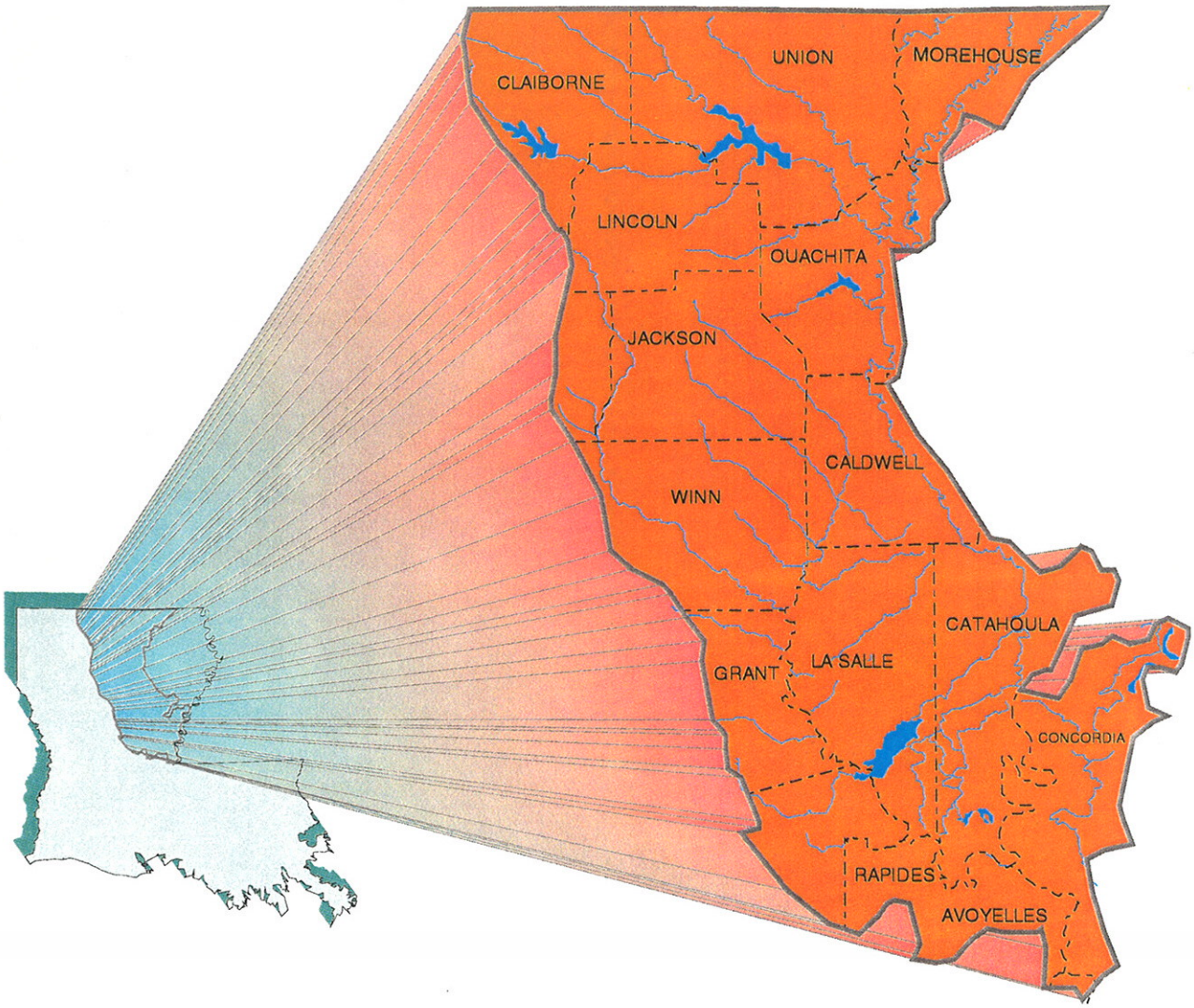
Statistical Summary of Surface-Water Quality in Louisiana--Ouachita River Basin, 1908-94

LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
Water Resources Technical Report No. 55C



STATE OF LOUISIANA
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
PUBLIC WORKS AND FLOOD CONTROL DIRECTORATE
WATER RESOURCES SECTION
in cooperation with the
U.S. GEOLOGICAL SURVEY

1997

STATE OF LOUISIANA
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
PUBLIC WORKS AND FLOOD CONTROL DIRECTORATE
WATER RESOURCES SECTION
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U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

WATER RESOURCES
TECHNICAL REPORT NO. 55C

Statistical Summary of Surface-Water Quality in Louisiana--Ouachita River Basin, 1908-94

By
Charles R. Garrison
U.S. GEOLOGICAL SURVEY

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Multiply	By	To obtain
inch (in.)	25.4	millimeter
foot (ft)	0.3048	meter
mile (mi)	1.609	kilometer
acre	0.4047	hectare
cubic foot per second (ft^3/s)	0.0283	cubic meter per second
million gallon per day (Mgal/d)	0.04381	cubic meter per second

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

Sea level: In this report, "sea level" refers to the National Geodetic Vertical Datum of 1929--a geodetic datum derived from a general adjustment of the first-order level nets of both the United States and Canada, formerly called "Sea Level Datum of 1929."

Abbreviated water-quality units:

cells per milliliter (cells/mL)
colonies per 100 milliliters (cols/100 mL)
microsiemens per centimeter at 25 degrees Celsius (µS/cm)
micrograms per liter (µg/L)
milligrams per liter (mg/L)
nanograms per liter (ng/L)

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By Charles R. Garrison

ABSTRACT

A statistical summary of surface-water quality in the Ouachita River basin was completed using available data from the U.S. Geological Survey Water-Data Storage and Retrieval System (WATSTORE), a computerized data base. Data for 33 water-quality properties and constituents for 36 sites in the Ouachita River basin within Louisiana were statistically analyzed for the water years 1908-94. Results are reported as boxplots, linear-regression plots, and tabulated data.

The data were summarized into seven categories: (1) physical properties--specific conductance, pH, water temperature, dissolved oxygen, and dissolved solids; (2) major inorganic cations--dissolved calcium, magnesium, sodium, and potassium; (3) major inorganic anions--total alkalinity as calcium carbonate, dissolved sulfate, and dissolved chloride; (4) trace metals--dissolved copper, iron, lead, and zinc; (5) nutrients--nitrogen and phosphorus constituents; (6) organic compounds--pesticides and PCB's; and (7) biological constituents--fecal coliform and fecal streptococcus bacteria and phytoplankton.

The physical properties values varied for surface waters in the Ouachita River basin. The median values for specific conductance ranged from 39 to 1,740 microsiemens per centimeter at 25 degrees Celsius. Values for pH in water from the basin often were less than 6.5, the lower limit of the U.S. Environmental Protection Agency's recommended range for freshwater aquatic life. Median values for water temperatures ranged from 13.5 to 24.5 degrees Celsius.

The dissolved oxygen concentrations were greater than the State's minimum water quality criterion of 5.0 mg/L (milligrams per liter) in more than 75 percent of the samples analyzed at most sites. However, the statistical data indicated that approximately 25 percent of the samples collected at Bayou Bartholomew near Jones, Louisiana had concentrations of dissolved oxygen of less than or equal to 5.0 mg/L. The dissolved oxygen concentrations differed seasonally in the lakes due to temperature and algal blooms.

An analysis of the data for major inorganic cations and anions indicated that concentrations of major ions were below recommended levels for drinking water, for which such levels have been established. However, there were periodic high concentrations of calcium and chloride at Bayou de Loutre near Laran, Louisiana. On the other hand, the interquartile ranges of major inorganic cations and anions were much narrower and the median concentrations were lower at the oxbow lakes than at the stream sites due to the separation of the oxbow lakes from any inflowing streams.

An analysis of the available data for trace metals indicated that dissolved copper, lead, and zinc were less than the maximum contaminant levels of the U.S. Environmental Protection Agency's primary and secondary drinking water regulations. The iron concentrations in water from the basin often exceeded the U.S. Environmental Protection Agency's Secondary Maximum Contaminant Level of 300 µg/L (micrograms per liter) for domestic water supplies at most of the sites but were less than the recommended maximum level of 1,000 µg/L for freshwater aquatic life.

An analysis of the nutrient data indicated that the median concentrations of ammonia plus organic nitrogen as nitrogen at the lake sites generally were slightly above 1.0 mg/L. However, the median concentrations at the rivers and bayous ranged from less than 0.1 to 8.0 mg/L.

An analysis of available data for selected organic chemical compounds indicated that concentrations of pesticides, except diazinon and 2, 4-D, rarely exceeded their detection levels.

The median ratios of fecal coliform to fecal streptococcus bacteria were less than 0.7 for most of the sites within the Ouachita River basin, indicating that sources of fecal coliform bacteria were probably predominantly livestock or poultry wastes. Additional study is needed to confirm these results. Phytoplankton concentrations ranged from 0 to 2,200,000 cells per milliliter due to seasonal influence.

ACKNOWLEDGMENTS

The author extends his appreciation to Zahir "Bo" Bolourchi, Chief, Water Resources Section, of the Louisiana Department of Transportation and Development, for guidance and assistance provided during the study and his substantial contribution to the completion of this report. The Report Preparation Section of the Louisiana District was especially helpful in the completion of this report at early stages of preparation and different stages of review. The final preparation and layout of the report was a team effort. The team members were Sebastian R. Brazelton, Dorothy L. Collier, Cheryl A. Johnson, William C. Martin, and Darlene M. Smothers.

1.0 INTRODUCTION

THIS REPORT IS ORGANIZED INTO THREE PARTS AND PRESENTED IN "STOP" FORMAT[1]

A single topic is presented in text and pictures on facing pages.

This report, "Statistical Summary of Surface-Water Quality in Louisiana--Ouachita River Basin, 1908-94," is one of a series of reports in which surface-water-quality data for the major river basins in Louisiana will be statistically summarized. This report is organized into three parts (excluding the "Abstract"): the "Introduction," the "Ouachita River Basin in Louisiana," and "Selected References."

The "Introduction" provides background information about the study, describes the hydrologic setting and land use in Louisiana, and presents a brief description of selected water-quality properties and constituents.

The section titled "Ouachita River Basin in Louisiana," presents statistical analyses of the surface-water-quality data at selected representative sites in the basin. This basin summary section contains the following:

- Maps and text giving an overview of the basin, including location, areal extent, drainage area, major drainage and surface-water bodies, land use, and water use.
- Boxplots and text describing statistical summaries of selected physical properties of surface waters at representative sampling sites.
- Graphs and text describing the relation between specific conductance and dissolved solids and specific conductance and dissolved chloride, at representative sampling sites.
- Boxplots, tables, and text describing statistical summaries of major inorganic chemical constituents; selected trace metals, nutrients, and organic chemical concentrations; and selected biological constituents, usually bacteria.
- Summary and conclusions, which pertain only to the basin summary.

The "Selected References" lists all references that pertain to the water quality in the basin.

[1]This report is presented in "STOP" (Sequential Thematic Organization of Publications) format (Hobba, Jr., 1981, p. 1). In this format, topics are presented using text and illustrations on two facing pages. Generally, topics are presented on two facing pages in this report, but in a few places the information is continued on additional pages.

1.0 INTRODUCTION--continued

1.1 Background

SURFACE-WATER QUALITY OF THE MAJOR DRAINAGE BASINS IN LOUISIANA

A large amount of water-quality data is available for streams, rivers, and lakes in Louisiana.

Water-quality samples from streams, rivers, and lakes in Louisiana have been collected and analyzed by the U.S. Geological Survey (USGS) since 1905, and the USGS, in cooperation with local, State, and other Federal agencies, systematically has operated water-quality sites on streams, rivers, and lakes in the State since 1943. Results of the analyses are stored in the USGS computerized water-quality files and often are used to answer data requests and provide a large source of information for the managers of Louisiana's surface-water resources. Even though these data have been published in the USGS series of annual reports entitled Water Resources Data for Louisiana (Dantin and others, 1994) and in many other reports that describe surface-water quality, descriptive statistics for these data are needed to make the data more useful for water managers, to allow more complete answers to be given for information requests from the public, to indicate the need for additional water-quality data at existing or new sites, and to indicate problem areas where interpretive studies are needed.

In response to the above needs, the USGS, in cooperation with the Louisiana Department of Transportation and Development, began a study in October 1987 to statistically analyze and summarize water-quality data from about 300 surface-water-quality sites in Louisiana and to present the data in such a manner that trends, overall quality, and basin-wide changes in water quality could be evaluated. The study focused on the surface-water quality of the Mississippi River mainstem and the major drainage basins in Louisiana: the Lake Pontchartrain-Lake Maurepas basin; the Mississippi River Delta basin; the Atchafalaya-Teche-Vermilion basin; and the Calcasieu-Mermentau, Ouachita, Pearl, Red, Sabine, and Tensas River basins (fig. 1.1-1).

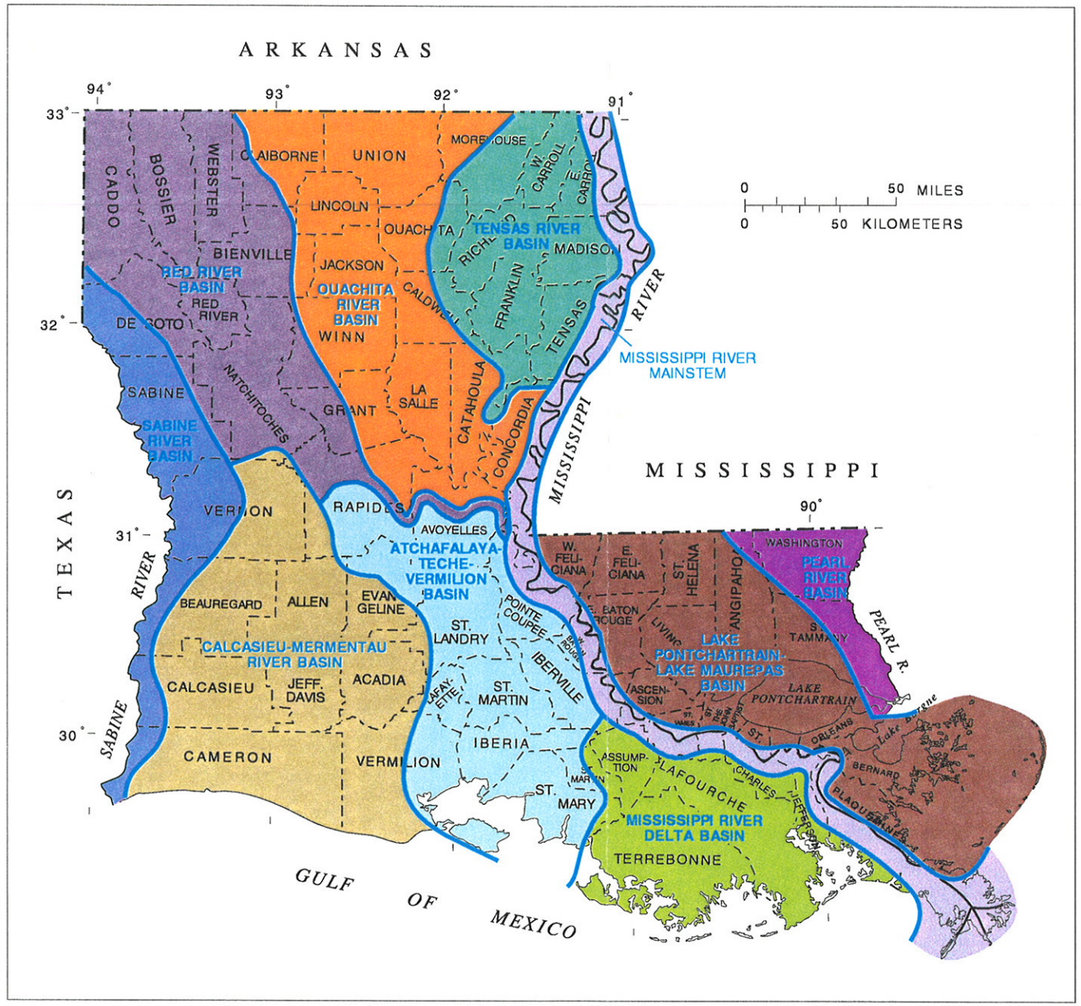

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Figure 1.1-1. Major surface-water basins in Louisiana.

1.2 Purpose and Scope

ANALYZE AND SUMMARIZE SURFACE-WATER-QUALITY DATA

Statistical analyses with illustrations describe water quality of the major drainage basins in Louisiana.

Statistical analyses of water-quality data and corresponding illustrations are presented for each major drainage basin in Louisiana. Nine of the 10 basins described in this study are those delineated by the Louisiana Department of Transportation and Development (1984). The mainstem of the Mississippi River is discussed separately from the Mississippi River Delta basin to preserve continuity of data for the Mississippi River.

Data for about 300 sites in Louisiana for water years 1905-95 were included in these statistical analyses. The number of water-quality sites varied from basin to basin, and the number and type of samples varied from site to site within a given basin. Pesticides, and occasionally, trace metals and nutrients are presented in tables when there are more than 10 samples, and most, or all, of the concentrations are below the largest detection level for the analytical methods used. Daily sediment data were collected at Bayou Grand Cane near Stanley, Bayou Castor near Logansport, and Bayou San Patricio near Benson in the Sabine River basin, and Pearl River near Bogalusa in the Pearl River basin. This information is presented in tables in the Sabine River basin and the Pearl River basin reports. All water-quality data and streamflow data used for the statistical analyses are stored in the USGS Water-Data Storage and Retrieval System (WATSTORE), a computerized data base (fig. 1.2-1). Only WATSTORE data were used for the study.

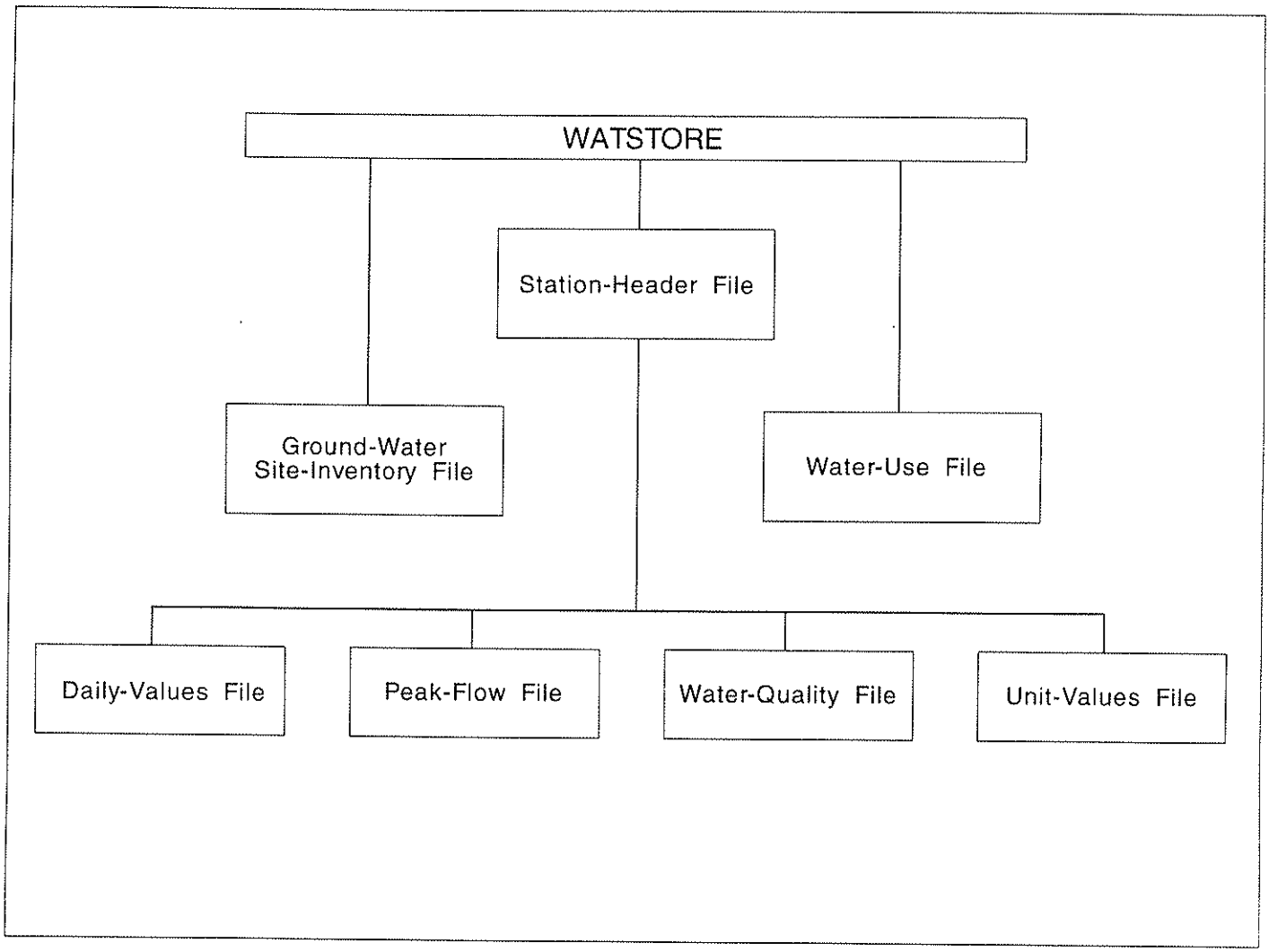

Figure 1.2-1. Files in the U.S. Geological Survey Water-Data Storage and Retrieval System (WATSTORE).

1.3 Methods of Study

BOXPLOTS AND GRAPHS ILLUSTRATE WATER QUALITY AT SIX REPRESENTATIVE SITES IN A BASIN

Tables list statistical information for selected water-quality properties and constituents.

Data from six representative sites within a basin are presented graphically. Data from all sites within a basin that were sampled 10 or more times are summarized in tables for each basin. These tables list the following information and summary statistics for selected properties and constituents for each site: number of analyses; detection level; maximum, minimum, and mean values or concentrations; and values or concentrations representing the 5th, 25th, 50th, 75th, and 95th percentiles of the total sample population. The data for selected sites were used to generate boxplots and linear regression equations and graphs for selected properties and constituents.

Boxplots illustrate a statistical summary of water-quality data at a site (D.R. Helsel, U.S. Geological Survey, written commun., 1989) (fig. 1.3-1). Boxplots of specific conductance, pH, water temperature, dissolved oxygen, major inorganic cations, major inorganic anions, trace metals, nutrients, bacteria, and phytoplankton (where data were available), were developed for selected sites in each basin.

A boxplot summarizes a data set by displaying the values or concentrations representing the 5th, 25th, 50th, 75th, and 95th percentiles of the data. This format allows comparison among streams in the basin. The term percentile as used in this report refers to a distribution of values in the total data set. For example, the 25th percentile is the data value below which 25 percent of the data values occur (Sokal and Rohlf, 1969, p. 45). The 50th percentile is also the median of the data. The interquartile range is between the 25th and 75th percentiles. Fifty percent of the data are within this range.

A boxplot is constructed so the top and bottom of the box are drawn at the 75th and 25th percentiles. A line across the box indicates the median. The 95th and 5th percentiles are indicated by a vertical line from the top of the box to the 95th percentile and from the bottom of the box to the 5th percentile.

A horizontal dashed line indicates the analytical detection level. Because of changes in analytical procedures the reporting level may have changed over time. When multiple reporting levels were used for some constituents, a dashed line was drawn across the boxplot at the largest reporting level used.

Another method used to evaluate water-quality data in this series of reports is linear regression (fig. 1.3-2). Linear regression equations were calculated in the form of $Y = aX + b$, where a is the slope of the regression line, b is the Y intercept, and Y and X are the dependent and independent variables (Sokal and Rohlf, 1969, p. 408). The number of data pairs, N, and the correlation coefficient, r, also are presented. The correlation coefficient indicates the degree of association between two variables. The closer the r value is to ± 1, the better the association. Linear regression equations and graphs are presented for specific conductance and dissolved solids and for specific conductance and dissolved chloride. However, extrapolation of the equations beyond the data used to define the equation could result in incorrect values because the relation may not be linear in that range.

Water-quality samples were collected and analyzed using techniques and methods prescribed by the USGS. Collection procedures for chemical constituents are determined by the Office of Water Quality within the USGS. Methods for chemical analyses are presented in "Methods for Determination of Inorganic Substances in Water and Fluvial Sediments" (Fishman and Friedman, 1989). Collection procedures and analytical methods for biological constituents are presented in "Methods for Collection and Analysis of Aquatic Biological and Microbiological Samples" (Britton and Greeson, 1988). Collection procedures and analytical methods for organic constituents are presented in "Methods for the Determination of Organic Substances in Water and Fluvial Sediments" (Wershaw and others, 1983).

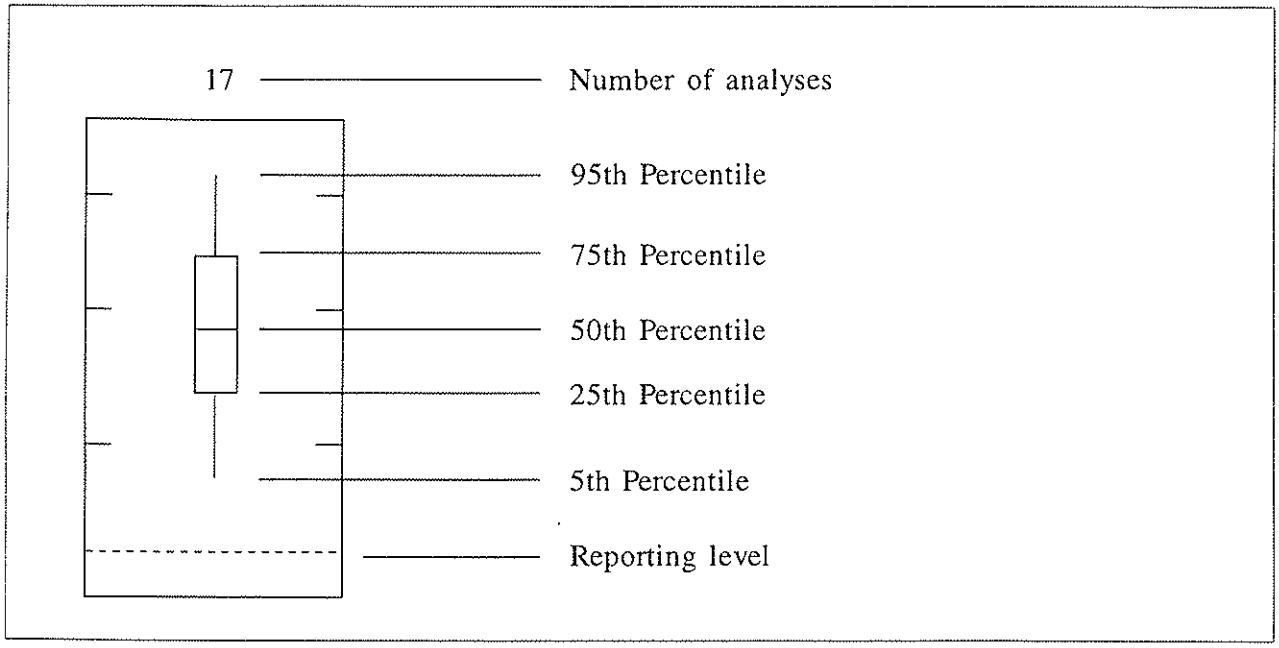

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Figure 1.3-1. Example and definition of boxplot.

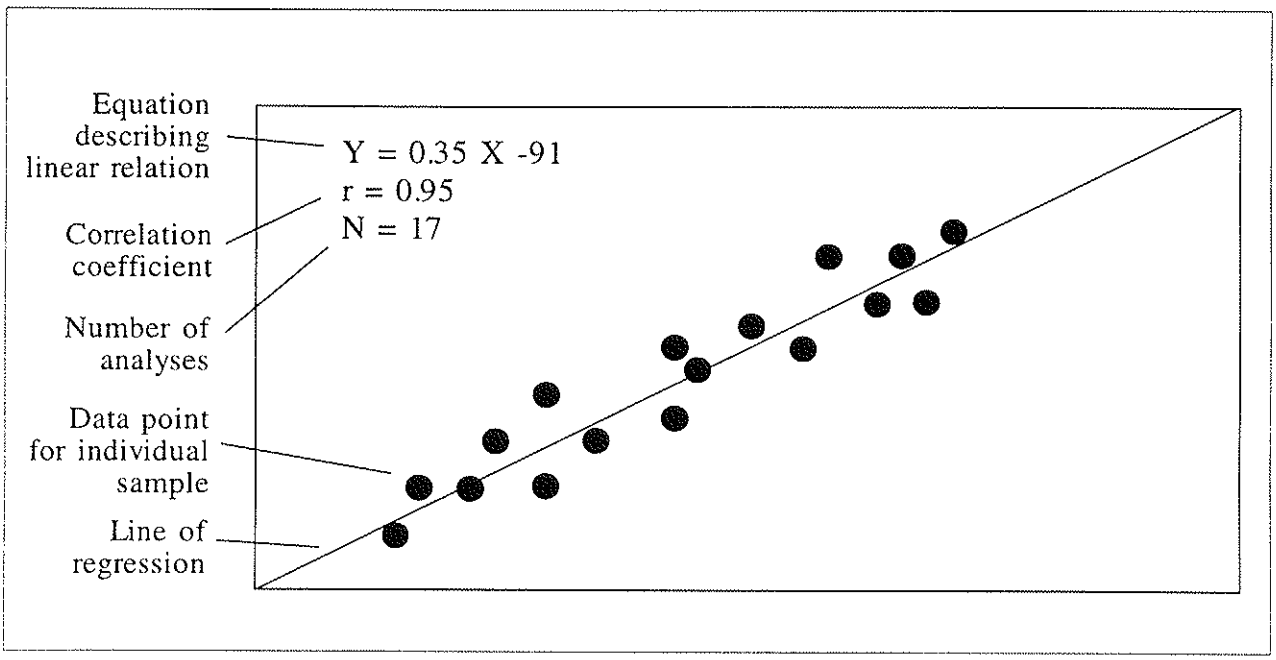

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Figure 1.3-2. Example and definition of linear regression.

1.4 Hydrologic Setting and Land Use in Louisiana

CLIMATE AND PHYSIOGRAPHY INDIRECTLY AFFECT WATER QUALITY

Climate and physiography are the primary factors that affect land use in Louisiana, and "the quality of Louisiana's streams, rivers, and lakes depends in large part on the uses of the land they drain" (U.S. Geological Survey, 1993, p. 293).

1.4.1 Climate

HUMID, SUBTROPICAL CLIMATE PREVAILS IN LOUISIANA

The mean annual precipitation ranges from about 48 inches in the northwestern part of the State to 64 inches in the southeastern part.

The relatively high annual rainfall and the year-round moderate air temperatures account for the humid, subtropical climate in Louisiana (Lee, 1985b, p.2). Annual rainfall ranges from about 48 in. in the northwestern part of the State to about 64 in. in the southeastern part (fig. 1.4.1-1) (McWreath and Lowe, 1986; Muller and others, 1984). The most intense rainfall occurs during localized thunderstorms that produce large amounts of rainfall but move rapidly through an area.

Other sources of heavy rainfall are tropical storms and hurricanes. These storms intensify over the warm waters of the Gulf of Mexico and move slowly inland. During this inland movement, extremely heavy rainfall can occur over most of the State in a short period of time and can cause major flooding.

Mean annual air temperatures range from 19.0 °C in the northern part of the State to 20.5 °C in the southern part. The lowest temperatures usually occur during January and February and the highest temperatures occur during July and August (Lee, 1985b, p. 2).

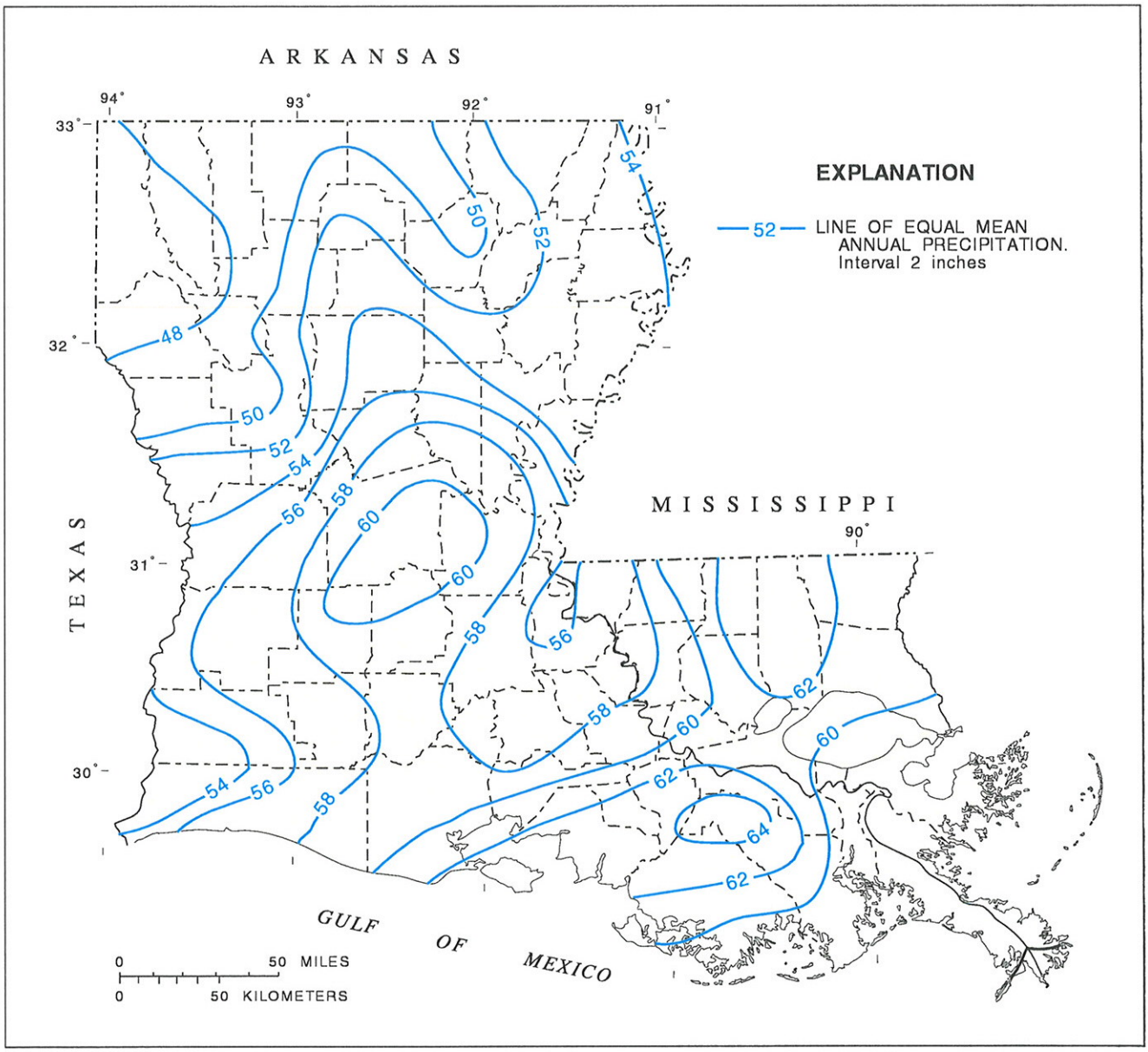

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Figure 1.4.1-1. Mean annual precipitation in Louisiana, 1951-80. (Source: Muller and others, 1984)

1.4.2 Physiography

LOUISIANA INCLUDES PARTS OF FOUR PHYSIOGRAPHIC DIVISIONS--PINE HILLS, PRAIRIES, COASTAL MARSHES, AND ALLUVIAL PLAINS

Major land uses include forests and agricultural lands.

Louisiana lies within the Coastal Plain Physiographic Province, and includes parts of four physiographic divisions--the Pine Hills, the Prairies, the Coastal Marshes, and the Alluvial Plains (Fenneman, 1938). These physiographic divisions are shown in figure 1.4.2-1. Parts of north-central, western, and southeastern Louisiana are in the Pine Hills division. The topography of this division is undulating hills with extensive pine and hardwood forests. Parts of southern and southwestern Louisiana are in the Prairies physiographic division. The land surface elevations in the Prairies range from 20 to 30 ft above sea level. This area generally is treeless except along streams. Much of coastal Louisiana is in the Coastal Marshes division. These areas are flat and subject to tidal flooding from the Gulf of Mexico. The flood plains adjacent to the Mississippi, Ouachita, and Red Rivers are in the Alluvial Plains physiographic division. The topography of these areas is flat with interconnecting streams that allow flow between the river basins (Lee, 1985b, p. 3).

The major land uses in the State include forests, cropland, grazing land, and wetlands (Louisiana Department of Transportation and Development, 1984, p. 24-28). Even though most land is well suited to agriculture, some areas support industry, oil and gas production, and aquaculture (U.S. Geological Survey, 1993, p. 293).

The principal rivers draining the State are the Pearl, Mississippi, Atchafalaya, Ouachita, Sabine, and Red Rivers. The Pearl River forms part of the eastern boundary between Louisiana and Mississippi and drains only a small part of the State. The Mississippi River is the largest river in the State but few streams within the State are tributary to it. The Atchafalaya River is a controlled distributary of the Mississippi River, and carries flow from the Red, Mississippi, and Ouachita Rivers to the Gulf of Mexico. The Sabine River forms part of the western boundary between Louisiana and Texas and drains only a small part of the State.

All other streams in the State are tributary to these rivers with the exception of two groups. The first group consists of streams east of the Mississippi River and west of the Pearl River. This group includes the Tchefuncte, Tangipahoa, Natalbany, and Amite Rivers. These rivers eventually flow into the Gulf of Mexico by way of Lake Pontchartrain and Lake Maurepas. The second group includes rivers west of the Mississippi River and east of the Sabine River. Major streams in this group are Bayou Teche and the Vermilion, Mermentau, and Calcasieu Rivers. These rivers flow into the Gulf of Mexico.

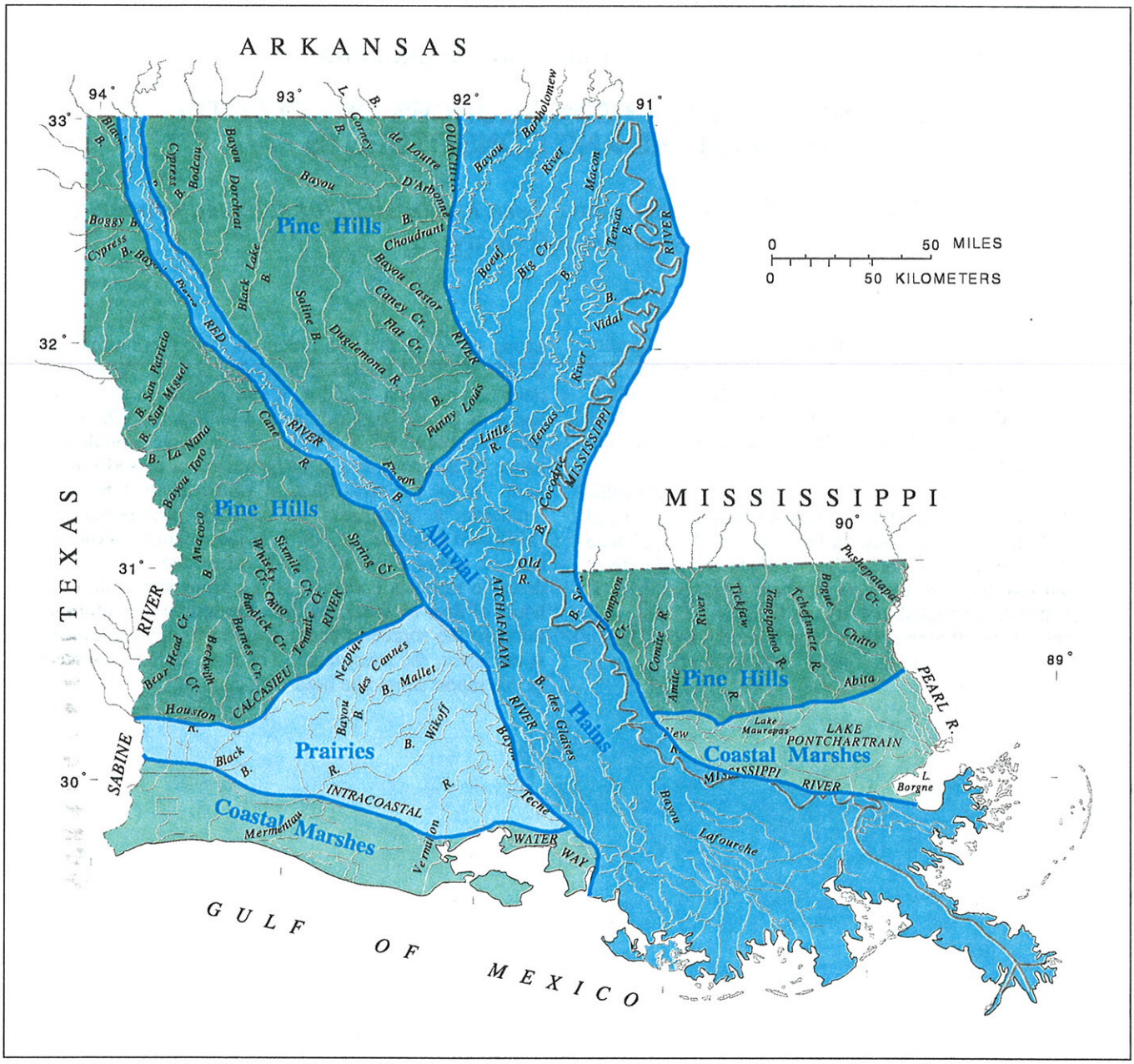

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Figure 1.4.2-1. Physiographic divisions and streams in Louisiana. (Source: Lee, 1985b, p. 4)

1.5 Surface-Water-Quality Properties and Constituents

TABLE INCLUDES COMMON SOURCES OF SELECTED PROPERTIES AND CONSTITUENTS

Federal regulations and State criteria have been established for selected properties and constituents analyzed.

Table 1.5-1 describes selected water-quality properties and constituents discussed in this report. The table lists common sources of the properties and constituents and their environmental significance, and where established, the Federal regulations and State criteria are presented.

In addition to the information presented in this table, it may be noted that values for fecal coliform and fecal streptococcus bacteria have a special importance when compared to each other. "When the ratio (fecal coliform bacteria to fecal streptococcus bacteria) is greater than or equal to 4, it may be taken as strong evidence that pollution derives from human wastes. When the ratio is less than or equal to 0.7, it may be taken as strong evidence that pollution derives predominantly or entirely from livestock or poultry wastes. When the ratio lies between 2 and 4, it can indicate a predominance of human wastes in mixed pollution. When the ratio is between 0.7 and 1.0, it can indicate a predominance of livestock and poultry wastes in mixed pollution. When the ratio falls on values from 1 to 2, it represents a 'grey area' of uncertain interpretation" (Millipore Corporation, 1972, p. 36). This interpretation of ratios is most reliable when the two counts describe samples collected at the same site within 24 hours of flow downstream from the source of pollution. Because the source of contamination in most instances is unknown, the interpretation of these ratios presented in this report should be used with caution.

Table 1.5-1. Common sources of properties and constituents, their environmental significance, and Federal regulations and State criteria

[Source: U.S.Environmental Protection Agency (USEPA), 1976; 1986; 1994; 1996; Louisiana Department of Environmental Quality (DEQ), 1984; Hem, 1985; Tobin and Youger, 1977.
NE, no established criteria; SMCL, secondary maximum contaminant level; °C, degrees Celsius; mg/L, milligrams per liter; µg/L, micrograms per liter;
MCL, maximum contaminant level; Proposed MCL, proposed maximum contaminant level; ng/L, nanograms per liter; cols/100 mL, colonies per 100 milliliters]

Property or constituent	Common source	Environmental significance	USEPA Federal water-quality regulations[1]	DEQ State water-quality criteria
Physical properties				
Specific conductance	Ions within the water.	Indicates the presence of precipitation, dilution, evaporation, and metabolic uptake and release of chemicals.	NE	NE
pH	Hydrogen-ion activity.	May indicate oxidation of some form of sulfur or iron.	SMCL is 6.5-8.5 and 6.5-9.0 is the recommended range for freshwater aquatic life.	6.0-9.0 and no effluent will cause pH to vary by more than 1.0.
Water temperature	Seasonal changes; daily variance outside discharges into waterbody.	Affects migration patterns and colonization characteristics; accelerates biodegradation; decreases maximum oxygen concentration.	See U.S. Environmental Protection Agency (1976, p. 218).	Freshwater: (1) Maximum of 2.8 °C rise above ambient for streams. (2) Maximum of 1.7 °C rise above ambient for lakes. (3) Maximum temperature of 32.2 °C except where otherwise listed. Estuarine and coastal waters: (1) Maximum of 2.2 °C rise above ambient October through May. (2) Maximum of 0.83 °C rise during June through September. (3) Maximum temperature of 35.0 °C except when natural conditions elevate temperature above this level.
Dissolved oxygen	Transferred from the atmosphere; photosynthesis by aquatic plants.	Inadequate dissolved oxygen can have adverse effect on aquatic life.	For freshwater aquatic life and coastal marine water, 5.0 mg/L.	For freshwater and coastal marine water, 5.0 mg/L.
Total dissolved solids.	Inorganic salts and some organic materials.	Excess can cause pipe corrosion or have detrimental effects on sensitive crops if used for irrigation.	SMCL is 500 mg/L. 250 mg/L for chlorides and sulfates in domestic water supplies (welfare).	State criteria vary from stream to stream.
Major inorganic cations				
Calcium, dissolved	Occurs in igneous-rock minerals, silicate minerals, and as carbonates in sedimentary rocks.	Important for animal and plant nutrition.	NE	NE
Magnesium, dissolved	Carbonate sedimentary rock forms such as limestone.	Important for animal and plant nutrition.	NE	NE
Sodium, dissolved	Occurs in igneous and sedimentary rocks, especially evaporites.	Excessive sodium in drinking or irrigation water can have detrimental effects on plants and consumers.	No water-quality contaminant level is recommended for home drinking water.	NE
Potassium, dissolved	More abundant in sedimentary rocks than igneous rocks.	Essential plant nutrient.	NE	NE
Major inorganic anions				
Alkalinity, as calcium carbonate	Caused by the presence of bicarbonates, carbonates, and hydroxides. Function of pH and temperature.	Buffers water against pH changes.	For freshwater aquatic life, 20 mg/L.	NE
Sulfate, dissolved	Can be dissolved from gypsum, sodium sulfate, and some types of shales. Mining activities, industrial waste, and organic matter.	Concentrations exceeding a natural, background level indicate contamination from human activity; in sufficient quantity, can cause water to be unsuitable for public supply; can harm aquatic organisms.	SMCL is 250 mg/L.	Maximum contaminant level is 250 mg/L.
Chloride, dissolved	Common in brine and a primary constituent in seawater; evaporite sediment.	Associated with sodium and, if present in excess, can be detrimental in water used for drinking or irrigation.	SMCL is 250 mg/L	For instream concentration, 250 mg/L.
Trace metals				
Copper, dissolved	Malachite and cuprite. Oxides and sulfates are used in algicides, pesticides, and fungicides.	Important for the synthesis of chlorophyll.	SMCL is 1,000 µg/L.	NE
Iron, dissolved	Present in igneous-rock minerals and in sedimentary rocks.	Important for plant and animal nutrition.	SMCL is 300 µg/L.	NE
Lead, dissolved	Often result from mining, smelting, and other industrial operations. May occur naturally as lead sulfide.	Toxic, bioaccumulative. Has no nutritional value.	MCL is 15 µg/L at the tap. For sensitive freshwater resident species, 0.01 times the 96-hour LC_{50} value, using the receiving or comparable water as the diluent and soluble lead measurements (using an 0.45 micron filter).	NE
Zinc, dissolved	Used in the metallurgy, paint, rubber, and photo-engraving industries.	Important for animal metabolism. However, small quantities can be toxic to aquatic plants, animals, and bacteria.	SMCL is 5,000 µg/L.	NE
Nutrients				
Ammonia plus organic nitrogen, total	Sewerage or industrial contamination.	Ammonia reactions with chlorine can result in the formation of chloramine compounds. Organic nitrogen can be an indicator of organic pollution.	NE	NE
Nitrite plus nitrate, nitrate, and nitrite as nitrogen, total.	Fertilizers and animal and human wastes.	Plant nutrient that can be an indication of wastes.	MCL for nitrite plus nitrate is 10 mg/L, nitrate is 10 mg/L, and nitrite 1.0 mg/L.	NE
Phosphorus, total	Results from leaching of rocks and soil, decomposition of plants and animals, from fertilizers, sewerage, and industrial waste.	Although it is not toxic to man, it is bioaccumulative and toxic to certain forms of aquatic life. High concentrations promote undesirable plant growth causing eutrophication of lakes.	NE	NE
Pesticides and other organics				
DDT, total	Insecticides.	Bioaccumulative and toxic.	For freshwater and marine aquatic life, 0.001 µg/L.	For freshwater, 1.1 µg/L. For public water supply, 0.24 ng/L.
PCB, total	Found in capacitors and transformers used in the electrical industry.	Bioaccumulative and toxic.	For freshwater aquatic life, 0.014 µg/L. Ingestion of contaminated water and aquatic organisms should be zero.	For freshwater, 2.0 µg/L. For public water supply, 0.79 ng/L.
Diazinon, total	Insecticides.	Bioaccumulative and toxic.	NE	NE
Lindane, total	Insecticides.	Bioaccumulative and toxic.	For domestic water supply, 0.2 µg/L. For freshwater aquatic life, 0.01 µg/L.	NE
Chlordane, total	Insecticides.	Bioaccumulative and toxic.	For freshwater aquatic life, 2.4 µg/L.	For freshwater, 2.4 µg/L. For public water supply, 4.6 ng/L.
Malathion, total	Insecticides.	Bioaccumulative and toxic.	For freshwater and marine aquatic life, 0.1 µg/L.	NE
Endrin, total	Insecticides.	Bioaccumulative and toxic.	For freshwater aquatic life, 0.18 µg/L. MCL is 2.0 µg/L.	For freshwater, 0.18 µg/L. For public water supply, 1.0 µg/L.
Parathion, total	Insecticides.	Bioaccumulative and toxic.	For freshwater and marine aquatic life, 0.04 µg/L.	NE
Endosulfan, total	Insecticides.	Bioaccumulative and toxic.	For freshwater aquatic life, 0.22 µg/L. To protect public health, 74 µg/L.	NE
2,4-D, total	Herbicides.	Bioaccumulative and toxic.	For domestic water supply, 70 µg/L.	For public water supply, 100 µg/L.
Biological constituents				
Fecal coliform	Human wastes.	Indicator of pathogens.	Based on minimum of 5 samples collected over a 30-day period, the level should not exceed a log mean of 200 cols/100 mL, nor should more than 10 percent of the total samples collected during any 30-day period exceed 400 cols/100 mL.	Based on a minimum of 5 samples collected over a 30-day period, the level should not exceed a log mean of 200 cols/100 mL, nor should more than 10 percent of the total samples collected during any 30-day period exceed 400 cols/100 mL.
Fecal streptococcus	Livestock and poultry wastes.	Indicator of pathogens.	NE	NE
Suspended sediment				
Suspended sediment	Sand, silt, clay, and organic material which enter a stream either from hillslope erosion or directly from the streambed.	Long periods of high concentrations of sediment can interfere with photosynthesis, bury benthic organisms, inhibit respiration of gilled organisms, and ultimately alter the aquatic ecosystem.	NE	NE

[1] *Primary Drinking-Water Regulations maximum contaminant level (February 1996):* Enforceable, health-based regulation that is to be set as close to the maximum contaminant level goal as is feasible. The definition of feasible means the use of best technology, treatment techniques, and other means that the Administrator of USEPA finds, after examination for efficacy under field conditions and not solely under laboratory conditions, are generally available (taking cost into consideration).

Proposed maximum contaminant level: Not enforceable.

Secondary Drinking-Water Regulations secondary maximum contaminant level: Contaminants that affect the aesthetic quality of drinking water. At high concentrations or values, health implications as well as aesthetic degradation may also exist. SMCLs are not federally enforced, but are intended as guidelines for the states.

2.0 OUACHITA RIVER BASIN IN LOUISIANA

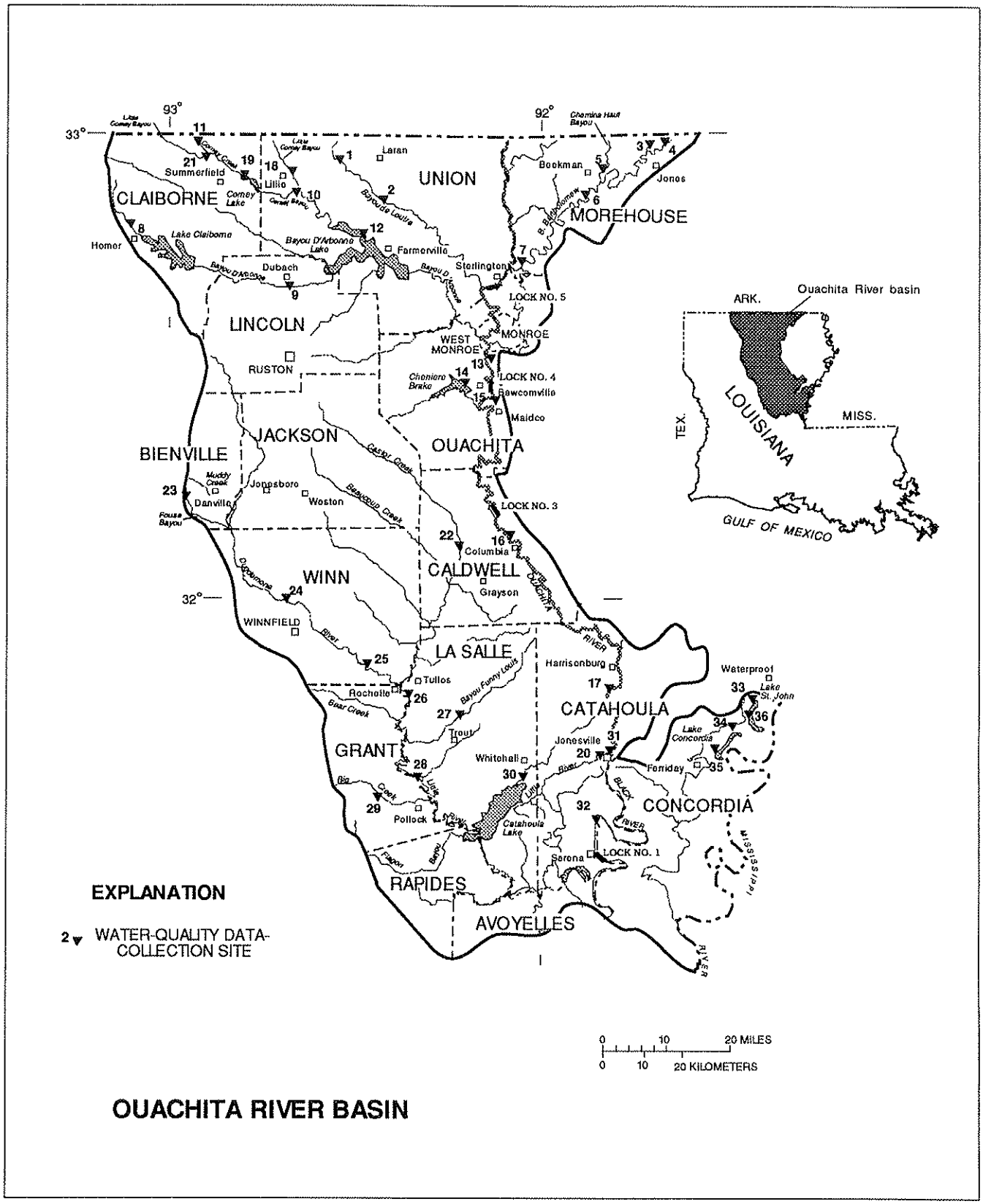
STATISTICAL SUMMARY OF SURFACE-WATER QUALITY IN THE OUACHITA RIVER BASIN

Data from 36 sites were analyzed.

Statistical analyses of surface-water-quality data for the Ouachita River basin are presented in this part of the report. Text, maps, boxplots, graphs, and tables are used to describe the surface-water quality. Data are presented for 33 water-quality properties and constituents for analyses stored in the USGS WATSTORE files. The data were collected from 36 sites (table 2.0-1 and fig. 2.0-1) in the basin during water years 1908-94. This information is useful to Federal, State, and local planners; hydrologists; engineers; scientists; and others who have water-resources management responsibilities for the Ouachita River basin.

Table 2.0-1. Surface-water-quality data-collection sites in the Ouachita River basin, Louisiana, 1908-94

Map no. (fig. 2.0-1)	Site name and location	Map no. (fig. 2.0-1)	Site name and location
1	Bayou de Loutre near Laran	19	Corney Lake near Summerfield
2	Bayou de Loutre near Farmerville	20	Little River at Jonesville
3	Bayou Bartholomew near Jones	21	Little Corney Bayou near Summerfield
4	Bayou Bartholomew northwest of Jones	22	Castor Creek near Grayson
5	Chemin-a-Haut Bayou near Beekman	23	Fouse Bayou near Danville
6	Bayou Bartholomew near Beekman	24	Dugdemona River near Winnfield
7	Bayou Bartholomew near Sterlington	25	Dugdemona River near Tullos
8	Bayou D'Arbonne at Homer	26	Little River near Rochelle
9	Bayou D'Arbonne near Dubach	27	Bayou Funny Louis near Trout
10	Corney Bayou near Lillie	28	Little River near Pollock
11	Corney Bayou near Arkansas-Louisiana State Line	29	Big Creek at Pollock
12	Bayou D'Arbonne Lake at Farmerville	30	Catahoula Lake near Whitehall
13	Ouachita River at Monroe	31	Black River at Jonesville
14	Cheniere Brake at dam near Bawcomville	32	Black River near Serena
15	Ouachita River at Maidco	33	Lake St. John near Waterproof
16	Ouachita River at Columbia	34	Lake Concordia near Ferriday
17	Ouachita River near Harrisonburg	35	Lake Concordia at Ferriday
18	Little Corney Bayou near Lillie	36	Lake St. John, south, near Waterproof



Louisiana Department of Transportation and Development-U.S. Geological Survey Water Resources Cooperative Program

Figure 2.0-1. Surface-water-quality data-collection sites in the Ouachita River basin, Louisiana, 1908-94.

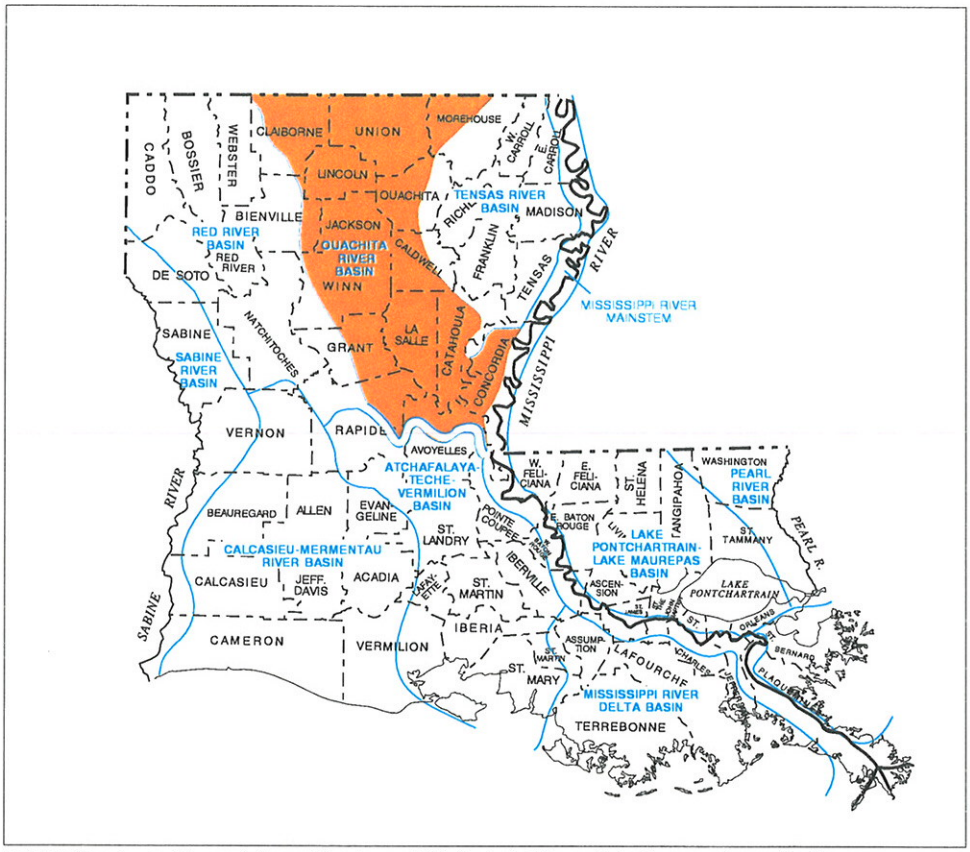
2.1 Overview

OUACHITA RIVER, DUGDEMONA RIVER, LITTLE RIVER, BLACK RIVER, AND TWO OXBOW LAKES ARE PRINCIPAL SOURCES OF SURFACE WATER

Surface water within the Ouachita River basin is used mainly for power generation.

The Ouachita River basin in Louisiana (fig. 2.0-1) is about 135 mi long and 90 mi wide at its widest point. The Ouachita River is the primary source of surface water that is used for power generation (Louisiana Department of Transportation and Development, 1984). Surface waters in the basin also are used for industry and, to some extent, rice irrigation (fig. 2.1-1) (Lovelace, 1991, p. 110).

The other principal sources of fresh surface water in the basin are Dugdemona River, Little River, Black River, Lake St. John, and Lake Concordia. During the period 1981-94, the maximum average discharge was 17,600 ft^3/s at Ouachita River at Columbia (Garrison and others, 1995, p. 110). Big Creek at Pollock has the lowest median discharge (30 ft^3/s) for the periods of record for sites where data were available (Garrison and others, 1995, p.127). The oxbow lakes have surface areas of 2,120 acres at Lake St. John and 1,050 acres at Lake Concordia (Louisiana Department of Transportation and Development, 1984). Other bodies of fresh surface water in the basin include Bayous Bartholomew, D'Arbonne, de Loutre, and Funny Louis; Castor Creek; Catahoula Lake; Chenier Brake; and Chemin-a-Haut, Corney, Fouse, and Little Corney Bayous.



Louisiana Department of Transportation and Development-U.S. Geological Survey Water Resources Cooperative Program

Withdrawals by Category

Category	Amount (Mgal/d)
Public supply	0.92
Industry	59.31
Power generation	66.50
Rural domestic	.00
Livestock	1.13
Rice irrigation	8.97
General irrigation	.39
Aquaculture	3.01
TOTAL	140.23

Withdrawals by Major Water Body

Water Body	Amount (Mgal/d)
Bayou Bartholomew	24.67
Big Creek	2.53
Little River	1.87
Ouachita River	97.81

Withdrawals by Parish

Parish	Amount (Mgal/d)
Avoyelles	0.09
Caldwell	.07
Catahoula	3.10
Claiborne	.09
Concordia	2.58
Grant	4.46
Jackson	.07
La Salle	.23
Lincoln	.19
Morehouse	31.58
Ouachita	91.11
Rapides	6.32
Union	.29
Winn	.05

Figure 2.1-1. Surface-water withdrawals (in million gallons per day) from the Ouachita River basin, Louisiana, 1990. (Source: Lovelace, 1991, p. 110)

2.2 Surface-Water Quality

SELECTED PROPERTIES AND CONSTITUENTS

Physical, chemical, and biological data describe the surface-water quality of the Ouachita River basin.

Figure 2.2-1 shows 1 of the 36 water-quality data-collection sites in the Ouachita River basin. The data for this and other water-quality sites in the basin are presented alphabetically by site name in table 2.2-1 at the back of this report. The table includes selected water-quality properties and constituents, number of analyses, reporting levels, and values or concentrations for the percentiles used to generate the boxplots shown for 6 of the 36 sites in the Ouachita River basin. The format of the data in these tables allows easy comparison among sites within the basin. Results of analyses used for statistical computations are in the files of the USGS.

Figure 2.2-1. Water-quality data-collection site at Little River near Rochelle, Louisiana. (Photograph from U.S. Geological Survey files)

2.2 Surface-Water Quality--continued

2.2.1 Physical Properties--Specific Conductance, pH, Water Temperature, and Dissolved Oxygen

VALUES FOR pH AT SEVERAL SITES IN THE BASIN FALL OUTSIDE OF U.S. ENVIRONMENTAL PROTECTION AGENCY'S SECONDARY MAXIMUM CONTAMINANT LEVEL RANGE OF 5.0 TO 9.0

Values for pH range from 3.7 to 9.8 at sites within the basin.

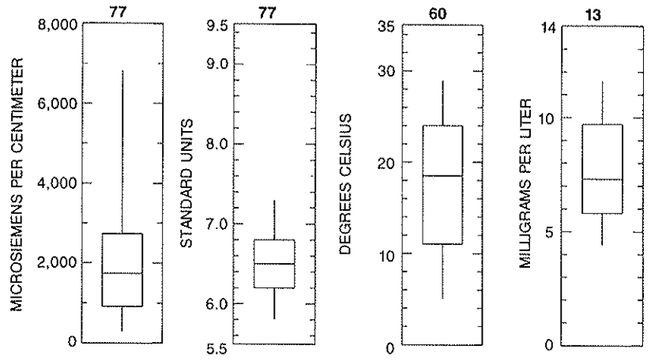
Statistical summaries of water-quality data at 36 sites in the basin are presented in table 2.2-1 in the back of the report and boxplots summarizing the specific conductance, pH, water temperature, and dissolved oxygen concentration data are presented in figure 2.2.1-1 for six of the sites. Specific conductance values for all sites in the Ouachita River basin ranged from 23 µS/cm at Big Creek at Pollock to 43,400 µS/cm at Bayou Funny Louis near Trout (table 2.2-1). The median values for specific conductance ranged from 39 to 1,740 µS/cm for all sites. Oil field brine discharges probably account for median specific conductance values for Bayou de Loutre; the values were occasionally higher than other sites. Interquartile ranges for specific conductance were 911 to 2,740 µS/cm at Bayou de Loutre near Laran and 138 to 726 µS/cm at Little River near Rochelle.

Values for pH in water from all sites in the basin ranged from 3.7 at Bayou de Loutre near Laran, Corney Bayou near Arkansas-Louisiana State line, and Corney Lake near Summerfield to 9.8 at Bayou Bartholomew near Jones. Several sites within the basin occasionally exceeded the secondary maximum contaminant level (SMCL) range of 5.0 to 9.0 for domestic water supply (U.S. Environmental Protection Agency, 1976; 1986) due to swamps, oil field brines, and surface drainage from bottomland hardwoods. Median pH values in the Ouachita River basin ranged from 4.5 to 8.4. The boxplots indicate that pH often was less than 6.5, the lower limit of the U.S. Environmental Protection Agency recommended range for freshwater aquatic life (U.S. Environmental Protection Agency, 1976; 1986). For example, at least 50 percent of the measured values were less than 6.5 at Bayou de Loutre near Laran. At Little River near Rochelle and Ouachita River at Columbia, more than 25 percent of the pH values were less than 6.5. Interquartile ranges for pH were 7.6 to 8.3 at Lake Concordia near Ferriday and 7.1 to 8.3 at Lake St. John near Waterproof.

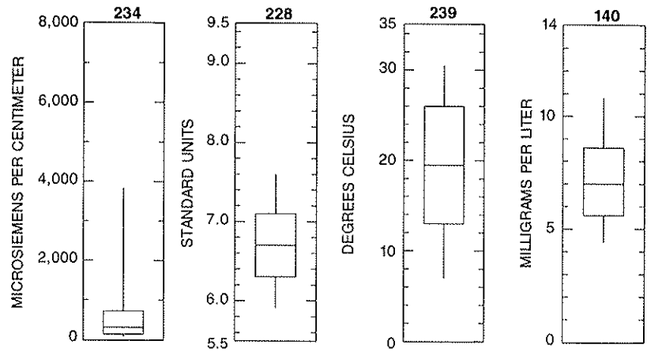
Values for water temperatures at all sites in the basin ranged from 0.0 °C at Ouachita River at Monroe and Chemin-a-Haut Bayou near Beekman to 36.0 °C at Bayou D'Arbonne Lake at Farmerville and Ouachita River at Monroe. Median values ranged from 13.5 to 24.5 °C. Maximum water temperatures at Bayou D'Arbonne Lake, Bayou de Loutre, Cheniere Brake, Lake Concordia, Lake St. John, and Ouachita River exceeded the State's criterion of 32.2 °C. These temperatures probably occurred during extreme low flow or on very hot days (Louisiana Department of Environmental Quality, 1984, p. 12). Interquartile ranges for water temperature were 13.0 to 26.0 °C at Little River near Rochelle and 13.0 to 27.8 °C at Ouachita River at Columbia.

Dissolved oxygen concentrations in water from the basin ranged from 0.0 mg/L at Little River near Rochelle to 14.0 mg/L at Lake St. John near Waterproof. The median concentrations for dissolved oxygen ranged from 5.0 to 9.3 mg/L. The dissolved oxygen concentrations differed seasonally in the lakes due to temperature and algal blooms. Dissolved oxygen concentrations were greater than the State's minimum water-quality criterion of 5.0 mg/L in more than 75 percent of the samples analyzed at most sites. The U.S. Environmental Protection Agency's criterion for dissolved oxygen is 5.0 mg/L for freshwater aquatic life (U.S. Environmental Protection Agency, 1976; 1986). The boxplots for dissolved oxygen concentrations in figure 2.2.1-1 indicate that approximately 25 percent of the values measured at Bayou Bartholomew near Jones were less than or equal to 5.0 mg/L. Interquartile ranges for dissolved oxygen concentrations were 7.7 to 11.8 mg/L at Lake Concordia near Ferriday and 7.5 to 10.1 at Lake St. John near Waterproof.

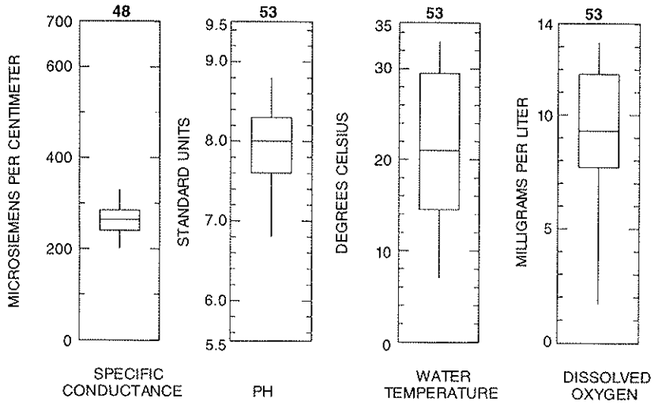
1 BAYOU DE LOUTRE NEAR LARAN

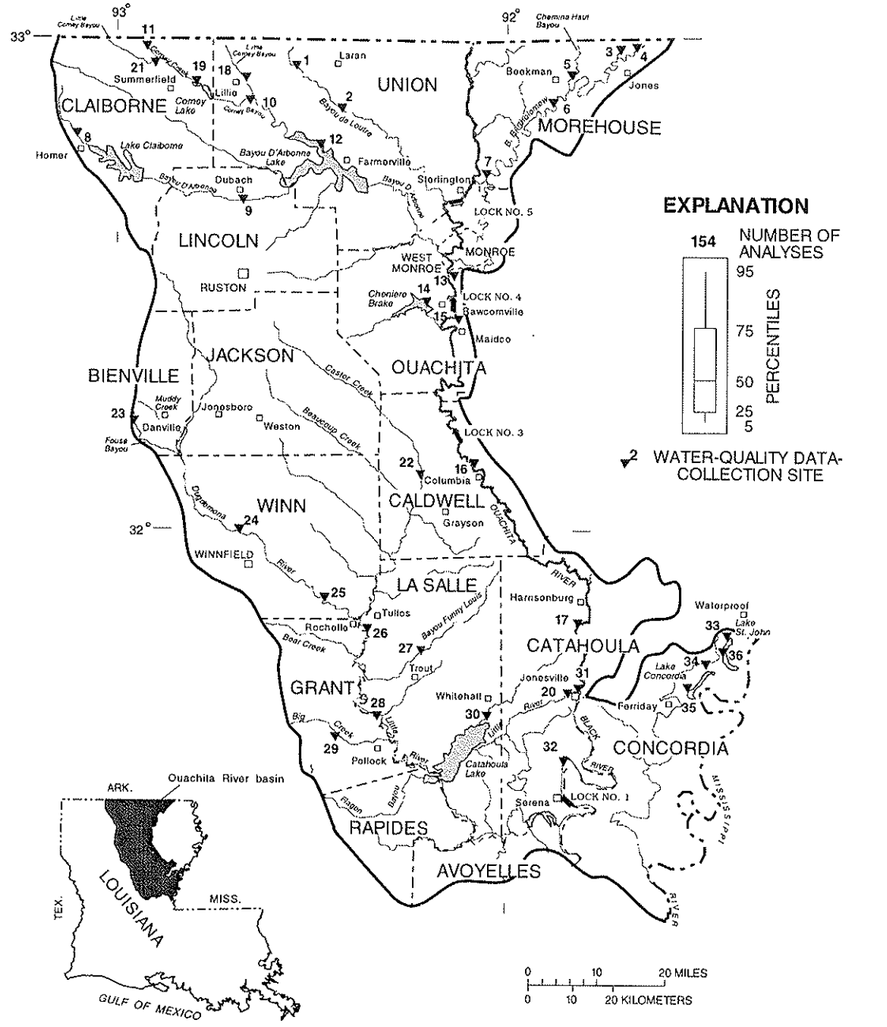


26 LITTLE RIVER NEAR ROCHELLE

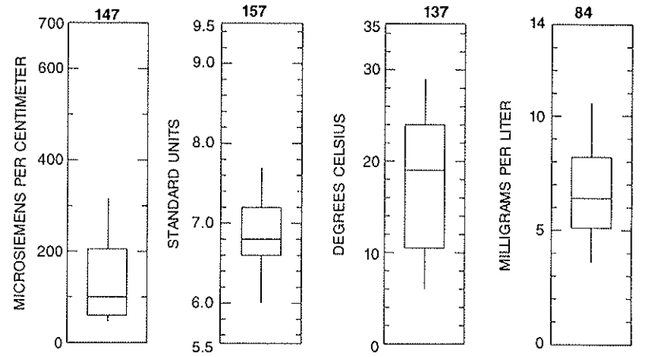


34 LAKE CONCORDIA NEAR FERRIDAY

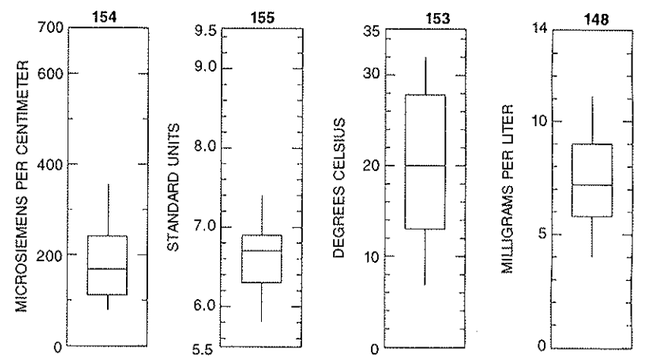




3 BAYOU BARTHOLOMEW NEAR JONES



16 OUACHITA RIVER AT COLUMBIA



36 LAKE ST. JOHN NEAR WATERPROOF

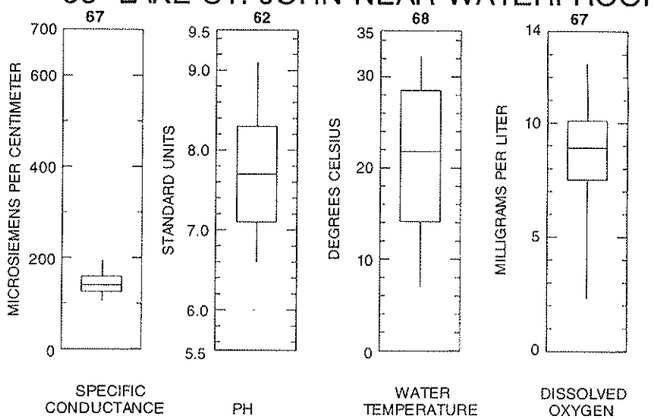


Figure 2.2.1-1. Water-quality data-collection sites in the Ouachita River basin, Louisiana, and boxplots summarizing specific conductance, pH, water temperature, and dissolved-oxygen data for selected sites.

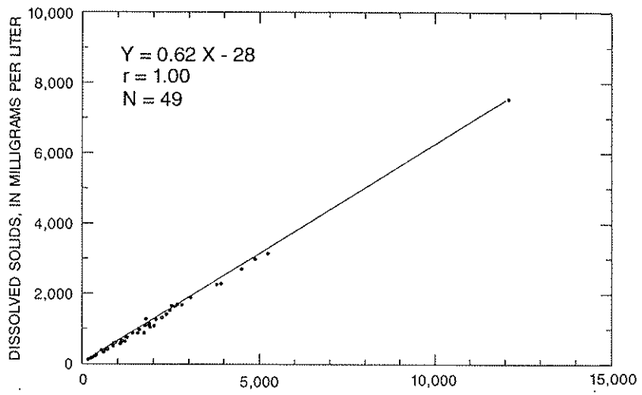
DISSOLVED SOLIDS CONCENTRATIONS CAN BE ESTIMATED FROM SPECIFIC CONDUCTANCE VALUES

Dissolved solids concentrations in water from the Ouachita River basin met the U.S. Environmental Protection Agency's secondary drinking water regulations for dissolved solids in irrigation water.

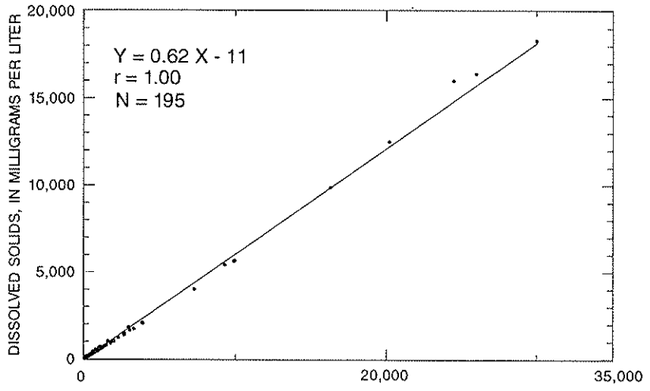
Linear regression equations relating dissolved solids concentrations to specific conductance were calculated for six sites in the Ouachita River basin (fig. 2.2.2-1). The correlation coefficient values, r, ranged from 0.87 at Lake St. John near Waterproof to 1.00 at Bayou de Loutre near Laran and Little River near Rochelle. The relatively strong correlation between specific conductance and dissolved solids concentrations indicates that dissolved solids concentrations can be estimated from specific conductance values with a reasonable degree of accuracy.

The regression equation for Ouachita River at Columbia, which was based on 150 chemical analyses, indicates that dissolved solids concentrations at that site can exceed 500 mg/L when specific conductance values exceed 274 µS/cm. The boxplot for specific conductance for Ouachita River at Columbia (fig. 2.2.1-1) indicates that 274 µS/cm was exceeded in less than 25 percent of the samples analyzed. Although no State criteria for the quality of irrigation water are established for these streams or for the other streams for which regression equations were developed, the regression equations indicated that the streams in the basin generally met the U.S. Environmental Protection Agency's (1976) criterion for dissolved solids in irrigation water (500 mg/L).

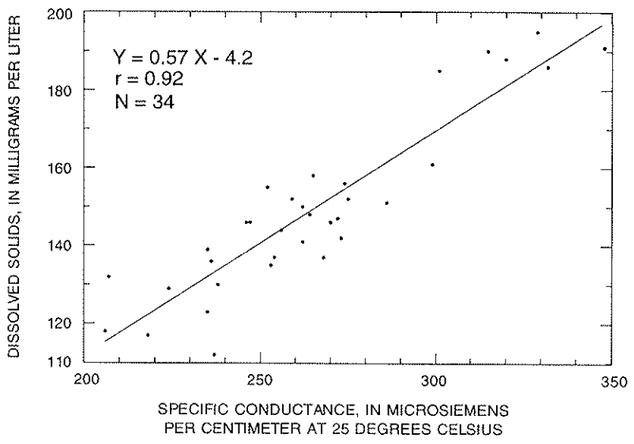
1 BAYOU DE LOUTRE NEAR LARAN

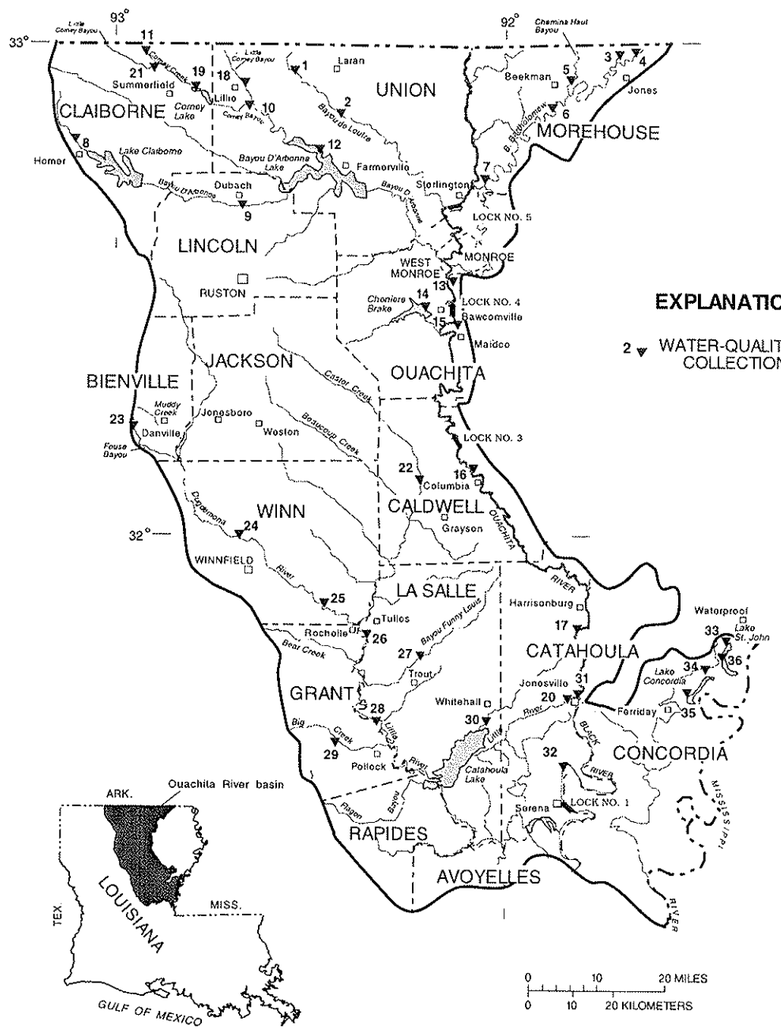


26 LITTLE RIVER NEAR ROCHELLE



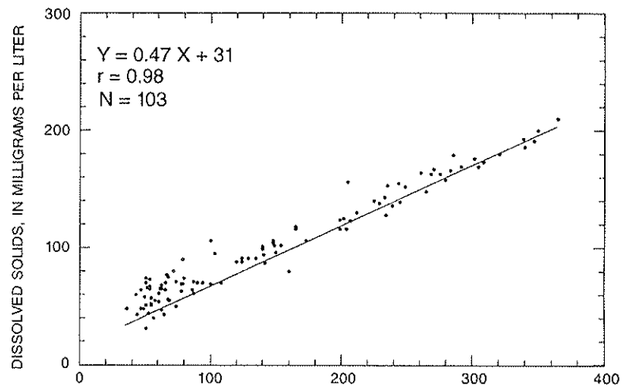
34 LAKE CONCORDIA NEAR FERRIDAY



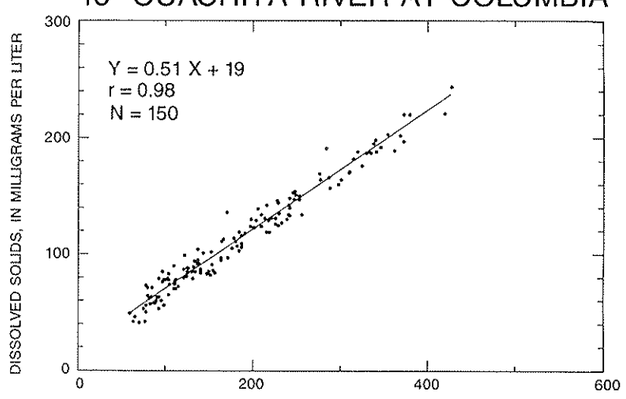


OUACHITA RIVER BASIN

3 BAYOU BARTHOLOMEW NEAR JONES



16 OUACHITA RIVER AT COLUMBIA



36 LAKE ST. JOHN NEAR WATERPROOF

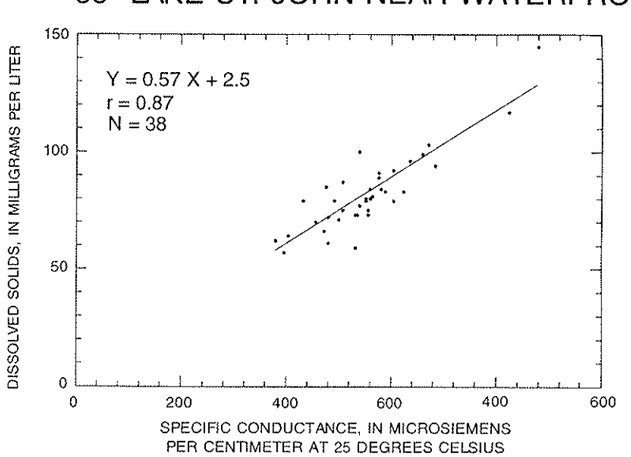


Figure 2.2.2-1. Water-quality data-collection sites in the Ouachita River basin, Louisiana, and graphs showing relation between specific conductance and dissolved solids in water from selected sites.

2.2.3 Major Inorganic Cations--Dissolved Calcium, Magnesium, Sodium, and Potassium

CONCENTRATIONS OF DISSOLVED CALCIUM, MAGNESIUM, SODIUM, AND POTASSIUM ARE HIGH IN WATER FROM SOME SITES IN THE BASIN

Concentrations of calcium were significantly higher at Bayou de Loutre near Laran than at the other sites in the basin.

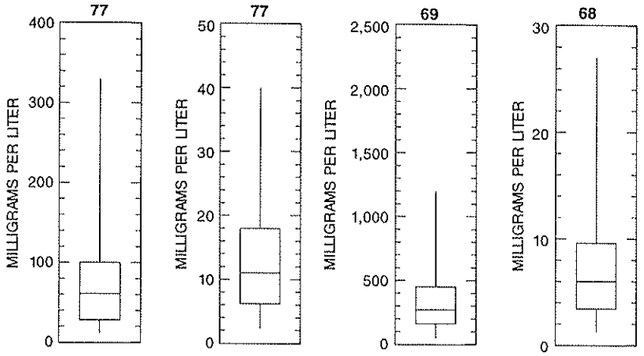
The data for major inorganic cations and anions in water from the basin indicated that concentrations of major ions were below recommended levels for drinking water, for which such levels have been established. Calcium concentrations at all sites in the Ouachita River basin ranged from less than 0.01 mg/L at Ouachita River at Monroe to 680 mg/L at Bayou de Loutre near Laran. Concentrations of calcium were significantly higher at Bayou de Loutre near Laran than at the other sites in the basin. Boxplots for six representative sites in the basin (fig. 2.2.3-1) show that the median value for calcium at Bayou de Loutre near Laran was approximately two to six times greater than the median concentration at other sites. The median value at Bayou de Loutre near Laran is 61 mg/L, and the median value at Lake St. John near Waterproof is 13 mg/L.

Magnesium concentrations in the basin ranged from less than 0.01 mg/L at Big Creek at Pollock, Little River near Rochelle, and Ouachita River at Monroe to 250 mg/L at Bayou Funny Louis near Trout. Boxplots from six representative sites (fig. 2.2.3-1) show that at least 75 percent of the magnesium values in the samples collected at these sites were less than 20 mg/L. The median values for magnesium ranged from 0.70 to 12 mg/L for all sites.

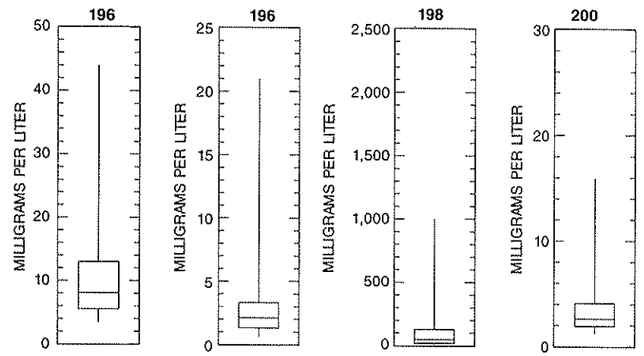
Although the highest sodium concentration in water from the basin was at Little River near Rochelle (6,500 mg/L), the median concentration was only 49 mg/L. The minimum sodium concentration (0.70 mg/L) occurred at Big Creek at Pollock. Boxplots for six representative sites shown in fig. 2.2.3-1 show that at least 95 percent of the samples collected had sodium concentrations less than 50 mg/L, except at Bayou de Loutre near Laran and Little River near Rochelle. The median concentration at Bayou de Loutre near Laran (270 mg/L) was more than 10 times greater than the median at most of the other sites.

Concentrations of potassium in water from the basin ranged from 0.10 mg/L at Big Creek at Pollock to 140 mg/L at Little River near Pollock. The minimum median concentration (1.3 mg/L) occurred at Big Creek at Pollock. Boxplots for six representative sites (fig. 2.2.3-1) show that at least 95 percent of values for potassium were less than 5.0 mg/L at all of these sites, except Bayou de Loutre near Laran and Little River near Rochelle.

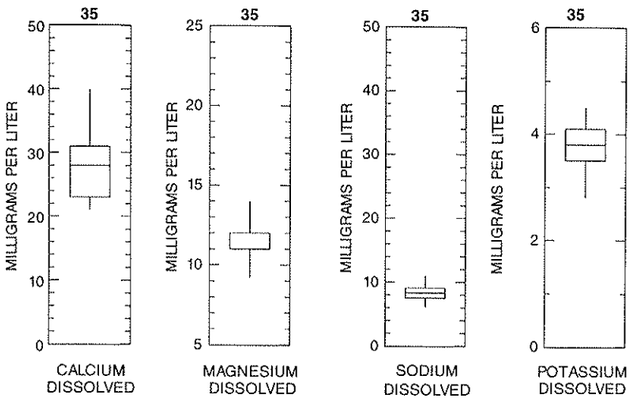
1 BAYOU DE LOUTRE NEAR LARAN

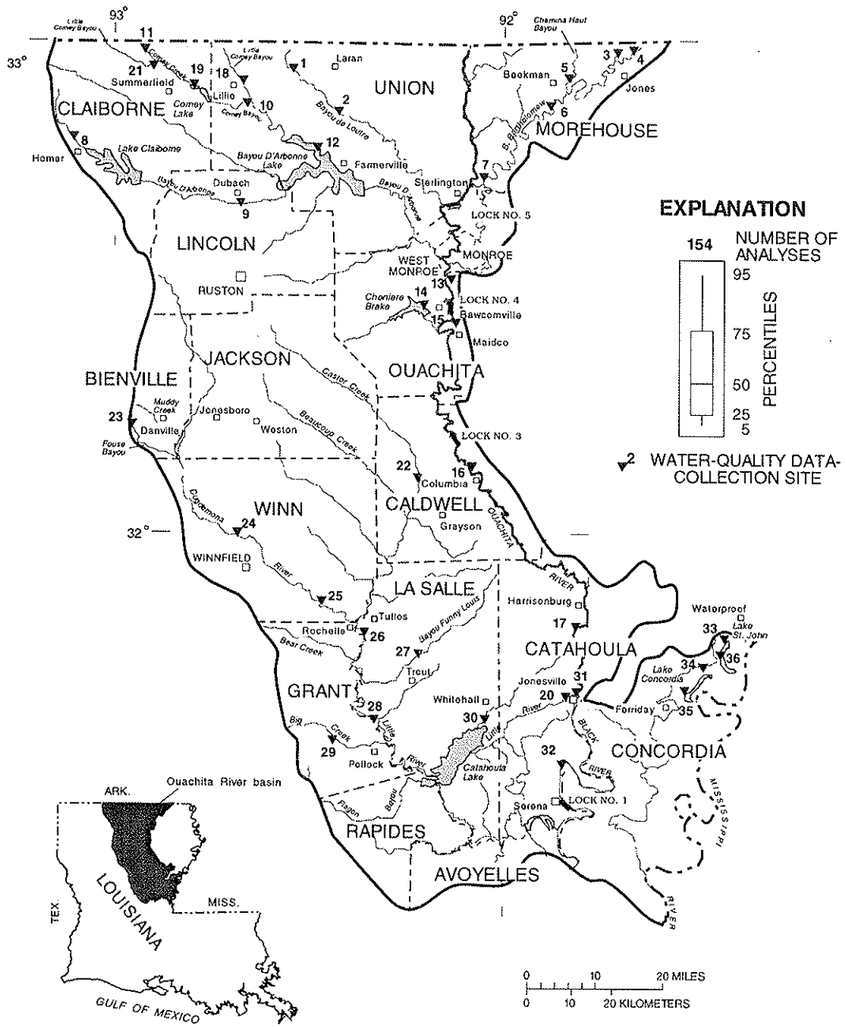


26 LITTLE RIVER NEAR ROCHELLE



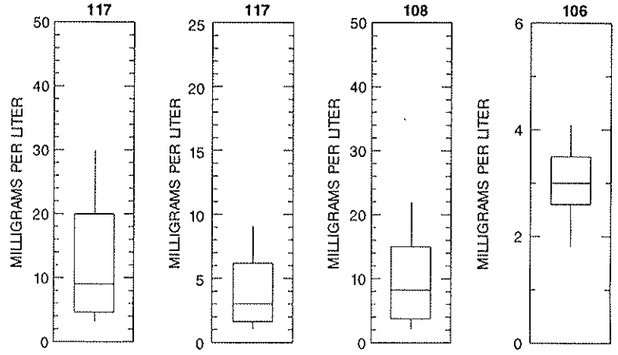
34 LAKE CONCORDIA NEAR FERRIDAY



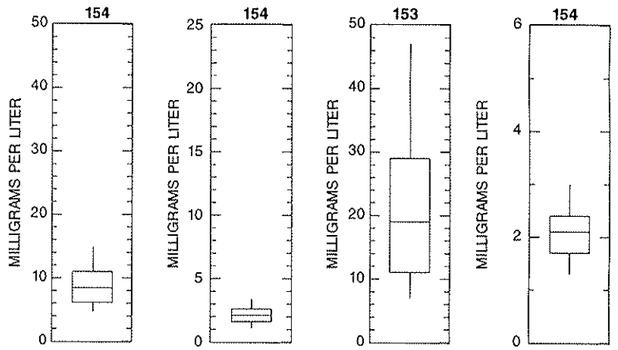


OUACHITA RIVER BASIN

3 BAYOU BARTHOLOMEW NEAR JONES



16 OUACHITA RIVER AT COLUMBIA



36 LAKE ST. JOHN NEAR WATERPROOF

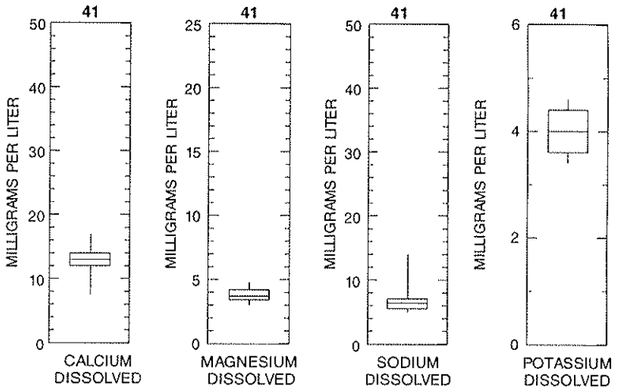


Figure 2.2.3-1. Water-quality data-collection sites in the Ouachita River basin, Louisiana, and boxplots summarizing data for dissolved calcium, magnesium, sodium, and potassium concentrations in water from selected sites.

2.2.4 Major Inorganic Anions--Total Alkalinity as Calcium Carbonate, Dissolved Sulfate, and Dissolved Chloride

TOTAL ALKALINITY IS HIGH AT LAKE CONCORDIA

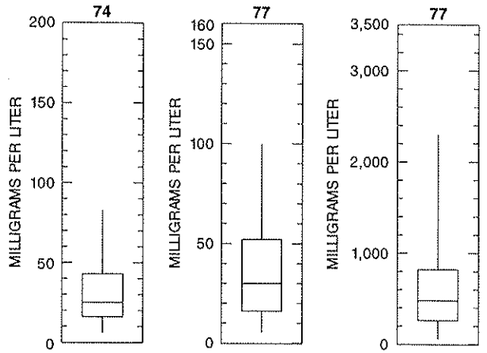
The median total alkalinity at Lake Concordia near Ferriday is greater than 100 mg/L.

The data for major inorganic cations and anions in water from the basin indicated that concentrations of major ions were below recommended levels for drinking water, for which such levels have been established. Alkalinity as calcium carbonate in water from the Ouachita River basin ranged from less than 1 mg/L at Bayou de Loutre near Laran, Corney Bayou near the Arkansas-Louisiana State line, Corney Bayou near Lillie, and Ouachita River at Monroe, to 440 mg/L at Black River at Jonesville. The lowest median concentration (7 mg/L) occurred at Corney Bayou near Lillie. The maximum median alkalinity in the basin was 125 mg/L, which occurred at Lake Concordia near Ferriday. The boxplots for six representative sites (fig. 2.2.4-1) show that alkalinity values in 75 percent of the samples analyzed generally were 20 mg/L or greater at Lake Concordia near Ferriday and Lake St. John near Waterproof. The U.S. Environmental Protection's Agency's minimum alkalinity criterion for freshwater aquatic life is 20 mg/L except where alkalinities for natural waters commonly are less (U.S. Environmental Protection Agency, 1976). The alkalinity values at Lake Concordia are considerably higher than most values in the basin.

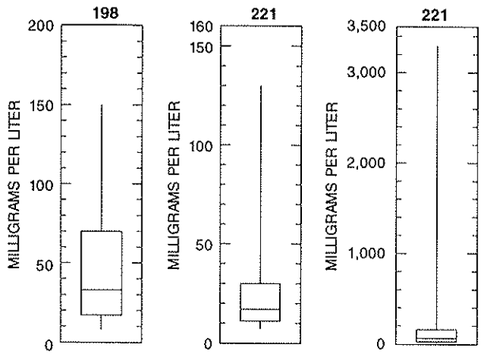
Concentrations of sulfate in water from the basin ranged from less than 0.1 mg/L at Catahoula Lake near Whitewall, Corney Bayou near Lillie, Dugdemona River near Winnfield, and Little Corney Bayou near Lillie, to 440 mg/L at Little River near Rochelle. The SMCL for drinking water is 250 mg/L (U.S. Environmental Protection Agency, 1986; Louisiana Department of Environmental Quality, 1984). The boxplots for six representative sites (fig. 2.2.4-1) show that the median concentration of sulfate at Bayou de Loutre near Laran was more than 10 times greater than the median concentration at Lake Concordia near Ferriday and Lake St. John near Waterproof.

Chloride concentrations in water from the basin ranged from 0.1 mg/L at Bayou Bartholomew near Sterlington to 17,000 mg/L at Bayou Funny Louis near Trout. The SMCL for drinking water is 250 mg/L (U.S. Environmental Protection Agency, 1986; Louisiana Department of Environmental Quality, 1984). Median concentrations ranged from 4.1 mg/L at Big Creek at Pollock to 530 mg/L at Little River at Jonesville. The boxplots summarizing the data for six representative sites in the basin (fig. 2.2.4-1) show that more than 75 percent of the samples analyzed had chloride concentrations less than 45 mg/L at all of these sites except Bayou de Loutre near Laran and Little River near Rochelle, which had significantly higher concentrations.

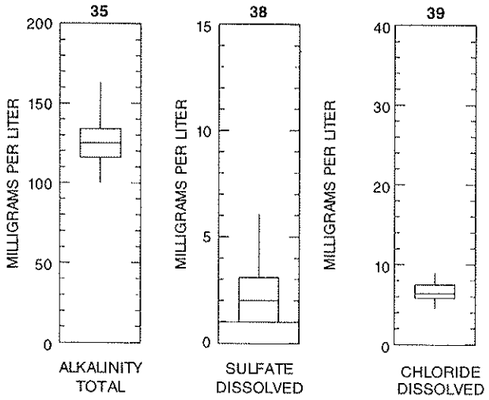
1 BAYOU DE LOUTRE NEAR LARAN

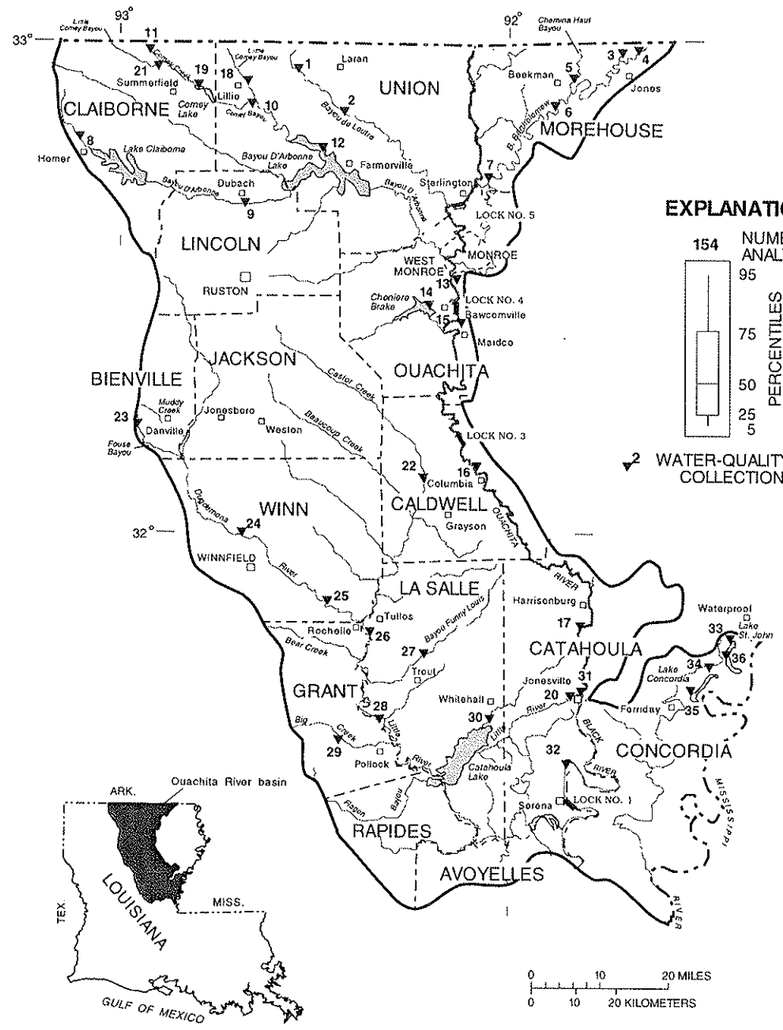


26 LITTLE RIVER NEAR ROCHELLE



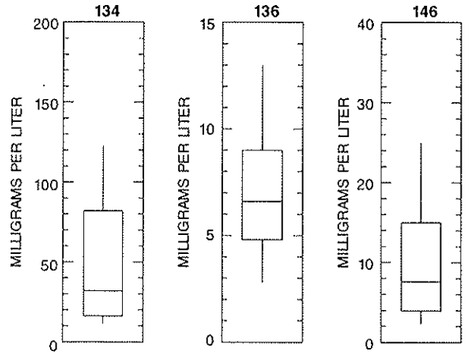
34 LAKE CONCORDIA NEAR FERRIDAY



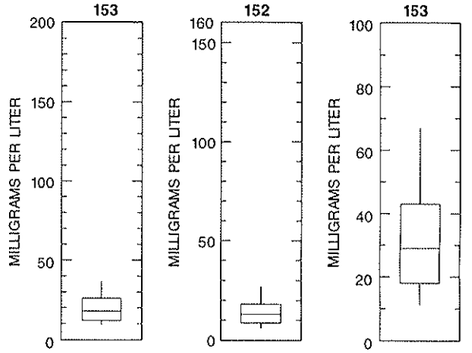


OUACHITA RIVER BASIN

3 BAYOU BARTHOLOMEW NEAR JONES



16 OUACHITA RIVER AT COLUMBIA



36 LAKE ST. JOHN NEAR WATERPROOF

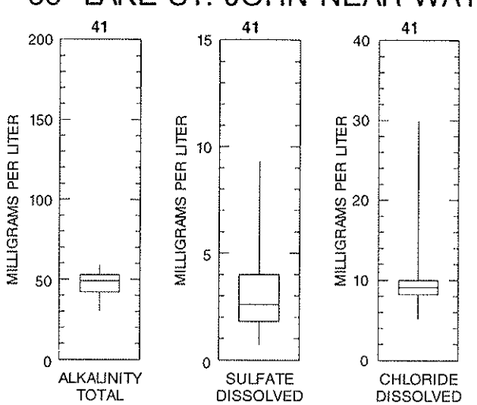


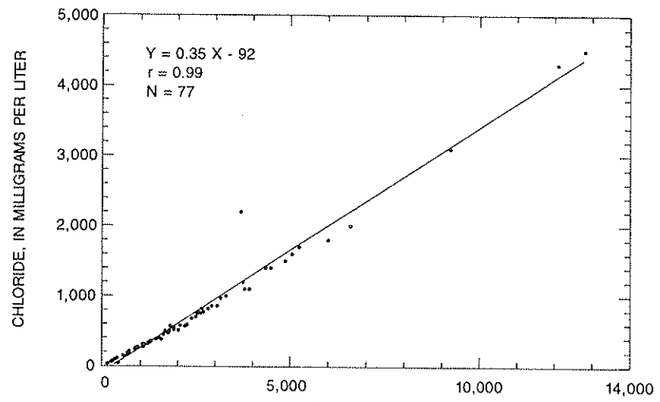
Figure 2.2.4-1. Water-quality data-collection sites in the Ouachita River basin, Louisiana, and boxplots summarizing data for total alkalinity as calcium carbonate and dissolved sulfate and chloride concentrations in water from selected sites.

A DIRECT RELATION EXISTS BETWEEN SPECIFIC CONDUCTANCE AND DISSOLVED CHLORIDE

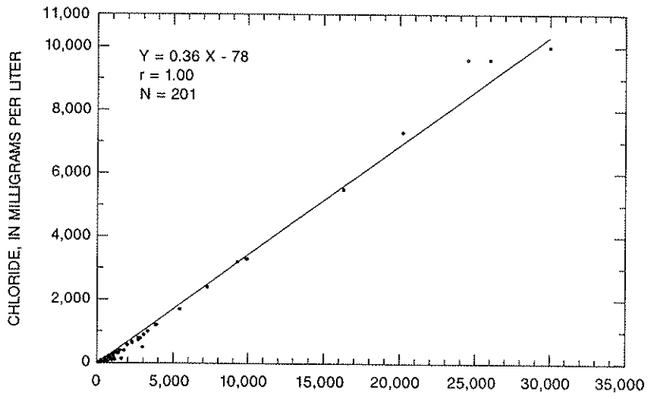
Linear regression equations indicate that dissolved chloride can be estimated from specific conductance for selected streams in the Ouachita River basin.

Regression equations relating chloride concentrations to specific conductance values were calculated for six sites in the Ouachita River basin (fig. 2.2.5-1). The correlation coefficient values, r, ranged from 0.59 at Lake Concordia near Ferriday to 1.00 at Little River near Rochelle. These equations can be used to estimate chloride concentrations from specific conductance for water uses such as irrigation of chloride-sensitive crops. The regression equations indicate that chloride constitutes a lesser percentage of the dissolved solids in water from Lake Concordia than in water from the other five sites. For example, application of the regression equations to specific conductance of 200 µS/cm yields an estimated chloride concentration of 5.0 mg/L for Lake Concordia near Ferriday but 170 mg/L for Bayou Bartholomew near Jones.

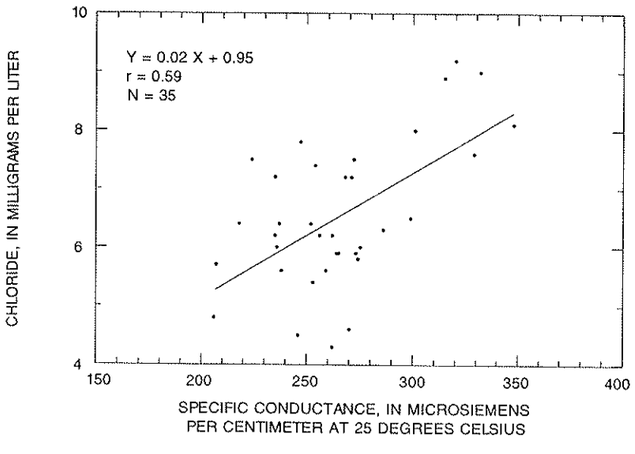
1 BAYOU DE LOUTRE NEAR LARAN

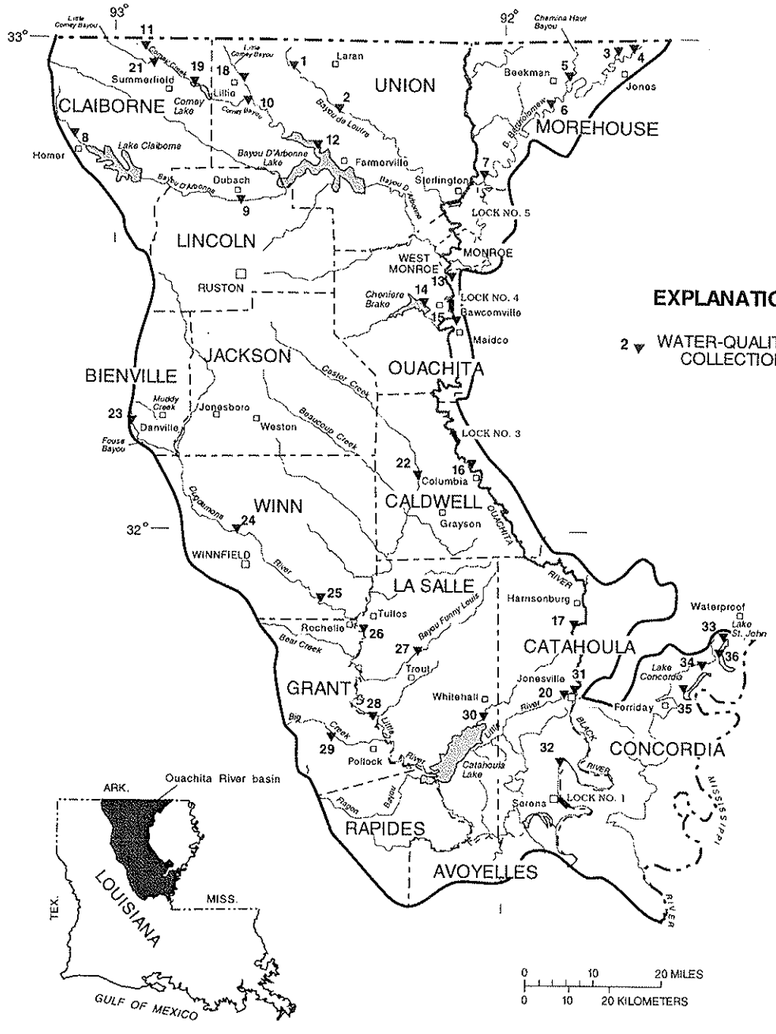


26 LITTLE RIVER NEAR ROCHELLE



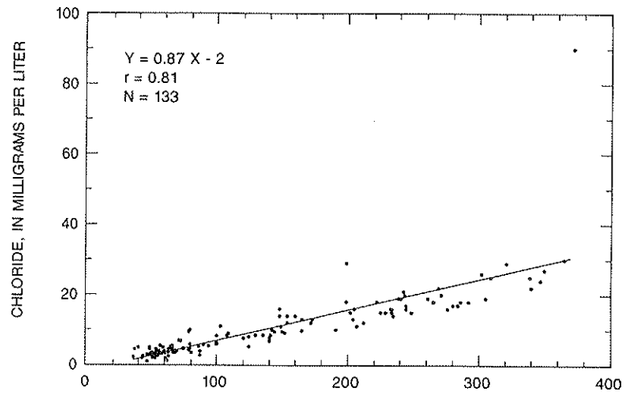
34 LAKE CONCORDIA NEAR FERRIDAY



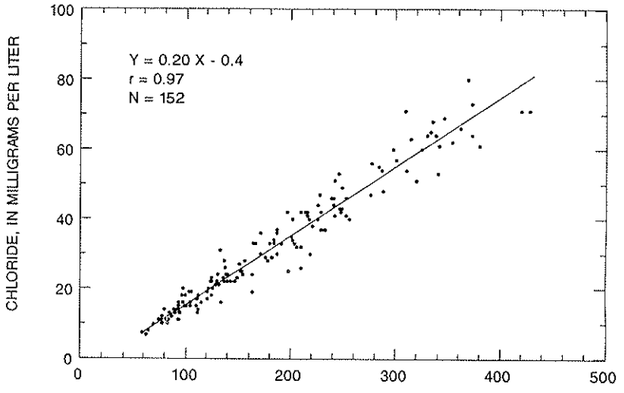


OUACHITA RIVER BASIN

3 BAYOU BARTHOLOMEW NEAR JONES



16 OUACHITA RIVER AT COLUMBIA



36 LAKE ST. JOHN NEAR WATERPROOF

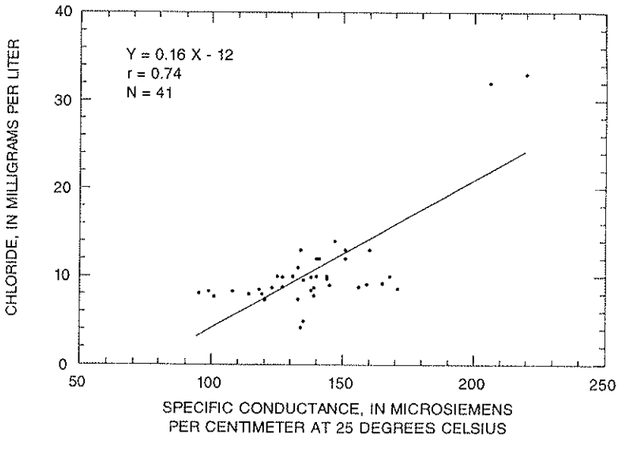


Figure 2.2.5-1. Water-quality data-collection sites in the Ouachita River basin, Louisiana, and graphs showing relation between specific conductance and dissolved chloride in water from selected sites.

2.2.6 Trace Metals[2]--Dissolved Copper, Iron, Lead, and Zinc

CONCENTRATIONS OF SELECTED DISSOLVED TRACE METALS WERE WITHIN THE U.S. ENVIRONMENTAL PROTECTION AGENCY'S RECOMMENDED LEVELS

Median concentrations of dissolved iron ranged from 81 to 460 µg/L.

The available data for trace metals indicated that concentrations of dissolved copper, lead, and zinc were less than the maximum contaminant levels of the U.S. Environmental Protection Agency's primary and secondary drinking water regulations. Iron concentrations in water from the basin often were greater than 300 µg/L (micrograms per liter), which is the criterion for domestic water supplies. However, iron concentrations were usually less than the agency's criterion of 1,000 µg/L for freshwater aquatic life.

Concentrations of copper in water samples collected in the Ouachita River basin ranged from less than 1 µg/L at Bayou de Loutre near Farmerville, Bayou de Loutre near Laran, Fouse Bayou at State Highway 155, near Danville, and Lake St. John near Waterproof, to 39 µg/L at Little River near Rochelle. The median copper concentrations ranged from less than the detection level to 6 µg/L at the five sites (Bayou Bartholomew near Jones, Big Creek at Pollock, Little River near Rochelle, Ouachita River at Columbia, and Ouachita River at Monroe) for which 10 or more samples were analyzed. Copper concentrations for six representative sites are summarized using boxplots and tables in figure 2.2.6-1. Tables are presented instead of boxplots when less than 10 analyses were available for a site. The boxplots (fig. 2.2.6-1) illustrate that at the three sites with 10 or more analyses, at least 95 percent of the samples analyzed had copper concentrations of 25 µg/L or less.

Iron concentrations ranged from 4 µg/L at Little Corney Bayou near Lillie to 4,800 µg/L at Fouse Bayou at State Highway 155, near Danville. Median iron concentrations in the basin ranged from 81 to 460 µg/L. Boxplots and tables (fig. 2.2.6-1) summarizing data for six representative sites within the basin show that 75 percent of iron concentrations were approximately 500 µg/L or less.

Concentrations of lead in water from the basin generally were low at all sites. The concentrations ranged from less than the reporting level at most sites to 31 µg/L at Little River near Rochelle. The median concentrations were less than 10 µg/L at the five sites for which 10 or more samples were analyzed. Boxplots and tables for six representative sites (fig. 2.2.6-1) show that at least 75 percent of all analyses were less than 5 µg/L.

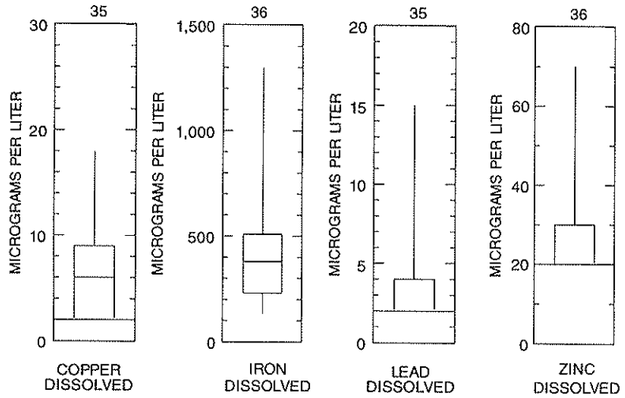
Zinc concentrations in water from the Ouachita River basin generally were low at all sites. However, the maximum zinc concentration at Lake Concordia at Ferriday was 3,000 µg/L. Zinc concentrations in the basin ranged from less than 4 µg/L at Big Creek at Pollock and Little Corney Bayou near Lillie to 3,000 µg/L at Lake Concordia at Ferriday. Median zinc concentrations were less than 20 µg/L at the five sites for which 10 or more samples were analyzed. Boxplots and tables for six representative sites (fig. 2.2.6-1) show that zinc concentrations in most of the samples analyzed were less than or equal to 30 µg/L.

[2]"Traditionally, dissolved trace-element concentrations have been reported at the micrograms per liter level. Recent evidence, mostly from large rivers, indicates that actual dissolved-phase concentrations for a number of trace elements are within the range of 10's to 100's of nanograms per liter (ng/L). Present data above the micrograms per liter level should be viewed with caution. Such data may actually represent elevated environmental concentrations from natural or human causes; however, these data could reflect contamination introduced during sampling, processing, or analysis. To confidently produce dissolved trace-element data with insignificant contamination, the U.S. Geological Survey began using new trace-element protocols after the period of record associated with this report."

1 BAYOU DE LOUTRE NEAR LARAN

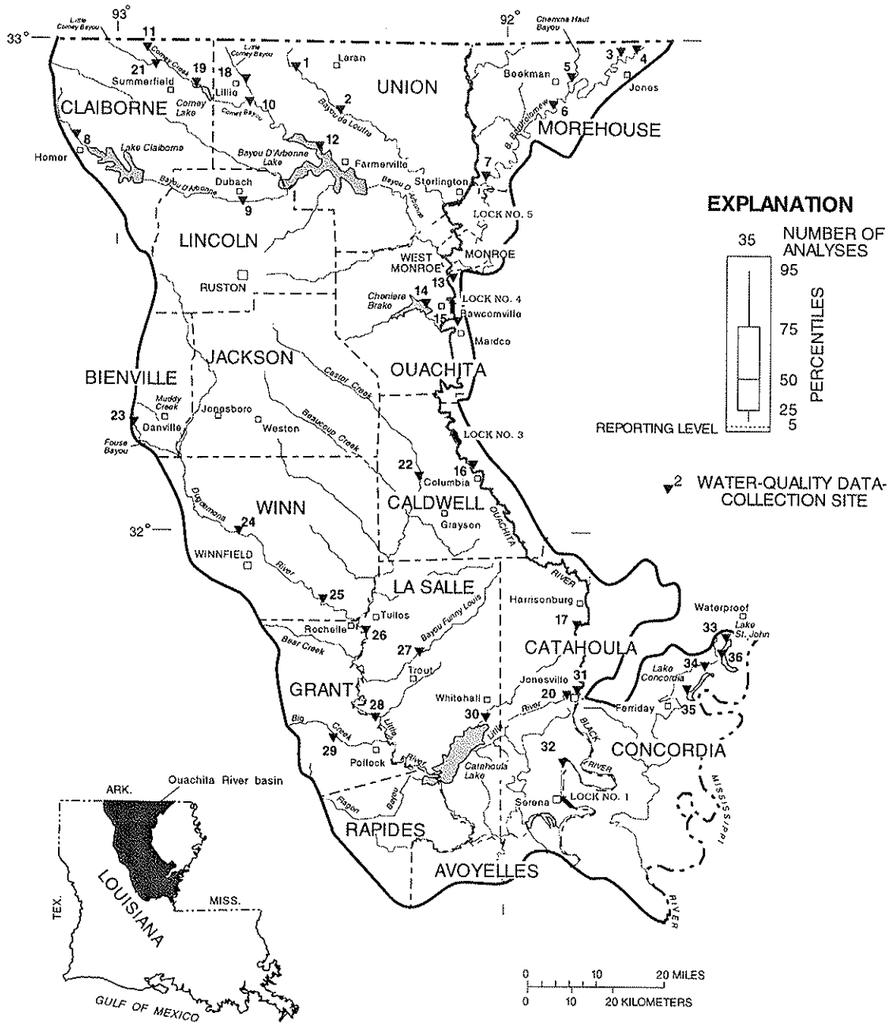
DISSOLVED CONSTITUENT	TOTAL NUMBER OF ANALYSES	REPORTING LEVEL (µg/L)	NUMBER OF ANALYSES AT OR ABOVE REPORTING LEVEL
COPPER	4	1	2
IRON	5	10	5
LEAD	4	5	2
ZINC	4	10	2

26 LITTLE RIVER NEAR ROCHELLE



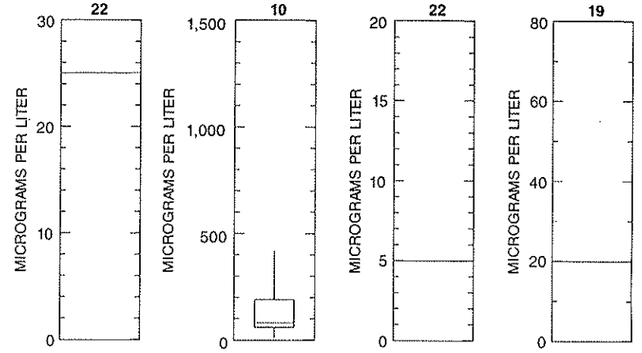
34 LAKE CONCORDIA NEAR FERRIDAY

DISSOLVED CONSTITUENT	TOTAL NUMBER OF ANALYSES	REPORTING LEVEL (µg/L)	NUMBER OF ANALYSES AT OR ABOVE REPORTING LEVEL
COPPER	8	2	4
IRON	8	10	3
LEAD	8	2	2
ZINC	8	20	0

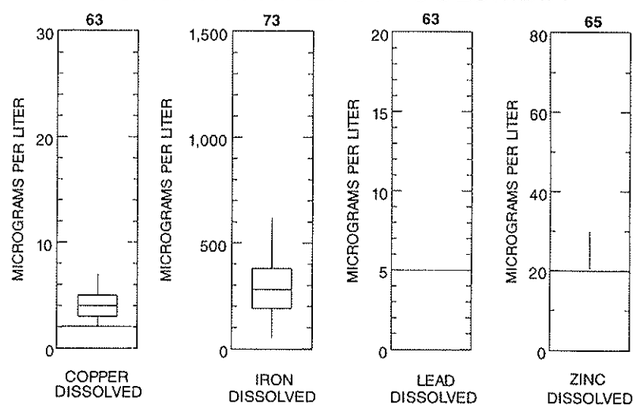


OUACHITA RIVER BASIN

3 BAYOU BARTHOLOMEW NEAR JONES



16 OUACHITA RIVER AT COLUMBIA



36 LAKE ST. JOHN NEAR WATERPROOF

DISSOLVED CONSTITUENT	TOTAL NUMBER OF ANALYSES	REPORTING LEVEL (µg/L)	NUMBER OF ANALYSES AT OR ABOVE REPORTING LEVEL
COPPER	9	1	8
IRON	9	10	4
LEAD	9	5	1
ZINC	9	20	1

Figure 2.2.6-1. Water-quality data-collection sites in the Ouachita River basin, Louisiana, and boxplots and tables summarizing data for dissolved copper, iron, lead, and zinc concentrations in water from selected sites.

LOW VARIANCE IN CONCENTRATIONS OF NUTRIENTS IN BASIN

Median concentrations of ammonia plus organic nitrogen ranged from 0.4 to 1.1 mg/L and median phosphorus concentrations were less than or equal to 0.20 mg/L.

Concentrations of ammonia plus organic nitrogen in water from the basin ranged from less than 0.1 mg/L at Corney Bayou near Lillie to 8.0 mg/L at Little River near Rochelle. Median concentrations ranged from 0.4 to 1.1 mg/L. However, median concentrations of ammonia plus organic nitrogen as nitrogen at the lake sites generally were slightly above 1.0 mg/L. Concentrations of ammonia plus organic nitrogen in water from the five representative sites for which boxplots are shown generally were less than 3.0 mg/L (fig. 2.2.7-1).

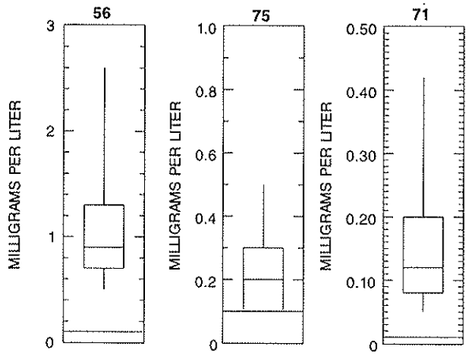
Concentrations of nitrite plus nitrate as nitrogen in the Ouachita River basin ranged from 0.01 mg/L at Bayou Bartholomew near Jones and Dugdemona River near Winnfield to 1.1 mg/L at Bayou Bartholomew near Jones. Median nitrite plus nitrate nitrogen concentrations ranged from less than the reporting level to 0.22 mg/L. Boxplots at six representative sites show that concentrations in 75 percent of all samples analyzed were less than or equal to 0.4 mg/L (fig. 2.2.7-1).

Concentrations of total phosphorus in water in the Ouachita River basin ranged from less than 0.01 mg/L at Big Creek at Pollock and Ouachita River at Monroe to 0.87 mg/L at Corney Bayou near Lillie. Median concentrations ranged from 0.03 to 0.20 mg/L. Boxplots for six representative sites show that phosphorus concentrations in 75 percent of all samples analyzed were less than 0.03 mg/L, and median concentrations were less than or equal to 0.20 mg/L at all of these sites (fig. 2.2.7-1).

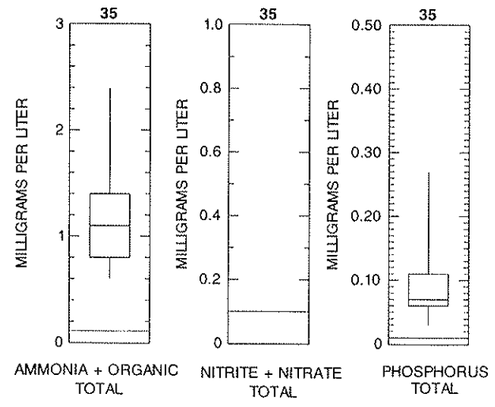
1 BAYOU DE LOUTRE NEAR LARAN

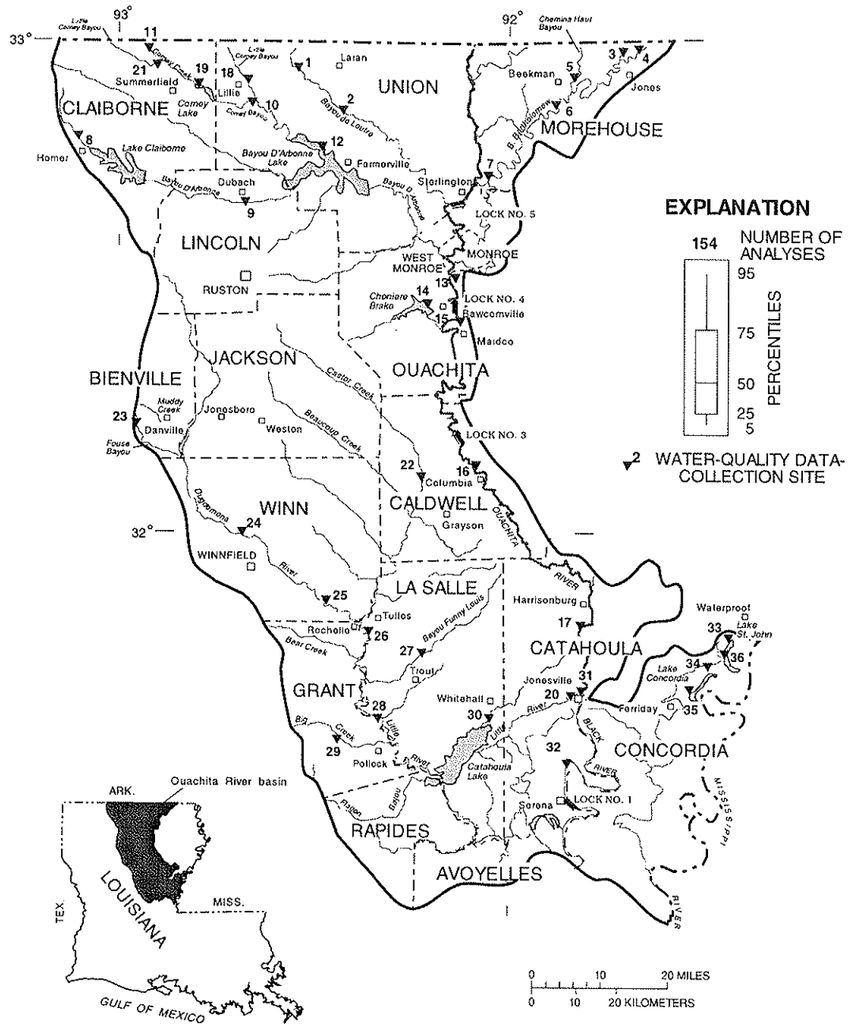
TOTAL CONSTITUENT	TOTAL NUMBER OF ANALYSES	REPORTING LEVEL (mg/L)	NUMBER OF ANALYSES AT OR ABOVE REPORTING LEVEL
AMMONIA + ORGANIC	9	0.1	9
NITRITE + NITRATE	9	0.10	8
PHOSPHORUS	9	0.01	9

26 LITTLE RIVER NEAR ROCHELLE



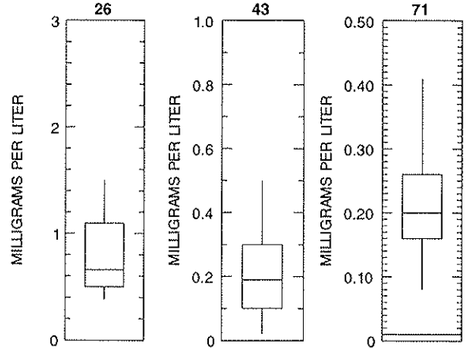
34 LAKE CONCORDIA NEAR FERRIDAY



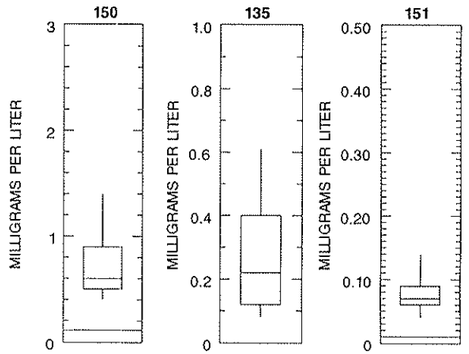


OUACHITA RIVER BASIN

3 BAYOU BARTHOLOMEW NEAR JONES



16 OUACHITA RIVER AT COLUMBIA



36 LAKE ST. JOHN NEAR WATERPROOF

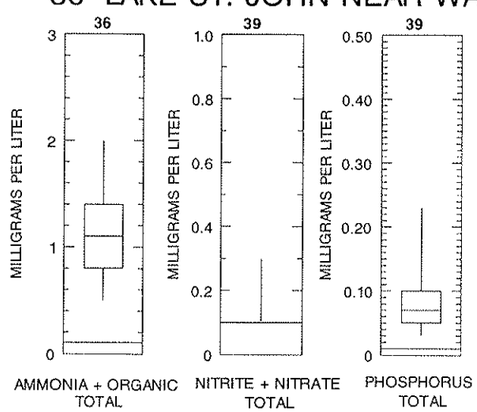


Figure 2.2.7-1. Water-quality data-collection sites in the Ouachita River basin, Louisiana, and boxplots and a table summarizing data for concentrations of selected nutrients in water from selected sites.

FOUR ORGANIC COMPOUNDS DETECTED IN SURFACE WATERS IN THE BASIN

The most commonly occurring organic compounds in the Ouachita River basin were diazinon and 2,4-D.

Diazinon was detected at more sites and with greater frequency than any of the other organic compounds that were analyzed, with the exception of 2,4-D. The highest diazinon concentration was 0.08 µg/L in a sample collected at Little River near Rochelle. Diazinon was detected at least once at 10 of the 18 sites for which water samples were analyzed for organic compounds. Tables rather than boxplots are used to summarize occurrences of diazinon at six representative sites in figure 2.2.8-1, because the total number of samples analyzed for each site was less than 10 or the number of samples that contained organic compounds in concentrations greater than the reporting level was equal to or less than 10. Of these six sites, the only site where diazinon was not detected at least once was at Bayou Bartholomew near Jones.

The herbicide 2,4-D was detected at least once at 11 of the 18 sites for which water samples were analyzed for organic compounds. The maximum concentration of 2,4-D in water from the basin was 0.70 µg/L, at Lake St. John near Waterproof. The tables listing the number of samples in which organic compounds were detected for six representative sites in the basin indicate that 2,4-D was detected in at least 70 percent of the samples collected at the lake sites (fig. 2.2.8-1).

Low-level concentrations of other organic compounds which include DDT, dieldrin, lindane and malathion occasionally were detected at other sites.

1 BAYOU DE LOUTRE NEAR LARAN

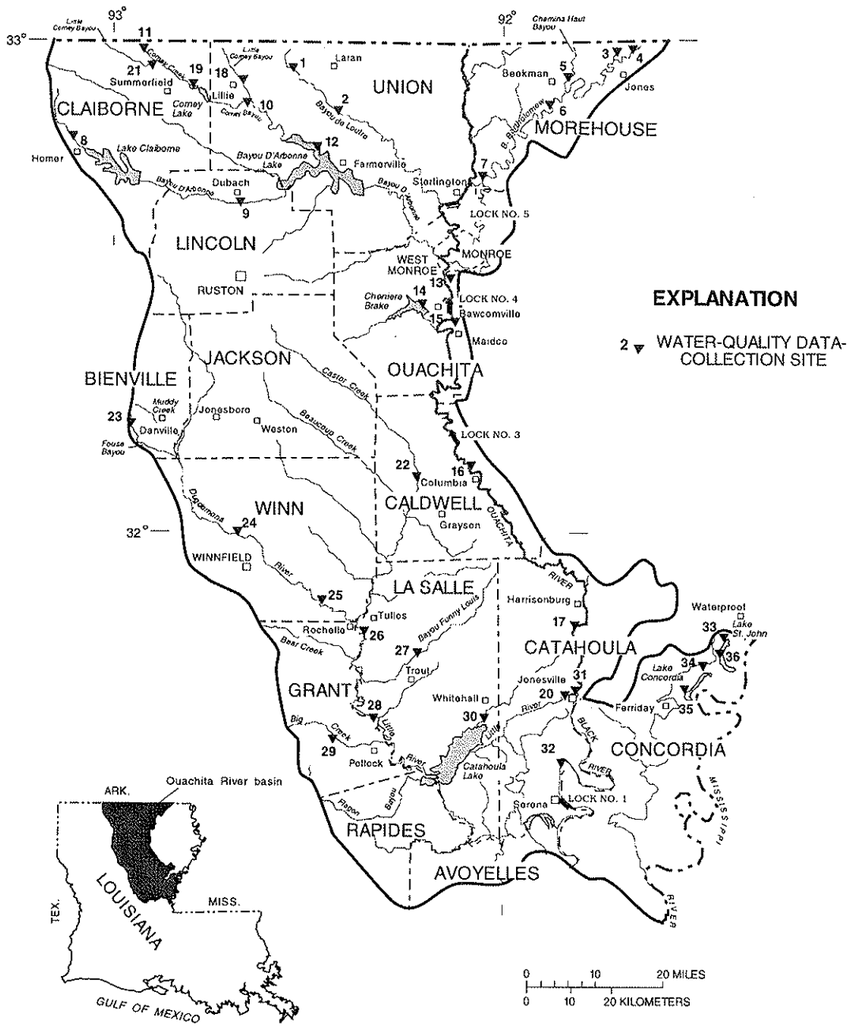
ORGANIC COMPOUND TOTAL	TOTAL NUMBER OF ANALYSES	REPORTING LEVEL (µg/L)	NUMBER OF ANALYSES AT OR ABOVE REPORTING LEVEL
DDT	3	0.01	1
PCB	3	0.1	0
DIAZINON	3	0.01	1
LINDANE	3	0.01	0
CHLORDANE	3	0.1	0
MALATHION	3	0.01	0
ENDRIN	3	0.01	0
PARATHION	3	0.01	0
DIELDRIN	3	0.01	0
2,4-D	3	0.01	0

26 LITTLE RIVER NEAR ROCHELLE

ORGANIC COMPOUND TOTAL	TOTAL NUMBER OF ANALYSES	REPORTING LEVEL (µg/L)	NUMBER OF ANALYSES AT OR ABOVE REPORTING LEVEL
DDT	17	0.01	0
PCB	17	0.1	0
DIAZINON	17	0.01	7
LINDANE	17	0.01	0
CHLORDANE	17	0.1	0
MALATHION	17	0.01	0
ENDRIN	17	0.01	0
PARATHION	17	0.01	0
DIELDRIN	17	0.01	0
ENDOSULFAN	10	0.01	0
2,4-D	17	0.01	7

34 LAKE CONCORDIA NEAR FERRIDAY

ORGANIC COMPOUND TOTAL	TOTAL NUMBER OF ANALYSES	REPORTING LEVEL (µg/L)	NUMBER OF ANALYSES AT OR ABOVE REPORTING LEVEL
DDT	9	0.01	0
PCB	9	0.1	0
DIAZINON	9	0.01	1
LINDANE	9	0.01	0
CHLORDANE	9	0.1	0
MALATHION	9	0.01	0
ENDRIN	9	0.01	0
PARATHION	9	0.01	0
DIELDRIN	9	0.01	1
ENDOSULFAN	8	0.01	0
2,4-D	9	0.01	7



OUACHITA RIVER BASIN

3 BAYOU BARTHOLOMEW NEAR JONES

ORGANIC COMPOUND TOTAL	TOTAL NUMBER OF ANALYSES	REPORTING LEVEL (µg/L)	NUMBER OF ANALYSES AT OR ABOVE REPORTING LEVEL
DDT	16	0.02	2
PCB	8	0.1	0
DIAZINON	8	0.01	0
LINDANE	8	0.01	0
CHLORDANE	8	0.1	0
MALATHION	8	0.01	1
ENDRIN	16	0.02	0
PARATHION	8	0.01	0
DIELDRIN	16	0.001	1
ENDOSULFAN	13	0.01	0
2,4-D	8	0.01	1

13 OUACHITA RIVER AT MONROE

ORGANIC COMPOUND TOTAL	TOTAL NUMBER OF ANALYSES	REPORTING LEVEL (µg/L)	NUMBER OF ANALYSES AT OR ABOVE REPORTING LEVEL
DDT	13	0.01	0
PCB	13	0.1	0
DIAZINON	13	0.01	10
LINDANE	13	0.01	0
CHLORDANE	13	0.1	0
MALATHION	13	0.01	0
ENDRIN	13	0.01	0
PARATHION	13	0.01	0
DIELDRIN	13	0.01	0
ENDOSULFAN	13	0.01	0
2,4-D	12	0.01	4

36 LAKE ST. JOHN NEAR WATERPROOF

ORGANIC COMPOUND TOTAL	TOTAL NUMBER OF ANALYSES	REPORTING LEVEL (µg/L)	NUMBER OF ANALYSES AT OR ABOVE REPORTING LEVEL
DDT	10	0.01	0
PCB	10	0.1	0
DIAZINON	10	0.01	1
LINDANE	10	0.01	0
CHLORDANE	10	0.1	0
MALATHION	10	0.01	0
ENDRIN	10	0.01	0
PARATHION	10	0.01	0
DIELDRIN	10	0.01	0
ENDOSULFAN	8	0.01	0
2,4-D	10	0.01	7

Figure 2.2.8-1. Water-quality data-collection sites in the Ouachita River basin, Louisiana, and tables listing organic compounds detected in water from selected sites.

FECAL COLIFORM AND FECAL STREPTOCOCCUS BACTERIA CONCENTRATIONS VARIED GREATLY THROUGHOUT THE BASIN

Median fecal coliform concentrations ranged from less than 5 to 140 cols/100 mL.

Concentrations of fecal coliform bacteria varied greatly at the 15 sites in the Ouachita River basin for which data are available. Concentrations ranged from 2 cols/100 mL at Big Creek at Pollock and Black River near Serena to 24,000 cols/100 mL at Ouachita River near Harrisonburg. Median concentrations ranged from less than 5 to 140 cols/100 mL. Although fecal coliform concentrations were greater than 200 cols/100 mL some of the time at most of the sites, additional data are needed to determine if the U.S. Environmental Protection Agency's (1976; 1986) maximum contaminant level is being exceeded. Boxplots of fecal coliform and fecal streptococcus bacteria concentrations at five representative sites in the basin show that at least 75 percent of all samples analyzed had fecal coliform concentrations of less than 200 cols/100 mL, and most of the samples collected at Lake Concordia and Lake St. John had concentrations less than 100 cols/100 mL (fig. 2.2.9-1).

Concentrations of fecal streptococcus bacteria also varied greatly at sites in the basin. Concentrations ranged from less than 1 col/100 mL at Ouachita River at Monroe to 110,000 cols/100 mL at Bayou Bartholomew near Jones. Median fecal streptococcus concentrations, which ranged from 20 to 640 cols/100 mL, generally were higher than the median fecal coliform concentrations. Boxplots of fecal streptococcus concentrations at five representative sites show a wide variance of concentration of the samples analyzed. At least 75 percent of the samples collected at the lakes had less than 200 cols/100 mL.

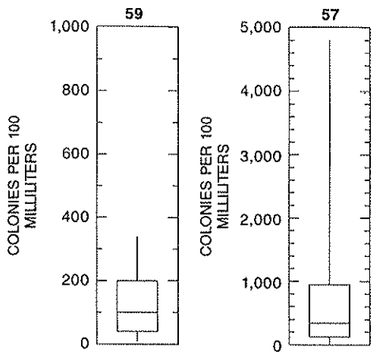
The median ratio of fecal coliform to fecal streptococcus bacteria was less than 0.7 at most of the sites sampled for analysis of bacteria concentrations within the Ouachita River basin, indicating that sources of fecal coliform bacteria probably were livestock or poultry wastes (Millipore Corporation, 1972, p. 36). Additional study is needed to confirm these results.

Concentrations of phytoplankton varied greatly at sites in the basin due to the seasonal influence. Concentrations ranged from 0 cells/mL at Ouachita River at Columbia to 2,200,000 cells/mL at Lake Concordia near Ferriday. Median concentrations ranged from 390 to 200,000 cells/mL. Boxplots of phytoplankton concentrations at two representative sites show that 75 percent of the samples analyzed had concentrations less than or equal to 800,000 cells/mL.

1 BAYOU DE LOUTRE NEAR LARAN

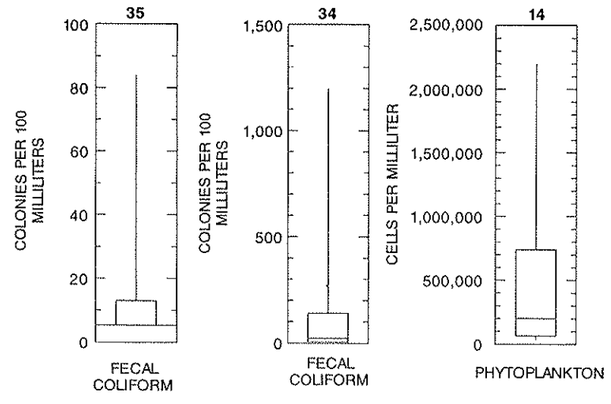
CONSTITUENT	TOTAL NUMBER OF ANALYSES	REPORTING LEVEL (COLONIES PER 100 MILLILITERS)	NUMBER OF ANALYSES AT OR ABOVE REPORTING LEVEL
FECAL COLIFORM	9	1	9
FECAL STREPTOCOCCUS	9	1	9

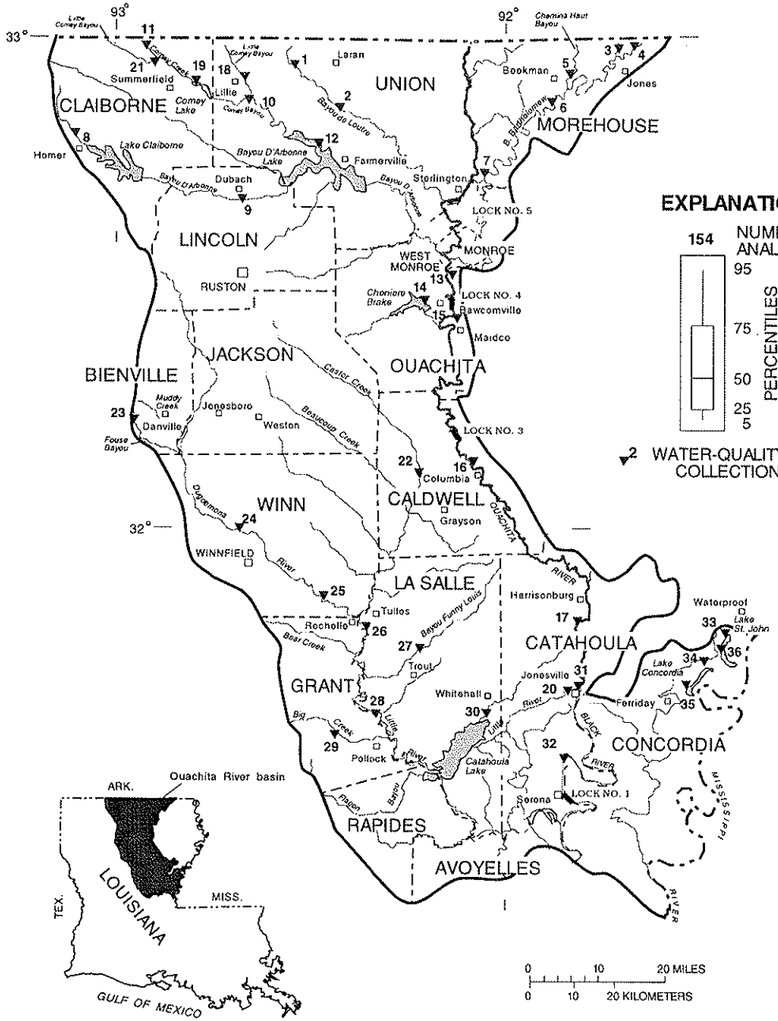
26 LITTLE RIVER NEAR ROCHELLE



CONSTITUENT	TOTAL NUMBER OF ANALYSES	REPORTING LEVEL (CELLS PER MILLILITER)	NUMBER OF ANALYSES AT OR ABOVE REPORTING LEVEL
PHYTOPLANKTON	9	1	9

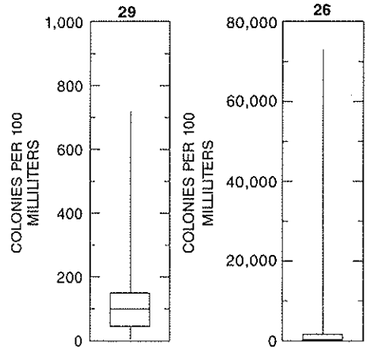
34 LAKE CONCORDIA NEAR FERRIDAY



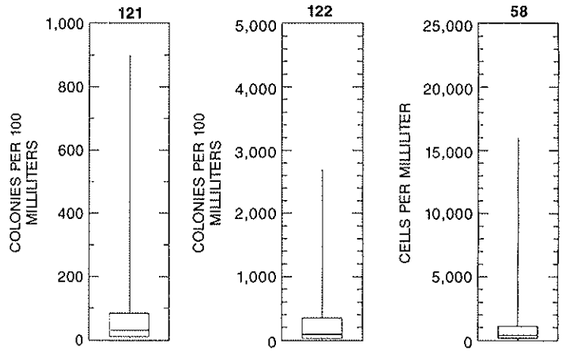


OUACHITA RIVER BASIN

3 BAYOU BARTHOLOMEW NEAR JONES



16 OUACHITA RIVER AT COLUMBIA



36 LAKE ST. JOHN NEAR WATERPROOF

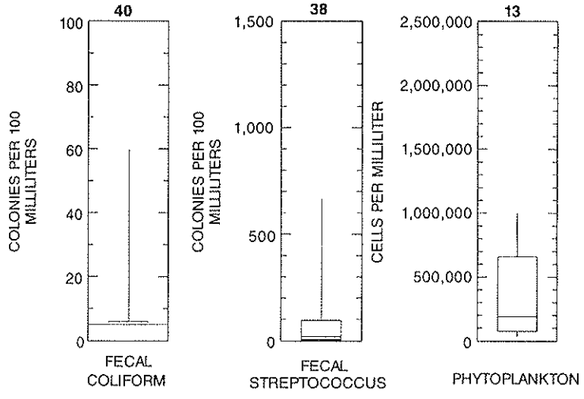


Figure 2.2.9-1. Water-quality data-collection sites in the Ouachita River basin, Louisiana, and boxplots and tables summarizing data for concentrations of fecal coliform and fecal streptococcus bacteria and phytoplankton in water from selected sites.

2.3 Summary and Conclusions

VALUES FOR pH OUTSIDE THE U.S. ENVIRONMENTAL PROTECTION AGENCY RANGE FOR FRESHWATER AQUATIC LIFE

Values for pH often were less than 6.5, the lower limit of the U.S. Environmental Protection Agency recommended range for freshwater aquatic life.

The Ouachita River basin in Louisiana is about 135 miles long and 90 miles wide at its widest point. Surface waters in the basin are used for power generation, industry and, to some extent, rice irrigation. The principal sources of fresh surface water in the basin are the Ouachita River, Dugdemona River, Little River, Black River, Lake St. John, and Lake Concordia.

Water quality in the Ouachita River basin in Louisiana was investigated as part of a statewide investigation to evaluate water-quality conditions in the major surface-water drainage basins in Louisiana. The water-quality conditions in the Ouachita River basin were evaluated using data collected from 36 sites during the water years 1908-94. Data for 33 water-quality properties and constituents from water-quality analyses stored in the USGS Water-Data Storage and Retrieval System (WATSTORE), a computerized data base, were used for the evaluation. Results are reported as boxplots, linear-regression plots, and tabulated data.

The data were statistically analyzed and summarized for seven categories of water-quality properties and constituents: (1) physical properties--specific conductance, pH, water temperature, and dissolved oxygen; (2) major inorganic cations--dissolved calcium, magnesium, sodium, and potassium; (3) major inorganic anions--total alkalinity as calcium carbonate, dissolved sulfate, and dissolved chloride; (4) trace metals--dissolved copper, iron, lead, and zinc; (5) nutrients--selected nitrogen and phosphorus constituents; (6) organic compounds--pesticides and PCB's; (7) biological constituents--fecal coliform and fecal streptococcus bacteria, and phytoplankton.

The physical properties varied for waters in the basin. The median values for specific conductance ranged from 39 to 1,740 microsiemens per centimeter at 25 degrees Celsius. For pH, values often were less than 6.5, the lower limit of the U.S. Environmental Protection Agency recommended range for freshwater aquatic life. Median values for water temperature ranged from 13.5 to 24.5 degrees Celsius.

Dissolved oxygen concentrations were greater than the State's minimum water-quality criterion of 5.0 mg/L (milligrams per liter) in more than 75 percent of the samples analyzed for most sites. However, the statistical data indicated that approximately 25 percent of the samples collected at Bayou Bartholomew near Jones, Louisiana, had dissolved oxygen concentrations of less than or equal to 5.0 mg/L. The dissolved oxygen concentrations differed seasonally in the lakes due to temperature and algal blooms.

The data for major inorganic cations and anions in water from the basin indicated that concentrations of major ions were below recommended levels for drinking water, for which such levels have been established. However, there were periodic high concentrations of calcium and chloride at Bayou de Loutre near Laran, Louisiana. On the other hand, the interquartile ranges of major inorganic cations and anions were much narrower and the median concentrations were lower at the oxbow lakes than at the stream sites due to the separation of the oxbow lakes from any inflowing streams.

The available data for trace metals indicated that dissolved copper, lead, and zinc were less than the maximum contaminant levels of the U.S. Environmental Protection Agency's primary and secondary drinking water regulations. Iron concentrations in water from the basin often were greater than 300 µg/L (micrograms per liter), which is the criterion for domestic water supplies. However, iron concentrations were usually less than the agency's criterion of 1,000 µg/L for freshwater aquatic life.

Median concentrations of ammonia plus organic nitrogen as nitrogen at the lake sites generally were slightly above 1.0 mg/L. However, the median concentrations at the rivers and bayous ranged from less than 0.1 to 8.0 mg/L. Concentrations of total phosphorus at the rivers and bayous ranged from less than 0.01 to 0.87 mg/L.

Diazinon and 2,4-D were detected at more sites and with greater frequency than any of the other organic compounds that were analyzed. Of the 18 sites for which water samples were analyzed for organic compounds, diazinon was detected at least once at 10 of the sites and 2,4-D was detected at least once at 11 sites. However, low-level concentrations of other organic compounds, which include DDT, dieldrin, lindane, and malathion occasionally were detected at other sites.

The median ratios of fecal coliform to fecal streptococcus bacteria were less than 0.7 for most of the sites within the Ouachita River basin, indicating that sources of fecal bacteria probably were predominantly livestock or poultry wastes. However, additional samples closer to the potential sources of contamination need to be collected and analyzed to confirm these results. Phytoplankton concentrations varied greatly at sites in the basin due to the seasonal influence. Concentrations ranged from 0 to 2,200,000 cells per milliliter.

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TABLE 2.2-1. STATISTICAL SUMMARY OF WATER-QUALITY DATA FOR THE OUACHITA RIVER BASIN IN LOUISIANA, 1908-94

Table 2.2-1. Statistical summary of water-quality data for the Ouachita River basin in Louisiana, 1908-94

[Number in parentheses with the site name is the map number shown in fig. 2.0-1. Water temperature is in degrees Celsius, specific conductance is in microsiemens per centimeter at 25 degrees Celsius, and other units are given; <, less than.]

Bayou Bartholomew near Beekman, Louisiana (6)

Water-quality property or constituent	Number of analyses	Reporting level	Number of analyses greater than or equal to reporting level	Maximum	Minimum	Mean	Percentiles				
							5th	25th	50th (median)	75th	95th
Physical properties											
Specific conductance	27	(a)	(a)	317	39	169	40	58	163	274	314
pH (standard units)	25	(a)	(a)	8.2	6.1	7.1	6.1	6.4	7.3	7.6	8.2
Water temperature	6	(a)	(a)	29.0	9.0	(b)	(b)	(b)	(b)	(b)	(b)
Dissolved solids (milligrams per liter)	18	(a)	(a)	195	43	99	43	56	86	140	195
Major cations (milligrams per liter)											
Calcium, dissolved	27	0.01	27	33	2.8	15	2.9	4.6	14	26	32
Magnesium, dissolved	27	.01	27	8.7	.50	4.8	.54	1.8	4.2	8.2	8.7
Sodium, dissolved	17	.01	17	23	1.6	8.9	1.6	2.2	4.6	18	23
Potassium, dissolved	15	.01	15	3.9	1.8	2.6	1.8	2.3	2.5	3.0	3.9
Major anions (milligrams per liter)											
Alkalinity, total as $CaCO_3$	27	1	27	125	11	64	11	18	57	116	125
Sulfate, dissolved	27	.1	27	15	2.0	5.5	2.0	3.5	4.4	6.6	14
Chloride, dissolved	27	.1	27	27	.7	10	.7	1.8	9.9	16	25

Table 2.2-1. Statistical summary of water-quality data for the Ouachita River basin in Louisiana, 1908-94--Continued

Bayou Bartholomew near Jones, Louisiana (3)

Water-quality property or constituent	Number of analyses	Reporting level	Number of analyses greater than or equal to reporting level	Maximum	Minimum	Mean	Percentiles				
							5th	25th	50th (median)	75th	95th
Physical properties											
Specific conductance	147	(a)	(a)	372	35	136	46	59	100	205	316
pH (standard units)	157	(a)	(a)	9.8	5.5	6.9	6.0	6.6	6.8	7.2	7.7
Water temperature	137	(a)	(a)	32.0	2.0	17.9	6.0	10.5	19.0	24.0	29.0
Dissolved oxygen (milligrams per liter)	84	(a)	(a)	11.5	3.2	6.7	3.6	5.1	6.4	8.2	10.6
Dissolved solids (milligrams per liter)	119	(a)	(a)	210	31	101	47	65	91	130	180
Major cations (milligrams per liter)											
Calcium, dissolved	117	0.01	117	36	2.1	12	3.1	4.6	9.0	20	30
Magnesium, dissolved	117	.01	117	10	.10	3.9	1.0	1.6	3.0	6.2	9.1
Sodium, dissolved	108	.01	108	24	1.5	9.8	2.1	3.7	8.2	15	22
Potassium, dissolved	106	.01	106	5.3	1.3	3.0	1.8	2.6	3.0	3.5	4.1
Major anions (milligrams per liter)											
Alkalinity, total as $CaCO_3$	134	1	134	135	9	48	11	16	32	82	123
Sulfate, dissolved	136	.1	136	23	1.0	7.2	2.8	4.8	6.6	9.0	13
Chloride, dissolved	146	.1	146	90	1.0	10	2.3	3.9	7.6	15	25
Nutrients (milligrams per liter)											
Nitrogen, ammonia plus organic, total as nitrogen	26	0.01	26	1.5	0.37	0.79	0.38	0.50	0.66	1.1	1.5
Nitrogen, nitrite plus nitrate, total as nitrogen	43	.01	43	1.1	.01	.22	.02	.10	.19	.30	.50
Phosphorus, total as phosphorus	71	.01	71	.51	.01	.22	.08	.16	.20	.26	.41

Table 2.2-1. Statistical summary of water-quality data for the Ouachita River basin in Louisiana, 1908-94--Continued

Bayou Bartholomew near Jones, Louisiana (3)--continued

Water-quality property or constituent	Number of analyses	Reporting level	Number of analyses greater than or equal to reporting level	Maximum	Minimum	Mean	Percentiles				
							5th	25th	50th (median)	75th	95th
Biological constituents--bacteria (colonies per 100 milliliters)											
Fecal coliform	29	5	27	3,600	<5	(c)	<5	45	100	150	720
Fecal streptococcus	26	1	26	110,000	48	5,000	49	120	280	1,600	73,000
Trace metals (micrograms per liter)											
Copper, dissolved	22	25	0	<25	<25	(c)	<25	<25	<25	<25	<25
Iron, dissolved	10	10	8	420	<10	(c)	<10	60	81	190	420
Lead, dissolved	22	5	2	6	<5	(c)	<5	<5	<5	<5	5
Zinc, dissolved	19	20	0	<20	<20	(c)	<20	<20	<20	<20	<20
Organic compounds (micrograms per liter)											
DDT, total	16	0.02	2	0.10	<0.02	(c)	<0.02	<0.02	<0.02	<0.02	0.10
PCB, total	8	.1	0	<.1	<.1	(b,c)	(b)	(b)	(b)	(b)	(b)
Diazinon, total	8	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Lindane, total	8	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Chlordane, total	8	.1	0	<.1	<.1	(b,c)	(b)	(b)	(b)	(b)	(b)
Malathion, total	8	.01	1	.02	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Endrin, total	16	.02	0	<.02	<.02	(c)	<.02	<.02	<.02	<.02	<.02
Parathion, total	8	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Dieldrin, total	16	.001	1	.010	<.001	(c)	<.01	<.01	<.01	<.01	.01
Endosulfan, total	13	.01	0	<.01	<.01	(c)	<.01	<.01	<.01	<.01	<.01
2,4-D, total	8	.01	1	.03	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)

Table 2.2-1. Statistical summary of water-quality data for the Ouachita River basin in Louisiana, 1908-94--Continued

Bayou Bartholomew near Sterlington, Louisiana (7)

Water-quality property or constituent	Number of analyses	Reporting level	Number of analyses greater than or equal to reporting level	Maximum	Minimum	Mean	Percentiles				
							5th	25th	50th (median)	75th	95th
Physical properties											
Specific conductance	44	(a)	(a)	486	33	136	42	56	117	217	286
pH (standard units)	44	(a)	(a)	7.8	6.1	7.0	6.4	6.7	7.0	7.2	7.8
Water temperature	43	(a)	(a)	30.5	4.0	18.3	4.1	11.0	19.0	25.0	30.0
Dissolved oxygen (milligrams per liter)	43	(a)	(a)	11.0	4.8	8.2	5.8	6.7	8.1	9.5	11.0
Dissolved solids (milligrams per liter)	43	(a)	(a)	316	37	103	48	70	94	127	182
Major cations (milligrams per liter)											
Calcium, dissolved	43	0.01	43	28	3.0	11	3.0	4.9	10	16	25
Magnesium, dissolved	43	.01	43	11	.10	3.3	1.0	1.4	2.4	4.4	7.3
Sodium, dissolved	43	.01	43	74	1.1	11	1.5	4.0	8.2	16	23
Potassium, dissolved	43	.01	43	4.9	1.6	2.8	1.8	2.4	2.7	3.2	4.3
Major anions (milligrams per liter)											
Alkalinity, total as $CaCO_3$	43	1	43	119	11	43	12	19	35	64	107
Sulfate, dissolved	43	.1	43	11	.6	6.4	.7	4.6	6.2	8.2	10
Chloride, dissolved	43	.1	43	140	.1	12	.5	3.9	7.3	15	23
Nutrients (milligrams per liter)											
Phosphorus, total as phosphorus	11	0.01	11	0.41	0.01	0.18	0.01	0.09	0.18	0.23	0.41
Biological constituents--bacteria (colonies per 100 milliliters)											
Fecal coliform	1	1	1	340	(d)	(b)	(b)	(b)	(b)	(b)	(b)
Trace metals (micrograms per liter)											
Iron, dissolved	1	10	1	110	(d)	(b)	(b)	(b)	(b)	(b)	(b)

Table 2.2-1. Statistical summary of water-quality data for the Ouachita River basin in Louisiana, 1908-94--Continued

Bayou Bartholomew northwest of Jones, Louisiana (4)

Water-quality property or constituent	Number of analyses	Reporting level	Number of analyses greater than or equal to reporting level	Maximum	Minimum	Mean	Percentiles				
							5th	25th	50th (median)	75th	95th
Physical properties											
Specific conductance	19	(a)	(a)	231	34	76	34	44	52	83	231
pH (standard units)	19	(a)	(a)	7.4	6.3	6.8	6.3	6.6	6.8	7.0	7.4
Water temperature	18	(a)	(a)	28.0	4.0	14.7	4.0	8.8	16.0	19.2	28.0
Dissolved oxygen (milligrams per liter)	19	(a)	(a)	7.9	1.0	4.7	1.0	3.2	5.0	5.9	7.9
Major cations (milligrams per liter)											
Calcium, dissolved	4	0.01	4	17	2.0	(b)	(b)	(b)	(b)	(b)	(b)
Magnesium, dissolved	4	.01	4	7.0	2.0	(b)	(b)	(b)	(b)	(b)	(b)
Major anions (milligrams per liter)											
Alkalinity, total as $CaCO_3$	19	1	19	82	7	27	7	13	19	36	82
Sulfate, dissolved	6	1.0	5	12	<1.0	(b,c)	(b)	(b)	(b)	(b)	(b)
Chloride, dissolved	19	.1	19	10	3.0	5.7	3.0	4.5	5.0	7.0	10
Nutrients (milligrams per liter)											
Phosphorus, total as phosphorus	5	0.01	5	0.25	0.14	(b)	(b)	(b)	(b)	(b)	(b)

Table 2.2-1. Statistical summary of water-quality data for the Ouachita River basin in Louisiana, 1908-94--Continued

Bayou D'Arbonne at Homer, Louisiana (8)

Water-quality property or constituent	Number of analyses	Reporting level	Number of analyses greater than or equal to reporting level	Maximum	Minimum	Mean	Percentiles				
							5th	25th	50th (median)	75th	95th
Physical properties											
Specific conductance	10	(a)	(a)	94	35	51	35	42	44	54	94
pH (standard units)	10	(a)	(a)	7.8	5.7	6.4	5.7	6.0	6.2	6.7	7.8
Dissolved solids (milligrams per liter)	8	(a)	(a)	80	35	(b)	(b)	(b)	(b)	(b)	(b)
Major cations (milligrams per liter)											
Calcium, dissolved	10	0.01	10	4.2	1.7	2.6	1.7	2.2	2.4	3.1	4.2
Magnesium, dissolved	10	.01	10	1.4	.40	1.0	.40	.80	1.1	1.2	1.4
Sodium, dissolved	10	.01	10	6.9	2.3	3.6	2.3	2.7	3.0	4.5	6.9
Potassium, dissolved	10	.01	10	2.3	.80	1.4	.80	1.1	1.4	1.6	2.3
Major anions (milligrams per liter)											
Alkalinity, total as $CaCO_3$	2	1	2	8	7	(b)	(b)	(b)	(b)	(b)	(b)
Sulfate, dissolved	10	.1	10	5.4	.4	3.2	.4	1.7	3.6	4.4	5.4
Chloride, dissolved	10	.1	10	8.8	4.2	5.3	4.2	4.5	4.8	5.5	8.8

Table 2.2-1. Statistical summary of water-quality data for the Ouachita River basin in Louisiana, 1908-94--Continued

Bayou D'Arbonne near Dubach, Louisiana (9)

Water-quality property or constituent	Number of analyses	Reporting level	Number of analyses greater than or equal to reporting level	Maximum	Minimum	Mean	Percentiles				
							5th	25th	50th (median)	75th	95th
Physical properties											
Specific conductance	36	(a)	(a)	2,400	52	324	55	101	136	245	1,870
pH (standard units)	36	(a)	(a)	7.3	5.8	6.5	5.9	6.2	6.6	6.9	7.2
Water temperature	33	(a)	(a)	28.0	4.0	16.6	4.7	11.0	16.0	24.2	26.6
Dissolved solids (milligrams per liter)	32	(a)	(a)	1,370	54	174	55	76	88	128	1,010
Major cations (milligrams per liter)											
Calcium, dissolved	36	0.01	36	75	3.3	10	3.4	5.6	6.5	11	44
Magnesium, dissolved	36	.01	36	12	.40	2.7	.82	1.5	2.1	3.1	9.9
Sodium, dissolved	33	.01	33	400	3.3	43	3.8	11	15	24	316
Potassium, dissolved	33	.01	33	8.2	.40	2.2	.47	1.2	1.9	2.4	5.4
Major anions (milligrams per liter)											
Alkalinity, total as $CaCO_3$	36	1	36	136	5	28	5	9	15	33	122
Sulfate, dissolved	36	.1	36	160	3.8	17	4.5	6.2	7.5	9.8	118
Chloride, dissolved	36	.1	36	660	4.4	70	5.7	17	22	51	507

Table 2.2-1. Statistical summary of water-quality data for the Ouachita River basin in Louisiana, 1908-94--Continued

Bayou D'Arbonne Lake at Farmerville, Louisiana (12)

Water-quality property or constituent	Number of analyses	Reporting level	Number of analyses greater than or equal to reporting level	Maximum	Minimum	Mean	Percentiles				
							5th	25th	50th (median)	75th	95th
Physical properties											
Specific conductance	15	(a)	(a)	615	76	177	76	110	129	195	615
pH (standard units)	15	(a)	(a)	7.0	5.7	6.3	5.7	6.2	6.3	6.4	7.0
Water temperature	9	(a)	(a)	36.0	9.0	(b)	(b)	(b)	(b)	(b)	(b)
Dissolved oxygen (milligrams per liter)	4	(a)	(a)	10.8	7.3	(b)	(b)	(b)	(b)	(b)	(b)
Dissolved solids (milligrams per liter)	12	(a)	(a)	221	75	106	75	78	88	125	221
Major cations (milligrams per liter)											
Calcium, dissolved	15	0.1	15	27	4.3	9.2	4.3	6.6	7.2	10	27
Magnesium, dissolved	15	.1	15	5.6	.6	1.8	.6	1.0	1.6	1.9	5.6
Sodium, dissolved	14	.1	14	34	7.2	15	7.2	11	12	20	34
Potassium, dissolved	14	.1	14	3.0	.3	2.0	.3	1.5	1.9	2.7	3.0
Major anions (milligrams per liter)											
Alkalinity, total as $CaCO_3$	15	1	15	23	2	10	2	7	10	14	23
Sulfate, dissolved	14	.1	14	8.6	2.0	5.1	2.0	4.0	4.6	7.0	8.6
Chloride, dissolved	15	.1	15	180	13	42	13	22	27	45	180

Table 2.2-1. Statistical summary of water-quality data for the Ouachita River basin in Louisiana, 1908-94--Continued

Bayou D'Arbonne Lake at Farmerville, Louisiana (12)--continued

Water-quality property or constituent	Number of analyses	Reporting level	Number of analyses greater than or equal to reporting level	Maximum	Minimum	Mean	Percentiles				
							5th	25th	50th (median)	75th	95th
Trace metals (micrograms per liter)											
Copper, dissolved	2	10	0	<10	<10	(b,c)	(b)	(b)	(b)	(b)	(b)
Iron, dissolved	4	10	4	270	80	(b)	(b)	(b)	(b)	(b)	(b)
Lead, dissolved	2	5	0	<5	<5	(b,c)	(b)	(b)	(b)	(b)	(b)
Zinc, dissolved	2	20	0	<20	<20	(b,c)	(b)	(b)	(b)	(b)	(b)
Organic compounds (micrograms per liter)											
DDT, total	1	0.01	0	<0.01	(d)	(b,c)	(b)	(b)	(b)	(b)	(b)
PCB, total	1	.1	0	<.1	(d)	(b,c)	(b)	(b)	(b)	(b)	(b)
Diazinon, total	1	.01	0	<.01	(d)	(b,c)	(b)	(b)	(b)	(b)	(b)
Lindane, total	1	.01	0	<.01	(d)	(b,c)	(b)	(b)	(b)	(b)	(b)
Chlordane, total	1	.1	0	<.1	(d)	(b,c)	(b)	(b)	(b)	(b)	(b)
Malathion, total	1	.01	0	<.01	(d)	(b,c)	(b)	(b)	(b)	(b)	(b)
Endrin, total	1	.01	0	<.01	(d)	(b,c)	(b)	(b)	(b)	(b)	(b)
Parathion, total	1	.01	0	<.01	(d)	(b,c)	(b)	(b)	(b)	(b)	(b)
Dieldrin, total	1	.01	0	<.01	(d)	(b,c)	(b)	(b)	(b)	(b)	(b)
2,4-D, total	1	.01	0	<.01	(d)	(b,c)	(b)	(b)	(b)	(b)	(b)

Table 2.2-1. Statistical summary of water-quality data for the Ouachita River basin in Louisiana, 1908-94--Continued

Bayou de Loutre near Farmerville, Louisiana (2)

	Number of analyses	Reporting level	Number of analyses greater than or equal to reporting level	Maximum	Minimum	Mean	Percentiles				
							5th	25th	50th (median)	75th	95th
Physical properties											
Specific conductance	16	(a)	(a)	3,910	294	1,480	294	691	1,360	1,935	3,910
pH (standard units)	16	(a)	(a)	6.8	5.5	6.4	5.5	6.1	6.4	6.6	6.8
Water temperature	15	(a)	(a)	28.5	5.0	17.3	5.0	7.0	19.5	25.5	28.5
Dissolved oxygen (milligrams per liter)	15	(a)	(a)	11.7	4.6	7.9	4.6	6.4	7.4	9.7	11.7
Dissolved solids (milligrams per liter)	16	(a)	(a)	2,180	176	865	176	413	772	1,110	2,180
Major cations (milligrams per liter)											
Calcium, dissolved	16	0.01	16	80	9.4	38	9.4	18	37	54	80
Magnesium, dissolved	16	.01	16	22	2.5	9.1	2.5	4.9	8.2	12	22
Sodium, dissolved	16	.01	16	690	40	240	40	100	200	320	690
Potassium, dissolved	15	.01	15	7.8	1.7	4.0	1.7	2.4	3.6	4.9	7.8
Major anions (milligrams per liter)											
Alkalinity, total as $CaCO_3$	16	1	16	59	5	20	5	9	15	28	59
Sulfate, dissolved	16	.1	16	55	5.0	23	5.0	10	20	36	55
Chloride, dissolved	16	.1	16	1,200	72	430	72	180	380	590	1,200
Nutrients (milligrams per liter)											
Nitrogen, ammonia plus organic, total as nitrogen	15	0.01	15	1.2	0.30	0.68	0.30	0.50	0.60	0.90	1.2
Nitrogen, nitrite plus nitrate, total as nitrogen	15	.10	11	0.28	<.10	(c)	<.10	<.10	.16	.20	.28
Phosphorus, total as phosphorus	15	.01	15	.17	.03	.06	.03	.04	.05	.06	.17

Table 2.2-1. Statistical summary of water-quality data for the Ouachita River basin in Louisiana, 1908-94--Continued

Bayou de Loutre near Farmerville, Louisiana (2)--continued

Water-quality property or constituent	Number of analyses	Reporting level	Number of analyses greater than or equal to reporting level	Maximum	Minimum	Mean	Percentiles				
							5th	25th	50th (median)	75th	95th
Biological constituents--bacteria (colonies per 100 milliliters)											
Fecal coliform	16	1	16	340	10	97	10	34	56	84	340
Fecal streptococcus	15	1	15	4,900	80	1,100	80	320	640	1,500	4,900
Trace metals (micrograms per liter)											
Copper, dissolved	4	1	2	4	<1	(b,c)	(b)	(b)	(b)	(b)	(b)
Iron, dissolved	4	10	4	170	60	(b)	(b)	(b)	(b)	(b)	(b)
Lead, dissolved	4	1	4	3	1	(b)	(b)	(b)	(b)	(b)	(b)
Zinc, dissolved	4	10	4	26	<10	(b,c)	(b)	(b)	(b)	(b)	(b)
Organic compounds (micrograms per liter)											
DDT, total	4	0.01	0	<0.01	<0.01	(b,c)	(b)	(b)	(b)	(b)	(b)
PCB, total	4	.1	0	<.1	<.1	(b,c)	(b)	(b)	(b)	(b)	(b)
Diazinon, total	4	.01	1	.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Lindane, total	4	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Chlordane, total	4	.1	0	<.1	<.1	(b,c)	(b)	(b)	(b)	(b)	(b)
Malathion, total	4	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Endrin, total	4	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Parathion, total	4	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Dieldrin, total	4	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Endosulfan, total	4	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
2,4-D, total	4	.01	1	.03	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)

Table 2.2-1. Statistical summary of water-quality data for the Ouachita River basin in Louisiana, 1908-94--Continued

Bayou de Loutre near Laran, Louisiana (1)

Water-quality property or constituent	Number of analyses	Reporting level	Number of analyses greater than or equal to reporting level	Maximum	Minimum	Mean	Percentiles				
							5th	25th	50th (median)	75th	95th
Physical properties											
Specific conductance	77	(a)	(a)	12,800	135	2,320	277	911	1,740	2,740	6,840
pH (standard units)	77	(a)	(a)	7.5	3.7	6.5	5.8	6.2	6.5	6.8	7.3
Water temperature	60	(a)	(a)	33.0	2.0	17.8	5.0	11.0	18.5	24.0	29.0
Dissolved oxygen (milligrams per liter)	13	(a)	(a)	11.6	4.4	7.7	4.4	5.8	7.3	9.7	11.6
Dissolved solids (milligrams per liter)	49	(a)	(a)	7,540	118	1,180	165	540	878	1,470	3,070
Major cations (milligrams per liter)											
Calcium, dissolved	77	0.01	77	680	5.0	90	11	28	61	100	330
Magnesium, dissolved	77	.01	77	91	.36	14	2.3	6.2	11	18	40
Sodium, dissolved	69	.01	69	2,400	22	380	43	160	270	450	1,200
Potassium, dissolved	68	.01	68	37	1.2	8.3	1.2	3.4	6.0	9.6	27
Major anions (milligrams per liter)											
Alkalinity, total as $CaCO_3$	74	1	73	105	<1	(c)	6	16	25	43	83
Sulfate, dissolved	77	.1	77	180	1.0	39	5.4	16	30	52	100
Chloride, dissolved	77	.1	77	4,500	31	710	56	260	480	820	2,300
Nutrients (milligrams per liter)											
Nitrogen, ammonia plus organic, total as nitrogen	9	0.1	9	1.3	0.3	(b)	(b)	(b)	(b)	(b)	(b)
Nitrogen, nitrite plus nitrate, total as nitrogen	9	.10	8	.40	<.10	(b,c)	(b)	(b)	(b)	(b)	(b)
Phosphorus, total as phosphorus	9	.01	9	.40	.04	(b)	(b)	(b)	(b)	(b)	(b)

Table 2.2-1. Statistical summary of water-quality data for the Ouachita River basin in Louisiana, 1908-94--Continued

Bayou de Loutre near Laran, Louisiana (1)--continued

Water-quality property or constituent	Number of analyses	Reporting level	Number of analyses greater than or equal to reporting level	Maximum	Minimum	Mean	Percentiles				
							5th	25th	50th (median)	75th	95th
Biological constituents--bacteria (colonies per 100 milliliters)											
Fecal coliform	9	1	9	270	17	(b)	(b)	(b)	(b)	(b)	(b)
Fecal streptococcus	9	1	9	300	24	(b)	(b)	(b)	(b)	(b)	(b)
Trace metals (micrograms per liter)											
Copper, dissolved	4	1	2	3	<1	(b,c)	(b)	(b)	(b)	(b)	(b)
Iron, dissolved	5	10	5	550	60	(b)	(b)	(b)	(b)	(b)	(b)
Lead, dissolved	4	5	2	4	<5	(b,c)	(b)	(b)	(b)	(b)	(b)
Zinc, dissolved	4	10	2	50	<10	(b,c)	(b)	(b)	(b)	(b)	(b)
Organic compounds (micrograms per liter)											
DDT, total	3	0.01	1	0.01	<0.01	(b,c)	(b)	(b)	(b)	(b)	(b)
PCB, total	3	.1	0	<.1	<.1	(b,c)	(b)	(b)	(b)	(b)	(b)
Diazinon, total	3	.01	1	.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Lindane, total	3	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Chlordane, total	3	.1	0	<.1	<.1	(b,c)	(b)	(b)	(b)	(b)	(b)
Malathion, total	3	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Endrin, total	3	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Parathion, total	3	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Dieldrin, total	3	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
2,4-D, total	3	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)

Table 2.2-1. Statistical summary of water-quality data for the Ouachita River basin in Louisiana, 1908-94--Continued

Bayou Funny Louis near Trout, Louisiana (27)

Water-quality property or constituent	Number of analyses	Reporting level	Number of analyses greater than or equal to reporting level	Maximum	Minimum	Mean	Percentiles				
							5th	25th	50th (median)	75th	95th
Physical properties											
Specific conductance	11	(a)	(a)	43,400	43	6,030	43	142	189	669	43,400
pH (standard units)	10	(a)	(a)	7.2	5.8	6.6	5.8	6.4	6.6	6.9	7.2
Water temperature	8	(a)	(a)	27.0	9.0	(b)	(b)	(b)	(b)	(b)	(b)
Dissolved solids (milligrams per liter)	11	(a)	(a)	28,500	56	3,900	56	94	132	360	28,500
Major cations (milligrams per liter)											
Calcium, dissolved	10	0.01	10	240	2.7	44	2.7	4.1	5.5	45	240
Magnesium, dissolved	10	.01	10	250	.90	33	.90	1.0	1.6	18	250
Sodium, dissolved	10	.01	10	4,600	4.0	590	4.0	19	34	340	4,600
Potassium, dissolved	10	.01	10	12	.50	2.9	.50	1.1	1.6	3.2	12
Major anions (milligrams per liter)											
Alkalinity, total as $CaCO_3$	6	1	6	24	8	(b)	(b)	(b)	(b)	(b)	(b)
Sulfate, dissolved	10	.1	10	190	2.6	35	2.6	4.2	6.3	36	190
Chloride, dissolved	11	.1	82	17,000	5.0	2,280	5.0	31	43	180	17,000

Table 2.2-1. Statistical summary of water-quality data for the Ouachita River basin in Louisiana, 1908-94--Continued

Big Creek at Pollock, Louisiana (29)

Water-quality property or constituent	Number of analyses	Reporting level	Number of analyses greater than or equal to reporting level	Maximum	Minimum	Mean	Percentiles				
							5th	25th	50th (median)	75th	95th
Physical properties											
Specific conductance	243	(a)	(a)	68	23	39	31	37	39	42	47
pH (standard units)	243	(a)	(a)	8.0	5.0	6.5	5.7	6.2	6.5	6.8	7.2
Water temperature	238	(a)	(a)	29.0	4.0	18.1	8.0	12.5	18.0	24.0	27.0
Dissolved oxygen (milligrams per liter)	202	(a)	(a)	12.8	5.7	8.8	6.8	7.6	8.6	9.8	11.2
Dissolved solids (milligrams per liter)	236	(a)	(a)	98	21	47	34	42	46	53	62
Major cations (milligrams per liter)											
Calcium, dissolved	237	0.01	237	7.9	1.0	2.1	1.5	1.7	2.0	2.4	3.2
Magnesium, dissolved	236	.01	235	1.8	<.01	(c)	.20	.60	.70	.90	1.1
Sodium, dissolved	238	.01	238	8.0	.70	4.2	2.6	3.8	4.2	4.7	5.5
Potassium, dissolved	239	.01	239	2.4	.10	1.3	.80	1.1	1.3	1.5	1.8
Major anions (milligrams per liter)											
Alkalinity, total as $CaCO_3$	242	1	242	26	3	11	5	10	11	13	15
Sulfate, dissolved	237	1.0	219	7.2	<1.0	(c)	<1.0	1.0	2.0	3.0	5.2
Chloride, dissolved	241	.1	241	8.2	.8	4.2	2.9	3.8	4.1	4.6	5.8
Nutrients (milligrams per liter)											
Nitrogen, ammonia plus organic, total as nitrogen	68	0.2	61	1.2	<0.2	(c)	<0.2	0.2	0.4	0.7	1.1
Nitrogen, nitrite plus nitrate, total as nitrogen	116	.10	104	.62	<.10	(c)	<.10	<.10	<.10	.10	.15
Phosphorus, total as phosphorus	157	.01	147	.40	<.01	(c)	<.01	.02	.03	.04	.12

Table 2.2-1. Statistical summary of water-quality data for the Ouachita River basin in Louisiana, 1908-94--Continued

Big Creek at Pollock, Louisiana (29)--continued

Water-quality property or constituent	Number of analyses	Reporting level	Number of analyses greater than or equal to reporting level	Maximum	Minimum	Mean	Percentiles				
							5th	25th	50th (median)	75th	95th
Biological constituents--bacteria (colonies per 100 milliliters)											
Fecal coliform	119	1	119	4,400	2	380	20	85	140	300	2,400
Fecal streptococcus	113	1	113	12,000	18	960	27	200	330	780	5,100
Trace metals (micrograms per liter)											
Copper, dissolved	38	10	5	18	<10	(c)	<10	<10	<10	<10	16
Iron, dissolved	58	10	58	450	70	230	90	180	220	280	390
Lead, dissolved	39	10	3	10	<10	(c)	<10	<10	<10	<10	10
Zinc, dissolved	39	4	23	48	<4	(c)	<4	<4	5	10	20
Organic compounds (micrograms per liter)											
DDT, total	11	0.01	0	<0.01	<0.01	(c)	<0.01	<0.01	<0.01	<0.01	<0.01
PCB, total	11	.1	0	<.1	<.1	(c)	<.1	<.1	<.1	<.1	<.1
Diazinon, total	12	.01	2	.01	<.01	(c)	<.01	<.01	<.01	<.01	.01
Lindane, total	11	.01	1	.01	<.01	(c)	<.01	<.01	<.01	<.01	.01
Chlordane, total	11	.1	0	<.1	<.1	(c)	<.1	<.1	<.1	<.1	<.1
Malathion, total	12	.01	0	<.01	<.01	(c)	<.01	<.01	<.01	<.01	<.01
Endrin, total	11	.01	0	<.01	<.01	(c)	<.01	<.01	<.01	<.01	<.01
Parathion, total	12	.01	0	<.01	<.01	(c)	<.01	<.01	<.01	<.01	<.01
Dieldrin, total	11	.01	0	<.01	<.01	(c)	<.01	<.01	<.01	<.01	<.01
Endosulfan, total	3	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
2,4-D, total	12	.01	0	<.01	<.01	(c)	<.01	<.01	<.01	<.01	<.01

Table 2.2-1. Statistical summary of water-quality data for the Ouachita River basin in Louisiana, 1908-94--Continued

Black River at Jonesville, Louisiana (31)

Water-quality property or constituent	Number of analyses	Reporting level	Number of analyses greater than or equal to reporting level	Maximum	Minimum	Mean	Percentiles				
							5th	25th	50th (median)	75th	95th
Physical properties											
Specific conductance	536	(a)	(a)	2,360	71	446	129	253	402	564	1,010
pH (standard units)	528	(a)	(a)	8.2	5.7	6.9	6.2	6.6	6.9	7.2	7.5
Water temperature	42	(a)	(a)	31.0	4.0	19.5	7.2	13.8	21.0	26.0	29.4
Dissolved solids (milligrams per liter)	499	(a)	(a)	850	28	262	96	154	236	336	549
Major cations (milligrams per liter)											
Calcium, dissolved	516	0.01	516	54	3.7	18	7.8	11	17	24	36
Magnesium, dissolved	512	.01	512	26	.60	5.0	1.5	2.7	4.6	6.6	10
Sodium, dissolved	512	.01	512	450	5.0	58	12	28	50	77	140
Potassium, dissolved	509	.01	509	5.5	.60	2.6	1.6	2.1	2.5	3.1	4.0
Major anions (milligrams per liter)											
Alkalinity, total as $CaCO_3$	528	1	528	440	8	40	16	25	35	51	78
Sulfate, dissolved	521	.1	521	51	1.4	11	5.0	8.6	10	13	19
Chloride, dissolved	537	.1	537	740	8.6	100	21	47	81	140	270

Table 2.2-1. Statistical summary of water-quality data for the Ouachita River basin in Louisiana, 1908-94--Continued

Black River near Serena, Louisiana (32)

Water-quality property or constituent	Number of analyses	Reporting level	Number of analyses greater than or equal to reporting level	Maximum	Minimum	Mean	Percentiles				
							5th	25th	50th (median)	75th	95th
Physical properties											
Specific conductance	12	(a)	(a)	730	80	225	80	113	176	245	730
pH (standard units)	12	(a)	(a)	7.8	5.9	6.6	5.9	6.3	6.6	6.9	7.8
Water temperature	11	(a)	(a)	31.5	6.0	18.2	6.0	8.0	18.5	29.0	31.5
Dissolved oxygen (milligrams per liter)	12	(a)	(a)	11.4	2.6	7.3	2.6	5.7	7.4	9.6	11.4
Dissolved solids (milligrams per liter)	12	(a)	(a)	378	57	134	57	79	106	167	378
Major cations (milligrams per liter)											
Calcium, dissolved	12	0.01	12	34	5.0	13	5.0	8.1	11	16	34
Magnesium, dissolved	12	.1	11	11	<.1	(c)	1.1	1.1	2.2	3.6	11
Sodium, dissolved	12	.01	12	83	6.7	23	6.7	9.9	17	27	83
Potassium, dissolved	12	.01	12	4.0	.60	2.5	.60	2.0	2.2	3.3	4.0
Major anions (milligrams per liter)											
Alkalinity, total as $CaCO_3$	12	1	12	110	11	35	11	17	25	47	110
Sulfate, dissolved	12	.1	12	25	5.6	13	5.6	8.0	10	17	25
Chloride, dissolved	12	.1	12	130	10	37	10	15	30	43	130
Nutrients (milligrams per liter)											
Nitrogen, ammonia plus organic, total as nitrogen	12	0.1	12	1.2	.4	0.7	0.4	0.6	0.7	0.9	1.2
Nitrogen, nitrite plus nitrate, total as nitrogen	12	.1	12	.4	.1	.2	.1	.1	.2	.3	.4
Phosphorus, total as phosphorus	12	.01	12	.35	.02	.13	.02	.08	.12	.15	.35

Table 2.2-1. Statistical summary of water-quality data for the Ouachita River basin in Louisiana, 1908-94--Continued

Black River near Serena, Louisiana (32)--continued

Water-quality property or constituent	Number of analyses	Reporting level	Number of analyses greater than or equal to reporting level	Maximum	Minimum	Mean	Percentiles				
							5th	25th	50th (median)	75th	95th
Biological constituents--bacteria (colonies per 100 milliliters)											
Fecal coliform	11	1	11	1,900	2	220	2	5	40	80	1,900
Fecal streptococcus	11	1	11	720	7	280	7	80	300	530	720
Trace metals (micrograms per liter)											
Copper, dissolved	3	2	2	22	<2	(b,c)	(b)	(b)	(b)	(b)	(b)
Iron, dissolved	3	10	3	250	130	(b)	(b)	(b)	(b)	(b)	(b)
Lead, dissolved	3	2	0	<2	<2	(b,c)	(b)	(b)	(b)	(b)	(b)
Zinc, dissolved	3	20	1	30	<20	(b,c)	(b)	(b)	(b)	(b)	(b)
Organic compounds (micrograms per liter)											
DDT, total	2	0.01	0	<0.01	<0.01	(b,c)	(b)	(b)	(b)	(b)	(b)
PCB, total	2	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Diazinon, total	2	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Lindane, total	2	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Chlordane, total	2	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Malathion, total	2	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Endrin, total	2	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Parathion, total	2	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Dieldrin, total	2	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Endosulfan, total	1	.01	0	<.01	(d)	(b,c)	(b)	(b)	(b)	(b)	(b)
2,4-D, total	3	.01	3	.04	.01	(b)	(b)	(b)	(b)	(b)	(b)

Table 2.2-1. Statistical summary of water-quality data for the Ouachita River basin in Louisiana, 1908-94--Continued

Castor Creek near Grayson, Louisiana (22)

Water-quality property or constituent	Number of analyses	Reporting level	Number of analyses greater than or equal to reporting level	Maximum	Minimum	Mean	Percentiles				
							5th	25th	50th (median)	75th	95th
Physical properties											
Specific conductance	13	(a)	(a)	138	42	71	42	50	60	84	138
pH (standard units)	13	(a)	(a)	6.9	5.8	6.4	5.8	6.2	6.5	6.6	6.9
Water temperature	5	(a)	(a)	28.0	5.5	(b)	(b)	(b)	(b)	(b)	(b)
Dissolved solids (milligrams per liter)	5	(a)	(a)	95	53	(b)	(b)	(b)	(b)	(b)	(b)
Major cations (milligrams per liter)											
Calcium, dissolved	13	0.01	13	18	2.4	5.8	2.4	3.0	4.2	6.8	18
Magnesium, dissolved	13	.01	13	3.6	.70	1.6	.70	1.1	1.3	1.8	3.6
Sodium, dissolved	13	.01	13	9.3	2.1	5.2	2.1	4.0	5.1	6.2	9.3
Potassium, dissolved	10	.01	10	2.9	.80	1.6	.80	1.3	1.6	1.9	2.9
Major anions (milligrams per liter)											
Alkalinity, total as $CaCO_3$	13	1	13	60	7	23	7	11	16	30	60
Sulfate, dissolved	13	.1	13	6.2	.4	2.9	.4	1.6	2.2	4.8	6.2
Chloride, dissolved	13	.1	13	7.0	2.5	4.8	2.5	3.8	4.8	5.9	7.0

Table 2.2-1. Statistical summary of water-quality data for the Ouachita River basin in Louisiana, 1908-94--Continued

Catahoula Lake near Whitehall, Louisiana (30)

Water-quality property or constituent	Number of analyses	Reporting level	Number of analyses greater than or equal to reporting level	Maximum	Minimum	Mean	Percentiles				
							5th	25th	50th (median)	75th	95th
Physical properties											
Specific conductance	7	(a)	(a)	11,300	82	2,170	82	94	240	1,710	11,300
pH (standard units)	16	(a)	(a)	6.9	4.3	6.1	4.3	5.9	6.2	6.5	6.9
Water temperature	2	(a)	(a)	12.0	7.0	(b)	(b)	(b)	(b)	(b)	(b)
Dissolved solids (milligrams per liter)	13	(a)	(a)	890	48	266	48	92	138	447	890
Major cations (milligrams per liter)											
Calcium, dissolved	6	0.01	6	100	3.2	(b)	(b)	(b)	(b)	(b)	(b)
Magnesium, dissolved	6	.01	6	56	.40	(b)	(b)	(b)	(b)	(b)	(b)
Sodium, dissolved	6	.01	6	2,300	7.8	(b)	(b)	(b)	(b)	(b)	(b)
Potassium, dissolved	6	.01	6	7.4	1.2	(b)	(b)	(b)	(b)	(b)	(b)
Major anions (milligrams per liter)											
Alkalinity, total as $CaCO_3$	5	1	5	21	12	(b)	(b)	(b)	(b)	(b)	(b)
Sulfate, dissolved	16	.1	15	17	<.1	(c)	<.1	3.1	5.3	8.6	17
Chloride, dissolved	17	.1	17	3,800	12	380	12	24	63	390	3,800

Table 2.2-1. Statistical summary of water-quality data for the Ouachita River basin in Louisiana, 1908-94--Continued

Chemin-a-Haut Bayou near Beekman, Louisiana (5)

Water-quality property or constituent	Number of analyses	Reporting level	Number of analyses greater than or equal to reporting level	Maximum	Minimum	Mean	Percentiles				
							5th	25th	50th (median)	75th	95th
Physical properties											
Specific conductance	18	(a)	(a)	444	29	157	29	43	104	290	444
pH (standard units)	29	(a)	(a)	7.8	6.0	6.8	6.0	6.4	6.6	7.4	7.8
Water temperature	16	(a)	(a)	27.0	.0	16.1	.0	9.6	17.5	21.1	27.0
Dissolved oxygen (milligrams per liter)	12	(a)	(a)	11.5	.6	5.6	.6	2.9	5.7	8.6	11.5
Dissolved solids (milligrams per liter)	13	(a)	(a)	191	34	94	34	64	74	128	191
Major cations (milligrams per liter)											
Calcium, dissolved	9	0.01	9	40	2.0	(b)	(b)	(b)	(b)	(b)	(b)
Magnesium, dissolved	9	.01	9	10	1.0	(b)	(b)	(b)	(b)	(b)	(b)
Sodium, dissolved	5	.01	5	34	4.6	(b)	(b)	(b)	(b)	(b)	(b)
Potassium, dissolved	5	.01	5	10	2.8	(b)	(b)	(b)	(b)	(b)	(b)
Major anions (milligrams per liter)											
Alkalinity, total as $CaCO_3$	18	1	18	164	8	55	8	12	37	106	164
Sulfate, dissolved	20	.1	20	8.0	.4	3.6	.4	1.6	3.6	5.0	8.0
Chloride, dissolved	29	.1	29	38	1.2	11	1.8	3.5	6.4	16	36
Nutrients (milligrams per liter)											
Phosphorus, total as phosphorus	4	.01	4	.09	.07	(b)	(b)	(b)	(b)	(b)	(b)

Table 2.2-1. Statistical summary of water-quality data for the Ouachita River basin in Louisiana, 1908-94--Continued

Cheniere Brake at dam near Bawcomville, Louisiana (14)

Water-quality property or constituent	Number of analyses	Reporting level	Number of analyses greater than or equal to reporting level	Maximum	Minimum	Mean	Percentiles				
							5th	25th	50th (median)	75th	95th
Physical properties											
Specific conductance	16	(a)	(a)	304	50	74	50	55	58	65	304
pH (standard units)	16	(a)	(a)	6.9	5.7	6.3	5.7	6.1	6.2	6.6	6.9
Water temperature	12	(a)	(a)	33.5	6.5	17.2	6.5	7.2	15.8	26.5	33.5
Dissolved oxygen (milligrams per liter)	10	(a)	(a)	10.1	4.8	8.3	4.8	5.6	9.3	9.8	10.1
Dissolved solids (milligrams per liter)	13	(a)	(a)	190	34	56	34	40	46	54	190
Major cations (milligrams per liter)											
Calcium, dissolved	14	0.01	14	14	2.2	4.4	2.2	3.2	3.6	4.4	14
Magnesium, dissolved	14	.01	14	2.7	.10	1.3	.10	1.0	1.2	1.5	2.7
Sodium, dissolved	14	.01	14	39	3.9	7.7	3.9	4.8	5.2	5.8	39
Potassium, dissolved	14	.01	14	2.2	1.6	1.9	1.6	1.7	1.8	2.0	2.2
Major anions (milligrams per liter)											
Alkalinity, total as $CaCO_3$	13	1	13	34	7	13	7	8	13	14	34
Sulfate, dissolved	14	.1	14	18	.4	5.4	.4	2.8	4.0	6.9	18
Chloride, dissolved	14	.1	14	55	4.8	10	4.8	5.9	6.8	7.4	55
Nutrients (milligrams per liter)											
Nitrogen, ammonia plus organic, total as nitrogen	6	0.1	6	.8	.3	(b)	(b)	(b)	(b)	(b)	(b)
Nitrogen, nitrite plus nitrate, total as nitrogen	8	.1	0	.1	<.1	(b,c)	(b)	(b)	(b)	(b)	(b)
Phosphorus, total as phosphorus	8	.01	8	.05	.02	(b)	(b)	(b)	(b)	(b)	(b)

Table 2.2-1. Statistical summary of water-quality data for the Ouachita River basin in Louisiana, 1908-94--Continued

Cheniere Brake at dam near Bawcomville, Louisiana (14)--continued

Water-quality property or constituent	Number of analyses	Reporting level	Number of analyses greater than or equal to reporting level	Maximum	Minimum	Mean	Percentiles				
							5th	25th	50th (median)	75th	95th
Biological constituents--bacteria (colonies per 100 milliliters)											
Fecal coliform	7	5	2	1,200	<5	(b,c)	(b)	(b)	(b)	(b)	(b)
Fecal streptococcus	6	5	4	11,000	<5	(b,c)	(b)	(b)	(b)	(b)	(b)
Trace metals (micrograms per liter)											
Copper, dissolved	2	5	1	5	<5	(b,c)	(b)	(b)	(b)	(b)	(b)
Iron, dissolved	2	10	2	360	100	(b)	(b)	(b)	(b)	(b)	(b)
Lead, dissolved	2	2	1	2	<2	(b,c)	(b)	(b)	(b)	(b)	(b)
Zinc, dissolved	2	20	0	<20	<20	(b,c)	(b)	(b)	(b)	(b)	(b)
Organic compounds (micrograms per liter)											
DDT, total	2	0.01	0	<0.01	<0.01	(b,c)	(b)	(b)	(b)	(b)	(b)
PCB, total	2	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Diazinon, total	2	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Lindane, total	2	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Chlordane, total	2	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Malathion, total	2	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Endrin, total	2	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Parathion, total	2	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Dieldrin, total	2	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
2,4-D, total	2	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)

Table 2.2-1. Statistical summary of water-quality data for the Ouachita River basin in Louisiana, 1908-94--Continued

Corney Bayou near Arkansas-Louisiana State Line (11)

Water-quality property or constituent	Number of analyses	Reporting level	Number of analyses greater than or equal to reporting level	Maximum	Minimum	Mean	Percentiles				
							5th	25th	50th (median)	75th	95th
Physical properties											
Specific conductance	4	(a)	(a)	1,360	171	(b)	(b)	(b)	(b)	(b)	(b)
pH (standard units)	15	(a)	(a)	6.8	3.7	4.8	3.7	4.1	4.5	5.1	6.8
Water temperature	8	(a)	(a)	29.0	11.0	(b)	(b)	(b)	(b)	(b)	(b)
Dissolved solids (milligrams per liter)	12	(a)	(a)	1,540	114	711	114	494	666	886	1,540
Major cations (milligrams per liter)											
Calcium, dissolved	4	0.01	4	77	8.7	(b)	(b)	(b)	(b)	(b)	(b)
Magnesium, dissolved	4	.01	4	8.9	1.5	(b)	(b)	(b)	(b)	(b)	(b)
Sodium, dissolved	4	.01	4	160	18	(b)	(b)	(b)	(b)	(b)	(b)
Potassium, dissolved	4	.01	4	4.9	2.0	(b)	(b)	(b)	(b)	(b)	(b)
Major anions (milligrams per liter)											
Alkalinity, total as $CaCO_3$	4	1	3	3	<1	(b,c)	(b)	(b)	(b)	(b)	(b)
Sulfate, dissolved	15	.1	15	14	.6	5.0	.6	1.4	4.4	6.4	14
Chloride, dissolved	15	.1	15	2,500	41	490	41	250	310	470	2,500

Table 2.2-1. Statistical summary of water-quality data for the Ouachita River basin in Louisiana, 1908-94--Continued

Corney Bayou near Lillie, Louisiana (10)

Water-quality property or constituent	Number of analyses	Reporting level	Number of analyses greater than or equal to reporting level	Maximum	Minimum	Mean	Percentiles				
							5th	25th	50th (median)	75th	95th
Physical properties											
Specific conductance	61	(a)	(a)	851	80	370	108	236	402	485	608
pH (standard units)	109	(a)	(a)	7.5	4.2	5.6	4.5	5.1	5.6	5.9	6.9
Water temperature	101	(a)	(a)	31.0	4.0	17.4	6.0	10.0	17.5	25.0	29.0
Dissolved oxygen (milligrams per liter)	19	(a)	(a)	11.1	2.7	7.5	2.7	5.5	7.9	10.0	11.1
Dissolved solids (milligrams per liter)	76	(a)	(a)	1,090	63	286	89	172	282	360	474
Major cations (milligrams per liter)											
Calcium, dissolved	60	0.01	60	44	5.0	19	5.5	11.2	19	24	31
Magnesium, dissolved	60	.01	60	6.8	.9	3.6	1.1	2.5	3.6	4.4	6.0
Sodium, dissolved	60	.01	60	92	7.0	41	10	25	44	56	75
Potassium, dissolved	60	.01	60	9.0	1.3	3.0	1.4	2.1	2.6	3.5	6.2
Major anions (milligrams per liter)											
Alkalinity, total as $CaCO_3$	60	1	59	55	<1	(c)	2	3	7	9	27
Sulfate, dissolved	111	.1	110	27	<.1	(c)	1.4	3.6	4.8	6.8	12
Chloride, dissolved	116	.1	116	1,400	1.0	250	30	78	140	280	800
Nutrients (milligrams per liter)											
Nitrogen, ammonia plus organic, total as nitrogen	15	.1	14	1.4	<.1	(c)	<.1	.3	.5	.8	1.4
Nitrogen, nitrite plus nitrate, total as nitrogen	15	.10	4	.20	<.10	(c)	<.10	<.10	<.10	.10	.20
Phosphorus, total as phosphorus	14	.01	14	.87	.02	.11	.02	.03	.03	.06	.87

Table 2.2-1. Statistical summary of water-quality data for the Ouachita River basin in Louisiana, 1908-94--Continued

Corney Bayou near Lillie, Louisiana (10)--continued

Water-quality property or constituent	Number of analyses	Reporting level	Number of analyses greater than or equal to reporting level	Maximum	Minimum	Mean	Percentiles				
							5th	25th	50th (median)	75th	95th
Biological constituents--bacteria (colonies per 100 milliliters)											
Fecal coliform	16	1	16	600	8	93	8	20	38	110	600
Fecal streptococcus	14	1	14	5,400	35	1,300	35	240	560	2,600	5,400
Trace metals (micrograms per liter)											
Copper, dissolved	6	2	4	4	<2	(b,c)	(b)	(b)	(b)	(b)	(b)
Iron, dissolved	6	10	6	440	140	(b)	(b)	(b)	(b)	(b)	(b)
Lead, dissolved	6	5	1	9	<5	(b,c)	(b)	(b)	(b)	(b)	(b)
Zinc, dissolved	6	20	0	<20	<20	(b,c)	(b)	(b)	(b)	(b)	(b)
Organic compounds (micrograms per liter)											
DDT, total	5	0.01	1	0.01	<0.01	(b,c)	(b)	(b)	(b)	(b)	(b)
PCB, total	5	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Diazinon, total	5	.01	2	.02	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Lindane, total	5	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Chlordane, total	5	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Malathion, total	5	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Endrin, total	5	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Parathion, total	5	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Dieldrin, total	5	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Endosulfan, total	4	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
2,4-D, total	5	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)

Table 2.2-1. Statistical summary of water-quality data for the Ouachita River basin in Louisiana, 1908-94--Continued

Corney Lake near Summerfield, Louisiana (19)

Water-quality property or constituent	Number of analyses	Reporting level	Number of analyses greater than or equal to reporting level	Maximum	Minimum	Mean	Percentiles				
							5th	25th	50th (median)	75th	95th
Physical properties											
pH (standard units)	19	(a)	(a)	6.3	3.7	5.3	3.7	5.1	5.3	5.6	6.3
Water temperature	3	(a)	(a)	29.0	13.0	(b)	(b)	(b)	(b)	(b)	(b)
Dissolved solids (milligrams per liter)	17	(a)	(a)	843	275	554	275	370	628	681	843
Major anions (milligrams per liter)											
Sulfate, dissolved	19	.1	19	11	.4	4.8	.4	2.0	4.0	7.4	11
Chloride, dissolved	19	.1	19	2,400	97	465	97	150	300	350	2,400

Table 2.2-1. Statistical summary of water-quality data for the Ouachita River basin in Louisiana, 1908-94--Continued

Dugdemona River near Tullos, Louisiana (25)

Water-quality property or constituent	Number of analyses	Reporting level	Number of analyses greater than or equal to reporting level	Maximum	Minimum	Mean	Percentiles				
							5th	25th	50th (median)	75th	95th
Physical properties											
Specific conductance	20	(a)	(a)	1,040	68	334	69	134	284	424	1,020
pH (standard units)	18	(a)	(a)	7.7	6.1	6.9	6.1	6.6	6.8	7.1	7.7
Water temperature	12	(a)	(a)	30.5	6.5	16.0	6.5	11.2	13.5	23.4	30.5
Dissolved oxygen (milligrams per liter)	10	(a)	(a)	9.1	4.1	6.4	4.1	4.7	5.9	7.8	9.1
Dissolved solids (milligrams per liter)	20	(a)	(a)	614	64	245	65	113	199	296	614
Major cations (milligrams per liter)											
Calcium, dissolved	17	0.01	17	18	4.6	9.4	4.6	5.7	8.2	12	18
Magnesium, dissolved	17	.01	17	2.5	.3	1.3	.3	1.0	1.2	1.7	2.5
Sodium, dissolved	17	.01	17	130	5.8	46	5.8	18	44	74	130
Potassium, dissolved	18	.01	18	7.4	1.6	3.2	1.6	1.8	2.5	4.3	7.4
Major anions (milligrams per liter)											
Alkalinity, total as $CaCO_3$	18	1	18	250	13	60	13	21	31	74	250
Sulfate, dissolved	18	.1	18	49	11	24	11	15	18	40	49
Chloride, dissolved	19	.1	19	140	4.1	40	4.1	12	33	62	140

Table 2.2-1. Statistical summary of water-quality data for the Ouachita River basin in Louisiana, 1908-94--Continued

Dugdemona River near Winnfield, Louisiana (24)

Water-quality property or constituent	Number of analyses	Reporting level	Number of analyses greater than or equal to reporting level	Maximum	Minimum	Mean	Percentiles				
							5th	25th	50th (median)	75th	95th
Physical properties											
Specific conductance	63	(a)	(a)	839	33	306	59	120	216	474	781
pH (standard units)	78	(a)	(a)	8.3	5.7	7.0	6.0	6.6	7.0	7.4	7.9
Water temperature	53	(a)	(a)	32.0	5.0	19.4	7.9	13.0	20.0	25.0	30.0
Dissolved oxygen (milligrams per liter)	43	(a)	(a)	11.0	3.6	6.9	3.9	5.4	7.0	7.9	10.2
Dissolved solids (milligrams per liter)	62	(a)	(a)	676	28	245	55	102	184	354	595
Major cations (milligrams per liter)											
Calcium, dissolved	55	0.01	55	16	2.0	7.1	2.4	5.0	6.6	8.6	14
Magnesium, dissolved	54	.01	54	6.0	.4	1.9	.65	1.1	1.5	2.3	5.0
Sodium, dissolved	60	.01	60	190	1.9	56	2.8	17	34	87	170
Potassium, dissolved	60	.01	60	8.5	1.1	3.7	1.6	2.3	3.2	4.6	7.7
Major anions (milligrams per liter)											
Alkalinity, total as $CaCO_3$	61	1	61	315	9	96	13	30	63	145	279
Sulfate, dissolved	78	.1	76	170	<.1	(c)	1.2	13	19	35	66
Chloride, dissolved	75	.1	75	54	1.0	13	2.6	6.0	10	16	39
Nutrients (milligrams per liter)											
Nitrogen, nitrite plus nitrate, total as nitrogen	3	.01	3	.15	.01	(b)	(b)	(b)	(b)	(b)	(b)
Phosphorus, total as phosphorus	3	.01	3	.25	.07	(b)	(b)	(b)	(b)	(b)	(b)

Table 2.2-1. Statistical summary of water-quality data for the Ouachita River basin in Louisiana, 1908-94--Continued

Dugdemona River near Winnfield, Louisiana (24)--continued

Water-quality property or constituent	Number of analyses	Reporting level	Number of analyses greater than or equal to reporting level	Maximum	Minimum	Mean	Percentiles				
							5th	25th	50th (median)	75th	95th
Trace metals (micrograms per liter)											
Copper, dissolved	5	3	3	15	<3	(b,c)	(b)	(b)	(b)	(b)	(b)
Iron, dissolved	5	10	5	730	160	(b)	(b)	(b)	(b)	(b)	(b)
Lead, dissolved	5	5	3	12	<5	(b,c)	(b)	(b)	(b)	(b)	(b)
Zinc, dissolved	5	20	3	40	<20	(b,c)	(b)	(b)	(b)	(b)	(b)
Organic compounds (micrograms per liter)											
DDT, total	4	0.01	0	<0.01	<0.01	(b,c)	(b)	(b)	(b)	(b)	(b)
PCB, total	4	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Diazinon, total	3	.01	1	.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Lindane, total	4	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Chlordane, total	4	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Malathion, total	3	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Endrin, total	4	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Parathion, total	3	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Dieldrin, total	4	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
2,4-D, total	4	.01	2	.66	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)

Table 2.2-1. Statistical summary of water-quality data for the Ouachita River basin in Louisiana, 1908-94--Continued

Fouse Bayou near Danville, Louisiana (23)

Water-quality property or constituent	Number of analyses	Reporting level	Number of analyses greater than or equal to reporting level	Maximum	Minimum	Mean	Percentiles				
							5th	25th	50th (median)	75th	95th
Physical properties											
Specific conductance	7	(a)	(a)	517	37	(b)	(b)	(b)	(b)	(b)	(b)
pH (standard units)	10	(a)	(a)	7.8	6.2	6.9	6.2	6.3	6.8	7.5	7.8
Water temperature	9	(a)	(a)	28.0	3.5	(b)	(b)	(b)	(b)	(b)	(b)
Dissolved solids (milligrams per liter)	7	(a)	(a)	373	40	(b)	(b)	(b)	(b)	(b)	(b)
Major cations (milligrams per liter)											
Calcium, dissolved	8	0.01	8	20	5.1	(b)	(b)	(b)	(b)	(b)	(b)
Magnesium, dissolved	8	.01	8	2.9	.50	(b)	(b)	(b)	(b)	(b)	(b)
Sodium, dissolved	8	.01	8	94	5.4	(b)	(b)	(b)	(b)	(b)	(b)
Potassium, dissolved	8	.01	8	3.4	1.0	(b)	(b)	(b)	(b)	(b)	(b)
Major anions (milligrams per liter)											
Alkalinity, total as $CaCO_3$	10	1	10	39	10	20	10	12	19	27	39
Sulfate, dissolved	10	.1	10	41	1.4	17	1.4	4.0	10	36	41
Chloride, dissolved	10	.1	10	160	3.0	53	3.0	5.3	51	83	160
Nutrients (milligrams per liter)											
Nitrogen, nitrite plus nitrate, total as nitrogen	1	.1	1	.7	(d)	(b)	(b)	(b)	(b)	(b)	(b)
Trace metals (micrograms per liter)											
Copper, dissolved	1	1	0	<1	(d)	(b,c)	(b)	(b)	(b)	(b)	(b)
Iron, dissolved	10	10	10	4,800	140	1,000	140	300	460	1,200	4,800
Lead, dissolved	1	5	0	<5	(d)	(b,c)	(b)	(b)	(b)	(b)	(b)
Zinc, dissolved	1	5	1	10	(d)	(b)	(b)	(b)	(b)	(b)	(b)

Table 2.2-1. Statistical summary of water-quality data for the Ouachita River basin in Louisiana, 1908-94--Continued

Lake Concordia at Ferriday, Louisiana (35)

Water-quality property or constituent	Number of analyses	Reporting level	Number of analyses greater than or equal to reporting level	Maximum	Minimum	Mean	Percentiles				
							5th	25th	50th (median)	75th	95th
Physical properties											
Specific conductance	24	(a)	(a)	390	210	272	210	245	270	291	380
pH (standard units)	25	(a)	(a)	9.5	6.9	7.9	7.0	7.4	7.8	8.2	9.4
Water temperature	25	(a)	(a)	30.5	7.0	21.4	7.0	12.2	24.5	29.2	30.2
Dissolved oxygen (milligrams per liter)	25	(a)	(a)	13.8	.4	6.9	.6	2.2	7.7	10.2	13.7
Dissolved solids (milligrams per liter)	10	(a)	(a)	158	114	136	114	120	134	150	158
Major cations (milligrams per liter)											
Calcium, dissolved	12	0.01	12	33	19	26	19	21	25	30	33
Magnesium, dissolved	12	.01	12	13	8.6	11	8.6	10	11	12	13
Sodium, dissolved	12	.01	12	11	7.5	9.0	7.5	7.9	8.8	9.8	11
Potassium, dissolved	12	.01	12	4.5	3.5	4.0	3.5	3.8	4.0	4.2	4.5
Major anions (milligrams per liter)											
Alkalinity, total as $CaCO_3$	12	1	12	140	100	122	100	110	120	137	140
Sulfate, dissolved	12	.1	12	4.2	.9	2.4	.9	1.6	2.4	2.8	4.2
Chloride, dissolved	12	.1	12	8.6	5.9	7.3	5.9	6.5	7.4	7.9	8.6
Nutrients (milligrams per liter)											
Nitrogen, ammonia plus organic, total as nitrogen	9	0.1	9	1.1	.5	(b)	(b)	(b)	(b)	(b)	(b)
Nitrogen, nitrite plus nitrate, total as nitrogen	12	.1	12	<.1	<.1	(c)	<.1	<.1	<.1	<.1	<.1
Phosphorus, total as phosphorus	12	.01	12	.18	.04	.09	.04	.06	.07	.10	.18

Table 2.2-1. Statistical summary of water-quality data for the Ouachita River basin in Louisiana, 1908-94--Continued

Lake Concordia at Ferriday, Louisiana (35)--continued

Water-quality property or constituent	Number of analyses	Reporting level	Number of analyses greater than or equal to reporting level	Maximum	Minimum	Mean	Percentiles				
							5th	25th	50th (median)	75th	95th
Biological constituents--bacteria (colonies per 100 milliliters)											
Fecal coliform	12	4	6	2,300	<5	(c)	<5	<5	5	32	2,300
Fecal streptococcus	10	1	9	730	<5	(c)	5	8	27	56	730
Trace metals (micrograms per liter)											
Copper, dissolved	3	2	2	7	<2	(b,c)	(b)	(b)	(b)	(b)	(b)
Iron, dissolved	3	10	2	28	<10	(b,c)	(b)	(b)	(b)	(b)	(b)
Lead, dissolved	3	2	1	2	<2	(b,c)	(b)	(b)	(b)	(b)	(b)
Zinc, dissolved	3	20	2	3,000	<20	(b,c)	(b)	(b)	(b)	(b)	(b)
Organic compounds (micrograms per liter)											
DDT, total	3	0.01	0	<0.01	<0.01	(b,c)	(b)	(b)	(b)	(b)	(b)
PCB, total	3	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Diazinon, total	3	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Lindane, total	3	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Chlordane, total	3	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Malathion, total	3	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Endrin, total	3	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Parathion, total	3	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Dieldrin, total	3	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Endosulfan, total	1	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
2,4-D, total	2	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)

Table 2.2-1. Statistical summary of water-quality data for the Ouachita River basin in Louisiana, 1908-94--Continued

Lake Concordia near Ferriday, Louisiana (34)

Water-quality property or constituent	Number of analyses	Reporting level	Number of analyses greater than or equal to reporting level	Maximum	Minimum	Mean	Percentiles				
							5th	25th	50th (median)	75th	95th
Physical properties											
Specific conductance	48	(a)	(a)	348	196	266	200	240	264	285	331
pH (standard units)	53	(a)	(a)	9.0	6.7	7.9	6.8	7.6	8.0	8.3	8.8
Water temperature	53	(a)	(a)	34.0	5.0	21.4	7.0	14.5	21.0	29.5	33.0
Dissolved oxygen (milligrams per liter)	53	(a)	(a)	13.7	.5	9.2	1.7	7.7	9.3	11.8	13.2
Dissolved solids (milligrams per liter)	38	(a)	(a)	195	112	149	117	137	146	155	191
Major cations (milligrams per liter)											
Calcium, dissolved	35	0.01	35	42	19	28	21	23	28	31	40
Magnesium, dissolved	35	.01	35	15	8.2	12	9.2	11	12	12	14
Sodium, dissolved	35	.01	35	11	5.9	8.3	6.1	7.5	8.3	9.1	11
Potassium, dissolved	35	.01	35	4.5	1.7	3.8	2.8	3.5	3.8	4.1	4.5
Major anions (milligrams per liter)											
Alkalinity, total as $CaCO_3$	35	1	35	164	97	128	100	116	125	134	163
Sulfate, dissolved	38	1.0	27	7.0	<1.0	(c)	<1.0	<1.0	2.0	3.1	6.1
Chloride, dissolved	39	.1	39	9.2	4.3	6.6	4.5	5.8	6.4	7.5	9.0
Nutrients (milligrams per liter)											
Nitrogen, ammonia plus organic, total as nitrogen	35	0.1	35	2.4	0.4	1.2	.6	.8	1.1	1.4	2.2
Nitrogen, nitrite plus nitrate, total as nitrogen	35	.1	3	.3	<.1	(c)	<.1	<.1	<.1	<.1	.1
Phosphorus, total as phosphorus	35	.01	35	.40	.03	.10	.03	.06	.07	.11	.27

Table 2.2-1. Statistical summary of water-quality data for the Ouachita River basin in Louisiana, 1908-94--Continued

Lake Concordia near Ferriday, Louisiana (34)--continued

Water-quality property or constituent	Number of analyses	Reporting level	Number of analyses greater than or equal to reporting level	Maximum	Minimum	Mean	Percentiles				
							5th	25th	50th (median)	75th	95th
Biological constituents											
Fecal coliform bacteria (colonies per 100 milliliters)	35	5	16	1,200	<5	(c)	<5	<5	<5	13	84
Fecal streptococcus bacteria (colonies per 100 milliliters)	34	5	26	2,100	<5	(c)	<5	5	21	140	1,200
Phytoplankton (cells per milliliter)	14	1	14	2,200,000	30,000	460,000	30,000	64,000	200,000	740,000	2,200,000
Trace metals (micrograms per liter)											
Copper, dissolved	8	2	4	12	<2	(b,c)	(b)	(b)	(b)	(b)	(b)
Iron, dissolved	8	10	3	20	<10	(b,c)	(b)	(b)	(b)	(b)	(b)
Lead, dissolved	8	2	2	3	<2	(b,c)	(b)	(b)	(b)	(b)	(b)
Zinc, dissolved	8	20	0	<20	<20	(b,c)	(b)	(b)	(b)	(b)	(b)
Organic compounds (micrograms per liter)											
DDT, total	9	0.01	0	<0.01	<0.01	(b,c)	(b)	(b)	(b)	(b)	(b)
PCB, total	9	.1	0	<.1	<.1	(b,c)	(b)	(b)	(b)	(b)	(b)
Diazinon, total	9	.01	1	.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Lindane, total	9	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Chlordane, total	9	.1	0	<.1	<.1	(b,c)	(b)	(b)	(b)	(b)	(b)
Malathion, total	9	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Endrin, total	9	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Parathion, total	9	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Dieldrin, total	9	.01	1	.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Endosulfan, total	8	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
2,4-D, total	9	.01	7	.15	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)

Table 2.2-1. Statistical summary of water-quality data for the Ouachita River basin in Louisiana, 1908-94--Continued

Lake St. John near Waterproof, Louisiana (33)

Water-quality property or constituent	Number of analyses	Reporting level	Number of analyses greater than or equal to reporting level	Maximum	Minimum	Mean	Percentiles				
							5th	25th	50th (median)	75th	95th
Physical properties											
Specific conductance	67	(a)	(a)	220	95	143	104	125	140	159	194
pH (standard units)	62	(a)	(a)	9.4	6.2	7.7	6.6	7.1	7.7	8.3	9.1
Water temperature	68	(a)	(a)	34.0	4.5	21.1	7.0	14.1	21.8	28.5	32.3
Dissolved oxygen (milligrams per liter)	67	(a)	(a)	14.0	.5	8.5	2.3	7.5	8.9	10.1	12.6
Dissolved solids (milligrams per liter)	38	(a)	(a)	145	57	82	59	73	80	90	118
Major cations (milligrams per liter)											
Calcium, dissolved	41	0.01	41	17	4.6	13	7.5	12	13	14	17
Magnesium, dissolved	41	.01	41	5.0	2.9	3.8	3.0	3.4	3.7	4.2	4.8
Sodium, dissolved	41	.01	41	16	4.9	6.7	4.9	5.5	6.4	7.1	14
Potassium, dissolved	41	.01	41	5.0	3.3	4.0	3.4	3.6	4.0	4.4	4.6
Major anions (milligrams per liter)											
Alkalinity, total as $CaCO_3$	41	1	41	62	27	48	30	42	49	53	59
Sulfate, dissolved	41	1.0	38	14	<1.0	(c)	.7	1.8	2.6	4.0	9.3
Chloride, dissolved	41	.1	41	33	4.2	10	5.1	8.2	9.1	10	30
Nutrients (milligrams per liter)											
Nitrogen, ammonia plus organic, total as nitrogen	36	0.1	36	2.0	0.3	1.1	0.5	0.8	1.1	1.4	2.0
Nitrogen, nitrite plus nitrate, total as nitrogen	39	.1	11	.3	<.1	(c)	<.1	<.1	<.1	.1	.3
Phosphorus, total as phosphorus	39	.01	39	.30	.02	.08	.03	.05	.07	.10	.23

Table 2.2-1. Statistical summary of water-quality data for the Ouachita River basin in Louisiana, 1908-94--Continued

Lake St. John near Waterproof, Louisiana (33)--continued

Water-quality property or constituent	Number of analyses	Reporting level	Number of analyses greater than or equal to reporting level	Maximum	Minimum	Mean	Percentiles				
							5th	25th	50th (median)	75th	95th
Biological constituents											
Fecal coliform bacteria (colonies per 100 milliliters)	40	5	11	950	<5	(c)	<5	<5	<5	6	60
Fecal streptococcus bacteria (colonies per 100 milliliters)	38	5	28	850	<5	(c)	<5	<5	20	95	670
Phytoplankton (cells per millilter)	13	1	13	1,000,000	33,000	360,000	33,000	73,000	190,000	660,000	1,000,000
Trace metals (micrograms per liter)											
Copper, dissolved	9	1	8	8	<1	(b,c)	(b)	(b)	(b)	(b)	(b)
Iron, dissolved	9	10	4	61	<10	(b,c)	(b)	(b)	(b)	(b)	(b)
Lead, dissolved	9	5	1	5	<5	(b,c)	(b)	(b)	(b)	(b)	(b)
Zinc, dissolved	9	20	1	86	<20	(b,c)	(b)	(b)	(b)	(b)	(b)
Organic compounds (micrograms per liter)											
DDT, total	10	0.01	0	<0.01	<0.01	(c)	<0.01	<0.01	<0.01	<0.01	<0.01
PCB, total	10	.1	0	<.1	<.1	(c)	<.1	<.1	<.1	<.1	<.1
Diazinon, total	10	.01	1	.02	<.01	(c)	<.01	<.01	<.01	<.01	.02
Lindane, total	10	.01	0	<.01	<.01	(c)	<.01	<.01	<.01	<.01	<.01
Chlordane, total	10	.1	0	<.1	<.1	(c)	<.1	<.1	<.1	<.1	<.1
Malathion, total	10	.01	0	<.01	<.01	(c)	<.01	<.01	<.01	<.01	<.01
Endrin, total	10	.01	0	<.01	<.01	(c)	<.01	<.01	<.01	<.01	<.01
Parathion, total	10	.01	0	<.01	<.01	(c)	<.01	<.01	<.01	<.01	<.01
Dieldrin, total	10	.01	0	<.01	<.01	(c)	<.01	<.01	<.01	<.01	<.01
Endosulfan, total	8	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
2,4-D, total	10	.01	7	.70	<.01	(c)	<.01	<.01	.02	.12	.70

Table 2.2-1. Statistical summary of water-quality data for the Ouachita River basin in Louisiana, 1908-94--Continued

Lake St. John, south, near Waterproof, Louisiana (36)

Water-quality property or constituent	Number of analyses	Reporting level	Number of analyses greater than or equal to reporting level	Maximum	Minimum	Mean	Percentiles				
							5th	25th	50th (median)	75th	95th
Physical properties											
Specific conductance	19	(a)	(a)	170	118	148	118	130	145	170	170
pH (standard units)	20	(a)	(a)	9.1	7.1	8.2	7.1	7.3	8.4	8.8	9.1
Water temperature	20	(a)	(a)	32.5	7.0	21.4	7.0	16.0	21.0	29.0	32.4
Dissolved oxygen (milligrams per liter)	20	(a)	(a)	12.2	.5	8.7	.6	7.7	8.8	10.9	12.2
Dissolved solids (milligrams per liter)	7	(a)	(a)	83	58	(b)	(b)	(b)	(b)	(b)	(b)
Major cations (milligrams per liter)											
Calcium, dissolved	8	0.01	8	14	11	(b)	(b)	(b)	(b)	(b)	(b)
Magnesium, dissolved	8	.01	8	3.7	2.9	(b)	(b)	(b)	(b)	(b)	(b)
Sodium, dissolved	8	.01	8	7.7	5.7	(b)	(b)	(b)	(b)	(b)	(b)
Potassium, dissolved	8	.01	8	4.8	3.7	(b)	(b)	(b)	(b)	(b)	(b)
Major anions (milligrams per liter)											
Alkalinity, total as $CaCO_3$	8	1	8	51	40	(b)	(b)	(b)	(b)	(b)	(b)
Sulfate, dissolved	8	.1	8	7.9	.3	(b)	(b)	(b)	(b)	(b)	(b)
Chloride, dissolved	8	.1	8	13	9.0	(b)	(b)	(b)	(b)	(b)	(b)
Nutrients (milligrams per liter)											
Nitrogen, ammonia plus organic, total as nitrogen	8	0.1	8	1.3	.6	(b)	(b)	(b)	(b)	(b)	(b)
Nitrogen, nitrite plus nitrate, total as nitrogen	8	.1	2	.2	<.1	(b,c)	(b)	(b)	(b)	(b)	(b)
Phosphorus, total as phosphorus	8	.01	8	.29	.04	(b)	(b)	(b)	(b)	(b)	(b)

Table 2.2-1. Statistical summary of water-quality data for the Ouachita River basin in Louisiana, 1908-94--Continued

Lake St. John, south, near Waterproof, Louisiana (36)--continued

Water-quality property or constituent	Number of analyses	Reporting level	Number of analyses greater than or equal to reporting level	Maximum	Minimum	Mean	Percentiles				
							5th	25th	50th (median)	75th	95th
Biological constituents--bacteria (colonies per 100 milliliters)											
Fecal coliform	8	5	3	1,400	<5	(b,c)	(b)	(b)	(b)	(b)	(b)
Fecal streptococcus	8	5	5	1,000	<5	(b,c)	(b)	(b)	(b)	(b)	(b)
Trace metals (micrograms per liter)											
Copper, dissolved	2	8	1	8	<8	(b,c)	(b)	(b)	(b)	(b)	(b)
Iron, dissolved	2	10	0	<10	<10	(b,c)	(b)	(b)	(b)	(b)	(b)
Lead, dissolved	2	2	1	2	<2	(b,c)	(b)	(b)	(b)	(b)	(b)
Zinc, dissolved	2	20	0	<20	<20	(b,c)	(b)	(b)	(b)	(b)	(b)
Organic compounds (micrograms per liter)											
DDT, total	2	0.01	0	<0.01	<0.01	(b,c)	(b)	(b)	(b)	(b)	(b)
PCB, total	2	.1	0	<.1	<.1	(b,c)	(b)	(b)	(b)	(b)	(b)
Diazinon, total	2	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Lindane, total	2	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Chlordane, total	2	.1	0	<.1	<.1	(b,c)	(b)	(b)	(b)	(b)	(b)
Malathion, total	2	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Endrin, total	2	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Parathion, total	2	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Dieldrin, total	2	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Endosulfan, total	1	.01	0	<.01	(d)	(b,c)	(b)	(b)	(b)	(b)	(b)
2,4-D, total	2	.01	1	.03	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)

Table 2.2-1. Statistical summary of water-quality data for the Ouachita River basin in Louisiana, 1908-94--Continued

Little Corney Bayou near Lillie, Louisiana (18)

Water-quality property or constituent	Number of analyses	Reporting level	Number of analyses greater than or equal to reporting level	Maximum	Minimum	Mean	Percentiles				
							5th	25th	50th (median)	75th	95th
Physical properties											
Specific conductance	45	(a)	(a)	863	58	258	80	156	212	296	811
pH (standard units)	58	(a)	(a)	7.2	5.0	6.1	5.6	5.8	6.2	6.4	7.0
Water temperature	45	(a)	(a)	30.0	4.0	16.6	4.3	11.0	17.0	22.2	28.7
Dissolved oxygen (milligrams per liter)	15	(a)	(a)	11.0	3.4	7.3	3.4	5.7	6.9	9.8	11.0
Dissolved solids (milligrams per liter)	52	(a)	(a)	543	37	162	66	106	145	192	390
Major cations (milligrams per liter)											
Calcium, dissolved	45	0.01	45	42	4.1	13	4.3	7.2	10	15	38
Magnesium, dissolved	45	.01	45	7.9	.60	2.5	.80	1.6	2.2	3.2	6.2
Sodium, dissolved	45	.01	45	110	5.9	29	8.0	16	23	34	97
Potassium, dissolved	45	.01	45	20	.30	3.2	1.2	1.9	2.5	3.4	7.7
Major anions (milligrams per liter)											
Alkalinity, total as $CaCO_3$	45	1	45	44	3	12	3	6	10	16	26
Sulfate, dissolved	58	.1	57	25	<.1	(c)	.8	3.3	5.1	7.5	11
Chloride, dissolved	58	.1	58	250	4.0	63	10	28	45	71	240
Nutrients (milligrams per liter)											
Nitrogen, ammonia plus organic, total as nitrogen	15	0.1	15	2.3	0.3	0.8	0.3	0.5	0.7	1.0	2.3
Nitrogen, nitrite plus nitrate, total as nitrogen	15	.1	5	.2	<.1	(c)	<.1	<.1	<.1	.2	.2
Phosphorus, total as phosphorus	15	.01	15	.37	.03	.09	.03	.05	.07	.09	.37

Table 2.2-1. Statistical summary of water-quality data for the Ouachita River basin in Louisiana, 1908-94--Continued

Little Corney Bayou near Lillie, Louisiana (18)--continued

Water-quality property or constituent	Number of analyses	Reporting level	Number of analyses greater than or equal to reporting level	Maximum	Minimum	Mean	Percentiles				
							5th	25th	50th (median)	75th	95th
Biological constituents--bacteria (colonies per 100 milliliters)											
Fecal coliform	16	1	16	800	12	140	12	41	91	160	800
Fecal streptococcus	15	5	14	11,000	<5	(c)	68	230	640	2,400	11,000
Trace metals (micrograms per liter)											
Copper, dissolved	4	1	4	8	3	(b)	(b)	(b)	(b)	(b)	(b)
Iron, dissolved	4	3	4	320	4	(b)	(b)	(b)	(b)	(b)	(b)
Lead, dissolved	4	1	4	2	1	(b)	(b)	(b)	(b)	(b)	(b)
Zinc, dissolved	4	4	3	34	<4	(b,c)	(b)	(b)	(b)	(b)	(b)
Organic compounds (micrograms per liter)											
DDT, total	4	0.01	0	<0.01	<0.01	(b,c)	(b)	(b)	(b)	(b)	(b)
PCB, total	4	.1	0	<.1	<.1	(b,c)	(b)	(b)	(b)	(b)	(b)
Diazinon, total	4	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Lindane, total	4	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Chlordane, total	4	.1	0	<.1	<.1	(b,c)	(b)	(b)	(b)	(b)	(b)
Malathion, total	4	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Endrin, total	4	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Parathion, total	4	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Dieldrin, total	4	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Endosulfan, total	4	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
2,4-D, total	4	.01	1	.01	<.01	(b)	(b)	(b)	(b)	(b)	(b)

Table 2.2-1. Statistical summary of water-quality data for the Ouachita River basin in Louisiana, 1908-94--Continued

Little Corney Bayou near Summerfield, Louisiana (21)

Water-quality property or constituent	Number of analyses	Reporting level	Number of analyses greater than or equal to reporting level	Maximum	Minimum	Mean	Percentiles				
							5th	25th	50th (median)	75th	95th
Physical properties											
pH (standard units)	11	(a)	(a)	6.8	5.5	6.0	5.5	5.7	5.9	6.0	6.8
Water temperature	1	(a)	(a)	24.0	(d)	(b)	(b)	(b)	(b)	(b)	(b)
Dissolved solids (milligrams per liter)	10	(a)	(a)	372	77	144	77	88	111	159	372
Major anions (milligrams per liter)											
Sulfate, dissolved	11	.1	11	13	1.8	5.2	1.8	2.0	3.8	9.4	13
Chloride, dissolved	11	.1	11	170	9.2	42	9.2	15	27	38	170

Table 2.2-1. Statistical summary of water-quality data for the Ouachita River basin in Louisiana, 1908-94--Continued

Little River at Jonesville, Louisiana (20)

Water-quality property or constituent	Number of analyses	Reporting level	Number of analyses greater than or equal to reporting level	Maximum	Minimum	Mean	Percentiles				
							5th	25th	50th (median)	75th	95th
Physical properties											
Water temperature	2	(a)	(a)	16.5	6.0	(b)	(b)	(b)	(b)	(b)	(b)
Major anions (milligrams per liter)											
Chloride, dissolved	46	.1	46	3,000	34	800	49	170	530	1,200	2,400

Table 2.2-1. Statistical summary of water-quality data for the Ouachita River basin in Louisiana, 1908-94--Continued

Little River near Pollock, Louisiana (28)

Water-quality property or constituent	Number of analyses	Reporting level	Number of analyses greater than or equal to reporting level	Maximum	Minimum	Mean	Percentiles				
							5th	25th	50th (median)	75th	95th
Physical properties											
Specific conductance	8	(a)	(a)	8,520	109	(b)	(b)	(b)	(b)	(b)	(b)
pH (standard units)	17	(a)	(a)	8.1	6.3	6.8	6.3	6.4	6.6	7.0	8.1
Water temperature	6	(a)	(a)	31.0	14.0	(b)	(b)	(b)	(b)	(b)	(b)
Dissolved oxygen (milligrams per liter)	4	(a)	(a)	7.2	5.7	(b)	(b)	(b)	(b)	(b)	(b)
Dissolved solids (milligrams per liter)	18	(a)	(a)	12,600	80	3,410	80	157	851	6,300	12,600
Major cations (milligrams per liter)											
Calcium, dissolved	7	0.01	7	58	4.9	(b)	(b)	(b)	(b)	(b)	(b)
Magnesium, dissolved	6	.01	6	27	.90	(b)	(b)	(b)	(b)	(b)	(b)
Sodium, dissolved	7	.01	7	1,600	13	(b)	(b)	(b)	(b)	(b)	(b)
Potassium, dissolved	7	.01	7	140	1.7	(b)	(b)	(b)	(b)	(b)	(b)
Major anions (milligrams per liter)											
Alkalinity, total as $CaCO_3$	7	1	7	34	13	(b)	(b)	(b)	(b)	(b)	(b)
Sulfate, dissolved	17	.1	17	75	4.4	24	4.4	9.8	16	36	75
Chloride, dissolved	18	.1	18	7,400	15	1,900	15	47	440	3,500	7,400
Nutrients (milligrams per liter)											
Nitrogen, ammonia plus organic, total as nitrogen	1	0.1	1	0.6	(d)	(b)	(b)	(b)	(b)	(b)	(b)
Nitrogen, nitrite plus nitrate, total as nitrogen	4	.01	4	.11	.03	(b)	(b)	(b)	(b)	(b)	(b)
Phosphorus, total as phosphorus	4	.01	4	.09	.06	(b)	(b)	(b)	(b)	(b)	(b)

Table 2.2-1. Statistical summary of water-quality data for the Ouachita River basin in Louisiana, 1908-94--Continued

Little River near Pollock, Louisiana (28)--continued

Water-quality property or constituent	Number of analyses	Reporting level	Number of analyses greater than or equal to reporting level	Maximum	Minimum	Mean	Percentiles				
							5th	25th	50th (median)	75th	95th
Trace metals (micrograms per liter)											
Copper, dissolved	1	1	1	5	(d)	(b)	(b)	(b)	(b)	(b)	(b)
Iron, dissolved	1	3	1	420	(d)	(b)	(b)	(b)	(b)	(b)	(b)
Lead, dissolved	1	10	0	<10	(d)	(b,c)	(b)	(b)	(b)	(b)	(b)
Zinc, dissolved	1	20	1	<20	(d)	(b,c)	(b)	(b)	(b)	(b)	(b)
Organic compounds (micrograms per liter)											
DDT, total	1	0.01	0	<0.01	(d)	(b,c)	(b)	(b)	(b)	(b)	(b)
PCB, total	1	.1	0	<.1	(d)	(b,c)	(b)	(b)	(b)	(b)	(b)
Diazinon, total	1	.01	0	<.01	(d)	(b,c)	(b)	(b)	(b)	(b)	(b)
Lindane, total	1	.01	0	<.01	(d)	(b,c)	(b)	(b)	(b)	(b)	(b)
Chlordane, total	1	.1	0	<.1	(d)	(b,c)	(b)	(b)	(b)	(b)	(b)
Malathion, total	1	.01	0	<.01	(d)	(b,c)	(b)	(b)	(b)	(b)	(b)
Endrin, total	1	.01	0	<.01	(d)	(b,c)	(b)	(b)	(b)	(b)	(b)
Parathion, total	1	.01	0	<.01	(d)	(b,c)	(b)	(b)	(b)	(b)	(b)
Dieldrin, total	1	.01	0	<.01	(d)	(b,c)	(b)	(b)	(b)	(b)	(b)
2,4-D, total	1	.01	0	<.01	(d)	(b,v)	(b)	(b)	(b)	(b)	(b)

Table 2.2-1. Statistical summary of water-quality data for the Ouachita River basin in Louisiana, 1908-94--Continued

Little River near Rochelle, Louisiana (26)

Water-quality property or constituent	Number of analyses	Reporting level	Number of analyses greater than or equal to reporting level	Maximum	Minimum	Mean	Percentiles 5th	25th	50th (median)	75th	95th
Physical properties											
Specific conductance	234	(a)	(a)	30,000	49	1,190	74	138	314	726	3,840
pH (standard units)	228	(a)	(a)	8.1	5.3	6.7	5.9	6.3	6.7	7.1	7.6
Water temperature	239	(a)	(a)	32.0	.5	18.8	7.0	13.0	19.5	26.0	30.5
Dissolved oxygen (milligrams per liter)	140	(a)	(a)	13.1	.0	7.2	4.4	5.6	7.0	8.6	10.8
Dissolved solids (milligrams per liter)	214	(a)	(a)	18,300	46	1,030	60	116	225	491	5,890
Major cations (milligrams per liter)											
Calcium, dissolved	196	0.01	196	170	2.6	14	3.4	5.5	8.1	13	44
Magnesium, dissolved	196	.01	195	99	<.01	(c)	.60	1.3	2.1	3.3	21
Sodium, dissolved	198	.01	198	6,500	4.8	270	6.9	19	49	130	1,000
Potassium, dissolved	200	.01	200	98	.50	4.4	1.2	1.9	2.6	4.1	16
Major anions (milligrams per liter)											
Alkalinity, total as $CaCO_3$	198	1	198	320	4	50	8	17	33	70	150
Sulfate, dissolved	221	.1	221	440	2.8	32	7.0	11	17	30	130
Chloride, dissolved	221	.1	221	10,000	3.4	530	7.0	22	64	160	3,300
Nutrients (milligrams per liter)											
Nitrogen, ammonia plus organic, total as nitrogen	56	0.1	56	8.0	0.4	1.2	0.5	0.7	0.9	1.3	2.6
Nitrogen, nitrite plus nitrate, total as nitrogen	75	.1	45	.8	<.1	(c)	<.1	<.1	.2	.3	.5
Phosphorus, total as phosphorus	71	.01	71	.53	.03	.16	.05	.08	.12	.20	.42

Table 2.2-1. Statistical summary of water-quality data for the Ouachita River basin in Louisiana, 1908-94--Continued

Little River near Rochelle, Louisiana (26)--continued

Water-quality property or constituent	Number of analyses	Reporting level	Number of analyses greater than or equal to reporting level	Maximum	Minimum	Mean	Percentiles				
							5th	25th	50th (median)	75th	95th
Biological constituents											
Fecal coliform bacteria (colonies per 100 milliliters)	59	5	59	3,800	<5	(c)	8	40	100	200	340
Fecal streptococcus bacteria (colonies per 100 milliliters)	57	1	57	7,000	2	990	8	120	340	950	4,800
Phytoplankton (cells per milliliter)	9	1	9	14,000	55	(b)	(b)	(b)	(b)	(b)	(b)
Trace metals (micrograms per liter)											
Copper, dissolved	35	2	31	39	<2	(c)	<2	2	6	9	18
Iron, dissolved	36	3	36	2,500	130	490	130	230	380	510	1,300
Lead, dissolved	35	2	20	31	<2	(c)	<2	<2	2	4	15
Zinc, dissolved	36	20	17	70	<20	(c)	<20	<20	<20	30	70
Organic compounds (micrograms per liter)											
DDT, total	17	0.01	0	<0.01	<0.01	(c)	<0.01	<0.01	<0.01	<0.01	<0.01
PCB, total	17	.1	0	<.1	<.1	(c)	<.1	<.1	<.1	<.1	<.1
Diazinon, total	17	.01	7	.08	<.01	(c)	<.01	<.01	<.01	.01	.08
Lindane, total	17	.01	0	<.01	<.01	(c)	<.01	<.01	<.01	<.01	<.01
Chlordane, total	17	.1	0	<.1	<.1	(c)	<.1	<.1	<.1	<.1	<.1
Malathion, total	17	.01	0	<.01	<.01	(c)	<.01	<.01	<.01	<.01	<.01
Endrin, total	17	.01	0	<.01	<.01	(c)	<.01	<.01	<.01	<.01	<.01
Parathion, total	17	.01	0	<.01	<.01	(c)	<.01	<.01	<.01	<.01	<.01
Dieldrin, total	17	.01	0	<.01	<.01	(c)	<.01	<.01	<.01	<.01	<.01
Endosulfan, total	10	.01	0	<.01	<.01	(c)	<.01	<.01	<.01	<.01	<.01
2,4-D, total	17	.01	7	.12	<.01	(c)	<.01	<.01	<.01	.06	.12

Table 2.2-1. Statistical summary of water-quality data for the Ouachita River basin in Louisiana, 1908-94--Continued

Ouachita River at Columbia, Louisiana (16)

Water-quality property or constituent	Number of analyses	Reporting level	Number of analyses greater than or equal to reporting level	Maximum	Minimum	Mean	Percentiles				
							5th	25th	50th (median)	75th	95th
Physical properties											
Specific conductance	154	(a)	(a)	428	59	185	78	111	168	241	356
pH (standard units)	155	(a)	(a)	8.3	5.2	6.6	5.8	6.3	6.7	6.9	7.4
Water temperature	153	(a)	(a)	33.5	4.0	20.0	6.8	13.0	20.0	27.8	32.0
Dissolved oxygen (milligrams per liter)	148	(a)	(a)	12.4	2.7	7.4	4.0	5.8	7.2	9.0	11.1
Dissolved solids (milligrams per liter)	151	(a)	(a)	244	41	115	53	79	106	144	200
Major cations (milligrams per liter)											
Calcium, dissolved	154	0.01	154	19	3.6	9.1	4.6	6.1	8.4	11	15
Magnesium, dissolved	154	.01	154	3.6	1.0	2.2	1.1	1.6	2.1	2.6	3.4
Sodium, dissolved	153	.01	153	59	5.1	22	6.9	11	19	29	47
Potassium, dissolved	154	.01	154	5.1	.8	2.1	1.3	1.7	2.1	2.4	3.0
Major anions (milligrams per liter)											
Alkalinity, total as $CaCO_3$	153	1	153	46	5	20	9	12	18	26	37
Sulfate, dissolved	152	.1	152	43	2.6	14	5.9	8.5	13	18	27
Chloride, dissolved	153	.1	153	80	6.7	32	11	18	29	43	67
Nutrients (milligrams per liter)											
Nitrogen, ammonia plus organic, total as nitrogen	150	0.1	150	1.9	.2	.8	.4	.5	.6	.9	1.4
Nitrogen, nitrite plus nitrate, total as nitrogen	135	.01	135	1.0	.03	.08	.08	.12	.22	.40	.61
Phosphorus, total as phosphorus	151	.01	151	.40	.03	.08	.04	.06	.07	.09	.14

Table 2.2-1. Statistical summary of water-quality data for the Ouachita River basin in Louisiana, 1908-94--Continued

Ouachita River at Columbia, Louisiana (16)--continued

Water-quality property or constituent	Number of analyses	Reporting level	Number of analyses greater than or equal to reporting level	Maximum	Minimum	Mean	Percentiles				
							5th	25th	50th (median)	75th	95th
Biological constituents											
Fecal coliform bacteria (colonies per 100 milliliters)	121	5	117	9,800	<5	(c)	<5	10	30	84	900
Fecal streptococcus bacteria (colonies per 100 milliliters)	122	1	122	15,000	1	630	6	28	91	350	2,700
Phytoplankton (cells per milliliter)	58	0	58	25,000	0	2,200	17	170	390	1,100	16,000
Trace metals (micrograms per liter)											
Copper, dissolved	63	2	56	11	<2	(c)	<2	3	4	5	7
Iron, dissolved	73	3	73	690	17	290	50	190	280	380	620
Lead, dissolved	63	5	3	12	<5	(c)	<5	<5	<5	<5	<5
Zinc, dissolved	65	20	13	50	<20	(c)	<20	<20	<20	<20	30

Table 2.2-1. Statistical summary of water-quality data for the Ouachita River basin in Louisiana, 1908-94--Continued

Ouachita River near Harrisonburg, Louisiana (17)

Water-quality property or constituent	Number of analyses	Reporting level	Number of analyses greater than or equal to reporting level	Maximum	Minimum	Mean	Percentiles				
							5th	25th	50th (median)	75th	95th
Physical properties											
Specific conductance	8	(a)	(a)	570	82	(b)	(b)	(b)	(b)	(b)	(b)
pH (standard units)	12	(a)	(a)	7.5	6.1	6.5	6.1	6.3	6.4	6.7	7.5
Water temperature	8	(a)	(a)	34.0	6.0	(b)	(b)	(b)	(b)	(b)	(b)
Dissolved oxygen (milligrams per liter)	8	(a)	(a)	11.0	2.5	(b)	(b)	(b)	(b)	(b)	(b)
Dissolved solids (milligrams per liter)	12	(a)	(a)	455	58	159	58	84	105	198	455
Major cations (milligrams per liter)											
Calcium, dissolved	8	0.01	8	24	5.2	(b)	(b)	(b)	(b)	(b)	(b)
Magnesium, dissolved	8	.01	8	6.2	1.3	(b)	(b)	(b)	(b)	(b)	(b)
Sodium, dissolved	8	.01	8	78	8.6	(b)	(b)	(b)	(b)	(b)	(b)
Potassium, dissolved	8	.01	8	3.8	1.7	(b)	(b)	(b)	(b)	(b)	(b)
Major anions (milligrams per liter)											
Alkalinity, total as $CaCO_3$	8	1	8	90	12	(b)	(b)	(b)	(b)	(b)	(b)
Sulfate, dissolved	12	.1	12	28	1.4	12	1.4	9.0	11	16	28
Chloride, dissolved	12	.1	12	190	9.3	50	9.3	16	31	66	190
Nutrients (milligrams per liter)											
Nitrogen, ammonia plus organic, total as nitrogen	8	0.1	8	0.7	0.5	(b)	(b)	(b)	(b)	(b)	(b)
Nitrogen, nitrite plus nitrate, total as nitrogen	8	.1	8	.5	.1	(b)	(b)	(b)	(b)	(b)	(b)
Phosphorus, total as phosphorus	8	.01	8	.80	.06	(b)	(b)	(b)	(b)	(b)	(b)

Table 2.2-1. Statistical summary of water-quality data for the Ouachita River basin in Louisiana, 1908-94--Continued

Ouachita River near Harrisonburg, Louisiana (17)--continued

Water-quality property or constituent	Number of analyses	Reporting level	Number of analyses greater than or equal to reporting level	Maximum	Minimum	Mean	Percentiles				
							5th	25th	50th (median)	75th	95th
Biological constituents--bacteria (colonies per 100 milliliters)											
Fecal coliform	7	5	6	24,000	<5	(b,c)	(b)	(b)	(b)	(b)	(b)
Fecal streptococcus	7	1	7	5,400	30	(b)	(b)	(b)	(b)	(b)	(b)
Trace metals (micrograms per liter)											
Copper, dissolved	2	2	1	12	<2	(b,c)	(b)	(b)	(b)	(b)	(b)
Iron, dissolved	2	3	0	270	170	(b)	(b)	(b)	(b)	(b)	(b)
Lead, dissolved	2	2	1	3	<2	(b,c)	(b)	(b)	(b)	(b)	(b)
Zinc, dissolved	2	20	0	<20	<20	(b,c)	(b)	(b)	(b)	(b)	(b)
Organic compounds (micrograms per liter)											
DDT, total	2	0.01	0	<0.01	<0.01	(b,c)	(b)	(b)	(b)	(b)	(b)
PCB, total	2	.1	0	<.1	<.1	(b,c)	(b)	(b)	(b)	(b)	(b)
Diazinon, total	2	.01	7	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Lindane, total	2	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Chlordane, total	2	.1	0	<.1	<.1	(b,c)	(b)	(b)	(b)	(b)	(b)
Malathion, total	2	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Endrin, total	2	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Parathion, total	2	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Dieldrin, total	2	.01	0	<.01	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)
Endosulfan, total	1	.01	0	<.01	(d)	(b,c)	(b)	(b)	(b)	(b)	(b)
2,4-D, total	2	.01	1	.02	<.01	(b,c)	(b)	(b)	(b)	(b)	(b)

Table 2.2-1. Statistical summary of water-quality data for the Ouachita River basin in Louisiana, 1908-94--Continued

Ouachita River at Maidco, Louisiana (15)

Water-quality property or constituent	Number of analyses	Reporting level	Number of analyses greater than or equal to reporting level	Maximum	Minimum	Mean	Percentiles				
							5th	25th	50th (median)	75th	95th
Physical properties											
Specific conductance	56	(a)	(a)	808	73	305	94	167	268	423	645
pH (standard units)	56	(a)	(a)	7.6	6.1	6.9	6.2	6.7	6.9	7.1	7.5
Water temperature	58	(a)	(a)	33.0	4.5	19.8	5.0	12.9	22.0	28.0	31.1
Dissolved oxygen (milligrams per liter)	56	(a)	(a)	10.0	1.6	6.3	2.3	4.3	6.1	8.6	10.0
Dissolved solids (milligrams per liter)	43	(a)	(a)	430	66	181	74	112	160	244	355
Major cations (milligrams per liter)											
Calcium, dissolved	43	0.01	43	27	4.6	13	4.7	7.8	12	17	24
Magnesium, dissolved	43	.01	43	7.4	.30	2.6	1.3	1.8	2.4	3.2	5.4
Sodium, dissolved	43	.01	43	110	2.8	36	5.1	15	29	52	86
Potassium, dissolved	43	.01	43	5.3	1.3	2.8	1.8	2.1	2.6	3.2	5.2
Major anions (milligrams per liter)											
Alkalinity, total as $CaCO_3$	43	1	43	56	10	26	11	16	23	37	51
Sulfate, dissolved	43	.1	43	31	4.6	14	6.2	9.3	13	19	30
Chloride, dissolved	43	.1	43	190	8.8	58	14	27	49	75	140
Nutrients (milligrams per liter)											
Phosphorus, total as phosphorus	11	.01	11	0.19	0.01	0.10	0.01	0.04	0.08	0.14	0.19

Table 2.2-1. Statistical summary of water-quality data for the Ouachita River basin in Louisiana, 1908-94--Continued

Ouachita River at Monroe, Louisiana (13)

Water-quality property or constituent	Number of analyses	Reporting level	Number of analyses greater than or equal to reporting level	Maximum	Minimum	Mean	Percentiles				
							5th	25th	50th (median)	75th	95th
Physical properties											
Specific conductance	418	(a)	(a)	5,350	54	610	96	183	336	844	1,970
pH (standard units)	403	(a)	(a)	7.7	4.0	6.6	5.9	6.3	6.6	6.9	7.3
Water temperature	141	(a)	(a)	36.0	.0	19.3	7.1	12.5	19.0	26.2	31.0
Dissolved oxygen (milligrams per liter)	94	(a)	(a)	11.1	1.5	6.0	2.6	4.0	6.0	8.2	9.8
Dissolved solids (milligrams per liter)	283	(a)	(a)	986	35	238	63	104	162	293	765
Major cations (milligrams per liter)											
Calcium, dissolved	396	0.01	393	160	<0.01	(c)	5.6	9.0	14	30	62
Magnesium, dissolved	396	.01	393	40	<.01	(c)	1.0	1.9	3.1	6.8	15
Sodium, dissolved	183	.01	183	180	4.6	35	8.2	15	27	45	91
Potassium, dissolved	184	.01	184	6.3	.70	2.1	1.2	1.6	2.0	2.5	3.8
Major anions (milligrams per liter)											
Alkalinity, total as $CaCO_3$	359	1	358	54	<1	(c)	8	11	16	22	33
Sulfate, dissolved	398	.1	398	38	.4	10	3.8	6.9	9.6	13	19
Chloride, dissolved	402	.1	402	1,700	7.2	171	17	39	80	250	590
Nutrients (milligrams per liter)											
Nitrogen, ammonia plus organic, total as nitrogen	2	0.1	2	0.6	0.5	(b)	(b)	(b)	(b)	(b)	(b)
Nitrogen, nitrite plus nitrate, total as nitrogen	9	.01	9	.27	.06	(b)	(b)	(b)	(b)	(b)	(b)
Phosphorus, total as phosphorus	11	.01	10	.18	<.01	(c)	.05	.06	.07	.09	.18

Table 2.2-1. Statistical summary of water-quality data for the Ouachita River basin in Louisiana, 1908-94--Continued

Ouachita River at Monroe, Louisiana (13)--continued

Water-quality property or constituent	Number of analyses	Reporting level	Number of analyses greater than or equal to reporting level	Maximum	Minimum	Mean	Percentiles				
							5th	25th	50th (median)	75th	95th
Biological constituents--bacteria (colonies per 100 milliliters)											
Fecal streptococcus	1	1	0	<1	(d)	(b,c)	(b)	(b)	(b)	(b)	(b)
Trace metals (micrograms per liter)											
Copper, dissolved	14	2	7	9	<2	(c)	<2	<2	<2	5	9
Iron, dissolved	15	3	15	550	50	280	50	180	250	440	550
Lead, dissolved	14	5	1	10	<5	(c)	<5	<5	<5	<5	10
Zinc, dissolved	15	20	7	100	<20	(c)	<20	<20	<20	40	100
Organic compounds (micrograms per liter)											
DDT, total	13	0.01	0	<0.01	<0.01	(c)	<0.01	<0.01	<0.01	<0.01	<0.01
PCB, total	13	.1	0	<.1	<.1	(c)	<.1	<.1	<.1	<.1	<.1
Diazinon, total	13	.01	10	.05	<.01	(c)	<.01	<.01	.01	.02	.05
Lindane, total	13	.01	0	<.01	<.01	(c)	<.01	<.01	<.01	<.01	<.01
Chlordane, total	13	.1	0	<.1	<.1	(c)	<.1	<.1	<.1	<.1	<.1
Malathion, total	13	.01	0	<.01	<.01	(c)	<.01	<.01	<.01	<.01	<.01
Endrin, total	13	.01	0	<.01	<.01	(c)	<.01	<.01	<.01	<.01	<.01
Parathion, total	13	.01	0	<.01	<.01	(c)	<.01	<.01	<.01	<.01	<.01
Dieldrin, total	13	.01	0	<.01	<.01	(c)	<.01	<.01	<.01	<.01	<.01
2,4-D, total	12	.01	4	.07	<.01	(c)	<.01	<.01	<.01	.02	.07

a Not applicable.

b Not calculated because sample size was less than 10.

c Not calculated because data base contained remarked values.

d Only one sample in data base.

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