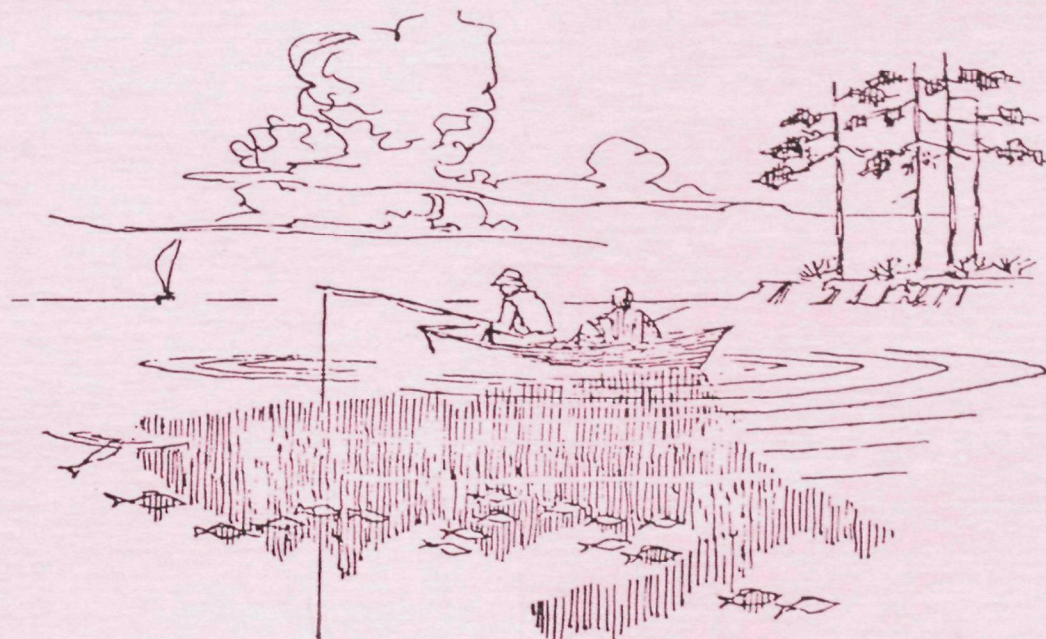




WATER QUALITY STANDARDS CRITERIA DIGEST
A COMPILATION OF FEDERAL/STATE CRITERIA ON
-SETTLEABLE SOLIDS-



ENVIRONMENTAL PROTECTION AGENCY
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INTRODUCTION

This digest was compiled in order 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 settleable solids criteria for interstate waters. The water quality standards program is directed by the Environmental Protection Agency, an independent regulatory agency which has responsibility for approving State-adopted standards for interstate waters, evaluating adherence to the standards, and overseeing enforcement of standards.

Standards, the first nationwide strategy for water quality management, contain four major elements: the use (recreation, drinking water, fish and wildlife propagation, industrial, or agricultural) to be made of the interstate water; criteria to protect those uses; implementation plans (for needed industrial-municipal waste treatment improvements, among others) and enforcement plans; and an antidegradation statement to protect existing high quality waters.

Minimum water quality criteria, or numerical specification of physical, chemical, temperature, and biological levels, are stated in the National Technical Advisory Committee report to the Secretary of the Interior, Water Quality Criteria, dated April 1, 1968, and published by the Government Printing Office, Washington, D.C. Unavailability of the NTAC report before June 30, 1967-- the date set by the Water Quality Act of 1965 for formal adoption of State standards--resulted in significant variations between the State-adopted and the NTAC minimum criteria. Some standards were adopted and approved before the NTAC became available. Also, the Water Quality Criteria report is subject to updating in light of new scientific and technical information.

Standards for settleable solids are set to control and prevent the artificial discharge of such materials into the water. Settleable solids may consist of sewage and industrial sludges. They include inorganic (sand, silt, and clay) and organic (greases, oils, tars, animal and vegetable fats, paper mill and synthetic plastic fibers, sawdust and hair) materials, which tend to settle out rapidly on the stream bottom. They can trap and smother bottom organisms, cover and destroy spawning beds, blanket bacteria, fungi, and decomposing organic wastes. Deposits of solids interfere with recreation, navigation, and fish and shellfish production, and destroy aesthetic values of water. Dissolved or colloidal solids may be synthesized by bacteria in a stream to form suspended and settleable sludge consisting primarily of bacterial and biological slimes. Deposits containing organic materials may deplete bottom oxygen supplies and produce hydrogen sulfide, carbon dioxide, methane, or other noxious gases.

The National Technical Advisory Committee report, considering criteria for the aquatic life use, recommended: "Since it is known that even minor deposits of settleable materials inhibit the growth of normal stream or lake flora and fauna (and marine and estuarine organisms), it is recommended that no settleable materials be added to these waters in quantities that adversely affect the natural biota."

Since water quality standards experience revisions and upgrading from time to time following procedures set forth in the Federal Water Pollution Control Act, individual entries in this digest may be superseded. As these revisions are accomplished, this digest will be updated and reissued. Because this publication is not intended for use other than as a general information resource, for the latest information, and for special purposes and applications, refer to the existing, approved water quality standards which can be obtained from the State water pollution control agencies or EPA Washington, D.C. or regional offices.

Individual State-adopted criteria follow.

SETTLEABLE SOLIDS

Alabama	State waters shall be free from substances attributable to sewage, industrial waste or other waste that will settle to form bottom deposits which are unsightly, putrescent or interfere directly or indirectly with any classified water use.
Alaska	<p>Class A - Public Water Supply. Below normally measurable amounts in the water diverted.</p> <p>Class B - Public Water Supply. No imposed loads that will interfere with established levels of treatment.</p> <p>Class C - Primary Contact Recreation. Numerical values not applicable. No visible concentrations of silt.</p> <p>Class D - Fish & Wildlife Propagation. No appreciable deposition which will adversely affect fish spawning and habitat.</p> <p>Class E - Shellfish Growth & Propagation. No appreciable deposition which adversely affects growth and propagation.</p> <p>Class F - Agricultural Water Supply. For sprinkler irrigation, water free of particles of 0.074mm or coarser. For irrigation or water spreading, not to exceed 200 mg/l for an extended period of time.</p> <p>Class G - Industrial Water Supply. No imposed loads that would interfere with established levels of treatment.</p>
Arizona	Free from substances attributable to domestic or industrial wastes or other controllable sources that will settle to form sludge or bottom deposits in amounts sufficient to be unsightly, putrescent or odorous, or amounts sufficient to interfere with any beneficial use of the water.
Arkansas	The streams shall have no distinctly visible solids, scum, or foam of a persistent nature, nor shall there be any formation of slimes, bottom deposits, or sludge banks, attributable to waste discharges.
California	(Statement varies among the 32 regional water boards but generally limits settleable solids as follows.) Less than the concentration that would change the physical nature of the stream bottom or adversely affect the aquatic environment.

- Colorado All waters of the state shall be free from substances attributable to municipal, domestic, or industrial waste or other controllable sources that either settle to form unsightly, putrescent, or odorous bottom deposits, or will interfere with the classified use of the water.
- Connecticut Class A - Public Water Supply. Sludge deposits - none allowable.
- All Other Classes - Sludge deposits, floating solids, oils, grease and scum shall not be allowed except for such small amounts that may result from the discharge of appropriately treated sewage or industrial waste effluents. Same for salt water classifications.
- Delaware Debris, oil, scum, and other floating materials and substances that settle to form sludge deposits should be substantially removed from all discharges.
- Florida Minimum conditions of all waters; all waters shall be free from settleable substances--substances attributable to municipal, industrial, agricultural, or other discharges that will settle to form putrescent or otherwise objectionable sludge deposits.
- Georgia All waters of the state shall be free from materials associated with municipal or domestic sewage, industrial waste or any other waste which will settle to form sludge deposits that become putrescent, unsightly or otherwise objectionable.
- Class 1 - Public Drinking Water Supply. None associated with any waste discharge.
- Hawaii All waters shall be free of substances attributable to discharges of waste materials that will settle to form objectionable deposits.
- All waters shall also be free from soil particles resulting from erosion on land involved in earth work, such as the construction of public works, highways, subdivisions, recreational, commercial, or industrial development, or the cultivation and management of agricultural lands. This standard shall be deemed as met if it can be showed that the land on which the erosion occurred or is occurring is being managed in accordance with soil conservation practices acceptable to the Director, and that a comprehensive conservation program is being actively pursued, or that the discharge has received the best practicable treatment for control.

Idaho	Interstate waters shall not contain visible concentrations of oil, sludge deposits, scum, foam or other wastes that may adversely affect the use indicated.
Illinois	Freedom from unnatural sludge or bottom deposits, floating debris, ... harmful to human, animal, plant or aquatic life of other than natural origin.
Indiana	Water shall be free from substances contributable to municipal, industrial, agricultural or other discharges that will settle to form putrescent or otherwise objectionable deposits.
Iowa	Waters shall be free from substances attributable in municipal, industrial, or other discharges that will settle to form putrescent or otherwise objectionable sludge deposits.
Kansas	There shall be no man-made deposits of solids in the river, either organic or inorganic, which will be detrimental to established beneficial uses.
Kentucky	All waters of the Commonwealth shall be substantially free from substances attributable to municipal, industrial or other discharges or agricultural practices that will settle to form putrescent sludge deposits.
Louisiana	None that will produce distinctly visible turbidity, solids or scum, nor shall there be any formation of slimes, bottom deposits, or sludge banks, attributable to waste discharges.
Maine	All waters shall be free from sludge deposits, solid refuse and floating solids such as oils, grease or scum.
Maryland	Waters of the state shall at all time be free from substances attributable to sewage, industrial waste, or other wastes that will settle to form sludge deposits that are unsightly, putrescent or odorous to such degree as to create a nuisance, or that interfere directly or indirectly with water uses.
Massachusetts	Classes A, B, SA and SB which are public water supplies and recreation. None allowable. All other classifications which are sludge deposits, solid refuse, floating solids, oils, grease, and scum; none allowable except those amounts that may result from the discharge from waste treatment facilities providing appropriate treatment.

Michigan	All Classes - No objectionable unnatural turbidity, color, or in deposits sufficient to interfere with the designated uses. This criterion applies to all suspended, colloidal and settleable materials.
Minnesota	No raw or treated sewage, industrial wastes or other wastes shall be discharged into any interstate waters of the state so as to cause nuisance conditions, such as the presence of significant amounts of floating solids, scum, oil slicks, excessive suspended solids, material discoloration, obnoxious odors, ... or other offensive or harmful effects.
Mississippi	All waters of the state shall be free from substances contributable to municipal, industrial, agricultural or other discharges that will settle to form putrescent or otherwise objectionable sludge deposits.
Missouri	Substances attributable to municipal, industrial, agricultural, mining or other effluents shall not cause formation of putrescent or otherwise objectionable sludge deposits on the stream bed.
Montana	<p>Class A - Closed - Public Water Supply. None allowable.</p> <p>Class A - Open - Public Water Supply. None in sufficient quantities to adversely affect the use indicated. This same statement applies to Classes C, D1, D2, D3, E and F.</p> <p>Class B - Public Water Supply. None in sufficient quantities to adversely affect established levels of treatment.</p>
Nebraska	<p>Suspended, colloidal, or settleable solids. None from waste water sources which will permit objectionable deposition or be deleterious for the designated uses.</p> <p>For intermittent streams suspended solids shall not exceed 30mg/l.</p>
Nevada	Substantially free from sludge banks and debris from other than natural origin.
New Hampshire	<p>Class A (Public Water Supply): No discharge of any sewage or wastes permitted.</p> <p>Class B (Swimming): No objectionable physical characteristics.</p> <p>Class C (Fish & Wildlife): Free from conditions inimical to fish life.</p> <p>Class D (Industrial): Free from sludge deposits ...</p>

New Jersey	None noticeable in the water or deposited along the shore or on the aquatic substrate in quantities detrimental to the natural biota. None which would render the waters unsuitable for the designated uses.
New Mexico	The stream bottom shall be free from debris and sediment of other than natural origin that will adversely inhibit the growth of normal stream flora and fauna or significantly alter the physical and chemical properties of the bottom.
New York	Classes AA (Public Water Supply) and SA (Shellfish): None attributable to sewage, industrial wastes or other wastes. All other classes: None which are readily visible and attributable to sewage, industrial wastes, or other wastes, or which deleteriously increase the amounts of these constituents in receiving waters after opportunity for reasonable dilution and mixture with the wastes discharged thereto.
North Carolina	Class A1 - Public Water Supply. None attributable to sewage, industrial waste or other waste. All other classifications. Only such amounts attributable to sewage, industrial waste or other wastes as will not, after reasonable opportunity of dilution and mixture of same with the receiving waters, make the waters unsafe or unsuitable as a source of water supply for drinking, culinary, or food processing purposes, injurious to fish and wildlife, or impair the waters for any other best usage established for this class.
North Dakota	All waters shall be free of substances that will settle to form putrescent or otherwise objectionable sludge deposits, cause bottom slime formations, or in any manner adversely affect the intended usage of the water.
Ohio	All waters of the state shall be free from substances attributable to municipal, industrial or other discharges that will settle to form putrescent or otherwise objectionable sludge deposits.
Oklahoma	All waters shall be free of floating debris, bottom deposits, scum, foam and other materials of a persistent nature from other than a natural source.
Oregon	No waste shall be discharged and no activity shall be conducted which either alone or in combination with other wastes or activities will cause in any waters of the state the formation of appreciable bottom or sludge deposits or the formation of any organic or inorganic deposits deleterious to fish or other aquatic life or injurious to public health, recreation or industries.

Pennsylvania	The water shall not contain substances attributable to municipal, industrial or other waste discharges in concentrations or amounts sufficient to be inimical or harmful to the water uses to be protected or to human, animal, plant or aquatic life. Specific substances to be controlled include, but are not limited to, ... substances that ... settle to form such deposits.
Rhode Island	Classes A, SA, B and SB - Public Water Supply and Recreation. None allowable. Classes C, Fish & Wildlife Habitat and D, Navigation. Sludge deposits, floating solids, oils, grease and scum shall not be allowed except for such small amounts that may result from the discharge of appropriately treated sewage or industrial waste effluent. Classes SC, Fish & Wildlife Habitat and SD, Navigation. Criteria are none except that amount that may result from the discharge of a waste treatment facility providing appropriate treatment.
South Carolina	The waters of the state shall at all times be free from substances attributable to sewage, industrial waste, or other wastes that will settle to form sludge deposits that are unsightly, putrescent or odorous to such degree to create a nuisance, or that interfere directly or indirectly with water uses.
South Dakota	Fish life propagation; cold water permanent 30mg/l. Fish life propagation; cold water marginal, warm water permanent, warm water semi-permanent 90mg/l. Fish life propagation; warm water marginal 150mg/l.
Tennessee	There shall be no distinctly visible solids, scum, foam, oil slick or the formation of slimes, bottom deposits or sludge banks of such size or character as may impair the usefulness of the water for the uses indicated.
Texas	All waters of the state shall be essentially free of floating debris and settleable suspended solids conducive to the production of putrescible sludge deposits or sediment layers which would adversely affect benthic biota or other lawful uses. Essentially free of settleable suspended solids conducive to changes in the flow character of stream bottoms, to the untimely filling of reservoirs and lakes, in which might result in unnecessary dredging costs.

Utah	It shall be unlawful to discharge or place any waste or other substances in such a way to result in materials that will settle to form objectionable deposits.
Vermont	Settleable solids, floating solids, oil, grease, and scum shall not be discharged except after installation of an appropriately designed and operated waste treatment plant as approved by the department. All classes. Sludge deposits, solid refuse, floating solids, oil, grease and scum: none other than of natural origin.
Virginia	These standards, which apply at all times regardless of stream use classification adopted by the board are: Free from substances attributable to sewage, industrial waste, or other waste that will settle to form sludge deposits that are unsightly, putrescent or odorous, to such degree as to create a nuisance or to interfere directly or indirectly with specified uses of such waters.
Washington	No requirement found in standards.
West Virginia	No sewage, industrial waste or other waste entering any of the waters of the state shall cause therein or materially to contribute to any of the following conditions thereof, which shall be the minimum conditions allowable: Distinctly visible floating or settleable solids, scum, foam or oily slicks of unreasonable kind or quantity; objectionable deposits on bottom or sludge banks.
Wisconsin	As a result of municipal, industrial, commercial, domestic, agricultural, land development or other activities, conditions may rise which will be controlled by the following standards: Substances that will cause objectionable deposits on the shore or in the bed of a body of water, shall not be present in such amounts as to create a nuisance; floating or submerged debris, oil, scum or other material shall not be present in such amounts as to create a nuisance.
Wyoming	All water of the state shall be essentially free from substances of other than natural origin that will settle to form sludge, bank or bottom deposits.
District of Columbia	All waters of the District of Columbia shall at all times be free from substances attributable to sewage, industrial waste, or other waste that will settle to form sludge deposits that are unsightly, putrescent or odorous to such degree as to create a nuisance, or that interfere directly or indirectly with water uses.

Guam	All waters shall be free from materials attributable to sewage, industrial waste, or other waste that will produce visible turbidity or settle to form deposits.
Puerto Rico	<p>Class SA - Preservation of existing natural phenomena. Existing natural conditions shall not be altered.</p> <p>Class SC - Recreation. Coastal waters shall be free of floating solids, settleable solids, oil, sludge deposits attributable to municipal, industrial or other waste discharges.</p> <p>Class SB - Propagation of marine life. Coastal waters shall not contain floating solids, settleable solids, oils, sludge deposits that are readily visible and attributable to municipal, industrial or other wastes or which increase the amount of these constituents in receiving waters.</p> <p>Class SE - Industrial Use. Water shall not contain floating solids, settleable solids, oils, and sludge deposits which are readily visible and attributable to municipal, industrial, or other waste or which increase the amounts of these constituents in receiving waters or any other material or waste that would interfere with the aesthetics of these waters.</p>
Virgin Islands	All waters shall be free from substances attributable to municipal, industrial or other discharges that will settle to form putrescent or otherwise objectionable sludge deposits.