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2007 Kentucky River Watershed Watch Sampling Results Summary Report

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2007 Kentucky River Watershed Watch Sampling Results

Summary Report

Prepared for Kentucky River Watershed Watch

By Kentucky Water Resources Research Institute

Malissa McAlister
Lindell Ormsbee

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CHAPTER I: INTRODUCTION

This report documents the results of the 2007 Kentucky River Watershed Watch sampling effort, which was supported through funding and other contributions from the **Kentucky River Authority, Eastern Kentucky PRIDE, Sierra Club, the Kentucky Waterways Alliance, Bluegrass PRIDE, Toyota Manufacturing Company, Brown-Forman Corporation, Lexington-Fayette Urban County Government, KY American Water, NOAA and Virginia Environmental Endowment.** Kentucky River Watershed Watch is a volunteer organization with the following goals:

- ... To provide current data on general water quality conditions to local stream based organizations working to protect their watershed.
- ... To provide widespread screening for potential water quality problems to resource management agencies.
- ... To provide auxiliary information to assist resource management agencies in meeting specific operational and management objectives.
- ... To identify specific impacts to water quality through targeted observations and measurements.

The 2007 sampling effort was conducted so as to be consistent with the scientific study plan developed by the Kentucky River Watershed Watch Scientific Advisory Board. This plan describes the monitoring objectives, methods, parameters, quality assurance, and data management. A copy of the plan may be found on the internet at http://kywater.org/watch/2000/plan_of_work.htm. In addition, detailed sampling results for 2007 and past years are posted in an interactive database on the KRWW web site at <http://www.krww.org>.

Study Area

During 2007, the Kentucky River Watershed Watch sampling effort was conducted at 223 different sites across the Kentucky River Basin. The Kentucky River Basin extends over much of the central and eastern portions of the state and is home to approximately 710,000 Kentuckians. The watershed includes all or part of 42 counties and drains over 7,000 square miles with a tributary network of more than 15,000 miles. A map of the watershed with the associated counties is shown in Figure I.1. For the purpose of watershed management, the River Basin has been subdivided into smaller sub-basins and watersheds using the USGS Hydrologic Unit Code (HUC) classification system. A map showing the 8-digit sub basins is shown in Figure I.2. A more detailed description of the 11-digit HUC watersheds is provided in Figures I.3-I.5. An index of the 223 sampling sites is provided in Figure I.6 and Table I.1.

Sample Data and Collection Dates

Water quality data were collected across the basin at four different times extending during the summer and fall of 2007. A listing of the sample dates and types of data collected during each sample period is provided in Table I.2. A summary of the types and number of samples collected at each data collection site is provided in Table I.3.

Table I.2 2007 Basinwide Sample Data and Collection Dates

Type of Data Collected	Sample Dates	# of Sites	# of Samples
1. Herbicide	5/18 - 5/23/2007	23	23
2. Synoptic Fecal Coliform.	6/29 - 6/30/2007	158	161
3. Follow Up Fecal Coliform	7/27 - 7/30/2007	105	109
4a. Chemical/Nutrients	9/13 - 9/25/2007	177	177
4b. Metals	9/13 - 9/25/2007	69	69

Base flow Conditions

In order to provide a basis for interpreting the sampling results, it is important to understand the associated stream flow conditions. For example, data collected during low flow or dry conditions may be more indicative of the impact of point source discharges, while data collected following a storm may be more reflective of the impacts of non-point pollutant discharges, or storm water runoff pollution.

An indication of the stream flow conditions during the sampling period may be obtained by examination of USGS (United States Geological Survey) stream flow records. For the purposes of this study, five separate USGS gauging stations were selected to provide an indication of the stream flow conditions during the sampling period. The names, station numbers, and locations of each of these stations are shown in Figure 1.7. Stream flow plots for each station showing the dates of the different sampling efforts are shown in Figures 1.8. – 1.12. (The stream flow values for these tables can be found on the USGS website at <http://ky.water.usgs.gov>).

In each of the graphs, the date of the herbicide sampling effort is indicated by a square ■ ; synoptic fecal sampling event by a triangle ▲ ; follow-up fecal sampling event by a circle ○ ; and the chemical, nutrient and metal sampling effort by a diamond ◆ . The flow graphs illustrate the largely low flow conditions present during the 2007 KRWW sampling season. Peak flows occurred in April, prior to the initial sampling event in May. Low flows were present during the synoptic pathogen and chemical sampling events. Throughout most of the basin, a slightly higher flow was recorded for the follow-up pathogen sampling effort in late July. The predominantly low flows occurring during the 2007 KRWW sampling season may suggest that observed water quality problems are more likely caused by point source contributions than nonpoint sources.

CHAPTER 2: DATA COLLECTION AND ANALYSIS

Physical/Chemical Field Data

General physical/chemical field data (dissolved oxygen, pH, water temperature, and observed flow level) were collected at each sample site during the four separate basin wide sampling periods. A summary of the physical/chemical data collected during this period is provided in Table 2.1. The table also includes results for chlorides, conductivity and turbidity for some of the sampling sites.

Dissolved Oxygen

Approximately **14 percent of the station readings (58 of 414)** displayed dissolved oxygen values less than 5.0 mg/L. A dissolved oxygen value less than 5.0 mg/L is problematic for aquatic organisms, causing increased susceptibility to environmental stresses, reduced growth rates, mortality and an alteration in the distribution of aquatic life. The 58 sampling sites with 2007 readings less than 5.0 mg/L are highlighted in shaded, bold text in Table 2.1.

pH

Thirteen of the station readings produced a pH value less than 6. The average pH value of all samples, 7.6, falls within the neutral range of between 6 and 9. A pH value less than 6 signifies acidic conditions in which toxic heavy metals are more soluble, and therefore more available for uptake by aquatic life. At pH values greater than 9, toxic ammonia concentrations increase. The 13 KRWW samples with readings less than six are indicated in shaded, bold text in Table 2.1.

Temperature

Only two sites had temperature readings that exceeded 31.7° Celsius, the water quality standard for protection of aquatic life in warm water streams. **These sites were K409 on the Kentucky River below the Dale Power Plant and K514 on a tributary to Tates Creek in Madison County.** In addition to having its own toxic effect, water temperature affects the solubility and the toxicity of many other water quality parameters. Generally, the solubility of solids increases with increasing temperature, while gases tend to be more soluble in cold water. An important physical relationship exists between the amount of dissolved oxygen in a body of water and its temperature. The warmer the water, the less dissolved oxygen. Colder water can maintain greater dissolved oxygen concentrations.

Flow

Based on visual observations, the flow rate in the streams was assessed using the following numerical equivalents:

- 0 – Dry
- 1 – Ponded
- 2 – Low
- 3 – Normal
- 4 – Bank Full
- 5 – Flood

Most flow assessments during the 2007 KRWW sampling season were rated either low (2) or normal (3).

Chlorides

The **greatest chloride reading of 222 mg/L**, at site K302 on Town Branch in Fayette County, is below the public drinking water standard of 250 mg/L, as well as the chronic (long-term) aquatic life standard of 600 mg/L and the acute (short-term) aquatic life standard of 1,200 mg/L. Chlorides are salts resulting from the combination of chlorine gas with a metal.

Conductivity

Forty-one percent of the conductivity readings (or 130 of 313) were at 800 micromhos/cm or greater. This conductivity level is somewhat arbitrary in that it is Kentucky's water quality criteria for the Ohio River mainstem, but it is the only established standard for the state. Conductivity is a measurement of the ability of an aqueous solution to carry an electrical current. Conductivity measurements are used to determine mineralization, or total dissolved solids. Indirect effects of excess dissolved solids are primarily the elimination of desirable food plants and habitat-forming plant species.

Turbidity

Turbidity readings ranged from 0.5 NTU at Site K473 at Fish Pond Lake in Letcher County to 165 NTU at Site K481 on Little Dry Fork, also in Letcher County. The state of Kentucky has not issued water quality standards for turbidity. Turbidity is a measure of water clarity and how much the material suspended in the water decreases the passage of light through the water. Suspended materials include soil particles (clay, silt and sand), algae, plankton, microbes, and other substances. Higher turbidity increases water temperatures, because suspended particles absorb more heat. This, in turn, reduces the concentration of dissolved oxygen because warm water holds less dissolved oxygen than cold water. Higher turbidity also reduces the amount of light penetrating the water, which reduces photosynthesis and the production of oxygen. Suspended materials can clog fish gills, reducing resistance to disease in fish, lowering growth rates, and affecting egg and larval development. As the particles settle, they can blanket the stream bottom, especially in slower waters, and smother fish eggs and benthic macroinvertebrates. Sources of turbidity include soil erosion, waste discharge, urban runoff, eroding streambanks, large numbers of bottom feeders which stir up bottom sediments, and excessive algal growth (USEPA, www.epa.gov/owow/monitoring/volunteer/stream/vms55.html).

Herbicide Indicators

Two separate herbicides were used to evaluate the possibility of potential pollution from rural and/or urban land uses in the Kentucky River Basin. The herbicides included Metolachlor and Triazine.

Metolachlor is usually applied to crops before plants emerge from the soil, and is used to control certain broadleaf and annual grassy weeds in field corn, soybeans, peanuts, grain sorghum, potatoes, pd crops, cotton, safflower, stone fruits, nut trees, highway right-of-ways and woody ornamentals. It inhibits protein synthesis; thus high protein crops (e.g. soy) can be adversely affected by excessive Metolachlor application. Additives may be included in product formulations to help protect sensitive crops (i.e. sorghum) from injury. Metolachlor is highly persistent in water over a wide range of acidity. At 20° Celsius, its half-life is greater than 200 days in highly acidic water and is 97 days in highly basic water. Metolachlor is moderately persistent in the soil environment, with observed half-lives of 15 to 70 days. Breakdown rates are mainly dependent on microbial activity, and are therefore temperature-dependent. Metolachlor is currently unregulated by the U.S. Environmental Protection Agency, and therefore is not assigned a maximum contaminant level.

Triazine (or Atrazine) is a selective triazine herbicide used to control broadleaf and grassy weeds in corn and other crops, and in conifer reforestation plantings. It is also used as a nonselective herbicide on non-cropped industrial lands and on fallow lands. Over 64 million acres of cropland were treated with atrazine in the U.S. in 1990. Atrazine is moderately soluble in water. The main route of breakdown is chemical hydrolysis, followed by biodegradation. Atrazine is highly persistent in soil. Chemical hydrolysis followed by microbial breakdown accounts for most of its degradation in soil. Although hydrolysis is rapid in acidic or basic soil environments, it is slower at neutral pHs. The EPA's drinking water standard maximum contaminant level for Atrazine is 0.003 mg/L (<http://www.epa.gov/safewater/mcl.html>). EPA's Office of Water has published a draft ambient water quality criteria document for atrazine containing acute and chronic criteria recommendations for the protection of aquatic life in both freshwater and saltwater. The procedures described in the "Guidelines for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic Organisms and Their Uses" indicate that, except possibly where a locally important species is very sensitive, freshwater aquatic life and their uses should not be affected unacceptably if the one-hour average concentration does not exceed 350 ug/L more than once every three years on the average (acute criterion). If the four-day average concentration of atrazine does not exceed 12 ug/L more than once every three years on the average (chronic criterion).

The basic manufacturer of both herbicides, Metolachlor and Atrazine, is Syngenta Crop Protection. They can be contacted at (800)334-9481 or <http://www.syngentacropprotection-us.com>.

Herbicide Sampling Results

Herbicide data were collected at 23 sites during May of 2007. The location of each site is shown in Figure 2.1, with sites showing detections noted with stars. A summary of the results for the herbicide data collection effort is provided below in Table 2.2. **Five of the 23 sites had detectable levels of Metolachlor, and none of the sites had a detectable level of Triazine.**

Bacteriological Indicators

A number of pathogenic (disease causing) viruses, bacteria, and protozoans can enter a water body via fecal contamination. Human illness can result from drinking water or swimming in water that contains pathogens. Eating shellfish harvested from such waters may also result in human illness.

Unfortunately, direct testing for pathogens is impractical. Pathogens are rarely present in large numbers, and many are difficult to cultivate in the lab. Instead, microbiologists look for “indicator” species – so called because their presence indicates that fecal contamination may have occurred. The indicators most commonly used today include: total coliforms, fecal coliforms, *Escherichia coli*, fecal streptococci, and enterococci. Each of these bacteria are normally prevalent in the intestines and feces of warm-blooded animals, including humans. The indicator bacteria themselves are not usually pathogenic. All but *E. coli* are composed of a number of species of bacteria that share common characteristics such as shape, habitat, or behavior. *E. coli* is a single species in the fecal coliform group.

There are basically two methods for analyzing water samples for bacteria:

The Membrane Filter Method involves filtering several different-sized portions of the sample using filters with a standard diameter and pore size, placing each filter on a selective nutrient medium in a Petri plate, incubating the plates at a specific temperature for a specified time period, and then counting the colonies that have grown on the filter. This method varies for different bacteria types (variations might include, for example, the nutrient medium type, the number and types of incubations, the method of incubations, etc.)

The Multiple-Tube Fermentation Method involves adding specified quantities of the sample to tubes containing a nutrient broth, incubating the tubes at a specified temperature for a specified time period, and then looking for the development of gas and/or turbidity that the bacteria produce. The presence or absence of gas in each tube is used to calculate an index known as the Most Probable Number (MPN).

Escherichia coli (E. coli)

The bacteria, *E. coli*, is commonly found in intestines of healthy humans and animals and produces the K and B- complex vitamins that are then absorbed for nutritional benefit. The presence of *E. coli* in water indicates fecal contamination and the potential for waterborne disease. EPA recommends *E. coli* as the best indicator of health risk from water contact in recreational waters. Kentucky has transitioned from a fecal coliform standard to an *E. coli* standard. The state criteria for *E. coli* are based on the designated use of the particular stream and may be summarized as follows:

Primary Contact Recreation (swimming from May 1 thru Oct 31): *E. coli* shall not exceed 130 colonies per 100 ml as a monthly geometric mean based on not less than 5 samples per month; nor exceed 240 colonies per 100 ml in 20 percent or more of all samples taken during the month [Note: As a result of the sampling frequency requirement with the first criteria, the state of Kentucky uses the 240 colonies per 100-ml criteria for classifying streams in the 305(b) report].

Total Coliforms

Total coliforms are a group of bacteria that are widespread in nature. All members of the fecal coliform group can occur in human feces, but some can also be present in animal manure, soil, and submerged wood and in other places outside the human body. Thus, the usefulness of total coliforms as an indicator of fecal contamination depends on the extent to which the bacteria species found are fecal and human in origin. For recreational waters, total coliforms are no longer recommended as an indicator. For drinking water, total coliforms are still the standard test because their presence indicates contamination of a water supply by an outside source. Total coliforms are indicated in the lab by their ability to metabolize (ferment) the sugar lactose in an incubator at a temperature of 35C.

Atypical Coliforms

Atypical coliform are additional colonies that appear on the coliform agar plate without the greenish metallic sheen and may be further classified as dark red, red or pink in appearance. By examining the ratio of the atypical to total coliforms present, a determination of the age and likely source of the fecal material can be determined. This approach to bacteriological testing was only performed on some of the 2007 follow-up coliform samples and was not conducted during the prior synoptic testing.

AC/TC Ratio

Recent research has shown that an atypical to total coliform (AC/TC) ratio of 4 or below indicates fresh fecal matter from both humans and animals. Ratios below two are normally characteristic of raw human sewage. However, samples taken from agricultural creeks during times when cows were present and actively defecating into the water have been noted to be below two as well. An AC/TC ratio between five and ten indicates fecal matter most likely derived from indirect sources of agriculture. Indirect sources of urban runoff have been found to have ratios that range between 10 and 20. Impounded urban runoff typically has ratios between 15 and 25. All ratios increase with time as the indigenous atypical coliforms proliferate and the fecally associated total coliforms die off. AC/TC ratios above 20 indicate aged fecal material from either human or agricultural sources (Brion 2000).

Fecal Coliform

Fecal coliforms, a subset of total coliform bacteria, are more fecal specific in origin. However, even this group contains a genus, *Lebsiella*, with species that are not necessarily fecal in origin. *Klebsiella* are commonly associated with textile and pulp and paper mill wastes. Therefore if these sources discharge to your stream, you might want to consider monitoring more fecal and human-specific bacteria. For recreational waters, this group was the primary bacteria indicator until relatively recently, when EPA began recommending *E. coli* and enterococci as better indicators of health risk from water contact. However, fecal coliforms are still being used in many states as the indicator bacteria. Similar to total coliforms, fecal coliforms are indicated in the lab by their ability to metabolize (ferment) the sugar lactose in an incubator at a temperature of 44.5 C. The state criteria for fecal coliform are based on the designated use of the particular stream and may be summarized as follows:

Primary Contact Recreation (swimming from May 1 thru Oct 31): fecal coliform shall not exceed 200 colonies per 100 ml as a monthly geometric mean based on not less than 5 samples per month; nor exceed 400 colonies per 100 ml in 20 percent or more of all samples taken during the month [Note: As a result of the sampling frequency requirement with the first criteria, the state of Kentucky uses the 400 colonies per 100-ml

criteria for classifying streams in the 305(b) report].

Secondary Contact Recreation (fishing and boating): fecal coliform content shall not exceed 1000 colonies per 100 ml as a monthly geometric mean based on not less than 5 samples per month; nor exceed 2000 colonies per 100 ml in 20 percent or more of all samples taken during the month.

Domestic Water Supply: fecal coliform content shall not exceed 2000 colonies per 100 ml as a monthly geometric mean based on not less than 5 samples per month.

Bacteriological Sampling Results

Two different sets of fecal coliform sampling were conducted in the Kentucky River basin during the summer of 2007. These included synoptic sampling and follow-up sampling. The results of each sampling effort are discussed in the following sections. During the first (synoptic) test and the second (follow-up) test, samples collected in the northern and central regions of the Kentucky River Basin and assessed at the University of Kentucky laboratory were analyzed for E coli using the membrane filter test. Samples collected in eastern Kentucky and analyzed at the Hazard lab were analyzed for fecal coliform using the membrane filter test.

Synoptic Fecal Coliform Sampling

As in past years, a synoptic round of fecal coliform samples was collected at all sampling locations during the month of July. The sample locations and associated results are shown in Figure 2.2. The individual results for each site are shown in Table 2.3. A ranking of the stations by the magnitude of the E. coli results is shown in Tables 2.4a, and a ranking of the fecal coliform results in shown in Table 2.4b.

Follow-Up Fecal Coliform Sampling

Based on the observation of **high readings at 77 of 121 (or 64%) of the synoptic E. coli sites** (i.e., >240 CFU/100 ml) and **high readings at 18 of 35 (or 51%) of fecal coliform sites** (>400cfu/100 ml), an additional round of pathogen sampling was conducted between 7/27/2007 and 7/30/2007. The sample locations and associated values are shown in Figure 2.3. The results of this sampling effort are provided in Table 2.5. **Results indicated continuing pathogen-related problems at 91 of 105, or 87%, of the re-sampled sites.**

In addition to E. coli analyses, 15 of the follow-up samples were also evaluated for total coliform and atypical coliform in order to determine the AC/TC ratio. These ratios are also listed in Table 2.5, and a summary of the resulting ratios is provided in Table 2.6.

Table 2.6 Summary of AC/TC Pathogen Source Analysis

Category	AC/TC Ratio	Description	# Samples
1	AC/TC < 2	Fresh, likely human source	2
2	2 <= AC/TC < 4	Fresh, human or ag sources	6
3	4 <= AC/TC < 10	Moderate age, likely indirect ag	5
4	10 <= AC/TC < 20	Older, indirect urban	0
5	AC/TC >20	Aged, human or ag sources	2

Chemical Sampling Results

General chemical data (alkalinity, chlorides, conductivity, and total suspended solids) were collected at all sample locations during the month of September. The individual results for each sample are shown in Table 2.7.

Alkalinity: Alkalinity refers to the degree to which the water sample is basic, or has a pH greater than 7, and affects the capability of water to neutralize acid. In most natural water bodies in Kentucky the buffering system is carbonate-bicarbonate. Alkalinity is important for fish and aquatic life because it protects or buffers against rapid pH changes. Higher alkalinity levels in surface waters will buffer acid rain and other acid wastes and prevent pH changes that are harmful to aquatic life. Kentucky's water quality criteria state that for protection of aquatic life, the buffering capacity should be at least 20 mg/L. If alkalinity is naturally low, (less than 20 mg/L) there can be no greater than a 25% reduction in alkalinity. **During the 2007 KRWW sampling season, alkalinity values ranged from <3 mg/L to 553 mg/L (K473). Site K473 also had the highest alkalinity value in 2006.**

Chlorides: Chlorides are salts resulting from the combination of the gas chlorine with a metal. Fish and aquatic communities cannot survive in waters with high levels of chlorides. Public Drinking Water Standards require chloride levels not to exceed 250 mg/L. Criteria for protection of aquatic life require levels of less than 600 mg/L for chronic (long-term) exposure and 1200 mg/L for short-term exposure. **During the 2007 KRWW sampling season, chloride values ranged from 2.5 mg/L (K584) to 222 mg/L (K302). The second greatest chloride value was measured at site K055, which also had the highest chloride levels in 2005 and 2006.**

Conductivity: Conductivity is a measurement of the ability of an aqueous solution to carry an electrical current. Conductivity measurements are used to determine mineralization, or total dissolved solids. Indirect effects of excess dissolved solids are primarily the elimination of desirable food plants and habitat-forming plant species. For Kentucky, water quality criteria have been established only for the mainstem of the Ohio River. The limit is 800 micromhos/cm or 500 mg/L total dissolved solids. **During the 2007 KRWW sampling season, conductivity values ranged from 240 (K581) to >2,000 mg/L at 11 different sites, included K481, where the greatest conductivity value was found in 2006.**

Total Suspended Solids: One of the biggest sources of water pollution in Kentucky is suspended solids. Suspended solids include inorganic particles (silts, clays, etc.) and organic particles (algae, zooplankton, bacteria, and detritus) that are carried along by water as it runs off the land. The inorganic portion is usually considerably higher than the organic. Both contribute to turbidity, or cloudiness of the water. High values of TSS cause multiple environmental impacts, including clogging fish gills, reducing light penetration, and siltation of stream bottoms and associated habitats. Indirectly, the suspended solids affect other parameters such as temperature and dissolved oxygen. Suspended solids also interfere with effective drinking water treatment. High sediment loads interfere with coagulation, filtration, and disinfection, and more chlorine is required to effectively disinfect turbid water.

There are no quantitative criteria for TSS. The Kentucky Water Quality Standards for aquatic life state that suspended solids "shall not be changed to the extent that the indigenous aquatic community is adversely affected" and "the addition of settleable solids that may adversely alter the stream bottom is pro-

hibited." During the 2007 sampling season, total suspended solids concentrations ranged from < 3.0 mg/L (several sites) to 509 mg/L (K120).

Nutrients

Oxygen demanding materials and plant nutrients are the most common substances discharged to the environment by man's activities, through wastewater facilities and by agricultural, residential, and storm water runoff. The most important plant nutrients, in terms of water quality, are phosphorus and nitrogen. In general, increasing nutrient concentrations are due to the potential for accelerated growth of aquatic plants, including algae. Nuisance plant growth can create imbalances in the aquatic community, as well as aesthetic and access issues. High densities of phytoplankton (algae) can cause wide fluctuations in pH and dissolved oxygen.

Total phosphorus (TP) is commonly measured to determine phosphorus concentrations in surface waters. TP includes all of the various forms of phosphorus (organic, inorganic, dissolved, and particulate) present in a sample. Phosphorus is one of the key elements necessary for growth of plants and animals. Phosphates are made up of phosphorus and exist in three forms: orthophosphate, metaphosphate (or polyphosphate) and organically bound phosphate. Each compound contains phosphorus in a different chemical formula. *Ortho* forms are produced by natural processes and are found in sewage. *Poly* forms are used for treating boiler waters and in detergents. In water, they change into the *ortho* form. Organic phosphates are important in nature. Their occurrence may result from the breakdown of organic pesticides that contain phosphates. They may exist in solution, as particles, loose fragments or in the bodies of aquatic organisms.

The forms of nitrogen routinely analyzed at most Kentucky ambient sampling sites are ammonia and ammonium (NH₃/NH₄), total Kjeldahl nitrogen (TKN), and nitrite and nitrate (NO₂/NO₃). Ammonia and ammonium are readily used by plants. TKN is a measure of organic nitrogen and ammonia in a sample. Nitrate is the product of aerobic transformation of ammonia, and is the most common form used by aquatic plants. Nitrite is usually not present in significant amounts. Nitrates can react directly with hemoglobin in the blood of humans and other warm-blooded animals to produce methemoglobin which destroys the ability of red blood cells to transport oxygen. This condition is especially serious in babies under three months of age and causes a condition known as methemoglobinemia or "blue baby" disease.

Kentucky currently has no official numerical standards or criteria for total phosphorus or total nitrogen. The state drinking water supply standard for nitrate-nitrogen, which is a measurement of the nitrogen portion of the nitrate molecule, is 10 mg/L. The state water quality standard for sulfate is 250 mg/L. The USEPA has recently issued recommendations for phosphorus concentrations to prevent over-enrichment. In general, any concentration of phosphorus in excess of 0.1 mg/l has the potential to cause eutrophication problems in a stream.

In addition to man-made sources, some phosphorus loadings may occur naturally from the watershed soils and underlying geology. Due to background levels of total phosphorus in the Kentucky River Basin as high as 0.25 mg/L, those sites with average total phosphorus concentrations of 0.5 mg/L can be

noted as potentially problematic. The informal total phosphorus standard of 0.5 mg/L has been adopted by the KRWW Scientific Advisory Committee as an appropriate level of concern for water quality sampling conducted in the Kentucky River Basin.

Nutrient Sampling Results

In addition to chemical data, general nutrient data (nitrate-nitrogen, total nitrogen, total phosphorus and sulfate) were also collected at each sample site during the month of September. A summary of the nutrient data collected during this period is provided in Table 2.8. **Nine stations had nitrate-nitrogen readings greater than 10 mg/L. As illustrated in Figure 2.4, the highest nitrate-nitrogen reading of 19.25 mg/L was recorded at station K085 (Glenn's Creek, Woodford County).**

As shown in Figure 2.5, **24 stations had phosphorus readings in excess of 0.5 mg/l. The highest recorded phosphorus reading was 2.1 mg/l which occurred at station K209 (Tates Creek in Madison County).**

Thirty-four sulfate concentrations exceeded the state drinking water supply standard of 250 mg/L. Sulfate results are displayed in Figure 2.6. The greatest sulfate reading of 1,990 mg/L was taken at site K542 in Troublesome Creek of Breathitt County, which was also the site of the greatest sulfate reading in 2006. Other sites showing high sulfate readings were largely located in the coal mining region of southeastern Kentucky.

Metals Sampling Results

In addition to chemical and nutrient data, metals data were also collected at most new stations which were established due to high metal concentrations the previous year. The results of the sampling effort are provided in Table 2.10. A summary of those stations that had the highest concentration for a particular metal is shown in Table 2.9. The sampling sites with concentrations greater than an established water quality standard are shown in Figure 2.7.

Out of the 30 different metals tested for during the 2007 KRWW sampling season, 13 metals are associated with specific water quality limits. No detections were found for five of these 13 metals with water quality standards, leaving eight different types of metals for which there were both established standards and detections at KRWW sites during 2007. **Of these, water quality standards were violated for chromium, copper, iron, manganese, nickel and zinc. As during the 2006 sampling season, sampling on Sandlick Creek in Letcher County accounted for most (4 of 6) of the greatest metals results.**

CHAPTER 3: EXECUTIVE SUMMARY

During the summer of 2007, multiple agencies and organizations provided funds for the support of volunteer water quality sampling in the Kentucky River Basin as part of the 2007 Kentucky River Watershed Watch effort. This report summarizes the results of that sampling effort. As part of this sampling effort, 223 separate sites were sampled at up to four different times for three main groups of parameters: herbicides, pathogens, and chemicals/nutrients/metals. In each case, the stream was also sampled for basic physical and chemical parameters such as pH, temperature, and dissolved oxygen. Thirteen stations had a pH reading less than 6. Only two sites produced temperature readings that exceeded 31.7° Celsius, which is the water quality standard for protection of aquatic life in warm water streams. Fourteen percent of the field samples produced dissolved oxygen readings below a minimum threshold of 5 mg/l recommended for supporting aquatic life.

Twenty-three sites were sampled for the herbicides Triazine and Metolachlor. None of the samples exhibited a concentration greater than the EPA Maximum Contaminant Limit for Triazines.

Chemical sampling in September produced 130 sites with relatively high conductivity values (e.g. > 1000), as compared to high conductivity values found at only 34 sites during 2006.

In 2007, the samples collected from the central and lower Kentucky River Basin were assessed for E. coli, whereas the samples collected in southeastern Kentucky were analyzed for fecal coliform. Thus, a direct comparison of all sites for pathogen concentrations is not possible. During the synoptic sampling event, 64% of sites analyzed for E. coli exceeded the primary contact recreation standard of 240 cfu/100 ml, and 51% of sites analyzed for fecal coliform exceeded the primary contact standard of 400 cfu/100 ml. Results from the follow-up pathogen sampling event at sites with previously high pathogen levels showed that 87% of the sites continued to exceed the standards for E coli and fecal coliform .

In an attempt to determine the age and source of the fecal contamination, total coliform and atypical coliforms were also collected during the follow-up sampling event. An evaluation of AC/TC (atypical coliform:typical coliform) ratios revealed a probable fresh, human source for only two of the 15 contaminated sites assessed, and 6 sites suggested either a fresh, human or fresh, agricultural source. It is recommended that additional investigations of these sites be conducted in an attempt to pinpoint the probable source of pollution.

An evaluation of the nutrient results revealed that phosphorous levels continue to be at levels of concern at several sites. Twenty-four sites had phosphorus concentrations in excess of 0.5 mg/L. The highest concentrations of phosphorus were found in Tates Creek in Madison County and Glenn's Creek in Woodford County. Nine sites had nitrate levels that exceeded the maximum in-stream concentration of 10 mg/L, the greatest being 19.25 mg/L in Glenn's Creek at site K085. Thirty-four sites had high sulfate readings, where concentrations exceeded 250 mg/L. These sites were mainly located in the mining regions of southeastern Kentucky.

Of the 58 sites sampled for 30 different metals during the 2007 sampling season, six sites produced results exceeding water quality standards for 5 different metals. These sites were K135, K437, K480, K481, K536, and K542.

In summary, the following water bodies have been targeted for more in-depth sampling and water quality management efforts due to 2007 sampling results of concern.

Overall Water Quality Problems

K085—Glenn’s Creek, Woodford County (* also listed in 2006)

K191—Otter Creek, Madison County

Pathogens, nitrogen, phosphorus

Nutrient Problems

K026— South Elkhorn Creek, Scott County

K030— Ten Mile Creek, Grant County

K209 / K515— Tates Creek, Madison County

Pathogen Problems

K116—Blair Branch, Letcher County

K215 & K216—Lost Creek, Breathitt County (* also listed in 2005 & 2006, also high sulfate readings)

K264— Unnamed tributary, Madison County

K288—Troublesome Creek, Knott County

K448 / K534—Cowan Creek, Letcher County

Metals / Sulfate Problems

K447—Cowan Creek, Letcher County

K536—Long Branch, Letcher County

K542 / K578—Sandlick Creek, Letcher County (* also listed in 2006)

K579—Cane Hollow, Letcher County

The following sites had the highest pathogen results following the synoptic and follow-up sampling events and should also be further studied for sources and causes of this water quality problem.

K297—Penitentiary Branch, Franklin County (*greatest synoptic, E. coli*)

K289—Troublesome Creek, Knott County (*greatest synoptic, fecal coliform*)

K085, K187/K250, K468, K472—Glenn’s Creek, Woodford County; Muddy Creek, Madison County; Wolf Run, Fayette County; Vaughn’s Branch, Fayette County (*greatest follow-up, E. coli*)

K215—Lost Creek, Breathitt County (*greatest follow-up, fecal coliform*)

CHAPTER 4: 2007 FOCUSED SAMPLING

Each year, some volunteers choose to sample their particular watershed more intensively in order to better elicit the degree and causes of observed water quality problems. Typically, multiple sampling sites are selected at strategic locations to aid in this endeavor. **During 2007, focused sampling was conducted within the Cane Run, Dix River, Glenn’s Creek, North Fork and White Oak watersheds.**

Cane Run—Focused Pathogen Sampling Results

The Cane Run watershed is located in central Kentucky and includes portions of Fayette and Scott Counties. The stream empties into North Elkhorn Creek west of Georgetown. The 2007 KRWW focus study included two Cane Run sampling sites located in Scott County.

Past KRWW data have shown high levels of bacteria indicative of pathogen contamination in Cane Run, and Cane Run is listed by the Kentucky Division of Water as unsafe for primary contact recreation (wading and swimming). During the 2007 sampling season, focused fecal sampling was conducted at sites K005 and K556 in order to better assess the level of the pathogen contamination problem and potential sources of the pollutant. These focus sites and associated sampling data are shown in the following table.

The geometric mean results for each of the sampling sites showed exceedances of the primary contact recreation standard of 240 cfu/100 ml for E. coli. The ratios of atypical coliforms to total coliforms pro-

2007 Cane Run Focused Pathogen Sampling Results

Site ID#	Waterbody	Location	Date	E coli	Total Coliform	Atypical Coliform	AC/TC Ratio
K005	Cane Run	0.2 Mi. Upstream of Hwy 460 bridge	6/29/2007	1040			
			7/5/2007	8160	1000		
			7/12/2007	373		13000	
			7/19/2007	428	750	15000	20.0
			7/27/2007	417	1200	5100	4.3
Geomean =				892			
K556	Cane Run	At Intersect of Coleman Lane and Hwy 25	6/29/2007	6130		6000	
			7/6/2007	8660		6000	
			7/12/2007	1110		11000	
			7/19/2007	2420	14000	TNTC	
			7/27/2007	1420	3200	10000	3.1
Geomean =				2893			

duced results suggesting sources that are fresh human or animal (< 4) or impounded runoff (15 to 25).

Dix River / Herrington Lake—Focused Pathogen Sampling Results

The Dix River / Herrington Lake watershed is located in Central Kentucky and includes portions of Boyle, Garrard, Lincoln and Mercer Counties. The Dix River enters the Kentucky River near High Bridge on the Mercer/Garrard County line. A 2007 KRWW focused pathogen study included six sites located around Herrington Lake. Historical KRWW and Division of Water data have not shown a pathogen concern within the lake. However, area residents wanted to verify acceptable swimming standards by conducting this focused sampling effort.

Sampling was conducted on five separate dates at six sampling locations. These focus sites and associated sampling data are shown in the following table. At five of the six sites, E coli readings were so low (< 10 cfu/100 ml) that it was not possible to calculate a geometric mean of the sampling results. The geometric mean at K310 of 31 cfu/100 ml is well below Kentucky's swimming standard of 240 cfu/100 ml. [Sampling was only conducted once at two of the sites initially chosen for the focused effort (K561 and K565), so geometric means were also impossible to calculate at those sites.]

2007 Herrington Lake Focused Pathogen Sampling Results

Site ID#	Waterbody	Location	Date	E coli	Total Coliform	Atypical Coliform	AC/TC Ratio
K310	Herrington Lake	At Kings Mill Marina	6/30/2007	30			
			7/7/2007	75			
			7/14/2007	10			
			7/20/2007	31			
			7/28/2007	41			
Geomean =				31			
K548	Cane Run	At Royalty Marina on Camp Road	6/30/2007	80			
			7/7/2007	<10			
			7/14/2007	<10			
			7/21/2007	10	50	400	8.0
			7/28/2007	<10	680	2233	3.3
Geomean =				N/A			
K549	Curds Creek	Above Dix Dam on Donamar Road	6/30/2007	<10			
			7/7/2007	20			
			7/14/2007	<10			
			7/21/2007	<10	<50	817	16.7
			7/28/2007	<10	200	1017	5.1
Geomean =				N/A			
K550	Herrington Lake	At the dock at Hardin Heights - south end.	6/30/2007	20			
			7/7/2007	<10			
			7/14/2007	<10			
			7/21/2007	<10	<50	600	12.2
			7/28/2007	<10	<50	850	17.3
Geomean =				N/A			
K555	Rocky Fork	Near Dix River Dam on Ron Clar Lane	6/30/2007	576			
			7/7/2007	<10			
			7/14/2007	<10			
			7/20/2007	<10	<50	1650	33.7
			7/28/2007	<10	700	2050	2.9
Geomean =				N/A			
K561	South Rocky Fork	At the headwaters	6/30/2007	399			
K562	Rocky Fork	At Rose's dock	6/30/2007	10			
			7/7/2007	<10			
			7/14/2007	<10			
			7/20/2007	10	<50	5300	108.2
			7/28/2007	<10	625	1400	2.2
Geomean =				N/A			
K565	Rocky Fork	Near Dix Dam	7/28/2007	<10	700	2050	2.9

Glenn's Creek—Focused Pathogen Sampling Results

The Glenn's Creek watershed is located in northwest Woodford County and a small portion of southeastern Franklin County. Glenn's Creek empties into the Kentucky River just south of Frankfort, just north of Interstate 64. Its tributaries include Camden Creek and Buck Run. The surface waters of the watershed supply drinking water for Versailles. Versailles' treated sewage is also discharged to this creek.

Based on local concern for high pathogen levels, focused E coli sampling was conducted at four different sites in the Glenn's Creek watershed during the summer of 2007. The resulting geometric means at all four of these sites were greater than the state of Kentucky's safe wading/swimming standard of 240 cfu/100 ml, with the result of 4,513 at Site K085 being the greatest. The AC/TC ratios (atypical coliforms to total coliforms) indicated sources ranging from fresh, human waste (<2) to impounded urban runoff (15-25).

2007 Glenn's Creek Focused Pathogen Sampling Results

Site ID#	Waterbody	Location	Date	E coli	Total Coliform	Atypical Coliform	AC/TC Ratio
K085	Glenn's Creek	Intersection of Steele Rd & McCracken	6/30/2007	3650			
			7/14/2007	7700	6000	12000	2.0
			7/21/2007	1310	2400	18300	7.6
			7/27/2007	2100			
			7/28/2007	24200			
Geomean =				4513			
K096	Graddy Spring	Spring on Greenwood Farm	6/30/2007	2100			
			7/14/2007	631	475	3600	7.6
			7/21/2007	4110	2800	2100	0.8
			7/27/2007	86			
			7/28/2007	279			
Geomean =				666			
K126	Glenn's Creek	At Millville, KY	6/30/2007	20		2400	
			7/14/2007	223	1600	11000	6.9
			7/21/2007	384	1300	7000	5.4
			7/27/2007	576	3225	17000	5.3
			7/28/2007	19900			
Geomean =				456			
K224	Spring	At Welcome Hall	6/30/2007	75			
			7/14/2007	20	550	6000	10.9
			7/21/2007	3780	1300	6900	5.3
			7/28/2007	7270	<1000	22000	24.4
Geomean =				451			

North Fork of Kentucky River (Letcher County) - Focused Pathogen Sampling Results

The North Fork of the Kentucky River begins in Letcher County, flowing through the communities of Whitesburg and Blackey. Longstanding high pathogen readings and local water quality concerns prompted a focused pathogen KRWW sampling effort in 2007. Sampling was conducted at 13 sites throughout the Letcher County portion of the North Fork watershed. These focus sites and associated sampling data are shown in the following table.

Results at all 11 of the 13 sampling sites were greater than the state of Kentucky's water quality safe swimming criteria of 400 cfu/100 ml for fecal coliform. It is hoped that this information will be considered by the Kentucky Division of Water during their next water quality assessment of the North Fork.

2007 North Fork Kentucky River Focused Pathogen Sampling Results

Site ID#	Waterbody	Location	Date	Fecal Coliform (cfu/100 mL)
K017	Sandlick Creek	near mouth at Caudilltown behind Cookie's house	6/29/2007	690
			7/6/2007	1100
			7/13/2007	370
			7/20/2007	2600
			7/27/2007	1800
Geomean =				1056
K105	Blair Branch	mouth of Blair Br	6/29/2007	330
			7/6/2007	6000
			7/13/2007	3200
			7/20/2007	9300
			7/27/2007	1090
Geomean =				2299
K114	Colley Creek	Mouth of Colley Creek	6/29/2007	220
			7/6/2007	310
			7/13/2007	610
			7/20/2007	2300
			7/27/2007	2300
Geomean =				739
K116	Blair Branch	above Tooter Br	6/29/2007	1200
			7/6/2007	8600
			7/13/2007	3400
			7/20/2007	4200
			7/27/2007	6900
Geomean =				3994
K437	Little Cowan	100m fro Hwy 119 intersection with Little Cowan Rd	6/29/2007	88
			7/6/2007	280
			7/13/2007	8
			7/20/2007	2500
			7/27/2007	1600
Geomean =				240
K447	Big Cowan	behind Comm. Center below confluence with Sturgill Br	6/29/2007	410
			7/6/2007	56
			7/13/2007	380
			7/20/2007	3900
			7/27/2007	890
Geomean =				497
K448	Big Cowan	upper Cowan at Joey's Dr.	6/29/2007	2500
			7/6/2007	1000
			7/13/2007	620
			7/20/2007	970
			7/27/2007	3400
Geomean =				1386
K451	Little Cowan	at mouth	6/30/2007	500
			7/6/2007	7200
			7/13/2007	2000
			7/20/2007	4000
			7/27/2007	1240
Geomean =				2044

2007 North Fork Kentucky River Focused Pathogen Sampling Results

Site ID#	Waterbody	Location	Date	Fecal Coliform (cfu/100 mL)
K476	Dry Fork	near the mouth just above Hwy 588 bridge	6/29/2007	180
			7/6/2007	300
			7/13/2007	430
			7/20/2007	9500
			7/27/2007	630
			Geomean =	674
K480	Big Cowan	by Cowan Elem. Bridge	6/30/2007	180
			7/6/2007	210
			7/13/2007	280
			7/20/2007	3000
			7/27/2007	1020
			Geomean =	504
K534	Big Cowan	at mouth on Stallard Dr.	6/29/2007	1200
			7/6/2007	730
			7/13/2007	150
			7/20/2007	39000
			7/27/2007	3600
			Geomean =	1791
K568	Little Cowan	at midpoint at Walnut Gap	6/29/2007	330
			7/6/2007	50
			7/13/2007	380
			7/20/2007	900
			7/27/2007	970
			Geomean =	353
K569	Blair Branch	above Arthurs Loop (lower side)	6/29/2007	220
			7/6/2007	170
			7/13/2007	150
			7/20/2007	3100
			7/27/2007	3800
			Geomean =	581

White Oak Creek—Focused Pathogen Sampling Results

White Oak Creek is a tributary of the Kentucky River located in Garrard County, located just downstream of Lock & Dam 8 and Camp Nelson. A focused pathogen sampling effort was conducted in 2007 at two sites, one upstream of the Dicey Branch tributary and one downstream of this tributary. The geometric mean of the results from the sampling site just downstream of Dicey Branch (K330) exceeded Kentucky's swimming standard of 240 cfu/100 ml. The upstream site at the Tom Dorman State Nature Preserve produced E coli readings within the water quality standard, except for the July 28 reading of 1,180 cfu/100 ml. The AC/TC (atypical coliforms/total coliforms) ratios indicated sources of indirect agriculture and aged human/agricultural fecal material.

The White Oak focus sites and associated sampling data are shown in the following table.

2007 White Oak Creek Focused Pathogen Sampling Results

Site ID#	Waterbody	Location	Date	E coli	Total Coliform	Atypical Coliform	AC/TC Ratio
K330	White Oak Creek	Downstream of Dicey Branch	6/30/2007	405		7800	
			7/7/2007	63		6600	
			7/14/2007	107	375	19000	50.7
			7/20/2007	1270	<50	34000	N/A
			7/28/2007	1480	800	18000	22.5
Geomean =				348			
K403	White Oak Creek	Just Upstream of Dicey Branch at the State Nature Preserve	6/30/2007				
			7/7/2007	73		1400	
			7/14/2007	120	2000	17000	8.5
			7/20/2007	158	600	26000	43.3
			7/28/2007	1180	1733	11700	6.8
Geomean =				201			

APPENDIX A: FIGURES

Figure I.1 Kentucky River Basin, Counties, and Sub-Basins (8-Digit HUCs)

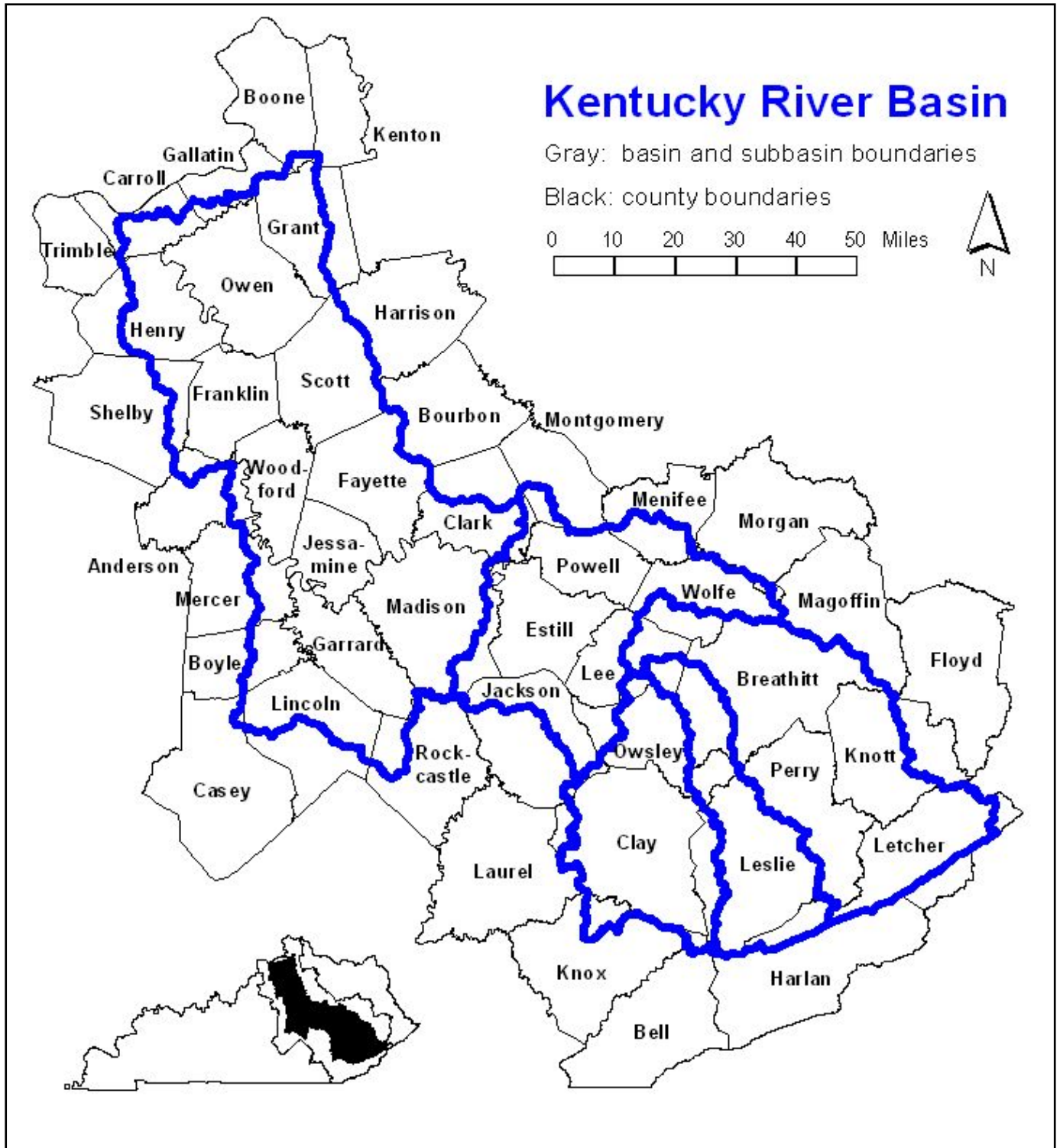


Figure 1.2 Kentucky River Basin and Sub-Basins (8-Digit HUCs)

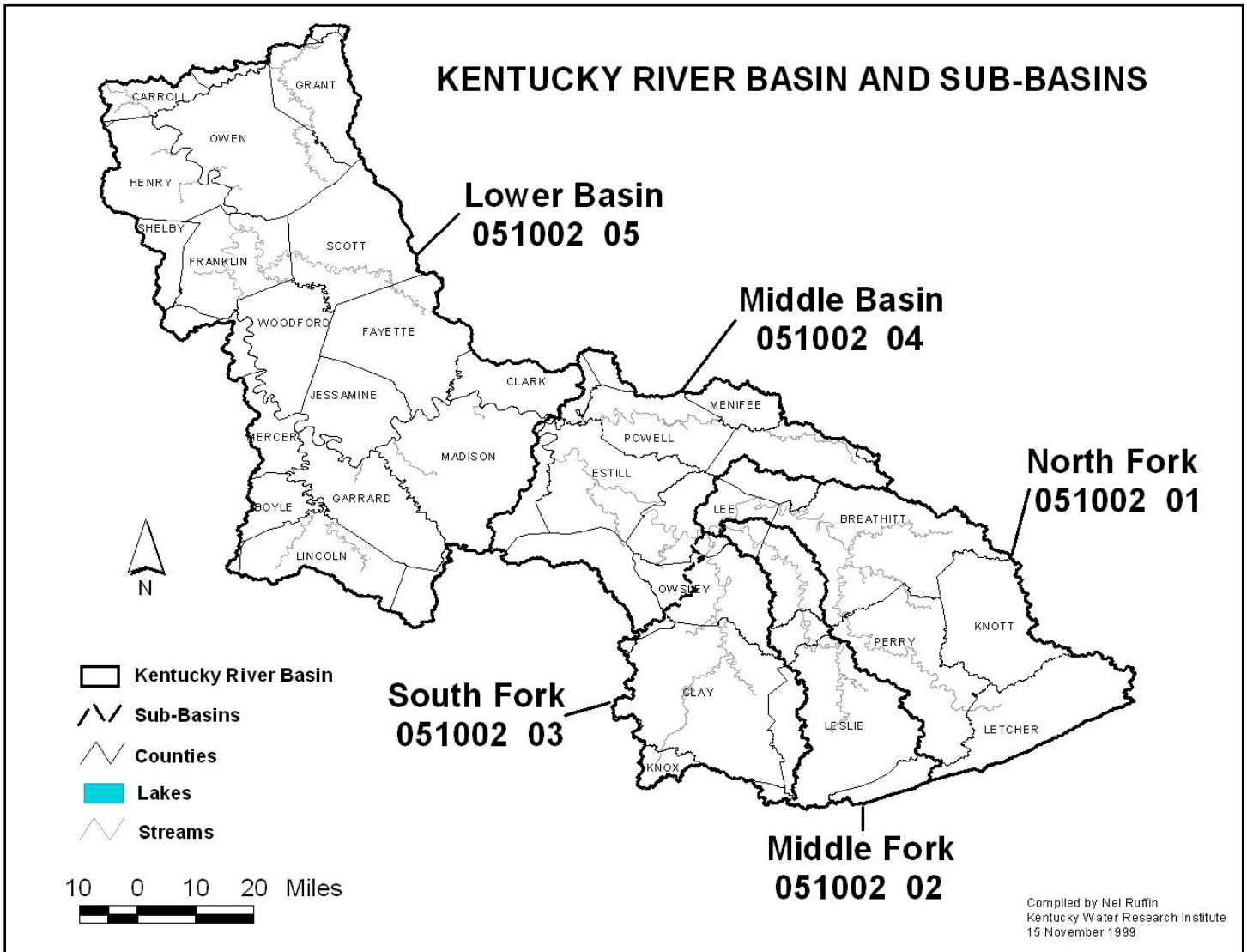


Figure I.3 Kentucky River Northern Region (HUC-8 #05100205)

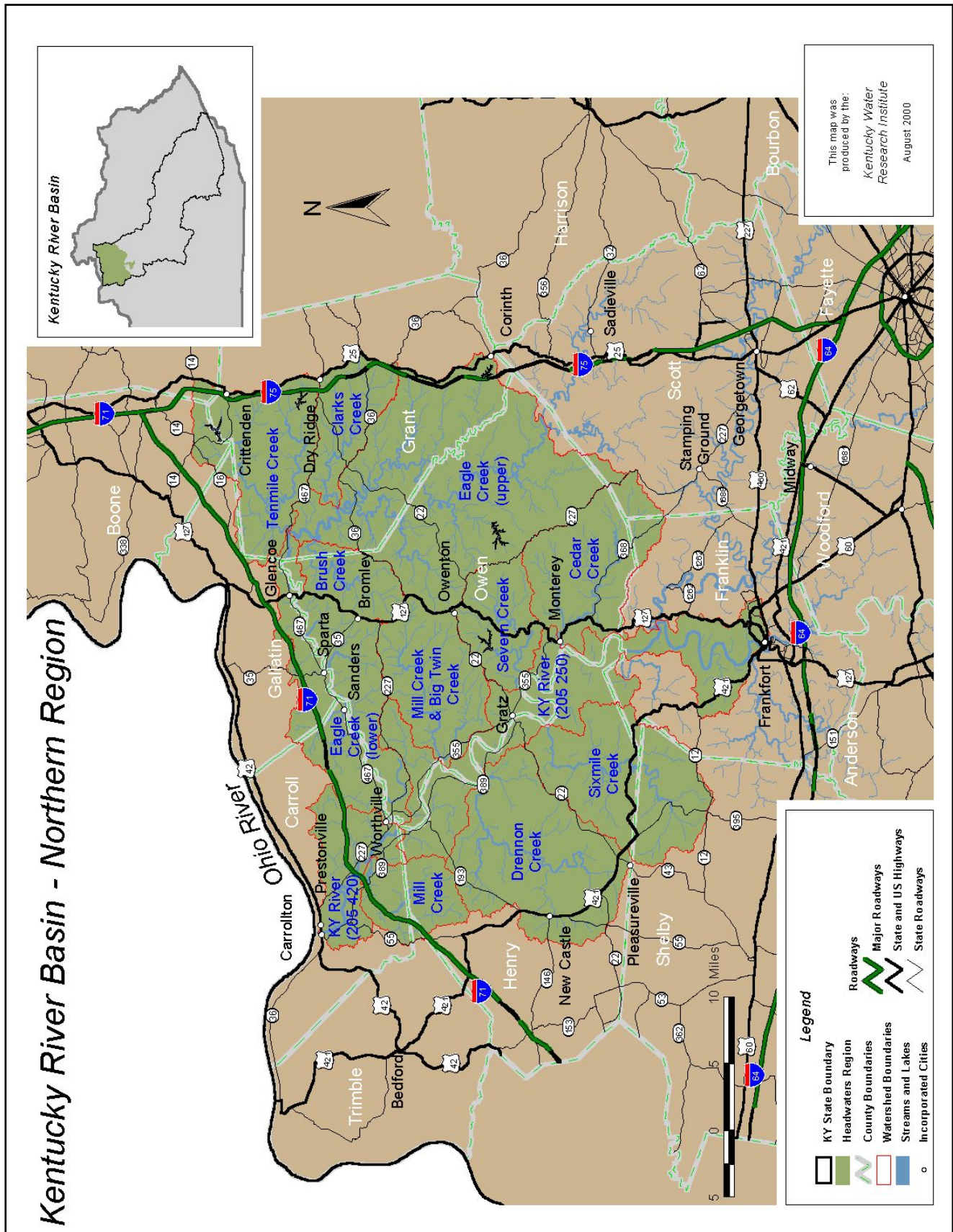


Figure I.4 Kentucky River Middle Basin (HUC-8 #05100204)

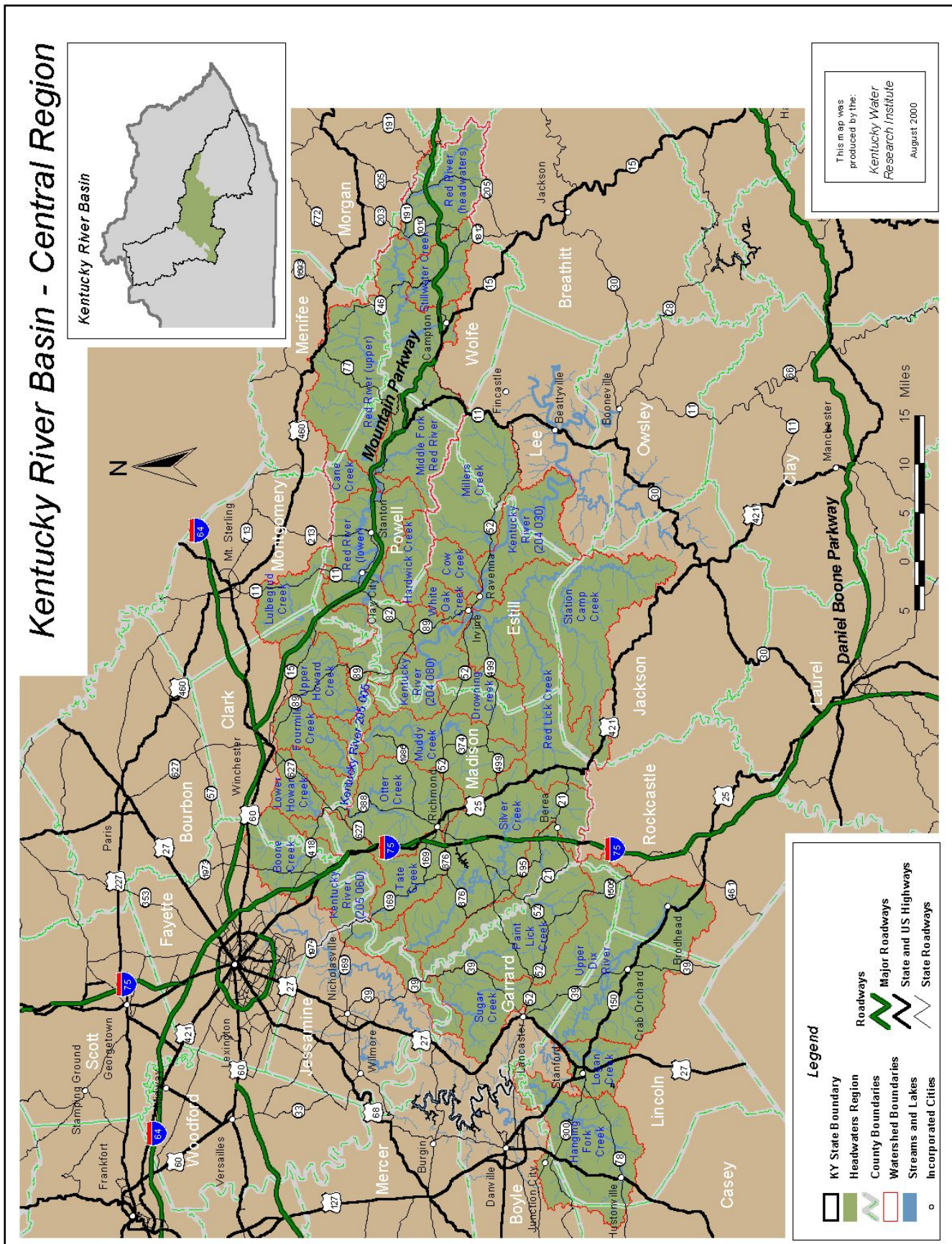


Figure 1.5 Kentucky River Southern Region (HUC-8 #05100201, 05100203, and 05100203)

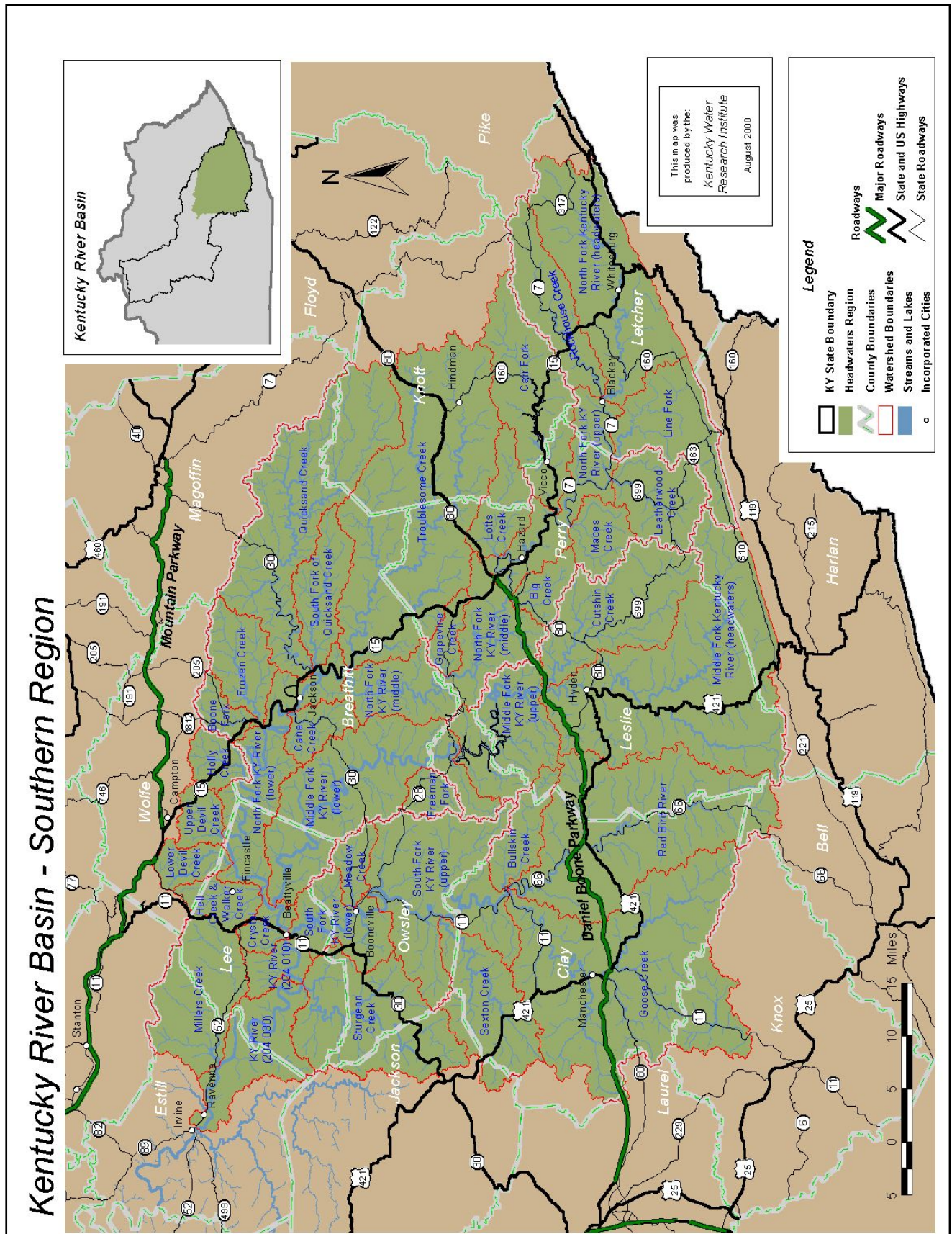


Figure I.6 2007 Kentucky River Watershed Watch Sampling Sites

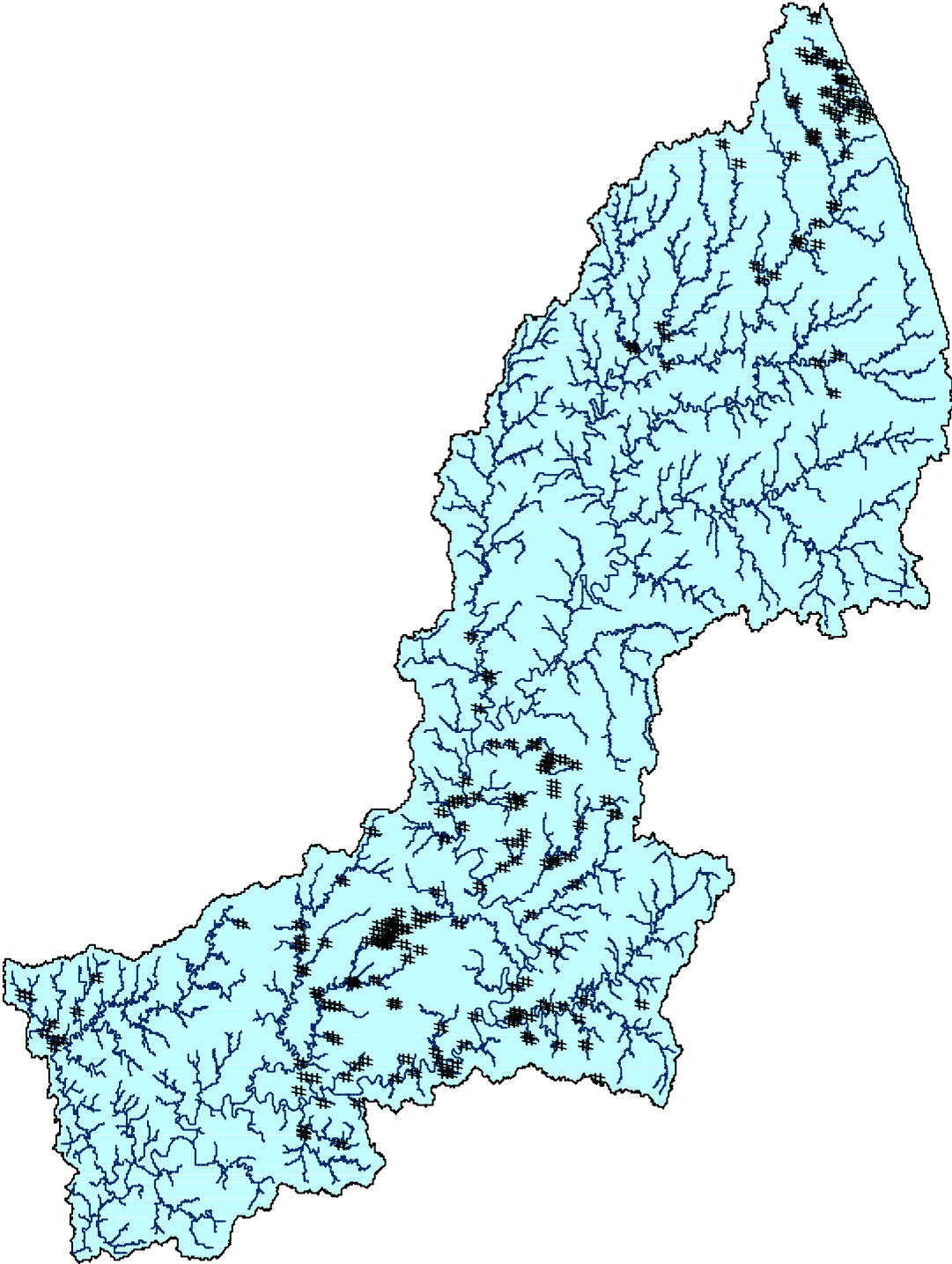
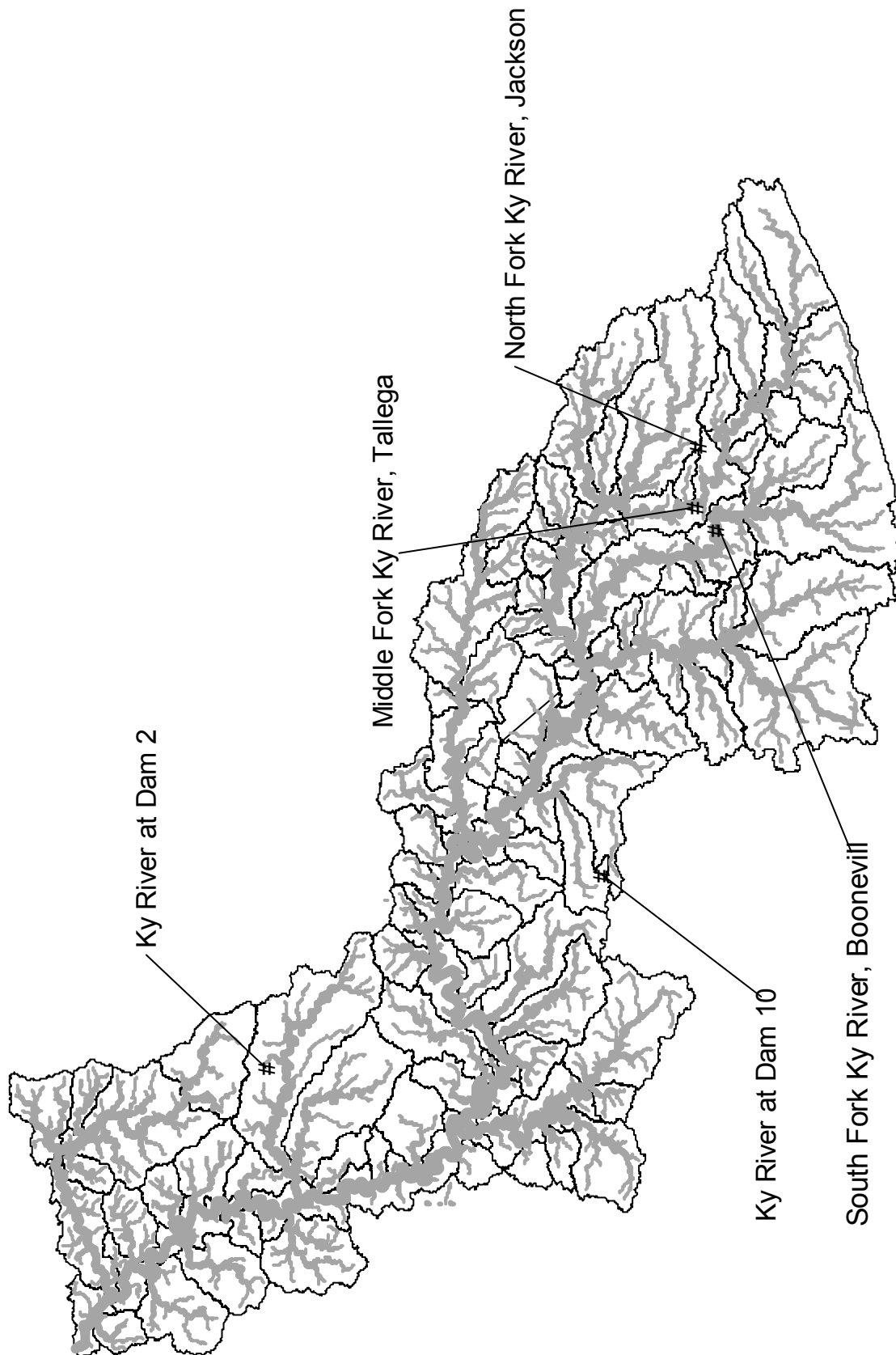
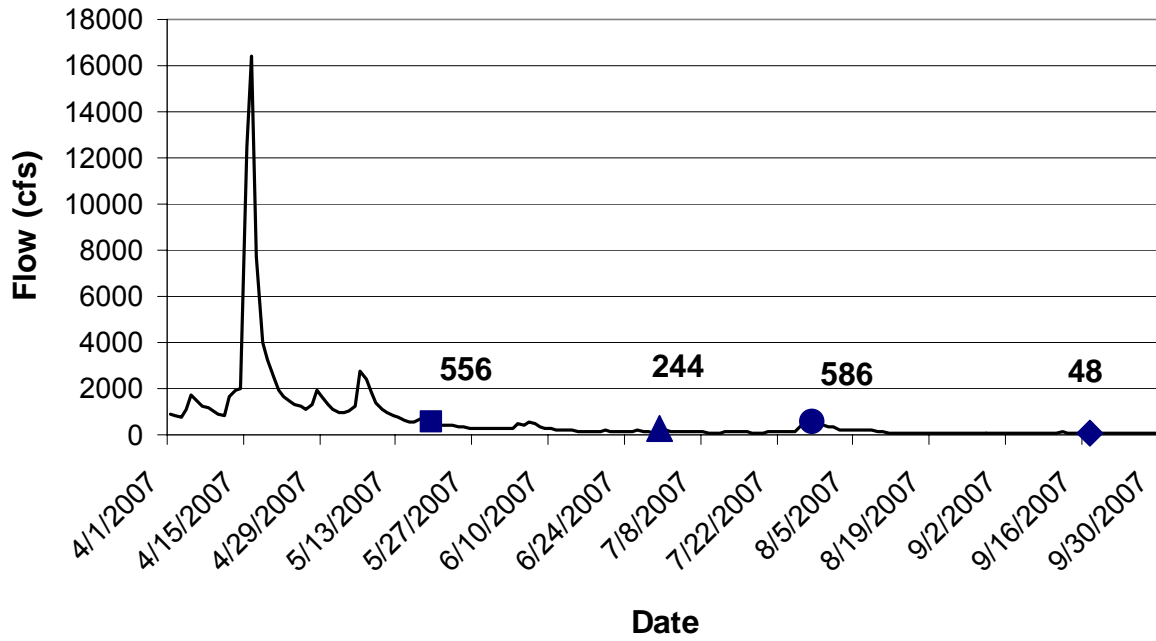


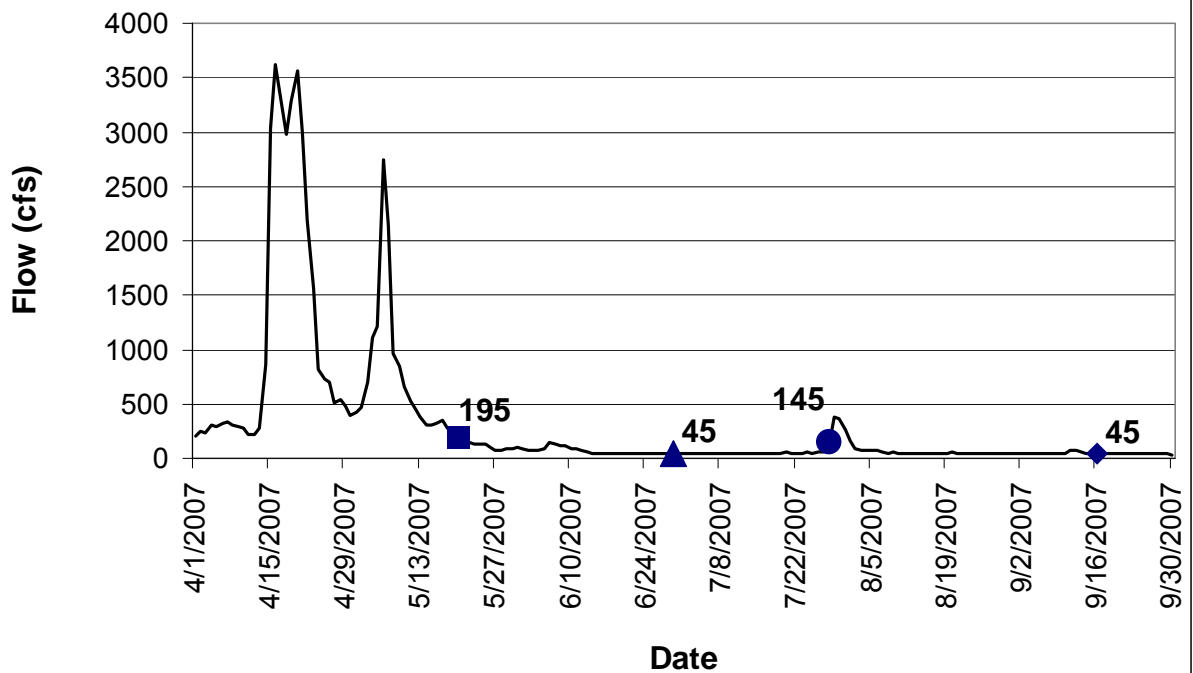
Figure I.7 Kentucky River Basin USGS Selected Gaging Stations



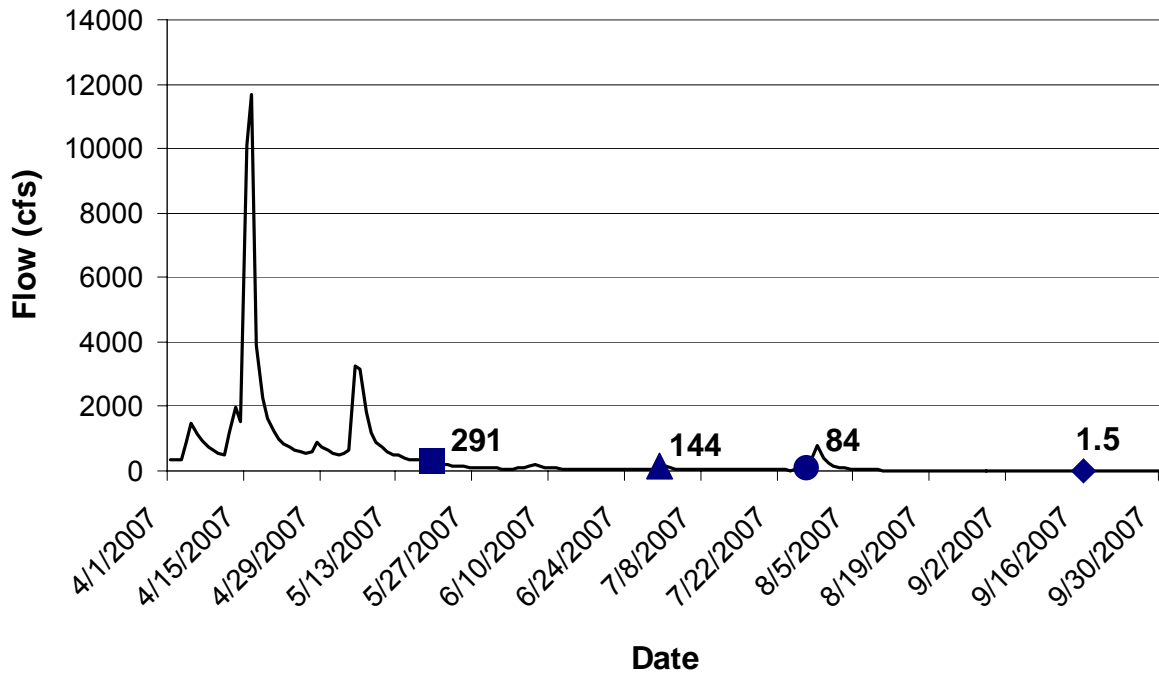
**Figure 1.8 North Fork Kentucky River at Jackson
2007 Flow Values**



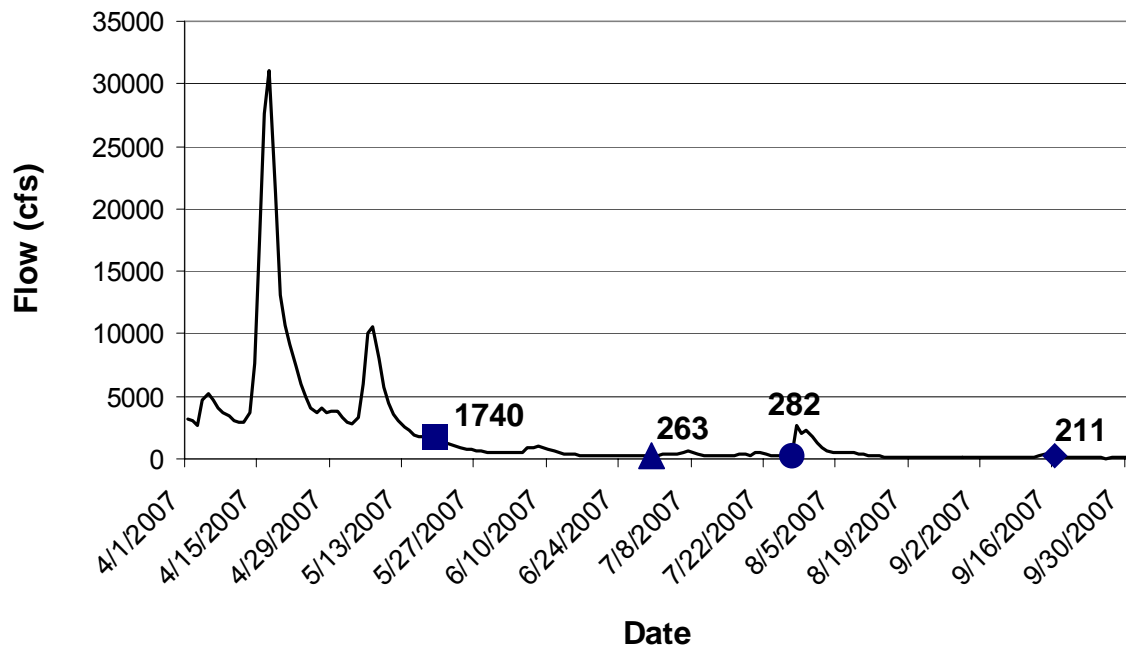
**Figure 1.9 Middle Fork Kentucky River at Tallega
2007 Flow Values**



**Figure 1.10 South Fork Kentucky River at Booneville
2007 Flow Values**



**Figure 1.11 Kentucky River at Lock & Dam 10
2007 Flow Values**



**Figure 1.12 Kentucky River at Lock & Dam 2
2007 Flow Values**

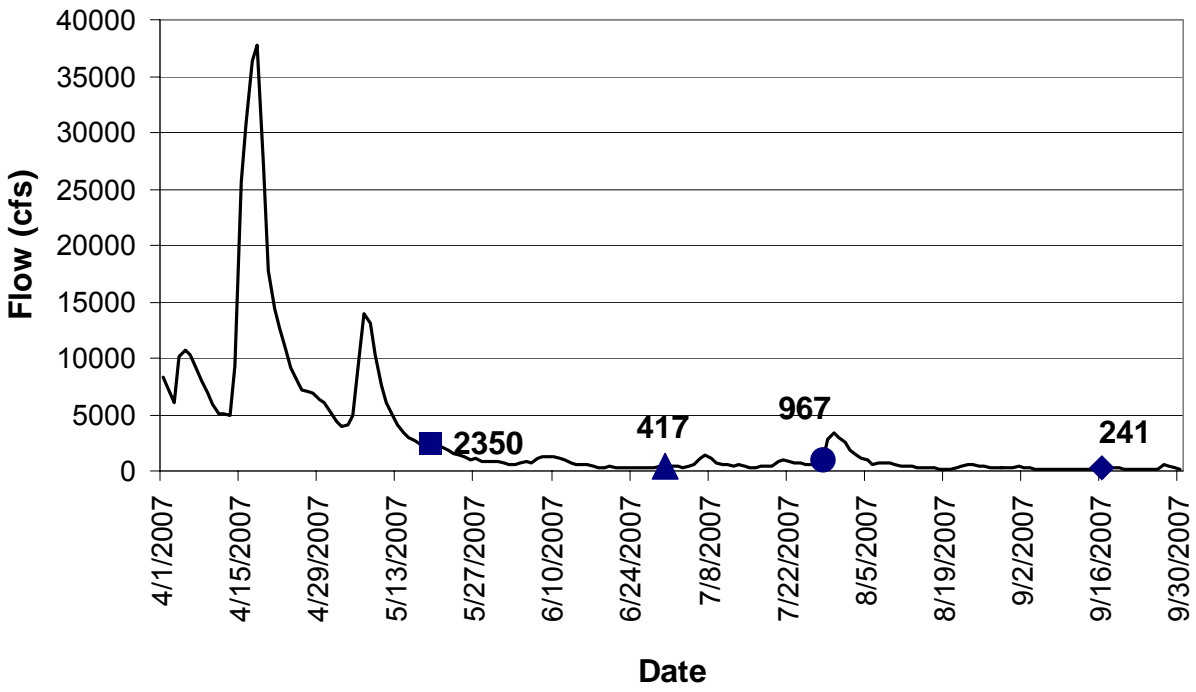


Figure 2.1 - 2007 Kentucky River Basin Herbicide Sampling Locations

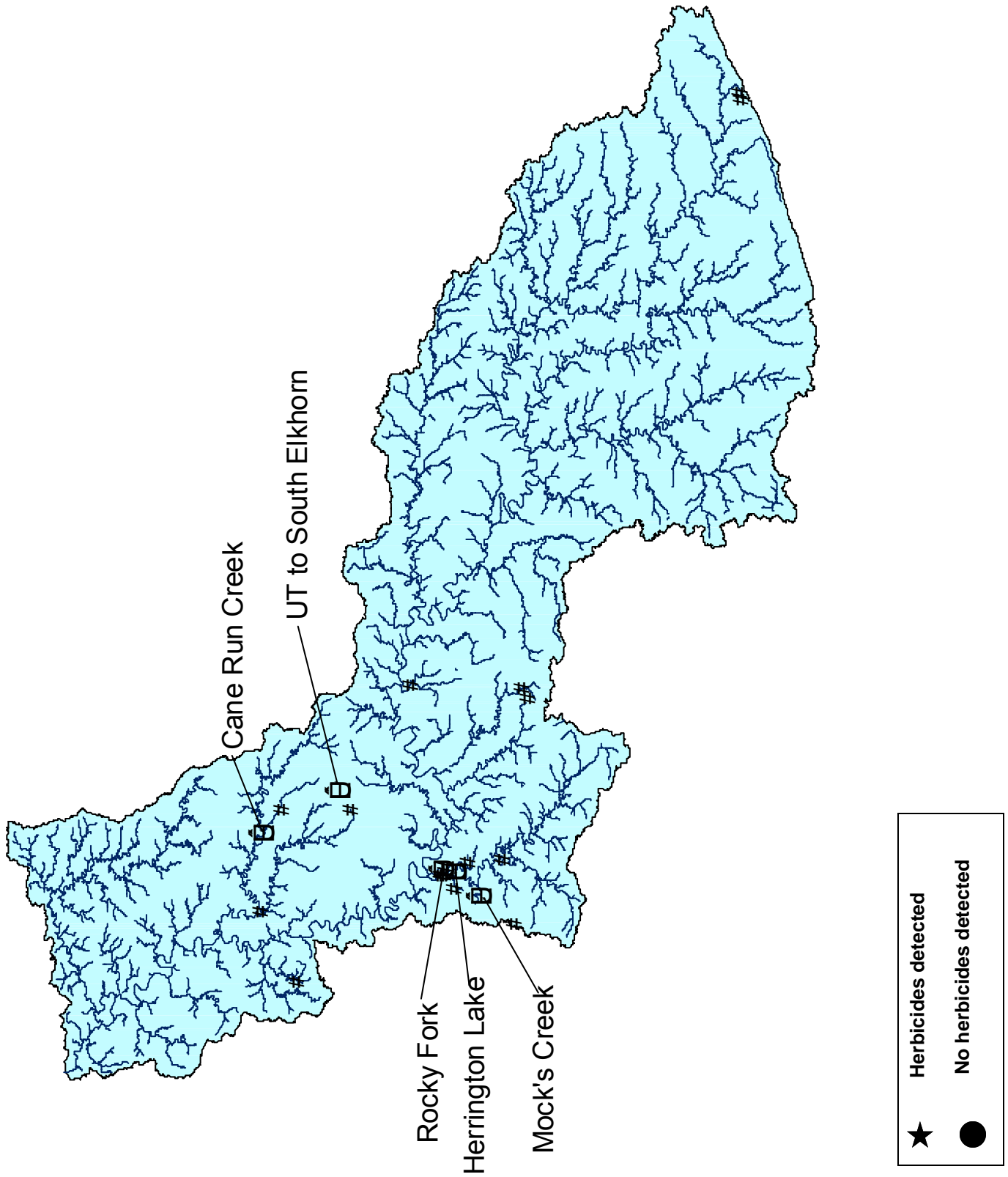


Figure 2.2 2007 Kentucky River Basin Synoptic Pathogen Sampling Results

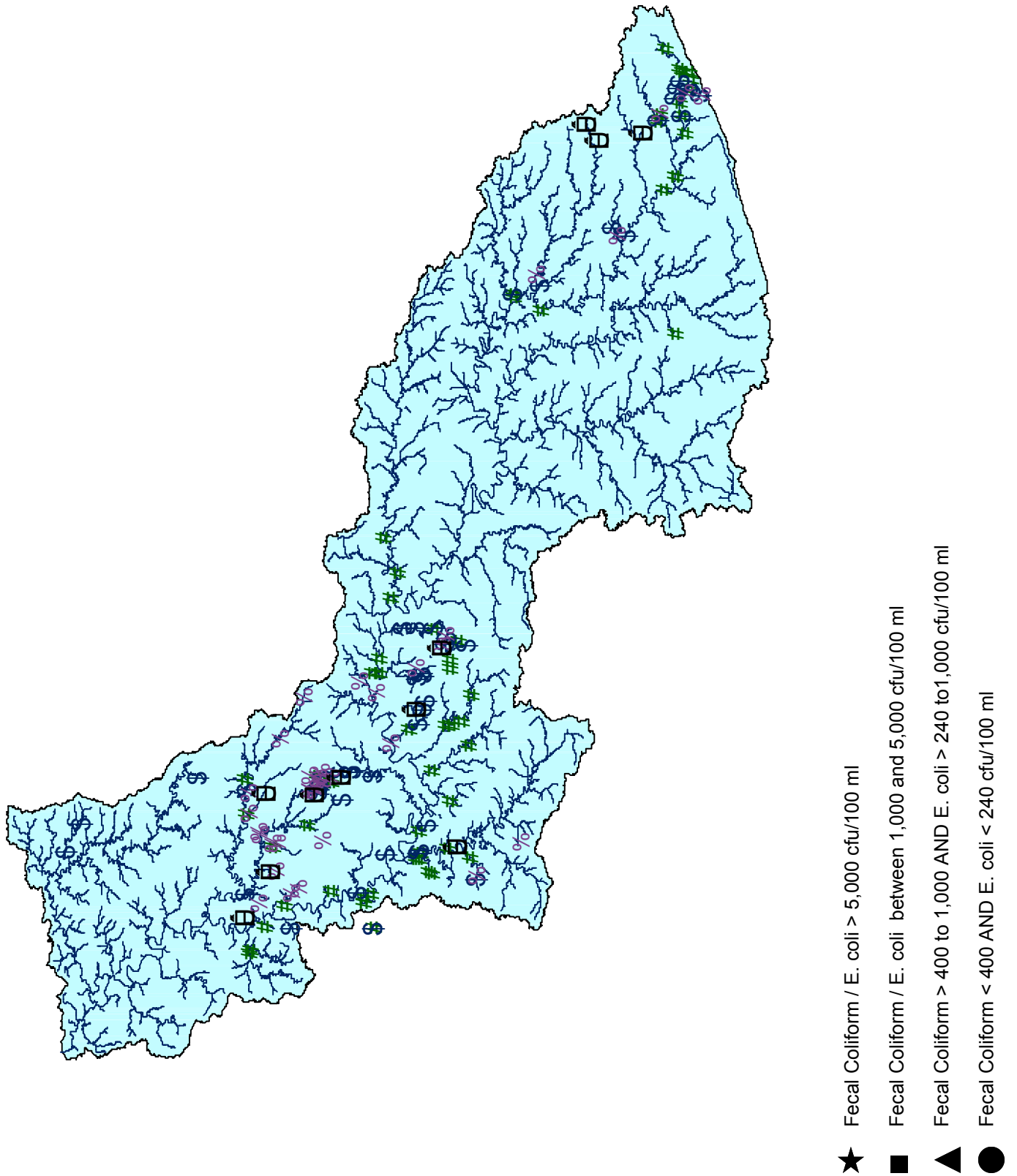


Figure 2.3 2007 Kentucky River Basin Follow-Up Pathogen Sampling Results

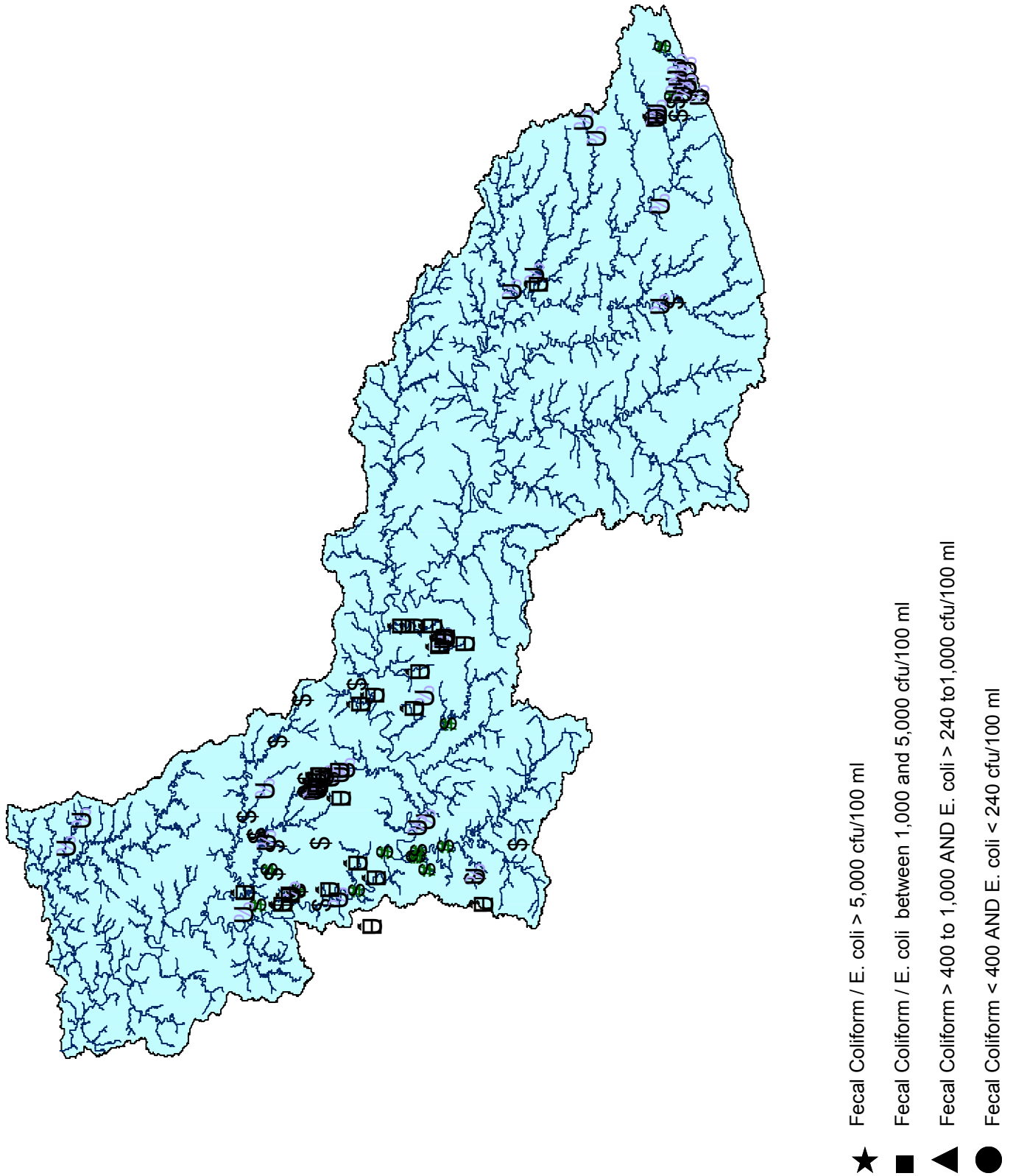


Figure 2.4 2007 Kentucky River Basin Nitrate Concentrations > 10 mg/L

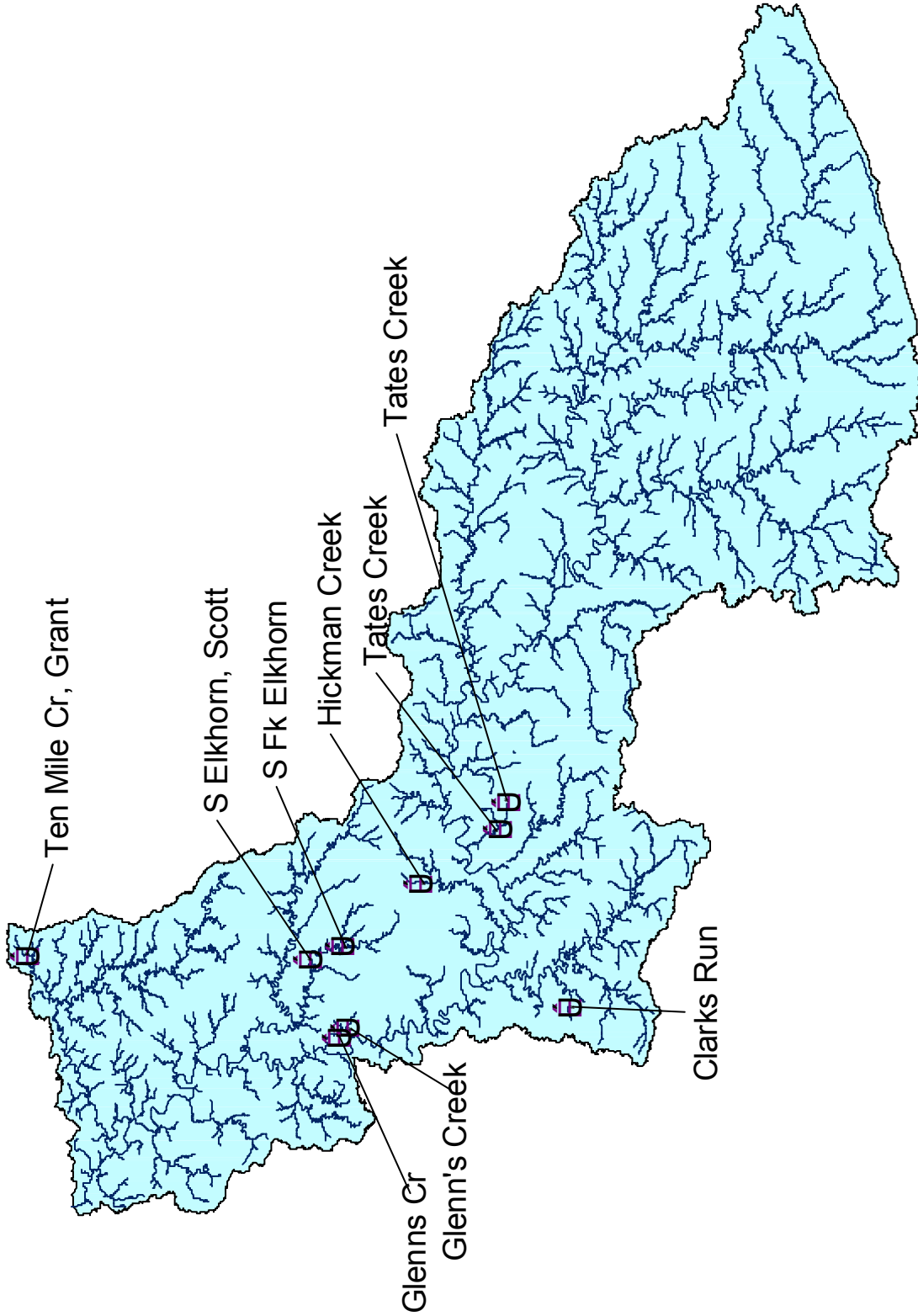


Figure 2.5 2007 Kentucky River Basin Phosphorus Sites > 1.0 mg/L

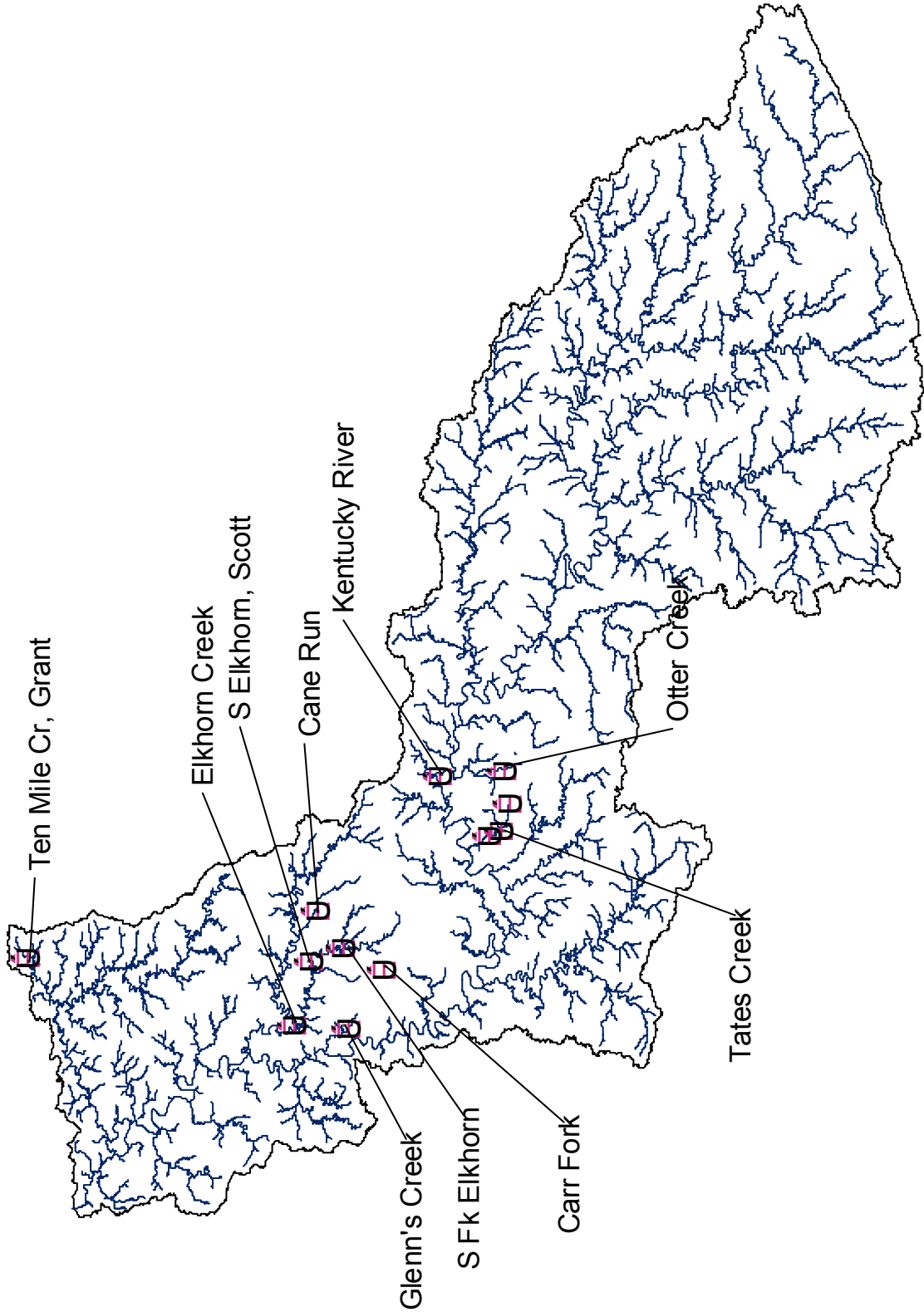


Figure 2.6 2007 Kentucky River Basin Sulfate Sites > 1,000 mg/L

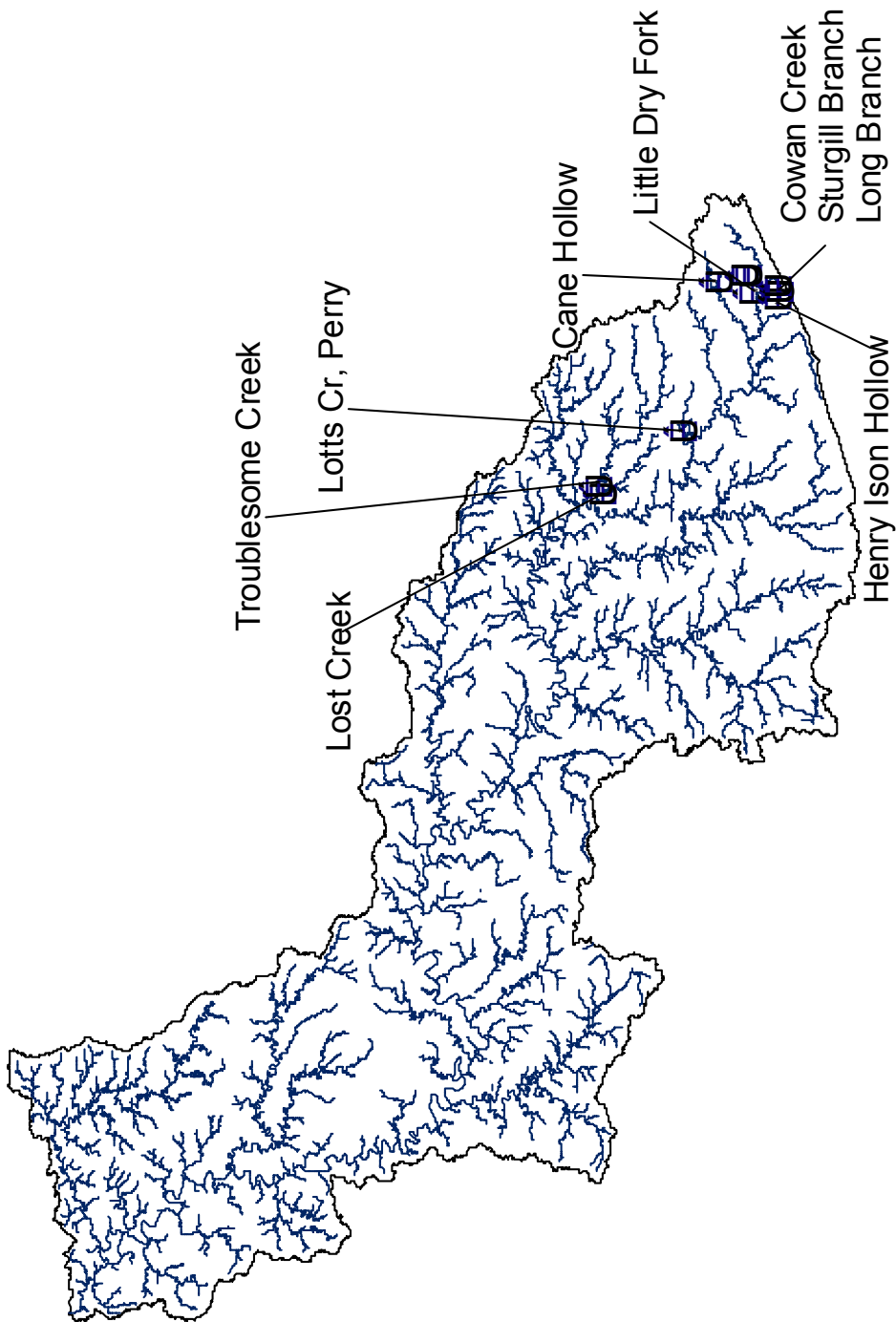


Figure 2.7 2007 Kentucky River Basin High Metal Sites

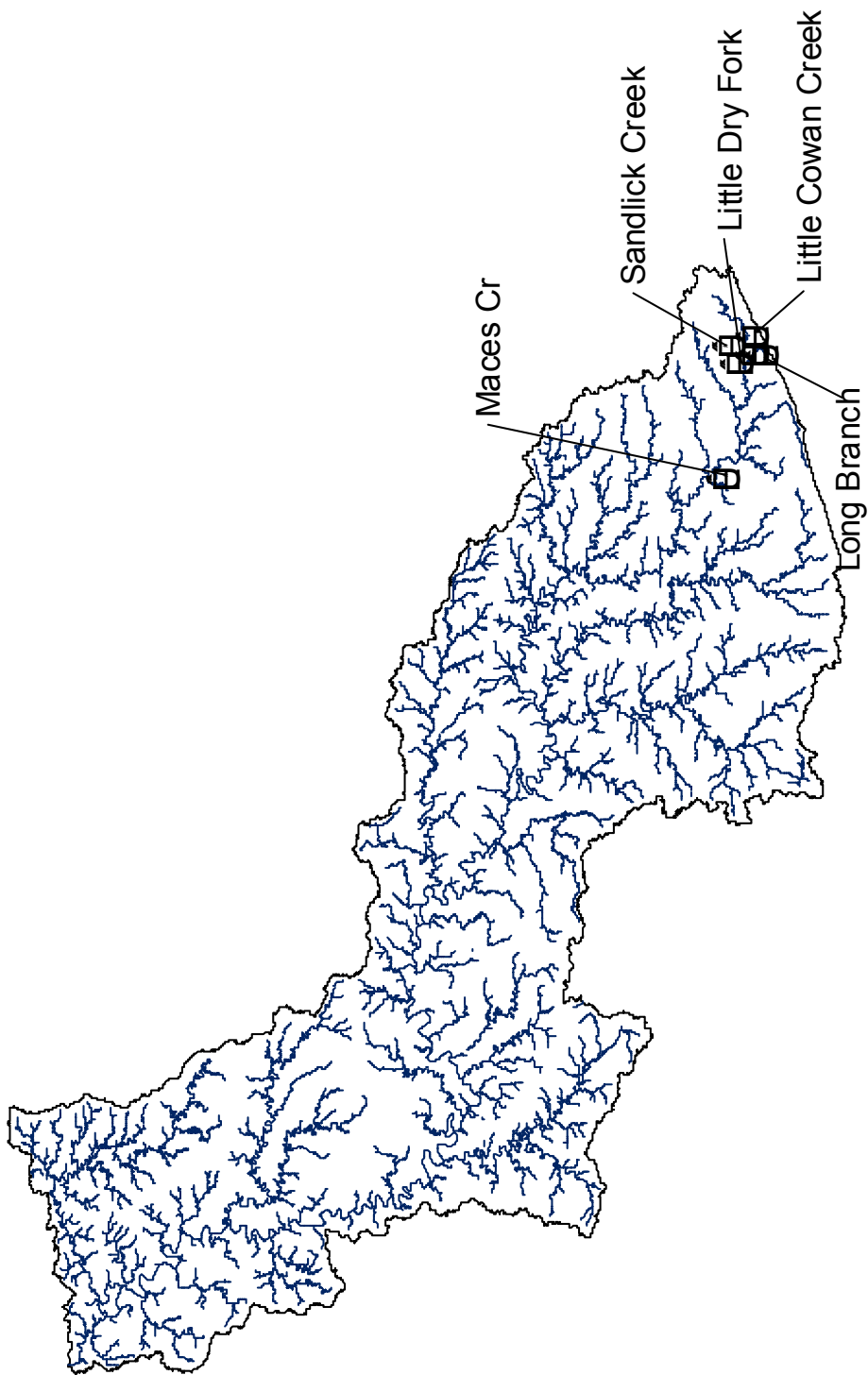
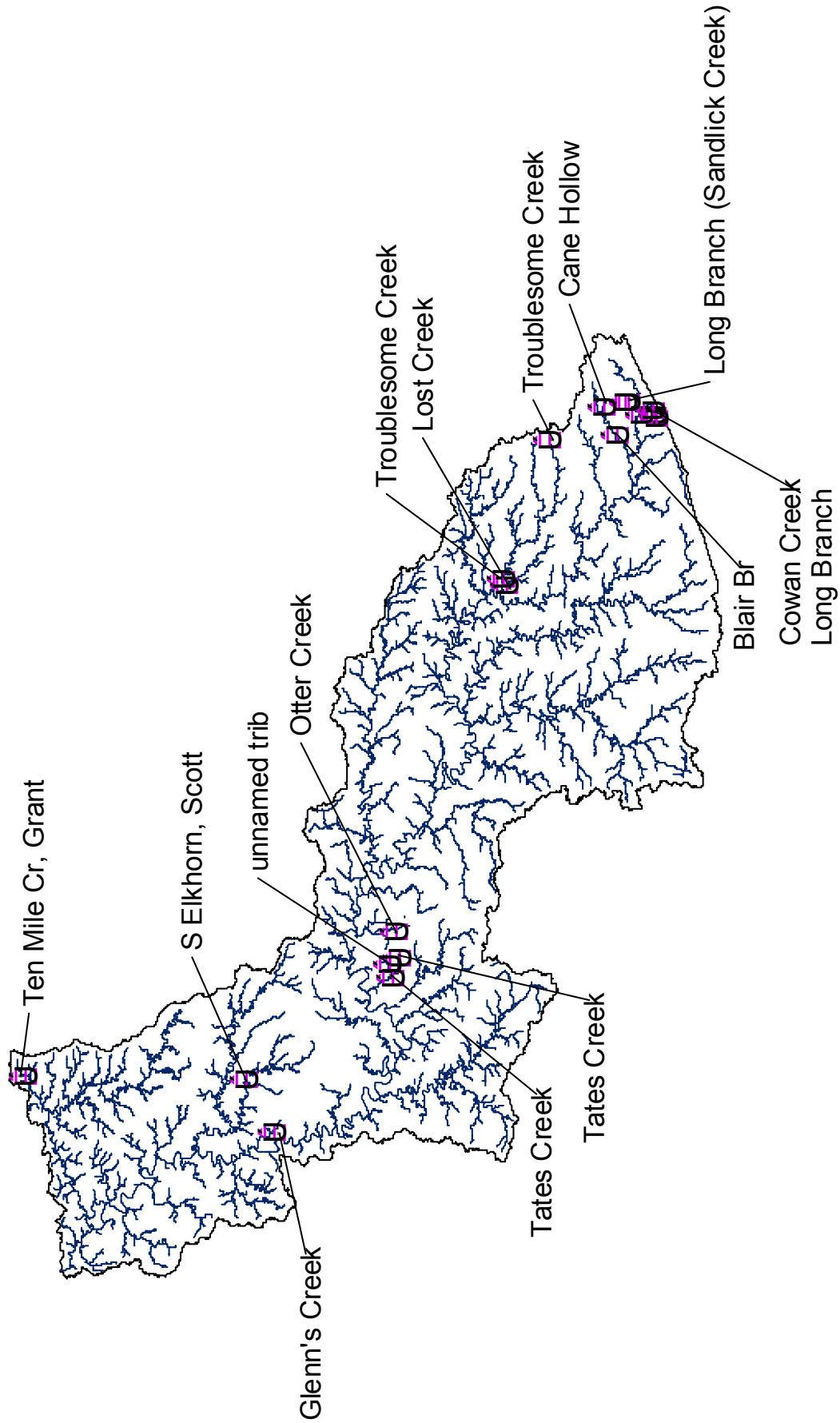


Figure 2.8 2007 Kentucky River Watershed Watch Sites of Concern



APPENDIX B: FIGURES

Table 1.1 - 2007 Kentucky River Watershed Watch Sampling Site Descriptions

Sample ID #	Stream Name	Site Location	11 Digit HUC ID	Latitude (dec. deg.)	Longitude (dec. deg.)
K01	Lee's Br, Woodford	About 50 ft downstream of new sewage treatment facility	5100205270	38.16546	-84.69126
K02	Lee's Branch	150yds downstream of Stephens St	5100205270	38.13863	-84.68252
K03	Eagle Cr E Fk, Scott	Above Hinton Cemetary Rd	5100205360	38.43077	-84.62425
K04	Eagle Cr W Fk, Scott	Burgess Rd Bridge 1.25mi N	5100205360	38.41616	-84.64744
K05	Cane Run Creek	0.2 mi upstream of 460 Br	5100205280	38.20944	-84.61074
K06	Upper Red Rv	Big Branch canoe launch, at the mouth.	5100204120	37.80204	-83.4842
K07	Stillwater Creek	First riffle below the bridge	5100204130	37.77515	-83.49858
K08	Cedar Run	Just above Ky. Rv. at Shaker Landing.	5100205210	37.817269	-84.721837
K09	Landing Run	600 feet up from confluence of KY Rv	5100205420	37.91064	-84.81915
K10	Ten Mile Creek	0.25 mi upstream of mouth of Eagle Creek	5100205390	38.628255	-85.137398
K11	Eagle Cr, Grant	Just up from Mouth of Ten Mile Cr	5100205370	38.708845	-84.757301
K12	Craig Cr, Woodford	Lillard's Ferry Rd Bridge	5100205140	37.98117	-84.81883
K13	Grier's Cr, Woodford	At .5mi below bridge on Griers Cr Rd.	5100205230	38.02069	-84.82827
K14	Clarks Run	At Goggin Lane	5100205190	37.633017	-84.762205
K15	Hanging Fork Creek	N37 37' 24" W 84 40' 49"	5100205180	37.372400	-84.404900
K16	N. Fk Elkhorn, Scott	At Great Crossings	5100205280	38.21564	-84.6058
K17	Sandlick Creek	Whitesburg, at 931/15.	5100201010	37.12360	-82.83700
K18	Sharps Br, Anderson	0.75mi upstream of Mouth of Sharps	5100205420	38.06465	-84.83958
K19	Gilbert's Cr, Anderson	First Crossing of Gilbert's Cr Rd	5100205140	37.97655	-84.83014
K20	Hickman Cr	Between UT and Mouth of Hickman	5100205120	37.76886	-84.61263
K21	Town Br, Jessamine	Just below New WWTP, Nicholasville	5100205130	37.85299	-84.62239
K22	Jessamine Cr	At SR 29 Bridge	5100205420	37.81054	-84.64875
K23	Jessamine Cr	Just above mouth at Jessamine	5100205130	37.85055	-84.64642
K24	S Elkhorn, Fayette	Upstream of US 60 near Airport	5100205270	38.04231	-84.62588
K25	S Elkhorn, Fayette	Below Dam near Confl of Town Br,Paynes Mill Rd.	5100205270	38.11329	-84.62981
K26	S Elkhorn, Scott	0.5 mi upstrm of SR 341	5100205270	38.18007	-84.66193
K27	Two Mile Cr, Clark	0.5 mi south of Elkin Station Rd Bridge	5100205420	37.90966	-84.22552
K28	Clear Cr, Woodford	500m upstream of Mouth of Clear Cr	5100205220	37.9325	-84.79488
K29	Clear Cr, Woodford	At KY 33 Bridge	5100205220	37.9395	-84.77613
K30	Ten Mile Cr, Grant	0.5 mi upstrm of Verona Mt Zion Rd	5100205390	38.768160	-84.663980
K31	S Elkhorn Cr, Woodford	Just Upstream of SR 1685 Bridge	5100205270	38.1838	-84.74018
K32	Beals Run, Woodford	Just below US 421	5100205270	38.1753	-84.74615
K33	UT S Elkhorn, Scott	210 Ironworks Estate Subdivision UT	5100205270	38.18278	-84.65559
K34	Wolfe Run, Fayette	At Valley Park off Cambridge Dr.	5100205270	38.05682	-84.5498
K35	Sugar Cr, Garrard	Three Forks 200yds below 1355br	5100205110	37.69972	-84.571
K36	Paint Lick Cr, Garrard	Paint Lick, SR 52 Bridge	5100205100	37.65488	-84.43648
K37	Paint Lick Cr, Garrard	Bradshaw Mill off Dry Bridge Road	5100205100	37.7466	-84.49661
K38	Silver Cr, Madison	Ruthton	5100205090	37.67118	-84.37839
K39	Silver Cr, Madison	Below I-75 bridge	5100205090	37.64672	-84.31316
K40	Middle Fork	Just Below Mouth of Asher Branch	5100202010	37.18252	-83.38252
K41	Middle Fk, Leslie	Below Mouth of Greasy Cr	5100202010	37.07819	-83.39265
K42	Cutshin Cr,	At gauging station at Wooton.	5100202020	37.16488	-83.30801
K43	Sturgeon Cr, Jackson	SR 30 Bridge over Sturgeon Cr	5100204020	37.395	-83.84233
K44	Station Camp Cr	Rt 89 Bridge	5100204050	37.56082	-83.92341
K45	Station Camp Cr	Rt 1209 Bridge	5100204050	37.56083	-83.96619
K46	Boone Cr, Fayette	By Iroquois Hunt Club	5100205070	37.92189	-84.34068
K47	Eagle Creek, Carroll	Boat Ramp Eagle Cr. Resort	5100205410	38.61184	-85.03471
K48	North Fork of Ky River	Martha Lane Collins Br (KY 541)	5100201150	38.61184	-85.03471
K49	Middle Fk Ky Rv	Under KY 30 Bridge	5100202040	37.48774	-83.48359
K50	Benson Cr, Franklin	Dowstream of Red Bridge	5100205260	38.207091	-84.933609
K51	Benson Cr, Franklin Co.	At Red Bridge Falls.	5100205260	38.209756	-84.942658
K52	Benson Cr	At riffle above Red Bridge	5100205260	38.208614	-84.938901
K53	W Hickman Cr, Fayette	Behind Tates Cr Shopping Center	5100205120	37.97457	-84.49927
K54	McConnell Spr.	McConnell Spring, Fayette	5100205270	38.05539	-84.51903
K55	Town Branch, Fayette	Jimmy Campbell Lane Bridge	5100205270	38.06256	-84.53362
K56	Dix River, Mercer	0.25mi N of Dix Dam	5100205170	37.79246	-84.70655

Table 1.1 - 2007 Kentucky River Watershed Watch Sampling Site Descriptions

Sample ID #	Stream Name	Site Location	11 Digit HUC ID	Latitude (dec. deg.)	Longitude (dec. deg.)
K57	Spring Stn, Woodford	At spring, Beals Run	5100205270	38.15527	-84.74323
K59	Tates Cr, Madison	Below mouth of Long Br	5100205080	37.84343	-84.42403
K60	Dreaming Cr, Madison	Mouth of Dreaming near Otter Cr	5100205040	37.78503	-84.26101
K61	Drowning Cr, Estill	100yds upstream of SR52 bridge	5100204100	37.71704	-84.09609
K62	North Fork of Ky River	Mayking, at Old Regular Baptist Church	5100201010	37.13640	-82.76450
K63	Pine Creek	At Mayking Baptist Church	5100201010	37.13340	-82.76350
K64	Cram Cr., Letcher	At Mouth of Cram Cr & Pert Fk	5100201010	37.12490	-82.76990
K65	Muddy Creek, Madison	SR 1986 Bridge at Doylesville	5100205020	37.86022	-84.16759
K66	Otter Creek, Madison	RR crossing on 388 near Boonesboro	5100205040	37.86482	-84.27546
K67	Bullskin Cr, Clay	At mouth of Little Bullskin Cr	5100203030	37.27257	-83.62553
K68	Goose Cr, Clay	At mouth of Sutton Br	5100203040	37.15973	-83.76523
K69	Goose Cr, Clay	Below Mouth of Jacks Br	5100203040	37.26858	-83.6461
K70	Bishops Br, Clay	At mouth	5100203020	37.33676	-83.65597
K71	S Fk Elkhorn, Fayette	US 68 Harrodsburg Rd Bridge	5100205270	38.17618	-84.81264
K72	Steele's Br, Fayette	Redd Rd Bridge off Old Frankfort Pk	5100205270	38.10645	-84.62871
K73	Mdl Fk, Red River	KY 715 Bridge over Middle Fk	5100204140	37.79348	-83.70271
K74	Swift Camp Cr	At Swift Camp Creek Camp	5100204120	37.81748	-83.57722
K75	Town Branch, Fayette	Yarnellton Rd Bridge	5100205270	38.10353	-84.5879
K76	Red Rv, Powell	East of Stanton, at bridge.	5100204160	37.84209	-83.80894
K77	Cane Cr, Menifee	Gordon Property at Menifee/Powell Co Line	5100204160	37.89573	-83.74999
K78	Severn Cr	Gravel crossing at .25mi below US 127.	5100205320	38.453216	-84.862779
K79	Cedar Cr, Owen	Cedar Creek below Sawbridge Cr	5100205310	38.41764	-84.85513
K80	Elkhorn Cr, Franklin	Strohmeir Rd at old Iron Bridge	5100205290	38.31881	-84.84982
K81	KY Rv N Fk, Perry	Fusonia below Fort Br	5100201150	37.1603	-83.08705
K82	KY Rv N Fk, Perry	Perry Co Park	5100201150	37.27592	-83.2078
K83	Lotts Cr, Perry	550 bridge	5100201080	37.28781	-83.17841
K84	Trib. A, South Elkhorn	Bridge at Branwood Rd over trib	5100205270	37.972500	-84.569500
K85	Glenn's Creek	At Glenn's Creek Baptist Church	5100205240	38.10066	-84.80528
K86	N. Fork Elkhorn	Switzer	5100205280	38.2538	-84.75245
K87	Warfork	Below Bridge, Jack's Ridge Rd.	5100204050	37.42106	-83.9167
K88	Crystal Creek	.4 miles from Main Street on Locust Rd in Beattyville	5100204010	37.57303	-83.70777
K89	South Fork, Red River	40 yds upstream from hwy11/15 bridge	5100204140	37.82657	-83.74633
K90	Quicksand Creek, Breathitt	Off Hwy 15 bridge over quicksand creek	5100201140	37.53823	-83.34614
K91	Turkey Cr.	Turkey Cr. at Bates Fk.	5100201040	37.08334	-83.02303
K92	Turkey Cr.	Turkey Cr. at Line Fork.	5100201040	37.10029	-83.01746
K93	Line Fork	Line Fork at Hallie post office	5100201040	37.09997	-83.01889
K94	Lower Red River	Red River at Twin Creek	5100204160	37.83296	-84.01583
K95	Red River	Below bridge, Rt 15, Clay City	5100204160	37.86907	-83.93072
K96	Graddy Spring	Spring on Greenwood Farm, Steele Road, Woodford Co.	5100205140	38.081900	-84.794204
K97	North Fork of Ky River	at Bridge to Vocational School (above confluence with Hammonds Br)	5100201010	37.11357	-82.80569
K98	Millstone Cr	Millstone Transfer Station	5100201010	37.19860	-82.76200
K99	Otter Cr	-	5100201020	37.22370	-82.81580
K100	Rockhouse Cr	Below Doty Cr	5100201020	37.17262	-82.93039
K101	Rockhouse Cr	Above Doty Cr	5100201020	37.17500	-82.92800
K102	Doty Cr	Mouth of Doty	5100201020	37.17611	-82.93059
K103	Rockhouse Cr	Below Blair Br	5100201070	37.17240	-82.92000
K104	Rockhouse Cr	Above Blair Br	5100201020	37.17357	-82.91792
K105	Blair Br	Mouth of Blair Br	5100201020	37.17230	-82.91910
K106	Blair Br	At Tooter Br	5100201020	37.16990	-82.91130
K107	Rockhouse Cr	Below Crases Br	5100201020	37.14483	-82.96350
K108	Rockhouse Cr	Above Crases Br	5100201020	37.14718	-82.95267
K109	Crases Br	Mouth of Crases Br	5100201020	37.14426	-82.95840
K110	Rockhouse Cr	Below Isom	5100201020	37.18267	-82.91083
K111	Rockhouse Cr	Above Isom	5100201020	37.18933	-82.89733
K112	North Fork	North Fork below Crafts Colley Creek	5100201010	37.11667	-82.79278
K113	North Fork Ky	North Fork above Crafts Colley Creek	5100201010	37.12222	-82.79278

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Sample ID #	Stream Name	Site Location	11 Digit HUC ID	Latitude (dec. deg.)	Longitude (dec. deg.)
K114	Crafts Colley Creek	Mouth of Crafts Colley Creek	5100201010	37.11917	-82.79278
K115	Allen Branch	Mouth of Allen Branch	5100201010	37.14611	-82.79472
K116	Blair Br	Above Tooter Br	5100201020	37.16990	-82.91040
K117	Blair Br	Below Tooter Br	5100201020	37.17010	-82.91240
K118	Doty Cr	Left Fk Doty Cr	5100201020	37.17917	-82.93400
K119	Doty Cr	Right Fk Doty Cr	5100201020	37.17917	-82.93400
K120	UT to Elkhorn Creek	East of Bayberry Road	5100205270	38.02500	-84.68000
K121	S Fk Elkhorn	Hopewell Farm	5100205270	38.102538	-84.637131
K122	S Fk Elkhorn	Browns Mill Rd bridge closest to Old Frankfort Pike	5100205270	38.108887	-84.63358
K123	S Fk Elkhorn	2nd Browns Mill Rd bridge from Old Frankfort Pike	5100205370	38.111800	-84.632900
K124	Ky River	Boonesborough Beach (same site as K157)	5100205005	37.8988	-84.2625
K125	Clarks Run	Dix River,	5100205190	37.65	-84.708
K126	Glenns Cr	At Millville, KY	5100205240	38.12056	-84.82694
K127	North Elkhorn	At Dog Pound	5100205280	38.21628	-84.56913
K129	Otter Cr	Bridge on Route 388	5100205040	37.875	-84.28
K130	Floyd's Branch	At Red Lick Creek	5100204070	37.590000	-84.120000
K131	Woodfield Retention Basin	Above Woodfield basin	5100205120	37.98422	-84.48083
K132	West Hickman	Veterans Park	5100205120	37.955211	-84.500987
K133	UT West Hickman	Zandale/Lansdowne	5100205120	38.000416	-84.501915
K134	Leatherwood Cr	Behind Cornetisville Fire Dept.	5100201030	37.133889	-83.076944
K135	Maces Cr	Left fork @ Maces creek, north fork @ Ky river	5100201060	37.161667	-83.131944
K136	Troublesome Cr	Duplicate of K136, Knott County Central	5100201120	37.350000	-82.950000
K137	Hardwicks Cr	1057 bridge, 2 1/2 miles south of Clay City.	5100204170	37.815000	-83.920500
K138	Spring Cr	End of Lower Spring Creek Road	5100203010	37.061005	-83.551947
K139	Fort Br	North Fk Ky	5100201030	37.250000	-83.190000
K140	Middle Fk	Upstream of Hyden near Rye Cove Creek	5100202010	36.9613	-83.4503
K141	Carr Fk	At City Hall (Hazard)	5100201030	37.250515	-83.196754
K144	North Fk	-	5100201120	37.485756	-83.345186
K145	Troublesome Creek	North Fork of Ky	5100201120	37.485756	-83.345186
K146	99 mile creek	Confluence of Boat Dock	5100202030	37.272135	-83.386794
K147	Hell for Certain	Just above mouth	5100202030	37.250000	-83.380000
K148	Greasy Creek	Mouth of Greasy Creek	5100202010	37.075617	-83.389965
K149	Jacks Creek	Behind Jacks Creek Methodist on Hwy 406	5100203010	37.025129	-83.524096
K150	Pole Cat Creek	Between Hwy 89 and Ky River	5100204080	37.770835	-84.022249
K151	Calloway Creek	Hwy 89 and mouth of Ky River	5100204080	37.748998	-84.000778
K152	Bear Creek	Junction of Hwy 708 and Hwy 2017	5100202040	37.570000	-83.870000
K153	Bear Branch	0.2 miles upstream from mouth of Ky River	5100205140	38.001311	-84.831263
K154	Wildcat Branch	0.1 mile upstream from mouth of Ky River	5100205140	38.024644	-84.833074
K155	Bailey Run	0.1 mile upstream from mouth of Ky River	5100205140	38.034009	-84.839119
K156	Four Mile Cr	At mouth of creek	5100205030	37.877949	-84.223871
K157	KY River	Boonesboro Beach	5100205005	37.898800	-84.262500
K158	Howards Cr	At Mouth of Creek	5100205010	37.470000	-83.378000
K159	Kentucky River	At Benson Cr/Elkhorn Cr	5100205140	38.120000	-84.870000
K160	North Elkhorn	At Highway 25	5100205280	38.220000	-84.560000
K161	Silver Cr	At Hagan's Mill Road	5100205090	37.695000	-84.375000
K162	Silver Cr	At Taylor's Fork	5100205090	37.702000	-84.380000
K163	Frozen Cr	North Fork of Frozen Creek	5100201170	37.605000	-83.420000
K164	Clear Cr	1/4 mi upstream Fords Mill bridge.	5100205220	37.945387	-84.745041
K165	Cane Cr	3,000 ft above confluence of Cane Cr/Lindon Fork	5100201160	37.55848	-83.41667
K166	War Cr	Above confluence with North Fork Kentucky River	5100201150	37.605556	-83.488889
K167	Boone Fk	HWY 15 - KY 205 intersection	5100201010	37.155556	-82.730000
K168	Lulbegrud Cr	At loglick in Clark County.	5100204160	37.850000	-84.050000
K169	Gladie Cr	Apprx 300-500 yds upstream mouth	5100204120	37.835878	-83.609371
K170	Red Rv	From Hwy 715 to Hwy 77	5100204120	37.850000	-83.720000
K171	Clifty Cr	Apprx 300-500 yds upstream mouth	5100204120	37.830000	-83.540000
K172	Swift Camp Cr	Between Castle Arch and Sky Bridge	5100204120	37.815558	-83.577052
K173	Shannon Run	North of Versailles	5100205270	38.050000	-84.640000

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Sample ID #	Stream Name	Site Location	11 Digit HUC ID	Latitude (dec. deg.)	Longitude (dec. deg.)
K174	South Fork Elkhorn	Hwy 421 to Forks	5100205270	38.13262	-84.639447
K175	Billy Fork	At Millers Creek - North side of Ky	5100204040	37.69637	-83.77623
K176	Benson Creek	Bridgeport & Benson near old drive in on US 60	5100205260	38.160000	-85.010000
K177	Cedar Creek	At Monterey	5100205310	38.421024	-84.870884
K178	Drennon Creek	On Flat Rock Road 4.4 miles from Junction 202.	5100205340	38.438695	-85.109865
K179	Flat Rock Creek	1 mile on Flat Creek Rd	5100205300	38.310000	-84.900000
K180	Clarks Run	Ky School for Deaf property	5100205190	37.633017	-84.762205
K181	Oregon Creek	Hwy 127 north to Oregon Landing Road. Site is 2.1 miles at Oregon Road/Gall Lane intersection	5100205140	38.110000	-84.880000
K182	Landings Run	From Oregon Landing Road turn right onto Oregon Road, 0.4 miles to creek site and 1/4 mile from Kentucky River	5100205140	37.980000	-84.810000
K183	Wolf Run	At Gardenside Park	5100205270	38.035166	-84.543104
K184	Wolf Run	At Holly Springs Drive	5100205270	38.033182	-84.542095
K185	North Elkhorn	-	5100205280	38.220000	-84.620000
K186	Evans	Trib to Billys Fork	5100204040	37.69848	-83.88664
K187	Muddy Creek	Bridge at college hill and union city	5100205020	37.786337	-84.148407
K188	Muddy Creek	Outflow at Army Depot	5100205020	37.707351	-84.174829
K189	Muddy Creek	Inflow at Army Depot	5100205020	37.657916	-84.192988
K190	Brushy Creek	Below Shirley Poor property	5100205140	37.881093	-84.76272
K191	Otter Creek	At Hwy 388 and Beaver Road	5100205040	37.770000	-84.260000
K192	Black Spring	The Black Spring is a tributary of Clear Creek.	5100205220	37.929700	-84.726250
K193	Greasy Creek	Just downstream Shamrock discharge	5100202010	36.984444	-83.285556
K194	Big Laurel	Swimming hole near Big Laurel.	5100202010	36.981946	-83.210816
K195	Calloway Cr E Fk	Just above merger of N & E forks	5100204080	37.75084	-83.996603
K196	Calloway Cr N Fk	Just above merger of N & E forks	5100204080	37.752554	-83.998289
K197	Phillips Creek	1 1/2 miles upstred from Otter Cr and Lock 10 at Boonesborough	5100205040	37.856500	-84.256400
K198	Ky River	Pool 6 main stem	5100205140	37.920000	-84.820000
K199	Ky River	Pool 6	5100205140	37.920000	-84.810000
K200	Ky River	Pool 6	5100205140	37.910000	-84.820000
K201	Ky River	Pool 6	5100205140	37.900000	-84.800000
K202	Elk Lick Creek	At Ky River "Pebble Beach"	5100205060	37.900000	-84.360000
K203	Ky River	Water company intake 220 yds downstream from quarry	5100205060	37.870000	-84.420000
K205	North Fork Ky River	North Fork of Kentucky River at intake of water plant	5100201150	37.600000	-83.450000
K206	Elkhorn Creek	South Fork at 133 Treetop (Cornetts Residence)	5100205270	38.100000	-84.640000
K207	Silver Creek	Hwy 52 crosses Taylor Fork just south of Richmond.	5100205090	37.660000	-84.300000
K208	Silver Creek	At Curtis Road	5100205090	37.700000	-84.390000
K209	Tates Creek	At Goggins Lane	5100205080	37.760000	-84.330000
K210	Big Sinking Creek	KY 52 - KY 1746 intersection	5100204040	37.670000	-83.840000
K211	Deep Branch Creek	Off lower Howards Creek behind Halls Resturant	5100205050	37.920000	-84.270000
K212	Howards Creek	Immediately behind Old Stone Church on Old Stone Church Rd	5100205010	37.900000	-84.120000
K213	Quicksand	Main Fk of Quicksand - 100m above confluence with south fk	5100201140	37.540000	-83.340000
K214	Quicksand	South fk of Quicksand - 250m above confluence with main fk	5100201130	37.540000	-83.340000
K215	Lost Creek	Below lost creek Post Office	5100201120	37.470000	-83.320000
K216	Troublesome Creek	Below lost creek Free Church	5100201120	37.480000	-83.300000
K217	North Elkhorn	North Elkhorn at Fayette Co line at Paris Pike	5100205280	38.070000	-84.320000
K218	Cane Creek	Confluence of Cane Creek and Lindon Fork (little cane)	5100201160	37.560000	-83.420000
K219	Beech Fork	At Stone Coal Branch	5100202010	37.002050	-83.399533
K220	Howards Creek	At Quarry Apartments on Old Boonesborough Rd	5100205050	37.970000	-84.210000
K221	Indian Creek	At Jordon Ferry Road	5100205005	37.880000	-84.170000
K224	-	At Welcome Hall	5100205240	38.000000	-84.790000
K225	Elk Lick Creek	At Nature Sanctuary	5100205060	37.900000	-84.360000
K226	Boone Creek	At Iroquois Hunt Club	5100205070	37.940000	-84.330000
K227	-	Stream runs into the Ky River at Boonesborough State Park	5100205005	37.900000	-84.270000
K228	North Elkhorn	Mt. Horeb Road at Adena Indian Mound	5100205280	38.170000	-84.470000
K229	Baughman Fork	At Cleveland Road	5100205070	37.970000	-84.360000
K230	Brushy Creek	At intersection of Highways 11 & 15 in Waltersville, Ky.	5100204160	37.860000	-83.940000
K231	Hines Creek	1 mile off US 25 {past barn on right}	5100205060	37.860000	-84.340000
K232	Hines Creek	1 mi on Lower Hines Creek Rd, off US 25, {past barn on rt}.	5100205060	37.880000	-84.360000

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Sample ID #	Stream Name	Site Location	11 Digit HUC ID	Latitude (dec. deg.)	Longitude (dec. deg.)
K234	Troublesome Creek	At Riverside School(as K145 on 9/23/01)	5100201120	37.480000	-83.320000
K235	Knoblick Creek	Tributary of Hanging Fork, at Hatcher Rd, 1 mile west of Stanford	5100205180	37.520000	-84.680000
K236	Little Benson Creek	At Franklin/Anderson Co. line, Ninevah Rd.	5100205260	38.101000	-84.881000
K237	Middle Fork	Below city water dam	5100202010	37.090000	-83.380000
K238	Short Creek	Mouth	5100202010	37.140000	-83.390000
K239	fell over Rock Branch	Mouth	5100202010	37.140000	-83.380000
K240	Clarks Run	At the end of Winterhawk Rd, btwn KY34 and KY52	5100205190	37.390107	-84.424928
K241	Viney Fork - south	Bluegrass Army Depot - south viney	5100205020	37.680000	-84.180000
K242	Viney North	Bluegrass Army Depot - north fork of viney	5100205020	37.710000	-84.180000
K243	Vega	Bluegrass Army Depot - vega tailwaters	5100205020	37.700000	-84.230000
K244	Viney Forks	Bluegrass Army Depot - Route 3B area	5100205020	37.710000	-84.190000
K245	Muddy Creek	Bluegrass Army Depot - muddy creek	5100205020	37.700000	-84.250000
K246	Muddy Creek Tributary	Bluegrass Army Depot - Rt 10 E area	5100205020	37.720000	-84.200000
K247	Viney	Bluegrass Army Depot - Rt 10 E area	5100205020	37.720000	-84.201700
K248	Clear Creek	At Doyleville Road	5100205020	37.821500	-84.208100
K249	Muddy Creek	Dreyfus Rd, @ culvert where creek exits Central Ky WMA	5100205020	37.738300	-84.154100
K250	Muddy Creek	At Highway 52	5100205020	37.740000	-84.150000
K251	Muddy Creek	At Cane Springs Road	5100205020	37.820000	-84.150000
K252	Muddy Creek	At confluence with Kentucky River	5100205020	37.860000	-84.170000
K253	East Fork Indian Creek	Directly behind CCC Mariba, KY	5100205005	37.918100	-83.595500
K255	Dry Run	At US 25. Runs into North Elkhorn	5100205280	38.260000	-84.570000
K256	Lanes Run	At highway 460 and Crumbaugh Rd. Runs into N Elkhorn.	5100205280	38.218600	-84.518100
K257	North Elkhorn	At Russell Cave Rd on a private farm	5100205280	38.130000	-84.430000
K258	Twin Creek	Residence 1/4 mi above confluence	5100204160	37.830000	-84.010000
K259	Silver Creek	Just upstream of waterfall on cattle farm next to Barnes Mill Road	5100205090	37.712300	-84.390800
K260	Dreaming Creek	Behind Madison Central High; downstream from sewage plant behind H.S.	5100205040	37.743100	-84.285800
K261	Dreaming Creek	Downstream of discharge pipes from road above creek on hwy 876, on Wells property on Ky 388	5100205040	37.879200	-84.278900
K262	South Elkhorn	At US 60 and Harrodsburg Road bridge	5100205270	37.995900	-84.585900
K263	North Elkhorn	Confluence of Avon Trib. at Muir & Bryan Station Rd.	5100205280	38.100000	-84.390000
K264	unnamed trib	Behind Alice Jones property	5100205040	37.787700	-84.348800
K265	Bullock Pen Creek	Just upstream from Ten Mile Creek	5100205390	38.770970	-84.660000
K266	Jouett Creek	Hwy 418 and Jouett Creek	5100205060	37.930000	-84.290000
K267	East Hickman Creek	On DeLong Road at the 90 degree loop on the east hickman creek.	5100205120	37.940000	-84.450000
K268	Town Branch	Downstream of old WWTP for Medical Cntr,next to Masterson Station Pk.	5100205270	38.100000	-84.570000
K269	North Elkhorn	Galloway Road overpass	5100205280	38.230000	-84.650000
K270	Howards Creek	100 yards upstream of KY 89 & Howard's creek	5100205010	37.898900	-84.058500
K271	Glenns Creek	Mile marker 12 @ Clifton Road	5100205240	38.062100	-84.772500
K274	Elk Lick Creek	100 yards below outflow of KU plant	5100205060	37.904400	-84.368100
K275	Elkhorn Creek	Downstream from Jim Beam distillery	5100205290	38.246400	-84.827
K276	Elkhorn Creek	Upstream from retention wall at Switzer covered bridge	5100205290	38.253800	-84.7523
K279	Clarks Run	Upstream bridge on Goggin Rd (1805)(re:K14 for Sept '02)	5100205190	37.639000	-84.721700
K280	White Oak Creek	30 meters north of bridge near SNP	5100205130	37.762000	-84.651600
K281	Dix River	At Hwy 52 and Rankin Road	5100205170	37.637600	-84.673700
K282	Cane Run	At Hwy 152	5100205170	37.748300	-84.749600
K283	Rocky Fork	At Ben Naylor Road in Garrard County	5100205170	37.768700	-84.696500
K284	Troublesome Creek	At Hindman Elementary School	5100201120	37.330400	-82.994000
K285	Caney Creek	At Hwy 899 and Alice Lloyd College	5100201120	37.327836	-82.882537
K286	Ball Fork	Just below Big Branch, between Big Br and Talcum	5100201120	37.369300	-83.071800
K287	Troublesome Creek	On Route 550, downstream from Hindman E	5100201120	37.330900	-82.994600
K288	Troublesome Creek	Where Troublesome Cr meets at Upper	5100201120	37.355000	-82.926800
K289	Troublesome Creek	At Troublesome and Perkins Branch	5100201120	37.322600	-82.966800
K290	Little Carr Creek	At campground and Carr Lake	5100201070	37.239300	-82.947700
K291	Hale Branch	At Graceland Drive	5100201070	37.212400	-82.950700
K292	Dreaming Creek	25 yds upstream from wastewater treatment plant	5100205040	37.750300	-84.279300
K293	Elkhorn Creek	Below fish hatchery	5100205290	38.309400	-84.812200

Table 1.1 - 2007 Kentucky River Watershed Watch Sampling Site Descriptions

Sample ID #	Stream Name	Site Location	11 Digit HUC ID	Latitude (dec. deg.)	Longitude (dec. deg.)
K294	Muddy Creek	At EKU/Meadowbrook Farm	5100205020	37.725900	-84.141600
K295	Kentucky River	Downstream of US68	5100205140	37.861300	-84.703000
K297	Penitentiary Branch	US127 North and Thornhill bypass, towards Owenton	5100205250	38.219700	-84.853900
K298	Spring Creek	Hwy 1267 and 169 at Keene	5100205220	37.942600	-84.640000
K299	Hickman Creek	At Zandale and Heather Way	5100205120	38.001900	-84.524500
K300	Hickman Creek	At Zandale and Libby Lane	5100205120	38.002000	-84.524400
K301	Hickman Creek	Cr	5100205120	37.892200	-84.512700
K302	Town Branch	South Forbes Lane at stockyards	5100205270	38.074700	-84.551900
K303	Hickman Creek	At KY1980 Bridge	5100205120	37.948000	-84.500000
K304	Hickman Creek	At Southern Middle School	5100205120	37.986700	-84.525400
K305	Town Branch	Behind St Joseph's hospital @ RR track and Bob O' Link	5100205270	38.032200	-84.524300
K306	South Benson	Upstream from red bridge	5100205260	38.207600	-84.964500
K307	Wolf Run	Well at Old Frankfort Pike (USGS site)	5100205270	38.141900	-84.751200
K308	Herrington Lake	At boat dock	5100205170	37.773000	-84.710900
K309	McKecknie Creek	At bridge crossing with KY1355	5100205110	37.681300	-84.684000
K310	Herrington Lake	At Kings Mill Marina ramp beneath KY34	5100205170	37.708000	-84.687700
K311	West Hickman	At Landsdowne Park	5100205120	38.001600	-84.489500
K313	Mallard Point Lake	Center of Mallard Point Lake, at deepest point	5100205208	38.317300	-84.592200
K314	Mallard Point Lake	Below disposal station	5100205208	38.317200	-84.591100
K315	Drake Lake	50 feet south of Mallard Point Drive	5100205280	38.310900	-84.589400
K316	North Elkhorn	Avon tributary	5100205280	38.069800	-84.327300
K317	Clarks Creek	At Hwy 36 bridge	5100205380	38.6319	-84.6249
K318	Eagle Creek	At Reb Stacy's Woodland & Wildlife Center above Statlers Run	5100205390	38.697044	-84.754052
K319	Arnold's Creek	bridge on Sipple Road over Arnolds Creek	5100205390	38.727395	-84.731251
K320	Clarks Creek	Fords Mill Road at Clarks creek	5100205380	38.671900	-84.693600
K321	Ten Mile Creek	at the Hwy 467 bridge	5100205390	38.714840	-84.749484
K322	Boone Creek	Vauhgn farm at Grimes Mill Road	5100205070	37.9168	-84.347
K323	South Elkhorn Creek	at Bosworth Lane	5100205270	38.0611	-84.6306
K324	Raven Run	between trail markers R and S at Raven Run Nature Sanctuary	5100205060	37.8688	-84.375
K325	West Hickman	behind her residence of 3479 Lansdowne Dr.	5100205270	37.9985	-84.4999
K327	Ten Mile Creek	upstream from mouth of Arnolds Creek	5100205390	38.735786	-84.734593
K328	Eagle Creek	2 miles downstream from mouth of Ten Mile creek	5100205390	38.717046	-84.767767
K329	Shannon Run	at the brige on Briarwood in Sycamore Estates	5100205220	38.0233	-84.6753
K330	White Oak	Downstream of Dicey Branch, in the State Nature Pervse	5100205140	37.7566	-84.6311
K331	Long Branch	at the bridge on Hall Road about 90 ft. upstream	5100205110	37.6641	-84.5077
K332	Back Creek	ersville Road and Long Branch Road meet @ crossing onto Back Creek 100 yd	5100205110	37.6927	-84.4934
K333	Muddy Creek	Meadowbrook farm - 2nd site	5100205020	37.7108	-84.161
K334	Muddy Creek	Meadowbrook farm at shelter area	5100205020	37.713	-84.1571
K335	Muddy Creek	Meadowbrook farm last site	5100205020	37.7277	-84.1469
K336	Muddy Creek	Bluegrass Army Depot, L-Range below mouth of tributary	5100205020	37.7125	-84.1908
K337	Wymers Branch	on her property at 1175 Marshall Branch Road	5100205120	37.926	-84.5149
K338	Otter Creek	where KY 388 and RT. 1986 meet	5100205040	37.7834	-84.2739
K339	Otter Creek	Rt. 1986 close to RR tracks	5100205040	37.7845	-84.258
K340	Bannis Fork	off Hwy 22 in North Pleasureville	5100205330	38.3877	-85.0525
K341	Elkhorn Creek	at 374 Muir Lane	5100205280	38.1607	-84.6789
K342	Clear Creek	McCauley Road by bridge	5100205220	37.9429	-84.6398
K343	farm spring	family farm spring hwy 1267 and Hwy 169	5100205220	37.9436	-84.6398
K344	Elkhorn Creek	intersection of Hwy 1262 & Hwy 1900	5100205290	38.2543	-84.8125
K345	North Elkhorn	at 421 bridge	5100205270	38.141383	-84.645144
K346	Troublesome Creek	off 476 at Robinson Forest	5100201120	37.4435	-83.2149
K347	Lost Creek	off hwy 15 at Robinson Forest	5100201120	37.4123	-83.2719
K348	Goose Creek	50ft upstream from bridge on Newtown Pike	5100205280	38.2192	-84.4805
K349	Mocks Branch	at bridge on Buster Pike & hwy 33	5100205200	37.6978	-84.7759
K350	Hickman Creek	Ecton Park	5100205120	38.01396	-84.49141
K401	Clemens Run	Boston Rd Millpond shopping center	5100205270	37.9775	-84.5516
K402	North Rolling Fork	Hwy 300, 2nd bridge	5100205180	37.5458	-84.7284
K403	White Oak	upstream of Dicey branch	5100205140	37.7794	-84.6441

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Sample ID #	Stream Name	Site Location	11 Digit HUC ID	Latitude (dec. deg.)	Longitude (dec. deg.)
K404	Red River	hwy 191 bridge below Hazel Gree	5100204110	37.7955	-83.4194
K405	Red River	intersection of hwy 205 & hwy 1094	5100204110	37.7397	-83.3352
K406	Taylor Fork	hwy 25& 499 across from boat place	5100205090	37.7038	-84.2663
K407	Tate Creek	at Tates Creek rd and I-75	5100205080	37.7614	-84.3187
K408	Kentucky River	at the boat ramp at Boonsboro Park	5100205060	37.9075	-84.2713
K409	Kentucky River	below the Dale Power Plant	5100205060	37.8805	-84.2617
K411	Billy Fork	Estill County	5100204040	37.6631	-83.8241
K412	Millers Creek	At hwy 1571 bridge	5100204040	37.6675	-83.8619
K413	Martins Fork	At Fletcher's ridge	5100204120	37.8687	-83.6375
K414	Powell's Branch	at Hwy 77	5100204120	37.9087	-83.5751
K415	Kentucky River	at Valley View 6500	5100205060	37.8465	-84.4357
K416	Spears Creek	Hwy 33 crossing	5100205200	37.6639	-84.768
K417	Red River	At the John Swift Campground	5100204120	37.8204	-83.5734
K418	UT of West Hickman	Behind the Meadowbrook Golf Course	5100205120	37.975825	-84.514761
K419	Rogers Fork	at Pitts Road where Rogers Fork and Cow Creek meet	5100204060	37.7206	-83.8912
K420	Cow Creek	at McIntosh Hollow just past Pitts Road	5100204060	37.7213	-83.8889
K423	Cow Creek	1/4 mile upstream from mouth of Millers	5100204060	37.6808	-83.9436
K424	KY River	behind American Legion on hwy 1571	5100204030	37.6822	-83.9193
K426	Calloway Creek	just below sawmill	5100204080	37.6144	-83.9993
K427	Calloway Creek	intersect of sawmill and landfill	5100204080	37.7607	-83.9992
K428	Calloway Creek	just below landfill	5100204080	37.7603	-84.0002
K429	Viney Fork	at Speedwell just below Army Depot	5100205020	37.6799	-84.1821
K430	KY River	under the 627 bridge	5100205005	37.9059	-84.2707
K431	KY River	200 yds downstream at waterfront café	5100205005	37.9028	-84.2679
K432	Millers Creek	at hwy 1571 and 52 intersections	5100204040	37.6699	-83.8575
K433	Crystal Creek	at hwy 1571	5100204040	37.6626	-83.8294
K434	Douglas Pond	at 897 Charlie Norris Road	5100205040	37.7664	-84.2675
K436	Little Negro	off hwy 70 at Steve Albright crossing	5100205150	37.3666	-84.4213
K437	Little Cowan Creek	approx 100 meters from I19 intersection	5100201010	37.09571	-82.79818
K440	Carr Fork	confluence of Carr Fork and KY River	5100201070	37.2012	-83.1253
K441	Scuddy Branch	Scuddy Branch and Carr Creek intersect	5100201070	37.2023	-83.0846
K442	Montgomery Creek	Montgomery Cr. and Lick Fork Road meet	5100201070	37.1911	-83.0101
K443	Sassafras Creek	intersect of Sassafras and Kelly Branch	5100201070	37.223	-83.0541
K445	Kingdom Come Creek	at mouth near bend in road	5100201010	37.11320	-82.90570
K446	North Fork KY River	below Kingdom Com	5100201010	37.11300	-82.90710
K447	Cowan Creek	behind Comm. Center after confluence with Sturgill Branch	5100201010	37.06762	-82.85650
K448	Cowan Creek	on Joeyes Drive by little shed	5100201010	37.06140	-82.86850
K449	Solomon Creek	Across from eye examination building	5100201010	37.11780	-82.82030
K450	Fish Pond Lake	off hwy 119 and hwy 3400	5100201010	37.15700	-82.67890
K451	Little Cowan Creek	near mouth beside Cowan Elementary ball field	5100201010	37.09550	-82.84280
K452	North fork of Ky River	behind Heritage Building	5100201010	37.11662	-82.82213
K454	Red River	fluence of Red River with Ky River on Clark County side, upstrm of boat	5100204160	37.85150	-84.07770
K455	KY River	Ky River just below Clay Lick creek	5100205140	37.9713	-84.8162
K456	Marble Creek	just off Marble Creek Lane	5100205060	37.849	-84.4383
K457	Benson Creek	at Red Bridge	5100205260	38.2069	-84.9603
K458	Eagle Creek	intersect of little eagle and eagle creek	5100205360	38.338	-84.5134
K461	Cardinal Run	at Davenport Dr crossing	5100205270	38.0489	-84.5536
K462	Cardinal Run	Below Chinquapin Ln bridge	5100205270	38.0431	-84.5573
K463	Cardinal Run	Duck Pond on Cross Keys Road near dam	5100205270	38.0416	-84.5561
K464	Wolf Run	Goodrich Ave at end of walk before RR	5100205270	38.0158	-84.5226
K465	Wolf Run	Village Dr and Cambrige Dr	5100205270	38.0535	-84.5509
K466	Wolf Run	Lafayette Pkwy at Rosemont	5100205270	38.023	-84.5286
K467	Springs Branch	at end of Faircrest Dr	5100205270	38.0294	-84.5374
K468	Wolf Run	upstream of Springs Br at end of Faircrest Dr	5100205270	38.0301	-84.5373
K469	Beacon Hill Culvert	drains Garden Springs neighborhood	5100205270	38.033	-84.5431
K470	Vaughns Branch	25 ft upstream of mouth at Valley Park	5100205270	38.0548	-84.5497
K471	Vaughns Branch	park at end of Tazwell Dr	5100205270	38.0448	-84.536

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Sample ID #	Stream Name	Site Location	11 Digit HUC ID	Latitude (dec. deg.)	Longitude (dec. deg.)
K472	Vaughns Branch	25 ft upstream of Nicholasville Rd	5100205270	38.0224	-84.5124
K473	Fish Pond Lake	inflow at Fish Pond Lake	5100201010	37.16740	-82.67080
K474	Fish Pond Lake	outflow at Fish Pond Lake	5100201010	37.15410	-82.68190
K475	Wiley's Lake	lake on top of Pine Mountain	5100201010	36.982673	-83.087083
K476	Dry Fork	at mouth, 20' above hwy 588 bridge	5100201010	37.121400	-82.874000
K477	North Fork KY River	at Millstone 20' below confluence	5100201010	37.167200	-82.753200
K478	Millstone Creek	at mouth of Millstone	5100201010	37.167820	-82.753180
K479	Rockhouse Creek	after confluence with Camp Branch	5100201020	37.210630	-82.856930
K480	Cowan Creek	by Cowan Elementary bridge, before confluence with Little Cowan	5100201010	37.094400	-82.843100
K481	Little Dry Fork	at mouth via Lion Drive	5100201010	37.128900	-82.863000
K482	Bo Fork	upstream from the interesection of Kingdom Come	5100201010	37.072800	-82.878800
K483	Henry Ison Hollow	upstream of the intersect of Kingdom Come.	5100201010	37.073600	-82.876900
K484	Cram Creek	right fork, looking upstream	5100201010	37.119300	-82.766600
K485	Cram Creek	left fork, looking upstream	5100201010	37.119300	-82.766100
K486	Cowan Branch	at mouth below Foothills Drive	5100201010	37.108500	-82.803700
K487	Laurel Creek	on Laurel Creek Road just below Hwy 80 and under the Ginger Creek lane bridge.	5100202010	37.130800	-83.436700
K488	Troublesome Creek	just off Hwy 476 at Robinson Elementary School	5100201120	37.367200	-83.150000
K489	Big Willard	just off hwy 451 at Willard Elementary School.	5100201100	37.268300	-83.293900
K490	Perkins Branch	in Brinkley, KY just off hwy 3391 and above the confluence of Troublesome Creek.	5100201120	37.319600	-82.971900
K491	North Fork KY River	Just downstream of mouth of Carr Fork, where Hwy 7 and Hwy 15	5100201030	37.206050	-83.131560
K492	Carr Fork	1/2 mile upstream from the intersect of KY River and Carr Fork. at the RR bridge on Hwy 15.	5100201070	37.201540	-83.125260
K493	Sugar Creek	off hwy 1971 at bridge.	5100205110	37.732183	-84.557250
K494	Kentucky River	off hwy 1971 bridge below Sugar Creek	5100205110	37.733698	-84.560358
K496	unnamed trib	spring feeds into clear creek at 3151 Cummins Ferry Rd at Firegate #40, Woodford Co.	5100205220	37.912600	-84.713200
K497	Nonesuch	7/10th of a mile east of Nonesuch creek to clear creek. (on Abshear property), Woodford Co.	5100205220	37.912600	-84.741100
K498	Wolf Run	WR-S0 just above confluence with Town Branch	5100205270	38.073130	-84.553900
K499	Town Branch	just above the confluence with Wolfe Run.	5100205270	38.073438	-84.553364
K500	Cedar Run	at the intersection of Old Lawrenceburg Road and the E-W	5100205310	38.168300	-84.878500
K501	Eagle Creek	at intersection of 330 and 845	5100205370	38.530800	-84.719600
K502	Eagle Creek	at Twin Bridges, 2nd bridge going West on 22	5100205370	38.628410	-84.709498
K503	Rattlesnake Creek	Twin Bridges, 1st bridge going west on 22	5100205370	38.629170	-84.708488
K504	Grassy RunCreek	on White Chapel Road, Cotton residence. 1st riffle from mouth of Grassy Run where it meets Eagle Creek.	5100205370	38.598880	-84.685120
K505	Eagle Creek	at Cotton residence on White Chapel Rd. where grassy creek and eagle creek intersect.	5100205370	38.599220	-84.683420
K506	North Elkhorn	at hwy 460 and RR tracks at Oser Landing Park.	5100205280	38.212990	-84.545430
K507	Royal Springs	at the intersect of West Main and South Water Street.	5100205280	38.209880	-84.561890
K508	Calloway Creek	at Simpson Lane just below the clark county line, 0.2 miles on Calloway Creek north of confluence with Smith Fork.	5100204080	37.887300	-84.318800
K509	Silver Creek	at the curtis pike bridge.	5100205090	37.696190	-84.384780
K510	Taylors Fork	Curtis Pike Creek at telephone pole #160.	5100205090	37.711700	-84.362300
K511	Taylors Fork	intersect of taylors fork and curtis pike creek. Under the bridge where curtis pike and taylors fork intersect.	5100205090	37.708000	-84.364800
K512	Taylors Fork	at the dam of wilgreen lake. Southwest of dam at discharge conduit of wilgreen lake.	5100205090	37.704600	-84.358800
K513	Cowbell Creek	in Big Hill on hwy 421 directly in front of Pilot Knob and Merj Market.	5100204070	37.555019	-84.208480
K514	trib to tates creek	at Boone Way	5100205080	37.766930	-84.349780
K515	Tates Creek	Million Bible Church, near Route 1789	5100205080	37.779250	-84.386481
K516	Brushy Fork	at Hwy 21 bridge and Prospect Street.	5100205090	37.569725	-84.280399
K517	Springs Branch	WR-S85 Supstream of Sheridan Drive Culvert.	5100205270	38.021718	-84.540733
K518	North Fork KY River	North fork of Ky River below Craft's Colley (same as K112)	5100201010	37.116700	-82.792780
K519	Pert Creek	mouth of Pert Cr, at the end of Singing Waters Drive	5100201010	37.111050	-82.799360
K520	Friday Branch	mouth of Friday Cr, above hogpen	5100201010	37.126380	-82.785280
K521	Line Fork	at the mouth of line fork	5100201040	37.128700	-83.053900
K522	North Fork KY River	after the confluence with Line Fork, on Letcher/Perry county line.	5100201030	37.129500	-83.054200

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Sample ID #	Stream Name	Site Location	11 Digit HUC ID	Latitude (dec. deg.)	Longitude (dec. deg.)
K523	UT to Hickman Creek	at Tates Creek high school, near Greentree Road	5100205120		
K524	Kentucky River	At Cummins Ferry Road, Mercer Co.	5100205140		
K525	Phillips Creek	1/2 mile upstream of Ky River Lock & Dam 10, Madison Co.	5100205040	37.856500	-84.256400
K526	Trib to South Elkhorn	At Stonewall School, Cornwall Drive	5100205270	38.002500	-84.556000
K527	Balls Fork	At United Baptist Church in Vest, KY, on Ogden Rd off Hwy 80	5100201120	37.393900	-83.004800
K528	Lee's Branch	In front of Midway College, Woodford Co.	5100205270	38.149300	-84.683400
K529	Elkhorn Creek	at Elkhorn Campground and Georgetown Road	5100205290	38.215600	-84.797800
K530	Tates Creek	6.3 miles downstream on Tates Creek Rd. from Goggins Lane. Across from Anthioch Christian Church.	5100205080	37.802750	-84.398440
K531	Glenn's Creek	At McCracken Pike	5100205240	38.092900	-84.788800
K532	Vaughn's Branch, North Fk	WR - Behind Lexington Clinic Surgery Center at Golf Course fence	5100205270	38.036950	-84.522710
K533	Benson Creek	At 129 Apple Tree Court, Franklin Co.	5100205260	38.131700	-84.966200
K534	Cowan Creek	near mouth, after confluence w/ George Brown Br, on Stallard Rd	5100201010	37.105000	-82.860200
K535	Sturgill Branch	at mouth	5100201010	37.067900	-82.858100
K536	Long Branch	Ran Day Holw at mouth	5100201010	37.072700	-82.846100
K537	Potters Fork	at mouth	5100201010	37.179200	-82.714300
K538	Boone Fork	at mouth beside Martha Jane Potter	5100201010	37.157200	-82.739600
K539	Kings Creek	at mouth	5100201010	37.106100	-82.948000
K540	Judys Branch	at mouth	5100201010	37.158710	-82.824070
K541	Sandlick Creek	AMD beside Fire Dept.	5100201010	37.158710	-82.824070
K542	Sandlick Creek	AMD across from Rainbow Drive	5100201010	37.158710	-82.824070
K543	Clarks Run	off hwy 34 at Cross Pike	5100205190	37.611400	-84.828400
K546	trib to cane run	at the fork of unnamed trib and cane run - just off hwy 152	5100205170	37.763298	-84.720497
K547	cane run trib	the fork of unnamed trib and cane run - between hwy 152 and Norman Camp Rd	5100205170	37.748300	-84.749000
K548	Cane Run	at Royalty Marina on Camp Road	5100205170	37.754700	-84.743600
K549	Curds Creek	above Dix Dam on Donamar Road	5100205170	37.785346	-84.713488
K550	Herrington Lake	at the dock at Hardin Heights - south end.	5100205170	37.779362	-84.712141
K551	UT to South Elkhorn	on Stone Road at Montessori Middle School.	5100205270	38.027500	-84.511900
K552	Silver Creek	at Silver Creek Elementary School and 1016 bridge	5100205090	37.577600	-84.290700
K553	Brushy Creek	on highway 25.	5100205090	37.591200	-84.263300
K554	Brushy Creek	at the Ecovillage outflow on Berea College campus.	5100205090	37.574200	-84.293300
K555	Rocky Fork	near Dix River Dam on Ron Clar Lane.	5100205170	37.780571	-84.698847
K556	Cane Run	at intersect of Coleman Lane and Hwy 25.	5100205170	38.166600	-84.553200
K557	Herrington Lake	off highway 152 at Kennedy docks.	5100205170	37.750548	-84.703520
K558	Mock's Creek	off highway 33	5100205170	37.690167	-84.763134
K559	Tanyard Branch	off highway 1853.	5100205170	37.722167	-84.680135
K560	Dix River	off highway 34	5100205170	37.639301	-84.673420
K561	South Rocky Fork	at the headwaters	5100205170	37.773830	-84.692043
K562	Rocky Fork	at Rose Dock	5100205170	37.776069	-84.696446
K563	East Hickman	at the Jacobson Park Reservoir watershed	5100205120	37.976300	-84.459800
K564	Unnamed Pond	unnamed pond behind Palmer residence.	5100205140	38.185400	-84.829100
K565	North Fork KY River	upstream from Boone Fork	5100201030	37.156600	-82.739900
K566	Boone Fork	at mouth of Boone Fork and KY River by Martha Jane Potter.	5100201030	37.157450	-82.739460
K567	North Fork KY River	upstream from Boone Fork.	5100201030	37.156460	-82.739930
K568	Little Cowan	at midpoint at walnut gap.	5100201030	37.089250	-82.816710
K569	Blair Branch	above Arthurs Loop (lower side)	5100201303	37.169550	-82.903850
K570	Tussey lake	front side of lake at Tussey property.	5100204100	37.682200	-84.170600
K571	Tussey Lake	back side of lake on Tussey property.	5100204100	37.682200	-84.170300
K572	Middle Fork KY River	Ogden Water Dam located behind the Leslie County Road Department Garage	5100202010	37.121600	-83.361100
K573	Middle Fork KY River	approx. 1/2 mile past the Grace Brethren Church on Dryhill Road in Hyde	5100202010	37.162500	-83.375600
K575	Left Fork of Millstone Creek	off of Hwy 113 near intersection with Hwy 803, approx 20' above confluence with main stem, downstream from landfill	5100201010	37.18056	-82.75368
K576	Millstone Creek	Fork	5100201010	37.1805	-82.75347
K577	Dry Fork - AMD	Acid Mine Drainage entering Dry Fork near Horns' on Little Dry Fork Rd (aka Crown)	5100201010	37.14209	-82.85598
K578	Long Branch (Sandlick Creek)	near mouth, above Hwy 931 N culvert by Refuse Dr. below strip job and old refuse pile	5100201010	37.1403	-82.8209
K579	Cane Hollow	near mouth above Hwy 931 N culvert	5100201020	37.2077	-82.83724

Table 1.3 - Types and Number of KRWW Samples Collected During 2007

	Herbicide	Synoptic	Follow-Up			
Sample	Sampling	Pathogens	Pathogens	Chemicals	Nutrients	Metals
ID#	# Samples	# Samples	# Samples	# Samples	# Samples	# Samples
K002		1	1	1	1	
K005	1	1	1	1	1	1
K012			1	1	1	
K013			1	1	1	
K014		1	1	1	1	
K016		1		1	1	
K017		1	1	1	1	1
K026		1	1	1	1	
K028		1	1			
K029				1	1	
K030				1	1	
K033		1	1			
K035		1		1	1	
K036		1		1	1	
K037		1		1	1	
K038		1		1	1	
K039		1		1	1	
K046			1			
K050		1		1	1	1
K051		1		1	1	
K052				1	1	
K053		1	1	1	1	
K054		1	1	1	1	
K055				1	1	1
K057		1	1	1	1	
K062				1	1	1
K063				1	1	1
K071				1	1	
K081		1		1	1	1
K082		1		1	1	1
K083		1		1	1	1
K084		1	1	1	1	
K085		1	2	1	1	
K090		1		1	1	1
K094		1		1	1	
K095		1		1	1	1
K096		1	2	1	1	
K104		1	1	1	1	1
K105		1	1	1	1	1
K112				1	1	1
K114		1	1	1	1	1
K116		1	1	1	1	1

Table 1.3 - Types and Number of KRWW Samples Collected During 2007

	Herbicide	Synoptic	Follow-Up			
Sample	Sampling	Pathogens	Pathogens	Chemicals	Nutrients	Metals
ID#	# Samples	# Samples	# Samples	# Samples	# Samples	# Samples
K120				1	1	
K121				1	1	
K122				1	1	
K123				1	1	
K125		1		1	1	
K126		1	2	1	1	
K132		1	1	1	1	
K135			1	1	1	1
K141		1		1	1	1
K156		1		1	1	
K157		1		1	1	
K158		1		1	1	
K160		1		1	1	
K180		1	1	1	1	
K183a		1	1	1	1	
K184		1	2	1	1	
K187		1	1	1	1	
K188		1	1	1	1	
K189		1	1	1	1	
K190			1			
K191		1	1	1	1	
K192			1			
K198		1		1	1	
K199		1		1	1	
K200				1	1	
K201		1		1	1	
K208			1	1	1	
K209		1	1	1	1	
K213		1		1	1	1
K214		1	1	1	1	1
K215		1	1	1	1	1
K216		1	1	1	1	1
K224		1	1	1	1	
K235		1	1	1	1	
K236		1				
K241		1		1	1	
K242		1	1	1	1	
K243		1		1	1	
K244		1				
K245		1		1	1	

Table 1.3 - Types and Number of KRWW Samples Collected During 2007

	Herbicide	Synoptic	Follow-Up			
Sample	Sampling	Pathogens	Pathogens	Chemicals	Nutrients	Metals
ID#	# Samples	# Samples	# Samples	# Samples	# Samples	# Samples
K246		1	1			
K247		1	1			
K249		1		1	1	
K250		1	1	1	1	
K251		1	1	1	1	
K256		1		1	1	
K257		1	1	1	1	
K258				1	1	
K259		1				
K264		1	1	1	1	
K265				1	1	
K266		1	1			
K267				1	1	
K282		1				
K288		1	1			
K289		1	1			
K291		1				
K295		1	1	1	1	
K297		1	1	1	1	
K299		1	1	1	1	
K300		1	1	1	1	
K301		1		1	1	
K302				1	1	
K303		1		1	1	
K305		2	1	1	1	
K307		1	1	1	1	
K309		1				
K310		1	1	1	1	
K316		1	1	1	1	
K317		1	1	1	1	
K318				1	1	
K319				1	1	
K320		2	1	1	1	
K321				1	1	
K323		1		1	1	
K327				1	1	
K328				1	1	
K329		1	1	1	1	
K330		1	1	1	1	
K336		1	1	1	1	

Table 1.3 - Types and Number of KRWW Samples Collected During 2007

	Herbicide	Synoptic	Follow-Up			
Sample	Sampling	Pathogens	Pathogens	Chemicals	Nutrients	Metals
ID#	# Samples	# Samples	# Samples	# Samples	# Samples	# Samples
K338		1				
K339		1				
K341			1			
K350				1	1	
K403		1	1	1	1	
K408		1		1	1	
K409		1		1	1	1
K418		1	1	1	1	
K429		1				
K434		1				
K437		1	1	1	1	1
K445		1	1			
K446		1				
K447		1	1	1	1	1
K448		1	1			
K451		1	1	1	1	1
K452		1	1			
K454		1		1	1	1
K456		1		1	1	
K458		1				
K461		1	1	1	1	
K462		1	1	1	1	
K463		1	1	1	1	
K464		1	1	1	1	
K465		1	1	1	1	
K466		1		1	1	
K467		1		1	1	
K468		1	1	1	1	
K469		1	1	1	1	
K470		1	1	1	1	
K471				1	1	1
K472		1	1	1	1	
K473				1	1	1
K476		1	1	1	1	1
K478				1	1	1
K480		1	1	1	1	1
K481		1	1	1	1	1
K483				1	1	1
K484				1	1	1

Table 1.3 - Types and Number of KRWV Samples Collected During 2007

	Herbicide	Synoptic	Follow-Up			
Sample	Sampling	Pathogens	Pathogens	Chemicals	Nutrients	Metals
ID#	# Samples	# Samples	# Samples	# Samples	# Samples	# Samples
K485				1	1	1
K487		1				
K491				1	1	1
K492				1	1	1
K500		1				
K506		1				
K507		1				
K508		1	1	1	1	
K509		1				
K514		1		1	1	
K515		1		1	1	
K517		2	1			
K519		1		1	1	1
K521		1				
K522		1				
K523	1					
K524	1			1	1	
K525	1					
K526	1			1	1	
K528		3		1	1	
K529	1	1	1	1	1	
K530		1		1	1	
K533	1					
K534		1	1	1	1	1
K535	1			1	1	1
K536	1			1	1	1
K539		1				
K542				1	1	1
K543	1		1	1	1	1
K548	1	1	1	1	1	1
K549	1	1	1	1	1	1
K550	1	1	1	1	1	1
K551	1	1	1	1	1	1
K552	1			1	1	1
K553	1			1	1	1
K554				1	1	1
K555	1	1		1	1	1
K556	1	1	1	1	1	1
K557	1					
K558	1					

Table 1.3 - Types and Number of KRWW Samples Collected During 2007

	Herbicide	Synoptic	Follow-Up			
Sample	Sampling	Pathogens	Pathogens	Chemicals	Nutrients	Metals
ID#	# Samples	# Samples	# Samples	# Samples	# Samples	# Samples
K559	1					
K560	1					
K561	1	1				
K562		1	1	1	1	1
K564		1	1			
K565			1	1	1	1
K566				1	1	1
K567		1		1	1	1
K568		1	1	1	1	1
K569		1	1	1	1	1
K572			1			
K573			1			
K575				1	1	1
K576				1	1	1
K577				1	1	1
K578				1	1	1
K579				1	1	1
K580				1	1	1
K581		1		1	1	1
K582		1	1	1	1	1
K583				1	1	1
K584				1	1	1
Total # Samples Collected	23	161	105	177	177	69

Table 2.1 - 2007 Kentucky River Watershed Watch Physical/Chemical Field Data

Site ID#	Date	Dissolved Oxygen	pH	Temp (° C)	Flow Conditions	Chlorides	Conductivity	Turbidity (measured at UK)
Water Quality Std.		5.0 for AL	6.0 - 9.0	31.7 °C for WWAH	N/A	250 for DW 1,200 for acute AL 600 for chronic AL	800 for Ohio River	N/A
K002	9/14/2007	7.2	7	16	2	13.8	571	
K002	6/30/2007	6.60	7.50	19	2			
K002	7/27/2007	5.40	7.00	20	2			
K005	5/21/2007	8.4	8.5	17	3			
K005	9/14/2007	6.2	8	18	2	45	595	
K005	7/5/2007	7.40	7.50	24	5		280	
K005	6/29/2007	4.00	7.50	24	2		470	
K005	7/27/2007	3.80	7.50	22	3			
K012	9/17/2007	3.4	7.1	9		14.4	526	
K013	9/17/2007	10	8	17	2	60.5	762	
K014	9/14/2007	7.6	8.5	22	2	87.9	857	
K014	6/30/2007	7.53	7.80	23.7	3			
K014	7/28/2007	7.60	7.80	22.4	3			
K016	9/15/2007	6.4	7.5	20	3	50.5	641	
K016	6/29/2007	6.80	8.00	25	4		590	
K017	5/18/2007	1	7.9	12	3	10.4	803	0.86
K017	6/28/2007	9.06	8.1	21.6	3		1200	
K017	9/15/2007	9.80	8.07	12.58	2		1276	
K017	9/16/2007	9.8	8.07	12.58	2	14	1348	
K026	9/25/2007				2	109	1084	
K026	6/29/2007	6.00	7.50	24	3			
K028	6/29/2007	8.20	8.00	20	1			
K029	9/15/2007	6.5	7.5		2	14.9	532	
K030	9/13/2007	2.8	7.5	18	2	107	874	
K033	6/29/2007	4.00	7.50	24	1			
K034	7/2/2007	10.40	8.00	24	2			
K035	9/14/2007	5	7.3	15.1	1	15.9	627	
K035	6/30/2007	4.20	7.50	25	1			
K036	9/14/2007				1	17.4	396	
K036	6/30/2007	4.80	7.50	26	1			
K037	9/14/2007				1	14.7	373	
K037	6/30/2007	4.00	7.50	26	1			
K038	9/14/2007				1	49.4	605	
K039	9/14/2007				2	29.8	492	
K039	6/30/2007	3.80	7.50	25	2			
K039	6/30/2007	6.00	7.50	27	2			
K050	9/16/2007				1	20.9	365	
K050	6/30/2007				1			
K051	9/16/2007				1	13.2	403	
K051	6/30/2007				1			
K052	9/16/2007				1	14.6	449	
K053	9/15/2007				1	44.5	513	
K053	6/30/2007	7.80	8.00	23	3			
K053	7/28/2007	6.20	7.50	21	4			

* Shaded values indicate violations of water quality standards or guidelines.

Table 2.1 - 2007 Kentucky River Watershed Watch Physical/Chemical Field Data

Site ID#	Date	Dissolved Oxygen	pH	Temp (° C)	Flow Conditions	Chlorides	Conductivity	Turbidity (measured at UK)
K054	9/14/2007			20	2	54	699	
K054	6/30/2007		7.00		3			
K055	9/16/2007				2	208	1374	
K057	9/14/2007	8.2	8	19	2	15.6	509	
K057	6/30/2007	7.00	7.00	12	2			
K057	7/27/2007	8.60	6.50	12	2			
K062	5/19/2007				3	8.5	823	5.96
K062	9/15/2007				2			
K062	9/16/2007	7.4	6.5	12	2	18.6	1089	
K063	9/15/2007				2			
K063	9/16/2007				2	28.7	654	
K064	5/19/2007				3	8.6	576	2.52
K071	9/14/2007				2	38.2	695	
K081	6/28/2007	7.60	8.3	25.5	2		975	
K081	9/14/2007	9.25	8.24	22.4	2		1190	
K081	9/17/2007				3	29.7	1234	
K082	5/18/2007	8.68	7.96	16.3	3	11.7	696	2.27
K082	6/28/2007	6.0	7.7	24.6	2.5		943	
K082	9/16/2007	7.29	8.22	17.0	2		1145	
K082	9/17/2007	9.25	8.24	22.4	2	32.7	1194	
K083	5/18/2007	9.03	7.62	13.5	3	5.8	1132	3.31
K083	6/29/2007	6.2	8	22	2			
K083	9/15/2007	8.0	8.0	18	2			
K083	9/16/2007	7.29	8.22	17	2	3.6	>2,000	
K084	9/15/2007	8	8	18	2	12.6	519	
K084	6/30/2007	6.50	7.50	20.5	2			
K084	7/28/2007	8.00	7.50	17.7	4			
K085	9/17/2007	3.2	7.5	15.5	1	103	957	
K085	6/30/2007	5.30	7.70	21	3			
K085	7/28/2007	7.00	7.70	19	4			
K085	7/27/2007	6.00	7.70	21	3			
K090	6/29/2007	6.3	7.8	21	2			
K090	9/15/2007	7.5	7.5	14	2			
K090	9/16/2007	8.6	7.7	12	3	6.4	628	
K094	9/15/2007	7.5	7.5	14	2	16.3	289	
K094	6/30/2007	3.50	7.50	25	1			
K095	9/15/2007	7	7.5	18	2	31	314	
K095	6/30/2007	2.00	7.50	25	2			
K096	9/17/2007	7	7.5	19	2	4.1	546	
K096	6/30/2007	6.60	6.70	14	3			
K096	7/28/2007	5.00	5.67	14	4			
K096	7/27/2007	5.80	6.70	12	3			
K104	5/19/2007	9.2	8.05	12.3	3	16.7	1108	1.95
K104	6/28/2007	9.14	8.2	23.0	3		1303	
K104	9/15/2007	9.80	8.28	15.93	2		1578	
K104	9/16/2007	6	6.7	10	2	21.3	1661	
K105	6/28/2007	5.86	7.9	23.3	2		764	

Table 2.1 - 2007 Kentucky River Watershed Watch Physical/Chemical Field Data

Site ID#	Date	Dissolved Oxygen	pH	Temp (° C)	Flow Conditions	Chlorides	Conductivity	Turbidity (measured at UK)
K105	9/15/2007	6.37	7.51	15.48	2		689	
K105	9/16/2007	9.8	8.28	15.93		18.6	759	
K109	5/18/2007	8.2	7.7	12.5	2	10	258	2.15
K112	5/18/2007	9	7.5	14.5	3	9.4	786	2.49
K112	9/16/2007	7.0	8.5	15	2		990	
K112	9/17/2007	6.37	7.51	15.48	2	20.2	1103	
K113	5/19/2007	8.5	7.5	13	3	9.9	802	2.71
K114	5/18/2007	10.3	7.6	12	3	16.5	822	4.17
K114	6/28/2007	7.45	7.8	21.5	2		1007	
K114	9/16/2007	9.46	7.84	14.29	2		889	
K114	9/17/2007	7	8.5	15		40.6	1089	
K115	5/19/2007		5	10	3	11	631	1.26
K116	6/28/2007	8.83	8.3	22.1	2		842	
K116	9/15/2007	8.79	8.38	18.51	2		927	
K116	9/16/2007	9.46	7.84	14.29	2	18.5	984	
K120	9/24/2007		8.38	18.51	2	21.9	627	
K121	9/17/2007					37	638	
K122	9/17/2007					60.6	630	
K123	9/17/2007	6.8	7.5		2	104	1065	
K125	9/15/2007	4.5	7.5	17	1	23.6	635	
K125	6/30/2007	1.00	7.50		1			
K126	9/17/2007	9.2	7.7	12	3	93.5	902	
K126	6/30/2007	6.40	8.00	21	3			
K126	7/28/2007	7.40	7.70	20	4			
K126	7/27/2007	6.80	7.70	20	3			
K132	9/14/2007	8.4	7.5		2	48.6	530	
K132	6/30/2007	7.50	7.30	21	2			
K132	7/28/2007	7.20	7.50	19	4			
K135	9/15/2007	6.0	8.4	20	2		1350	
K135	9/16/2007	6	8.4	20	2	29.6	1421	
K141	5/18/2007	9.84	7.97	12.9		8.5	658	3.47
K141	6/28/2007	6.82	7.9	22.9	2		872	
K141	9/14/2007	9.65	8.38	20.8	2		870	
K141	9/15/2007	9.65	8.38	20.8	2	8.3	907	
K156	9/16/2007	6.4	8.5	22	3	17.3	770	
K156	6/29/2007	8.00	7.50	30	2			
K157	9/15/2007			29.4	4	17.5	767	
K157	6/29/2007			30	2			
K158	9/15/2007				4	14.2	435	
K158	6/29/2007				2			
K160	9/15/2007	4.6	7.5	22	3	40.5	638	
K160	6/29/2007	6.40	7.50	24	2		550	
K180	9/15/2007	6.5	7.5	17	2	30.2	626	
K180	6/30/2007	4.50	7.00	22.00	2			
K180	7/27/2007	5.00	7.50	21.5	2			
K183a	9/17/2007	7.4	7	16	2	29	608	
K183a	6/30/2007			18	2			

Table 2.1 - 2007 Kentucky River Watershed Watch Physical/Chemical Field Data

Site ID#	Date	Dissolved Oxygen	pH	Temp (° C)	Flow Conditions	Chlorides	Conductivity	Turbidity (measured at UK)
K184	9/17/2007	23?	8.75	19.5	2	68	694	
K184	6/30/2007			21	2			
K187	9/16/2007	9.62	7.89	21.91	1	17	347	
K187	6/29/2007	6.26	8.19	23.3	2		295.4	
K187	7/28/2007	8.16	7.28	20.99	4		226.2	
K188	9/17/2007	7.82	7.81	12.47	1	16.9	311	
K188	6/29/2007	6.20	8.01	22.25	2		316	
K188	7/28/2007	4.02	6.75	21.06	4		380.9	
K189	9/17/2007	2	7.05	12.92	1	22.6	463	
K189	6/29/2007	3.20	7.70	22.15	2		468	
K189	7/28/2007	7.71	7.12	20.1	4		209.3	
K191	9/16/2007	7.6	7.5	16	2	84.7	1046	
K191	6/30/2007	4.75	7.40	20	3			
K191	7/28/2007	6.60	7.30	20	4			
K198	9/16/2007	6	7.5	22	2	15.5	481	
K198	6/30/2007	10.00	8.50	24	2			
K199	9/16/2007	6.3	7.5	22	2	15.7	481	
K199	6/30/2007	10.00	8.50	24	2			
K200	9/16/2007	6	7.5	22	2	16.2	476	
K200	6/30/2007	10.00	8.50	24	2			
K201	9/16/2007	6.2	7.5	22	2	16	476	
K201	6/30/2007	10.00	8.50	24	2			
K208	9/15/2007	7.8	8	18	2	63.9	708	
K208	7/28/2007	5.60	7.25	22	3			
K209	9/16/2007	10.6	8.2	22	3	89.4	1151	
K209	6/30/2007	6.80	7.40	21	2			
K209	7/28/2007	6.70	7.50	20	4			
K213	6/29/2007	6.0	7.3	21	2			
K213	9/15/2007	6.7	7.3	14	2			
K213	9/16/2007	6.7	7.25	14	2	6.6	518	
K214	6/29/2007	6.4	8.0	21	2			
K214	9/15/2007	7.7	7.8	13	2			
K214	9/16/2007	7.7	7.75	13	2	4.5	889	
K215	6/29/2007	8.4	7.5	23	4			
K215	9/16/2007	9.8	7.5	14	2			
K215	9/17/2007	9.8	7.5	14	2	12.7	>2,000	
K216	6/29/2007	7.9	7.5	23	4			
K216	9/16/2007	9.0	7.5	15	2			
K216	9/17/2007	9	7.5	15	2	13.4	>2,000	
K224	9/17/2007	7.6	7.5	10	2	30.4	651	
K224	6/30/2007	8.10	7.00	14	3			
K224	7/28/2007	8.60	6.70	14	3			
K235	9/14/2007	7.2	7.5	21	1	11.5	425	
K235	6/30/2007	3.74	7.90	23.2	1			
K235	7/28/2007	4.70	7.80	22.2	2			
K236	6/29/2007			15	1			
K241	9/17/2007	1.5	7.5	14	1	7.8	554	

Table 2.1 - 2007 Kentucky River Watershed Watch Physical/Chemical Field Data

Site ID#	Date	Dissolved Oxygen	pH	Temp (° C)	Flow Conditions	Chlorides	Conductivity	Turbidity (measured at UK)
K241	6/29/2007				0			
K242	9/17/2007	4.9	7.5	13	1	11.8	449	
K242	6/29/2007	2.20	7.50	23	1		280	
K242	7/28/2007		7.50	22	4		190	
K243	9/17/2007	3.3	7.6	22	2	16	251	
K243	6/29/2007	3.60	7.50	23	2		270	
K244	6/29/2007				0			
K245	9/17/2007	4.1	7.6	15	1	7	452	
K245	6/29/2007	2.60	7.40	23	1		300	
K246	6/29/2007	4.20	7.40	22	3		310	
K246	7/28/2007	6.70	7.60	22	4		300	
K247	6/29/2007	6.40	7.60	22	2		470	
K247	7/28/2007		7.60	22	4		310	
K249	9/17/2007	3.2	7.2	12.47	1	41.2	588	
K249	6/29/2007	5.20	7.01	21.14	2		331	
K250	9/16/2007	8.2	7.72	19.99	1	15.6	340	
K250	6/29/2007	6.33	8.03	22.9	2		342	
K250	7/28/2007	8.33	7.26	21.06	4		239.6	
K251	9/16/2007	10.6	8.31	25.74	1	17.6	306	
K251	6/29/2007	8.57	8.46	22.9	2		277.2	
K251	7/28/2007	8.80	7.45	20.9	4		224.8	
K256	9/17/2007	7	7.5	19	1	40.1	761	
K256	6/30/2007	4.60	7.00	24	3			
K257	9/14/2007	7.6	7.5	16	2	31.7	590	
K257	6/30/2007	6.00	7.50	18	3			
K257	7/27/2007	6.50	7.50	18	2			
K258	9/15/2007	5.5	7.5	15	2	11	409	
K259	6/30/2007	2.50	7.25	22	1			
K264	9/16/2007	5.9	7.25	11.01	1	66.4	943	
K264	6/29/2007	1.97	7.81	20.83	1		655.1	
K264	7/28/2007	8.18	7.15	19.3	4		672.1	
K265	9/13/2007	3.7	7.2	14.6	1	50.9	619	
K266	6/30/2007	4.40	8.00	22	1			
K266	7/27/2007				1			
K267	9/15/2007			16	2	25	520	
K282	6/30/2007	9.20	8.75	27	0			
K288	6/28/2007	6.4	7.5	26	1		450	
K289	6/28/2007	7.2	7.5	25	2		740	
K291	6/29/2007	1.97	7.81	20.85	1		655.1	
K295	9/16/2007	8.5	8	22	2	14.5	434	
K295	6/30/2007	9.80	8.00	28	2		400	
K295	7/27/2007	10.20	8.00	26.5	2		440	
K297	9/14/2007				2	50.1	712	
K297	6/29/2007	10.00	8.50	20				
K297	7/28/2007				4			
K299	9/15/2007			21	1	92.1	784	
K299	6/30/2007	7.20	7.80	20	3			

Table 2.1 - 2007 Kentucky River Watershed Watch Physical/Chemical Field Data

Site ID#	Date	Dissolved Oxygen	pH	Temp (° C)	Flow Conditions	Chlorides	Conductivity	Turbidity (measured at UK)
K299	7/28/2007	7.20	7.50	20	3			
K300	9/15/2007			19	1	35.4	692	
K300	6/30/2007	8.60	8.00	18	3			
K300	7/28/2007	7.40	7.50	16	3			
K301	9/16/2007				2	20.6	452	
K301	6/30/2007				3			
K302	9/15/2007	6.8	7.5	16	3	222	1394	
K303	9/16/2007				2	75.3	1016	
K303	6/30/2007				3			
K305	9/15/2007	6.8	7.5	13	2	126	1012	
K305	6/30/2007	7.00	7.50	21	3		850	
K305	6/30/2007	7.00	7.50	21	3		850	
K305	7/28/2007	7.20	7.00	21	4		670	
K307	9/14/2007				2	53.2	673	
K307	6/30/2007				2			
K309	6/30/2007		7.00	15	2			
K310	9/15/2007	3.52	8.1	25.1	3	18.2	368	
K310	7/7/2007							
K310	6/30/2007		8.00	28				
K310	7/28/2007			20				
K316	9/17/2007	10	7.9	16	2	65.4	866	
K316	6/30/2007	10.00	7.80	22	3			
K316	7/27/2007	8.80	7.80	23	3			
K317	9/14/2007	5.8	7.5	19	2	116	804	
K317	6/30/2007	5.00	7.50	22	2		830	
K317	7/28/2007	7.00	8.00	21	4		860	
K318	9/13/2007	5.9	7.1	20.6	2	7.1	305	
K319	9/14/2007	6.6	7.8	18.2	1	58.1	522	
K320	9/14/2007	5.6	7.5	21	2	89.4	689	
K320	6/30/2007							
K320	6/30/2007	5.40	7.50	23	2		640	
K320	7/28/2007	5.20	7.50	22	2		590	
K321	9/13/2007	1.5	6.9	17.4	1	35.3	577	
K323	9/16/2007	7.8	7.5	17	2	28.8	575	
K323	6/29/2007	6.20	7.50	22	3			
K327	9/13/2007	2.4	7.1	16.6	1	48.2	522	
K328	9/13/2007	4.8	6.8	20.8	2	9.3	301	
K329	9/16/2007	8	8	15	3	20.4	602	
K329	6/29/2007	12.00	7.50	23	3		42	
K329	7/28/2007	9.00	7.50	20	3		430	
K330	9/14/2007	7.8	7.5	18	2	17.4	494	
K330	7/7/2007	7.10	7.50	18	2			
K330	6/30/2007	6.50	7.50	19	2			
K330	7/28/2007	7.60	7.50	20	3			
K336	9/17/2007	7.4	7.6	14	2	16.5	301	
K336	6/29/2007	6.40	7.60	22	2		270	
K336	7/28/2007		7.50	23	4		220	

Table 2.1 - 2007 Kentucky River Watershed Watch Physical/Chemical Field Data

Site ID#	Date	Dissolved Oxygen	pH	Temp (° C)	Flow Conditions	Chlorides	Conductivity	Turbidity (measured at UK)
K338	6/30/2007	3.20	7.50	23.5	2			
K339	6/30/2007	5.40	7.70	24	2			
K341	7/28/2007	10.00	7.00	22.5	5			
K350	9/15/2007	0	7.5	15	3	49	681	
K403	9/14/2007	8.8	8	18	2	16.2	512	
K403	7/7/2007	7.10	7.50	18	2			
K403	6/30/2007	7.00	7.50	19	2			
K403	7/28/2007	7.50			3			
K408	9/15/2007				1	60.8	1000	
K408	6/29/2007				0			
K409	9/16/2007	5.7	7.5	7.9	3	18.2	767	
K409	6/29/2007	7.20	7.50	35	2			
K418	9/14/2007	5.7	7	16	2	70.5	780	
K418	6/30/2007	5.8l	6.8l	16	2			
K418	7/28/2007	7.30	7.20	17	4			
K429	6/30/2007							
K434	6/30/2007	0.80	7.30	24	2			
K437	6/28/2003	7.30	7.3	20.2	2		737	
K437	9/16/2003	4.66	6.82	15.10	2		957	
K437	9/17/2007	4.66	6.82	15.1	2	56.1	1021	
K441	5/19/2007	16.7	6	10	3	6.6	1180	13.3
K445	5/18/2007		7.3	10	3	3.3	555	3.26
K445	6/29/2003		7.4	22	2		1030	
K446	5/18/2007		7.3	15	3	4.1	568	0.77
K446	6/29/2003	6.2	7.8	24	2		1060	
K447	6/28/2003	6.91	7.9	20.4	2		2186	
K447	9/16/2003	8.5	8.0	15	1		1990+	
K447	9/17/2007	8.5	8	15	1	39.6	>2,000	
K448	6/28/2003	6.58	7.8	20.8	2		401	
K451	6/29/2003		7.3	22	1.5		880	
K451	9/16/2003	5.2	7.8	12	2			
K451	9/17/2007	5.2	7.8	12	2	91.3	940	
K452	5/18/2007		7.8		3	11.2	779	2.29
K452	6/29/2003	6.7	7.8	23.5	2		983	
K454	5/19/2007	9	7	19	3	9.1	221	11.4
K454	9/15/2007	8	7.5	26	3	16.4	787	
K454	6/30/2007	8.20	7.50	29	2		730	
K456	9/15/2007	6.4	8	16	1	6.8	472	
K456	6/30/2007	9.80	7.50	23	2			
K458	6/29/2007	3.70	7.50	26	1			
K461	9/14/2007				3	36.9	402	
K461	6/30/2007				3			
K462	9/17/2007		8.3	14	2	27.8	590	
K462	6/29/2007							
K462	7/27/2007				3			
K463	9/17/2007		7.3	17	2	14.2	369	
K463	6/29/2007				3			

Table 2.1 - 2007 Kentucky River Watershed Watch Physical/Chemical Field Data

Site ID#	Date	Dissolved Oxygen	pH	Temp (° C)	Flow Conditions	Chlorides	Conductivity	Turbidity (measured at UK)
K463	7/27/2007				3			
K464	9/17/2007	2	7.5	19	1	126	856	
K464	6/30/2007		8.00	25	2		700	
K464	7/28/2007				3			
K465	9/15/2007	9.2	7.5	15	1	34.1	346	
K465	6/30/2007	7.00	7.50	22	3		580	
K466	9/17/2007	13.5	8.5	26	2	32.9	551	
K466	6/30/2007		7.50	25	2		370	
K467	9/17/2007	9.8	8.75	18	2	85	844	
K467	6/30/2007			18	2			
K468	9/17/2007		8.25	18	0	70.4	713	
K468	6/30/2007			20				
K469	9/17/2007	8.9	8	17	2	64.8	761	
K469	6/30/2007	7.20	8.50	20	2		750	
K470	9/15/2007	9.9	7.5	17	2	40.7	704	
K470	6/30/2007	8.70	7.50	23	3		590	
K471	9/15/2007	9.4	7.5	15	2	26.9	633	
K472	9/13/2007	5	7.8	18	1	146	1106	
K472	6/30/2007	6.20	7.00	21	3		1230	
K472	7/27/2007	7.00	7.50	23	3		730	
K473	5/18/2007		7.61	13.3	3	3.6	1266	0.5
K473	9/15/2003	8.40	7.81	15.40	3		1396	
K473	9/16/2007	8.4	7.91	15.4	3	3.6	1545	
K476	5/18/2007	9	7	13	3	11.8	1412	31.7
K476	6/28/2003	9.60	8.3	18.5	3		1660	
K476	9/16/2003	9.0	8.0	11	2		1590	
K476	9/17/2007	9	8	11	2	15.2	1638	
K477	5/18/2007		8.18	12.5	3	8.8	1072	2.76
K478	5/18/2007		8.18	12.2	3	9.3	1145	4.35
K478	9/15/2003	10.26	8.16	16.50			1317	
K478	9/16/2007	10.26	8.16	16.5		16.5	1396	
K479	5/19/2007	9.2	8.06	12	3	11	1203	6.15
K480	6/29/2003	6.4	7.3	21.5	1.5		760	
K480	9/16/2003	2.0	7.0	13	1			
K480	9/17/2007	2	7	13	1	34.5	782	
K481	5/18/2007	9	7	14	3	6.1		165
K481	6/29/2003	9.0	7.7	15.5	2		2321	
K481	9/16/2003	8.0	7.0	13	4		1990+	
K481	9/17/2007	8	7	13	4	10.4	>2,000	
K483	5/18/2007	10.3	7.3	14	3	3	1166	4.8
K483	9/15/2003	7.0	8.0	10	2			
K483	9/16/2007	7	8	10	2	4.4	>2,000	
K484	9/15/2003				2			
K484	9/16/2007				2	12.8	755	
K485	9/15/2003				2			
K485	9/16/2007				2	16.7	535	
K487	6/28/2003	8.01	7.7	21	1			

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Site ID#	Date	Dissolved Oxygen	pH	Temp (° C)	Flow Conditions	Chlorides	Conductivity	Turbidity (measured at UK)
K491	9/16/2003	8.8	7.5	16	2		910	
K491	9/17/2007	8.8	7.5	16	2	30	1067	
K492	5/19/2007		7.75	11.5	3	9.4	657	2.87
K492	9/16/2003	8.2	8.3	14	2		910	
K492	9/17/2007	8.2	8.25	14	2	9.1	896	
K500	6/29/2007	8.50	8.00		2			
K506	6/30/2007			23	3			
K507	6/30/2007			18	3			
K508	9/16/2007	9.4	8	20	1	66.5	898	
K508	6/30/2007				2			
K508	7/28/2007	8.00	8.00	20	4			
K509	6/30/2007	4.00		25	2			
K514	9/16/2007				0	27.8	936	
K514	6/29/2007	4.00	6.60	36.7	1			
K515	9/16/2007	9.5	7.8		2	72	1082	
K515	6/29/2007	6.50	7.00		2			
K517	6/30/2007	6.80	7.50	22	3		500	
K517	6/30/2007	6.80	7.50	22	3		500	
K517	7/28/2007	7.40	7.00	19	4		690	
K519	6/29/2003	8.5	7.5	21	2			
K519	9/16/2003		8.0	13	2			
K519	9/17/2007		8	13	2	47.4	1432	
K521	6/28/2003	8.38	8.1	24.5	2		510	
K522	6/28/2003	8.18	8.2	24.6	2		1077	
K523	5/19/2007	6.4	8	19	2			
K524	5/19/2007			22	3			
K524	9/15/2007	5.4	7.5	25	2	14.6	492	
K525	5/23/2007				1			
K526	5/21/2007	8.5	8	15	3			
K526	9/14/2007	7.1	7.8	20	2	46.2	740	
K528	9/14/2007	0.8	7	16	2	12	527	
K528	6/25/2006	3.30	7.50	27	3			
K528	6/28/2007	6.00	7.80	23	2			
K528	6/30/2007				1			
K528	6/30/2007	1.80	7.00	20	2			
K529	5/20/2007				2			
K529	9/14/2007	8	8.3	23	2	106	1035	
K529	6/30/2007	9.00	8.30	21	3			
K529	7/28/2007	7.70	8.00	22	4			
K530	9/16/2007	11.9	8.7	20	3	66.4	904	
K530	6/30/2007	6.10	7.90	22	2			
K533	5/21/2007	7.1	7.3	18	2			
K534	6/28/2003	7.34	7.9	22.3	2		783	
K534	9/16/2003	8.2	7.0	14	2			
K534	9/17/2007	8.2	7	14	2	48	911	
K535	5/18/2007	7	6.5	11	3	2	1443	1.1
K535	9/16/2003	8.0	8.0	13	1		950	

Table 2.1 - 2007 Kentucky River Watershed Watch Physical/Chemical Field Data

Site ID#	Date	Dissolved Oxygen	pH	Temp (° C)	Flow Conditions	Chlorides	Conductivity	Turbidity (measured at UK)
K535	9/17/2007	8	8	13	1	12.7	>2,000	
K536	5/18/2007	8.8	8	10	3	12.3	1763	2.86
K536	9/16/2003	8.2	8.0	12	2			
K536	9/17/2007	8.2	8	12	2	6.8	>2,000	
K539	6/29/2003	7.0	7.8	20	2			
K542	9/15/2003	7.15	2.88	15.11	3		2403	
K542	9/16/2007	7.15	2.88	15.11	3	3	>2,000	
K543	5/19/2007	8.8	7.5	12	3			
K543	9/15/2007	5.2	7.5	16	2	28.6	576	
K543	7/28/2007	5.80	7.50	20	2			
K548	5/19/2007	10	8.25	20	3			
K548	9/15/2007	8	7.5	24	2	9.4	314	
K548	7/7/2007	11.00	8.00	28	3			
K548	6/30/2007	11.00	8.25	27	2			
K548	7/28/2007	9.00	8.30	25.5	3			
K549	5/19/2007	11	8.25	20	3			
K549	9/15/2007	10	8	25	2	9.4	323	
K549	7/7/2007	12.00	7.75	28	3			
K549	6/30/2007	10.00	8.25	27				
K549	7/28/2007	11.50	8.25	26	3			
K550	5/18/2007	11	8.2	20	3			
K550	9/15/2007	8	8	25	2	9.3	318	
K550	7/7/2007	8.40	8.20	27	2			
K550	6/30/2007	7.40	8.20	26.5	2			
K550	7/28/2007	7.20	8.30	25.5	3			
K551	5/17/2007	10.9	7.5	18	3			
K551	9/13/2007	7.2	7.3	19	2	83.9	848	
K551	6/29/2007	6.2	7.3	20.5	2			
K551	7/28/2007	7.20	7.30	20	4			
K552	5/19/2007	9.5	7.4	16	3			
K552	9/15/2007		7.3	15	2	16.2	501	
K553	5/19/2007	8.8	7.2	15	2			
K553	9/15/2007		7.5	18	2	16.1	283	
K554	9/16/2007		7.5	18	2	16.3	283	
K555	5/19/2007	10	8	20	4			
K555	9/15/2007	8.8	8	25	2	9.3	316	
K555	7/7/2007	10.30	7.50	27	3			
K555	6/30/2007	10.50	7.70	27.5	3			
K556	5/21/2007	17.4	8	19	3			
K556	9/15/2007	12.4	8		2	48.3	824	
K556	7/6/2007	6.60	7.50	22	5		210	
K556	6/29/2007	6.10	7.50	25	2		410	
K556	7/27/2007	6.40	8.00	21	3			
K557	5/19/2007	8.5	7.5	20.5	3			
K558	5/19/2007	9.5	8	19	3			
K559	5/19/2007	9	8.5	19				
K560	5/18/2007	7.5	8	19	3			

Table 2.1 - 2007 Kentucky River Watershed Watch Physical/Chemical Field Data

Site ID#	Date	Dissolved Oxygen	pH	Temp (° C)	Flow Conditions	Chlorides	Conductivity	Turbidity (measured at UK)
K561	5/19/2007	9.5	8	10	3			
K561	6/30/2007	8.20	8.00	18	2			
K562	5/19/2007	13.7	7.2	11	2	2.8	158	5.42
K562	9/15/2007	8.2	8	25	2	9.4	316	
K562	7/7/2007	7.80	7.50	28	3			
K562	6/30/2007	7.90	8.00	27	1			
K562	7/28/2007	7.60	8.00	26	1			
K563	5/19/2007	13.5	7.8	11	3	4.2	1666	2.44
K564	6/29/2007	9.60	8.70	25	3			
K564	7/27/2007				3			
K565	5/19/2007	7	4.4	12	3	4.1	745	9.92
K565	9/15/2003	7.41	4.20	13.45	3		990	
K565	9/16/2007	7.41	4.2	13.45	3	4.7	1159	
K565	7/28/2007	10.00	8.00	27	3			
K566	9/16/2003	6.6	7.5	13	2			
K566	9/17/2007	6.6	7.5	13	2	16.1	1061	
K567	6/29/2003	8.6	7.5	20	2			
K567	9/16/2003	8.2	7.5	13	2			
K567	9/17/2007	8.2	7.5	13	2	10.7	1158	
K568	6/28/2003	8.73	8.1	20.4	2		619	
K568	9/16/2003	8.56	8.01	17.91	2		695	
K568	9/17/2007	8.56	8.01	17.91	2	108	738	
K569	6/28/2003	8.69	8.3	20.4	2		986	
K569	9/15/2003	9.30	8.45	15.20	2		1067	
K569	9/16/2007	9.3	8.45	15.2	2	40.8	1127	
K575	9/15/2003	9.21	8.10	17.31			1434	
K575	9/16/2007	9.21	8.1	17.31		13.3	1503	
K576	9/15/2003	10.48	8.32	17.10			1217	
K576	9/16/2007	10.48	8.32	17.1		7.7	1276	
K577	9/16/2003		6.5	14	2			
K577	9/17/2007		6.5	14	2	11.6	1319	
K578	9/15/2003	6.25	4.41	12.89	2		2334	
K578	9/16/2007	6.25	4.41	12.89	2	6.5	>2,000	
K579	9/15/2003	9.50	5.60	13.42	3		2146	
K579	9/16/2007	9.5	5.6	13.42	3	15.8	>2,000	
K580	9/15/2003	7.69	3.69	14.90	2		1407	
K580	9/16/2007	7.69	3.69	14.9	2	13	1504	
K581	9/13/2007	5	8.5	23	1	13.3	240	
K581	6/30/2007	1.80	1.50	24	3		250	
K582	9/15/2007		8		2	35.7	796	
K582	6/30/2007		7.50		3			
K582	7/28/2007		7.50		4			
K583	9/14/2007	7.8	7.5	21		106	557	
K584	9/15/2003		8.09	14.80			1235	
K584	9/16/2007		8.09	14.8		2.5	1280	

Table 2.2 - 2007 Kentucky River Watershed Watch Herbicide Sampling Results

Sample ID#	Collection Date	Stream Name	Triazines (ug/L)*	Metolachlor (ug/L)*
Water Quality Standard			3.0 for DWS 350 for acute AL 12 for chronic AL	N/A
K005	5/21/2007	Cane Run	0.03	0.06
K523	5/19/2007	trib to Hickman	0.03	0.04
K524	5/19/2007	KY River	0.03	0.04
K525	5/23/2007	Philips creek	0.03	0.04
K526	5/21/2007	trib to South Elkhorn	0.03	0.04
K529	5/20/2007	Elkhorn Creek	0.03	0.04
K533	5/21/2007	Benson Creek	0.03	0.04
K535	5/18/2007	Sturgill Branch	0.03	0.04
K536	5/18/2007	Ran Day Hollow	0.03	0.04
K543	5/19/2007	Clarks Run	0.03	0.04
K548	5/19/2007	Cane Run	0.03	0.04
K549	5/19/2007	Curds Creek	0.03	0.04
K550	5/18/2007	Herrington Lake	0.03	0.04
K551	5/17/2007	unnamed trib to South Elkhorn	0.03	0.06
K552	5/19/2007	Silver Creek	0.03	0.04
K553	5/19/2007	Brushy Creek	0.03	0.04
K555	5/19/2007	Rocky Fork	0.03	0.06
K556	5/21/2007	Cane Run	0.03	0.04
K557	5/19/2007	Herrington Lake	0.03	0.06
K558	5/19/2007	Mock's Creek	0.03	0.08
K559	5/19/2007	Tanyard Branch	0.03	0.04
K560	5/18/2007	Dix River	0.03	0.04
K561	5/19/2007	South Rocky Fork	0.03	0.04

*The laboratory's minimum detection limit (MDL) for triazines was 0.06 ug/L. The MDL for Metolachlor was 0.08 ug/L. When no herbicide was detected, a value of half of the laboratory's MDL is provided as the sampling result. Thus, a Triazines result of 0.03 and a Metolachlor result of 0.04 indicates that the herbicide level was undetectable by the laboratory's equipment.

**Table 2.3 - 2007 Kentucky River Watershed Watch Synoptic Pathogen Data
(in numerical order by Sample ID #)**

SAMPLE ID#	Date	Stream	E. coli (cfu/100 ml)	Fecal Coli-form (cfu/100 ml)
K002	6/30/2007	Lees Branch	3870	
K005	6/29/2007	Cane Run Creek	1040	
K014	6/30/2007	Clarks Run	878	
K016	6/29/2007	N. Fork Elkhorn	173	
K017	6/29/2007	Sandlick Creek		690
K026	6/29/2007	S. Elkhorn	3260	
K028	6/29/2007	Clear Creek	504	
K033	6/29/2007	UT S. Elkhorn	4880	
K035	6/30/2007	Sugar Cr.	148	
K036	6/30/2007	Paint Lick Cr	110	
K037	6/30/2007	Paint Lick Cr	131	
K038	6/30/2007	Silver CR	31	
K039	6/30/2007	Silver CR	216	
K050	6/30/2007	Benson Cr	<10	
K051	6/30/2007	Benson Cr	20	
K053	6/30/2007	W. Hickman Cr.	605.00	
K054	6/30/2007	McConnell Springs	1960	
K057	6/30/2007	Spring Station	5800	
K081	6/29/2007	North Fork Kentucky River		40
K082	6/29/2007	North Fork Kentucky River		2400
K083	6/29/2007	Lotts Creek		450
K084	6/30/2007	Trib. A, S. Elkhorn	670	
K085	6/30/2007	Glens Creek	3650	
K090	6/30/2007	Quicksand Cr		200
K094	6/30/2007	Lower Red River	185	
K095	6/30/2007	Red River	197	
K096	6/30/2007	Graddy Spring	2100	
K104	6/29/2007	Rockhouse Cr		500
K105	6/29/2007	Blair Branch		330
K114	6/29/2007	Colley Creek		220
K116	6/29/2007	Blair Branch		1200
K125	6/30/2007	Clarks Run	86	
K126	6/30/2007	Glens Creek	20	
K132	6/30/2007	West Hickman	627	
K141	6/29/2007	Carr Fork, Right Fork		540
K156	6/29/2007	Four Mile Cr	10	
K157	6/29/2007	KY River	31	
K158	6/29/2007	Howards Cr	120	
K160	6/29/2007	N. Elkhorn		
K180	6/30/2007	Clarks Run	1520	
K183a	6/30/2007	Holly Spring	341	
K184	6/30/2007	Wolfe Run	987	
K187	6/29/2007	Muddy Creek Tributary	959	
K188	6/29/2007	Muddy Creek Tributary	933	
K189	6/29/2007	Muddy Creek Tributary	910	
K191	6/30/2007	Otter Creek	910	

**Table 2.3 - 2007 Kentucky River Watershed Watch Synoptic Pathogen Data
(in numerical order by Sample ID #)**

SAMPLE ID#	Date	Stream	E. coli (cfu/100 ml)	Fecal Coli-form (cfu/100 ml)
K199	6/30/2007	KY River	31	
K201	6/30/2007	KY River	63	
K209	6/30/2007	Tates Creek	288	
K213	6/30/2007	Quicksand Cr		170
K214	6/30/2007	Quicksand Cr South Fork		460
K215	6/30/2007	Lost Cr		880
K216	6/30/2007	Troublesome Cr		1100
K224	6/30/2007	Spring	75	
K235	6/30/2007	Knoblick Creek	1860	
K236	6/29/2007	Little Benson Creek	249	
K241	6/29/2007	Viney Fork - South		
K242	6/29/2007	Viney North	1010	
K243	6/29/2007	Vega	10	
K244	6/29/2007	Muddy Creek Tributary		
K245	6/29/2007	Muddy Creek Tributary	<10	
K246	6/29/2007	Muddy Creek Tributary	5250	
K247	6/29/2007	Muddy Creek Tributary	4880	
K249	6/29/2007	Muddy Creek Tributary	121	
K250	6/29/2007	Muddy Creek Tributary	373	
K251	6/29/2007	Muddy Creek Tributary	355	
K256	6/30/2007	Lanes Run	110	
K257	6/30/2007	North Elkhorn	1620	
K259	6/30/2007	Twin Creek	135	
K264	6/29/2007	Unnamed Trib.	7700	
K266	6/30/2007	Jouett Creek	3450	
K282	6/30/2007	Cane Run	20	
K288	6/29/2007	Troublesome Cr Left Fork		7000
K289	6/29/2007	Troublesome Cr		>24000
K291	6/29/2007	Unnamed Trib.	7700	
K295	6/30/2007	KY River	327	
K297	6/29/2007	Penitentiary Branch	>24200	
K299	6/30/2007	Hickman	189	
K300	6/30/2007	Hickman	1670	
K301	6/30/2007	Hickman	548	
K303	6/30/2007	West Hickman	275	
K305	6/30/2007	Vaughns Branch	4350	
K305	6/30/2007	Vaughns Branch	3870	
K307	6/30/2007	Wolf Run	2610	
K309	6/30/2007	McKecknie Creek	5170	
K310	6/30/2007	Herrington Lake	30	
K316	6/30/2007	North Elkhorn	2380	
K317	6/30/2007	Clarks Creek	420	
K320	6/30/2007	Clarks Creek	703	
K323	6/29/2007	S. Elkhorn Creek	74	
K329	6/29/2007	Shannons Run	1790	
K330	6/30/2007	White Oak	405	
K336	6/29/2007	Muddy Creek Tributary	556	
K338	6/30/2007	Dreaming Creek	857	

**Table 2.3 - 2007 Kentucky River Watershed Watch Synoptic Pathogen Data
(in numerical order by Sample ID #)**

SAMPLE ID#	Date	Stream	E. coli (cfu/100 ml)	Fecal Coli-form (cfu/100 ml)
K403	6/30/2007	White Oak	201.00	
K408	6/29/2007	KY River		
K409	6/29/2007	KY River	135	
K418	6/30/2007	Trib. To West Hickman	7270	
K429	6/30/2007	Tussey Lake	41	
K434	6/30/2007	Douglas Pond	556	
K437	6/29/2007	Little Cowan		88
K445	6/30/2007	Kingdom Come Cr		680
K446	6/30/2007	North Fork Kentucky River		220
K447	6/29/2007	Big Cowan		410
K448	6/29/2007	Big Cowan		2500
K451	6/30/2007	Little Cowan		500
K452	6/30/2007	North Fork Kentucky River		510
K454	6/30/2007	Red River	<10	
K456	6/30/2007	Marble Creek	2360	
K458	6/29/2007	Little Eagle Creek	259	
K461	6/30/2007	Cardinal Run	1660	
K462	6/29/2007	Cardinal Run	12000	
K463	6/29/2007	Cardinal Run	1730	
K464	6/30/2007	Wolf Run	4880	
K465	6/30/2007	Wolf Run	1470	
K466	6/30/2007	Wolf Run	238	
K467	6/30/2007	Springs Branch	480	
K468	6/30/2007	Wolfe Run	2100	
K469	6/30/2007	Beacon Hill Culvert	464	
K470	6/30/2007	Vaughns Br	1430	
K472	6/30/2007	Vaughns Br	663	
K476	6/29/2007	Dry Fork		180
K480	6/30/2007	Big Cowan		180
K481	6/30/2007	Little Dry Fork		920
K487	6/29/2007	Laurel Creek		150
K500	6/29/2007	Cedar Creek	10	
K506	6/30/2007	North Elkhorn	305	
K507	6/30/2007	Royal Springs	2280	
K508	6/30/2007	Calloway Creek	1770	
K509	6/30/2007	Silver Creek	160	
K514	6/29/2007	Trib. To Tates Creek	341	
K515	6/29/2007	Tates Creek	441	
K517	6/30/2007	Spring Branch	41	
K517	6/30/2007	Spring Branch	727	
K519	6/30/2007	Pert Cr		150
K521	6/29/2007	Line Fork		80
K522	6/29/2007	North Fork Kentucky River		64
K526	6/28/2007	trib to South Elkhorn	2280	
K528	6/30/2007	Benson Cr	96	
K528	6/30/2007	Lees Branch	1,620	
K529	6/30/2007	Elkhorn Creek	546	
K530	6/30/2007	Tates Creek	20	

**Table 2.3 - 2007 Kentucky River Watershed Watch Synoptic Pathogen Data
(in numerical order by Sample ID #)**

SAMPLE ID#	Date	Stream	E. coli (cfu/100 ml)	Fecal Coli-form (cfu/100 ml)
K539	6/30/2007	Kings Creek		72
K548	6/30/2007	Cane Run	80	
K549	6/30/2007	Curds Creek	<10	
K550	6/30/2007	Herrington Lake	20	
K551	6/29/2007	Unnamed trib to S. Elkhorn	1470	
K555	6/30/2007	Rocky Fork	576	
K556	6/29/2007	Cane Run	6130	
K561	6/30/2007	South Rocky Fork	399	
K562	6/30/2007	Rock Fork	10	
K564	6/29/2007	Unnamed Pond	4880	
K567	6/30/2007	North Fork Kentucky River		320
K568	6/29/2007	Little Cowan		330
K569	6/29/2007	Blair Branch		220
K581	6/30/2007	Gluck Storm water Pond	<10	
K582	6/30/2007	Cardinal Run	762	

**Table 2.4a - 2007 Kentucky River Watershed Watch Synoptic Pathogen Data
(in order by descending E. coli concentrations)**

Sample ID#	Date	Stream	E. coli (cfu/100ml)
Primary Contact Water Quality Standard			240
K297	6/29/2007	Penitentiary Branch	>24200
K462	6/29/2007	Cardinal Run	12000
K264	6/29/2007	Unnamed Trib.	7700
K291	6/29/2007	Unnamed Trib.	7700
K418	6/30/2007	Trib. To West Hickman	7270
K556	6/29/2007	Cane Run	6130
K057	6/30/2007	Spring Station	5800
K246	6/29/2007	Muddy Creek Tributary	5250
K309	6/30/2007	McKecknie Creek	5170
K033	6/29/2007	UT S. Elkhorn	4880
K247	6/29/2007	Muddy Creek Tributary	4880
K464	6/30/2007	Wolf Run	4880
K564	6/29/2007	Unnamed Pond	4880
K305	6/30/2007	Vaughns Branch	4350
K002	6/30/2007	Lees BR	3870
K305	6/30/2007	Vaughns Branch	3870
K085	6/30/2007	Glens Creek	3650
K266	6/30/2007	Jouett Creek	3450
K026	6/29/2007	S. Elkhorn	3260
K307	6/30/2007	Wolf Run	2610
K316	6/30/2007	North Elkhorn	2380
K456	6/30/2007	Marble Creek	2360
K507	6/30/2007	Royal Springs	2280
K528	6/28/2007	trib to South Elkhorn	2280
K096	6/30/2007	Graddy Spring	2100
K468	6/30/2007	Wolfe Run	2100
K054	6/30/2007	McConnell Springs	1960
K235	6/30/2007	Knoblick Creek	1860
K329	6/29/2007	Shannons Run	1790
K508	6/30/2007	Calloway Creek	1770
K463	6/29/2007	Cardinal Run	1730
K300	6/30/2007	Hickman	1670
K461	6/30/2007	Cardinal Run	1660
K257	6/30/2007	North Elkhorn	1620
K180	6/30/2007	Clarks Run	1520
K465	6/30/2007	Wolf Run	1470
K551	6/29/2007	Unnamed trib to S. Elkhorn	1470
K470	6/30/2007	Vaughns Br	1430
K339	6/30/2007	Otter Creek	1270
K005	6/29/2007	Cane Run Creek	1040
K242	6/29/2007	Viney North	1010
K184	6/30/2007	Wolfe Run	987
K187	6/29/2007	Muddy Creek Tributary	959
K188	6/29/2007	Muddy Creek Tributary	933

**Table 2.4a - 2007 Kentucky River Watershed Watch Synoptic Pathogen Data
(in order by descending E. coli concentrations)**

Sample ID#	Date	Stream	E. coli (cfu/100ml)
K189	6/29/2007	Muddy Creek Tributary	910
K191	6/30/2007	Otter Creek	910
K014	6/30/2007	Clarks Run	878
K338	6/30/2007	Dreaming Creek	857
K582	6/30/2007	Cardinal Run	762
K517	6/30/2007	Spring Branch	727
K320	6/30/2007	Clarks Creek	703
K084	6/30/2007	Trib. A, S. Elkhorn	670
K472	6/30/2007	Vaughns Br	663
K132	6/30/2007	West Hickman	627
K053	6/30/2007	W. Hickman Cr.	605
K555	6/30/2007	Rocky Fork	576
K336	6/29/2007	Muddy Creek Tributary	556
K434	6/30/2007	Douglas Pond	556
K301	6/30/2007	Hickman	548
K529	6/30/2007	Elkhorn Creek	546
K028	6/29/2007	Clear Creek	504
K467	6/30/2007	Springs Branch	480
K469	6/30/2007	Beacon Hill Culvert	464
K515	6/29/2007	Tates Creek	441
K317	6/30/2007	Clarks Creek	420
K330	6/30/2007	White Oak	405
K561	6/30/2007	South Rocky Fork	399
K250	6/29/2007	Muddy Creek Tributary	373
K251	6/29/2007	Muddy Creek Tributary	355
K183a	6/30/2007	Holly Spring	341
K514	6/29/2007	Trib. To Tates Creek	341
K295	6/30/2007	KY River	327
K506	6/30/2007	North Elkhorn	305
K209	6/30/2007	Tates Creek	288
K303	6/30/2007	West Hickman	275
K458	6/29/2007	Little Eagle Creek	259
K236	6/29/2007	Little Benson Creek	249
K466	6/30/2007	Wolf Run	238
K039	6/30/2007	Silver CR	216
K403	6/30/2007	White Oak	201
K095	6/30/2007	Red River	197
K299	6/30/2007	Hickman	189
K094	6/30/2007	Lower Red River	185
K016	6/29/2007	N. Fork Elkhorn	173
K509	6/30/2007	Silver Creek	160
K035	6/30/2007	Sugar Cr.	148
K259	6/30/2007	Twin Creek	135
K409	6/29/2007	KY River	135
K037	6/30/2007	Paint Lick Cr	131
K249	6/29/2007	Muddy Creek Tributary	121
K528	6/30/2007	Lees BR	121

**Table 2.4a - 2007 Kentucky River Watershed Watch Synoptic Pathogen Data
(in order by descending E. coli concentrations)**

Sample ID#	Date	Stream	E. coli (cfu/100ml)
K158	6/29/2007	Howards Cr	120
K036	6/30/2007	Paint Lick Cr	110
K256	6/30/2007	Lanes Run	110
K528	6/30/2007	Benson Cr	96
K125	6/30/2007	Clarks Run	86
K548	6/30/2007	Cane Run	80
K224	6/30/2007	Spring	75
K323	6/29/2007	S. Elkhorn Creek	74
K201	6/30/2007	KY River	63
K429	6/30/2007	Tussey Lake	41
K517	6/30/2007	Spring Branch	41
K038	6/30/2007	Silver CR	31
K157	6/29/2007	KY River	31
K199	6/30/2007	KY River	31
K310	6/30/2007	Herrington Lake	30
K051	6/30/2007	Benson Cr	20
K126	6/30/2007	Glens Creek	20
K282	6/30/2007	Cane Run	20
K530	6/30/2007	Tates Creek	20
K550	6/30/2007	Herrington Lake	20
K156	6/29/2007	Four Mile Cr	10
K243	6/29/2007	Vega	10
K500	6/29/2007	Cedar Creek	10
K562	6/30/2007	Rock Fork	10
K050	6/30/2007	Benson Cr	<10
K198	6/30/2007	KY River	<10
K245	6/29/2007	Muddy Creek Tributary	<10
K454	6/30/2007	Red River	<10
K549	6/30/2007	Curds Creek	<10
K581	6/30/2007	Gluck Storm water Pond	<10

**Table 2.4b - 2007 Kentucky River Watershed Watch Synoptic Pathogen Data
(in order by descending fecal concentrations)**

SAMPLE ID#	Date	Stream	Fecal Coliform (cfu/100 ml)
Primary Contact Water Quality Standard			400
K289	6/29/2007	Troublesome Cr	>24000
K288	6/29/2007	Troublesome Cr Left Fork	7000
K448	6/29/2007	Big Cowan	2500
K082	6/29/2007	North Fork Kentucky River	2400
K116	6/29/2007	Blair Branch	1200
K534	6/29/2007	Big Cowan	1200
K216	6/30/2007	Troublesome Cr	1100
K481	6/30/2007	Little Dry Fork	920
K215	6/30/2007	Lost Cr	880
K017	6/29/2007	Sandlick Creek	690
K445	6/30/2007	Kingdom Come Cr	680
K141	6/29/2007	Carr Fork, Right Fork	540
K452	6/30/2007	North Fork Kentucky River	510
K104	6/29/2007	Rockhouse Cr	500
K451	6/30/2007	Little Cowan	500
K214	6/30/2007	Quicksand Cr South Fork	460
K083	6/30/2007	Lotts Creek	450
K447	6/29/2007	Big Cowan	410
K105	6/29/2007	Blair Branch	330
K568	6/29/2007	Little Cowan	330
K567	6/30/2007	North Fork Kentucky River	320
K114	6/29/2007	Colley Creek	220
K446	6/30/2007	North Fork Kentucky River	220
K569	6/29/2007	Blair Branch	220
K090	6/30/2007	Quicksand Cr	200
K476	6/29/2007	Dry Fork	180
K480	6/30/2007	Big Cowan	180
K213	6/30/2007	Quicksand Cr	170
K487	6/29/2007	Laurel Creek	150
K519	6/30/2007	Pert Cr	150
K437	6/29/2007	Little Cowan	88
K521	6/29/2007	Line Fork	80
K539	6/30/2007	Kings Creek	72
K522	6/29/2007	North Fork Kentucky River	64
K081	6/29/2007	North Fork Kentucky River	40

Table 2.5 - 2007 Kentucky River Watershed Watch Follow-Up Pathogen Data

SAM- PLE ID	Date	Stream Name	Fecal coliform	E-coli	Atypical coli- forms	Total Coliforms	AC/TC	Pathogen Age/ Source
K002	7/27/2007	Lee's Branch		355				
K005	7/27/2007	Cane Run Creek		417	1200	5100	4.3	Moderate, indirect ag
K012	7/27/2007	Craig Cr		1860				
K013	7/27/2007	Grier's Creek		272				
K014	7/28/2007	Clarks Run		4350				
K017	7/27/2007	SANDLICK CR	1800					
K026	7/27/2007	S. Elkhorn		256				
K028	7/27/2007	Clear Creek		231				
K033	7/27/2007	UT S. Elkhorn		457				
K046	7/27/2007	Springs Br		7700				
K053	7/28/2007	W. Hickman Cr.		6130				
K054	7/30/2007	McConnell Springs		512	2300	3300	1.4	Raw, human
K057	7/27/2007	Spring Stn		161				
K084	7/28/2007	A. South Elkhorn		9800				
K085	7/27/2007	Glen's Cr		2100				
K085	7/28/2007	Glen's Cr		>24200				
K096	7/27/2007	Graddy Spring		86				
K096	7/28/2007	Graddy Spring		279				
K104	7/27/2007	ROCKHOUSE CR	820					
K105	7/27/2007	BLAIR BR	1090					
K114	7/27/2007	COLLEY CR	2300					
K116	7/27/2007	BLAIR BR	6900					
K126	7/27/2007	Glen's Cr		576	3225	17000	5.3	Moderate, indirect ag
K126	7/28/2007	Glen's Cr		19900				
K132	7/28/2007	W. Hickman Cr.		4350				
K135	7/28/2007	MACES CR	2700					
K180	7/27/2007	Clarks Run		657				
K183a	7/27/2007	Holly Spring		185				
K184	7/27/2007	Wolf Run		14100				
K184	7/30/2007	Wolf Run		880	1100	8500	7.7	Moderate, indirect ag
K187	7/28/2007	Muddy Creek		>24200				
K188	7/28/2007	Muddy Creek		10500				
K189	7/28/2007	Muddy Creek		7270				
K190	7/27/2007	Brushy Creek		6490				
K191	7/28/2007	Otter Creek		13000				
K192	7/27/2007	Black Spring		7700				
K208	7/28/2007	Silver Creek		95				
K209	7/28/2007	Tates Creek		1120				
K214	7/28/2007	QUICKSAND-S. FK	1600					
K215	7/28/2007	LOST CR	8800					
K216	7/28/2007	TROUBLESOME CR	3800					
K224	7/28/2007	Spring		7270	<1000	22000		
K235	7/28/2007	Knoblick Creek		703				
K242	7/28/2007	Viney North		12300				
K246	7/28/2007	Muddy Creek		2010				
K247	7/28/2007	Muddy Creek		6020				
K250	7/28/2007	Muddy Creek		>24200				

Table 2.5 - 2007 Kentucky River Watershed Watch Follow-Up Pathogen Data

SAM- PLE ID	Date	Stream Name	Fecal coliform	E-coli	Atypical coli- forms	Total Coliforms	AC/TC	Pathogen Age/ Source
K251	7/28/2007	Muddy Creek		11200				
K257	7/27/2007	N. Elkhorn		538				
K264	7/28/2007	Unnamed Trib.		11200				
K266	7/27/2007	Jouett Creek		266				
K288	7/27/2007	TROUBLESOME-L FK	2900					
K289	7/27/2007	TROUBLESOME CR	1300					
K295	7/27/2007	KY River		<10				
K297	7/28/2007	Penitentiary Branch		4110				
K299	7/28/2007	Hickman		4880				
K300	7/28/2007	Hickman		4610				
K305	7/28/2007	Vaughns Br		7270				
K307	7/30/2007	Wolf Run		441	1900	4300	2.3	Fresh, human or ag
K310	7/28/2007	Herrington Lake		41				
K316	7/27/2007	N. Elkhorn		785				
K317	7/28/2007	Clark's Creek		4610				
K320	7/28/2007	Clark's Creek		2760				
K329	7/28/2007	Shannons Run		262				
K330	7/28/2007	White Oak		1480	800	18000	22.5	Aged, human or ag
K336	7/28/2007	Muddy Creek		4880				
K341	7/28/2007	Elkhorn Creek		2250				
K403	7/28/2007	White Oak		1180	1733	11700	6.8	Moderate, indirect ag
K418	7/28/2007	Trib. To W. Hickman		3080				
K437	7/27/2007	LITTLE COWAN	1600					
K445	7/27/2007	KINGDOM COME CR	810					
K447	7/27/2007	BIG COWAN	890					
K448	7/27/2007	BIG COWAN	3400					
K451	7/27/2007	LITTLE COWAN	1240					
K452	7/27/2007	NORTH FK- KY RIVER	1280					
K461	7/30/2007	Cardinal Run		813	1200	2000	1.7	Raw, human
K462	7/27/2007	Cardinal Run		4380				
K463	7/27/2007	Cardinal Run		1240				
K464	7/28/2007	Wolf Run		4110				
K465	7/30/2007	Wolf Run		677	1300	3000	2.3	Fresh, human or ag
K468	7/27/2007	Wolf Run		>24200				
K469	7/27/2007	Beacon Hill Culvert		4880				
K470	7/30/2007	Vaughns Br		496	2100	57000	27.1	Aged, human or ag
K472	7/27/2007	Vaughns Br		>24200				
K476	7/27/2007	DRY FK	630					
K480	7/27/2007	BIG COWAN	1020					
K481	7/27/2007	LITTLE DRY FK	140					
K508	7/28/2007	Calloway Creek		6870				
K517	7/28/2007	Spring Branch		7700				
K529	7/28/2007	Elkhorn Creek		11200				
K534	7/27/2007	BIG COWAN	3600					

Table 2.5 - 2007 Kentucky River Watershed Watch Follow-Up Pathogen Data

SAM- PLE ID	Date	Stream Name	Fecal coliform	E-coli	Atypical coli- forms	Total Coliforms	AC/TC	Pathogen Age/ Source
K543	7/28/2007	Clarks Run		6490				
K548	7/28/2007	Cane Run		<10	680	2233	3.3	Fresh, human or ag
K549	7/28/2007	Curds Creek		<10	200	1017	5.1	Moderate, indirect ag
K550	7/28/2007	Herrington Lake		<10	<50	850		
K551	7/28/2007	S. Elkhorn		10500				
K556	7/27/2007	Cane Run		1420	3200	10000	3.1	Fresh, human or ag
K562	7/28/2007	Rocky Fork		<10	625	1400	2.2	Fresh, human or ag
K564	7/27/2007	Unnamed Pond		161				
K565	7/28/2007	Rocky Fork		<10	700	2050	2.9	Fresh, human or ag
K568	7/27/2007	LITTLE COWAN	970					
K569	7/27/2007	BLAIR BR	3800					
K572	7/27/2007	MIDDLE FK -KY RIVER	690					
K573	7/27/2007	MIDDLE FK -KY RIVER	1800					
K582	7/28/2007	Cardinal Run		1440				

Table 2.7 2007 Kentucky River Watershed Watch Chemical Sampling Results

Sample ID #	Collection Date	Alkalinity (mg/L as CaCO ₃)	Chloride (mg/L)	Conductivity (uS/cm)	Total Suspended Solids (mg/L)
Water Quality Standard		>20 for AL*	250 for DWS* 1,200 for acute AL 600 for chronic AL	800 for Ohio River	N/A
Minimum Detection Limit*		3 mg/L	1.0 mg/L	1 uS/cm	3 mg/L
K002	14-Sep-07	220	13.8	571	19
K005	14-Sep-07	204	45	595	7
K012	17-Sep-07	232	14.4	526	9
K013	17-Sep-07	249	60.5	762	6
K014	14-Sep-07	159	87.9	857	9
K016	15-Sep-07	186	50.5	641	8
K017	16-Sep-07	172	14	1348	3
K026	25-Sep-07	142	109	1084	14
K029	15-Sep-07	245	14.9	532	4
K030	13-Sep-07	141	107	874	28
K035	14-Sep-07	125	15.9	627	8
K036	14-Sep-07	112	17.4	396	21
K037	14-Sep-07	140	14.7	373	33
K038	14-Sep-07	175	49.4	605	8
K039	14-Sep-07	123	29.8	492	38
K050	16-Sep-07	99	20.9	365	5
K051	16-Sep-07	141	13.2	403	12
K052	16-Sep-07	163	14.6	449	16
K053	15-Sep-07	150	44.5	513	Less Than MDL
K054	14-Sep-07	218	54	699	Less Than MDL
K055	16-Sep-07	256	208	1374	Less Than MDL
K057	14-Sep-07	226	15.6	509	4
K062	16-Sep-07	249	18.6	1089	5
K063	16-Sep-07	162	28.7	654	Less Than MDL
K071	14-Sep-07	252	38.2	695	Less Than MDL
K081	17-Sep-07	199	29.7	1234	18
K082	17-Sep-07	182	32.7	1194	10
K083	16-Sep-07	148	3.6	>2,000	4
K084	15-Sep-07	250	12.6	519	17
K085	17-Sep-07	126	103	957	5
K090	16-Sep-07	146	6.4	628	5
K094	15-Sep-07	111	16.3	289	23
K095	15-Sep-07	95	31	314	31
K096	17-Sep-07	275	4.1	546	Less Than MDL
K104	16-Sep-07	246	21.3	1661	6
K105	16-Sep-07	275	18.6	759	Less Than MDL
K112	17-Sep-07	239	20.2	1103	5
K114	17-Sep-07	90	40.6	1089	15
K116	16-Sep-07	325	18.5	984	12

* AL = Warm Water Aquatic Life; DWS = Drinking Water Supply

* MDL = Minimum Detection Limit of laboratory's analytical equipment

Table 2.7 2007 Kentucky River Watershed Watch Chemical Sampling Results

Sample ID #	Collection Date	Alkalinity (mg/L as CaCO ₃)	Chloride (mg/L)	Conductivity (uS/cm)	Total Suspended Solids (mg/L)
K121	17-Sep-07	222	37	638	23
K122	17-Sep-07	222	60.6	630	12
K123	17-Sep-07	146	104	1065	8
K125	15-Sep-07	230	23.6	635	16
K126	17-Sep-07	150	93.5	902	12
K132	14-Sep-07	144	48.6	530	Less Than MDL
K135	16-Sep-07	126	29.6	1421	Less Than MDL
K141	15-Sep-07	140	8.3	907	4
K156	16-Sep-07	128	17.3	770	6
K157	15-Sep-07	128	17.5	767	4
K158	15-Sep-07	159	14.2	435	Less Than MDL
K160	15-Sep-07	196	40.5	638	13
K180	15-Sep-07	229	30.2	626	8
K183a	17-Sep-07	236	29	608	Less Than MDL
K184	17-Sep-07	183	68	694	7
K187	16-Sep-07	135	17	347	10
K188	17-Sep-07	130	16.9	311	15
K189	17-Sep-07	203	22.6	463	29
K191	16-Sep-07	143	84.7	1046	16
K198	16-Sep-07	122	15.5	481	6
K199	16-Sep-07	122	15.7	481	6
K200	16-Sep-07	119	16.2	476	8
K201	16-Sep-07	119	16	476	8
K208	15-Sep-07	159	63.9	708	9
K209	16-Sep-07	151	89.4	1151	8
K213	16-Sep-07	105	6.6	518	9
K214	16-Sep-07	256	4.5	889	7
K215	17-Sep-07	225	12.7	>2,000	Less Than MDL
K216	17-Sep-07	187	13.4	>2,000	12
K224	17-Sep-07	213	30.4	651	92
K235	14-Sep-07	120	11.5	425	Less Than MDL
K241	17-Sep-07	284	7.8	554	7
K242	17-Sep-07	170	11.8	449	7
K243	17-Sep-07	95	16	251	13
K245	17-Sep-07	126	7	452	7
K249	17-Sep-07	201	41.2	588	23
K250	16-Sep-07	140	15.6	340	50
K251	16-Sep-07	119	17.6	306	23
K256	17-Sep-07	285	40.1	761	Less Than MDL
K257	14-Sep-07	197	31.7	590	4
K258	15-Sep-07	123	11	409	4
K264	16-Sep-07	319	66.4	943	57
K265	13-Sep-07	196	50.9	619	16
K267	15-Sep-07	161	25	520	Less Than MDL
K295	16-Sep-07	117	14.5	434	9
K297	14-Sep-07	236	50.1	712	10
K299	15-Sep-07	222	92.1	784	10
K300	15-Sep-07	285	35.4	692	4

Table 2.7 2007 Kentucky River Watershed Watch Chemical Sampling Results

Sample ID #	Collection Date	Alkalinity (mg/L as CaCO3)	Chloride (mg/L)	Conductivity (uS/cm)	Total Suspended Solids (mg/L)
K301	16-Sep-07	176	20.6	452	Less Than MDL
K302	15-Sep-07	251	222	1394	3
K303	16-Sep-07	150	75.3	1016	3
K305	15-Sep-07	207	126	1012	Less Than MDL
K307	14-Sep-07	219	53.2	673	7
K310	15-Sep-07	137	18.2	368	12
K316	17-Sep-07	237	65.4	866	Less Than MDL
K317	14-Sep-07	134	116	804	32
K318	13-Sep-07	134	7.1	305	6
K319	14-Sep-07	89	58.1	522	46
K320	14-Sep-07	145	89.4	689	17
K321	13-Sep-07	194	35.3	577	23
K323	16-Sep-07	199	28.8	575	3
K327	13-Sep-07	162	48.2	522	12
K328	13-Sep-07	125	9.3	301	9
K329	16-Sep-07	248	20.4	602	11
K330	14-Sep-07	221	17.4	494	5
K336	17-Sep-07	126	16.5	301	11
K350	15-Sep-07	222	49	681	6
K403	14-Sep-07	225	16.2	512	4
K408	15-Sep-07	289	60.8	1000	12
K409	16-Sep-07	128	18.2	767	10
K418	14-Sep-07	230	70.5	780	Less Than MDL
K437	17-Sep-07	386	56.1	1021	13
K447	17-Sep-07	233	39.6	>2,000	14
K451	17-Sep-07	179	91.3	940	8
K454	15-Sep-07	117	16.4	787	5
K456	15-Sep-07	237	6.8	472	Less Than MDL
K461	14-Sep-07	253	36.9	402	Less Than MDL
K462	17-Sep-07	227	27.8	590	23
K463	17-Sep-07	169	14.2	369	53
K464	17-Sep-07	236	126	856	134
K465	15-Sep-07	95	34.1	346	122
K466	17-Sep-07	201	32.9	551	4
K467	17-Sep-07	230	85	844	8
K468	17-Sep-07	230	70.4	713	7
K469	17-Sep-07	211	64.8	761	13
K470	15-Sep-07	199	40.7	704	20
K471	15-Sep-07	271	26.9	633	5
K472	13-Sep-07	212	146	1106	Less Than MDL
K473	16-Sep-07	553	3.6	1545	5
K476	17-Sep-07	328	15.2	1638	Less Than MDL
K478	16-Sep-07	266	16.5	1396	9
K480	17-Sep-07	214	34.5	782	10
K481	17-Sep-07	285	10.4	>2,000	27
K483	16-Sep-07	201	4.4	>2,000	6
K484	16-Sep-07	315	12.8	755	10

Table 2.7 2007 Kentucky River Watershed Watch Chemical Sampling Results

Sample ID #	Collection Date	Alkalinity (mg/L as CaCO3)	Chloride (mg/L)	Conductivity (uS/cm)	Total Suspended Solids (mg/L)
K485	16-Sep-07	160	16.7	535	6
K491	17-Sep-07	193	30	1067	9
K492	17-Sep-07	143	9.1	896	4
K508	16-Sep-07	166	66.5	898	22
K514	16-Sep-07	240	27.8	936	Not Analyzed
K515	16-Sep-07	171	72	1082	15
K519	17-Sep-07	179	47.4	1432	5
K524	15-Sep-07	122	14.6	492	Less Than MDL
K526	14-Sep-07	263	46.2	740	3
K528	14-Sep-07	267	12	527	6
K529	14-Sep-07	159	106	1035	4
K530	16-Sep-07	187	66.4	904	9
K534	17-Sep-07	216	48	911	6
K535	17-Sep-07	234	12.7	>2,000	14
K536	17-Sep-07	291	6.8	>2,000	8
K542	16-Sep-07	Less Than MDL	3	>2,000	9
K543	15-Sep-07	215	28.6	576	4
K548	15-Sep-07	105	9.4	314	Less Than MDL
K549	15-Sep-07	106	9.4	323	Less Than MDL
K550	15-Sep-07	106	9.3	318	Less Than MDL
K551	13-Sep-07	257	83.9	848	Less Than MDL
K552	15-Sep-07	142	16.2	501	47
K553	15-Sep-07	80	16.1	283	25
K554	16-Sep-07	80	16.3	283	19
K555	15-Sep-07	103	9.3	316	Less Than MDL
K556	15-Sep-07	203	48.3	824	Less Than MDL
K562	15-Sep-07	103	9.4	316	Less Than MDL
K565	16-Sep-07	Less Than MDL	4.7	1159	13
K566	17-Sep-07	187	16.1	1061	7
K567	17-Sep-07	305	10.7	1158	Less Than MDL
K568	17-Sep-07	165	108	738	5
K569	16-Sep-07	375	40.8	1127	6
K575	16-Sep-07	242	13.3	1503	7
K576	16-Sep-07	266	7.7	1276	5
K577	17-Sep-07	403	11.6	1319	7
K578	16-Sep-07	Less Than MDL	6.5	>2,000	18
K579	16-Sep-07	10	15.8	>2,000	36
K580	16-Sep-07	Less Than MDL	13	1504	5
K581	13-Sep-07	84	13.3	240	32
K582	15-Sep-07	145	35.7	796	Less Than MDL
K583	14-Sep-07	79	106	557	48
K584	16-Sep-07	260	2.5	1280	9

Table 2.8 2007 Kentucky River Watershed Watch Nutrient Sampling Results

Sample ID#	Collection Date	Nitrate-N (NO ₃ -N) mg/L	Total Nitrogen mg/L	Total Recoverable Phosphorus mg/L	Sulfate mg/L
Water Quality Standard		10 (DWS*)	N/A	0.5 (KRWW unofficial)	250 (DWS*)
Minimum Detection Limit		0.02 mg/L	0.07 mg/L	0.05 mg/L	5 mg/L
K002	14-Sep-07	1.04	1.04	0.47	62.6
K005	14-Sep-07	0.16	0.17	0.41	36.1
K012	17-Sep-07	0.045	0.18	0.12	29.8
K013	17-Sep-07	1.29	1.32	0.32	52.4
K014	14-Sep-07	11.1	11.15	0.48	76.8
K016	15-Sep-07	0.63	1.08	0.24	59.8
K017	16-Sep-07	0.23	0.22	Less Than MDL	565
K026	25-Sep-07	14.24	14.22	1.64	188
K029	15-Sep-07	0.203	0.2	0.32	21.8
K030	13-Sep-07	11.39	11.34	1.32	66.6
K035	14-Sep-07	0.023	0.15	0.12	142
K036	14-Sep-07	0.271	0.3	0.12	54.4
K037	14-Sep-07	Less Than MDL	0.19	0.15	30.8
K038	14-Sep-07	0.09	0.13	0.14	63.6
K039	14-Sep-07	1.28	1.2	0.12	68.5
K050	16-Sep-07	Less Than MDL	0.18	0.04	43.3
K051	16-Sep-07	0.023	0.17	0.09	40.9
K052	16-Sep-07	0.023	0.24	0.12	44.3
K053	15-Sep-07	0.7	0.69	0.58	37.3
K054	14-Sep-07	2.33	2.27	0.3	51.8
K055	16-Sep-07	2.94	3.11	0.46	141
K057	14-Sep-07	3.48	3.48	0.35	19
K062	16-Sep-07	0.66	0.68	0.05	308
K063	16-Sep-07	0.18	0.19	Less Than MDL	120
K071	14-Sep-07	1.02	1	0.26	65.6
K081	17-Sep-07	0.023	0.08	0.06	407
K082	17-Sep-07	0.68	0.66	0.17	392
K083	16-Sep-07	0.068	0.1	Less Than MDL	1220
K084	15-Sep-07	0.61	0.71	0.33	14.6
K085	17-Sep-07	19.25	20.03	1.86	105
K090	16-Sep-07	0.113	0.13	0.04	168
K094	15-Sep-07	0.407	0.41	0.09	13
K095	15-Sep-07	0.203	0.25	0.09	11.3
K096	17-Sep-07	2.89	2.89	0.4	15.4
K104	16-Sep-07	0.045	0.12	Less Than MDL	674
K105	16-Sep-07	0.045	0.08	Less Than MDL	100
K112	17-Sep-07	0.41	0.43	Less Than MDL	337
K114	17-Sep-07	0.11	0.11	0.04	420
K116	16-Sep-07	0.045	0.08	0.09	154

* DWS = Drinking Water Supply; KRWW = Kentucky River Watershed Watch

* MDL = Minimum Detection Limit for laboratory's analytical equipment

Table 2.8 2007 Kentucky River Watershed Watch Nutrient Sampling Results

Sample ID#	Collection Date	Nitrate-N (NO ₃ -N) mg/L	Total Nitro- mg/L	Total Recoverable Phosphorus mg/L	Sulfate mg/L
K120	24-Sep-07	4.61	4.81	1.74	43.9
K121	17-Sep-07	0.54	0.54	0.33	64.8
K122	17-Sep-07	0.63	0.68	0.29	63.3
K123	17-Sep-07	14.58	14.62	1.74	176
K125	15-Sep-07	0.045	0.16	0.14	68.3
K126	17-Sep-07	13.42	13.53	0.83	97.7
K132	14-Sep-07	0.588	0.56	0.17	41.7
K135	16-Sep-07	0.068	0.09	Less Than MDL	675
K141	15-Sep-07	0.14	0.14	Less Than MDL	327
K156	16-Sep-07	0.023	0.1	0.04	240
K157	15-Sep-07	0.09	0.11	0.05	238
K158	15-Sep-07	0.81	0.82	0.22	48.7
K160	15-Sep-07	0.158	0.21	0.22	71.3
K180	15-Sep-07	1.04	1	0.18	55.5
K183a	17-Sep-07	4.16	4.09	0.47	26
K184	17-Sep-07	1.08	1.1	0.11	69.7
K187	16-Sep-07	0.023	0.14	0.07	16.5
K188	17-Sep-07	0.29	0.26	0.07	8.8
K189	17-Sep-07	0.045	0.28	0.08	16.2
K191	16-Sep-07	9.92	10.13	1.62	222
K198	16-Sep-07	0.14	0.17	0.06	92.3
K199	16-Sep-07	0.16	0.19	0.07	91.7
K200	16-Sep-07	0.2	0.22	0.08	90.2
K201	16-Sep-07	0.18	0.23	0.08	89
K208	15-Sep-07	0.23	0.23	0.22	91.9
K209	16-Sep-07	15.48	15.83	2.1	241
K213	16-Sep-07	0.14	0.15	0.12	141
K214	16-Sep-07	0.023	0.09	0.05	246
K215	17-Sep-07	0.18	0.18	Less Than MDL	1590
K216	17-Sep-07	0.068	0.1	Less Than MDL	1610
K224	17-Sep-07	5.63	5.63	0.77	57.7
K235	14-Sep-07	0.452	0.4	0.1	74.8
K241	17-Sep-07	0.023	0.18	0.12	21.8
K242	17-Sep-07	0.16	0.18	0.07	59.5
K243	17-Sep-07	0.2	0.21	0.1	8.8
K245	17-Sep-07	0.11	0.72	0.15	88.4
K249	17-Sep-07	0.09	0.25	0.08	56.8
K250	16-Sep-07	0.068	0.16	0.09	9.3
K251	16-Sep-07	0.045	0.26	0.04	17
K256	17-Sep-07	0.27	0.29	0.16	62.6
K257	14-Sep-07	1.31	1.32	0.26	59.9
K258	15-Sep-07	0.203	0.2	0.27	69.3
K264	16-Sep-07	1.94	1.91	0.18	81.9
K265	13-Sep-07	0.068	0.09	0.55	48.4
K267	15-Sep-07	0.316	0.28	0.51	65.9
K295	16-Sep-07	0.32	0.32	0.06	76.5
K297	14-Sep-07	2.49	2.5	0.44	58.8
K299	15-Sep-07	1.65	1.73	0.19	45.7
K300	15-Sep-07	2.35	2.28	0.24	33.9

Table 2.8 2007 Kentucky River Watershed Watch Nutrient Sampling Results

Sample ID#	Collection Date	Nitrate-N (NO ₃ -N) mg/L	Total Nitrogen mg/L	Total Recoverable Phosphorus mg/L	Sulfate mg/L
K301	16-Sep-07	0.27	0.28	0.27	27.4
K302	15-Sep-07	2.67	2.71	0.74	142
K303	16-Sep-07	13.74	14.03	0.46	207
K305	15-Sep-07	1.92	2.12	0.45	108
K307	14-Sep-07	1.81	1.89	0.28	50.6
K310	15-Sep-07	0.226	0.32	0.11	22.1
K316	17-Sep-07	0.2	0.17	0.11	124
K317	14-Sep-07	5.92	6.39	0.7	61.5
K318	13-Sep-07	0.023	0.14	0.05	16.1
K319	14-Sep-07	Less Than MDL	0.76	0.38	78.5
K320	14-Sep-07	Less Than MDL	0.19	0.11	62.8
K321	13-Sep-07	Less Than MDL	0.14	0.19	24.8
K323	16-Sep-07	0.56	0.51	0.32	68.2
K327	13-Sep-07	0.045	0.13	0.09	30.8
K328	13-Sep-07	0.09	0.2	0.05	19.6
K329	16-Sep-07	4.36	4.38	0.27	32.6
K330	14-Sep-07	3.77	3.73	0.3	26.7
K336	17-Sep-07	0.2	0.22	0.09	7.6
K350	15-Sep-07	3.86	3.95	0.56	38.5
K403	14-Sep-07	1.51	1.49	0.29	28
K408	15-Sep-07	0.18	0.4	1.4	159
K409	16-Sep-07	0.09	0.13	0.04	236
K418	14-Sep-07	1.4	1.48	0.31	65.1
K437	17-Sep-07	0.43	0.41	Less Than MDL	98.6
K447	17-Sep-07	0.7	0.73	0.07	1260
K451	17-Sep-07	Less Than MDL	Less Than MDL	0.04	152
K454	15-Sep-07	0.023	0.1	Less Than MDL	227
K456	15-Sep-07	0.68	0.62	0.26	18.5
K461	14-Sep-07	1.18	1.1	0.27	29.7
K462	17-Sep-07	3.39	3.37	0.59	31.7
K463	17-Sep-07	0.27	0.25	0.28	Less Than MDL
K464	17-Sep-07	0.045	1.18	0.74	63.9
K465	15-Sep-07	Less Than MDL	0.45	0.66	22.4
K466	17-Sep-07	1.45	1.65	0.17	35.1
K467	17-Sep-07	2.73	2.76	0.29	77.3
K468	17-Sep-07	0.2	0.25	0.17	37.5
K469	17-Sep-07	3.96	4	0.12	73.9
K470	15-Sep-07	0.09	0.1	0.5	87.3
K471	15-Sep-07	0.45	0.44	0.29	31.5
K472	13-Sep-07	1.58	1.62	0.22	118
K473	16-Sep-07	0.023	Less Than MDL	Less Than MDL	375
K476	17-Sep-07	0.56	0.58	Less Than MDL	527
K478	16-Sep-07	0.16	0.16	Less Than MDL	513
K480	17-Sep-07	0.45	0.9	0.04	131
K481	17-Sep-07	0.32	0.44	Less Than MDL	1030
K483	16-Sep-07	0.045	0.08	Less Than MDL	1490
K484	16-Sep-07	0.18	0.16	0.06	95.3

Table 2.8 2007 Kentucky River Watershed Watch Nutrient Sampling Results

Sample ID#	Collection Date	Nitrate-N (NO ₃ -N) mg/L	Total Nitrogen mg/L	Total Recoverable Phosphorus mg/L	Sulfate mg/L
K485	16-Sep-07	0.29	0.26	0.04	97
K491	17-Sep-07	0.023	Less Than MDL	Less Than MDL	320
K492	17-Sep-07	0.068	0.09	Less Than MDL	327
K508	16-Sep-07	Less Than MDL	Less Than MDL	0.13	197
K514	16-Sep-07	6.87	6.91	Not Analyzed	208
K515	16-Sep-07	11	11.71	1.76	191
K519	17-Sep-07	0.16	0.16	Less Than MDL	626
K524	15-Sep-07	0.09	0.12	0.06	84.8
K526	14-Sep-07	0.75	0.73	0.18	59.7
K528	14-Sep-07	0.32	0.29	0.24	9.9
K529	14-Sep-07	9.22	9.43	1.12	135
K530	16-Sep-07	6.51	6.53	1.09	188
K534	17-Sep-07	0.16	0.18	Less Than MDL	197
K535	17-Sep-07	0.61	0.62	0.05	1370
K536	17-Sep-07	0.97	0.97	Less Than MDL	1600
K542	16-Sep-07	0.27	0.27	Less Than MDL	1990
K543	15-Sep-07	0.45	0.4	0.04	39.4
K548	15-Sep-07	Less Than MDL	Less Than MDL	Less Than MDL	37.7
K549	15-Sep-07	0.023	Less Than MDL	Less Than MDL	42.5
K550	15-Sep-07	0.023	Less Than MDL	Less Than MDL	40.4
K551	13-Sep-07	0.16	0.16	0.08	63.6
K552	15-Sep-07	0.068	0.11	0.08	87.9
K553	15-Sep-07	0.14	0.16	0.05	35.3
K554	16-Sep-07	0.18	0.16	0.05	35.3
K555	15-Sep-07	Less Than MDL	Less Than MDL	0.03	40.8
K556	15-Sep-07	2.85	2.81	1.12	120
K562	15-Sep-07	Less Than MDL	Less Than MDL	0.04	40.8
K565	16-Sep-07	0.045	0.07	Less Than MDL	537
K566	17-Sep-07	1.81	2.05	0.15	280
K567	17-Sep-07	0.36	0.36	Less Than MDL	376
K568	17-Sep-07	0.045	0.08	0.03	47.9
K569	16-Sep-07	0.26	0.23	0.03	171
K575	16-Sep-07	0.2	0.21	Less Than MDL	651
K576	16-Sep-07	0.18	0.18	Less Than MDL	466
K577	17-Sep-07	Less Than MDL	0.12	Less Than MDL	326
K578	16-Sep-07	0.09	0.32	0.11	1850
K579	16-Sep-07	0.29	0.29	Less Than MDL	1490
K580	16-Sep-07	0.16	0.13	Less Than MDL	924
K581	13-Sep-07	Less Than MDL	0.31	0.88	14
K582	15-Sep-07	0.27	0.28	0.27	181
K583	14-Sep-07	Less Than MDL	0.17	0.44	23.3
K584	16-Sep-07	0.068	0.1	Less Than MDL	482

Table 2.9 - Metals with Water Quality Standards / Greatest 2007 Results

Metals	Water Quality Standard	Greatest 2007 Result
Barium	DWS < 1.0 mg/L	K135, K437, K480 = 0.15 mg/L Maces Cr., Little Cowan Cr, Cowan Cr.
Beryllium	WAH < 0.053 mg/L	K542 = 0.02 mg/L Sandlick Creek
Chromium	WAH < 0.011 mg/L DWS < 0.05 mg/L	K536 = 0.15 mg/L Long Branch
Copper	WAH < 0.0012 mg/L DWS < 1.3 mg/L	K542 = 0.09 mg/L Sandlick Creek
Iron	WAH < 1.0 mg/L	K481 = 12.3 mg/L Little Dry Fork
Manganese	DWS < 0.05 mg/L	K542 = 13.2 mg/L Sandlick Creek
Nickel	WAH < 0.158 mg/L	K542 = 0.88 mg/L Sandlick Creek
Zinc	WAH = 0.106 mg/L	K542 = 2.19 mg/L Sandlick Creek

DWS = drinking water supply standard

WAH = warm water aquatic habitat standard

* Results in **bold** indicate an exceedance of an associated water quality stan-

**Table 2.10 2007 KRWW Metals Sampling Results
(metals with associated water quality standards and 2007 KRWW sampling detections)**

Site ID	Collection Date	Waterbody	Barium (mg/L)	Beryllium (mg/L)	Chromium (mg/L)	Copper (mg/L)	Iron (mg/L)	Manganese (mg/L)	Nickel (mg/L)	Zinc (mg/L)
Water Quality Standard			< 1 (DWS*)	< 0.053 (WAH*)	< 0.011 (WAH) < 0.05 (DWS)	< 0.0012 (WAH) < 1.3 (DWS)	< 1	< 0.05	< 0.158	< 0.106
Min. Detection Limit			0.003	0.001	0.024	0.005	0.002	0.001	0.002	0.002
K005	14-Sep-07	Cane Run	0.04	< MDL	< MDL	< MDL	0.17	0.13	< MDL	0.01
K017	16-Sep-07	Sandlick Creek	0.07	< MDL	0.03	< MDL	0.24	0.06	< MDL	< MDL
K050	16-Sep-07	Benson Creek	0.04	< MDL	< MDL	< MDL	0.13	0.04	< MDL	0.02
K055	16-Sep-07	Town Branch	0.05	< MDL	< MDL	< MDL	0.19	0.06	< MDL	0.04
K062	16-Sep-07	N. Fork Ky River	0.07	< MDL	0.03	< MDL	0.27	0.09	< MDL	< MDL
K063	16-Sep-07	Pine Creek	0.07	< MDL	< MDL	< MDL	0.47	0.3	< MDL	0.02
K081	17-Sep-07	N. Fork Ky River	0.11	< MDL	0.026	< MDL	0.56	0.06	< MDL	0.03
K082	17-Sep-07	N. Fork Ky River	0.08	< MDL	0.026	< MDL	0.41	0.1	< MDL	0.02
K083	16-Sep-07	Lotts Creek	0.07	< MDL	0.06	< MDL	0.21	0.04	< MDL	< MDL
K090	16-Sep-07	Quicksand Creek	0.06	< MDL	< MDL	< MDL	0.41	0.09	< MDL	0.002
K095	15-Sep-07	Red River	0.08	< MDL	< MDL	< MDL	1.46	0.14	< MDL	0.01
K104	16-Sep-07	Rockhouse Creek	0.08	< MDL	0.03	< MDL	0.21	0.04	< MDL	< MDL
K105	16-Sep-07	Blair Branch	0.12	< MDL	< MDL	< MDL	0.13	0.17	< MDL	0.009
K112	17-Sep-07	N. Fork Ky River	0.07	< MDL	< MDL	< MDL	0.33	0.15	< MDL	0.03
K114	17-Sep-07	Crafts Colley Creek	0.1	< MDL	0.03	< MDL	0.95	0.2	< MDL	0.004
K116	16-Sep-07	Blair Branch	0.07	< MDL	< MDL	< MDL	0.77	0.12	< MDL	0.009
K135	16-Sep-07	Maces Creek	0.15	< MDL	0.05	< MDL	0.17	0.12	< MDL	< MDL
K141	15-Sep-07	Carr Fork	0.05	< MDL	< MDL	< MDL	0.31	0.06	< MDL	< MDL
K213	16-Sep-07	Quicksand Creek	0.05	< MDL	< MDL	< MDL	0.37	0.12	< MDL	< MDL
K214	16-Sep-07	Quicksand Creek	0.07	< MDL	0.05	< MDL	0.46	0.06	< MDL	0.003
K215	17-Sep-07	Lost Creek	0.04	< MDL	0.11	< MDL	0.21	0.07	< MDL	< MDL
K216	17-Sep-07	Troublesome Creek	0.07	< MDL	0.11	< MDL	0.09	0.09	< MDL	< MDL
K409	16-Sep-07	Kentucky River	0.06	< MDL	< MDL	0.006	0.34	0.21	< MDL	0.009
K437	17-Sep-07	Little Cowan Creek	0.15	< MDL	< MDL	< MDL	10.4	6.15	< MDL	0.03
K447	17-Sep-07	Cowan Creek	0.11	< MDL	0.1	< MDL	1.38	0.13	< MDL	0.06

* DWS = Drinking Water Supply; WAH = Warm Water Aquatic Habitat

* < MDL = Less than minimum detection limit of laboratory's analytical equipment

Table 2.10 2007 KRWW Metals Sampling Results
(metals with associated water quality standards and 2007 KRWW sampling detections)

Site ID	Collection	Waterbody	Barium	Beryllium	Chromium	Copper	Iron	Manganese	Nickel	Zinc
K451	17-Sep-07	Little Cowan Creek	0.1	< MDL	< MDL	< MDL	0.42	0.12	< MDL	< MDL
K454	15-Sep-07	Red River	0.08	< MDL	< MDL	< MDL	0.21	0.12	< MDL	< MDL
K471	15-Sep-07	Vaughns Branch	0.06	< MDL	< MDL	< MDL	0.31	0.26	< MDL	< MDL
K473	16-Sep-07	Fish Pond Lake	0.05	< MDL	0.03	< MDL	0.13	0.02	< MDL	< MDL
K476	17-Sep-07	Dry Fork	0.03	< MDL	< MDL	< MDL	0.26	0.16	< MDL	< MDL
K478	16-Sep-07	Milstone Creek	0.05	< MDL	0.03	< MDL	0.34	0.06	< MDL	< MDL
K480	17-Sep-07	Cowan Creek	0.15	< MDL	< MDL	< MDL	1.74	1.15	< MDL	0.003
K481	17-Sep-07	Little Dry Fork	0.02	< MDL	< MDL	< MDL	12.3	1.61	< MDL	< MDL
K483	16-Sep-07	Henry Ison Hollow	0.09	< MDL	0.07	< MDL	0.12	0.02	< MDL	< MDL
K484	16-Sep-07	Cram Creek	0.07	< MDL	< MDL	< MDL	0.18	0.02	< MDL	0.004
K485	16-Sep-07	Cram Creek	0.08	< MDL	< MDL	< MDL	0.37	0.03	< MDL	0.01
K491	17-Sep-07	N. Fork Ky River	0.08	< MDL	0.025	< MDL	0.24	0.04	< MDL	< MDL
K492	17-Sep-07	Carr Fork	0.04	< MDL	0.04	< MDL	0.16	0.03	< MDL	< MDL
K519	17-Sep-07	Pert Creek	0.08	< MDL	0.07	< MDL	0.06	0.02	< MDL	< MDL
K534	17-Sep-07	Cowan Creek	0.11	< MDL	0.03	< MDL	0.24	0.03	< MDL	0.004
K535	17-Sep-07	Sturgill Branch	0.09	< MDL	0.12	< MDL	0.27	0.11	< MDL	0.15
K536	17-Sep-07	Long Branch	0.06	< MDL	0.15	< MDL	0.24	0.02	< MDL	0.004
K542	16-Sep-07	Sandlick Creek	0.03	0.02	0.07	0.09	6.69	13.2	0.88	2.19
K543	15-Sep-07	Clark's Run	0.05	< MDL	< MDL	< MDL	0.22	0.07	0.002	0.002
K548	15-Sep-07	Cane Run	0.04	< MDL	< MDL	< MDL	0.02	0.007	0.002	< MDL
K549	15-Sep-07	Curds Creek	0.04	< MDL	< MDL	< MDL	0.06	0.009	0.002	< MDL
K550	15-Sep-07	Herrington Lake	0.05	< MDL	< MDL	< MDL	0.04	0.006	0.002	< MDL
K551	13-Sep-07	UT to South Elkhorn	0.06	< MDL	< MDL	< MDL	0.06	0.05	0.002	< MDL
K552	15-Sep-07	Silver Creek	0.04	< MDL	< MDL	< MDL	0.46	0.12	0.006	< MDL
K553	15-Sep-07	Brushy Creek	0.03	< MDL	< MDL	< MDL	1.01	0.13	0.006	0.01
K554	16-Sep-07	Brushy Creek	0.02	< MDL	< MDL	< MDL	0.97	0.12	0.006	0.01
K555	15-Sep-07	Rocky Fork	0.04	< MDL	< MDL	< MDL	0.03	0.006	< MDL	< MDL
K556	15-Sep-07	Cane Run	0.04	< MDL	< MDL	< MDL	0.06	0.04	< MDL	< MDL
K562	15-Sep-07	Rocky Fork	0.04	< MDL	< MDL	< MDL	0.07	0.01	0.002	< MDL
K565	16-Sep-07	North Fork KY River	0.03	< MDL	0.027	< MDL	11.3	1.73	0.08	0.08
K566	17-Sep-07	Boone Fork	0.07	< MDL	0.03	< MDL	0.34	0.05	< MDL	< MDL
K567	17-Sep-07	North Fork KY River	0.09	< MDL	0.04	< MDL	0.15	0.06	< MDL	< MDL
K568	17-Sep-07	Little Cowan	0.08	< MDL	< MDL	< MDL	0.13	0.03	< MDL	< MDL

Table 2.10 2007 KRWW Metals Sampling Results
(metals with associated water quality standards and 2007 KRWW sampling detections)

Site ID	Collection	Waterbody	Barium	Beryllium	Chromium	Copper	Iron	Manganese	Nickel	Zinc
K569	16-Sep-07	Blair Branch	0.05	< MDL	K	< MDL	0.07	0.006	< MDL	< MDL
K575	16-Sep-07	Left Fork Millstone Cr.	0.06	< MDL	0.05	< MDL	0.6	0.07	< MDL	< MDL
K576	16-Sep-07	Millstone Creek	0.04	< MDL	0.05	< MDL	0.32	0.06	< MDL	< MDL
K577	17-Sep-07	Dry Fork	0.03	< MDL	0.03	< MDL	3.78	0.43	< MDL	< MDL
K578	16-Sep-07	Long Branch	0.03	0.01	0.11	< MDL	2.29	11	0.32	0.77
K579	16-Sep-07	Cane Hollow	0.04	< MDL	0.06	< MDL	24	2.36	0.19	0.17
K580	16-Sep-07	Yellowhouse Branch	0.03	0.01	0.05	0.06	0.92	2.24	0.27	0.54
K581	13-Sep-07	Gluck Stormwater Pond	0.04	< MDL	< MDL	0.05	1.24	0.18	< MDL	0.01
K582	15-Sep-07	Cardinal Run	0.05	< MDL	< MDL	< MDL	0.08	0.04	0.002	< MDL
K583	14-Sep-07	Silver Lake	0.09	< MDL	< MDL	< MDL	2.25	0.5	< MDL	0.004
K584	16-Sep-07	Lick Fork	0.03	< MDL	0.05	< MDL	2.84	0.43	< MDL	< MDL

Other Metals with Water Quality Standards, but NO detections: Antimony, Lead, Selenium, Silver, and Thallium.

* DWS = Drinking Water Supply standard (for Kentucky)

* WAH = Warm Water Aquatic Habitat standard (for Kentucky)

92 MDL = Minimum Detection Limit (of laboratory equipment)