1980-82		N	N	N
E FK LITTLE SANDY R NR ARGILLITE, KY	03216570	138.00	1970-72		N		N
OHIO R AT GREENUP DAM, KY	03216600	62000.00	1974-86	N	N	N	N
SOLDIER FK AT LAWTON, KY	03216770		1971-72		N		N
TYGARTS CR AT IRON HILL, KY	03216930		1971-72		N		N
BUFFALO CR NR GESLING, KY	03216960		1980-82		N	N	N
KINNICONICK CR NR RUGLESS, KY	03237230	109.00	1970-72		N		N
OHIO R AT MELDAHL DAM NR CHILO, OH	03238680	70800.00	1967-70		N		N
TWELVEMILE CR AT HWY 1997 NR ALEXANDRIA, KY	03238745	39.0	2001		N		N
OHIO R AT RAW WATER INTAKE, CINCINNATI, OH	03238800		1970				N
LICKING R NR FREDVILLE, KY	03248165		1980-82		N	N	N
BURNING FK AT SAYLERSVILLE, KY	03248380		1980-82		N	N	N
LEFT FK NR HENDRICKS, KY	03248520		1980-82		N	N	N
RIGHT FK AT FRITZ, KY	03248530		1980-82		N	N	N
JOHNSON CR AT KERNIE, KY	03248560		1980-82		N	N	N
LICK CR NR BLOOMINGTON, KY	03248580		1980-82		N	N	N
WHITE OAK CR AT WHITE OAK, KY	03248610		1980-82		N	N	N
WILLIAMS CR NR ELAMTON, KY	03248670		1980-82		N	N	N
ELK FK NR LENOX, KY	03248685	59.40	1980-82		N	N	N
CANEY CR NR CANEY, KY	03248710		1980-82		N	N	N
GRASSY CR AT GRASSY CREEK, KY	03248750		1980-82		N	N	N
LICKING R AT FARMERS, KY	03249500	827.00	1948-79		N	N	N
TRIPLETT CR AT MOREHEAD, KY	03250000	47.50	1978-80		N		
SLATE CR NR OWINGSVILLE, KY	03250240	185.00	1970-71		N		N
ROCK LICK CR NR SHARKEY, KY	03250320	4.01	1978-83		N		
LICKING R AT SHERBURNE, KY	03250400		1981-83	N	N	N	N
N FK LICKING R NR MILFORD, KY	03251400	286.00	1970-72		N		N
LICKING R AT MCKINNEYSBURG, KY	03251500	2326.00	1951-79		N	N	N
STONER CR NR MIDDLETOWN, KY	03251665	51.60	1974		N		N
HINKSTON CR NR SHARPSBURG, KY	03252190	78.90	1973		N		N
HINKSTON CR NR CARLISLE, KY	03252300	154.00	1970-74		N		N
S FK LICKING R AT CYNTHIANA, KY	03252500	621.00	1949-83	N	N	N	N
LICKING R AT CATAWBA, KY	03253500	3300.00	1962-79		N		N
LICKING R AT BUTLER, KY	03254000	3375.00	1950, 1975-94	N	N	N	N

DISCONTINUED SURFACE-WATER-QUALITY STATIONS

STATION NAME AND NUMBER	STATION NUMBER	DRAINAGE AREA (MI^2)	PERIOD OF RECORD	BIO. ACTIVE STATUS	PHY. ACTIVE STATUS	SED. ACTIVE STATUS	CHEMICAL ACTIVE STATUS
OHIO R AT MARKLAND DAM, KY	03277200	83170.00	1960-70	N	N	N	N
			1974-86	N	N	N	N
OHIO R AT LOCK AND DAM 39 NR FLORENCE, KY	03277205	82910.00	1953-75		N		
YONTS CR NR NEON, KY	03277260		1980-82		N	N	N
N FK KENTUCKY R AT WHITESBURG, KY	03277300	66.40	1970-75		N		N
KINGS CR NR ROXANA, KY	03277320		1980-82		N	N	N
N FK KENTUCKY R AT BLACKEY, KY	03277340	131.00	1971-75		N		N
ROCKHOUSE CR NR FLETCHER, KY	03277361		1980-82		N	N	N
ROCKHOUSE CR AT LETCHER, KY	03277362		1971		N		N
LINE FK AT DEFEATED CREEK, KY	03277370	40.80	1980-82		N	N	N
LINE FK AT ULVAH, KY	03277380		1971		N		N
N FK KENTUCKY R AT CORNETTSVILLE, KY	03277411	322.00	1970-72		N		N
RIGHT FK MACYS CR NR FARLAR, KY	03277415		1980-82		N	N	N
YELLOW CR AT SASSAFRAS, KY	03277455		1965-75		N		N
CARR FK NR HAZARD, KY	03277480		1971		N		N
LOTTS CR NR DARFORK, KY	03277515		1980-82		N	N	N
BIG CR NR AVAWAN, KY	03277580		1980-82		N	N	N
GRAPEVINE CR NR LAMONT, KY	03277700		1980-82		N	N	N
TROUBLESOME CR NR ARY, KY	03277800		1980-82		N	N	N
BALLS FK NR TALCUM, KY	03277900		1980-82		N	N	N
BUCKHORN CR NR NOBLE, KY	03278100		1980-82		N	N	N
LOST CR NR LOST CREEK, KY	03279150		1980-82		N	N	N
LAUREL FK NR ELMROCK, KY	03279250		1980-82		N	N	N
MIDDLE FK QUICKSAND CR NR DECOY, KY	03279300		1980-82		N	N	N
HAWLS FK NR TIPTOP, KY	03279370		1980-82		N	N	N
QUICKSAND CR AT LUNAH, KY	03279400	101.00	1970-72		N		N
CANEY CR NR CAMP LEWIS, KY	03279430		1980-82		N	N	N
HUNTING CR NR ROUSSEAU, KY	03279460		1980-82		N	N	N
S FK QUICKSAND CR AT PORTSMOUTH, KY	03279650		1980-82		N	N	N
QUICKSAND CR AT QUICKSAND, KY	03279700	203.00	1965-75		N		N
N FK KENTUCKY R AT JACKSON, KY	03280000	1101.00	1948-75	N	N	N	N
			1979-81				
			1987-91				
CANE CR NR JACKSON, KY	03280100		1980-82		N	N	N
ROCKHOUSE CR NR HYDEN, KY	03280360		1980-82		N	N	N
FROZEN CR NR TAULBEE, KY	03280400		1980-82		N	N	N
BOONE FK NR VANCLEAVE, KY	03280450		1980-82		N	N	N
MIDDLE FK KENTUCKY R NR WARBRANCH, KY	03280520		1980-82		N	N	N
MIDDLE FK KENTUCKY R AT ASHER, KY	03280530		1971		N		N
BEECH FK NR HELTON, KY	03280540		1980-82		N	N	N
BEECH FK AT ASHER, KY	03280550	33.90	1971		N		N
GREASY CR NR NAPIER, KY	03280560		1980-82		N	N	N
LAUREL FK NR LEWIS CREEK, KY	03280575		1980-82		N	N	N
GREASY CR AT HOSKINSTON, KY	03280590	95.00	1971		N		N
MIDDLE FK KENTUCKY R NR HAYDEN, KY	03280600	202.00	1975-82	N	N	N	N
			1988		N		N
CUTSHIN CR NR CINDA, KY	03280670		1980-82		N	N	N
HELL FOR CERTAIN CR NR KALIOPI, KY	03280750		1980-82		N	N	N
TURKEY CR NR TURKEY, KY	03280950		1980-82		N	N	N
MIDDLE FK KENTUCKY R AT TALLEGA, KY	03281000	537.00	1950-75	N	N	N	N
			1978-83				
			1987-90				
RED BIRD R AT BIG CREEK, KY	03281030	125.00	1970-72		N		N
BIG CR NR BIG CREEK, KY	03281035		1980-82		N	N	N
HECTOR BRANCH NR ERILINE, KY	03281045		1980-82		N	N	N
GOOSE CR NR GOOSEROCK, KY	03281065	49.60	1979-82		N	N	N
COLLINS FK NR BLUEHOLE, KY	03281075		1980-82		N	N	N
HORSE CR NR HIMA, KY	03281097		1980-82		N	N	N
LITTLE GOOSE CR NR MANCHESTER, KY	03281133		1980-82		N	N	N
BULLSKIN CR NR BRUTUS, KY	03281175		1980-82		N	N	N
S FK KENTUCKY R AT ONEIDA, KY	03281200	486.00	1970-72		N		N
SEXTON CR NR CHESTNUTBURG, KY	03281340		1980-82		N	N	N
LOWER ALLEN CR NR CONKLING, KY	03281360		1980-82		N	N	N

DISCONTINUED SURFACE-WATER-QUALITY STATIONS

STATION NAME AND NUMBER	STATION NUMBER	DRAINAGE AREA (MI^2)	PERIOD OF RECORD	BIO. ACTIVE STATUS	PHY. ACTIVE STATUS	SED. ACTIVE STATUS	CHEMICAL ACTIVE STATUS
S FK KENTUCKY R AT BOONEVILLE, KY	03281500	722.00	1950-75 1979-83 1987-90	N	N	N	N
BIG SINKING CR NR CRYSTAL, KY	03282075	23.40	1987-89		N	N	N
FURNACE FK NR CRYSTAL, KY	03282100	9.94	1987-89		N	N	N
STATION CAMP CR AT WAGERSVILLE, KY	03282170	115.00	1970-72		N		N
KENTUCKY R NR TRAPP, KY	03282300		1982-83		N	N	N
RED R AT DAYSBORO, KY	03282400		1980-82		N	N	N
RED R NR PINE RIDGE, KY	03283100	142.00	1968-76		N		N
CAT CR NR STANTON, KY	03283370	8.30	1987-89		N	N	N
KENTUCKY R AT LOCK 10 NR WINCHESTER, KY	03284000	3955.00	1987-91	N	N	N	N
BAUGHMAN FK AT GENTRY ROAD NR ATHENS, KY	03284090	7.18	1967-68		N		N
BOONE CR AT GRIMES MILL RD NR LOCUST GROVE, KY	03284100	41.80	1967-68		N		N
KENTUCKY R NR LEXINGTON, KY	03284105		1970				N
SILVER CR NR KINGSTON, KY	03284300	28.60	1978-83		N		
SILVER CR NR RICHMOND, KY	03284350		1973-75		N		N
PAINT LICK CR NR MCCREARY, KY	03284450	97.60	1970-72		N		N
KENTUCKY R AT LOCK 8 NR CAMP NELSON, KY	03284500	4414.00	1948-75		N		N
DIX R NR STANFORD, KY	03284800	160.00	1973-75		N		N
HANGING F CR NR STANFORD, KY	03284935	46.90	1974		N		N
DIX R NR DANVILLE, KY	03285000	318.00	1988		N		N
SPEARS CR AT STREAMLAMD DR NR DANVILLE, KY	03285290		1998-2001		N		N
MOCKS BR AT HWY 1896 NR DANVILLE, KY	03285335		1998-99 2001		N		N
DIX R AT DIX DAM NR BURGIN, KY	03286200	439.00	1961-79		N		N
KENTUCKY R AT LOCK 4 AT FRANKFORT, KY	03287500	5411.00	1949-73 1987-90	N	N	N	N
BENSON CR AT FRANKFORT, KY	03287530	71.20	1973		N		N
BENSON CR NR FRANKFORT, KY	03287550	107.00	1970-72		N		N
N ELKHORN CR AT BRYAN STATION RD AT MONTROSE, KY	03287600	21.50	1967-68		N		N
N ELKHORN CR UNNAMED TR AT MUIR STA RD NR MUI, KY	03287620	15.80	1967-68		N		N
N ELKHORN CR AT HUFFMAN MILL RD NR MATTOXTOWN, KY	03287700	62.70	1967-68		N		N
GOOSE CR AT MT HOREB RD NR NEWTOWN, KY	03287800	14.20	1967-68		N		N
GOOSE CR AT NEWTOWN RD, NR NEW ZION, KY	03287810		1967		N		N
N ELKHORN CR NR GEORGETOWN, KY	03288000	119.00	1988-89		N		N
CANE RUN AT BEREA ROAD NR DONERAIL, KY	03288200	19.90	1967-68		N		N
CANE RUN NR GEORGETOWN, KY	03288260	45.40	1973		N		N
CAVE CR NR FORT SPRING, KY	03288500	2.53	1968		N		N
STEELES RUN AT OLD FRANKFORT RD AT FAYWOOD, KY	03289100	6.67	1967-68		N		N
TOWN BRANCH AT YARNALLTON RD AT YARNALLTON, KY	03289200		1967-68		N		N
ELKHORN CR NR FRANKFORT, KY	03289500	473.00	1987-91	N	N	N	N
SIX MILE NR DEFOE, KY	03290420	42.60	1973		N		N
SIX MILE CR NR LOCKPORT, KY	03290490	76.50	1973-74		N		N
KENTUCKY R AT LOCK #2 AT LOCKPORT, KY	03290500	6180.00	1974-95	N	N	N	N
DRENNON CR AT DRENNON SP, KY	03290675	82.50	1973-74		N		N
EAGLE CR NR HOLBROOK, KY	03291270	258.00	1973-75		N		N
TEN MILE CR NR FOLSOM, KY	03291490	68.40	1973		N		N
EAGLE CR AT GLENCOE, KY	03291500	437.00	1948-79		N	N	N
LITTLE KY R NR BEDFORD, KY	03291700	73.20	1970-72		N		N
HARRODS CR NR SKYLIGHT, KY	03292467	60.30	1974-75		N		N
HARRODS CR NR PROSPECT, KY	03292473	92.1	1988-98		N		N
GOOSE CR AT OLD WESTPORT RD AT ST. MATTHEWS, KY	03292474		1988-98		N		N
GOOSE CR AT U.S. HWY 42 AT GLENVIEW ACRES, KY	03292475	10.1	1988-98		N		N
LITTLE GOOSE CR NR HARRODS CR, KY	03292480	5.8	1988-98		N		N
OHIO R AT WATER SUPPLY INTAKE AT LOUISVILLE, KY	03292494		1970				N
S FK BEARGRASS CR AT LOUISVILLE, KY	03292500	17.2	1988-92, 95-98		N		N
S. FK. BEARGRASS CR NR EASTERN PKY AT LOUISVILLE, KY	03292530	21.6	1995-98		N		N
S .FK BEARGRASS CR NR WINTER AVE., KY.	03292550	22.6	1988-98		N		N
MIDDLE FK BEARGRASS CR AT LOUISVILLE, KY	03293000	18.9	1988-92, 96-98		N		N
M. FK. BEARGRASS CR NR SCENIC LOOP AT LOUISVILLE, KY	03293200	22.7	1988-98		N		N
M. FK. BEARGRASS CR NR LEXINGTON RD AT LOUISVILLE, KY	03293500	24.4	1996-98		N		N

DISCONTINUED SURFACE-WATER-QUALITY STATIONS

STATION NAME AND NUMBER	STATION NUMBER	DRAINAGE AREA (MI^2)	PERIOD OF RECORD	BIO. ACTIVE STATUS	PHY. ACTIVE STATUS	SED. ACTIVE STATUS	CHEMICAL ACTIVE STATUS
MUDDY FK. MOCKINGBIRD VALLEY RD AT LOUISVILLE, KY	03293550	6.2	1988-98		N		N
OHIO R AT LOUISVILLE, KY	03294500	91170.00	1968-83		N	N	N
MILL CR CUTOFF NR LOUISVILLE, KY	03294550	24.4	1988-92,		N		N
			98				
MILL CR AT ORELL RD NR LOUIVILLE, KY	03294570	13.5	1988-98		N		N
OHIO R AT KOSMOSDALE, KY	03294600	91200.00	1970				N
SALT R NR HARRODSBURG, KY	03295000	41.40	1970-72		N		N
SALT R NR VAN BUREN, KY	03295500	196.00	1970-79		N		N
SALT R AT TAYLORSVILLE, KY	03295610	359.00	1970-72		N		N
BRASHEARS CR NR FINCHVILLE, KY	03295800	147.00	1970-72		N		N
BRASHEARS CR AT TAYLORSVILLE, KY	03295900	262.00	1973-75		N		N
PLUM CR SUBWATER SHED NO 4 NR SIMPSONVILLE, KY	03296000	1.55	1953-64			N	
PLUM CR AT WATERFORD, KY	03297500	31.80	1953-61		N	N	N
COX CR NR HIGHGROVE, KY	03297700	95.80	1970-72		N		N
FLOYDS FK NR CRESTWOOD, KY	03297845	46.70	1979-83	N	N	N	N
LONG RUN NR FISHERVILLE, KY	03297980	22.5	1988-98		N		N
FLOYDS FK AT FISHERVILLE, KY	03298000	138.	1988-98		N		N
POPE LICK AT POPE LICK RD AT MIDDLETOWN, KY	03298100	2.9	1988-98		N		N
CHENOWETH RUN NR RUCKRIEGEL PKY, AT LOUISVILLE, KY	03298135	5.47	1996-98		N		N
CHENOWETH RUN NR GELHAUS LANE, AT FERN CREEK, KY	03298150	11.6	1988-98		N		N
FLOYDS FK NR MOUNT WASHINGTON, KY	03298200	21.3	1988-98		N		N
CEDAR CR AT FAIRMOUNT RD NR MOUNT WASHINGTON, KY	03298242	7.8	1992-98		N		N
CEDAR CREEK AT THIXTON RD NR LOUISVILLE, KY	03298250	11.1	1988-98		N		N
PENNSYLVANIA R AT MT WASHINGTON RD AT LOUISVILLE, KY	03298300	6.4	1988-98		N		N
FLOYDS FK NR GAP IN KNOB, KY	03298390	259.00	1973-75		N		N
SALT R AT SHEPHERDSVILLE, KY	03298500	1197	1948-75	N	N	N	N
			1979-92				
N ROLLING FK AT BRADSFORDVILLE, KY	03298760	95.70	1973-75		N		N
ROLLING FK NR LEBANON, KY	03299000	239.00	1970-80		N		N
BEECH FK NR SPRINGFIELD, KY	03300000	85.90	1970-72		N		N
CHAPLIN R AT SHARPSVILLE, KY	03300300	140.00	1970-72		N		N
BEECH FK AT MAUD, KY	03300400	436.00	1979-83	N	N	N	N
CARTWRIGHT CR AT FREDRICKTOWN, KY	03300498	82.30	1973-75		N		N
BEECH FK AT BARDSTOWN, KY	03301000	669.00	1962-72		N		N
ROLLING FK NR BOSTON, KY	03301500	1299.00	1948-79		N		N
WILSON CR HARRISON FK RD AT DEATSVILLE, KY	03301575	5.7	1990-98		N		N
WILSON CR NR DEATSVILLE, KY	03301580	27.7	1991-92		N		
			1992-96				N
ROLLING FORK NR LEBANON JUNCTION, KY	03301630	1375.00	1975-94	N	N	N	N
SOUTHERN DITCH AT MINORS LN NR OKOLONA, KY	03301880	12.8	1988-98		N		N
FERN CR NR OLD BARDSTOWN RD AT LOUISVILLE, KY	03301900	3.5	1988-98		N		N
NORTHERN DITCH AT OKOLONA, KY	03301940	11.1	1988-98		N		N
SPRING DITCH AT PRIVATE DRIVE NR OKOLONA, KY	03301950	1.6	1988-98		N		N
POND CR NR LOUISVILLE, KY	03302000	64.0	1988-98		N		
POND CR AT PENDLETON RD NR LOUISVILLE, KY	03302030	80.3	1988-98		N		N
SALT R AT MOUTH NR LOUISVILLE, KY	03302060		1970				N
OTTER CR NR VINE GROVE, KY	03302080		1970-71		N		N
OTTER CR AT GRAHAMTON, KY	03302100	88.40	1970-72		N		N
OTTER CR AT OTTER CR PARK NR ROCKHAVEN, KY	03302110	99.2	1993-98		N		N
DOE RUN NR BRANDENBURG STATION, KY	03302150	52.70	1970-72		N		N
SINKING CR NR LODIBURG, KY	03303205	125.00	1971		N		N
SINKING CR AT SAMPLE, KY	03303210	222.00	1970		N		N
BEECH FK NR CLOVERPORT, KY	03303220		1980-82		N	N	N
TAR FK NR CLOVERPORT, KY	03303230		1980-82		N	N	N
OHIO R AT CANNELTON DAM, KY	03303280	97000.00	1975-86	N	N	N	N
BLACKFORD CR NR MACEO, KY	03303447		1980-82		N	N	N
BLACKFORD CR NR MACEO, KY	03303450	111.00	1973-75		N		N
PUP CR NR MACEO, KY	03303490		1980-82		N	N	N
OHIO R AT OWENSBORO, KY	03303500	97200.00	1970				N
GREEN R NR MCKINNEY, KY	03305000	22.40	1970-72		N		N
GREEN R NR DUNNVILLE, KY	03305660	221.00	1973-75		N		N
GREEN R AT NEATSVILLE, KY	03305800	399.00	1959-72		N	N	N
CASEY CR AT CASEY CR, KY	03305865	74.70	1973-75		N		N

DISCONTINUED SURFACE-WATER-QUALITY STATIONS

STATION NAME AND NUMBER	STATION NUMBER	DRAINAGE AREA (MI^2)	PERIOD OF RECORD	BIO. ACTIVE STATUS	PHY. ACTIVE STATUS	SED. ACTIVE STATUS	CHEMICAL ACTIVE STATUS
GREEN R AT GREENSBURG, KY	03306500	736.00	1948-59		N		
BIG PITMAN CR NR GREENSBURG, KY	03307300		1966		N		N
LITTLE BARREN R NR MONROE, KY	03307800	244.00	1960-72		N		N
GREEN RIVER AT MUNFORDVILLE, KY	03308500	1673.00	1950-94	N	N	N	N
ECHO R OUTLET AT MAMMOTH CAVE, KY	03308950		1974		N		N
GREEN R AT MAMMOTH CAVE, KY	03309000	1983.00	1958-74		N		N
WET PRONG BUFFALO CR NR MAMMOTH CAVE, KY	03309100	2.26	1962-74		N	N	N
MCDOUGAL CR AT HODGENVILLE, KY	03309600		1970		N		N
N FK NOLIN R AT HODGENVILLE, KY	03310000	36.40	1970-72		N		N
N FK NOLIN R NR EAGLE MILLS, KY	03310030		1970-79		N		N
NOLIN R AT EAGLE MILLS, KY	03310100		1970-72		N		N
MIDDLE CR AT NEELY BRANCH, KY	03310117		1971		N		N
MIDDLE CR NR TONIEVILLE, KY	03310120		1970-72		N		N
MIDDLE CR AT EAGLE MILLS, KY	03310130		1971-72		N		N
NOLIN R NR GLENDALE, KY	03310160	185.00	1971-75		N		N
VALLEY CR AT ELIZABETHTOWN, KY	03310210		1970-73		N		N
VALLEY CR AT GAITHERS, KY	03310225		1971-73		N		N
W RHUDES CR NR CECILIA, KY	03310250		1970-72		N		N
VALLEY CR NR GLENDALE, KY	03310270	90.10	1960-75		N		N
NOLIN R NR STAR MILLS, KY	03310273		1971-72		N		N
NOLIN R AT WAX, KY	03310500	600.00	1949-61		N	N	N
ROCK CR NR CLARKSON, KY	03310550		1980-82		N	N	N
DOG CR NR MAMMOTH CAVE, KY	03310600	8.12	1961-74		N		N
BYLEW CR NR MAMMOTH CAVE, KY	03311100	5.16	1965-74		N		N
GREEN R AT LOCK 6 AT BROWNSVILLE, KY	03311500	2762.00	1978-82		N		
BEAVERDAM CR AT RHODA, KY	03311600	10.90	1965-79		N		N
BEAR CR NR BEE SPRING, KY	03312040		1980-82		N	N	N
SUNFISH CR NR BEE SPRING, KY	03312070		1980-82		N	N	N
BEAR CR NR ROUNDHILL, KY	03312100	137.00	1960-72		N		N
BIG REEDY CR NR ROUNDHILL, KY	03312120		1980-82		N	N	N
LITTLE REEDY CR NR ROUNDHILL, KY	03312130		1980-82		N	N	N
BARREN R AT ACKERSVILLE, KY	03312400	298.00	1970-72		N		N
SKAGGS CR NR GLASGOW, KY	03312680	141.00	1970-72		N		N
BAYS FK AT CLAYPOOL, KY	03313570	80.90	1960-68		N		N
UNNAMED NON-CONTRIB STREAM AT GREENHILL, KY	03313590		1968		N		N
TRAMMEL CR NR SCOTTSVILLE, KY	03313900	93.40	1970-72		N		N
DRAKES CR NR ALVATON, KY	03314000	478.00	1968-72		N	N	N
UNNAMED NON-CONTRIB STREAM AT THREE SPRINGS, KY	03314595		1968		N		N
JENNINGS CR NR LOST RIVER, KY	03314610		1968		N		N
JENNINGS CR AT US 231 AT BOWLING GREEN, KY	03314650		1968		N		N
JENNINGS CR BELOW LOST R OUTLET AT BOWLING GREEN, KY	03314680		1968		N		N
JENNINGS CR AT BARREN R RD NR BOWLING GREEN, KY	03314700		1968		N		N
GASPER R AT HADLEY, KY	03315300	190.00	1960-72		N		N
WELCH CR NR ABERDEEN, KY	03315510		1980-82		N	N	N
INDIAN CAMP CR NR MORGANTOWN, KY	03315590		1980-82		N	N	N
E PRONG INDIAN CAMP CR NR MORGANTOWN, KY	03315600		1980-82		N	N	N
MUDDY CR AT DUNBAR, KY	03315810	94.30	1960-82		N	N	N
PANTHER CR NR ROCHESTER, KY	03315830		1980-82		N	N	N
MUD R NR LEWISBURG, KY	03316000	90.50	1960-72		N		N
WOLFLICK CR NR LEWISBURG, KY	03316200	116.00	1970-72		N		N
ROCKY CR NR PENROD, KY	03316300		1980-82		N	N	N
GREEN R AT PARADISE, KY	03316500	6183.00	1978-82		N		
POND CR NR MARTWICK, KY	03316640	125.00	1972-82		N	N	N
LEWIS CR AT ROCKPORT, KY	03316660		1980-82		N	N	N
MEETING CR NR BIG CLIFTY, KY	03316885		1980-82		N	N	N
N FK ROUGH R NR WESTVIEW, KY	03317500	42.00	1970-72		N		N
ROUGH R AT ROUGH R DAM NR FALLS OF ROUGH, KY	03318010	454.00	1962-83		N		
ROCK LICK CR NR FALLS OF ROUGH, KY	03318300		1980-82		N	N	N
SHORT CR NR FALLS OF ROUGH, KY	03318600		1980-82		N	N	N
S FK CANEY CR AT CANEYVILLE, KY	03318700		1980-82		N	N	N
ADAMS FK NR FORDSVILLE, KY	03319510		1980-82		N	N	N
W FK ADAMS FK NR FORDSVILLE, KY	03319530		1980-82		N	N	N
HALLS CR NR DUNDEE, KY	03319570		1980-82		N	N	N

STATION NAME AND NUMBER	STATION NUMBER	DRAINAGE AREA (MI^2)	PERIOD OF RECORD	BIO. AC-TIVE STA-TUS	PHY. AC-TIVE STA-TUS	SED. AC-TIVE STA-TUS	CHEM-ICAL AC-TIVE STA-TUS
ROUGH R AT HARTFORD, KY	03319600		1966-72		N		N
MUDDY CR NR BEAVER DAM, KY	03319615		1980-82		N	N	N
THREELICK CR NR BEAVER DAM, KY	03319620		1980-82		N	N	N
BARNETT CR NR HARTFORD, KY	03319700		1980-82		N	N	N
N FK BARNETT CR NR HARTFORD, KY	03319750		1980-82		N	N	N
GREEN R AT LIVERMORE, KY	03319885	7512.00	1948-75		N		
BUCK CR NR LIVERMORE, KY	03319925		1980-82		N	N	N
LONG FALLS CR NR RUMSEY, KY	03320075		1980-82		N	N	N
LONG CR NR KIRKMANSVILLE, KY	03320400		1980-82		N	N	N
W FK POND R NR APEX, KY	03320700		1980-82		N	N	N
MCFARLAN CR NR WHITE PLAINS, KY	03320740		1980-82		N	N	N
DRAKES CR NR WHITE PLAINS, KY	03321035	52.50	1979-82		N	N	N
FLAT CR NR MADISONVILLE, KY	03321050		1980-82		N	N	N
POND R NR SACRAMENTO, KY	03321100	523.00	1959-73		N		N
POND R NR VANDETTA, KY	03321120		1980-82		N	N	N
OTTER CR NR HANSON, KY	03321150		1980-82		N	N	N
CYPRESS CR NR MIDLAND, KY	03321160		1980-82		N	N	N
CYPRESS CR NR CENTRAL CITY, KY	03321170		1980-82		N	N	N
LITTLE CYPRESS CR AT CENTRAL CITY, KY	03321180		1980-82		N	N	N
CYPRESS CR NR RUMSEY, KY	03321215	149.00	1973-75		N		N
GREEN R NR BEECH GROVE, KY	03321230	8545.00	1975-86	N	N	N	N
DEER CR NR SEBREE, KY	03321290	122.00	1974-75		N		N
N FK PANTHER CR NR MASONVILLE, KY	03321400		1980-82		N	N	N
N FK PANTHER CR NR MASONVILLE, KY	03321410	88.30	1970-71		N		N
PANTHER CR NR CURDSVILLE, KY	03321450	344.00	1973-80		N		N
LICK CR NR BLUFF CITY, KY	03321455		1980-82		N	N	N
KNOBLICK CR NR CURDSVILLE, KY	03321455		1980-82		N	N	N
GREEN R AT LOCK AND DAM 1 AT SPOTTSVILLE, KY	03321500	9181.00	1955-62		N		N
CANOE CR NR HENDERSON, KY	03322180	56.00	1979-82		N	N	N
CASEY CR NR WAVERLY, KY	03322370		1980-82		N	N	N
HIGHLAND CR NR UNIONTOWN, KY	03322400	166.00	1970-72		N		N
OHIO R NR UNIONTOWN DAM, KY	03322420		1975		N		N
EAGLE CR NR MORGANFIELD, KY	03382570		1980-82		N	N	N
TRADEWATER R AT POOLS MILL BR NR DAWSON SPRINGS, KY	03382600	60.40	1966-82		N	N	N
CASTLEBERRY CR NR DAWSON SPRINGS, KY	03382650		1980-82		N	N	N
TRADEWATER R AT COLLINS BRDG, NR DAWSON SPRINGS, KY	03382680		1965-67		N		N
TRADEWATER R AT MURPHY FK NR DAWSON SPRINGS, KY	03382685	94.10	1966-75		N		N
BUFFALO CR AT ST HWY 1338 NR DAWSON SPRINGS, KY	03382700		1965-69		N		
BUFFALO CR NR DAWSON SPRINGS, KY	03382720	12.70	1965-67		N		N
COPPERAS CR AT HWY BRIDGE NR ILSLEY, KY	03382835		1966-67		N		N
CANY CR AT MOUTH NR DAWSON SPRINGS, KY	03382855		1965-67		N		N
TRADEWATER R AT ST HWY 109 AT DAWSON SPRINGS, KY	03382870	143.00	1966-67		N		N
PINY CR BL LK BESHEAR D NR DAWSON SPRINGS, KY	03382890		1966-67		N		N
TRADEWATER R AT OLNEY, KY	03383000	255.00	1949-83	N	N	N	N
TRADEWATER R NR DALTON, KY	03383500	283.00	1965-66		N		N
DONALDSON CR NR FRYER, KY	03383650		1980-82		N	N	N
DONALDSON CR AT BR ON HWY 293 NR DALTON, KY	03383700		1966		N		N
TRADEWATER R AT ST HWY 293 NR DALTON, KY	03383710		1965-66		N		N
CLEAR CR AT HWY 70 BR NR RICHLAND, KY	03383755	17.00	1966-82		N	N	N
RICHLAND CR ABOVE TRIBUTARY NO 1 NR ILSLEY, KY	03383770		1966-67		N		N
UNNAMED TRIB NO 1 TO RICHLAND CR NR ILSLEY, KY	03383775		1966-67		N		N
UNNAMED TRIB NO 2 TO RICHLAND CR NR ILSLEY, KY	03383780		1966-67		N		N
RICHLAND CR AT RICHLAND, KY	03383800		1966		N		
UNNAMED TRIB TO CLEAR CR NR BEULAH, KY	03383901		1966		N		N
LICK CR NR RABBIT RIDGE, KY	03384035		1980-82		N	N	N
CLEAR CR AT BRIDGE ON ST HWY 293 NR PROVIDENCE, KY	03384050	197.00	1966-67		N		N
TRADEWATER R AT DAM NR PROVIDENCE, KY	03384060		1965-66		N		N
TRADEWATER R AT BRIDGE BELOW DAM NR PROVIDENCE, KY	03384072		1966-67		N		N
TRADEWATER R NR PROVIDENCE, KY	03384100	605.00	1965-72		N		N
TRADEWATER R NR BLACKFORD, KY	03384103		1980		N	N	N
PINEY CR NR SHADY GROVE, KY	03384106		1980-82		N	N	N
UNNAMED TRIB TO SLOVER CR NR PROVIDENCE, KY	03384133		1968				N
SLOVER CR NR CLAY, KY	03384136		1969		N		N

DISCONTINUED SURFACE-WATER-QUALITY STATIONS

STATION NAME AND NUMBER	STATION NUMBER	DRAINAGE AREA (MI^2)	PERIOD OF RECORD	BIO. AC-TIVE STA-TUS	PHY. AC-TIVE STA-TUS	SED. AC-TIVE STA-TUS	CHEM-ICAL AC-TIVE STA-TUS
UNNAMED TRIB TO SLOVER CR NR CLAY, KY	03384138		1969		N		N
UNNAMED TRIB TO SLOVER CR NR CLAY, KY	03384140		1969-79		N		N
FREDRICKS DITCH NR CLAY, KY	03384145		1969		N		N
CRABORCHARD CR NR CLAY, KY	03384150		1965-82		N	N	N
CRABORCHARD CR NR CLAY, KY	03384151		1969		N		N
CRABORCHARD CR AT CLAY, KY	03384152		1966		N		N
CRABORCHARD CR AT CLAY, KY	03384154	86.60	1969-72		N	N	N
CANEY FK NR CLAY, KY	03384158		1980-82		N	N	N
TRADEWATER R NR SULLIVAN, KY	03384180	861.19	1975-77		N	N	N
SMITH DITCH NR STURGIS, KY	03384200		1980-82		N	N	N
LOONEY CR NR CLUTTS, KY	03400480		1980-82		N	N	N
CLOVER FK NR SHIELDS, KY	03400650		1980-82		N	N	N
CLOVER FK AT EVARTS, KY	03400700	82.40	1960-72		N		N
MARTINS FK ABOVE SMITH, KY	03400785	23.80	1986-88			N	
CRANE CR NR SMITH, KY	03400796	1.63	1978-80		N		
BROWNICE CR NR OAKS, KY	03401290		1980-82		N	N	N
CLEAR CR NR PINEVILLE, KY	03402400		1980-82		N	N	N
LITTLE CLEAR CR NR PINEVILLE, KY	03402450		1980-82		N	N	N
STRAIGHT CR NR KETTLE ISLAND, KY	03402800		1980-82		N	N	N
LEFT FK STRAIGHT CR NR CARY, KY	03402830		1980-82		N	N	N
MIDDLE FK STINKING CR NR WALKER, KY	03403100		1980-82		N	N	N
ROAD FK CR NR BARNYARD, KY	03403150		1980-82		N	N	N
LITTLE INDIAN CR NR PERMON, KY	03403550		1980-82		N	N	N
FOURMILE BRANCH NR BRYANTS STORE, KY	03403590		1980-82		N	N	N
WATTS CR NR WOFFORD, KY	03404100		1980-82		N	N	N
JELLICO CR NR WILLIAMSBURG, KY	03404200	103.00	1979-82		N	N	N
MARSH CR NR DUCKRUN, KY	03404350		1980-82		N	N	N
TRIBUTARY TO LAUREL R NR LESBAS, KY	03404650		1980-82		N	N	N
TRIBUTARY TO LAUREL R NR PINE GROVE, KY	03404800		1980-82		N	N	N
LAUREL R AT MUNICIPAL DAM NR CORBIN, KY	03404820	140.00	1977-83		N		
LYNN CAMP CR AT CORBIN, KY	03404900	53.80	1973-83		N		
LAUREL R AT CORBIN, KY	03405000	201.00	1949-73		N		N
CRAIG CR NR HIGHTOP, KY	03405550		1980-82		N	N	N
S FK TO ROCKCASTLE R NR CRAWFORD, KY	03405600		1980-82		N	N	N
S FK ROCKCASTLE R NR PEOPLES, KY	03405700	95.10	1961-72		N		N
POND CR NR PEOPLES, KY	03405730		1980-82		N	N	N
LAUREL FK NR MCKEE, KY	03405780		1980-82		N	N	N
INDIAN CR NR HURLEY, KY	03405800		1980-82		N	N	N
ROUNDSTONE CR AT LIVINGSTON, KY	03405900	144.00	1960-72		N		N
WOOD CR NR LONDON, KY	03406000	3.89	1976-80	N	N		
CANE BRANCH NR PARKERS LAKE, KY	03407100	.67	1955-74		N	N	N
W FK CANE BR NR PARKERS LAKE, KY	03407200	.26	1957-73		N	N	N
HELTON BRANCH AT GREENWOOD, KY	03407300	.85	1955-73		N	N	N
BUCK CR AT DYKES, KY	03407640	253.00	1973-75		N		N
S FK CUMBERLAND R NR STEARNS, KY	03410500	954.00	1960-72				
			1979-95	N	N	N	N
ROARING PAUNCH CR NR BARTHELL, KY	03410530		1980-82		N	N	N
ROCK CR AT WHITE OAK JUNCTION, KY	03410560		1980-82		N	N	N
S FK CUMBERLAND R NR YAMACRAW, KY	03410600	1083.00	1948-76		N		
WOLF CR AT WOLF CREEK, KY	03410700		1980-82		N	N	N
LITTLE S FK CUMBERLAND R NR OIL VALLEY, KY	03410900	98.20	1970-72		N		N
S FK CUMBERLAND R AT NEVELSVILLE, KY	03411000	1271.00	1960-75		N		
SINKING CR NR GREGORY, KY	03411100		1980-82		N	N	N
PUCKETT CR NR PATHFORK, KY	03411250		1980-82		N	N	N
PITMAN CR AT SOMERSET, KY	03412500	31.30	1970-72		N		N
FISHING CR NR HOGUE, KY	03412700	59.80	1970-72		N		N
CUMBERLAND R NR ROWENA, KY	03414000	5790.00	1965-79		N		N
CROCUS CR NR BAKERTON, KY	03414080	108.00	1973-75		N		N
CUMBERLAND R NR BURKESVILLE, KY	03414110	6050.00	1948-79		N		N
RED R NR ADAIRVILLE, KY	03435100	229.00	1970-72		N		N
WHIPPOORWILL CR NR CLAYMOUR, KY	03435140	20.80	1978-82		N		
WHIPPOORWILL CR AT DOT, KY	03435265	115.00	1973-75		N		N
ELK FK NR HADENSVILLE, KY	03435380	88.50	1973-75		N		N

DISCONTINUED SURFACE-WATER-QUALITY STATIONS

STATION NAME AND NUMBER	STATION NUMBER	DRAINAGE AREA (MI^2)	PERIOD OF RECORD	BIO. AC- TIVE STA- TUS	PHY. AC- TIVE STA- TUS	SED. AC- TIVE STA- TUS	CHEM- ICAL AC- TIVE STA- TUS
W FK RED R NR SAINT ELMO, KY	03436190	162.00	1973-75		N		N
S FK LITTLE R AT HOPKINSVILLE, KY	03437500	46.50	1949-75		N		
LITTLE R NR CADIZ, KY	03438000	244.00	1958-73		N	N	N
MUDDY FK LITTLE R NR CERULEAN, KY	03438070	30.50	1978-82		N		
EDDY CR NR LAMASCO, KY	03438170	71.70	1970-74		N		N
BARKLEY-KENTUCKY CANAL NR GRAND RIVERS, KY	03438190		1978-82		N		
CUMBERLAND R NR GRAND RIVERS, KY	03438220	17598.00	1969-86	N	N	N	N
LIVINGSTON CR NR DYCUSBURG, KY	03438470	112.00	1970-72		N		N
TENNESSEE R NR PADUCAH, KY	03609500	40200.00	1951-73		N		N
TENNESSEE R AT HWY 60 NR PADUCAH, KY	03609750	40330.00	1950		N		
			1952		N		
			1967-72		N		
			1974-86	N	N	N	N
CLARKS R AT MURRAY, KY	03610000	89.10	1970-72		N		N
CLARKS R AT ALMO, KY	03610200	134.00	1982-83	N	N	N	N
CLARKS R NR BENTON, KY	03610500	227.00	1948-61		N		N
W FK CLARKS R NR BREWERS, KY	03610545	68.70	1970-81		N	N	N
W FK CLARKS R AT KALER, KY	03610585	150.00	1973-75		N		N
HUMPHREY CR AT LACENTER, KY	03613000	44.20	1970-72		N		N
MAYFIELD CR AT LOVELACEVILLE, KY	07023000	212.00	1960-72		N		N
BAYOU DE CHIEN NR CLINTON, KY	07024000	68.70	1954-83	N	N	N	N
OBION CR NR ARLINGTON, KY	07023700	203.00	1970-72		N		N
MISSISSIPPI R AT HICKMAN, KY	07024070	922500.00	1969-70	N	N		N

N Eliminated activity

DISCONTINUED GROUND-WATER STATIONS

Station Number	County	Station Name	Period of Record
363634088191601	Calloway	Joe Parks	1948-83, 1988-97
365142087270401	Christian	Western State Hospital	1950-83, 1988-97
374638087054101	Daviess	OMU	1951-83, 1990-97
380425083091901	Elliott	Roy Adkins	1952-84, 1998-97
375928084362001	Fayette	M.A. Kehrt	1952-84, 1988-97
382031084553901	Franklin	Harp Road	1973-83, 1988-97
373925085540301	Hardin	OW-6	1989-95
374020085530601	Hardin	OW-5	1989-90, 1994,95
374035085525401	Hardin	OW-1-82	1982-98
374046085523501	Hardin	OW-1-81	1982-98 1994,95
375958085575401	Hardin	Hart #1	1980-92
374441087421001	Henderson	Town of Corydon	1952-83, 1988-97
380122085545001	Jefferson	80-1	1980-97
380252085530601	Jefferson	79-3	1979-97
380308085533501	Jefferson	79-4	1979-92
380341085534501	Jefferson	83-1	1983-97
380423085541501	Jefferson	Genewein	1976-97
380434085525101	Jefferson	E-1-d	1980-92
380458085523201	Jefferson	86-4	1986-97
380517085535201	Jefferson	77-1	1977-97
380532085515301	Jefferson	76-1	1976-97
380616085532801	Jefferson	Lou. Ext. Water District	1962-92
380619085512301	Jefferson	86-3	1986-97
380637085521301	Jefferson	D-1-d	1980-92
380709085531101	Jefferson	C-5-m	1980-97
380716085521801	Jefferson	RR-47	1945-97
380718085515802	Jefferson	C-3-s	1984-92
380718085524202	Jefferson	C-4-m	1983-92
380816085520701	Jefferson	Dohn	1943-97
380827085503001	Jefferson	86-5	1986-97
380843085530701	Jefferson	B-3-d	1980-97
380843085522801	Jefferson	B-2-d	1980-92
380846085520101	Jefferson	B-1-d	1980-92
380850085534701	Jefferson	78-2	1978-97
380852085515901	Jefferson	Waller	1943-92
380940085514001	Jefferson	81-1	1981-97
380955085531801	Jefferson	83-2	1983-97
381011085491601*	Jefferson	86-1	1986-93
381034085502601	Jefferson	RR-30	1945-97
381050085511001	Jefferson	RR-29	1945-97
381102085485601	Jefferson	86-2	1986-97
381102085512102	Jefferson	Kaufman	1944-92
381108085511301	Jefferson	Baugh	1945-92
381123085491401	Jefferson	RR-32	1945-87
381130085515001	Jefferson	Thienemen	1944-97
381139085502301	Jefferson	81-2	1991-97

DISCONTINUED GROUND-WATER STATIONS

Station Number	County	Station Name	Period of Record
381142085475702	Jefferson	RR-42	1945-97
381143085465801	Jefferson	RR-25	1945-97
381155085483401	Jefferson	Mathis	1944-92
381157085510201	Jefferson	RR-39	1945-92
381204085455301	Jefferson	CP-16	1979-97
381207085484601	Jefferson	RR-41	1945-97
381209085472101	Jefferson	C-7	1935-97
381212085473801	Jefferson	C-6	1935-92
381213085521701	Jefferson	RR-22	1945-97
381221085475001	Jefferson	C-5	1935-92
381222085505201	Jefferson	RR-27	1945-97
381224085474001	Jefferson	Early Times	1947-92
381229085510201	Jefferson	Triangle Refinery	1978-92
381246085470601	Jefferson	Seagrams TW #2	1943-97
381246085463201	Jefferson	CP-18A	1984-97
381250085484901	Jefferson	C-2	1935-92
381251085500501	Jefferson	RR-35	1945-97
381256085471501	Jefferson	National Distillery TW-2	1941-92
381257085471801	Jefferson	TW-4	1942-97
381259085471502	Jefferson	National Distillery TW-1	1941-92
381259085511002	Jefferson	RR-21	1945-97
381305085501302	Jefferson	Reynolds Metals	1980-92
381309085505302	Jefferson	RR-24	1945-92
381313085495501	Jefferson	B.F. Goodrich TW-2	1947-92
381315085501401	Jefferson	Airco TW-11	1956-92
381315085502602	Jefferson	NC-TW-D	1956-97
381316085502101	Jefferson	Airco TW-12	1956-92
381320085464101	Jefferson	CP-15	1978-97
381324085460401*	Jefferson	American Standard	1978-93
381331085491601	Jefferson	RR-26	1945-97
381338085481601	Jefferson	CP-8	1977-92
381346085453801	Jefferson	St. Patricks’s well	1981-97
381346085454201	Jefferson	CP-1	1977-97
381355085465901	Jefferson	Louisville Cooperage	1948-92
381400085445001	Jefferson	CP-6	1977-97
381406085463001	Jefferson	United Catalyst	1978-92
381417085500301	Jefferson	RR-23	1945-97
381424085454602	Jefferson	CP12A	1980-92
381428085485701	Jefferson	78-6	1978-97
381430085452602	Jefferson	Conna	1943-92
381430085472501	Jefferson	CP-17	1982-97
381442085444801	Jefferson	Metro United Way	1991-2002
381445085460201	Jefferson	QW Well 9th & Broadway	1996-2002
381447085454001	Jefferson	Courier Journal	1953-2002
381500085445501	Jefferson	89-2	1989-92
381500085454701	Jefferson	78-5	1978-92
381501085445601	Jefferson	U of L Medical School	1996-2002
381501085464601	Jefferson	CP-10	1977-97
381503085452601	Jefferson	Stewarts	1981-92
381503085453301	Jefferson	Kentucky Towers	1948-2002
381505085475701	Jefferson	CP-5	1977-92
381508085455701	Jefferson	CP-4	1977-97
381514085453502	Jefferson	CP11A	1984-92
381517085455501	Jefferson	Roy Wilkins Blvd.	1986-2002
381518085451801	Jefferson	87-1	1986-96

DISCONTINUED GROUND-WATER STATIONS

Station Number	County	Station Name	Period of Record
381518085454401	Jefferson	86-10	1986-97
381524085452301	Jefferson	86-8	1986-92
381527085453001	Jefferson	Belevedre Well	1986-2002
381528085454201	Jefferson	86-9	1986-92
381536085492801	Jefferson	CP-2	1977-92
381538085434401*	Jefferson	78-7	1978-92
381539085465201	Jefferson	CP-9	1977-97
361343085480101	Jefferson	CP-14	1978-97
381553085431602	Jefferson	M-2	1978-97
381604085430501	Jefferson	WC-1	1946-97
381607085483601	Jefferson	CP-3	1977-97
381613085421901	Jefferson	WC-14	1946-92
381628085473101	Jefferson	CP-13	1978-92
381722085405801	Jefferson	WC-11	1946-92
374151085413201	Larue	Wagner	1971-83, 1988-97
370757084045001	Laurel	Hale	1951-62, 1965-84,
371033082374301*	Letcher	C&ORR	1962-92 1988-97
372739084402101	Lincoln	Peck	1953-84 1988-97
365046086444901	Logan	Appling	1988-97
370551088510401	Mccracken	Heath	1969-83, 1988-97
370211085354301	Metcalfe	Froedge	1979-83, 1988-97
370342086080101	Warren	Estes	1961-83, 1988-97

* destroyed

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Conversion Factors

Multiply	By	To obtain
	Length	
inch (in.)	2.54×10^{1}	millimeter (mm)
	2.54×10^{-2}	meter
foot (ft)	3.048×10^{-1}	meter (m)
mile (mi)	1.609×10^{0}	kilometer (km)
	Area	
acre	4.047×10^{3}	square meter (m^2)
	4.047×10^{-1}	square hectometer (hm^2)
	4.047×10^{-3}	square kilometer (km^2)
square mile (mi^2)	2.590×10^{0}	square kilometer (km^2)
	Volume	
gallon (gal)	3.785×10^{0}	liter (L)
	3.785×10^{-3}	cubic meter (m^3)
	3.785×10^{0}	cubic decimeter (dm^3)
million gallons (Mgal)	3.785×10^{3}	cubic meter (m^3)
	3.785×10^{-3}	cubic hectometer (hm^3)
cubic foot (ft^3)	2.832×10^{-2}	cubic meter (m^3)
	2.832×10^{1}	cubic decimeter (dm^3)
cubic-foot-per-second-per-day [(ft^3/s/d]	2.447×10^{3}	cubic meter (m^3)
	2.447×10^{-3}	cubic hectometer (hm^3)
acre-foot (acre-ft)	1.223×10^{3}	cubic meter (m^3)
	1.223×10^{-3}	cubic hectometer (hm^3)
	1.223×10^{-6}	cubic kilometer (km^3)
	Flow rate	
cubic foot per second (ft^3/s)	2.832×10^{1}	liter (L/s)
	2.832×10^{-2}	cubic meter per second (m^3/s)
	2.832×10^{1}	cubic decimeter per second (dm^3/s)
gallon per minute (gal/min)	6.309×10^{-2}	liter per second (L/s)
	6.309×10^{-5}	cubic meter per second (m^3/s)
	6.309×10^{-2}	cubic decimeter per second (dm^3/s)
million gallons per day (Mgal/d)	4.381×10^{-2}	cubic meter per second
	4.381×10^{1}	cubic decimeter per second (dm^3/s)
	Mass	
ton, short (2,000 lb)	9.072×10^{-1}	megagram (Mg) or metric ton

Temperature in degrees Celsius (°C) may be converted to degrees Fahrenheit (°F) as follows:

$$°F = (1.8 \times °C) + 32$$

USGS

McClain and others—**Water Resources Data, Kentucky, Water Year 2003**—KY-03-1

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Occurrence, Distribution, Loads, and Yields of Selected Pesticides in the Little River Basin, Kentucky, 2003-04

Scientific Investigations Report 2006-5142

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

Cover Photograph. Casey Creek at KY 525 near Cadiz, Kentucky, water-quality site 03437990, April 2003.

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

U.S. Department of the Interior
DIRK KEMPTHORNE, Secretary

U.S. Geological Survey
P. Patrick Leahy, Acting Director

U.S. Geological Survey, Reston, Virginia: 2006

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Conversion Factors and Abbreviations

Inch/Pound to SI

Multiply	By	To obtain
Length		
inch (in.)	2.54	centimeter (cm)
inch (in.)	25.4	millimeter (mm)
millimeter (mm)	0.03937	inch (in.)
foot (ft)	0.3048	meter (m)
mile (mi)	1.609	kilometer (km)
mile, nautical (nmi)	1.852	kilometer (km)
Area		
acre	4,047	square meter (m^2)
acre	0.4047	hectare (ha)
acre	0.4047	square hectometer (hm^2)
acre	0.004047	square kilometer (km^2)
square mile (mi^2)	259.0	hectare (ha)
square mile (mi^2)	2.590	square kilometer (km^2)
Flow rate		
cubic foot per second (ft^3/s)	0.02832	cubic meter per second (m^3/s)
Application rate		
pound per day (lb/d)	0.4536	kilogram per day (kg/d)
pounds per year (lb/yr)	0.4536	kilograms per year (kg/yr)
pounds per year per square mile ((lb/yr)/mi^2)	0.17514	kilograms per year per square kilometer [(kg/yr)/km^2]

Temperature in degrees Celsius (˚C) may be converted to degrees Fahrenheit (˚F) as follows:

$$°F=(1.8\times°C)+32$$

Concentrations of chemical constituents in water are given either in milligrams per liter (mg/L) or micrograms per liter (µg/L).

Abbreviations

AIC - Akaike Information Criterion

EDI - equal-discharge increment

EWI - equal-width increment

GC/MS - gas chromatography/mass spectrometry

HAL - health advisory level

KDA – Kentucky Department of Agriculture

MCL - maximum contaminant level

MDL - method detection limit

MRL - method reporting limit

NASS - National Agricultural Statistics Service

NWQL - National Water Quality Laboratory

RPD - relative percent difference

USEPA - U.S. Environmental Protection Agency

USGS - U.S. Geological Survey

Occurrence, Distribution, Loads, and Yields of Selected Pesticides in the Little River Basin, Kentucky, 2003-04

By Angela S. Crain

Abstract

Water resources in the Little River Basin are potentially vulnerable to applications of pesticides associated with both agricultural and nonagricultural activities, because much of the basin is characterized by karst topography. Concerns about water quality resulting from pesticide use in karst areas and lack of data on concentrations of pesticides in surface water led to further investigation of water quality in the Little River Basin, which includes about 600 square miles in Christian and Trigg Counties and a portion of Caldwell County in western Kentucky. Water samples were collected in streams in the Little River Basin, Kentucky during 2003-04 as part of a study conducted in cooperation with the Kentucky Department of Agriculture. The objectives of the study were to assess the occurrence and distribution of pesticides, to evaluate the spatial and seasonal variability of pesticides, and to evaluate loads and yields of selected pesticides in the basin. A total of 91 water samples was collected at 4 fixed-network sites from March through November 2003 and from February through November 2004. An additional 20 samples were collected at 5 synoptic-network sites within the same period.

Twenty-four pesticides were detected of the 127 pesticides analyzed in the stream samples. Of the 24 detected pesticides, 15 were herbicides, 7 were insecticides, and 2 were fungicides. The most commonly detected pesticides—atrazine, simazine, metolachlor, and acetochlor—were those most heavily used on crops during the study. Atrazine and simazine were detected in 100 percent of all surface-water samples, and metolachlor and acetochlor were detected in more than 45 percent. The pesticide degradate, deethylatrazine, was detected in 100 percent of the samples. Only one nonagricultural herbicide, prometon, was detected in more than 50 percent of the samples. Diazinon, the most commonly detected insecticide, was found in 25 percent of all samples and was found at all sites except Casey Creek. Metalaxyl was the most commonly detected fungicide (14 percent); most detections were in samples from the Sinking Fork subbasin.

Concentrations of herbicides were highest following application in the spring (March–May). In contrast, insecticides typically were present during the summer (June-August). The most commonly detected pesticides in the Little River Basin were found at low concentrations in streams year-round. Atrazine and simazine (row-crop herbicides) had the highest measured concentrations (22 and 6.1 micrograms per liter (µg/L), respectively) and were the most heavily applied herbicides in the basin. Metolachlor also was heavily applied in the basin, but measured concentrations did not exceed 0.32 µg/L. The insecticide, Malathion, was only detected in 4 percent of the samples, although it was heavily applied in the basin during 2003-04. Most detections of pesticides were at low concentrations in relation to drinking-water standards and guidelines established for the protection of aquatic life. Only two pesticide compounds—atrazine and simazine—exceeded the U.S. Environmental Protection Agency (USEPA) standards for drinking water. Atrazine exceeded the USEPA's maximum contaminant level (MCL) 19 times in 111 detections; simazine exceeded the established MCL 2 times in 111 detections. These exceedences occurred in the spring. Concentrations of atrazine also exceeded the established aquatic-life criterion (1.8 µg/L) in 32 samples collected from all sites.

Concentrations of deethylatrazine, an herbicide-transformation compound, tended to follow the same monthly concentration pattern as its parent compound (atrazine), but concentrations of deethylatrazine were lower than those of atrazine. Atrazine may have been present in the soil much longer at these sites, which might have allowed microbial populations to transform atrazine into deethylatrazine.

A statistical comparison of concentrations of selected pesticides among four fixed-network sites showed higher differences in median concentrations of atrazine, simazine, and diazinon at the North Fork Little River site than at the other sites. Median concentrations of deethylatrazine were appreciably lower at the North Fork Little River site than at the other sites. Concentrations of metolachlor were higher at Sinking Fork near Cadiz than at the other three sites.

The largest mean annual loads of selected pesticides among the fixed-network sites were at the Little River near Cadiz. Loads were not estimated for the fixed-network site at Sinking Fork near Cadiz. The Little River near Cadiz site had the largest mean annual loads of atrazine (2,337 pounds per year (lb/yr)), metolachlor (19.51 lb/yr), and simazine (330.8 lb/yr) during 2003-04. The North Fork Little River site had the largest mean annual load of diazinon (5.57 lb/yr). The

mean annual load of acetochlor (190 lb/yr) was largest at the South Fork Little River site.

The estimated annual loads of acetochlor, atrazine, diazinon, metolachlor, and simazine for the study period were about 0.01 to 2.2 percent of the amount applied in the basin. Atrazine had the largest estimated use and the largest estimated loads in the basin. The load for diazinon, an insecticide that is primarily used for nonagricultural purposes, was less than agricultural herbicides. The largest load of diazinon, estimated at the North Fork Little River site, was less than 1 percent of the atrazine load.

Total yields of atrazine ranged from 9.07 to 10.88 pounds per year per square mile ((lb/yr)/mi^2). The South Fork Little River site had the largest yields of commonly used row-crop herbicides (acetochlor, atrazine, and metolachlor). The yield of atrazine was 10.88 ((lb/yr)/mi^2); acetochlor and metolachlor yields were 3.27 and 0.18 ((lb/yr)/mi^2), respectively. Simazine, another commonly used row-crop herbicide, had the largest yield at the Little River near Cadiz site (1.36 (lb/yr)/mi^2). The North Fork Little River site, a more urban site, had the largest yield of diazinon (0.08 (lb/yr)/mi^2).

Introduction

Pesticides are chemical or biological substances that are used to control pests such as weeds (herbicides), insects (insecticides), and fungi (fungicides). Nearly 1 billion pounds of pesticides are used annually in the United States (Barbash and Resek, 1997). About 80 percent of pesticides are used for agricultural purposes, but pesticides also are used for industrial, commercial, and household purposes. Although the use of pesticides has resulted in increased crop production and reduced insect-borne diseases, it has raised concerns about potential adverse effects on the environment and human health. Excess pesticides (herbicides, insecticides, and fungicides) in the environment can cause a variety of ecological and human-health effects. Possible human-health effects from overexposure to some pesticides include cancer, reproductive or nervous-system disorders, and acute toxicity. Some pesticides potentially can affect aquatic life by disrupting the endocrine system and by interfering with natural hormones for reproduction (U.S. Geological Survey, 1999).

Water resources in the Little River Basin potentially are vulnerable to applications of pesticides associated with agricultural and nonagricultural activities especially because of karst topography in much of the basin. Karst topography is characterized by internal (sinkhole) drainage and rapid flow through solutional conduits, providing reduced opportunity for natural attenuation of contaminants and enhanced potential for surface- and ground-water contamination (Field, 1990). Previous studies by State water-quality agencies have identified nutrient enrichment and siltation as water-quality issues affecting water resources in the basin; however, one of the largest gaps in Kentucky’s water-quality database is a lack of data on concentrations of pesticides in surface water. Thus, concerns about water quality resulting from pesticide use in karst areas and the lack of data on the concentrations of pesticides led to further investigation of the water quality in the basin by the USGS and the Kentucky Department of Agriculture (KDA). The Little River Basin study is intended to provide much-needed information on (1) the presence of pesticides and (2) the spatial and seasonal variability of pesticides in the Little River Basin. The purpose of the study was to determine the presence and distribution of pesticides in streams in the Little River Basin study area, to evaluate the variability in concentrations of pesticides by site and season, and to evaluate the loads and yields of selected pesticides at selected sites in the basin.

Purpose and Scope

The purpose of this report is to provide a summary of the occurrence and distribution of selected pesticides and provides estimates of selected pesticide loads and yields from samples collected from streams in the Little River Basin during 2003-04. Pesticide loads are computed using LOADEST, a U.S. Geological Survey (USGS) software program that uses regression models to compute mean constituent loads in rivers. Loads and yields of selected pesticides are presented for three fixed-network sites in the basin.

Description of the Little River Basin, Kentucky

The Little River Basin encompasses about 600 mi^2 (fig. 1). The Little River discharges into Lake Barkley Reservoir on the Cumberland River. Water quality throughout the basin is directly affected by natural (geology, climate, soils) and human (population, land use) factors. The Little River Basin has a high “hydrogeologic sensitivity rating” indicating it is highly vulnerable to effects from runoff, because much of the area is underlain by karst (Ray and others, 1994). The hydrologic sensitivity of an area is defined as the ease and speed with which a contaminant is transported within a ground-water system (Ray and others, 1994). Some streams in the Little River Basin are listed as impaired streams in the State’s 303(d) List of Water report (Corrine Wells, Kentucky Environmental and Public Protection Cabinet, oral commun., 2002). The Kentucky Division of Water has listed the causes of impairments to the streams in the basin as siltation, nutrients, pathogens, organic enrichment (low dissolved oxygen), and habitat alterations (Kentucky Environmental and Public Protection Cabinet, 2005, p.134-136).

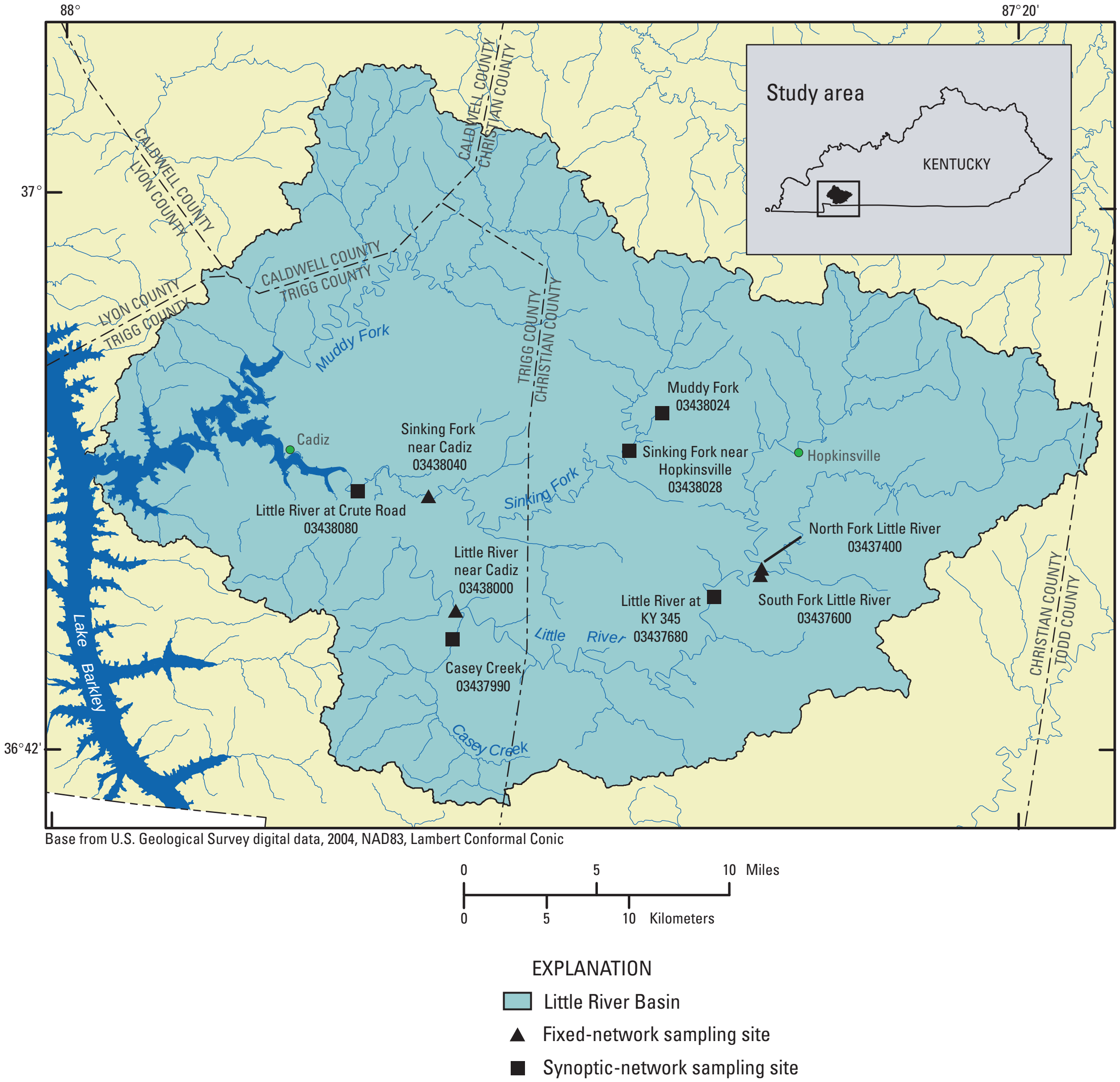


Figure 1. Location of the surface-water-sampling sites in the Little River Basin, Kentucky, study area.

Geology

The Little River Basin mostly is underlain by karstic limestone formations of Mississippian through Pennsylvanian age (fig. 2). The limestone units of significance within the Little River Basin study area are the St. Louis and Ste. Genevieve Limestone Formations. The St. Louis Limestone mostly is composed of sequences of massively bedded (tabular) limestones, and the Ste. Genevieve Limestone mostly is composed of thin-bedded, cherty limestones.

Overlying the Ste. Genevieve and St. Louis Limestone formations on the northeastern side of the study area is a thick sequence of limestone, sandstone, and shale formations of Chesterian age that are divided into upper and lower parts. The Lower Chesterian is composed of alternating sandstone and limestone strata that includes the Golconda Formations (sandstone dominated) and the Girkin Limestone Formation (McDowell, 1986). The Upper rocks of the Chesterian-age formations are mainly composed of siltstone and shale with alternating minor beds of limestone.

Numerous karst features including sinkholes (fig. 3), sinking streams, and springs are present in the study area. The exposure of Ste. Genevieve Limestone at the land surface allows for water from surface-water streams to enter the underground cavities through sinkholes. Water also enters the Ste. Genevieve and Girkin Limestones through sinkholes developed in the sandstone members of the Golconda Formation. Potential contaminants may enter the karstic limestone aquifers with surface runoff drained by sinkholes in the St. Louis and Ste. Genevieve and through sinking streams.

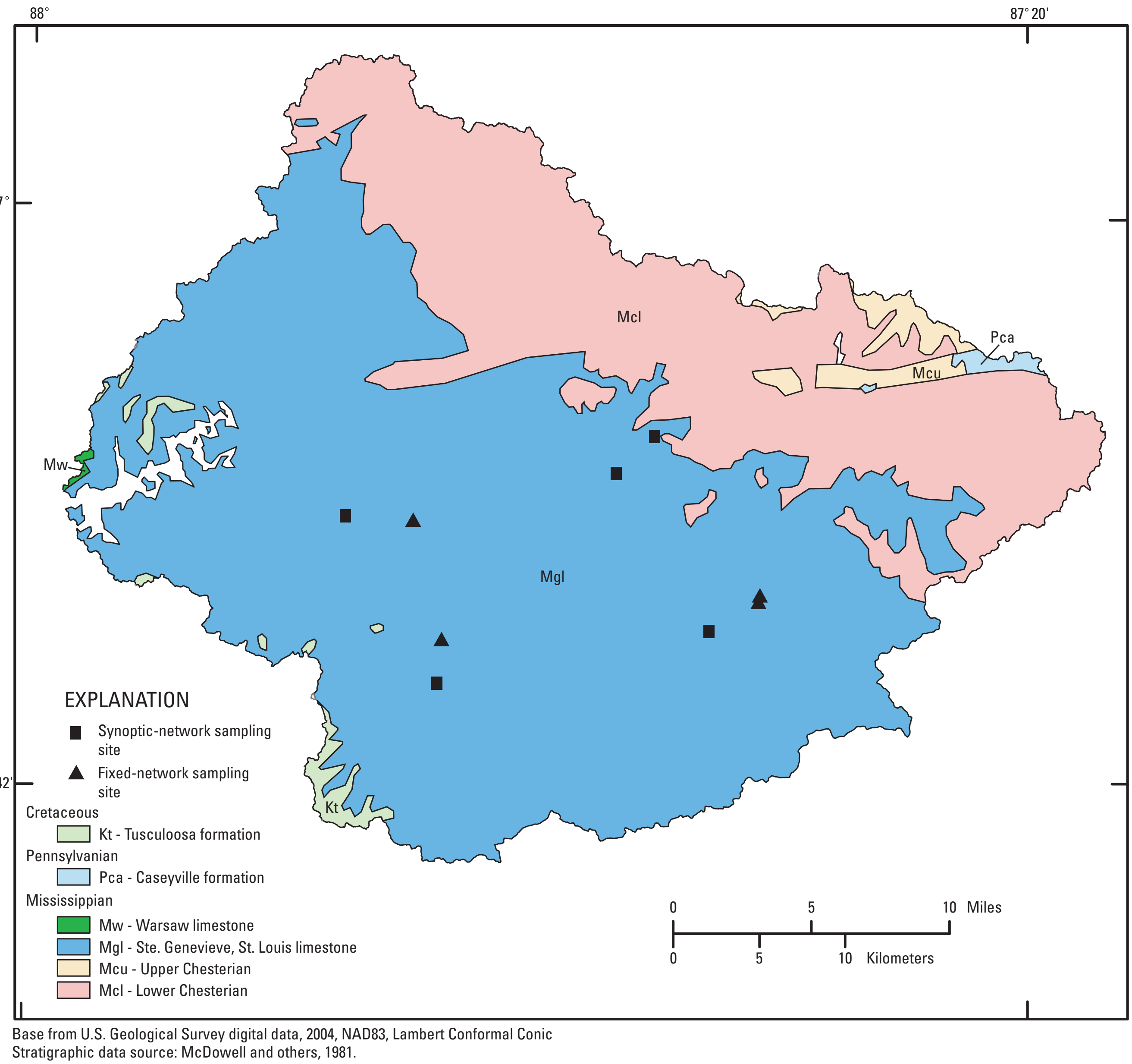
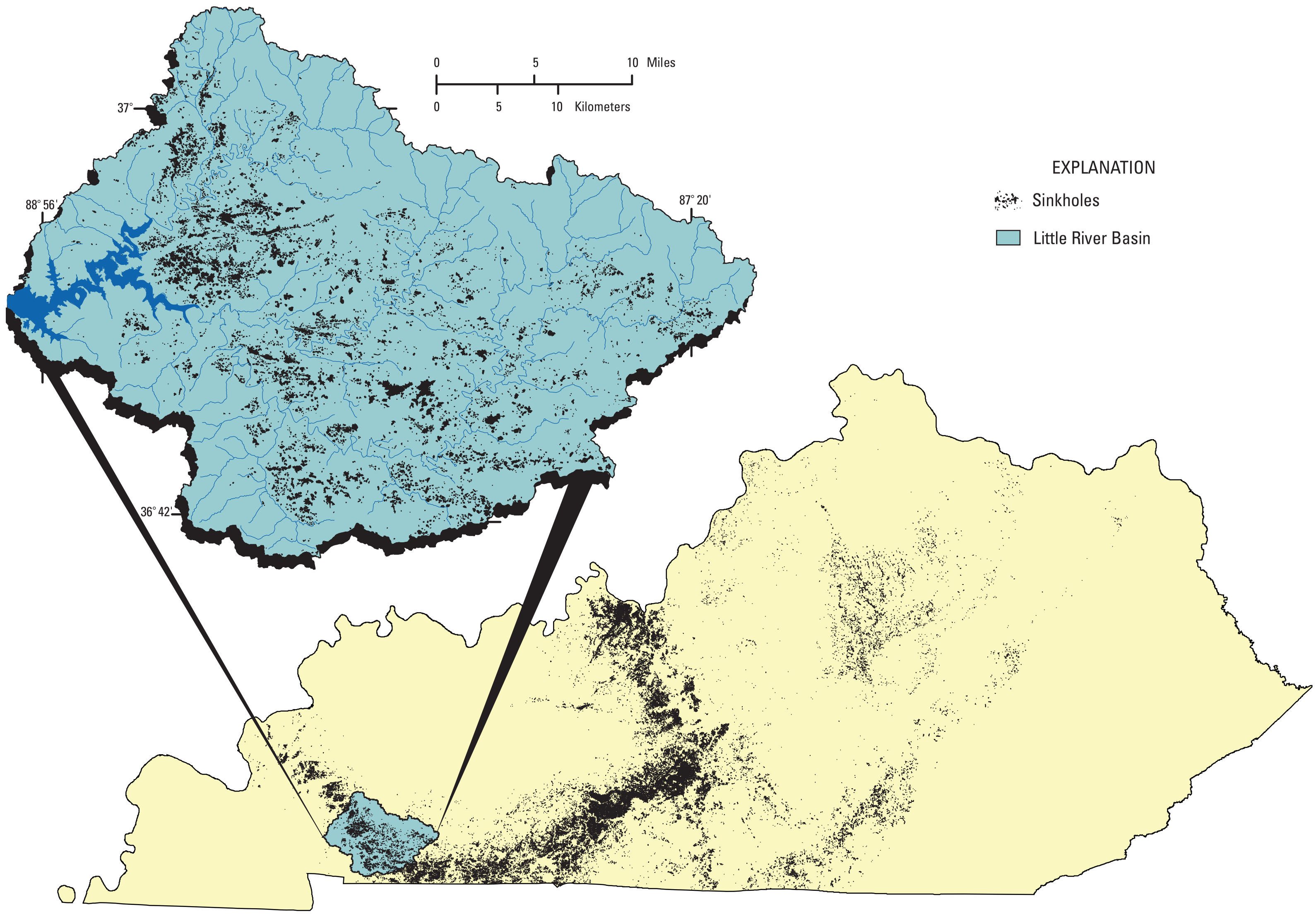


Figure 2. Surficial geology in the Little River Basin, Kentucky, study area.



Source: Kentucky Geological Survey, A GIS Sinkhole Coverage for the Karst Areas of Kentucky, 2003.

Figure 3. Generalized distribution of sinkholes in the Little River Basin and throughout Kentucky.

Streamflow

Direct surface runoff and ground-water discharge are the major sources of streamflow in the Little River Basin. Another source is interflow, which is part of the subsurface flow that moves at shallow depths and potentially can reach the surface channels in a short period of time. During a storm, interflow slowly increases until the end of the storm, then gradually decreases (Viessman and others, 1989, p. 171).

Annual mean flow differs appreciably from year to year, with variations in weather conditions. Mean annual streamflow of the Little River near Cadiz (water years 1940-2004) was about 360 ft^3/s and was 479 ft^3/s in 2003 and 299 ft^3/s in 2004. Mean monthly streamflow peaks in the spring (March–May); however, there is a second peak in the winter (December–February) months. Low streamflow conditions typically occur from late summer (June–August) to early fall (September–November). The mean daily streamflows for Little River near Cadiz in 2003 ranged from 27 ft^3/s (November 7) to 5,170 ft^3/s (May 7); mean daily streamflows in 2004 ranged from 33 ft^3/s (October 11) to 2,670 ft^3/s (April 24).

Mean annual precipitation for the Little River Basin was 55.8 in. in 2003 and 54.0 in. in 2004 (National Oceanic and Atmospheric Administration, 2003 and 2004). About 63 percent of the mean annual precipitation in 2003 (34.9 in.) and about 57 percent of the mean annual precipitation in 2004 (31.0 in.) occurred during the growing season from April through October (fig. 4). The long-term mean annual precipitation for the Little Rive Basin is about 50 in.

Land Use

Streams in the Little River Basin drain a diverse landscape of forest, agricultural areas, and urban areas around Hopkinsville and Cadiz, Kentucky. Agricultural land uses represent about 60 percent of the study area (fig. 5). Most of the agricultural land (34 percent) is used for corn, soybeans, wheat, hay, and tobacco production; the remaining 26 percent of the agricultural land is used for pasture. Corn is the principal row crop harvested in the basin, followed by soybeans. In 2003, about 95,000 acres of corn were harvested for seed, grain, silage, or sweet corn; about 76,500 acres of soybeans were harvested (Kentucky Agricultural Statistics Service, 2004).

Forested land represents about 31 percent of the Little River Basin. The southern and western parts are the most densely forested areas in the basin.

Urban areas represent about 9 percent of the land use in the basin. The most heavily populated communities in the Little River Basin are Hopkinsville and Cadiz. Hopkinsville has a population of about 30,000; Cadiz has a population of about 2,400 (U.S. Census Bureau, 2002).

Pesticide Use, Properties, and Sales

Herbicides commonly are used to control weeds in agricultural areas in the Little River Basin. The most commonly used herbicides are atrazine, simazine, metolachlor, and acetochlor. Glyphosate is another commonly used herbicide, but it was not examined during this study. The largest applications of these herbicides to agricultural land in the Little River Basin are on row crops such as corn, soybeans, tobacco, wheat, and on pasture and hay fields. Combinations of herbicides applied to row crops are sometimes used for more effective weed control. Multiple applications are common and include some combination of pre-plant applications of selective and nonselective herbicides and pre- and post-emergent applications of selective herbicides (Hippe and others, 1994).

The three classes of herbicides most heavily used in the Little River Basin are triazines, chloroacetanilides, and organophosphate herbicides (glyphosate). The most common triazines (atrazine, simazine, and cyanazine) are used primarily on corn. The most common chloroacetanilides (acetochlor, metolachlor, alachlor) are used on both corn and soybeans. The most common organophosphate herbicide, glyphosate, is used on corn and soybeans. Both the triazine and chloroacetanilide groups have moderate to high water solubility and moderately low soil-sorption coefficients and, therefore, can be persistent in soil (Wauchope and others, 1992). As a result, they have moderate to strong potential for transport, primarily in the dissolved phase, from fields through surface runoff (Goss, 1992).

Chemical or biological processes can transform herbicides. Chemical-transformation processes include photolysis (photochemical degradation), hydrolysis, oxidation, and reduction. The transformation of herbicides through microbial metabolic processes is considered the primary mechanism of biological degradation (Ritter and Shirmohammadi, 2001, p. 114).

Pesticide-transformation compounds are more water-soluble than their parent compounds. For example, Mills and Thurman (1994) found that one of the transformation compounds of the parent compound atrazine, deethylatrazine (DEA), sorbs less strongly to soils than does its parent compound. In some studies, pesticide-transformation compounds often have been detected at higher concentrations than their respective parent compound (Kolpin and others, 1998); Scribner and others, 1998). The toxicity of pesticide-transformation compounds is unknown (U.S. Geological Survey, 1999).

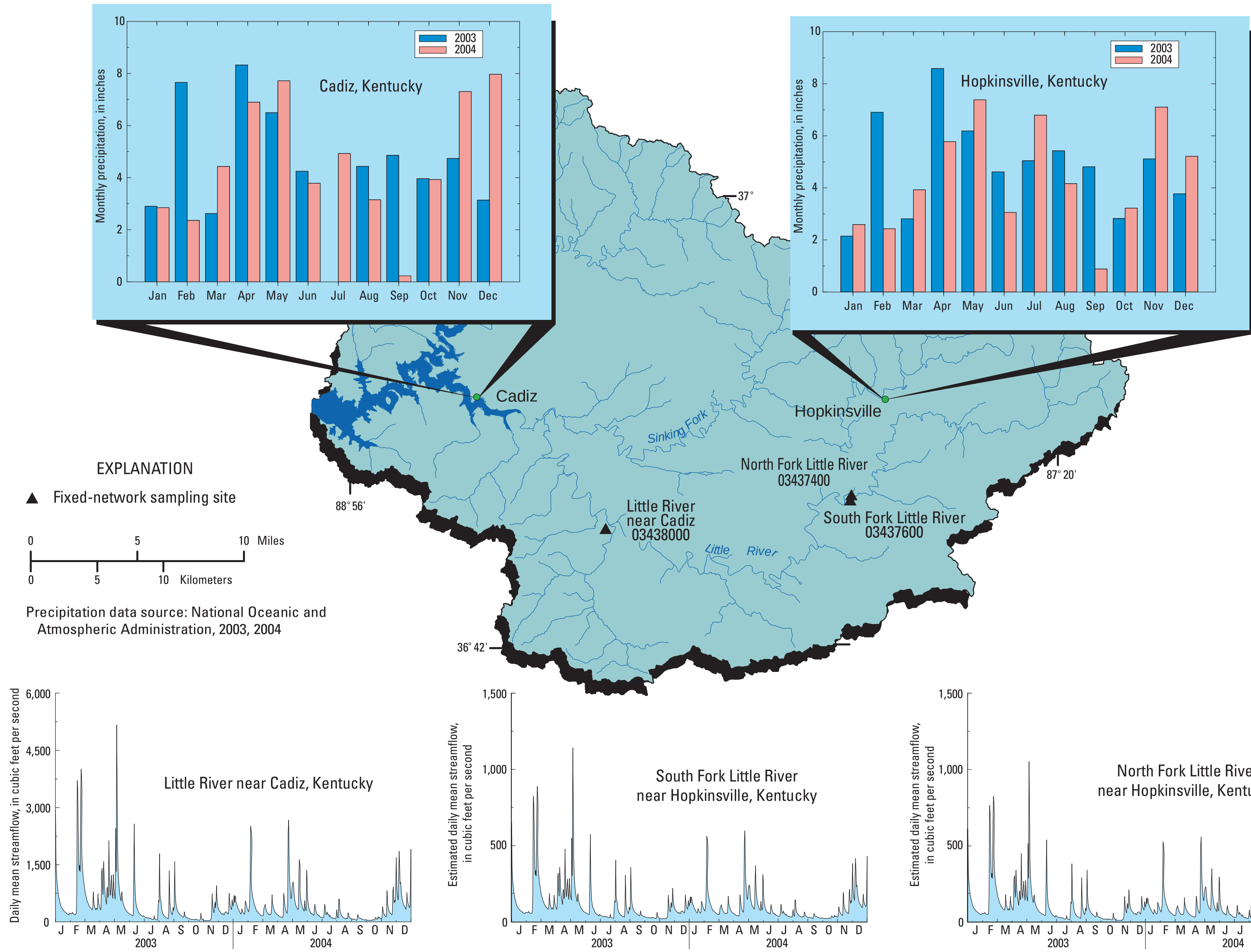


Figure 4. Location of fixed-network sampling sites and graphs showing precipitation and daily mean streamflow at selected surface-water sites in the Little River Basin, Kentucky, study area, 2003-04.

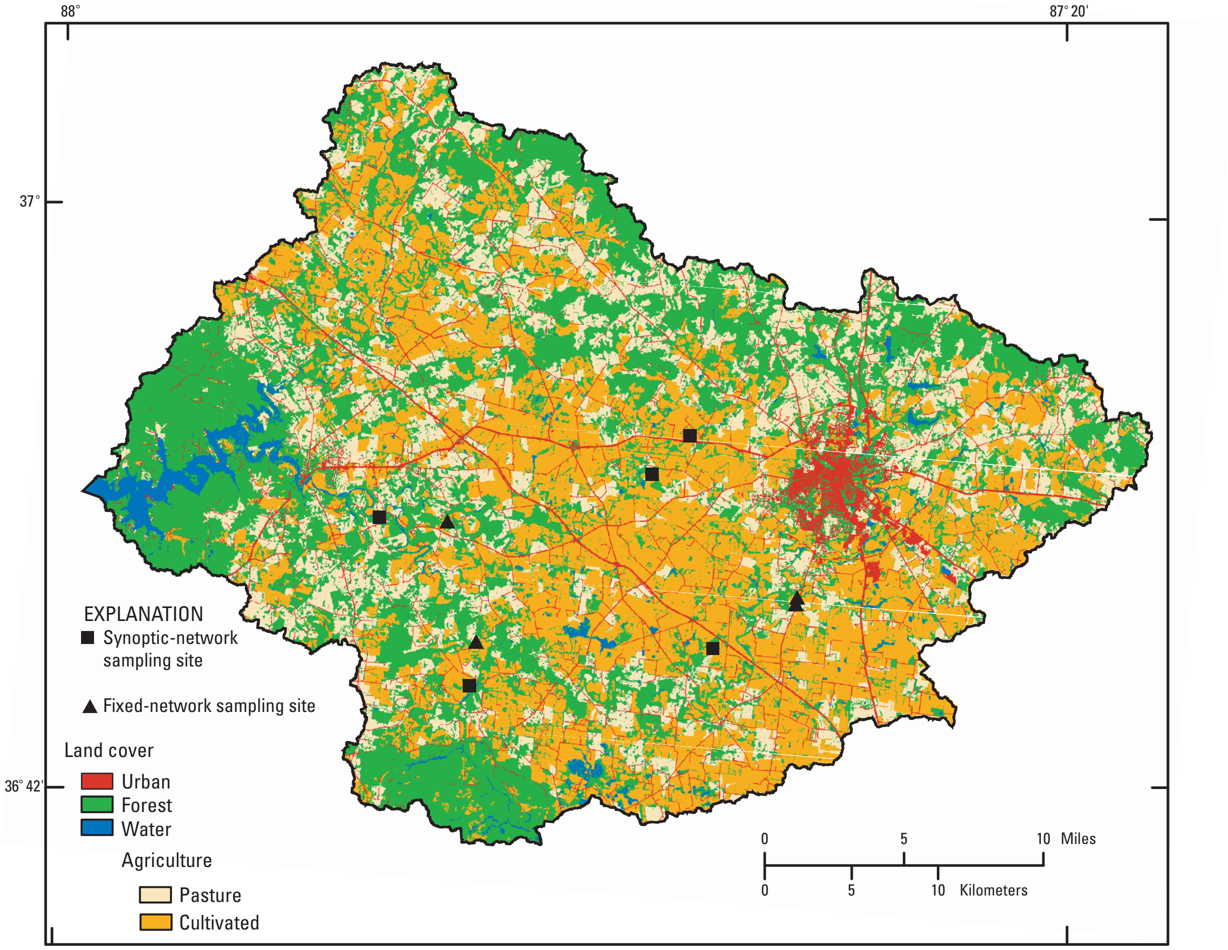


Figure 5. Land cover in the Little River Basin, Kentucky, study area, 2001.

The amount of pesticides applied annually to agricultural land within the Little River Basin (in pounds of active ingredient) was derived from county-based crop-acreage data and State-level estimates of pesticide-use rates for individual crops from the National Agricultural Statistics Service (NASS) database. County-crop acreages were combined with the State pesticide-use coefficients to calculate county-level pesticide usage by pesticide and crop. The crops of interest included corn, soybeans, winter wheat, alfalfa hay, pasture, and tobacco. Little information was available for pesticide use in forestry, transportation (weed control along roadways and right-of-ways), aquatic use (algae control), and various commercial and industrial applications.

Every year, the KDA assembles a database of agricultural pesticide sales (reported as amount of active ingredient) to evaluate where pesticides are purchased and potentially applied in each county in Kentucky. The number of active ingredients that were sold statewide in the years 2003 and 2004 were 156 and 183, respectively. The top five active ingredients sold in Kentucky were atrazine, glyphosate, S-metolachlor, 2,4-D, and simazine in 2003, and glyphosate, atrazine, 2,4-D, fatty alcohol, and simazine in 2004.

Atrazine was the top-selling active ingredient in the Little River Basin (Christian and Trigg Counties) of the pesticides studied followed by simazine, acetochlor, metolachlor, Malathion, prometon, and diazinon (table 1). Glyphosate ranked second in pounds of active ingredient in the basin. Christian County ranked fourth out of Kentucky's 120 counties in pounds of active ingredient for atrazine in 2003-04. It is assumed that high sales equates to high use of pesticides in the Little River Basin, because atrazine and simazine were detected at all of the sampling sites in the basin. Although the insecticide Malathion ranked fifth in sales among the pesticides studied, it was not frequently detected; however, it may not have been widely distributed in the basin and most applications may occur during periods of reduced runoff.

Table 1. Pesticide active-ingredient sales and detections in surface-water samples, Christian and Trigg Counties, Kentucky, 2003-04.

Constituent	Amount of active ingredient for 2003-04 (in pounds)[1]	Detection (in percent)
Acetochlor	36,030	46
Atrazine	353,301	100
Diazinon	433	25
Malathion	1,958	4
Metolachlor	8,137	94
Prometon	798	53
Simazine	88,102	100

[1]Ernest Collins, Kentucky Department of Agriculture, written commun., 2004.

Study Design and Methods

Stream-sampling sites in the Little River Basin were selected to assess the spatial and seasonal variability of selected pesticides in subbasins consisting of mixed land use and different types of agricultural land. Samples were collected on three Little River main-stem sites and five tributaries—North Fork Little River, South Fork Little River, Muddy Fork, Sinking Fork, and Casey Creek (fig. 1 and table 2).

Sample-Site Selection and Sampling Frequency

Pesticide samples were collected monthly (March–November 2003 and February–November 2004) at four fixed-network sites. The sites included North Fork Little River, South Fork Little River, Sinking Fork near Cadiz, and Little River near Cadiz. An additional four samples were collected at each of these sites based on three high-flow events and one low-flow event.

Table 2. Description of surface-water sampling sites in the Little River Basin, Kentucky.

[USGS, U.S. Geological Survey; mi^2, square mile; Ky., Kentucky; N/A, not applicable]

USGS site number	USGS site name	Abbreviated site name	Drainage area (mi^2)	Site type	Percentage of basin area in indicated land use[1]			
					Agriculture	Forest	Urban	Water
03437400	North Fork Little River at Gary Lane Bridge near Hopkinsville, Ky.	North Fork Little River	58	Fixed	50	36	13	1
03437600	South Fork Little River at KY 107 near Hopkinsville, Ky.	South Fork Little River	67	Fixed	63	26	11	0
03438000	Little River near Cadiz, Ky.	Little River near Cadiz	244	Fixed	57	35	6	2
03438040	Sinking Fork at Kings Chapel Road near Cadiz, Ky.	Sinking Fork near Cadiz	107	Fixed	68	26	6	0
03437680	Little River at KY 345 near Hopkinsville, Ky.	Little River at KY 345	134	Synoptic[2]	N/A	N/A	N/A	N/A
03438024	Muddy Fork near Hopkinsville, Ky.	Muddy Fork	7.9	Synoptic[2]	N/A	N/A	N/A	N/A
03438028	Sinking Fork near Hopkinsville, Ky.	Sinking Fork near Hop-kinsville	44	Synoptic[2]	N/A	N/A	N/A	N/A
03437990	Casey Creek at KY 525 near Cadiz, Ky.	Casey Creek	35.7	Synoptic[2]	N/A	N/A	N/A	N/A
03438080	Little River at Crute Road near Cadiz, Ky.	Little River at Crute Road	400	Synoptic[2]	N/A	N/A	N/A	N/A

[1]Kentucky Land Cover Data Set, 2001, Kentucky Commonwealth Office of Technology, November 1, 2005.

[2]Site located within the 10-digit hydrologic-unit code of one of the four fixed sites.

In addition to the routine sampling at the four fixed-network sites, five synoptic-network sites were sampled twice each year in 2003 and 2004. Three high-flow events and one low-flow event were collected over the 2-year period to evaluate the spatial distribution of selected pesticides in the various subbasins in the Little River Basin.

A total of 91 samples were collected for pesticide analysis at the fixed-network sites. An additional 20 samples were collected at the synoptic-network sites. Thirty-one samples were collected for quality assurance/quality control (blanks, spikes, and replicates).

Sampling Methods

Representative water samples were collected by use of (1) the equal-width increment (EWI) method, in which depth-integrated samples are collected at equal distances across the entire stream width and composited or (2) the equal-discharge increment (EDI) method, in which equal-volume, depth-integrated samples are collected at the center of each EDI across the stream width and composited (Edwards and Glysson, 1998). All sampling material was constructed of Teflon to minimize contamination of sampling artifacts. Equipment used to collect and process the pesticide samples was precleaned with a 0.1-percent nonphosphate detergent, triple rinsed with tap water, acid rinsed with 5 percent hydrochloric acid for 30 minutes (nonmetal equipment only), triple rinsed with deionized water, rinsed with certified pesticide-free methanol, air dried, and stored in a dust-free environment prior to sample collection (Wilde, 2004).

Water samples for pesticides were pumped through Teflon tubing and filtered through a 142 mm diameter, 0.7-micrometer (µm) pore size, borosilicate glass-fiber filter placed in a stainless-steel filter unit (Sandstrom, 1995). The filtered water was collected in amber-glass colored bottles and chilled for later analysis of pesticides and pesticide-transformation products. Both the glass-fiber filters and the amber-glass bottles had been baked at 450˚C in a muffle furnace for a minimum of 2 hours. All pesticide samples were chilled and shipped on ice by overnight air express to the USGS National Water Quality Laboratory (NWQL) in Lakewood, Colorado, for analysis.

Field measurements of stream discharge, air temperature, barometric pressure, water temperature, specific conductance, pH, concentrations of dissolved oxygen, and turbidity were measured at the time of sampling. Alkalinity and bicarbonate were determined by titrating filtered sample water with 0.16N sulfuric acid using a digital titrator. Discharge was measured according to standard USGS guidelines as described by Rantz and others (1982). The field measurement data is available online at *http://ky.water.usgs.gov/* .

Analytical Methods

Pesticide water samples were analyzed using capillary-column gas chromatography/mass spectrometry (GC/MS) with selected-ion monitoring (Zaugg and others, 1995; Sandstrom and others, 2001). Concentrations of pesticides were reported by the NWQL with appropriate qualifiers to indicate analytical limitations. Analytical data from the NWQL were reported as "less than" when a pesticide was not detected or not present at the method detection limit (MDL). The MDL is defined as the minimum concentration of a substance that can be identified, measured, and reported with 99-percent confidence that the compound concentration is greater than zero (Wershaw and others, 1987). When the presence of a pesticide was detected and quantified in the sample, but the reported value was below the MDL, the concentration was identified as an estimated value.

Quality Control

Quality-control information is needed to estimate the bias and variability that results from sample collection, sample processing, and laboratory analysis in order to ensure proper interpretation of water-quality data. About 25 percent of all samples submitted to the laboratory were quality-control samples, which included equipment blanks and field blanks to measure contamination and bias, replicate samples to measure variability, and field-matrix spikes to measure the recovery of analytes.

A blank is a water sample that consists of water that has undetectable concentrations of analytes of interest. Blank-water samples are used to test for bias that could result from contamination during any stage of the sample collection or analysis process. Field-blank samples were collected to demonstrate that (1) equipment has been adequately cleaned to remove contamination introduced by samples obtained at previous sites; (2) sample collection and processing have not resulted in contamination; and (3) sample handling, transport, and laboratory analysis have not introduced contamination (Mueller and others, 1997). The procedure for blank samples was to place pesticide-free water through all of the sampling and filtration steps as a typical water-quality sample. Field-blank sample concentrations for pesticides did not indicate any contamination from the equipment or sample-processing methods.

A spike is an environmental sample that is injected with a known amount (mass) of a specific analyte. Spikes measure bias and variability in the measurements of pesticides. Pesticides added to environmental samples in the field are called field-matrix spikes; a field-matrix spike is a specific type of spiked sample that is injected in the field prior to shipping. Field-matrix spikes not only measure bias and variability of the analytical method, but also measure the potential effects caused by analyte degradation or matrix interference. Matrix interference is the effect that the matrix of the water sample itself has on the measurement of individual analytes within the environmental sample. The amount of pesticide measured (recovered) in a spiked sample is expressed as a percentage (the percent recovery) of the known amount of pesticide added to the sample. The recovery of a spike can be greater or less than 100 percent, so the bias can be either positive or negative. Spike-recovery calculations are described by (Mueller and others, 1997, p. 5).

Table 3 summarizes the percent-recovery data for commonly detected pesticides from the five water samples spiked in the field. Mean spike recoveries ranged from 91 to 106 percent and median spike recoveries ranged from 87 to 107 percent.

Table 3. Summary of percent recovery data for commonly detected pesticides spiked in the field for the Little River Basin, Kentucky, 2003-04.

	Spike recovery, in percent			
Constituent	Minimum	Maximum	Mean	Median
Acetochlor	85	112	98	97
Atrazine	28	147	97	87
Diazinon	87	102	95	94
Metolachlor	96	116	106	107
Prometon	84	113	99	96
Simazine	57	111	91	96

Replicate samples are a set of two or more environmental samples considered to be essentially identical in composition. Concurrent replicates are prepared by using one sampler and alternating collection of the samples into two or more compositing containers. All replicates collected in the Little River Basin were concurrent replicates.

Data obtained from the six sets of replicate samples was used to access the variability of the overall sampling and analytical process. Replicate samples were compared by using relative percent differences (RPDs). The RPD for each analyte and replicate sample pair was calculated by the following equation:

$$RPD = |S1 - S2| / (S1 + S2) / 2x100 \qquad (1)$$

where

$S1$ is equal to the concentration in the environmental sample, in milligrams per liter (mg/L) (nutrients) or micrograms per liter (µg/L) (pesticides); and

$S2$ is equal to the concentration in the replicate sample, in mg/L (nutrients) or µg/L (pesticides).

A large RPD can indicate greater variability in those samples. Differences in concentrations, as measured by RPD, within replicate sets ranged from 0 to 6.9 percent for pesticides (table 4).

Table 4. Summary of replicate sample data for commonly detected pesticides and pesticide-transformation compounds.

[RPD, relative percent difference]

Constituent	Number of replicate sample sets	Median RPD	Number of replicate sample sets with greater than 10 percent RPD
Acetochlor	6	1.8	0
Atrazine	6	4.5	1
Deethylatrazine*	6	3.6	2
Diazinon	6	1.5	2
Metolachlor	6	6.9	1
Prometon	6	0	1
Simazine	6	2.8	1

*Pesticide-transformation compound.

Statistical Analysis of Selected Pesticides

The S-Plus software program (Insightful Corporation, 2005) was used to calculate summary statistics such as the mean, median, minimum, and maximum concentrations for selected pesticides. The Wilcoxson rank-sum nonparametric statistical test (Helsel and Hirsch, 1992) was used to compare concentrations of selected pesticides at the four fixed-network sites in the basin. The Wilcoxson rank-sum test ranks the data points to determine the statistical significance of differences in concentrations between groups of data. Differences among the groups of data with a probability (p) value of 0.05 or less were considered significant in this study.

Load-Estimation Methods

Selected pesticide (atrazine, acetochlor, simazine, metolachlor, and diazinon) loads were estimated with the USGS software, LOADEST. This software uses time-series streamflow data and constituent concentrations to calibrate a regression model that describes constituent loads in terms of various functions of streamflow and time (Runkel and others, 2004). A complete discussion of the theory and principles behind the calibration and estimation methods can be found in Runkel and others, 2004.

The LOADEST software allows the user to choose between selecting the general form of the regression from several predefined models and letting the software automatically select the best-defined model, based on the Akaike Information Criterion (AIC) (Akaike, 1981). The predefined model with the lowest value for the AIC was then selected for use in load estimation; a user-defined model was used for this study. User-defined results and results defined by the software are listed in table 5. The RPDs between the two methods ranged from about zero to 53 percent (table 5).

Table 5. A comparison of loads for select pesticides at three sites using LOADEST predefined and user-defined models.

[lb/yr, pound per year]

Constituent	Predefined LOADEST model results (lb/yr)	User-defined LOADEST model results (lb/yr)	Relative difference (in percent)
North Fork Little River near Hopkinsville, Ky. (03437400)			
Atrazine	601	613	2.1
Simazine	75	74	.22
Metolachlor	4.3	4.2	3.8
Diazinon	4.3	5.6	27
South Fork Little River near Hopkinsville, Ky. (03437600)			
Atrazine	503	631	23
Simazine	55	55	.58
Metolachlor	10	10	1.6
Diazinon	1.9	1.1	53
Little River near Cadiz, Ky. (03438000)			
Atrazine	2,144	2,337	8.6
Simazine	349	331	5.2
Metolachlor	26	20	28
Diazinon	4.3	3.1	32

The output regression equation has the following general form:

$$1n(L) = a + b(1nQ) + c(1nQ^2) + d[\sin(2\pi T)] + e[\cos(2\pi T)] + fT + gT^2 \quad (2)$$

where

L	is the constituent load, in lb/d;
Q	is the stream discharge, in ft^3/s;
T	is the time, in decimal years, from the beginning of the calibration period; and
a,b,c,d,e,f,g	are regression coefficients.

Pesticides in Streams in the Little River Basin, Kentucky

Water samples for pesticides were collected at four fixed-network sites in the Little River Basin during March–November 2003 and February–November 2004. Additional samples were collected at five synoptic-network sites within the same time period. Results of the pesticide samples were evaluated in terms of occurrence, variability by site and season, and loads and yields of selected pesticides at selected sites in the basin. Water-quality criteria and guidelines are used to evaluate the potential effects of pesticides on human health and aquatic organisms.

Occurrence and Distribution

Detections and concentrations of pesticides in streams are affected by many factors, including the amount of pesticide used, the environmental persistence of the pesticide, and the analytical methods used. The most commonly detected pesticides were among the most heavily applied in the Little River Basin. Samples from all nine sites had detectable concentrations of at least one pesticide; 1 sample collected at the North Fork Little River site contained 12 detected pesticides. A common method reporting limit (MRL) of 0.01 µg/L was used to compare the detection frequencies of pesticides, because MRLs vary widely from one pesticide or related compound to another. The use of the detection threshold allows for comparison among pesticides by censoring detections to a common reference concentration. The lowest appropriate MRL for comparing pesticides is 0.01 µg/L for most of the pesticides analyzed in this study; however, several pesticides (prometon, tebuthiuron, pendimethalin, carbaryl, and Malathion) had MRLs that were greater than or equal to 0.01 µg/L. For these pesticides, the detection frequency is preceded by the asterisk (*) symbol to indicate that the true percentage of samples with concentrations greater than the threshold probably are greater than or equal to that reported in figure 6. Of the 127 pesticides analyzed, 24 were detected above the adjusted MRL of 0.01 µg/L (table 6).

Herbicides were detected more frequently than insecticides and fungicides. Fifteen of the 24 pesticides detected in water were herbicides. The commonly used herbicides—atrazine, simazine, metolachlor, acetochlor, and prometon—were found throughout the basin. Atrazine and simazine were detected in 100 percent, and metolachlor and acetochlor were detected in more than 45 percent of all surface-water samples (fig. 6). Almost 60 percent of the atrazine and 93 percent of the simazine samples were in the 0.1 to 1.0 µg/L range. The pesticide-transformation compound, deethylatrazine, was detected in 100 percent of the samples. Only one non-agricultural herbicide, prometon, was detected in more than 50 percent of the samples. Less frequently detected herbicides were butylate, pebulate, propyzamide, EPTC, tebuthiuron, and pendimethalin.

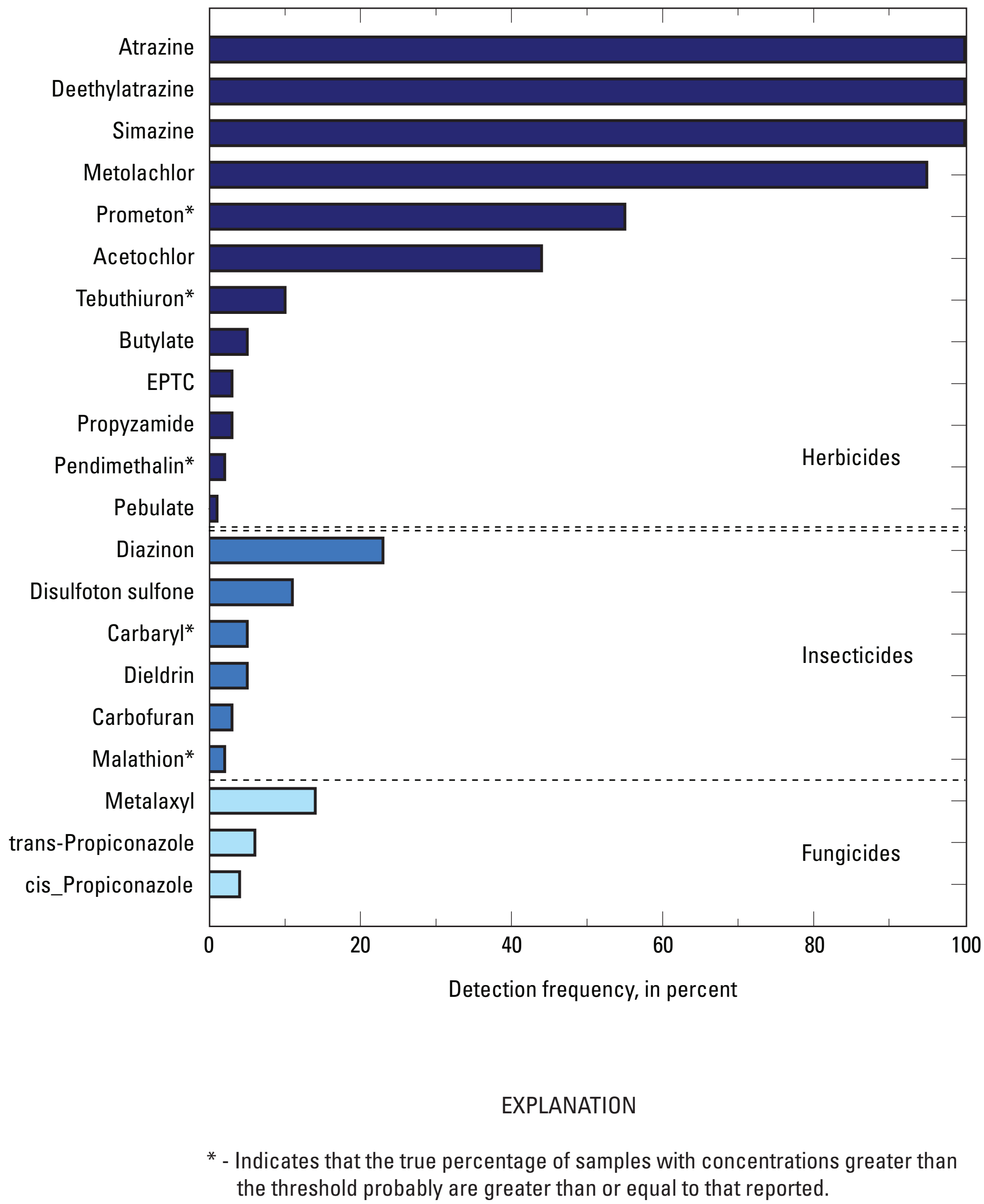


Figure 6. Occurrence of pesticide compounds from all samples at all sites in the Little River Basin, Kentucky, study area, 2003-04.

Table 6. Pesticides and pesticide-transformation products analyzed in surface-water samples from the Little River Basin, Kentucky, 2003-04.

[**Bold-faced** compounds were detected; *italicized* compounds are pesticide-transformation products]

Acetochlor	***Desethylatrazine***	2-[(2-Ethyl-6-methyl-phenyl)-amino]-1-propanol	**Metolachlor**	Propetamphos parathion
Alachlor	Desulfinyl	Fenamiphos	**Metribuzin**	**Propiconazole (cis- and trans-)**
alpha-Endosulfan	Desulfinylfipronil	Fenamiphos	Molinate	**Propyzamide**
alpha-HCH	**Diazinon**	Fenamiphos	Myclobutanil	**Simazine**
2-Amino-N-isopropyl-benzamide	Dichlorvos	Fenthion	1-Naphthol	Sulfotepp
Atrazine	2,5-Dichloroaniline	Fenthion	1,4-Naphthoquinone	Sulprofos
Azinphos-methyl	3,4-Dichloroaniline sulfate	Fipronil alcohol	**Napropamide**	Tebupirimphos
Azinphos-methyl	3,5-Dichloroaniline	Fipronil	O-Ethyl-O-methyl-S-propylphosphorothio-ate sulfide	**Tebuthiuron**
Benfluralin	4,4’-Dichlorobenzophenone	Fipronil	Oxyfluorfen sulfone	Tefluthrin
beta-Endosulfan	*2,6-Diethylaniline*	Flumetralin	pp’-DDE amide	Tefluthrin
Bifenthrin	(E)-Dimethomorph	Fonofos methyl	Paraoxon fipronil	Tefluthrin
Butylate	(Z)-Dimethomorph	Fonofos oxygen analog	Parathion	Temephos
2-(4-tert-Butylphenoxy)-cyclohexanol	Dicrotophos	***gamma*-HCH (Lin-dane)**	**Pebulate**	Terbacil
Carbaryl	**Dieldrin**	Hexazinone oxygen analog	**Pendimethalin**	Terbufos
Carbofuran	Dimethoate	4-(Hydroxymethyl)	3-Phenoxybenzyl	Terbufos
4-Chloro-2-methylphenol	Disulfoton	Iprodione sulfone	Phorate	Terbuthylazine
4-Chlorophenyl	***Disulfoton sulfone***	Isofenphos sulfoxide	Phorate	Thiobencarb
2-Chloro-2’,6’-diethylac-etanilide	Disulfoton sulfoxide	lambda-Cyhalothrin ether	Phosmet	Triallate
Chlorpyrifos	Endosulfan	Linuron sulfone	Phosmet	Tribuphos
Chlorpyrifos	Endosulfan	Malaoxon sulfoxide	Phostebupirim	Trifluralin
cis-Permethrin	**EPTC**	**Malathion**	Profenofos	3-(Trifluoromethyl)-aniline
Cyanazine	Ethalfluralin	**Metalaxyl**	**Prometon**	
Cycloate	Ethion	Methidathion	Prometryn	
Cyfluthrin	Ethion	Methyl (cis- and trans-)	Propachlor	
Cypermethrin	Ethoprop	Methyl paraoxon	Propanil	
DCPA	2-Ethyl-6-methylaniline	Methyl pendimethalin	Propargite	

The insecticides carbaryl, carbofuran, diazinon, dieldrin, Malathion, and disulfoton sulfone (transformation compound of disulfoton) were the only insecticides detected at any of the sites. Diazinon, the most commonly detected insecticide, was found in 23 percent of the samples and was detected at all sites, except Casey Creek. Insecticides, such as diazinon, typically are associated with urban areas. Diazinon was most frequently detected (10 out of 26 samples) at the North Fork Little River sampling site, which is 13 percent urban. Although detected in 23 percent of all samples, diazinon was detected in 54 percent of the samples collected in July and August. Disulfoton sulfone was detected in 11 percent of all samples and frequently occurred in the spring. Carbaryl and dieldrin were each detected in 5 percent of all samples. Carbaryl was most frequently detected at the North Fork Little River sampling site (three out of six samples). Carbofuran and Malathion were detected in 3 and 2 percent of the samples, respectively. The lower use, relative to herbicides and the application during periods of reduced runoff, probably accounts for lower detection rates and low concentrations of insecticides in the basin.

Metalaxyl was the most commonly detected fungicide (14 percent); most detections of metalaxyl were from the Sinking Fork subbasin. Metalaxyl was detected in about 63 percent of the samples collected during June, July, and August, although it was detected in only 14 percent of all samples. Propiconazole (cis- and trans- forms) was the only other fungicide detected in the samples.

Seasonal Variability in Concentrations of Pesticides

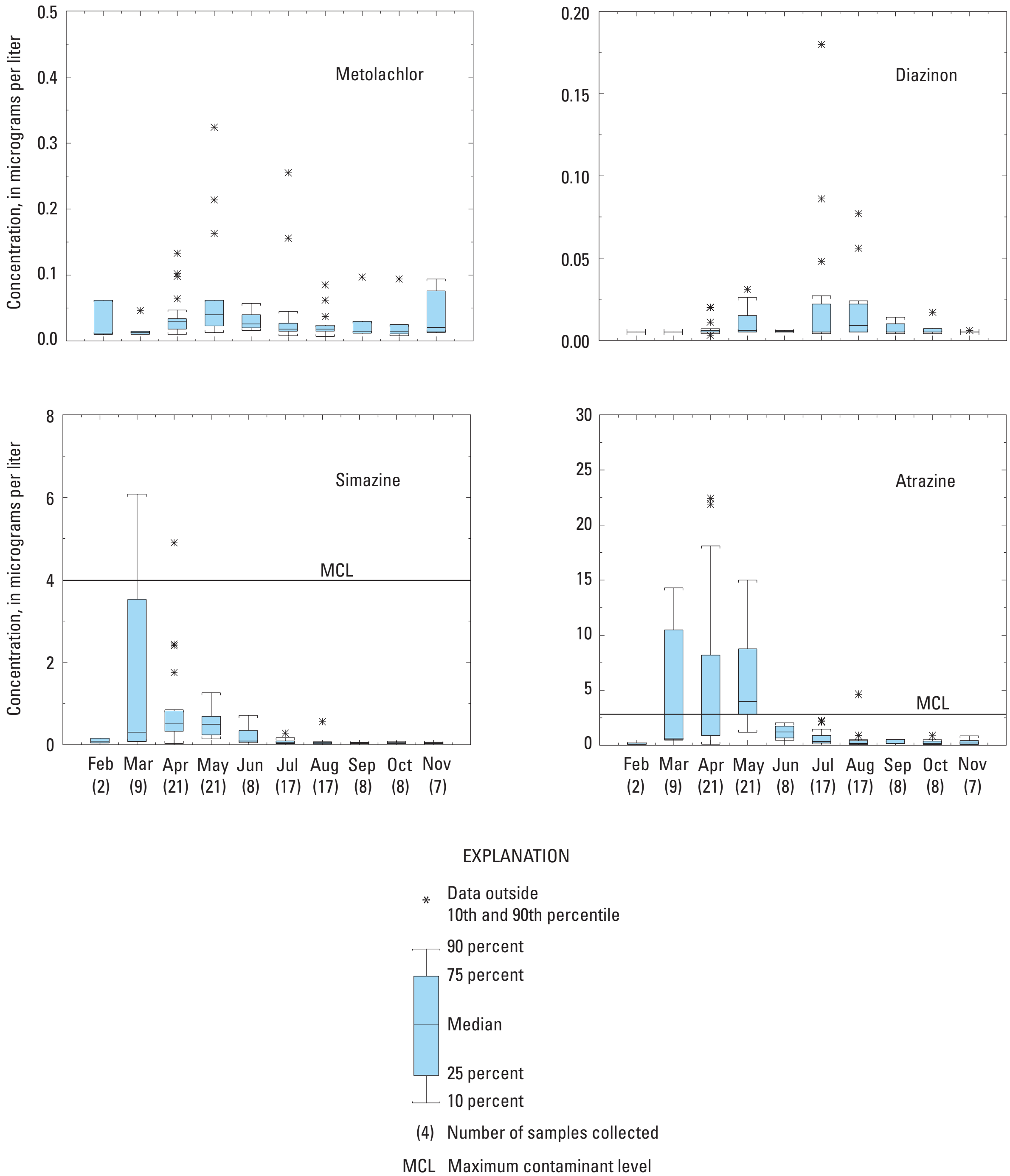
Concentrations of pesticides varied throughout the year in samples collected at all the sampling sites with the highest concentrations occurring during storm runoff in the spring. The maximum concentrations of 11 of the 15 herbicides detected occurred during the growing season (March-May) (fig. 7). The maximum concentrations for the four remaining detected herbicides (EPTC, pebulate, propyzamide, and tebuthiuron) occurred during the non-growing season.

The most commonly detected pesticides in the Little River Basin were found at low concentrations in streams year round (table 7). Atrazine (22 µg/L), simazine (6.1 µg/L), and acetochlor (4.1 µg/L) had the highest detected concentrations in the basin of the 15 herbicides detected. These herbicides are row-crop herbicides and are the most heavily applied pesticides in the basin. Metolachlor also is a heavily applied row-crop herbicide in the basin, but concentrations were never greater than 0.32 µg/L. Median concentrations of the herbicides acetochlor, atrazine, metolachlor, prometon, and simazine ranged from <0.018 µg/L for prometon to 0.58 µg/L for atrazine for all samples collected during this study (table 7). The highest concentrations of herbicides occurred in March, April, and May during storm runoff (fig. 7).

Concentrations of atrazine and its transformation compound (deethylatrazine) in relation to daily mean streamflow at three of the fixed-network sites are shown in figure 8. Daily mean streamflow was estimated for the North Fork Little River and South Fork Little River sites (both ungaged sites) by multiple-regression analysis using the available daily mean streamflow at the Little River near Cadiz site.

Concentrations of the parent-pesticide compound, atrazine, were higher in the spring following application during periods of increased streamflow and lower later in the growing season when there is no application and streamflow is decreased. The seasonal pattern for the pesticide-transformation compound, deethylatrazine, mirrored that of its parent compound, atrazine, but at lower concentrations. Concentrations of deethylatrazine at the South Fork Little River site and at Little River near Cadiz were slightly higher than atrazine during late summer and autumn; however, the difference was <0.1 µg/L (fig. 8). It would be expected for pesticide-transformation compounds to follow a similar seasonal pattern as the parent pesticide compounds, because most pesticides begin to degrade by chemical or biological processes following application.

In contrast to the most commonly detected herbicides, the most commonly detected insecticide, diazinon, was primarily present during the summer. The highest concentrations of diazinon occurred during July and August (fig. 9). When present, concentrations of diazinon were less than 0.18 µg/L. Diazinon typically is applied to lawns later in the season to control fleas, ticks, and white grubs, which would probably explain its high detection rate and concentrations during the summer months. It also is used to control cockroaches. Unlike diazinon, disulfoton sulfone was most frequently detected in the spring; the highest concentrations occurred in April. Disulfoton is a systemic insecticide used to control aphids and various other insects; disulfoton sulfone is a transformation product of disulfoton.



Fgure 7. Monthly concentrations of selected pesticides at all sampling sites in the Little River Basin, Kentucky, study area, 2003-04.

Table 7. Summary statistics of the detected herbicides, insecticides, and fungicides in samples collected in the Little River Basin, Kentucky; laboratory reporting limits; drinking-water standards; and aquatic-life criteria.

[Concentrations in micrograms per liter (µg/L); MCL. maximum contaminant level; HAL, health advisory level; --, no regulation or guideline; Ky, Kentucky; CIAT, 2-chloro-4-isopropylamino-6-amino-s-triazine; LD, less than laboratory reporting level; drinking water standards from U.S. Environmental Protection Agency (2004b), unless otherwise noted]

Compound	Trade name(s)	Method detection limit (µg/L)	Median concentration of all samples (µg/L)	90th percentile of all samples	Maximum concentration detected (µg/L)	Site of maximum concentration	Drinking water standard or guideline (MCL or HAL) (µg/L)	Aquatic Life Criterion (µg/L)
				Herbicides				
Acetochlor	Harness	0.002	0.008	0.253	4.14	Little River near Cadiz, Ky.	--	--
Alachlor	Lasso	.002	LD	.006	.015	Sinking Fork near Hopkinsville, Ky.	2	--
Atrazine	Aatrex	.001	.58	9.41	22.4	South Fork Little River at Hopkinsville, Ky.	3	[1]1.8
Butylate	Sutan+	.002	LD	.01	[2].02	North Fork Little River at Hopkinsville, Ky.	350	--
CIAT (DEA)	Degradate of atrazine	.002	[2].218	[2].448	[2].997	South Fork Little River at Hopkinsville, Ky.	--	--
EPTC	Eptam	.002	LD	.009	.035	North Fork Little River at Hopkinsville, Ky.	--	--
Metoalchlor	Dual	.002	.02	.09	.32	South Fork Little River at Hopkinsville, Ky.	[3]100	[1]7.8
Metribuzin	Lexone, Sencor	.004	LD	LD	.029	Little River near Cadiz, Ky.	[3]200	[1]1
Napropamide	Devrinol	.003	LD	LD	.022	South Fork Little River at Hopkinsville, Ky.	--	--
Pebulate	Tillam	.004	LD	LD	.012	North Fork Little River at Hopkinsville, Ky.	--	--
Pendimethalin	Prowl, Tillam	.004	LD	LD	.121	Sinking Fork near Hopkinsville, Ky.	--	--
Prometon	Pramitol	.018	LD	.05	.16	Sinking Fork at Kings Chapel Road near Cadiz, Ky.	[3]100	--
Propyzamide	Kerb	.004	LD	.008	.015	North Fork Little River at Hopkinsville, Ky. and South Fork Little River at Hopkinsville, Ky.	--	--
Simazine	Princep, Aquazine	.005	.07	.77	6.1	Sinking Fork at Kings Chapel Road near Cadiz, Ky.	4	--
Tebuthiuron	Spike, Graslan	.010	LD	LD	.11	South Fork Little River at Hopkinsville, Ky.	500	--
				Insecticides				
Carbaryl	Sevin	.003	LD	LD	[2].404	North Fork Little River at Hopkinsville, Ky.	700	[1].20
Carbofuran	Furadan	.003	LD	LD	[2].035	North Fork Little River at Hopkinsville, Ky.	40	[1]1.8
Diazinon	Diazinon and others	.002	LD	.02	.18	North Fork Little River at Hopkinsville, Ky.	[3].6	[1].08
Dieldrin	Panoram D-31	.001	[2].008	[2].009	.021	North Fork Little River at Hopkinsville, Ky. and South Fork Little River at Hopkinsville, Ky.	--	--
Disulfoton	Disyston and others	.017	LD	LD	.10	South Fork Little River at Hopkinsville, Ky.	.3	--
gamma-HCH	Lindane	.011	LD	LD	.016	Muddy Fork near Hopkinsville, Ky.	[3].2	[1].01
Malathion	Malathion and others	.005	LD	LD	.038	North Fork Little River at Hopkinsville, Ky.	200	.1
				Fungicides				
cis-Propiconazole	Banner, Orbit	.001	LD	LD	.027	Muddy Fork near Hopkinsville, Ky.	--	--
trans-Propiconazole	Banner, Orbit	.001	LD	LD	.04	Muddy Fork near Hopkinsville, Ky.	--	--
Metalaxyl	Apron, Subdue	.002	LD	.02	.05	Little River near Cadiz, Ky.	--	--

[1]Canadian water-quality guidelines for the protection of freshwater aquatic life (Canadian Council of Ministers of the Environment, 2003).
[2]Estimated value.
[3]U.S. Environmental Protection Agency lifetime-health advisory for a 70-kilogram adult (U.S. Environmental Protection Agency, 2004a).

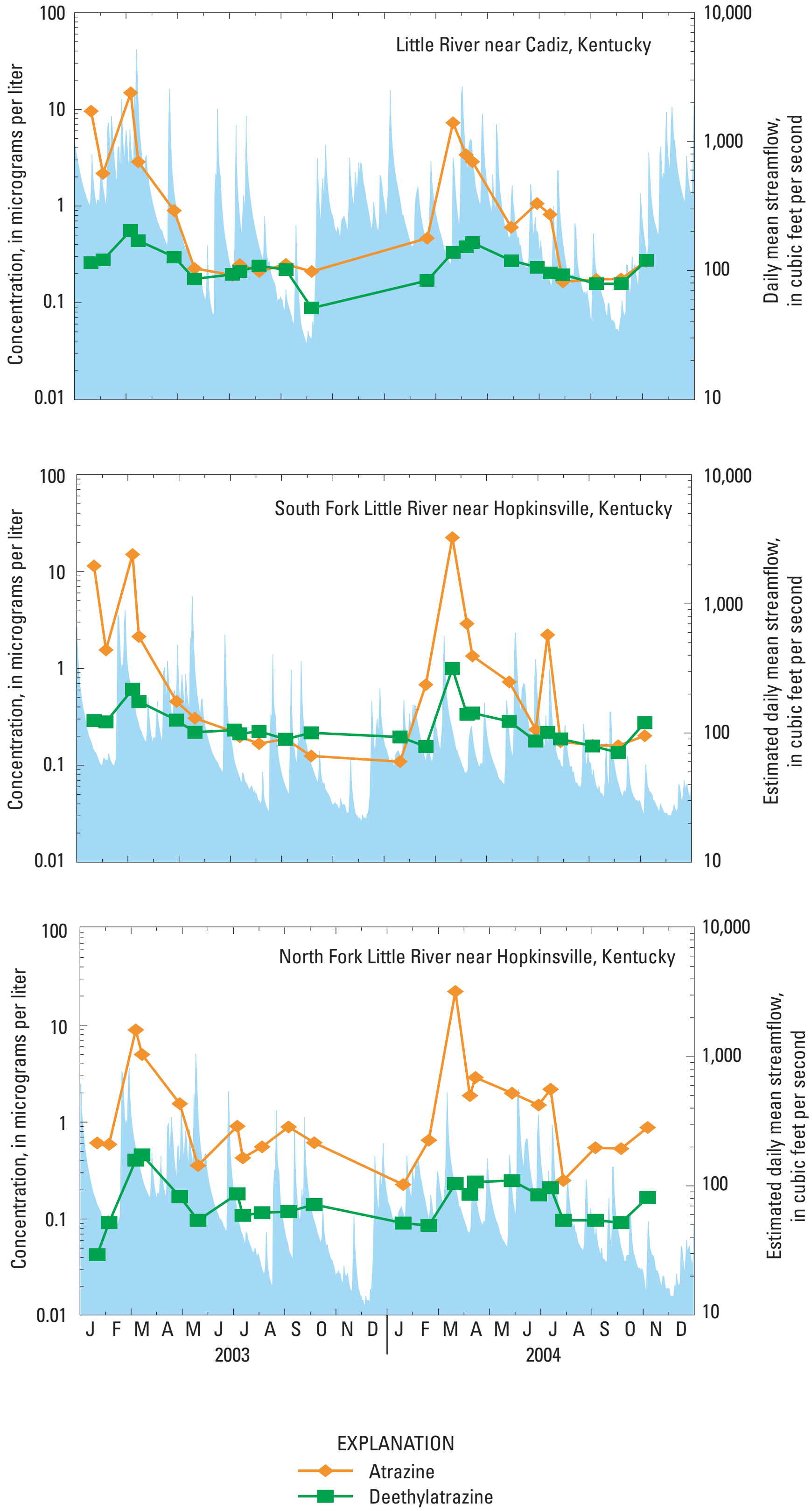


Figure 8. Seasonal variabilty of atrazine and its transformation product, deethylatrazine, at three selected sampling sites in the Little River Basin, Kentucky, study area, 2003-04.

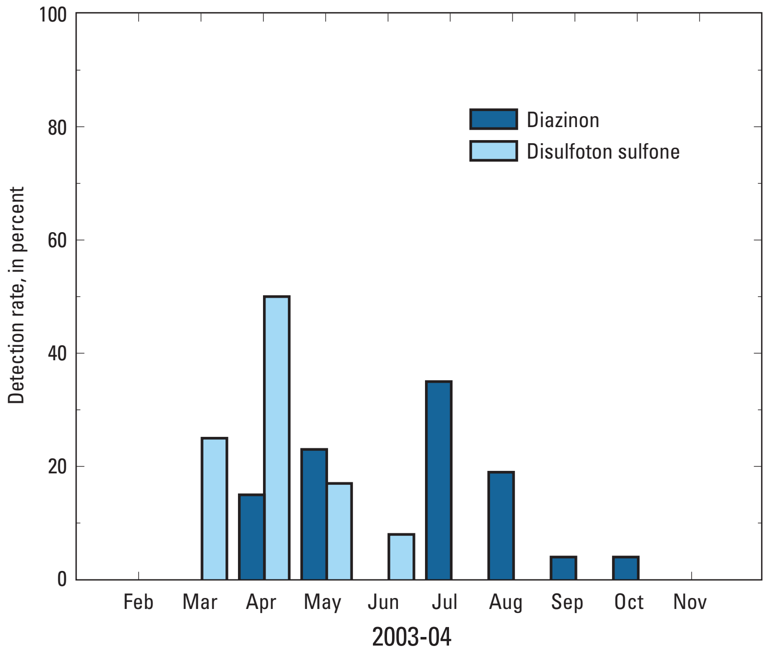


Figure 9. Monthly detection rates of selected insecticides (diazinon and disulfonton sulfone) in the Little River Basin, Kentucky, study area, 2003-04. (Monthly detection rates were combined for 2003 and 2004.)

Median concentrations of the detected insecticides were less than their detection levels with the exception of dieldrin; the median concentration of dieldrin was estimated at 0.008 µg/L. Concentrations of fungicides were highest during summer and late autumn. Concentrations of pesticides can vary seasonally because of differences in the time and frequency that pesticides are applied; hydrologic conditions; types of soil; and the physical, chemical, and biological characteristics of pesticide compounds. Some of the key hydrologic conditions include the timing and amount of runoff from rainfall and the degree of interaction between streams and ground water. Seasonal patterns are important to characterize because they determine the timing and duration of the highest concentrations of pesticides that may affect the quality of water for human aquatic life and wildlife (Gilliom and others, 2006).

Spatial Variability in Concentrations of Pesticides

The Wilcoxson rank-sum nonparametric statistical test (Helsel and Hirsch, 1992) was used to compare concentrations of selected pesticides at the four fixed-network sites in the basin. The Wilcoxson rank-sum test ranks the data points to determine if one data set has higher values than another data set. Differences between the groups with probability (*p*) values of 0.05 or less were considered significant in this study. A total of 23 samples were collected at each of the 4 fixed-network sites during 2003-04. Median concentrations of atrazine and simazine were higher at the North Fork Little River site than at Sinking Fork near Cadiz and at the South Fork Little River site, respectively (fig. 10). There is no clear explanation as to why there are higher concentrations of atrazine and simazine at the North Fork Little River site than at the other sites, since it has the least amount of cultivated land (19 percent). No statistical differences were found among the median concentrations of atrazine or simazine at the other sites. Median concentrations of deethylatrazine (transformation compound of atrazine) were lower at the North Fork Little River site than at the other fixed-network sites. The median concentration of deethylatrazine at the North Fork Little River site was 0.26 µg/L.

Concentrations of metolachlor were higher at Sinking Fork near Cadiz than at the other three sites (fig. 10); the median concentration of metolachlor for this site was about 2.5 times higher (0.05 µg/L) than at the other three sites. Median concentrations of deethylatrazine (transformation compound of atrazine) were lower at the North Fork Little River site than at the other fixed-network sites. The median concentration of deethylatrazine at the North Fork Little River site was 0.26 µg/L.

Differences in median concentrations of diazinon were higher at the North Fork Little River site than at the other three sites (fig. 10). The median concentration for diazinon for the North Fork Little River site was 0.01 µg/L. One explanation for the North Fork Little River site having a higher median concentration of diazinon than the other sites is because the amount of urban land where diazinon (an urban insecticide) might be used is greater in the North Fork Little River subbasin (13 percent).

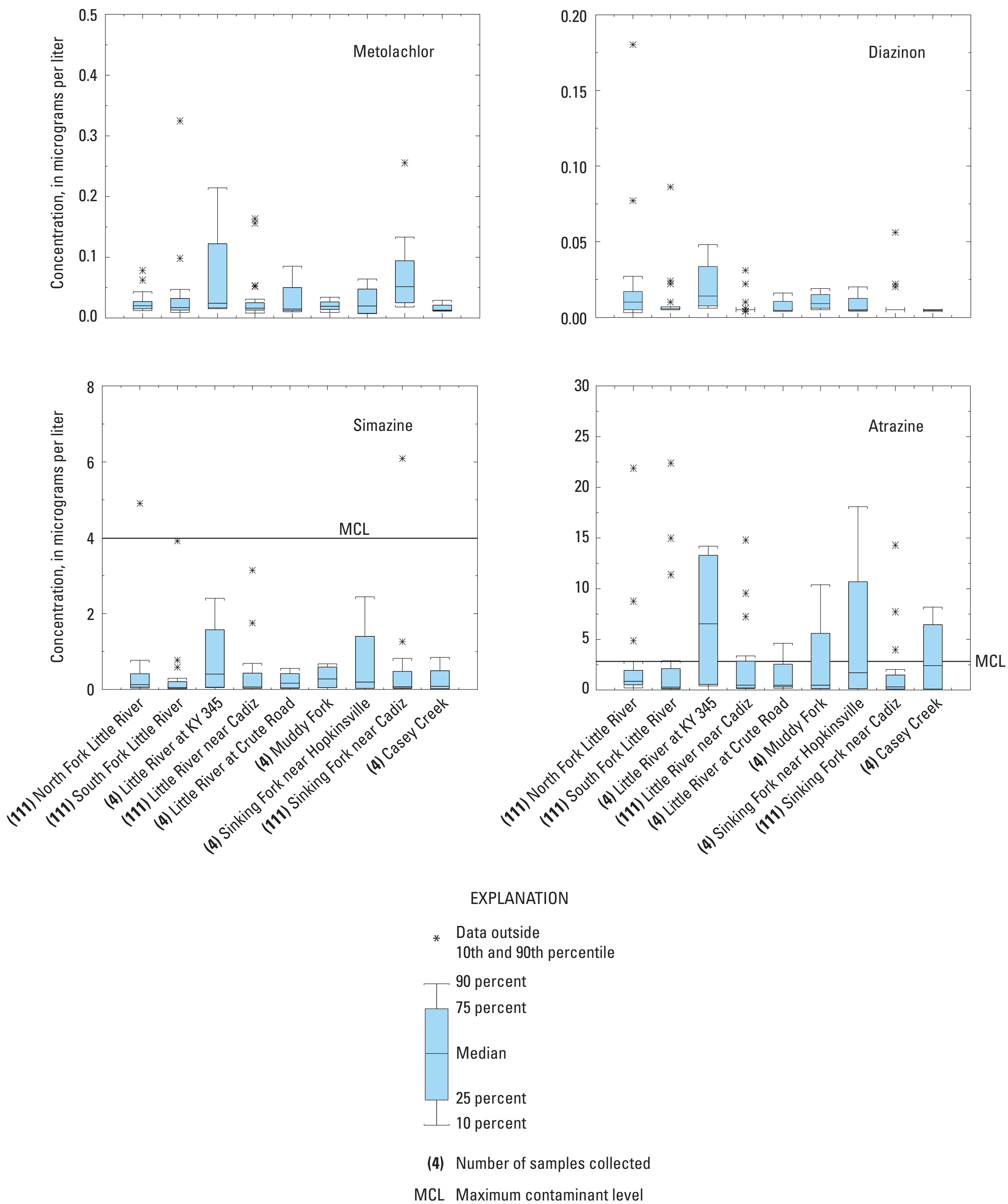


Figure 10. Concentrations of selected pesticides (metolachlor, diazinon, simazine, and atrazine) at all sampling sites in the Little River Basin, Kentucky, study area, 2003-04.

Concentrations of Stream Pesticides Compared to Drinking-Water Standards and Aquatic-Life Guidelines

The U.S. Environmental Protection Agency (USEPA) has developed water-quality standards and guidelines for some compounds that can have adverse effects on human health and aquatic organisms. The standards and guidelines (also known as maximum contaminant levels (MCLs)) established by the USEPA pertain to finished drinking water; however, the MCL values provide comparison with sampled concentrations (U.S. Environmental Protection Agency, 2004a). Aquatic-life criteria provide for the protection of aquatic organisms for short-term (acute) and long-term (chronic) exposures to chemical compounds. In certain instances, Canadian guidelines were used for comparison when other criteria were unavailable (International Joint Commission Canada and United States, 1977; Canadian Council of Ministers of the Environment, 2003).

Most detections of pesticides during this study were at low concentrations relative to existing drinking-water standards and guidelines established for the protection of aquatic life (table 7). Many of the pesticides detected during this study, including the pesticide-transformation compounds, do not have established standards or criteria. Only two pesticide compounds—atrazine and simazine—exceeded the USEPA's MCL. Atrazine and simazine exceeded the established MCL in 17 and 2 percent of the samples, respectively. These exceedences occurred in the spring, and for atrazine, were observed at all sampling sites.

Although most detections of pesticides were at concentrations less than the U.S. Environmental Protection Agency (2004b) drinking-water MCLs and health-advisory levels (HALs), several pesticides—atrazine, carbaryl, diazinon, and gamma-HCH (lindane)—were detected in stream samples at concentrations exceeding guidelines established to protect aquatic life (Canadian Council of Ministers of the Environment, 2003; International Joint Commission Canada and United States, 1977).

Concentrations of atrazine exceeded its aquatic-life criterion (1.8 µg/L) in 32 samples collected from all sites. The concentration of atrazine in the storm sample collected from the South Fork Little River site (22.4 µg/L) was more than 12 times its aquatic-life criterion; most of the high concentrations of atrazine occurred in storm samples. The highest concentrations of the insecticides—carbaryl, diazinon, and gamma-HCH—also occurred in storm samples. Carbaryl was detected at concentrations that exceeded the aquatic-life criterion (0.2 µg/L) in 12 samples. Concentrations of diazinon exceeded their aquatic-life criterion (0.08 µg/L) in two samples collected in July 2004 at the North Fork Little River and at the South Fork Little River sites. Gamma-HCH was detected in one sample from Muddy Fork near Hopkinsville (0.016 µg/L), exceeding its aquatic-life criterion (0.01 µg/L).

Estimated Loads and Yields of Selected Pesticides

Water-resource managers often need to know the amount of a contaminant transported in a stream to determine the stream's condition and how it changes over time. Loads and yields of the contaminants are common measures for these assessments. Loads and yields were estimated for the five pesticides frequently detected in samples for three of the four fixed-network sites from samples collected during 2003-04 (table 8). Loads were not estimated at Sinking Fork near Cadiz because a streamflow relation between this site and Little River near Cadiz could not be established.

Mean annual loads (in lb/yr) for selected pesticides were estimated using the LOADEST program. Load represents the mass (usually in pounds or tons) of a given water-bourne constituent moving past a given point per unit of time. Annual loads vary depending upon drainage-basin size, discharge conditions, and land uses. Load estimates based on monitoring sites with long periods of record are more reliable than estimates from sites with short periods of record.

The largest mean annual loads of selected pesticides among the three fixed sites were at Little River near Cadiz. This site had the largest mean annual loads of atrazine (2,337 lb/yr), metolachlor (19.51 lb/yr), and simazine (330.8 lb/yr) during 2003-04. The North Fork Little River site had the largest mean annual load of diazinon (5.57 lb/yr). The mean annual load of acetochlor (190 lb/yr) was largest at the South Fork Little River site.

Atrazine had the largest estimated use and the largest estimated loads. The load for diazinon, an insecticide that is primarily used for nonagricultural purposes, was less than agricultural herbicides. For example, the load of diazinon at the North Fork Little River site was only 0.9 percent of the atrazine load.

The estimated annual loads of acetochlor, atrazine, diazinon, metolachlor, and simazine for the study period were about 0.01 to 2.2 percent of the amount applied in the basin. The large variability in the values for load as a percentage of use is to be expected because of the considerable variability in physical properties and in application practices (Larson and others, 1997).

Yield is equal to the load divided by the drainage area. Yields are helpful in comparison between basins of differing size and streamflow characteristics because they minimize the effect of differences in streamflow. The South Fork Little River site had the largest yields of commonly used row-crop herbicides (acetochlor, atrazine, and metolachlor). The yield of atrazine was 10.9 (lb/yr)/mi^2 (table 8); acetochlor and metolachlor yields were 3.3 and 0.19 (lb/yr)/mi^2, respectively. Simazine, another commonly used row-crop herbicide, had the largest yield at Little River near Cadiz (1.4 (lb/yr)/mi^2). The North Fork Little River site, a more urban site, contained the largest yield of diazinon (0.08 (lb/yr)/mi^2); diazinon is a pesticide typically used in urban areas.

Table 8. Mean annual load and yield of selected pesticides at selected fixed-network sites in the Little River Basin, Kentucky, 2003-04.

[lb/d, pound per day; (lb/yr)/mi², pound per year per square mile; DA, drainage area; mi², square mile; <, less than]

Pesticide	Mean annual load (lb/d)	95 percent confidence interval Lower	95 percent confidence interval Upper	Standard error	Mean annual yield (lb/yr)/mi²
Little River near Cadiz, Ky. (DA = 244 mi²)					
Acetochlor	66	7.3	234	40	0.27
Atrazine	2,300	1,100	4,400	780	9.4
Deethylatrazine	266	219	314	24	1.1
Diazinon	<4	<4	7.3	.8	<.02
Metolachlor	18	11	29	4.8	.07
Simazine	330	175	584	96	1.3
North Fork Little River near Hopkinsville, Ky. (DA = 58 mi²)					
Acetochlor	33	7.3	95	24	.49
Atrazine	620	274	1,170	217	9.2
Deethylatrazine	36	26	48	5.3	.05
Diazinon	<4	<4	11	2.4	<.06
Metolachlor	<4	<4	<4	.41	<.06
Simazine	73	47	113	16	1.1
South Fork Little River near Hopkinsville, Ky. (DA = 67 mi²)					
Acetochlor	193	7.3	912	241	3.3
Atrazine	620	193	1,570	338	11
Deethylatrazine	80	55	95	8.0	1.4
Diazinon	<4	<4	4	<4	<.07
Metolachlor	11	4	18	4	.19
Simazine	55	26	106	16	.95

Summary

A water-quality assessment of streams in the Little River Basin (about 600 square miles in western Kentucky was conducted during 2003–04, in cooperation with the Kentucky Department of Agriculture. The purpose of the study was to determine the presence and distribution of pesticides in streams in the study area, to evaluate the variability in concentrations of pesticides by site and season, and to evaluate loads and yields of selected pesticides. Four fixed-network sites were sampled monthly from March through November 2003 and from February through November 2004. Additional samples were collected at each of these sites during floods to define concentrations of pesticides during high-flow events. Samples were collected from five synoptic-network sites during three high-flow events and one low-flow event over the 2 year period to better define spatial variability in concentrations of pesticides. Ninety one samples were collected for pesticide analysis at the four fixed-network sites.

Herbicides were detected more frequently than insecticides and fungicides; 15 of the 24 pesticides detected in surface-water samples were herbicides. The most commonly detected herbicides were those used on row crops. Atrazine and simazine were detected in all surface-water samples. Metolachlor and acetochlor were detected in more than 45 percent of the samples. Deethylatrazine, a transformation compound of atrazine, was detected in 100 percent of the samples. Only one nonagricultural herbicide, prometon, was detected in more than 50 percent of the samples. Diazinon, the most commonly detected insecticide, was detected in 25 percent of the samples and was found at all sites, except Casey Creek. It was detected most frequently in July and August. Samples from all 9 sites had detectable concentrations of at least 1 pesticide; 1 sample collected at the North Fork Little River site contained 12 detected pesticides. Pesticide detections most frequently occurred in the spring to early summer months (March-June) when agricultural pesticides are applied.

Most pesticides were present in low concentrations. Atrazine and simazine (row-crop herbicides) had the highest measured concentrations (22 and 6.1 µg/L, respectively) and were the most heavily applied herbicides in the basin. Metolachlor also was heavily applied in the basin, but measured concentrations did not exceed 0.32 µg/L. The insecticide Malathion was only detected in 4 percent of the samples, although it was heavily applied in the basin during 2003-04. The highest concentration of Malathion (0.04 µg/L) was measured at South Fork Little River.

Concentrations of deethylatrazine, an herbicide-transformation compound, tended to follow the same monthly concentration pattern as its parent compound, atrazine, but concentrations of deethylatrazine were lower than those of atrazine. Atrazine may have been present in the soil much longer at these sites, which might have allowed microbial populations to transform atrazine into deethylatrazine.

Most concentrations of pesticides were low in relation to existing drinking-water standards and guidelines established for the protection of aquatic life. Only two pesticide compounds—atrazine and simazine—exceeded the U.S. Environmental Protection Agency (USEPA) standards for drinking water. Atrazine exceeded the USEPA's maximum contaminant level (MCL) in 17 percent of all samples; simazine exceeded its established MCL in 2 percent of all samples. These exceedences occurred in the spring. Concentrations of atrazine also exceeded its established aquatic-life criterion (1.8 µg/L) in 29 percent of all samples.

A statistical comparison of concentrations of selected pesticides among the four fixed-network sites showed higher median concentrations of atrazine, simazine, and diazinon at the North Fork Little River site than at the other sites. Median concentrations of deethylatrazine were higher at the North Fork Little River site than at the other sites. Concentrations of metolachlor were significantly higher at Sinking Fork near Cadiz than at the other three sites.

The largest mean annual loads of selected pesticides among the fixed-network sites were at the Little River near Cadiz. Loads were not estimated for the fixed-network site, Sinking Fork near Cadiz. The Little River near Cadiz site had the largest mean annual loads of atrazine (2,337 pounds per year (lb/yr)), metolachlor (19.51 lb/yr), and simazine (330.8 lb/yr) during 2003-04. The North Fork Little River site had the largest mean annual load of diazinon (5.57 lb/yr). The mean annual load of acetochlor (189.5 lb/yr) was largest at the South Fork Little River site.

The estimated annual loads of acetochlor, atrazine, diazinon, metolachlor, and simazine for the study period were about 0.01 to 2.2 percent of the amount applied in the basin. Atrazine had the largest estimated use and the largest estimated loads in the basin. The largest load of the insecticide diazinon that was estimated at the North Fork Little River site was only 0.9 percent of the atrazine load.

Total yields of atrazine ranged from 9.07 to 10.88 pounds per year per square mile ((lb/yr)/mi^2). The South Fork Little River site had the largest yields of commonly used row-crop herbicides (acetochlor, atrazine, and metolachlor). The yield of atrazine was 11 (lb/yr)/mi^2; acetochlor and metolachlor yields were 3.3 and 0.19 (lb/yr)/mi^2, respectively. Simazine, another commonly used row-crop herbicide, had the largest yield at Little River near Cadiz (1.36 (lb/yr)/mi^2). The North Fork Little River site, a more urban site, had the largest yield of diazinon (0.08 (lb/yr)/mi^2); diazinon is a pesticide typically used in urban areas.

The results presented in this report provide an assessment of the presence of pesticide compounds that commonly were used during and possibly several years prior to the study period 2003-04. The vulnerability of drinking-water supplies and of aquatic life to applications of pesticides in the Little River Basin is enhanced by development of karst features, which provide reduced opportunity for natural attenuation of contaminants and increased opportunity for surface- and ground-water contamination.

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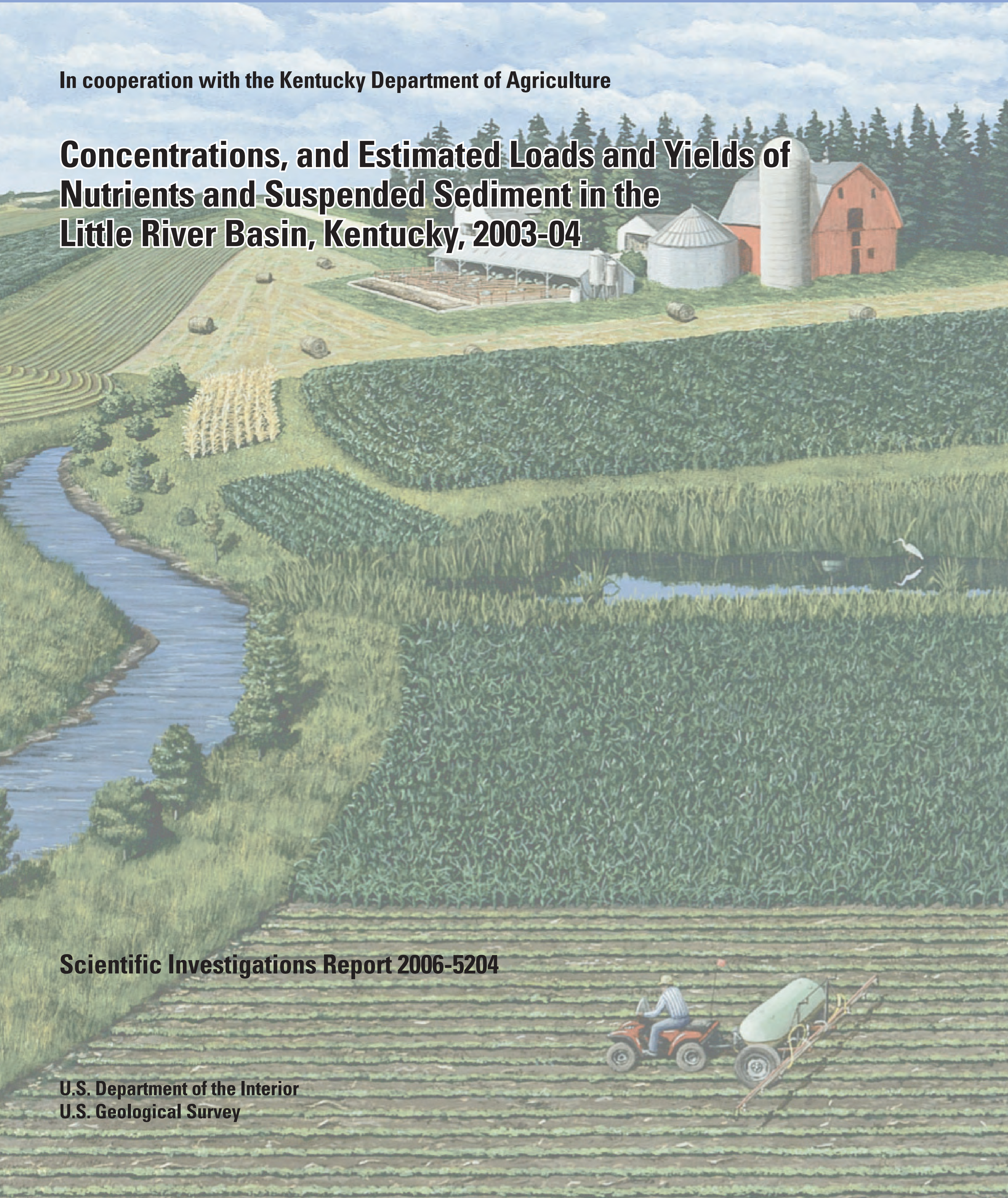
Concentrations, and Estimated Loads and Yields of Nutrients and Suspended Sediment in the Little River Basin, Kentucky, 2003-04



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Concentrations, and Estimated Loads and Yields of Nutrients and Suspended Sediment in the Little River Basin, Kentucky, 2003-04

By Angela S. Crain

In cooperation with the Kentucky Department of Agriculture

Scientific Investigations Report 2006-5204

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Figures

Tables

Conversion Factors and Abbreviations

Inch/Pound to SI

Multiply	By	To obtain
	Length	
inch (in.)	2.54	centimeter (cm)
inch (in.)	25.4	millimeter (mm)
	Area	
acre	4,047	square meter (m^2)
acre	0.4047	hectare (ha)
acre	0.4047	square hectometer (hm^2)
acre	0.004047	square kilometer (km^2)
square mile (mi^2)	259.0	hectare (ha)
square mile (mi^2)	2.590	square kilometer (km^2)
	Flow rate	
cubic foot per second (ft^3/s)	0.02832	cubic meter per second (m^3/s)
million gallons per day (Mgal/d)	0.04381	cubic meter per second (m^3/s)
	Mass	
pound, avoirdupois (lb)	0.4536	kilogram (kg)
	Application rate	
pounds per acre (lb/acre)	1.121	kilograms per hectare (kg/ha)
pounds per day (lb/d)	0.4536	kilogram per day (kg/d)
pounds per year (lb/yr)	0.4536	kilograms per year (kg/yr)
pounds per square mile (lb/mi^2)	0.17514	kilograms per square kilometer (kg/km^2)
pounds per square mile per year ((lb/mi^2)/yr)	0.17514	kilograms per square kilometer per year ((kg/km^2)/yr)
pounds per year per square mile ((lb/yr)/mi^2)	0.17514	kilograms per year per square kilometer ((kg/yr)/km^2)

Temperature in degrees Celsius (°C) may be converted to degrees Fahrenheit (°F) as follows:

$°F=(1.8\times°C)+32$

Concentrations of chemical constituents in water are given either in milligrams per liter (mg/L) or micrograms per liter (µg/L).

Abbreviations

AIC - Akaike Information Criterion

EDI - equal-discharge increment

EWI - equal-width increment

mL - milliliter

MCL - maximum contaminant level

N – normal

NADP - National Atmospheric Deposition Program

NPDES – National Pollutant Discharge Elimination System

NWQL - National Water Quality Laboratory

PCS – Permit Compliance Section

RPD - relative percent difference

TMDL - total maximum daily load

USEPA - U.S. Environmental Protection Agency

USGS - U.S. Geological Survey

Concentrations, and Estimated Loads and Yields of Nutrients and Suspended Sediment in the Little River Basin, Kentucky, 2003-04

By Angela S. Crain

Abstract

Nutrients, primarily nitrogen and phosphorus compounds, naturally occur but also are applied to land in the form of commercial fertilizers and livestock waste to enhance plant growth. Concentrations, estimated loads and yields, and sources of nitrite plus nitrate, total phosphorus, and orthophosphate were evaluated in streams of the Little River Basin to assist the Commonwealth of Kentucky in developing "total maximum daily loads" (TMDLs) for streams in the basin. The Little River Basin encompasses about 600 square miles in Christian and Trigg Counties, and a portion of Caldwell County in western Kentucky. Water samples were collected in streams in the Little River Basin during 2003-04 as part of a study conducted in cooperation with the Kentucky Department of Agriculture. A total of 92 water samples were collected at four fixed-network sites from March through November 2003 and from February through November 2004. An additional 20 samples were collected at five synoptic-network sites during the same period.

Median concentrations of nitrogen, phosphorus, and suspended sediment varied spatially and seasonally. Concentrations of nitrogen were higher in the spring (March-May) after fertilizer application and runoff. The highest concentration of nitrite plus nitrate—5.7 milligrams per liter (mg/L)—was detected at the South Fork Little River site. The Sinking Fork near Cadiz site had the highest median concentration of nitrite plus nitrate (4.6 mg/L).

The North Fork Little River site and the Little River near Cadiz site had higher concentrations of orthophosphate in the fall and lower concentrations in the spring. Concentrations of orthophosphate remained high during the summer (June-August) at the North Fork Little River site possibly because of the contribution of wastewater effluent to streamflow. Fifty-eight percent of the concentrations of total phosphorus at the nine sites exceeded the U.S. Environmental Protection Agency recommended maximum concentration limit of 0.1 mg/L.

Concentrations of suspended sediment were highest in the spring during runoff and lowest in the fall. The highest concentration of suspended sediment (1,020 mg/L) was observed at the Sinking Fork near Cadiz site. The median concentration of suspended sediment for all sites sampled was 12 mg/L. A nonparameteric statistical test (Wilcoxson rank-sum) showed that the median concentrations of suspended sediment were not different among any of the fixed-network sites.

The Little River near Cadiz site contributed larger estimated mean annual loads of nitrite plus nitrate (2,500,000 pounds per year (lb/yr)) and total phosphorus (160,000 lb/yr) than the other three fixed-network sites. Of the two main upstream tributaries from the Little River near Cadiz site, the North Fork Little River was the greatest contributor of total phosphorus to the study area with an estimated mean annual load of 107,000 lb/yr or about 64 percent of the total estimated mean annual load at the Little River near Cadiz site. The other main upstream tributary, South Fork Little River, had an estimated mean annual load of total phosphorus that was about 20 percent of the mean annual load at the Little River near Cadiz site. Estimated loads of suspended sediment were largest at the Little River near Cadiz site, where the estimated mean annual load for 2003-04 was about 84,000,000 lb/yr. The North Fork Little River contributed an estimated 36 percent of the mean annual load of suspended sediment at the Little River near Cadiz site, while the South Fork Little River contributed an estimated 18 percent of the mean annual load at the Little River near Cadiz site.

The North Fork Little River site had the largest estimated mean annual yield of total phosphorus (1,600 pounds per year per square mile (lb/yr/mi^2)) and orthophosphate (1,100 lb/yr/mi^2). A principal source of phosphorus for the North Fork Little River is discharge from wastewater-treatment facilities. The largest estimated mean annual yield of nitrite plus nitrate was observed at the South Fork Little River site. The North Fork Little River site had the largest estimated mean annual yield of suspended sediment (450,000 lb/yr/mi^2).

Inputs of nitrogen and phosphorus to streams from point and nonpoint sources were estimated for the Little River Basin. Commercial fertilizer and livestock-waste applications on row crops are a principal source of nutrients for most of the Little River Basin. Sources of nutrients in the urban areas of the basin mainly are from effluent discharge from wastewater-treatment facilities and fertilizer applications to lawns and golf courses.

Introduction

Nitrogen and phosphorus are essential nutrients for the growth of plants and animals. Nitrogen and phosphorus compounds occur naturally, but also are applied to land in the form of commercial fertilizers and livestock waste to enhance plant growth. Nutrients that are not utilized by crops or stored in the soil can travel in runoff to streams or through soil to ground water. Suspended sediment plays a major role in the transport and fate of contaminants because contaminants may sorb onto the surface of the suspended sediments and be transported and deposited in other areas downstream. Concentrations of suspended sediment are affected by natural conditions (soil erosion, streambed resuspension) and by human activities (construction, timber harvesting, and certain agricultural practices).

Excess nutrients and suspended sediment in the environment can be detrimental to aquatic ecosystems and to the health of organisms living in and using water. Section 303(d) of the Clean Water Act requires that each State identify surface waters that do not meet applicable water-quality standards. In Kentucky, about 520 stream miles are impaired because of nutrients and about 470 stream miles are impaired because of suspended sediment (U.S. Environmental Protection Agency, 2006a). The Kentucky Environmental and Public Protection Cabinet—Division of Water has listed some streams in the Little River Basin (fig. 1) as impaired streams for nutrients and suspended sediment in the State’s 2002 305(b) Report to Congress on Water Quality and in the 2002 and 2004 303(d) List of Waters for Kentucky report (Kentucky Environmental and Public Protection Cabinet, 2002, 2003, and 2005). The State must develop plans to restore and maintain the water quality of the streams in the Little River Basin because of these impairments. The plans establish a “total maximum daily load” (TMDL) for the impaired streams. A TMDL represents the total amount of contaminant a water body can assimilate without violating the designated water-quality standard established by the U.S. Environmental Protection Agency (USEPA). The State currently (2006) is developing TMDLs specifically for the North Fork Little River and the South Fork Little River.

In 2003, the U.S. Geological Survey (USGS), in cooperation with the Kentucky Department of Agriculture, began a study to determine concentrations and estimate loads and yields of nutrients and suspended sediment in the Little River Basin. Information from this study will assist State and local water managers and planners, who are responsible for implementing TMDLs for streams in the Little River Basin to make informed management decisions on nutrients and suspended sediment. The purpose of the study was to determine the presence and distribution of nutrients and suspended sediment in streams in the Little River Basin study area and to estimate loads and yields of nutrients and suspended sediment at selected sites in the basin. Pesticides and pesticide degradates also were collected during this study and their results can be found in Crain (2006).

Purpose and Scope

This report summarizes the occurrence and distribution of nutrients and suspended sediment and provides estimates of nutrient and suspended-sediment loads and yields from samples collected from streams in the Little River Basin during 2003-04. The spatial and seasonal variability in concentrations of nutrients and suspended sediment is presented. Nutrient and suspended-sediment loads are computed using LOADEST, a USGS software program used to compute mean constituent loads in rivers using regression models. Estimated loads and yields of nutrients and suspended sediment are presented for three sites in the basin.

Description of the Little River Basin

The Little River Basin encompasses about 600 mi^2 (fig. 1). The Little River discharges into Lake Barkley Reservoir on the Cumberland River. Water quality throughout the basin is directly affected by natural (geology, climate, soils) and human (population, land use) factors. The Little River Basin has a high “hydrogeologic sensitivity rating” indicating it is highly vulnerable to effects from runoff, because much of the area is underlain by karst (Ray and others, 1994). The hydrologic sensitivity of an area is defined as the ease and speed with which a contaminant is transported within a ground-water system (Ray and others, 1994). Some streams in the Little River Basin are listed as impaired streams in the State’s 303(d) List of Waters for Kentucky report (Kentucky Environmental and Public Protection Cabinet, 2005). The Kentucky Division of Water has listed the causes of impairments to the streams in the basin as siltation, nutrients, pathogens, organic enrichment (low dissolved oxygen), and habitat alterations (Kentucky Environmental and Public Protection Cabinet, 2005, p. 134-136).

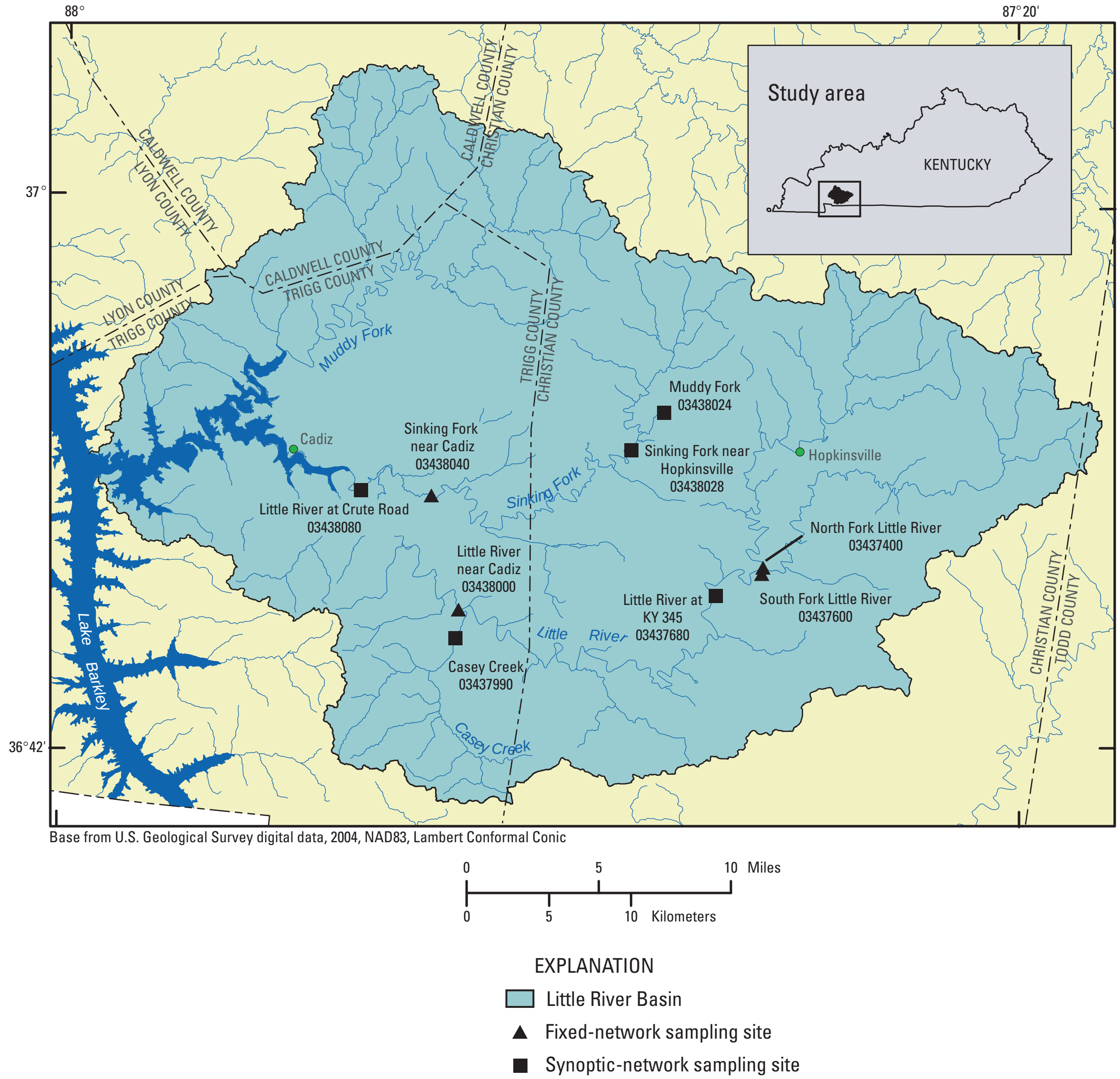


Figure 1. Location of the surface-water-sampling sites in the Little River Basin, Kentucky, 2003-04.

Geology

The Little River Basin mostly is underlain by karstic limestone formations of late Mississippian age (fig. 2). The limestone units of significance within the Little River Basin study area are the St. Louis and Ste. Genevieve Limestone. The St. Louis Limestone mostly is composed of sequences of massively bedded (tabular) limestones, and the Ste. Genevieve Limestone mostly is composed of thin-bedded, cherty limestones.

Overlying the Ste. Genevieve and St. Louis Limestone on the northeastern side of the study area is a thick sequence of limestone, sandstone, and shale formations of Chesterian age (late Mississippian) that are divided into upper and lower parts. The lower Chesterian is composed of alternating sandstone and limestone strata that includes the Golconda Formation (sandstone dominated) and the Girkin Limestone (McDowell, 1986). The upper rocks of the Chesterian-age formations are mainly composed of siltstone and shale with alternating minor beds of limestone.

Numerous karst features including sinkholes (fig. 3), sinking streams, and springs are present in the study area. The exposure of Ste. Genevieve Limestone at the land surface allows for water from surface-water streams to enter the underground cavities through sinkholes. Water also enters the Ste. Genevieve and Girkin Limestones through sinkholes developed in the sandstone members of the Golconda Formation. Potential contaminants may enter the karstic limestone aquifers with surface runoff drained by sinkholes in the St. Louis and Ste. Genevieve Limestone and through sinking streams.

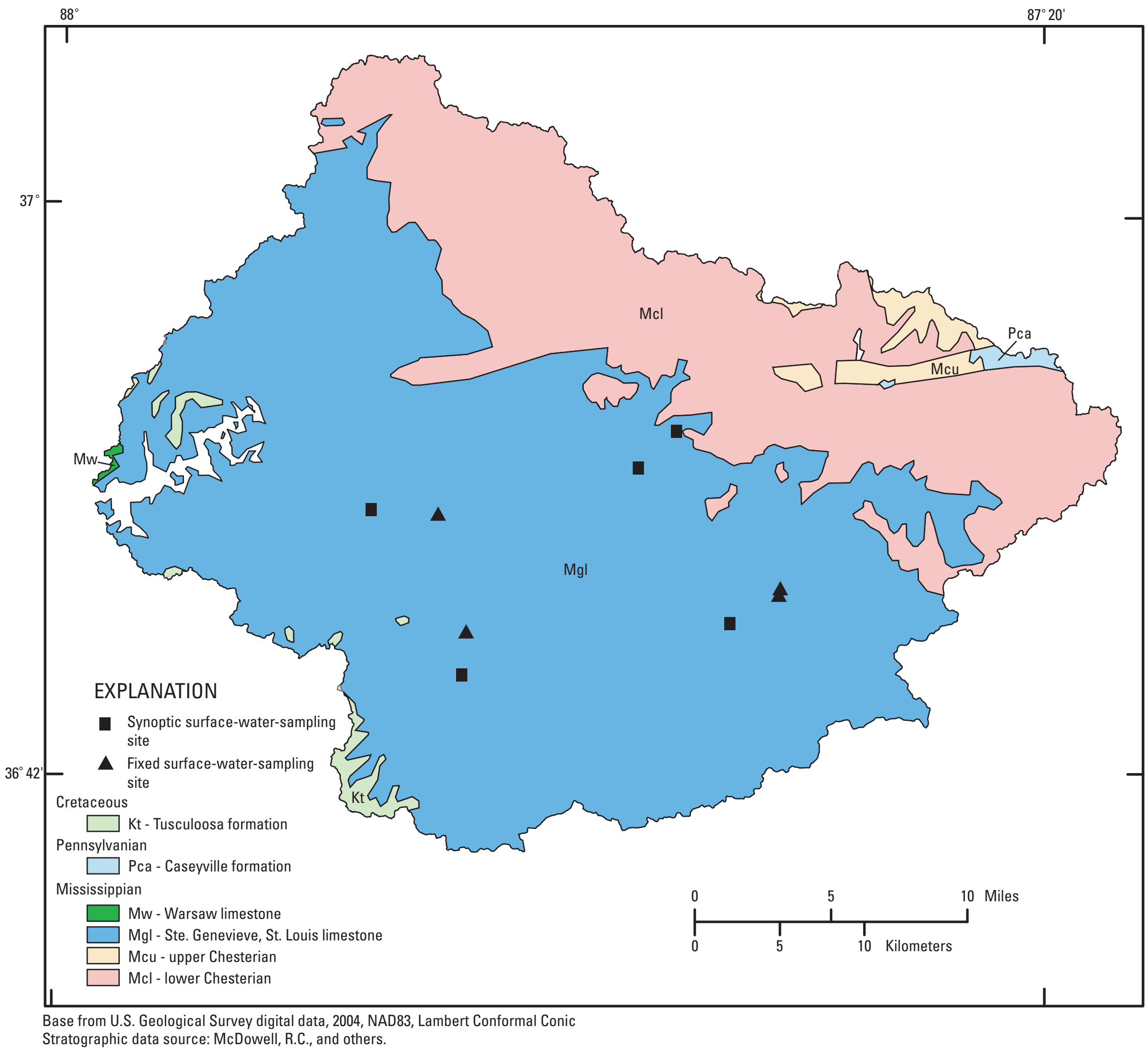
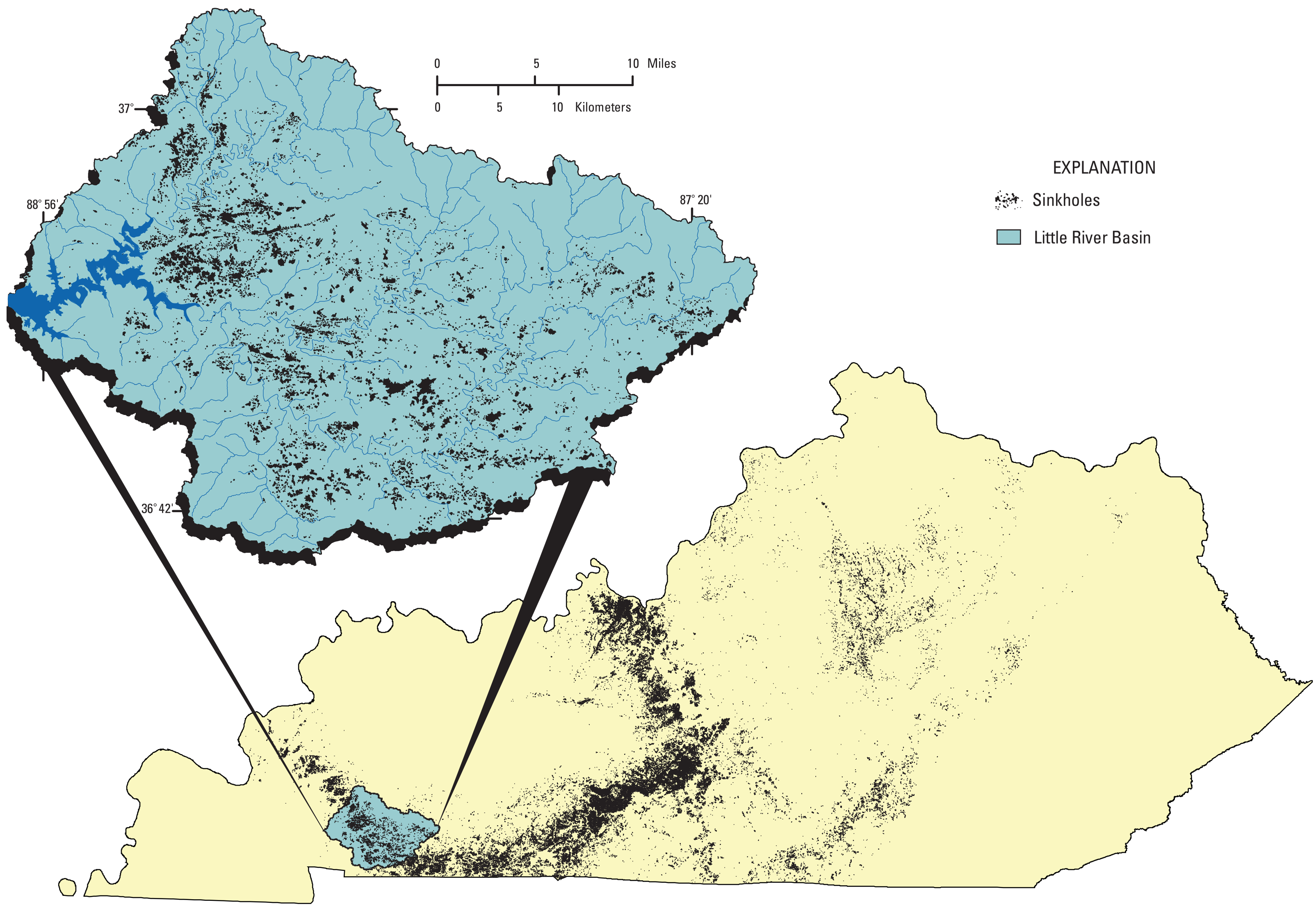


Figure 2. Surficial geology in the Little River Basin, Kentucky, 2003-04.



Source: Kentucky Geological Survey, A GIS Sinkhole Coverage for the Karst Areas of Kentucky, 2003.

Figure 3. Location of sinkholes in the Little River Basin, Kentucky, 2003-04.

Streamflow

Direct surface runoff and ground-water discharge are the major sources of streamflow in the Little River Basin. Another source is interflow, which is part of the subsurface flow that moves at shallow depths and potentially can reach the surface channels in a short period of time. During a storm, interflow slowly increases until the end of the storm, then gradually decreases (Viessman and others, 1989, p. 171).

Annual mean flow differs appreciably from year to year, with variations in weather conditions. Mean annual streamflow of the Little River near Cadiz site (water years 1940-2004) was about 360 ft^3/s. It was 479 ft^3/s in 2003 and 299 ft^3/s in 2004. Mean monthly streamflow usually peaks in the spring (March–May); however, there is often a second peak in the winter (December–February). Low streamflow conditions typically occur from late summer (June–August) to early fall (September–November). The mean daily streamflows for the Little River near Cadiz site in 2003 ranged from 27 ft^3/s (November 7) to 5,170 ft^3/s (May 7); mean daily streamflows in 2004 ranged from 33 ft^3/s (October 11) to 2,670 ft^3/s (April 24).

Mean annual precipitation for the Little River Basin was 55.8 in. in 2003 and 54.0 in. in 2004 (National Oceanic and Atmospheric Administration, 2003 and 2004). About 63 percent of the mean annual precipitation in 2003 (34.9 in.) and about 57 percent of the mean annual precipitation in 2004 (31.0 in.) occurred during the growing season from April through October (fig. 4). The long-term mean annual precipitation for the Little River Basin is about 50 in.

Land Use

Streams in the Little River Basin drain a diverse landscape of forest, agricultural areas, and urban areas around Hopkinsville and Cadiz, Kentucky. Forested land represents about 31 percent of the Little River Basin. The southern and western parts are the most densely forested areas in the basin.

Agricultural land uses represent about 60 percent of the study area (fig. 5). Most of the agricultural land (34 percent) is used for corn, soybeans, wheat, hay, and tobacco production; the remaining 26 percent is used for pasture. Corn is the principal row crop harvested in the basin, followed by soybeans. In 2003, about 95,000 acres of corn were harvested for seed, grain, silage, or sweet corn; about 76,500 acres were harvested for soybeans (Kentucky Agricultural Statistics Service, 2004).

Urban areas represent about 9 percent of the land use in the basin. The most heavily populated communities in the Little River Basin are Hopkinsville and Cadiz. Hopkinsville has a population of about 30,000; Cadiz has a population of about 2,400 (U.S. Census Bureau, 2002).

Study Design and Methods

Stream-sampling sites in the Little River Basin were selected to assess the spatial and seasonal variability of nutrients and suspended sediment in subbasins consisting of mixed land use and different types of agricultural land. Samples were collected on three Little River main-stem sites and five tributaries—the North Fork Little River, South Fork Little River, Muddy Fork, Sinking Fork, and Casey Creek (fig. 1 and table 1).

Sample-Site Selection and Sampling Frequency

Water-quality and suspended-sediment samples were collected monthly (March 2003 through November 2003 and February 2004 through November 2004) at four fixed-network sites. The sites included North Fork Little River, South Fork Little River, Sinking Fork near Cadiz, and Little River near Cadiz. These sites were sampled to monitor seasonal changes in water quality resulting from a variety of land-use activities. An additional four samples were collected at each of these sites for three high-flow events and one low-flow event.

In addition to the routine sampling at the four fixed-network sites, five synoptic-network sites were sampled twice each year in 2003 and 2004. The sites included Little River at KY 345, Muddy Fork, Sinking Creek near Hopkinsville, Casey Creek, and Little River at Crute Road. A total of three high-flow events and one low-flow event were collected over the 2 years to evaluate the spatial distribution of nutrients and suspended sediment in the Little River Basin.

Ninety-two samples were collected for nutrient and suspended sediment at the fixed-network sites, and 20 samples were collected at the synoptic-network sites. Twenty-two samples were collected for quality assurance/quality control (blanks and replicates).

Sampling Methods

Representative water samples were collected by means of the equal-width increment (EWI) method, in which depth-integrated samples are collected at equal distances across the entire stream width and composited, or by means of the equal-discharge increment (EDI) method, in which equal-volume, depth-integrated samples are collected at the center of each EDI across the stream width and composited (Edwards and Glysson, 1998). All sampling material was constructed of Teflon to minimize contamination. Equipment used to collect and process nutrient samples was pre-cleaned with a 0.1-percent nonphosphate detergent, triple rinsed with tap water, acid rinsed with 5-percent hydrochloric acid for 30 minutes (nonmetal equipment only), triple rinsed with deionized water, air dried, and stored in a dust-free environment prior to sample collection (Webb and others, 1999).

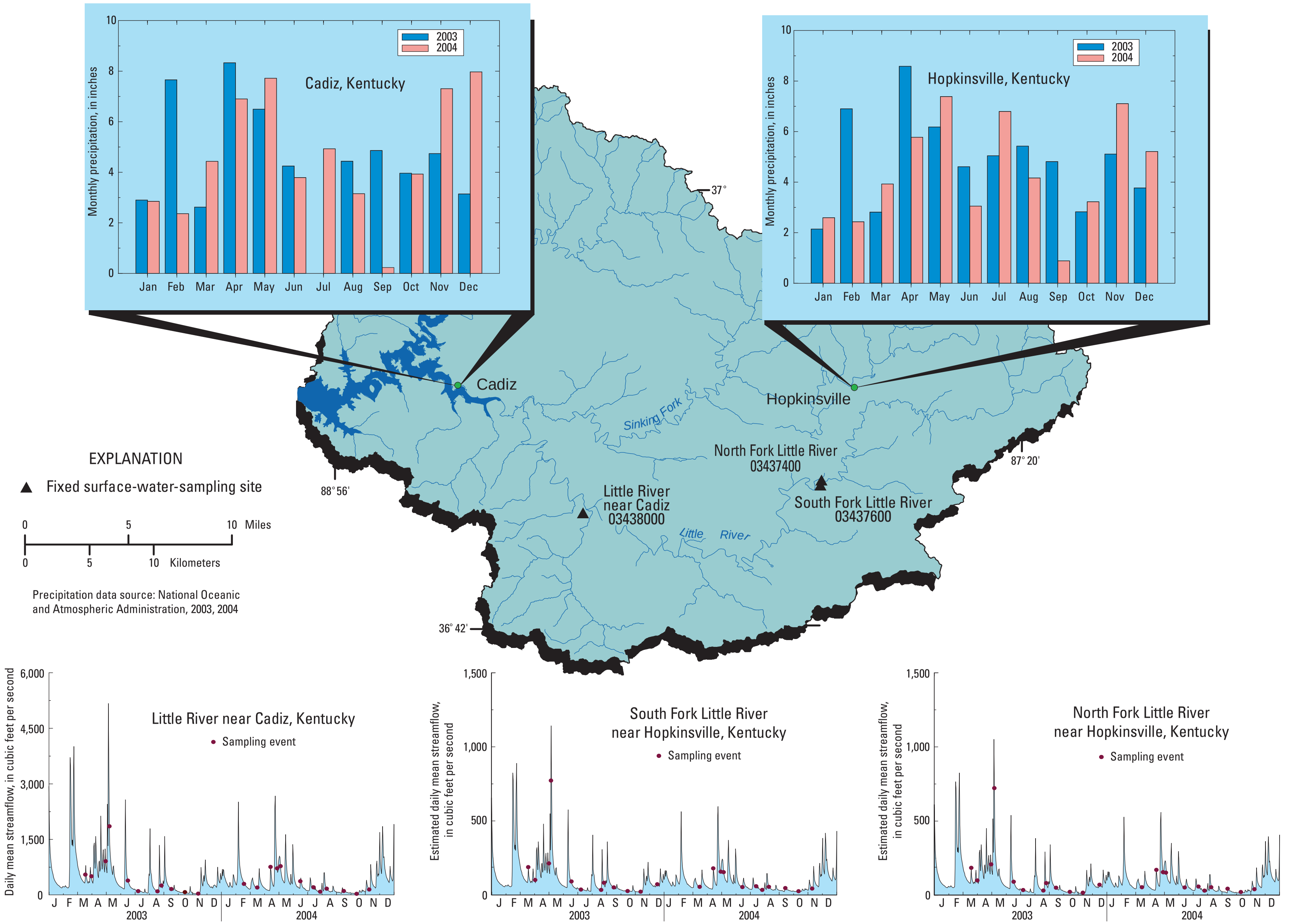


Figure 4. Location of surface-water-sampling sites and graphs showing precipitation and daily mean streamflow at selected sites in the Little River Basin, Kentucky, 2003-04.

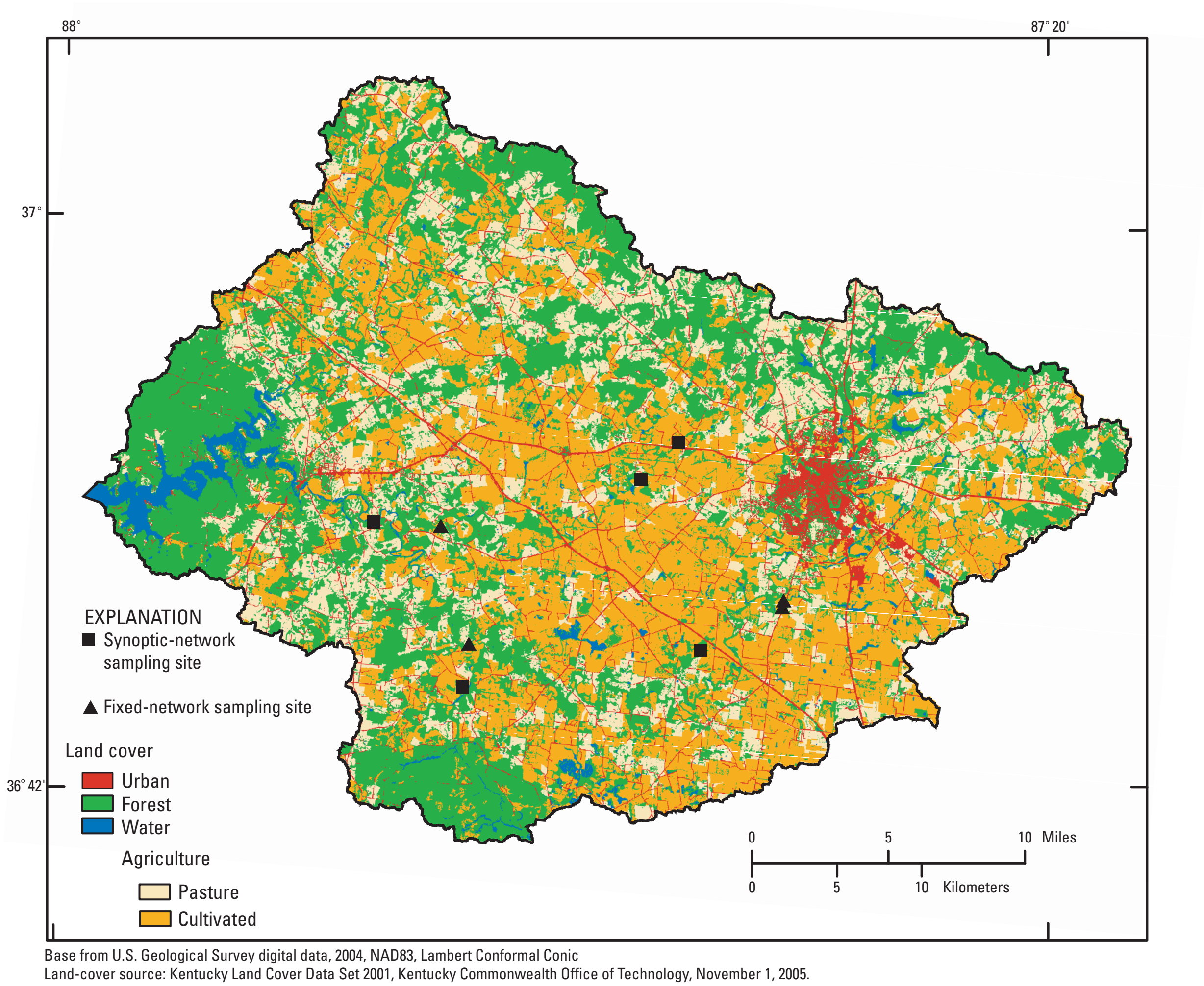


Figure 5. Land cover in the Little River Basin, Kentucky, 2001.

Water samples for dissolved nutrients were filtered using a 0.45-micrometer (µm) pore-size filter that was pre-rinsed with deionized water and filtered native stream water and collected in the appropriate bottle types. Whole-water (unfiltered) nutrient samples were preserved using 1 milliliter (mL) of 4.5N sulfuric acid. All nutrient samples were chilled and shipped on ice by overnight air express to the USGS National Water Quality Laboratory (NWQL) in Lakewood, Colorado, for analysis. Suspended-sediment samples were shipped to the USGS Kentucky Water Science Center Sediment Laboratory in Louisville, Kentucky.

Field measurements of stream discharge, air temperature, barometric pressure, water temperature, specific conductance, pH, concentrations of dissolved oxygen (DO), and turbidity were measured at the time of sampling. Alkalinity and concentrations of bicarbonate were determined by titrating filtered sample water with 0.16N sulfuric acid using a digital titrator. Discharge was measured according to standard USGS guidelines as described by Rantz and others (1982). The field measurement data is available online at *http://ky.water.usgs.gov/*.

A continuously recording (15-minute interval) water-quality monitor was installed at the USGS streamflow-gaging station on Little River near Cadiz, Kentucky (station number 03438000), on April 1, 2003. Water-quality properties measured with the monitor during April 2003–November 2004 included water temperature, specific conductance, pH, dissolved oxygen, and turbidity. Measurements were transmitted every 4 hours via satellite to the USGS office in Louisville, Kentucky, and were made available in near-real time on the Internet at URL *http//ky.water.usgs.gov/*. The water-quality monitor was inspected onsite by USGS personnel approximately every 3 to 4 weeks to maintain calibration. Guidelines and standard operating procedures for maintaining the site and reporting the data are described in Wagner and others (2000).

Table 1. Description of surface-water-sampling sites in the Little River Basin, Kentucky, 2003-04.

[USGS, U.S. Geological Survey; mi^2, square mile; Ky., Kentucky; N/A, not applicable]

USGS site number	USGS site name	Abbreviated site name	Drainage area (mi^2)	Site type	Percentage of basin area in indicated land use[1]			
					Agriculture	Forest	Urban	Water
03437400	North Fork Little River at Gary Lane Bridge near Hopkinsville, Ky.	North Fork Little River	58	Fixed	50	36	13	1
03437600	South Fork Little River at KY 107 near Hopkinsville, Ky.	South Fork Little River	67	Fixed	63	26	11	0
03438000	Little River near Cadiz, Ky.	Little River near Cadiz	244	Fixed	57	35	6	2
03438040	Sinking Fork at Kings Chapel Road near Cadiz, Ky.	Sinking Fork near Cadiz	107	Fixed	68	26	6	0
03437680	Little River at KY 345 near Hopkinsville, Ky.	Little River at KY 345	134	Synoptic[2]	N/A	N/A	N/A	N/A
03438024	Muddy Fork near Hopkinsville, Ky.	Muddy Fork	7.9	Synoptic[2]	N/A	N/A	N/A	N/A
03438028	Sinking Fork near Hopkinsville, Ky.	Sinking Fork near Hop-kinsville	44	Synoptic[2]	N/A	N/A	N/A	N/A
03437990	Casey Creek at KY 525 near Cadiz, Ky.	Casey Creek	35.7	Synoptic[2]	N/A	N/A	N/A	N/A
03438080	Little River at Crute Road near Cadiz, Ky.	Little River at Crute Road	400	Synoptic[2]	N/A	N/A	N/A	N/A

[1]Kentucky Land Cover Data Set, 2001, Kentucky Commonwealth Office of Technology, November 1, 2005.

[2]Site located within the 10-digit hydrologic-unit code of one of the four fixed-network sites.

Analytical Methods

The USGS NWQL analyzed the water-quality samples for nutrients. Water-quality samples for dissolved (filtered) and suspended (unfiltered) species of nitrogen and phosphorus were analyzed by colorimetric methods (Fishman, 1993; Patton and Truitt, 1992; Patton and Kryskalla, 2003; U.S. Environmental Protection Agency, 1993). These analyses quantified sample concentrations of dissolved nitrite plus nitrate, dissolved ammonia nitrogen, dissolved orthophosphate, and total phosphorus (table 2). Concentrations of nutrients discussed in this report represent their concentrations expressed as either nitrogen or phosphorus. For example, a concentration of nitrite plus nitrate expressed as 10 milligrams per liter (mg/L) refers to a concentration of nitrite plus nitrate of 10 mg/L as nitrogen.

The USGS Kentucky Water Science Center in Louisville, Kentucky, analyzed the suspended-sediment samples by filtering samples through a pretared 0.45-µm membrane filter. The filtrate was rinsed with deionized water to remove salts, and the insoluble material and filter were dried at 103°C and weighed (Fishman and Friedman, 1989).

Table 2. Reporting limits for nutrients as established by the U.S. Geological Survey National Water-Quality Laboratory.

[mg/L, milligrams per liter; N, nitrogen; P, phosphorus]

Constituent	Laboratory reporting level
Ammonia (as N), dissolved	0.04 mg/L as N
Nitrite plus nitrate (as N), dissolved	.06 mg/L as N
Phosphorus (as P), total	.004 mg/L as P
Orthophosphate (as P), dissolved	.006 mg/L as P

Quality Control

Quality-control information is needed to estimate the bias and variability that result from sample collection, sample processing, and laboratory analysis in order to ensure proper interpretation of water-quality data. About 20 percent of all samples submitted to the laboratory were quality-control samples, which included equipment blanks and field blanks to measure contamination and bias, and replicate samples to measure variability.

A blank is a water sample that consists of water that has undetectable concentrations of analytes of interest. Blank-water samples are used to test for bias that could result from contamination during any stage of sample collection or analysis process. Field-blank samples were collected to demonstrate that (1) equipment has been adequately cleaned to remove contamination introduced by samples obtained at previous sites; (2) sample collection and processing have not resulted in contamination; and (3) sample handling, transport, and laboratory analysis have not introduced contamination (Mueller and others, 1997). The procedure for blank samples was to use pesticide-free water through all of the sampling and filtration steps as a typical water-quality sample. Field-blank sample concentrations for nutrients did not indicate any contamination from the equipment or sample-processing methods.

Replicate samples are a set of two or more environmental samples considered to be essentially identical in composition. Concurrent replicates are prepared by using one sampler and alternating collection of the samples into two or more compositing containers. All replicates collected in the Little River Basin were concurrent replicates.

Data obtained from the six sets of replicate samples were used to access the variability of the overall sampling and analytical process. Replicate samples were compared by using relative percent differences (RPDs). RPD’s for each analyte and replicate sample pair was calculated by the following equation:

$$RPD = |S1 - S2| / (S1 + S2) / 2x100 \tag{1}$$

where

S1 is equal to the concentration in the environmental sample, in mg/L (nutrients and suspended sediment); and

S2 is equal to the concentration in the replicate sample, in mg/L (nutrients and suspended sediment).

The larger the RPD, the greater the variability in those samples. Concentration differences, as measured by RPD, within replicate sets ranged from 0 to 5 percent for nutrients and were 15 percent for suspended sediment (table 3). If the RPD of replicate samples was 15 percent or less, then the data from the collected samples were determined to meet the precision objectives of the project.

Statistical Analysis of Nutrients and Suspended Sediment

The S-Plus software program (Insightful, 2005) was used to calculate summary statistics such as the mean, median, minimum, and maximum concentrations for nutrients and suspended sediment (Appendix 1). The Wilcoxson rank-sum nonparameteric statistical test (Helsel and Hirsch, 1992) was used to compare concentrations of nutrients and suspended sediment at the four fixed-network sites in the basin. The Wilcoxson rank-sum tests rank the data points to determine the statistical significance of differences in concentrations among groups of data. Differences among the groups of data with probability (p) values of 0.05 or less were considered significant in this study.

Table 3. Summary of replicate-sample data for nutrients and suspended sediment in the Little River Basin, Kentucky, 2003-04.

[RPD, relative percent difference; <, less than]

Constituent	Number of replicate sample sets	Median RPD	Maximum RPD
Ammonia (as N), dissolved	6	0	<1
Nitrite plus nitrate (as N), dissolved	6	.14	2
Phosphorus (as P), total	6	.94	5
Orthophosphate (as P), dissolved	6	1.1	3
Suspended sediment	5	0	15

Load-Estimation Methods

Nutrient (ammonia nitrogen, nitrite plus nitrate, total phosphorus, and orthophosphate) loads and suspended sediment loads were estimated with the USGS software, LOADEST. This software uses time-series streamflow data and constituent concentrations to calibrate a regression model that describes constituent loads in terms of various functions of streamflow and time (Runkel and others, 2004). A complete discussion of the theory and principles behind the calibration and estimation methods can be found in Runkel and others (2004).

The LOADEST software allows the user to choose between selecting the general form of the regression from several predefined models and letting the software automatically select the best-defined model, on the basis of the Akaike Information Criterion (AIC) (Akaike, 1981). The predefined model with the lowest value for the AIC was then selected for use in load estimation. A user-defined model was used for this study. User-defined results and results defined by the software are listed in table 4. The RPD's between the two methods ranged from about 0 to 14 percent (table 4).

The output regression equations have the following general form:

$$1n(L) = a + b(1nQ) + c(1nQ^2) + d[\sin(2\pi T)] + e[\cos(2\pi T)] + fT + gT^2 \quad (2)$$

where

L is the constituent load, in lb/d;
Q is the stream discharge, in ft^3/s;
T is the time, in decimal years, from the beginning of the calibration period; and
a,b,c,d,e,f,g are regression coefficients.

Sources of Nitrogen and Phosphorus

Sources of nutrients into the Little River Basin are categorized as nonpoint or point source. Contaminant sources that are diffuse and do not have a single point of origin into receiving streams are called nonpoint sources. Nonpoint sources of nutrients include atmospheric deposition, fertilizer applications from agricultural and residential areas, feed-lot discharges, septic systems, and urban runoff. Point sources differ from nonpoint sources in that they discharge directly into a receiving stream at a discrete point. Point sources primarily consist of a variety of large and small wastewater-treatment facilities, but nutrient inputs also can come from storm-water runoff and sewer overflows.

Nonpoint-Source Contributions

Nonpoint-source inputs of nutrients for the Little River Basin estimated in this report include atmospheric deposition, commercial fertilizer application, livestock waste, and nitrogen fixation from soybeans (table 5). Nutrient inputs from urban runoff, combined sewer overflows, and septic systems were not included in the nonpoint source estimates of this report because of minimal or no data.

Table 4. Loads of nutrients and suspended sediment at three sites in the Little River Basin, Kentucky, 2003-04, using LOADEST predefined and user-defined models.

[lb/yr, pound per year; ---, unable to determine from available data]

Constituent	Predefined LOADEST model results (lb/yr)	User-defined LOADEST model results (lb/yr)	Relative difference (in percent)
North Fork Little River near Hopkinsville, Ky. (03437400)			
Ammonia as (N), dissolved	13,000	13,000	0
Nitrite plus nitrate as (N), dissolved	470,000	450,000	4.3
Phosphorus as (P), total	105,000	107,000	1.9
Orthophosphate as (P), dissolved	75,000	74,000	1.3
Suspended sediment	26,000,000	30,000,000	14
South Fork Little River near Hopkinsville, Ky. (03437600)			
Ammonia as (N), dissolved	---	---	---
Nitrite plus nitrate as (N), dissolved	803,000	780,000	4.6
Phosphorus as (P), total	28,000	32,000	13
Orthophosphate as (P), dissolved	13,000	14,000	7.4
Suspended sediment	18,000,000	18,000,000	0
Little River near Cadiz, Ky. (03438000)			
Ammonia as (N), dissolved	---	---	---
Nitrite plus nitrate as (N), dissolved	2,700,000	2,500,000	5.6
Phosphorus as (P), total	145,000	166,000	13
Orthophosphate as (P), dissolved	59,000	65,000	9.7
Suspended sediment	91,000,000	84,000,000	8.0

Table 5. Estimated mean annual loads of total nitrogen and total phosphorus from nonpoint and point sources in the Little River Basin, Kentucky, 2003-04.

[lb/yr, pound per year; NA, not applicable]

Constituent	Mean annual load of total nitrogen (lb/yr)	Mean annual load of total phosphorus (lb/yr)
Inputs to land		
Atmospheric deposition[2]	2,600	NA
Farm fertilizer[3]	9,800,000	2,100,000
Nonfarm fertilizer[3]	68,000	4,000
Livestock waste[1]	3,000,000	1,000,000
Nitrogen fixation[4]	20,000	NA
Input to streams		
Municipal wastewater discharge[5]	221,000	102,000

[1]U.S. Department of Agriculture, 2004.

[2]Data from National Atmospheric Deposition Program, 2006. Dry deposition nitrogen not included in atmospheric deposition.

[3]Ruddy and others, 2006. Data from 2001.

[4]Kentucky Agricultural Statistics Service, 2004.

[5]U.S. Environmental Protection Agency, 2006b

Atmospheric Deposition

Atmospheric deposition of nitrogen has been measured since December 1994 at a site in the Land between the Lakes National Recreation Area (KY99) in Trigg County, Kentucky. The wet-deposition data from the National Atmospheric Deposition Program (NADP) include nitrate and ammonia. No dry deposition data are measured; therefore, total atmospheric deposition of nitrogen cannot be obtained. Atmospheric deposition of phosphorus is not measured by NADP because concentrations generally are not appreciable and samples are subject to contamination (National Atmospheric Deposition Program, 2006).

Rates of wet deposition of total nitrogen in 2003 and 2004 were 2,900 and 2,300 lb/mi^2, respectively. The 8-year mean rate (1995-2004) of wet deposition of total nitrogen was 2,200 lb/mi^2. The wet-deposition inputs for total nitrogen during 2003-04 were higher than the 8-year mean, reflecting above-average precipitation for those 2 years. The NADP provides annual-summary reports which are available online at *http://nadp.sws.uiuc.edu/*.

Commercial Fertilizer and Livestock Waste

Commercial fertilizers applied to agricultural lands has become a primary nonpoint source of nitrogen and phosphorus in the United States. Commercial nitrogen fertilizer is applied as either ammonia or nitrate and commercial phosphorus fertilizer commonly is applied as phosphate. Application of nitrogen and phosphorus in commercial fertilizers in the United States during 1945-2001 increased by about 22 and 3.6 percent, respectively (Ruddy and others, 2006).

County-level data for nitrogen and phosphorus from commercial fertilizer (farm and nonfarm) and livestock waste were compiled in a national data set (Ruddy and others, 2006). The methods for allocating data on State total fertilizer sales to individual counties and for estimating livestock-waste inputs from livestock populations are described in detail by Ruddy and others (2006). The use of county-level data has some limitations in its application, because fertilizer and livestock waste sources are not evenly distributed within counties. The use of county-level data generally is more applicable to large drainage basins that encompass entire counties than smaller drainage basins that encompass only parts of one or more counties. However, the study area encompasses large portions of Christian and Trigg Counties, which are mostly homogenous in land use. Thus, any introduced error from using estimates of farm fertilizer and livestock waste inputs should not be appreciable.

Farm-fertilizer inputs of nutrients in 2001 were 9,800,000 lb of nitrogen and 2,100,000 lb of phosphorus in Christian and Trigg Counties, which are average applications of about 8,100 lb/mi^2/yr of nitrogen and 1,700 lb/mi^2/yr of phosphorus. The amount of cultivated-agricultural land in the Little River Basin is about 34 percent, or about 200 mi^2. Nitrogen and phosphorus fertilizers generally are applied to corn in spring just before seeding. Livestock waste also can be used during this time. Nitrogen fertilizer is reapplied to corn fields 6 to 10 weeks after planting; phosphorus fertilizer is applied to corn and soybeans at the time of planting. Nitrogen and phosphorus fertilizers and livestock waste are applied in late summer through early fall for cool-season pasture, hay fields, and wheat fields (University of Kentucky, 2001).

Nonfarm-fertilizer inputs of nutrients in 2001 were 68,000 lb of nitrogen and 14,000 lb of phosphorus in Christian and Trigg Counties. These applications average about 56 lb/mi^2/yr of nitrogen and 12 lb/mi^2/yr of phosphorus.

Nitrogen and phosphorus in livestock waste potentially can be a major source of nitrogen and phosphorus loads in streams draining agricultural areas. Animal-feeding operations and concentrated animal-feeding operations, which concentrate animals, feed, and waste on a small land area, have greater potential to contribute nutrients to surface runoff and ground water. Wastes produced by these operations may be applied to pasture land and crop land, becoming available for either crop uptake or losses to the environment. An animal-feeding operation in Kentucky is defined as a facility where animals are confined and fed for a total of 45 days or more in any 12-month period and where crops, vegetation forage growth, or post-harvest residues are not sustained over any portion of the facility in the normal growing season (Kentucky Environmental and Public Protection Cabinet, 2006). In order for an animal-feeding operation to be defined as a confined animal-feeding operation, the facility has more than 300 animal units confined and there is a discharge to the Waters of the Commonwealth, or if more than 1,000 head of beef cattle, 700 head of dairy cattle, 2,500 pigs, 25,000 broilers, or 82,000 laying hens or pullets are present at the facility. There are 11 animal-feeding operations and 0 confined animal-feeding operations within the southern portion of the Little River Basin as of July 2006 (James Seay, Kentucky Environmental and Public Protection Cabinet–Kentucky Division of Water, written commun., 2006).

In Kentucky, the average inputs of nutrients from livestock waste were 1,100,000 lb of nitrogen and 320,000 lb of phosphorus in 1997. In Christian and Trigg Counties, nutrient inputs from livestock waste in 1997 were 3,000,000 lb of nitrogen and 1,000,000 lb of phosphorus. These nutrient inputs average about 2,500 lb/mi^2/yr of nitrogen and 830 lb/mi^2/yr of phosphorus throughout the basin. Actual nitrogen inputs to the land probably were lower because of volatilization of ammonia from the waste and nitrification and de-nitrification.

Nutrient-input estimates from livestock waste were based on county-level livestock-population data collected by the U.S. Census Bureau during the Census of Agriculture. The method and assumptions used in Ruddy and others (2006) to estimate nitrogen and phosphorus content of livestock waste produced by the various types of livestock are described by Goolsby and others (1999). The livestock groups used to estimate nutrient inputs from livestock waste include beef cattle, dairy cows, hogs, and poultry.

Nitrogen Fixation by Soybeans

Nitrogen fixation by soybeans is an important source of nitrogen in the Little River Basin because of the large acreage of soybeans in the study area; however, the fixation of nitrogen from soybeans is not used in computations of nonpoint-source inputs of nitrogen because little nitrogen is available to enter the surface and ground water. The amount of nitrogen produced by fixation from soybeans in the basin is based on the area of soybeans planted and an annual nitrogen fixation rate of 105 lb/acre, as used by Hoos and others (1999) from Craig and Kuenzler (1983) for soybeans in the southeast. This rate was multiplied by 2003-04 harvested acres for soybeans (Kentucky Agricultural Statistics Service, 2004) to estimate the amount of fixed nitrogen. The estimated nitrogen fixation for the Little River Basin was 20,000 lb/mi^2/yr.

Point-Source Contributions

The only point-source inputs of nitrogen and phosphorus estimated in this report are municipal-wastewater discharge (table 5). Only facilities with a mean flow greater than 0.1 Mgal/d were available for input computations for this study (table 6). The exclusion of minor privately owned discharge facilities (<0.1 Mgal/d) in the study area, if totaled, could be an appreciable source of nitrogen and phosphorus to the basin.

Table 6. Estimated mean annual loads of total nitrogen and total phosphorus from municipal wastewater discharge in the Little River Basin, Kentucky, 2003-04.

[Mgal/d, million gallons per day; lb/yr, pounds per year; WWTP, wastewater-treatment plant]

Facility name	County	Receiving stream	Effluent flow (Mgal/d)[1]	Mean annual load: Total nitrogen (lb/yr)	Mean annual load: Total phosphorus (lb/yr)
Hopkinsville Hammond Wood WWTP	Christian	North Fork Little River	3.35	123,000	87,200
Hopkinsville Northside WWTP	Christian	North Fork Little River	2.30	86,200	13,900
Cadiz WWTP	Trigg	Little River	.32	11,800	1,200
Total				**221,000**	**102,300**

[1]U.S. Environmental Protection Agency, 2006b

The nutrient inputs are based on information from the NPDES permitting program of the USEPA. The required monitoring data for NPDES discharges are stored in the USEPA's PCS database. All of the wastewater-treatment facilities in the Little River Basin monitor effluent for ammonia and total phosphorus, but concentrations of total nitrogen were not available. A regression equation, developed from more than 800 observations of effluent concentrations from municipal wastewater-treatment facilities in Virginia and North Carolina, was used to estimate concentrations of total nitrogen from concentrations of ammonia nitrogen (McMahon and Lloyd, 1995, p. 70-71). The regression equation is as follows:

$$\textit{Total nitrogen} = 11.97 + 0.55\,(\textit{ammonia}) \qquad (3)$$

where concentrations are in mg/L, as nitrogen.

Nitrogen and phosphorus inputs to streams from municipal wastewater-treatment facilities were estimated using the following equation:

$$L = (RQ)(C)(f)(T) \qquad (4)$$

where

- L is nutrient load in lb/yr;
- RQ is wastewater effluent flow in ft^3/s;
- C is the mean concentration of nutrient in mg/L;
- f is a unit conversion factor of 5.3943; and
- T is time in days per year.

The estimated inputs from wastewater discharge were 221,000 lb/yr for nitrogen and 102,300 lb/yr for phosphorus for the Little River Basin. Wastewater discharges to the Little River ranged from 33 to 50 percent of the annual mean streamflow during 2003-04.

Concentrations, and Estimated Loads and Yields of Nutrients

Summary statistics for the concentrations of nutrients (ammonia nitrogen, nitrite-plus-nitrate nitrogen, total phosphorus, and orthophosphate) from March 2003 through November 2003 and from February 2004 through November 2004 at all sampling sites are shown in Appendix 1. These data provide the basis for analysis of concentrations, and estimated loads and yields at the selected sampling sites.

Concentrations

Although nutrients such as nitrogen and phosphorus are necessary for plant and animal life, in excessive quantities they can accelerate the growth of aquatic plants and cause algal blooms. Excessive aquatic growth may result in unsuitable habitat conditions for aquatic animals and can interfere with recreational activities such as fishing, swimming, and boating. Decomposition of aquatic-plant growth can cause odor and taste concerns in drinking water supplies and can consume dissolved oxygen, which can adversely affect aquatic life.

Spatial Variability

Concentrations of nitrate greater than 10 mg/L in drinking water can have adverse human-health effects. Concentrations of nitrite plus nitrate ranged from 0.36 to 5.7 mg/L at the nine sites (fig. 6 and Appendix 1). The highest concentration of nitrite plus nitrate, 5.7 mg/L, was measured at the South Fork Little River site. The lowest concentration of nitrite plus nitrate, 0.36 mg/L, was measured at the Casey Creek site. The median concentration of nitrite plus nitrate for all sites sampled was 3.6 mg/L. The Sinking Fork near Cadiz site had the highest median nitrogen concentration of 4.6 mg/L. Concentrations of ammonia nitrogen ranged from <0.04 to 0.66 mg/L at the nine sites (Appendix 1). The highest concentration of ammonia nitrogen was observed at the South Fork Little River site.

Phosphorus is a common element in rocks; other sources of phosphorus include fertilizer, human and animal waste, and some detergents. Although no established aquatic-life criterion exists for total phosphorus, the USEPA recommends a maximum concentration of total phosphorus of 0.1 mg/L to discourage excessive growth of aquatic plants and algae. Concentrations of total phosphorus in 58 percent of the samples were greater than 0.1 mg/L (fig. 6). The median concentration of total phosphorus for all sites sampled was 0.13 mg/L. Concentrations of orthophosphates ranged from <0.006 to 2.0 mg/L. The highest concentration of orthophosphate was measured at the North Fork Little River site: 2.0 mg/L. This sampling site is located immediately downstream from a wastewater-treatment facility. Sources of orthophosphate include weathering of soils, human and animal waste, some detergents, decaying plants, and fertilizer.

A Wilcoxson rank-sum nonparameteric statistical test (Helsel and Hirsch, 1992) was used to compare concentrations of nitrite plus nitrate, total phosphorus, and orthophosphate among the four fixed-network sites. A total of 23 samples were collected at each of the four fixed-network sites during 2003-04.

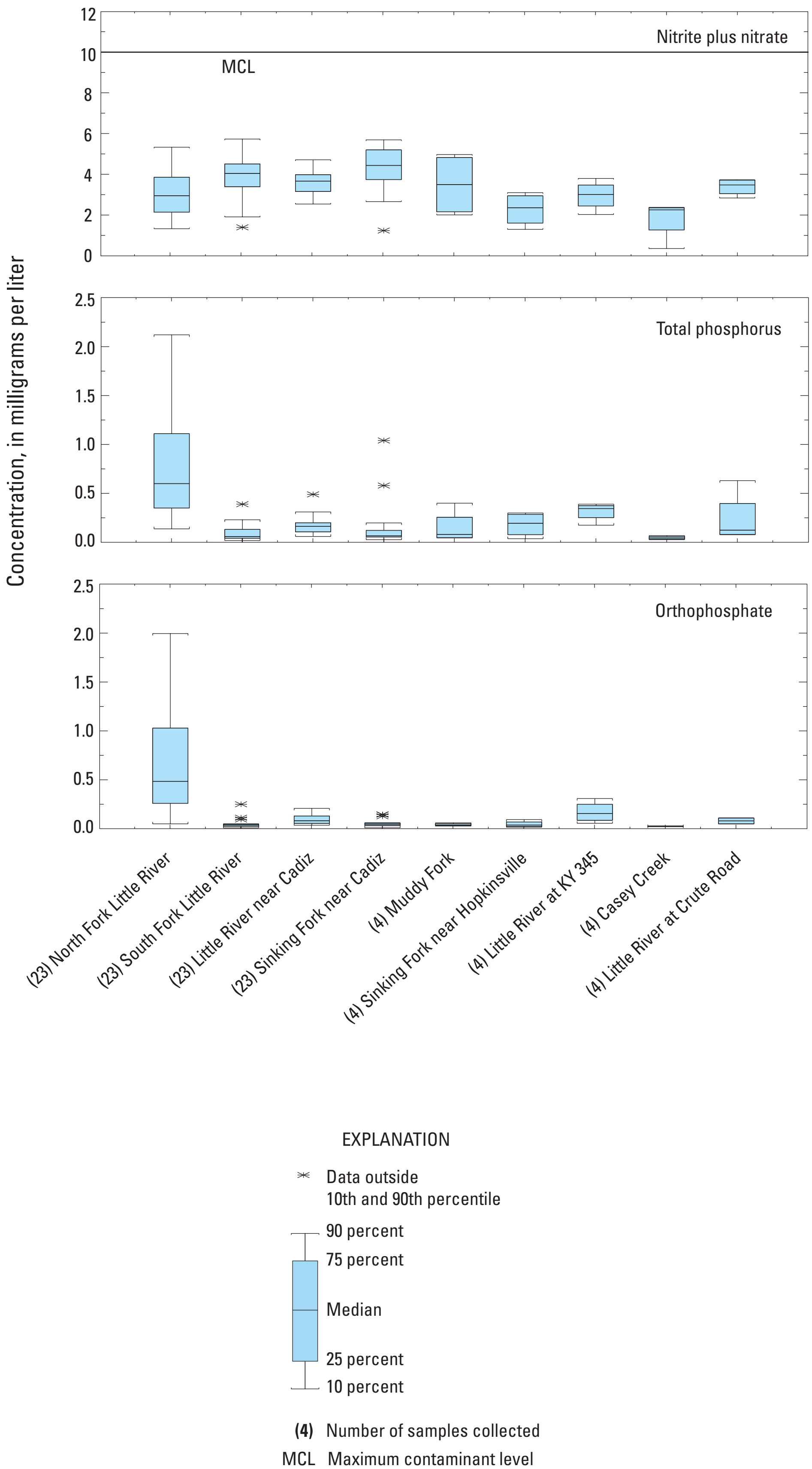


Figure 6. Concentrations of nitrite plus nitrate, total phosphorus, and orthophosphate at all sampling sites in the Little River Basin, Kentucky, 2003-04.

The fixed-network sites sampled in the Little River Basin represent drainage areas in predominantly agricultural areas, forested areas, or a mixture of both. Urban areas represent only a small portion of the study area. Median concentrations of nitrite plus nitrate were lowest at the North Fork Little River site, which had the least agricultural and most urban land use (fig. 6). However, the North Fork Little River site had higher median concentrations of both total phosphorus and orthophosphate than samples from the other fixed-network sites, likely because of the urban sources in the North Fork Little River subbasin. The Sinking Fork near Cadiz site had a higher median concentration of nitrite plus nitrate than the other fixed-network sites, likely because this site had a higher percentage of drainage area in row crops. Median concentrations of total phosphorus and orthophosphate were lowest at the Sinking Creek near Cadiz site.

Seasonal Variability

Concentrations of nutrients vary seasonally. Concentrations of nitrite plus nitrate tended to be highest during spring and lowest in the fall in the Little River Basin. During late fall, plants become dormant and limit the uptake of available nutrients allowing for nutrients to build up in the soil. An increase in precipitation in the spring allows for the runoff of nutrients into the streams. In addition, nitrogen fertilizers are applied in the spring to row crops such as corn, adding more available nutrients to the soil that potentially can runoff into the streams. Precipitation decreases in the fall allowing plants to take up much of the available nutrients in the soil; thus, concentrations of nitrite plus nitrate decrease in streams. An insufficient number of samples were collected in the winter to perform a statistical analysis.

Differences in median concentrations of nitrite plus nitrate were minimal between fall and spring at the South Fork Little River site and the Sinking Fork near Cadiz site (fig. 7). The other fixed-network sites showed no difference between fall and spring. The South Fork Little River site also showed a difference between spring and summer (p value: 0.008). No difference was shown between fall and summer at any of the sites.

Seasonal variation in concentrations of total phosphorus was minimal, with the exception of the North Fork Little River site (fig. 8). The North Fork Little River site and the Little River near Cadiz site had high concentrations of orthophosphate in the fall and low concentrations of orthophosphate during spring (fig. 8). Concentrations of orthophosphate always were higher at the North Fork Little River site than at the other sites. A possible explanation is the effluent from the wastewater-treatment facilities on the North Fork Little River considerably contributes to streamflow. The percentage of total phosphorus that is orthophosphate varies seasonally. Concentrations of total phosphorus and orthophosphate are similar in the fall and summer at the fixed-network sites, but concentrations of orthophosphate are lower than concentrations of total phosphorus in the spring (fig.8). This probably is because orthophosphate is readily consumed by aquatic plants and algae during the spring growing season.

The Wilcoxson rank-sum test showed that median concentrations of total phosphorus and orthophosphate were different between fall and spring (p value: 0.024 and 0.014, respectively) and between summer and spring (p value: 0.001 for both constituents) at the North Fork Little River site. Only median concentrations of orthophosphate at the Little River near Cadiz site were notable during the same seasons. Median concentrations of total phosphorus and orthophosphate were not similar among any of the three seasons at the South Fork Little River site and the Sinking Fork near Cadiz site.

Estimated Loads and Yields

Load represents the mass (usually pounds or tons) of a given waterborne constituent moving past a given point per unit of time. Annual loads can vary depending upon drainage basin size, hydrologic conditions, and land uses within a basin. Mean annual loads (in lb/yr) for nutrients were estimated using the LOADEST program at three of the four fixed-network sampling sites from samples collected March through November 2003 and February through November 2004 (table 7). The 95-percent confidence interval for each estimated annual load of ammonia nitrogen, nitrite plus nitrate, total phosphorus, and orthophosphate was calculated from the standard error of prediction provided by the LOADEST program. The confidence interval is shown in pounds per year. Loads were not estimated at the Sinking Fork near Cadiz site, because a streamflow relation between this site and the Little River near Cadiz site could not be established; however, estimates for this site are available (Michael C. Ierardi (U.S. Geological Survey, unpub. data., 2006) (table 7).

The coefficients of determination (R^2) for the best-fit regression models for loads of nitrite plus nitrate, total phosphorus, orthophosphate, and suspended sediment are listed in table 8. High R^2 values indicate that the models for all four constituents successfully simulated the variability in constituent loads at the three fixed-network sites. Overall, the model simulations for nitrite plus nitrate showed the highest R^2 values. Based on R^2 values, the model simulations for total phosphorus showed a better fit than the orthophosphate model. The better fit for total phosphorus likely is related to the suspended components of total phosphorus. Generally, suspended material has a stronger relation to streamflow than do dissolved components such as orthophosphate. Model simulations for suspended sediment showed high R^2 values for all three fixed-network sites.

The largest estimated mean annual load of nitrite plus nitrate among the three fixed-network sites was at the Little River near Cadiz site (2,500,000 lb/yr) (table 7). This site also had the largest estimated mean annual load of total phosphorus (166,000 lb/yr). The estimated mean annual load of orthophosphate was 65,000 lb/yr, which is about 40 percent of the mean annual load of total phosphorus at this site.

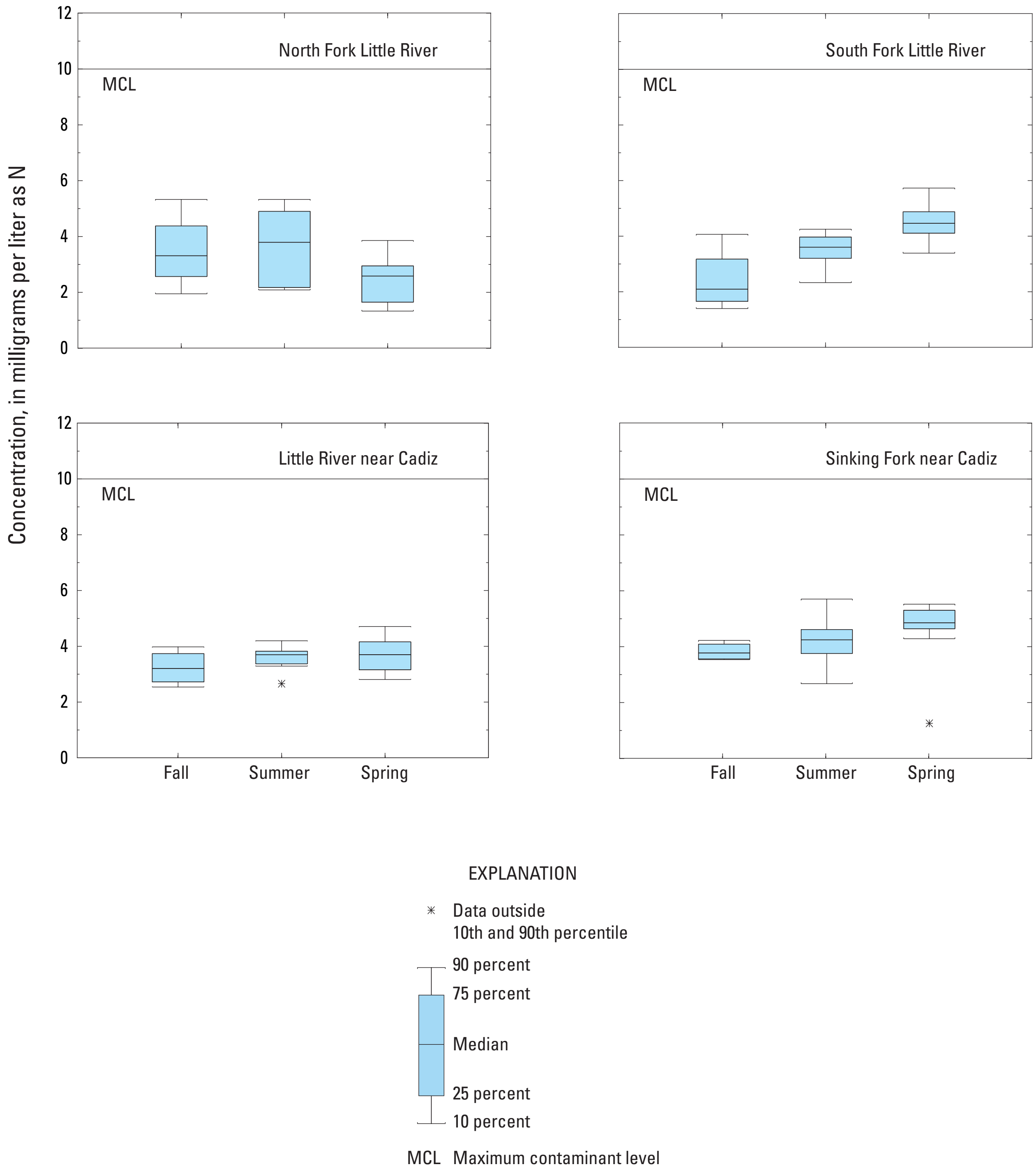


Figure 7. Seasonal distribution of concentrations of nitrite plus nitrate for four fixed-network sites in the Little River Basin, Kentucky, 2003-04.

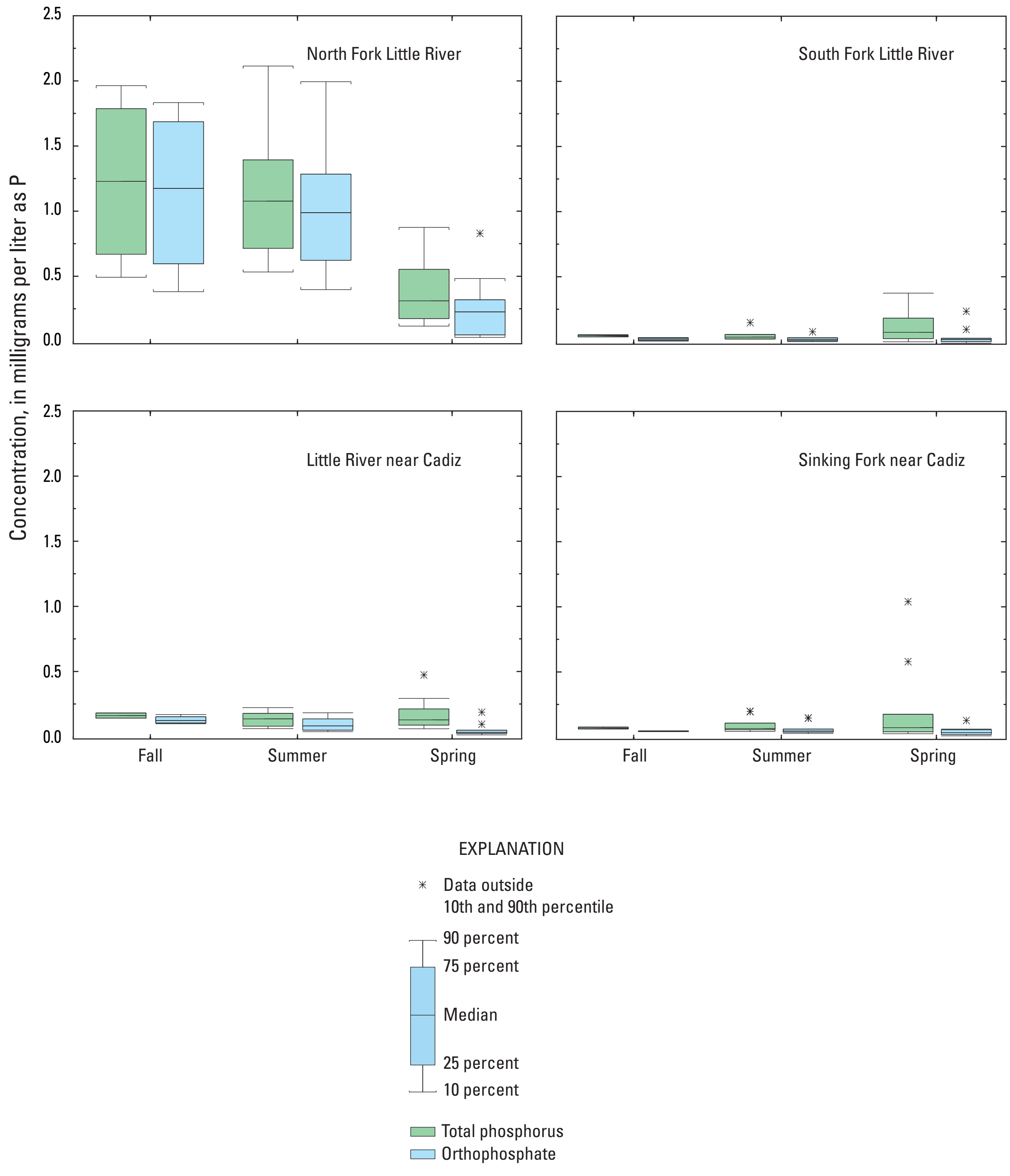


Figure 8. Seasonal distribution of concentrations of total phosphorus and orthophosphate for four fixed-network sites in the Little River Basin, Kentucky, 2003-04.

Table 7. Estimated mean annual load and yield of nutrients and suspended sediment at the fixed-network sites in the Little River Basin, Kentucky, 2003-04.

[lb/yr, pound per year; lb/yr/mi², pounds per year per square mile; DA, drainage area; mi², square miles; ---, not available]

Constituent	Mean annual load (lb/yr)	95-percent confidence interval: Lower	95-percent confidence interval: Upper	Standard error of prediction	Mean annual yield (lb/yr/mi²)
North Fork Little River near Hopkinsville, Ky. (DA = 58 mi²)					
Ammonia (as N), dissolved	13,000	7,800	20,000	3,000	190
Nitrite plus nitrate (as N), dissolved	450,000	396,000	516,000	31,000	6,700
Phosphorus (as P), total	107,000	87,000	129,000	10,000	1,600
Orthophosphate (as P) dissolved	74,000	60,000	90,000	7,500	1,100
Suspended sediment	30,000,000	7,000,000	23,000,000	4,400,000	450,000
South Fork Little River near Hopkinsville, Ky. (DA=67 mi²)					
Ammonia (as N), dissolved	---	---	---	---	---
Nitrite plus nitrate (as N), dissolved	780,000	678,000	890,000	54,000	13,000
Phosphorus (as P), total	32,000	14,500	62,000	12,000	550
Orthophosphate (as P) dissolved	14,000	6,100	29,000	5,900	240
Suspended sediment	18,000,000	3,500,000	55,000,000	14,000,000	310,000
Little River near Cadiz, Ky. (DA = 244 mi²)					
Ammonia (as N), dissolved	---	---	---	---	---
Nitrite plus nitrate (as N), dissolved	2,500,000	230,000	2,800,000	103,000	10,000
Phosphorus (as P), total	166,000	102,000	250,000	39,000	660
Orthophosphate (as P) dissolved	65,000	46,000	89,000	11,000	270
Suspended sediment	84,000,000	59,000	620,000	150,000	340,000
Sinking Fork near Cadiz, Ky.[1] (DA = 107 mi²)					
Total nitrogen	1,200,000	--	--	660,000	12,000
Phosphorus (as P), total	114,000	--	--	67,000	1,000

[1]Data from Michael C. Ierardi, U.S. Geological Survey, unpub. data, 2006.

Table 8. Regression coefficients and coefficients for determination (R^2) for load models used to estimate nitrite plus nitrate, total phosphorus, orthophosphate, and suspended sediment at three sites in the Little River Basin, Kentucky, 2003-04.

[Site locations are shown in figure 1. The regression equation is $ln(L) = a + b(lnQ) + c(lnQ^2) + d[\sin(2\pi T)] + e[\cos(2\pi T)] + fT + gT^2$: where L is the constituent load, in pounds per day; Q is stream discharge, in cubic feet per second; T is time in decimal years from the beginning of the calibration period; *a,b,c,d,e,f,g* are regression coefficients; R^2 represents the amount of variance explained by the model]

Site name	Regression coefficient							R^2 (percent)
	a	*b*	*c*	*d*	*e*	*f*	*g*	
			Nitrite plus nitrate					
North Fork Little River near Hopkinsville, Ky.	6.09	0.750	-0.002	-0.059	-0.209	0.343	0.527	92
South Fork Little River near Hopkinsville, Ky.	6.24	1.008	-.049	.273	-.208	.013	-.016	97
Little River near Cadiz, Ky.	7.67	1.000	-.040	.084	-.068	.152	-.144	99
			Total phosphorus					
North Fork Little River near Hopkinsville, Ky.	4.72	.855	.124	-.436	-.146	.751	-.306	86
South Fork Little River near Hopkinsville, Ky.	1.91	1.46	.158	.328	-.052	-.127	.478	85
Little River near Cadiz, Ky.	4.35	1.22	.181	-.199	.026	.246	.404	88
			Orthophosphate					
North Fork Little River near Hopkinsville, Ky.	4.41	.583	.030	-.494	-.271	.985	-.501	81
South Fork Little River near Hopkinsville, Ky.	1.16	1.52	.084	-.897	-.164	-.250	.681	77
Little River near Cadiz, Ky.	3.83	1.02	.063	-.349	-.048	.479	-.126	84
			Suspended sediment					
North Fork Little River near Hopkinsville, Ky.	8.47	2.21	-.041	.131	-.473	-.394	-1.22	94
South Fork Little River near Hopkinsville, Ky.	6.59	2.08	.247	-.041	.016	.035	.798	86
Little River near Cadiz, Ky.	8.32	2.02	.179	.176	-.876	-.108	1.11	91

Estimates of mean annual total load of nitrite plus nitrate and total phosphorus during 1985-97 reported by Crain (2001) and estimates reported by Michael C. Ierardi (U.S. Geological Survey, unpub. data, 2006) are similar to the estimates in this report. The estimated mean annual load of nitrite plus nitrate and total phosphorus reported during 1985-97 was 2,100,000 and 212,000 lb/yr, respectively (Crain, 2001). Estimated mean annual loads for total nitrogen were 2,000,000 lb/yr and for total phosphorus were 210,000 lb/yr (Michael C. Ierardi, U.S. Geological Survey, unpub. data, 2006). Although Michael C. Ierardi (U.S. Geological Survey, unpub. data, 2006) reported mean annual loads for total nitrogen and not nitrite plus nitrate, the major form of nitrogen in the Little River Basin is nitrite plus nitrate (about 87 percent of total nitrogen) (Crain, 2001). Load estimates with long periods of record are more reliable than estimates from sites with short periods of record.

Of the two main tributaries upstream from the Little River near Cadiz site, the North Fork Little River site contributed the greatest amount of total phosphorus to the study area with an estimated mean annual load of 107,000 lb/yr or about 64 percent of the total mean annual load at the Little River near Cadiz site, from about 27 percent of the overall drainage area. The South Fork Little River site contributed an estimated mean annual load of total phosphorus of 32,000 lb/yr, which was about 20 percent of the total mean annual load at the Little River near Cadiz site, from 24 percent of the overall drainage area.

The estimated mean annual loads for orthophosphate for the North Fork Little River site and South Fork Little River site were 74,000 and 14,000 lb/yr, respectively. The mean annual load of orthophosphate represented a larger percentage of the mean annual load of total phosphorus at the North Fork Little River site (68 percent) than at the South Fork Little River site (44 percent). A possible reason for the larger percentage of orthophosphate to total phosphorus at the North Fork Little River site is a wastewater-treatment facility, which discharges just upstream from the sampling site. The estimated mean annual load of nitrite plus nitrate for the South Fork Little River site was 780,000 lb/yr. The North Fork Little River site had an estimated mean annual load of nitrite plus nitrate of 450,000 lb/yr.

Yields are defined as the amount of load per unit area and are useful for comparing basins with varying size, land use, and physiography. Yields for ammonia nitrogen, nitrite plus nitrate, total phosphorus, and orthophosphate were computed for each of the three fixed-network sites (table 7).

Estimated historical mean annual yields (Crain, 2001; Michael C. Ierardi, U.S. Geological Survey, unpub. data, 2006) of nitrite plus nitrate and total phosphorus for the Little River near Cadiz site were similar to those computed from samples collected during 2003-04. The estimated mean annual yields of nitrite plus nitrate and total phosphorus reported by Crain (2001) were 8,600 and 870 (lb/yr)/mi^2, respectively. Estimated mean annual yields of total nitrogen and total phosphorus from Michael C. Ierardi (U.S. Geological Survey, unpub. data, 2006) were 8,200 and 860 (lb/yr)/mi^2, respectively; whereas, the estimated mean annual yield of nitrite plus nitrate was 10,000 (lb/yr)/mi^2 and the estimated mean annual yield for total phosphorus was 660 (lb/yr)/mi^2 for 2003-04 at the Little River near Cadiz site. Mean annual streamflow for the Little River near Cadiz site was 389 ft^3/s for water years 2003-04, compared to 372 ft^3/s for water years 1985-97, and 355 ft^3/s for the period reported by Michael C. Ierardi (U.S. Geological Survey, unpub. data, 2006).

The North Fork Little River site had the largest estimated mean annual yield of total phosphorus (1,600 (lb/yr)/mi^2) and orthophosphate (1,100 (lb/yr)/mi^2). Thirteen percent of the land is considered urban in this subbasin. A principal source of phosphorus for the North Fork Little River is discharge from wastewater-treatment facilities. The mean annual yields for total phosphorus and orthophosphate for the Little River near Cadiz site and the South Fork Little River site were much lower, with the Little River near Cadiz site having slightly larger yields of the two (table 7). The South Fork Little River site had the largest estimated mean annual yield of nitrite plus nitrate (13,000 (lb/yr)/mi^2), followed by the Little River near Cadiz site (10,000 (lb/yr)/mi^2), and the North Fork Little River site (6,700 (lb/yr)/mi^2). Estimated mean annual yields for nitrogen and phosphorus from Crain (2001) and Michael C. Ierardi (U.S. Geological Survey, unpub. data, 2006) were similar to the mean annual yields estimated in this report.

Concentrations, and Estimated Loads and Yields of Suspended Sediment

Summary statistics for the concentrations of suspended sediment from March 2003 through November 2003 and from February 2004 through November 2004 at all sampling sites are shown in Appendix 1. These data provide the basis for analysis of concentrations, and estimated loads and yields at the selected sampling sites.

Concentrations

Suspended sediment is all particulate matter suspended in the water column resulting from streambed resuspension, rock weathering, and soil erosion. Concentrations of suspended sediment are affected by natural conditions (streambank erosion, steep slopes, and forest fires) and anthropogenic activities (construction, timber harvesting, and certain agricultural practices).

High concentrations of suspended sediment can cause habitat destruction and limit light penetration throughout the water column. In addition, suspended sediment has a major role in the transport and fate of contaminants. Contaminants may sorb onto the surface of the suspended sediments and be transported and deposited in other areas downstream.

Spatial Variability

Concentrations of suspended sediment generally were low in the Little River Basin (fig. 9). The median concentration of suspended sediment for all sites sampled was 12 mg/L. The highest concentration of suspended sediment was measured at the Sinking Fork near Cadiz site (1,020 mg/L) during a spring runoff event.

Concentrations of suspended sediment for the four fixed-network sites were grouped by site and compared by means of the Wilcoxson rank-sum test. Differences in median concentrations of suspended sediment were not significant (p value: >0.05) among any of the fixed-network sites.

Seasonal Variability

Concentrations of suspended sediment were higher during spring and low during the fall (fig. 10). Concentrations of suspended sediment were grouped by season and compared by means of the Wilcoxson rank-sum test. Differences in median concentrations of suspended sediment were not significant (p value: >0.05) at the South Fork Little River site among any season, while samples from the Little River near Cadiz site had differences in median concentrations of suspended sediment that were significant among all seasons. Differences in median concentrations of suspended sediment at the North Fork Little River site were significant between summer and fall (p value: 0.04) and between spring and fall (p value: 0.006). The Sinking Fork near Cadiz site and the Little River near Cadiz site had differences in median concentrations of suspended sediment that were significant between spring and summer (p value: 0.01 and 0.03, respectively).

Estimated Loads and Yields

Mean annual loads (in lb/yr) for suspended sediment were estimated using the LOADEST program at three of the four fixed-network sites from samples collected during 2003-04 (table 7). The 95-percent confidence interval for each estimated annual load of suspended sediment has been calculated from the standard error of prediction provided by the LOADEST program; the confidence interval is shown in pounds per year. Loads of suspended sediment were not estimated at the Sinking Fork near Cadiz site, because a streamflow relation between this site and the Little River near Cadiz site could not be established. Annual loads vary depending upon drainage basin size, hydrologic conditions, and land uses within a basin.

Estimated loads of suspended sediment were largest at the Little River near Cadiz site, where the mean annual load for 2003-04 was about 84,000,000 lb/yr (table 7). The largest estimated mean annual yield was 450,000 (lb/yr)/mi^2 at the North Fork Little River site. The smallest mean annual loads and yields of suspended sediment, 18,000,000 lb/yr and 310,000 (lb/yr)/mi^2, respectively, were estimated at the South Fork Little River site.

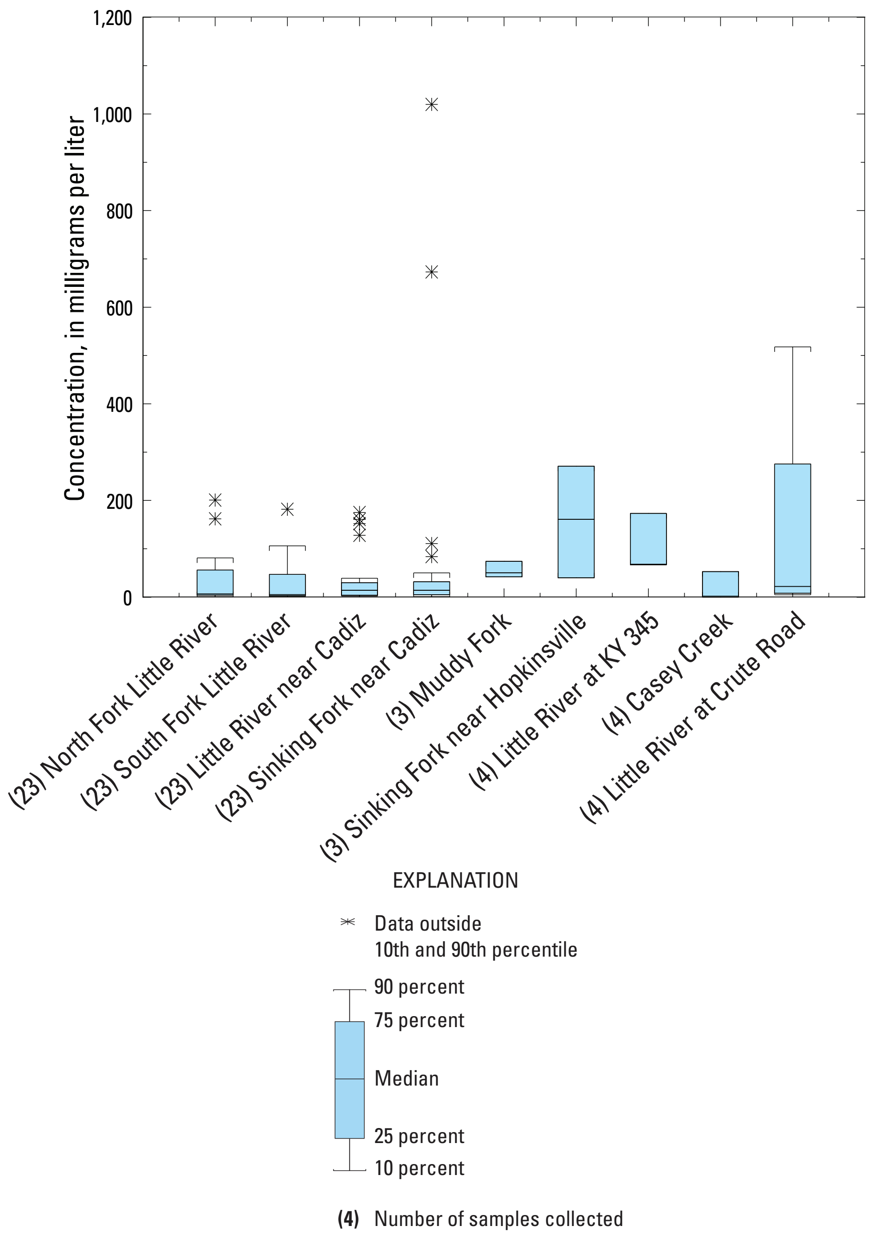


Figure 9. Concentrations of suspended sediment at all sampling sites in the Little River Basin, Kentucky, 2003-04.

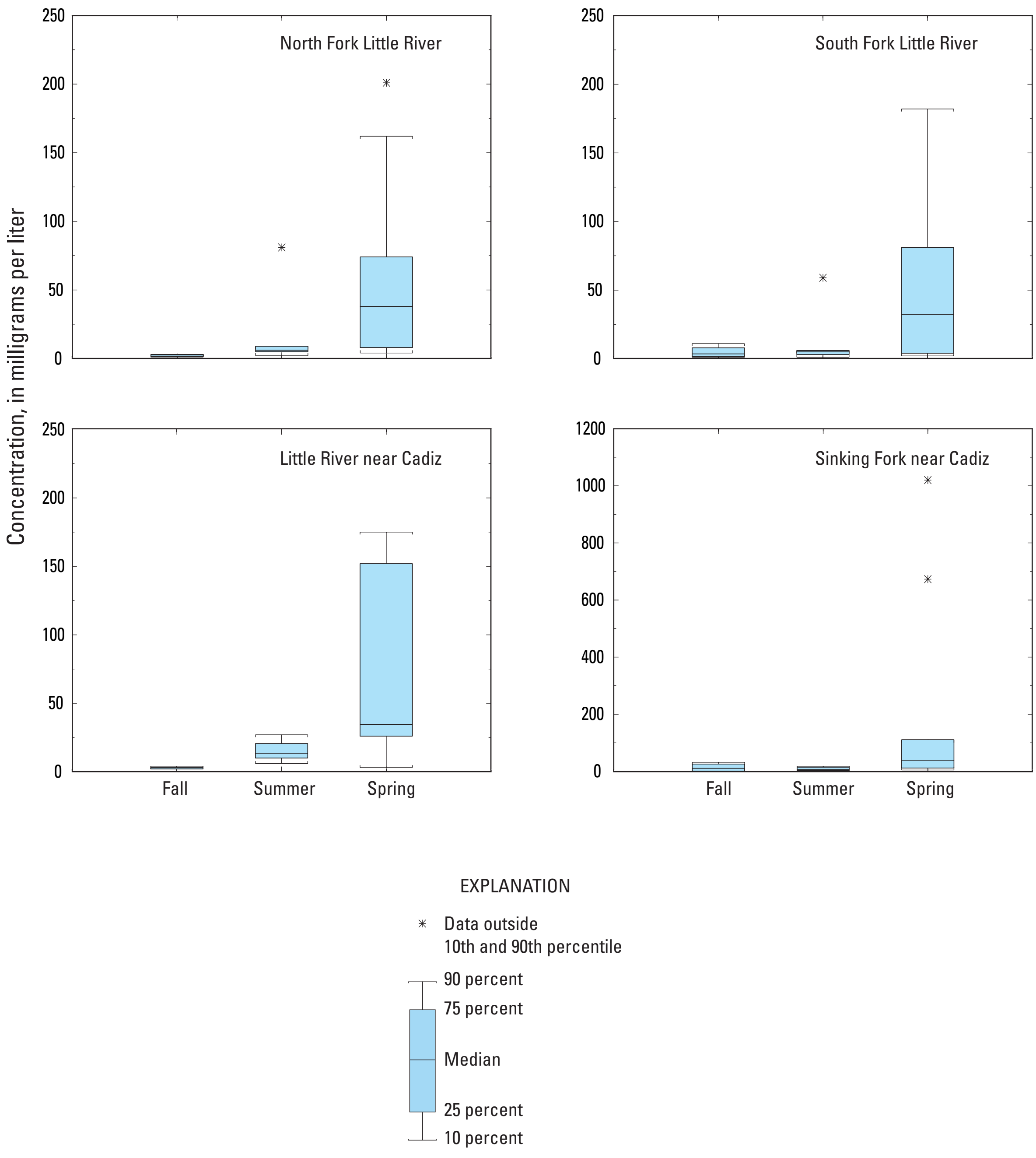


Figure 10. Seasonal distribution of concentrations of suspended sediment for four fixed-network sites in the Little River Basin, Kentucky, 2003-04.

Conclusions

Concentrations and estimated loads and yields of nitrite plus nitrate, total phosphorus, orthophosphate, and suspended sediment were evaluated in streams of the Little River Basin of western Kentucky. Water samples were collected in streams in the Little River Basin during 2003-04 as part of study in cooperation with the Kentucky Department of Agriculture. A total of 92 water samples were collected at four fixed-network sites from March through November 2003 and from February through November 2004. An additional 20 samples were collected at five synoptic-network sites during the same period. The Little River Basin encompasses about 600 square miles in Christian and Trigg Counties, and a portion of Caldwell County.

Median concentrations of nitrogen, phosphorus, and suspended sediment varied spatially and seasonally. Concentrations of nitrogen were higher in the spring (March-May) after fertilizer application and runoff. The highest concentration of nitrite plus nitrate, 5.7 milligrams per liter (mg/L), was detected at the South Fork Little River site. The Sinking Fork near Cadiz site had the highest median concentration of nitrite plus nitrate (4.6 mg/L). Median concentrations of nitrite plus nitrate were notable between spring and fall (September-November) at the South Fork Little River site and the Sinking Fork near Cadiz site. The median concentrations at the other fixed-network sites showed no differences between the seasons.

The North Fork Little River site and the Little River near Cadiz site had higher concentrations of orthophosphate in the fall and lower concentrations in the spring. Concentrations of orthophosphate remained high during the summer (June-August) at the North Fork Little River site probably because of the contribution of wastewater effluent to streamflow. Fifty-eight percent of the concentrations of total phosphorus at the nine sites exceeded the U.S. Environmental Protection Agency recommended maximum concentration limit of 0.1 mg/L.

Concentrations of suspended sediment were high in the spring during runoff and low in the fall. The highest concentration of suspended sediment (1,020 mg/L) was observed at the Sinking Fork near Cadiz site. The median concentration of suspended sediment for all sites sampled was 12 mg/L. A nonparameteric statistical test (Wilcoxson rank-sum) showed that the median concentrations of suspended sediment were not different among any of the fixed-network sites.

Commercial-fertilizer and livestock-waste application on corn and soybean fields is the principal source of nutrients for most of the Little River Basin. Some of these nutrients from agricultural nonpoint sources eventually are transported to streams by surface runoff, erosion of sediment, or ground-water discharge. Sources of nutrients in the urban areas (Hopkinsville) mainly are from effluent discharge from wastewater-treatment facilities and fertilizer applications to lawns and golf courses. The Little River near Cadiz site contributed larger estimated mean annual loads of nitrite plus nitrate (2,500,000 pounds per year (lb/yr)) and total phosphorus (160,000 lb/yr) than the other three fixed-network sites. Of the two main tributaries upstream from the Little River near Cadiz site, the North Fork Little River was the greatest contributor of total phosphorus to the study area with an estimated mean annual load of 107,000 lb/yr or about 64 percent of the total mean annual load at the Little River near Cadiz site. The other main upstream tributary, South Fork Little River, had an estimated mean annual load of total phosphorus that was about 20 percent of the mean annual load at the Little River near Cadiz site. Estimated loads of suspended sediment were largest at the Little River near Cadiz site, where the mean annual load for 2003-04 was about 84,000,000 lb/yr. The North Fork Little River contributed an estimated 36 percent of the mean annual load of suspended sediment at the Little River near Cadiz site; the South Fork Little River contributed an estimate of 18 percent of the mean annual load at this site.

The North Fork Little River site had the largest estimated mean annual yield of total phosphorus (1,600 pounds per year per square mile (lb/yr)/mi^2) and orthophosphate (1,100 (lb/yr)/mi^2). A principal source of phosphorus for the North Fork Little River is discharge from wastewater-treatment facilities. The largest estimated mean annual yield of nitrite plus nitrate was at the South Fork Little River site. The North Fork Little River site had the largest estimated mean annual yield of suspended sediment (450,000 (lb/yr)/mi^2). The smallest estimated mean annual loads and yields of suspended sediment were at the South Fork Little River site.

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Appendix 1. Statistical summary of concentrations of ammonia nitrogen, nitrite plus nitrate, total phosphorus, orthophosphate, and suspended sediment in the Little River Basin, Kentucky, 2003-04.

[N, nitrogen; P, phosphorus; <, less than; ---, not applicable]

Constituent	Number of samples	Number of detections	Concentrations, in milligrams per liter					
			Minimum	25th percentile	Mean	Median	75th percentile	Maximum
North Fork Little River near Hopkinsville , Kentucky (03437400)								
Ammonia (as N), dissolved	23	15	<0.04	<0.04	0.06	<0.04	0.05	0.48
Nitrite plus nitrate (as N), dissolved	23	23	1.3	2.2	3.1	2.9	3.8	5.3
Phosphorus (as P), total	23	23	.14	.36	.81	.60	1.1	2.1
Orthophosphate (as P), dissolved	23	23	.05	.26	.70	.48	1.0	2.0
Suspended sediment	23	---	1	4	35	7	56	201
South Fork Little River near Hopkinsville , Kentucky (03437600)								
Ammonia (as N), dissolved	23	3	<.04	<.04	.07	<.04	<.04	.66
Nitrite plus nitrate (as N), dissolved	23	23	1.4	3.4	3.8	4.0	4.5	5.7
Phosphorus (as P), total	23	23	.02	.04	.09	.06	.10	.39
Orthophosphate (as P), dissolved	23	22	<.006	.02	.05	.03	.05	.25
Suspended sediment	23	---	1	3	28	5	39	182
Little River near Cadiz, Kentucky (03438000)								
Ammonia (as N), dissolved	23	4	<.04	<.04	.03	<.04	<.04	.11
Nitrite plus nitrate (as N), dissolved	23	23	2.5	3.2	3.6	3.7	3.9	4.7
Phosphorus (as P), total	23	23	.06	.11	.17	.16	.20	.49
Orthophosphate (as P), dissolved	23	23	.03	.05	.1	.08	.13	.21
Suspended sediment	23	---	2	5	38	14	28	175

Appendix 1. Statistical summary of concentrations of ammonia nitrogen, nitrite plus nitrate, total phosphorus, orthophosphate, and suspended sediment in the Little River Basin, Kentucky, 2003-04.—*Continued*

[N, nitrogen; P, phosphorus; <, less than; ---, not applicable]

Constituent	Number of samples	Number of detections	Concentrations, in milligrams per liter					
			Minimum	25th percentile	Mean	Median	75th percentile	Maximum
Sinking Fork near Cadiz, Kentucky (03438040)								
Ammonia (as N), dissolved	23	3	<0.04	<0.04	0.02	<0.04	<0.04	0.10
Nitrite plus nitrate (as N), dissolved	23	23	1.2	3.7	4.3	4.4	5.2	5.7
Phosphorus (as P), total	23	23	.03	.06	.14	.07	.11	1.0
Orthophosphate (as P), dissolved	23	23	.008	.03	.05	.04	.05	.14
Suspended sediment	23	---	1	5	93	14	30	1,020
Little River at KY 345 near Cadiz, Kentucky (03437680)								
Ammonia (as N), dissolved	4	2	<.04	<.04	.07	<.04	.07	.22
Nitrite plus nitrate (as N), dissolved	4	4	2.0	2.7	3.0	3.0	3.3	3.8
Phosphorus (as P), total	4	4	.17	.29	.31	.34	.37	.39
Orthophosphate (as P), dissolved	4	4	.05	.10	.17	.15	.22	.31
Suspended sediment	4	---	67	67	103	68	120	173
Muddy Fork near Hopkinsville, Kentucky (03438024)								
Ammonia (as N), dissolved	4	2	<.04	<.04	<.04	<.04	<.04	.05
Nitrite plus nitrate (as N), dissolved	4	4	2.0	2.2	3.5	3.5	4.7	5.0
Phosphorus (as P), total	4	4	.04	.05	.15	.08	.18	.40
Orthophosphate (as P), dissolved	4	4	.03	.03	.04	.04	.05	.06
Suspended sediment	3	---	42	46	55	50	62	74

Appendix 1. Statistical summary of concentrations of ammonia nitrogen, nitrite plus nitrate, total phosphorus, orthophosphate, and suspended sediment in the Little River Basin, Kentucky, 2003-04.—*Continued*

[N, nitrogen; P, phosphorus; <, less than; ---, not applicable]

			Concentrations, in milligrams per liter					
Constituent	Number of samples	Number of detections	Minimum	25th percentile	Mean	Median	75th percentile	Maximum
Sinking Fork near Hopkinsville, Kentucky (03438028)								
Ammonia (as N), dissolved	4	1	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Nitrite plus nitrate (as N), dissolved	4	4	1.3	1.8	2.3	2.4	2.9	3.1
Phosphorus (as P), total	4	4	.04	.10	.18	.19	.28	.30
Orthophosphate (as P), dissolved	4	4	.01	.02	.05	.04	.06	.09
Suspended sediment	3	---	40	100	157	161	216	271
Casey Creek near Cadiz, Kentucky (03437990)								
Ammonia (as N), dissolved	4	0	<.04	<.04	<.04	<.04	<.04	<.04
Nitrite plus nitrate (as N), dissolved	4	4	.36	1.7	1.8	2.3	2.3	2.4
Phosphorus (as P), total	4	4	.03	.03	.05	.04	.06	.07
Orthophosphate (as P), dissolved	4	3	<.006	.02	.02	.02	.02	.03
Suspended sediment	4	---	<1	1	18	2	27	53
Little River at Crute Road near Cadiz, Kentucky (03438080)								
Ammonia (as N), dissolved	4	3	<.04	<.04	<.04	<.04	.05	.06
Nitrite plus nitrate (as N), dissolved	4	4	2.8	3.2	3.4	3.5	3.7	3.7
Phosphorus (as P), total	4	4	.08	.08	.24	.12	.28	.63
Orthophosphate (as P), dissolved	4	4	.05	.05	.08	.08	.11	.11
Suspended sediment	4	---	5	9	142	22	154	518

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