

EXHIBIT A
PROPOSED REGULATION

**ARKANSAS POLLUTION CONTROL
AND ECOLOGY COMMISSION**



Regulation No. 2

**Regulation Establishing Water
Quality Standards for Surface
Waters of the State of Arkansas**

**Mark-Up Draft
Submitted to the Commission in July 2016**

DESIGNATED USES: OUACHITA MOUNTAIN ECOREGION

(Plates OM-1, OM-2)

Extraordinary Resource Waters

Lake Ouachita (OM-1, OM-2)

DeGray Reservoir (OM-2)

Saline River - entire segment including North, Alum, Middle and South Forks (OM-2)

Caddo River - above DeGray Reservoir (OM-1, OM-2)

South Fork Caddo River (OM-1)

Cossatot River - above Gillham Reservoir (OM-1)

Caney Creek (OM-1)

Little Missouri River - above Lake Greeson (OM-1)

Mountain Fork River (OM-1)

Big Fork Creek - adjacent to natural area (OM-1)

Natural and Scenic Waterway

Cossatot River above Gillham Reservoir (OM-1)

Little Missouri River above Lake Greeson (OM-1)

Brushy Creek (OM-1)*

Ecologically Sensitive Waterbodies

Ouachita River above Lake Ouachita - location of Caddo madtom, longnose darter, peppered shiner and threatened Arkansas fatmucket Mussel (OM-1)

South Fork Ouachita River - location of Arkansas fatmucket mussel and Caddo madtom (OM-1)

Caddo River and all tributaries above DeGray Reservoir - location of endemic paleback darter, Caddo madtom and threatened Arkansas fatmucket Mussel (OM-1, OM-2)

Mountain Fork River - location of threatened leopard darter (OM-1)

Cossatot River above Gillham Reservoir - location of threatened leopard darter (OM-1)

Saline River including Alum, Middle, North and South Forks, and Ten Mile Creek - location of endemic Ouachita madtom and threatened Arkansas fatmucket Mussel (except South fork and Ten Mile Creek) (OM-2)

Little Missouri River above Lake Greeson - location of Caddo madtom

Mayberry Creek (tributary to Hallman's Creek) - location of paleback darter (OM-2)

Robinson Creek - location of threatened leopard darter (OM-1)

Primary Contact Recreation - all streams with watersheds of greater than 10 mi² and all lakes/reservoirs**

Secondary Contact Recreation - all waters**

Domestic, Industrial and Agricultural Water Supply - all waters**

Aquatic Life**

Trout

Lake Ouachita (lower portion) (OM-2)

Ouachita River from Blakely Mt. Dam to Hwy. 270 bridge (OM-2)

Lakes and Reservoirs – all

*As designated in the National Wild and Scenic Rivers System

**Except for those waters with designated use variations supported by Use Attainability Analysis or other investigations.

Aquatic Life**

- Streams**
 Seasonal Ouachita Mountain Ecoregion aquatic life - all streams with watersheds of less than 10 mi² except as otherwise provided in Reg. 2.505
 Perennial Ouachita Mountain Ecoregion aquatic life - all streams with watershed of 10 mi² or larger and those waters where discharges equal or exceed 1 cfs

Site Specific Designated Use Variations Supported by Use Attainability Analysis

Rolling Fork from unnamed trib. A at Grannis to DeQueen Reservoir - no domestic water supply use (OM-1, #2)
 Unnamed tributaries A and A1 at Grannis - no domestic water supply use (OM-1, #3)

SPECIFIC STANDARDS: OUACHITA MOUNTAIN ECOREGION

(Plates OM-1, OM-2)

	<u>Streams</u>	<u>Lakes and Reservoirs</u>
Temperature °C (°F)*	30 (86)	32 (89.6)
Trout waters	20 (68)	
Turbidity (NTU) (base/all)	10/18	25/45
Minerals	see Reg. 2.511	see Reg. 2.511
Dissolved Oxygen (mg/L) **	<u>Pri.</u> <u>Crit</u>	see Reg. 2.505
<10 mi ² watershed	6 2	
10 mi ² and greater	6 6	
Trout waters	6 6	
All other standards	(same as statewide)	

Site Specific Standards Variations Supported by Use Attainability Analysis

Prairie Creek: from headwaters to confluence with Briar Creek, critical season dissolved oxygen - 4 mg/L (OM-1, #1)
 Rolling Fork from unnamed tributary A to DeQueen Reservoir - chlorides 130 mg/L; sulfates - 70 mg/L; total dissolved solids - 670 mg/L(OM-1, #2)
 Unnamed tributaries A and A1 at Grannis - chlorides - 135 mg/L; sulfates - 70 mg/L; total dissolved solids - 700 mg/L (OM-1, #3)
 South Fork Caddo River - sulfates 60 mg/L (OM-1, #4)
 Back Valley Creek - sulfates 250 mg/L; total dissolved solids 500 mg/L (OM-1,#5)
 Wilson Creek from a point approximately 0.85 mile upstream of Outfall 001 to UMETCO Outfall 001 – chlorides 56 mg/L; sulfates 250 mg/L; total dissolved solids 500 mg/L (OM-2, #6)
 Wilson Creek downstream of UMETCO Outfall 001 to its mouth – chlorides 56 mg/L; sulfates 250 mg/L; total dissolved solids 500 mg/L (OM-2, #7)

*Increase over natural temperatures may not be more than 2.8°C (5°F).

**At water temperatures ≤10°C or during March, April and May when stream flows are 15 cfs and greater, the primary season dissolved oxygen standard will be 6.5 mg/L. When water temperatures exceed 22°C, the critical season dissolved oxygen standard may be depressed by 1 mg/L for no more than 8 hours during a 24-hour period.

Variations Supported by Environmental Improvement Project

Chamberlain Creek - sulfates 1,384 mg/L; total dissolved solids 2,261 mg/L; chlorides 68 mg/L (OM-2, #1)

Cove Creek - sulfates 250 mg/L; total dissolved solids 500 mg/L (OM-2, #2)

Lucinda Creek - sulfates 250 mg/L; total dissolved solids 500 mg/L (OM-2, #3)

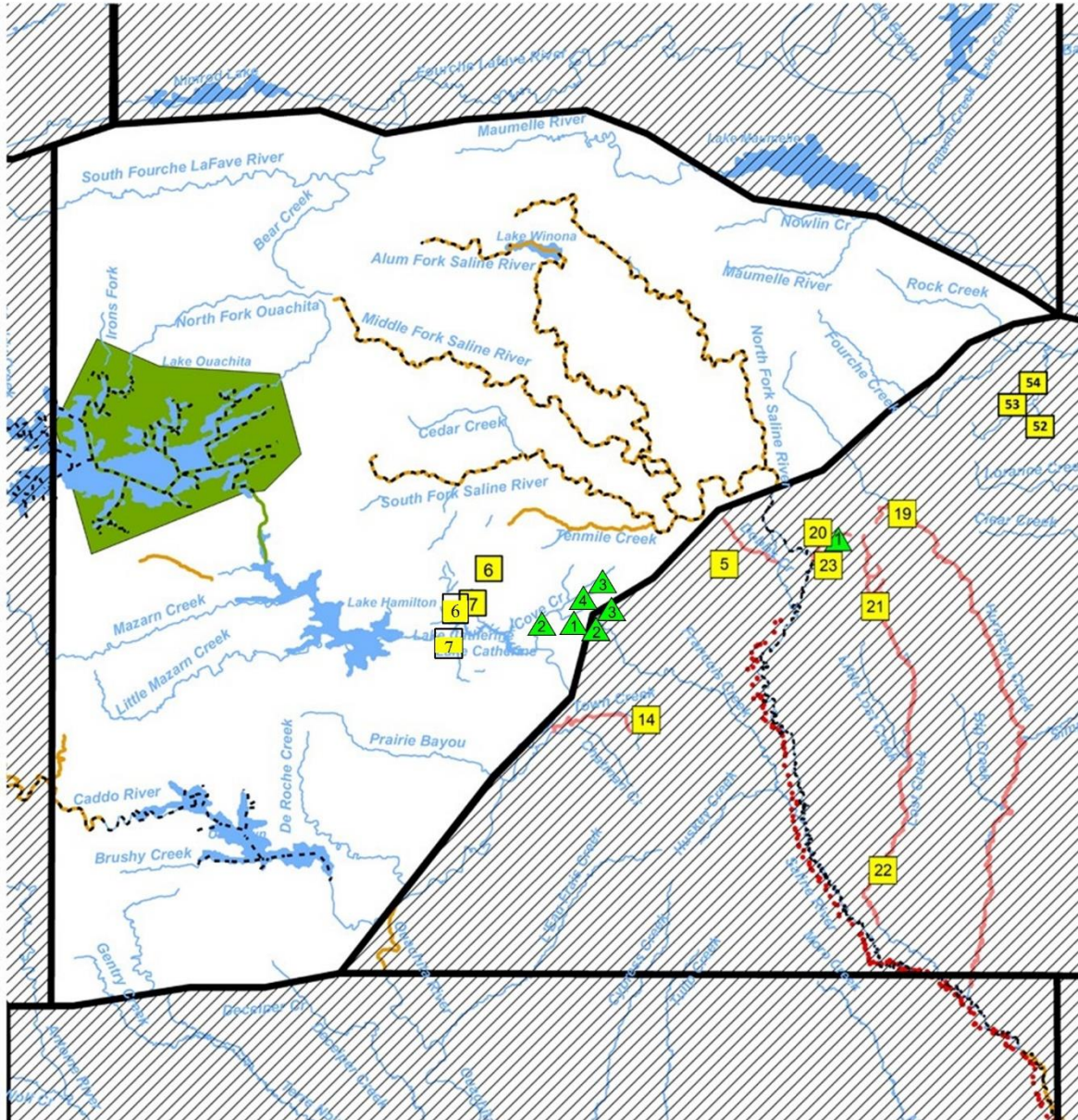
Rusher Creek - sulfates 250 mg/L; total dissolved solids 500 mg/L (OM-2, #4)

Plate OM-2 (Ouachita Mountains)

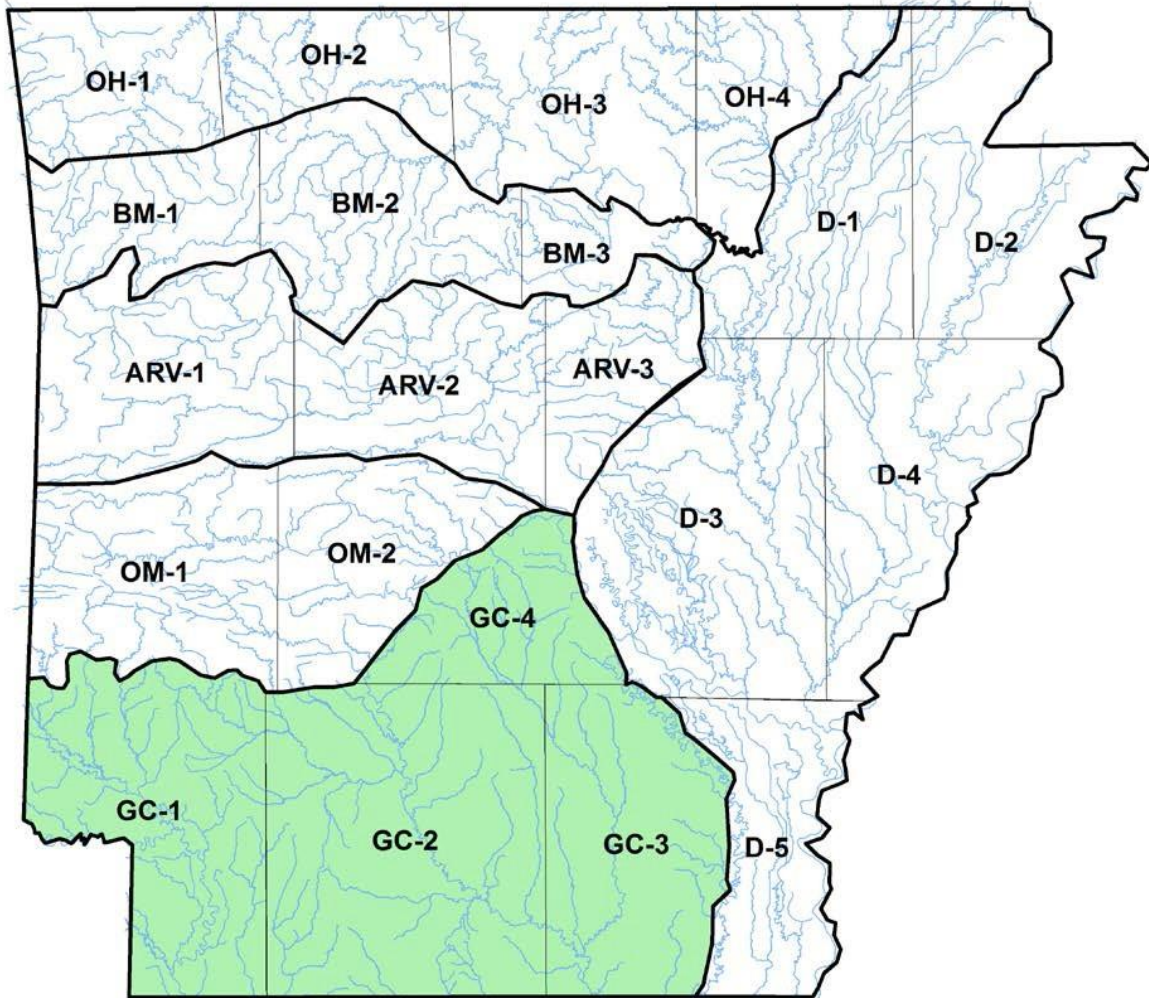


LEGEND

- - Extraordinary Resource Waters
- Natural and Scenic Waterways
- Variation by UAA
- Ecologically Sensitive Waterbodies
- ESW Caves, Springs, and Seeps
- Trout_Waters
- ▲ Variation by EIP



Index to Plates of the Gulf Coastal Plain



DESIGNATED USES: GULF COASTAL ECOREGION

(Plates GC-1, GC-2, GC-3, GC-4)

Extraordinary Resource Waters

Saline River (GC-3, GC-4)

Moro Creek - adjacent to natural area (GC-2)

Natural and Scenic Waterways

Saline River from the Grant-Saline County line to mouth (GC-3)

Ecologically Sensitive Waterbodies

Little River above Millwood Reservoir - location of Ouachita rock pocketbook and pink mucket mussels (GC-1) Grassy

Lake and Yellow Creek below Millwood Reservoir - unique ecosystem and biota (GC-1)

Lower Little Missouri River - location of peppered shiner and longnose darter (GC-2) Lower

Saline River - location of peppered shiner, crystal darter and goldstripe darter (GC-3)

Ouachita River near Arkadelphia - location of flat floater, Ouachita rock pocketbook and pink mucket mussels (GC-4)

Streams with Substantial Springwater Influence

L'Eau Frais (GC-4) Cypress

Creek (GC-4)

East and West Fork Tulip Creeks (GC-4) Others

to be determined

Primary Contact Recreation - all streams with watersheds greater than 10 mi² and all lakes/reservoirs**

Secondary Contact Recreation - all waters**

Domestic, Industrial and Agricultural Water Supply - all waters**

Domestic Water Supply

Aquatic Life**

Trout

Little Missouri River from Narrows Dam to confluence with Muddy Fork (GC-1)

Lakes and Reservoirs - all

Streams

Seasonal Gulf Coastal aquatic life - all streams with watersheds of less than 10 mi² except as otherwise provided in Reg. 2.505

Perennial Gulf Coastal aquatic life - all streams with watersheds of 10 mi² or larger and those waters where discharges equal or exceed 1 cfs

**Except for those waters with designated use variations supported by Use Attainability Analysis or other investigations.

Site Specific Designated Use Variations Supported by Use Attainability Analysis

Loutré Creek - perennial aquatic life use, except seasonal from railroad bridge to mouth (GC-2, #1)
Unnamed tributary to Smackover Creek - no fishable/swimmable uses (GC-2, #2)
Unnamed tributary to Flat Creek - no fishable/swimmable uses (GC-2, #4) Dodson
Creek - perennial aquatic life use (GC-4, #5)
Jug Creek - perennial aquatic life use (GC-2, #6)
Lick Creek - seasonal aquatic life use; no primary contact (GC-1, #7)
Coffee Creek and Mossy Lake - no fishable/swimmable or domestic water supply uses (GC-3, #8)
Red River from Oklahoma state line to confluence with Little River - No domestic water supply use (GC-1, #9) Bluff
Creek and unnamed tributary - no domestic water supply use (GC-1, #10)
Mine Creek from Highway 27 to Millwood Lake - no domestic water supply use (GC-1, #11) Caney
Creek - no domestic or industrial water supply use (GC-1, #12)
Bois d'Arc Creek from Caney Creek to Red River - no domestic or industrial water supply use (GC-1, #13)
Town Creek below Acme tributary - no domestic water supply (GC-4, #14)
Unnamed trib. from Acme - no domestic water supply (GC-4, #14) Gum
Creek - no domestic water supply use (GC-2, #15)
Loutré Creek from Highway 15 S. to the confluence of Bayou de Loutré – no domestic water supply use (GC-2,
#41)
Unnamed trib 002 (UT002) – no domestic water supply use (GC-2, #31)
Unnamed trib 003 (UT003) – no domestic water supply use (GC-2, #34)
Unnamed trib 004 (UT004) – no domestic water supply use (GC-2, #32)
Bayou de Loutré from mouth of UT004 to Louisiana state line - no domestic water supply use (GC-2, #16) Walker
Branch - no domestic water supply use (GC-2, #17)
Little Cornie Bayou from Walker Branch to Arkansas/Louisiana state line - no domestic water supply use (GC- 2, #18)
Unnamed trib to Little Cornie Bayou (UTLCB-2) - no domestic water supply use (GC-2, #18)
Alcoa unnamed trib to Hurricane Creek and Hurricane Creek - no domestic water supply use (GC-4, #19) Holly
Creek - no domestic water supply use (GC-4, #20)
Dry Lost Creek and Tribs. - no domestic water supply use (GC-4, #21)
Lost Creek - no domestic water supply use (GC-4, #22)
Albemarle unnamed trib (AUT) to Horsehead Creek - no domestic water supply use (GC-2, #27)
Horsehead Creek from AUT to mouth - no domestic water supply use (GC-2, #27)
Dismukes Creek and Big Creek to Bayou Dorcheat – no domestic water supply (GC-2, #28)
Boggy Creek from the discharge from Clean Harbors El Dorado LCC downstream to the confluence of Bayou de Loutré -
no domestic water supply use (GC-2, #51)
Unnamed tributary to Flat Creek from EDCC Outfall 001 d/s to confluence with unnamed tributary A to Flat Creek - no
domestic water supply use (GC-2, #37)
Unnamed tributary A to Flat Creek from mouth of EDCC 001 ditch to confluence with Flat Creek - no domestic water
supply use (GC-2, #38)
Flat Creek from mouth of UTA to confluence with Haynes Creek - no domestic water supply use (GC-2, #39) Haynes
Creek from mouth of Flat Creek to confluence with Smackover Creek - no domestic water supply use (GC-
2, #40)
Red River from the mouth of the Little River to the Arkansas/Louisiana state line – no domestic water supply use (GC-
1, #55) †

SPECIFIC STANDARDS: GULF COASTAL ECOREGION

(Plates GC-1, GC-2, GC-3, GC-4)

	<u>Typical Streams</u>	<u>Spring Water Streams</u>	<u>Lakes and Reservoirs</u>
Temperature °C (°F)*	30 (86)	30 (86)	32 (89.6)
Ouachita River			
(state line to Little Missouri River) Red River	32 (89.6)		
Little River	32 (89.6)		
(from Millwood Lake to the Red River)	32 (89.6) †		
Turbidity (NTU) (base/all)	21/32	21/32	25/45
Red River (base/all)	50/150		
	see Reg. 2.511		see Reg. 2.511
Minerals			
	<u>Pri.</u>	<u>Crit.</u>	see Reg. 2.505
Dissolved Oxygen (mg/L) **	5	2	
<10 mi ² watershed	5	3	
10 mi ² - 500 mi ²	5	5	
>500 mi ² watershed		6	5
All sizes (springwater influenced)			
All other standards	(same as statewide)		

*Increase over natural temperatures may not be more than 2.8°C (5°F).

**At water temperatures ≤10°C or during March, April and May when stream flows are 15 cfs and greater, the primary season dissolved oxygen standard will be 6.5 mg/L. When water temperatures exceed 22°C, the critical season dissolved oxygen standard may be depressed by 1 mg/L for no more than 8 hours during a 24-hour period.

Site Specific Standards Variations Supported by Use Attainability Analysis

Loutre Creek - from headwaters to railroad bridge, critical season dissolved oxygen standard - 3 mg/L; primary season - 5 mg/L; from railroad bridge to mouth, critical season dissolved oxygen - 2 mg/L (GC-2, #1)

Unnamed tributary to Smackover Creek - headwaters to Smackover Creek, year round dissolved oxygen criteria - 2 mg/L (GC-2, #2)

Unnamed tributary to Flat Creek - from headwaters to Flat Creek, year round dissolved oxygen criteria - 2 mg/L (GC-2, #4)

Dodson Creek - from headwaters to confluence with Saline River, critical season dissolved oxygen standard - 3 mg/L (GC-4, #5)

Jug Creek - from headwaters to confluence with Moro Creek, critical season dissolved oxygen standard - 3 mg/L (GC-2, #6)

Lick Creek - from headwaters to Millwood Reservoir, critical season dissolved oxygen standard - 2 mg/L (GC-1, #7)

Coffee Creek and Mossy Lake - exempt from Reg. 2.406 and Chapter Five (GC-3, #8)

Red River from Oklahoma state line to confluence with Little River - total dissolved solids - 850 mg/L (GC-1, #9)

Bluff Creek and unnamed trib. - sulfates 651 mg/L; total dissolved solids 1033 mg/L (GC-1, #10)

Muddy Fork Little Missouri River - sulfates 250 mg/L; total dissolved solids 500 mg/L (GC-1, #24)

Little Missouri River - sulfates 90 mg/L; total dissolved solids 180 mg/L (GC-1, #25)

Mine Creek from Highway 27 to Millwood Lake - chlorides - 90 mg/L; sulfates - 65 mg/L; total dissolved solids - 700 mg/L (GC-1, #11)

Caney Creek - chlorides 113 mg/L; sulfates 283 mg/L; total dissolved solids 420 mg/L (GC-1,#12)

Bois d'Arc Creek from Caney Creek to Red River - chlorides 113 mg/L; sulfates 283 mg/L; total dissolved solids 420 mg/L (GC-1,#13)

Town Creek below Acme tributary - sulfates 200 mg/L; total dissolved solids 700 mg/L (GC-4,#14) Unnamed trib. from Acme - sulfates 330 mg/L; total dissolved solids 830 mg/L (GC-4,#14)

Gum Creek - chlorides 104 mg/L; total dissolved solids 311 mg/L (GC-2,#15)

Bayou de Loutre from Gum Creek to State line - Chlorides 250 mg/L; total dissolved solids 750 mg/L (GC-2,#16)

Walker Branch - chlorides 180 mg/L; total dissolved solids 970 mg/L (GC-2,#17)

Ouachita River - from Ouachita River mile (ORM) 223 to the Arkansas-Louisiana border (ORM 221.1), site specific seasonal dissolved oxygen criteria: 3 mg/L June and July; 4.5 mg/L August; 5 mg/L September through May. These seasonal criteria may be unattainable during or following naturally occurring high flows,(i.e., river stage above 65 feet measured at the lower gauge at the Felsenthal Lock and Dam, Station No.89-o, and also for the two weeks following the recession of flood waters below 65 feet), which occurs from May through August. Naturally occurring conditions which fail to meet criteria should not be interpreted as violations of these criteria (GC-3, #26)

Alcoa unnamed trib. to Hurricane Cr. and Hurricane Cr. - see Reg. 2.511 (CG-4. #19) Holly Creek - See Reg. 2.511 (CG-4, #20)

Saline River bifurcation - see Reg. 2.511 (GC-4, #23)

Dry Lost Creek and tributaries - see Reg. 2.511 (GC-4, #21) Lost Creek - see Reg. 2.511 (GC-4, #22)

Albamarle unnamed trib (AUT) to Horsehead Creek - chlorides 137 mg/L; total dissolved solids 383 mg/L (GC- 2,#27)

Horsehead Creek from AUT to mouth - chlorides 85 mg/L; total dissolved solids 260 mg/L(GC-2,#27) Bayou Dorcheat - sulfates 16 mg/L (GC-2,#27)

Dismukes Creek – chlorides 26 mg/L; total dissolved solids 157 mg/L (GC-2, #28)

Big Creek from Dismukes to Bayou Dorcheat – chlorides 20 mg/L; total dissolved solids 200 mg/L (GC-2, #28) Bayou de Loutre from Chemtura outfall to Loutre Creek – maximum water temperature 96°F (GC-2, #29)

Unnamed tributary of Lake June below Entergy Couch Plant to confluence with Lake June – maximum water temperature 95 degrees F (limitation of 5 degrees above natural temperature does not apply) (GC-1, #30).

Unnamed tributary to Flat Creek from EDCC Outfall 001 d/s to confluence with unnamed tributary A to Flat Creek Chloride 23 mg/L, Sulfate 125 mg/L, TDS 475 mg/L, (GC-2, #37) †

Unnamed tributary A to Flat Creek from mouth of EDCC 001 ditch to confluence with Flat Creek, Chloride 16 mg/L, Sulfate 80 mg/L, TDS 315 mg/L, (GC-2, #38) †

Boggy Creek from the discharge from Clean Harbors El Dorado LCC downstream to the confluence of Bayou de Loutre. Chloride, 631mg/L; Sulfate, 63 mg/L, total dissolved solids, 1360; Selenium, 15.6 u/L

McGeorge Creek (headwaters to Willow Springs Branch) Sulfate, 250 mg/L; total dissolved solids, 432 mg/L (GC- 4. #52)

Willow Springs Branch (McGeorge Creek to Little Fourche Creek) Sulfate, 112 mg/L; total dissolved solids 247 mg/L (GC-4. #53)

Little Fourche Creek (Willow Springs Branch to Fourche Creek) total dissolved solids, 179 mg/L (GC-4. #54) Red River from mouth of the Little River to the Arkansas/Louisiana state line, TDS 860 mg/L (GC-1, #55, 58)† Little River from Millwood Lake to the Red River, TDS 138mg/L; temperature 32 °C/89.6 °F (GC-1, #56)†

† Not applicable for clean water act purposes until approved by EPA.

Variations Supported by Environmental Improvement Project

Holly Creek; Selenium, Chronic Standard, 17µg/L (GC-4, #1)

Reyburn Creek: sulfates 250 mg/L; total dissolved solids 500 mg/L (GC-4, #2)

Scull Creek (including Clearwater Lake): sulfates 250 mg/L; total dissolved solids 500 mg/L (GC-4, #3)

Variations Supported by Technical Adjustment

Red River from the Arkansas/Oklahoma state line to the mouth of the Little River, sulfate 250 mg/L, TDS 940 mg/L (GC-1, #57)†

Red River from mouth of the Little River to the Arkansas/Louisiana state line, sulfate 225 mg/L (GC-1, #58)†

Plate GC-4 (Gulf Coastal Plain)



LEGEND

- - Extraordinary Resource Waters
- Natural and Scenic Waterways
- Variation by UAA
- Ecologically Sensitive Waterbodies
- ESW Caves, Springs, and Seeps
- Trout_Waters
- ▲ Variation by EIP

