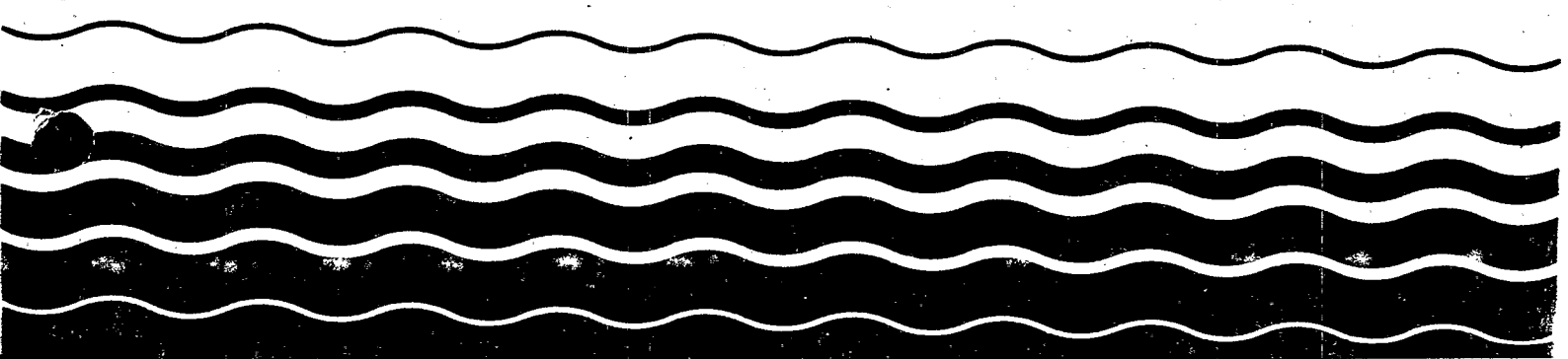


Water



State Water Quality Standards Summary: Missouri



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The reader should consult the water quality standards of a particular State for exact regulatory language applicable to that State. Copies of State water quality standards may be obtained from the State's Water Pollution Control Agency or its equivalent.

Additional information may also be obtained from the:

Standards Branch
Criteria and Standards Division (WH-585)
Office of Water Regulations and Standards
U.S. Environmental Protection Agency
Washington, D.C. 20460
202-475-7315

This document may be obtained only from the National Technical Information Service (NTIS) at the following address:

National Technical Information Service
5285 Front Royal Road
Springfield, Virginia 22161
703-487-4650

The NTIS order number is: PB89-141915.

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State Narrative Language For: Antidegradation

Where water quality exceeds levels necessary to protect beneficial uses, that quality shall be fully maintained and protected. Water quality may be lowered only if the state finds, after full satisfaction of the intergovernmental coordination and public participation provisions of 10 CSR 20-6.020, that such lowered water quality is necessary to allow important economic and social development. The state shall 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 before allowing any lowering of water quality. Such lowered water quality would only be allowable provided that:

- (1) Existing instream uses are fully maintained and protected.
- (2) No public health hazard is created; and
- (3) There is no lowered water quality in outstanding natural resource waters or outstanding state resource waters

State Narrative Language For: Toxics

The waters of the state shall be free from substances or conditions that have a harmful effect on human, animal, or aquatic life.

Water contaminants shall not cause the limits in Table A in the Missouri Water Quality Standards for the toxic form of metals and other toxic substances to be exceeded. Concentrations of such substances in bottom sediments or waters shall not harm benthic organisms and shall not accumulate through the food chain in harmful concentrations, nor shall Food and Drug Administration maximum fish tissue levels for fish consumption be exceeded. More stringent criteria may be imposed if there is evidence of additive or synergistic effects. Effluent toxicity studies or site-specific instream biological studies performed, recognized, or sanctioned by the commission may be used to develop alternative effluent limits not based on Table A values.

Persistent, bioaccumulative, man-made toxic substances are not allowed in waters of the state.

Other potentially toxic substances for which sufficient toxicity data are not available may not be released to waters of the state until safe levels are demonstrated through adequate bioassay studies.

State Narrative Language For: Free From

All waters of the State at all times shall be:

- A. Free from substances that will cause the formation of putrescent or otherwise objectionable bottom deposits.
- B. Free from oil, scum and floating debris in sufficient amounts to be unsightly or deleterious.
- C. Free from materials that cause color, odor, or other conditions in such degree as to create a nuisance.
- D. Free from substances or conditions that have a harmful effect on human, animal, or aquatic life.

State Narrative Language For: Mixing Zones

- A. The mixing zones shall be exempted from the specific criteria for those substances that are rendered non-toxic by dilution, dissipation, or rapid transformation. Acutely toxic concentrations of substances are not allowed in the mixing zone. The mixing zone shall not overlap another mixing zone in such a manner that

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the maintenance of aquatic life in the body of water as a whole would be adversely affected.

B. In determining the size and location of the mixing zone for any discharge, the following characteristics must be considered:

i. The size of the river, the volume of discharge, the stream bank configuration, the mixing velocities, and other hydrologic or physiographic characteristics;

ii. The present and anticipated future uses of the water, including type of aquatic life supported; and

iii. The dilution ratio, that is, the ratio of the seven (7)-day once-in-ten (10)-year low flow of the receiving stream to the average dry weather flow of the discharge.

C. Zones of passage must be provided wherever mixing zones are allowed. As a guideline, at least three quarters of the cross-sectional area or volume of flow of a stream should be left free as a zone of passage.

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Classifications:

Irrigation	Application of water to cropland or directly to plants that may be used for human or livestock consumption. Occasional supplemental irrigation, rather than continuous irrigation, is assumed.
Livestock Watering & Wildlife Watering	Maintenance of conditions to support health in livestock and wildlife.
Protection of Warm-Water Aquatic Life	Maintenance of conditions to sustain warm-water fish and other warm-water aquatic life, including critical stages of reproduction and early life. It will include warm-water sport fishing.
Coldwater Sport Fishery	Maintenance of conditions to support the propagation or stocking of trout.
Whole Body Contact Recreation	Activities in which there is direct human contact with the raw surface water to the point of complete body submergence. The raw water may be ingested accidentally and certain sensitive body organs, such as the eyes, ears, and the nose will be exposed to the water. Although the water may be ingested accidentally, it is not intended to be used as a potable supply unless acceptable treatment is applied. Water so designated is intended to be used for swimming, water skiing or skin diving.
Drinking Water Supply	Maintenance of a raw water supply which will yield potable water by public water treatment facilities.
Industrial Process Water & Industrial Cooling Water	Water to support various industrial uses; since quality needs will vary by industry, no specific criteria are set in these standards.
Commercial Fishery	Aquatic life criteria and Food and Drug Administration limits for fish consumption are applicable.
Boating & Canoeing	Activities in which very little contact with water is assumed.
Stream-flow Classification Class P	Streams that maintain permanent flow even in drought periods.
Stream-Flow Classification Class P1	Standing water reaches of Class P Streams, including impoundments.
Stream-flow Classifications Class C	Streams that may cease flow in dry periods, but maintain permanent pools which support aquatic life.

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	All Classes	Irrigation	Livestock Water..	Protection of W..	
Physical					
pH					
Upper Value	9.0				
Lower Value	6.5				
Dissolved Oxygen					
Lower Value					
Temperature			5	mg/L	
Upper Value	Narr.				
Temperature Change					
Upper Value	Narr.				
Nutrients					
Ammonia					
Upper Value			0.1	mg/L	
Toxic Metals					
Arsenic					
Upper Value					
Cadmium	100	ug/L	20	ug/L	
Upper Value					
Chromium - Total	10	ug/L	12	ug/L	
Upper Value					
Copper	100	ug/L	50	ug/L	
Upper Value					
Cyanide		500	ug/L	20	ug/L
Upper Value					
Iron			5	ug/L	
Upper Value					
Lead			1000	ug/L	
Upper Value					
Mercury			50	ug/L	
Upper Value					
Zinc			2	ug/L	
Upper Value					
Beryllium		2000	ug/L	100	ug/L
Upper Value					
Boron	100	ug/L	5	ug/L	
Upper Value					
Nickel	750	ug/L			
Upper Value					
Selenium		200	ug/L	100	ug/L
Upper Value					
Silver			10	ug/L	
Upper Value			5	ug/L	
Pesticides					
Organics					
Phenol					
Upper Value			100	ug/L	
Bacteria					

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Coldwater Sport Whole Body Cont.. Drinking Industrial Proc..

Physical

Dissolved Oxygen
Lower Value

6 mg/L

Nutrients

Ammonia
Upper Value
Nitrate
Upper Value

0.02 mg/L

10 mg/L

Toxic Metals

Arsenic
Upper Value

50 ug/L

Cadmium
Upper Value

1.2 ug/L

10 ug/L

Chromium - Total
Upper Value

50 ug/L

Copper
Upper Value

20 ug/L

1000 ug/L

Iron
Upper Value

1000 ug/L

300 ug/L

Lead
Upper Value

50 ug/L

Mercury
Upper Value

2 ug/L

2 ug/L

Zinc
Upper Value

100 ug/L

5000 ug/L

Barium
Upper Value

1000 ug/L

Beryllium
Upper Value

5 ug/L

Manganese
Upper Value

50 ug/L

Nickel
Upper Value

100 ug/L

Selenium
Upper Value

10 ug/L

10 ug/L

Silver
Upper Value

5 ug/L

50 ug/L

Pesticides

Organics

Phenol
Upper Value

100 ug/L

1 ug/L

Bacteria

Fecal Coliform
Upper Value

Narr.

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Commercial Fish.. Boating & Canoe.. Stream-flow
Class P

Stream-Flow
Class P1

Physical

Nutrients

Toxic Metals

Iron

Upper Value

1000 ug/L

Lead

Upper Value

50 ug/L

Pesticides

Organics

Bacteria

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Stream-flow
Class C

Physical

Nutrients

Toxic Metals

Pesticides

Organics

Bacteria

