

Part 6: Chapter 2: Mississippi Commission on Environmental Quality Regulations for Surface Water Quality Criteria for Intrastate, Interstate, and Coastal Waters

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Rule 2.1 General Conditions Applicable to All Surface Waters of the State:

- A. Antidegradation: The policy inherent in the standards shall be to protect water quality existing at the time these water quality standards were adopted and to upgrade or enhance water quality within the State of Mississippi. Waters whose existing quality is better than the established standards will be maintained at high quality unless the Commission finds, after full satisfaction of the intergovernmental coordination and public participation provisions of the State's continuing planning process, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located.

In no event, however, may degradation of water quality interfere with, or become injurious to, existing in-stream water uses. Further, in no case will water quality be degraded below (or above) the base levels set forth in these standards for the protection of the beneficial uses described herein. In addition, the State will assure that there shall be achieved the highest statutory and regulatory requirements for all new and existing point sources and all cost-effective and reasonable best management practices for nonpoint source control.

Where the Commission determines that high quality waters constitute an outstanding national resource, such as waters of National State Parks, Wildlife Refuges, and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected. For the purposes of this rule, existing uses are defined as those uses actually attained in the waterbody on or after November 28, 1975, whether or not they are included in the Water Quality Criteria.

- B. Sampling and Assessment: The limiting values of water quality herein described shall be measured by the Commission in surface waters under consideration as determined by good environmental engineering and scientific practice and after consultation with affected parties. Samples shall be taken from points so distributed over the seasons of the year, time of day, and area and depth of the waters being studied to provide a realistic assessment of water quality. All sampling must be conducted in accordance with the appropriate MDEQ-

approved Quality Management Plan (QMP), Quality Assurance Project Plan (QAPP), or its equivalent.

Water quality assessments are technical reviews of physical, chemical, bacteriological, biological, and/or toxicological data and information to determine the quality of the State's surface water resources. Monitoring data are evaluated against both narrative and numeric water quality criteria to determine if a waterbody is supporting or not supporting its classification(s)/designated use(s). Water quality assessments regarding designated use attainment are conducted in accordance with the most recent version of *Mississippi's Consolidated Listing and Assessment Methodology* (CALM). All samples shall be collected and analyzed in accordance with the appropriate methodology specified in 40 CFR 136 and with the latest edition of *Standard Methods for the Examination of Water and Wastewater* or other methods acceptable to the Commission.

- C. Waterbody Classifications, Designated Uses, and Attainment: Water quality standards define the water quality goals of each waterbody or portion thereof, in part, by designating the use or uses to be made of the water. States adopt water quality standards to protect public health or welfare, to enhance water quality, and to serve the purposes of the Clean Water Act: (1) provide, wherever attainable, water quality for the protection and propagation of fish, shellfish, and wildlife, as well as, recreation in and on the water and (2) consider the use and value of State waters for public water supplies, protection and propagation of fish, shellfish and wildlife, recreation in and on the water, agriculture and industrial purposes, and navigation.

The State of Mississippi assigns one or more waterbody classifications to all Surface Waters of the State. Each waterbody classification has one or more corresponding designated uses. A waterbody, or a specific waterbody segment, may be assigned multiple waterbody classifications. When multiple classifications are assigned to a waterbody, the State must ensure protection of the most sensitive use. The State must also consider the water quality standards of downstream waters and ensure that its water quality standards provide for the attainment and maintenance of the water quality standards of downstream waters. In no case shall it be permissible to deposit or introduce materials into Surface Waters of the State that will cause impairment of the designated use(s) of said waters.

Certain Surface Waters of the State may not fall within desired or prescribed limitations as outlined within these water quality standards. In such instances, the Commission may authorize exceptions or alternatives to these criteria as described in more detail within Rule 2.5 Implementation of Water Quality Standards.

- D. Natural Conditions: Natural conditions are defined as background water quality conditions due only to non-anthropogenic sources. The criteria herein apply specifically with regard to substances attributed to sources (permitted discharges, nonpoint sources, or in-stream activities) as opposed to natural phenomena. Some waterbodies may have characteristics that are naturally outside the criteria established herein. Therefore, naturally occurring conditions that preclude attainment of these criteria should not be interpreted as violations of the criteria.

- E. Site-Specific Modified Criteria: In some instances, the statewide aquatic life criteria for one or more parameters may not be appropriate for a particular waterbody or waterbody segment. In such circumstances, the Commission may establish site-specific modified aquatic life criteria for one or more parameters applicable to a specific waterbody or waterbody segment. Site-specific modified aquatic life criteria must be based on natural conditions, the recalculation procedure outlined in *Revised Deletion Process for the Site-Specific Recalculation Procedure for Aquatic Life Criteria - 2013 (U.S. EPA-823-R-13-001)*, or other scientifically defensible methods.

Site-specific modified aquatic life criteria must be based on sound scientific rationale and supported by adequate scientific evidence to validate that the modified criteria are more appropriate for the identified waterbody or waterbody segment. All site-specific modified aquatic life criteria must fully maintain and protect the designated use(s) within the identified waterbody or waterbody segment. All site-specific modified aquatic life criteria must also protect the attainment of water quality standards within downstream waters. Site-specific modified aquatic life criteria are subject to Mississippi public participation requirements for revisions to water quality standards and will be subject to review by the U.S. EPA.

- F. Criteria for New Materials: Industries continue to produce new materials whose characteristics and effects are unknown at this time or for which national water quality criteria recommendations have not been established. For the purposes of setting water quality standards or permit limits on a case-by-case basis, these new materials shall be evaluated on their merits as information becomes available to the Commission. Sources of information shall include, but not be limited to, the latest edition of *Quality Criteria for Water*, prepared by the U.S. Environmental Protection Agency (U.S. EPA) pursuant to Section 304(a) of the Clean Water Act and Title XIV of the Federal Public Health Services Act: Safety of Public Water Systems (Safe Drinking Water Act).

- G. Water Contact Advisories:

Bacteria: According to 40 CFR 131.41(b), Coastal Recreational Waters are defined as marine coastal waters (including coastal estuaries) that are suitable for recreational purposes, including but not limited to, such water contact activities as swimming, wading, and water skiing. Coastal recreational waters do not include inland waters or waters upstream from the mouth of a river or a stream having a natural connection to the open sea. Water quality monitoring for bacteria is conducted by MDEQ within Coastal Recreational Waters to protect the health of bathers. Water contact is discouraged on Mississippi's public access bathing beaches along the shoreline of Jackson, Harrison, and Hancock Counties when enterococci exceed 104 colonies per 100 ml. When enterococci counts exceed 104 per 100 ml at the public access beaches, water contact advisories are issued by Mississippi's Beach Monitoring Task Force.

- H. Definitions:

- (1) Acute criterion or Criteria Maximum Concentration (CMC) is the highest concentration of a pollutant to which aquatic life can be exposed for a short period of time (1-hour average) without deleterious effects. (40 CFR 131.36)

- (2) Best management practice (BMP) means a structural or non-structural management-based practice used singularly or in combination to reduce nonpoint source inputs to receiving waters in order to achieve water quality protection goals.
- (3) Bioconcentration factor (BCF) is defined as the ratio (in L/kg-tissue) of the concentration of a substance in tissue of an aquatic organism to its concentration in the ambient water, in situations where the organism is exposed through the water only and the ratio does not change substantially over time. (U.S. EPA-822-B-00-004)
- (4) Biological integrity is defined as the ability of a system to support and maintain a balanced, integrated, and adaptive community of organisms having a composition, diversity, and functional organization comparable to that of natural habitats of the region.
- (5) Cancer Potency Factor (CPF) is a measure of the cancer-causing potency of a substance estimated by the upper 95 percent confidence limit of the slope of a straight line calculated by the Linearized Multistage Model according to the U.S. EPA Guidelines (FR 51(185): 339992-34003, and FR 45(231 Part V); 79318-79379).
- (6) Chronic criterion or Criteria Continuous Concentration (CCC) is the highest concentration of a pollutant to which aquatic life can be exposed for an extended period of time (4 days) without deleterious effects. (40 CFR 131.36)
- (7) Clean techniques refers to an integrated system of sample collection and laboratory analytical procedures designed to detect concentrations of trace metals below criteria levels and eliminate or minimize inadvertent sample contamination that can occur during traditional sampling practices.
- (8) Composite sampling is a technique whereby multiple temporally or spatially discrete media or tissue samples are combined, thoroughly homogenized, and treated as a single sample.
- (9) E. coli (*Escherichia coli*) is a common inhabitant of the intestinal tract of warm-blooded animals, and its presence in water samples is an indication of fecal pollution and the possible presence of enteric pathogens.
- (10) Enteric pathogens are a species of bacteria can be highly pathogenic when they enter and colonize the human digestive tract.
- (11) Existing uses are those uses actually attained in the waterbody on or after November 28, 1975, whether or not they are included in the water quality standards.
- (12) Grab samples are samples where the entire sample is collected in one uninterrupted interval.

- (13) Highest Attainable Use is the modified aquatic life, wildlife, or recreation use that is both closest to the uses specified in section 101(a)(2) of the Clean Water Act and attainable, based on the evaluation of the factor(s) in § 131.10(g) that preclude(s) attainment of the use and any other information or analyses that were used to evaluate attainability. There is no required highest attainable use where the State demonstrates the relevant use specified in section 101(a)(2) of the Clean Water Act and sub-categories of such a use are not attainable.
- (14) Mean Annual Flow is the total of daily mean flows for the full period of record divided by the total days for the full period of record.
- (15) Membrane Filtration (MF) is a method of quantitative or qualitative analysis of bacterial or particulate matter in a water sample filtered through a membrane capable of retaining bacteria.
- (16) Modified criterion is a waterbody-specific criterion adopted to protect either the Modified Fish and Wildlife or Drainage Waters classifications. The criterion should be supported by the findings of the respective waterbody's use attainability analysis in support of the designated use change and reflect the use of scientifically defensible methods. Following adoption of modified criteria into Rule 2.4, the state will submit the modified criteria for review and require action by the U.S. EPA before the modified criteria supersede the previously applicable criterion.
- (17) Most probable number (MPN) is the most probable number of coliform-group organisms per unit volume of sample water.
- (18) Pollutant minimization program in the context of 40 CFR 131.14, is a structured set of activities to improve processes and pollutant controls that will prevent and reduce pollutant loadings.
- (19) Point source is a stationary location or fixed facility from which pollutants are discharged or emitted. Also, any single identifiable source of pollution, e.g., a pipe, ditch, or ship.
- (20) 7Q10 is the average streamflow rate over seven consecutive days that may be expected to be reached as an annual minimum no more frequently than one year in ten years.
- (21) 7Q2 is the average streamflow rate over seven consecutive days that may be expected to be reached as an annual minimum no more frequently than one year in two years.
- (22) Stratification is the formation of layers of water within a waterbody that are of different densities. The density difference may be caused by variations of temperature, salinity, or concentrations of other dissolved substances within the water at different depths.

- (23) Surface Waters of the State means all waters within the jurisdiction of this state, including all streams, lakes, ponds, impounding reservoirs, marshes, watercourses, waterways, wells, springs, irrigation systems, drainage systems, and all other bodies or accumulations of water, natural or artificial, situated wholly or partly within or bordering upon the state, and such coastal waters as are within the jurisdiction of the state, except lakes, ponds or other surface waters which are wholly landlocked and privately owned, and which are not regulated under the Clean Water Act (33 U.S.C. 1251 et seq).
- (24) Threshold odor number is the number of times a sample needs to be diluted with clean water in order to reach the level that smell is not detectable.
- (25) Toxic substance means any substance or combination of substances (including disease-causing agents), which after discharge and upon exposure, ingestion, inhalation, or assimilation into any organism, whether directly from the environment or indirectly by ingestion through food chains, has the potential to cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunctions or suppression in reproduction or growth) or physical deformities in such organisms or their offspring.
- (26) Use attainability analysis is a structured scientific assessment of the factors affecting the attainment of a designated use. This assessment may include physical, chemical, biological, and economic factors as described in 40 CFR 131.10(g).
- (27) Toxic substance means any substance or combination of substances (including disease-causing agents), which after discharge and upon exposure, ingestion, inhalation, or assimilation into any organism, whether directly from the environment or indirectly by ingestion through food chains, has the potential to cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunctions or suppression in reproduction or growth) or physical deformities in such organisms or their offspring.
- (28) Waters of the State means all waters within the jurisdiction of this state, including all streams, lakes, ponds, impounding reservoirs, marshes, watercourses, waterways, wells, springs, irrigation systems, drainage systems, and all other bodies or accumulations of water, surface and underground, natural or artificial, situated wholly or partly within or bordering upon the state, and such coastal waters as are within the jurisdiction of the state, except lakes, ponds or other surface waters which are wholly landlocked and privately owned, and which are not regulated under the Clean Water Act (33 U.S.C. 1251 et seq). Source: Miss. Code Ann. § 49-17-5(1)(f)
- (29) Water quality standards variance is a time-limited designated use and criterion for a specific pollutant(s) or water quality parameter(s) that reflect the highest attainable condition during the term of the water quality standards variance.

Source: Miss. Code Ann. §§ 49-2-1, et seq. and 49-17-1, et seq.

Rule 2.2 Minimum Conditions Applicable to All Surface Waters of the State:

A. Narrative Standards:

- (1) Waters shall be free from substances attributable to municipal, industrial, agricultural, or other discharges that will settle to form putrescent or otherwise objectionable sludge deposits.
- (2) Waters shall be free from floating debris, oil, scum, and other floating materials attributable to municipal, industrial, agricultural, or other discharges in amounts sufficient to be unsightly or deleterious.
- (3) Waters shall be free from materials attributable to municipal, industrial, agricultural, or other discharges producing color, odor, taste, total suspended or dissolved solids, sediment, turbidity, or other conditions in such degree as to create a nuisance, render the waters injurious to public health, recreation, or to aquatic life and wildlife, or adversely affect the palatability of fish, aesthetic quality, or impair the waters for any designated use. Except as prohibited in Rule 2.5.C., the turbidity outside the limits of a 750-foot mixing zone shall not exceed the background turbidity at the time of discharge by more than 50 Nephelometric Turbidity Units (NTU). Exemptions to the turbidity standard may be granted under the following circumstances:
 - (a) in cases of emergency to protect the public health and welfare
 - (b) for environmental restoration projects which will result in reasonable and temporary deviations and which have been reviewed and approved by the Department of Environmental Quality.
- (4) Waters shall be free from substances attributable to municipal, industrial, agricultural, or other discharges in concentrations or combinations that are toxic or harmful to humans, animals, or aquatic life. Specific requirements for toxicity are found in Rule 2.2.F.
- (5) Municipal wastes, industrial wastes, or other wastes shall receive effective treatment or control in accordance with Section 301, 306, and 307 of the Clean Water Act. A degree of treatment greater than defined in these sections may be required when necessary to protect designated uses.

B. Waterbody Classifications and Designated Uses: The State of Mississippi assigns one or more waterbody classifications to all Surface Waters of the State. Each waterbody classification has one or more corresponding designated uses. The waterbody classifications and corresponding designated uses are provided in Table 1. All Surface Waters of the State default to the Fish and Wildlife Classification. Any waterbody classified as Public Water Supply, Recreation, or Shellfish Harvesting shall meet not only the criteria to support its respective classification, but also shall meet the criteria to support the Fish and Wildlife Classification.

Table 1. Mississippi Waterbody Classifications and Designated Uses

MS Waterbody Classifications	U.S. EPA Associated Designated Uses
Fish and Wildlife	Aquatic Life Use* Fish Consumption* Secondary Contact Recreation
Recreation	Primary Contact Recreation*
Public Water Supply	Drinking Water Supply*
Shellfish Harvesting	Shellfish Consumption*
Modified Fish and Wildlife	Aquatic Life Use-Modified Fish Consumption* Secondary Contact Recreation
Drainage Waters	Aquatic Life Use-Drainage Waters Fish Consumption* Secondary Contact Recreation
Outstanding Mississippi Water**	Aquatic Life Use* Fish Consumption* Secondary Contact Recreation

* Denotes designated uses as outlined in the Clean Water Act

** All existing designated uses will remain in place for any waterbody or waterbody segment assigned the classification of Outstanding Mississippi Water

- C. Dissolved Oxygen: Dissolved oxygen concentrations shall be maintained at a daily average of not less than 5.0 mg/l with an instantaneous minimum of not less than 4.0 mg/l.

When possible, samples should be taken from ambient sites according to the following guidelines:

For waterbodies that are not stratified, samples should be taken:

At mid-depth if the total water column depth is 10 feet or less.

At 5 feet from the water surface if the total water column depth is greater than 10 feet.

For waters that are stratified, samples should be taken:

At mid-depth of the epilimnion if the epilimnion depth is 10 feet or less.

At 5 feet from the water surface if the epilimnion depth is greater than 10 feet.

- D. pH: The normal pH of the waters shall be 6.0 to 9.0. The discharge of waters or wastewaters shall not cause the pH to vary more than 1.0 unit within this range, nor be less than 6.0, nor be greater than 9.0. Variations may be allowed on a case-by-case basis if the Commission determines that there will be no detrimental effect on attainment of the waterbody's designated use(s) as a result of the larger pH change. In black water streams and in those watersheds with highly acidic soils, the pH may be lower than 6.0 due to natural conditions.

- E. Temperature: The maximum water temperature increase above natural temperatures shall not exceed 5°F (2.8°C) in streams, lakes, and reservoirs, nor shall the maximum water temperature exceed 90°F (32.2°C), except that in the Tennessee River, the temperature shall not exceed 86°F (30°C). In lakes and reservoirs, there shall be no withdrawals from

or discharge of heated waters to the hypolimnion unless it can be shown that such discharge will be beneficial to water quality.

In all waters, the normal daily and seasonal temperature variations that were present before the addition of artificial heat shall be maintained. The maximum water temperature shall not exceed 90°F (32.2°C) in coastal or estuarine waters. The discharge of any heated waste into any coastal or estuarine waters shall not raise temperatures more than 4°F (2.2°C) above natural background temperatures during the months of October through May nor more than 1.5°F (0.8°C) above natural background temperature during the months of June through September.

There shall be no thermal block to the migration of aquatic organisms. Requirements for zones of passage as referenced in Rule 2.5.C. shall apply. The general requirements of Rule 2.1.B. state that samples should be taken from points so distributed over the seasons of the year, time of day, and area and depth of the waters being studied as to permit a realistic assessment of water quality. Therefore, the temperature shall be measured during the environmentally critical period. In addition, temperature shall be measured at a depth of 5 feet in waters 10 feet or greater in depth; and for those waters less than 10 feet in depth, temperature criteria will be applied at mid-depth.

In those specific cases where natural conditions elevate the temperatures in excess of the limits expressed herein, Rule 2.2.E. shall apply on a case-by-case basis. The discharge of any heated waters into a stream, lake, or reservoir shall not raise temperatures more than 5°F (2.8°C) above natural condition temperatures. The discharge of any heated waste into any coastal or estuarine waters shall not raise temperatures more than 4°F (2.2°C) above natural condition temperatures during the months of October through May nor more than 1.5°F (0.8°C) above natural condition temperatures during the months of June through September. This will also be considered on a case-by-case basis requiring evidence that the aquatic life of the waterbody will not be adversely impacted by the elevated temperatures.

F. Toxic Substances:

(1) Aquatic Life and Human Health Standards

- (a) Aquatic Life - The concentration of toxic substances in Surface Waters of the State shall not result in chronic or acute toxicity or impairment of the uses of aquatic life. Toxicity concentrations in Surface Waters of the State in excess of these values shown in Table 2 will be assessed to determine chronic or acute toxicity, and/or the impairment of the uses of aquatic life. Chronic and/or acute toxicity will be determined in accordance with the most recent version of the U.S. EPA's *Water Quality Standards Handbook* and *Technical Support Document for Water Quality-Based Toxics Control* (U.S. EPA-505/2-90-001, March 1991). Regardless of the results of chronic or acute toxicity bioassay surveys, the concentrations of toxic substances shall not exceed the chronic or acute values, except as provided for in Rules 2.2.F.5(a) and 2.2.F.5(b).

- (b) Human Health - The concentration of toxic substances shall not exceed the level necessary to protect human health through exposure routes of fish (and shellfish) tissue consumption, water consumption, or other routes identified as appropriate for the waterbody.
- (2) Numeric criteria for all Surface Waters of the State are established herein for certain toxic pollutants for which the U.S. EPA has published national criteria recommendations for the protection of aquatic life and human health pursuant to Section 304(a) of the Clean Water Act in addition to chlorine and ammonia. The pollutants are listed in Table 2 and are expressed as the dissolved phase of the parameter.
 - (3) Ammonia toxicity shall be evaluated according to U.S. EPA guidelines published in *Aquatic Life Ambient Water Quality Criteria for Ammonia (Freshwater)-2013* (U.S. EPA-822-R-18-002) or *Ambient Water Quality Criteria for Ammonia (Saltwater)-1989* (U.S. EPA-440/5-88-004).
 - (4) Application of Numerical Criteria:
 - (a) When evaluating human health effects all waters must comply with the Organisms Only criteria except for waters classified as Public Water Supply and all stream segments within 50 stream miles upstream of a drinking water intake. Stream segments that are classified as Public Water Supply or are within 50 miles upstream of a drinking water intake shall comply with the Water and Organisms criteria.
 - (b) When applying acute or chronic toxicity or human health criteria the following stream flows shall be used:

Acute Toxicity - 7Q10
Chronic Toxicity - 7Q10
Human Health - Mean Annual Flow
 - (c) Criteria for certain metals may be modified on a site-specific basis when a water effect ratio (WER) study is conducted in accordance with Mississippi's *Wastewater Regulations for National Pollutant Discharge Elimination System (NPDES) Permits, Underground Injection Control (UIC) Permits, State Permits, Water Quality Based Effluent Limitations and Water Quality Certification*, Title 11, Part 6, Chapter 1. In these instances, the criterion for the specific metal in the affected waterbody shall be equal to the criterion concentrations calculated using the following equations:

$$\text{CMC} = \text{WER} * \text{Acute}$$
$$\text{CCC} = \text{WER} * \text{Chronic}$$

Where: CCC = Criteria Continuous Concentration
CMC = Criteria Maximum Concentration
WER = Water Effects Ratio for a Specific Pollutant
Acute = Acute Criterion from Table 2
Chronic = Chronic Criterion from Table 2

When a WER study has not been conducted, the criterion listed in Table 2 of this regulation shall apply. The value of the WER is presumed to equal one in the absence of data to indicate otherwise.

- (5) Discharger-Specific Modified Criteria:
- (a) Existing Discharges
- (1) The Commission may establish discharger-specific modified criteria for existing discharges if all of the following conditions are satisfied:
- (i) Discharge existed prior to December 1, 1988.
- (ii) Discharger performs acute and/or chronic bioassays, instream biological assessments, and other evaluations as deemed appropriate by the Commission.
- (iii) The designated uses of the waters are maintained.
- (2) All discharger-specific modified criteria will be subject to Mississippi public participation requirements for revisions to water quality standards and will be subject to review by the U.S. EPA.
- (b) New Source Discharges
- (1) The Commission may establish discharger-specific modified criteria for new source discharges if the discharger can demonstrate that established State water quality criteria are based on conditions not applicable to Mississippi such as, but not limited to, water quality criteria established based on the use of species not indigenous to Mississippi. The *Revised Deletion Process for the Site-Specific Recalculation Procedure for Aquatic Life Criteria* (U.S. EPA-823-R-13-001) should be applied for any revisions to the composition of the sensitive species distribution to better reflect the taxonomy of species within a specific waterbody or location.

- (2) All discharger-specific modified criteria will be subject to Mississippi public participation requirements for revisions to water quality standards and will be subject to review by the U.S. EPA if the discharge is to a Water of the United States. Discharges to Surface Waters of the State which are not within federal jurisdiction will not be subject to U.S. EPA review.
- (6) Toxic and Human Health Parameters for which No State Numeric Criteria have been Established:
- (a) For those toxic and human health parameters for which no State numeric criteria have been established, the Commission shall determine criteria using available references which shall include, but not be limited to, the latest version of U.S. EPA *Quality Criteria for Water* (Section 304(a)), Federal regulations under Section 307 of the Clean Water Act, and Federal regulations under Title XIV of the Federal Public Health Services Act: Safety of Public Water Systems (Safe Drinking Water Act).
 - (b) The not to be exceeded value for criteria published in 1980 or the one hour average value for criteria published in 1985 or later shall be used as an **acute** toxicity number for calculating effluent limitations, establishing Total Maximum Daily Loads (TMDLs), or reviewing ambient water quality data.
 - (c) The 24-hour average for criteria published in 1980 or the 4-day average for criteria published in 1985 or later shall be used as a **chronic** toxicity number for calculating effluent limitations, establishing TMDLs, or reviewing ambient water quality data.
 - (d) If metals concentrations for criteria are hardness-dependent, the chronic and acute concentrations shall be based on the actual mixed in-stream hardness.
 - (e) If separate criteria are given for freshwater and saltwater, they shall be applied as appropriate.
 - (f) For non-carcinogens, these concentrations will be determined using a Reference Dose (RfD) as published by the U.S. EPA pursuant to Section 304(a) of the Federal Water Pollution Act as amended unless a more recent RfD is issued by the U.S. EPA as listed in the Integrated Risk Information System file, in which case the more recent value will be used.

Water quality standards or criteria used to calculate water quality-based effluent limitations (and for all other purposes of water quality criteria under Section 303(c) of the Clean Water Act) to protect human health through the different exposure routes are determined as follows:

(1) Fish tissue consumption:

$$WQC = (RfD) \times [(Body\ Weight) / (FCR \times BCF)]$$

where: WQC = water quality criterion

RfD = reference dose

FCR = fish consumption rate (17.5 gm/person-day)

BCF = bioconcentration factor

BCF values are based on U.S. EPA publications pursuant to Section 304(a) of the Clean Water Act. FCR values are average consumption rates for a 70 kg adult for a lifetime of the population; alternative FCR values may be used when it is considered necessary to protect localized populations which may be consuming fish at a higher rate.

(2) Water consumption and fish tissue consumption:

$$WQC = (RfD) \times [(Body\ Weight) / (WCR + (FCR \times BCF))]$$

where: WQC = water quality criterion

RfD = reference dose

FCR = fish consumption rate (17.5 gm/person-day)

BCF = bioconcentration factor

WCR = water consumption rate (2 liters/day for adults)

The equations listed in this subparagraph will be used to develop water quality criteria or standards on a case-by-case basis for toxic substances that are not presently included in the water quality standards. Alternative FCR values may be used when it is considered necessary to protect localized populations that may be consuming fish at a higher rate.

- (g) For carcinogens, the concentrations of toxic substances will not result in unacceptable health risk and will be based on a Cancer Potency Factor (CPF). An unacceptable health risk for cancer will be considered to be more than one additional case of cancer per one million people exposed (10^{-6} risk level).

Water quality standards or criteria used to calculate water quality-based effluent limitations (and for all other purposes of water quality criteria under Section 303(c) of the Clean Water Act) to protect human health through the different exposure routes are determined as follows:

(1) Fish tissue consumption:

$$WQC = (\text{Risk}) \times [(\text{Body Weight}) / (\text{CPF} \times (\text{FCR} \times \text{BCF}))]$$

where: WQC = water quality criterion

Risk = risk factor (10)

CPF = cancer potency factor

FCR = fish consumption rate (17.5 gm/person-day)

BCF = bioconcentration factor

BCF values are based on U.S. EPA publications pursuant to Section 304(a) of the Clean Water Act. FCR values are average consumption rates for a 70 kg adult for a lifetime of the population; alternative FCR values may be used when it is considered necessary to protect localized populations which may be consuming fish at a higher rate.

(2) Water consumption (including a correction for fish consumption):

$$WQC = (\text{Risk}) \times [(\text{Body Weight}) / (\text{CPF} \times (\text{WCR} + (\text{FCR} \times \text{BCF})))]$$

where: WQC = water quality criterion

Risk = risk factor (10)

CPF = cancer potency factor

FCR = fish consumption rate (17.5 gm/person-day)

BCF = bioconcentration factor

WCR = water consumption rate (2 liters/day for adults)

The equations listed in this subparagraph will be used to develop water criteria or standards on a case-by-case basis for toxic substances that are not presently included in the water quality standards. Alternative FCR values may be used when it is considered necessary to protect localized populations that may be consuming fish at a higher rate.

- G. Numeric Criteria: Numeric water quality criteria for the protection of human health and aquatic life within Surface Waters of the State are provided in Table 2. These criteria shall be applied as described in above in Rule 2.2.F. Additional details regarding the information provided in Table 2 are provided below.

Notes for Table 2. Numeric Criteria for All Surface Waters of the State

- a The $CMC = 1/[(f_1/CMC_1) + (f_2/CMC_2)]$ where f_1 and f_2 are the fractions of total selenium that are treated as selenite and selenate, respectively, and CMC_1 and CMC_2 are 185.9 $\mu\text{g/l}$ and 12.83 $\mu\text{g/l}$. The value in the table is calculated assuming a worst case scenario in which all selenium is present as selenate.
- b Hardness dependent parameter. Criteria values provided in Table 2 are based on an in-stream hardness of 50 mg/l as CaCO_3 . For hardness dependent parameters, chronic and

acute criteria values should be based on the actual mixed in-stream hardness. Equations for calculating criteria values for hardness dependent parameters can be found in *Quality Criteria for Water*.

- c** Criteria for pentachlorophenol are based on a pH dependent equation as found in *Quality Criteria for Water*. Values listed are for a pH of 7.0 s.u.
- e** Parameter subject to water effects ratio equations where:
CMC = WER * Acute
CCC = WER * Chronic
- f** Ammonia criteria are dependent on pH, temperature, and salinity. See Rule 2.2.F.3. for more detail.
- g** Expressed as μg free cyanide (as CN)/L.
- h** Refers to the inorganic form only.
- i** Applies to the sum of α and β isomers.
- j** Chemical Abstracts Service (CAS) registry numbers, which provide a unique identification for each chemical.
- k** This criterion applies to total PCBs (e.g., the sum of all congener or all isomer or homolog or Aroclor analyses).

TABLE 2
Numeric Criteria for All Surface Waters of the State (µg/l)

CAS ^j	Parameter	Freshwater		Saltwater		Human Health	
		Acute	Chronic	Acute	Chronic	Organisms Only	Water & Organisms
107028	Acrolein	3	3				
309002	Aldrin	3.0		1.3		0.000050	0.000049
959988	alpha-Endosulfan	0.22 ⁱ	0.056 ⁱ	0.034 ⁱ	0.0087 ⁱ	89	62 ^j
7664417	Ammonia	f	f	f	f		
7440382	Arsenic (III), Total Dissolved	340 ^e	150 ^e	69	36		
7440382	Arsenic, Total Dissolved					24 ^h	0.078 ^h
33213659	beta-Endosulfan	0.22 ⁱ	0.056 ⁱ	0.034 ⁱ	0.0087 ⁱ	89 ^j	62
7440439	Cadmium, Total Dissolved	1.03 ^{b,e}	0.15 ^{b,e}	33	7.9	168	5
63252	Carbaryl	2.1	2.1	1.6			
57749	Chlordane	2.4	0.0043	0.09	0.004	0.00081	0.00080
16887006	Chloride	860000	230000				
7782505	Chlorine	19	11	13	7.5		
2921882	Chlorpyrifos	0.083	0.041	0.011	0.0056		
16065831	Chromium (III), Total Dissolved	323 ^{b,e}	42 ^{b,e}			140468	100
18540299	Chromium (Hex), Total Dissolved	16 ^e	11 ^e	1100	50	1470	98
7440508	Copper, Total Dissolved	7.0 ^{b,e}	5.0 ^{b,e}	4.8	3.1	1000	1300
57125	Cyanide	22.0 ^g	5.2 ^g	1.0 ^g	1.0 ^g	140	140
8065483	Demeton		0.1		0.1		
333415	Diazinon	0.17	0.17	0.82	0.82		
60571	Dieldrin	0.24	0.056	0.71	0.0019	0.000054	0.000052
1031078	Endosulfan Sulfate					89 ^j	62 ^j
72208	Endrin	0.086	0.036	0.037	0.0023	0.060	0.059
58899	gamma-BHC (Lindane)	0.95	0.08	0.16		1.8	0.98
86500	Guthion		0.01		0.01		

CAS ^j	Parameter	Freshwater		Saltwater		Human Health	
		Acute	Chronic	Acute	Chronic	Organisms Only	Water & Organisms
76448	Heptachlor	0.52	0.0038	0.053	0.0036	0.000079	00.00079
1024573	Heptachlor Epoxide	0.52	0.0038	0.053	0.0036		
7439896	Iron		1000				
7439921	Lead, Total Dissolved	30 ^{b,e}	1.18 ^{b,e}	210	8.1		15
121755	Malathion		0.1		0.1		
7439976	Mercury (II), Total Dissolved	2.1 ^c	0.012	1.8	0.025		
7439976	Mercury					0.153	0.151
72435	Methoxychlor		0.03		0.03		
2385855	Mirex		0.001		0.001		
7440020	Nickel, Total Dissolved	260 ^{b,e}	29 ^{b,e}	75	8.3	4600	610
84852153	Nonylphenol	28	6.6	7	1.7		
56382	Parathion	0.065	0.013				
87865	Pentachlorophenol	8.7 ^c	6.7 ^c	13 ^c	7.9 ^c	3.0	0.27
108952	Phenol	300	102	300	58	860000	10000
	Polychlorinated Biphenyls (Total PCBs)	0.02 ^k	0.014 ^k	1.0 ^k	0.03 ^k	0.000064 ^k	0.000064 ^k
7782492	Selenium, Total Dissolved	11.8 ^{a,e}	4.6 ^c	290 ^e	71 ^e	4200	170
7440224	Silver, Total Dissolved	0.98 ^{b,f}		1.9			100
7783064	Sulfide-Hydrogen Sulfide		2.0		2.0		
8001352	Toxaphene	0.73	0.0002	0.21	0.0002	0.00028	0.00028
	Tributyltin (TBT)	0.46	0.072	0.42	0.0074		
7440666	Zinc, Total Dissolved	65 ^{b,e}	65 ^{b,e}	90	81	26,000	7,400
1746016	2,3,7,8 TCDD (Dioxin)					51 x 10 ⁻⁹	50 x 10 ⁻⁹
50293	4,4 DDT	1.1	0.001	0.13	0.001	0.00022	0.00022

Source: Miss. Code Ann. §§ 49-2-9, 49-2-1, et seq., and 49-17-1, et seq.

Rule 2.3 Waterbody Classifications and Water Quality Criteria:

A. PUBLIC WATER SUPPLY CLASSIFICATION:

Waters in this classification are a source of raw water supply for drinking and food processing purposes. The water treatment process shall be approved by the Mississippi State Department of Health. The raw water supply shall be such that after the approved treatment process, it will satisfy the regulations established pursuant to Section 1412 of the Public Health Service Act as amended by the Safe Drinking Water Act (42 U.S.C. §§ 300f to 300j-27). Information regarding surface water intakes for Public Water Supply is provided in Table 3.

Table 3. Mississippi Surface Water Intakes for Public Water Supply

Waterbody	Name	Location	Status
Bonita Reservoir	City of Meridian	Lauderdale County	Inactive
Long Creek Reservoir	City of Meridian	Lauderdale County	Inactive
Luxapallila Creek	Columbus Light and Water	Lowndes County	Inactive
Okatibbee Reservoir	Pat Harrison Waterway District	Lauderdale County	Inactive
Pascagoula River	Jackson County Port Authority	Jackson County	Active
Pickwick Lake (Yellow Creek Embayment)	Short Coleman Park Water Association	Tishomingo County	Inactive
Ross Barnett Reservoir Pearl River	City of Jackson	Hinds County	Active
Tenn-Tom Waterway	City of Corinth Gas and Water Department	Tishomingo County	Active
Tombigbee River	NE MS Regional Water Supply District	Itawamba County	Active

Waters that meet the Public Water Supply criteria shall also be suitable for secondary contact recreation. Secondary contact recreation is defined as incidental contact with the water during activities such as wading, fishing, and boating, that are not likely to result in full body immersion. In considering the acceptability of a proposed site for the discharge of wastewater in or near waters with the Public Water Supply Classification, the Permit Board shall consider the relative proximity of the discharge to water supply intakes.

- (1) Bacteria: Culturable e.coli shall not exceed a geometric mean of 126 per 100 ml over a 30-day period, nor shall the samples examined during a 30-day period exceed 410 per 100 ml more than 10% of the time. There should be a minimum of 5 samples taken over a 30-day period with no less than 12 hours between individual samples.
- (2) Chlorides (Cl): There shall be no substances added which will cause the chloride content to exceed 230 mg/l in freshwater streams.

- (3) Specific Conductance: There shall be no substances added to increase the conductivity above 500 micromhos/cm for freshwater streams.
- (4) Total Dissolved Solids: There shall be no substances added to the waters that will cause the dissolved solids to exceed 500 mg/l for freshwater streams.
- (5) Threshold Odor: There shall be no substances added which will cause the threshold odor number to exceed 24 (at 60°C) as a daily average.
- (6) Radioactive Substances: There shall be no radioactive substances added to the waters which will cause the gross beta activity (in the known absence of Strontium-90 and alpha emitters) to exceed 1000 picocuries per liter at any time.
- (7) Specific Chemical Constituents: In addition to the provisions in Section 2.2.A.4, the following concentrations (dissolved) shall not be exceeded at any time:

<u>Constituent</u>	<u>Concentration (mg/l)</u>
Barium	2.0
Fluoride	2.0
Lead	0.015
Nitrate (as N)	10.0

B. SHELLFISH HARVESTING CLASSIFICATION

Waters in this classification are for propagation and harvesting shellfish for sale or use as a food product. These waters shall meet the requirements set forth in the latest edition of the *National Shellfish Sanitation Program (NSSP) Guide for the Control of Molluscan Shellfish* as published by the U.S. Food and Drug Administration. Waters that meet the Shellfish Harvesting criteria shall also be suitable for recreational purposes. In considering the acceptability of a proposed site for the discharge of wastewater in or near waters with this classification, the Permit Board shall consider the relative proximity of the discharge to shellfish harvesting beds.

- (1) Bacteria: The median fecal coliform MPN (Most Probable Number) of the water shall not exceed 14 per 100 ml, and not more than 10% of the samples shall ordinarily exceed an MPN of 43 per 100 ml in those portions or areas most probably exposed to fecal contamination during most unfavorable hydrographic and pollutive conditions.

C. RECREATION CLASSIFICATION:

Waters in this classification are to be suitable for recreational purposes, including such water contact activities as swimming and water skiing. In considering the acceptability of a proposed site for the discharge of wastewater in or near waters with this classification, the Permit Board shall consider the relative proximity of the discharge to areas of actual water contact activity.

- (1) Bacteria: Culturable e.coli shall not exceed a geometric mean of 126 per 100 ml, nor shall the samples examined during a 30-day period exceed 410 per 100 ml more than 10% of the time. There should be a minimum of 5 samples taken over a 30-day period with no less than 12 hours between individual samples.

For both marine and estuarine coastal recreational waters, enterococci shall not exceed a 90-day geometric mean of 35 per 100 ml, nor shall the samples examined during a 90-day period exceed 130 per 100 ml more than 10% of the time. Coastal recreational waters do not include inland waters upstream of the mouth of a river or a stream having a natural connection to the open sea.

- (2) Specific Conductance: There shall be no substances added to increase the conductivity above 1000 micromhos/cm for freshwater streams.
- (3) Total Dissolved Solids: There shall be no substances added to the water to cause the dissolved solids to exceed 750 mg/l as a monthly average value, nor exceed 1500 mg/l at any time for freshwater streams.

D. FISH AND WILDLIFE CLASSIFICATION:

Waters in this classification are intended for fishing and should support protection and propagation of fish, aquatic life, and wildlife. Waters that meet the Fish and Wildlife Criteria shall also be suitable for secondary contact recreation. Secondary contact recreation is defined as incidental contact with the water during activities such as wading, fishing, and boating, that are not likely to result in full body immersion.

- (1) Bacteria: Culturable e.coli shall not exceed a geometric mean of 126 per 100 ml over a 30-day period, nor shall the samples examined during a 30-day period exceed 410 per 100 ml more than 10% of the time. There should be a minimum of 5 samples taken over a 30-day period with no less than 12 hours between individual samples.

For marine and estuarine waters, enterococci shall not exceed a 90-day geometric mean of 35 per 100 ml, nor shall the samples examined during a 90-day period exceed 130 per 100 ml more than 10% of the time.

- (2) Specific Conductance: There shall be no substances added to increase the conductivity above 1000 micromhos/cm for freshwater streams.
- (3) Total Dissolved Solids: There shall be no substances added to the waters to cause the dissolved solids to exceed 750 mg/l as a monthly average value, nor exceed 1500 mg/l at any time for freshwater streams.

E. MODIFIED FISH AND WILDLIFE CLASSIFICATION:

Waters in this classification are intended to support water quality appropriate for a modified population of fish, aquatic life, and wildlife that are limited or substantially degraded due to alternations of the physical habitat, hydrology, or water quality based on one or more 40 CFR 131.10(g) factors. Waters within this classification share the same water quality criteria as Fish and Wildlife waters with the exception of any modified criteria (narrative or numeric) that have been established for a waterbody or waterbody segment. Waters that meet the Modified Fish and Wildlife criteria shall also be suitable for fish consumption and secondary contact recreation. Waters classified as Modified Fish and Wildlife must also protect the attainment of water quality standards within downstream waters.

F. DRAINAGE WATERS CLASSIFICATION

Waters within this classification are intended strictly for the drainage of agricultural lands, agricultural irrigation, livestock watering, industrial cooling, or process water supplies. Waters classified as Drainage Waters may contain a transient population of aquatic life when there is suitable habitat for survival of aquatic life. However, typical conditions within these waters are not adequate to support the reproductive cycles for fish and other aquatic life. Waters in this classification can include, but are not limited to, wholly artificial canals or ditches, waterbodies or ditches located behind or influenced by a control structure, or waters which are part of a water control or water management system. One or more of the 40 CFR 131.10(g) factors apply to waters in this class. Waters within this classification share the same water quality criteria as Fish and Wildlife waters with the exception of any modified criteria (narrative or numeric) that have been established for a waterbody or waterbody segment. Waters that meet the Drainage Waters criteria shall also be suitable for fish consumption and secondary contact recreation. Waters classified as Drainage Waters must also protect the attainment of water quality standards within downstream waters.

G. OUTSTANDING MISSISSIPPI WATER (OMW) CLASSIFICATION:

Waters in this classification are high quality waters that constitute an outstanding Mississippi resource. Waters within this classification can include, but are not limited to, waters within national parks, state parks, wildlife refuges, waters of exceptional ecological significance, or waters of high recreational or aesthetic value. Waters within this classification must meet the same water quality criteria as Fish and Wildlife waters with the exception of any site-specific modified criteria that have been established to protect the outstanding features of the waterbody.

- (1) Existing point source discharges into an Outstanding Mississippi Water shall be allowed.
- (2) New point source discharges or expansions of existing point source discharges shall not be allowed into an Outstanding Mississippi Water unless the permit applicant has conducted a thorough evaluation of all practicable treatment and

disposal alternatives and has demonstrated to the satisfaction of the Permit Board that there is no feasible alternative other than to discharge into the Outstanding Mississippi Water.

- (3) Effluent limitations for new point source discharges or expansions of existing point source discharges to waters upstream of Outstanding Mississippi Waters shall be established by the Permit Board to be protective of the downstream Outstanding Mississippi Water.
- (4) All criteria for protection of aquatic life and human health apply. Specific requirements for toxicity are found in Rule 2.2.F.
- (5) Nonpoint source discharges shall use best management practices adequate to protect water quality consistent with the Department's nonpoint source program.
- (6) All NPDES permits should be in compliance with all regulations and should require the development of appropriate water pollution reduction plans.

H. EPHEMERAL STREAM CLASSIFICATION:

Waters in this classification do not support a fisheries resource and are not usable for human consumption or aquatic life. Ephemeral streams normally are natural watercourses, including natural watercourses that have been modified by channelization or a manmade drainage ditch, that without the contribution of point source discharges, flow only in direct response to precipitation or irrigation return-water discharge in the immediate vicinity and whose channels are normally above the groundwater table. Physical conditions related to the natural features of the waterbody, such as the lack of a proper substrate, cover, flow, depth, pools, riffles, and the like, unrelated to water quality, preclude attainment of aquatic life protection uses. These streams may contain a transient population of aquatic life during the portion of the year when there is suitable habitat for fish survival. Normally, aquatic habitat in these streams is not adequate to support a reproductive cycle for fish and other aquatic life. Wetlands are excluded from this classification.

Waters in this classification shall be protective of wildlife and humans that may come in contact with the waters. Waters contained in ephemeral streams shall also allow maintenance of the standards applicable to all downstream waters.

- (1) Provisions (1), (2), (3), and (5) of Rule 2.2 (Minimum Conditions Applicable to All Waters: Narrative Standards) are applicable except as they relate to fish and other aquatic life. All aspects of provisions 2.2.A.4) and 2.2.F. concerning toxicity will apply to ephemeral streams, except for domestic or compatible domestic wastewater discharges which will be required to meet toxicity requirements in downstream waters not classified as ephemeral. Alternative methods may be utilized to determine the potential toxic effect of ammonia. Acutely toxic conditions are prohibited under any circumstances in waters in this classification.

- (2) Dissolved Oxygen: The dissolved oxygen shall be maintained at an appropriate level to avoid nuisance conditions.
- (3) Bacteria: The Permit Board may assign bacterial criteria where the probability of a public health hazard or other circumstances so warrant.
- (4) Fisheries resource is defined as any waterbody which has a viable gamefish population as documented by the Mississippi Department of Wildlife Fisheries and Parks or has sufficient flow or physical characteristics to support the fishing use during times other than periods of flow after precipitation events or irrigation return water discharge.
- (5) "Not usable for human consumption or aquatic life" means that sufficient flow or physical characteristics are not available to support these uses.
- (6) "Flow only in response to precipitation or irrigation return water" means that without the influence of point source discharges the stream will be dry unless there has been recent rainfall or a discharge of irrigation return water.
- (7) "Protective of wildlife and humans that may come in contact with the waters" means that toxic pollutants shall not be discharged in concentrations that will endanger wildlife or humans.
- (8) "Nuisance conditions" means objectionable odors or aesthetic conditions that may generate complaints from the public.

Recommendations for assignment of the Ephemeral Stream classification shall be made to the Commission on Environmental Quality by the Permit Board after appropriate demonstration of physical and hydrological data. The Ephemeral Stream classification shall not be assigned where environmental circumstances are such that a nuisance or hazardous condition would result or public health is likely to be threatened. Alternate discharge points shall be investigated before the Ephemeral Stream classification is considered.

Source: Miss. Code Ann. §§ 49-2-9, 49-2-1, *et seq.*, and 49-17-1, *et seq.*

Rule 2.4 Waterbody-Specific Water Quality Criteria:

A. Chlorides, Sulfates, and Total Dissolved Solids (TDS) in the Mississippi River:

The Mississippi River is classified as Fish and Wildlife. All water quality criteria for the Fish and Wildlife classification apply but with the following additions to the criteria stated herein:

Mineral Constituents: Not to exceed the following concentrations at any time:

From Mississippi-Tennessee border to Vicksburg

Chlorides	60 mg/l
Sulfates	150 mg/l
TDS	425 mg/l

From Vicksburg south to the Mississippi-Louisiana border

Chlorides	75 mg/l
Sulfates	120 mg/l
TDS	400 mg/l

B. Nickel in the Mississippi Sound:

The Mississippi Sound is classified as Recreation. The waterbody runs east-west along Mississippi Coast. The Mississippi Sound is separated from the Gulf of Mexico on its southern side by the Mississippi–Alabama barrier islands. The following nickel criteria are applicable for this waterbody for the protection of aquatic life:

Acute	167 µg/l
Chronic	18.5 µg/l

C. Dissolved Oxygen in the Escatawpa River:

The Escatawpa River is located within Jackson County in southeast Mississippi. The waterbody is located within the Pascagoula River Basin is classified as Fish and Wildlife. Site-specific criteria for dissolved oxygen apply to a segment of the Escatawpa River from river mile 10 to its mouth at the Pascagoula River. The following dissolved oxygen standard is applicable for this segment:

Dissolved oxygen concentrations shall not be less than a daily average of 3.7 mg/l from May 1 through October 31. Additional information regarding the derivation and implementation of this criterion can be found in MDEQ the report titled, *A Site-Specific Dissolved Oxygen Criterion for the Escatawpa River: Criteria Derivation and Implementation*.

D. Selenium in Little Bywy Creek, Middle Bywy Creek, and Big Bywy Ditch:

Little Bywy Creek, Middle Bywy Creek, and Big Bywy Ditch are located within Choctaw and Montgomery Counties in central Mississippi. These waterbodies are located within the Big Black River Basin and are all classified as Fish and Wildlife. Site-specific criteria for selenium apply to the following waterbody segments:

Little Bywy Creek: From the headwaters to its mouth at Middle Bywy Creek

Middle Bywy Creek: From its headwaters to its mouth at Big Bywy Ditch

Big Bywy Ditch: From the confluence with Middle Bywy Creek to its mouth at the Big Black River

The following selenium criteria apply for the segments listed above:

Media Type	Fish Tissue		Water Column
Criterion Element	Egg/Ovary	Fish Whole Body or Muscle	Monthly Average Exposure
Magnitude	15.1 mg/kg (dry weight)	Whole body: 8.5 mg/kg (dry weight) or Muscle: 11.3 mg/kg (dry weight) (skinless, boneless fillet)	1.5 µg/L in lentic aquatic systems or 3.1 µg/L in lotic aquatic system
Duration	Instantaneous	Instantaneous	30 days
Frequency	Not to be exceeded	Not to be exceeded	Not more than once in three years on average

1. Fish tissue elements are expressed as steady-state.
2. Egg/Ovary supersedes any whole-body, muscle, or water column element when fish egg/ovary concentrations are measured.
3. Fish whole-body or muscle tissue supersedes water column element when both fish tissue and water concentrations are measured.
4. Water column values are based on dissolved total selenium in water and are derived from fish tissue values via bioaccumulation modeling. Water column values are the applicable criterion element in the absence of steady-state condition fish tissue data.
5. Fish tissue data provide instantaneous point measurements that reflect integrative accumulation of selenium over time and space in fish population(s) at a given site.

Rule 2.5 Implementation of Water Quality Criteria :

According to 40 CFR 131.13, States may, at their discretion, include in their State standards, policies generally affecting their application and implementation, such as mixing zones, low flows and variances. Such policies are subject to U.S. EPA review and approval. If the State adopts a policy applicable only to Surface Waters of the State that are not also Waters of the United States, such policy is not subject to U.S. EPA review and approval.

- A. Natural Conditions: Natural conditions are defined as background water quality conditions due only to non-anthropogenic sources. The criteria herein apply specifically with regard to substances attributed to sources (permitted discharges, nonpoint sources, or in-stream activities) as opposed to natural phenomena. Some waterbodies may have characteristics that are naturally outside the limits established herein. Therefore, naturally occurring conditions that preclude attainment of these criteria should not be interpreted as violations of the criteria.
- B. Applicable Flow: All criteria contained herein shall apply to all stages of stream flow greater than or equal to the 7-day, 10-year minimum flow (7Q10) in unregulated, natural streams, and the legally guaranteed minimum flow in regulated streams, unless otherwise provided in these regulations. This requirement shall not be interpreted to permit any unusual waste discharges during periods of lower flow.

Notwithstanding the above, a stream flow equal to the 7-day, 2-year minimum flow (7Q2) in unregulated, natural streams shall be utilized in establishing permit limitations for stormwater permits. In cases in which either (1) the data are indefinite or inconclusive, or (2) the 7-day, 2-year minimum flow and/or the 7-day, 10-year minimum flow are inappropriate because of the hydrology of the area, other appropriate State and federal agencies will be consulted in order to establishing the appropriate and applicable stream flow.

- C. Mixing Zones: It is recognized that limited areas of mixing are sometimes unavoidable; however, mixing zones shall not be used as a substitute for waste treatment. Mixing zones constitute an area whereby physical mixing of a wastewater effluent with a receiving waterbody occurs. Application of mixing zones shall be made on a case-by-case basis and shall only occur in cases involving large surface waterbodies in which a long distance or large area is required for the wastewater to completely mix with the receiving waterbody.

The location of a mixing zone shall not significantly alter the designated uses of the receiving water outside its established boundary. Adequate zones of passage for the migration and free movement of fish and other aquatic biota shall be maintained. Toxicity and human health concerns within the mixing zone shall be addressed as specified in the U.S. EPA *Technical Support Document for Water Quality-Based Toxics Control* (U.S. EPA-505/2-90-001, March 1991) and amendments thereof. Under no circumstances shall mixing zones overlap or cover tributaries, nursery locations, locations of threatened or endangered species, or other ecologically sensitive areas.

D. Schedules of Compliance:

When appropriate, the State, UIC, or NPDES permit issued by the Permit Board pursuant to Rule 1.1.3.H may contain a schedule of compliance leading to compliance with the Federal Water Pollution Control Act and the Mississippi Air and Water Pollution Control Law. Additional information and requirements regarding schedules of compliance can be found within 11 Miss. Admin. Code Pt. 6, R. 1.1.4.A(9).

E. Water Quality Standards Variances:

As defined in 40 CFR 131.3(o), a water quality standards variance is a time-limited designated use and criterion for a specific pollutant(s) or water quality parameter(s) that reflect the highest attainable condition during the term of the variance. A water quality standards variance must meet certain provisions according to 40 CFR 131.14 and must meet certain public participation requirements within 40 CFR 131.20(b). A WQS variance is a water quality standard subject to U.S. EPA review and approval or disapproval. MDEQ will apply the same provisions of 40 C.F.R. § 131.14 in considering a WQS variance for State waters that do not meet the definition of Waters of the United States and will use the same public participation requirements within § 131.20(b) for such waters. A WQS variance to Surface Waters of the State which do not meet the definition of “Waters of the United States” will not be subject to U.S. EPA review and approval or disapproval.

(1) Applicability:

- (a) A WQS variance may be adopted for a permittee(s) or waterbody/waterbody segment(s), but only applies to the permittee(s) or waterbody/waterbody segment(s) specified in the WQS variance.
- (b) Where the State adopts a WQS variance, the State must retain, in its standards, the underlying designated use and criterion addressed by the WQS variance, unless the State adopts and U.S. EPA approves a revision to the underlying designated use and criterion consistent with 40 CFR 131.10 and 131.11. All other applicable standards not specifically addressed by the WQS variance remain applicable. U.S. EPA approval is not required for State waters that are not waters of the United States.
- (c) A WQS variance, once adopted by the State and approved by U.S. EPA, shall be the applicable standard for purposes of the Clean Water Act under 40 CFR 131.21(d) through (e), for the following limited purposes. An approved WQS variance applies for the purposes of developing NPDES permit limits and requirements under 301(b)(1)(C), where appropriate, consistent with paragraph (1)(a) of this section. States and other certifying entities may also use an approved WQS variance when issuing certifications under section 401 of the Clean Water Act. U.S. EPA approval is not required for Surface Waters of the State that are not Waters of the United States.
- (d) The State may not adopt WQS variances if the designated use and criterion addressed by the WQS variance can be achieved by implementing technology-based effluent limits required under sections 301(b) and 306 of the Clean Water Act.

(2) Requirements for Submission to the Commission and/or to U.S EPA:

(a) A WQS variance must include:

- (i) Identification of the pollutant(s) or water quality parameter(s), and the waterbody or waterbody segment(s) to which the WQS variance applies. Discharger(s)-specific WQS variances must also identify the permittee(s) subject to the WQS variance.
- (ii) The requirements that apply throughout the term of the WQS variance. The requirements shall represent the highest attainable condition of the waterbody or waterbody segment applicable throughout the term of the WQS variance based on the documentation required in (2)(b) of this section. The requirements shall not result in any lowering of the currently attained ambient water quality, unless a WQS variance is necessary for restoration activities, consistent with paragraph (2)(b)(i)(1) of this section. The State must specify the highest attainable condition of the waterbody or waterbody segment as a quantifiable expression that is one of the following:

(1) For discharger(s)-specific WQS variances:

The highest attainable interim criterion; or

The interim effluent condition that reflects the greatest pollutant reduction achievable; or

If no additional feasible pollutant control technology can be identified, the interim criterion or interim effluent condition that reflects the greatest pollutant reduction achievable with the pollutant control technologies installed at the time the State adopts the WQS variance, and the adoption and implementation of a pollutant minimization program.

(2) For WQS variances applicable to a waterbody or waterbody segment:

The highest attainable interim use and interim criterion; or

If no additional feasible pollutant control technology can be identified, the interim use and interim criterion that reflect the greatest pollutant reduction achievable with the pollutant control technologies installed at the time the State adopts the WQS variance, and the adoption and implementation of a pollutant minimization program.

- (iii) A statement providing that the requirements of the WQS variance are either the highest attainable condition identified at the time of the adoption of the WQS variance, or the highest attainable condition later identified during

any re-evaluation consistent with paragraph (2)(a)(v) of this section, whichever is more stringent.

- (iv) The term of the WQS variance, expressed as an interval of time from the date of Commission and/or U.S. EPA approval or a specific date. The term of the WQS variance must only be as long as necessary to achieve the highest attainable condition and consistent with the demonstration provided in paragraph (2)(b) of this section. The State may adopt a subsequent WQS variance consistent with this section.
- (v) For a WQS variance with a term greater than five years, a specified frequency to re-evaluate the highest attainable condition using all existing and readily available information and a provision specifying how the State intends to obtain public input on the re-evaluation. Such re-evaluations must occur no less frequently than every five years after Commission and/or U.S. EPA approval of the WQS variance and the results of such re-evaluation must be submitted to the Commission and/or U.S. EPA within 30 days of completion of the re-evaluation.
- (vi) A provision that the WQS variance will no longer be the applicable water quality standard for purposes of the Clean Water Act if the State does not conduct a re-evaluation consistent with the frequency specified in the WQS variance or the results are not submitted to the Commission and/or U.S. EPA as required by (2)(a)(v) of this section.

(b) The supporting documentation must include:

(i) Documentation demonstrating the need for a WQS variance.

(1) For a WQS variance to a use specified in section 101(a)(2) of the Clean Water Act or a sub-category of such a use, the State must demonstrate that attaining the designated use and criterion is not feasible throughout the term of the WQS variance because:

One of the factors listed in 40 CFR 131.10(g) is met, or

Actions necessary to facilitate lake, wetland, or stream restoration through dam removal or other significant reconfiguration activities preclude attainment of the designated use and criterion while the actions are being implemented.

(1) For a WQS variance to a non-101(a)(2) use, the State must submit documentation justifying how its consideration of the use and value of the water for those uses listed in 40 CFR 131.10(a) appropriately supports the WQS variance and term. A demonstration consistent with paragraph (2)(b)(i)(1) of this section may be used to satisfy this requirement.

- (ii) Documentation demonstrating that the term of the WQS variance is only as long as necessary to achieve the highest attainable condition. Such documentation must justify the term of the WQS variance by describing the pollutant control activities to achieve the highest attainable condition, including those activities identified through a Pollutant Minimization Program, which serve as milestones for the WQS variance.
- (iii) In addition, for a WQS variance that applies to a waterbody or waterbody segment:

Identification and documentation of any cost-effective and reasonable best management practices for nonpoint source controls related to the pollutant(s) or water quality parameter(s) and waterbody or waterbody segment(s) specified in the WQS variance that could be implemented to make progress towards attaining the underlying designated use and criterion. The State must provide public notice and comment for any such documentation.

Any subsequent WQS variance for a waterbody or waterbody segment must include documentation of whether and to what extent best management practices for nonpoint source controls were implemented to address the pollutant(s) or water quality parameter(s) subject to the WQS variance and the water quality progress achieved.

(3) Implementing WQS variances in NPDES permits.

A WQS variance serves as the applicable water quality standard for implementing NPDES permitting requirements for the term of the WQS variance. Any limitations and requirements necessary to implement the WQS variance shall be included as enforceable conditions of the NPDES permit for the permittee(s) subject to the WQS variance.

F. Designation of Uses and Use Attainability Analyses:

- (1) According to 40 CFR 131.10 (a), the Commission will specify appropriate water uses to be achieved and protected. The classification of Surface Waters of the State must take into consideration the use and value of water for public water supplies, protection and propagation of fish, shellfish and wildlife, recreation in and on the water, agricultural, industrial, and other purposes including navigation. If adopting new or revised designated uses other than the uses specified in section 101(a)(2) of the Clean Water Act, or removing designated uses, the State must submit documentation justifying how its consideration of the use and value of water for those uses listed in this paragraph appropriately supports the State's action. A use attainability analysis may be used to satisfy this requirement. In no case shall the State adopt waste transport or waste assimilation as a designated use. The State shall also re-examine any waterbody segment with water quality standards that do not include the uses specified in section 101(a)(2) of the Clean Water Act every 3 years to determine if any new information has become available. If such new information indicates that the uses specified in section 101(a)(2) of the Clean Water Act are attainable, the State shall revise its standards accordingly.

- (2) In designating uses of a waterbody and the appropriate criteria for those uses, the State shall take into consideration the water quality standards of downstream waters and shall ensure that its water quality standards provide for the attainment and maintenance of the water quality standards of downstream waters.
- (3) The State may adopt sub-categories of a use and set the appropriate criteria to reflect varying needs of such sub-categories of uses, for instance, to differentiate between cold water and warm water fisheries.
- (4) At a minimum, uses are deemed attainable if they can be achieved by the imposition of effluent limits required under sections 301(b) and 306 of the Clean Water Act and cost-effective and reasonable best management practices for nonpoint source control.
- (5) The State may adopt seasonal uses as an alternative to reclassifying a waterbody or segment thereof to uses requiring less stringent water quality criteria. If seasonal uses are adopted, water quality criteria should be adjusted to reflect the seasonal uses, however, such criteria shall not preclude the attainment and maintenance of a more protective use in another season.
- (6) The State may designate a use, or remove a use that is *not* an existing use, if the State conducts a use attainability analysis that demonstrates attaining the use is not feasible because of one of the six factors in this paragraph. If the State adopts a new or revised water quality standard based on a required use attainability analysis, the State shall also adopt the highest attainable use.
 - (a) Naturally occurring pollutant concentrations prevent the attainment of the use; or
 - (b) Natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges without violating State water conservation requirements to enable uses to be met; or
 - (c) Human caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place; or
 - (d) Dams, diversions or other types of hydrologic modifications preclude the attainment of the use, and it is not feasible to restore the waterbody to its original condition or to operate such modification in a way that would result in the attainment of the use; or
 - (e) Physical conditions related to the natural features of the waterbody, such as the lack of a proper substrate, cover, flow, depth, pools, riffles, and the like, unrelated to water quality, preclude attainment of aquatic life protection uses; or
 - (f) Controls more stringent than those required by sections 301(b) and 306 of the Clean Water Act would result in substantial and widespread economic and social impact.

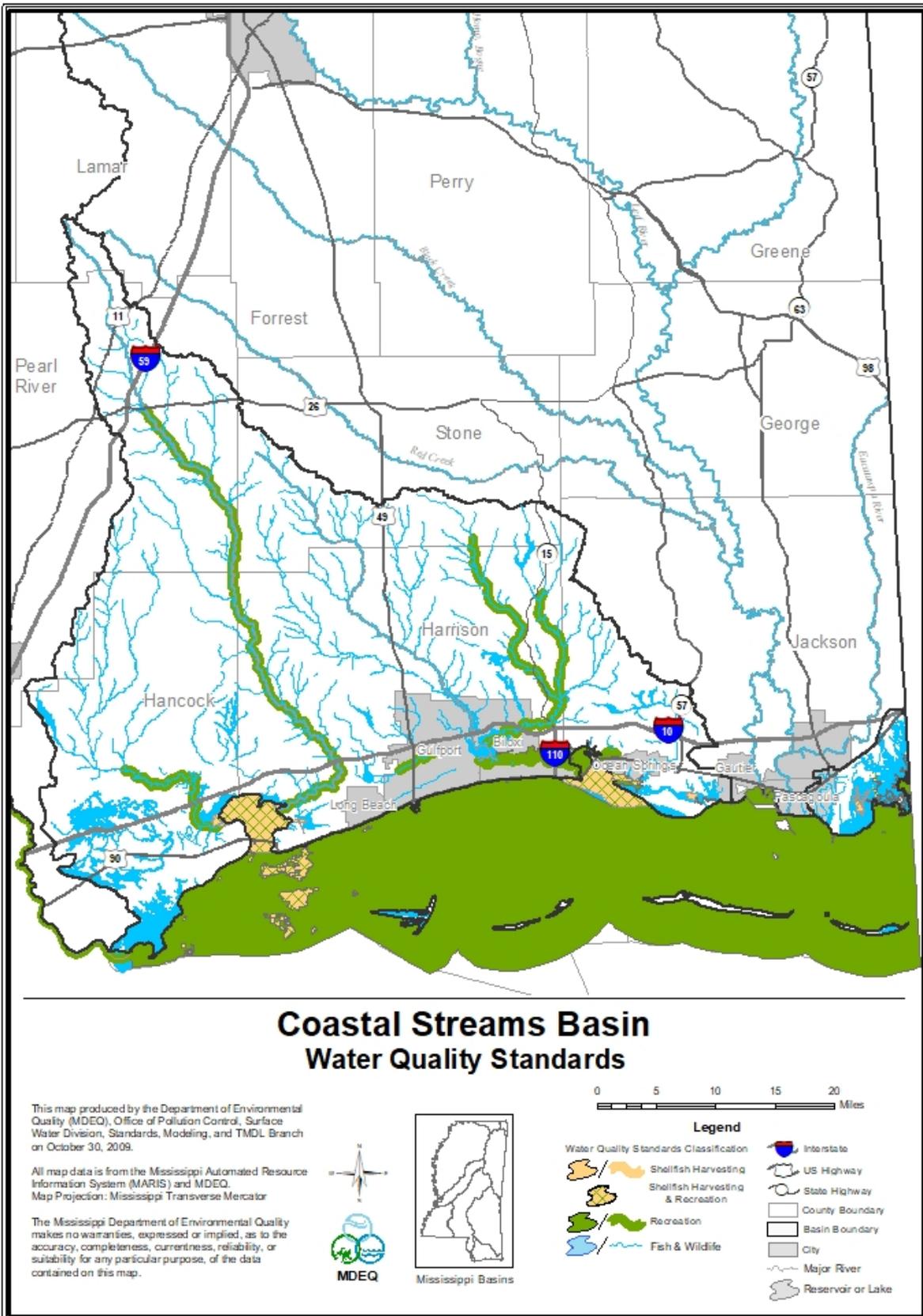
- (7) The State may not remove designated uses if:
- (a) They are existing uses, as defined in 40 CFR 131.3, unless a use requiring more stringent criteria is added; or
 - (b) Such uses will be attained by implementing effluent limits required under sections 301(b) and 306 of the Clean Water Act and by implementing cost-effective and reasonable best management practices for nonpoint source control.
- (8) Where existing water quality standards specify designated uses less than those which are presently being attained, the State shall revise its standards to reflect the uses actually being attained.
- (9) The State must conduct a use attainability analysis as described in 40 CFR 131.3(g), and paragraph (F)(5) of this section, whenever:
- (a) The State designates for the first time, or has previously designated for a waterbody, uses that do not include the uses specified in section 101(a)(2) of the Clean Water Act; or
 - (b) The State wishes to remove a designated use that is specified in section 101(a)(2) of the Clean Water Act, to remove a sub-category of such a use, or to designate a sub-category of such a use that requires criteria less stringent than previously applicable.
- (10) The State is not required to conduct a use attainability analysis whenever:
- (a) The State designates for the first time, or has previously designated for a waterbody, uses that include the uses specified in section 101(a)(2) of the Clean Water Act; or
 - (b) The State designates a sub-category of a use specified in section 101(a)(2) of the Clean Water Act that requires criteria at least as stringent as previously applicable; or,
 - (c) The State wishes to remove or revise a designated use that is a non-101(a)(2) use. In this instance, as required by paragraph (1) of this section, the State must submit documentation justifying how its consideration of the use and value of water for those uses listed in paragraph (1) appropriately supports the State's action, which may be satisfied through a use attainability analysis.

Rule 2.6 Waterbody Classifications for Surface Waters of the State (Organized by River Basin)

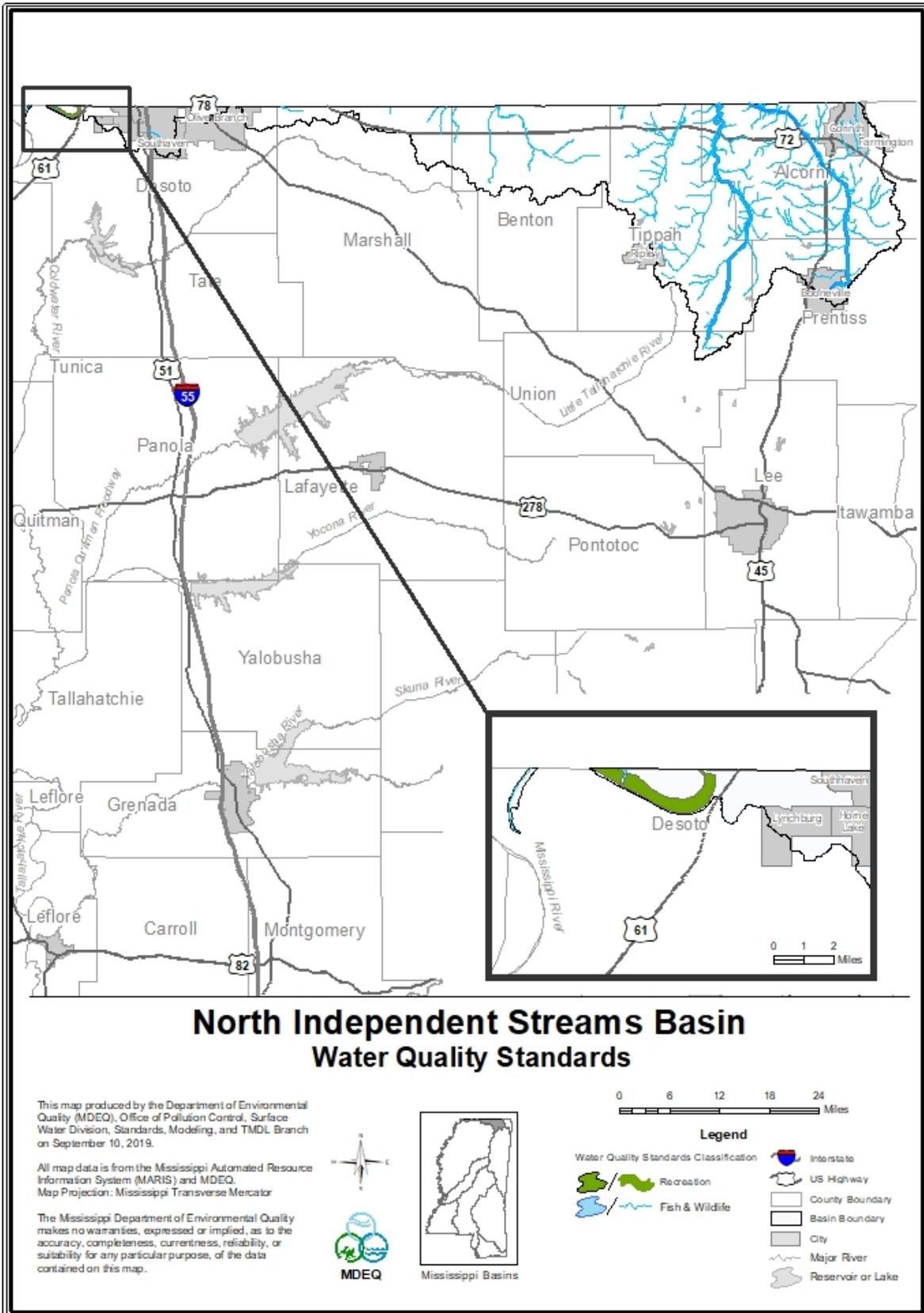
All Surface Waters of the State not specifically listed below shall be classified as Fish and Wildlife. Surface Waters of the State waters carrying other classifications are:

Coastal Streams Basin		
Waters	Location	Classification
Back Bay of Biloxi	From Popp's Ferry Bridge to Biloxi Bay	Recreation
Bangs Lake	From headwaters to the Mississippi Sound	Shellfish Harvesting
Bayou Cumbest	From headwaters to the Mississippi Sound	Shellfish Harvesting
Big Lake	From Bernard Bayou to the Popp's Ferry Bridge	Recreation
Biloxi Bay	From Headwaters (US Hwy 90 Bridge) to the Mississippi Sound	Shellfish Harvesting Recreation
Buoy Beef	Mississippi Sound	Shellfish Harvesting Recreation
Davis Bayou	From headwaters to the Biloxi Bay	Shellfish Harvesting
Graveline Bay	From headwaters to Graveline Bayou	Shellfish Harvesting
Graveline Bayou	From Graveline Bay to the Mississippi Sound	Shellfish Harvesting
Jourdan River	From confluence of Bacon Bayou and Catahoula Creek to the St. Louis Bay	Recreation
Kittiwake Reed (Long Beach Reef)	Mississippi Sound	Shellfish Harvesting Recreation
Mallini Bayou	From St. Louis Bay to St. Louis Bay	Shellfish Harvesting
Mississippi Sound	Contiguous to Mississippi Coastline	Recreation
Old Fort Bayou	From Bayou Talla to Biloxi Bay	Recreation
Pass Christian Reef (off Henderson Point)	Mississippi Sound	Shellfish Harvesting Recreation
Pass Marianne Reef	Mississippi Sound	Shellfish Harvesting Recreation
Pelican Key Reef	Mississippi Sound	Shellfish Harvesting Recreation
Point Clear Shell Plant	Mississippi Sound	Shellfish Harvesting Recreation
St. Joe Reef (St. Joseph's Point Reef)	Mississippi Sound	Shellfish Harvesting Recreation
St. Louis Bay	Harrison and Hancock Counties	Shellfish Harvesting Recreation

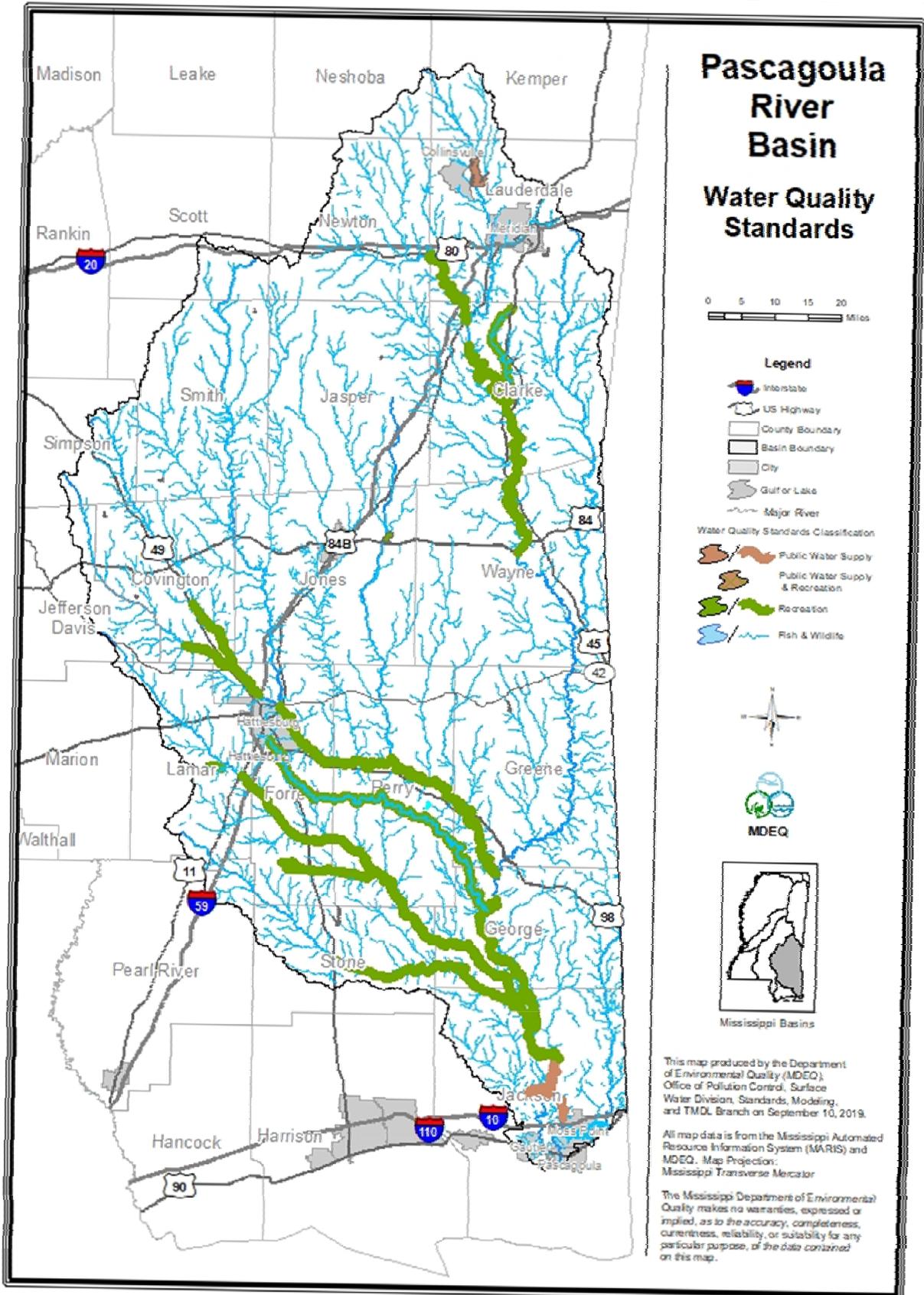
Coastal Streams Basin		
Waters	Location	Classification
St. Stanislaus Reef	Mississippi Sound	Shellfish Harvesting Recreation
Tchoutacabouffa River	From headwaters to the Back Bay of Biloxi	Recreation
Telegraph Reef	Mississippi Sound	Shellfish Harvesting Recreation
Turkey Creek	From North Gulfport Eighth Grade to Bernard Bayou	Recreation
Tuxachanie Creek	From headwaters to the Tchoutacabouffa River	Recreation
Waveland Reef	Mississippi Sound	Shellfish Harvesting Recreation
Wolf River	From MS Hwy 26 to the St. Louis Bay	Recreation



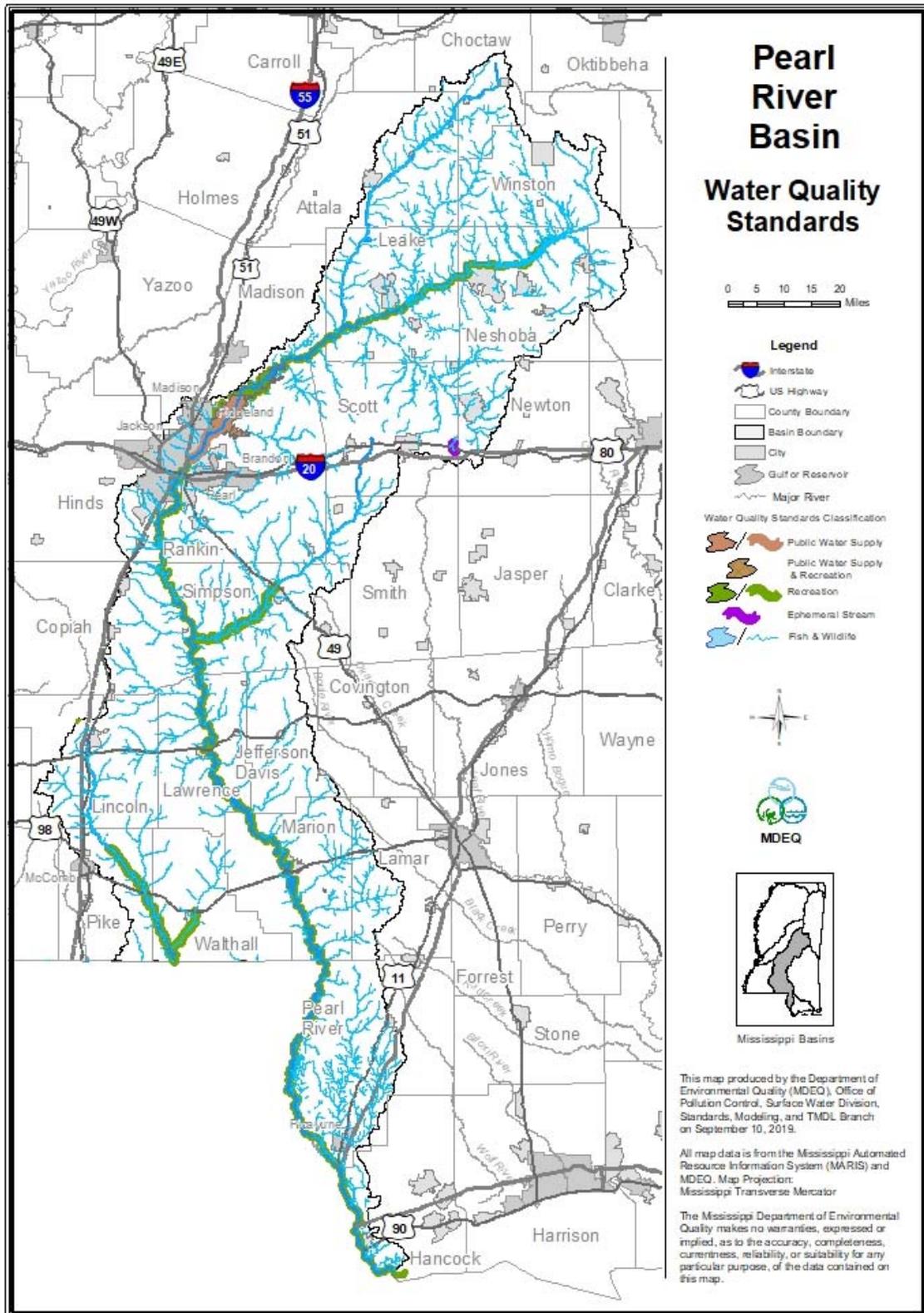
North Independent Streams Basin		
Waters	Location	Classification
Horn Lake	DeSoto County	Recreation



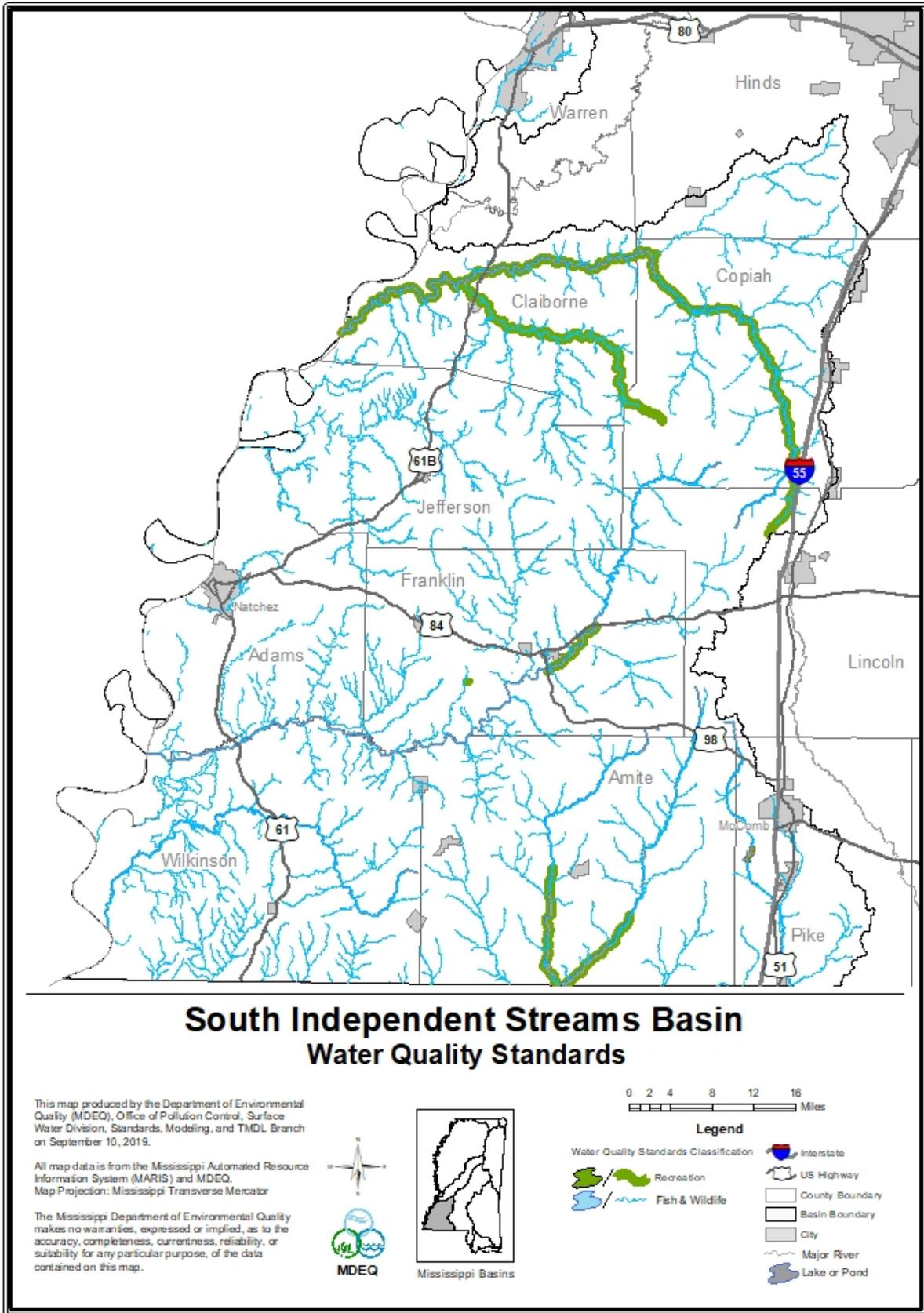
Pascagoula River Basin		
Waters	Location	Classification
Archusa Reservoir	Clarke County	Recreation
Beaverdam Creek	From headwaters in Perry and Forrest Counties to Black Creek	Recreation
Black Creek	From Hwy 11 to the Pascagoula River	Recreation
Bonita Reservoir	Lauderdale County	Public Water Supply
Bowie Creek	From MS Hwy 589 to the Bowie River	Recreation
Bowie River	From Bowie Creek to Interstate 59	Recreation
Chickasawhay River	From Stonewall to MS Hwy 84	Recreation
Chunky River	From US Hwy 80 to the Chickasawhay River	Recreation
Clarke State Park (Ivy Lake)	Clarke County	Recreation
Dry Creek Lake Site #3	Covington County	Recreation
Flint Creek Reservoir	Stone County	Recreation
Lake Bogue Homa	Jones County	Recreation
Lake Claude Bennett	Jasper County	Recreation
Lake Geiger	Forrest County	Recreation
Lake Marathon	Smith County	Recreation
Lake Mike Conner	Covington County	Recreation
Lake Perry	Perry County	Recreation
Lake Ross Barnett	Smith County	Recreation
Lake Shongela	Smith County	Recreation
Lakeland Park Lake	Wayne County	Recreation
Leaf River	From Hwy 42 to the Chickasawhay River	Recreation
Long Creek Reservoir	Lauderdale County	Public Water Supply
Okatibbee Reservoir	Lauderdale County	Public Water Supply Recreation
Okatoma Creek	From Seminary (MS Hwy 590) to the Bowie River	Recreation
Pascagoula River	From 5 miles north of Cumbest Bluff to Cumbest Bluff	Public Water Supply
Pascagoula River	From 6 miles north of MS Hwy 26 (George County) to Smear Bayou (Jackson County)	Recreation
Red Creek	From US Hwy 49 to Big Black Creek	Recreation
Turkey Creek Reservoir	Greene County	Recreation



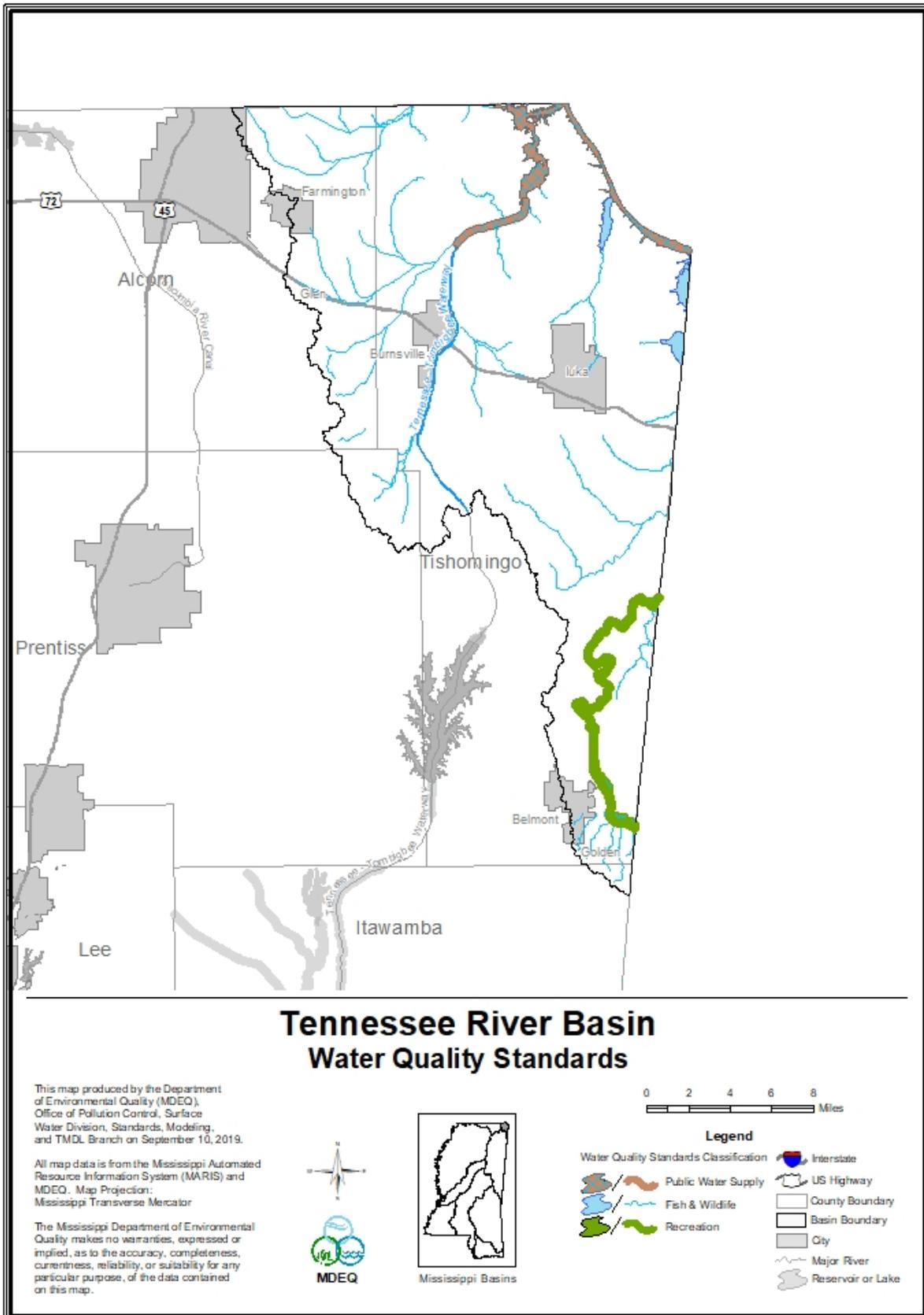
Pearl River Basin		
Waters	Location	Classification
Ross Barnett Reservoir	Madison and Rankin Counties	Recreation
Ross Barnett Reservoir	From River Bend to the Reservoir Dam	Public Water Supply
Bogue Chitto River	From MS Hwy 570 to the MS/LA State Line	Recreation
Bogue Homa	From MS Hwy 604 to the Pearl River	Recreation
Lake Columbia	Marion County	Recreation
Lake Dixie Springs	Pike County	Recreation
Magees Creek	From US Hwy 98 to the Bogue Chitto River	Recreation
Pearl River	From Barnett Reservoir to the City of Jackson Water Intake	Public Water Supply
Pearl River (including Ross Barnett Reservoir)	From Hwy 16 near Edinburg to the Mississippi Sound	Recreation
Strong River	From US Hwy 49 to the Pearl River	Recreation
Shadow Lake (Roosevelt State Park)	Scott County	Recreation
Legion Lake	Simpson County	Recreation
Unnamed Drainage Ditch	From Lake POTW (MS0025194) to Warrior Branch	Ephemeral



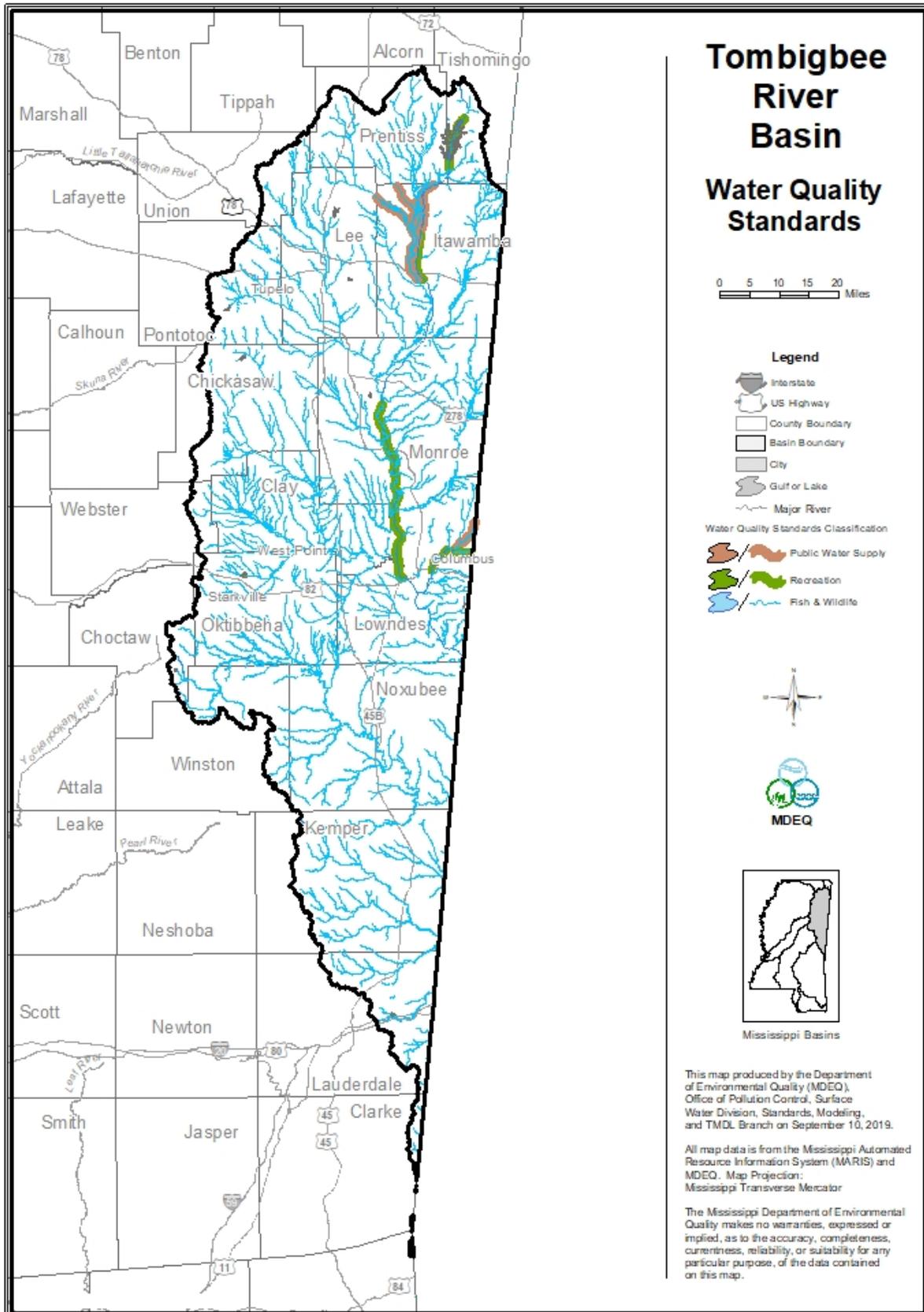
South Independent Streams Basin		
Waters	Location	Classification
Bayou Pierre	From headwaters to the Mississippi River	Recreation
Clear Springs Lake	Franklin County	Recreation
East Fork Amite River	From MS Hwy 584 to the MS/LA State Line	Recreation
Homochitto River	From US Hwy 84 to US Hwy 98	Recreation
Little Bayou Pierre	From headwaters to Bayou Pierre	Recreation
Percy Quinn State Park Lake	Pike County	Recreation
West Fork Amite River	From MS Hwy 24 to the MS/LA State Line	Recreation



Tennessee River Basin		
Waters	Location	Classification
Bear Creek	From MS/AL State Line to the MS/AL State Line	Recreation
Pickwick Lake (including Yellow Creek Embayment)	Tishomingo County	Public Water Supply Recreation
Tennessee River	From MS/AL State Line to the MS/TN State Line	Public Water Supply Recreation
Tenn-Tom Waterway	From Pickwick Lake to Little Yellow Creek	Public Water Supply Recreation

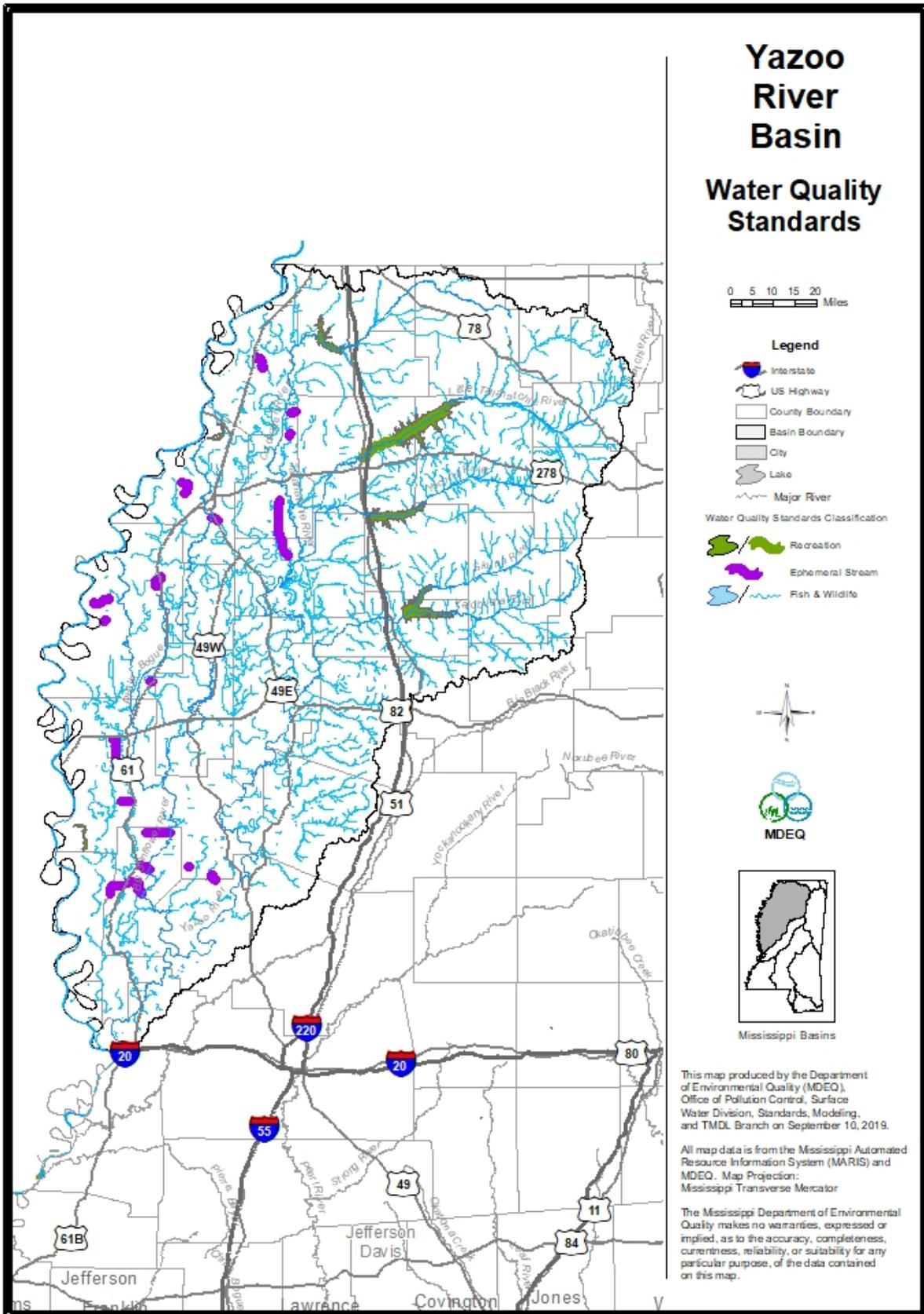


Tombigbee River Basin		
Waters	Location	Classification
Aberdeen Lake (Tenn-Tom Waterway)	From Mile 355.5 to Mile 364.3 (Normal Pool Elevation 190.0)	Recreation
Bay Springs Lake (Tenn-Tom Waterway)	From Mile 410.0 to Mile 419.0 (Normal Pool Elevation 414.0)	Recreation
Canal Section Pool "C" (Tenn-Tom Waterway)	From Mile 389.0 to Mile 396.4 (Normal Pool Elevation 270.0)	Recreation
Chiwapa Reservoir	Pontotoc County	Recreation
Choctaw Lake	Choctaw County	Recreation
Columbus Lake (Tenn-Tom Waterway)	From Mile 332.9 to Mile 355.5 (Normal Pool Elevation 163.0)	Recreation
Davis Lake	Chickasaw County	Recreation
Donivan Creek	From Natchez Trace Parkway to the Tombigbee River	Public Water Supply
Lake Lamar	Lee County	Recreation
Lake Lowndes	Lowndes County	Recreation
Lake Monroe	Monroe County	Recreation
Lake Tom Bailey	Lauderdale County	Recreation
Luxapallila Creek	From the MS/AL State Line to Hwy 50	Public Water Supply Recreation
Oktibbeha County Lake	Oktibbeha County	Recreation
Tenn-Tom Waterway	From Montgomery Lock Dam to Hwy 25 near Fulton	Public Water Supply
Twentymile Creek	From Natchez Trace Parkway to the Tombigbee River	Public Water Supply
Tombigbee River	From Boat Ramp Road to Hwy 78	Public Water Supply
Tombigbee State Park Reservoir	Lee County	Recreation
Yellow Creek	From the MS/AL State Line to Luxapallila Creek	Public Water Supply



Yazoo River Basin		
Waters	Location	Classification
Arkabutla Reservoir	DeSoto and Tate Counties	Recreation
Canal #12	From Delta City Utility District (MS0038164) to the Big Sunflower River	Ephemeral
Chewalla Reservoir	Marshall County	Recreation
Drainage Ditch #3	From Rosedale POTW (MS0020630) to Lane Bayou	Ephemeral
Enid Reservoir	Panola, Lafayette, and Yalobusha Counties	Recreation
Grenada Reservoir	Grenada County	Recreation
Lake Dumas	Tippah County	Recreation
Lake Washington	Washington County	Recreation
Little Tallahatchie River	From Sardis Reservoir to US Hwy 51	Recreation
Moon Lake	Coahoma County	Recreation
Sardis Reservoir	Panola and Lafayette Counties	Recreation
Straight Bayou Drainage Main Ditch "A"	From Louise POTW (MS0044512) to Unnamed Tributary of Silver Creek	Ephemeral
Tillatoba Lake	Yalobusha County	Recreation
Unnamed Drainage Canal	From Anguilla POTW (MS0020541) to the Big Sunflower River	Ephemeral
Unnamed Drainage Ditch	From Arcola POTW (MS0037311) to Black Bayou	Ephemeral
Unnamed Drainage Ditch	From Beulah POTW (MS0042285) to Leban Bayou	Ephemeral
Unnamed Drainage Ditch	From Crenshaw POTW (MS0026930) to David Bayou	Ephemeral
Unnamed Drainage Ditch (Hollandale)	From Farm Fresh Catfish POTW (MS0039535) to Black Bayou	Ephemeral
Unnamed Drainage Ditch	From Farrell to POTW (MS0045187) Overcup Slough	Ephemeral
Unnamed Drainage Ditch	From Lambert POTW (MS0020231) to Muddy Bayou	Ephemeral

Yazoo River Basin Continued		
Waters	Location	Classification
Unnamed Drainage Ditch	From Leland POTW (MS0020761)to Black Bayou	Ephemeral
Unnamed Drainage Ditch	From Lurand Utility District (MS0045080)to the Big Sunflower River	Ephemeral
Unnamed Drainage Ditch	From Rolling Fork POTW (East Lagoon) (MS0025585) to the Little Sunflower River	Ephemeral
Unnamed Drainage Ditch	From Rolling Fork POTW (West Lagoon) (MS0025593) to Indian Bayou	Ephemeral
Unnamed Drainage Ditch	From Ruleville POTW (MS0024945) to the Quiver River	Ephemeral
Unnamed Drainage Ditch	From Shaw POTW (MS0024953) to Porter Bayou	Ephemeral
Unnamed Drainage Ditch	From Shelby POTW (MS0025089) to Mound Bayou	Ephemeral
Unnamed Drainage Ditch	From Simmons Farm Raised Catfish (Yazoo County) (MS0039403) to Unnamed Tributary of Lake George	Ephemeral
Unnamed Drainage Ditch	From Sledge POTW (MS0021016) to David Bayou	Ephemeral
Unnamed Drainage Ditch	From Tunica POTW (MS0042323) Unnamed Tributary of White Oak Bayou	Ephemeral
Unnamed Drainage Ditch	From Winstonville POTW (MS0026450 to the ephemeral ditch west of Winstonville	Ephemeral
Wall Doxey State Park Reservoir (Spring Lake)	Marshall County	Recreation



Source Miss. Code Ann. §§ 49-2-9, 49-17-17, 49-2-1, *et seq.* and 49-17-1, *et seq.*