



# **Bacteriological and Water-Quality Data Collected at Coastal Mississippi Sites Following Hurricane Katrina, September-October 2005**

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Data Series 174

# **Bacteriological and Water-Quality Data Collected at Coastal Mississippi Sites Following Hurricane Katrina, September-October 2005**

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**Data Series 174**

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

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## CONVERSION FACTORS, ABBREVIATIONS, AND ACRONYMS

Multiply	By	To Obtain
Length		
foot (ft)	0.3048	meter (m)
Volume		
gallon (gal)	3.785	liter (L)
gallon (gal)	3.785.412	milliliter (mL)

Temperature in degrees Celsius (°C) may be converted to degrees Fahrenheit (°F) as follows:  

$$^{\circ}\text{F}=(1.8\times^{\circ}\text{C})+32$$

Temperature in degrees Fahrenheit (°F) may be converted to degrees Celsius (°C) as follows:  

$$^{\circ}\text{C}=(^{\circ}\text{F}-32)/1.8$$

Horizontal coordinate information is referenced to the North American Datum of 1983 (NAD83).

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

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

ft	foot
L	liter
mL	milliliter
mg/l	milligrams per liter
μg/L	micrograms per liter
μS/cm	microsiemens per centimeter
CFU	colony forming units
CO	Colorado
COD	chemical oxygen demand
<i>E. coli</i>	<i>Escherichia coli</i>
MDEQ	Mississippi Department of Environmental Quality
MPN	most probably number
MS	Mississippi
NOAA	National Oceanic and Atmospheric Administration
NWQL	USGS National Water Quality Laboratory
PVC	polyvinyl chloride
RPD	relative percent difference
USEPA	U.S. Environmental Protection Agency
USGS	U.S. Geological Survey

## ABSTRACT

On August 29, 2005, Hurricane Katrina devastated coastal Mississippi with 150 mile-per-hour winds and a storm surge in excess of 20 feet. Katrina moved inland and wreaked destruction on a broad swath of eastern Mississippi. Some eastern Mississippi counties were left without power and water and some major roads were impassable for weeks. The possibility of disease transmission from contaminated water and contamination caused by chemical spills were major concerns.

As part of a multi-agency response to the disaster, the U.S. Geological Survey (USGS), in partnership with the Mississippi Department of Environmental Quality (MDEQ), established a network of sampling locations to determine the effects of the storm on surface-water quality along the Mississippi Gulf Coast. Water samples were collected weekly at 31 estuarine tributary sites and 13 beach monitoring sites in coastal Mississippi Counties – Hancock, Harrison, and Jackson – for a period of 5 weeks beginning September 19, 2005. Samples were collected by MDEQ and USGS, were transported to a temporary laboratory established at a USGS facility at Stennis Space Center near Bay St. Louis, MS, and were analyzed within 6 hours of collection. USGS analyzed the samples primarily for enterococci, which is the standard fecal indicator bacteria for brackish waters and can be used as a fecal indicator for freshwater. Enterococci densities were determined by the most probable value method. About 14 percent of the enterococci densities were less than the detection limit, and 81 percent were lower than U.S. Environmental Agency criteria for the protection of public health. Densities at several of the bacteriological sites increased during the second week of sampling possibly due to runoff associated with Hurricane Rita rainfall that occurred September 23-24, 2005. Quality-control data were reviewed to ensure that methods performed as expected.

USGS also collected 19 water-quality samples at 12 inland freshwater sites for a period of 2 weeks starting on September 19, 2005. Sampling sites were located near established USGS stream gages. Physical properties of the streams were measured on site. Water-quality samples were collected, processed, and preserved on site according to standard procedures and then shipped to the USGS National Water Quality Laboratory in Denver, CO, for analysis--except for biochemical oxygen demand samples, which were analyzed by the MDEQ laboratory in Pearl, MS. Each sample was analyzed for multiple constituents including nutrients, major ions, trace metals, modern-use and polar pesticides, wastewater compounds, volatile organic compounds, and degradate organic compounds. Most detections were below available State and Federal water-quality criteria for Mississippi streams. Overall, the results from the bacteriological and water-quality samples indicated no systematic contamination in the sampled streams in the aftermath of Hurricane Katrina.

## INTRODUCTION

Hurricane Katrina made landfall in coastal Alabama, Mississippi, and Louisiana on August 29, 2005. The local population in the three coastal Mississippi Counties – Hancock, Harrison, and Jackson – was concerned about water quality in streams, bays, and estuaries of the Gulf Coast in the aftermath of the hurricane because of damage caused by flooding, wind, and storm surge. Nearly all of the municipal wastewater treatment facilities in the three coastal counties, as well as many north of the affected counties, were out of operation for an extended period of time due to widespread power outages. Many of the industrial operations in the region, such as oil refineries, chemical production plants, and timber processing plants, were also without power for an extended period of time. As a result, there were concerns about potential contamination of the bays and estuaries that are used for commercial, recreational, and subsistence fishing and shellfish harvesting along the Mississippi Gulf Coast. There were also concerns about the safety of workers involved in debris removal from these same estuarine locations.

The U.S. Geological Survey (USGS) partnered with the Mississippi Department of Environmental Quality (MDEQ) to collect bacteriological samples at tributary locations to the estuaries and bays and at selected MDEQ beach monitoring sites in the three Mississippi Gulf Coast counties. Bacteriological samples were collected weekly for 5 consecutive weeks beginning September 19, 2005, and were analyzed primarily for enterococci, which is the U.S. Environmental Protection Agency (USEPA) standard for fecal-indicator bacteria for brackish waters (U.S. Environmental Protection Agency, 2000 and 2004a). Selected samples were also analyzed for *Escherichia coli* (E. Coli).

The USGS also collected water-quality samples at current real-time stream gage or crest-stage gage locations on inland freshwater streams tributary to the coastal estuaries and bays. Water-quality samples were collected weekly for 2 weeks beginning September 19, 2005, and were analyzed for numerous constituents including nutrients, major ions, trace metals, modern-use and polar pesticides, wastewater compounds, volatile organic compounds, and degradate organic compounds.

This report documents the site-selection criteria, sample-collection and analysis methods, quality-assurance procedures, and analysis results of the bacteriological and water-quality samples collected along the Mississippi Gulf Coast in the aftermath of Hurricane Katrina. This information will be useful to agencies that continue to coordinate clean-up efforts, community leaders involved in industrial recovery, and natural resource managers leading environmental assessments and restoration.

## SITE SELECTION

Many Federal, State, and local agencies were involved in collecting environmental data in the aftermath of Hurricane Katrina. It was determined, through numerous conference calls to coordinate the field activities of the involved Federal agencies, that the USEPA and the National Oceanic and Atmospheric Administration (NOAA) would collect bacteriological and water-quality samples in the Mississippi Sound and in the primary bays and estuaries (St. Louis Bay, Biloxi Bay, Pascagoula Bay) along the Mississippi Gulf Coast (National Oceanic and Atmospheric Administration, 2005a; U.S. Environmental Protection Agency, 2005). In an effort to coordinate with the data-collection efforts of USEPA and NOAA and to avoid duplication, the USGS and MDEQ chose to sample locations along the beaches and at inland locations on small tributaries of the bays and estuaries. This section documents selection of the bacteriological and the water-quality sampling sites by the USGS and MDEQ.

### Bacteriological Sampling Sites

USGS and MDEQ selected 31 near-coastal sites for bacteriological sampling (table 1). These sites were located near active or historical USGS streamflow gage, crest-stage gage (which measures the highest stage during a runoff event), or water-quality sampling sites on inland tributaries to bays and estuaries in the three Mississippi Gulf Coast counties. Figure 1 shows site locations in all three counties, and figures 2, 3, and 4 show site locations in each county – Hancock, Harrison, and Jackson – respectively. Although each of the 31 sites has a USGS station number and station name, they were also assigned a unique field number for quick reference. The field number begins with the initials of the county: HK, Hancock County Site, HN, Harrison County site, and JK, Jackson County site (table 1). For example, HK-1 is Hancock County site 1 (table 1).

The USGS and MDEQ also collected bacteriological samples at 13 “beach” sites (table 1; figs. 1, 2, 3, and 4). These sites were part of MDEQ’s Mississippi Beach Monitoring Program, which began in 2000 (Mississippi Department of Environmental Quality, 2005). These sites were also assigned a unique field number similar to the nomenclature used for the near-coastal sites; for example, HKB-1 is Hancock County beach site 1 (table 1).

### Water-Quality Sampling Sites

As Hurricane Katrina made landfall, its strength diminished slowly as it proceeded northward into Mississippi. The cities of Hattiesburg and Meridian, MS, experienced Category 2 and Category 1 force winds, respectively, throughout the day and evening after landfall. Widespread damage to trees resulting in power outages that lasted for days, and in some cases weeks, were common in southern and eastern Mississippi. Such damage could potentially be a source of contamination to rivers and streams. There were reports of numerous fish kills in the Pascagoula River Basin, and although depletion of dissolved oxygen caused by large amounts of debris flushing into the streams was the likely cause, increased toxicity due to possible chemical spills was also suspected. For these reasons, USGS and MDEQ agreed that inland freshwater sites, especially in the Pascagoula River Basin, were of concern and were, therefore, targeted for sampling.

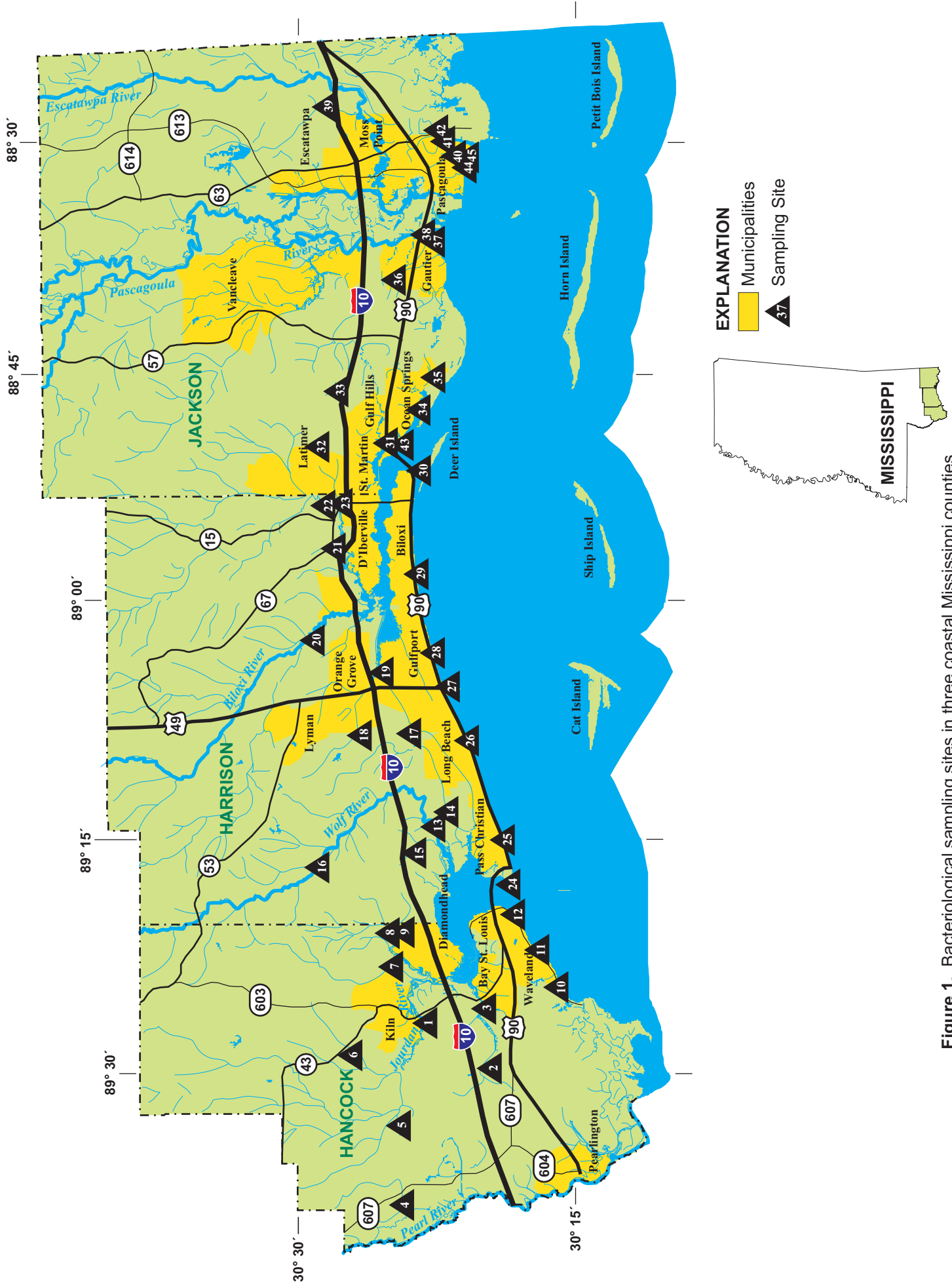
Water-quality sampling sites included eight sites in the Pascagoula River Basin, and one site each in the Tchoutacabouffa, Biloxi, Wolf, and Jourdan River Basins (fig. 5). All of the water-quality sampling sites were located at active USGS real-time streamflow gages (satellite telemetry) except for the Tchoutacabouffa River sampling site, which is an active crest-stage gage. Table 2 lists the station number, station name, type of site, dates sampled, and latitude-longitude for each of the water-quality sampling sites.

## SAMPLE COLLECTION AND ANALYSIS METHODS

The methods used to collect and process bacteriological and water-quality samples collected in this study are documented in this section. These methods were agreed upon by the USGS and MDEQ prior to sampling, and generally followed procedures outlined in the USGS National Field Manual for the Collection of Water-Quality Data (U.S. Geological Survey, variously dated; hereafter referred to in this report as USGS-NFM).

### Bacteriological Samples

Each field crew collecting bacteriological samples was composed of one USGS and one MDEQ employee. During each site visit, the stream stage was measured relative to an established reference point, hydrologic conditions were noted, a water sample was collected, and the date and time of the sample were recorded. In general, the water sample was collected in a 300-milliliter (mL) polypropylene bottle attached to a weighted sampler, which was lowered over the side of the bridge near the center of flow in the stream. The polypropylene bottle was sterilized and sealed prior to use and contained a tablet of sodium thiosulfate, which minimizes the potential effects of residual anti-bacterial chemicals, such as chlorine, that could be present in the water at each sampling location. At the beach monitoring sites, a special sampler made of a large polyvinyl chloride (PVC) elbow joint attached to an 8-foot (ft) aluminum pole was used to collect the sample in the surf at the shoreline. This sampler was used so that field personnel could avoid wading into the surf to collect a sample in unsafe conditions caused by the large amount of debris along the beach and in the surf. All samplers were cleaned with either anti-bacterial spray or isopropyl alcohol and allowed to air-dry between sampling sites. Sample bottles were stored in a cooler filled with ice for transport to the lab and were analyzed within 6 hours of collection.



**EXPLANATION**

- Municipalities
- ▲ Sampling Site

**Figure 1.** Bacteriological sampling sites in three coastal Mississippi counties.



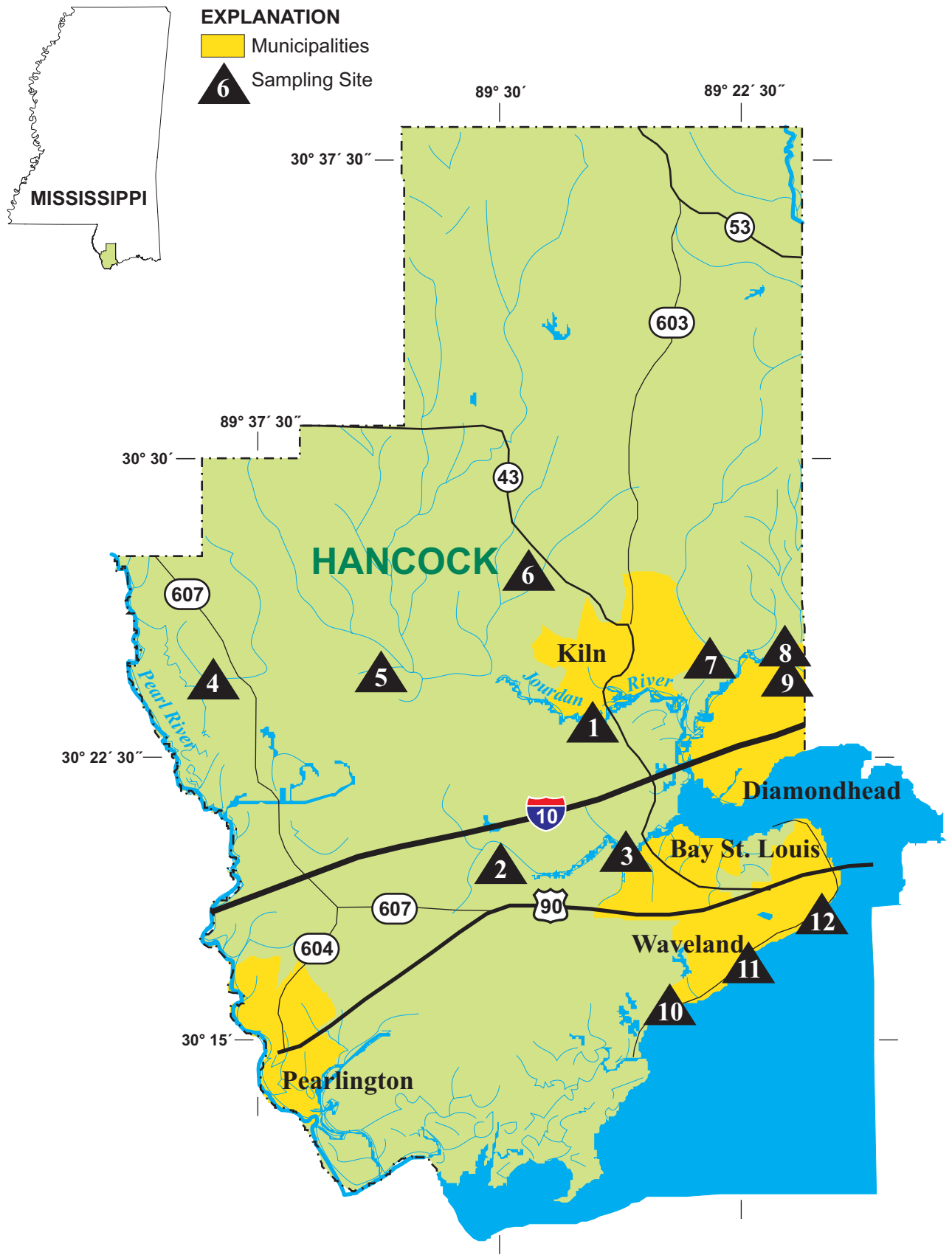
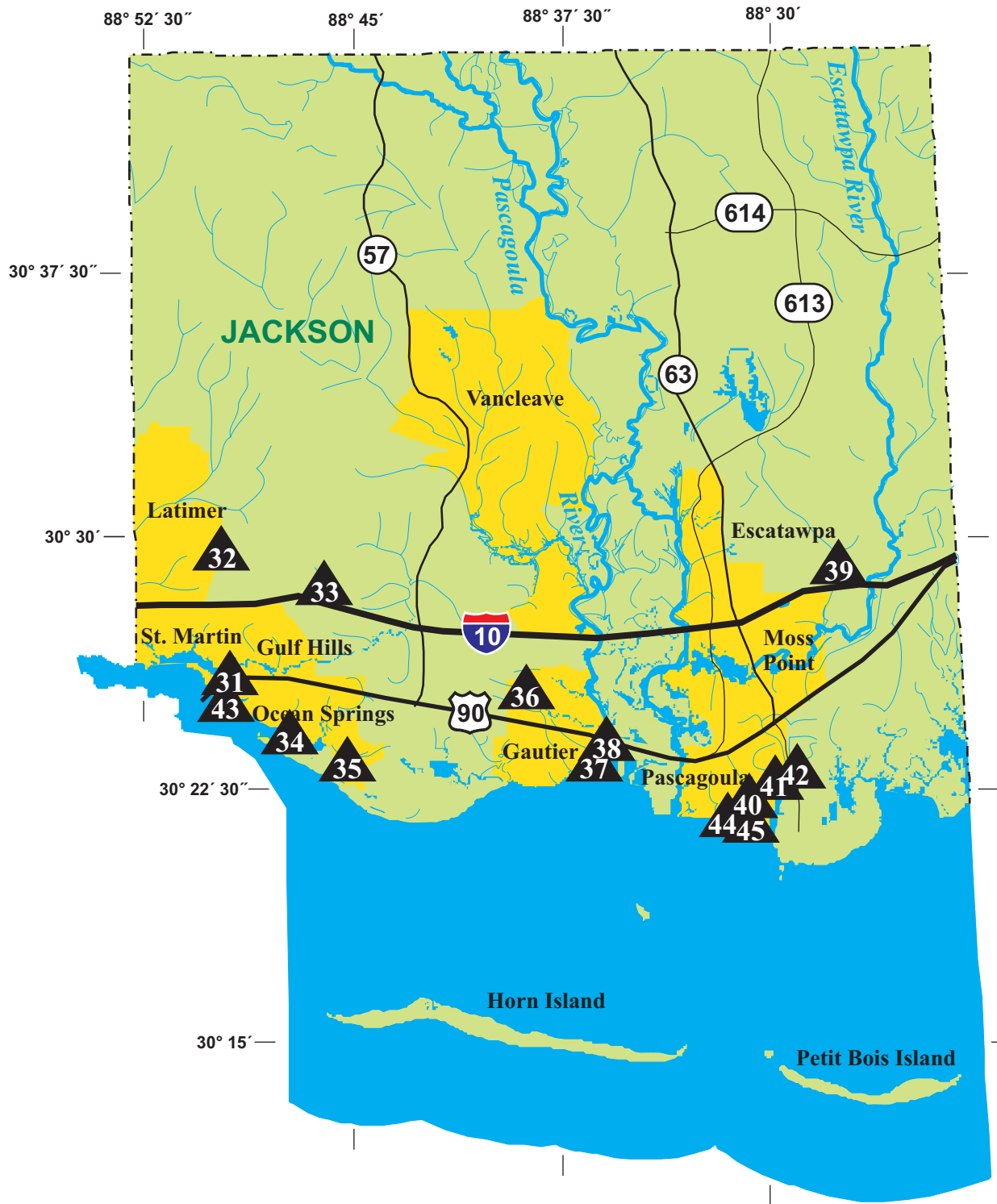


Figure 2. Bacteriological sampling sites in Hancock County, Mississippi.



Figure 3. Bacteriological sampling sites in Harrison County, Mississippi.



- EXPLANATION**
- Municipalities
  - 35 Sampling Site



**Figure 4.** Bacteriological sampling sites in Jackson County, Mississippi.



Figure 5. Water-quality sampling sites in southeastern Mississippi.

Bacteriological samples were processed and analyzed by USGS employees at a temporary laboratory at the USGS Hydrologic Instrumentation Facility located on the property of the National Aeronautics and Space Administration's Stennis Space Center near Bay St. Louis, MS. When the samples were received at the laboratory, information about each sample was logged onto a lab analysis sheet, and a specific conductance reading was obtained from the sample bottle to determine if the sample water was considered freshwater or saltwater. All original field notes and lab sheets are available for inspection in the files of the USGS Mississippi Water Science Center.

Current USEPA recreational criteria for evaluating the microbiological quality of marine/brackish waters use an enterococci standard (U.S. Environmental Protection Agency, 2004a). Enterococci can also be used as an indicator of microbiological contamination in freshwater. Therefore, all bacteriological samples collected during this study were analyzed for enterococci.

There were two methods of analysis used to measure densities of enterococci in the samples. The primary method used for all samples was most-probable-number (MPN) using Enterolert defined-substrate medium (U.S. Environmental Protection Agency, 2003a) in Quanti-Tray 2000® wells (IDEXX Corporation, 2005a). MPN analyses result in a statistical estimate of the original density of cells in a water volume based on positive reactions (plus-minus response) in multiple sub-aliquots. Results of MPN tests are reported as MPN per 100 mL. Confidence intervals were applied to MPN density estimates according to a tabulation of 95 percent confidence intervals provided by the manufacturer (IDEXX Corporation, 2005b).

Sample dilutions prior to analysis by MPN were based on whether the sample water was freshwater or saltwater. An undiluted, a 1:10 dilution, and in some cases, a 1:100 dilution were run on freshwater samples. A 1:10, and in some cases, a 1:100 dilution were run on saltwater samples. MPN analyses were not run on undiluted saltwater samples to avoid potential false positives caused by interference from a common marine bacillus bacteria as instructed by the manufacturer (Sharon Muhilly, IDEXX Corporation, oral commun., September 21, 2005).

About 15 percent of the samples were analyzed by membrane filtration methods for enterococci and for *E. coli*. Membrane filtration for enterococci was used as a means of comparison and verification of MPN results; *E. coli* analysis was used to further characterize the sampled waters for other fecal indicators. Enterococci and *E. coli* densities were determined by membrane filtration and cultivation on mEI agar and modified mTEC agar, respectively (U.S. Environmental Protection Agency, 2000). Membrane filtration results in a colony count from a defined volume of water, generally reported as colony forming units (CFU) per 100 mL water. Confidence intervals were not applied to bacteria densities measured by membrane filtration.

## **Water-Quality Samples**

At each site, physical properties of the streams were measured near the center of flow at each site using a multi-probe which measured temperature, specific conductance, pH, dissolved oxygen, and turbidity. Calibration of the multi-probe followed guidelines outlined in USGS-NFM (U.S. Geological Survey, variously dated). All instruments were calibrated each morning, and calibration was checked at the end of each day. Physical properties were recorded on field sheets, which are stored in files of the USGS Mississippi Water Science Center.

Prior to use, all equipment that came into contact with a water sample was cleaned with non-phosphate detergent, rinsed with deionized water, rinsed with methanol, air dried, and stored in a dust-free environment. All equipment (churn splitter, tubing, and bottles) was placed in plastic bags after cleaning to prevent contamination. Water samples were collected from bridges or by wading using established depth- and width-integrated procedures, and about 10 liters (L) of water were processed at each site using methods as outlined in the USGS-NFM (U.S. Geological Survey, variously dated). A Teflon churn splitter was used to subdivide each sample into appropriate bottles as required by the laboratory. Bottle requirements, filtering requirements, and sample-preservation techniques are listed in table 3. All samples were double-bagged in plastic bags, packed on ice, and shipped overnight to the USGS National Water Quality Laboratory (NWQL) in Denver, CO. The exception was for biochemical oxygen demand samples, which were collected in a 1-L polypropylene bottle, stored on ice and transported to the MDEQ laboratory in Pearl, MS, and were analyzed within 48 hours of collection. Between sites and at the end of each day of sampling, all equipment was cleaned and stored as specified earlier.

## **QUALITY-ASSURANCE PROCEDURES**

This section documents the quality-assurance procedures for the processing and analysis of the bacteriological and water-quality samples. These procedures were followed to document potential bias and variability in the data sets.

### **Bacteriological Sample Processing and Analysis**

Generally, quality-assurance practices for bacteriological analysis were followed as described by Francy and others (2005) and Myers and Wilde (2004). All sample collection and processing information was recorded on USGS microbiology field forms. Each day a media batch preparation form was completed to document the lot numbers of media and supplies used. The performance of the autoclaves was checked throughout the sampling period with heat-indicating autoclave tape to ensure that supplies were properly sterilized. Incubator temperatures were monitored with mercury thermometers at a minimum of twice daily, and results were recorded in a logbook. Each time the incubators were opened during the day, the temperature was checked and recorded on the field sheets.



For the MPN Enterolert method, quality-control samples included duplicate samples, procedure and field blanks, and positive and negative controls. Generally, two water samples were analyzed weekly, in duplicate, to test analytical variability. Procedure blanks using deionized water were also analyzed at a frequency of two samples per week. A procedure blank is a blank solution that is processed through all stages of set-up and analysis to ensure that no contamination is introduced after samples were received at the lab. Only one field blank was processed for the study period. A field blank is a blank solution that is processed through all stages of sample collection to ensure that no contamination is introduced during the sample collection and handling phase prior to delivering the sample to the lab. Positive and negative control samples were grown on the MPN media to test the ability of the method to detect targeted bacteria and exclude non-targeted bacteria, respectively. The positive control bacteria were enterococci, and the negative control bacteria were *E. coli*. Positive and negative control samples were analyzed at a rate of once weekly.

For the membrane filtration method, quality-assurance samples included filter and procedure blanks, which were analyzed during sample processing to ensure that filtration equipment and buffer solutions were not contaminated. Filter and procedure blanks were analyzed at a rate of once every three to four samples processed.

## **Water-Quality Sample Processing and Analysis**

Quality-assurance procedures generally followed those outlined in the USGS-NFM (U.S. Geological Survey, variously dated). As part of these procedures, quality-assurance samples collected during the study period included one sequential replicate, field blank, equipment blank, and laboratory spike. Sites were chosen at random for the collection and processing of these samples. A sequential replicate is an additional 10-L sample of environmental water collected immediately after an environmental sample is collected at a particular site. The sequential replicate is subjected to the same processing as the environmental sample and is used to assess variability among samples due to collection, processing, shipping, and analysis procedures for samples collected at different times. The sequential replicate is also used to assess water-quality variability in the stream being sampled.

For the field blank, laboratory-assured chemical-free water was processed at a field site in the same manner and with the same equipment used to process the environmental sample. A field blank is used to determine if there are any sources of contamination introduced by the sample collection and processing procedures that could bias results for the environmental samples. For the equipment blank, laboratory-assured chemical-free water was processed through the field equipment at the USGS office in Jackson, MS, prior to sampling to check initial cleaning procedures.

For the laboratory spike, an additional sample was collected at one site, processed in the same manner as the environmental sample, and shipped to the laboratory where a mix of known concentrations of target compound was added to the sample. The target compounds included organic chemicals such as pesticides, wastewater compounds, and volatile organic compounds. The laboratory spike samples were used to test the ability of the laboratory to accurately measure those particular compounds, to assess environmental matrix effects associated with the analysis, and to assess potential degradations in these compounds due to sample processing, shipping, or analysis.

## **RESULTS**

Analytical results for the bacteriological and water-quality samples collected during this study period are stored in the USGS National Water Information System (NWIS) database. Results of the quality-assurance samples are stored locally in the USGS Mississippi Water Science Center NWIS quality-assurance database.

### **Bacteriological Results**

Bacteriological data for MPN analyses of enterococci (including 95 percent confidence intervals) and membrane filtration of enterococci and *E. coli* are presented in table 4. The MPN test results are a statistical estimate of the density of enterococci in a water sample based on a presence/absence test in multiple sub-aliquots. Membrane filtration test results are based on an actual count of colonies forming on a nutrient agar medium under the conditions of the analysis. There were 200 samples analyzed for enterococci using the Enterolert MPN method and 30 samples analyzed for enterococci and *E. coli* using the mEI agar and modified mTEC agar membrane filtration method, respectively. Twenty-seven enterococci results from the MPN method, one enterococci result from the mEI method, and two *E. coli* results from the modified mTEC method, were less than detection.

Table 5 lists the USEPA recreational criteria for the protection of public health for single-sample densities of enterococci and *E. coli* (U.S. Environmental Protection Agency, 2004a). Enterococci results from the MPN analyses were compared to criteria in table 5 based on site classifications (table 1) as follows: results at freshwater and mixed sites were compared to the infrequent full body contact criteria of 151 colonies per 100 mL; results at saltwater sites were compared to the infrequent full body contact criteria of 501 colonies per 100 mL; and results at beach sites were compared to the designated beach area criteria of 104 colonies per 100 mL (table 5). Only the enterococci results from the MPN method were compared to USEPA criteria in this report because the MPN analyses were considered the primary method for analyses by MDEQ for this study. Of the 200 enterococci samples analyzed by the MPN method, 162 results were less than the USEPA criteria (table 4). Seventeen samples from sites considered to be freshwater or mixed exceeded the criterion, ranging from 162 to 719 MPN per 100 mL; 5 samples from sites considered to be saltwater exceeded the criterion, ranging from 644 to 24,200 MPN per 100 mL; and 16 samples from designated beach sites exceeded the criterion, ranging from 109 to 1,918 MPN per 100 mL. The highest density of 24,200 MPN per 100 mL occurred at Bayou Chico at Pascagoula, MS, on October 11, 2005 (table 4). Densities at most of the bacteriological sites increased during the second week of sampling, possibly due

to runoff from an estimated 2-day rainfall total of about 3 inches, caused by outer bands of Hurricane Rita, which made landfall along the western Louisiana and eastern Texas coastline, September 23-24, 2005 (National Oceanic and Atmospheric Administration, 2005b).

Thirty samples from all site types were analyzed for *E. coli* using the modified mTEC membrane filtration method during the study period (table 4). Of the 30 samples, 13 samples were reported as estimated due to non-ideal colony counts. The highest *E. coli* density was 2,400 CFU per 100 mL at the Mississippi Sound at Maywood Road at Gulfport, MS, on October 18, 2005. Because criteria for *E. coli* are only available for freshwaters (U.S. Environmental Protection Agency, 2004a), densities from freshwater and mixed sites for this study were compared to criteria listed in table 5, specifically, to the single-sample density of 575 CFU per 100 mL for infrequent full-body contact. Of the 13 *E. coli* samples from freshwater or mixed sites, none exceeded the criterion.

Eleven duplicate, 11 procedure blank, 1 field blank, 5 positive control, and 5 negative control quality-assurance samples were run using the MPN Enterolert method during the study period (table 6). Relative percent differences (RPD) were calculated for the 11 duplicate samples by subtracting the density of the duplicate from the environmental sample, dividing by their average, and multiplying by 100 (RPDs not shown). The average RPD was 49 percent, and ranged from 0 to 152 percent. There were no detections of enterococci in the procedure blanks. The field blank had a density of 8 MPN per 100 mL; although this density was slightly above detection, it did not reflect potential contamination to the environmental results due to improper handling by field personnel. All of the positive control samples were greater than 2,420 MPN per 100 mL, and all of the negative control samples were less than detection, as expected.

## Water-Quality Results

Nineteen water-quality samples were collected at 12 sites over a 2-week period beginning September 19, 2005 (table 2). Water measurements and water-quality analysis for samples collected during the study period included the following constituents and compounds as listed in table 7 with their respective reporting levels:

- Physical properties and other water-quality measurements – discharge (flow), turbidity, dissolved oxygen, pH, specific conductance, and temperature;
- Nitrogen, phosphorus, carbon, and oxygen demand – 5 nitrogen and 3 phosphorus compounds, total organic carbon, biochemical oxygen demand, and chemical oxygen demand;
- 34 major ions, trace metals, and related constituents – including residue on evaporation (total dissolved solids), alkalinity, and bicarbonate;
- 82 modern-use pesticide compounds and degradation products;
- 60 polar pesticide compounds and degradation products;
- 63 waste-water organic compounds and degradation products; and
- 85 volatile organic compounds and degradation products.

Organic compounds listed in table 7 are grouped according to standardized NWQL laboratory schedules; selected compounds may be repeated in other lists. For example, metalaxyl is listed in both the polar pesticide and wastewater compound lists in table 7. There were 265 constituents and compounds that were not detected in any of the samples (compounds that are listed in bold in table 7). Concentrations of constituents and compounds that were detected at each site and water-quality criteria for freshwater systems, where available, are listed in table 8. Nearly all of the constituents and compounds detected were below water-quality criteria except for the following:

- Dissolved oxygen concentrations were 3.3 and 3.6 milligrams per liter (mg/L) at Tchoutacabouffa River at D'Iberville, MS, on September 21 and 28, respectively. Dissolved oxygen was 2.3 mg/L at Jourdan River near Bay St. Louis, MS, on September 28. The State of Mississippi dissolved oxygen criterion is 5 mg/L (4 mg/L instantaneous) (State of Mississippi, 2003).
- Total phosphorus was 0.137 mg/L at the Leaf River near McClain, MS, on September 27. The USEPA recommends that total phosphorus not exceed 0.1 mg/L for flowing water that does not discharge into a lake or reservoir (U.S. Environmental Protection Agency, 1986).
- Aluminum concentrations in 11 samples exceeded the USEPA criteria continuous concentration (similar to chronic toxicity) of 87 micrograms per liter ( $\mu\text{g/L}$ ), but none exceeded the criteria maximum concentration (similar to acute toxicity) of 750  $\mu\text{g/L}$  (U.S. Environmental Protection Agency, 2004b). Aluminum is considered a non-priority pollutant.
- Copper concentrations were 13.1  $\mu\text{g/L}$  at Bluff Creek at Vancleave, MS, on September 27 and 5  $\mu\text{g/L}$  at Jourdan River near Bay St. Louis, MS, on September 21. The acute and chronic water-quality criteria for State of Mississippi waters are 7 and 5  $\mu\text{g/L}$ , respectively (State of Mississippi, 2003). Copper is considered a priority pollutant.

It should be noted that there were about 18 detections of organic chemicals above respective detection limits (there were also compounds that were detected, but concentrations were estimated below detection limits). Detections included the presence of caffeine, toluene, N,N-diethyl-meta-toluamide (DEET), naphthalene, and para-nonylphenol, which are wastewater organic compounds. These detections indicated the presence of wastewater at selected sampling locations; however, concentrations were very low, and none exceeded available water-quality criteria.

Quality-assurance samples were used to assess bias and variability in the water-quality data (table 9). All of the equipment blank constituents and compounds were either below detection or were estimated below the laboratory reporting level, except for ammonia plus organic nitrogen (filtered), which had a concentration of 0.16 mg/L. There were several significant detections in the field blank at Red Creek at Vestry, MS, on September 29, especially for chemical oxygen demand and for several major ions and trace metals. Although every precaution was taken in the field to ensure a clean working environment, the samples were collected and processed under adverse conditions, and consequently, some contamination may have occurred. Therefore, the reader is cautioned in interpreting results for the following constituents as there may have been some bias that was introduced during sample collection and processing: chemical oxygen demand, sodium, chloride, silica, barium, calcium, lead, nickel, and zinc.

A duplicate sample was collected at Cypress Creek near Janice, MS, and RPDs were computed for detectable constituents. All RPDs were lower than 20 percent, signifying that variability associated with random errors in the collection, processing, and analysis of the samples was minimal (RPDs not shown). Results from laboratory spike samples indicated that the laboratory could successfully detect constituents when they were present, matrix effects were minimal, and little degradation occurred in sample processing, shipping, and storage (data not shown).

## **SUMMARY**

Nearly all bacteriological results were below current criteria, and several were below detection; bacteriological results above current criteria were isolated, localized, and were sporadic, for the most part, with the exception of several occurrences possibly due to rainfall from Hurricane Rita, September 23-24, 2005. Nearly all of the results from the water-quality samples were below available criteria, with the exceptions of a few dissolved oxygen, total phosphorus, aluminum, and copper concentrations. Although a few wastewater compounds were detected at selected sites, concentrations were very low, and none exceeded available criteria. Therefore, it did not appear that there was any systematic contamination in the aftermath of Hurricane Katrina at the streams sampled during this study.

## **ACKNOWLEDGMENTS**

The authors of this report wish to acknowledge the contributions of laboratory and field personnel involved in the bacteriological and water-quality sampling for this project. Personnel from the USGS Mississippi Water Science Center are numerous and are not listed here, but the authors wish to acknowledge from the USGS, Callie Oblinger, Southeastern Regional Water-Quality Specialist from Raleigh, North Carolina, who helped establish and operate the temporary bacteria lab; and Richard Moreland, from the Alabama Water Science Center in Montgomery, Alabama, who helped collect water-quality samples the week of September 19, 2005. The authors also wish to acknowledge MDEQ field personnel Emily Cotton, Tony Cox, Jeff Ethridge, and Ken Dollar, and laboratory personnel, Jennifer Milner, Alice Dossett, Otis Clark, and Kathy Farris for their contributions to the project. Together, all of the laboratory and field personnel from both agencies worked tirelessly for long hours under difficult circumstances.



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## **TABLES**

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**Table 1.** Bacteriological sampling sites - Hancock, Harrison, and Jackson Counties, Mississippi - post Hurricane Katrina, September 19 through October 18, 2005

[USGS, U.S. Geological Survey; datum is North American Datum 1983; MS, Mississippi]

Site identifier (figures 1-4)	USGS station number	Station name	Site type	Field number	Latitude	Longitude
1	02481660	Jourdan River near Bay St. Louis, MS	Mixed	HK-1	30° 23' 14"	89° 26' 29"
2	02481670	Bayou La Croix near Clermont Harbour, MS	Saltwater	HK-2	30° 19' 25"	89° 29' 17"
3	02481671	Bayou La Croix at State Highway 603 near Waveland, MS	Saltwater	HK-3	30° 19' 48"	89° 25' 29"
4	02492610	Turtleskin Creek near Santa Rosa, MS	Freshwater	HK-4	30° 24' 24"	89° 38' 01"
5	02481565	Wolf Branch near Santa Rosa, MS	Freshwater	HK-5	30° 24' 34"	89° 32' 57"
6	02481649	Orphan Creek at Highway 43 near Kiln, MS	Freshwater	HK-6	30° 27' 16"	89° 28' 26"
7	0248166518	Bayou LaTerra at Fenton, MS	Freshwater	HK-7	30° 24' 51"	89° 22' 57"
8	02481663	Rotten Bayou near Fenton, MS	Freshwater	HK-8	30° 25' 09"	89° 20' 40"
9	0248166310	Mill Creek at Fenton, MS	Freshwater	HK-9	30° 24' 34"	89° 20' 40"
10	301541089241355	Mississippi Sound near Buccaneer State Park near Waveland, MS	Beach	HKB-1	30° 15' 41"	89° 24' 13"
11	301650089215300	Mississippi Sound at Waveland, MS	Beach	HKB-2	30° 16' 50"	89° 21' 53"
12	301808089193955	Mississippi Sound at Bay St. Louis, MS	Beach	HKB-3	30° 18' 08"	89° 19' 39"
13	02481524	Wolf River near Cuevas, MS	Mixed	HN-1	30° 22' 32"	89° 13' 51"
14	02481310	Bayou Portage at Cuevas, MS	Mixed	HN-2	30° 21' 46"	89° 13' 06"
15	02481526	DeLisle Bayou near DeLisle, MS	Freshwater	HN-3	30° 23' 37"	89° 15' 40"
16	02481510	Wolf River near Landon, MS	Freshwater	HN-4	30° 29' 01"	89° 16' 28"
17	02481240	Turkey Creek (Canal Road) near Gulfport, MS	Freshwater	HN-5	30° 23' 54"	89° 08' 12"
18	02481194	Bayou Bernard (Canal Road) near Landon, MS	Freshwater	HN-6	30° 26' 39"	89° 08' 13"
19	02481252	Turkey Creek at Creosote Road near Gulfport, MS	Saltwater	HN-7	30° 25' 27"	89° 04' 14"
20	02481130	Biloxi River near Lyman, MS	Freshwater	HN-8	30° 29' 18"	89° 02' 09"
21	02480606	Howard Creek at Cedar Lake, MS	Freshwater	HN-9	30° 28' 06"	88° 56' 18"
22	02480590	Tchoutacabouffa River near D'Iberville, MS	Freshwater	HN-10	30° 28' 33"	88° 53' 36"
23	02480595	Cypress Creek near D'Iberville, MS	Freshwater	HN-11	30° 27' 41"	88° 53' 30"
24	301827089173955	Mississippi Sound at Henderson Point, MS	Beach	HNB-1	30° 18' 27"	89° 17' 39"
25	301843089145255	Mississippi Sound at Pass Christian Harbour at Pass Christian, MS	Beach	HNB-2	30° 18' 43"	89° 14' 52"
26	302044089083655	Mississippi Sound at Long Beach, MS	Beach	HNB-3	30° 20' 44"	89° 08' 36"
27	302147089051055	Mississippi Sound at Gulfport Harbor at Gulfport, MS	Beach	HNB-4	30° 21' 47"	89° 05' 10"
28	302237089025855	Mississippi Sound at Maywood Road at Gulfport, MS	Beach	HNB-5	30° 22' 37"	89° 02' 58"
29	302328088575655	Mississippi Sound at Broadwater Marina at Biloxi, MS	Beach	HNB-6	30° 23' 28"	88° 57' 56"
30	302318088512600	Biloxi Bay at Point Cadet Harbor at Biloxi, MS	Beach	HNB-7	30° 23' 18"	88° 51' 26"
31	02481299	Old Fort Bayou at Ocean Springs, MS	Saltwater	JK-1	30° 25' 09"	88° 49' 41"
32	02481292	Perigal Creek near D'Iberville, MS	Freshwater	JK-2	30° 28' 58"	88° 49' 49"
33	0248129250	South Branch Perigal Creek near Ocean Springs, MS	Freshwater	JK-3	30° 27' 52"	88° 46' 17"
34	02480289	Davis Bayou at Ocean Springs, MS	Saltwater	JK-4	30° 23' 21"	88° 47' 31"
35	02480288	Simmons Bayou at Ocean Springs, MS	Saltwater	JK-5	30° 22' 28"	88° 45' 35"
36	02480284	Mary Walker Bayou at Gautier, MS	Mixed	JK-6	30° 24' 38"	88° 39' 18"
37	02480286	Bayou St. Pierre at Gautier, MS	Saltwater	JK-7	30° 22' 35"	88° 36' 51"
38	02480285	West Pascagoula at Highway 90 at Gautier, MS	Saltwater	JK-7A	30° 22' 58"	88° 36' 32"
39	02480205	Black Creek near Helena, MS	Freshwater	JK-8	30° 28' 21"	88° 28' 18"
40	0247109250	Bayou Chico at Pascagoula, MS	Saltwater	JK-9	30° 21' 17"	88° 31' 36"
41	0247109160	West Prong Bayou Cassotte at Louise Road at Pascagoula, MS	Saltwater	JK-10	30° 21' 51"	88° 30' 36"
42	0247109150	Bayou Cassotte at Orchard Avenue at Pascagoula, MS	Saltwater	JK-11	30° 22' 05"	88° 30' 05"
43	302421088495255	Biloxi Bay at Jackson Avenue at Ocean Springs, MS	Beach	JKB-1	30° 24' 21"	88° 49' 52"
44	302036088320955	Mississippi Sound at Country Club Drive at Pascagoula, MS	Beach	JKB-2	30° 20' 36"	88° 32' 09"
45	302031088313855	Mississippi Sound near Chico Bayou at Pascagoula, MS	Beach	JKB-3	30° 20' 31"	88° 31' 38"

**Table 2.** Surface water-quality sampling sites, southeastern Mississippi, post-Hurricane Katrina, September 19-30, 2005.

[Datum is North American Datum 1983; MS, Mississippi; RT, active real-time gage; ---, did not sample; CSG, active crest-stage gage]

Site identifier (figure 5)	Station number	Station name	Type of site	Number of samples	Week 1 sampling date	Week 2 sampling date	Latitude	Longitude
A	02475000	Leaf River near McClain, MS	RT	1	---	9/27/2005	31° 06' 10"	88° 48' 30"
B	02478500	Chickasawhay River at Leakesville, MS	RT	1	---	9/27/2005	31° 08' 55"	88° 32' 53"
C	02479155	Cypress Creek near Janice, MS	RT	1	9/19/2005	---	31° 01' 31"	89° 01' 00"
D	02479160	Black Creek near Wiggins, MS	RT	2	9/22/2005	9/29/2005	30° 51' 12"	88° 54' 49"
E	02479300	Red Creek at Vestry, MS	RT	2	9/20/2005	9/29/2005	30° 44' 10"	88° 46' 52"
F	02479330	Pascagoula River at Cumbest Bluff, MS	RT	1	---	9/27/2005	30° 35' 02"	88° 34' 12"
G	02479560	Escatawpa River near Agricola, MS	RT	1	9/20/2005	---	30° 48' 12"	88° 27' 31"
H	02480254	Bluff Creek at Vancleave, MS	RT	2	9/20/2005	9/27/2005	30° 31' 55"	88° 41' 25"
I	02480599	Tchoutacabouffa River at D'Iberville, MS	CSG	2	9/21/2005	9/28/2005	30° 27' 36"	88° 54' 03"
J	02481000	Biloxi River at Wortham, MS	RT	2	9/19/2005	9/28/2005	30° 33' 31"	89° 07' 19"
K	02481510	Wolf River near Landon, MS	RT	2	9/21/2005	9/28/2005	30° 29' 01"	89° 16' 28"
L	02481660	Jourdan River near Bay St. Louis, MS	RT	2	9/21/2005	9/28/2005	30° 23' 14"	89° 26' 29"

**Table 3.** Bottle requirements, filtering requirements, and sample-preservation techniques for water-quality samples collected in the aftermath of Hurricane Katrina, September through October 2005.

[mL, milliliter;  $\mu\text{m}$ , micrometer; C, Celsius; L, liter; <, less than; HCl, hydrochloric acid]

Type of sample (number of bottles required)	Bottles required	Filtered or unfiltered	Filter type	Sample preservation
Nutrients (2)	125-mL brown polypropylene	Filtered	0.45 $\mu\text{m}$ cartridge-type filter	Chilled at 4°C
	125-mL translucent polypropylene	Unfiltered	None	Acidified with 1mL of 4.5 normal sulfuric acid; then chilled at 4°C
Total organic carbon (1)	125-baked amber glass	Unfiltered	None	Chilled at 4°C
Chemical oxygen demand (1)	125-baked amber glass	Unfiltered	None	Acidified with sulfuric acid to a pH of <2; chilled at 4°C
Biochemical oxygen demand	1-L translucent polypropylene	Unfiltered	None	Chilled at 4°C
Major Ions (3)	250-mL polypropylene, acid-rinsed	Filtered	0.45 $\mu\text{m}$ cartridge-type filter	Acidified with nitric acid to a pH of <2
	250-mL polypropylene	Filtered	0.45 $\mu\text{m}$ cartridge-type filter	None
	250-mL polypropylene	Unfiltered	None	None
Trace metals (2)	250-mL polypropylene, acid-rinsed	Filtered	0.45 $\mu\text{m}$ cartridge-type filter	Acidified with nitric acid to a pH of <2
	250-mL polypropylene	Unfiltered	None	None
Modern-use pesticides (1)	1-L baked amber glass	Filtered	0.7 $\mu\text{m}$ glass fiber filter	Chilled at 4°C
Polar pesticides (1)	1-L baked amber glass	Filtered	0.7 $\mu\text{m}$ glass fiber filter	Chilled at 4°C
Waste water organic compounds (1)	1-L baked amber glass	Filtered	0.7 $\mu\text{m}$ glass fiber filter	Chilled at 4°C
Volatile organic compounds (3)	40-mL amber glass bottle	Unfiltered	None	Bottle is filled completely with sample; sample is adjusted with a 1:1 HCl/water solution to a pH of <2; sample is protected from sunlight and chilled at 4° C

**Table 4.** Results of bacteriological analyses for water samples collected in the aftermath of Hurricane Katrina, coastal Mississippi Counties, September 19 - October 18, 2005

[MPN, most probable number; mL, milliliters; CFU, colony-forming units; numbers in brackets are unique field numbers; numbers in parenthesis are 95 percent confidence intervals; <, less than; E, estimated due to non-ideal colony counts]

Sample date	Sample time	Enterococci densities analyzed by Enterolert most probable number method, MPN per 100 mL	Enterococci densities analyzed by membrane filtration, mEI agar method, CFU per 100 mL	<i>Escherichia Coli</i> densities analyzed by membrane filtration, modified mTEC agar method, CFU per 100 mL
<b>02481660 Jourdan River near Bay St. Louis, MS [HK-1]</b>				
9/20/2005	0925	37 (25-53)		
9/27/2005	0910	79 (56-109)		
10/4/2005	1200	26 (17-38)		
10/11/2005	1710	189 (142-251)		
10/17/2005	1550	<10 (0-37)		
<b>02481670 Bayou La Croix near Clermont Harbour, MS [HK-2]</b>				
9/20/2005	1125	40 (11-89)		
9/27/2005	1245	712 (507-983)		
10/4/2005	1420	52 (18-108)		
10/11/2005	1730	<10 (0-37)		
10/17/2005	1615	<10 (0-37)	10E	25E
<b>02481671 Bayou La Croix at State Highway 603 near Waveland, MS [HK-3]</b>				
9/20/2005	1100	201 (124-318)		
9/27/2005	1058	20 (3-59)		
10/4/2005	1615	52 (18-108)		
10/11/2005	1750	213 (127-326)		
10/17/2005	1630	31 (7-89)	24E	44E
<b>02492610 Turtleskin Creek near Santa Rosa, MS [HK-4]</b>				
9/20/2005	1005	54 (39-73)		
9/27/2005	0957	26 (16-39)	40E	22E
10/4/2005	1300	4 (2-10)		
10/11/2005	1815	24 (16-36)		
10/17/2005	1700	1 (0-6)		
<b>02481565 Wolf Branch near Santa Rosa, MS [HK-5]</b>				
9/20/2005	0945	10 (4-17)		
9/27/2005	0935	16 (9-25)		
10/4/2005	1245	5 (2-12)		
<b>02481649 Orphan Creek at Highway 43 near Kiln, MS [HK-6]</b>				
9/20/2005	0900	38 (26-54)		
9/27/2005	0852	75 (53-103)		

**Table 4.** Continued--Results of bacteriological analyses for water samples collected in the aftermath of Hurricane Katrina, coastal Mississippi Counties, September 19 - October 18, 2005

Sample date	Sample time	Enterococci densities analyzed by Enterolert most probable number method, MPN per 100 mL	Enterococci densities analyzed by membrane filtration, mEI agar method, CFU per 100 mL	<i>Escherichia Coli</i> densities analyzed by membrane filtration, modified mTEC agar method, CFU per 100 mL
10/4/2005	1145	6 (3-14)		
10/11/2005	1640	16 (9-26)		
10/17/2005	1530	6 (3-14)		
<b>0248166518 Bayou LaTerra at Fenton, MS [HK-7]</b>				
9/20/2005	0837	138 (98-192)		
9/27/2005	0825	167 (123-223)		
10/4/2005	1125	21 (13-33)	143	73
10/11/2005	1620	25 (16-37)		
10/17/2005	1505	8 (4-16)		
<b>02481663 Rotten Bayou near Fenton, MS [HK-8]</b>				
9/20/2005	0830	40 (27-56)		
9/27/2005	0745	35 (24-50)		
10/4/2005	1115	12 (6-20)	43E	90
10/11/2005	1610	38 (26-54)	56E	93
10/17/2005	1455	11 (5-18)		
<b>0248166310 Mill Creek at Fenton, MS [HK-9]</b>				
9/20/2005	0815	46 (32-64)		
9/27/2005	0735	91 (66-123)	168	49E
10/4/2005	1100	32 (21-46)		
10/11/2005	1600	20 (12-30)		
10/17/2005	1445	31 (7-89)		
<b>301541089241355 Mississippi Sound near Buccaneer State Park near Waveland, MS [HKB-1]</b>				
9/20/2005	1150	<10 (0-37)		
9/27/2005	1130	52 (23-119)	60E	17E
10/4/2005	1545	269 (176-391)	198	28E
10/12/2005	1500	<10 (0-37)		
10/18/2005	1510	<10 (0-37)		
<b>301650089215300 Mississippi Sound at Waveland, MS [HKB-2]</b>				
9/20/2005	1215	20 (3-71)		
9/27/2005	1140	233 (144-361)		
10/4/2005	1530	40 (11-89)	143E	49E
10/12/2005	1445	41 (12-91)	70	100
10/18/2005	1435	10 (1-55)		

**Table 4.** Continued--Results of bacteriological analyses for water samples collected in the aftermath of Hurricane Katrina, coastal Mississippi Counties, September 19 - October 18, 2005

Sample date	Sample time	Enterococci densities analyzed by Enterolert most probable number method, MPN per 100 mL	Enterococci densities analyzed by membrane filtration, mEI agar method, CFU per 100 mL	<i>Escherichia Coli</i> densities analyzed by membrane filtration, modified mTEC agar method, CFU per 100 mL
<b>301808089193955 Mississippi Sound at Bay St. Louis, MS [HKB-3]</b>				
9/20/2005	1230	148 (85-251)		
9/27/2005	1150	20 (3-71)		
10/4/2005	1515	<10 (0-37)		
10/12/2005	1525	31 (7-89)		
10/18/2005	1450	10 (1-55)		
<b>02481524 Wolf River near Cuevas, MS [HN-1]</b>				
9/19/2005	1750	162 (115-221)		
9/26/2005	1505	45 (31-61)	180	90
10/4/2005	0945	62 (24-122)		
10/12/2005	1200	10 (1-55)	40E	51E
10/18/2005	1245	63 (25-127)		
<b>02481310 Bayou Portage at Cuevas, MS [HN-2]</b>				
9/19/2005	1730	91 (67-121)		
9/26/2005	1458	206 (147-283)		
10/3/2005	1430	238 (146-358)	410	120
10/12/2005	1155	169 (94-270)		
10/18/2005	1235	41 (17-95)		
<b>02481526 DeLisle Bayou near DeLisle, MS [HN-3]</b>				
9/19/2005	1818	42 (28-60)		
9/26/2005	1542	51 (36-69)		
10/4/2005	1020	313 (217-440)		
10/12/2005	1210	326 (270-388)		
10/18/2005	1300	184 (149-222)	182	20E
<b>02481510 Wolf River near Landon, MS [HN-4]</b>				
9/20/2005	0800	122 (87-167)		
9/27/2005	0802	93 (68-123)		
10/4/2005	1040	15 (8-25)		
10/11/2005	1540	5 (2-12)		
10/17/2005	1420	2 (0-7)		
<b>02481240 Turkey Creek (Canal Road) near Gulfport, MS [HN-5]</b>				
9/19/2005	1542	70 (50-95)		
9/26/2005	1410	12 (6-21)	44E	18E
10/3/2005	1400	58 (42-78)		
10/12/2005	1655	719 (526-946)	46E	
10/17/2005	1345	6 (2-12)		



**Table 4.** Continued--Results of bacteriological analyses for water samples collected in the aftermath of Hurricane Katrina, coastal Mississippi Counties, September 19 - October 18, 2005

Sample date	Sample time	Enterococci densities analyzed by Enterolert most probable number method, MPN per 100 mL	Enterococci densities analyzed by membrane filtration, mEI agar method, CFU per 100 mL	<i>Escherichia Coli</i> densities analyzed by membrane filtration, modified mTEC agar method, CFU per 100 mL
<b>02481194 Bayou Bernard (Canal Road) near Landon, MS [HN-6]</b>				
9/19/2005	1520	56 (38-77)		
9/26/2005	1350	145 (100-205)		
10/3/2005	1345	71 (50-95)		
10/11/2005	1505	87 (64-115)		
10/17/2005	1400	24 (15-35)		
<b>02481252 Turkey Creek at Creosote Road near Gulfport, MS [HN-7]</b>				
9/20/2005	1340	186 (125-269)		
9/27/2005	1300	181 (104-286)	340	70
10/4/2005	1245	63 (25-127)		
10/12/2005	0905	41 (17-95)		
10/18/2005	1430	10 (1-55)	40E	58E
<b>02481130 Biloxi River near Lyman, MS [HN-8]</b>				
9/20/2005	1415	28 (18-41)		
9/27/2005	1005	63 (45-85)		
10/12/2005	1425	12 (6-21)		
10/18/2005	1000	17 (9-27)		
<b>02480606 Howard Creek at Cedar Lake, MS [HN-9]</b>				
9/20/2005	1455	101 (74-136)		
9/27/2005	0940	261 (171-398)		
10/4/2005	1450	378 (262-526)	510	137
10/12/2005	1355	249 (173-350)		
10/18/2005	0940	437 (337-556)		
<b>02480590 Tchoutacabouffa River near D'Iberville, MS [HN-10]</b>				
9/20/2005	1505	1 (0-4)		
<b>02480595 Cypress Creek near D'Iberville, MS [HN-11]</b>				
9/20/2005	1510	4 (2-10)		
<b>301827089173955 Mississippi Sound at Henderson Point, MS [HNB-1]</b>				
9/19/2005	1710	<10 (0-37)		
9/26/2005	1640	10 (1-55)		
10/3/2005	1550	20 (3-56)	90	10E
10/12/2005	1110	<10 (0-37)		
10/18/2005	1200	<10 (0-37)	8E	<3

**Table 4.** Continued--Results of bacteriological analyses for water samples collected in the aftermath of Hurricane Katrina, coastal Mississippi Counties, September 19 - October 18, 2005

Sample date	Sample time	Enterococci densities analyzed by Enterolert most probable number method, MPN per 100 mL	Enterococci densities analyzed by membrane filtration, mEI agar method, CFU per 100 mL	<i>Escherichia Coli</i> densities analyzed by membrane filtration, modified mTEC agar method, CFU per 100 mL
<b>301843089145255 Mississippi Sound at Pass Christian Harbour at Pass Christian, MS [HNB-2]</b>				
9/19/2005	1640	85 (39-156)		
9/26/2005	1605	10 (1-55)	9E	7E
10/3/2005	1520	120 (60-203)		
10/12/2005	1050	<10 (0-37)		
10/18/2005	1130	41 (17-95)		
<b>302044089083655 Mississippi Sound at Long Beach, MS [HNB-3]</b>				
9/19/2005	1620	10 (1-55)		
9/26/2005	1430	323 (211-472)		
10/4/2005	0840	262 (166-397)		
10/12/2005	1020	109 (56-195)		
10/18/2005	1100	31 (7-89)		
<b>302147089051055 Mississippi Sound at Gulfport Harbor at Gulfport, MS [HNB-4]</b>				
9/20/2005	1525	132 (71-220)		
9/27/2005	1410	40 (11-89)		
10/4/2005	1305	337 (227-480)		
10/12/2005	1005	1918 (1367-2645)		
10/18/2005	1210	<10 (0-37)		
<b>302237089025855 Mississippi Sound at Maywood Road at Gulfport, MS [HNB-5]</b>				
9/20/2005	1535	645 (460-873)		
10/4/2005	1315	73 (29-139)		
10/12/2005	1630	<10 (0-37)		
10/18/2005	1200	757 (569-985)	2500	2400
<b>302328088575655 Mississippi Sound at Broadwater Marina at Biloxi, MS [HNB-6]</b>				
9/20/2005	1600	448 (302-634)		
9/27/2005	1425	63 (29-137)		
10/4/2005	1335	20 (3-71)		
10/12/2005	1615	<10 (0-37)		
10/18/2005	1145	109 (56-195)		
<b>302318088512600 Biloxi Bay at Point Cadet Harbor at Biloxi, MS [HNB-7]</b>				
9/20/2005	1620	10 (1-55)		
9/27/2005	1445	10 (0-37)		
10/4/2005	1350	<10 (0-37)		
10/12/2005	1300	<10 (0-37)		
10/18/2005	1125	<10 (0-37)		

**Table 4.** Continued--Results of bacteriological analyses for water samples collected in the aftermath of Hurricane Katrina, coastal Mississippi Counties, September 19 - October 18, 2005

Sample date	Sample time	Enterococci densities analyzed by Enterolert most probable number method, MPN per 100 mL	Enterococci densities analyzed by membrane filtration, mEI agar method, CFU per 100 mL	<i>Escherichia Coli</i> densities analyzed by membrane filtration, modified mTEC agar method, CFU per 100 mL
<b>02481299 Old Fort Bayou at Ocean Springs, MS [JK-1]</b>				
9/20/2005	1230	10 (1-55)		
<b>02481292 Perigal Creek near D'Iberville, MS [JK-2]</b>				
9/20/2005	1315	27 (17-39)		
9/27/2005	0905	317 (264-378)		
10/4/2005	0930	326 (270-388)		
10/12/2005	0630	31 (21-44)		
10/17/2005	1855	4 (2-10)		
<b>0248129250 South Branch Perigal Creek near Ocean Springs, MS [JK-3]</b>				
9/20/2005	1250	4 (2-10)		
<b>02480289 Davis Bayou at Ocean Springs, MS [JK-4]</b>				
9/20/2005	1155	122 (68-214)		
9/27/2005	0835	644 (446-886)		
10/4/2005	0850	86 (45-169)		
10/12/2005	1005	146 (82-246)		
10/17/2005	1810	135 (78-234)		
<b>02480288 Simmons Bayou at Ocean Springs, MS [JK-5]</b>				
9/20/2005	1125	41 (17-95)		
9/27/2005	0815	74 (36-149)		
10/4/2005	0830	98 (47-184)		
10/12/2005	0905	20 (3-71)		
10/17/2005	1755	41 (17-95)		
<b>02480284 Mary Walker Bayou at Gautier, MS [JK-6]</b>				
9/20/2005	1105	72 (53-95)		
9/26/2005	1600	461 (293-688)		
10/3/2005	1545	74 (32-144)	280	155
10/11/2005	1810	10 (1-55)		
10/17/2005	1720	10 (0-37)		
<b>02480286 Bayou St. Pierre at Gautier, MS [JK-7]</b>				
10/11/2005	1740	10 (0-37)		
<b>02480285 West Pascagoula at Highway 90 at Gautier, MS [JK-7A]</b>				
9/19/2005	1715	10 (1-55)		
9/26/2005	1545	108 (52-186)		
10/3/2005	1530	20 (3-59)		
10/17/2005	1705	<10 (0-37)		

**Table 4.** Continued--Results of bacteriological analyses for water samples collected in the aftermath of Hurricane Katrina, coastal Mississippi Counties, September 19 - October 18, 2005

Sample date	Sample time	Enterococci densities analyzed by Enterolert most probable number method, MPN per 100 mL	Enterococci densities analyzed by membrane filtration, mEI agar method, CFU per 100 mL	<i>Escherichia Coli</i> densities analyzed by membrane filtration, modified mTEC agar method, CFU per 100 mL
<b>02480205 Black Creek near Helena, MS [JK-8]</b>				
9/20/2005	0915	49 (36-65)		
9/26/2005	1415	91 (66-123)	280	440
10/3/2005	1425	6 (3-14)		
10/11/2005	1525	15 (8-25)		
10/17/2005	1555	1 (0-4)		
<b>0247109250 Bayou Chico at Pascagoula, MS [JK-9]</b>				
9/20/2005	1005	288 (183-427)		
9/26/2005	1500	1785 (1238-2505)		
10/3/2005	1455	160 (95-251)		
10/11/2005	1640	24196 (16304-47161)		
10/17/2005	1625	<10 (0-37)		
<b>0247109160 West Prong Bayou Cassotte at Louise Road at Pascagoula, MS [JK-10]</b>				
9/20/2005	0950	85 (39-156)		
9/26/2005	1450	3076 (1953-4712)		
10/3/2005	1445	41 (17-95)		
10/11/2005	1625	10 (1-55)		
10/17/2005	1620	<10 (0-37)		
<b>0247109150 Bayou Cassotte at Orchard Avenue at Pascagoula, MS [JK-11]</b>				
9/20/2005	0945	81 (37-153)		
9/26/2005	1440	121 (65-211)		
10/3/2005	1400	41 (17-95)	21E	160
10/11/2005	1615	10 (1-55)		
10/17/2005	1615	<10 (0-37)		
<b>302421088495255 Biloxi Bay at Jackson Avenue at Ocean Springs, MS [JKB-1]</b>				
9/20/2005	1210	20 (3-71)		
9/27/2005	0845	161 (93-268)	202E	130
10/4/2005	0910	52 (23-119)		
10/12/2005	1025	<10 (0-37)	12E	<3
10/17/2005	1835	41 (17-95)		
<b>302036088320955 Mississippi Sound at Country Club Drive at Pascagoula, MS [JKB-2]</b>				
9/20/2005	1025	<10 (0-37)		
9/26/2005	1515	1137 (833-1517)		
10/3/2005	1510	20 (3-71)		
10/11/2005	1705	<10 (0-37)	<3	<3
10/17/2005	1635	10 (1-55)		

**Table 4.** Continued--Results of bacteriological analyses for water samples collected in the aftermath of Hurricane Katrina, coastal Mississippi Counties, September 19 - October 18, 2005

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<b>Sample date</b>	<b>Sample time</b>	<b>Enterococci densities analyzed by Enterolert most probable number method, MPN per 100 mL</b>	<b>Enterococci densities analyzed by membrane filtration, mEI agar method, CFU per 100 mL</b>	<b><i>Escherichia Coli</i> densities analyzed by membrane filtration, modified mTEC agar method, CFU per 100 mL</b>
<b>302031088313855 Mississippi Sound near Chico Bayou at Pascagoula, MS [JKB-3]</b>				
9/20/2005	1035	<10 (0-37)		
9/26/2005	1520	31 (7-89)		
10/3/2005	1515	<10 (0-37)		
10/11/2005	1655	<10 (0-37)		
10/17/2005	1645	41 (17-95)		

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**Table 5.** U.S. Environmental Protection Agency criteria for Enterococci and *Escherichia coli* in recreational waters

[CFU, colony-forming units]

Fecal indicator bacteria	Single-sample density (CFU per 100 milliliters; not to be exceeded in more than 10 percent of samples taken over a 30-day period)*		
	Designated beach areas	Moderate full-body contact	Infrequent full-body contact
Freshwater			
Enterococci	61	78	151
<i>Escherichia coli</i>	235	298	575
Marine water			
Enterococci	104	158	501

\* U.S. Environmental Protection Agency (2004a)

**Table 6.** Results of bacteriological quality-assurance samples collected in the aftermath of Hurricane Katrina, coastal Mississippi Counties, September 19 - October 18, 2005.

[MPN, most probable number; numbers in parentheses are environmental sample results for comparison; >, greater than; QC, quality control; <, less than]

Sample/Site	Type	Sample date	Sample time	Time processed	Enterococci concentrations analyzed by Enterolert most probable number method, MPN per 100 mL
<b>REPLICATES</b>					
02481671	replicate	10/4/2005	1615	1805	41 (52)
02481526	replicate	10/12/2005	1210	1650	>2420 (326)
02481194	replicate	10/17/2005	1400	1745	14 (24)
302044089083655	replicate	10/4/2005	840	1430	148 (262)
302044089083655	replicate	10/12/2005	1020	1448	95 (109)
302044089083655	replicate	10/18/2005	1100	1615	41 (31)
302147089051055	replicate	10/4/2005	1305	1810	262 (337)
02480284	replicate	9/26/2005	1600	2040	201 (461)
02480285	replicate	9/19/2005	1715	2125	20 (10)
302421088495255	replicate	9/20/2005	1210	1635	10 (20)
302031088313855	replicate	9/26/2005	1520	2025	20 (31)
<b>BLANKS</b>					
Blank	QC	9/19/2005		2125	<1
Blank	QC	9/20/2005		1415	<1
Blank	QC	9/26/2005		2015	<1
Blank	QC	9/27/2005		1335	<1
Blank	QC	10/4/2005		1315	<1
Blank	QC	10/4/2005		1630	<1
Blank	QC	10/11/2005		2155	<1
Blank	QC	10/12/2005		1620	<1
Blank	QC	10/18/2005		1820	<1
Blank	QC	10/18/2005		1215	<1
Blank	QC	10/17/2005		2010	<1
Field blank	QC	10/18/2005	1030	1620	8
<b>POSITIVE/NEGATIVE CONTROLS</b>					
Positive control	QC	9/20/2005		1710	>2400
Positive control	QC	9/27/2005		1335	>2420
Positive control	QC	10/4/2005		1630	>2420
Positive control	QC	10/12/2005		1620	>2420
Positive control	QC	10/17/2005		2015	>2420
Negative control	QC	9/20/2005		1710	<1
Negative control	QC	9/27/2005		1335	<1
Negative control	QC	10/4/2005		1630	<1
Negative control	QC	10/12/2005		1620	<1
Negative control	QC	10/17/2005		2015	<1

**Table 7.** Constituents and compounds included for analysis for samples collected in the aftermath of Hurricane Katrina, southeastern Mississippi, September 19-30, 2005

[cfs, cubic feet per second; NTU, Nephelometric Turbidity Units; mg/L, milligrams per liter; uS/cm, microsiemens per centimeter; C, Celsius; N, nitrogen; P, phosphorus; ug/L, micrograms per liter; compounds in **bold** were not detected in any sample]

Analyte	Reporting level	Units
<b>PHYSICAL PROPERTIES</b>		
Discharge	0	cfs
Turbidity	0	NTU
Dissolved oxygen	0.1	mg/L
pH	0.1	pH
Specific conductance	2.6	uS/cm
Temperature	0.1	C
<b>NITROGEN, PHOSPHORUS, CARBON, AND OXYGEN DEMAND</b>		
Ammonia plus organic nitrogen as N, filtered	0.1	mg/L
Ammonia plus organic nitrogen as N, unfiltered	0.1	mg/L
Ammonia as N, filtered	0.04	mg/L
Nitrite plus nitrate as N, filtered	0.06	mg/L
Nitrite as N, filtered	0.008	mg/L
Orthophosphate as P, filtered	0.018	mg/L
Phosphorus, filtered	0.004	mg/L
Phosphorus, unfiltered	0.004	mg/L
Organic carbon, unfiltered	0.4	mg/L
Biochemical oxygen demand, unfiltered	1	mg/L
Chemical oxygen demand, high level, unfiltered	10	mg/L
<b>MAJOR IONS, METALS, AND RELATED CHEMISTRY (all constituents are from filtered sample)</b>		
Calcium	0.02	mg/L
Magnesium	0.008	mg/L
Potassium	0.16	mg/L
Sodium	0.2	mg/L
Alkalinity	1	mg/L
Bicarbonate	1	mg/L
Chloride	0.2	mg/L
Fluoride	0.1	mg/L
Silica	0.04	mg/L
Sulfate	0.18	mg/L
Residue on evaporation, 180 degrees Celsius	10	mg/L
Aluminum	1.6	ug/L
<b>Antimony</b>	0.2	ug/L
Arsenic	0.12	ug/L
Barium	0.2	ug/L
Beryllium	0.06	ug/L
Boron	8	ug/L
Cadmium	0.04	ug/L
Chromium	0.04	ug/L
Cobalt	0.04	ug/L
Copper	0.4	ug/L
Iron	6	ug/L
Lead	0.08	ug/L
Lithium	0.6	ug/L
Manganese	0.6	ug/L
Molybdenum	0.4	ug/L
Nickel	0.06	ug/L



**Table 7.** Continued--Constituents and compounds included for analysis for samples collected in the aftermath of Hurricane Katrina, southeastern Mississippi, September 19-30, 2005

Analyte	Reporting level	Units
Selenium	0.08	ug/L
<b>Silver</b>	0.2	ug/L
Strontium	0.4	ug/L
Thallium	0.04	ug/L
Uranium, natural	0.04	ug/L
Vanadium	0.1	ug/L
Zinc	0.6	ug/L
MODERN USE PESTICIDES AND DEGRADATES (all constituents are from filtered sample)		
<b>1-Naphthol</b>	0.0882	ug/L
<b>2-Chloro-2,6-diethylacetanilide</b>	0.005	ug/L
<b>2-Ethyl-6-methylaniline</b>	0.0045	ug/L
<b>3,4-Dichloroaniline</b>	0.0045	ug/L
<b>3,5-Dichloroaniline</b>	0.0043	ug/L
<b>4-Chloro-2-methylphenol</b>	0.0056	ug/L
<b>Acetochlor</b>	0.006	ug/L
<b>Alachlor</b>	0.005	ug/L
<b>2,6-Diethylaniline</b>	0.006	ug/L
Atrazine	0.007	ug/L
<b>Azinphos-methyl</b>	0.05	ug/L
<b>Azinphos-methyl-oxon</b>	0.07	ug/L
<b>Benfluralin</b>	0.01	ug/L
<b>Carbaryl</b>	0.041	ug/L
<b>Carbofuran</b>	0.02	ug/L
<b>Chlorpyrifos</b>	0.005	ug/L
<b>Chlorpyrifos, oxygen analog</b>	0.0562	ug/L
<b>cis-Permethrin</b>	0.006	ug/L
<b>cis-Propiconazole</b>	0.008	ug/L
<b>Cyanazine</b>	0.018	ug/L
<b>Cyfluthrin</b>	0.0267	ug/L
<b>Cypermethrin</b>	0.0086	ug/L
<b>Dacthal</b>	0.003	ug/L
<b>2-Chloro-4-isopropylamino-6-amino-s-triazine {CIAT}</b>	0.006	ug/L
Diazinon	0.005	ug/L
Dichlorvos	0.0118	ug/L
<b>Dicrotophos</b>	0.0843	ug/L
<b>Dieldrin</b>	0.009	ug/L
<b>Dimethoate</b>	0.0061	ug/L
<b>Disulfoton</b>	0.021	ug/L
<b>Disulfoton sulfone</b>	0.0059	ug/L
<b>alpha-Endosulfan</b>	0.0047	ug/L
<b>Endosulfan sulfate</b>	0.0138	ug/L
<b>EPTC</b>	0.004	ug/L
<b>Ethion</b>	0.004	ug/L
<b>Ethion monoxon</b>	0.002	ug/L
<b>Ethoprophos</b>	0.005	ug/L
<b>Fenamiphos</b>	0.029	ug/L
<b>Fenamiphos sulfone</b>	0.0491	ug/L
<b>Fenamiphos sulfoxide</b>	0.0387	ug/L
<b>Desulfinylfipronil amide</b>	0.029	ug/L
Fipronil sulfide	0.013	ug/L
<b>Fipronil sulfone</b>	0.024	ug/L
<b>Desulfinylfipronil</b>	0.012	ug/L

**Table 7.** Continued--Constituents and compounds included for analysis for samples collected in the aftermath of Hurricane Katrina, southeastern Mississippi, September 19-30, 2005

Analyte	Reporting level	Units
<b>Fipronil</b>	0.016	ug/L
<b>Fonofos</b>	0.003	ug/L
Hexazinone	0.0129	ug/L
<b>Iprodione</b>	0.538	ug/L
<b>Isofenphos</b>	0.0034	ug/L
<b>lambda-Cyhalothrin</b>	0.0089	ug/L
<b>Malaoxon</b>	0.0298	ug/L
<b>Malathion</b>	0.027	ug/L
<b>Metalaxyl</b>	0.0051	ug/L
<b>Methidathion</b>	0.0058	ug/L
<b>Parathion-methyl</b>	0.015	ug/L
Metolachlor	0.006	ug/L
<b>Metribuzin</b>	0.006	ug/L
<b>Molinate</b>	0.003	ug/L
<b>Myclobutanil</b>	0.008	ug/L
<b>Oxyfluorfen</b>	0.0073	ug/L
<b>Paraoxon-methyl</b>	0.0299	ug/L
<b>Pendimethalin</b>	0.022	ug/L
<b>Phorate</b>	0.011	ug/L
<b>Phorate oxygen analog</b>	0.1048	ug/L
<b>Phosmet</b>	0.0079	ug/L
<b>Phosmet oxon</b>	0.0511	ug/L
<b>Prometon</b>	0.01	ug/L
<b>Prometryn</b>	0.0054	ug/L
<b>Propyzamide</b>	0.004	ug/L
<b>Propanil</b>	0.011	ug/L
<b>Propargite</b>	0.023	ug/L
Simazine	0.005	ug/L
<b>Tebuconazole</b>	0.0136	ug/L
Tebuthiuron	0.016	ug/L
<b>Tefluthrin</b>	0.0077	ug/L
<b>Terbufos</b>	0.017	ug/L
<b>Terbufos oxygen analog sulfone</b>	0.0676	ug/L
<b>Terbutylazine</b>	0.0102	ug/L
<b>Thiobencarb</b>	0.01	ug/L
<b>trans-Propiconazole</b>	0.0133	ug/L
<b>Tribufos</b>	0.0044	ug/L
<b>Trifluralin</b>	0.009	ug/L
POLAR PESTICIDES AND DEGRADATES (all constituents are from filtered sample)		
<b>2,4-D</b>	0.038	ug/L
<b>2,4-D methyl ester</b>	0.016	ug/L
<b>2,4-DB</b>	0.02	ug/L
<b>2-Hydroxy-4-isopropylamino-6-ethylamino-s-triazine {OJET}</b>	0.032	ug/L
<b>3(4-Chlorophenyl)-1-methyl urea</b>	0.036	ug/L
<b>Acifluorfen</b>	0.028	ug/L
<b>Aldicarb</b>	0.04	ug/L
<b>Aldicarb sulfone</b>	0.018	ug/L
<b>Aldicarb sulfoxide</b>	0.022	ug/L
<b>Chloramben, methyl ester</b>	0.024	ug/L
Atrazine	0.008	ug/L
<b>Bendiocarb</b>	0.02	ug/L
<b>Benomyl</b>	0.022	ug/L

**Table 7.** Continued--Constituents and compounds included for analysis for samples collected in the aftermath of Hurricane Katrina, southeastern Mississippi, September 19-30, 2005

Analyte	Reporting level	Units
<b>Bensulfuron-methyl</b>	0.018	ug/L
<b>Bentazon</b>	0.012	ug/L
<b>Bromacil</b>	0.018	ug/L
<b>Bromoxynil</b>	0.028	ug/L
Caffeine	0.018	ug/L
<b>Carbaryl</b>	0.018	ug/L
<b>Carbofuran</b>	0.016	ug/L
<b>3-Hydroxycarbofuran</b>	0.008	ug/L
<b>Chlorimuron-ethyl</b>	0.032	ug/L
<b>Clopyralid</b>	0.024	ug/L
<b>Cycloate</b>	0.014	ug/L
<b>Dacthal monoacid</b>	0.028	ug/L
<b>2-Chloro-4-isopropylamino-6-amino-s-triazine {CIAT}</b>	0.028	ug/L
<b>Chlordiamino-s-triazine</b>	0.04	ug/L
<b>2-Chloro-6-ethylamino-4-amino-s-triazine {CEAT}</b>	0.08	ug/L
<b>Dicamba</b>	0.036	ug/L
<b>Dichlorprop</b>	0.028	ug/L
<b>Dinoseb</b>	0.038	ug/L
<b>Diphenamid</b>	0.01	ug/L
<b>Diuron</b>	0.015	ug/L
<b>Fenuron</b>	0.019	ug/L
<b>Flumetsulam</b>	0.04	ug/L
<b>Fluometuron</b>	0.016	ug/L
<b>Imazaquin</b>	0.036	ug/L
<b>Imazethapyr</b>	0.038	ug/L
<b>Imidacloprid</b>	0.02	ug/L
<b>Linuron</b>	0.014	ug/L
<b>MCPA</b>	0.03	ug/L
<b>MCPB</b>	0.01	ug/L
Metalaxyl	0.012	ug/L
<b>Methiocarb</b>	0.01	ug/L
<b>Methomyl</b>	0.02	ug/L
<b>Metsulfuron methyl</b>	0.025	ug/L
<b>Neburon</b>	0.012	ug/L
<b>Nicosulfuron</b>	0.04	ug/L
<b>Norflurazon</b>	0.02	ug/L
<b>Oryzalin</b>	0.012	ug/L
<b>Oxamyl</b>	0.03	ug/L
<b>Picloram</b>	0.032	ug/L
<b>Propham</b>	0.03	ug/L
<b>Propiconazole</b>	0.01	ug/L
<b>Propoxur</b>	0.008	ug/L
<b>Siduron</b>	0.02	ug/L
<b>Sulfometuron-methyl</b>	0.038	ug/L
Tebuthiuron	0.026	ug/L
<b>Terbacil</b>	0.016	ug/L
<b>Triclopyr</b>	0.026	ug/L

WASTE WATER ORGANIC COMPOUNDS AND DEGRADATES

(all constituents are from filtered sample)

<b>Cotinine</b>	1	ug/L
<b>5-Methyl-1H-benzotriazole</b>	2	ug/L
<b>Anthraquinone</b>	0.5	ug/L

**Table 7.** Continued--Constituents and compounds included for analysis for samples collected in the aftermath of Hurricane Katrina, southeastern Mississippi, September 19-30, 2005

<b>Analyte</b>	<b>Reporting level</b>	<b>Units</b>
<b>Acetophenone</b>	0.5	ug/L
<b>Acetyl hexamethyl tetrahydronaphthalene (AHTN)</b>	0.5	ug/L
<b>Anthracene</b>	0.5	ug/L
<b>1,4-Dichlorobenzene</b>	0.5	ug/L
<b>Benzo[a]pyrene</b>	0.5	ug/L
<b>Benzophenone</b>	0.5	ug/L
<b>Bromacil</b>	0.5	ug/L
<b>Bromoform</b>	0.5	ug/L
<b>3-tert-Butyl-4-hydroxy anisole (BHA)</b>	5	ug/L
Caffeine	0.5	ug/L
Camphor	0.5	ug/L
<b>Carbaryl</b>	1	ug/L
<b>Carbazole</b>	0.5	ug/L
<b>Chlorpyrifos</b>	0.5	ug/L
Cholesterol	2	ug/L
<b>3-beta-Coprostanol</b>	2	ug/L
<b>Isopropylbenzene</b>	0.5	ug/L
N,N-diethyl-meta-toluamide (DEET)	0.5	ug/L
Diazinon	0.5	ug/L
Dichlorvos	1	ug/L
<b>Bisphenol A</b>	1	ug/L
<b>Triethyl citrate (ethyl citrate)</b>	0.5	ug/L
<b>Tetrachloroethylene</b>	0.5	ug/L
<b>Fluoranthene</b>	0.5	ug/L
<b>Hexahydrohexamethylcyclopentabenzopyran (HHCB)</b>	0.5	ug/L
<b>Indole</b>	0.5	ug/L
<b>Isoborneol</b>	0.5	ug/L
<b>Isophorone</b>	0.5	ug/L
<b>Isoquinoline</b>	0.5	ug/L
<b>d-Limonene</b>	0.5	ug/L
<b>Menthol</b>	0.5	ug/L
Metalaxyl	0.5	ug/L
Metolachlor	0.5	ug/L
Naphthalene	0.5	ug/L
<b>1-Methylnaphthalene</b>	0.5	ug/L
<b>2,6-Dimethylnaphthalene</b>	0.5	ug/L
<b>2-Methylnaphthalene</b>	0.5	ug/L
<b>4-Nonylphenol diethoxylates</b>	5	ug/L
<b>4-Octylphenol diethoxylates</b>	1	ug/L
<b>4-Octylphenol monoethoxylates</b>	1	ug/L
<b>p-Cresol</b>	1	ug/L
<b>4-Cumylphenol</b>	1	ug/L
para-Nonylphenol (total)	5	ug/L
<b>4-n-Octylphenol</b>	1	ug/L
<b>4-tert-Octylphenol</b>	1	ug/L
<b>Phenanthrene</b>	0.5	ug/L
Phenol	0.5	ug/L
<b>Pentachlorophenol</b>	2	ug/L
<b>Tributyl phosphate</b>	0.5	ug/L
<b>Triphenyl phosphate</b>	0.5	ug/L
<b>Tris(2-butoxyethyl)phosphate</b>	0.5	ug/L
<b>Tris(2-chloroethyl)phosphate</b>	0.5	ug/L
<b>Prometon</b>	0.5	ug/L

**Table 7.** Continued--Constituents and compounds included for analysis for samples collected in the aftermath of Hurricane Katrina, southeastern Mississippi, September 19-30, 2005

Analyte	Reporting level	Units
Pyrene	0.5	ug/L
Methyl salicylate	0.5	ug/L
3-Methyl-1(H)-indole (Skatole)	1	ug/L
beta-Sitosterol	2	ug/L
beta-Stigmastanol	2	ug/L
Triclosan	1	ug/L
Tris(dichlorisopropyl)phosphate	0.5	ug/L
VOLATILE ORGANIC COMPOUNDS AND DEGRADATES		
(all constituents are from unfiltered sample)		
1,2,3,4-Tetramethylbenzene	0.14	ug/L
1,2,3,5-Tetramethylbenzene	0.14	ug/L
2-Butanone	2	ug/L
trans-1,4-Dichloro-2-butene	0.7	ug/L
2-Hexanone	0.4	ug/L
4-Methyl-2-pentanone	0.37	ug/L
Acetone	6	ug/L
Acrylonitrile	0.8	ug/L
Benzene	0.021	ug/L
1,2,3-Trichlorobenzene	0.18	ug/L
1,2,3-Trimethylbenzene	0.06	ug/L
1,2,4-Trichlorobenzene	0.12	ug/L
Bromobenzene	0.028	ug/L
Chlorobenzene	0.028	ug/L
Ethylbenzene	0.03	ug/L
1,3-Dichlorobenzene	0.03	ug/L
Butylbenzene	0.12	ug/L
n-Propylbenzene	0.042	ug/L
1,2-Dichlorobenzene	0.048	ug/L
1,4-Dichlorobenzene	0.034	ug/L
sec-Butylbenzene	0.06	ug/L
tert-Butylbenzene	0.06	ug/L
Bromoethene	0.1	ug/L
Bromoform	0.1	ug/L
Hexachlorobutadiene	0.14	ug/L
Carbon disulfide	0.038	ug/L
Tetrachloromethane	0.06	ug/L
Chloroform	0.024	ug/L
Isopropylbenzene	0.038	ug/L
1,1,1,2-Tetrachloroethane	0.03	ug/L
1,1,1-Trichloroethane	0.032	ug/L
1,1,2-Trichlorotrifluoroethane	0.038	ug/L
1,2-Dibromoethane	0.036	ug/L
1,2-Dichloroethane	0.13	ug/L
Hexachloroethane	0.14	ug/L
1,1,2,2-Tetrachloroethane	0.08	ug/L
Chloroethane	0.12	ug/L
Diethyl ether	0.08	ug/L
Ethyl tert-butyl ether	0.03	ug/L
cis-1,2-Dichloroethylene	0.024	ug/L
Tetrachloroethylene	0.03	ug/L
trans-1,2-Dichloroethylene	0.032	ug/L
Trichloroethylene	0.038	ug/L

**Table 7.** Continued--Constituents and compounds included for analysis for samples collected in the aftermath of Hurricane Katrina, southeastern Mississippi, September 19-30, 2005

Analyte	Reporting level	Units
1,1-Dichloroethane	0.035	ug/L
Tetrahydrofuran	1	ug/L
Diisopropyl ether	0.1	ug/L
m- and p-Xylene	0.06	ug/L
1,3,5-Trimethylbenzene	0.044	ug/L
Ethyl methacrylate	0.18	ug/L
Methyl methacrylate	0.2	ug/L
Methyl acrylonitrile	0.4	ug/L
Bromochloromethane	0.12	ug/L
Bromodichloromethane	0.028	ug/L
Dibromochloromethane	0.1	ug/L
Dichlorodifluoromethane	0.18	ug/L
Trichlorofluoromethane	0.08	ug/L
Methyl acrylate	1	ug/L
Bromomethane	0.26	ug/L
Chloromethane	0.17	ug/L
Methyl iodide	0.5	ug/L
tert-Butyl methyl ether	0.1	ug/L
Dibromomethane	0.05	ug/L
Dichloromethane	0.06	ug/L
Naphthalene	0.52	ug/L
o-Xylene	0.038	ug/L
4-Isopropyl-1-methylbenzene	0.08	ug/L
1,2,3-Trichloropropane	0.18	ug/L
1,3-Dichloropropane	0.06	ug/L
2,2-Dichloropropane	0.05	ug/L
1,2-Dibromo-3-chloropropane	0.51	ug/L
1,1-Dichloropropene	0.026	ug/L
3-Chloropropene	0.5	ug/L
cis-1,3-Dichloropropene	0.05	ug/L
trans-1,3-Dichloropropene	0.09	ug/L
1,2-Dichloropropane	0.029	ug/L
1,2,4-Trimethylbenzene	0.056	ug/L
Styrene	0.042	ug/L
tert-Pentyl methyl ether	0.04	ug/L
Toluene	0.02	ug/L
2-Chlorotoluene	0.04	ug/L
o-Ethyl toluene	0.06	ug/L
4-Chlorotoluene	0.05	ug/L
Vinyl chloride	0.08	ug/L
1,1,2-Trichloroethane	0.04	ug/L
1,1-Dichloroethylene	0.024	ug/L

**Table 8.** Constituents and compounds detected in samples collected in the aftermath of Hurricane Katrina, southeastern Mississippi September 19-30, 2005.

[MS, Mississippi; inst, instantaneous; E, estimated (typically below laboratory reporting level); water-quality criteria values with a slash (/) are acute and chronic values, respectively, unless otherwise stated; CMC, criteria maximum concentration (related to acute toxicity); CCC, criteria continuous concentration (related to chronic toxicity); residue upon evaporation (parameter code 70300) is equivalent to total dissolved solids; recom, recommended]

Parameter code	Parameter name	Result	Water-quality criteria or recommendation
<b>02475000 Leaf River near McClain, MS, Sample Date: 9/27/05, Sample Time: 1000</b>			
<b>Physical properties</b>			
00061	Discharge, instantaneous, cubic feet per second	1420	
63676	Turbidity, water, unfiltered, Nephelometric Turbidity Ratio-Units	19	
00300	Dissolved oxygen, water, unfiltered, milligrams per liter	6.5	5 (4 inst) <sup>a</sup>
00400	pH, water, unfiltered, field, standard units	6.5	6-9 <sup>a</sup>
00095	Specific conductance, water, unfiltered, microsiemens per centimeter at 25 degrees Celsius	157	1000 <sup>a</sup>
00010	Temperature, water, degrees Celsius	27.8	32.2 <sup>a</sup>
<b>Nitrogen, Phosphorus, Carbon, and Oxygen Demand</b>			
00623	Ammonia plus organic nitrogen, water, filtered, milligrams per liter as nitrogen	0.41	
00625	Ammonia plus organic nitrogen, water, unfiltered, milligrams per liter as nitrogen	0.48	
00608	Ammonia, water, filtered, milligrams per liter as nitrogen	E0.03	1.5-2 <sup>b</sup>
00631	Nitrite plus nitrate, water, filtered, milligrams per liter as nitrogen	0.34	
00613	Nitrite, water, filtered, milligrams per liter as nitrogen	0.008	
00671	Orthophosphate, water, filtered, milligrams per liter as phosphorus	0.04	
00666	Phosphorus, water, filtered, milligrams per liter	0.064	
00665	Phosphorus, water, unfiltered, milligrams per liter	0.137	0.1 <sup>c</sup>
00680	Organic carbon, water, unfiltered, milligrams per liter	8.1	
00310	Biochemical oxygen demand, water, unfiltered, 5 days at 20 degrees Celsius, milligrams per liter	2	
00340	Chemical oxygen demand, high level, water, unfiltered, milligrams per liter	20	
<b>Major ions, metals, and related chemistry</b>			
00915	Calcium, water, filtered, milligrams per liter	5.36	
00925	Magnesium, water, filtered, milligrams per liter	1.57	
00935	Potassium, water, filtered, milligrams per liter	3.33	
00930	Sodium, water, filtered, milligrams per liter	22.4	
39086	Alkalinity, water, filtered, incremental titration, field, milligrams per liter as calcium carbonate	25	
00453	Bicarbonate, water, filtered, incremental titration, field, milligrams per liter	30	
00940	Chloride, water, filtered, milligrams per liter	15.7	860(CMC)/230(CCC) <sup>d</sup>
00955	Silica, water, filtered, milligrams per liter	12.3	
00945	Sulfate, water, filtered, milligrams per liter	14.5	
70300	Residue on evaporation, dried at 180 degrees Celsius, water, filtered, milligrams per liter	112	1,500 <sup>a</sup>
01106	Aluminum, water, filtered, micrograms per liter	21	750(CMC)/87(CCC) <sup>d</sup>
01000	Arsenic, water, filtered, micrograms per liter	0.9	340/150 <sup>a</sup>
01005	Barium, water, filtered, micrograms per liter	31	50,000 (recom) <sup>c</sup>
01020	Boron, water, filtered, micrograms per liter	20	
01030	Chromium, water, filtered, micrograms per liter	0.18	16/11 <sup>a</sup>
01035	Cobalt, water, filtered, micrograms per liter	0.229	
01040	Copper, water, filtered, micrograms per liter	1.3	7/5 <sup>a</sup>
01046	Iron, water, filtered, micrograms per liter	149	1000 <sup>d</sup>
01049	Lead, water, filtered, micrograms per liter	0.09	30/1.18 <sup>a</sup>
01130	Lithium, water, filtered, micrograms per liter	1.2	
01056	Manganese, water, filtered, micrograms per liter	59.7	
01060	Molybdenum, water, filtered, micrograms per liter	0.4	
01065	Nickel, water, filtered, micrograms per liter	0.97	260/29 <sup>a</sup>
01080	Strontium, water, filtered, micrograms per liter	36.3	
22703	Uranium (natural), water, filtered, micrograms per liter	E0.04	
01085	Vanadium, water, filtered, micrograms per liter	1.1	
01090	Zinc, water, filtered, micrograms per liter	1.2	65/65 <sup>a</sup>
<b>Organic chemicals</b>			
50305	Caffeine, water, filtered, recoverable, micrograms per liter	0.028	
62083	Diethoxynonylphenol, water, filtered, recoverable, micrograms per liter	E3	
32106	Trichloromethane, water, unfiltered, recoverable, micrograms per liter	E0.02	
<b>02478500 Chickasawhay River at Leakesville, MS, Sample Date: 9/27/05, Sample Time: 1330</b>			
<b>Physical properties</b>			
00061	Discharge, instantaneous, cubic feet per second	1750	
63676	Turbidity, water, unfiltered, Nephelometric Turbidity Ratio-Units	73	
00300	Dissolved oxygen, water, unfiltered, milligrams per liter	6.8	5 (4 inst) <sup>a</sup>
00400	pH, water, unfiltered, field, standard units	6.7	6-9 <sup>a</sup>
00095	Specific conductance, water, unfiltered, microsiemens per centimeter at 25 degrees Celsius	88	1000 <sup>a</sup>

**Table 8.** Continued--Constituents and compounds detected in samples collected in the aftermath of Hurricane Katrina, southeastern Mississippi September 19-30, 2005.

Parameter code	Parameter name	Result	Water-quality criteria or recommendation
00010	Temperature, water, degrees Celsius	28.3	32.2 <sup>a</sup>
<b>Nitrogen, Phosphorus, Carbon, and Oxygen Demand</b>			
00623	Ammonia plus organic nitrogen, water, filtered, milligrams per liter as nitrogen	0.22	
00625	Ammonia plus organic nitrogen, water, unfiltered, milligrams per liter as nitrogen	0.47	
00631	Nitrite plus nitrate, water, filtered, milligrams per liter as nitrogen	0.22	
00613	Nitrite, water, filtered, milligrams per liter as nitrogen	E0.004	
00666	Phosphorus, water, filtered, milligrams per liter	0.006	
00665	Phosphorus, water, unfiltered, milligrams per liter	0.052	0.1 <sup>c</sup>
00680	Organic carbon, water, unfiltered, milligrams per liter	6.9	
00340	Chemical oxygen demand, high level, water, unfiltered, milligrams per liter	20	
<b>Major ions, metals, and related chemistry</b>			
00915	Calcium, water, filtered, milligrams per liter	8.06	
00925	Magnesium, water, filtered, milligrams per liter	1.5	
00935	Potassium, water, filtered, milligrams per liter	1.73	
00930	Sodium, water, filtered, milligrams per liter	5.51	
39086	Alkalinity, water, filtered, incremental titration, field, milligrams per liter as calcium carbonate	21	
00453	Bicarbonate, water, filtered, incremental titration, field, milligrams per liter	E25	
00940	Chloride, water, filtered, milligrams per liter	6.3	860(CMC)/230(CCC) <sup>d</sup>
00950	Fluoride, water, filtered, milligrams per liter	E0.1	
00955	Silica, water, filtered, milligrams per liter	10.8	
00945	Sulfate, water, filtered, milligrams per liter	4.2	
70300	Residue on evaporation, dried at 180 degrees Celsius, water, filtered, milligrams per liter	72	1,500 <sup>a</sup>
01106	Aluminum, water, filtered, micrograms per liter	9	750(CMC)/87(CCC) <sup>d</sup>
01000	Arsenic, water, filtered, micrograms per liter	0.5	340/150 <sup>a</sup>
01005	Barium, water, filtered, micrograms per liter	25	50,000 (recom) <sup>c</sup>
01020	Boron, water, filtered, micrograms per liter	19	
01030	Chromium, water, filtered, micrograms per liter	0.09	16/11 <sup>a</sup>
01035	Cobalt, water, filtered, micrograms per liter	0.138	
01040	Copper, water, filtered, micrograms per liter	0.7	7/5 <sup>a</sup>
01046	Iron, water, filtered, micrograms per liter	135	1000 <sup>d</sup>
01049	Lead, water, filtered, micrograms per liter	E0.06	30/1.18 <sup>a</sup>
01130	Lithium, water, filtered, micrograms per liter	1.3	
01056	Manganese, water, filtered, micrograms per liter	25.1	
01065	Nickel, water, filtered, micrograms per liter	0.95	260/29 <sup>a</sup>
01080	Strontium, water, filtered, micrograms per liter	66.6	
22703	Uranium (natural), water, filtered, micrograms per liter	E0.03	
01085	Vanadium, water, filtered, micrograms per liter	0.3	
01090	Zinc, water, filtered, micrograms per liter	0.9	65/65 <sup>a</sup>
<b>Organic chemicals</b>			
62083	Diethoxynonylphenol, water, filtered, recoverable, micrograms per liter	E3	
04025	Hexazinone, water, filtered, recoverable, micrograms per liter	E0.011	
50359	Metalaxyl, water, filtered, recoverable, micrograms per liter	0.71	
04035	Simazine, water, filtered, recoverable, micrograms per liter	0.011	
<b>02479155 Cypress Creek near Janice, MS, Sample Date: 9/19/05, Sample Time: 1100</b>			
<b>Physical properties</b>			
00061	Discharge, instantaneous, cubic feet per second	69	
00300	Dissolved oxygen, water, unfiltered, milligrams per liter	7.7	5 (4 inst) <sup>a</sup>
00400	pH, water, unfiltered, field, standard units	5	6-9 <sup>a</sup>
00095	Specific conductance, water, unfiltered, microsiemens per centimeter at 25 degrees Celsius	23	1000 <sup>a</sup>
00010	Temperature, water, degrees Celsius	25.5	32.2 <sup>a</sup>
<b>Nitrogen, Phosphorus, Carbon, and Oxygen Demand</b>			
00623	Ammonia plus organic nitrogen, water, filtered, milligrams per liter as nitrogen	0.42	
00625	Ammonia plus organic nitrogen, water, unfiltered, milligrams per liter as nitrogen	0.36	
00608	Ammonia, water, filtered, milligrams per liter as nitrogen	E0.02	1.5-2 <sup>b</sup>
00631	Nitrite plus nitrate, water, filtered, milligrams per liter as nitrogen	E0.05	
00666	Phosphorus, water, filtered, milligrams per liter	0.005	
00665	Phosphorus, water, unfiltered, milligrams per liter	0.011	0.1 <sup>c</sup>
00680	Organic carbon, water, unfiltered, milligrams per liter	10.1	



**Table 8.** Continued--Constituents and compounds detected in samples collected in the aftermath of Hurricane Katrina, southeastern Mississippi September 19-30, 2005.

Parameter code	Parameter name	Result	Water-quality criteria or recommendation
<b>Major ions, metals, and related chemistry</b>			
00915	Calcium, water, filtered, milligrams per liter	0.76	
00925	Magnesium, water, filtered, milligrams per liter	0.509	
00935	Potassium, water, filtered, milligrams per liter	0.71	
00930	Sodium, water, filtered, milligrams per liter	2.34	
00940	Chloride, water, filtered, milligrams per liter	3.46	860(CMC)/230(CCC) <sup>d</sup>
00955	Silica, water, filtered, milligrams per liter	12.3	
00945	Sulfate, water, filtered, milligrams per liter	0.7	
70300	Residue on evaporation, dried at 180 degrees Celsius, water, filtered, milligrams per liter	44	1,500 <sup>a</sup>
01106	Aluminum, water, filtered, micrograms per liter	190	750(CMC)/87(CCC) <sup>d</sup>
01000	Arsenic, water, filtered, micrograms per liter	0.6	340/150 <sup>a</sup>
01005	Barium, water, filtered, micrograms per liter	30	50,000 (recom) <sup>c</sup>
01010	Beryllium, water, filtered, micrograms per liter	0.1	130/5.3 <sup>c</sup>
01020	Boron, water, filtered, micrograms per liter	E4	
01025	Cadmium, water, filtered, micrograms per liter	E0.02	1.74/0.62 <sup>a</sup>
01030	Chromium, water, filtered, micrograms per liter	0.43	16/11 <sup>a</sup>
01035	Cobalt, water, filtered, micrograms per liter	0.635	
01040	Copper, water, filtered, micrograms per liter	0.8	7/5 <sup>a</sup>
01046	Iron, water, filtered, micrograms per liter	496	1000 <sup>d</sup>
01049	Lead, water, filtered, micrograms per liter	0.32	30/1.18 <sup>a</sup>
01130	Lithium, water, filtered, micrograms per liter	0.9	
01056	Manganese, water, filtered, micrograms per liter	47.5	
01065	Nickel, water, filtered, micrograms per liter	1.03	260/29 <sup>a</sup>
01080	Strontium, water, filtered, micrograms per liter	8.66	
22703	Uranium (natural), water, filtered, micrograms per liter	0.06	
01085	Vanadium, water, filtered, micrograms per liter	0.5	
01090	Zinc, water, filtered, micrograms per liter	2.9	65/65 <sup>a</sup>
<b>Organic chemicals</b>			
50305	Caffeine, water, filtered, recoverable, micrograms per liter	E0.028	
62070	Camphor, water, filtered, recoverable, micrograms per liter	E0.1	
62082	DEET, water, filtered, recoverable, micrograms per liter	E0.1	
77356	4-Isopropyltoluene, water, unfiltered, recoverable, micrograms per liter	E0.02	
81552	Acetone, water, unfiltered, recoverable, micrograms per liter	E2	
34010	Toluene, water, unfiltered, recoverable, micrograms per liter	0.27	6300/5000 <sup>c</sup>
<b>02479160 Black Creek near Wiggins, MS, Sample Date: 9/22/05, Sample Time: 1015</b>			
<b>Physical properties</b>			
00061	Discharge, instantaneous, cubic feet per second	384	
00300	Dissolved oxygen, water, unfiltered, milligrams per liter	6.9	5 (4 inst) <sup>a</sup>
00400	pH, water, unfiltered, field, standard units	5.7	6-9 <sup>a</sup>
00095	Specific conductance, water, unfiltered, microsiemens per centimeter at 25 degrees Celsius	34	1000 <sup>a</sup>
00010	Temperature, water, degrees Celsius	26.8	32.2 <sup>a</sup>
<b>Nitrogen, Phosphorus, Carbon, and Oxygen Demand</b>			
00623	Ammonia plus organic nitrogen, water, filtered, milligrams per liter as nitrogen	0.35	
00625	Ammonia plus organic nitrogen, water, unfiltered, milligrams per liter as nitrogen	0.32	
00631	Nitrite plus nitrate, water, filtered, milligrams per liter as nitrogen	E0.05	
00666	Phosphorus, water, filtered, milligrams per liter	0.008	
00665	Phosphorus, water, unfiltered, milligrams per liter	0.017	0.1 <sup>c</sup>
00680	Organic carbon, water, unfiltered, milligrams per liter	7	
00340	Chemical oxygen demand, high level, water, unfiltered, milligrams per liter	10	
<b>Major ions, metals, and related chemistry</b>			
00915	Calcium, water, filtered, milligrams per liter	1.48	
00925	Magnesium, water, filtered, milligrams per liter	1.03	
00935	Potassium, water, filtered, milligrams per liter	1.09	
00930	Sodium, water, filtered, milligrams per liter	2.64	
00940	Chloride, water, filtered, milligrams per liter	3.85	860(CMC)/230(CCC) <sup>d</sup>
00955	Silica, water, filtered, milligrams per liter	11	
00945	Sulfate, water, filtered, milligrams per liter	1.7	
70300	Residue on evaporation, dried at 180 degrees Celsius, water, filtered, milligrams per liter	44	1,500 <sup>a</sup>
01106	Aluminum, water, filtered, micrograms per liter	70	750(CMC)/87(CCC) <sup>d</sup>
01000	Arsenic, water, filtered, micrograms per liter	0.8	340/150 <sup>a</sup>
01005	Barium, water, filtered, micrograms per liter	29	50,000 (recom) <sup>c</sup>
01010	Beryllium, water, filtered, micrograms per liter	E0.06	130/5.3 <sup>c</sup>
01020	Boron, water, filtered, micrograms per liter	14	
01030	Chromium, water, filtered, micrograms per liter	0.22	16/11 <sup>a</sup>
01035	Cobalt, water, filtered, micrograms per liter	0.337	

**Table 8.** Continued--Constituents and compounds detected in samples collected in the aftermath of Hurricane Katrina, southeastern Mississippi September 19-30, 2005.

Parameter code	Parameter name	Result	Water-quality criteria or recommendation
01040	Copper, water, filtered, micrograms per liter	0.5	7/5 <sup>a</sup>
01046	Iron, water, filtered, micrograms per liter	409	1000 <sup>d</sup>
01049	Lead, water, filtered, micrograms per liter	0.26	30/1.18 <sup>a</sup>
01130	Lithium, water, filtered, micrograms per liter	1	
01056	Manganese, water, filtered, micrograms per liter	50	
01065	Nickel, water, filtered, micrograms per liter	0.77	260/29 <sup>a</sup>
01145	Selenium, water, filtered, micrograms per liter	E0.4	11.8/4.6 <sup>a</sup>
01080	Strontium, water, filtered, micrograms per liter	11.9	
22703	Uranium (natural), water, filtered, micrograms per liter	E0.03	
01085	Vanadium, water, filtered, micrograms per liter	0.4	
01090	Zinc, water, filtered, micrograms per liter	1.4	65/65 <sup>a</sup>
<b>Organic chemicals</b>			
50305	Caffeine, water, filtered, recoverable, micrograms per liter	E0.093	
34010	Toluene, water, unfiltered, recoverable, micrograms per liter	E0.08	6300/5000 <sup>c</sup>
<b>02479160 Black Creek near Wiggins, MS, Sample Date: 9/29/05, Sample Time: 1430</b>			
<b>Physical properties</b>			
00061	Discharge, instantaneous, cubic feet per second	404	
63676	Turbidity, water, unfiltered, Nephelometric Turbidity Ratio-Units	5	
00300	Dissolved oxygen, water, unfiltered, milligrams per liter	6.8	5 (4 inst) <sup>a</sup>
00400	pH, water, unfiltered, field, standard units	5.8	6-9 <sup>a</sup>
00095	Specific conductance, water, unfiltered, microsiemens per centimeter at 25 degrees Celsius	62	1000 <sup>a</sup>
00010	Temperature, water, degrees Celsius	27.6	32.2 <sup>a</sup>
<b>Nitrogen, Phosphorus, Carbon, and Oxygen Demand</b>			
00623	Ammonia plus organic nitrogen, water, filtered, milligrams per liter as nitrogen	0.38	
00625	Ammonia plus organic nitrogen, water, unfiltered, milligrams per liter as nitrogen	0.35	
00608	Ammonia, water, filtered, milligrams per liter as nitrogen	E0.02	1.5-2 <sup>b</sup>
00631	Nitrite plus nitrate, water, filtered, milligrams per liter as nitrogen	E0.06	
00666	Phosphorus, water, filtered, milligrams per liter	0.005	
00665	Phosphorus, water, unfiltered, milligrams per liter	0.014	0.1 <sup>c</sup>
00680	Organic carbon, water, unfiltered, milligrams per liter	8.3	
00340	Chemical oxygen demand, high level, water, unfiltered, milligrams per liter	20	
<b>Major ions, metals, and related chemistry</b>			
00915	Calcium, water, filtered, milligrams per liter	2.46	
00925	Magnesium, water, filtered, milligrams per liter	2.27	
00935	Potassium, water, filtered, milligrams per liter	1.25	
00930	Sodium, water, filtered, milligrams per liter	3.99	
39086	Alkalinity, water, filtered, incremental titration, field, milligrams per liter as calcium carbonate	5	
00453	Bicarbonate, water, filtered, incremental titration, field, milligrams per liter	6	
00940	Chloride, water, filtered, milligrams per liter	6.83	860(CMC)/230(CCC) <sup>d</sup>
00950	Fluoride, water, filtered, milligrams per liter	E0.1	
00955	Silica, water, filtered, milligrams per liter	12	
00945	Sulfate, water, filtered, milligrams per liter	7.1	
70300	Residue on evaporation, dried at 180 degrees Celsius, water, filtered, milligrams per liter	65	1,500 <sup>a</sup>
01106	Aluminum, water, filtered, micrograms per liter	47	750(CMC)/87(CCC) <sup>d</sup>
01000	Arsenic, water, filtered, micrograms per liter	0.7	340/150 <sup>a</sup>
01005	Barium, water, filtered, micrograms per liter	43	50,000 (recom) <sup>c</sup>
01010	Beryllium, water, filtered, micrograms per liter	E0.04	130/5.3 <sup>c</sup>
01020	Boron, water, filtered, micrograms per liter	55	
01030	Chromium, water, filtered, micrograms per liter	0.2	16/11 <sup>a</sup>
01035	Cobalt, water, filtered, micrograms per liter	0.382	
01040	Copper, water, filtered, micrograms per liter	0.5	7/5 <sup>a</sup>
01046	Iron, water, filtered, micrograms per liter	261	1000 <sup>d</sup>
01049	Lead, water, filtered, micrograms per liter	0.12	30/1.18 <sup>a</sup>
01130	Lithium, water, filtered, micrograms per liter	1.3	
01056	Manganese, water, filtered, micrograms per liter	61.3	
01065	Nickel, water, filtered, micrograms per liter	0.84	260/29 <sup>a</sup>
01080	Strontium, water, filtered, micrograms per liter	17.7	
22703	Uranium (natural), water, filtered, micrograms per liter	E0.03	
01085	Vanadium, water, filtered, micrograms per liter	0.3	
01090	Zinc, water, filtered, micrograms per liter	1.1	65/65 <sup>a</sup>

**Table 8.** Continued--Constituents and compounds detected in samples collected in the aftermath of Hurricane Katrina, southeastern Mississippi September 19-30, 2005.

Parameter code	Parameter name	Result	Water-quality criteria or recommendation
<b>Organic chemicals</b>			
62085	4-Nonylphenol, water, filtered, recoverable, micrograms per liter	E2	
50305	Caffeine, water, filtered, recoverable, micrograms per liter	0.08	
62082	DEET, water, filtered, recoverable, micrograms per liter	E0.1	
62083	Diethoxynonylphenol, water, filtered, recoverable, micrograms per liter	E10	
34010	Toluene, water, unfiltered, recoverable, micrograms per liter	E0.09	6300/5000 <sup>c</sup>
<b>02479300 Red Creek at Vestry, MS, Sample Date: 9/20/05, Sample Time: 1500</b>			
<b>Physical properties</b>			
00061	Discharge, instantaneous, cubic feet per second	369	
00300	Dissolved oxygen, water, unfiltered, milligrams per liter	6.4	5 (4 inst) <sup>a</sup>
00400	pH, water, unfiltered, field, standard units	6	6-9 <sup>a</sup>
00095	Specific conductance, water, unfiltered, microsiemens per centimeter at 25 degrees Celsius	41	1000 <sup>a</sup>
00010	Temperature, water, degrees Celsius	28.3	32.2 <sup>a</sup>
<b>Nitrogen, Phosphorus, Carbon, and Oxygen Demand</b>			
00623	Ammonia plus organic nitrogen, water, filtered, milligrams per liter as nitrogen	0.37	
00625	Ammonia plus organic nitrogen, water, unfiltered, milligrams per liter as nitrogen	0.36	
00631	Nitrite plus nitrate, water, filtered, milligrams per liter as nitrogen	E0.05	
00666	Phosphorus, water, filtered, milligrams per liter	0.008	
00665	Phosphorus, water, unfiltered, milligrams per liter	0.023	0.1 <sup>c</sup>
00680	Organic carbon, water, unfiltered, milligrams per liter	8.4	
00340	Chemical oxygen demand, high level, water, unfiltered, milligrams per liter	20	
<b>Major ions, metals, and related chemistry</b>			
00915	Calcium, water, filtered, milligrams per liter	1.77	
00925	Magnesium, water, filtered, milligrams per liter	0.891	
00935	Potassium, water, filtered, milligrams per liter	1.21	
00930	Sodium, water, filtered, milligrams per liter	3.78	
00940	Chloride, water, filtered, milligrams per liter	5.9	860(CMC)/230(CCC) <sup>d</sup>
00955	Silica, water, filtered, milligrams per liter	12.1	
00945	Sulfate, water, filtered, milligrams per liter	1.5	
70300	Residue on evaporation, dried at 180 degrees Celsius, water, filtered, milligrams per liter	55	1,500 <sup>a</sup>
01106	Aluminum, water, filtered, micrograms per liter	66	750(CMC)/87(CCC) <sup>d</sup>
01000	Arsenic, water, filtered, micrograms per liter	0.7	340/150 <sup>a</sup>
01005	Barium, water, filtered, micrograms per liter	38	50,000 (recom) <sup>c</sup>
01010	Beryllium, water, filtered, micrograms per liter	0.09	130/5.3 <sup>c</sup>
01020	Boron, water, filtered, micrograms per liter	12	
01025	Cadmium, water, filtered, micrograms per liter	E0.03	1.74/0.62 <sup>a</sup>
01030	Chromium, water, filtered, micrograms per liter	0.3	16/11 <sup>a</sup>
01035	Cobalt, water, filtered, micrograms per liter	0.27	
01040	Copper, water, filtered, micrograms per liter	0.9	7/5 <sup>a</sup>
01046	Iron, water, filtered, micrograms per liter	386	1000 <sup>d</sup>
01049	Lead, water, filtered, micrograms per liter	0.2	30/1.18 <sup>a</sup>
01130	Lithium, water, filtered, micrograms per liter	1.1	
01056	Manganese, water, filtered, micrograms per liter	31.6	
01065	Nickel, water, filtered, micrograms per liter	0.9	260/29 <sup>a</sup>
01145	Selenium, water, filtered, micrograms per liter	E0.3	11.8/4.6 <sup>a</sup>
01080	Strontium, water, filtered, micrograms per liter	24.2	
22703	Uranium (natural), water, filtered, micrograms per liter	E0.03	
01085	Vanadium, water, filtered, micrograms per liter	0.4	
01090	Zinc, water, filtered, micrograms per liter	3	65/65 <sup>a</sup>
<b>Organic chemicals</b>			
50305	Caffeine, water, filtered, recoverable, micrograms per liter	E0.106	
62082	DEET, water, filtered, recoverable, micrograms per liter	E0.1	
04025	Hexazinone, water, filtered, recoverable, micrograms per liter	E0.009	
39415	Metolachlor, water, filtered, recoverable, micrograms per liter	E0.005	
81552	Acetone, water, unfiltered, recoverable, micrograms per liter	E1	
34010	Toluene, water, unfiltered, recoverable, micrograms per liter	E0.08	6300/5000 <sup>c</sup>
<b>02479300 Red Creek at Vestry, MS, Sample Date: 9/29/05, Sample Time: 1030</b>			
<b>Physical properties</b>			
00061	Discharge, instantaneous, cubic feet per second	400	
63676	Turbidity, water, unfiltered, Nephelometric Turbidity Ratio-Units	7	
00300	Dissolved oxygen, water, unfiltered, milligrams per liter	6.6	5 (4 inst) <sup>a</sup>
00400	pH, water, unfiltered, field, standard units	5.6	6-9 <sup>a</sup>
00095	Specific conductance, water, unfiltered, microsiemens per centimeter at 25 degrees Celsius	44	1000 <sup>a</sup>
00010	Temperature, water, degrees Celsius	26.6	32.2 <sup>a</sup>

**Table 8.** Continued--Constituents and compounds detected in samples collected in the aftermath of Hurricane Katrina, southeastern Mississippi September 19-30, 2005.

Parameter code	Parameter name	Result	Water-quality criteria or recommendation
<b>Nitrogen, Phosphorus, Carbon, and Oxygen Demand</b>			
00623	Ammonia plus organic nitrogen, water, filtered, milligrams per liter as nitrogen	0.36	
00625	Ammonia plus organic nitrogen, water, unfiltered, milligrams per liter as nitrogen	0.42	
00631	Nitrite plus nitrate, water, filtered, milligrams per liter as nitrogen	E0.06	
00666	Phosphorus, water, filtered, milligrams per liter	0.008	
00665	Phosphorus, water, unfiltered, milligrams per liter	0.024	0.1 <sup>c</sup>
00680	Organic carbon, water, unfiltered, milligrams per liter	10.3	
00310	Biochemical oxygen demand, water, unfiltered, 5 days at 20 degrees Celsius, milligrams per liter	21	
00340	Chemical oxygen demand, high level, water, unfiltered, milligrams per liter	60	
<b>Major ions, metals, and related chemistry</b>			
00915	Calcium, water, filtered, milligrams per liter	1.79	
00925	Magnesium, water, filtered, milligrams per liter	0.917	
00935	Potassium, water, filtered, milligrams per liter	1.52	
00930	Sodium, water, filtered, milligrams per liter	3.9	
39086	Alkalinity, water, filtered, incremental titration, field, milligrams per liter as calcium carbonate	1	
00453	Bicarbonate, water, filtered, incremental titration, field, milligrams per liter	1	
00940	Chloride, water, filtered, milligrams per liter	8.4	860(CMC)/230(CCC) <sup>d</sup>
00955	Silica, water, filtered, milligrams per liter	12.1	
00945	Sulfate, water, filtered, milligrams per liter	1.3	
70300	Residue on evaporation, dried at 180 degrees Celsius, water, filtered, milligrams per liter	62	1,500 <sup>a</sup>
01106	Aluminum, water, filtered, micrograms per liter	93	750(CMC)/87(CCC) <sup>d</sup>
01000	Arsenic, water, filtered, micrograms per liter	0.6	340/150 <sup>a</sup>
01005	Barium, water, filtered, micrograms per liter	40	50,000 (recom) <sup>c</sup>
01010	Beryllium, water, filtered, micrograms per liter	0.06	130/5.3 <sup>c</sup>
01020	Boron, water, filtered, micrograms per liter	18	
01025	Cadmium, water, filtered, micrograms per liter	E0.03	1.74/0.62 <sup>a</sup>
01030	Chromium, water, filtered, micrograms per liter	0.33	16/11 <sup>a</sup>
01035	Cobalt, water, filtered, micrograms per liter	0.272	
01040	Copper, water, filtered, micrograms per liter	1	7/5 <sup>a</sup>
01046	Iron, water, filtered, micrograms per liter	444	1000 <sup>d</sup>
01049	Lead, water, filtered, micrograms per liter	0.28	30/1.18 <sup>a</sup>
01130	Lithium, water, filtered, micrograms per liter	0.8	
01056	Manganese, water, filtered, micrograms per liter	31.6	
01065	Nickel, water, filtered, micrograms per liter	1.09	260/29 <sup>a</sup>
01080	Strontium, water, filtered, micrograms per liter	23.7	
22703	Uranium (natural), water, filtered, micrograms per liter	E0.04	
01085	Vanadium, water, filtered, micrograms per liter	0.4	
01090	Zinc, water, filtered, micrograms per liter	4.3	65/65 <sup>a</sup>
<b>Organic chemicals</b>			
50305	Caffeine, water, filtered, recoverable, micrograms per liter	0.123	
62082	DEET, water, filtered, recoverable, micrograms per liter	E0.1	
81552	Acetone, water, unfiltered, recoverable, micrograms per liter	E2	
34010	Toluene, water, unfiltered, recoverable, micrograms per liter	0.11	6300/5000 <sup>c</sup>
<b>02479330 Pascagoula River at Cumbest Bluff, MS, Sample Date: 9/27/05, Sample Date: 1700</b>			
<b>Physical properties</b>			
63676	Turbidity, water, unfiltered, Nephelometric Turbidity Ratio-Units	26	
00300	Dissolved oxygen, water, unfiltered, milligrams per liter	6.7	5 (4 inst) <sup>a</sup>
00400	pH, water, unfiltered, field, standard units	6.7	6-9 <sup>a</sup>
00095	Specific conductance, water, unfiltered, microsiemens per centimeter at 25 degrees Celsius	91	1000 <sup>a</sup>
00010	Temperature, water, degrees Celsius	28.5	32.2 <sup>a</sup>
<b>Nitrogen, Phosphorus, Carbon, and Oxygen Demand</b>			
00623	Ammonia plus organic nitrogen, water, filtered, milligrams per liter as nitrogen	0.28	
00625	Ammonia plus organic nitrogen, water, unfiltered, milligrams per liter as nitrogen	0.51	
00631	Nitrite plus nitrate, water, filtered, milligrams per liter as nitrogen	0.16	
00613	Nitrite, water, filtered, milligrams per liter as nitrogen	E0.004	
00666	Phosphorus, water, filtered, milligrams per liter	0.014	
00665	Phosphorus, water, unfiltered, milligrams per liter	0.061	0.1 <sup>c</sup>
00680	Organic carbon, water, unfiltered, milligrams per liter	8.7	
00310	Biochemical oxygen demand, water, unfiltered, 5 days at 20 degrees Celsius, milligrams per liter	3	
00340	Chemical oxygen demand, high level, water, unfiltered, milligrams per liter	20	

**Table 8.** Continued--Constituents and compounds detected in samples collected in the aftermath of Hurricane Katrina, southeastern Mississippi September 19-30, 2005.

Parameter code	Parameter name	Result	Water-quality criteria or recommendation
<b>Major ions, metals, and related chemistry</b>			
00915	Calcium, water, filtered, milligrams per liter	4.52	
00925	Magnesium, water, filtered, milligrams per liter	1.23	
00935	Potassium, water, filtered, milligrams per liter	1.85	
00930	Sodium, water, filtered, milligrams per liter	9.77	
39086	Alkalinity, water, filtered, incremental titration, field, milligrams per liter as calcium carbonate	17	
00453	Bicarbonate, water, filtered, incremental titration, field, milligrams per liter	20	
00940	Chloride, water, filtered, milligrams per liter	8.36	860(CMC)/230(CCC) <sup>d</sup>
00955	Silica, water, filtered, milligrams per liter	11.3	
00945	Sulfate, water, filtered, milligrams per liter	7	
70300	Residue on evaporation, dried at 180 degrees Celsius, water, filtered, milligrams per liter	77	1,500 <sup>a</sup>
01106	Aluminum, water, filtered, micrograms per liter	32	750(CMC)/87(CCC) <sup>d</sup>
01000	Arsenic, water, filtered, micrograms per liter	0.7	340/150 <sup>a</sup>
01005	Barium, water, filtered, micrograms per liter	32	50,000 (recom) <sup>c</sup>
01010	Beryllium, water, filtered, micrograms per liter	E0.03	130/5.3 <sup>c</sup>
01020	Boron, water, filtered, micrograms per liter	23	
01030	Chromium, water, filtered, micrograms per liter	0.19	16/11 <sup>a</sup>
01035	Cobalt, water, filtered, micrograms per liter	0.13	
01040	Copper, water, filtered, micrograms per liter	0.6	7/5 <sup>a</sup>
01046	Iron, water, filtered, micrograms per liter	496	1000 <sup>d</sup>
01049	Lead, water, filtered, micrograms per liter	0.1	30/1.18 <sup>a</sup>
01130	Lithium, water, filtered, micrograms per liter	1	
01056	Manganese, water, filtered, micrograms per liter	43.9	
01060	Molybdenum, water, filtered, micrograms per liter	E0.2	
01065	Nickel, water, filtered, micrograms per liter	0.91	260/29 <sup>a</sup>
01080	Strontium, water, filtered, micrograms per liter	38.7	
22703	Uranium (natural), water, filtered, micrograms per liter	E0.04	
01085	Vanadium, water, filtered, micrograms per liter	0.4	
01090	Zinc, water, filtered, micrograms per liter	1.4	65/65 <sup>a</sup>
<b>Organic chemicals</b>			
50305	Caffeine, water, filtered, recoverable, micrograms per liter	0.03	
04025	Hexazinone, water, filtered, recoverable, micrograms per liter	E0.009	
34443	Naphthalene, water, filtered, recoverable, micrograms per liter	E0.1	2300/620 <sup>c</sup>
34010	Toluene, water, unfiltered, recoverable, micrograms per liter	E0.03	6300/5000 <sup>c</sup>
<b>02479560 Escatawpa River near Agricola, MS, Sample Date: 9/20/05, Sample Time: 1045</b>			
<b>Physical properties</b>			
00061	Discharge, instantaneous, cubic feet per second	343	
00300	Dissolved oxygen, water, unfiltered, milligrams per liter	6.6	5 (4 inst) <sup>a</sup>
00400	pH, water, unfiltered, field, standard units	5.5	6-9 <sup>a</sup>
00095	Specific conductance, water, unfiltered, microsiemens per centimeter at 25 degrees Celsius	30	1000 <sup>a</sup>
00010	Temperature, water, degrees Celsius	26.6	32.2 <sup>a</sup>
<b>Nitrogen, Phosphorus, Carbon, and Oxygen Demand</b>			
00623	Ammonia plus organic nitrogen, water, filtered, milligrams per liter as nitrogen	0.47	
00625	Ammonia plus organic nitrogen, water, unfiltered, milligrams per liter as nitrogen	0.4	
00608	Ammonia, water, filtered, milligrams per liter as nitrogen	E0.03	1.5-2 <sup>b</sup>
00631	Nitrite plus nitrate, water, filtered, milligrams per liter as nitrogen	0.1	
00666	Phosphorus, water, filtered, milligrams per liter	E0.003	
00665	Phosphorus, water, unfiltered, milligrams per liter	0.014	0.1 <sup>c</sup>
00680	Organic carbon, water, unfiltered, milligrams per liter	9.5	
00340	Chemical oxygen demand, high level, water, unfiltered, milligrams per liter	20	
<b>Major ions, metals, and related chemistry</b>			
00915	Calcium, water, filtered, milligrams per liter	1.29	
00925	Magnesium, water, filtered, milligrams per liter	0.848	
00935	Potassium, water, filtered, milligrams per liter	0.79	
00930	Sodium, water, filtered, milligrams per liter	2.32	
00940	Chloride, water, filtered, milligrams per liter	4.33	860(CMC)/230(CCC) <sup>d</sup>
00955	Silica, water, filtered, milligrams per liter	9.3	
00945	Sulfate, water, filtered, milligrams per liter	1.4	
70300	Residue on evaporation, dried at 180 degrees Celsius, water, filtered, milligrams per liter	38	1,500 <sup>a</sup>
01106	Aluminum, water, filtered, micrograms per liter	102	750(CMC)/87(CCC) <sup>d</sup>
01000	Arsenic, water, filtered, micrograms per liter	0.8	340/150 <sup>a</sup>
01005	Barium, water, filtered, micrograms per liter	33	50,000 (recom) <sup>c</sup>
01010	Beryllium, water, filtered, micrograms per liter	E0.05	130/5.3 <sup>c</sup>
01020	Boron, water, filtered, micrograms per liter	11	

**Table 8.** Continued--Constituents and compounds detected in samples collected in the aftermath of Hurricane Katrina, southeastern Mississippi September 19-30, 2005.

Parameter code	Parameter name	Result	Water-quality criteria or recommendation
01030	Chromium, water, filtered, micrograms per liter	0.3	16/11 <sup>a</sup>
01035	Cobalt, water, filtered, micrograms per liter	0.756	
01040	Copper, water, filtered, micrograms per liter	0.8	7/5 <sup>a</sup>
01046	Iron, water, filtered, micrograms per liter	477	1000 <sup>d</sup>
01049	Lead, water, filtered, micrograms per liter	0.24	30/1.18 <sup>a</sup>
01130	Lithium, water, filtered, micrograms per liter	0.7	
01056	Manganese, water, filtered, micrograms per liter	41.1	
01065	Nickel, water, filtered, micrograms per liter	1.19	260/29 <sup>a</sup>
01145	Selenium, water, filtered, micrograms per liter	E0.2	11.8/4.6 <sup>a</sup>
01080	Strontium, water, filtered, micrograms per liter	17.1	
22703	Uranium (natural), water, filtered, micrograms per liter	E0.03	
01085	Vanadium, water, filtered, micrograms per liter	0.4	
01090	Zinc, water, filtered, micrograms per liter	3.5	65/65 <sup>a</sup>
<b>Organic chemicals</b>			
50305	Caffeine, water, filtered, recoverable, micrograms per liter	E0.027	
04025	Hexazinone, water, filtered, recoverable, micrograms per liter	E0.009	
39415	Metolachlor, water, filtered, recoverable, micrograms per liter	E0.005	
82670	Tebuthiuron, water, filtered (0.7 micron glass fiber filter), recoverable, micrograms per liter	0.02	
81552	Acetone, water, unfiltered, recoverable, micrograms per liter	E3	
34010	Toluene, water, unfiltered, recoverable, micrograms per liter	E0.05	6300/5000 <sup>c</sup>
<b>02480254 Bluff Creek at Vancleave, MS, Sampling Date: 9/20/05, Sample Time: 1745</b>			
<b>Physical properties</b>			
00300	Dissolved oxygen, water, unfiltered, milligrams per liter	6.2	5 (4 inst) <sup>a</sup>
00400	pH, water, unfiltered, field, standard units	5.3	6-9 <sup>a</sup>
00095	Specific conductance, water, unfiltered, microsiemens per centimeter at 25 degrees Celsius	33	1000 <sup>a</sup>
00010	Temperature, water, degrees Celsius	27.5	32.2 <sup>a</sup>
<b>Nitrogen, Phosphorus, Carbon, and Oxygen Demand</b>			
00623	Ammonia plus organic nitrogen, water, filtered, milligrams per liter as nitrogen	0.3	
00625	Ammonia plus organic nitrogen, water, unfiltered, milligrams per liter as nitrogen	0.36	
00608	Ammonia, water, filtered, milligrams per liter as nitrogen	E0.03	1.5-2 <sup>b</sup>
00666	Phosphorus, water, filtered, milligrams per liter	E0.003	
00665	Phosphorus, water, unfiltered, milligrams per liter	0.013	0.1 <sup>c</sup>
00680	Organic carbon, water, unfiltered, milligrams per liter	9.5	
00340	Chemical oxygen demand, high level, water, unfiltered, milligrams per liter	30	
<b>Major ions, metals, and related chemistry</b>			
00915	Calcium, water, filtered, milligrams per liter	1.05	
00925	Magnesium, water, filtered, milligrams per liter	0.612	
00935	Potassium, water, filtered, milligrams per liter	1.06	
00930	Sodium, water, filtered, milligrams per liter	3.49	
00940	Chloride, water, filtered, milligrams per liter	5.58	860(CMC)/230(CCC) <sup>d</sup>
00955	Silica, water, filtered, milligrams per liter	13.5	
00945	Sulfate, water, filtered, milligrams per liter	1.2	
70300	Residue on evaporation, dried at 180 degrees Celsius, water, filtered, milligrams per liter	42	1,500 <sup>a</sup>
01106	Aluminum, water, filtered, micrograms per liter	116	750(CMC)/87(CCC) <sup>d</sup>
01000	Arsenic, water, filtered, micrograms per liter	0.8	340/150 <sup>a</sup>
01005	Barium, water, filtered, micrograms per liter	34	50,000 (recom) <sup>c</sup>
01010	Beryllium, water, filtered, micrograms per liter	0.08	130/5.3 <sup>c</sup>
01020	Boron, water, filtered, micrograms per liter	12	
01025	Cadmium, water, filtered, micrograms per liter	0.07	1.74/0.62 <sup>a</sup>
01030	Chromium, water, filtered, micrograms per liter	0.37	16/11 <sup>a</sup>
01035	Cobalt, water, filtered, micrograms per liter	1.26	
01040	Copper, water, filtered, micrograms per liter	0.5	7/5 <sup>a</sup>
01046	Iron, water, filtered, micrograms per liter	361	1000 <sup>d</sup>
01049	Lead, water, filtered, micrograms per liter	0.17	30/1.18 <sup>a</sup>
01130	Lithium, water, filtered, micrograms per liter	0.8	
01056	Manganese, water, filtered, micrograms per liter	45.4	
01065	Nickel, water, filtered, micrograms per liter	1.03	260/29 <sup>a</sup>
01145	Selenium, water, filtered, micrograms per liter	E0.2	11.8/4.6 <sup>a</sup>
01080	Strontium, water, filtered, micrograms per liter	10.6	
01057	Thallium, water, filtered, micrograms per liter	E0.02	1400/40 <sup>c</sup>
22703	Uranium (natural), water, filtered, micrograms per liter	E0.03	
01085	Vanadium, water, filtered, micrograms per liter	0.3	
01090	Zinc, water, filtered, micrograms per liter	5.7	65/65 <sup>a</sup>

**Table 8.** Continued--Constituents and compounds detected in samples collected in the aftermath of Hurricane Katrina, southeastern Mississippi September 19-30, 2005.

Parameter code	Parameter name	Result	Water-quality criteria or recommendation
<b>Organic chemicals</b>			
62085	4-Nonylphenol, water, filtered, recoverable, micrograms per liter	E2	
50305	Caffeine, water, filtered, recoverable, micrograms per liter	E0.147	
62082	DEET, water, filtered, recoverable, micrograms per liter	E0.2	
62083	Diethoxynonylphenol, water, filtered, recoverable, micrograms per liter	E2	
34466	Phenol, water, filtered, recoverable, micrograms per liter	E0.9	300/102 <sup>a</sup>
81552	Acetone, water, unfiltered, recoverable, micrograms per liter	E4	
34010	Toluene, water, unfiltered, recoverable, micrograms per liter	0.48	6300/5000 <sup>c</sup>
<b>02480254 Bluff Creek at Vancleave, MS, Sampling Date: 9/27/05, Sample Time: 2030</b>			
<b>Physical properties</b>			
63676	Turbidity, water, unfiltered, Nephelometric Turbidity Ratio-Units	6	
00300	Dissolved oxygen, water, unfiltered, milligrams per liter	6.8	5 (4 inst) <sup>a</sup>
00400	pH, water, unfiltered, field, standard units	5.1	6-9 <sup>a</sup>
00095	Specific conductance, water, unfiltered, microsiemens per centimeter at 25 degrees Celsius	36	1000 <sup>a</sup>
00010	Temperature, water, degrees Celsius	27.5	32.2 <sup>a</sup>
<b>Nitrogen, Phosphorus, Carbon, and Oxygen Demand</b>			
00623	Ammonia plus organic nitrogen, water, filtered, milligrams per liter as nitrogen	0.31	
00625	Ammonia plus organic nitrogen, water, unfiltered, milligrams per liter as nitrogen	0.33	
00608	Ammonia, water, filtered, milligrams per liter as nitrogen	E0.03	1.5-2 <sup>b</sup>
00665	Phosphorus, water, unfiltered, milligrams per liter	0.01	0.1 <sup>c</sup>
00680	Organic carbon, water, unfiltered, milligrams per liter	10.9	
00340	Chemical oxygen demand, high level, water, unfiltered, milligrams per liter	20	
<b>Major ions, metals, and related chemistry</b>			
00915	Calcium, water, filtered, milligrams per liter	0.98	
00925	Magnesium, water, filtered, milligrams per liter	0.637	
00935	Potassium, water, filtered, milligrams per liter	1.15	
00930	Sodium, water, filtered, milligrams per liter	3.54	
39086	Alkalinity, water, filtered, incremental titration, field, milligrams per liter as calcium carbonate	1	
00453	Bicarbonate, water, filtered, incremental titration, field, milligrams per liter	1	
00940	Chloride, water, filtered, milligrams per liter	6.46	860(CMC)/230(CCC) <sup>d</sup>
00955	Silica, water, filtered, milligrams per liter	12.9	
00945	Sulfate, water, filtered, milligrams per liter	1.1	
70300	Residue on evaporation, dried at 180 degrees Celsius, water, filtered, milligrams per liter	48	1,500 <sup>a</sup>
01106	Aluminum, water, filtered, micrograms per liter	151	750(CMC)/87(CCC) <sup>d</sup>
01000	Arsenic, water, filtered, micrograms per liter	0.8	340/150 <sup>a</sup>
01005	Barium, water, filtered, micrograms per liter	36	50,000 (recom) <sup>c</sup>
01010	Beryllium, water, filtered, micrograms per liter	0.1	130/5.3 <sup>c</sup>
01020	Boron, water, filtered, micrograms per liter	16	
01025	Cadmium, water, filtered, micrograms per liter	0.11	1.74/0.62 <sup>a</sup>
01030	Chromium, water, filtered, micrograms per liter	0.39	16/11 <sup>a</sup>
01035	Cobalt, water, filtered, micrograms per liter	1.26	
01040	Copper, water, filtered, micrograms per liter	13.1	7/5 <sup>a</sup>
01046	Iron, water, filtered, micrograms per liter	305	1000 <sup>d</sup>
01049	Lead, water, filtered, micrograms per liter	0.59	30/1.18 <sup>a</sup>
01130	Lithium, water, filtered, micrograms per liter	0.7	
01056	Manganese, water, filtered, micrograms per liter	42.6	
01065	Nickel, water, filtered, micrograms per liter	1.52	260/29 <sup>a</sup>
01080	Strontium, water, filtered, micrograms per liter	10.1	
01057	Thallium, water, filtered, micrograms per liter	E0.03	1400/40 <sup>c</sup>
22703	Uranium (natural), water, filtered, micrograms per liter	E0.03	
01085	Vanadium, water, filtered, micrograms per liter	0.3	
01090	Zinc, water, filtered, micrograms per liter	21.5	65/65 <sup>a</sup>
<b>Organic chemicals</b>			
50305	Caffeine, water, filtered, recoverable, micrograms per liter	E0.1	
62083	Diethoxynonylphenol, water, filtered, recoverable, micrograms per liter	E3	
77356	4-Isopropyltoluene, water, unfiltered, recoverable, micrograms per liter	E0.02	
81552	Acetone, water, unfiltered, recoverable, micrograms per liter	E3	
77128	Styrene, water, unfiltered, recoverable, micrograms per liter	E0.02	
34010	Toluene, water, unfiltered, recoverable, micrograms per liter	1.27	6300/5000 <sup>c</sup>

**Table 8.** Continued--Constituents and compounds detected in samples collected in the aftermath of Hurricane Katrina, southeastern Mississippi September 19-30, 2005.

Parameter code	Parameter name	Result	Water-quality criteria or recommendation
<b>02480599 Tchoutacabouffa River at D'Iberville, MS, Sample Date: 9/21/05, Sample Time: 1030</b>			
<b>Physical properties</b>			
00300	Dissolved oxygen, water, unfiltered, milligrams per liter	3.3	5 (4 inst) <sup>a</sup>
00400	pH, water, unfiltered, field, standard units	5.1	6-9 <sup>a</sup>
00095	Specific conductance, water, unfiltered, microsiemens per centimeter at 25 degrees Celsius	72	1000 <sup>a</sup>
00010	Temperature, water, degrees Celsius	29.1	32.2 <sup>a</sup>
<b>Nitrogen, Phosphorus, Carbon, and Oxygen Demand</b>			
00623	Ammonia plus organic nitrogen, water, filtered, milligrams per liter as nitrogen	0.42	
00625	Ammonia plus organic nitrogen, water, unfiltered, milligrams per liter as nitrogen	0.52	
00666	Phosphorus, water, filtered, milligrams per liter	0.006	
00665	Phosphorus, water, unfiltered, milligrams per liter	0.037	0.1 <sup>c</sup>
00680	Organic carbon, water, unfiltered, milligrams per liter	13.1	
00340	Chemical oxygen demand, high level, water, unfiltered, milligrams per liter	30	
<b>Major ions, metals, and related chemistry</b>			
00915	Calcium, water, filtered, milligrams per liter	1.71	
00925	Magnesium, water, filtered, milligrams per liter	1.03	
00935	Potassium, water, filtered, milligrams per liter	1.18	
00930	Sodium, water, filtered, milligrams per liter	7.11	
00940	Chloride, water, filtered, milligrams per liter	11.5	860(CMC)/230(CCC) <sup>d</sup>
00955	Silica, water, filtered, milligrams per liter	12.7	
00945	Sulfate, water, filtered, milligrams per liter	2.4	
70300	Residue on evaporation, dried at 180 degrees Celsius, water, filtered, milligrams per liter	73	1,500 <sup>a</sup>
01106	Aluminum, water, filtered, micrograms per liter	156	750(CMC)/87(CCC) <sup>d</sup>
01000	Arsenic, water, filtered, micrograms per liter	1.1	340/150 <sup>a</sup>
01005	Barium, water, filtered, micrograms per liter	37	50,000 (recom) <sup>c</sup>
01010	Beryllium, water, filtered, micrograms per liter	0.11	130/5.3 <sup>c</sup>
01020	Boron, water, filtered, micrograms per liter	20	
01025	Cadmium, water, filtered, micrograms per liter	0.05	1.74/0.62 <sup>a</sup>
01030	Chromium, water, filtered, micrograms per liter	0.47	16/11 <sup>a</sup>
01035	Cobalt, water, filtered, micrograms per liter	1.36	
01040	Copper, water, filtered, micrograms per liter	1	7/5 <sup>a</sup>
01046	Iron, water, filtered, micrograms per liter	345	1000 <sup>d</sup>
01049	Lead, water, filtered, micrograms per liter	0.25	30/1.18 <sup>a</sup>
01130	Lithium, water, filtered, micrograms per liter	1.6	
01056	Manganese, water, filtered, micrograms per liter	73.4	
01065	Nickel, water, filtered, micrograms per liter	1.35	260/29 <sup>a</sup>
01080	Strontium, water, filtered, micrograms per liter	20	
22703	Uranium (natural), water, filtered, micrograms per liter	0.04	
01085	Vanadium, water, filtered, micrograms per liter	0.3	
01090	Zinc, water, filtered, micrograms per liter	4.8	65/65 <sup>a</sup>
<b>Organic chemicals</b>			
39632	Atrazine, water, filtered, recoverable, micrograms per liter	E0.007	1,500 <sup>e</sup>
50305	Caffeine, water, filtered, recoverable, micrograms per liter	E0.111	
62082	DEET, water, filtered, recoverable, micrograms per liter	E0.1	
34466	Phenol, water, filtered, recoverable, micrograms per liter	E0.1	300/102 <sup>a</sup>
77356	4-Isopropyltoluene, water, unfiltered, recoverable, micrograms per liter	E0.03	
81552	Acetone, water, unfiltered, recoverable, micrograms per liter	E2	
34010	Toluene, water, unfiltered, recoverable, micrograms per liter	0.31	6300/5000 <sup>c</sup>
38775	Dichlorvos, water, filtered, recoverable, micrograms per liter	E0.03	
<b>02480599 Tchoutacabouffa River at D'Iberville, MS, Sample Date: 9/28/05, Sample Time: 0930</b>			
<b>Physical properties</b>			
63676	Turbidity, water, unfiltered, Nephelometric Turbidity Ratio-Units	5	
00300	Dissolved oxygen, water, unfiltered, milligrams per liter	3.6	5 (4 inst) <sup>a</sup>
00400	pH, water, unfiltered, field, standard units	5.3	6-9 <sup>a</sup>
00095	Specific conductance, water, unfiltered, microsiemens per centimeter at 25 degrees Celsius	79	1000 <sup>a</sup>
00010	Temperature, water, degrees Celsius	28	32.2 <sup>a</sup>
<b>Nitrogen, Phosphorus, Carbon, and Oxygen Demand</b>			
00623	Ammonia plus organic nitrogen, water, filtered, milligrams per liter as nitrogen	0.6	
00625	Ammonia plus organic nitrogen, water, unfiltered, milligrams per liter as nitrogen	0.51	
00666	Phosphorus, water, filtered, milligrams per liter	0.017	
00665	Phosphorus, water, unfiltered, milligrams per liter	0.044	0.1 <sup>c</sup>
00680	Organic carbon, water, unfiltered, milligrams per liter	15.4	
00310	Biochemical oxygen demand, water, unfiltered, 5 days at 20 degrees Celsius, milligrams per liter	11	
00340	Chemical oxygen demand, high level, water, unfiltered, milligrams per liter	50	



**Table 8.** Continued--Constituents and compounds detected in samples collected in the aftermath of Hurricane Katrina, southeastern Mississippi September 19-30, 2005.

Parameter code	Parameter name	Result	Water-quality criteria or recommendation
<b>Major ions, metals, and related chemistry</b>			
00915	Calcium, water, filtered, milligrams per liter	1.78	
00925	Magnesium, water, filtered, milligrams per liter	1.1	
00935	Potassium, water, filtered, milligrams per liter	1.82	
00930	Sodium, water, filtered, milligrams per liter	9.5	
39086	Alkalinity, water, filtered, incremental titration, field, milligrams per liter as calcium carbonate	3	
00453	Bicarbonate, water, filtered, incremental titration, field, milligrams per liter	4	
00940	Chloride, water, filtered, milligrams per liter	14.4	860(CMC)/230(CCC) <sup>d</sup>
00955	Silica, water, filtered, milligrams per liter	11.7	
00945	Sulfate, water, filtered, milligrams per liter	3.3	
70300	Residue on evaporation, dried at 180 degrees Celsius, water, filtered, milligrams per liter	87	1,500 <sup>a</sup>
01106	Aluminum, water, filtered, micrograms per liter	167	750(CMC)/87(CCC) <sup>d</sup>
01000	Arsenic, water, filtered, micrograms per liter	0.9	340/150 <sup>a</sup>
01005	Barium, water, filtered, micrograms per liter	36	50,000 (recom) <sup>c</sup>
01010	Beryllium, water, filtered, micrograms per liter	0.11	130/5.3 <sup>c</sup>
01020	Boron, water, filtered, micrograms per liter	33	
01025	Cadmium, water, filtered, micrograms per liter	E0.02	1.74/0.62 <sup>a</sup>
01030	Chromium, water, filtered, micrograms per liter	0.4	16/11 <sup>a</sup>
01035	Cobalt, water, filtered, micrograms per liter	1.3	
01040	Copper, water, filtered, micrograms per liter	1.1	7/5 <sup>a</sup>
01046	Iron, water, filtered, micrograms per liter	354	1000 <sup>d</sup>
01049	Lead, water, filtered, micrograms per liter	0.34	30/1.18 <sup>a</sup>
01130	Lithium, water, filtered, micrograms per liter	1.1	
01056	Manganese, water, filtered, micrograms per liter	77.5	
01065	Nickel, water, filtered, micrograms per liter	1.25	260/29 <sup>a</sup>
01080	Strontium, water, filtered, micrograms per liter	20.2	
01057	Thallium, water, filtered, micrograms per liter	E0.03	1400/40 <sup>c</sup>
22703	Uranium (natural), water, filtered, micrograms per liter	0.05	
01085	Vanadium, water, filtered, micrograms per liter	0.3	
01090	Zinc, water, filtered, micrograms per liter	5.4	65/65 <sup>a</sup>
<b>Organic chemicals</b>			
50305	Caffeine, water, filtered, recoverable, micrograms per liter	0.075	
62072	Cholesterol, water, filtered, recoverable, micrograms per liter	E1	
62082	DEET, water, filtered, recoverable, micrograms per liter	E0.1	
62083	Diethoxynonylphenol, water, filtered, recoverable, micrograms per liter	E2	
62167	Fipronil sulfide, water, filtered, recoverable, micrograms per liter	E0.005	
<b>02481000 Biloxi River at Wortham, MS, Sample Date: 9/19/05, Sample Time: 1630</b>			
<b>Physical properties</b>			
00061	Discharge, instantaneous, cubic feet per second	60	
00300	Dissolved oxygen, water, unfiltered, milligrams per liter	6.7	5 (4 inst) <sup>a</sup>
00400	pH, water, unfiltered, field, standard units	5.3	6-9 <sup>a</sup>
00095	Specific conductance, water, unfiltered, microsiemens per centimeter at 25 degrees Celsius	35	1000 <sup>a</sup>
00010	Temperature, water, degrees Celsius	26.8	32.2 <sup>a</sup>
<b>Nitrogen, Phosphorus, Carbon, and Oxygen Demand</b>			
00623	Ammonia plus organic nitrogen, water, filtered, milligrams per liter as nitrogen	0.39	
00625	Ammonia plus organic nitrogen, water, unfiltered, milligrams per liter as nitrogen	0.49	
00666	Phosphorus, water, filtered, milligrams per liter	E0.003	
00665	Phosphorus, water, unfiltered, milligrams per liter	0.024	0.1 <sup>c</sup>
00680	Organic carbon, water, unfiltered, milligrams per liter	12.7	
00340	Chemical oxygen demand, high level, water, unfiltered, milligrams per liter	30	
<b>Major ions, metals, and related chemistry</b>			
00915	Calcium, water, filtered, milligrams per liter	1.54	
00925	Magnesium, water, filtered, milligrams per liter	0.928	
00935	Potassium, water, filtered, milligrams per liter	1.16	
00930	Sodium, water, filtered, milligrams per liter	3.23	
00940	Chloride, water, filtered, milligrams per liter	5.1	860(CMC)/230(CCC) <sup>d</sup>
00955	Silica, water, filtered, milligrams per liter	15.7	
00945	Sulfate, water, filtered, milligrams per liter	1.9	
70300	Residue on evaporation, dried at 180 degrees Celsius, water, filtered, milligrams per liter	54	1,500 <sup>a</sup>
01106	Aluminum, water, filtered, micrograms per liter	136	750(CMC)/87(CCC) <sup>d</sup>
01000	Arsenic, water, filtered, micrograms per liter	1	340/150 <sup>a</sup>
01005	Barium, water, filtered, micrograms per liter	54	50,000 (recom) <sup>c</sup>
01010	Beryllium, water, filtered, micrograms per liter	0.14	130/5.3 <sup>c</sup>
01020	Boron, water, filtered, micrograms per liter	9	
01030	Chromium, water, filtered, micrograms per liter	0.52	16/11 <sup>a</sup>

**Table 8.** Continued--Constituents and compounds detected in samples collected in the aftermath of Hurricane Katrina, southeastern Mississippi September 19-30, 2005.

Parameter code	Parameter name	Result	Water-quality criteria or recommendation
01035	Cobalt, water, filtered, micrograms per liter	0.778	
01040	Copper, water, filtered, micrograms per liter	0.7	7/5 <sup>a</sup>
01046	Iron, water, filtered, micrograms per liter	499	1000 <sup>d</sup>
01049	Lead, water, filtered, micrograms per liter	0.24	30/1.18 <sup>a</sup>
01130	Lithium, water, filtered, micrograms per liter	1.2	
01056	Manganese, water, filtered, micrograms per liter	50.2	
01065	Nickel, water, filtered, micrograms per liter	1.68	260/29 <sup>a</sup>
01145	Selenium, water, filtered, micrograms per liter	0.5	11.8/4.6 <sup>a</sup>
01080	Strontium, water, filtered, micrograms per liter	25.7	
22703	Uranium (natural), water, filtered, micrograms per liter	0.06	
01085	Vanadium, water, filtered, micrograms per liter	0.4	
01090	Zinc, water, filtered, micrograms per liter	2.7	65/65 <sup>a</sup>
<b>Organic chemicals</b>			
62085	4-Nonylphenol, water, filtered, recoverable, micrograms per liter	E1	
50305	Caffeine, water, filtered, recoverable, micrograms per liter	E0.097	
62083	Diethoxynonylphenol, water, filtered, recoverable, micrograms per liter	E2	
81552	Acetone, water, unfiltered, recoverable, micrograms per liter	E3	
34010	Toluene, water, unfiltered, recoverable, micrograms per liter	E0.03	6300/5000 <sup>c</sup>
<b>02481000 Biloxi River at Wortham, MS, Sample Date: 9/28/05, Sample Time: 1315</b>			
<b>Physical properties</b>			
00061	Discharge, instantaneous, cubic feet per second	63	
63676	Turbidity, water, unfiltered, Nephelometric Turbidity Ratio-Units	6	
00300	Dissolved oxygen, water, unfiltered, milligrams per liter	6.7	5 (4 inst) <sup>a</sup>
00400	pH, water, unfiltered, field, standard units	5.2	6-9 <sup>a</sup>
00095	Specific conductance, water, unfiltered, microsiemens per centimeter at 25 degrees Celsius	36	1000 <sup>a</sup>
00010	Temperature, water, degrees Celsius	26.3	32.2 <sup>a</sup>
<b>Nitrogen, Phosphorus, Carbon, and Oxygen Demand</b>			
00623	Ammonia plus organic nitrogen, water, filtered, milligrams per liter as nitrogen	0.51	
00625	Ammonia plus organic nitrogen, water, unfiltered, milligrams per liter as nitrogen	0.53	
00608	Ammonia, water, filtered, milligrams per liter as nitrogen	E0.02	1.5-2 <sup>b</sup>
00666	Phosphorus, water, filtered, milligrams per liter	0.005	
00665	Phosphorus, water, unfiltered, milligrams per liter	0.022	0.1 <sup>c</sup>
00680	Organic carbon, water, unfiltered, milligrams per liter	11.5	
00340	Chemical oxygen demand, high level, water, unfiltered, milligrams per liter	30	
<b>Major ions, metals, and related chemistry</b>			
00915	Calcium, water, filtered, milligrams per liter	1.46	
00925	Magnesium, water, filtered, milligrams per liter	0.834	
00935	Potassium, water, filtered, milligrams per liter	1.23	
00930	Sodium, water, filtered, milligrams per liter	3.09	
39086	Alkalinity, water, filtered, incremental titration, field, milligrams per liter as calcium carbonate	2	
00453	Bicarbonate, water, filtered, incremental titration, field, milligrams per liter	3	
00940	Chloride, water, filtered, milligrams per liter	5.23	860(CMC)/230(CCC) <sup>d</sup>
00955	Silica, water, filtered, milligrams per liter	14.4	
00945	Sulfate, water, filtered, milligrams per liter	1.6	
70300	Residue on evaporation, dried at 180 degrees Celsius, water, filtered, milligrams per liter	62	1,500 <sup>a</sup>
01106	Aluminum, water, filtered, micrograms per liter	120	750(CMC)/87(CCC) <sup>d</sup>
01000	Arsenic, water, filtered, micrograms per liter	1	340/150 <sup>a</sup>
01005	Barium, water, filtered, micrograms per liter	46	50,000 (recom) <sup>c</sup>
01010	Beryllium, water, filtered, micrograms per liter	0.11	130/5.3 <sup>c</sup>
01020	Boron, water, filtered, micrograms per liter	19	
01030	Chromium, water, filtered, micrograms per liter	0.41	16/11 <sup>a</sup>
01035	Cobalt, water, filtered, micrograms per liter	0.652	
01040	Copper, water, filtered, micrograms per liter	2.1	7/5 <sup>a</sup>
01046	Iron, water, filtered, micrograms per liter	400	1000 <sup>d</sup>
01049	Lead, water, filtered, micrograms per liter	0.57	30/1.18 <sup>a</sup>
01130	Lithium, water, filtered, micrograms per liter	1.1	
01056	Manganese, water, filtered, micrograms per liter	42	
01065	Nickel, water, filtered, micrograms per liter	1.6	260/29 <sup>a</sup>
01080	Strontium, water, filtered, micrograms per liter	19.8	
22703	Uranium (natural), water, filtered, micrograms per liter	0.05	
01085	Vanadium, water, filtered, micrograms per liter	0.5	
01090	Zinc, water, filtered, micrograms per liter	7.9	65/65 <sup>a</sup>

**Table 8.** Continued--Constituents and compounds detected in samples collected in the aftermath of Hurricane Katrina, southeastern Mississippi September 19-30, 2005.

Parameter code	Parameter name	Result	Water-quality criteria or recommendation
<b>Organic chemicals</b>			
50305	Caffeine, water, filtered, recoverable, micrograms per liter	0.123	
81552	Acetone, water, unfiltered, recoverable, micrograms per liter	E2	
34010	Toluene, water, unfiltered, recoverable, micrograms per liter	E0.05	6300/5000 <sup>c</sup>
<b>02481510 Wolf River near Landon, MS, Sample Date: 9/21/05, Sample Time: 1430</b>			
<b>Physical properties</b>			
00061	Discharge, instantaneous, cubic feet per second	198	
00300	Dissolved oxygen, water, unfiltered, milligrams per liter	7.4	5 (4 inst) <sup>a</sup>
00400	pH, water, unfiltered, field, standard units	5.4	6-9 <sup>a</sup>
00095	Specific conductance, water, unfiltered, microsiemens per centimeter at 25 degrees Celsius	37	1000 <sup>a</sup>
00010	Temperature, water, degrees Celsius	29.3	32.2 <sup>a</sup>
<b>Nitrogen, Phosphorus, Carbon, and Oxygen Demand</b>			
00623	Ammonia plus organic nitrogen, water, filtered, milligrams per liter as nitrogen	0.42	
00625	Ammonia plus organic nitrogen, water, unfiltered, milligrams per liter as nitrogen	0.41	
00666	Phosphorus, water, filtered, milligrams per liter	0.006	
00665	Phosphorus, water, unfiltered, milligrams per liter	0.02	0.1 <sup>c</sup>
00680	Organic carbon, water, unfiltered, milligrams per liter	9.5	
00340	Chemical oxygen demand, high level, water, unfiltered, milligrams per liter	20	
<b>Major ions, metals, and related chemistry</b>			
00915	Calcium, water, filtered, milligrams per liter	1.79	
00925	Magnesium, water, filtered, milligrams per liter	1.02	
00935	Potassium, water, filtered, milligrams per liter	1.29	
00930	Sodium, water, filtered, milligrams per liter	2.73	
00940	Chloride, water, filtered, milligrams per liter	5	860(CMC)/230(CCC) <sup>d</sup>
00955	Silica, water, filtered, milligrams per liter	12.8	
00945	Sulfate, water, filtered, milligrams per liter	2.3	
70300	Residue on evaporation, dried at 180 degrees Celsius, water, filtered, milligrams per liter	55	1,500 <sup>a</sup>
01106	Aluminum, water, filtered, micrograms per liter	79	750(CMC)/87(CCC) <sup>d</sup>
01000	Arsenic, water, filtered, micrograms per liter	1.1	340/150 <sup>a</sup>
01005	Barium, water, filtered, micrograms per liter	43	50,000 (recom) <sup>c</sup>
01010	Beryllium, water, filtered, micrograms per liter	0.16	130/5.3 <sup>c</sup>
01020	Boron, water, filtered, micrograms per liter	12	
01025	Cadmium, water, filtered, micrograms per liter	E0.02	1.74/0.62 <sup>a</sup>
01030	Chromium, water, filtered, micrograms per liter	0.33	16/11 <sup>a</sup>
01035	Cobalt, water, filtered, micrograms per liter	0.864	
01040	Copper, water, filtered, micrograms per liter	0.9	7/5 <sup>a</sup>
01046	Iron, water, filtered, micrograms per liter	327	1000 <sup>d</sup>
01049	Lead, water, filtered, micrograms per liter	0.18	30/1.18 <sup>a</sup>
01130	Lithium, water, filtered, micrograms per liter	1.5	
01056	Manganese, water, filtered, micrograms per liter	68.6	
01065	Nickel, water, filtered, micrograms per liter	1.5	260/29 <sup>a</sup>
01145	Selenium, water, filtered, micrograms per liter	E0.4	11.8/4.6 <sup>a</sup>
01080	Strontium, water, filtered, micrograms per liter	29.2	
22703	Uranium (natural), water, filtered, micrograms per liter	0.05	
01085	Vanadium, water, filtered, micrograms per liter	0.4	
01090	Zinc, water, filtered, micrograms per liter	2.2	65/65 <sup>a</sup>
<b>Organic chemicals</b>			
50305	Caffeine, water, filtered, recoverable, micrograms per liter	E0.164	
81552	Acetone, water, unfiltered, recoverable, micrograms per liter	E3	
34010	Toluene, water, unfiltered, recoverable, micrograms per liter	0.13	6300/5000 <sup>c</sup>
<b>02481510 Wolf River near Landon, MS, Sample Date: 9/28/05, Sample Time: 1615</b>			
<b>Physical properties</b>			
00061	Discharge, instantaneous, cubic feet per second	231	
63676	Turbidity, water, unfiltered, Nephelometric Turbidity Ratio-Units	7	
00300	Dissolved oxygen, water, unfiltered, milligrams per liter	7	5 (4 inst) <sup>a</sup>
00400	pH, water, unfiltered, field, standard units	5.4	6-9 <sup>a</sup>
00095	Specific conductance, water, unfiltered, microsiemens per centimeter at 25 degrees Celsius	38	1000 <sup>a</sup>
00010	Temperature, water, degrees Celsius	28.2	32.2 <sup>a</sup>

**Table 8.** Continued--Constituents and compounds detected in samples collected in the aftermath of Hurricane Katrina, southeastern Mississippi September 19-30, 2005.

Parameter code	Parameter name	Result	Water-quality criteria or recommendation
<b>Nitrogen, Phosphorus, Carbon, and Oxygen Demand</b>			
00623	Ammonia plus organic nitrogen, water, filtered, milligrams per liter as nitrogen	0.42	
00625	Ammonia plus organic nitrogen, water, unfiltered, milligrams per liter as nitrogen	0.47	
00666	Phosphorus, water, filtered, milligrams per liter	0.005	
00665	Phosphorus, water, unfiltered, milligrams per liter	0.021	0.1 <sup>c</sup>
00680	Organic carbon, water, unfiltered, milligrams per liter	12.6	
00310	Biochemical oxygen demand, water, unfiltered, 5 days at 20 degrees Celsius, milligrams per liter	2	
00340	Chemical oxygen demand, high level, water, unfiltered, milligrams per liter	30	
<b>Major ions, metals, and related chemistry</b>			
00915	Calcium, water, filtered, milligrams per liter	1.61	
00925	Magnesium, water, filtered, milligrams per liter	0.932	
00935	Potassium, water, filtered, milligrams per liter	1.63	
00930	Sodium, water, filtered, milligrams per liter	2.82	
39086	Alkalinity, water, filtered, incremental titration, field, milligrams per liter as calcium carbonate	3	
00453	Bicarbonate, water, filtered, incremental titration, field, milligrams per liter	3	
00940	Chloride, water, filtered, milligrams per liter	5.41	860(CMC)/230(CCC) <sup>d</sup>
00955	Silica, water, filtered, milligrams per liter	12.4	
00945	Sulfate, water, filtered, milligrams per liter	2	
70300	Residue on evaporation, dried at 180 degrees Celsius, water, filtered, milligrams per liter	58	1,500 <sup>a</sup>
01106	Aluminum, water, filtered, micrograms per liter	97	750(CMC)/87(CCC) <sup>d</sup>
01000	Arsenic, water, filtered, micrograms per liter	0.9	340/150 <sup>a</sup>
01005	Barium, water, filtered, micrograms per liter	43	50,000 (recom) <sup>c</sup>
01010	Beryllium, water, filtered, micrograms per liter	0.1	130/5.3 <sup>c</sup>
01020	Boron, water, filtered, micrograms per liter	16	
01030	Chromium, water, filtered, micrograms per liter	0.34	16/11 <sup>a</sup>
01035	Cobalt, water, filtered, micrograms per liter	0.878	
01040	Copper, water, filtered, micrograms per liter	1.9	
01046	Iron, water, filtered, micrograms per liter	519	1000 <sup>d</sup>
01049	Lead, water, filtered, micrograms per liter	0.2	30/1.18 <sup>a</sup>
01130	Lithium, water, filtered, micrograms per liter	1	
01056	Manganese, water, filtered, micrograms per liter	66.3	
01065	Nickel, water, filtered, micrograms per liter	1.58	260/29 <sup>a</sup>
01080	Strontium, water, filtered, micrograms per liter	26.9	
22703	Uranium (natural), water, filtered, micrograms per liter	0.05	
01085	Vanadium, water, filtered, micrograms per liter	0.34	
01090	Zinc, water, filtered, micrograms per liter	3.5	65/65 <sup>a</sup>
<b>Organic chemicals</b>			
50305	Caffeine, water, filtered, recoverable, micrograms per liter	0.154	
81552	Acetone, water, unfiltered, recoverable, micrograms per liter	E3	
34010	Toluene, water, unfiltered, recoverable, micrograms per liter	E0.06	6300/5000 <sup>c</sup>
<b>02481660 Jourdan River near Bay St. Louis, MS, Sample Date: 9/21/05, Sample Time: 1715</b>			
<b>Physical properties</b>			
00061	Discharge, instantaneous, cubic feet per second	3540	
00300	Dissolved oxygen, water, unfiltered, milligrams per liter	5.9	5 (4 inst) <sup>a</sup>
00400	pH, water, unfiltered, field, standard units	5.8	6-9 <sup>a</sup>
00095	Specific conductance, water, unfiltered, microsiemens per centimeter at 25 degrees Celsius	102	1000 <sup>a</sup>
00010	Temperature, water, degrees Celsius	29.7	32.2 <sup>a</sup>
<b>Nitrogen, Phosphorus, Carbon, and Oxygen Demand</b>			
00623	Ammonia plus organic nitrogen, water, filtered, milligrams per liter as nitrogen	0.33	
00625	Ammonia plus organic nitrogen, water, unfiltered, milligrams per liter as nitrogen	0.42	
00666	Phosphorus, water, filtered, milligrams per liter	0.006	
00665	Phosphorus, water, unfiltered, milligrams per liter	0.04	0.1 <sup>c</sup>
00680	Organic carbon, water, unfiltered, milligrams per liter	10.5	
00340	Chemical oxygen demand, high level, water, unfiltered, milligrams per liter	20	
<b>Major ions, metals, and related chemistry</b>			
00915	Calcium, water, filtered, milligrams per liter	1.81	
00925	Magnesium, water, filtered, milligrams per liter	1.81	
00935	Potassium, water, filtered, milligrams per liter	1.41	
00930	Sodium, water, filtered, milligrams per liter	12.2	
00940	Chloride, water, filtered, milligrams per liter	20.3	860(CMC)/230(CCC) <sup>d</sup>
00955	Silica, water, filtered, milligrams per liter	10.9	
00945	Sulfate, water, filtered, milligrams per liter	3	
70300	Residue on evaporation, dried at 180 degrees Celsius, water, filtered, milligrams per liter	80	1,500 <sup>a</sup>
01106	Aluminum, water, filtered, micrograms per liter	58	750(CMC)/87(CCC) <sup>d</sup>
01000	Arsenic, water, filtered, micrograms per liter	0.9	340/150 <sup>a</sup>

**Table 8.** Continued--Constituents and compounds detected in samples collected in the aftermath of Hurricane Katrina, southeastern Mississippi September 19-30, 2005.

Parameter code	Parameter name	Result	Water-quality criteria or recommendation
01005	Barium, water, filtered, micrograms per liter	34	50,000 (recom) <sup>c</sup>
01010	Beryllium, water, filtered, micrograms per liter	0.07	130/5.3 <sup>c</sup>
01020	Boron, water, filtered, micrograms per liter	21	
01025	Cadmium, water, filtered, micrograms per liter	0.04	1.74/0.62 <sup>a</sup>
01030	Chromium, water, filtered, micrograms per liter	0.35	16/11 <sup>a</sup>
01035	Cobalt, water, filtered, micrograms per liter	0.442	
01040	Copper, water, filtered, micrograms per liter	5	7/5 <sup>a</sup>
01046	Iron, water, filtered, micrograms per liter	210	1000 <sup>d</sup>
01049	Lead, water, filtered, micrograms per liter	0.18	30/1.18 <sup>a</sup>
01130	Lithium, water, filtered, micrograms per liter	1.4	
01056	Manganese, water, filtered, micrograms per liter	76.4	
01065	Nickel, water, filtered, micrograms per liter	0.88	260/29 <sup>a</sup>
01145	Selenium, water, filtered, micrograms per liter	E0.2	11.8/4.6 <sup>a</sup>
01080	Strontium, water, filtered, micrograms per liter	23.9	
22703	Uranium (natural), water, filtered, micrograms per liter	E0.03	
01085	Vanadium, water, filtered, micrograms per liter	0.2	
01090	Zinc, water, filtered, micrograms per liter	4.6	65/65 <sup>a</sup>
<b>Organic chemicals</b>			
39632	Atrazine, water, filtered, recoverable, micrograms per liter	E0.006	1,500 <sup>e</sup>
50305	Caffeine, water, filtered, recoverable, micrograms per liter	E0.117	
62082	DEET, water, filtered, recoverable, micrograms per liter	E0.1	
39572	Diazinon, water, filtered, recoverable, micrograms per liter	0.065	0.1 <sup>f</sup>
62167	Fipronil sulfide, water, filtered, recoverable, micrograms per liter	E0.007	
38775	Dichlorvos, water, filtered, recoverable, micrograms per liter	E0.17	
<b>02481660 Jourdan River near Bay St. Louis, MS, Sample Date: 9/28/05, Sample Time: 1830</b>			
<b>Physical properties</b>			
00061	Discharge, instantaneous, cubic feet per second	3400	
63676	Turbidity, water, unfiltered, Nephelometric Turbidity Ratio-Units	6	
00300	Dissolved oxygen, water, unfiltered, milligrams per liter	2.3	5 (4 inst) <sup>a</sup>
00400	pH, water, unfiltered, field, standard units	5.3	6-9 <sup>a</sup>
00095	Specific conductance, water, unfiltered, microsiemens per centimeter at 25 degrees Celsius	188	1000 <sup>a</sup>
00010	Temperature, water, degrees Celsius	28.6	32.2 <sup>a</sup>
<b>Nitrogen, Phosphorus, Carbon, and Oxygen Demand</b>			
00623	Ammonia plus organic nitrogen, water, filtered, milligrams per liter as nitrogen	0.46	
00625	Ammonia plus organic nitrogen, water, unfiltered, milligrams per liter as nitrogen	0.57	
00608	Ammonia, water, filtered, milligrams per liter as nitrogen	E0.02	1.5-2 <sup>b</sup>
00666	Phosphorus, water, filtered, milligrams per liter	0.005	
00665	Phosphorus, water, unfiltered, milligrams per liter	0.036	0.1 <sup>c</sup>
00680	Organic carbon, water, unfiltered, milligrams per liter	15.3	
00310	Biochemical oxygen demand, water, unfiltered, 5 days at 20 degrees Celsius, milligrams per liter	2	
00340	Chemical oxygen demand, high level, water, unfiltered, milligrams per liter	30	
<b>Major ions, metals, and related chemistry</b>			
00915	Calcium, water, filtered, milligrams per liter	2.48	
00925	Magnesium, water, filtered, milligrams per liter	2.98	
00935	Potassium, water, filtered, milligrams per liter	2.81	
00930	Sodium, water, filtered, milligrams per liter	23.2	
39086	Alkalinity, water, filtered, incremental titration, field, milligrams per liter as calcium carbonate	4	
00453	Bicarbonate, water, filtered, incremental titration, field, milligrams per liter	5	
00940	Chloride, water, filtered, milligrams per liter	41.3	860(CMC)/230(CCC) <sup>d</sup>
00955	Silica, water, filtered, milligrams per liter	11.3	
00945	Sulfate, water, filtered, milligrams per liter	5.2	
70300	Residue on evaporation, dried at 180 degrees Celsius, water, filtered, milligrams per liter	136	1,500 <sup>a</sup>
01106	Aluminum, water, filtered, micrograms per liter	107	750(CMC)/87(CCC) <sup>d</sup>
01000	Arsenic, water, filtered, micrograms per liter	1	340/150 <sup>a</sup>
01005	Barium, water, filtered, micrograms per liter	35	50,000 (recom) <sup>c</sup>
01010	Beryllium, water, filtered, micrograms per liter	0.06	130/5.3 <sup>c</sup>
01020	Boron, water, filtered, micrograms per liter	35	
01025	Cadmium, water, filtered, micrograms per liter	E0.03	1.74/0.62 <sup>a</sup>
01030	Chromium, water, filtered, micrograms per liter	0.42	16/11 <sup>a</sup>
01035	Cobalt, water, filtered, micrograms per liter	1.06	
01040	Copper, water, filtered, micrograms per liter	1.2	7/5 <sup>a</sup>
01046	Iron, water, filtered, micrograms per liter	293	1000 <sup>d</sup>
01049	Lead, water, filtered, micrograms per liter	0.23	30/1.18 <sup>a</sup>
01130	Lithium, water, filtered, micrograms per liter	1.2	

**Table 8.** Continued--Constituents and compounds detected in samples collected in the aftermath of Hurricane Katrina, southeastern Mississippi September 19-30, 2005.

Parameter code	Parameter name	Result	Water-quality criteria or recommendation
01056	Manganese, water, filtered, micrograms per liter	154	
01065	Nickel, water, filtered, micrograms per liter	1.01	260/29 <sup>a</sup>
01080	Strontium, water, filtered, micrograms per liter	29.5	
01057	Thallium, water, filtered, micrograms per liter	E0.02	1400/40 <sup>c</sup>
22703	Uranium (natural), water, filtered, micrograms per liter	0.04	
01085	Vanadium, water, filtered, micrograms per liter	0.3	
01090	Zinc, water, filtered, micrograms per liter	5.2	65/65 <sup>a</sup>
<b>Organic chemicals</b>			
50305	Caffeine, water, filtered, recoverable, micrograms per liter	0.125	
77356	4-Isopropyltoluene, water, unfiltered, recoverable, micrograms per liter	E0.02	
34010	Toluene, water, unfiltered, recoverable, micrograms per liter	E0.05	6300/5000 <sup>c</sup>

<sup>a</sup>Water quality criteria for intrastate, interstate, and coastal waters, State of Mississippi (State of Mississippi, 2003). Criterion listed here for chromium is for chromium IV, and USGS chromium data listed here are for total chromium including both chromium III and chromium IV; criterion listed here for arsenic is for arsenic III, and USGS arsenic values are for total arsenic; criteria listed here for dissolved oxygen, pH, and temperature are minimum criteria for all waters in Mississippi; criteria listed here for specific conductance and total dissolved solids are for Mississippi waters designated as recreation.

<sup>b</sup>Aquatic life ambient water quality criteria for ammonia update (U.S. Environmental Protection Agency, 1999). Ammonia criteria listed here are based on temperature, pH, and life-stage. This update is adopted by Mississippi as the current criteria for ammonia.

<sup>c</sup>U.S. Environmental Protection Agency "Gold Book" standards (U.S. Environmental Protection Agency, 1986). Barium criterion listed here is a recommended standard. Total phosphorus criterion listed here is recommended for flowing waters that do not discharge into a lake or reservoir.

<sup>d</sup>U.S. Environmental Protection Agency National recommended water quality criteria (U.S. Environmental Protection Agency, 2004b). Criteria for chloride, aluminum, and iron are considered criteria for non-priority pollutants.

<sup>e</sup>Revised draft for aquatic life for atrazine (U.S. Environmental Protection Agency, 2003b).

<sup>f</sup>Draft diazinon criteria (U.S. Environmental Protection Agency, 2003c).

**Table 9.** Results of quality-assurance samples collected at water-quality sites in the aftermath of Hurricane Katrina, southeastern Mississippi, September 19-30, 2005.

[MS, Mississippi; detections above laboratory reporting levels are presented for field blank, equipment blank, and replicate samples; all results are presented for spike sample; E, estimated; <, less than]

Parameter code	Parameter name	Result
<b>EQUIPMENT BLANK, Sample Date - 9/26/05, Sample Time - 1500</b>		
<b>Nitrogen, Phosphorus, Carbon, and Oxygen Demand</b>		
00608	Ammonia, water, filtered, milligrams per liter as nitrogen	E0.02
00623	Ammonia plus organic nitrogen, water, filtered, milligrams per liter as nitrogen	0.16
<b>Major ions, metals, and related chemistry</b>		
00915	Calcium, water, filtered, milligrams per liter	E0.01
00955	Silica, water, filtered, milligrams per liter	E0.04
01046	Iron, water, filtered, micrograms per liter	E4
01085	Vanadium, water, filtered, micrograms per liter	E0.1
01090	Zinc, water, filtered, micrograms per liter	E0.5
<b>Organic chemicals</b>		
62085	4-Nonylphenol, water, filtered, recoverable, micrograms per liter	E2
62064	Acetophenone, water, filtered, recoverable, micrograms per liter	E0.2
62083	Diethoxynonylphenol, water, filtered, recoverable, micrograms per liter	E3
50407	Imazethapyr, water, filtered, recoverable, micrograms per liter	E0.01
34010	Toluene, water, unfiltered, recoverable, micrograms per liter	E0.02
<b>FIELD BLANK 02479300 Red Creek at Vestry, MS, Sample Date - 9/29/05, Sample Time - 1000</b>		
<b>Nitrogen, Phosphorus, Carbon, and Oxygen Demand</b>		
00623	Ammonia plus organic nitrogen, water, filtered, milligrams per liter as nitrogen	0.11
00340	Chemical oxygen demand, high level, water, unfiltered, milligrams per liter	60
<b>Major ions, metals, and related chemistry</b>		
00915	Calcium, water, filtered, milligrams per liter	0.21
00925	Magnesium, water, filtered, milligrams per liter	0.008
00930	Sodium, water, filtered, milligrams per liter	0.51
00940	Chloride, water, filtered, milligrams per liter	3.73
00955	Silica, water, filtered, milligrams per liter	2.41
01106	Aluminum, water, filtered, micrograms per liter	11
01005	Barium, water, filtered, micrograms per liter	2
01025	Cadmium, water, filtered, micrograms per liter	E0.03
01030	Chromium, water, filtered, micrograms per liter	E0.02
01040	Copper, water, filtered, micrograms per liter	3.6
01049	Lead, water, filtered, micrograms per liter	0.12
01056	Manganese, water, filtered, micrograms per liter	0.2
01065	Nickel, water, filtered, micrograms per liter	0.18
01080	Strontium, water, filtered, micrograms per liter	E0.39
01090	Zinc, water, filtered, micrograms per liter	6.8
<b>Organic chemicals</b>		
34466	Phenol, water, filtered, recoverable, micrograms per liter	E0.3
<b>REPLICATE: 02479155 Cypress Creek near Janice, MS, Sample Date - 9/19/05, Sample Time - 1245</b>		
<b>Nitrogen, Phosphorus, Carbon, and Oxygen Demand</b>		
00623	Ammonia plus organic nitrogen, water, filtered, milligrams per liter as nitrogen	0.4
00625	Ammonia plus organic nitrogen, water, unfiltered, milligrams per liter as nitrogen	0.34
00631	Nitrite plus nitrate, water, filtered, milligrams per liter as nitrogen	E0.05
00665	Phosphorus, water, unfiltered, milligrams per liter	0.015
00666	Phosphorus, water, filtered, milligrams per liter	E0.004
00680	Organic carbon, water, unfiltered, milligrams per liter	10
<b>Major ions, metals, and related chemistry</b>		
00900	Hardness, water, milligrams per liter as calcium carbonate	4
00915	Calcium, water, filtered, milligrams per liter	0.74
00925	Magnesium, water, filtered, milligrams per liter	0.496
00935	Potassium, water, filtered, milligrams per liter	0.67
00930	Sodium, water, filtered, milligrams per liter	2.27
00940	Chloride, water, filtered, milligrams per liter	3.44
00955	Silica, water, filtered, milligrams per liter	12.2

**Table 9.** Continued--Results of quality-assurance samples collected at water-quality sites in the aftermath of Hurricane Katrina, southeast Mississippi, September 19-30, 2005.

<b>Parameter</b>		<b>Result</b>
<b>code</b>	<b>Parameter name</b>	
00945	Sulfate, water, filtered, milligrams per liter	0.7
70300	Residue on evaporation, dried at 180 degrees Celsius, water, filtered, milligrams per liter	38
01106	Aluminum, water, filtered, micrograms per liter	186
01000	Arsenic, water, filtered, micrograms per liter	0.6
01005	Barium, water, filtered, micrograms per liter	31
01010	Beryllium, water, filtered, micrograms per liter	0.1
01020	Boron, water, filtered, micrograms per liter	E4
01030	Chromium, water, filtered, micrograms per liter	0.43
01035	Cobalt, water, filtered, micrograms per liter	0.643
01040	Copper, water, filtered, micrograms per liter	1
01046	Iron, water, filtered, micrograms per liter	448
01049	Lead, water, filtered, micrograms per liter	0.38
01130	Lithium, water, filtered, micrograms per liter	0.9
01056	Manganese, water, filtered, micrograms per liter	52.9
01065	Nickel, water, filtered, micrograms per liter	1.09
01145	Selenium, water, filtered, micrograms per liter	E0.4
01080	Strontium, water, filtered, micrograms per liter	8.6
22703	Uranium (natural), water, filtered, micrograms per liter	0.06
01085	Vanadium, water, filtered, micrograms per liter	0.5
01090	Zinc, water, filtered, micrograms per liter	3.3
<b>Organic chemicals</b>		
50305	Caffeine, water, filtered, recoverable, micrograms per liter	E0.054
62070	Camphor, water, filtered, recoverable, micrograms per liter	E0.1
77356	4-Isopropyltoluene, water, unfiltered, recoverable, micrograms per liter	E0.02
81552	Acetone, water, unfiltered, recoverable, micrograms per liter	E3
34010	Toluene, water, unfiltered, recoverable, micrograms per liter	0.27