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Water

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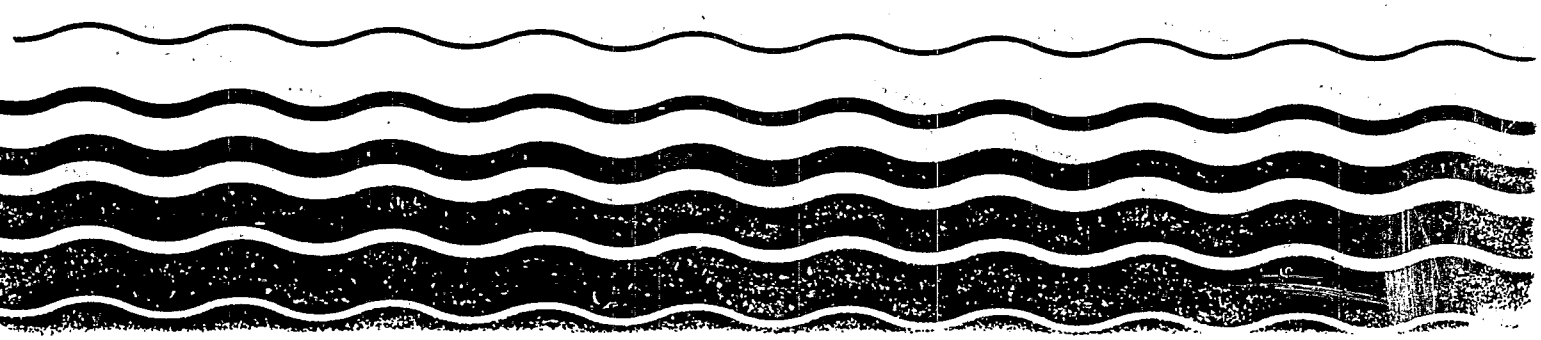
Dissolved Solids

Water Quality Standards Criteria Summaries: A Compilation of State/Federal Criteria



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Additional information may alsc be obtained from the:

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INTRODUCTION

This digest is compiled to provide general information to the public as well as to Federal, State, and local officials. It contains excerpts from the individual Federal-State water quality standards establishing pollutant specific criteria for interstate surface waters. The water quality standards program is implemented by the U. S. Environmental Protection Agency where responsibility for providing water quality recommendations, approving State-adopted standards for interstate waters, evaluating adherence to the standards, and overseeing enforcement of standards compliance, has been mandated by Congress.

Standards, a nationwide strategy for surface water quality management, contain three major elements: the use (recreation, drinking water, fish and wildlife propagation, industrial, or agricultural) to be made of the navigable water; criteria to protect these uses; and an antidegradation statement to protect existing high quality waters, from degradation by the addition of pollutants. Guidance for the development of standards by individual States is contained in two EPA documents entitled Water Quality Standards Handbook (1983) and Quality Criteria for Water (1986).

Although natural waters contain dissolved solids, the subject of this digest, consisting mainly of carbonates, bicarbonates, chlorides, sulfates, phosphates, and possibly nitrates with traces of metallic elements, increases in these substances above normal are undesirable and sometimes detrimental. Concentrations or effects of these substances can be raised or synergistically altered by, for example, the addition of chemical wastes, dissolved salts, acids, alkalis, gas and oil-well brines, or irrigation drainage. Adverse effects may be unpalatable drinking water, fish kills, crop damage, or corrosion damage in water systems.

The 1986 Quality Criteria for Water recommends a criterion of 250 mg/l for chlorides and sulfates in domestic water supplies (welfare).

Since water quality standards are revised from time to time, following procedures set forth in the Clean Water Act, individual entries in this digest may be superseded. This digest will be updated periodically. Because this publication is intended for use only as a general information reference, the reader needs to refer to the current approved water quality standards to obtain the latest information for special purpose and applications. These can be obtained from the State water pollution control agencies or the EPA Regional Offices.

REFERENCES

3 Water Quality Boundaries and Standards (Arizona), Article 2. Surface Water Quality Standards, A.R.S R18.11, 1987.

5 California Water Quality Standards by River Basins, ca. 1975

For more detailed information on selected basins, sub-basins and stretches of streams and coastal areas refer to California State Water Quality Standards.

11 Hawaii Administative Rules, Title II, Hawaii Department of Health, Chapter 54: Water Quality Standards, 1988.

31 Water Quality Standards for Interstate and Intrastate Streams in New Mexico, State of New Mexico Water Quality Control Commission, 1988.

43 Texas Surface Water Quality Standards, Texas Water Commission, Rule Change, 1988.

44 Utah Standards of Quality for Waters of the State, Wastewater Disposal Regulations: Part II, State of Utah Department of Health: Division of Environmental Health, 1988.

48 Water Quality Standards, West Virginia Legislative Rules, State Water Resources Board, 1985.

53 Revised Guam Water Quality Standards, Guam Environmental Protection Agency, 1984, p. 10.

54 Commonwealth of the Northern Mariana Islands Marine and Fresh Water Quality Standards, Commonwealth Register, Vol. 8 No. 5, August 15, 1986, p. 4465.

56 Marine and Fresh Water Quality Standard Regulations, Trust Territory, 1986, p. 7.

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2 Pages 706:1003-1004, November 7, 1986

4 Pages 716:1005-1007, August 30, 1985

6 Page 726:1010, August 22, 1986

9 Pages 746:1011, January 21, 1983

13 Pages 766:0505-0508, December 2, 1983

14 Pages 771:1005-1006, August 10, 1984, 771:1008, December 26, 1980, 771:1015, January 10 1986

15 Page 776:1005, February 13, 1987

17 Pages 786:1008, 1010, November 29, 1985

18 Pages 791:1006-1007, January 18, 1985

21 Page 806:1003, June 21, 1985

22 Page 811:1003, February 13, 1987

23 Pages 816:1014-1019, June 25, 1982

24 Pages 821:1003-1004, October 25, 1985

28 Pages 841:1001, 1013, 1069-1083, February 22, 1985, 841:1005, 1008-1009, 1027-1068, June 29, 1984

30 Pages 851:1014-1024, April 4, 1986

32 Pages 861:1007-1011, November 29, 1985

33 Pages 866:1009-1014, August 29, 1986

35 Pages 876:1011, 1023, May 24, 1985

36 Page 881:1009, September 26, 1986

37 Pages 886:1005-1037, May 9, 1986

38 Page 891:1008, August 9, 1985

41 Pages 911:1005-1007, March 22, 1985

42 Pages 916:0541-0542, September 7, 1984

46 Page 936:1006.4, February 28, 1986

49 Page 951:1002, March 13, 1987

55 Pages 896:1003-1004, December 23, 1983

State	Designated Use and Criteria Value
Alabama[1]	Not specified
Alaska[2]	**Water Supply:** **Drinking, culinary and food processing.** Shall not exceed 500 mg/l. Neither chlorides nor sulfates shall exceed 200 mg/l. **Agriculture, including irrigation and stock watering.** Shall not exceed 1000 mg/l. **Aquaculture, Growth and Propagation of Fish, Shellfish and other Aquatic Life, and Wildlife Including Waterfowl and Furbearers.** Shall not exceed a maximum of 1,500 mg/l including natural conditions. Increase in TDS shall not exceed one-third of the concentration of the natural condition of the body of water. **Industrial.** No amounts above natural conditions which can cause corrosion, scaling, or process problems.
Arizona[3]	Colorado River Salinity Standards: the flow-weighted average annual salinity in the lower main stem of the Colorado River system shall be maintained at or below the average value found during 1972, while allowing the Colorado River Basin states to continue to develop their compact-apportioned waters. The flow-weighted average annual salinity values for the year 1972 were: Below Hoover Dam 723 mg/l Below Parker Dam 747 mg/l At Imperial Dam 879 mg/l Any municipal point source discharge that may have a direct or indirect impact on the lower main stem of the Colorado River above Imperial Dam shall not discharge TDS in concentrations exceeding 400 mg/l above the flow-weighted average salinity concentration of the intake water supply, unless the Department determines that it is not practicable to attain this limit. Demonstration of practicability shall be consistent with the criteria set forth in the "1984 Review: Water Quality Standards for Salinity, Colorado River System" and supplement thereto, which is hereby adopted and incorporated by reference and is on file with the Arizona Department of Health Services and the Office of the Secretary of State.

State	Designated Use and Criteria Value

Arkansas[4]

Mineral Quality. Existing mineral quality shall not be altered by municipal, industrial or other waste discharges or stream activity so as to interfere with other beneficial uses. The following limits apply to the streams indicated, and represent concentrations of chloride (Cl), sulfate (SO4) and total dissolved solids (TDS) not to be exceeded in more than (1) in ten (10) samples collected over a period not less than 30 days or more than 360 days:

Stream	Concentration - mg/l Cl	SO_4	TDS
Arkansas River Basin:			
Arkansas River (Mouth to L&D #7)	250	100	600
Arkansas River (L&D #7 to L&D #10)	250	100	750
Cadron Creek	20	20	100
Arkansas River (L&D #10 to Oklahoma line, including Dardanelle Reservoir)	250	120	750
James Fork	20	100	275
Illinois River	20	20	300
White River Basin:			
White River (Mouth to L&D #3)	20	60	430
Big Creek	20	30	270
Cache River	20	30	270
Bayou DeView	20	30	270
Little Red River	20	30	100
Black River	20	30	270
Strawberry River	20	30	270
Spring River	20	30	290
Eleven Point River	20	30	270
South Fork Spring River	20	30	270

State

Designated Use and Criteria Value

Stream	Concentration - mg/l Cl	SO_4	TDS
Myatt Creek	20	30	270
Current River	20	30	270
White River (Dam #3 to Missouri line, including Bull Shoals Reservoir)	20	20	180
Buffalo Creek	20	20	200
Crooked Creek	20	20	200
White River (Missouri line to Headwaters, including Beaver Reservoir)	20	20	160
Kings River	20	20	150
West Fork White River	20	20	150
St. Francis River Basin:			
St Francis River (Mouth to 36 N. Lat.)	10	30	330
L'Anguille River	20	30	235
Tyronza River	20	30	350
Little River	20	30	365
Pemiscot Bayou	20	30	380
St. Francis River (36° N. Lat. to 36° 30′ N. Lat.)	10	20	180
Ouachita River Basin:			
Bayou Bartholomew	30	30	220
Chemin-a-Haut Creek	50	20	570
Overflow Creek	20	30	170
Bayou Macon	30	40	330
Boeuf River	90	30	460
Big Cornie Creek	230	30	560
Little Cornie Creek	200	10	400
Three Creeks	800	10	1500

State

Designated Use and Criteria Value

Stream	Concentration - mg/l Cl	SO_4	TDS
Little Cornie Bayou	200	20	560
Bayou D'Loutre	800	90	1500
Ouachita River (Louisiana line to Camden)	160	40	350
Saline River	20	40	120
Hurricane Creek	20	500	1000
Lost Creek	20	500	1000
Holly Creek	20	500	1000
Moro Creek	30	20	260
Smackover Creek	1000	30	1700
Ouachita River (Camden to Carpenter Dam)	50	40	150
Little Missouri River	10	10	90
Garland Creek	250	250	500
Ouachita River (Carpenter Dam to Headwaters, including Lake Ouachita tributaries)	10	10	100
Red River Basin:			
Bayou Dorcheat	100	10	250
Cypress Creek	250	70	500
Crooked Creek	350	10	650
Bodcau Creek	250	70	650
Posten Bayou	120	40	1000
Kelly Bayou	90	40	660
Red River	340	220	1160
Sulphur River	120	100	500
Days Creek	500	250	800
McKinney Bayou	180	60	480
Little River	20	20	100

State	Designated Use and Criteria Value

Stream	Concentration - mg/l Cl	SO_4	TDS
Saline River	20	10	90
Rolling Fork	20	20	100
Mountain Fork	20	20	110
Mississippi River (Louisiana line to Arkansas River)	60	150	425
Mississippi River (Arkansas River to Missouri line)	60	175	450

As a guideline for tributary streams not listed above, an increase up to 15 mg/l chlorides and 15 mg/l sulfates or an increase of 1/3 over naturally occurring levels, whichever is greater, may be permitted. In no case shall discharges cause concentrations in the tributary streams to exceed 250, 250, and 500 mg/l of chlorides, sulfates and total dissolved solids, respectively, or cause concentrations to exceed the applicable criteria in the streams to which they are tributary.

California[5]

(2) San Francisco Bay Basin - Alameda Creek Watershed

The following chemical quality limits shall be maintained in the surface waters of the Alameda Creek watershed above Niles:

TDS: 250 mg/l 90 day-arithmetic mean
360 mg/l 90 day-90th percentile
500 mg/l daily maximum

Chlorides: 60 mg/l 90 day-arithmetic mean
100 mg/l 90 day-90th percentile
250 mg/l daily maximum

(5 A,B,C) Sacramento-San Joaquin Delta. This includes water quality objectives that apply to all inland surface waters (excluding the Delta) of the basins, and objectives that apply only to specific surface water bodies.

Goose Lake. Shall not exceed 1,300,000 tons.

North Fork, American River, Source to Folsom Lake, Middle Fork, American River, Source to Folsom Lake South Fork, American River, Source to Folsom Lake American River, Folsom, Dam to Sacramento River. Shall not exceed 125 mg/l (90 percentile)

Folsom Lake. Shall not exceed 100 mg/l (90 percentile)

State	Designated Use and Criteria Value
	This presents specific numeric objectives which apply to all waters of the Sacramento-San Joaquin Delta. All waters lying within the legal boundaries of the Delta are covered by these objectives unless otherwise specified.
	Total Dissolved Solids - The total dissolved solids (TDS) concentration of Delta waters shall be maintained below the indicated limits for the waters specified. If a reliable correlation can be demonstrated between TDS and EC, such correlation can be used to aid in monitoring for compliance with these objectives.
	(1) At Cache Slough at the City of Vallejo intake, the TDS shall not exceed 250 mg/l.
	(2) At Rock Slough at Contra Costa Canal intake, the mean tidal cycle value TDS shall not exceed 750 mg/l and in addition shall not exceed 380 mg/l for at least 65 percent of any year.
	(3) In the San Joaquin River near Vernalis, the mean average TDS concentration shall not exceed 500 mg/l over any consecutive 30-day period.
	(4) In eastern Delta channels, the mean monthly TDS concentration shall not exceed 700 mg/l.
	(5) At Terminous in Little Potato Slough, at Rio Vista in the Sacramento River, at San Andreas Landing in the San Joaquin River, at Clifton Court Ferry in Old River, and after the initial operation of the Peripheral Canal, at the bifurcation of Middle River and Old River,
	a. a mean daily TDS concentration of 700 mg/l or less when measured on the basis of the average mean daily value for any 14 consecutive days,
	b. a mean monthly TDS concentration of 500 mg/l or less when measured on the basis of the average mean daily value for any calendar month,
	c. a mean annual TDS concentration of 450 mg/l or less when measured on the basis of the average mean daily value for any calendar year.
	(6) After 1 April in a dry or critical year and after 1 August in a below normal year and until 31 December of the same calendar year, the TDS criteria specified in (5) above may reach, but not exceed 800 mg/l for item a, 600 mg/l for item b, and 500 mg/l for item c; provided, however, the average of the values of the

State	Designated Use and Criteria Value
	total dissolved solids concentration at all of the named locations shall not exceed. for the balance of the calendar year, the mean values specified in (5) above. (7) Whenever the recorded TDS concentration in the Sacramento River at Green's Landing exceeds a mean 14-day or mean monthly value of 150 mg/l, the quality criteria in (5) and (6) may be changed by adding to those values the product of 1 1/2 times the amount by which the recorded TDS concentration at Green's Landing exceeds 150 mg/l. (8) At Antioch, in the San Joaquin River, the average of mean daily TDS for any 14 consecutive days shall not exceed 450 mg/l throughout a period of at least 150 days in each normal or below normal water year; provided, however, that the period is reduced to 120 days during dry water years and 100 days during critical water years. These objectives shall not apply when the State Board determines that adequate substitute supplies are available to all existing municipal and industrial water users located in the vicinity of Antioch and Pittsburg.
Colorado[6]	
Drinking Water Supply	Chloride--250 mg/l 30-day avg. Sulfates--250 mg/l 30-day avg. The Commission recognizes that excessive salinity and suspended solids levels can be detrimental to the water use classifications. The Commission has established salinity standards for the Colorado River basin ("Water Quality Standards for Salinity including Numeric Criteria and Plan of Implementation for Salinity Control", Commission Regulation 3.9) but has not established or assigned other standards for salinity or suspended solids. This section is reserved for additional salinity and suspended solids control practices to be developed through 208 plans, coordination with agricultural agencies, and further studies of existing water quality.
Connecticut[7]	Not specified
Delaware[8]	Not specified

State	Designated Use and Criteria Value
Florida[9]	**Class 1 - Potable Water Supply.** Not to exceed 500 mg/l as a monthly average or exceed 1,000 mg/l at any time.
Georgia[10]	Not specified
Hawaii[11]	NON-FILTERABLE RESIDUE CRITERIA: **Streams.** Geometric Mean not to exceed 20 mg/l. Not to exceed 50 mg/l more than 10% of the time.[1] Not to exceed 80 mg/l mor than 2% of the time.[1] Geometric mean not to exceed 10 mg/l. Not to exceed 30 mg/l more than 10% of the time.[2] Not to exceed 55 mg/l more than 2% of the time.[2] 1 Wet season, November 1 through April 30. 2 Dry season, May 1 through October 31.
Idaho[12]	Not specified
Illinois[13]	The following levels of chemical constituents shall not be exceeded: **General Water Quality Standards.** Chloride--500 mg/l, STORET No. 00940 Sulfate---500 mg/l, STORET No. 00945 TDS -----1000 mg/l, STORET No. 70300 **Public and Food Processing Water Supply Standards.** Chloride--250 mg/l. Sulfate---250 mg/l. TDS ------500 mg/l. **Secondary Contact and Indigenous Aquatic Life Standards.** TDS ---1500 mg/l. **Lake Michigan.** Chloride--12.0 mg/l. Sulfate---24.0 mg/l. TDS -----180.0 mg/l.
Indiana[14]	Water Quality for Potable Supply. The concentrations of either chlorides or sulfates shall not exceed 250 mg/l other than due to naturally occurring sources.

State

Designated Use and Criteria Value

Water Quality for Industrial Water Supply.
The standard to ensure protection of water quality at the point at which water is withdrawn for use (either with or without treatment) for industrial cooling and processing is that, other than from naturally occurring sources, the dissolved solids shall not exceed 750 mg/l as a monthly average, nor exceed 1,000 mg/l at any time. Values of specific conductance of 1,200 and 1,600 micromhos/cm (at 25°C) may be considered equivalent to dissolved solids concentrations of 750 and 1,000 mg/l.

Ohio River Main Stem and the Interstate Portion of the Wabash River.
Dissolved Solids
Maximum monthly average--500 mg/l.
Maximum allowable--750 mg/l.
Chloride--250 mg/l.
Sulfate--250 mg/l.

Parameter	Inner Harbor, Gary Harbor and Burns Harbor	Lake Michigan
Filtrable Residue (mg/l) (Total Dissolved Solids)		
Monthly average	185	172
Daily maximum	215	200
Chlorides (mg/l)		
Monthly average	15	15
Daily maximum	20	20
Sulfates (mg/l)		
Monthly average	26	26
Daily maximum	50	50

West Branch of Grand Calumet River.
Filtrable Residue -- 500 mg/l.
Chlorides -- 125 mg/l maximum.
40 mg/l as a 12 month average.
Sulfates -- 225 mg/l maximum.
75 mg/l as a 12 month average.

E. Branch of Grand Calumet River and Indiana Harbor Ship Canal.
Filtrable Residue -- 350 mg/l.
Chlorides -- 125 mg/l maximum.
40 mg/l as a 12 month average.
Sulfates -- 100 mg/l maximum.
60 mg/l as a 12 month average.

State	Designated Use and Criteria Value
Iowa[15]	TDS shall not exceed 750 mg/l in any lake or impoundment or any stream with a flow equal to or greater than 3 times the upstream point source discharges.
Kansas[16]	500 mg/L for Domestic Water Supply
Kentucky[17]	**Aquatic Life.** TDS shall not be changed to the extent that the indigenous aquatic community is adversely affected. Chloride - 600 mg/l **Domestic Water Supply.** Chloride - 250 mg/l Sulfate - 250 mg/l TDS - 750 mg/l
Louisiana[18]	Chlorides, Sulfates, and Total Dissolved Solids -- By segment, generally between 100-500 mg/l, with a few segments between 1,000 and 3,000 mg/l. For tributary, distributary and ancillary streams and waterbodies not specifically listed in the numerical criteria tables, increases over background levels of chlorides, sulfates and total dissolved solids may be permitted. Such increases will be at the discretion of the Office on a case-by-case basis and shall not cause instream concentrations to exceed 250, 250 and 500 gm/l for chlorides, sulfates, and total dissolved solids respectively. Under no circumstances, shall an allowed increase induce a violation of any numerical criteria in any listed waterbody or a violation of any other general or numerical criteria in either listed or unlisted waterbodies. Numerical criteria for these parameters generally represent the arithmetic mean of the nearest existing data plus one standard deviation. For criteria of specific segments, see Environment Reporter p. 791:1021-1056.
Maine[19]	Not specified
Maryland[20]	Not specified
Massachusetts[21]	Class A. TDS shall not exceed 500 mg/l. Chlorides shall not exceed 250 mg/l, and sulfates shall not exceed 250 mg/l.

State	Designated Use and Criteria Value
Michigan[22]	Rule 51. (1) The addition of any dissolved solids shall not exceed concentrations which are or may become injurious to any designated use. Point sources containing dissolved solids in the waters of the state shall be limited through the application of best practicable control technology currently available as prescribed by the administrator of the United States environmental protection agency pursuant to section 304(b) of United States Public Law 92-500, as amended, 33 U.S.C. §466 et. seq., except that in no instance shall TDS in the waters of the state exceed a concentration of 500 mg/l as a monthly average nor more than 750 mg/l at any time, as a result of controllable point sources. (2) The waters of the state designated as a public water supply source shall not exceed 125 mg/l of chlorides as a monthly average, except for the Great Lakes and connecting waters, where chlorides shall not exceed 50 mg/l as a monthly average.
Minnesota[23]	**Domestic consumption.** Classes A, B, and C: Total Dissolved Solids 500 mg/l. Chlorides 250 mg/l. Sulfates 250 mg/l. Class D, after treatment: Total Dissolved Solids 500 mg/l. Chlorides 250 mg/l. Sulfates 250 mg/l. **Fisheries and Recreation.** Class A: Chlorides 50 mg/l. **Industrial Consumption.** Class A: Chlorides 50 mg/l. Hardness 50 mg/l. Class B: Chlorides 100 mg/l. Hardness 250 mg/l. Class C: Chlorides 250 mg/l. Hardness 500 mg/l.

State	Designated Use and Criteria Value
	Agriculture and Wildlife. Class A: Total dissolved salts 700 mg/l. Sulfates 10 mg/l, applicable to water used for production of wild rice during periods when the rice may be susceptible to damage by high sulfate levels. Class B: Total salinity 1000 mg/l.
Mississippi[24]	**Public Water Supply.** Chlorides: There shall be no substances added which will cause the chloride content to exceed 250 mg/l in fresh water streams. Dissolved Solids: There shall be no substances added to the waters to cause the dissolved solids to exceed 500 mg/l. **Recreation, Fish and Wildlife.** 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.
Missouri[25]	Not specified
Montana[26]	Not specified
Nebraska[27]	Not specified
Nevada[28]	**Class A, B and C.** Must not exceed 500 mg/l or one-third above that characteristic of natural conditions (whichever is less). Values for total dissolved solids in mg/l apply at the three lower main stem stations of the Colorado River as follows: Below Hoover Dam 723 mg/l Below Parker Dam 747 mg/l Imperial Dam 879 mg/l West Walker River Annual Average Not more than 100 mg/l Single Value Not more than 170 mg/l

State	Designated Use and Criteria Value	
	Topaz Lake	
	Annual Average	Not more than 100 mg/l
	Single Value	Not more than 170 mg/l
	West Walker River (Wellington)	
	Annual Average	Not more than 150 mg/l
	Single Value	Not more than 240 mg/l
	(Above Confluence with E. Walker)	
	Annual Average	Not more than 290 mg/l
	Single Value	Not more than 485 mg/l
	Sweetwater Creek	
	Annual Average	Not more than 220 mg/l
	Single Value	Not more than 300 mg/l
	East Walker River (State Line)	
	Annual Average	Not more than 175 mg/l
	Single Value	Not more than 300 mg/l
	(Yerington)	
	Annual Average	Not more than 250 mg/l
	Single Value	Not more than 390 mg/l
	Walker River	
	Annual Average	Not more than 360 mg/l
	Single Value	Not more than 530 mg/l
	Chiatovich Creek	
	Annual Average	Not more than 60 mg/l
	Single Value	Not more than 75 mg/l
	Desert Creek	
	Annual Average	Not more than 110 mg/l
	Single Value	Not more than 130 mg/l
	Indian Creek	
	Annual Average	Not more than 225 mg/l
	Single Value	Not more than 300 mg/l
	Leidy Creek	
	Annual Average	Not more than 135 mg/l
	Single Value	Not more than 150 mg/l
	Snake Creek	
	Annual Average	Not more than 100 mg/l
	Single Value	Not more than 125 mg/l
	Big Goose Creek	
	Annual Average	Not more than 140 mg/l
	Single Value	Not more than 160 mg/l

State	Designated Use and Criteria Value	
	Salmon Falls Creek	
	Annual Average	Not more than 200 mg/l
	Single Value	Not more than 250 mg/l
	Shoshone Creek	
	Annual Average	Not more than 200 mg/l
	Single Value	Not more than 250 mg/l
	East Fork Jarbidge (Below Murphy's Hot spring)	
	Annual Average	Not more than 120 mg/l
	Single Value	Not more than 200 mg/l
	Jarbidge River (Upstream from Jarbidge)	
	Annual Average	Not more than 50 mg/l
	Single Value	Not more than 75 mg/l
	(Downstream)	
	Annual Average	Not more than 65 mg/l
	Single Value	Not more than 80 mg/l
	West Fork Bruneau River	
	Annual Average	Not more than 160 mg/l
	Single Value	Not more than 180 mg/l
	East Fork Owyhee (Above Mill Creek at Ranger Station)	
	Annual Average	Not more than 170 mg/l
	Single Value	Not more than 200 mg/l
	East Fork Owyhee River (South of Owykee)	
	Annual Average	Not more than 200 mg/l
	Single Value	Not more than 250 mg/l
	(State Line)	
	Annual Average	Not more than 200 mg/l
	Single Value	Not more than 250 mg/l
	South Fork Owyhee River	
	Annual Average	Not more than 240 mg/l
	Single Value	Not more than 280 mg/l
	Smoke Creek	
	Annual Average	Not more than 225 mg/l
	Single Value	Not more than 275 mg/l
	Bronco Creek (At Hirschdale Road)	
	Annual Average	Not more than 225 mg/l
	Single Value	Not more than 300 mg/l
	Gray Creek (At Hirschdale Road)	
	Annual Average	Not more than 125 mg/l
	Single Value	Not more than 165 mg/l

State	Designated Use and Criteria Value
	Lake Mead Flow Weighted (in mg/l) Annual Average ≤723 measured below Hoover Dam Single Value ≤1000 Muddy River (At Glendale Bridge) Annual Average Not more than 1000 mg/l Single Value Not more than 1700 mg/l Maximum allowable TDS increase above receiving water concentration of TDS: 400 mg/l not to exceed single value standard. For the Humboldt River segments, refer to Environment Reporter pages 841:1076-1082. For more specific values, for example, Chlorides and Sulfates, refer to Environment Reporter pages 841:1014-1082.
New Hampshire[29]	Not specified
New Jersey[30]	**FW2.** Total Dissolved Solids--no increase in background which may adversely affect the survival growth or propagation of the aquatic biota or would interfere with the designated or existing uses, or 500 mg/l, whichever is more stringent. (increases up to 133 percent of background are deemed to be in compliance with the narrative criterion above. Increases above 133 percent of background may be granted where the discharger demonstrates, to the satisfaction of the department, that the proposed increase will not adversely affect the aquatic biota.) **All SE.** TDS--None which would render the water unsuitable for the designated uses. **Delaware River, Zones 1C, 1D, 1E, 2, 3.** TDS not to exceed 133 percent of background or 500 mg/l, whichever is less. (Background is 90 mg/l for Zones 1C and 1D and 200 mg/l for Zones 1E and 2.) **Zones 4, 5, 6.** TDS not to exceed 133 percent of background.
New Mexico[31]	Total Dissolved Solids criteria are segment specific.
New York[32]	**Class AA,A.** TDS shall be kept as low as practicable to maintain the best usage of waters, but in no case shall it exceed 500 mg/l.

State	Designated Use and Criteria Value
	Class B,C. None at concentrations which will be detrimental to the growth and propagation of aquatic life. Waters having present levels less than 500 mg/l shall be kept below this limit. **Class A-Special.** Should not exceed 200 mg/l. No criteria are specified for any other class.
North Carolina[33]	**Classes WS-I, WS-II, WS-III.** TDS not greater than 500 mg/l. Sulfates not greater than 250 mg/l.
North Dakota[34]	Not specified
Ohio[35]	**Warmwater Habitat, Exceptional Warmwater Habitat, Seasonal Salmonid, Coldwater Habitat.** Not to exceed 1500 mg/l as a 30-day average. (Equivalent 25°C specific conductance value is 2400 micromhos/cm.) **Public Water Supply.** Not to exceed a maximum of 750 mg/l, or 500 mg/l as a 30-day average. (Equivalent 25°C specific conductance values are 1200 microhos/cm as a maximum and 800 microhos/cm as a 30-day average. **Agricultural Water Supply.** This criterion is determined by the Aquatic Life Habitat or the Nuisance Prevention use designation assigned to the stream segment. **Lake Erie.** Should not exceed 200 mg/l. **Ohio River.** TDS should not exceed 500 mg/l as a monthly average value, nor exceed 750 mg/l at any time. (Equivalent 25°C specific conductance values are 800 and 1200 micromhos/cm.) Chlorides should not exceed 250 mg/l. Sulfates should not exceed 250 mg/l.
Oklahoma[36]	**Agriculture (Livestock and Irrigation)** For chlorides, sulfates and total dissolved solids at 180°C (see Standard Methods), the arithmetic mean of the concentration of the samples taken for a year in a particular segment shall not exceed the historical "yearly mean standard" determined from Table 3 and Appendix I calculated for that segment. Furthermore, not more than one (1) in twenty (20) samples randomly collected at a site shall exceed the historical value

State	Designated Use and Criteria Value
	of the "sample standard" calculated for that segment. Increased mineralization from other elements such as calcium, magnesium, sodium and their associated anions shall be maintained at or below a level that will not restrict any beneficial use. Historical data are available only for sparsely distributed sampling stations. Therefore, the data in each segment are averaged, and the mean chloride, sulfate, and total dissolved solids at 180°C are presented in the following table. It is anticipated that as sources of pollution are identified and adequately addressed, the mineral concentrations may decrease over a period of time. Segment averages should be used unless more appropriate data are available. In assigning permit limitations based on Water Quality Standards or enforcing the standards for total dissolved solids, sulfates or chlorides interpolated between monitoring stations may be acceptable where appropriate.
Oregon[37]	The following criteria for total dissolved solids are not to be exceeded unless otherwise specifically authorized by DEQ upon such conditions as it may deem necessary to carry out the general intent of this plan and to protect the beneficial uses set forth in rule 340-41-282. Columbia River -- 500 mg/l. o All other fresh water streams and tributaries thereto -- 100 mg/l. Mid Coast Basin -- 100 mg/l. Umpqua Basin -- 500 mg/l. South Coast Basin -- 100 mg/l. Rogue Basin -- 500 mg/l. Willamette Basin -- 200 mg/l. Sandy Basin, Main Stem Columbia River (river miles 120 to 147) -- 200 mg/l. o All other basin waters -- 100 mg/l. Hood Basin -- 200 mg/l. Deschutes Basin -- 500 mg/l. John Day River and Tributaries -- 500 mg/l.

State	Designated Use and Criteria Value
	Walla Walla Basin -- 200 mg/l. Main Stem Grande Ronde River -- 200 mg/l. Main Stem Snake River -- 750 mg/l.
Pennsylvania[38]	TDS_1. Not more than 500 mg/l as a monthly average value; not more than 750 mg/l at any time. TDS_2. Not more than 1,500 mg/l at any time. TDS_3. Not to exceed 133% of ambient stream concentrations or 500 mg/l, whichever is less. TDS_4. Not to exceed 133% of ambient stream concentration.
Rhode Island[39]	Not specified
South Carolina[40]	Not specified
South Dakota[41]	**Domestic water supplies.** TDS may not exceed 1000 mg/l and chloride may not exceed 250 mg/l, with variations allowed under subdivision 74:03:02:32(2). **Coldwater permanent fish life propagation waters.** Chlorides may not exceed 100 mg/l with a variation allowed under subdivision 74:03:02:32(2). **Wildlife propagation and stock watering waters.** TDS may not exceed 2500 mg/l. **Commerce and industry waters.** TDS may not exceed 2000 mg/l with a variation allowed under subdivision 74;03:02:32(2).
Tennessee[42]	**Domestic water supply.** TDS shall at no time exceed 500 mg/l. **Industrial water supply.** TDS shall at no time exceed 500 mg/l.
Texas[43]	By Segment

State	Designated Use and Criteria Value
Utah[44]	**Agriculture.** 1200 mg/l. **All other classes.** Insufficient evidence to warrant the establishment of numerical standard. Limits assigned on case-by-case basis.
Vermont[45]	Not specified
Virginia[46]	**Surface Public Water Supplies.** Total Dissolved Solids--500 mg/l. Chloride--250 mg/l. Sulfates--250 mg/l.
Washington[47]	Not specified
West Virginia[48]	All Categories A, B, & C. Chloride not to exceed 250 mg/l.
Wisconsin[49]	**Public Water Supply.** TDS not to exceed 500 mg/l as a monthly average value, nor exceed 750 mg/l at any time.
Wyoming[50]	Not specified
American Samoa[51]	Not specified
District of Columbia[52]	Not specified
Guam[53]	**All marine waters.** Shall not exceed 133% of the ambient value. No alterations of the marine environment shall occur that would alter the salinity of marine or estuarine waters more than +/-10% of the ambient conditions, except when due to natural conditions. **Fresh water, Classes S-1, S-2, S-3.** The maximum allowable amount of chlorides and sulfates shall be 250 mg/l, and the total dissolved solids shall not exceed 500 mg/l or 133% of the ambient condition. The salinity of fresh-water sources shall not be increased more than 20% above ambient by discharges of saline water.

State	Designated Use and Criteria Value
Northern Mariana Islands[54]	**Surface water classes AA, A.** No change in channels, basic geometry or fresh water influx shall be made which would cause permanent changes in isohaline patterns of more than 10% from the natural conditions or which would otherwise adversely affect the indigenous biota and natural sedimentary patterns.
Puerto Rico[55]	**Class SA.** TDS shall not be altered except by natural causes. **Classes SB, SC.** For Class SB and SC estuarine waters, sulfates shall not exceed 2,800 mg/l. **Class SD.** TDS shall not exceed 500 mg/l. Chlorides shall not exceed 250 mg/l.
Trust Territory[56]	**All Waters.** No change in channels, basin geometry or fresh water influx shall be made which would cause permanent changes in isohaline patterns of more than 10% from the natural conditions or change in salinity outside the range of 29-35 o/oo, or which would otherwise adversely affect the indigenous biota and natural sedimentary patterns.
Virgin Islands[57]	Not specified