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Water

EPA

A Compilation of Water Quality Standards for Marine Waters

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A COMPILATION OF WATER QUALITY STANDARDS FOR MARINE WATERS

Introduction

Section 301(h) of the Clean Water Act (CWA) authorizes the Environmental Protection Agency (EPA), with State concurrence, to issue a National Pollutant Discharge Elimination System (NPDES) permit which modifies the Federal secondary treatment requirements for publicly owned treatment works discharging into certain marine waters. In order to obtain such a modification the applicant must demonstrate its proposed less-than-secondary discharge will comply with seven criteria established by section 301(h). One of these criteria is that "there is an applicable water quality standard specific to the pollutant for which the modification is requested, which has been identified under section 304(a)(6) of this Act." The term "water quality standard" as used in section 301(h) means those water quality standards promulgated, approved, or left in effect under section 303 of the CWA. 40 CFR 125.58(v).

Section 304(a)(6) of the CWA directs the Administrator of EPA for purposes of section 301(h), to publish and revise as appropriate "...information identifying each water quality standard in effect under this Act or State law, the specific pollutants associated with such water quality standard, and the particular waters to which such water quality standard applies."

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This compilation of marine water quality standards has been prepared in compliance with section 304(a)(6) of the CWA and supersedes the previous publication " A Compilation of State Water Quality Standards for Marine Waters" dated April 1978. This compilation should not in any way be construed as expressing an Agency opinion as to whether the waters listed are marine waters within the meaning of section 301(h) of the CWA, or whether discharges to such waters are qualified for a section 301(h) modification. Users of this compilation should refer to 40 CFR Part 125, Subpart G, which sets forth the regulations governing eligibility for a section 301(h) modification.

Because section 303 standards typically do not have a separate section specifically identifying all of the marine water quality standards, extensive editing was necessary to separate the marine standards from the freshwater standards. In all cases the marine standards are presented in as close to the original text as possible in order to eliminate any confusion which might arise from the editing process.

State of ALABAMA Marine Water Quality Standards

Reference:

State of Alabama

Water Improvement Commission

Water Quality Criteria

April 5, 1982

also

Water Use Classifications for

Interstate and Intrastate Waters

of the State of Alabama

February 4, 1981

Water Improvement Commission

State Office Building

Montgomery, Alabama 36130

ANTIDEGRADATION POLICY

The purpose and intent of the water quality standards is to conserve the waters of the State of Alabama and to protect, maintain and improve the quality thereof for public water supplies for the propagation of wildlife, fish and aquatic life, and for domestic, agricultural, industrial, recreational and other legitimate beneficial uses; and to provide for the prevention, abatement and control of new or existing water pollution. Waters of high quality located within national and state parks and other areas which constitute an outstanding national resource shall be maintained at such high quality.

Waters of quality higher than that established by the standards as of the effective date of such standards shall be maintained at that high quality water provided that the Commission has the authority to approve a new or increased discharge of waste to a high quality water upon demonstration that such discharge is necessary for economic or social development.

(1) In no case will developments constituting a new or increased source of pollution to high quality waters be allowed to install or operate less than the highest and best degree of treatment available under existing technology. This degree of treatment for industrial and municipal waste is generally considered to be a minimum of secondary treatment as described in Alabama Water Quality Standards. Where necessary to protect existing and future beneficial uses, a higher degree of treatment may be required.

(2) Developments constituting a new or increased source of thermal pollution shall assure that such release will not impair the propagation of a balanced indigenous population of fish and aquatic life.

(3) In applying these policies and requirements, the State of Alabama will recognize and protect the interests of the federal government. Toward this end the Commission will consult and cooperate with the Environmental Protection Agency on all matters affecting the federal interest.

SECTION IV - MINIMUM CONDITIONS APPLICABLE TO ALL STATE WATERS

The following minimum conditions are applicable to all State waters, at all places and at all times, regardless of their uses:

1. State waters shall be free from substances attributable to sewage, industrial wastes or other wastes that will settle to form bottom deposits which are unsightly, putrescent or interfere directly or indirectly with any classified water use.
2. State waters shall be free from floating debris, oil, scum, and other floating materials attributable to sewage, industrial wastes or other wastes in amounts sufficient to be unsightly or interfere directly or indirectly with any classified water use.
3. State waters shall be free from substances attributable to sewage, industrial wastes or other wastes in concentrations or combinations which are toxic or harmful to human, animal or aquatic life to the extent commensurate with the designated usage of such waters.

B. SWIMMING AND OTHER WHOLE BODY WATER-CONTACT SPORTS

Best Usage of Waters: Swimming and other whole body water-contact sports.*

Conditions Related to Best Usage: The waters, under proper sanitary supervision by the controlling health authorities, will meet accepted standards of water quality for outdoor swimming places and will be considered satisfactory for swimming and other whole body water-contact sports. The quality of waters will also be suitable for the propagation of fish, wildlife and aquatic life. The quality of salt waters and estuarine waters to which this classification is assigned will be suitable for the propagation and harvesting of shrimp and crabs.

Items	Specifications
1. Sewage, industrial wastes, or other wastes.	None which are not effectively treated or controlled in accordance with Section V of these criteria.
2. pH	Sewage, industrial wastes or other wastes shall not cause the pH to deviate more than one unit from the normal or natural pH, nor be less than 6.0, nor greater than 8.5. For estuarine waters and salt waters to which this classification is assigned, wastes as described herein shall not cause the pH to deviate more than one unit from the normal or natural pH, nor be less than 6.5, nor greater than 8.5.
3. Temperature	a. The maximum temperature in streams, lakes, and reservoirs, other than those in river basins listed in Part b. hereof, shall not exceed 90°F.
	b. The maximum temperature in streams, lakes, and reservoirs in the Tennessee and Cahaba River Basins, and for that portion of the Tallapoosa River Basin from the tailrace of Thurlow Dam at Tallassee downstream to the junction of the Coosa and Tallapoosa Rivers which has been designated by the Alabama Department of Conservation and Natural Resources as supporting smallmouth bass, sauger, or walleye, shall not exceed 86°F.

(3. Temperature - Cont'd)

c. The maximum in-stream temperature rise above ambient water temperature due to the addition of artificial heat by a discharger shall not exceed 5°F in streams, lakes, and reservoirs in non-coastal and non-estuarine areas.

d. The maximum in-stream temperature rise above ambient water temperature due to the addition of artificial heat by a discharger shall not exceed 4°F in coastal or estuarine waters during the period October through May, nor shall the rise exceed 1.5°F during the period June through September.

e. In lakes and reservoirs there shall be no withdrawal from, nor discharge of heated waters to, the hypolimnion unless it can be shown that such discharge or withdrawa will be beneficial to water quality.

f. In all waters the normal daily and seasonal temperature variations that were present before the addition of artificial heat shall be maintained, and there shall be no thermal block to the migration of aquatic organisms.

g. Thermal permit limitations in State discharge permits may be less stringent than those required by criteria a. - d. hereof when a showing by the discharger has been made pursuant to Section 316 of the Federal Water Pollution Control Act (FWPCA), 33 U.S.C. 1251 et seq. or pursuant to a study of an equal or more stringent nature required by the State of Alabama authorized by Title 22, Section 22-22-9(c), Code of Alabama, 1975, that such limitations will assure the protection and propagation of a balanced, indigenous population of shellfish, fish and wildlife, in and on the body of water to which the discharge is made. Any such demonstration shall take into account the interaction of the thermal discharge component with other pollutants discharged.

4. Dissolved Oxygen

For a diversified warm water biota, including game fish, daily dissolved oxygen concentrations shall not be less than 5 mg/l at all times; except under extreme conditions due to natural causes, it may range between 5 mg/l and 4 mg/l, provided that the water quality is favorable in all other

(4. Dissolved Oxygen - Cont'd)	parameters. The normal seasonal and daily fluctuations shall be maintained above these levels. In no event shall the dissolved oxygen level be less than 4 mg/l due to discharges from existing impoundments. All new impoundments shall be designed so that the discharge will contain at least 5 mg/l dissolved oxygen where practicable and technologically possible. The Environmental Protection Agency in cooperation with the State of Alabama and parties responsible for impoundments, shall develop a program to improve the design of existing facilities. In coastal waters surface dissolved oxygen concentrations shall not be less than 5 mg/l, except where natural phenomena cause the value to be depressed. In estuaries and tidal tributaries, dissolved oxygen concentrations shall not be less than 5 mg/l, except in dystrophic waters or where natural conditions cause the value to be depressed. In the application of dissolved oxygen criteria referred to above, dissolved oxygen 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, dissolved oxygen criteria will be applied at mid-depth.
5. Toxic substances; color producing substances; odor producing substances; or other deleterious substances attributable to sewage, industrial wastes, or other wastes.	Only such amounts, whether alone or in combination with other substances or wastes, as will not render the water unsafe or unsuitable for swimming and water-contact sports; be injurious to fish, wildlife, and aquatic life or, where applicable, shrimp and crabs; impair the palatability of fish, or, where applicable, shrimp and crabs; impair the waters for any other usage established for this classification or unreasonably affect the aesthetic value of waters for any use under this classification.
6. Bacteria	Waters in the immediate vicinity of discharges of sewage or other wastes likely to contain bacteria harmful to humans, regardless of the degree of treatment afforded these wastes*, are not acceptable for swimming or other whole body water-contact sports.

(6. Bacteria - Cont'd)	In all other areas, the bacterial quality of water is acceptable when a sanitary survey reveals no source of dangerous pollution and when the geometric mean fecal coliform organism density does not exceed 100/100 ml in coastal waters and 200/100 ml in other waters. When the geometric mean fecal coliform organism density exceeds these levels, the bacterial water quality shall be considered acceptable only if a second detailed sanitary survey and evaluation discloses no significant public health risk in the use of the waters. The policy of nondegradation of high quality waters shall be stringently applied to bacterial quality of recreational waters.
7. Radioactivity	The concentrations of radioactive materials present shall not exceed the requirements of the State Department of Public Health.
8. Turbidity	There shall be no turbidity of other than natural origin that will cause substantial visible contrast with the natural appearance of waters or interfere with any beneficial uses which they serve. Furthermore, in no case shall turbidity exceed 50 Nephelometric units above background. Background will be interpreted as the natural condition of the receiving waters, without the influence of man-made or man-induced causes. Turbidity levels caused by natural runoff will be included in establishing background levels.

*NOTE: In assigning this classification to waters intended for swimming and water-contact sports, the Commission will take into consideration the relative proximity of discharges of wastes and will recognize the potential hazards involved in locating swimming areas close to waste discharges. The Commission will not assign this classification to waters, the bacterial quality of which is dependent upon adequate disinfection of waste and where the interruption of such treatment would render the water unsafe for bathing.

C. SHELLFISH HARVESTING

Best Usages of Waters: Propagation and harvesting of shellfish for sale or use as a food product.

Conditions Related to Best Usage: Waters will meet the sanitary and bacteriological standards included in the latest edition of the National Shellfish Sanitation Program Manual of Operations, Sanitation of Shellfish Growing Areas, published by the Public Health Service, U. S. Department of Health, Education, and Welfare, and the requirements of the State Department of Public Health. The waters will also be of a quality suitable for the propagation of fish and other aquatic life, including shrimp and crabs.

Items	Specifications
1. Sewage, industrial wastes, or other wastes.	None of which are not effectively treated in accordance with Section V of these criteria.
2. pH	Sewage, industrial wastes or other wastes shall not cause the pH to deviate more than one unit from the normal or natural pH, nor be less than 6.5, nor greater than 8.5.
3. Temperature	a. The maximum temperature in streams, lakes, and reservoirs, other than those in river basins listed in Part b. hereof, shall not exceed 90°F.
	b. The maximum temperature in streams, lakes, and reservoirs in the Tennessee and Cahaba River Basins, and for that portion of the Tallapoosa River Basin from the tailrace of Thurlow Dam at Tallassee downstream to the junction of the Coosa and Tallapoosa Rivers which has been designated by the Alabama Department of Conservation and Natural Resources as supporting smallmouth bass, sauger, or walleye, shall not exceed 86°F.
	c. The maximum in-stream temperature rise above ambient water temperature due to the addition of artificial heat by a discharger shall not exceed 5°F in streams, lakes, and reservoirs in non-coastal and non-estuarine areas.

(3. Temperature - Cont'd)

d. The maximum in-stream temperature rise above ambient water temperature due to the addition of artificial heat by a discharger shall not exceed 4°F in coastal or estuarine waters during the period October through May, nor shall the rise exceed 1.5°F during the period June through September.

e. In lakes and reservoirs there shall be no withdrawal from, nor discharge of heated waters to, the hypolimnion unless it can be shown that such discharge or withdrawal will be beneficial to water quality.

f. In all waters the normal daily and seasonal temperature variations that were present before the addition of artificial heat shall be maintained, and there shall be no thermal block to the migration of aquatic organisms.

g. Thermal permit limitations in State discharge permits may be less stringent than those required by criteria a. - d. hereof when a showing by the discharger has been made pursuant to Section 316 of the Federal Water Pollution Control Act (FWPCA), 33 U.S.C. 1251 et seq. or pursuant to a study of an equal or more stringent nature required by the State of Alabama authorized by Title 22, Section 22-22-9(c), Code of Alabama, 1975, that such limitations will assure the protection and propagation of a balanced, indigenous population of shellfish, fish and wildlife, in and on the body of water to which the discharge is made. Any such demonstration shall take into account the interaction of the thermal discharge component with other pollutants discharged.

4. Dissolved Oxygen

For a diversified warm water biota, including game fish, daily dissolved oxygen concentrations shall not be less than 5 mg/l at all times; except under extreme conditions due to natural causes, it may range between 5 mg/l and 4 mg/l, provided that the water quality is favorable in all other parameters. The normal seasonal and daily fluctuations shall be maintained above these levels. In no event shall the dissolved oxygen level be less than 4 mg/l due to discharges from existing impoundments. All new impoundments shall be designed so

(4. Dissolved Oxygen - Cont'd)	that the discharge will contain at least 5 mg/l dissolved oxygen where practicable and technologically possible. The Environmental Protection Agency in cooperation with the State of Alabama and parties responsible for impoundments, shall develop a program to improve the design of existing facilities. In coastal waters, surface dissolved oxygen concentrations shall not be less than 5 mg/l except where natural phenomena cause the value to be depressed. In estuaries and tidal tributaries, dissolved oxygen concentrations shall not be less than 5 mg/l, except in dystrophic waters or where natural conditions cause the value to be depressed. In the application of dissolved oxygen criteria referred to above, dissolved oxygen 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, dissolved oxygen criteria will be applied at mid-depth.
5. Toxic substances attributable to sewage, industrial wastes, or other wastes.	Only such amounts, whether alone or in combination with other substances, as will not be injurious to fish and aquatic life, including shrimp and crabs; affect the marketability of fish and shellfish, including shrimp and crabs; exceed one-tenth of the 96-hour median tolerance limit for fish, aquatic life or shellfish, including shrimp and crabs.
6. Color, taste, and odor-producing substances and other deleterious substances attributable to sewage, industrial wastes, or other wastes.	Only such amounts, whether alone or in combination with other substances, as will not be injurious to fish and shellfish, including shrimp and crabs; adversely affect marketability or palatability of fish and shellfish, including shrimp and crabs; unreasonably affect the aesthetic value of waters for any use under this classification.
7. Bacteria	Not to exceed the limits specified in the latest edition of the National Shellfish Sanitation Program Manual of Operations, Sanitation of Shellfish Growing Areas, published by EPA (USPHS).

8. Radioactivity	The concentrations of radioactive materials present shall not exceed the requirements of the State Department of Public Health.
9. Turbidity	There shall be no turbidity of other than natural origin that will cause substantial visible contrast with the natural appearance of waters or interfere with any beneficial uses which they serve. Furthermore, in no case shall turbidity exceed 50 Nephelometric units above background. Background will be interpreted as the natural condition of the receiving waters without the influence of man-made or man-induced causes. Turbidity levels caused by natural runoff will be included in establishing background levels.

D. FISH AND WILDLIFE

Best Usage of Waters: Fishing, propagation of fish, aquatic life, and wildlife, and any other usage except for swimming and water-contact sports or as a source of water supply for drinking or food-processing purposes.

Conditions Related to Best Usage: The waters will be suitable for fish, aquatic life and wildlife propagation. The quality of salt and estuarine waters to which this classification is assigned will also be suitable for the propagation of shrimp and crabs.

Items	Specifications
1. Sewage, industrial wastes, or other wastes.	None which are not effectively treated in accordance with Section V of these criteria.
2. pH	Sewage, industrial wastes or other wastes shall not cause the pH to deviate more than one unit from the normal or natural pH, nor be less than 6.0, nor greater than 8.5. For salt waters and estuarine waters to which this classification is assigned, wastes as herein described shall not cause the pH to deviate more than one unit from the normal or natural pH, nor be less than 6.5, nor greater than 8.5.
3. Temperature	a. The maximum temperature in streams, lakes, and reservoirs, other than those in river basins listed in Part b. hereof, shall not exceed 90°F.
	b. The maximum temperature in streams, lakes, and reservoirs in the Tennessee and Cahaba River Basins, and for that portion of the Tallapoosa River Basin from the tailrace of Thurlow Dam at Tallassee downstream to the junction of the Coosa and Tallapoosa Rivers which has been designated by the Alabama Department of Conservation and Natural Resources as supporting smallmouth bass, sauger, or walleye, shall not exceed 86°F.
	c. The maximum in-stream temperature rise above ambient water temperature due to the addition of artificial heat by a discharger shall not exceed 5°F in streams, lakes, and reservoirs in non-coastal and non-estuarine areas.

(3. Temperature - Cont'd)

d. The maximum in-stream temperature rise above ambient water temperature due to the addition of artificial heat by a discharger shall not exceed 4°F in coastal or estuarine waters during the period October through May, nor shall the rise exceed 1.5°F during the period June through September.

e. In lakes and reservoirs there shall be no withdrawal from, nor discharge of heated waters to, the hypolimnion unless it can be shown that such discharge or withdrawal will be beneficial to water quality.

f. In all waters the normal daily and seasonal temperature variations that were present before the addition of artificial heat shall be maintained, and there shal' be no thermal block to the migration of aquatic organisms.

g. Thermal permit limitations in State discharge permits may be less stringent than those required by criteria a. - d. hereof when a showing by the discharger has been made pursuant to Section 316 of the Federal Water Pollution Control Act (FWPCA), 33 U.S.C. 1251 *et seq.* or pursuant to a study of an equal or more stringent nature required by the State of Alabama authorized by Title 22, Section 22-22-9(c), Code of Alabama, 1975, that such limitations will assure the protection and propagation of a balanced, indigenous population of shellfish, fish and wildlife, in and on the body of water to which the discharge is made. Any such demonstration shall take into account the interaction of the thermal discharge component with other pollutants discharged.

4. Dissolved Oxygen

For a diversified warm water biota, including game fish, daily dissolved oxygen concentrations shall not be less than 5 mg/l at all times; except under extreme conditions due to natural causes, it may range between 5 mg/l and 4 mg/l, provided that the water quality is favorable in all other parameters. The normal seasonal and daily fluctuations shall be maintained above these levels. In no event shall the dissolved oxygen level be less than 4 mg/l due to discharges from existing impoundments. All new impoundments shall be designed so that the discharge will

(4. Dissolved Oxygen - Cont'd)	contain at least 5 mg/l dissolved oxygen where practicable and technologically possible. The Environmental Protection Agency in cooperation with the State of Alabama and parties responsible for impoundments, shall develop a program to improve the design of existing facilities. In coastal waters, surface dissolved oxygen concentrations shall not be less than 5 mg/l, except where natural phenomena cause the value to be depressed. In estuaries and tidal tributaries, dissolved oxygen concentrations shall not be less than 5 mg/l, except in dystrophic waters or where natural conditions cause the value to be depressed. In the application of dissolved oxygen criteria referred to above, dissolved oxygen 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, dissolved oxygen criteria will be applied at mid-depth.
5. Toxic substances attributable to sewage, industrial wastes, or other wastes.	Only such amounts, whether alone or in combination with other substances, as will not be injurious to fish and aquatic life, including shrimp and crabs in estuarine or salt waters or the propagation thereof; not to exceed one-tenth of the 96-hour median tolerance limit for fish and aquatic life, including shrimp and crabs in salt and estuarine waters, except that other limiting concentrations may be used when factually justified and approved by the Commission.
6. Taste, odor, and color-producing substances attributable to sewage, industrial wastes, and other wastes.	Only such amounts, whether alone or in combination with other substances, as will not be injurious to fish and aquatic life, including shrimp and crabs in estuarine and salt waters or adversely affect the propagation thereof; impair the palatability or marketability of fish and wildlife or shrimp and crabs in estuarine and salt waters; unreasonably affect the aesthetic value of waters for any use under this classification.

E. AGRICULTURAL AND INDUSTRIAL WATER SUPPLY

Best Usage of Waters: Agricultural irrigation, livestock watering, industrial cooling and process water supplies, and any other usage, except fishing, bathing, recreational activities, including water-contact sports, or as a source of water supply for drinking or food-processing purposes.

Conditions Related to Best Usage: The waters, except for natural impurities which may be present therein, will be suitable for agricultural irrigation, livestock watering, industrial cooling waters, and fish survival. The waters will be usable after special treatment, as may be needed under each particular circumstance, for industrial process water supplies. The waters will also be suitable for other uses for which waters of lower quality will be satisfactory.

This category includes watercourses in which natural flow is intermittent and non-existent during droughts and which may, of necessity, receive treated wastes from existing municipalities and industries, both now and in the future. In such instances, recognition must be given to the lack of opportunity for mixture of the treated wastes with the receiving stream for purposes of compliance. It is also understood in considering waters for this classification that urban runoff or natural conditions may impact any waters so classified.

Items	Specifications
1. Sewage, industrial wastes, or other wastes.	None which are not effectively treated or controlled in accordance with Section V of these criteria.
2. pH	Sewage, industrial wastes, or other wastes shall not cause the pH to deviate more than one unit from the normal or natural pH, nor be less than 6.0, nor greater than 8.5. For salt waters and estuarine waters to which this classification is assigned, wastes as herein described shall not cause the pH to deviate more than one unit from the normal or natural pH, nor be less than 6.5, nor greater than 8.5.

3. Temperature	The maximum temperature rise above natural temperatures before the addition of artificial heat shall not exceed $5^{o}F$ in streams, lakes, and reservoirs, nor shall the maximum water temperature exceed $90^{o}F$.
4. Dissolved Oxygen	Sewage, industrial wastes, or other wastes shall not cause the dissolved oxygen to be less than 3.0 parts per million. In the application of dissolved oxygen criteria referred to above, dissolved oxygen 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, dissolved oxygen criteria will be applied at mid-depth.
5. Color, odor, and taste-producing substances, toxic substances, and other deleterious substances, including chemical compounds attributable to sewage, industrial wastes, and other wastes.	Only such amounts as will not render the waters unsuitable for agricultural irrigation, livestock watering, industrial cooling, industrial process water supply purposes, and fish survival, nor interfere with downstream water uses.
6. Radioactivity	The concentrations of radioactive materials present shall not exceed the requirements of the State Department of Public Health.
7. Turbidity	There shall be no turbidity of other than natural origin that will cause substantial visible contrast with the natural appearance of waters or interfere with any beneficial uses which they serve. Furthermore, in no case shall turbidity exceed 50 Nephelometric units above background. Background will be interpreted as the natural condition of the receiving waters without the influence of man-made or man-induced causes. Turbidity levels caused by natural runoff will be included in establishing background levels.

G. NAVIGATION

Best Usage of Waters: Navigation and related activities.

Conditions Related to Best Usage: Waters will be of a quality suitable for navigation and, after special treatment as may be needed under each particular circumstance, could be usable for agricultural irrigation, livestock watering, industrial cooling and industrial process water supply.

This category includes watercourses in which natural flow is intermittent and non-existent during droughts and which may, of necessity, receive treated wastes from existing municipalities and industries, both now and in the future. In such instances, recognition must be given to the lack of opportunity for mixture of the treated wastes with the receiving stream for purposes of compliance. It is also understood in considering waters for this classification that urban runoff or natural conditions may impact any waters so classified.

Items	Specifications
1. Sewage, industrial wastes, or other wastes.	None which are not effectively treated or controlled in accordance with Section V of these criteria.
2. pH	Sewage, industrial wastes, or other wastes shall not cause the pH to deviate more than one unit from the normal or natural pH, nor be less than 6.0, nor greater than 8.5. For salt waters and estuarine waters to which this classification is assigned, wastes as herein described shall not cause the pH to deviate more than one unit from the normal or natural pH, nor be less than 6.5, nor greater than 8.5.
3. Dissolved Oxygen	Sewage, industrial wastes, or other wastes shall not cause the dissolved oxygen to be less than 2.0 parts per million. In the application of dissolved oxygen criteria referred to above, dissolved oxygen shall be measured at a depth of 5 feet in waters

(3.	Dissolved Oxygen - Cont'd)	10 feet or greater in depth; and for those waters less than 10 feet in depth, dissolved oxygen criteria will be applied in mid-depth.
4.	Temperature	The maximum temperature rise above natural temperatures before the addition of artificial heat shall not exceed 5°F in streams, lakes, and reservoirs, nor shall the maximum water temperature exceed 90°F.
5.	Color, odor, and taste-producing substances, toxic substances, and other deleterious substances, including chemical compounds attributable to sewage, industrial wastes, and other wastes.	Only such amounts as will not render the waters unsuitable for agricultural irrigation, livestock watering, industrial cooling, and industrial process water supply purposes, where applicable, nor interfere with downstream water uses.
6.	Radioactivity	The concentrations of radioactive materials present shall not exceed the requirements of the State Department of Public Health.
7.	Turbidity	There shall be no turbidity of other than natural origin that will cause substantial visible contrast with the natural appearance of waters or interfere with any beneficial uses which they serve. Furthermore, in no case shall turbidity exceed 50 Nephelometric units above background. Background will be interpreted as the natural condition of the receiving waters without the influence of man-made or man-induced causes. Turbidity levels caused by natural run-off will be included in establishing background levels.

USE CLASSIFICATIONS

Use classifications apply water quality criteria adopted for particular uses based on existing utilization, uses reasonably expected in the future, and those uses not now possible because of correctable pollution but which could be made if the effects of pollution were controlled or eliminated. Of necessity, the assignment of use classifications must take into consideration the physical capability of waters to meet certain uses.

Those use classifications presently included in the standards are reviewed informally by the Commission's staff as the need arises, and the entire standards package, to include the use classifications, receive a formal review at least once each three years. Efforts currently underway through local 201 planning projects, designated 208 agency programs, and Statewide 208 planning will provide additional technical data on certain streams in the State, information on treatment alternatives, and applicability of various management techniques, which, when available, will hopefully lead to new decisions regarding use classifications. Of particular interest are those segments which are currently classified for any usage which has an associated degree of quality criteria considered to be less than that applicable to a classification of "Fish and Wildlife." As rapidly as it can be demonstrated that new classifications are feasible on these segments from an economic and technological viewpoint, based on the information being generated pursuant to staff studies and the planning efforts previously outlined, such improvement will be sought.

Although it is not explicitly stated in the classifications, it should be understood that the use classification of "Shellfish Harvesting" is only applicable in the coastal area and, therefore, is included only in the Mobile River Basin and the Perdido-Escambia River Basin. It should also be noted that with

the exception of those segments in the "Public Water Supply" classification, every segment, in addition to being considered acceptable for its designated use, is also considered acceptable for any other use with a less stringent associated criteria.

Not all waters are included by name in the use classifications since it would be a tremendous administrative burden to list all stream segments in the State. In addition, in virtually every instance where a segment is not included by name, the Commission has no information or stream data upon which to base a decision relative to the assignment of a particular classification. An effort has been made, however, to include all major stream segments and all segments which to the Commission's knowledge, are currently recipients of point source discharges. Those segments which are not included by name will be considered to be acceptable for a "Fish and Wildlife" classification unless it can be demonstrated that such a generalization is inappropriate in specific instances.

INTERSTATE AND COASTAL WATERS OF THE MOBILE RIVER-MOBILE BAY BASIN

Stream	From	To	Classification(s)
Mobile River and all other rivers, creeks, lakes of the their tributaries except as otherwise designated.		Mobile River Delta and	F&W
MOBILE BAY	West of a line drawn due south from the western shore of Chacaloochee Bay	A point due east of the mouth of Dog River	F&W

INTERSTATE AND COASTAL WATERS OF THE MOBILE RIVER-MOBILE BAY BASIN

Stream	From	To	Classification(s)
MOBILE BAY	South of a line drawn due east from the mouth of Dog River and east of a line drawn due south from the western shore of Chacaloochee Bay and all other portions of MOBILE BAY.		S/F&W
MOBILE BAY	All that portion lying south of a line extending in an easterly direction from the south bank of East Fowl River at its mouth through lighted beacon (FL 2 seconds) to lighted beacon (FLG 4 seconds "23") at the Mobile Ship Channel thence in a northeasterly direction to Daphne.		SH/F&W
Bon Secour Bay		in its entirety	SH/S/F&W
Mississippi Sound and contiguous waters excepting: that portion of Portersville Bay 1,000 feet on each side of a straight line connecting the shore at Bayou Coden to a lighted beacon (FLR 4 seconds "6") and lighted beacon (FL 4 seconds "1"); that portion of Portersville Bay 1,000 feet on each side of a straight line connecting the shore at Bayou La Batre and lighted beacons (FR) and (FLR 4 seconds "6"), and that portion of Bayou Aloe within 1,000 feet of the outfall of the Dauphin Island sewage treatment plant.			SH/S/F&W
Waters excepted in foregoing description of Portersville Bay and contiguous waters			F&W
Oyster Bay and that portion of Bon Secour River west of a line drawn due north from the east bank of the inlet connecting Oyster Bay and Bon Secour River			SH/F&W
Coastal waters of the Gulf of Mexico contiguous to the State of Alabama			SH/S/F&W
Intracoastal Waterway	Bon Secour Bay	Oyster Bay	F&W
Intracoastal Waterway	Oyster Bay	Alabama Highway 59	F&W
Bon Secour River	Bon Secour Bay	One mile upstream from first bridge above its mouth	S/F&W
Boggy Branch	Bon Secour River	its source	S/F&W
Weeks Bay	Bon Secour Bay	Fish River	S/F&W
Magnolia River	Weeks Bay	its source	S/F&W
Fish River	Weeks Bay	Clay City	S/F&W

INTERSTATE AND COASTAL WATERS OF THE MOBILE RIVER-MOBILE BAY BASIN

Stream	From	To	Classification(s)
Turkey Branch	Fish River	its source	S/F&W
Waterhole Branch	Fish River	its source	S/F&W
Cowpen Creek	Fish River	its source	S/F&W
Point Clear Creek	MOBILE BAY	its source	F&W
Fly Creek	MOBILE BAY	its source	S/F&W
Rock Creek	MOBILE BAY	its source	F&W
D'Olive Creek	D'Olive Bay	its source	F&W
West Fowl River	Fowl River Bay	its source	S/F&W
Bayou Coden	Portersville Bay	its source	F&W
Bayou La Batre	Portersville Bay	its source	F&W
Little River	Portersville Bay	its source	F&W
East Fowl River	Fowl River	its source	S/F&W
Fowl River	MOBILE BAY	its source	S/F&W
Deer River and its forks	MOBILE BAY	their source	F&W
Dog River	MOBILE BAY	Halls Mill Creek	S/F&W
Halls Mill Creek	Dog River	its source	F&W
Alligator Bayou	Dog River	its source	F&W
Rabbit Creek	Dog River	its source	F&W
Rattlesnake Bayou	Dog River	its source	F&W
Robinson's Bayou	Dog River	its source	F&W
Three Mile Creek	MOBILE RIVER	Mobile Street	A&I
Industrial Canal	Three Mile Creek	its source	A&I
Chickasaw Creek	MOBILE RIVER	limit of tidal effects (Hwy. 43)	N
[illegible] Bayou	Chickasaw Creek	its source	N

INTERSTATE AND COASTAL WATERS OF THE MOBILE RIVER-MOBILE BAY BASIN

Stream	From	To	Classification(s)
Little Lagoon (Baldwin County)	in its entirety		SH/S/F&W
Bayou Sara	MOBILE RIVER	U. S. Highway 43	S/F&W
Bayou Sara	U. S. Highway 43	its source	F&W
Gunnison Creek	Bayou Sara	its source	S/F&W
Steele Creek	Gunnison Creek	its source	S/F&W

NOTE: Waters of the Mobile River-Mobile Bay Basin classified for SWIMMING AND OTHER WHOLE BODY WATER-CONTACT SPORTS, SHELLFISH HARVESTING and/or FISH AND WILDLIFE in which natural conditions provide an appropriate habitat for shrimp and crabs are to be suitable for the propagation and harvesting of shrimp and crabs.

State of Alaska Marine Water Quality Standards

Reference:

Alaska Dept. of Environmental Conservation

Water Quality Standards

Title 18 Chapter 70

February 1979

State of Alaska

Dept. of Environmental Conservation

Pouch O

Juneau, AK 99811

18 AAC 70.010. GENERAL. (a) No person may conduct an operation which causes or contributes to a violation of the water quality standards established by this chapter.

(b) The water quality standards established in this chapter apply to manmade alterations to waters of the state. The water quality standards established by this chapter constitute the degree of degradation which may not be exceeded in a water body.

(c) Waters having natural characteristics which are of a higher quality than the water quality criteria for protected uses established in sec. 20 of this chapter must be maintained at the existing quality, except where: (1) under sec. 15 or sec. 55 of this chapter, it is demonstrated to the satisfaction of the department that limited degradation of the water body may be allowed; (2) it has been demonstrated to the department that a reduction of water quality is justifiable as a result of necessary economic or social development; (3) the reduction of water quality will not injure present or potential uses of the waters; and (4) all wastes and other materials and substances proposed for discharge into the waters are provided with all known available and feasible methods of treatment as determined by the department before discharge. (In effect before 7/28/59; am 5/24/70, Reg. 34; am 8/28/71, Reg. 39; am 10/22/72, Reg. 44; am 2/2/79, Reg. 69)

Authority: AS 46.03.010
AS 46.03.020(9)
AS 46.03.020(10)(A)
AS 46.03.070
AS 46.03.080

18 AAC 70.015. SHORT-TERM VARIANCE. (a) A short-term variance from the criteria established in sec. 20 of this chapter will, in the department's discretion, be allowed for nonpoint sources, and for temporary activities associated with the placement of dredged or fill material, affecting a specific water body when necessary to accommodate essential activities, respond to emergencies, or to protect the public interest. Short-term variances must be authorized in writing by the commissioner or his designee under conditions the commissioner, in his discretion, will prescribe, even though the activities may result in a temporary exceeding of the water quality criteria for the water involved. A short-term variance will be granted only after the applicant has demonstrated to the satisfaction of the commissioner that the wastes, materials, or substances which will exceed the water criteria limits are provided with all known available and feasible methods of treatment before entering state waters, and if the activity for which the variance is sought

(1) will have no actual or potential adverse impact on a protected use of the waters involved beyond the term of the variance granted;

(2) will be kept to a minimum impact and time frame, utilizing all known available and feasible methods of mitigation;

(3) when completed, will not result in a continuing or recurring reduction of water quality; and

(4) when completed the water quality will return within the shortest feasible time to that existing before the activity for which the short-term variance was requested unless, as provided for in sec. 10 of this chapter, it is found that a limited degradation of the water in question is justifiable.

(b) A variance under this section may be authorized on either an area or project basis or for specific individual events, as determined by the commissioner.

Alaska

(c) A person seeking a short-term variance of the water quality criteria shall submit a written request to the commissioner. The request must contain the location, time, duration, and type of activity requiring the variance; reasons why the activity is required; the geographical extent and quantified degree of variance from the applicable criteria required; detailed plans of construction or operational techniques proposed, and an estimate of the impact of the activity on the uses of the waters involved, including recreational use and use for habitat, food chain, rearing, growth, or migration by fish, shellfish, other aquatic life, mammals, and wildlife including seabirds, waterfowl and furbearers. The commissioner will, in his discretion, treat an application for a U.S. Army Corps of Engineer's permit as an application for a short-term variance for temporary activities associated with the placement of dredged or fill material when the commissioner determines that a variance is needed for certification of the activity. Upon the commissioner's request, the applicant shall submit additional information required for processing of an application for a short-term variance.

(d) If the commissioner determines that the application may generate substantial controversy, he will issue public notice of the application under (e) of this section. If public notice is not issued, the commissioner will obtain the staff recommendation on the application within 20 days of receipt of the application, and will issue the departments decision within 10 days after receipt of the staff recommendation.

(e) If the commissioner determines to issue public notice under (d) of this section, he will, within 10 days of receipt of the application, publish notice of the application in two editions of a newspaper in general circulation within the area which will be most significantly affected by the decision, and in other media the commissioner deems appropriate. The notice will summarize the substance of the request, and will identify the office of the department where copies of the request and supporting documents may be obtained. Public comment will be considered timely if it is submitted within 30 days of the second publication of notice. A mailing list of interested persons and organizations wishing to receive copies of the public notice will be maintained by the department for mailing at the time notice is given.

(f) Within 10 days of the close of the public notice period, a staff person designated by the commissioner will issue a recommendation. The recommendation will include the basis for recommending approval or disapproval of the variance request. Where public comment adverse to the request has been received by the department, and where the staff recommendation is to approve the request, it will state the staff rationale for the recommentation. The rationale for a recommended denial will also be provided. The staff recommendation will be forwarded to the commissioner for his review. The recommendation will be served on the applicant, and on all persons who submitted timely written comments.

(g) Within 10 days of service of the staff's recommendation, the applicant, or any other person who submitted timely written comments on the application, may serve upon the commissioner comments on the recommendation. All comments served, and all supplemental matters submitted by the staff, will be placed in a record file. The record file will be closed 10 days after the deadline for serving comments under this subsection.

(h) Within 10 days of closing the record file, the commissioner, or his designee, based upon the matters contained in the record file, will affirm, modify or reverse the staff's recommendation. The commissioner or his designee will, in his discretion, adopt the findings and conclusions in the staff recommendation by reference. The decision will be served on the applicant and all persons who submitted timely written comments.

(i) The commissioner or his designee will, in his discretion, include conditions in the short-term variance necessary to insure that disturbance to water quality and protected uses, including recreational use and use for habitat, food chain, rearing, growth, or migration by fish, shellfish, other aquatic life, mammals, and wildlife, including seabirds, waterfowl and furbearers, is minimized. (Eff. 2/2/79, Reg. 59; am 4/23/79, Reg. 70; am / / , Reg.) Alaska

Authority: AS 46.03.010
AS 46.03.070
AS 46.03.080

18 AAC 70.020. PROTECTED WATER USES AND CRITERIA. (a) Uses of waters of the state protected by water quality criteria established in (b) of this section are

(2) Marine Waters

(A) Water Supply

(i) aquaculture;

(ii) seafood processing;

(iii) industrial, including any water supply used in association with a manufacturing or production enterprise (other than food processing) including mining, placer mining, energy production or development.

(B) Water Recreation

(i) contact recreation;

(ii) secondary receation.

(C) Growth and Propagation of Fish, Shellfish, other Aquatic Life, and Wildlife including Seabirds, Waterfowl and Furbearers.

(D) Harvesting for Consumption of Raw Mollusks or other Raw Aquatic Life.

(b) Water quality criteria applicable to eacn protected water use are:

THE WATER QUALITY CRITERIA WHEN USED IN COMBINATION WITH [illegible]

WATER QUALITY PARAMETERS → / (i) MARINE WATER USES ↓	(1) FECAL COLIFORM BACTERIA (FC) (See Note 1)	(2) DISSOLVED GAS	(3) pH (Variation of pH for waters naturally outside the specified range shall be towards the range.)	(4) TURBIDITY
(A) Water Supply: (i) aquaculture	For products normally cooked the mean, based on a minimum of 5 samples taken in a period of 30 days, shall not exceed 200 FC/100 ml and not more than 10% of the samples shall exceed 400 FC/100 ml. For products not normally cooked the mean, based on a minimum of 5 samples taken in a period of 30 days shall not exceed 20 FC/100 ml, and not more than 10% of the samples shall exceed 40 FC/100 ml.	Surface dissolved oxygen (D.O.) concentrations in coastal water shall not be less than 6.0 mg/l for a depth of 1 meter except when natural conditions cause this value to be depressed. D.O. shall not be reduced below 4 mg/l at any point beneath the surface. D.O. concentrations in estuaries and tidal tributaries shall not be less than 5.0 mg/l except where natural conditions cause this value to be depressed. In no case shall D.O. levels above 17 mg/l be permitted. The concentration of total dissolved gas shall not exceed 110% of saturation at any point of sample collection.	Shall not be less than 6.5 or greater than 8.5, and shall not vary more than 0.1 pH units from natural condition.	Shall not exceed 25 NTU
(A) Water Supply: (ii) seafood processing	Based on a minimum of 5 samples taken in a period of 30 days, mean shall not exceed 20 FC/100 ml, and not more than 10% of the samples shall exceed 40 FC/100 ml	D.O. shall be greater than or equal to 5 mg/l.	Shall not be less than 6.0 or greater than 8.5. Shall not vary more than 0.5 pH unit from natural condition.	Shall not interfere with disinfection.
(A) Water Supply: (iii) industrial, including any water supplies used in association with a manufacturing or production enterprise (other than food processing) including mining, placer mining, energy production or development.	Where worker contact is present the mean FC bacteria concentration, based upon a minimum of 5 samples taken in a period of 30 days, shall not exceed 200 FC/100 ml, not more than 10% of the samples shall exceed 400 FC/100 ml.	Not applicable.	Shall not be less than 5.0 or greater than 9.0.	Shall not cause detrimental effects on established levels of water supply treatment.
(B) Water Recreation: (i) contact recreation	Based on a minimum of 5 samples taken in a 30 day period the mean shall not exceed 20 FC/100 ml, and not more than 10% of the samples shall exceed 40 FC/100 ml	Same as (2)(A)(i).	Shall not be less than 6.5 or greater than 8.5. If the natural pH condition is outside this range substances shall not be added that cause a increase in buffering capacity of the water.	Shall not exceed 25 NTU
(B) Water Recreation. (ii) secondary recreation	Based on a minimum of 5 samples taken in a 30 day period the mean shall not exceed 200 FC/100 ml, and not more than 10% of the samples shall exceed 400 FC/100 ml.	Same as (2)(A)(i).	Shall not be less than 5.0 or greater than 9.0.	Shall not exceed 25 NTU.
(C) Growth and Propagation of Fish, Shellfish Aquatic Life and Wildlife including Seabirds, Waterfowl and Furbearers	Not applicable.	Same as (2)(A)(i).	Shall not be less than 6.5 or greater than 8.5, and shall not vary more than 0.1 pH unit from natural condition.	Shall not reduce the depth of the compensation point for photosynthetic activity by more than 10%. In addition, shall not reduce the maximum secchi disk depth by more than 10%.
(D) Harvesting for Consumption of Raw Mollusks or Other Raw Aquatic Life	Based on a 5-tube decimal dilution test the fecal coliform median MPN shall not exceed 14 FC/100 ml, not more than 10% of the samples shall exceed a FC MPN of 43 FC/100 ml (See Note 15).	Same as (2)(A)(i).	Shall not be less than 6.0 or greater than 8.5. Shall not vary more than 0.5 pH unit from natural condition.	Same as (2)(C)

WATER QUALITY CRITERIA

WATER USE DESIGNATION CONSTITUTE THE WATER QUALITY STAND[illegible] OR A PARTICULAR WATER BODY THE WATER QUALITY STANDARDS

(5) TEMPERATURE	(6) DISSOLVED INORGANIC SUBSTANCES	(7) SEDIMENT	(8) TOXIC AND OTHER DELETERIOUS ORGANIC AND INORGANIC SUBSTANCES	(9) COLOR (See Note 12)	
Shall not cause the weekly average temperature to increase more than 1°C. The maximum rate of change shall not exceed 0.5°C per hour. Normal daily temperature cycles shall not be altered in amplitude or frequency	No man induced alterations shall be made that would cause a change in the water's isohaline patterns of more than ± 10% of the natural variations.	No imposed loads that will interfere with established water supply treatment levels.	Substances shall not individually or in combination exceed 0.01 times the lowest measured 96 hour LC50 (See Note 9) for life stages of species identified by the department as being the most sensitive, biologically important to the situation, or exceed criteria cited in EPA, Quality Criteria for Water or Alaska Drinking Water Standards (See Note 6 and 5), whichever concentration is less. Substances shall not be present or exceed concentrations which individually or in combination impart undesirable odor or taste to fish or other aquatic organisms as determined by either bioassay or organoleptic tests (See Note 9).	Shall not exceed 50 color units	(A)i
Shall not exceed 15°C.	Not applicable.	Below normally detectable amounts.	Substances shall not exceed EPA, Quality Criteria for Water (See Note 6) as applicable to the substance.	Shall not exceed 75 color units in water supplies which will be treated. Untreated water supplies shall not exceed 5 color units.	(A)ii
Shall not exceed 25°C.	No amounts above natural conditions which can cause corrosion, scaling, or process problems.	No imposed loads that will interfere with established water supply treatment levels.	Substances shall not be present which pose hazards to worker contact.	Not applicable.	(A)iii
Not applicable.	Not applicable.	No measurable increase in concentrations above natural conditions.	Substances shall not exceed EPA, Quality Criteria for Water (See Note 6) as applicable to constituent.	Shall not exceed 15 color units.	(B)i
Not applicable.	Not applicable.	Shall not pose hazards to incidental human contact or cause interference with the use.	Substances shall not be present which pose hazards to incidental human contact.	Surface waters shall be free of substances producing objectionable color.	(B)ii
Shall not cause the weekly average temperature to increase more than 1°C. The maximum rate of change shall not exceed 0.5°C per hour. Normal daily temperature cycles shall not be altered in amplitude or frequency.	Maximum allowable variation above natural salinity: Natural Salinity (parts per thousand) / Man-induced salinity (parts per thousand) 0 to 3.5 / 1 3.5 to 13.5 / 2 13.5 to 35 / 4	No measurable increase in concentrations above natural conditions.	Substances shall not individually or in combination exceed 0.01 times the lowest measured 96 hour LC50 (See Note 9) for life stages of species identified by the department as being the most sensitive, biologically important to the location, or exceed criteria cited in EPA, Quality Criteria for Water or Alaska Drinking Water Standards (See Note 6 and 5), whichever concentration is less. Substances shall not be present or exceed concentrations which individually or in combination impart undesirable odor or taste to fish or other aquatic organisms as determined by either bioassay or organoleptic tests (See Note 6 and 9).	Color or apparent color shall not reduce the depth of compensation point for photosynthetic activity by more than 10% from the seasonally established norm for aquatic life. For all waters not having a seasonally established norm for aquatic life color, or apparent color, shall not exceed 50 color units.	(C)
Same as (2)(C).	Same as 2(A)(i) and/or 2(C) as determined appropriate by the department.	Not applicable.	Substances shall not individually or in combination exceed 0.01 times the lowest measured 96 hour LC50 (See Note 9) for life stages of species identified by the department as being the most sensitive, biologically important to the location, or exceed criteria cited in EPA, Quality Criteria for Water (See Note 6) whichever concentration is less. Substances shall not be present or exceed concentrations which individually or in combination impart undesirable odor or taste to fish or other aquatic organisms as determined by either bioassay or organoleptic tests (See Note 6 and 9).	Same as (2)(C).	(D)

TER QUALITY STANDARDS REGULATE MAN-MADE ALTERATIONS TO THE WATERS OF THE STATE

(9) COLOR (See Note 12)	(10) PETROLEUM HYDROCARBONS, OILS AND GREASE (See Note 16)	(11) RADIOACTIVITY	(12) TOTAL RESIDUAL CHLORINE	* (13) RESIDUES FLOATING SOLIDS DEBRIS, SLUDGE DEPOSITS FOAM, SCUM	MARINE WATER USES
Shall not exceed 50 color units.	Shall not exceed 0 01 times the continuous flow 96 hour LC50 or if not available the static test 96 hour LC50 for the species involved (See Note 9 and 10)	Shall not exceed the concentrations specified in the Alaska Drinking Water Standards (See Note 5). Concentration factors for organisms involved shall not exceed maximum permissible limits for specific radioisotopes and unidentified mixtures as established in Title 10, Code of Federal Regulations, Part 20 (See Note 13) and National Bureau of Standards, Handbook 69 (See Note 14).	Concentration shall not exceed 2.0 ug/l for salmonoid fish or 10 0 ug/l for other organisms (See Note 6).	Shall not alone or in combination with other substances or wastes cause the water to be unfit or unsafe for the use. Shall not cause detrimental effects on established water supply treatment levels.	(A) (i)
Shall not exceed 75 color units in water supplies which will be treated. Untreated water supplies shall not exceed 5 color units.	Shall not cause a film, sheen, or discoloration on the surface or floor of the water body or adjoining shorelines. Surface waters shall be virtually free from floating oils. Shall not exceed concentrations which individually or in combination impart odor or taste as determined by organoleptic tests.	Shall not exceed the concentrations specified in the Alaska Drinking Water Standards (See Note 5) and shall not exceed limits specified in Title 10, Code of Federal Regulations, Part 20 (See Note 13) or National Bureau of Standards, Handbook 69 (See Note 14).	Not applicable	Shall not alone of in combination with other substances make the water unfit or unsafe for use; cause a film, sheen, or discoloration on the surface of the water or adjoining shoreline; cause leaching of toxic or deleterious substances, or cause a sludge, solid, or emulsion to be deposited beneath or upon the surface of the water within the water column, on the bottom, or upon adjoining shorelines.	(A) (ii)
Not applicable.	Shall not make the water unfit or unsafe for the use	Same as (2)(A)(ii)	Not applicable.	Shall not alone or in combination with other substances or wastes cause the water to be unfit or unsafe for the use.	(A) (iii)
Shall not exceed 15 color units.	Shall not cause a film, sheen, or discoloration on the surface or floor of the water body or adjoining shorelines Surface waters shall be virtually free from floating oils.	Same as (2)(A)(ii).	Not applicable.	Shall not alone or in combination with other substances make the water unfit or unsafe for use; cause a film, sheen, or discoloration on the surface of the water or adjoining shoreline, cause leaching of toxic or deleterious substances, or cause a sludge, solid, or emulsion to be deposited beneath or upon the surface of the water, within the water column on the bottom, or upon adjoining shorelines.	(B) (i)
Surface waters shall be free of substances producing objectionable color	Shall not cause a film, sheen, or discolorstion on the surface or floor of the water body or adjoining shorelines. Surface waters shall be virtually free from floating oils	Same as (2)(A)(ii)	Not applicable	Shall not alone or in combination with other substances make the water unfit or unsafe for use cause a film, sheen, or discoloration on the surface of the water or adjoining shoreline, cause leaching of toxic or deleterious substances, or cause a sludge, solid, or emulsion to be deposited beneath or upon the surface of the water, within the water column, on the bottom, or upon adjoining shorelines.	(B) (ii)
Color or apparent color shall not reduce the depth of compensation point for photosynthetic activity by more than 10% from the seasonally established norm for aquatic life. For all waters not having a seasonally established norm for aquatic life color, or apparent color, shall not exceed 50 color units	Total hydrocarbons in the water column shall not exceed 15 ug/l or 0 01 of the lowest measured continuous flow 96 hour LC50 for life stages of species identified by the department as the most sensitive, biologically important species in a particular location, whichever concentration is less (See Note 8 and 10) Total aromatic hydrocarbons in the water column shall not exceed 10 ug/l , or 0 01 of the lowest measured continuous flow 96 hour LC50 for life stages of species identified by the department as the most sensitive, biologically important species in a particular location, whichever concentration is less (See Note 10 and 11) There shall be no concentrations of hydrocarbons, animal fats, or vegetable oils in the sediment which cause deleterious effects to aquatic life. Surface waters and adjoining shorelines shall be virtually free from floating oil, film, sheen or discolorstion.	Same as (2)(A)(i)	Concentration shall not exceed 2 0 ug/l for salmonoid fish or 10 0 ug/l for other organisms (See Note 6)	Shall not alone or in combination with other substances or wastes cause the water to be unfit, unsafe or cause acute or chronic problem levels as determined by bioassay or other appropriate methods. Shall not alone or in combination with other substances cause a film, sheen, or discoloration on the surface of the water or adjoining shorelines, cause leaching of toxic or deleterious substances; or cause a sludge, solid, or emulsion to be deposited beneath or upon the surface of the water, with the water column, on the bottom, or upon adjoining shorelines.	(C)
Same as (2)(C)	Shall not exceed concentrations which individually or in combination impart undesirable odor or taste to organisms as determined by bioassay and/ or organoleptic tests	Same as (2)(A)(i)	Shall not exceed 1 mg/l at any time.	Shall not make the water unfit or unsafe for use, cause a film, sheen, or discoloration on the surface of the water or adjoining shoreline, cause leaching of toxic deleterious substances, or sludge, solid, or emulsion to be deposited beneath or upon the surface of the water, within the water column on the bottom, or upon adjoining shorelines.	(D)

* Notwithstanding the criteria otherwise applicable to the deposit of residues, the deposit of dredged or fill material will be allowed by the department if the applicant demonstrates to the satisfaction of the department that the deposit will not significantly impair a protected

Notes:

1. Wherever cited in these regulations, fecal coliform group organisms shall be determined by the Membrane Filter Technique or Most Probable Number Procedure (MPN) in accordance with the 14th Edition of Standard Methods for the Examination of Water and Wastewater, published by the Water Pollution Control Federation, the American Water Works Association and the American Public Health Association, (publication office: American Public Health Association, 1015 Eighteenth Street NW, Washington, DC 20036), or in accordance with other standards approved by both the department and the U.S. Environmental Protection Agency (EPA).

5. Alaska Drinking Water Regulations, Chapter 80 of this title, which is obtainable from any office of the department, and is on file in the office of the lieutenant governor.

6. Quality Criteria for Water, July 1976, U.S. Environmental Protection Agency, Washington, D.C., 20460, U.S. Government Printing Office: 1977 0-222-904, can be examined at any office of the department and is on file in the office of the lieutenant governor.

9. Continuous flow LC_{50} Bioassays shall apply if available; static bioassays shall apply otherwise. The analytical procedures used as methods of analysis to determine the quality of waters shall be in accordance with the 14th Edition of Standard Methods for the Examination of Water and Wastewater, published by the Water Pollution Control Federation, the American Water Works Association and the American Public Health Association (publication office: American Public Health Association, 1015 Eighteenth Street NW, Washington D.C. 20036), or in accordance with other standards approved by both the department and EPA.

10. Water soluble extracts of petroleum hydrocarbons shall be used as test solutions in LC_{50} determinations using preparation techniques as specified in Anderson, J.W., et. al. published in Marine Biology, v. 27, p. 75, 1974, which can be examined at any office of the department and is on file in the office of the lieutenant governor.

11. Continuous flow LC_{50} Bioassays shall apply as available; static bioassays shall apply otherwise. The procedures used for methods of analysis to determine total aromatic hydrocarbons shall be in accordance with standards mutually approved by the department and EPA.

13. Wherever cited in these regulations, 10 CFR 20 Federal Regulations means the Standards for Protection Against Radiation published in the Code of Federal Regulations, January 1, 1978. A copy of these regulations can be examined at any office of the department and are on file in the office of the lieutenant governor.

14. Wherever cited in these regulations, National Bureau of Standards Handbook 69 means the handbook entitled Maximum Permissible Body Burdens and Maximum Permissible Concentrations of Radionuclides in Air and Water for Occupational Exposure, U.S. Department of Commerce, National Bureau of Standards Handbook 69, June 5, 1959, a copy of which is obtainable from Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., and which can be examined at any office of the department, and which is on file in the office of the lieutenant governor.

15. Wherever cited in these regulations the National Shellfish Sanitation Program, Manual of Operations, Part I, means Sanitation of Shellfish Growing Areas, 1965 Revision, U.S. Department of Health, Education and Welfare, Public Health Service Publication No. 33 Part I, obtainable from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., 20402 (Price 45 cents), or which can be examined in any office of the department and which is on file in the office of the lieutenant governor.

16. In addition to these water quality standards contained in the table, all ballast placed in cargo tanks of tank vessels, as defined in AS 30.20.060(9), shall be processed by or in an onshore ballast water treatment facility and may not be discharged from tank vessels into the waters of the state.

(c) The analytical procedures used as methods of analysis to determine the quality of waters will be in accordance with the 14th edition of Standard Methods for the Examination of Water and Wastewater; published by the American Public Health Association and Water Pollution Control Federation, (publication office: American Public Health Association, 1015 Eighteenth Street NW, Washington, D.C. 20036); Manual of Methods for Chemical Analysis of Water and Wastes, 1974, published by the EPA (available through the Office of Technology Transfer, Cincinnati, Ohio 45268); those prescribed in (b) of this section; or other standard analytical procedures approved by both the department and EPA. (In effect before 7/28/59; am 5/24/70, Reg 34; am 8/28/71, Reg. 39; am 10/22/72, Reg. 44; am 8/12/73, Reg. 47; am 2/2/79, Reg. 69)

Authority: AS 46.03.020(10)(A)
AS 46.03.070
AS 46.03.080
AS 46.03.750(e)

18 AAC 70.030. PROCEDURE FOR APPLYING WATER QUALITY CRITERIA. In applying the appropriate water quality criteria for any waters or portion of waters, the department will use the following procedure

(1) if a water is classified for more than one use, the most stringent water quality criteria of all the included uses will apply;

(2) at the boundary between waters of different water use classifications, the water quality standard for the more stringent water use classification will apply; and

(3) in brackish water of estuaries, where the fresh and marine water quality standards differ within the same classification, the standard will be determined on the basis of salinity; except that the marine water quality criteria will apply for dissolved oxygen when the salinity is one part per thousand or greater and for fecal coliform organisms when the salinity is ten parts per thousand or greater. (In effect before 7/28/59; am 5/24/70, Reg. 34; am 8/28/71, Reg. 39; am 10/22/72, Reg. 44; am 8/12/73, Reg. 47; am 2/2/79, Reg. 69)

Authority: AS 46.03.020(10)(A)
AS 46.03.070
AS 46.03.080

18 AAC 70.032. MIXING ZONES. (a) In applying the water quality criteria of sec. 20 of this chapter to waters of the state the department will, in its discretion, prescribe in its permits or certifications a volume of dilution for the effluent or material within the receiving water. Water quality standards may be exceeded within this mixing zone; however, the standards must be met at every point outside its boundaries. The department will disallow mixing zones in instances where the substance discharged is bioaccumulative in food chains, concentrates in sediments, is persistent, carcinogenic, mutagenic or teratogenic, or if the potential ecological or human health effects are so potentially adverse that a mixing zone is not appropriate. A mixing zone may be granted only after the applicant has demonstrated to the satisfaction of the department that the wastes, materials, or substances which may exceed the water criteria limits are provided with all known available and feasible methods of treatment before entering state waters.

(b) The department will, in its discretion, establish effluent limitation requirements in its wastewater disposal permits in lieu of or in addition to a defined mixing zone.

(c) No individual mixing zone or combination of mixing zones will be permitted to form a barrier to the migratory routes of aquatic species.

(d) In determining the size of mixing zones, the department will consider the following:

(1) the physical, biological and chemical characteristics of the receiving water;

(2) the effects of the discharge on the present and anticipated protected water uses and quality of the receiving water;

(3) the mixing characteristics of the receiving water; and

(4) the characteristics of the effluent, including flow rate and composition.

(e) Unless it is demonstrated to the satisfaction of the department, in accordance with (f) of this section, that the size limitations can be increased, mixing zones will be as small as practicable and will comply with the following size limitations

(1) the cumulative linear width of the mixing zone(s) intersected on any given cross section of a river or stream will not exceed one third of the total width of that cross section;

(2) the total horizontal area allocated to all mixing zones on a lake will not exceed 10 percent of the lake's surface area;

(3) the cumulative linear length of the mixing zone(s) intersected on any given cross section of an estuary, inlet, cove, channel, or other marine water measured at mean lower low water may not exceed 10 percent of the total length of that cross section, nor may the total horizontal area allocated to mixing zones in these waters exceed 10 percent of the surface area measured at mean lower low water.

(f) A person conducting an operation for which a mixing zone is sought or required by the department shall submit to the department all information necessary for assignment of a mixing zone, including

(1) the type of operation being conducted;

(2) the characteristics of the effluent, or material including flow rate and composition;

(3) the characteristics of the receiving water at the location of the proposed discharge or activity including but not limited to, where appropriate, water quality, flow rate, current patterns, depth and width, and seasonal changes;

18 AAC 70.034. THERMAL DISCHARGES. As provided for in sec. 316(a) of the Clean Water Act of 1977, whenever the owner or operator of a source of thermal discharge, after opportunity for public hearing, can demonstrate to the satisfaction of the department that the application of the temperature criterion in sec. 20 of this chapter is more stringent than necessary to assure the protection and propagation of a balanced indigenous and anadromous population in the waters to which the discharge is to be made, the department will, in its discretion, apply a new temperature criterion to the water body affected. The new criterion will assure the protection and propagation of a balanced indigenous and anadromous population of aquatic life, and other wildlife in and on that body of water, according to the classification of the water. (Eff. 2/2/79, Reg. 69)

Authority: AS 46.03.020
AS 46.03.070
AS 46.03.080

18 AAC 70.110. DEFINITIONS. Unless the context indicates otherwise, in this chapter

(8) "color" means that condition of water which results in the visual sensations of hue and intensity; apparent color is the condition of water due to both substances in solution and due to suspended matter; color is measured in water after the turbidity has been removed;

(10) "compensation point for photosynthetic activity" means that point at which incident light penetration is sufficient for plankton to photosynthetically produce enough oxygen to balance their respiration requirements;

(11) "contact recreation" means activities in which there is direct and intimate contact with water; examples of primary contact recreation include wading and dabbling, swimming, diving, water skiing, surfing and any intimate contact with water directly associated with shoreline activities;

(12) "criterion" means a designated concentration or limit of a constituent that, when not exceeded, will protect an organism, an organism community, or a prescribed water use or quality with a reasonable degree of safety; a criterion, in some cases, may be a narrative statement instead of a numerical constituent concentration or limit;

(13) "department" means the Alaska Department of Environmental Conservation;

(14) "dissolved oxygen" means the solubility of oxygen in water as determined either by the Winkler (iodometric) method and its modifications or by the Membrane Electrode Method;

(16) "fecal coliform bacteria" means those bacteria that can ferment lactose at 44.5° ± 0.2°C to produce gas in a multiple tube procedure; fecal coliform bacteria also means all organisms which produce blue colonies within 24 ± hours of incubation at 44.5° ± 0.2°C in an M-FC broth medium;

(17) "fish" means any of the group of cold-blooded vertebrate animals living in water, and having permanent gills for breathing and fins for locomotion;

(20) "industrial use" means any water supply used in association with a manufacturing or production enterprise (other than food processing) including mining, placer mining, energy production or development;

(22) "LC_{50}" means the median lethal concentration of a toxicant; it is the concentration which is lethal to fifty percent of the organisms tested under conditions outlined by the department in a specified time; "LC_{50}" means the same as tolerance limit, TLM, or TL_{50};

(23) "mean" means the average of values obtained over a specified period of time; for fecal coliform determination the mean shall be computed as the logarithmic mean;

(25) "milligram per liter" (mg/l) means the concentration at which 1 milligram (10^{-3}g) is contained in a volume of 1 liter; it is approximately equivalent to the unit parts per million (ppm), formerly of common use;

(26) "mixing zone" means the area continguous to a discharge or to an activity in the water, where a receiving water may not meet all the water quality standards; wastes and water are given an area to mix such that the water quality standards are met at the boundaries of the mixing zone;

(27) "most probable number" (MPN) means the statistically determined number which represents the number of individuals most likely present in a given sample or a liquor, based on test data;

(29) "oil and grease" means oil and grease as defined by the procedure used; see sec. 20(c) of this chapter for analytical procedures;

(30) "pH" means the negative logarithm of the hydrogen-ion activity concentration when expressed as moles per liter; pH = $-\log_{10}(H^+)$;

(32) "residues" means floating solids, debris, sludge deposits, foam, scum or any other materials or substances remaining in a water body as a result of a direct or proximate activity of man;

(33) "secondary recreation" means recreation activities in which water use is incidental, accidental or sensory, and includes fishing, boating, camping, hunting, hiking and vacationing;

(34) "sediment" means solid material of organic or mineral origin that is transported by, suspended in, or deposited from water; it includes chemical and biochemical precipitates and organic material such as humus;

Grade Scale for Clastic "Sediments"
(based on the Udden-Wentworth scheme)

CLASS:	DIAMETER: Millimeters (mm)
boulders	greater than 256
large cobbles	256-128
small cobbles	128- 64
gravel	
very coarse gravel	64- 32
coarse gravel	32- 16
medium gravel	16- 8
fine gravel	8- 4
very fine gravel	4- 2
sand	
very coarse sand	2.00-1.00
coarse sand	1.00-0.50
medium sand	0.50-0.250
fine sand	0.250-0.125
very fine sand	0.125-0.062
silt	less than 0.062 greater than 0.004
clay	less than 0.004

(35) "sheen" means an irridescent appearance on the surface of the water;

(41) "toxic substances" means those materials, or combinations of materials, including disease-causing agents which after discharge and upon exposure, ingestion, inhalation or assimilation into any organism, either directly from the environment or indirectly by ingestion through food chains, will, on the basis of information available, cause death, disease, behavioral abnormalities, malignancy, genetic mutations, physiological abnormalities (including malfunctions in reproduction) or physical deformations, in affected organisms or their offspring; the term includes the following substances, and any other substance identified as a toxic pollutant under sec. 307(a) of the Clean Water Act of 1977 (33 U.S.C. sec. 466 et seq.):

Aldrin/Dieldrin; Arsenic; Benzidine; Carbon tetrachloride; Cadmium; Dichlorobenzidine; Chlorinated ethanes; Chloroform; Chromium; Demeton; Dichloroethylenes; Dinitrotoluene; Fluoranthene; Diphenylhydrazine; Endrin; Hexachlorocyclopentadiene; Ethylbenzene; Lindane; Mercury; Nickel; Nitrobenzene; Naphthalene; Silver; Vinyl Chloride; Acenaphthene; Antimony; Chlorinated benzenes; Chloroalkyl ethers; DDT; Dichloropropane and Dichloropropene; Halomethanes; Malathion; Tetrachloroethylene; Trichloroethylene; Polynuclear aromatic hydrocarbons; Endosulfan; Mirex; Pentachlorophenol; Phenol; Acrylonitrile; Asbestos; Benzene; Beryllium; Chlorinated Naphthalene; 2-Chlorophenol; Chlorophenols; Chlorophenoxy herbicides; Cyanide; 2, 4-Dichloraphenol; Acrolein; Chlordane; Nitrosamines; Copper; dichlorobenzenes; Guthion; Haloethers; Heptachlor; Hexachlorobutadiene; Hexachlorocyclohexane; Isophorone; Lead; Methoxychlor; nitrophenols; Parathion; Phthalate Esters; PCB's; Selenium; P-Dioxin; Thallium; Toluene; Toxaphene; Zinc; 2, 4-dimethylphenol;

(42) "turbidity" means an expression of the optical property that causes light to be scattered and absorbed rather than transmitted in straight lines through a water sample; turbidity in water is caused by the presence of suspended matter such as clay, silt, finely divided organic and inorganic matter, plankton, and other microscopic organisms;

(43) "waters" means lakes, bays, sounds, ponds, impounding reservoirs, springs, wells, rivers, streams, creeks, estuaries, marshes, inlets, straits, passages, canals, the Pacific Ocean, Gulf of Alaska, Bering Sea and Arctic Ocean, in the territorial limits of the state, and all other bodies of surface or underground water, natural or artificial, public or private, inland or coastal, fresh or salt, which are wholly or partially in or bordering upon the state or under jurisdiction of the state; "waters" does not include ponds, lagoons or parts of wastewater treatment systems which are lined or constructed in such a manner that seepage into the ground is not allowed;

(44) "water recreation" means contact recreation and/or secondary recreation as defined in this section;

(45) "water supply" means any of the waters of the state which are designated to be protected for fresh water or marine water uses including waters used for drinking, culinary, food processing, agricultural, aquacultural, seafood processing, and industrial purposes;

(46) "wildlife" means all species of mammals, birds, reptiles and amphibians. (In effect before 7/28/59; am 5/24/70, Reg. 34; am 8/28/71, Reg. 39. am 10/22/72, Reg. 44; am 8/12/73, Reg. 47; am 2/2/79, Reg. 69)

(47) "certification" means the certification of reasonable assurance issued by the department pursuant to section 401 of the Clean Water Act, as amended (33 USC Sec. 1341);

(48) "nonpoint source" means any source of pollution other than a point source;

(49) "point source" means any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, container, rolling stock, vessel or other floating craft, from which pollutants are or may be discharged. (In effect before 7/28/59; am 5/24/70, Reg. 34; am 8/28/71, Reg. 39; am 10/22/72, Reg. 44; am 8/12/73, Reg. 47; am 2/2/79, Reg. 69; am 4/23/79, Reg. 70; am / / , Reg.)

Authority: AS 45.03.020(10)(A)
AS 46.03.070
AS 46.03.080

State of California Marine Water Quality Standards

Reference:

Water Quality Control Plan for

Ocean Waters of California

1978

Water Quality Control Policy for

the Enclosed Bays and Estuaries of California

1974

State Water Resources Control Board

P.O. Box 100

Sacramento, CA 95801

State of California
The Resources Agency

STATE WATER RESOURCES CONTROL BOARD

1978

WATER QUALITY CONTROL PLAN

FOR

OCEAN WATERS OF CALIFORNIA

Adopted and Effective
1978

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RESOLUTION NO. 72-45

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CALIFORNIA STATE WATER RESOURCES CONTROL BOARD

WATER QUALITY CONTROL PLAN FOR OCEAN WATERS OF CALIFORNIA (As amended, 1978)

INTRODUCTION

In furtherance of legislative policy set forth in Section 13000 of Division 7 of the California Water Code (Stats. 1969, Chap. 482) and pursuant to the authority contained in Section 13170 (Stats. 1971, Chap. 1288) the State Water Resources Control Board hereby finds and declares that protection of the quality of the ocean waters for use and enjoyment by the people of the State requires control of the discharge of waste[1] to ocean water[2] in accordance with the provisions contained herein.

CHAPTER I. BENEFICIAL USES

The beneficial uses of the ocean waters of the State that shall be protected include industrial water supply, recreation, esthetic enjoyment, navigation, and preservation and enhancement of fish, wildlife, and other marine resources or preserves.

CHAPTER II. WATER QUALITY OBJECTIVES

This chapter sets forth limits or levels of water quality characteristics for ocean waters to ensure the reasonable protection of beneficial uses and the prevention of nuisance. The discharge of waste shall not cause violation of these objectives.[3]

A. Bacteriological Characteristics

1. Within a zone bounded by the shoreline and a distance of 1,000 feet from the shoreline or the 30-foot depth contour, whichever is further from the shoreline, and in areas[4] outside this zone used for body-contact sports, the following bacteriological objectives shall be maintained throughout the water column:

   (a.) Samples of water from each sampling station shall have a concentration of coliform organisms less than 1,000 per 100 ml (10 per ml); provided that not more than 20 percent of the samples at any sampling station, in any 30-day period, may

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Originally adopted by the State Water Resources Control Board by Resolution No. 72-45 on July 6, 1972, and amended in 1973 and 1978.

exceed 1,000 per 100 ml (10 per ml), and provided further that no single sample when verified by a repeat sample taken within 48 hours shall exceed 10,000 per 100 ml (100 per ml).

(b.) The fecal coliform concentration based on a minimum of not less than five samples for any 30-day period, shall not exceed a log mean of 200 per 100 ml nor shall more than 10 percent of the total samples during any 30-day period exceed 400 per 100 ml.

2. At all areas[4/] where shellfish may be harvested for human consumption, the following bacteriological objectives shall be maintained throughout the water column:

The median total coliform concentration shall not exceed 70 per 100 ml, and not more than 10 percent of the samples shall exceed 230 per 100 ml.

B. Physical Characteristics

1. Floating particulates and grease and oil shall not be visible.

2. The discharge of waste shall not cause esthetically undesirable discoloration of the ocean surface.

3. The transmittance of natural light shall not be significantly[5/] reduced at any point outside the initial dilution zone.[6/]

4. The rate of deposition of inert solids and the characteristics of inert solids in ocean sediments shall not be changed such that benthic communities are degraded.[7/]

C. Chemical Characteristics

1. The dissolved oxygen concentration[8/] shall not at any time be depressed more than 10 percent from that which occurs naturally, as the result of the discharge of oxygen demanding waste materials.

2. The pH[8/] shall not be changed at any time more than 0.2 units from that which occurs naturally.

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Chapter II. C.

3. The dissolved sulfide concentration of waters in and near sediments shall not be significantly[5/] increased above that present under natural conditions.

4. The concentration of substances set forth in Chapter IV, Table B, in marine sediments shall not be increased to levels which would degrade[7/] indigenous biota.

5. The concentration of organic materials in marine sediments shall not be increased above that which would degrade[7/] marine life.

6. Nutrient materials shall not cause objectionable aquatic growths or degrade[7/] indigenous biota.

D. Biological Characteristics

1. Marine communities, including vertebrate, invertebrate, and plant species, shall not be degraded.[7/]

2. The natural taste, odor, and color of fish, shellfish, or other marine resources used for human consumption shall not be altered.

E. Radioactivity

1. Radioactivity shall not exceed the limits specified in Title 17, Chapter 5, Subchapter 4, Group 3, Article 3, Section 30269 of the California Administrative Code.

CHAPTER III.
GENERAL REQUIREMENTS FOR MANAGEMENT OF WASTE DISCHARGE TO THE OCEAN

A. Waste management systems that discharge to the ocean must be designed and operated in a manner that will maintain the indigenous marine life and a healthy and diverse marine community.

B. Waste discharged to the ocean must be essentially free of:

1. material that is floatable or will become floatable upon discharge,

2. settleable material or substances that form sediments which degrade[7/] benthic communities or other aquatic life,

3. substances toxic to marine life due to increases in concentrations in marine waters or sediments,

4. substances that significantly decrease the natural light to benthic communities and other marine life, and

5. materials that result in esthetically undesirable discoloration of the ocean surface.

C. Waste effluents shall be discharged in a manner which provides sufficient initial dilution to minimize the concentrations of substances not removed in treatment.

D. Location of waste discharges must be determined after a detailed assessment of the oceanographic characteristics and current patterns to assure that:

1. pathogenic organisms and viruses are not present in areas where shellfish are harvested for human consumption or in areas used for swimming or other body-contact sports.9/

2. natural water quality conditions are not altered in areas designated as being of special biological significance, and

3. maximum protection is provided to the marine environment.

CHAPTER IV.
QUALITY REQUIREMENTS
FOR WASTE DISCHARGES
(EFFLUENT QUALITY REQUIREMENTS)

This chapter sets forth the quality requirements for waste discharge to the ocean.3/

Table A limitations apply only to publicly owned treatment works and industrial discharges for which Effluent Guideline Limitations have not been established pursuant to Sections 301, 302, 304, or 306 of the Federal Water Pollution Control Act of 1972.

Table B limitations apply to all discharges within the jurisdiction of this Plan.

The State Board is authorized to administer and enforce effluent requirements established pursuant to the Federal Water Pollution Control Act of 1972. Effluent limitations established

Chapter IV.

under Sections 301, 302, 306, 307, 316, 403, and 405 of the aforementioned Federal Act and administrative procedures pertaining thereto, are included in this Plan by reference.

Compliance with Table A limitations, or Environmental Protection Agency Effluent Guideline Limitations for industrial discharges, shall be the minimum level of treatment acceptable under this Plan, and define reasonable treatment and waste control technology.

TABLE A

MAJOR WASTEWATER CONSTITUENTS AND PROPERTIES

	Unit of measurement	Limiting Concentrations Monthly (30 day Average)	Weekly (7 day Average)	Maximum at any time
Grease and Oil	mg/l	25	40	75
Suspended Solids	mg/l	75 Percent Removal		
Settleable Solids	mg/l	1.0	1.5	3.0
Turbidity	JTU	75	100	225
pH	units	within limits of 6.0 to 9.0 at all times		
Toxicity Concentration 12/	tu	1.5	2.0	2.5

TABLE B

TOXIC MATERIALS LIMITATIONS

Effluent limitations shall be imposed in a manner prescribed by the State Board 10/ such that the concentrations set forth below as water quality objectives, shall not be exceeded in the receiving water upon the completion of initial dilution, except that limitations indicated for total chlorinated pesticides and PCB's and Radioactivity shall apply driectly to the undiluted waste effluent.

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Table B (continued)

	Unit of Measurement	Limiting Concentrations 6-Month Median	Daily Maximum	Instantaneous Maximum
Arsenic	mg/l	0.008	0.032	0.08
-Cadmium	mg/l	0.003	0.012	0.03
-Total Chromium	mg/l	0.002	0.008	0.02
-Copper	mg/l	0.005	0.020	0.05
-Lead	mg/l	0.008	0.032	0.08
Mercury	mg/l	0.00014	0.00056	0.0014
-Nickel	mg/l	0.02	0.08	0.2
-Silver	mg/l	0.00045	0.0018	0.0045
-Zinc	mg/l	0.020	0.08	0.2
Cyanide	mg/l	0.005	0.02	0.05
Phenolic Compounds	mg/l	0.03	0.12	0.3
Total Chlorine Residual	mg/l	0.002	(See Footnote 11/).	
Ammonia (expressed as nitrogen)	mg/l	0.6	2.4	6.0
Toxicity Concentration 12/	tu	0.05	-	-
Total Chlorinated Pesticides and PCB's 13/	mg/l	0.002	0.004	0.006
Radioactivity	Not to exceed limits specified in Section 30269 of the California Administrative Code.			

CHAPTER V.
DISCHARGE PROHIBITIONS

A. Hazardous Substances

The discharge of any radiological, chemical, or biological warfare agent or high-level radioactive waste into the ocean is prohibited.

B. Areas of Special Biological Significance

Waste shall be discharged a sufficient distance from areas designated as being of special biological significance to assure maintenance of natural water quality conditions in these areas.

C. Sludge

The discharge of municipal and industrial waste sludge directly to the ocean, or into a waste stream that discharges to the ocean, shall be prohibited. The discharge of sludge digester supernatant directly to the ocean, or into a waste stream that discharges to the ocean without further treatment shall be prohibited.

D. By-Passing

The by-passing of untreated wastes containing concentrations of pollutants in excess of those of Table A or Table B to the ocean is prohibited.

CHAPTER VI.
GENERAL PROVISIONS

A. Effective Date

This Plan is in effect as of the date of adoption by the State Water Resources Control Board.

B. Waste Discharge Requirements

The Regional Boards may establish more restrictive water quality objectives and effluent quality requirements than those set forth in this Plan as necessary for the protection of beneficial uses of the ocean.

Regional Boards may impose alternative less restrictive provisions to those contained within Table B of the Plan, provided an applicant can demonstrate that:

Reasonable control technologies (including source control, material substitution, treatment and dispersion) will not provide for complete compliance or;

Any less stringent provisions would encourage water reclamation;

Provided further than;

a) Any alternative water quality objectives shall be below the conservative estimate of chronic toxicity, upon which this Plan is based, and such alternative will provide for adequate protection of the marine environment;

b) A receiving water toxicity objective of 0.05 tu is not exceeded; and

c) The State Board and the Environmental Protection Agency concur in the Regional Board findings and alternative limits.

C. Revision of Waste Discharge Requirements

The Regional Board shall revise the waste discharge requirements for existing discharges as necessary to achieve compliance with this Plan and shall also establish a time schedule for compliance in accordance with State Board Resolution 74-5.

D. State Board Review of Time Schedules

The State Board shall review proposed time schedules for all municipal discharges throughout the State and shall recommend to the Regional Boards specific schedules to assure the maximum benefit from, and equitable distribution of, available state and federal grant funds.

E. Monitoring Program

The Regional Board shall require dischargers to conduct self-monitoring programs and submit reports necessary to determine compliance with the waste discharge requirements, and may require dischargers to contract with agencies or persons acceptable to the Regional Board to provide monitoring reports. Such monitoring programs shall comply with Guidelines for Monitoring the Effects of Waste Discharges on the Ocean which shall be issued by the Executive Director of the State Board.

F. Areas of Special Biological Significance

Areas of special biological significance shall be designated by the State Board after a public hearing by the Regional Board and review of its recommendations.

G. State Board Exceptions to Plan Requirements

The State Board may, subsequent to a public hearing, and with the concurrence of the Environmental Protection Agency, grant exceptions to any provision of this Plan where the Board determines:

1) The existence of unusual circumstances not anticipated at the time of the Plan's adoption;

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2) The exception will not compromise protection of ocean waters for beneficial uses, and

3) The public interest will be served.

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FOOTNOTES

1/ This Plan is applicable, in its entirety, to point source discharges to the ocean. Nonpoint sources of waste discharges to the ocean are subject to Chapter I - Beneficial Uses Chapter II - Water Quality Objectives, Chapter III - General Requirements, Chapter IV - Table B (wherein compliance with water quality objectives shall, in all cases, be determined by direct measurements in the receiving waters), and Chapter V- Discharge Prohibitions.

This Plan is not applicable to discharges to enclosed bays and estuaries or inland waters nor is it applicable to vessel wastes, and the control of dredging spoil.

Provisions regulating the thermal aspects of waste discharged to the ocean are set forth in the Water Quality Control Plan for the Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California dated May 18, 1972.

2/ Ocean waters are waters of the Pacific Ocean adjacent to the California coast outside of enclosed bays, estuaries, and coastal lagoons.

Enclosed bays are indentations along the coast which enclose an area of oceanic water within distinct headlands or harbor works. Enclosed bays include all bays where the narrowest distance between headlands or outermost harbor works is less than 75 percent of the greatest dimension of the enclosed portion of the bay. This definition includes but is not limited to: Humboldt Bay, Bodega Harbor, Tomales Bay, Drakes Estero, San Francisco Bay, Morro Bay, Los Angeles Harbor, Upper and Lower Newport Bay, Mission Bay, and San Diego Bay.

Estuaries and coastal lagoons are waters at the mouths of streams which serve as mixing zones for fresh and ocean waters during a major portion of the year. Mouths of streams which are temporarily separated from the ocean by sandbars shall be considered as estuaries. Estuarine waters will generally be considered to extend from a bay or the open ocean to the upstream limit of tidal action but may be considered to extend seaward if significant mixing of fresh and salt water occurs in the open coastal waters. The waters described by this definition include but are not limited to the Sacramento-San Joaquin Delta as defined by Section 12220 of the California Water Code, Suisun Bay, Carquinez Strait downstream to Carquinez Bridge, and appropriate areas of the Smith, Klamath, Mad, Eel, Noyo, and Russian Rivers.

Footnotes (continued)

3/ The Water Quality Objectives and Effluent Quality Requirements are defined by a statistical distribution when appropriate. This method recognizes the normally occurring variations in treatment efficiency and sampling and analytical techniques and does not condone poor operating practices.

4/ Body-contact sports areas outside the shoreline zone set forth in Chapter II.A.1. and all shellfishing areas shall be determined by the Regional Board on an individual basis.

5/ A significant difference is defined as a statistically significant difference in the means of two distributions of sampling results at the 95 percent confidence level.

6/ Initial dilution is the process which results in the rapid and irreversible turbulent mixing of wastewater with ocean water around the point of discharge.

For a submerged buoyant discharge, characteristic of most municipal and industrial wastes that are released from the submarine outfalls, the momentum of the discharge and its initial buoyancy act together to produce turbulent mixing. Initial dilution in this case is completed when the diluting wastewater ceases to rise in the water column and first begins to spread horizontally.

For shallow water submerged discharges, surface discharges, and nonbuoyant discharges, characteristic of cooling water wastes and some individual discharges, turbulent mixing results primarily from the momentum of discharge. Initial dilution, in these cases, is considered to be completed when the momentum induced velocity of the discharge ceases to produce significant mixing of the waste, or the diluting plume reaches a fixed distance from the discharge to be specified by the Regional Board, whichever results in the lower estimate for initial dilution.

For the purpose of this Plan, minimum initial dilution is the lowest average initial dilution within any single month of the year. Dilution estimates shall be based on observed waste flow characteristics, observed receiving water density structure, and the assumption that no currents, of sufficient strength to influence the initial dilution process, flow across the discharge structure.

The Executive Director shall issue guidelines to be used by the State and Regional Boards for determining the initial dilution achieved by each ocean discharge.

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Footnotes (continued)

7/ Degradation shall be determined by analysis of the effects of waste discharge on species diversity, population density, contamination, growth anomalies, debility, or supplanting of normal species by undersirable plant and animal species.

8/ Compliance with the water quality objectives of Chapter II shall be determined from samples collected at stations representative of the area within the waste field where initial dilution is completed.

9/ Waste that contains pathogenic organisms or viruses should be discharged a sufficient distance from shellfishing and body-contact sports areas to maintain applicable bacteriological standards without disinfection. Where conditions are such that an adequate distance cannot be attained, reliable disinfection in conjunction with a reasonable separation of the discharge point from the area of use must be provided. Consideration should be given to disinfection procedures that do not increase effluent toxicity and that constitute the least environmental and human hazard in their production, transport, and utilization.

10/ Effluent limitations for substances identified in Chapter IV, Table B, with the exceptions of Radioactivity and Total Identifiable Chlorinated Hydrocarbons, shall be determined through the use of the following equation:

$$Ce = Co + Dm\ (Co - Cs) \qquad (1)$$

where:

Ce = the effluent concentration limit,
Co = the concentration to be met at the completion of initial dilution,
Cs = background seawater concentration, and
Dm = minimum probable initial dilution expressed as parts seawater per part wastewater.

The State Board shall assist the Regional Boards in the evaluation of Dm, the minimum initial dilution for a specific waste discharge. Discharging agencies will be informed of the basis for the determination of minimum initial dilution.

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Footnotes (continued)

Waste Constituent	Cs mg/l
Arsenic	0.003
Cadmium	0.000
Total Chromium	0.000
Copper	0.002
Lead	0.000
Mercury	0.00006
Nickel	0.00
Silver	0.00016
Zinc	0.008
Cyanide	0.000
Phenolic Compounds	0.0
Total Chlorine Residual	0.000
Ammonia (expressed as nitrogen)	0.0
Toxicity Concentration (in toxic units)	0.00

The six-month median effluent concentration limit shall apply as a moving median of daily values for any 180 day period in which daily values represent flow weighted average concentrations within a 24-hour period. For intermittent discharges, the daily value shall be considered to equal zero for days on which no discharge occurred.

The daily maximum effluent concentration limit shall apply to flow weighted concentrations within 24 hours.

The instantaneous maximum shall apply to grab sample determinations

Discharge requirements shall also specify effluent requirements in terms of mass emission rate limits utilizing the general formula:

$$\text{lbs/day} = 8.34 \times Ce \times Q \qquad (2)$$

The six-month median limit on daily mass emissions shall be determined using the six-month median effluent concentration as Ce and the observed flow rate Q in million of gallons per day. The daily maximum mass emission shall be determined using the daily maximum effluent concentration limit as Ce and the observed flow rate Q in millions of gallons per day.

Any significant change in waste flow shall be cause for reevaluating effluent quality requirements.

If a calculated Ce value falls below the limit of detection of the test method specified in the Code of the Federal Register, 40 CFR 136, the limit of detection shall serve as

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Footnotes (continued)

the limiting effluent concentration. The State or Regional Board may, at their discretion, specify test methods which are more sensitive than those specified in 40 CFR 136. Total chlorine residual is likely to be a "limit of detection" effluent requirement in many cases. The limit of detection of total chlorine residual in standard test methods is less than, or equal to, 0.02 mg/l.

Due to the large total volume of powerplant and other heat exchange discharges, special procedures must be applied for determining compliance with Table B limitations on a routine basis. Effluent concentration values (Ce) shall be determined through the use of Equation 1 considering the minimal probable initial dilution of the combined effluent (in-plant waste streams plus cooling water flow). These concentration values shall then be converted to mass emission limitations as indicated in Equation 2. The mass emission limits will then serve as requirements applied to all in-plant waste streams taken together which discharge into the cooling water flow. The procedure described above shall apply to all Table B materials except limitations on total chlorine residual and radioactivity which shall apply to, and be measured in, the combined final effluent.

11/ Water quality objectives for total chlorine residual applying to intermittent discharges not exceeding two hours, and 24 hours and instantaneous (1 minute) maximum objectives applying to continuous sources, shall be determined through the use of the following equation:

$$\log y = -0.328 \log x - 0.905$$

where: y = the water quality objective to apply when chlorine is being discharged;
x = the duration of uninterrupted chlorine discharge in minutes.

12/ This parameter shall be used to measure the acceptability of waters for supporting a healthy marine biota until improved methods are developed to evaluate biological response.

a. Toxicity Concentration (Tc)

Expressed in Toxicity Units (tu)

$$Tc\ (tu) = \frac{100}{96\text{-hr. } TLm}$$

Water Quality Control Plan
Ocean Waters of California

Footnotes (continued)

b. Median Tolerance Limit (TLm%)

The TLm shall be determined by static or continuous flow bioassay techniques using standard test species. If specific identifiable substances in wastewater can be demonstrated by the discharger as being rapidly rendered harmless upon discharge to the marine environment, the TLm may be determined after the test samples are adjusted to remove the influence of those substances.

When it is not possible to measure the 96-hr. TLm due to greater than 50 percent survival of the test species in 100 percent waste, the toxicity concentration shall be calculated by the expression:

$$Tc\ (tu) = \frac{\log\ (100 - S)}{1.7}$$

S = percentage survival in 100% waste.

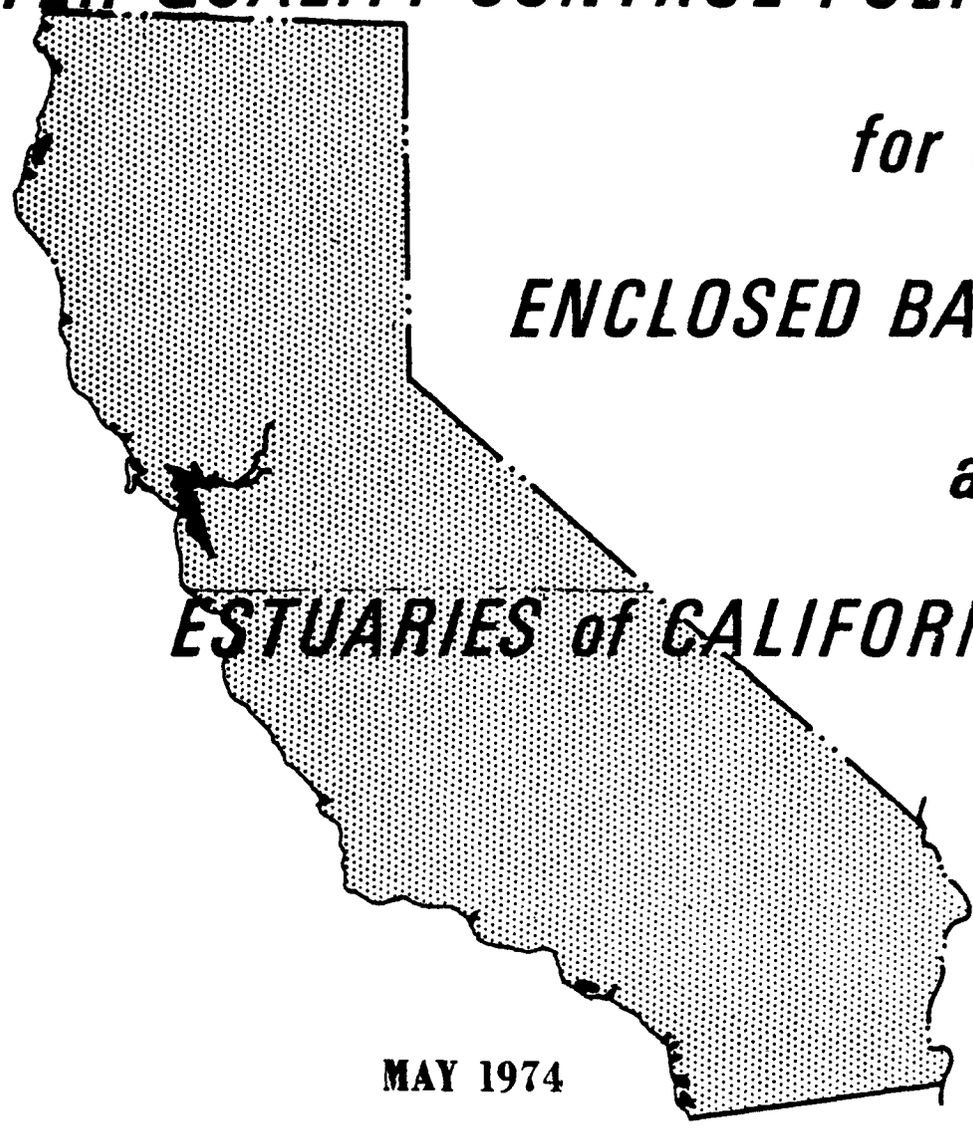
13/ Total chlorinated pesticides and PCB's shall be measured by summing the individual concentrations of DDT, DDD, DDE, aldrin, BHC, chlordane, endrin, heptachlor, lindane, dieldrin, and polychlorinated biphenyls.

The Executive Director shall undertake a preliminary investigation into the presence and hazards posed by the other halogenated hydrocarbons which may be present in wastewater discharges. Such review shall lead to a recommendation regarding the necessity for regulation, gathering of necessary data, or other appropriate actions which should be taken by the State Board.

As part of the preliminary investigation, the Executive Director may impose additional monitoring requirements on discharging agencies to assess the occurrence of halogenated hydrocarbons other than those specifically mentioned in this Plan.

State of California — The Resources Agency

WATER QUALITY CONTROL POLICY for the ENCLOSED BAYS and ESTUARIES of CALIFORNIA



MAY 1974

STATE WATER RESOURCES CONTROL BOARD

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* To be furnished upon request.

WATER QUALITY CONTROL POLICY FOR THE ENCLOSED BAYS AND ESTUARIES OF CALIFORNIA[1/]

INTRODUCTION

The purpose of this policy is to provide water quality principles and guidelines to prevent water quality degradation and to protect the beneficial uses of waters of enclosed bays and estuaries. Decisions on water quality control plans, waste discharge requirements, construction grant projects, water rights permits, and other specific water quality control implementing actions of the State and Regional Boards shall be consistent with the provisions of this policy.

The Board declares its intent to determine from time to time the need for revising this policy.

This policy does not apply to wastes from vessels or land runoff except as specifically indicated for siltation (Chapter III 4.) and combined sewer flows (Chapter III 7.).

PRINCIPLES FOR MANAGEMENT OF
WATER QUALITY IN ENCLOSED BAYS AND ESTUARIES

A. It is the policy of the State Board that the discharge of municipal wastewaters and industrial process waters[2], (exclusive of cooling water discharges) to enclosed bays and estuaries, other than the San Francisco Bay-Delta system, shall be phased out at the earliest practicable date. Exceptions to this provision may be granted by a Regional Board only when the Regional Board finds that the wastewater in question would consistently be treated and discharged in such a manner that it would enhance the quality of receiving waters above that which would occur in the absence of the discharge. [3]

B. With regard to the waters of the San Francisco Bay-Delta system, the State Board finds and directs as follows:

1a. There is a considerable body of scientific evidence and opinion which suggests the existence of biological degradation due to long-term exposure to toxicants which have been discharged to the San Francisco Bay-Delta system. Therefore, implementation of a program which controls toxic effects through a combination of source control for toxic materials, upgraded wastewater treatment, and improved dilution of wastewaters, shall proceed as rapidly as is practicable with the objective of providing full protection to the biota and the beneficial uses of Bay-Delta waters in a cost-effective manner.

1b. A comprehensive understanding of the biological effects of wastewater discharge on San Francisco Bay, as a whole, must await the results of further scientific study. There is, however, sufficient evidence at this time to indicate that the continuation of wastewater discharges to the southern reach of San Francisco Bay, south of the Dumbarton Bridge, is an unacceptable condition. The State Board and the San Francisco Regional Board shall take such action as is necessary to assure the elimination of wastewater discharges to waters of the San Francisco Bay, south of Dumbarton Bridge, at the earliest practicable date.

1c. In order to prevent excessive investment which would unduly impact the limited funds available to California for construction of publicly owned treatment works, construction of such works shall proceed in a staged fashion, and each stage shall be fully evaluated by the State and Regional Boards to determine the necessity for additional expenditures. Monitoring requirements shall be established to evaluate any effects on water quality, particularly changes in species diversity and abundance, which may result from the operation of each stage of planned facilities

and source control programs. Such a staged construction program, in combination with an increased monitoring effort, will result in the most cost-effective and rapid progress toward a goal of maintaining and enhancing water quality in the San Francisco Bay-Delta system.

2. Where a waste discharger has an alternative of in-bay or ocean disposal and where both alternatives offer a similar degree of environmental and public health protection, prime consideration shall be given to the alternative which offers the greater degree of flexibility for the implementation of economically feasible wastewater reclamation options.

C. The following policies apply to all of California's enclosed bays and estuaries:

1. Persistent or cumulative toxic substances shall be removed from the waste to the maximum extent practicable through source control or adequate treatment prior to discharge.
2. Bay or estuarine outfall and diffuser systems shall be designed to achieve the most rapid initial dilution[4/] practicable to minimize concentrations of substances not removed by source control or treatment.
3. Wastes shall not be discharged into or adjacent to areas where the protection of beneficial uses requires spatial separation from waste fields.
4. Waste discharges shall not cause a blockage of zones of passage required for the migration of anadromous fish.
5. Nonpoint sources of pollutants shall be controlled to the maximum practicable extent.

CHAPTER II.

QUALITY REQUIREMENTS FOR WASTE DISCHARGES

1. In addition to any requirements of this policy, effluent limitations shall be as specified pursuant to Chapter 5.5 of the Porter-Cologne Water Quality Control Act, and Regional Boards shall limit the mass emissions of substances as necessary to meet such limitations. Regional Boards may set more restrictive mass emission rates and concentration standards than those which are referenced in this policy to reflect dissimilar tolerances to wastewater constituents among different receiving water bodies.
2. All dischargers of thermal wastes or elevated temperature wastes to enclosed bays and estuaries which are permitted pursuant to this policy shall comply with the "Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of Califonia", State Water Resources Control Board, 1972, and with amendments and supplements thereto.
3. Radiological limits for waste discharges (for which regulatory responsibility is not preempted by the Federal Government) shall be at least as restrictive as limitations indicated in Section 30269, and Section 30355, Appendix A, Table II, of the California Administrative Code.
4. Dredge spoils to be disposed of in bay and estuarine waters must comply with federal criteria for determining the acceptability of dredged spoils to marine waters, and must be certified by the State Board or Regional Boards as in compliance with State Plans and Policies.

CHAPTER III.

DISCHARGE PROHIBITIONS

1. New discharges[5/] of municipal wastewaters and industrial process waters[2/] (exclusive of cooling water discharges) to enclosed bays and estuaries, other than the San Francisco Bay-Delta system, which are not consistently treated and discharged in a manner that would enhance the quality of receiving waters above that which would occur in the absence of the discharge, shall be prohibited.
2. The discharge of municipal and industrial waste sludge and untreated sludge digester supernatant, centrate, or filtrate to enclosed bays and estuaries shall be prohibited.
3. The deposition of rubbish or refuse into surface waters or at any place where they would be eventually transported to enclosed bays or estuaries shall be prohibited.[6/]
4. The direct or indirect discharge of silt, sand, soil clay, or other earthen materials from onshore operations including mining, construction, agriculture, and lumbering, in quantities which unreasonably affect or threaten to affect beneficial uses shall be prohibited.
5. The discharge of materials of petroleum origin in sufficient quantities to be visible or in violation of waste discharge requirements shall be prohibited, except when such discharges are conducted for scientific purposes. Such testing must be approved by the Executive Officer of the Regional Board and the Department of Fish and Game.
6. The discharge of any radiological, chemical, or biological warfare agent or high-level radioactive waste shall be prohibited.
7. The discharge or by-passing of untreated waste to bays and estuaries shall be prohibited.[7/]

CHAPTER IV.

GENERAL PROVISIONS

A. Effective Date

This policy is in effect as of the date of adoption by the State Water Resources Control Board.

B. Review and Revision of Plans, Policies and Waste Discharge Requirements

Provisions of existing or proposed policies or water quality control plans adopted by the State or Regional Boards for enclosed bays or estuaries shall be amended to conform with the applicable provisions of this policy.

Each appropriate Regional Board shall review and revise the waste discharge requirements with appropriate time schedules for existing discharges to achieve compliance with this policy and applicable water quality objectives. Each Regional Board affected by this policy shall set forth for each discharge allowable mass emission rates for each applicable effluent characteristic included in waste discharge requirements.

Regional Boards shall finalize waste discharge requirements as rapidly as is consistent with the National Pollutant Discharge Elimination System Permit Program.

C. Administration of Clean Water Grants Program

The Clean Water Grants Program shall require that the environmental impact report for any existing or proposed wastewater discharge to enclosed bays and estuaries, other than the San Francisco Bay-Delta system, shall evaluate whether or not the discharge would enhance the quality of receiving waters above that which would occur in the absence of the discharge.

The Clean Water Grants Program shall require that each study plan and project report (beginning with F. Y. 1974-75 projects) for a proposed wastewater treatment or conveyance facility within the San Francisco Bay-Delta system shall contain an evaluation of the degree to which the proposed project represents a necessary and cost-effective stage in a program leading to compliance with an objective of full protection of the biota and beneficial uses of Bay-Delta waters.

D. Administration of Water Rights

Any applicant for a permit to appropriate from a water-course which is tributary to an enclosed bay or estuary may be required to present to the State Board an analysis of the anticipated effects of the proposed appropriation on water quality and beneficial uses of the effected bay or estuary.

E. Monitoring Program

The Regional Board shall require dischargers to conduct self-monitoring programs and submit reports as necessary to determine compliance with waste discharge requirements and to evaluate the effectiveness of wastewater control programs. Such monitoring programs shall comply with applicable sections of the State Board's Administrative Procedures, and any additional guidelines which may be issued by the Executive Officer of the State Board.

FOOTNOTES

1/ Enclosed bays are indentations along the coast which enclose an area of oceanic water within distinct headlands or harbor works. Enclosed bays include all bays where the narrowest distance between headlands or outer most harbor works is less than 75 percent of the greatest dimension of the enclosed portion of the bay. This definition includes, but is not limited to: Humboldt Bay, Bodega Harbor, Tomales Bay, Drakes Estero, San Francisco Bay, Morro Bay, Los Angeles-Long Beach Harbor, Upper and Lower Newport Bay, Mission Bay, and San Diego Bay.

Estuaries, including coastal lagoons, are waters at the mouths of streams which serve as mixing zones for fresh and ocean waters.
Mouths of streams which are temporarily separated from the ocean by sandbars shall be considered as estuaries.
Estuarine waters will generally be considered to extend from a bay or the open ocean to a point upstream where there is no significant mixing of fresh water and seawater.
Estuarine waters shall be considered to extend seaward if significant mixing of fresh and saltwater occurs in the open coastal waters. Estuarine waters include, but are not limited to, the Sacramento-San Joaquin Delta, as defined by Section 12220 of the California Water Code, Suisun Bay, Carquinez Strait downstream to Carquinez Bridge, and appropriate areas of the Smith, Klamath, Mad, Eel, Noyo, and Russian Rivers.

2/ For the purpose of this policy, treated ballast waters and innocuous nonmunicipal wastewater such as clear brines, wash-water, and pool drains are not necessarily considered industrial process wastes, and may be allowed by Regional Boards under discharge requirements that provide protection to the beneficial uses of the receiving water.

3/ Undiluted wastewaters covered under this exception provision shall not produce less than 90 percent survival, 50 percent of the time, and not less than 70 percent survival, 10 percent of the time of a standard test species in a 96-hour static or continuous flow bioassay test using undiluted waste. Maintenance of these levels of survival shall not by themselves constitute sufficient evidence that the discharge satisfies the criteria of enhancing the quality of the receiving water above that which occur in the absence of the discharge. Full and uninterrupted protection for the beneficial uses of the receiving water must be maintained. A Regional Board may require physical, chemical, bioassay, and bacteriological assessment of treated wastewater quality prior to authorizing release to the bay or estuary of concern.

4/ Initial dilution zone is defined as the volume of water near the point of discharge within which the waste immediately mixes with the bay or estuarine water due to the momentum of the waste discharge and the difference in density between the waste and receiving water.

5/ A new discharge is a discharge for which a Regional Board has not received a report of waste discharge prior to the date of adoption of this policy, and which was not in existence prior to the date of adoption of this policy.

6/ Rubbish and refuse include any cans, bottles, paper, plastic, vegetable matter, or dead animals or dead fish deposited or caused to be deposited by man.

7/ The prohibition does not apply to cooling water streams which comply with the "Water Quality Control Plan for the Control of Temperature in Coastal and Interstate Waters and Enclosed Bays and Estuaries of California" - State Water Resources Control Board.

STATE WATER RESOURCES CONTROL BOARD
RESOLUTION NO. 74-43

WATER QUALITY CONTROL POLICY FOR THE
ENCLOSED BAYS AND ESTUARIES OF CALIFORNIA

WHEREAS:

1. The Board finds it necessary to promulgate water quality principles, guidelines, effluent quality requirements, and prohibitions to govern the disposal of waste into the enclosed bays and estuaries of California;

2. The Board, after review and analysis of testimony received at public hearings, has determined that it is both feasible and desirable to require that the discharge of municipal wastewaters and industrial process waters to enclosed bays and estuaries (other than the San Francisco Bay-Delta system) should only be allowed when a discharge enhances the quality of the receiving water above that which would occur in the absence of the discharge.

3. The Board has previously promulgated requirements for the discharge of thermal and elevated temperature wastes to enclosed bays and estuaries (Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California - SWRCB, 1972);

4. The Board, after review and analysis of testimony received at public hearings, has determined that implementation of a program which controls toxic effects through a combination of source control for toxic materials, upgraded waste treatment, and improved dilution of wastewaters, will result in timely and cost-effective progress toward an objective of providing full protection to the biota and beneficial uses of San Francisco Bay-Delta waters;

5. The Board intends to implement monitoring programs to determine the effects of source control programs, upgraded treatment, and improved dispersion of wastewaters on the condition of the biota and beneficial uses of San Francisco Bay-Delta waters.

THEREFORE, BE IT RESOLVED, that

1. The Board hereby adopts the "Water Quality Control Policy for the Enclosed Bays and Estuaries of California".

2. The Board hereby directs all affected California Regional Water Quality Control Boards to implement the provisions of the policy.

State Water Resources Control Board California

WATER QUALITY CONTROL PLAN FOR CONTROL OF TEMPERATURE IN THE COASTAL AND INTERSTATE WATERS AND ENCLOSED BAYS AND ESTUARIES OF CALIFORNIA[1/]

DEFINITION OF TERMS

1. Thermal Waste - Cooling water and industrial process water used for the purpose of transporting waste heat.

2. Elevated Temperature Waste - Liquid, solid, or gaseous material including thermal waste discharged at a temperature higher than the natural temperature of receiving water. Irrigation return water is not considered elevated temperature waste for the purpose of this plan.

3. Natural Receiving Water Temperature - The temperature of the receiving water at locations, depths, and times which represent conditions unaffected by any elevated temperature waste discharge or irrigation return waters.

4. Interstate Waters - All rivers, lakes, artificial impoundments, and other waters that flow across or form a part of the boundary with other states or Mexico.

5. Coastal Waters - Waters of the Pacific Ocean outside of enclosed bays and estuaries which are within the territorial limits of California.

6. Enclosed Bays - Indentations along the coast which enclose an area of oceanic water within distinct headlands or harbor works. Enclosed bays will include all bays where the narrowest distance between headlands or outermost harbor works is less than 75 percent of the greatest dimension of the enclosed portion of the bay. This definition includes but is not limited to the following: Humboldt Bay, Bodega Harbor, Tomales Bay, Drakes Estero, San Francisco Bay, Morro Bay, Los Angeles Harbor, Upper and Lower Newport Bay, Mission Bay, and San Diego Bay.

7. Estuaries and Coastal Lagoons - Waters at the mouths of streams which serve as mixing zones for fresh and ocean water during a major portion of the year. Mouths of streams which are temporarily separated from the ocean by sandbars shall be considered as estuaries. Estuarine waters will generally be considered to extend from a bay or the open

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1/ This plan revises and supersedes the policy adopted by the State Board on January 7, 1971, and revised October 13, 1971, and June 5, 1972.

ocean to the upstream limit of tidal action but may be considered to extend seaward if significant mixing of fresh and saltwater occurs in the open coastal waters. The waters described by this definition include but are not limited to the Sacramento-San Joaquin Delta as defined by Section 12220 of the California Water Code, Suisun Bay, Carquinez Strait downstream to Carquinez Bridge and appropriate areas of Smith River, Klamath River, Mad River, Eel River, Noyo River, and Russian River.

8. Cold Interstate Waters - Streams and lakes having a range of temperatures generally suitable for trout and salmon including but not limited to the following: Lake Tahoe, Truckee River, West Fork Carson River, East Fork Carson River, West Walker River and Lake Topaz, East Walker River, Minor California-Nevada Interstate Waters, Klamath River, Smith River, Goose Lake, and Colorado River from the California-Nevada stateline to the Needles-Topoc Highway Bridge.

9. Warm Interstate Waters - Interstate streams and lakes having a range of temperatures generally suitable for warm water fishes such as bass and catfish. This definition includes but is not limited to the following: Colorado River from the Needles-Topoc Highway Bridge to the northerly international boundary of Mexico, Tijuana River, New River, and Alamo River.

10. Existing Discharge - Any discharge (a) which is presently taking place, or (b) for which waste discharge requirements have been established and construction commenced prior to the adoption of this plan, or (c) any material change in an existing discharge for which construction has commenced prior to the adoption of this plan. Commencement of construction shall include execution of a contract for onsite construction or for major equipment which is related to the condenser cooling system.

    Major thermal discharges under construction which are included within this definition are:

    A. Diablo Canyon Units 1 and 2, Pacific Gas and Electric Company.

    B. Ormond Beach Generating Station Units 1 and 2, Southern California Edison Company.

    C. Pittsburg No. 7 Generating Plant, Pacific Gas and Electric Company.

    D. South Bay Generating Plant Unit 4 and Encina Unit 4, San Diego Gas and Electric Company.

11. New Discharge - Any discharge (a) which is not presently taking place unless waste discharge requirements have been established and construction as defined in Paragraph 10 has commenced prior to adoption of this plan or (b) which is presently taking place and for which a material change is proposed but no construction as defined in Paragraph 10 has commenced prior to adoption of this plan.

12. Planktonic Organism - Phytoplankton, zooplankton and the larvae and eggs of worms, molluscs, and anthropods, and the eggs and larval forms of fishes.

13. Limitations or Additional Limitations - Restrictions on the temperature, location, or volume of a discharge, or restrictions on the temperature of receiving water in addition to those specifically required by this plan.

SPECIFIC WATER QUALITY OBJECTIVES

1. Cold Interstate Waters

   A. Elevated temperature waste discharges into cold interstate waters are prohibited.

2. Warm Interstate Waters

   A. Thermal waste discharges having a maximum temperature greater than 5°F above natural receiving water temperature are prohibited.

   B. Elevated temperature wastes shall not cause the temperature of warm interstate waters to increase by more than 5°F above natural temperature at any time or place.

   C. Colorado River - Elevated temperature wastes shall not cause the temperature of the Colorado River to increase above the natural temperature by more than 5°F or the temperature of Lake Havasu to increase by more than 3°F provided that such increases shall not cause the maximum monthly temperature of the Colorado River to exceed the following:

January	-	60°F	July	-	90°F
February	-	65°F	August	-	90°F
March	-	70°F	September	-	90°F
April	-	75°F	October	-	82°F
May	-	82°F	November	-	72°F
June	-	86°F	December	-	65°F

D. Lost River - Elevated temperature wastes discharged to the Lost River shall not cause the temperature of the receiving water to increase by more than 2°F when the receiving water temperature is less than 62°F, and 0°F when the receiving water temperature exceeds 62°F.

E. Additional limitations shall be imposed when necessary to assure protection of beneficial uses.

3. Coastal Waters

A. Existing discharges

(1) Elevated temperature wastes shall comply with limitations necessary to assure protection of the beneficial uses and areas of special biological significance.

B. New discharges

(1) Elevated temperature wastes shall be discharged to the open ocean away from the shoreline to achieve dispersion through the vertical water column.

(2) Elevated temperature wastes shall be discharged a sufficient distance from areas of special biological significance to assure the maintenance of natural temperature in these areas.

(3) The maximum temperature of thermal waste discharges shall not exceed the natural temperature of receiving waters by more than 20°F.

(4) The discharge of elevated temperature wastes shall not result in increases in the natural water temperature exceeding 4°F at (a) the shoreline, (b) the surface of any ocean substrate, or (c) the ocean surface beyond 1,000 feet from the discharge system. The surface temperature limitation shall be maintained at least 50 percent of the duration of any complete tidal cycle.

(5) Additional limitations shall be imposed when necessary to assure protection of beneficial uses.

4. Enclosed Bays

A. Existing discharges

(1) Elevated temperature waste discharges shall comply with limitations necessary to assure protection of beneficial uses.

B. New discharges

(1) Elevated temperature waste discharges shall comply with limitations necessary to assure protection of beneficial uses. The maximum temperature of waste discharges shall not exceed the natural temperature of the receiving waters by more than 20°F.

(2) Thermal waste discharges having a maximum temperature greater than 4°F above the natural temperature of the receiving water are prohibited.

5. Estuaries

A. Existing discharges

(1) Elevated temperature waste discharges shall comply with the following:

a. The maximum temperature shall not exceed the natural receiving water temperature by more than 20°F.

b. Elevated temperature waste discharges either individually or combined with other discharges shall not create a zone, defined by water temperatures of more than 1°F above natural receiving water temperature, which exceeds 25 percent of the cross-sectional area of a main river channel at any point.

c. No discharge shall cause a surface water temperature rise greater than 4°F above the natural temperature of the receiving waters at any time or place.

d. Additional limitations shall be imposed when necessary to assure protection of beneficial uses.

(2) Thermal waste discharges shall comply with the provisions of 5A(1) above and, in addition, the maximum temperature of thermal waste discharges shall not exceed 86°F.

B. New discharges

California

(1) Elevated temperature waste discharges shall comply with item 5A(1) above.

(2) Thermal waste discharges having a maximum temperature greater than 4°F above the natural temperature of the receiving water are prohibited.

(3) Additional limitations shall be imposed when necessary to assure protection of beneficial uses.

GENERAL WATER QUALITY PROVISIONS

1. Additional limitations shall be imposed in individual cases if necessary for the protection of specific beneficial uses and areas of special biological significance. When additional limitations are established, the extent of surface heat dispersion will be delineated by a calculated 1-1/2°F isotherm which encloses an appropriate dispersion area. The extent of the dispersion area shall be:

   A. Minimized to achieve dispersion through the vertical water column rather than at the surface or in shallow water.

   B. Defined by the Regional Board for each existing and proposed discharge after receipt of a report prepared in accordance with the implementation section of this plan.

2. The cumulative effects of elevated temperature waste discharges shall not cause temperatures to be increased except as provided in specific water quality objectives contained herein.

3. Areas of special biological significance shall be designated by the State Board after public hearing by the Regional Board and review of its recommendations.

4. Regional Boards may, in accordance with Section 316(a) of the Federal Water Pollution Control Act of 1972, and subsequent federal regulations including 40 CFR 122, grant an exception to Specific Water Quality Objectives in this Plan. Prior to becoming effective, such exceptions and alternative less stringent requirements must receive the concurrence of the State Board.

5. Natural water temperature will be compared with waste discharge temperature by near-simultaneous measurements accurate to within 1°F. In lieu of near-simultaneous measurements, measurements may be made under calculated conditions of constant waste discharge and receiving water characteristics.

IMPLEMENTATION

1. The State Water Resources Control Board and the California Regional Water Quality Control Boards will administer this plan by establishing waste discharge requirements for discharges of elevated temperature wastes.

2. This plan is effective as of the date of adoption by the State Water Resources Control Board and the sections pertaining to temperature control in each of the policies and plans for the individual interstate and coastal waters shall be void and superseded by all applicable provisions of this plan.

3. Existing and future dischargers of thermal waste shall conduct a study to define the effect of the discharge on beneficial uses and, for existing discharges, determine design and operating changes which would be necessary to achieve compliance with the provisions of this plan.

4. Waste discharge requirements for existing elevated temperature wastes shall be reviewed to determine the need for studies of the effect of the discharge on beneficial uses, changes in monitoring programs and revision of waste discharge requirements.

5. All waste discharge requirements shall include a time schedule which assures compliance with water quality objectives by July 1, 1977, unless the discharger can demonstrate that a longer time schedule is required to complete construction of necessary facilities; or, in accordance with any time schedule contained in guidelines promulgated pursuant to Section 304(b) of the Federal Water Pollution Control Act.

6. Proposed dischargers of elevated temperature wastes may be required by the Regional Board to submit such studies prior to the establishment of waste discharge requirements. The Regional Board shall include in its requirements appropriate postdischarge studies by the discharger.

7. The scope of any necessary studies shall be as outlined by the Regional Board and shall be designed to include the following as applicable to an individual discharge:

   A. Existing conditions in the aquatic environment.

   B. Effects of the existing discharge on beneficial uses.

   C. Predicted conditions in the aquatic environment with waste discharge facilities designed and operated in compliance with the provisions of this plan.

D. Predicted effects of the proposed discharge on beneficial uses.

E. An analysis of costs and benefits of various design alternatives.

F. The extent to which intake and outfall structures are located and designed so that the intake of planktonic organisms is at a minimum, waste plumes are prevented from touching the ocean substrate or shorelines, and the waste is dispersed into an area of pronounced along-shore or offshore currents.

8. All waste discharge requirements adopted for discharges of elevated temperature wastes shall be monitored in order to determine compliance with effluent or receiving water temperature (or heat) requirements.

   Furthermore, for significant thermal discharges as determined by the Regional Board or State, Regional Boards shall require expanded monitoring programs, to be carried out either on a continuous or periodic basis, designed to assess whether the source continues to provide adequate protection to beneficial uses (including the protection and propagation of a balanced indigenous community of fish, shellfish, and wildlife, in and on the body of water into which the discharge is made). When periodic expanded monitoring programs are specified, the frequency of the program shall reflect the probable impact of the discharge.

9. The State Board or Regional Board may require a discharger(s) to pay a public agency or other appropriate person an amount sufficient to carry out the expanded monitoring program required pursuant to paragraph 8 above if:

   A. The discharger has previously failed to carry out monitoring programs in a manner satisfactory to the State Board or Regional Board, or;

   B. More than a single facility, under separate ownerships, may significantly affect the thermal characteristics of the body of water, and the owners of such facilities are unable to reach agreement on a cooperative program within a reasonable time period specified by the State Board or Regional Board.

Additional marine water quality objectives for specific California coastal waters are located in Chapters 2 and 4 of the following documents. Please reference where appropriate:

1) "Water Quality Control Plan, Klamath River Basin," as amended.
2) "Water Quality Control Plan, North Coastal Basin," as amended.
3) "Water Quality Control Plan, San Francisco Basin(2), Part I," as amended.
4) "Water Quality Control Plan, Central Coastal Basin, Part I," as amended.
5) "Water Quality Control Plan Report, Santa Clara River Basin (4A), Part I," as amended.
6) "Water Quality Control Plan Report, Los Angeles River Basin (4B), Part I," as amended.
7) "Water Quality Control Plan Report, Santa Ana River Basin (8), Part I, Volume I," as amended.
8) "Comprehensive Water Quality Control Plan Report, San Diego Basin (9)," as amended.

STATE WATER RESOURCES CONTROL BOARD

RESOLUTION NO. 68-16

STATEMENT OF POLICY WITH RESPECT TO
MAINTAINING HIGH QUALITY OF WATERS IN CALIFORNIA

WHEREAS the California Legislature has declared that it is the policy of the State that the granting of permits and licenses for unappropriated water and the disposal of wastes into the waters of the State shall be so regulated as to achieve highest water quality consistent with maximum benefit to the people of the State and shall be controlled so as to promote the peace, health, safety and welfare of the people of the State; and

WHEREAS water quality control policies have been and are being adopted for waters of the State; and

WHEREAS the quality of some waters of the State is higher than that established by the adopted policies and it is the intent and purpose of this Board that such higher quality shall be maintained to the maximum extent possible consistent with the declaration of the Legislature;

NOW, THEREFORE, BE IT RESOLVED:

1. Whenever the existing quality of water is better than the quality established in policies as of the date on which such policies become effective, such existing high quality will be maintained until it has been demonstrated to the State that any change will be consistent with maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial use of such water and will not result in water quality less than that prescribed in the policies.

2. Any activity which produces or may produce a waste or increased volume or concentration of waste and which discharges or proposes to discharge to existing high quality waters will be required to meet waste discharge requirements which will result in the best practicable treatment or control of the discharge necessary to assure that (a) a pollution or nuisance will not occur and (b) the highest water quality consistent with maximum benefit to the people of the State will be maintained.

3. In implementing this policy, the Secretary of the Interior will be kept advised and will be provided with such information as he will need to discharge his responsibilities under the Federal Water Pollution Control Act.

BE IT FURTHER RESOLVED that a copy of this resolution be forwarded to the Secretary of the Interior as part of California's water quality control policy submission.

CERTIFICATION

The undersigned, Executive Officer of the State Water Resources Control Board, does hereby certify that the foregoing is a full, true, and correct copy of a resolution duly and regularly adopted at a meeting of the State Water Resources Control Board held on October 24, 1968.

Dated: October 28, 1968

Kerry W. Mulligan
Executive Officer
State Water Resources
Control Board

State of Connecticut Marine Water Quality Standards

Connecticut Water Quality Standards
Classifications Sept. 1980

Dept. of Environmental Protection
State Office Building
Hartford, CT 06115

Antidegradation

Waters with existing quality better than established standards as of the date such standards become effective will be maintained at their existing high quality. These waters of the state will not be lowered in such unless and until it has been affirmatively demonstrated to the Commissioner that such change is justifiable as a result of necessary economic or social development and unless it will not interfere with or become injurious to any assigned uses made of, or presently possible in, such waters.

Criteria Applicable to All Waters of the State

The waters shall be free from chemical constituents in concentrations or combinations which would be harmful to human, animal, or aquatic life for the most sensitive and governing water use class.

The discharge of radioactive materials in concentrations or combinations which would be harmful to human, animal, or aquatic life shall not be allowed. In no case shall the Alpha emitters in a surface water exceed a concentration of 100 picocuries per liter.

Except within designated dredged material disposal areas, waters shall be substantially free of pollutants that: a) unduly affect the composition of bottom fauna; b) unduly affect the physical or chemical nature of the bottom; and c) interfere with the propagation and habitats of shellfish, finfish, and wildlife.

Coastal and marine waters are those generally subject to the rise and fall of the tide.

COASTAL AND MARINE WATERS

CLASS SA

Suitable for all seawater uses including shellfish harvesting for direct human consumption (approved shellfish areas), bathing, and other water contact sports; may be subject to absolute restrictions on the discharge of pollutants; authorization of new discharges other than cooling or clean water or dredged material would require revision of the class to Class SB (See General Policy 5) which would be considered concurrently with the issuance of a permit at public hearing.

1.	Dissolved oxygen	Not less than 6.0 mg/l at any time.
2.	Sludge deposits - solid refuse - floating solids, oils and grease - scum	None other than of natural origin (See Note 8)
3.	Silt or sand deposits	None other than of natural origin except as may result from normal agricultural, road maintenance, construction activity, or dredged materials disposal provided all reasonable controls are used. (See Notes 6 and 8)

CLASS SA (Continued)

4.	Color and turbidity	None other than of natural origin except as may result from normal agricultural, road maintenance, construction activity, or dredge material disposal provided all reasonable controls are used. (See Notes 6 and 8) A secchi disc shall be visible at a minimum depth of 1 meter, SA_B - criteria may be exceeded. (See Note 14)
5.	Coliform bacteria per 100 ml	Not to exceed a median MPN of 70 and not more than 10% of the samples shall ordinarily exceed an MPN of 230 for a 5-tube decimal dilution or 330 for a 3-tube decimal dilution. (See Notes 3 and 12)
6.	Taste and odor	None allowable.
7.	pH	6.8 - 8.5
8.	Allowable temperature increase	None except where the increase will not exceed the recommended limit on the most sensitive receiving water use and in no case exceed 83°F or in any case raise the normal temperature of the receiving water more than 4°F. During the period including July, August, September, the normal temperature of

8.	Allowable temperature increase (continued)	the receiving water shall not be raised more than 1.5°F unless it can be shown that spawning and growth of indigenous organisms will not be significantly affected. (See Note 19)
9.	Chemical constituents	None in concentrations or combinations which would be harmful to human, animal or aquatic life or which would make the waters unsafe or unsuitable for fish or shellfish or their propagation, impair the palatability of same, or impair the waters for any other uses. (See Note 4)

CLASS SB

Suitable for bathing, other recreational purposes, industrial cooling and shellfish harvesting for human consumption after depuration; excellent fish and wildlife habitat; good aesthetic value.

1.	Dissolved oxygen	Not less than 5.0 mg/l at any time.
2.	Sludge deposits - solid refuse - floating solids, oils and grease - scum	None except for small amounts that may result from the discharge from a waste treatment facility providing appropriate treatment. (See Note 8)
3.	Sand or silt deposits	None other than of natural origin except as may result from normal agricultural, road maintenance, construction activity, or dredge material disposal provided all reasonable controls are used. (See Notes 6 and 8)
4.	Color and turbidity	A secchi disc shall be visible at a minimum of 1 meter, SB_b - criteria may be exceeded. (See Notes 8 and 14)
5.	Coliform bacteria per 100 ml	Not to exceed a median value of 700 and not more than 2300 in more than 10% of the samples. (See Notes 3 and 12)

CLASS SB (Continued)

6.	Taste and odor	None in such concentrations that would impair any usages specifically assigned to this class and none that would cause taste and odor in edible fish or shellfish.
7.	pH	6.8 - 8.5
8.	Allowable temperature increase	None except where the increase will not exceed the recommended limit on the most sensitive receiving water use and in no case exceed 83°F or in any case raise the normal temperature of the receiving water more than 4°F. During the period including July, August, and September, the normal temperature of the receiving water shall not be raised more than 1.5°F unless it can be shown that spawning and growth of indigenous organisms will not be significantly affected. (See Note 19)
9.	Chemical constituents	None in concentrations or combinations which would be harmful to human, animal or aquatic life or which would make the waters unsafe or unsuitable for fish or shellfish or their propagation, or impair the water for any other usage assigned to this class. (See Note 4)

CLASS SC

Suitable for fish, shellfish and wildlife habitat; suitable for recreational boating and industrial cooling, good aesthetic value. (See Note 13)

1. Dissolved oxygen	Not less than 5 mg/l for more than 6 hours during any 24-hour period and at no time less than 4 mg/l. For cold water fishery, SC_c, not less than 5 mg/l at any time. SC_s - 6 mg/l. (See Note 15)
2. Sludge deposits - solid refuse - floating solids, oils and grease - scum	None except for small amounts that may result from the discharge from a waste treatment facility providing appropriate treatment. (See Note 8)
3. Sand and silt deposits	None other than of natural origin except as may result from normal agricultural, road maintenance, construction activity, or dredge material disposal provided all reasonable controls are used. (See Notes 6 and 8)
4. Color and turbidity	None in such concentrations that would impair any usages specifically assigned to this class. (See Note 8)
5. Coliform bacteria per 100 ml	Not to exceed an average in any 30-day period of 5000 nor exceed this value in more than 20% of the

CLASS SC (Continued)

5.	Coliform bacteria per 100 ml (continued)	samples collected during the period. (See Notes 3 and 12)
6.	Taste and color	None in such concentrations that would impair any usages specifically assigned to this class and none that would cause taste and odor in edible fish or shellfish.
7.	pH	6.5 - 8.5
8.	Allowable temperature increase	None except where the increase will not exceed the recommended limit on the most sensitive receiving water use and in no case exceed 83°F or in any case raise the normal temperature of the receiving water more than 4°F. During the period including July, August, and September, the normal temperature of the receiving water shall not be raised more than 1.5°F unless it can be shown that spawning and growth of indigenous organisms will not be significantly affected. (See Note 19)
9.	Chemical constituents	None in concentrations or combinations which would be harmful to human, animal or aquatic life or which would make the waters unsafe or unsuitable for fish or shellfish or their propagation, or

9.	Chemical constituents (Continued)	impair the water for any other usage assigned to this class. (See Note 4)

NOTES

These notes include additonal criteria, and supplementary information to insure proper interpretation and use of the criteria.

3. All sewage treatment plant effluent shall receive disinfection before discharge to the surface waters with the exception of discharges to the following streams for which disinfection shall be required only during the period from May 1st to October 1st.

Housatonic River (north of I-95 Bridge)

Naugatuck River

Quinnipiac River (north of I-95 Bridge)

Farmington River

Pequabuck River

Connecticut River (north of I-95 Bridge)

Hockanum River

Willimantic River

Shetucket River

Quinebaug River

Thames River (north of I-95 Bridge)

It is recognized that the coliform bacteria criteria may not be met on the above streams during the period when disinfection of sewage treatment plant effluent is not required.

The degree of treatment and disinfection shall be as required by the Commissioner and shall be consistent with the health standards as established by the State Department of Health.

4. The waters shall be free from chemical constituents in concentration, or combinations which would be harmful to human, animal or aquatic life for the most sensitive and governing water use class. Criteria for chemical constituents contained in the "Quality Criteria for Water" published by the Environmental Protection Agency shall be considered and used as guidance. In areas where fisheries are the governing considerations and approved limits have not been established, bioassays are necessary to establish limits on toxic substances, the recommendations for bioassay procedures contained in "Standard Methods for the Examination of Water shall be considered. For public drinking water supplies, the raw water sources must be of such a quality that U.S. Environmental Protection Agency limits as defined by the Safe Drinking Water Act (Public Law 93-523), or state limits if more stringent, for finished water can be met after conventional treatment.

6. Reasonable controls may be defined by the Commissioner on a case by case basis or the Commissioner may require that it be affirmatively demonstrated by any person or municipality engaged in such activities that all reasonable controls will be or are being used.

8. Except within designated dredged material disposal areas, waters shall be substantially free of pollutants that: a) unduly affect the composition of bottom fauna; b) unduly affect the physical or chemical nature of the bottom; and c) interfere with the propagation and habitats of shellfish, finfish, and wildlife. Dredged materials dumped at approved disposal areas shall not pollute the waters of the State and shall not result in; a) floating residues of any sort; b) release of any substance, biological or chemical constituents which may result in long-term or permanent degradadaion of Water Quality Standards overlying or adjacent to the dumping grounds; c) unintentional dispersal of sediments outside a mixing zone enclosing the designated dump points; and d) biological mobilization and subsequent transport of toxic substances to food chains.

12. Coliform bacteria criteria are intended to provide a standard for coliform data evaluation and are related to the probability of contamination by undisinfected sewage. High results may be due to soil bacteria or bacteria from the feces of warm blooded animals which are not of sanitary significance. High results should therefore be investigated by sanitary survey or other appropriate means to confirm the cause. Fecal coliform (i.e. coliform organisms from the feces of warm blooded animals), may be useful as a secondary indicator. Although the reliability of fecal coliform analysis is not yet adequate to use as a standard, it is desirable that correlation data be generated. The Region I Office of the U.S. Environmental Protection Agency has suggested criteria for fecal coliform data evaluation. Such criteria should be considered only as guidelines and can be found in Appendix A.

13. The existence of Class C or SC waters shall not be considered a reason for authorizing a new discharge that would not maintain the receiving waters as Class B or SB waters if the receiving waters were of such quality.

14. The use of subscript b in Class Sb is intended to identify those areas where natural conditions or conditions which cannot be expected to be appreciably altered by the control of discharges may preclude bathing. It may also be used in Classes Bb and SBb to designate areas in the immediate vicinity of treated sewage outfalls where bathing is not advisable.

15. The use of subscript c in Classes Bc, Cc, SBc and SCc is to identify areas suitable for cold water fisheries, especially fish passage.

19. Upstream of the mouths of the Housatonic River, Connecticut River, and Thames River, the allowable temperature increase shall be consistent with the corresponding Inland Waters Class.

APPENDIX A

Fecal Coliform Criteria suggested as a guideline for data analysis by the Region I Office of the U.S. Environmental Protection Agency.

For Class SA waters:

Shellfish growing areas:

The fecal coliform bacteria concentration shall not exceed a log mean of 15 organisms/100 ml in any group of samples nor shall 10 per cent of samples exceed 50 organisms/100 ml.

Non-shellfish growing areas:

The fecal coliform bacteria concentration shall not exceed a log mean of 50 organisms/100 ml in any group of samples nor shall 10 per cent of samples exceed 200 organisms/100 ml.

For Class SB waters:

Shellfish growing areas:

The fecal coliform bacteria concentration shall not exceed a log mean of 150 organisms/100 ml in any group of samples nor shall 10 per cent of samples exceed 500 organisms/100 ml.

Non-shellfish growing areas:

The fecal coliform bacteria concentration shall not exceed a log mean of 200 organisms/100 ml in any group of samples nor shall 10 per cent of samples exceed 500 organisms/100 ml.

For all Class SC waters:

The fecal coliform bacteria concentration shall not exceed a log mean of 1000 organisms/100 ml in any group of samples nor shall 10 per cent of samples exceed 2500 organisms/100 ml.

CLASS SA Adopted Class

Connecticut

Long Island Sound outside shellfish closure lines from Connecticut-New York state line to Connecticut-Rhode Island state line.

Great Creek

Tidal Waters inside Stonington Shellfish Closure Line from Palmer Neck Road in Barn Island Hunting Area to line from Pawcatuck Point to Rhodes Point.

CLASS SB Adopted Class

Long Island Sound and estuaries inside Greenwich shellfish closure line.

West Branch Stamford Harbor inside line 3000 feet downstream from Pulaski Street Bridge.

East Branch Stamford Harbor inside hurricane barrier.

Stamford Harbor and adjacent areas from 3000 feet downstream from Pulaski Street Bridge and from hurricane barrier to Stamford-Darien shellfish closure line.

Five Mile River tidal waters inside shellfish closure line.

Norwalk Harbor inside line extending from Keyser Point to Calfpasture Point.

Norwalk Harbor and adjacent area between line extending from Keyser Point to Calfpasture Point and the Norwalk shellfish closure line.

Saugatuck River tidal waters inside shellfish closure line.

Sherwood Mill Pond inside shellfish closure line.

Mill River tidal waters inside shellfish closure line.
Milford Harbor, Gulf Pond and The Gulf inside Milford Shellfish Closure Lines.
Ash Creek, Black Rock Harbor, and Bridgeport Harbor.

Tidal waters outside Ash Creek, Black Rock Harbor, and Bridgeport Harbor and inside Bridgeport shellfish closure line.

Ferry Creek

Quinnipiac River from Southington sewage treatment plant to tidewater.

Mill River from State Street to mouth.

CLASS SB (Continued)

East Haven River tidal waters inside shellfish closure line.

Branford River from tidewater to Branford Point (shellfish closure line).

Tidal waters inside Thimble Islands - Stony Creek Branford shellfish closure line.

Fourmile River tidal waters and adjacent areas.

Bridge Brook tidal waters and adjacent areas inside Bridge Brook shellfish closure line.

Baker Cove tidal waters inside Groton-New London shellfish closure line.

Poquonock River from Groton Reservoir Dam to mouth.

Mumford Cove tidal waters inside shellfish closure line.

Mystic River tidal waters inside shellfish closure line.

Tidal waters inside Stonington shellfish closure line from Wamphassock Point to Palmer Neck Road in Barn Island Hundint area.

Pawkatuck River from Pawkatuck Rock to a line from Pawkatuck Point to Rhoden Point.

CLASS SB_C Adopted Class

Bryam River tidewater to mouth.

Housatonic River from the top of the Derby Dam to mouth (shellfish closure line).

New Haven Harbor inside line extending from Morse Park to Lighthouse Point.

New Haven Harbor between line extending from Morse Park to Lighthouse Point and the New Haven shellfish closure line.

Clinton Harbor inside shellfish closure line.

Connecticut River from junction of Farmington River to the confluence of the Mattabasset River.

Connecticut River from the confluence of the Mattabasset River to Hurd State Park.

Connecticut River from Hurd State Park to mouth (shellfish closure line).

Shetucket River from Greenville Dam, Norwich to Thames River.

Thames River from junction of the Yantic and Shetucket rivers to mouth (shellfish closure line).

STATE OF DELAWARE

MARINE WATER QUALITY STANDARDS

Reference:

Water Quality Standards of Delaware

March 25, 1979

Dept. of Natural Resources

and Environmental Control

Tatnall Building, Capitol Complex

Dover, DE 19901

DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

WATER QUALITY STANDARDS FOR STREAMS

Section 1 - Uses

1. It is the policy of the State to maintain within its jurisdiction a reasonable quality of water consistent with public health and public recreation purposes, the propagation and protection of fish and wildlife, including birds, mammals and all other terrestrial and aquatic life, as well as the industrial development of the State.

2. Where conflicts develop between stated water uses, stream criteria or discharge criteria, water uses designated for each segment shall be paramount in determining the required stream criteria, which, in turn, shall be the basis of specific discharge limits.

Section 2 - Antidegradation Statement

1. Delaware stream water quality shall be maintained so that existing beneficial uses are protected. Any actions that would interfere with or become injurious to existing uses shall be prohibited.

2. High quality waters shall be maintained at their designated high quality unless it is shown by the discharger to the satisfaction of the Department that limited degradation is economically and environmentally justifiable.

3. Degradation in violation of any water quality criteria or standards contained herein shall be prohibited.

4. Upon receipt for an application for a permit to discharge into a stream segment or subsegment designated as high quality waters, whether an intermittent stream or not, a public hearing may be held in accordance with the provisions of 7 Del. C. §6004 and 6006. It shall be the responsibility of the applicant to demonstrate that the proposed discharge will not cause degradation of such high quality waters, or that limited degradation is economically and environmentally justifiable. This shall include, inter alia, an evaluation of alternative discharge sites and waste disposal methods.

5. The hearing requirement imposed by §2.4 above shall not be construed to impose a requirement for an additional public hearing where such a hearing is otherwise held pursuant to law, provided the requirements of this section are thereby met.

6. In implementing this policy, the Department of Natural Resources and Environmental Control shall keep the Administrator of the Environmental Protection Agency or his designee advised and shall provide him with any information he may need to discharge his responsibilities under the Federal Clean Water Act of 1977 as amended.

Section 3 - General Stream Criteria

1. The following minimum conditions shall be applicable to all waters, including intermittent streams, at all times.

(a) The water shall not contain substances attributable to municipal, industrial, agricultural or other discharges in concentrations or amounts sufficient to be harmful or adverse to water uses to be protected, or to humans, fish, aquatic life and wildlife;

(b) Water quality shall not disturb ecological food webs nor exceed standards for reproduction and growth of fish normally present;

(c) Water shall be free of floating solids, sludge deposits, debris, oil and scum.

Section 7 - Definitions (Continued)

Primary Contact Recreation:	Uses involving prolonged intimate body contact with water in which there is a significant risk of ingestion (e. g., swimming, water skiing).
Public Water Supply:	Any stream or impoundment used as a source of drinking water and may include other specified uses.
Secondary Contact Recreation:	Uses involving water as a pleasurable setting for activities in which there is an insignificant risk of ingestion (e. g., boating, fishing, picnicking, hiking, wading).
Shellfish:	Any fresh, brackish or saltwater Mollusk, whether edible or not, regardless of the reason, is to be considered a shellfish (e. g., clams, mussles, oysters). This definition includes eggs of all applicable species.
Transition Zone:	Areas between two adjacent zones of varying water quality or hydrologic conditions.
Temperature:	The normal temperature for streams is the average daily temperature for the month.
Tidal Waters:	Water which ebbs and flows cyclically.
Toxic Substances:	All materials, whether organic or inorganic, considered harmful (synergistically or otherwise) to humans, fish, wildlife or aquatic life.

Section 8 - Water Quality Segments and Water Uses

Segment No.	Segment Name	Public Water Supply	Industrial Water Supply	Primary Contact Recreation	Secondary Contact Recreation	Fish, Aquatic Life & Wildlife	Shellfish*	Agriculture	Navigation	Drainage	Anadromous Fish
1.	Delaware River	-	X	(a)	(b)	(c)	-	-	X	X	X
2.	Christina River	(f)	X	(d)	X	X	-	(f)	(e)	X	X
3.	Indian River	-	X	X	X	X	X	(f)	(e)	X	X
4.	Nanticoke	-	X	(d)	X	X	-	(f)	(e)	X	X
5.	Blackbird Appoquinimink	-	X	(d)	X	X	-	(f)	(e)	X	X
6.	Little Assawoman	-	-	X	X	X	X	(f)	(e)	X	X
7.	St. Jones	-	X	(d)	X	X	X	(f)	(e)	X	X
8.	White Clay (includes Red Clay Creek)	X	X	(d)	X	X	X	(f)	(f)	X	X
9.	Broadkill	-	X	(d)	X	X	X	(f)	(e)	X	X
10.	C & D Canal	-	X	-	X	X	-	-	X	X	X
11.	Red Lion	-	X	-	X	X	-	(f)	-	X	X
12.	Smyrna	-	X	(d)	X	X	X	(f)	(e)	X	X
13.	Brandywine	X	X	X	X	X	-	(f)	-	X	X
14.	Murderkill	-	X	(d)	X	X	X	(f)	(e)	X	X
15.	Leipsic	-	X	(d)	X	X	X	(f)	(e)	X	X
16.	Naaman's (includes Shellpot Creek)	-	X	-	X	X	-	-	-	X	X
17.	Mispillion	-	X	(d)	X	X	X	(f)	(e)	X	X
18.	Cedar Creek	-	-	(d)	X	X	X	(f)	-	X	X
19.	Buntings Branch	-	-	-	X	X	-	(f)	-	X	-
20.	Chesapeake Drainage System	-	-	(d)	X	X	-	(f)	-	X	X
21.	Choptank	-	-	(d)	X	X	-	X	-	X	X
22.	Delaware Bay	-	X	X	X	X	X	-	X	X	X
23.	Atlantic Ocean	-	-	X	X	X	X	-	X	X	X

* Includes harvestable and non-harvestable waters under present health restrictions

X Designated Water Uses
- Water Uses not Designated

Special Conditions

(a) Between River Mile 48.2 and River Mile 59.5
(b) Between River Mile 59.5 and River Mile 78.8
(c) Between River Mile 48.2 and River Mile 70.0
(d) Lakes and Ponds only
(e) Tidal
(f) Nontidal

Section 9 - Stream Quality Criteria

A. General Criteria for all non-tidal portions of stream basins (segments).

Indicator	Unit of Measurement	Criteria
Temperature	^{o}F	Any artificially induced rise shall not exceed $5^{o}F$ above the seasonal normal temperature or 85°F, (29°C), whichever is less.
Dissolved Oxygen	mg/l	Daily average concentrations shall not be less than 5.0 mg/l nor less than 4.0 mg/l at any time except when natural phenomena cause this value to be depressed further.
pH	Unit	Shall be between 6.5 to 8.5.
Total Alkalinity	mg/l as $CaCO_3$	Shall not be less than 20 mg/l at any time.
Total Acidity	mg/l as $CaCO_3$	Shall not exceed alkalinity by 20 mg/l at any time.
Fecal Coliform (except Naaman's Creek Segment* see fecal coliform criteria for Delaware River above RM 59.5 (See 9D)	colonies/100 ml	The fecal coliform levels shall not exceed a log mean of 200/100 ml. Samples shall be taken at such frequency and location as to permit valid interpretations.
Alpha Emitters	pico curies/l	Maximum 3 pc/l.
Beta Emitters	pico curies/l	Maximum 1,000 pc/l.
Taste, Odor & Color causing substances		None in concentrations which cause tastes, odors, color, or impact tastes to edible fish flesh and aquatic and marine life.
Phenolic Compounds	mg/l	Shall not exceed .005 mg/l.
Toxic Substances	mg/l	None in concentrations harmful (synergistically or otherwise) to humans, fish, wildlife and aquatic life as prescribed in the Environmental Protection Agency's "Quality Criteria for Water", 1976.
Turbidity	Units	Shall not exceed background values by 10 units or attain a maximum of 25 units.

Indicator	Unit of Measurement	Criteria
Specific Toxic Substances		
DDT	µg/l	0.001 µg/l for freshwater and marine aquatic life.
Aldrin	µg/l	0.003 µg/l for freshwater and marine aquatic life.
Dieldrin	µg/l	0.003 µg/l for freshwater and marine aquatic life.
Toxaphene	µg/l	0.005 µg/l for freshwater and marine aquatic life.
PCB's	µg/l	0.001 µg/l for freshwater and marine aquatic life.
Benzidine	µg/l	0.1 µg/l for freshwater and marine aquatic life.

B. Specific criteria which are considered in addition to general non-tidal criteria in 9A for non-tidal portions of stream basins used as sources of public water supply (Brandywine, Red Clay, White Clay and Christina).

Indicator	Unit of Measurement	Criteria
Ammonia - N	mg/l	Shall not exceed 0.4 mg/l.
Total Nitrogen - N (TKN, Nitrite, and Nitrate as N)	mg/l	Shall not exceed 3.0 mg/l.
Total Dissolved Solids	mg/l	Shall not exceed 250 mg/l of which sulfate portion shall not be greater than 100 mg/l.
Fluorides	mg/l	Shall not exceed 0.2 mg/l at any time.
Actinomycetes	colonies/100 ml	None attributable to waste discharges.
Specific Toxic Substances		
Endrin	µg/l	0.2 µg/l for domestic water supply (health).
Toxaphene	µg/l	5 µg/l for domestic water supply (health).

Specific Toxic Subatances (Cont.)

PCB's	µ g/l	0.001 µg/l for domestic water supply (health).
Benzidine	µ g/l	.01 µg/l for domestic water supply (health).

C. Specific criteria for all tidal portions of basins except Delaware River and Chesapeake and Delaware Canal, but including Atlantic Ocean and Delaware Bay below RM 48.2 in addition to general criteria in 9A. Any repeated indicator/ criteria found here supersedes that of 9A.

Indicator	Unit of Measurement	Criteria
Temperature	^{o}F	Coastal and Estuarine waters: No heat may be added except in designated mixing zones which would cause temperatures to exceed 85°F, or which would cause the temperatures to be raised by more than 4°F during September through May, or to be raised by more than 1.5°F durin June through August. The rate of temperature change in designated mixing zones shall not cause mortality of fish, shellfish, or their eggs.
Dissolved Oxygen	mg/l	The dissolved oxygen levels sha not be less than a daily averag of 6 mg/l nor go below 5 mg/l a any time.
Fecal Coliform (for tidal portions of Christina and Brandywine, see fecal coliform criteria for Delaware River above RM 59.5 (See 9D)	colonies/100 ml	The fecal coliform levels shall not exceed a log mean of 200/10 ml. Samples shall be taken at such frequency and location as to permit valid interpretation.
Total Coliform (for shellfish waters)	colonies/100 ml	The following recommended standards of the State Board of Health will govern. The coliform median MPN of the water shall not exceed 70 per 100 ml, and not have more than 10 percent of the samples ordinarily exceed an MPN of 230 per 100 ml for a 5-tube decimal dilution test (or 330 per 100 ml where the 3-tube decimal test is used) in those por-

Indicator	Unit of Measurement	Criteria
Total Coliform (Continued)		tions of the area most probably exposed to fecal contamination during the most favorable hydrographic and pollution conditions in designated shellfish areas. Samples shall be taken at such frequency and location as to permit valid interpretation.
Phenolic Compounds	mg/l	Shall not exceed 0.01 mg/l.
Turbidity	Units	Shall not exceed 150 units.

D. Specific criteria for Delaware River (from PA. - DE. Line, RM 78.8 to Liston Point RM 48.2) in addition to the general criteria of 9A. here supersedes that of 9A. Repeated indicator/criteria

Indicator	Unit of Measurement	Criteria
Fecal Coliform (above RM 59.5)	colonies/100 ml	The fecal coliform shall not exceed a log mean of 770/100 ml. Samples shall be taken at such frequency and locations as to permit valid interpretation.
Fecal Coliform (below RM 59.5)	colonies/100 ml	The fecal coliform levels shall not exceed a log mean of 200/100 ml. Samples shall be taken at such frequency and location as to permit valid interpretation.
Temperature	°F	No heat may be added except in designated mixing zones which would cause temperature to exceed 86°F or which would cause the temperature to be raised by more then 4°F during September through May, or to be raised by more than 1.5°F during June through August. The rate of temperature change in designated mixing zones shall not cause mortality of fish or shellfish.
D- ·ved Oxygen	mg/l	During April 1-June 15 and Sept. 16-Dec. 31 seasonal average concentration shall not be less than 6.5 mg/l

Dissolved Oxygen (Cont.)	mg/l	in the entire zone. At no time shall the daily average concentration be less than 3.5 mg/l at Mile 78.8, 4.5 mg/l at Mile 70.0 and 6.0 mg/l at Mile 59.5.
Phenolic Compounds	mg/l	Shall not exceed 0.01 mg/l.

E. Specific criteria for Chesapeake and Delaware Canal (from MD. - DE. line to Reedy Point) in addition to general criteria for all non-tidal portions in 9A. Repeated indicator/criteria found here supersedes that of 9A.

Indicator	Unit of Measurement	Criteria
Temperature	^{o}F	Coastal and Estuarine Waters: No heat may be added except in designated mixing zones which would cause temperature to exceed $85^{o}F$ or which would cause the temperature to be raised by more than $4^{o}F$ during September through May, or to be raised by more than $1.5^{o}F$ during June through August. The rate of temperature change in designated mixing zones shall not cause mortality of fish or shellfish.
Phenolic Compounds	mg/l	Shall not exceed 0.01 mg/l.
Dissolved Oxygen	mg/l	The dissolved oxygen levels shall not be less than a daily average of 5 mg/l nor go below 4 mg/l at any time except when natural phenomena cause this value to be depressed.

The Department's Technical Services Section of the Division of Environmental Control has an on-going program for analytical quality assurance. Methods used comply with those referenced in the Federal Register, Volume 41, Number 232, pages 52780-6 where applicable and are updated periodically in accordance with procedural changes approved by the U.S. Environmental Protection Agency and published in the Federal Register.

District of Columbia Marine Water Quality Standards

District of Columbia
Water Quality Standards
July 1973

Dept. of Environmental Services
5010 Overlook Ave. S.W.
Washington, D.C. 20032

WATER USE DESIGNATIONS

The District of Columbia designates the following uses to be protected in various interstate waters. The alphabetical designations are keyed to the table of Stream Sections and Their Water Uses (Table I). The water use categorizations are not necessarily reflective of relative water quality.

Category	Water Use
A	Primary Water Contact Recreation: any activities that require prolonged intimate water contact and involve risks of ingestion. Included are swimming, wading and any water contact sports.
B	Secondary Water Contact Recreation: any activities on or near the water. Included are recreational boating, fishing and recreation along the shores.
C	Propagation of Aquatic Life and Wildlife.
D	Public Water Supply.
E	Industrial Water Supply.
F	Navigation.

4. Temperature

For all existing thermal pollution sources - No increase in natural water temperature caused by artifical heat inputs shall exceed 5°F after reasonable allowance for mixing. Maximum water temperature shall not exceed 90°F. There shall be no sudden or localized temperature changes that may adversely affect aquatic life.

For all new or expanded sources - The allowable thermal loadings will be based on "site specific thermal requirements" The two upper limiting temperature values, necessary for the protection of important aquatic species, (temperature sensitive species found in the vicinity of discharge, at that time) shall be determined as follows:

A. The first limiting value is a maximum temperature for short exposures that is time dependent and is given by the species specific equation:

Temperature (°C) = (1/b) ($\log_{10}$ time (min)-a) -2°C

where: $\log_{10}$ = logarithm to base 10 (common logarithm)

a. = intercept on the "y" or logarithmic axis of the line fitted to experimental data and which is available from Appendix II-C, National Academy of Sciences, 1974 for some species.

b. = slope of the line fitted to experimental data and available from Appendix II-C, National Academy of Sciences, 1974 for some species.

B. The second value is a limit on the weekly average temperature that:

(1) in the cooler months (mid-October to mid-April) will protect against mortality of important aquatic species if the elevated plume temperature is suddenly dropped to the ambient temperature, with the limit being the acclimation temperature minus $2^{o}C$ when the lower lethal threshold temperature equals the ambient water temperature.

(2) In the warmer months (April through October) is determined by adding to the physiological optimum temperature (usually for growth) a factor calculated as one-third of the difference between the ultimate upper incipient lethal temperature and the optimum temperature for the most sensitive important aquatic species.

or

(3) During reproductive seasons (generally April through June and September through October) the limit is that temperature that meets site-specific requirements for successful migration, spawning, egg incubation, fry rearing, and other reproductive functions of important aquatic species. These local requirements should supersede all other requirements when they are applicable.

or

(4) There is a site-specific limit that is found necessary to preserve normal species diversity or prevent appearance of nuisance organisms.

5. Suspended Solids

For all interstate waters - Not more than 80 mg/l (seasonal average concentration).

WATER QUALITY STANDARDS SUMMARY FOR THE INTERSTATE WATERS OF THE DISTRICT OF COLUMBIA

Section	Location	Future Uses to be Protected	pH	D.O. mg/l	Fecal Coliform	Suspended Solids	Temperature *
1	Potomac River: Montgomery County line to Key Bridge	A,B,C,D,F	6-8.5	≮ 4 at any time ≮ 5 daily ave.	Based on minimum of 5 samples over a 30 day period. log mean ≯ 200/100 ml. 10% of total samples ≯ 400/100 ml.	≦ 80 mg/l	Site specific Standards
2	Potomac River: Key Bridge to Prince George's County line	B,C,E,F	6-8.5	Same as above	Based on minimum of 5 samples over a 30 day period. log mean ≯ 1000/100ml. 10% of total samples ≯ 2000/100 ml.	≦ 80 mg/l	Same as above
4	Anacostia River	B,C,E,F	6-8.5	Same as above	Same as Section 2	≦ 80 mg/l	Same as above

* = Applicable to new sources only

State of Florida Marine Water Quality Standards

Reference:

Chapters 17-3, 17-4, and 17-6

Florida Administrative Code

March 1, 1979

Florida Dept. of Environmental Regulation

Twin Towers Office Building

2600 Blair Stone Road

Tallahassee, FL 32301

(3) All discharges or proposed discharges of heated water into receiving bodies of water (RBW) wh[illegible]re controlled by the st[illegible] shall be subjected to a t[illegible]ugh study to assess the consequences of the discharge upon the environment. The state shall be divided into two general climatological zones: Peninsular Florida, which varies from tropical in nature to temperate but is modified by the peninsular configuration and is the area south of latitude 30°N (excluding Gulf and Franklin Counties); and Northern Florida which is temperate and continental and is the area above latitude 30°N plus the portions of Gulf and Franklin Counties which lie below 30°N.

(a) Heated water discharges existing on July 1, 1972:

(i) Shall not increase the temperature of the RBW so as to cause damage or harm to the aquatic life or vegetation therein or interfere with beneficial uses assigned to the RBW.

(ii) Shall be monitored by the discharger to ensure compliance with this rule, and

(iii) Shall be converted to offstream cooling or approved alternate methods in the event such monitoring produces evidence of substantial damage.

(b) Heated water sources proposed for future discharges into RBW controlled by the state shall not increase the water temperature by more than the monthly temperature limits prescribed for the particular type and location of the RBW. New sources shall include all expansions, modifications, alterations, replacements, or repairs which result in an increased output of ten percent (10%) or more of the level of energy production which existed on the d[illegible] this rule became effective. Water temperatures s[illegible]e measured by procedures approved by the Florida Department of Pollution Control (DPC). In all cases where a temperature rise above ambient is allowed and a maximum RBW temperature is also prescribed, the lower of the two limitations shall be the control temperature.

(d) Monthly and Maximum Temperature Limits

(ii) Coastal Waters — Heated water with a temperature at the POD more than 2°F higher than the ambient (natural) temperature of the RBW shall not be discharged into coastal waters in any zone during the months of June, July, August, and September. During the remainder of the year, heated water with a temperature at the POD more than 4°F higher than the ambient (natural) temperature of the RBW shall not be discharged into coastal waters in any zone. In addition, during June, July, August, and September, no heated water with a temperature above 92°F shall be discharged into coastal waters. Further, no heated water with a temperature above 90°F shall be discharged into coastal waters during the period October thru May.

(iii) Open Waters — Heated water with a temperature at the POD up to 17°F above ambient (natural) temperature of the RBW may be discharged from an open or closed conduit into open waters under the following restraints: The surface temperature of the RBW shall not be raised to more than 97°F and the POD must be sufficient distance d[illegible]re to ensure that the adjacent coastal waters are n[illegible]heated beyond the temperatures permitted in such waters.

ZONE	COASTAL		OPEN
	SUMMER	REMAINDER	
NORTH.	92°F. Max. AM. +2°F	90°F Max. AM. +4°F	97°F Max. AM. +17°
PENIN.	92°F Max. AM. +2°F	90°F Max. AM. +4°F.	97°F Max. AM. +17°F

CHAPTERS 17-3, 17-4, and 17-6,

FLORIDA ADMINISTRATIVE CODE,

AS OF MARCH 1, 1979.

RULES OF THE DEPARTMENT OF ENVIRONMENTAL REGULATION

CHAPTER 17-3

POLLUTION OF WATERS

WATER QUALITY STANDARDS

PART I. DECLARATION AND INTENT

17-3.011 FINDINGS, DECLARATION AND INTENT

(2) Section 403.021, Florida Statutes, declares that the public policy of the state is to conserve the waters of the state and to protect, maintain, and improve the quality thereof for public water supplies, for the propagation of wildlife, fish and other aquatic life, and for domestic, agricultural, industrial, recreational, and other beneficial uses. It also prohibits the discharge of wastes into Florida waters without treatment necessary to protect those beneficial uses of the waters.

(6) The quality of water which exceeds the minimum quality necessary to support the designated use of those waters shall be protected and enhanced.

(7) The quality of waters which is lower than that necessary to support the designated use of those waters shall be protected and enhanced provided, however, the Department shall not strive to abate natural conditions.

(8) The highest protection shall be afforded to Outstanding Florida Waters.

PART II DEFINITIONS

(19) "Predominantly marine waters" shall mean those surface waters in which the specific conductance of the water at the surface is greater than or equal to 5,000 micromhos per centimeter.

17-3.04 Domestic and Industrial Waste Treatment Requirements

(No Change)

17-3.041 SPECIAL PROTECTION, OUTSTANDING FLORIDA WATERS (new)

(1) It shall be the Department policy to afford the highest protection to Outstanding Florida Waters (a complete listing of which is provided in subsection (3)) which generally include the following surface waters:

(a) waters in National Parks, Wildlife Refuges, and Wilderness Areas; and

(b) waters in the State Park System and Wilderness Areas; and

(c) waters in Environmentally Endangered Lands which have been acquired under Chapter 259, Florida Statutes; and

(d) rivers designated under the Florida Scenic and Wild Rivers Program or the National Wild and Scenic Rivers Act; and

(e) waters within National Seashores, National Marine Sanctuaries, National Estuarine Sanctuaries, and certain National Monuments; and

(f) waters in Aquatic Preserves, created under the provisions of Chapter 258, Florida Statutes; and

(g) waters within the Big Cypress National Fresh-water preserve; and

(h) Special Waters as listed in 17-3.041(3)(q).

Each water body demonstrated to be of exceptional recreational or ecological significance may be designated as a Special Water. The following procedure shall be used in designating a Special Water after the adoption of this rule:

1. Rulemaking procedures pursuant to Chapter 120, F.S., and Chapter 17-1 shall be followed;

2. At least one fact-finding workshop shall be held in the affected area;

3. All local county or municipal governments and state legislators whose districts or jurisdictions include all or part of a special water shall be notified at least 60 days

prior to the workshop in writing by the Secretary;

4. A prominent public notice shall be placed in a newspaper of general circulation in the area of the proposed Special Water at least 60 days prior to the workshop;

5. An economic impact analysis, consistent with Chapter 120, shall be prepared which provides a general analysis of the impact on growth and development including such factors as impacts on planned or potential industrial, agricultural, or other development or expansion; and

6. The Commission may designate a water of the State as a Special Water after making a finding that the waters are of exceptional recreational or ecological significance and a finding that the environmental, social, and economic benefits of the action outweigh the environmental, social, and economic costs.

(2) The policy of this section shall be implemented through the permitting process pursuant to Section 17-4.242.

(3) Outstanding Florida Waters:

(a) Waters within National Parks

National Park	County
Everglades	Monroe/Dade/Collier

(b) Waters within Wildlife Refuges

Wildlife Refuge	County
Loxahatchee	Palm Beach
Pig Island	Gulf
St. Vicent	Franklin
Chassahowitzka	Citrus/Hernando
Anclote	Pasco
Pinellas	Pinellas
Okeefenokee (Florida Portion)	Baker
Anclote Island	Indian River
Pelican Island	Indian River
Bohe Sound	Martin
Passage Key	Manatee
Caloosahatchee	Lee
Lake Woodruff	Volusia
St. Mark's	Jefferson/Wakulla
National Key Deer	Monroe
Great White Heron	Monroe
Key West	Monroe
Pine Island	Lee
Matlacha Pass	Lee
J. N. "Ding" Darling	Lee
Island Bay	Charlotte
Cedar Keys	Levy
Chinsegut	Hernando
Merritt Island	Volusia/Brevard
Egmont Key	Pinellas
St. John's	Brevard

(c) Waters within State Parks or Recreation Areas

State Park or Recreation Area	County
Alfred B. Maclay State Ornamental Garden	Leon
Anastasia State Recreation Area	St. John's
Bahia Honda State Recreation Area	Monroe
Basin Bayou State Recreation Area	Walton
Bill Baggs Cape Florida State Recreation Area	Dade
Blackwater River State Park	Santa Rosa
Blue Springs State Recreation Area	Volusia
Caladesi Island State Park	Pinellas
Chekika State Recreation Area	Dade
Collier-Seminole State Park	Collier
Dead Lakes State Recreation Area	Gulf
Eden State Ornamental Garden	Walton
Falling Waters State Recreation Area	Washington
Faver-Dykes State Park	St. John's
Flagler Beach State Recreation Area	Flagler
Florida Caverns State Park	Jackson
Fort Clinch State Park	Nassau
Fort Pickens State Park	Escambia
Fred Gannon Rocky Bayou State Recreation Area	Okaloosa
Grayton Beach State Recreation Area	Walton

Highlands Hammock State Park	Highlands/Hardee
Hillsborough River State Park	Hillsborough
Honeymoon Island State Park	Volusia/Lake
Hugh Taylor Birch State Recreation Area	Broward
Ichetucknee Springs State Park	Columbia/Suwannee
John Pennekamp Coral Reef State Park	Monroe
John U. Lloyd Beach State Recreation Area	Broward
Jonathan Dickinson State Park	Martin
Lake Griffin State Recreation Area	Lake
Lake Kissimmee	Polk
Little Talbot Island State Park	Duval
Long Key State Recreation Area	Monroe
Manatee Springs State Park	Levy
Mike Roess Gold Head Branch State Park	Clay
Myakka River State Park	Manatee/Sarasota
Okaloacoochee River State Park	Wakulla
O'Leno State Park	Alachua/Columbia
Oscar Scherer Recreation Area	Sarasota
Peacock State Recreation Area	Palm Beach
Pepper Park State Recreation Area	St. Lucie
Ponce de Leon Springs State Recreation Area	Holmes/Walton
Ravine State Ornamental Garden	Putnam
St. Andrews State Recreation Area	Bay
Sebastian Inlet State Recreation Area	Hamilton/Madison/Suwannee
Three Rivers State Recreation Area	Jackson
T.H. Stone Memorial St. Joseph Peninsula State Park	Gulf
Tomoka State Park	Volusia
Torreya State Park	Liberty
Washington Oaks State Ornamental Garden	Flagler
Wekiva Springs State Park	Orange/Seminole

(d) Waters within Environmentally Endangered Lands which have been Purchased by the State

Environmentally Endangered Lands	County
Honeymoon Island	Pinellas
Rookery Bay/Strand/Big Cypress Bend	Collier
Volusia Recharge Area	Volusia
River Pine (McLeod Ranch)	Osceola
San Felasco Hammock	Alachua
Three Lakes Ranch	Osceola
Lower Apalachicola River Tracts	Franklin/Gulf
Palm Beach County Everglades Tract	Palm Beach
Paynes Prairie State Preserve Addition	Alachua
Lower Wekiva River Corridor	Lake/Seminole
Cayo Costa North Captiva Islands	Lee
Charlotte Harbor	Charlotte
Big Cypress National Preserve	Collier/Dade/Monroe
Tosohatchee State Preserve	Orange

(e) Waters Within National Seashores

National Seashores	County
Gulf Islands	Escambia/Santa Rosa
Canaveral	Brevard/Volusia

(f) Waters Within State Aquatic Preserves

Aquatic Preserves	County
Cape Romano - Ten Thousand Islands	Collier
Nassau River - St. Johns River Marshes	Nassau/Duval
St. Joseph Bay	Gulf
Apalachicola Bay	Franklin
North Fork, St. Lucie	St. Lucie/Martin
Intracoastal Waters-Jensen Beach to Jupiter Inlet	Martin/Palm Beach
Loxahatchee River - Lake Worth Creek	Martin/Palm Beach
Fort Clinch State Park	Nassau
Cockroach Bay	Hillsborough
Boca Ciega Bay	Pinellas
Caladesi Island	Pinellas
St. Martin's Marsh	Citrus
Alligator Harbor	Franklin
Biscayne Bay	Dade/Monroe
Estero Bay	Lee
Pellicer Creek	St. Johns/Flagler
Tomoka Marsh	Volusia/Flagler

Coupon Bight	Mon
Lignumvitae Key	Monroe
Cape Haze - Gasparilla Sound	Charlotte/Lee
Pine Island Sound	Lee
Matlacha Pass	Lee
Yellow River Marsh	Santa Rosa.
Fort Pickens State Park	Escambia
Lake Jackson	Leon
St. Andrew's State Park	Bay
Rocky Bayou State Park	Okaloosa
Mosquito Lagoon	Volusia/Brevard
Banana River	Brevard
Indian River - Malabar to Sebastian	Brevard/Indian River
Indian River-Vero Beach to Ft. Pierce	Indian River/St. Lucie
Pinellas County	Pinellas

(g) Special Waters

Special Waters

Ochlockonee River

Wakulla River

St Mark's River - except that part between Rattlesnake Branch and the confluence of the St. Mark's and Wakulla Rivers.

Wacissa River

Aucilla River

Apalachicola River south of northern Gulf County Line

Chipola River

Shoal River

Choctawhatchee River

Blackwater River

Perdido River

Suwannee River - except that this designation shall automatically lapse two (2) years from the effective date of this section for that portion of the Suwannee River between State Road 6, Hamilton and Columbia Counties, and Suwannee Springs, Hamilton and Suwannee Counties, unless the Commission, in accordance with the procedural and substantive requirements set forth in Section 17-3.041(1)(h), acts to continue the designation of that portion of the Suwannee River as a Special Water prior to two (2) years from the effective date of this section. The Commission shall initiate and complete such proceedings within two (2) years from the effective date of this section. At the request of any interested party the Commission, in the proceedings to continue or modify the designation of that portion of the Suwannee River as a Special Water, will consider the appropriateness of repealing or modifying the designation of any other portion of the Suwannee River not subject to the automatic lapse provision set forth in this section.

(h) Waters Within National Monuments

National Monuments	County
Biscayne	Dade

(i) Waters Within National Marine Sanctuaries

Marine Sanctuaries	County
Key Largo Coral Reef	Dade

(j) Waters Within National Estuarine Sanctuaries

National Estuarine Sanctuaries	County
Rookery Bay	Collier County

Specific Authority - 403.061, 403.062, 403.087, 403.504, 403.704, 403.804, 403.805, F.S.

Law Implemented - 403.021, 403.061, 403.087, 403.088, 403.101, 403.141, 403.182, 403.502, 403.702, 403.708, F.S.

History - New 7/11/78

Effective Date: January 1, 1979; or upon receipt by the Department from the United States Environmental Protection Agency of a determination that said provisions are the antidegradation policy, or a part thereof, and, therefore, are not subject to the provisions of establishment, modification, or repeal of designated use classification ("classification of waters") under Federal law, including but not limited to 40 C.F.R., Section 130.17, whichever later occurs.

17-3.051 MINIMUM CRITERIA FOR ALL WATERS AT ALL TIMES AND AL PLACES

All waters of the State shall at all places and at all times be free from:

(1) Domestic, industrial, agricultural, or other man-induced non-thermal components of discharges which, alone or in combination with other substances or in combination with other components of discharges (whether thermal or non-thermal):

(a) Settle to form putrescent deposits or otherwise create a nuisance; or

(b) Float as debris, scum, oil, or other matter in such amounts as to form nuisances; or

(c) Produce color, odor, taste, turbidity, or other conditions in such degree as to create a nuisance; or

(d) Are acutely toxic; or

(e) Are present in concentrations which are carcinogenic, mutagenic, or teratogenic to human beings or to significant, locally occurring, wildlife or aquatic species; or

(f) Pose a serious danger to the public health, safety, or welfare.

(2) Thermal components of discharges which, alone, or in combination with other discharges or components of discharges (whether thermal or non-thermal):

(a) Produce conditions so as to create a nuisance; or

(b) Do not comply with applicable provisions of Subsection 17-3.05(1), F.A.C.

Specific Authority - 403.061, 403.062, 403.087, 403.504, 403.704, 403.804, F.S.

Law Implemented - 403.021, 403.061, 403.087, 403.088, 403.141, 403.161, 403.182, 403.502, 403.702, 403.708, F.S.

History - Formerly 28-5.02, Formerly 17-3.02, Amended 10/28/78, Revised and Renumbered -- 7/13/78

Effective Date: See note following 17-3.011.

17-3.06 Classification of Waters, Usage (Revised and Renumbered as 17-3.061)

17-3.061 SURFACE WATERS: GENERAL CRITERIA

(1) The criteria of surface water quality hereinafter provided shall be applied to all surface waters except within zones of mixing.

(2) A violation of any of the following surface water quality criteria constitutes pollution. Additional, more stringent or alternative criteria than indicated in this paragraph may, however, be specified for individual classes of water under Sections 17-3.091, 17-3.111, 17-3.121, 17-3.131, and 17-3.141 of this Chapter.

(a) Arsenic - shall not exceed 0.05 milligrams per liter (mg)/l).

(b) BOD - shall not be increased to exceed values which would cause dissolved oxygen to be depressed below the limit established for each class and, in no case shall it be great enough to produce nuisance conditions.

(c) Chlorides - in predominantly marine waters, the chloride content shall not be increased more than ten percent (10%) above normal background chloride content. Normal daily and seasonal fluctuations in chloride levels shall be maintained.

(d) Chromium - shall not exceed 0.50 milligrams (mg)/l hexavalent or 1.0 milligrams (mg)/l total chromium in effluent discharge and shall not exceed 0.05 milligrams (mg)/l total chromium after reasonable mixing in the receiving water.

(e) Copper - shall not exceed 0.5 milligrams (mg)/l.

(f) Detergents - shall not exceed 0.5 milligrams (mg)/l.

(g) Fluorides - shall not exceed 10.0 milligrams (mg)/l as fluoride ion.

(h) Lead - shall not exceed 0.05 milligrams (mg)/l.

(i) Nutrients - The discharge of nutrients shall continue to be limited as needed to prevent violations of other standards contained in this Chapter. Man-induced nutrient enrichment (total nitrogen or total phosphorus) shall be considered degradation in relation to the provisions of Section 3.041 of this Chapter and Section 17-4.242.

(j) Oils and Greases:

1. Dissolved or emulsified oils and greases shall not exceed 5.0 milligrams (mg)/l.

2. No undissolved oil, or visible oil defined as iridescence, shall be present to cause taste or odor, or otherwise interfere the with beneficial uses of waters.

(k) pH - pH of receiving waters shall not be caused to vary more than one (1.0) unit above or below natural background pH of the water; the lower value shall not be less than six (6.0) and the upper value shall not be more than eight and one half (8.5).

(l) Phenolic compounds as listed - Chlorinated phenols including trichlorophenols; chlorinated creosols; 2-chlorophenol; 2, 4 dichlorophenol and pentachlorophenol; 2, 4-dinitrophenol; phenol - shall not exceed 1.0 micrograms per litre (ug)/l) unless higher values are shown not be be chronically toxic. Such higher values shall be approved in writing by the Secretary. Phenolic compounds other than those produced by the natural decay of plant material, named or unnamed, shall not taint the flesh of edible fish or shellfish or produce objectionable taste or odor in a drinking water supply.

(m) Radioactive Substances:

1. Combined radium 226 and 228 - shall not exceed five picocuries per liter.

2. Gross alpha particle activity including radium 226, but excluding radon and uranium - shall not exceed fifteen picocuries per liter.

(n) Specific Conductance - shall not be increased more than 100% above background levels or to a maximum level of 500 micromhos per centimeter in those surface waters in which the specific conductance of the water at the surface is less than 500 micromhos per centimeter; and shall not be increased more than 50% above background level or to a maximum level of 5,000 micromhos per centimeter for predominantly freshwaters as defined in Section 17-3.021 in which the specific conductance of the water at the surface is equal to or greater than 500 micromhos per centimeter.

(o) Substances in concentrations which injure, are chronically toxic to, or produce adverse physiological or behavioral responses in humans, animals, or plants - none shall be present.

(p) Substances in concentrations which result in the dominance of nuisance species - none shall be present.

(q) Turbidity - shall not exceed fifty (50) Jackson Units above natural background as related to a standard candle turbidimeter.

(r) Zinc - shall not exceed 1.0 milligrams (mg)/l.

Specific Authority - 403.061, 403.062, 403.087, 403.504, 403.704, 403.804, F.S.

Law Implemented - 403.021, 403.061, 403.087, 403.088, 403.141, 403.161, 403.182, 403.502, 403.702, 403.708, F.S.

History - Formerly 17-3.05(1) and (2), Amended 2/12/75, 8/26/75, 6/10/76, Revised and Renumbered -- 7/13/78.

Effective Date: See Note Following 17-3.011

17-3.11 Criteria: Class V Waters - Navigation, Utility, nd Industrial Use (Revised and Renumbered as 17-3.141)

17-3.121 CRITERIA: CLASS II WATERS - SHELLFISH PROPAGATION OR HARVESTING - SURFACE WATERS

The criteria listed below are for surface waters classified as Class II. The standards contained in Sections 17-3.051 and 17-3.061 also shall apply to all waters of this class, unless additional or more stringent levels are specified below. The following criteria are to be applied except within zones of mixing:

(1) Aluminum - shall not exceed 1.5 milligrams (mg)/l.

(2) Antimony - shall not exceed 0.2 milligrams (mg)/l.

(3) Bacteriological Quality - the median coliform MPN (Most Probable Number) of water shall not exceed seventy (70) per hundred (100) milliliters, and not more than ten per cent (10%) of the samples shall exceed a MPN of two hundred and thirty (230) per one hundred (100) milliliters. The fecal coliform bacterial level shall not exceed a median value of 14 MPN per 100 milliliters with not more than ten percent (10%) of the samples exceeding 43 MPN per 100 milliliters.

(4) Biological Integrity - the Shannon-Weaver diversity index of benthic macroinvertebrates shall not be reduced to less than 75% of established background levels as measured using organisms retained by a U.S. Standard No. 30 sieve and collected and composited from a minimum of three natural substrate samples, taken with Ponar type samplers with minimum sampling areas of 225 square centimeters.

(5) Bromine and Bromates - free (molecular) bromine shall not exceed 0.1 milligrams (mg)/l, and bromates shall not exceed 100 milligrams (mg)/l.

(6) Cadmium - shall not exceed 5.0 micrograms (ug)/l.

(7) Chlorine (total residual) - shall not exceed 0.01 milligrams (mg)/l.

(8) Copper - shall not exceed 0.015 milligrams (mg)/l.

(9) Cyanide - shall not exceed 5.0 micrograms (ug)/l.

(10) Dissolved Gases - shall not exceed 110% of the saturation value for gases at the existing atmospheric and hydrostatic pressures.

(11) Dissolved Oxygen - the concentration in all waters shall not average less than 5 milligrams (mg)/l in a 24-hour period and shall never be less than 4 milligrams (mg)/l. Normal daily and seasonal fluctuations above these levels shall be maintained.

(12) Fluorides - shall not exceed 1.5 milligrams (mg)/l.

(13) Iron - shall not exceed 0.3 milligrams (mg)/l.

(14) Manganese - shall not exceed 0.1 milligrams (mg)/l.

(15) Mercury - shall not exceed 0.1 micrograms (ug)/l.

(16) Nickel - shall not exceed 0.1 milligrams (mg)/l.

(17) Nutrients - In no case shall nutrient concentrations of a body of water be altered so as to cause an imbalance in natural populations of aquatic flora and fauna.

(18) Odor - threshold odor number not to exceed 24 at 60° C as a daily average.

(19) Pesticides and Herbicides:

(a) Aldrin plus Dieldrin - shall not exceed 0.003 micrograms (ug)/l.

(b) Chlordane - shall not exceed 0.004 micrograms (ug)/l.

(c) DDT - shall not exceed 0.001 micrograms (ug)/l.

(d) Demeton - shall not exceed 0.1 micrograms (ug)/l.

(e) Endosulfan - shall not exceed 0.001 micrograms (ug)/l.

(f) Endrin - shall not exceed 0.004 micrograms (ug)/l.

(g) Guthion - shall not exceed 0.01 micrograms (ug)/l.

(h) Heptachlor - shall not exceed 0.001 micrograms (ug)/l.

(i) Lindane - shall not exceed 0.004 micrograms (ug)/l.

(j) Malathion shall not exceed 0.1 micrograms (ug)/l.

(k) Methoxychlor - shall not exceed 0.03 micrograms (ug)/l.

(l) Mirex - shall not exceed 0.001 micrograms (ug)/l.

(m) Parathion - shall not exceed 0.04 micrograms (ug)/l.

(n) Toxaphene - shall not exceed 0.005 micrograms (ug)/l.

(20) pH - pH shall not be caused to vary more than one (1.0) unit above or below normal pH of coastal waters as defined in Section 17-3.021 and not more than two-tenths (0.2) unit above or below normal pH of open waters as defined in Section 17-3.021 and the lower value shall not be less than six and one-half (6.5) and the upper value not more than eight and one-half (8.5).

(21) Phosphorus (elemental) - shall not exceed 0.1 micrograms (ug)/l.

(22) Polychlorinated Biphenyls - shall not exceed 0.001 micrograms (ug)/l.

(23) Selenium - shall not exceed 0.025 milligrams (mg)/l.

(24) Silver - shall not exceed 0.05 micrograms (ug)/l.

(25) Transparency - the depth of the compensation point for photosynthetic activity shall not be reduced by more than 10% as compared to the natural background value.

Specific Authority - 403.061, 403.062, 403.087, 403.504, 403.704, 403.804, F.S.

Law Implemented - 403.021, 403.061, 403.087, 403.088, 403.141, 403.161, 403.182, 403.502, 403.702, 403.709, F.S.

History - Formerly 28-5.08, Formerly 17-3.08, Amended 6/10/72, 8/30/72, 1/3/73, Revised and Renumbered 7/13/78.

Effective Date: See note following 17-3.011.

17J.12 Definitions (Revised and Renumbered as 17-3.031)

17-3.121 CRITERIA: CLASS III WATERS - RECREATION - PROPAGATION AND MANAGEMENT OF FISH AND WILDLIFE - SURFACE WATERS

The criteria listed below are for surface waters classified as Class III. The standards contained in Sections 17-3.051 and 17-3.061 also apply to all waters of this classification, unless additional or more stringent criteria are specified below. The following criteria are to be applied except within zones of mixing.

(1) Alkalinity - shall not be depressed below 20 milligrams per litre (mg)/(l) as $CaCO_3$ in predominantly fresh waters.

(2) Aluminum - shall not exceed 1.5 milligrams (mg)/l in predominantly marine waters.

(3) Ammonia (un-ionized) - shall not exceed 0.02 milligrams (mg)/l in predominantly fresh waters.

(4) Antimony - shall not exceed 0.2 milligrams (mg)/l in predominantly marine waters.

(5) Bacteriological Quality - fecal coliform bacteria shall not exceed a monthly average of 200 per 100 ml of sample, nor exceed 400 per 100 ml of sample in 10 percent of the samples, nor exceed 800 per 100 ml on any one day, nor exceed a total coliform bacteria count of 1,000 per 100 ml as a monthly average, nor exceed 1,000 per 100 ml in more than 20 percent of the samples examined during any month, nor exceed 2,400 per 100 ml at any time. Monthly averages shall be expressed as geometric means based on a minimum of 10 samples taken over a 30 day period. Either MPN or MF counts may be utilized.

(6) Beryllium - in predominantly fresh waters shall not exceed 0.011 milligrams (mg)/l in waters with a hardness equal to or less than 150 (in milligrams (mg)/l of $CaCO_3$) and shall not exceed 1.10 milligrams (mg)/l in harder waters.

(7) Biological Integrity - the Shannon-Weaver diversity index of benthic macroinvertebrates shall not be reduced to less than 75 percent of established background levels as measured using organisms retained by a U.S. Standard No. 30 sieve and

in predominantly fresh waters, collected and composited from a minimum of three Hester-Dendy type artificial substrate samplers of 0.10 to 0.15 m^2 area each incubated for a period of four weeks, and in predominantly marine waters, collected and composited from a minimum of three natural substrate samples, taken with Ponar type samplers with minimum sampling area of 225 square centimeters.

(8) Bromine and Bromites - free (molecular) bromine shall not exceed 0.1 milligrams (mg)/l in predominantly marine waters, and bromates shall not exceed 100 milligrams (mg)/l in predominantly marine waters.

(9) Cadmium - shall not exceed 5.0 micrograms per litre (ug)/l in predominantly marine waters; shall not exceed 0.8 micrograms (ug)/l in predominantly fresh waters in water with a hardness (in milligrams (mg)/l of $CaCO_3$) of less than 150, and shall not exceed 1.2 micrograms (ug)/l in harder waters.

(10) Chlorine (total residual) - shall not exceed 0.01 milligrams (mg)/l.

(11) Copper - shall not exceed .015 milligrams (mg)/l in predominantly marine waters; shall not exceed .03 milligrams (mg)/l in predominantly fresh waters.

(12) Cyanide - shall not exceed 5.0 micrograms (ug)/l.

(13) Dissolved Gases - shall not exceed 110% of the saturation value for gases at the existing atmospheric and hydrostatic pressures.

(14) Dissolved Oxygen - in predominantly fresh waters, the concentration shall not be less than 5 milligrams (mg)/l. In predominantly marine waters, the concentration shall not average less than 5 milligrams (mg)/l in a 24-hour period and never less than 4 milligrams (mg)/l. Normal daily and seasonal fluctuations above these levels shall be maintained in both predominantly fresh waters and predominantly marine waters.

(15) Fluorides - shall not exceed 5.0 milligrams (mg)/l in predominantly marine waters.

(16) Iron - shall not exceed 1.0 milligrams (mg)/l in predominantly fresh waters; 0.3 milligrams (mg)/l in predominantly marine waters.

(17) Lead - shall not exceed .03 milligrams (mg)/l in predominantly fresh waters.

(18) Mercury - shall not exceed 0.1 micrograms (ug)/l in predominantly marine waters; shall not exceed 0.2 micrograms (ug)/l in predominantly fresh waters.

(19) Nickel - shall not exceed 0.1 milligrams (mg)/l.

(20) Nutrients - In no case shall nutrient concentrations of a body of water be altered so as to cause an imbalance in natural populations of aquatic flora or fauna.

(21) Pesticides and Herbicides:

(a) Aldrin plus Dieldrin - shall not exceed 0.003 micrograms (ug)/l.

(b) Chlordane - shall not exceed 0.01 micrograms (ug)/l in predominantly fresh waters and 0.004 micrograms (ug)/l in predominantly marine waters.

(c) DDT - shall not exceed 0.001 micrograms (ug)/l.

(d) Diazinon - shall not exceed 0.1 micrograms (ug)/l.

(e) Endosulfan - shall not exceed 0.003 micrograms (ug)/l in predominantly fresh waters and 0.001 micrograms (ug)/l in predominantly marine waters.

(f) Endrin - shall not exceed 0.004 micrograms (ug)/l.

(g) Guthion - shall not exceed 0.01 micrograms (ug)/l.

(h) Heptachlor - shall not exceed 0.001 micrograms (ug)/l.

(i) Lindane - shall not exceed 0.01 micrograms (ug)/l in predominantly fresh waters and 0.004 micrograms (ug)/l in predominantly marine waters.

(j) Malathion - shall not exceed 0.1 micrograms (ug)/l.

(k) Methoxychlor - shall not exceed 0.03 micrograms (ug)/l.

(l) Mirex - shall not exceed 0.001 micrograms (ug)/l.

(m) Parathion - shall not exceed 0.04 micrograms (ug)/l.

(n) Toxaphene - shall not exceed 0.005 micrograms (ug)/l.

(22) pH - pH of receiving waters shall not be caused to vary more than one (1.0) unit above or below normal pH of predominantly fresh waters and coastal waters as defined in Section 17-3.021; and not more than two tenths (0.2) units above or below normal pH of open waters as defined in Section 17-3.021; the lower value shall not be less than six (6.0) in predominantly fresh waters or less than six and one-half (6.5) in predominantly marine waters; and the upper value not more than eight and one-half (8.5).

(23) Phosphorus (elemental) - shall not exceed 0.1 micrograms (µg)/l in predominantly marine waters.

(24) Phthalate Waters shall not exceed 3.0 micrograms (µg)/l in predominantly fresh waters.

(25) Polychlorinated Biphenyls - shall not exceed 0.001 micrograms (µg)/l.

(26) Selenium - shall not exceed 0.025 milligrams (mg)/l.

(27) Silver - shall not exceed 0.07 micrograms (µg)/l in predominantly fresh waters and 0.05 micrograms (µg)/l in predominantly marine waters.

(28) Transparency - the depth of the compensation point for photosynthetic activity shall not be reduced by more than 10% compared to the natural background value.

(29) Zinc - shall not exceed .03 milligrams (mg)/l in predominantly fresh waters.

Specific Authority - 403.061, 403.062, 403.087, 403.504, 403.704, 403.804, F.S.

Law Implemented 403.021, 403.061, 403.087, 403.088, 403.141, 403.161, 403.182, 403.502, 403.702, 403.708, F.S.

History - Formerly 28-5.09, Formerly 17-3.09, Amended 6/10/72, 8/30/72, 7/3/73, Revised and Renumbered 7/13/78.

Effective Date: See note following 17-3.011.

17-3.13 Drainage Wells, Permits (Repealed)

17-3.131 CRITERIA: CLASS IV WATERS - AGRICULTURAL SUPPLIES - SURFACE WATERS

The criteria listed below are for surface waters classified as Class IV. The standards established in Sections 17-3.051 and 17-3.061 also apply to all waters of this classification, unless additional or more stringent criteria are specified below. The following criteria are to be applied except within zones of mixing.

(1) Alkalinity - shall not exceed 600 milligrams (mg)/l as $CaCO_3$.

(2) Berillium - shall not exceed 0.1 milligrams (mg)/l in waters with a hardness in milligrams (mg)/l of $CaCO_3$ of less than 150 and shall not exceed 0.5 milligrams (mg)/l in harder waters.

(3) Boron - shall not exceed 0.75 milligrams (mg)/l.

(4) Color, odor, and taste producing substances and other deleterious substances, including other chemical compounds, attributable to domestic wastes, industrial wastes, and other wastes - only such amounts as will not render the waters unsuitable for agricultural irrigation, livestock watering, industrial cooling, industrial process water supply purposes or fish survival.

(5) Cyanide - shall not exceed 5.0 micrograms (µg)/l.

(6) Dissolved Oxygen - shall not average less than 4.0 milligrams (mg)/l in a 24-hour period and shall never be depressed below 3.0 milligrams (mg)/l.

(7) Iron - shall not exceed 1.0 milligrams (mg)/l.

(8) Mercury - shall not exceed 0.2 micrograms (µg)/l.

(9) Nickel - shall not exceed 0.1 milligrams (mg)/l.

(10) pH - not more than (1.0) unit from the normal or not less than six (6.0) nor greater than 9.5.

Specific Authority - 403.061, 403.062, 403.087, 403.504, 403.704, 403.804, F.S.

Law Implemented - 403.021, 403.061, 403.087, 403.088, 403.141, 403.161, 403.182, 403.502, 403.702, 403.708, F.S.

History - Formerly 28-5.10, Formerly 17-3.10, Amended 6/10/72, 8/30/72, Revised and Renumbered 7/13/73.

Effective Date: See note following 17-3.011

17-3.16 Drainage Wells Drilling Requirements (Repealed)

17-3.161 CLASSIFIED WATERS

(1) The surface waters of the State of Florida are classified by river basins or sub-basins as Class III - Recreation - Propagation and Management of Fish and Wildlife, with only the individual exceptions to Class III listed within each basin as delineated on USGS Map, "Drainage Basins in Florida", Map Series No. 28, October 1967. Outstanding Florida Waters are listed in Section 17-3.041. All secondary and tertiary canals wholly within agricultural areas are hereby classified as Class IV, and are not listed below. Agricultural areas shall generally include lands actively used solely for the production of food and fiber which are zoned for agricultural use where county zoning is in effect. Agricultural areas exclude lands which are platted and subdivided or in a transition phase to residential use.

(2) The groundwaters of the State of Florida are classified on the basis of total dissolved solids content. Groundwaters with levels of total dissolved solids less than 10,000 mg/l are classified as Class I-B, and groundwaters with naturally-occurring levels of total dissolved solids equal to or greater than 10,000 mg/l are classified as Class V-B. These waters are not listed below.

(3) FLORIDA WATER CLASSIFICATIONS

(a) Nassau - St. Mary's Basin (No. 19)

This basin consists of U.S. Geological Survey Basins 09J - St. Mary's River Basin and coastal area and 09D - Coastal area between St. Mary's River and St. John's River and lists wholly or partially in the following counties: Nassau, Baker, Columbia, Union and Duval (consolidated city of Jacksonville). The following individual waters are exceptions to Class III:

1. Nassau County. South Amelia River - Nassau River-north Harrison Creek - Class II. Alligator Creek - Class II.

2. Nassau County and Duval County. Nassau River and Creek - Nassau Sound to Seymore Point - Class II.

3. Duval County (Consolidated City of Jacksonville). Pumpkinhill Creek - Class II. Intracoastal Waterway and tributaries - confluence of Nassau and Amelia Rivers south to Flashing Marker "71", thence eastward along Ft. George River to Ft. George Inlet and includes Garden Creek and both prongs of Simpson Creek - Class II.

(b) St. John's Basin (No. 20). This basin consists of U.S. Geological Survey Basin 09E - St. John's River basin and Sub-basins 09E1 - St. John's River above Oklawaha River, 09E2 - Oklawaha River, and 09E3 - St. John's River below Oklawaha River, and lies wholly or partially in the following counties: Duval (Consolidated City of Jacksonville), St. John's, Clay, Bradford, Alachua, Putnam, Flagler, Volusia, Marion, Levy, Lake, Sumter, Seminole, Orange, Brevard, Osceola, Polk, Indian River, Okeechobee and St. Lucie. The following individual waters are exceptions to Class III:

1. Brevard County and Indian River County. St. John's River and Tributaries - Lake Washington Dam south through and including sawgrass Lake, Lake Hellen Blazes, and Blue Cypress Lake to SR 60 in Indian River County - Class I-A.

2. Duval County. Ft. George River - Ft. George Inlet north to Nassau - St. Mary's/St. John's Basin Boundary. Class II.

(c) Suwannee Basin (No. 21). This basin consists of U.S. Geological Survey Basin 09J - Suwannee River Basin and Sub-basins, 09J1 - Suwannee River above Withlacoochee River, 09J2 - Alapaha River, 09J3 - Withlacoochee River, 09J5 - Suwannee River below Withlacoochee River, and 09J6 - Santa Fe River and lies wholly or partially in the following counties: Madison, Hamilton, Columbia, Baker, Union, Bradford, Clay, Alachua, Gilchrist, Suwannee, Lafayette, Dixie, Taylor and Levy. The following individual waters are exceptions to Class III:

1. Dixie County. Tidal Creeks within USGS Sub-basin 09J5 north of, but excluding the mouth of, the Suwannee River from Suwannee River or Gulf of Mexico to source - Class II.

2. Levy County. Tidal Creeks within USGS Sub-basin 09J5 south of, but excluding the mouth of, the Suwannee River from Suwannee River or Gulf of Mexico to source - Class II.

3. Hamilton County. Jumping Gully Creek - Unclassified.

(d) Aucilla - Ochlockonee - St. Mark's Basin (No. 22). This basin consists of U.S. Geological Survey Basins 09K - Aucilla River Basin, 11B - Coastal area between Aucilla River and Ochlockonee River, 11C - Ochlockonee River basin and coastal areas, and 11D - Coastal area between Ochlockonee River and Apalachicola River and lies wholly or partially in the following counties: Gadsden, Leon, Jefferson, Madison, Liberty, Franklin, Wakulla, Taylor, Lafayette, and Dixie. The following individual waters are exceptions to Class III.

1. Gadsden County. Quincy Creek - SR 65 to source - Class I-A. Bolman Branch - SR 270-A to source - Class I-A.

2. Franklin County. Ochlockonee Bay - Confluence of Sopchoppy and Ochlockonee Rivers to Gulf of Mexico - Class II. Alligator Harbor - East from a line from Peninsula Point north to St. James Island to mean high water - Class II. Gulf of Mexico - North of a line from Peninsula Point on Alligator Point to the northeastern tip of Dog Island and bounded on the east by Alligator Harbor and on the west by St. George Sound - Class II. St. George Sound (Portion in USGS Basin 11D) - Gulf of Mexico westerly to Apalachicola Bay - Class II. East Bay and Tributaries (Portion in USGS Basin 11D) - Apalachicola Bay to source - Class II.

3. Wakulla County. Oyster Bay, Apalachee Bay, and Tributaries - West of a line from western tip of Shell Point south to FL. 4 sec. marker and southerly to Ochlockonee Point, with the exception of Spring Creek and portion of Ring Bay west and north of a line from western-most tip of Porter Island south to Hungry Point - Class II.

4. Jefferson County and Wakulla County. Coastal waters - Mouth of Aucilla River west to Live Oak Point excluding mouths of drainage areas - Class II.

5. Taylor County. Fenholloway River - Class V-A.

6. Dixie County. Tidal Creeks and coastal waters - Horseshoe Point south to basin boundary of USGS Basin 09K - Class II. ~~Multi-County---Class-III-Special-Listing Ochlockonee-River-Wakulla-River-St.-Mark's-River-Aucilla-River Unless-background-information-available-to-the-regulatory-agency indicates-prior-existence-of-lower-values-under-unpolluted-conditions~~

(e) Withlacoochee Basin (No. 21). This basin consists of U.S. Geological Survey basins 09H - Coastal area between the Withlacoochee River Basin and Suwannee River and lies wholly or partially in the following counties: Gilchrist, Levy, Alachua, Marion, Citrus, Sumter, Hernando, Pasco, Lake and Polk. The following individual waters are exceptions to Class III:

1. Levy County. Tidal Creeks and coastal waters - South from USGS Basin boundary line 09H separating the Suwannee Basin from the Withlacoochee Basin to the Withlacoochee River excluding the Cedar Key area and the mouth of the Withlacoochee River Class II.

(f) Tampa Bay Area Basin (No. 24). This basin consists of U.S. Geological Survey Basins 10J - Coastal area between Withlacoochee River and Hillsborough River, 10H - Hillsborough River Basin and coastal area north of Alafia River, 10G - Alafia River Basin and 10F - Coastal area between Alafia River and Myakka River and lies wholly or partially in the following counties: Citrus, Hernando, Pasco, Pinellas, Hillsborough, Polk, Manatee, Sarasota, Charlotte, and Lee. The following individual waters are exceptions to Class III:

1. Citrus County. Tidal Creeks and coastal waters - Latitude 28° 54' N., south to Hernando County Line with the exception of waters which are bounded by and including the Crystal River on the north, St. Martin's River on the south, barrier islands on the west, and the mainland on the east - Class II.

2. Pinellas County. Mullet Key Area - Class II. Tampa Bay - South Pinellas County Line to Gandy Causeway - Class II. Old Tampa Bay - Gandy Causeway to Safety Harbor - Class II. Safety Harbor - To Old Tampa Bay - Class II. Mobbly Bay - Portion in Pinellas County - Class II.

3. Hillsborough County. Old Tampa Bay and Mobbly Bay - Beginning at the intersection of the north shore of SR 60 (Courtney Campbell Parkway) and Longitude 82° 35'45" west, thence due north to the line of mean high water, thence westward along the line of mean high water, including Rocky and Double Branch Creeks to SR 580 and up the upper Tampa Bay watershed canal to a line connecting the lines of mean high water on the outer sides of the canal banks, to the county line, thence southerly along the county line to SR 60, thence along the north shore of SR 60 to the point of beginning - Class II. Old Tampa Bay - All waters within Hillsborough County bounded on the north by SR 60 (Courtney Campbell Parkway), the south by Interstate 4 (Howard Franklin Bridge), the west by the county line, and the east by the line of mean high water - Class II. Tampa Bay - Beginning at Gadsden Point, thence along a line connecting Gadsden Point and the intersection of Gadsden Point Cut and Cut "A" to a point one-half nautical mile inside said intersection, thence westward along a line one-half nautical mile inside and parallel to Gadsden Point Cut, Cut "C", Cut "J", Cut "JJ", and Cut "X", to the line of mean high water, thence along the line of mean high water to the point of beginning - Class II. Tampa Bay - Beginning at the intersection of the Hillsborough County Line and the line of mean high water, thence to the rear range marker of Cut "D", thence northerly along the line of Cut "D" range to a point one-half nautical mile inside the southern boundary of Cut "C", thence along a line one-half mile inside and parallel to Cut "C", Cut "D", and Cut "E" to a point with Latitude 27°45'40" N. and Longitude 82°30'40" west, thence to a point Latitude 27°47' north and Longitude 82°27' west, thence on a true bearing of 140° to the line of mean high water, thence along the line of mean high water to the western tip of Mangrove Point, thence to the northwestern tip of Tropical Island, thence eastward along the line of mean high water to the eastern tip of Goat Island, thence due south to the line of mean high water, thence along the line of mean high water to the point of beginning - Class II. Tampa Bay - Hillsborough County portion west of the Sunshine Skyway and from the three fathom depth contour up to the line of mean high water - Class II. Hillsborough River - City of Tampa Water Treatment Plant Dam to Flint Creek - Class I-A. Cow House Creek - Hillsborough River to source - Class I-A.

4. Manatee County. Terra Ceia Bay - To Terra Ceia Point - Class II. Palma Sola Bay - Class II. Passage Key Area - Egmont Key to Anna Maria Island - Class II. Sarasota Bay - East-west line through marker "48" on Intracoastal Waterway south to Manatee County Line - Class II. Manatee River - Rye Bridge Road to Bethany Vicinity - Class I-A. Ward Lake - SR 70 to source (SR 675) - Class I-A.

5. Sarasota County. Sarasota Bay - West of Center (Intracoastal Waterway) - Class II. Lemon Bay - Forked Creek south to Charlotte County Line - Class II.

6. Charlotte County. Lemon Bay and Tributaries - N. Charlotte County Line south to Placida Harbor and bounded on the east by SR 775 - Class II. Alinger Creek---No Charlotte County Line south to SR 775---Class II. Placida Harbor - to mean high water - Class II. Gasparilla Sound - Placida Harbor to Charlotte County Line - Class II. Bull Bay - mean high water to Charlotte County Line - Class II. Turtle Bay - mean high water to Charlotte County Line - Class II. Charlotte Harbor - Portion in USGS Basin

10F south to Charlotte County Line - Class II.

7. Lee County. Charlotte Harbor - Portion in USGS Basin 10F south from N. Lee County Line - Class II.

(g) Peace Basin (No. 25). This basin consists of U.S. Geological Survey Basins 10E - Myakka River Basin, 10D - Peace River Basin and 10C - Coastal area between Peace River and Caloosahatchee River and lies wholly or partially in the following counties: Polk, Hillsborough, Manatee, Hardee, Highlands, Sarasota, DeSoto, Charlotte, Glades, and Lee. The following individual waters are exceptions to Class III:

1. Sarasota County. Big Slough Canal - South to U.S. 41 - Class I-A. Myakka River - Myakka vicinity thrbugh Upper and Lower Myakka Lakes to Manhattan Farms - Class I-A. Myakka River - S.W. North Port Charlotte Limit south to Charlotte County Line - Class II.

2. DeSoto County. Horse Creek - Vicinity Jct. SR 760 and 761 to Peace River - Class I-A.

3. DeSoto County and Charlotte County. Prairie Creek - Headwaters to Shell Creek - Class I-A.

4. Charlotte County. Myakka River - N. Charlotte County Line south to Charlotte Harbor - Class II. Charlotte Harbor - Portion in Peace Basin south to Charlotte County Line - Class II. Alligator Creek - North and south prongs from headwaters to SR 765-A - Class I-A. Shell Creek Headwaters to Ridge Harbor - Class I-A. Lemon Bay and tributaries - Placida Harbor north to Tampa Bay Area/Peace Basin Boundary, and bounded on the east by SR 775 - Class II. Port Charlotte Canal System Surface waters lying upstream of, or directly connected to, Fordham Waterway upstream of Conway Boulevard - Class I-A.

5. Lee County. Charlotte Harbor - Portion in USGS Basin 10C north to N. Lee County Line - Class II. Pine Island Sound Charlotte Harbor to San Carlos Bay - Class II. Matlacha Pass - Charlotte Harbor to San Carlos Bay - Class II. San Carlos Bay - Portion in USGS Basin 10C - Class II.

(h) Kissimmee Basin (No. 26). This basin consists of U.S. Geological Survey Sub-basin 1081 - Lake Okeechobee inflow area and lies wholly or partially in the following counties: Lake, Orange, Polk, Osceola, Highlands, Okeechobee, Glades Charlotte, Saint Lucie, and Martin. There are no individual exceptions to Class III in this basin.

(i) Florida East Coastal Basin (No. 27). This basin consists of U.S. Geological Survey Basins 09F - Coastal area between St. John's River and Turkey Creek and 10A - Turkey Creek and coastal area south to St. Lucie River and lies wholly or partially in the following counties: Duval (Consolidated City of Jacksonville), St. John's, Flagler, Volusia, Brevard, Indian River, St. Lucie, and Martin. The following individual waters are exceptions to Class III:

1. St. John's County. Tolomato River and Tributaries - From a line connecting Spanish Landing to Booth Landing south to Casa Cola Creek - Class II. Guana River - Guana Lake Dam south to Tolomato River - Class II. North River and Intracoastal Waterway - Casa Cola Creek south to Crescent Beach - Class II. Matanzas River (Intracoastal Waterway) - Crescent Beach south to Flagler County Line - Class II.

2. St. John's County and Flagler County. Pellicer Creek - Class II.

3. Flagler County. Matanzas River (Intracoastal Waterway) - N. Flagler County Line south to Fl. Marker "109" - Class II.

4. Volusia County. Indian River North - Channel Marker 57 south to Mosquito Lagoon - Class II. Mosquito Lagoon - Indian River North south to S. Volusia County Line - Class II.

5. Brevard County. Mosquito Lagoon - North Brevard County Line south to Max Hoock Creek - Class II. Indian River - N. Brevard County Line south to Florida East Coast Railroad Crossing (vicinity Jay Jay) - Class II. Indian River - Barnes Blvd. south to South Section Line of Section

29, T. 26 S., R. 37 E., Palm Shores - Class II. Indian River - Cape Malabar south to S. Brevard County Line - Class II. Trout Creek - Class II. Kid Creek - Class II. Goat Creek - Class II.

6. Indian River County. Indian River - Sebastian Inlet (N. Indian River County Line) south to Wabasso vicinity east of channel centerline - Class II. Indian River - Wabasso vicinity south to vicinity North Relief Canal - Class II.

7. St. Lucie County. Indian River - N. St. Lucie County Line south to Garfield Point - Class II. Indian River - Middle Cove vicinity south to S. St. Lucie County Line, east of Channel centerline - Class II.

8. Martin County. Indian River - N. Martin County Line south to St. Lucie Inlet, east of Channel centerline - Class II.

(j) Lower Florida Basin (No. 28). This basin consists of U.S. Geological Survey Sub-basin 1082 - Lake Okeechobee and the Everglades and lies wholly or partially in the following counties: Charlotte, Glades, Lee, Hendry, Collier, Monroe, Dade, Broward, Palm Beach, Martin, St. Lucie, and Okeechobee. The following individual waters are exceptions to Class III:

1. Lee County. Caloosahatchee River - E. Lee County Line to South Florida Water Management District Structure 79 - Class I-A. San Carlos Bay - Portion in USGS Sub-basin 1082 - Class II. Matanzas Pass - San Carlos Bay to Estero Bay - Class II. Bell Peckish Bay - Class II.

2. Collier County. Cocohatchee River - Class II. Little Hickory Bay - Class II. Wiggins Pass - Class II. Inner and Outer Clam Bay - Class II. Inner and Outer Doctors Bay - Class II. Connecting Waterways - Wiggins Pass south to Outer Doctors Bay - Class II. Naples Bay - Class II. Dollar Bay - Class II. Tidal Bays and Passes - Rookery Bay south and easterly through Ten Thousand Islands to Monroe County Line - Class II.

3. Monroe County. Monroe County Coastline - North Monroe County Line south and including Florida Bay portion within Everglades National Park - Class II.

4. Dade County. Miami River - Salinity barrier easterly 5.7 miles to Biscayne Bay - Class IV.

5. Broward County. Abandoned Rock Pit - Northeast corner of SR 87 and Prospect Field Road in the S.W. Quarter of Section 7; T. 49 S., R. 42 E. - Class I-A.

6. Palm Beach County. M- Canal L-8 to Lake Mangonia - Class I-A. Lake Mangonia - Class I-A. Clear Lake - Class I-A. Canal C-18 (freshwater portion) - Class I-A. Canal C-18 - Salinity barrier to Loxahatchee River - Class II.

7. Palm Beach County and Martin County. Loxahatchee River - Above Florida East Coast Railroad Bridge including South, Northwest, and North Forks - Class II.

8. Martin County. Great Pocket - St. Lucie River to Peck's Lake - Class II.

9. Multi County. Lake Okeechobee - Class I-A.

(k) Apalachicola Basin (No. 31). This basin consists of U.S. Geological Survey Basins 11E - Apalachicola River Basin and Sub-basins 11E2 - Chattahoochee River below Mulberry Creek, 11E7 - Apalachicola River and 11E8 - Chipola River, and lies wholly or partially in the following counties: Jackson, Gadsden, Washington, Bay, Calhoun, Liberty, Gulf, and Franklin. The following individual waters are exceptions to Class III:

1. Gadsden County. Mosquito Creek - U.S. Highway 90 north to Florida State Line - Class I-A.

2. Franklin County. East Bay - Portion in USGS Sub-basin 11E7 with exception of area encompassed within 2-mile radius from Apalachicola entrance of John Gorrie Memorial Bridge - Class II. Apalachicola Bay - Portion in USGS Sub-basin 11E7 with exception of area encompassed within 2-mile radius of John Gorrie Memorial Bridge - Class II.

~~Multi-County---Class-III-Special-Listing---Chattahoochee-River Apalachicola-Rivers-Chipola-Rivers-Unless-background-information available-to-the-regulatory-agency-indicates-prior-existence of-lower-values-under-unpolluted-conditions~~

(l) Choctawhatchee Basin (No. 32). This basin consists of U.S. Geological Survey Basins 11F - Coastal Area between Apalachicola River and Choctawhatchee River, 12A - Choctawhatchee River Basin, 12B - Coastal area between Choctawhatchee River and Yellow River and Sub-basins 12A3 - Pea River and 12A4 - Choctawhatchee River below Pea River, and lies wholly or partially in the following counties: Jackson, Calhoun, Gulf, Franklin, Holmes, Washington, Bay, Walton, Okaloosa, Santa Rosa, and Escambia. The following individual waters are exceptions to Class III:

1. Jackson County, Washinton County, and Bay County. Econfina Creek - Deer Point Impoundment to source - Class I-A.

2. Gulf County. Indian Lagoon - West of Indian Pass and St. Vincent Sound - Class II. St. Joseph Bay - South and west of a line from St. Joseph Point to vicinity Port St. Joe - Class II.

3. Franklin County. St. George Sound (Portion of USGS Basin 11F) - East Pass to Apalachicola Bay - Class II. Apalachicola Bay - Portion in USGS Basin 11F with exception of area encompassed within 2-mile radius from Apalachicola entrance of John Gorrie Memorial Bridge - Class II. St. Vincent Sound - Apalachicola Bay to Indian Pass - Class II.

4. Bay County. East Bay and Tributaries - East of U.S. Highway 98 to, but excluding, Watappo Creek - Class II. North Bay and Tributaries - North of U.S. Highway 98 to Deer Point Dam excluding Alligator and Fanning Bayous - Class II. West Bay and Tributaries - West of North Bay (line from West Bay Point on the north to Shell Point on the south) except West Bay Creek (northwest of Channel Marker 27C off Goose Point), Crooked Creek (north of a line from Crooked Creek Point to Doyle Point), and Burnt Mill Creek (north of a line from Craze Point to Cedar Point) - Class II. Deer Point Impoundment - Dam to source - Class I-A. Bayou George and Creek - Impoundment to source - Class I-A. Bear Creek - Impoundment to source - Class I-A. Big Cedar Creek - Impoundment to source Class I-A.

5. Walton County and Okaloosa County. Choctawhatchee Bay and Tributaries - Eastward from a line from White Point southwesterly through Fl. Light Marker "2" of the Intracoastal Waterway, and south of a line from Alaqua Point to Wheeler Point, to the eastern sources - Class II.

6. Okaloosa County. Rocky Bayou - Choctawhatchee Bay to Rocky Creek - Class II. Santa Rosa Sound - Okaloosa/Santa Rosa County line east to Manatee Point - Class II.

7. Okaloosa County, Santa Rosa County, and Escambia County. Santa Rosa Sound - From a line connecting Gulf Breeze approach to Pensacola Beach, Bascule Bridge, and Sharp Point east to north-south line through Manatee Point with exception of the Navarre Beach area from Channel Marker "109" to Navarre Bridge - Class II.

8. Santa Rosa County. Blackwater Bay (Portion in USGS Basin 12B) - From a line connecting Robinson's Point to Broad River south to East Bay (line due west from Escribano Point) - Class II. East Bay and Tributaries (Portion in USGS Basin 12B) - Blackwater Bay (line due west from Escribano Point) southerly to Pensacola Bay (line from Garcon Point on the North to Redfish Point on the South) - Class II.

~~Holmes County---Class III Special Listing Choctawhatchee River---Unless background information available to the regulatory agency indicates prior existence of lower values under unpolluted conditions.~~

(m) Perdido-Escambia Basin (No. 33). This basin consists of U.S. Geological Survey Basins 12C - Yellow River Basin, 12D - Blackwater River Basin and coastal area, 12E - Escambia River Basin and coastal area, and Sub-basins 12E1 - Conecuh River and 12E4 - Escambia River and lies wholly or partially in the following counties: Walton, Okaloosa, Santa Rosa, and Escambia. The following individual waters are exceptions to Class III:

1. Santa Rosa County. Blackwater Bay

(Portion in USGS Basins 12C and 12D) - From a line connecting Robinson's Point to Broad River south to East Bay (line due west from Escribano Point) - Class II. East Bay (Portion in USGS Basin 12D) - Blackwater Bay (line due west from Escribano Point) southerly to Pensacola Bay (line from Garcon Point on the north to Redfish Point on the South) - Class II.

2. Santa Rosa County and Escambia County.

Escambia Bay - Louisville and Nashville Railroad Trestle south to Pensacola Bay (Line from Emanuel Point east northeasterly to Garcon Point) - Class II. Pensacola Bay East of a line connecting Emanuel Point on the north to the south end of the Pensacola Bay Bridge (U.S. Highway 98) - Class II.

~~Main-County---Class-III-Special-Waters~~

~~Shoal-River-Yellow-River-Blackwater-River-Perdido-River~~

~~Unless-background-information-available-to-the-regulatory~~

~~agency-indicates-prior-existence-of-lower-values-under-unpolluted~~

~~conditions.~~

Santa Rosa Sound - From a line connecting Gulf Breeze approach to Pensacola Beach, Escambia Bridge, and Sharp Point east to Santa Rosa/Okaloosa County line with exception of the Navarre Beach area from Channel Marker "109" to Navarre Beach - Class II.

Specific Authority - 403.061, 403.062, 403.087, 403.504, 403.704, 403.804, F.S.

Law Implemented - 403.021, 403.061, 403.087, 403.088, 403.141, 403.161, 403.182, 403.502, 403.702, 403.708, F.S.

History - Adopted 1968, Amended 3/4/71, 7/13/78

Effective Date: As to Amendments see note following 17-3.011.

17-3.17 Drainage Well Permit Revocation and Modification (Repealed)

17-3.18 Test Wells and Borings (repealed)

17-3.19 Abandoned Wells (repealed)

17-3.20 Pollution Surveys (revised and renumbered as 17-4.247)

17-3.21 Classified Waters (revised and renumbered as 17-3.161)

17-3.22 Application Forms (No Change)

State of Georgia Marine Water Quality Standards

Reference:

Water Use Classifications,

Trout Stream Designations and

Water Quality Standards for the Surface

Waters of Georgia

July, 1980

Georgia Dept. of Natural Resources

Environmental Protection Division

270 Washington Street, S.W.

Atlanta, GA 30334

Part I

Water-Use Classifications

by River Basin for the

Surface Waters of the State of Georgia

Stream Categories (Water-Use Classifications)

Streams and stream reaches not listed below for specific water-use classification will fit into the following categorical classifications:

a) All stream reaches immediately downstream from point wastewater sources will be evaluated on a case-by-case basis as NPDES permits are issued for those sources. If it is determined, based on information from the U.S. Geological Survey, that a stream would be intermittent, ephemeral, or a combination thereof if the flow were not sustained by treated wastewaters, such streams are classified as fishing and will be regulated under mixing zone requirements, with mixing zone length and/or duration to be set on a case-by-case basis.

b) Streams and stream reaches not specifically classified below and not covered by a above are classified as fishing.

SAVANNAH RIVER BASIN		CLASSIFICATION
Savannah River	Fort Pulaski (Mile 0) to Open Sea and all littoral waters of Tybee Island	Recreation
OGEECHEE RIVER BASIN		**CLASSIFICATION**
Ogeechee River	U.S. Hwy. 17 Bridge to Open Sea and littoral waters of Skidaway, Ossabaw, Sapelo, and St. Catherines Islands	Recreation
Little Ogeechee River	South End of White Bluff Road near Carmelite Monastery to Open Sea and littoral waters of Skidaway and Ossabaw Islands	Recreation

ALTAMAHA RIVER BASIN		CLASSIFICATION
	All littoral waters on the ocean side of St. Simons, Sea, and Sapelo Islands	Recreation

SATILLA RIVER BASIN		CLASSIFICATION
	All littoral waters on ocean side of Cumberland and Jekyll Islands	Recreation

ST. MARYS RIVER BASIN		CLASSIFICATION
North River	Headwaters to confluence with St. Marys River	Industrial
	All littoral waters on ocean side of Cumberland Island	Recreation

391-3-6-.03 Water Use Classifications and Water Quality Standards.*

(1) **Purpose.** The establishment of water quality standards.

(2) **Water Quality Enhancement:**

(a) The purposes and intent of the State in establishing Water Quality Standards are to provide enhancement of water quality and prevention of pollution; to protect the public health or welfare in accordance with the public interest for drinking water supplies, conservation of fish, game and other beneficial aquatic life, and agricultural, industrial, recreational, and other beneficial uses.

(b) Those waters in the State whose existing quality is better than the minimum levels established in standards on the date standards become effective will be maintained at high quality; with the State having the power to authorize new developments, when

*Applicable to Intrastate and Interstate Waters of Georgia

it has been affirmatively demonstrated to the State that a change is justifiable to provide necessary social or economic development; and provided further that the level of treatment required is the highest and best practicable under existing technology to protect existing beneficial water uses.

(c) In applying these policies and requirements, the State of Georgia will recognize and protect the interest of the Federal Government in interstate (including coastal and estuarine) waters. Toward this end the State will consult and cooperate with the Environmental Protection Agency on all matters affecting the Federal interest.

(3) **Definitions.** All terms used in this Paragraph shall be interpreted in accordance with definitions as set forth in the Act and as otherwise herein defined:

(b) "Shellfish" refers to clams, oysters, scallops, mussels, and other mollusks.

(d) "Coastal waters" are those littoral recreational waters on the ocean side of the Georgia coast.

(5) **General Criteria for All Waters.** The following criteria are deemed to be necessary and applicable to all waters of the State:

(a) All waters 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.

(b) All waters shall be free from oil, scum and floating debris associated with municipal or domestic sewage, industrial waste or other discharges in amounts sufficient to be unsightly or to interfere with legitimate water uses.

(c) All waters shall be free from material related to municipal, industrial or other discharges which produce turbidity, color, odor or other objectionable conditions which interfere with legitimate water uses.

(d) All waters shall be free from toxic, corrosive, acidic and caustic substances discharged from municipalities, industries or other sources in amounts, concentrations or combinations which are harmful to humans, animals or aquatic life.

(e) Applicable State and Federal requirements and regulations for the discharge of radioactive substances shall be met at all times.

(f) No man-made physical or other alteration of stream beds that may violate established water quality standards, or reduce the waste assimilative capacity of the streams, will be permitted without the expressed approval of the Environmental Protection Division.

(6) Specific Criteria for Classified Water Usage. The following criteria are deemed necessary and shall be required for the specific water usage as shown:

(b) Recreation:

1. General recreational activities such as water skiing, boating, and swimming, or for any other use requiring water of a lower quality. These criteria are not to be interpreted as condoning water contact sports in proximity to sewage or industrial waste discharges regardless of treatment requirements:

(i) Bacteria: Fecal coliform not to exceed a geometric mean of:

(I) Coastal Waters - 100 per 100 ml

(II) All other recreational waters - 200 per 100 ml

(III) Should water quality and sanitary studies show natural fecal coliform levels exceed 200/100 ml (geometric mean) occasionally in high quality recreational waters, then the allowable geometric mean fecal coliform level shall not exceed 300 per 100 ml in lakes and reservoirs and 500 per 100 ml in free flowing fresh water streams.

I. The geometric mean will be used as the method of criteria expression. This technique will be applied to no less than four samples collected from a given sampling site over a 30-day period at intervals not less than 24 hours.

(ii) Dissolved Oxygen: A daily average of 6.0 mg/1 and no less than 5.0 mg/1 at all times for waters designated as trout streams by the State Game and Fish Division. A daily average of 5.0 mg/1 and no less than 4.0 mg/1 at all times for waters supporting warm water species of fish.

(iii) pH: Within the range of 6.0 - 8.5.

(iv) Toxic Wastes, Other Deleterious Materials: None in concentrations that would harm man, fish and game or other beneficial aquatic life.

(v) Temperature: Not to exceed 90°F. At no time is the temperature of the receiving waters to be increased more than 5°F above intake temperature except that in estuarine waters the increase will not be more than 1.5°F. In streams designated as trout or smallmouth bass waters by the State Game and Fish Division, there shall be no elevation or depression of natural stream temperatures.

(c) Fishing, Propagation of Fish, Shellfish, Game and Other Aquatic Life; or for any other use requiring water of a lower quality:

1. Dissolved Oxygen: A daily average of 6.0 mg 1 and no less than 5.0 mg 1 at all times for waters designated as trout streams by the State Game and Fish Division. A daily average of 5.0 mg/1 and no less than 4.0 mg/1 at all times for waters supporting warm water species of fish.

2. pH: Within the range of 6.0 - 8.5.

3. Bacteria: Fecal coliform not to exceed a geometric mean of 1,000 per 100 ml based on at least four samples taken over a 30-day period and not exceed a maximum of 4,000 per 100 ml.

4. Bacteria: (Applicable only to waters designated as approved shellfish harvesting waters by the appropriate State agencies) The requirements will be consistent with those established by the State and Federal agencies responsible for the National Shellfish Sanitation Program.

5. Temperature: Not to exceed 90° F. At no time is the temperature of the receiving waters to be increased more than 5 F above intake temperature except that in estuarine waters the increase will not be more than 1.5 F. In streams designated as trout or small-mouth bass waters by the State Game and Fish Division, there shall be no elevation or depression of natural stream temperatures.

6. Toxic Wastes, Other Deleterious Materials: None in concentrations that would harm man, fish and game or other beneficial aquatic life.

STATE OF HAWAII MARINE WATER QUALITY STANDARDS

Hawaii Water Quality Standards
Department of Health
Office of Environmental Health
550 Halekauwila St.
Honolulu, Hawaii

PUBLIC HEALTH REGULATIONS

DEPARTMENT OF HEALTH

STATE OF HAWAII

Chapter 37-A

WATER QUALITY STANDARDS

Under and by virtue of the provisions of Chapter 342, Hawaii Revised Statutes, Chapter 37-A of the Public Health Regulations, Department of Health, State of Hawaii, is hereby amended to read as follows:

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Section

1. Authority, Purpose and Definitions
2. Classification of State Waters
3. Classification of Water Uses
4. Basic Water Quality Criteria Applicable to All Waters
5. Uses and Specific Criteria Applicable to Inland Waters
6. Uses and Specific Criteria Applicable to Marine Waters
7. Uses and Specific Criteria Applicable to Marine Bottom Types
8. Specific Criteria for Recreational Areas
9. Zones of Mixing
10. Water Quality Analyses
11. Revision
12. Severability

1. AUTHORITY, PURPOSE AND DEFINITIONS

1.1 **Authority** Under and by virtue of the provisions of Chapter 342, Hawaii Revised Statutes, and the Federal Water Pollution Control Act Amendments of 1972, P.L. 92-500, and all other applicable laws, Chapter 37-A of the Public Health Regulations, Department of Health, State of Hawaii, is amended to read as follows.

1.2 **Purpose** The provisions of this Chapter establish standards for water quality for all State waters in order to protect their use and value for public water supplies, propagation of fish and wildlife, recreational purposes, and taking into consideration their use and value for navigation. Excluded from these regulations are the following: groundwater; and ditches, flumes, ponds, and reservoirs required as part of a pollution control system or which are used solely for irrigation waters.

1.3 **Basic Definitions**

(A) "Ambient conditions" means the existing conditions in surrounding waters not influenced by man.

(B) "Brackish waters" means waters with dissolved inorganic ions (salinity) greater than 500 ppm (parts per million), but less than 30,000 ppm.

(C) "Fresh waters" means all waters with dissolved inorganic ions of less than 500 ppm.

(D) "Saline waters" means waters with dissolved inorganic ions greater than 30,000 ppm.

(E) "State waters" means all waters, fresh, brackish, or salt, around and within the State of Hawaii which includes all the islands of the Hawaiian Archipelago together with their appurtenant reefs and waters except the Midway Islands.

(F) "Best degree of treatment or control" means that treatment or control which is required by applicable statutes and regulations of the State of Hawaii and the Federal Water Pollution Control Act, as amended, or which is otherwise specified by the Director considering technology or management practices currently available in relation to the public interest.

(Additional definitions are contained in subsequent sections of this Chapter.)

2. CLASSIFICATION OF STATE WATERS

2.1 The provisions of this Chapter shall apply to all state waters excluding the following: groundwater; and ditches, flumes, ponds, and reservoirs required as part of a pollution control system or which are used solely for irrigation water. State waters covered by this chapter are classified as either inland waters or marine waters.

2.2 **Inland Waters**

(A) All inland waters are either fresh waters, brackish waters, or saline waters.

(B) All inland fresh waters are classified as follows, based on their physical characteristics, ecological systems, and other natural criteria:

(1) Streams (perennial or intermittent);

(2) Springs and seeps, natural lakes, and reservoirs;

(3) Elevated wetlands;

(4) Low wetlands.

(C) All inland waters which are brackish waters or saline waters are classified as follows, based on their physical characteristics, ecological systems, and other natural criteria:

(1) Coastal wetlands;

(2) Estuaries;

(3) Anchialine pools.

2.3 **Marine Waters**

(A) All marine waters are either embayments, open coastal, or oceanic waters.

(B) All marine waters which are embayments or open coastal waters are also classified according to the following bottom subtypes:
(1) Sand beaches;
(2) Lava rock shorelines and solution benches;
(3) Marine pools and protected coves;
(4) Artificial basins;
(5) Reef flats and reef communities;
(6) Soft bottom communities.

3. CLASSIFICATION OF WATER USES

3.1 The following use categories classify inland and marine waters for purposes of applying the standards set forth in this Chapter and for the selection or definition of appropriate quality parameters and uses to be protected in these waters.

3.2 **Inland Waters**

(A) CLASS 1
(1) General - It is the objective of this class that these waters remain in their natural state as nearly as possible with an absolute minimum of pollution from any human-caused source. To the extent possible, the wilderness character of such areas shall be protected. Waste discharge into these waters is prohibited.
(2) CLASS 1.a - The uses to be protected in this class of waters are scientific and educational purposes, protection of breeding stock and baseline references from which human-caused changes can be measured, compatible recreation, aesthetic enjoyment, and other non-degrading uses which are compatible with the protection of the ecosystems associated with waters of this class.
(3) CLASS 1.b - The uses to be protected in this class of waters are for domestic water supplies, food processing, the support and propagation of aquatic life, compatible recreation, and aesthetic enjoyment. Public access to waters in this class may be restricted to protect water quality.

(B) CLASS 2 - It is the objective of this class of waters that their use for recreational purposes, propagation of fish and other aquatic life, and agricultural and industrial water supply be protected.

The uses to be protected in this class of waters are all uses compatible with the protection and propagation of fish, shellfish, and wildlife, and with recreation in and on these waters. Such waters shall not act as receiving waters for any discharge which has not received the best degree of treatment or control compatible with the criteria established for this class. No new industrial or sewage discharges will be permitted within estuaries.

3.3 **Marine Waters**

(A) CLASS AA - It is the objective of this class that these waters remain in their natural pristine state as nearly as possible with an absolute minimum of pollution or alteration of water quality from any human-

caused source or actions. To the extent practicable, the wilderness character of such areas shall be protected. No zones of mixing shall be permitted in this class within a defined reef area, in waters of a depth less than ten fathoms or in waters up to a distance of 1,000 feet off shore if there is no defined reef area and if the depth is greater than ten fathoms.

The uses to be protected in this class of waters are oceanographic research, the support and propagation of shellfish and other marine life, conservation of coral reefs and wilderness areas, compatible recreation, and aesthetic enjoyment.

The classification of any water area as Class AA shall not preclude other uses of such waters compatible with these objectives and in conformance with the criteria applicable to them.

The classification of any water area as Class AA shall not preclude other uses of such waters compatible with these objectives and in conformance with the criteria applicable to them.

(B) CLASS A - It is the objective of this class of waters that their use for recreational purposes and aesthetic enjoyment be protected.

Any other use shall be permitted as long as it is compatible with the protection and propagation of fish, shellfish, and wildlife, and with recreation in and on these waters. Such waters shall not act as receiving waters for any discharge which has not received the best degree of treatment or control compatible with the criteria established for this class. No new industrial or sewage discharges will be permitted within embayments.

3.4 **Marine Bottom Ecosystems**

(A) CLASS I - It is the objective of this class of marine bottom ecosystems that they remain as nearly as possible in their natural pristine state with an absolute minimum of pollution from any human-induced source.

Uses of marine bottom ecosystems in this class are passive human uses without intervention or alteration, allowing the perpetuation and preservation of the marine bottoms in a most natural state, such as for nonconsumptive scientific research (demonstration, observation or monitoring only), nonconsumptive education, aesthetic enjoyment, passive activities, and preservation.

(B) CLASS II - It is the objective of this class of marine bottom ecosystems that their use for protection and/or propagation of fish, shellfish, and wildlife, and for recreational purposes not be limited in any way.

The uses to be protected in this class of marine bottom ecosystems are all uses compatible with the protection and propagation of fish, shellfish, and wildlife, and with recreation. Any action which may permanently or completely modify, alter, consume, or degrade marine bottoms, such as structural flood control (channelization, dams); landfill and reclamation; navigational structures (harbors, ramps); structural shore protection (seawalls, revetments); and wastewater effluent outfall structures may be allowed upon securing approval in writing

from the Director of Health, considering the environmental impact and the public interest pursuant to HRS 342-6, 342-32 and -33 and in accordance with the applicable provisions of the Administrative Procedures Act, Chapter 91, H.R.S.

4. BASIC WATER QUALITY CRITERIA APPLICABLE TO ALL WATERS

All waters shall be free of substances attributable to domestic, industrial, or other controllable sources of pollutants and subject to verification by monitoring as may be prescribed by the Director of Health, as follows:

(A) Materials that will settle to form objectionable sludge or bottom deposits.

(B) Floating debris, oil, grease, scum, or other floating materials.

(C) Substances in amounts sufficient to produce taste or odor in the water or detectable off flavor in the flesh of fish, or in amounts sufficient to produce objectionable color, turbidity, or other conditions in the receiving waters.

(D) High temperatures; biocides; pathogenic organisms; toxic, radioactive, corrosive, or other deleterious substances at levels or in combinations sufficient to be toxic or harmful to human, animal, plant, or aquatic life, or in amounts sufficient to interfere with any beneficial use of the water. To identify the actual or potential effects of a discharge, as a minimum, a phytoplankton bioassay test or a 96-hour bioassay or both shall be required. The methods and test parameters shall be specified by the Director according to established procedures in Section 10 of this Chapter, provided that modifications may be prescribed to meet conditions specific to the disposal situation. Survival of test organisms shall not be less than that in controls which utilize appropriate experimental water. Field monitoring may be further required to insure conformance with this standard as long as a discharge or a suspected discharge is occurring.

(E) Substances or conditions or combinations thereof in concentrations which produce undesirable aquatic life.

(F) Soil particles resulting from erosion on land involved in earthwork, such as the construction of public works; highways; subdivisions; recreational, commercial, or industrial developments; or the cultivation and management of agricultural lands. This standard shall be deemed met upon a showing that the land on which the erosion occurred or is occurring is being managed in accordance with soil conservation practices acceptable to the applicable soil and water conservation district and the Director of Health, and that a comprehensive conservation program is being actively pursued, or that the discharge has received the best degree of treatment or control, and that the severity of impact of the residual soil reaching the receiving body of water is deemed to be acceptable.

5. USES AND SPECIFIC CRITERIA APPLICABLE TO INLAND WATERS

5.1 Definitions

(A) "Streams" means seasonal or continuous water flowing in all or part of natural channels as a result of either surface water runoff or ground water influx, or both. Streams may be either "perennial" or "intermittent."

(1) "Perennial streams" means fresh waters flowing down altitudinal gradients in definite natural channels, portions of which may be modified. In such streams, flowing water is present all year though volume may vary. Such streams may be **continuous**, with water flowing to the ocean all year, or **interrupted**, having flow and/or ecologically significant bodies of water only in parts of the channel, with seasonal discharge to the ocean.

(2) "Intermittent streams" means fresh waters flowing down altitudinal gradients in definite natural channels only during part of the year.

(B) "Deep" means greater than 6.6 feet or 2 meters.

(C) "Shallow means less than 6.6 feet or 2 meters.

(D) "Springs and seeps" means small, perennial, relatively constant fresh water flows not in distinct channels, such as wet films or trickles over rock surfaces, in which the water emanates from elevated aquifers. Springs and seeps may be either **stream associated**, occurring in deeply cut valleys and contributing to stream flow; or **coastal**, occurring on coastal cliffs and usually flowing into the ocean.

(E) "Natural lakes" means deep standing water that is always fresh, in well-defined natural basins.

F) "Reservoirs" means deep standing water that is always fresh, in well-defined artificially created impoundments.

(G) "Elevated wetlands" means shallow standing water that is always fresh, in more or less indistinct basins such as natural bogs, ponds, and marshes. Such wetlands are found in undisturbed areas, mainly remote uplands and forest reserves.

(H) "Low wetlands" means shallow standing water that is always fresh, ponds or marshes. Such wetlands are found in lowland areas near coasts or in valley termini modified by man. Their origin may be natural or man made.

(I) "Coastal wetlands" means natural or man-made ponds and marshes having variable salinity, basin limits, and permanence. Such wetlands usually adjoin the coastline but are not surface connected to the ocean except in rare circumstances. They are usually without tidal fluctuations. Most are characterized by introduced biota, especially fishes.

(J) "Anchialine pools" means standing waters that vary in salinity and basin limits and are not surface connected to the ocean except in rare circumstances. Such pools are natural brackish water exposures which are near coastlines in recent lavas (rarely, in fossil reefs) and which have tidal fluctuations. They are usually small, shallow pools of low

salinity (1,000 to 10,000 ppm) with distinctive biota but usually no fishes.

(K) "Estuaries" means deep characteristically brackish coastal waters in well-defined basins with a continuous or seasonal surface connection to the ocean that allows entry of marine fauna. Estuaries may be either **natural**, occurring mainly at stream or river mouths; or **developed**, artificial or strongly modified from the natural state, such as dredged and revetted stream termini.

5.2 **Water Areas to be Protected**

(A) CLASS 1.a

(1) All inland waters in preserves, reserves, sanctuaries, and refuges established by the Department of Land and Natural Resources under Natural Area Reserves, Chapter 195D HRS as amended, or similar reserves for the protection of aquatic life established under Chapter 195D HRS as amended.

(2) All inland waters in National and State parks.

(3) All inland waters in State or Federal fish and wildlife refuges.

(4) All inland waters which have been officially identified as a unique or critical habitat for threatened or endangered species.

(5) Waimanu Estuarine Sanctuary (Hawaii); Kilauea and Lumahai estuaries (Kauai).

(B) CLASS 1.b - All inland waters in protective sub-zones designated under Regulation 4 of the State Board of Land and Natural Resources.

(C) CLASS 2 - All inland water areas not otherwise classified. Waipio (Hawaii) and Pearl Harbor estuaries are included in this class.

5.3 **Criteria**

(A) Criteria for springs and seeps, natural lakes, reservoirs, low wetlands, coastal wetlands, and anchialine pools. Only the basic criteria set forth in Section 4 apply to springs and seeps, natural lakes, reservoirs, low wetlands, coastal wetlands, and anchialine pools, as more specific criteria have not yet been developed.

(B) Specific Criteria for Streams

(1) Water Column Criteria for Streams

Parameter	Geometric mean not to exceed the given value	Not to exceed the given value more than 10% of the time	Not to exceed the given value
Total Kjeldahl Nitrogen (ug N/1)	250.0* 180.0**	520.0* 380.0**	800.0* 600.0**
Nitrate + Nitrite Nitrogen (ug [NO_3 + NO_2] - N/1)	70.0* 30.0**	180.0* 90.0**	300.0* 170.0**
Total Phosphorus (ug P/1)	50.0* 30.0**	100.0* 60.0**	150.0* 80.0**

Total Non-filtrable Residue (ug/1)	20,000.0* 10,000.0**	50,000.0* 30,000.0**	80,000.0* 55,000.0**
Turbidity (Nephelometric Turbidity Units)	5.0* 2.0**	15.0* 5.5**	25.0* 10.0**

*Wet Season - November 1 through April 30.
**Dry Season - May 1 through October 31.

pH Units shall not deviate more than 0.5 units from ambient conditions and shall not be lower than 5.5 nor higher than 8.0.

Dissolved Oxygen - Not less than 80% saturation.

Temperature - Shall not vary more than 1°C from ambient conditions.

Specific Conductance - Not more than 300 micromhos/cm.

(2) Bottom Criteria for Streams
  (a) Episodic deposits of flood-borne soil sediment shall not occur in quantities exceeding an equivalent thickness of 5 mm. (0.20 inch) over hard bottoms 24 hours after a heavy rainstorm.
  (b) Episodic deposits of flood-borne soil sediment shall not occur in quantities exceeding an equivalent thickness of 10 mm. (0.40 inch) over soft bottoms 24 hours after a heavy rainstorm.
  (c) In soft bottom material in pool sections of streams, oxidation-reduction potential (E_h) in the top 10 cm. (4 inches) shall not be less than +100 mv.
  (d) In soft bottom material in pool sections of streams, no more than 50% of the grain size distribution of sediment shall be smaller than 0.125 mm. (0.005 inch) in diameter.
  (e) The Director of Health shall prescribe the appropriate parameters, measures, and criteria for monitoring stream bottom biological communities including their habitat, which may be affected by proposed actions. Permanent benchmark stations may be required where necessary for monitoring purposes. The water quality criteria for this subsection shall be deemed to be met if time series surveys of benchmark stations indicate no relative changes in the relevant biological communities, as noted by biological community indicators or by indicator organisms which may be applicable to the specific site.

(C) Specific Criteria for Elevated Wetlands: pH units shall not deviate more than 0.5 units from ambient conditions and shall not be lower than 4.5 nor higher than 7.0.

(D) Specific Criteria for Estuaries
  (1) Applicable to All Estuaries Except Pearl Harbor

Parameter	Geometric mean not to exceed the given value	Not to exceed the given value more than 10% of the time	Not to exceed the given value
Total Kjeldahl Nitrogen (ug N/1)	200.00	350.00	500.00
Ammonia Nitrogen (ug NH_4 - N/1)	6.00	10.00	20.00
Nitrate + Nitrite Nitrogen (ug [NO_3 + NO_2] - N/1)	8.00	25.00	35.00
Orthophosphate Phosphorus (ug PO_4 - P/1)	10.00	30.00	40.00
Total Phosphorus (ug P/1)	25.00	50.00	75.00
Light Extinction *Coefficient (k units)*	0.40	0.80	1.00
Chlorophyll *a* (ug/1)	2.00	5.00	10.00
Turbidity (Nephelometric Turbidity Units)	1.50	3.00	5.00
Non-filtrable Residue (ug/1)	35,000.00	45,000.00	50,000.00

pH units shall not deviate more than 0.5 units from ambient conditions and shall not be lower than 7.0 nor higher than 8.6.

Dissolved Oxygen - Not less than 75% saturation.

Temperature - Shall not vary more than 1°C from ambient conditions.

Salinity (ppm) - Shall not vary more than 10% from ambient conditions.

Oxidation - Reduction Potential (E_H) in the uppermost 10 cm. (4 inches) of sediment shall not be less than -100 mv.

(2) Applicable Only to Pearl Harbor Estuary

Parameter	Geometric mean not to exceed the given value	Not to exceed the given value more than 10% of the time	Not to exceed the given value
Total Kjeldahl Nitrogen (ug N/1)	300.00	550.00	750.00
Ammonia Nitrogen (ug NH_4 - N/1)	10.00	20.00	30.00

Nitrate + Nitrite Nitrogen (ug [NO_3 + NO_2] - N/1)	15.00	40.00	70.00
Orthophosphate Phosphorus (ug PO_4 - P/1)	20.00	48.00	90.00
Total Phosphorus (ug P/1)	60.00	130.00	200.00
Light Extinction Coefficient (k units)	0.80	1.60	2.50
Chlorophyll *a* (ug/1)	3.50	10.00	20.00
Turbidity (Nephelometric Turbidity Units)	4.00	8.00	15.00
Non-filtrable Residue (ug/1)	50,000.00	75,000.00	100,000.00

pH Units shall not deviate more than 0.5 units from ambient conditions and shall not be lower than 6.8 nor higher than 8.8.

Dissolved Oxygen - Not less than 60% saturation.

Temperature - Shall not vary more than 1°C from ambient conditions.

Salinity (ppm) - Shall not vary more than 10% from ambient conditions.

Oxidation - Reduction potential (E_H) in the uppermost 10 cm. (4 inches) of sediment shall not be less than -100 mv.

6. USES AND SPECIFIC CRITERIA APPLICABLE TO MARINE WATERS

6.1 Embayments

(A) Definition - "Embayments" means land confined and physically protected marine waters with restricted openings to open coastal waters defined by the ratio of total bay volume to the cross-sectional entrance area of 700 to 1 or greater.

(B) Water Areas to be Protected

(1) CLASS AA:

(a) Hawaii	Oahu	Kauai
Puako Bay	Waialua Bay	Hanalei Bay
Waiulua Bay	Kahana Bay	
Anaehoomalu Bay	Kaneohe Bay	
Kiholo Bay	Hanauma Bay	
Kailua Harbor		
Kealakekua Bay		
Honaunau Bay		

(b) All embayments in preserves, reserves, sanctuaries, and refuges established by the Department of Land and Natural Resources under Natural Area Reserves, Chapter 195 HRS as amended, or Marine Life Conservation Districts, Chapter 190 HRS as amended, or similar reserves for the protection of marine life established under Chapter 190 HRS as amended.
(c) All waters in State or Federal fish and wildlife refuges and marine sanctuaries.
(d) All waters which have been officially identified as a unique or critical habitat for threatened or endangered species.

(2) CLASS A

(a)

Hawaii	**Maui**	**Lanai**
Hilo Bay (inside breakwater)	Kahului Bay	Manele Boat Harbor
Kawaihae Harbor	Lahaina Boat Harbor	Kaumalapau Harbor
Honokohau Boat Harbor	Maalaea Boat Harbor	
Kawaihae Boat Harbor		
Keahou Bay		

Molokai	**Oahu**	**Kauai**
Haleolono Harbor	Kaiaka Bay	Hanamaulu Bay
Kaunakakai Harbor	Paiko to Kokohead	Nawiliwili Bay
Kaunakakai Boat Harbor	Ala Wai Boat Harbor	Kukuiula Bay
	Kewalo Basin	Wahiawa Bay
	Honolulu Harbor	Hanapepe Bay (inside breakwater)
	Keehi Lagoon	Kikiaolo Boat Harbor
	Barbers Point Harbor	Port Allen Boat Harbor
	Pokai Bay	
	Heeia-Kea Boat Harbor	
	Waianae Boat Harbor	
	Haleiwa Boat Harbor	

(C) Specific Criteria for Embayments
(Note that criteria for embayments differ based on fresh water inflow.)

Parameter	Geometric mean not to exceed the given value	Not to exceed the given value more than 10% of the time	Not to exceed the given value
Total Kjeldahl Nitrogen (ug N/1)	200.00* 150.00**	350.00* 250.00**	500.00* 350.00**
Ammonia Nitrogen (ug NH_4 - N/1)	6.00* 3.50**	13.00* 8.50**	20.00* 15.00**
Nitrate + Nitrite Nitrogen (ug [NO_3 + NO_2] - N/1)	8.00* 5.00**	20.00* 14.00**	35.00* 25.00**
Orthophosphate Phosphorus (ug PO_4 - P/1)	10.00* 7.00**	25.00* 12.00**	40.00* 17.00**
Total Phosphorus (ug P/1)	25.00* 20.00**	50.00* 40.00**	75.00* 60.00**
Light Extinction Coefficient (k units)	0.40* 0.15**	0.80* 0.35**	1.20* 0.60**
Chlorophyll *a* (ug/1)	1.50* 0.50**	4.50* 1.50**	8.50* 3.00**
Turbidity (Nephelometric Turbidity Units)	1.50* 0.40**	3.00* 1.00**	5.00* 1.50**
Non-filtrable Residue (ug/1)	25,000.00* 15,000.00**	40,000.00* 25,000.00**	50,000.00* 35,000.00**

*"Wet" criteria apply when the average fresh water inflow from the land equals or exceeds 1% of the embayment volume per day.

**"Dry" criteria apply when the average fresh water inflow from the land is less than 1% of the embayment volume per day.

Applicable to both "wet" and "dry" conditions:

pH Units shall not deviate more than 0.5 units from a value of 8.1.

Dissolved Oxygen - Not less than 75% saturation.

Temperature - Shall not vary more than 1°C from ambient conditions.

Salinity (ppm) - Shall not vary more than 10% from natural or seasonal changes considering hydrologic input and oceanographic factors.

6.2 Open Coastal Waters

(A) Definition - "Open coastal waters" means marine waters bounded by the 100 fathom (183 meters or 600 feet) depth contour and the shoreline, excluding bays named in Section 6.1.

(B) Water Areas to be Protected

(1) CLASS AA

(a) Hawaii - The open coastal waters from Leleiwi Point to Waiulaula Point.

(b) Maui - The open coastal waters between Nakalele Point and Waihee Point, and between Huelo Point and Puu Olai.

(c) Kahoolawe - All open coastal waters surrounding the island.

(d) Lanai - All open coastal waters surrounding the island.

(e) Molokai - The open coastal waters between the westerly boundary of Haleolono Harbor to Laau Point, and from Laau Point to Ilio Point and to Lamaloa Head. Also the open coastal waters from Cape Halawa to the easterly boundary of Kaunakakai Harbor.

(f) Oahu - Waimanalo Bay from Makapuu Point to the southerly boundary of Kaiona Beach Park, and including the waters surrounding Manana and Kaohikaipu Islands. Also, Waialua Bay from Kaiaka Point to Puaena Point, and the open coastal waters along Kaena Point from a distance of 3½ miles (5.6 kilometers) towards Mokuleia and 3½ miles (5.6 kilometers) towards Makua.

(g) Kauai - The open coastal waters between Hikimoe Valley and Makahoa Point. Also the open coastal waters between the westerly boundary of Hoai Bay to Makahuena Point.

(h) Niihau - All open coastal waters surrounding the island.

(i) All other islands of the state - All open coastal waters surrounding the islands not classified in this Section 6.2(B).

(j) All open coastal waters in preserves, reserves, sanctuaries, and refuges established by the Department of Land and Natural Resources under Natural Area Reserves, Chapter 195 HRS as amended, or Marine Life Conservation Districts, Chapter 190 HRS as amended, or similar reserves for the protection of marine life established under Chapter 190 HRS as amended; or in such refuges or sanctuaries established by the U.S. Fish and Wildlife Service or the National Marine Fisheries Service.

(2) CLASS A - All other open coastal waters not otherwise specified.

(C) Specific Criteria for Open Coastal Waters

(Note that criteria for open coastal waters differ based on fresh water discharge.)

Parameter	Geometric mean not to exceed the given value	Not to exceed the given value more than 10% of the time	Not to exceed the given value
Total Kjeldahl Nitrogen (ug N/1)	150.00* 110.00**	250.00* 180.00**	350.00* 250.00**
Ammonia Nitrogen (ug NH_4 - N/1)	3.50* 2.00**	8.50* 5.00**	15.00* 9.00**

Nitrate + Nitrite Nitrogen (ug [NO_3 + NO_2] - N/1)	5.00* 3.50**	14.00* 10.00**	25.00* 20.00**
Orthophosphate Phosphorus (ug PO_4 - P/1)	7.00* 5.00**	12.00* 9.00**	17.00* 13.00**
Total Phosphorus (ug P/1)	20.00* 16.00**	40.00* 30.00**	60.00* 45.00**
Light Extinction Coefficient (k units)	0.20* 0.10**	0.50* 0.30**	0.85* 0.55**
Chlorophyll *a* (ug/1)	0.30* 0.15**	0.90* 0.50**	1.75* 1.00**
Turbidity (Nephelometric Turbidity Units)	0.50* 0.20**	1.25* 0.50**	2.00* 1.00**
Non-filtrable Residue (ug/1)	20,000.00* 10,000.00**	30,000.00* 15,000.00**	40,000.00* 20,000.00**

*"Wet" criteria apply when the open coastal waters receive more than three million gallons per day of fresh water discharge per shoreline mile.

**"Dry" criteria apply when the open coastal waters receive less than three million gallons per day of fresh water discharge per shoreline mile.

Applicable to both "wet" and "dry" conditions:

pH Units shall not deviate more than 0.5 units from a value of 8.1.

Dissolved Oxygen - Not less than 75% saturation.

Temperature - Shall not vary more than 1°C from ambient conditions.

Salinity (ppm) - Shall not vary more than 10% from natural or seasonal changes considering hydrologic input and oceanographic factors.

6.3 Oceanic Waters

(A) Definition - "Oceanic waters" means all other marine waters outside of the 100 fathom (600 feet or 183 meters) depth contour.

(B) Water Areas to be Protected - CLASS A - All oceanic waters.

(C) Specific Criteria for Oceanic Waters

Parameter	Geometric mean not to exceed the given value	Not to exceed the given value more than 10% of the time	Not to exceed the given value
Total Kjeldahl Nitrogen (ug N/1)	50.00	80.00	100.00
Ammonia Nitrogen (ug NH_4 - N/1)	1.00	1.75	2.50

Nitrate + Nitrite Nitrogen (ug [NO_3 + NO_2] - N/1)	1.50	2.50	3.50
Orthophosphate Phosphorus (ug PO_4 - P/1)	1.00	3.00	5.00
Total Phosphorus (ug P/1)	10.00	18.00	25.00
Light Extinction Coefficient (k units)	0.04	0.07	0.10
Chlorophyll *a* (ug/1)	0.06	0.12	0.20
Turbidity (Nephelometric Turbidity Units	0.03	0.10	0.20
Non-filtrable Residue (ug/1)	3,000.00	6,000.00	9,000.00

pH Units shall not deviate more than 0.5 units from a value of 8.1.

Dissolved Oxygen - Not less than 75% saturation.

Temperature - Shall not vary more than 1°C from ambient conditions.

Salinity (ppm) - Shall not vary more than 10% from natural or seasonal changes considering hydrologic input and oceanographic factors.

7. USES AND SPECIFIC CRITERIA APPLICABLE TO MARINE BOTTOM TYPES

7.1 Sand Beaches

(A) Definition - "Sand beaches" means shorelines composed of the weathered calcareous remains of marine algae and animals (white sand), the weathered remains of volcanic tuff (olivine), and/or the weathered remains of lava (black sand). Associated animals are largely burrowers and are related to particle grain size, slope, and color of the beach.

(B) Water Areas to be Protected

(1) CLASS I - All beaches on the Northwestern Hawaiian Islands. These islands comprise that portion of the Hawaiian archipelago which lies northwest of the island of Kauai and is part of the State of Hawaii; including Nihoa Island, Necker Island, French Frigate Shoals, Brooks Banks, Gardiner Pinnacles, Dowsett and Maro Reef, Laysan island, Lisianski Island, Pearl and Hermes Reef, Gambia Shoal, and Kure Atoll.

(2) CLASS II - All beaches not in Class I.

(C) Specific Criteria to be Applied to Sand Beaches

(1) Episodic deposits of flood-borne soil sediment shall not occur in

quantities exceeding an equivalent thickness of 10 mm. (0.40 inch) 24 hours after a heavy rainstorm.

(2) Oxidation - reduction potential (E_H) in the uppermost 10 cm. (4 inches) of sediment shall not be less than +100 mv.

(3) No more than 50% of the grain size distribution of sediment shall be smaller than 0.125 mm. in diameter.

7.2 Lava Rock Shorelines and Solution Benches

(A) Definitions

(1) "Lava rock shorelines" means sea cliffs and other vertical rock faces, horizontal basalt, volcanic tuff beaches, and boulder beaches formed by rocks falling from above or deposited by storm waves. Associated plants and animals are adapted to the harsh physical environment and are distinctly zoned to the degree of wave exposure.

(2) "Solution benches" means sea level platforms developed on upraised reef or solidified beach rock by the erosive action of waves and rains. Solution benches are distinguished by a thick algal turf and conspicuous zonation of plants and animals.

(B) Water Areas to be Protected

(1) CLASS I - All lava rock shorelines and solution benches in preserves, reserves, sanctuaries, and refuges established by the Department of Land and Natural Resources under Natural Area Reserves, Chapter 195 HRS as amended, or Marine Life Conservation Districts, Chapter 190 HRS as amended, or similar reserves for the protection of marine life established under Chapter 190 HRS as amended; or in such refuges or sanctuaries established by the U.S. Fish and Wildlife Service or the National Marine Fisheries Service.

(2) CLASS II

(a) All other lava rock shorelines not in Class I.

(b) The following solution benches:

Maui	Oahu	Kauai
Kihei	Diamond Head	Near Hanapepe
Papaula Point	Manana Island	Salt Ponds
	Makapuu	Milolii
	Laie	Nualolo
	Kahuku	Makaha
	Mokuleia	Mahaulepu
	Makua	Kuhio Beach Park
	Makaha	(Kukuiula)
	Maile	
	Lualualei	
	Barbers Point	

(C) Specific Criteria to be Applied to Lava Rock Shorelines and Solution Benches

(1) Episodic deposits of flood-borne sediment shall not occur in quan-

tities exceeding an equivalent thickness of 5 mm. (0.20 inch) for longer than 24 hours after a heavy rainstorm.

(2) The Director of Health shall determine parameters, measures, and criteria for bottom biological communities which may be affected by proposed actions. Permanent benchmark stations may be required where necessary for monitoring purposes. The water quality standards for this subsection shall be deemed to be met if time series surveys of benchmark stations indicate no relative changes in the relevant biological communities, as noted by biological community indicators or by indicator organisms which may be applicable to the specific site.

7.3 Marine Pools and Protected Coves

(A) Definitions

(1) "Marine pools" means waters which collect in depressions on sea level lava rock outcrops and solution benches and also behind large boulders fronting the sea. Pools farthest from the ocean have harsher environments and less frequent renewal of water and support fewer animals. Those closest to the ocean are frequently renewed with water, are essentially marine, and support more diverse fauna.

(2) "Protected coves" means small inlets which are removed from heavy wave action or surge.

(B) Water Areas to be Protected

(1) CLASS I

(a) All marine pools and protected coves in preserves, reserves, sanctuaries, and refuges established by the Department of Land and Natural Resources under Natural Area Reserves, Chapter 195 HRS as amended, or Marine Life Conservation Districts, Chapter 190 HRS as amended, or similar reserves for the protection of marine life established under Chapter 190 HRS as amended; or in such refuges or sanctuaries established by the U.S. Fish and Wildlife Service or the National Marine Fisheries Service.

(b) **Hawaii**

Honaunau
Kiholo

(2) CLASS II

Hawaii		**Maui**
Kalapana	Hilo	Hana
Pohakuloa	Leleiwi Point	Keanae
Kopalaoa	Wailua Bay	Napili
Haenokalele		Puu Olai to Cape Hanamanioa
Kapoho		Kipahulu
King's Landing (Papai)		

Molokai	Oahu	Kauai
Cape Halawa	Diamond Head	Kealia
Kalaupapa	Halona Blowhole	Mahaulepu
South Coast	to Makapuu	Hanamaulu
	Mokuleia	Poipu
	Kaena Point	Puolo Point
	Makua	
	Punaluu	

(C) Specific Criteria to be Applied to Marine Pools and Protected Coves

(1) In marine pools and coves with sand bottoms, oxidation-reduction potential (E_H) in the uppermost 10 cm. (4 inches) of sediment shall not be less than +100 mv.

(2) In marine pools and coves with sand bottoms, no more than 50% of the grain size distribution of the sediment shall be smaller than 0.125 mm. in diameter.

(3) Episodic deposits of flood-borne soil sediment shall not occur in quantities exceeding equivalent thicknesses for longer than 24 hours following a heavy rainstorm according to the following:

(a) No thicker than an equivalent of 5 mm. (0.20 inch) on hard bottoms (other than living corals).

(b) No thicker than an equivalent of 10 mm. (0.40 inch) on soft bottoms.

(4) The Director of Health shall determine parameters, measures, and criteria for bottom biological communities which may be affected by proposed actions. Permanent benchmark stations may be required where necessary for monitoring purposes. The water quality standards for this subsection shall be deemed to be met if time series surveys or benchmark stations indicate no relative changes in the relevant biological communities, as noted by biological community indicators or by indicator organisms which may be applicable to the specific site.

7.4 **Artificial Basins**

(A) Definition - "Artificial basins" means dredged or quarried channels or harbors, and harbor-associated submerged structures. Many organisms can attach to the vertical structures, but the soft, shifting sediment bottoms of harbors may only be colonized by a few hardy or transient species.

(B) Water Areas to be Protected

(1) CLASS II

(a) Shallow draft recreational harbors

Hawaii		Maui
Wailoa River Boat Harbor	Honokohau Boat Harbor	Maalaea Boat Harbor
Mahukona Harbor	Kawaihae Small Boat Harbor	Lahaina Boat Harbor
Keauhou Harbor		Hana Harbor
Kailua-Kona Harbor		

Lanai	Molokai	Kauai
Manele Boat Harbor	Kalaupapa Anchorage	Nawiliwili Small Boat Harbor
Kaumalapau Harbor	Kaunakakai Small Boat Harbor	Kukuiula Boat Harbor
	Haleolono Small Boat Harbor	Kikiaola Boat Harbor
		Port Allen Boat Harbor

Oahu		
Heeia Kea Boat Harbor	Kaneohe Yacht Club	La Mariana Haleiwa Harbor
Kaneohe Bay Marina	Hawaii Kai Marina (Kuapa Pond)	Makani Kai Ala Wai Boat Harbor
Kaneohe Marine Corps Air Station	Pokai Bay	Keehi Drydock Boat Harbor
	Waianae Harbor	
	Keehi Harbor	

(b) Deep draft commercial harbors

Hawaii	Maui	Molokai
Kuhio Bay (Hilo Harbor)	Kahului Harbor	Kaunakakai Barge Harbor
Kawaihae Deep Draft Harbor		

Oahu	Kauai
Honolulu Harbor	Nawiliwili Harbor
Barbers Point Harbor	Port Allen Harbor
Kewalo Basin	

(C) Specific criterion to be applied - Oxidation-reduction potential (E_H) in the uppermost 10 cm. (4 inches) of sediment shall not be less than -100 mv.

7.5 Reef Flats and Reef Communities

(A) Definitions

(1) "Nearshore reef flats" means shallow platforms of reef rock, rubble, and sand extending from the shoreline. Smaller, younger flats projected out as semicircular aprons while older, larger flats form wide continuous platforms. Associated animals are mollusks, echinoderms, worms, crustaceans (many living beneath the surface), and reef-building corals.

(2) "Offshore reef flats" means shallow, submerged platforms of reef rock and sand between depths of 0 to 3 meters (0 to 10 feet) which are separated from the shoreline of high volcanic islands by lagoons or ocean expanses. Dominant organisms are bottom-dwelling algae. Biological composition is extremely variable. There are three types:

patch, barrier, and **atoll** reef flats; quite different from one another structurally. The presence of heavier wave action, water more oceanic in character, and the relative absence of terrigenous influences distinguish offshore reef flats.

(3) "Wave exposed reef communities" means aggregations, including scattered sand channels and patches, dominated by corals. They may be found at depths up to 40 meters (approximately 130 feet) along coasts subjected to continuous or heavy wave action and surge. Wave exposed reef communities are dominated biologically by benthic algae, reef-building corals, and echinoderms.

(4) "Protected reef communities" means hard bottom aggregations, including scattered sand channels and patches, dominated by living coral thickets, mounds, or platforms. They are found at depths of 10 to 30 meters (32 to 96 feet) along protected leeward coasts or in shallow water (up to sea level) in sheltered lagoons behind atoll or barrier reefs and in the calm reaches of bays or coves.

(B) Water Areas to be Protected

(1) CLASS I

(a) All reef flats and reef communities in preserves, reserves, sanctuaries, and refuges established by the Department of Land and Natural Resources under Natural Area Reserves, Chapter 195 HRS as amended, or Marine Life Conservation Districts, Chapter 190 HRS as amended, or similar reserves for the protection of marine life established under Chapter 190 HRS as amended; or in such refuges or sanctuaries established by the U.S. Fish and Wildlife Service or the National Marine Fisheries Service.

(b) Nearshore reef flats

Hawaii	**Maui**	**Lanai**
Puako	Honolua	Northwest Lanai Reef
Molokai	**Oahu**	**Kauai**
Western Kalaupapa	Hanauma Bay	Nualolokai
Southeast Molokai Reef		Hanalai (Anini to Haena)
Honomuni Harbor (Kula'alamini Fishpond)		

(c) Offshore reef flats

Moku o loe (Coconut Island, Kaneohe Bay, Oahu)
Kure Atoll
Pearl and Hermes Reef
Lisianski Atoll
Laysan Island
Maro Reef
French Frigate Shoals

(d) Wave exposed reef communities

Hawaii	Maui
1823 Lava Flow (Punaluu)	Hana Bay
1840 Lava Flow (North Puna)	Makuleia Bay (Honolua)
1868 Lava Flow (South Point)	
1887 Lava Flow (South Point)	
1955 Lava Flow (South Puna)	
1960 Lava Flow (Kapoho)	
1969 Lava Flow (Apuna Point)	
1970 Lava Flow (Apuna Point)	
1971 Lava Flow (Apuna Point)	
1972 Lava Flow (Apuna Point)	
1973 Lava Flow (Apuna Point)	

Molokini Island	Molokai
All wave exposed reef communities	Moanui (Kahainapohaku)
	Waikolu - Kalawao
	Halawa Bay

Oahu	Kauai
Sharks Cove (Pupukea)	Ke'e Beach (Kailio Point)
Moku Manu Islands	Poipu Beach
Outer Hanauma Bay	Kipukai
Waimea Bay	
Kawela Bay	
Kahana Bay	

Niihau	Lehua Island (off Niihau)
All wave exposed reef communities	All wave exposed reef communities

(e) Protected reef communities

Hawaii	Maui
Puako	Honolua
Honaunau	Ahihi-La Perouse (including 1970 Lava Flow at Cape Kinau)
Kealakekua	
Kiholo	
Anaehoomalu	
Hapuna	
Kahaluu Bay	
Keaweula (North Kohala)	
Milolii Bay to Keawaiki	
Kailua-Kaiwi (Kona)	
Onomea Bay	
1801 Lava Flow (Keahole or Kiholo)	
1850 Lava Flow (South Kona)	
1859 Lava Flow (Kiholo)	
1919 Lava Flow (Milolii)	
1926 Lava Flow (Milolii)	

Molokini Island
All protected reef communities

Lanai
Manele
Hulopoe

Molokai
Southeast Molokai
Kalaupapa
Honomuni Harbor

Oahu
Hanauma Bay
Moku o loe (Coconut Island, Kaneohe Bay)

Kauai
Hoai Bay (Poipu)

Northwestern Hawaiian Islands
Kure Atoll Lagoon
Pearl and Hermes Lagoon
Lisianski Lagoon
Maro Reef Lagoon
French Frigate Shoals Lagoon

(2) CLASS II

(a) Existing or planned harbors may be located within nearshore reef flats showing degraded habitats and only where feasible alternatives are lacking and upon written approval by the Director of Health, considering environmental impact and the public interest pursuant to HRS 342-6.

Hawaii
Blonde Reef (Hilo Harbor)
Kawaihae Small Boat Harbor

Maui
Lahaina Harbor
Kahului Harbor

Lanai
Manele

Molokai
Kaunakakai Harbors
Haleolono Harbor
Palaau (1.5 mile/2.4 km. East Pakanaku Fish Pond)

Oahu
Keehi Boat Harbor
Ala Moana Reef
Honolulu Harbor
Heeia Harbor
Kaneohe Yacht Club
Ala Wai Harbor
Haleiwa Harbor
Maunalua Bay
Pearl Harbor
Kaneohe Bay
Kahe

All other nearshore reef flats not in Class I.

(b) Offshore reef flats

Oahu

Kapapa Barrier Reef
Kaneohe Patch Reefs (Kaneohe Bay)

(c) All other wave exposed or protected reef communities not in Class I.

(C) Specific criteria to be applied to all reef flats and reef communities: No action shall be undertaken which would substantially risk damage, impairment, or alteration of the biological characteristics of the areas named herein. When a determination of substantial risk is made by the Director, the action shall be declared to be contrary to the public interest and no other permits shall be issued pursuant to HRS Chapter 342.

(1) Oxidation-reduction potential (E_H) in the uppermost 10 cm. (4 inches) of sand patches shall not be less than +100 mv.

(2) No more than 50% of the grain size distribution of sand patches shall be smaller than 0.125 mm. in diameter.

(3) Episodic deposits of flood-borne soil sediment shall not occur in quantities exceeding equivalent thicknesses for longer than 24 hours after a heavy rainstorm as follows:

(a) No thicker than an equivalent of 2 mm. (0.08 inch) on living coral surfaces.

(b) No thicker than an equivalent of 5 mm. (0.2 inch) on other hard bottoms.

(c) No thicker than an equivalent of 10 mm. (0.4 inch) on soft bottoms.

(d) The Director of Health shall determine parameters, measures, and criteria for bottom biological communities which may be affected by proposed actions. Permanent benchmark stations may be required where necessary for monitoring purposes. The water quality standards for this subsection shall be deemed to be met if time series surveys of benchmark stations indicate no relative changes in the relevant biological communities, as noted by biological community indicators or by indicator organisms which may be applicable to the specific site.

7.6 **Soft Bottom Communities**

(A) Definition - "Soft bottom communities" means poorly described and "patchy" communities, mostly of burrowing organism, living in deposits at depths between 2 to 40 meters (approximately 6 to 130 feet). The particle size of sediment, depth below sea level, and degree of water movement and associated sediment turnover dictate the composition of animals which rework the bottom with burrows, trails, ripples, hummocks, and depressions.

(B) Water Areas to be Protected - CLASS II - All soft bottom communities.

(C) Specific Criteria to be Applied - Oxidation-reduction potential (E_H) in the uppermost 10 cm. (4 inches) of sediment should not be less than -100 mv.

8. SPECIFIC CRITERIA FOR RECREATIONAL AREAS

In inland recreational waters and marine recreational waters within 1,000 feet of the shoreline, including natural public bathing areas:

(A) Fecal coliform content shall not exceed a geometric mean of 200 per 100 ml. in ten or more samples collected during any 30-day period and not more than 10% of the samples shall exceed 400 per 100 ml. in the same period.

(B) Raw or inadequately treated sewage or other pollutants of public health significance, as determined by the Director of Health, shall not be present in a natural public bathing or wading area.

9. ZONES OF MIXING

9.1 **Definition** - "Zones of mixing" means limited areas around outfalls and other facilities to allow for the initial dilution of waste discharges.

9.2 **Purpose** - Zones of mixing for the assimilation of municipal, agricultural, and industrial discharges which have received the best degree of treatment or control are recognized as being necessary. It is the objective of this limited zone to provide for a current realistic means of control over the placement and manner of discharges or emissions so as to achieve the highest attainable level of water quality or otherwise to achieve the minimum environmental impact considering initial dilution, dispersion, and reactions from substances which may be considered to be pollutants.

9.3 **Establishment, Renewal, and Termination**

(A) Application for establishment of the zone of mixing shall be made concurrently with any discharge permits whenever applicable and the conditions of the zone of mixing may be incorporated as conditions of such discharge permits. Every application for a zone of mixing shall be made on forms furnished by the Director of Health and shall be accompanied by a complete and detailed description of present conditions, how present conditions do not conform to standards, and such other information as the Director of Health may prescribe.

(B) Each application for a zone of mixing shall be reviewed in light of the descriptions, statements, plans, histories, and other supporting information as may be submitted upon the request of the Director of Health, and in light of the effect or probable effect upon the water quality standards established pursuant to this Chapter.

(C) Whenever an application is approved, the Director of Health shall establish the zone of mixing, taking into account the environmental impact, including but not limited to such factors as the protected uses of the body of water, existing natural conditions of the receiving water, character of the effluent, and the adequacy of the design of the outfall and diffuser system to achieve maximum dispersion and assimilation of the treated or controlled waste with a minimum of undesirable or noticeable effect on the receiving water.

(D) Approval of a zone of mixing shall be made either after a public hearing

is held by the Director of Health in the county where the source is situated, in accordance with the Hawaii Administrative Procedure Act and the Rules and Practice and Procedure of the Department of Health or after the public notification and comment process duly established for a discharge permit in the case when the zone of mixing is being considered concurrently with the discharge permit.

(E) No zone of mixing shall be granted by the Director of Health unless the application and the supporting information clearly show that:
  (1) The continuation of the function or operation involved in the discharge by the granting of the zone of mixing is in the public interest; and
  (2) The discharge occurring or proposed to occur does not substantially endanger human health or safety; and
  (3) Compliance with the existing water quality standards from which a zone of mixing is sought would produce serious hardships without equal or greater benefits to the public; and
  (4) The discharge occurring or proposed to occur does not violate the basic standards applicable to all waters, will not unreasonably interfere with any actual or probable use of the water areas for which it is classified, and has received (or in the case of a proposed discharge will receive) the best degree of treatment or control.

(F) Any zone of mixing or renewal thereof shall be granted within the requirements of this section and for time periods and under conditions consistent with the reasons therefore and within the following limitations:
  (1) If the zone of mixing is granted on the ground that there is no practicable means known or available for the adequate prevention, control, or abatement of the discharge involved, it shall be only until the necessary means for prevention, control, or abatement become practicable, and subject to the taking of any substitute or alternate measures that the Director of Health may prescribe. No renewal of a zone of mixing granted under this subsection shall be allowed without a thorough review of known and available means of preventing, controlling, or abating the discharge involved.
  (2) The Director of Health may issue a zone of mixing for a period not exceeding five years.
  (3) Every zone of mixing granted under this section shall include, but not be limited to, conditions requiring the grantee to perform appropriate effluent and receiving water sampling including monitoring of bottom biological communities and report the results of each sampling to the Director of Health. A program of research to develop practicable alternatives to the methods of treatment or control in use by the grantee may be required if such research is deemed prudent by the Director of Health.

(G) Any zone of mixing granted pursuant to this section may be renewed from time to time on terms and conditions and for periods not exceeding five years which would be appropriate on initial granting of a zone of mixing, provided that the applicant for renewal had met all of the

conditions specified in the immediately preceding zone of mixing, and provided further that the renewal and the zone of mixing established in pursuance thereof shall provide for discharge not greater in quantity of mass emissions than that attained pursuant to the terms of the immediately preceding zone of mixing at its expiration. No renewal shall be granted except on application therefor. Any such application shall be made at least sixty days prior to the expiration of the zone of mixing.

(H) No zone of mixing granted pursuant to this part shall be construed to prevent or limit the application of any emergency provisions and procedures provided by law.

(I) The establishment of any zone of mixing shall be subject to the concurrence of the U.S. Environmental Protection Agency.

(J) The Director of Health, on his own motion or upon the application of any person, shall terminate a zone of mixing if, after a hearing, he determines that the water area does not meet the basic criteria applicable to all water areas, or that the zone of mixing granted will unreasonably interfere with any actual or probable use of the water area, or that the discharge does not receive (in the case of a new discharge will not receive) the best treatment or control. Such termination shall be made only after a hearing held by the Director of Health on the island where the area is situated in accordance with the Hawaii Administrative Procedure Act and the Rules of Practice and Procedure of the Department of Health. Upon such termination, the standards of water quality applicable thereto shall be those established for the water as otherwise classified.

(K) Upon expiration of the period stated in the designation, the zone of mixing shall automatically terminate and no rights shall become vested in the designee.

10. WATER QUALITY ANALYSES

Laboratory analysis must be performed by a laboratory approved by the Director of Health.

Where applicable, analysis to determine compliance with these regulations shall be by:

Parameter	Reference
Sample Collection (Phytoplankton and other Bioassay)	*Standard Methods for the Examination of Water and Waste Water*, Fourteenth or Current Edition, APHA.
Sample Preservation and Holding Time	*Handbook for Evaluating Water Bacteriological Laboratories*, 1975, EPA, p. 19, or:
	Methods for Chemical Analysis of Water and Wastes, 1976, EPA, Table II, or:

	Manual of Analytical Methods for the Analysis of Pesticide Residues in Human and Environmental Samples, 1974, EPA, Section 2.
Bacteriological and Chemical Methodology	"Guidelines Establishing Test Procedures for Analysis of Pollutants, Amendments," *Federal Register*, December 1, 1976 and July 20, 1977.
96-hour Bioassay	Stephin, Charles P., *Methods for Acute Toxicity Test with Fish, Macroinvertebrates, and Amphibians*, Duluth, Minn., NERC, April 1975, or:
	Telpier, William, *Methods for Measuring the Acute Toxicity of Effluents to Aquatic Organisms*, Cincinnati, Ohio, EMSL, January 1978.
Quality Control: Bacteriology and Biology	"Elements of a Quality Assurance Program," *Assessment of Laboratory Needs and Field Sampling Equipment for the California Regional Boards*, 1974.
Chemistry	*Handbook for Analytical Quality Control*, EPA, 1972 or its revisions, or:
	As otherwise previously specified or approved by the Director of Health.

11. REVISION

These water quality criteria are based upon the best currently available data. Studies made in connection with the implementation program may suggest improvements to this Chapter. For this reason, the Chapter will be subject to periodic review and, where necessary, to change. Any change will be made only after public hearing, held in compliance with the Hawaii Administrative Procedure Act and the Rules of Practice and Procedure of the Department of Health.

12. SEVERABILITY

If any provision of this Chapter, or the application thereof to any person or circumstance, is held invalid, the invalidity does not affect other provisions or application of this Chapter which can be given effect without the invalid provision or application, and to this end the provisions of this Chapter are severable.

I, George A. L. Yuen, Director of Health, State of Hawaii, hereby certify that the foregoing regulations were adopted by the Department of Health on the 31st day of May, 1979.

GEORGE A. L. YUEN
Director of Health

The foregoing regulations are hereby approved as to form this 23rd day of August, 1979.

LAURENCE K. LAU
Deputy Attorney General

The foregoing regulations are hereby approved as to form this 5th day of September, 1979.

GEORGE R. ARIYOSHI
Governor of Hawaii

Chapter 37-A, Water Quality Standards, of the State Public Health Regulations was adopted on May 31, 1979, following public hearings held on Oahu, October 16, 1978; Hawaii, Octobr 17, 1978; Maui, October 18, 1978; and Kauai, October 19, 1978, after public notices were published in the Honolulu Advertiser and the Honolulu Star-Bulletin on September 16,1978; The Hawaii Tribune-Herald on September 19, 1978; the Maui News on September 18, 1978; and The Garden Island on September 18, 1978.

Filed in Lt. Governor's Office: September 6, 1979.
Notice of Approval Published in the Honolulu Star-Bulletin on: October 8, 1979.
Effective Date: December 7, 1979.

State of Louisiana Marine Water Quality Standards

Louisiana Water Quality Criteria
October 1977

Office of Environmental Affairs
Dept. of Natural Resources
P.O. Box 44396
Baton Rouge, LA 70804

LOUISIANA

Antidegradation Statement

It is the policy of the Louisiana Stream Control Commission that all interstate waters and intrastate waters, portions thereof, and coastal waters whose existing quality exceed the approved water quality standards will be maintained at their existing high quality unless the state chooses after full satisfaction of the intergovernmental coordination and public participation provisions of the State Continuing Planning Process to allow lower water quality as a result of necessary and justifiable economic and/or social development, and further that such changes will not interfere with or become injurious to the existing instream water uses. The Louisiana Stream Control Commission will disapprove any waste discharge that will cause water quality degradation of interstate waters and intrastate waters, portions thereof, and the coastal waters of Louisiana below the standards adopted by the State of Louisiana and approved by the United States Environmental Protection Agency without complying with the Federal and State of Louisiana laws applicable to the attainment of water quality standards.

Any industrial, public or private project or development that would constitute a new source of pollution or an increased source of pollution to any of the waters in Louisiana will be required, as part of the initial project design, to provide the highest and best degree of waste treatment available under existing technology consistent with the best practice in the area affected under the condition applicable to the project or development. Further, there shall be achieved the highest statutory and regulatory requirements for all existing point sources and feasible management or regulatory programs pursuant to Section 208 of Public Law 92-500 for nonpoint sources, both existing and proposed. Additionally, no degradation shall be allowed in high quality waters which constitute an outstanding national resource such as waters of national and state parks and wildlife refuges, waters in the state scenic rivers system and waters of exceptional recreational or ecological significance. This policy and implementation method shall be consistent with Section 316 of 92-500 (Re: thermal discharges). Consistent with the provision of the Federal Water Pollution Control Act as amended (1972) the Louisiana Stream Control Commission will keep the United States Environmental Protection Agency informed of its activities and will furnish the United States Environmental Protection Agency informational reports, in such form as the Administrator of the United States Environmental Protection Agency may, from time to time, reasonably require to carry out his function under

the Federal Water Pollution Control Act Amendments of 1972. The Louisiana Stream Control Commission will consult and cooperate with the United States Environmental Protection Agency on matters that are proper consideration of the Federal Agency; the United States Environmental Protection Agency will reciprocate in matters that are a proper consideration of the Louisiana Stream Control Commission.

General Criteria

The following general criteria are applicable to the surface waters of the State of Louisiana and specifically apply with respect to substances attributed to waste discharges or the activities of man as opposed to natural phenomena.

Natural waters may, on occasion, have characteristics outside the limits established by these criteria; in which case, these criteria do not apply. The criteria adopted herein relate to the condition of water as affected by waste discharges or man's activities.

These general criteria do not supercede specific exceptions to any one or more of the following if the exception is specifically stated in a specific water quality standard. All waters of the state shall be capable of supporting desirable diversified aquatic life consisting of indigenous species of fish, shell fish and wildlife.

(1) AESTHETICS

The waters of the state shall be maintained in an aesthetically attractive condition and shall meet the generally accepted aesthetic qualifications.

All waters shall be free from substances attributable to wastewater or other discharges that:

(1) settle to form objectionable deposits;

(2) float as debris, scum, oil, or other matter to form nuisances;

(3) produce objectionable color, odor, taste, or turbidity;

(4) injure or are toxic or produce adverse physiological response in humans, animals, fish, shellfish, wildlife, or plants; and,

(5) produce undesirable or nuisance aquatic life.

(2) COLOR

True color shall not be increased to the extent that it will interfere with present usage and projected future use of the streams and water bodies.

(1) waters shall be virtually free from substances producing objectionable color for aesthetic purposes;

(2) the source of supply should not exceed 75 color uni on the platinum-cobalt scale for domestic water supplies; and

(3) increased color (in combination with turbidity) sha not reduce the depth of light penetration by more than 10 percent from the seasonally established norm.

(3) FLOATING, SUSPENDED AND SETTLEABLE SOLIDS	Free from substances 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 from municipal, industrial, or other sources including agricultural practices. Settleable and suspended solids shall not reduce the depth of light penetration by more than 10 percent from the seasonably established norm.
(4) TASTE AND ODOR	Taste and odor producing substances shall be limited to concentrations in the waters of the state that will not interfere with the production of potable water by reasonable water treatment methods, or impart unpalatable flavor to food fish, including shellfish, or result in offensive odors arising from the waters, or otherwise interfere with the reasonable use of the waters.
(5) TOXIC SUBSTANCES	None present in quantities that alone or in combination will be toxic to animal or plant life. In all cases the level shall not exceed the TLM 96/10. Bioassay techniques will be used in evaluating toxicity utilizing methods and species of test organisms suitable to the purpose at hand. In cases where the stream is used as a public water supply the level of toxic substances shall not exceed the levels established by the United States Public Health Service drinking water standards latest edition.
(6) OILS AND GREASES	There shall be no free or floating oil or grease present in sufficient quantities to interfere with the designated uses, nor shall emulsified oils be present in sufficient quantities to interfere with the designated uses.
(7) FOAMING OR FROTHING MATERIALS	None of a persistent nature.
(8) NUTRIENTS	The naturally occurring nitrogen-phosphorous ratio shall be maintained. On completion of detailed studies on the naturally occurring levels of the various macro and micro nutrients the state will establish numerical limits on nutrients where possible.

(9) TURBIDITY	There shall be no substantial increase in turbidity from ambient conditions due to waste discharges.
(10) OTHER MATERIALS	Limits on other substances not specified in these revised water quality standards shall be in accordance with recommendations set by the Louisiana Stream Control Commission and/or the Louisiana Department of Health and Human Resources Administration for municipal raw water sources.

Classification of Surface Waters

The surface waters of the state will be divided into the following categories for ease of classification. Where the geographical coverage of a particular identified water or segment is subject to interpretation, e.g., East Cote Blanche Bay, the segment limits shall be defined by the maps included in the standards.

1. River Basin Waters - those surface inland waters comprising the lakes, reservoirs, major rivers and their tributaries and including the tidal portion of the river to the extent that it is confined in a channel. (This definition specifically does not apply to impoundments constructed solely for waste treatment purposes.

2. Coastal Basin Waters - those surface inland waters exclusive of number one (River Basin Waters) discharging or flowing or otherwise communicating with bays or the gulf including the tidal portion of streams to the extent that they are confined in channels.

3. Bay Waters - all tidal waters exclusive of those included in river basin waters, coastal basin waters, and gulf waters.

4. Gulf Waters - those waters which are not included in or form a part of any bay or estuary but which are a part of the open waters of the Gulf of Mexico to the limit of Louisiana's jurisdiction.

WATER USE CLASSIFICATION:

Policy:

It is the policy of the State of Louisiana that all state waters should be protected for recreational uses in and/or on the water and for the preservation and propagation of desirable species of aquatic biota such as indigeneous species of fish, shellfish and wildlife. Use and value of water for public water supplies, agricultural, industrial, and other purposes as well as navigation, shall also be considered in setting standards, but in no case, except as provided below, shall the criteria supporting these uses be permitted to interfere with recreational uses and the preservation of indigenous species of fish, shellfish, wildlife and desirable species of other aquatic biota.

Recreational uses will be specified as either "primary contact" or "secondary contact." Desirable species of fish, shellfish, wildlife and other aquatic biota will be specified as "fresh warm water," or "marine waters." All future designations of stream uses and their associated criteria must, at a minimum, adhere to these classifications except as provided below.

Exceptions:

Some waters, because of naturally occurring poor quality, man-made pollution or technological limitations may qualify for an excepted classification. This determination, however, will be made on a case-by-case basis following the analysis of each such area. In all cases where exceptions are proposed the concurrence of the Regional Administrator of the United States Environmental Protection Agency will first be obtained.

In any case where the exception is based on technological limitations, the exception will be temporary, i.e., the exception will be reviewed at least every three years as required by Section 303 (c) of Public Law 92-500 to determine the possibility of upgrading.

In applying this policy, the terms "recreational uses" and "desirable species of aquatic biota" will be given common sense application. The existence of man-made pollution will be reviewed as a problem to be solved, not as an impediment against assigning this use classification. "Desirable Species of Aquatic Biota" refers to a diverse and naturally occurring range of aquatic biota and not to species that exist in the area in question in disproportionate numbers as a result of man's waste discharges.

The most stringent criteria specified for each parameter shall be applicable where waters are classified for multiple uses.

CLASS A: WATER CONTACT RECREATION AND OTHER USES (PRIMARY CONTACT)

A surface raw water source intended for uses where the human body may come in direct contact with the raw water to the point of complete body submergence. The raw water may be ingested accidentally and certain sensitive body organs such as eyes, ears, nose, etc., may 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 may be used for swimming, water skiing, skin diving, other similar activities, or as a raw water source for public water supply, support and propagation of aquatic fish and wildlife, agricultural, industrial and navigational uses.

CLASS B.: FISH, WILDLIFE AND OTHER AQUATIC AND SEMI-AQUATIC LIFE, SECONDARY CONTACT RECREATION AND OTHER USES

A surface raw water source, suitable for the growth and propagation of fish, other aquatic and semi-aquatic life both marine and fresh water; waterfowl, fur bearers; and wildlife. This water may be used for warm water fish habitat, wildlife habitat, and other similar uses. This water is also suitable for secondary water contact recreation such as fishing, wading, boating, or activities where ingestion of the water is not probable or as a raw water source public water supply, agricultural, industrial and navigational uses.

Criteria for Class A and B are equal to or more stringent than those applicable for public water supply use as stated in the report of the National Technical Advisory Committee to the Secretary of the Interior on the Water Quality Criteria. However, when a water body is used as a public water supply it shall be identified as such in the standards for the stream and/or segment where the use occurs.

NUMERICAL CRITERIA

These numerical criteria apply to the specific waters of Louisiana identified in the tables, their navigable tributaries, distributaries and ancillary streams and waterbodies (unless such tributaries, distributaries and ancillary streams or waterbodies are specifically identified and have numerical standards listed in this book) and specifically apply with respect to substances or conditions attributed to waste discharges or activities of man as opposed to natural phenomena.

pH- The pH range represents minimum and maximum conditions throughout the segment with reasonable gradients applying towards segment boundaries.

In all cases the pH shall fall within the range of 6.0 to 9.0 unless otherwise specified in the tables. No discharge of wastes shall cause the pH of the water body to vary by more than one (1) pH unit within the specified pH range for that segment where the discharge occurs. (This does not apply in the Mixing Zone.)

CHLORIDES, SULFATES & DISSOLVED SOLIDS-

Values for these parameters apply to the approximate midpoint of the stream segment with reasonable gradients applying towards segment boundaries. Values listed in the standards in general represent the arithmetic mean of existing data plus one standard deviation.

DISSOLVED OXYGEN-

The following Dissolved Oxygen values represent minimum values for the type of water specified. These values shall apply at all times except in naturally dystrophic waters or where natural conditions cause the Dissolved Oxygen to be depressed. For short periods of time, diurnal variations below the standard specified may occur. However, no waste discharge or activity of man shall lower the Dissolved Oxygen concentration to the point where the diurnal variation falls below the specified minimum.

FRESH WATER-

For a diversified warm water biota including game fish, the daily D.O. concentration shall be above 5 mg/l assuming normal seasonal and daily variations are above this concentration. However, they may range between 5 and 4 mg/l for short periods of time during a 24-hour period, provided the water quality is favorable in all other respects.

ESTUARINE WATER-

Dissolved oxygen concentrations in estuaries and tidal tributaries shall not be less than 4mg/l at any time or place except in naturally dystrophic waters, or where natural conditions cause D.O. to be depressed.

COASTAL WATER-

Dissolved Oxygen concentration in surface coastal waters shall be greater than 5mg/l except when the upwellings and other natural phenomena may cause this value to be depressed.

TEMPERATURE-

The temperature standards enumerated in the tables, in most cases, represent maximum values obtained from existing data. However, in a few cases a limited number of unusually high temperatures in the range of 35°-36° have been deleted as it is felt that these values were recorded during conditions of unseasonably high temperatures and/or unusually low flows or water levels, and, therefore, do not represent normal maximum temperatures.

In order to protect a diversified warm water biota including game fish, the following temperature criteria shall apply (except when natural conditions cause the temperature to be raised above these limits).

The standard shall consist of two parts, a temperature differential and a maximum temperature. The temperature differential represents the maximum permissable rise above ambient conditions. There shall be no addition of artificial heat once the ambient temperature reaches the maximum temperature specified in the standards.

FRESH WATER- Temperature differential

1) Maximum of 5°F (2.8°C) rise above ambient for streams and rivers.

2) Maximum of 3°F (1.7°C) rise above ambient for lakes and reservoirs.

MAXIMUM TEMPERATURE- 90°C (32.2°C) except where otherwise listed in the tables or due to natural conditions.

ESTUARINE AND COASTAL WATERS - Temperature differential

1) Maximum of 4°F (2.2°C) rise above ambient during the period October through May.

2) Maximum 1.5°F (0.83°C) during the period June through September.

MAXIMUM TEMPERATURE - 95°F (35°C) except when natural conditions elevate temperature above this level.

These temperature criteria shall not apply to privately owned reservoirs, or reservoirs constructed solely for industrial cooling purposes.

Bacterial Standards

The bacterial standard applicable to a particular stream segment depends upon the use classification of that individual stream segment. Limitations

are placed on either fecal coliform content, MPN total coliform content, or a combination of both in order to achieve the stream sanitary quality required for the most restrictive stream water usage.

The tables in this document listing applicable criteria for each individual Louisiana stream segment designate one of the following four standards as applicable according to present and anticipated usage of the segment waters:

Standard #1 PRIMARY CONTACT RECREATION- Based on a minimum of not less than 5 samples taken over not more than a 30-day period, the fecal coliform content shall not exceed a log mean of 200/100 ml. nor shall more than 10 percent of the total samples during any 30-day period exceed 400/100 ml.

Standard #2 SECONDARY CONTACT RECREATION- Based on a minimum of not less than 5 samples taken over not more than a 30-day period, the fecal coliform content shall not exceed a log mean of 1,000/100ml. nor shall more than 10 percent of the total samples during any 30-day period equal or exceed 2,000/100ml.

Standard #3 PUBLIC WATER SUPPLY- The monthly arithmetic average of total coliform MPN (most probable number) shall not exceed 10,000/100ml. nor shall the monthly arithmetic average of fecal coliforms exceed 2,000/100ml.

Standard #4 SHELLFISH PROPAGATION- The monthly total coliform median MPN (most probable number) shall not exceed 70 per 100ml and not more than 10 percent of the samples ordinarily exceed an MPN of 230/100ml.

APPLICATION OF STANDARDS

Flow Conditions: Except where indicated below the water quality standards specified herein shall apply during all flow conditions.

Chemical Parameters: The chemical parameters (except Dissolved Oxygen) represent maximum values for the segment specified in the tables. These standards shall apply at all times except when natural conditions cause them to be exceeded.

Dissolved Oxygen: The Dissolved Oxygen values represent minimum values for the type of water specified. These values shall apply at all times except in naturally dystrophic waters or where natural conditions cause the Dissolved Oxygen to be depressed; for short periods of time diurnal variations below the standard specified may occur. However, no waste discharge or activity of man shall lower the Dissolved Oxygen concentration to the point where diurnal variation falls below the specified minimum.

Temperature: The temperature standards represent maximum values and shall apply in all cases except when unusual natural conditions of extremely low flow and unseasonably high temperatures may cause the established temperature standard to be exceeded. There shall be no addition of artificial heat once the ambient temperature reaches the maximum specified in the standards.

General Criteria and Other Parameters: The general criteria and other criteria not specifically discussed above shall apply at all times except when natural conditions may cause the standard to be exceeded.

Mixing Zones: The total area and/or volume of a stream assigned to mixing zones will be limited to that which will: (1) not interfere with biological communities or populations of important species to a degree which is damaging to the ecosystem; (2) not diminish other beneficial uses disproportionately.

Zones of Passage: In river streams, reservoirs, lakes, estuaries and coastal waters, zones of passage are continuous water routes of the volume, area and quality necessary to allow passage of free-swimming and drifting organisms with no significant effects produced on their populations. These zones must be provided wherever mixing zones are allowed.

Because of varying local physical and chemical conditions and biological phenomena no single value can be given on the percentage of river (or stream) width necessary to allow passage of criticial free-swimming and drifting organisms so that negligible or no effects are produced on their populations. As a guideline and except when otherwise specified by the Louisiana Stream Control Commission in a valid waste discharge permit the Mixing Zone will be limited to no more than 1/4 of the cross sectional area and/or volume of flow of stream or estuary, leaving at least 3/4 free as a zone of passage.

EXCEPTIONS:

The water quality standards will not apply to:

(1) Effluents

(2) With the exception of the general criteria the water quality criteria will not apply to water in mixing zones as defined above or in a valid waste discharge permit from the Louisiana Stream Control Commission and/or a National Pollution Discharge Elimination System Permit.

WATER QUALITY CRITERIA

SEGMENT		WATER USES				CRITERIA						
AGENCY I.D. NUMBER	DESCRIPTION	PRIMARY CONTACT RECREATION	SECONDARY CONTACT RECREATION	PROPAGATION OF FISH AND WILDLIFE	DOMESTIC RAW WATER SUPPLY	CHLORIDE (mg/l) Not to exceed	SULPHATE (mg/l) Not to exceed	DISSOLVED OXYGEN (mg/l) Not less than	PH RANGE	Bacteria Standard	TEMPERATURE °C	TOTAL DISSOLVED SOLIDS (mg/l) Not to exceed
010030	Atchafalaya River - Mile 118 to Atchafalaya Bay (Tidal)	X	X	X		-	-	4.0	6.5 to 9.0	1	35*	--
010040	Intracoastal Waterway (North-South) _ Bayou Sorrel to Morgan City		X	X		150	75	5.0	6.0 to 8.5	2	32	500
010050	Intracoastal Water (East-West) - Bayou Boeuf Locks to Wax Lake Outlet		X	X		150	75	5.0	6.0 to 8.5	2	32	500
010060	Wax Lake Outlet (Tidal)		X	X		-	-	4.0	6.5 to 9.0	2	35*	-
010070	Atchafalaya Bay (Tidal)		X	X		-	-	5.0	6.5 to 9.0	4	35*	-

* See narrative statement on temperature

WATER QUALITY CRITERIA

SEGMENT		WATER USES				CRITERIA						
AGENCY I.D. NUMBER	DESCRIPTION	PRIMARY CONTACT RECREATION	SECONDARY CONTACT RECREATION	PROPAGATION OF FISH AND WILDLIFE	DOMESTIC RAW WATER SUPPLY	CHLORIDE (mg/l) Not to exceed	SULPHATE (mg/l) Not to exceed	DISSOLVED OXYGEN (mg/l) Not less than	pH RANGE	Bacteria Standard	TEMPERATURE °C	TOTAL DISSOLVED SOLIDS (mg/l) Not to exceed
020080	Little Lake (Shellfish) (Tidal)		X	X		-	-	4.0	6.5 to 9.0	4	35*	-
020090	Barataria Bay (including Caminada Creole, Hackberry Bay, Bay Batiste, and Bay Long) (Tidal)	X	X	X		-	-	4.0	6.5 to 9.0	4	35*	-
020100	Intracoastal Waterway (East-West) - Larose to Mississippi River (Tidal)	X	X	X		-	-	4.0	6.5 to 9.0	1	35*	-
020070	Bayou Rigolets - Lake Salvador to Little Lake and and portions of Barataria Waterway (Shellfish) (Tidal)	X	X	X		-	-	4.0	6.5 to 9.0	4	35*	-
030150	Calcasieu River - Moss Lake to the Gulf of Mexico (Tidal)	X	X	X		-	-	4.0	6.0 to 8.5	4	35*	-

* See narrative statement on temperature.

WATER QUALITY CRITERIA

SEGMENT		WATER USES				CRITERIA						
AGENCY I.D. NUMBER	DESCRIPTION	PRIMARY CONTACT RECREATION	SECONDARY CONTACT RECREATION	PROPAGATION OF FISH AND WILDLIFE	DOMESTIC RAW WATER SUPPLY	CHLORIDE (mg/l) Not to exceed	SULPHATE (mg/l) Not to exceed	DISSOLVED OXYGEN (mg/l) Not less than	PH RANGE	Bacteria Standard	TEMPERATURE °C	TOTAL DISSOLVED SOLIDS (mg/l) Not to exceed
030160	Intracoastal Water (East-West) - Sabine River to Calcasieu Lock (Tidal)		X	X		-	-	4.0	6.0 to 8.5	2	35*	-
030090	Calcasieu River - Salt Water Barrier to Moss Lake (Tidal)	X	X	X		-	-	4.0	6.0 to 8.5	1	35*	-
030140	Bayou D'Inde - Headwaters to Calcasieu River (Tidal)		X	X		-	-	2.0	6.5 to 9.0	2	35*	-
040225	Charenton Canal - Bayou Teche to Intracoastal Waterway	X	X	X		250	75	5.0	6.0 to 8.5	1	32	500
040090	Mermentau River - Grand Lake to Gulf of Mexico (Tidal)	X	X	X		-	-	4.0	6.5 to 9.0	4	35*	-

* See narrative statement on temperature.

WATER QUALITY CRITERIA

SEGMENT		WATER USES				CRITERIA						
AGENCY I.D. NUMBER	DESCRIPTION	PRIMARY CONTACT RECREATION	SECONDARY CONTACT RECREATION	PROPAGATION OF FISH AND WILDLIFE	DOMESTIC RAW WATER SUPPLY	CHLORIDE (mg/l) Not to exceed	SULPHATE (mg/l) Not to exceed	DISSOLVED OXYGEN (mg/l) Not less than	PH RANGE	Bacteria Standard	TEMPERATURE °C	TOTAL DISSOLVED SOLIDS (mg/l) Not to exceed
040100	Little Pecan Bayou (Tidal)		X	X		-	-	4.0	6.5 to 9.0	2	35*	-
040150	Lake Peigneur (Tidal)		X	X		-	-	4.0	6.0 to 8.5	1	35*	-
040120	Vermilion River - Origin to Intracoastal Waterway	X	X	X		230	36	5.0	6.0 to 8.5	1	32	350
040130	Vermilion River - Intracoastal Waterway to Vermilion Bay (Tidal)		X	X		-	-	4.0	6.5 to 9.0	1	35*	-
040140	Bayou Tigre - Origin to Vermilion Bay (Tidal)		X	X		-	-	4.0	6.5 to 9.0	2	35*	-

* See narrative statement on temperature.

WATER QUALITY CRITERIA

SEGMENT		WATER USES				CRITERIA						
AGENCY I.D. NUMBER	DESCRIPTION	PRIMARY CONTACT RECREATION	SECONDARY CONTACT RECREATION	PROPAGATION OF FISH AND WILDLIFE	DOMESTIC RAW WATER SUPPLY	CHLORIDE (mg/l) Not to exceed	SULPHATE (mg/l) Not to exceed	DISSOLVED OXYGEN (mg/l) Not less than	pH RANGE	Bacteria Standard	TEMPERATURE °C	TOTAL DISSOLVED SOLIDS (mg/l) Not to exceed
040226	Charenton Canal - Intracoastal Waterway to West Cote Blanche Bay (Tidal)	X	X	X		-	-	4.0	6.5 to 9.0	1	35*	-
040230	Vermilion Lock (Tidal)		X	X		-	-	4.0	6.5 to 9.0	4	35*	-
040240	West Cote Blanche Bay (Tidal)		X	X		-	-	4.0	6.5 to 9.0	4	35*	-
040250	East Cote Blanche Bay Waterway (Tidal)		X	X		-	-	4.0	6.5 to 9.0	4	35*	-
040260	Intracoastal Waterway (East-West) - Calcasieu Lock to Vermilion Lock		X	X		250	75	5.0	6.0 to 8.5	2	32	500

* See narrative statement on temperature.

WATER QUALITY CRITERIA

SEGMENT		WATER USES				CRITERIA						
AGENCY I.D. NUMBER	DESCRIPTION	PRIMARY CONTACT RECREATION	SECONDARY CONTACT RECREATION	PROPAGATION OF FISH AND WILDLIFE	DOMESTIC RAW WATER SUPPLY	CHLORIDE(mg/l) Not to exceed	SULPHATE(mg/l) Not to exceed	DISSOLVED OXYGEN (mg/l) Not less than	PH RANGE	Bacteria Standard	TEMPERATURE °C	TOTAL DISSOLVED SOLIDS (mg/l) Not to exceed
040270	Intracoastal Waterway (East-West) - Vermilion Lock to Wax Lake (Tidal)		X	X		-	-	4.0	6.5 to 9.0	2	35*	-
050080	Bastian Bay, Adams Bay, Scofield Bay, Coquette Bay, Tambour Bay and Bay Jacques (Tidal)		X	X		-	-	5.0	6.5 to 8.5	4	35*	-
050090	Tiger Pass, Red Pass, Spanish Pass, Grand Pass, Tante Rhine Pass, and Southwest Pass (Tidal)		X	X		-	-	4.0	6.5 to 9.0	4	35*	-
050100	South Pass, North Pass, and Main Pass (Mississippi) (Tidal)		X	X		-	-	4.0	6.5 to 9.0	4	35*	-
050110	Baptiste Collette (Tidal)		X	X		-	-	4.0	6.5 to 9.0	4	35*	-

*See narrative statement on temperature.

WATER QUALITY CRITERIA

SEGMENT		WATER USES				CRITERIA						
AGENCY I.D. NUMBER	DESCRIPTION	PRIMARY CONTACT RECREATION	SECONDARY CONTACT RECREATION	PROPAGATION OF FISH AND WILDLIFE	DOMESTIC RAW WATER SUPPLY	CHLORIDE (mg/l) Not to exceed	SULPHATE (mg/l) Not to exceed	DISSOLVED OXYGEN (mg/l) Not less than	pH RANGE	Bacteria Standard	TEMPERATURE °C	TOTAL DISSOLVED SOLIDS (mg/l) Not to exceed
050120	River aux Chenes (Tidal)		X	X		-	-	4.0	6.5 to 9.0	4	35*	-
050130	Bayou Terre aux Boeufs (Tidal)		X	X		-	-	4.0	6.5 to 9.0	4	35*	-
050140	Lake Lery (Tidal)		X	X		-	-	4.0	6.5 to 9.0	4	35*	-
050150	Black Bay, California Bay, Breton Sound (Tidal)		X	X		-	-	4.0	6.5 to 9.0	4	35*	-
050070	Mississippi River: Head of Passes to Mouth of Passes (Tidal)		X	X		-	-	4.0	6.5 to 9.0	4	35*	-

* See narrative statement on temperature.

WATER QUALITY CRITERIA

SEGMENT		WATER USES				CRITERIA						
AGENCY I.D. NUMBER	DESCRIPTION	PRIMARY CONTACT RECREATION	SECONDARY CONTACT RECREATION	PROPAGATION OF FISH AND WILDLIFE	DOMESTIC RAW WATER SUPPLY	CHLORIDE (mg/l) Not to exceed	SULFATE (mg/l) Not to exceed	DISSOLVED OXYGEN (mg/l) Not less than	PH RANGE	Bacteria Standard	TEMPERATURE °C	TOTAL DISSOLVED SOLIDS (mg/l) Not to exceed
070070	Pearl River - I-10 to Lake Borgne (Includes West Pearl, West Middle Pearl, and Middle Pearl) (Tidal)	X	X	X		-	-	5.0	6.5 to 9.0	1	35*	-
080150	Lake Pontchartrain - West of Highway II Bridge (Tidal)	X	X	X		-	-	4.0	6.5 to 9.0	1	35*	-
080160	Lake Pontchartrain - East of Highway II Bridge (Tidal)	X	X	X		-	-	4.0	6.5 to 9.0	4	35*	-
080170	Industrial Canal - Mississippi River to Lake Pontchartrain (Tidal)		X	X		-	-	4.0	6.5 to 9.0	1	35*	-
080180	Lake St. Catherine (Tidal)		X	X		-	-	4.0	6.5 to 9.0	4	35*	-

* See narrative statement on temperature.

WATER QUALITY CRITERIA

SEGMENT		WATER USES				CRITERIA						
AGENCY I.D. NUMBER	DESCRIPTION	PRIMARY CONTACT RECREATION	SECONDARY CONTACT RECREATION	PROPAGATION OF FISH AND WILDLIFE	DOMESTIC RAW WATER SUPPLY	CHLORIDE (mg/l) Not to exceed	SULPHATE (mg/l) Not to exceed	DISSOLVED OXYGEN (mg/l) Not less than	pH RANGE	Bacteria Standard	TEMPERATURE °C	TOTAL DISSOLVED SOLIDS (mg/l) Not to exceed
080190	Rigolets and Chef Menteur Pass (Tidal)	X	X	X		-	-	4.0	6.5 to 9.0	4	35*	-
080200	Intracoastal Waterway - Mississippi River to Mississippi State Line (Tidal)		X	X		-	-	4.0	6.5 to 9.0	4	35*	-
080210	Mississippi River Gulf Outlet - Intracoastal Canal to Breton Sound (Tidal)		X	X		-	-	4.0	6.5 to 9.0	4	35*	-
080220	Lake Borgne (Tidal)	X	X	X		-	-	5.0	6.5 to 9.0	4	35*	-
080230	Bayou La Loutre - Hopedale to Chandelier Sound (Tidal)	X	X	X		-	-	4.0	6.5 to 9.0	4	35*	-

* See narrative statement on temperature.

WATER QUALITY CRITERIA

SEGMENT		WATER USES				CRITERIA						
AGENCY I.D. NUMBER	DESCRIPTION	PRIMARY CONTACT RECREATION	SECONDARY CONTACT RECREATION	PROPAGATION OF FISH AND WILDLIFE	DOMESTIC RAW WATER SUPPLY	CHLORIDE (mg/l) Not to exceed	SULPHATE (mg/l) Not to exceed	DISSOLVED OXYGEN (mg/l) Not less than	pH RANGE	Bacteria Standard	TEMPERATURE °C	TOTAL DISSOLVED SOLIDS (mg/l) Not to exceed
080240	Eloi Bay (Tidal)		X	X		-	-	5.0	6.5 to 9.0	4	35*	-
080250	Lake LaFortuna (Tidal)		X	X		-	-	5.0	6.5 to 9.0	4	35*	-
080260	Morgan Harbor (Tidal)		X	X		-	-	5.0	6.5 to 9.0	4	35*	-
080270	Drum Bay (Tidal)		X	X		-	-	5.0	6.5 to 9.0	4	35*	-
080280	Chandelier Sound (Tidal)	X	X	X		-	-	5.0	6.5 to 9.0	4	35*	-

* See narrative statement on temperature.

WATER QUALITY CRITERIA

SEGMENT		WATER USES				CRITERIA						
AGENCY I.D. NUMBER	DESCRIPTION	PRIMARY CONTACT RECREATION	SECONDARY CONTACT RECREATION	PROPAGATION OF FISH AND WILDLIFE	DOMESTIC RAW WATER SUPPLY	CHLORIDE (mg/l) Not to exceed	SULPHATE (mg/l) Not to exceed	DISSOLVED OXYGEN (mg/l) Not less than	pH RANGE	Bacteria Standard	TEMPERATURE °C	TOTAL DISSOLVED SOLIDS (mg/l) Not to exceed
080290	Bay Boudreau (Tidal)		X	X		-	-	5.0	6.5 to 9.0	4	35*	-
100080	Sabine Lake (Tidal)	X	X	X		-	-	4.0	6.0 to 8.5	4	35*	-
100081	Sabine Pass (Tidal)	X	X	X		-	-	5.0	6.5 to 9.0	4	35*	-
100090	Black Bayou - Intracoastal Waterway to Sabine Lake (Tidal)		X	X		-	-	4.0	6.0 to 8.5	2	35*	-
100100	Vinton Waterway - Vinton to Intracoastal Waterway (Tidal)		X	X		-	-	4.0	6.0 to 8.5	2	35*	-

* See narrative statement on temperature.

WATER QUALITY CRITERIA

SEGMENT		WATER USES				CRITERIA						
AGENCY I.D. NUMBER	DESCRIPTION	PRIMARY CONTACT RECREATION	SECONDARY CONTACT RECREATION	PROPAGATION OF FISH AND WILDLIFE	DOMESTIC RAW WATER SUPPLY	CHLORIDE (mg/l) Not to exceed	SULPHATE (mg/l) Not to exceed	DISSOLVED OXYGEN (mg/l) Not less than	pH RANGE	Bacteria Standard	TEMPERATURE °C	TOTAL DISSOLVED SOLIDS (mg/l) Not to exceed
100070	Sabine River - Morgan's Bluff to Sabine Lake (Tidal)	X	X	X		-	-	4.0	6.0 to 8.5	1	35*	-
110070	Bayou Terrebonne - Bourg to Lake Barre (Tidal)	X	X	X		-	-	4.0	6.5 to 9.0	4	35*	-
110160	Bayou Petit Caillou - Below Houma to Terrebonne Bay (Tidal)	X	X	X		-	-	4.0	6.5 to 9.0	4	35*	-
110170	Bayou Grand Caillou - Below Houma to Caillou Lake (Tidal)	X	X	X		-	-	4.0	6.5 to 9.0	4	35*	-
110180	Bayou Chauvin and Lake Boudreaux (Tidal)	X	X	X		-	-	4.0	6.5 to 9.0	1	35*	-

* See narrative statement on temperature.

WATER QUALITY CRITERIA

SEGMENT		WATER USES				CRITERIA						
AGENCY I.D. NUMBER	DESCRIPTION	PRIMARY CONTACT RECREATION	SECONDARY CONTACT RECREATION	PROPAGATION OF FISH AND WILDLIFE	DOMESTIC RAW WATER SUPPLY	CHLORIDE (mg/l) Not to exceed	SULPHATE (mg/l) Not to exceed	DISSOLVED OXYGEN (mg/l) Not less than	PH RANGE	Bacteria Standard	TEMPERATURE °C	TOTAL DISSOLVED SOLIDS (mg/l) Not to exceed
110190	Bayou de Large - Houma to Bay Junop (Tidal)	X	X	X		-	-	4.0	6.5 to 9.0	4	35*	-
110200	Lake Hache, Lake DeCade, Lost Lake and Four-League Bay (Tidal)		X	X		-	-	4.0	6.5 to 9.0	4	35*	-
110210	Bayou Penchant and Lake Penchant - Morgan City to Lake DeCade (Scenic River) (Tidal)	X	X	X		-	-	4.0	6.5 to 9.0	4	35*	-
110220	Caillou Bay (Open Bay)		X	X		-	-	5.0	6.5 to 9.0	4	35*	-
110230	Lake Pelto (Tidal)		X	X		-	-	5.0	6.5 to 9.0	4	35*	-

* See narrative statement on temperature.

WATER QUALITY CRITERIA

SEGMENT		WATER USES				CRITERIA						
AGENCY I.D. NUMBER	DESCRIPTION	PRIMARY CONTACT RECREATION	SECONDARY CONTACT RECREATION	PROPAGATION OF FISH AND WILDLIFE	DOMESTIC RAW WATER SUPPLY	CHLORIDE (mg/l) Not to exceed	SULPHATE (mg/l) Not to exceed	DISSOLVED OXYGEN (mg/l) Not less than	pH RANGE	Bacteria Standard	TEMPERATURE °C *	TOTAL DISSOLVED SOLIDS (mg/l) Not to exceed
110240	Terrebonne Bay (Tidal)		X	X		-	-	5.0	6.5 to 9.0	4	35*	-
110250	Lake Barre (Tidal)		X	X		-	-	5.0	6.5 to 9.0	4	35*	-
110260	Timbalier Bay (Tidal)		X	X		-	-	5.0	6.5 to 9.0	4	35*	-
119270	Bayou Blue - Catfish Lake to Lake Raccourci (Tidal)		X	X		-	-	4.0	6.5 to 9.0	4	35*	-
110290	Bayou Lafourche - Larose to Gulf of Mexico (Tidal)	X	X	X		-	-	4.0	6.5 to 9.0	4	35*	-

* See narrative statement on temperature.

WATER QUALITY CRITERIA

SEGMENT		WATER USES				CRITERIA						
AGENCY I.D. NUMBER	DESCRIPTION	PRIMARY CONTACT RECREATION	SECONDARY CONTACT RECREATION	PROPAGATION OF FISH AND WILDLIFE	DOMESTIC RAW WATER SUPPLY	CHLORIDE (mg/l) Not to exceed	SULPHATE (mg/l) Not to exceed	DISSOLVED OXYGEN (mg/l) Not less than	pH RANGE	Bacteria Standard	TEMPERATURE °C	TOTAL DISSOLVED SOLIDS (mg/l) Not to exceed
110080	Houma Navigation Canal - Houma to Terrebonne Bay (Tidal)		X	X		-	-	4.0	6.5 to 9.0	4	35*	-
	Gulf of Mexico and other open coastal waters not specifically identified in the tables	X	X	X		-	-	5.0	6.5 to 9.0	4	32	-

* See narrative statement on temperature.

State of Maine Marine Water Quality Standards

Maine Water Quality Standards Jan. 1980

Department of Environmental Protection
Bureau of Water Quality Control
Ray Building, Hospital V St.
Augusta, Maine 04333

MAINE

Antidegradation

Waters whose existing quality exceeds the established classification standards will be maintained at such high quality unless it has been demonstrated to the Department that the change will not preclude uses presently possible in such waters and is justifiable as a result of necessary social or economic development. Any project or development which would constitute a new or an increased source of pollution to high quality waters will be required to provide the necessary degree of waste treatment to maintain such high water quality.

Tidal or Marine Waters

Class SA shall be suitable for all clean water usages, including water contact recreation and fishing. Such waters shall be suitable for the harvesting and propagation of shellfish and for a fish and wildlife habitat.

Class SB-1 shall be suitable for all clean water usages, including water contact recreation and fishing. Such waters shall be suitable for the har-

vesting and propagation of shellfish and for fish and wildlife habitat.

Class SB-2 shall be suitable for recreational usages, including water contact and fishing. Such waters shall be suitable for the harvesting and propagation of shellfish, for a fish and wildlife habitat, and suitable for industrial cooling and process uses.

Class SC, the fourth highest classification, shall be of such quality as to be satisfactory for recreational boating, fishing and other similar uses, except primary water contact. Such waters may be used for the propagation of indigenous shellfish to be harvested for depuration purposes, for a fish and wildlife habitat, and industrial cooling and process uses.

Class SD waters shall be assigned only where a higher water classification cannot be attained after utilizing the best practicable treatment or control of sewage and other wastes. Waters of this Class may be used for power generation, navigation, industrial process waters or cooling waters and for migration of fish.

Table 1

Interstate Waters	Adopted Classification	Public Water Supply	Recreation	Fish & Wildlife Propagation	Industrial Processing	Power	Shellfish	Agriculture	Aesthetics
TIDAL WATERS									
Cumberland County									
Cousins River	SB-2		XX	X	X	X	X		X
Fore River	SC		X	X	X	X			X
Harraseeket River	SB-2		XX	X	X	X	X		X
Meadows Creek	SB-1		XX	X	X	X	X		X
Portland Harbor	SC		X	X	X	X			X
Presumpscot River	SC		X	X	X	X			X
Royal River	SB-2		XX	X	X	X	X		X
Scarboro River	SB-2		XX	X	X	X	X		X
Spurwink River	SC		X	X	X	X			X
Hancock County									
Bagaduce River	SA		XX	X	X	X	X		X
Benjamin River	SB-1		XX	X	X	X	X		X
Flanders Bay	SB-1		XX	X	X	X	X		X
Jordan River	SB-1		XX	X	X	X	X		X
Joy Cove	SB-1		XX	X	X	X	X		X
Morgan Bay	SB-1		XX	X	X	X	X		X
Northeast Harbor	SB-1		XX	X	X	X	X		X
Patten Bay	SB-1		XX	X	X	X	X		X
Penobscot River	SC		X	X	X	X			X
Salt Pond	SB-1		XX	X	X	X	X		X
Skillings River	SB-2		XX	X	X	X	X		X
Union River	SB-1		XX	X	X	X	X		X
West Bay	SB-1		XX	X	X	X	X		X
Knox County									
Goose River	SC		X	X	X	X			X
Meduncook River	SA		XX	X	X	X	X		X
Megunticook River	SC		X	X	X	X			X
St. George River	SA		XX	X			X		
Tenants Harbor	SC		X	X	X	X			X
Weskeag River	SB-1		XX	X	X	X	X		X
Lincoln County									
Back River, Boothbay	SB-1		XX	X	X	X	X		X
Back River, Westport	SB-1		XX	X	X	X	X		X
Boothbay Harbor	SB-2		XX	X	X	X	X		X
Cross River	SB-1		XX	X	X	X	X		X
Damariscotta River	SA		XX	X	X	X	X		X
	SB-1		XX	X	X	X	X		X
	SC		X	X	X	X	X		X
Johns River	SA		XX	X	X	X	X		X
Medomak River	SA		XX	X	X	X	X		X
	SB-1		XX	X	X	X	X		X

Table 1

Interstate Waters	Adopted Classification	Public Water Supply	Recreation	Fish & Wildlife Propagation	Industrial Processing	Power	Shellfish	Agriculture	Aesthetics
TIDAL WATERS									
Lincoln County (Cont'd)									
Pemaquid River	SC		X	X	X	X			X
Sheepscott River	SB-1		XX	X	X	X	X		X
Sagadahoc County									
Androscoggin River	SB-1		XX	X	X	X	X		X
Cathance River	SB-1		XX	X	X	X	X		X
Kennebec River	SB-1		XX	X	X	X	X		X
	SB-2		XX	X	X	X	X		X
Muddy River	SB-1		XX	X	X	X	X		X
Sasanoa River	SB-2		XX	X	X	X	X		X
Waldo County									
Belfast Harbor	SB-1		XX	X	X	X	X		X
	SB-2		XX	X	X	X	X		X
	SC		X	X	X	X			X
Ducktrap Harbor	SA		XX	X	X	X	X		X
Goose River	SB-1		XX	X	X	X	X		X
Little River	SB-1		XX	X	X	X	X		X
Passagassawakeag River	SB-2		XX	X	X	X	X		X
Searsport Harbor	SB-1		XX	X	X	X	X		X
	SB-2		XX	X	X	X	X		X
Washington County									
Bobby Creek	SA		XX	X	X	X	X		X
Cape Split Harbor	SA		XX	X	X	X	X		X
Carrying Place Cove	SA		XX	X	X	X	X		X
Chandler River	SB-1		XX	X	X	X	X		X
	SC		X	X	X	X			X
Cobscook Bay	SA		XX	X	X	X	X		X
Dennys Bay	SA		XX	X	X	X	X		X
Dennys River	SB-1		XX	X	X	X	X		X
	SC		X	X	X	X			X
East Machias River	SC		X	X	X	X			X
Englishman River	SA		XX	X	X	X	X		X
Friar Roads	SA		XX	X	X	X	X		X
	SC		X	X	X	X	X		X
Hairdscrabble River	SC		X	X	X	X			X
Haycock River	SA		XX	X	X	X	X		X
Harrington River	SB-2		XX	X	X	X	X		X
Indian River	SA		XX	X	X	X	X		X
	SB-2		XX	X	X	X	X		X
Little Kennebec Bay	SA		XX	X	X	X	X		X
Little Machias Bay	SA		XX	X	X	X	X		X

Tidal Water Thermal Discharges

No discharge of polllutants shall cause the monthly mean of the daily maximum ambient temperatures in any tidal body of water, as measured outside the mixing zone, to be raised more than 4°F, nor more than 1.5°F from June 1 to September 1. In no event ~~shall~~ any discharge cause the temperature of any tidal waters to exceed 85°F at any point outside a mixing zone established by the Board.

Table 1

Interstate Waters	Adopted Classification	Public Water Supply	Recreation	Fish & Wildlife Propagation	Industrial Processing	Power	Shellfish	Agriculture	Aesthetics
TIDAL WATERS									
Washington County (Cont'd)									
Little River	SA		XX	X	X	X	X		X
Lubec Channel	SA		XX	X	X	X	X		X
Machias River	SC		X	X	X	X			X
Middle River	SC		X	X	X	X			X
Mill River	SB-1		XX	X	X	X	X		X
Moose River*	SA		XX	X	X	X	X		X
Narraguagus River	SB-1		XX	X	X	X	X		X
Passamaquaddy Bay	SB-1		XX	X	X	X	X		X
Pennamaquam River			XX	X	X	X	X		X
Pleasant River	SA		XX	X	X	X	X		X
	SB-1		XX	X	X	X	X		X
Quaddy Roads	SA		XX	X	X	X	X		X
St. Croix River	SB-1		XX	X	X	X	X		X
	SB-2		XX	X	X	X	X		X
	SC		X	X	X	X			X
The Pool	SA		XX	X	X	X	X		X
Tank Stream	SA		XX	X	X	X	X		X
Western Passage	SA		XX	X	X	X	X		X
West River	SA		XX	X	X	X	X		X
Whiting Bay	SB-1		XX	X	X	X	X		X
York County									
Batson River	SC		X	X	X	X			X
Brave Boat Harbor	SA		XX	X	X	X	X		X
Cape Neddick Harbor	SB-2		XX	X	X	X	X		X
Chauncey Creek	SA		XX	X	X	X	X		X
Goose Fare Brook	SB-2		XX	X	X	X	X		X
Kennebunk River	SB-2		XX	X	X	X	X		X
	SC		X	X	X	X			X
Little River	SC		X	X	X	X			X
Mousam River	SB-1		XX	X	X	X	X		X
	SC		X	X	X	X			X
Ogunquit River	SC		X	X	X	X			X
Saco River	SC		X	X	X	X			X
Spruce Creek	SA		XX	X	X	X	X		X
Webhannet River	SB-1		XX	X	X	X	X		X
	SC		X	X	X	X			X
York River	SA		XX	X	X	X	X		X
	SB-2		XX	X	X	X	X		X

TABLE 3
DEPARTMENT OF ENVIRONMENTAL PROTECTION
WATER QUALITY CRITERIA
FOR
TIDAL OR MARINE WATERS

ITEM	CLASS SA	CLASS SB-1	CLASS SB-2	CLASS SC	CLASS SD
Dissolved Oxygen	Not less than 6.0 ppm at all times	Not less than 6.0 ppm at all times	Not less than 6.0 ppm at all times	Not less than 5.0 ppm at any time	Not less than 3.0 ppm at any time
Sludge Deposits, Floating Solids, Settleable Solids	None allowable	None allowable	None allowable	None allowable	None allowable
Color and Turbidity	None which will adversely affect usages of this class or be injurious to aquatic life or render such dangerous for human consumption	None which will adversely affect usages of this class or be injurious to aquatic life or render such dangerous for human consumption	None which will adversely affect usages of this class or be injurious to aquatic life or render such dangerous for human consumption	None which will adversely affect usages of this class or be injurious to aquatic life or render such dangerous for human consumption	None which will impair usages assigned to this class
Taste and Odor	None which will adversely affect usages of this class or be injurious to aquatic life or render such dangerous for human consumption	None which will adversely affect usages of this class or be injurious to aquatic life or render such dangerous for human consumption	None which will adversely affect usages of this class or be injurious to aquatic life or render such dangerous for human consumption	None which will adversely affect usages of this class or be injurious to aquatic life or render such dangerous for human consumption	None which will impair usages assigned to this class

TABLE 3 (Continued)

ITEM	CLASS SA	CLASS SB-1	CLASS SB-2	CLASS SC	CLASS SD
Coliform Bacteria In Shellfish Growing Areas	Median not in excess of 70 per 100 ml, nor shall 10% of samples exceed 230 per 100 ml	Median not in excess of 70 per 100 ml, nor shall 10% of samples exceed 230 per 100 ml	Median not in excess of 70 per 100 ml, nor shall 10% of samples exceed 230 per 100 ml	Median not in excess of 700 per 100 ml nor shall 10% of samples exceed 2300 per 100 ml	Not in amounts which, in the determination of the Commission, indicate a condition harmful to the public health or impair any usages assigned to this class
In Non-Shellfish Growing Areas	Not in excess of 70 per 100 ml, nor shall 10% of samples exceed 230 per 100 ml	Not in excess of 240 per 100 ml, nor shall 10% of samples exceed 500 per 100 ml	Not in excess of 500 per 100 ml, nor shall 10% of samples exceed 1000 per 100 ml	Not in excess of 1500 per 100 ml nor shall 10% of samples exceed 5000 per 100 ml	Not in amounts which in the determination of the Commission, indicate a condition harmful to the public health or impair any usages assigned to this class
Fecal Coliform Bacteria In Shellfish Growing Areas	Not in excess of 15 per 100 ml, nor shall 10% of samples exceed 50 per 100 ml	Not in excess of 15 per 100 ml, nor shall 10% of samples exceed 50 per 100 ml	Not in excess of 15 per 100 ml, nor shall 10% of samples exceed 50 per 100 ml	Not in excess of 150 per 100 ml, nor shall 10% of samples exceed 500 per 100 ml	

TABLE 3 (Continued)

ITEM	CLASS SA	CLASS SB-1	CLASS SB-2	CLASS SC	CLASS SD
In Non-Shellfish Growing Areas	Not in excess of 15 per 100 ml, nor shall 10% of samples exceed 50 per 100 ml	Not in excess of 50 fecal coliforms per 100 ml, nor shall 10% of samples exceed 150 fecal coliforms per 100 ml, not in excess of 240 fecal coliforms per 100 ml, nor shall 10% of samples exceed 500 coliforms per 100 ml	Not in excess of 100 per 100 ml, nor shall 10% of samples exceed 200 per 100 ml	Not in excess of 300 per 100 ml, nor shall 10% of samples exceed 1000 per 100 ml	
pH	6.7 to 8.5	6.7 to 8.5	6.7 to 8.5	6.7 to 8.5	None which would cause the pH to be in a range where usages shall be impaired
Allowable Temperature Increase	None which will raise the monthly mean or the maximum daily temperature more than 4°F or where necessary more than 1.5°F during July, August, and September	None which will raise the monthly mean or the maximum daily temperature more than 4°F or where necessary more than 1.5°F during July, August, and September	None which will raise the monthly mean or the maximum daily temperature more than 4°F or where necessary more than 1.5°F during July, August, and September	None which will raise the monthly mean or the maximum daily temperature more than 4°F or where necessary more than 1.5°F during July, August, and September	None which will raise the monthly mean or the maximum daily temperature more than 4°F or where necessary more than 1.5°F during July, August and September

TABLE 3 (Continued)

ITEM	CLASS SA	CLASS SB-1	CLASS SB-2	CLASS SC	CLASS SD
Chemical Constituents	None which would be harmful to humans, animal or aquatic life or which would adversely affect other uses of this class	None which would be harmful to humans, animal or aquatic life or which would adversely affect other uses of this class	None which would be harmful to humans, animal or aquatic life or which would adversely affect other uses of this class	None which would be harmful to humans, animal or aquatic life or which would adversely affect other uses of this class	None which would be harmful to humans, animal or aquatic life or which would adversely affect other uses of this class
Radioactivity	None which would be harmful to humans, animal or aquatic life or which would result in radionuclide concentrations in edible fish or other aquatic life rendering them dangerous for human consumption	None which would be harmful to humans, animal or aquatic life or which would result in radionuclide concentrations in edible fish or other aquatic life rendering them dangerous for human consumption	None which would be harmful to humans, animal or aquatic life or which would result in radionuclide concentrations in edible fish or other aquatic life rendering them dangerous for human consumption	None which would be harmful to humans, animal or aquatic life or which would result in radionuclide concentrations in edible fish or other aquatic life rendering them dangerous for human consumption	None which would be harmful to humans, animal or aquatic life or which would result in radionuclide concentrations in edible fish or other aquatic life rendering them dangerous for human consumption

Maine

State of Maryland Marine Water Quality Standards

Water Quality & Water Pollution Control

Code of Maryland Regulation 10.50.01

1981

Maryland Dept. of Natural Resources

Water Resources Administration

Annapolis, MD 21404

.02 Receiving Water Quality Standards.

A. Introduction.

(1) The receiving water quality standards consist of two parts: the designated uses of the waters involved, and the water quality criteria for the waters based upon these uses. Water quality criteria are numerical and descriptive limits for water constituents which are designed to protect designated uses of a body of water (for example, "dissolved oxygen may not be less than 4.0 mg/liter", or "no floating scum or debris").

(2) Sections B - H of this regulation define specific water use classes for Maryland surface (or receiving) waters and designate water quality criteria for each class. The sections also contain the State's anti-degradation policy required by U.S. Environmental Protection Agency regulation 40 CFR § 130.17 (1978) and other policies which apply to water quality standards. Section I, Classification of the Surface Waters of the State, assigns all Maryland receiving waters to a water use class.

B. Water Uses and Classes.

(1) Beneficial Water Uses.

(a) The Department* will manage and regulate the waters of the State* to protect the following beneficial water uses:

(i) Water contact recreation;

(ii) Fish*, other aquatic life*, and wildlife;

(iii) Shellfish harvesting;

(iv) Public water supply;

(v) Agricultural water supply; and

(vi) Industrial water supply.

(b) The actual uses of water are not limited to those designated in this regulation. Any lawful and reasonable use is permitted provided that the receiving water quality standards are not adversely affected by it.

(2) Basic Water Use. All waters of the State shall be protected for the basic uses of water contact recreation, fish, other aquatic life, and wildlife. These uses compose Class I. Criteria for Class I Waters shall apply to all waters of the State unless contravened by more restrictive criteria for other specific classes. Criteria to protect Class I waters are sufficiently stringent to afford protection also for public water supply in fresh water areas (with treatment by filtration and

disinfection), agricultural water supply, and industrial water supply. More restrictive criteria are established to protect shellfish harvesting waters*, natural trout waters*, and recreational trout waters*.

(3) Specific Receiving Water Use Classes. The following water use classes are established for the waters of the State. The concepts of suitability and capability for a water use as expressed in these classes are not based solely on existing conditions but include water uses to be made possible by anticipated improvements in water quality.

(a) Class I: Water Contact Recreation and Aquatic Life. Waters which are suitable for:

(i) Water contact sports;

(ii) Play and leisure time activities where the human body may come in direct contact with the surface water; and

(iii) The growth and propagation of fish (other than trout), other aquatic life, and wildlife.

(b) Class II: Shellfish Harvesting Waters. Waters where shellfish are propagated, stored, or gathered for marketing purposes, including actual or potential areas for the harvesting of oysters, softshell clams, hardshell clams, and brackish water clams.

(c) Class III: Natural Trout Waters. Waters which have the potential for or are:

(i) Suitable for the growth and propagation of trout; and

(ii) Capable of supporting nautral trout populations and their associated food organisms.

(d) Class IV: Recreational Trout Waters. Cold or warm waters which have the potential for or are:

(i) Capable of holding or supporting adult trout for put-and-take fishing; and

(ii) Managed as a special fishery by periodic stocking and seasonal catching.

(4) Actual Water Use Not Limited. The actual use of water is not limited to the water use classes established by this regulation. Any lawful and reasonable use is permitted if the receiving water quality standards are not adversely affected.

C. General Water Quality Criteria. The waters of the State at all times shall be free from:

(1) Substances attributable to sewage*, industrial waste*, or other waste* that will settle to form sludge deposits that are unsightly, putrescent, or odorous to a degree as to create a nuisance, or that interfere directly or indirectly with water uses;

(2) Floating debris, oil*, grease, scum, and other floating materials, attributable to sewage, industrial waste, or other waste in amounts sufficient to be unsightly to a degree as to create a nuisance, or that interfere directly or indirectly with water uses;

(3) Materials attributable to sewage, industrial waste, or other waste which produce taste, odor, or change the existing color or other physical and chemical conditions in the receiving waters* to a degree as to create a nuisance, or that interfere directly or indirectly with water uses; and

(4) High-temperature, toxic*, corrosive or other deleterious substances attributable to sewage, industrial waste, or other waste in concentrations or combinations which interfere directly or indirectly with water uses, or which are harmful to human, animal, plant, or aquatic life.

D. Specific Water Quality Criteria.

(1) Applicability. The following receiving water quality criteria are established for the classes indicated. These criteria shall apply during periods of flow greater than or equal to the 7-day, 10-year low flow. Where the waters of the State are or may be affected by discharges* from point sources*, these standards shall apply outside of any mixing zones which may be designated by the Department. It is recognized that in some cases the natural* water quality of a stream segment may not be consistent with the criteria established for the stream. In these cases, it is not intended that these natural conditions constitute a violation of the water quality standards, or that the water quality to be maintained and achieved be substantially different from that which would occur naturally.

(2) Criteria for Class I Waters: Water Contact Recreation and Aquatic Life.

(a) Bacteriological. There may not be any sources of pathogenic or harmful organisms in sufficient quantities to constitute a public health hazard. A public health hazard will be presumed if the fecal coliform density exceeds a log mean of 200 per 100 ml, based on a minimum of not less than five samples taken over any 30-day period, or if 10 percent of the total number of samples taken during any 30-day period exceed 400 per 100 ml, unless a sanitary survey approved by the Department of Health and Mental Hygiene discloses no significant health hazard.

(b) Dissolved Oxygen. The dissolved oxygen

concentration shall be not less than 5.0 mg/liter at any time.

(c) Temperature. For all discharges of heat, the maximum temperature outside the mixing zone determined in accordance with § F of this regulation or with Regulation .13 may not exceed 90°F (32°C) or ambient temperature of the receiving waters, whichever is greater. In addition, a discharge of heat may not create thermal barriers that adversely affect aquatic life.

(d) pH. Normal pH values may not be less than 6.5 or greater than 8.5.

(e) Turbidity. Turbidity may not exceed levels detrimental to aquatic life. Turbidity in the receiving water* resulting from any discharge may not exceed 150 NTU (Nephelometer Turbidity Units) at any time or 50 NTU as a monthly average. Note that NTUs are equivalent measures to FTUs (Formazin Turbidity Units) and JTUs (Jackson Turbidity Units).

(f) Toxic Materials. The toxic materials listed here may not exceed these designated limits at any time:

(i) Polychlorinated Biphenyls (PCB's) -.001 micrograms/liter;

(ii) Endrin -.004 micrograms/liter;

(iii) Toxaphene -.005 micrograms/liter;

(iv) DDT -.001 micrograms/liter;

(v) Benzidine -.1 micrograms/liter;

(vi) Aldrin-Dieldrin -.003 micrograms/liter;

(3) Criteria for Class II Waters: Shellfish Harvesting.

(a) Bacteriological. There may not be any sources of pathogenic or harmful organisms in sufficient quantities to constitute a public health hazard in the use of waters for shellfish harvesting. A public health hazard will be presumed whenever the most probable number (MPN) of fecal coliform* organisms exceeds a median concentration of 14 MPN per 100 ml or whenever more than 10 percent of samples taken exceed 43 MPN per 100 ml for a 5-tube decimal dilution test or 49 per 100 ml for a 3-tube decimal dilution test, unless a sanitary survey approved by the Department of Health and Mental Hygiene discloses no significant health hazard.

(b) Dissolved oxygen same as Class I waters.

(c) Temperature -same as Class I waters.

(g) Toxic Materials-same as Class I waters.

E. Anti-Degradation Policy.

(1) It is recognized that certain waters of the State possess an existing quality which is better than the water quality standards established for them. The quality of these waters shall be maintained unless and until it has been demonstrated to the satisfaction of the Department that a change is justifiable as a result of necessary economic or social development and will not diminish uses made of or presently possible in these waters. To accomplish this objective, all proposed new or increased sources* of pollution* are required to provide the degree of waste treatment necessary to maintain these waters at this higher quality.

(2) The Department will discourage downgrading any stream from a water use class with more stringent criteria to one with less stringent criteria. Downgrading may only be considered if:

(a) The designated use is not attainable because of natural causes;

(b) The designated use is not attainable because of irretrievable man-induced conditions; or

(c) Substantial and widespread adverse social and economic impacts will result from maintaining the designated use. Before downgrading any stream, the Department will provide public notice and opportunity for a public hearing on the proposed change.

(3) Water which does not meet the standards established for it shall be improved to meet the standards.

F. Mixing Zone Policy.

(1) Mixing zones are areas which are allowed for mixing of effluent waters with the receiving water. They are not considered to be areas where effluents are treated. The waters outside of the zones shall meet the standards for that particular body of water.

(2) The Department may designate mixing zones by regulation or in individual permits, or allow for mixing zones in the determination of effluent limitations in individual permits, subject to the following requirements:

(a) There shall be no interference with biological communities or populations of indigenous species to a degree which is damaging to the aquatic life or ecosystem;

(b) There shall be no diminishing of other legitimate beneficial uses;

(c) Mixing zones may not form barriers to the migratory routes of aquatic life;

(d) Mixing zones shall be designated and located to protect surface waters and shallow-water shoreline areas;

(e) The criteria of § C apply within mixing zones.

(3) A mixing zone is not permitted for toxic materials identified in § D(2)(f) of this regulation.

(4) Mixing zones which are not determined in accordance with Regulation .13 shall be subject to the following size restrictions. These restrictions are not intended to define individual effluent mixing zones, but will set maximum limits within which most biological and physical considerations will be satisfied in designating a particular mixing zone.

(a) In freshwater streams and rivers, a mixing zone width may not exceed one-third of the width of the receiving water body.

(b) In lakes, the combined area of all mixing zones may not exceed 10 percent of the lake surface area.

(c) In estuarine areas, the maximum cross-sectional area of the mixing zone may not exceed 10 percent of the cross-sectional area of the receiving water body.

G. Intermittent Stream Policy.

(1) Discharges to intermittent streams are not permitted when feasible alternatives are available.

(2) Effluent limitations* for discharges to specific intermittent streams may be determined by the Department on a case-by-case basis. The effluent limitations may not be less stringent than:

(a) The minimum national effluent guidelines established pursuant to the Federal Water Pollution Control Act, as amended;

(b) Those levels necessary to maintain the water quality standards of downstream segments; or

(c) Those levels necessary to protect the biological community of the intermittent stream.

H. Review and Revision.

(1) Procedure. Pursuant to State law and to § 303(c) of the Federal Water Pollution Control Act, as amended, and to 40

CFR 130.17(a), the Department shall review and revise its water quality standards as appropriate and transmit changes to the U.S. Environmental Protection Agency.

(2) Hearing Transcripts. Transcripts of public hearings on proposed standards revisions shall be available for public inspection in the main office of the Department and shall be furnished to the U.S. Environmental Protection Agency upon request.

I. Classification of the Surface Waters of the State.

(1) All surface waters of the State shall be protected for use in water contact recreation, for fish, other aquactic life, and wildlife (Class 1).

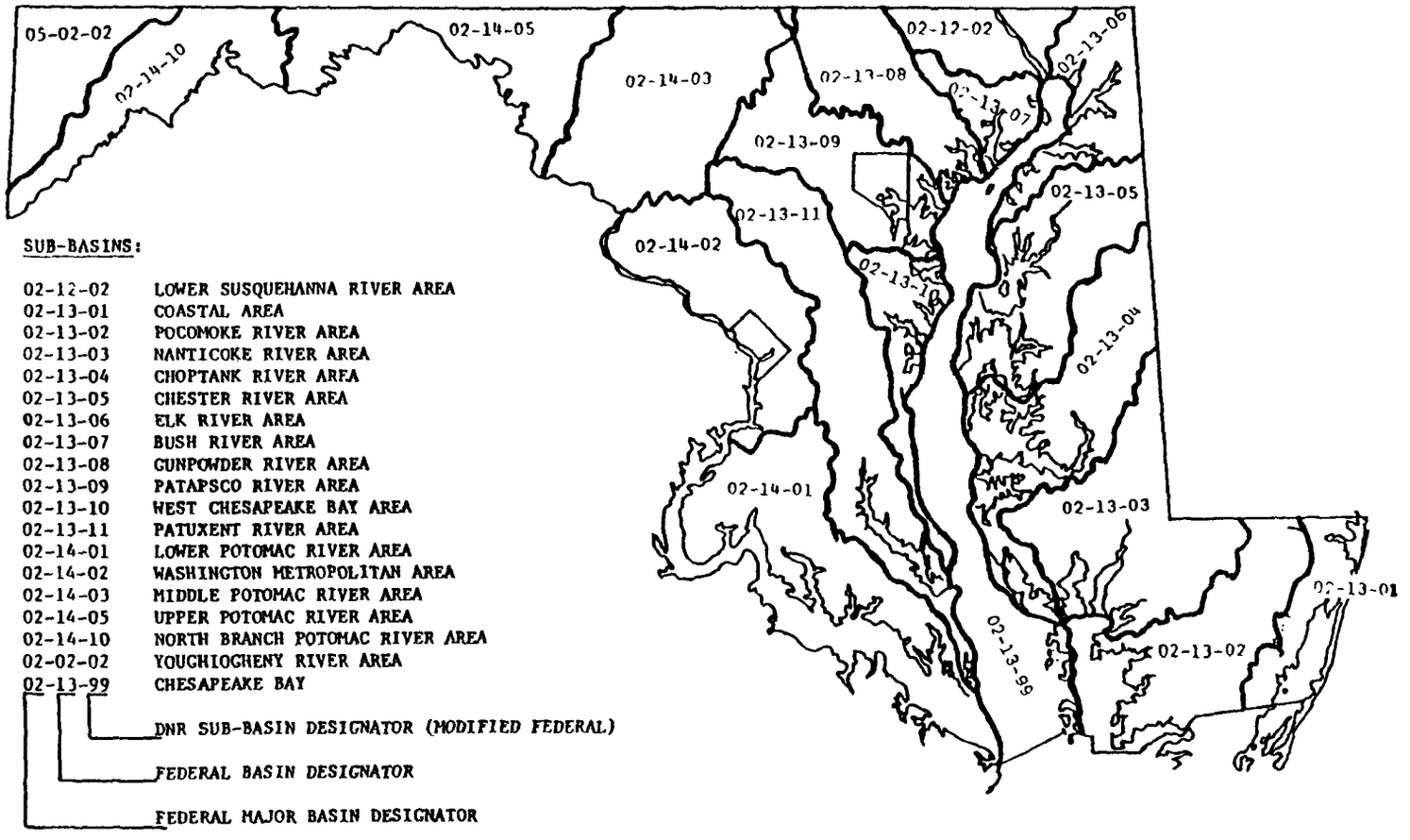
(2) For interstate waters those classifications apply only to those waters within the State.

(3) A stream segment is a distinct portion of a sub-basin.

(4) If the stream segment limits are specified as beginning at a specific point, streams terminating downstream of this point are not included in the same segment. For example "Deer Creek and all tributaries above Eden Mill Dam" does not include Little Deer Creek.

(5) Listed below, in tabular form by sub-basin, are those stream segments which shall be given the additional protection required for the uses of shellfish harvesting (Class II), natural trout (Class III), and recreational trout (Class IV). For each sub-basin, information is arranged under the following headings:

MARYLAND WATERSHED DESIGNATIONS



SUB-BASINS:

02-12-02	LOWER SUSQUEHANNA RIVER AREA
02-13-01	COASTAL AREA
02-13-02	POCOMOKE RIVER AREA
02-13-03	NANTICOKE RIVER AREA
02-13-04	CHOPTANK RIVER AREA
02-13-05	CHESTER RIVER AREA
02-13-06	ELK RIVER AREA
02-13-07	BUSH RIVER AREA
02-13-08	GUNPOWDER RIVER AREA
02-13-09	PATAPSCO RIVER AREA
02-13-10	WEST CHESAPEAKE BAY AREA
02-13-11	PATUXENT RIVER AREA
02-14-01	LOWER POTOMAC RIVER AREA
02-14-02	WASHINGTON METROPOLITAN AREA
02-14-03	MIDDLE POTOMAC RIVER AREA
02-14-05	UPPER POTOMAC RIVER AREA
02-14-10	NORTH BRANCH POTOMAC RIVER AREA
02-02-02	YOUGHIOGHENY RIVER AREA
02-13-99	CHESAPEAKE BAY

02-13-99
- DNR SUB-BASIN DESIGNATOR (MODIFIED FEDERAL)
- FEDERAL BASIN DESIGNATOR
- FEDERAL MAJOR BASIN DESIGNATOR

		Most downstream point or line for the segment using the Maryland Coordinate Grid System (MCGS) (East/North)
SUB-BASIN 02-13-01: COASTAL AREA		
Class	Waters	MCGS / Limits
Class II:		
All portions of the territorial seas and estuarine* portions of bays and tributaries except:		
(i) Bishopville Prong and tributaries		1321.7/216.4 — Above mouth
(ii) Herring Creek and tributaries		1336.4/189.9 — Above Route #50
(iii) Ocean City Harbor		1345/185.5
(c) SUB-BASIN 02-13-02: POCOMOKE RIVER AREA		
Class	Waters	MCGS / Limits
Class II:		
All estuarine portions of tributaries except:		
(i) Manokin River and tributaries		1174/137.9 — Above Route #363
(ii) Big Annemessex River and tributaries		1160.8/95.2 — Above River Road
(iii) Jenkins Creek		From 1127/48 to 1127.3/45.7 — Above mouth
(iv) Fair Island Canal		From 1177.6/51 to 1187.7/50.1
(d) SUB-BASIN 02-13-03: NANTICOKE RIVER AREA		
Class	Waters	MCGS / Limits
Class II:		
All estuarine portions of tributaries except:		
(i) Blackwater River and tributaries		From 1083.1/192 to 1084.2/191.6 — Above mouth
(ii) Transquaking R. and tributaries		From 1085.2/196.3 To 1088/197 — Above mouth
(iii) Nanticoke River and tributaries		From 1126/194 To 1128.2/191.2 — Above line from Runaway Pt. to Long Pt.
(iv) Wicomico River and tributaries		1147.9/160.5 — Above ferry crossing at White Haven
(v) Monie Creek		1138.7/146.7 — Above mouth
(e) SUB-BASIN 02-13-04: CHOPTANK RIVER AREA		
Class	Waters	MCGS / Limits
Class II:		
All estuarine portions of tributaries except:		
(i) Choptank River and tributaries		From 1099.3/308 To 1101/306.5 — Above line from Bow Knee Pt. to Wright Wharf
(ii) Tred Avon River and tributaries		1057.6/341.6 — Above Easton Pt.

Class	Waters	MCGS	Limits
Class II:			
	All estuarine portions of tributaries except:		
	(i) Chester River and tributaries	1066.5/502	Above Route #213
	(ii) Corsica River	1060.4/448.4	Above Earl Cove
	(iii) Piney Creek	From 1010.7/419.9 To 1012/418.8	Above Route #50
	(iv) Winchester Creek	1026.5/416.1	Above mouth
	(v) St. Michael's Harbor	1023/348.7	

(f) SUB-BASIN 02-13-05: CHESTER RIVER AREA

Class	Waters	MCGS	Limits
Class II:			
	All estuarine portions of tributaries except:		
	(i) Elk River and tributaries	From 1112.8/617 to 1114.8/613.9	Above line from Bull Minnow Pt. to Courthouse Pt.
	(ii) Bohemia River and tributaries	From 1108/603.7 to 1109/600	Above line from Rich Pt. to Baltery Pt.
	(iii) Sassafras River and tributaries	1088.6/561.5	Above Ordinary Pt.

9 SUB-BASIN 02-13-06: ELK RIVER AREA

Class	Waters	MCGS	Limits
	(iv) Stillpond Creek and tributaries (Still Pond)	1044/547	Above Kinnaird Pt.
	(v) Worton Creek	From 1031.4/532 To 1032.5/534.7	Above mouth
	(vi) Fairlee Creek	From 1023.6/524 To 1026/527.5	Above mouth
	(vii) Northeast R.	From 1081.3/623.3 To 1087.6/619.1	Above mouth

(h) SUB-BASIN 02-13-07: BUSH RIVER AREA

Class	Waters	MCGS	Limits
Class II:			
	All estuarine portions of tributaries except:		
	(i) Bush River and tributaries	From 1010.5/576 to 1014.1/574.1	Above line from Fairview Pt. to Chilbury Pt.
	(ii) Romney Creek	1022.3/567.5	Above Briar Pt.
	(iii) Swan Creek and tributaries	From 1050/603.5 to 1047.5/604.2	Above mouth

(i) SUB-BASIN 02-13-08: GUNPOWDER RIVER AREA

Class	Waters	MCGS	Limits
Class II:			
	All estuarine portions of tributaries except:		
	(i) Gunpowder R. and all tributaries	From 987/561.5 To 991.2/555.5	Above line from Oliver Pt. to Maxwell Pt.
	(ii) Middle River	From 972/536.1 To 970/532.5	Above line from Log Pt. to Turkey Pt.

(k) SUB-BASIN 02-13-10: WEST CHESAPEAKE BAY AREA

Class	Waters	MCGS	Limits
Class II:			
	All estuarine portions of tributaries except:		
	(i) Magothy River and tributaries	936.9/455	Above Henderson Pt.
	(ii) Severn River and tributaries	920.6/451	Above mouth of Forked Creek
	(iii) South River and tributaries	918.8/410.1	Above Porter Pt.
	(iv) Rockhold Creek and tributaries	925.7/315.8	Above Mason Beach Road
	(v) Tracys Creek	924.5/344.2	Above Route #256

(l) SUB-BASIN 02-13-11: PATUXENT RIVER AREA

Class	Waters	MCGS	Limits
Class II:			
	All estuarine portions of tributaries except:		
	Patuxent River and tributaries	886.8/316.3	Above Ferry Landing

(m) SUB-BASIN 02-14-01: LOWER POTOMAC RIVER AREA

Class	aters	MCGS	Limits
Class II:			
	All estuarine portions of tributaries except:		
	Potomac River and tributaries	From 723.8/211.8 To 710.9/205.3	Above line from Smith Pt. to Simms Pt.

(s) SUB-BASIN 02-13-19: CHESAPEAKE BAY (PROPER)

Class	Waters	MCGS	Limits
Class II:	All waters of the Chesapeake Bay Proper		From the Susquehanna River mouth to the Virginia State line, including: the tidal waters of the Chesapeake Bay bounded generally by the shoreline of the Bay and by "zero river mile" lines of estuaries and tributaries to the Bay, as designated by the Department; and any peripheral waters designated as part of the Chesapeake Bay Proper by the Department after consultation with the Maryland Tidewater Administration and the Maryland Wildlife Administration.

State of Massachusetts Marine Water Quality Standards

Massachusetts Water Quality Standard Sept. 1978
Massachusetts Water Resources Commission
Division of Water Pollution Control
110 Fremont St.
Boston, MA 02108

Regulation 2.1 Establishment of Effluent Limitations. In regulating discharges of pollutants to waters of the Commonwealth, the Division will limit prohibit such discharges to insure that the water quality standards of the receiving waters will be maintained or attained. The determination by the Division of the applicable level of treatment for an individual discharger will be made in the establishment of effluent limitations in the individual discharge permits. In establishing such effluent limitations, the Division must consider natural background conditions, protect existing downstream uses, and not interfere with the maintenance and attainment of beneficial uses in downstream waters. Toward this end, the Division may provide a reasonable margin of safety to account for any lack of knowledge concerning the relationship between the pollutants being discharged and their impact on the quality of the receiving waters.

Municipal discharges to inland waters and industrial discharges to all waters must provide minimum of secondary treatment or its industrial waste equivalent. In coastal and marine waters, municipal dischargers must provide a minimum of primary treatment plus disinfection. The above minimum treatment requirements will be increased where necessary to satisfy other state and federal laws and regulations or to achieve the water quality assigned in these regulations, whichever is the most stringent.

As used in this section, "secondary treatment" is that process or group of processes capable of removing from untreated wastewater a minimum of 85% of the 5 day biochemical oxygen demand and suspended solids, and virtually all floating and settleable solids, followed by disinfection. The "equivalent" treatment for industrial waste may generally be defined as that process or group of processes achieving maximum practicable removal of solids, oils, grease, acids, alkalis, toxic materials, bacteria, taste and odor causing materials, color and other objectionable constituents contained in untreated waste to produce an effluent equivalent to that obtained from secondary treatment of sewage or the effluent from the most efficient treatment facilities in current use for any specific category of industrial waste. Disinfection of treated effluent may be discontinued between October 15 and April 1 at the discretion of the Division. At the discretion of the Division, nitrification and/or phosphorus removal processes at municipal sewage treatment facilities may be seasonally discontinued.

Regulation 2.2 Mixing Zones. In applying these standards, the Division may recognize, where appropriate, a limited mixing zone or zone of initial dilution on a case-by-case basis. The location, size and shape of these zones shall provide for the maximum protection aquatic resources. At a minimum, mixing zones must:

a) Meet the criteria for aesthetics;

b) Be limited to an area or volume that will minimize interference with the designated uses or established community of aquatic life in the segment:

c) Allow an appropriate zone of passage for migrating fish and other organisms; and

d) Not result in substances accumulating in sediments, aquatic life or food chains to exceed known or predicted safe exposure levels for the health of humans or aquatic life.

Regulation 2.3 Hydrologic Conditions. The Division will determine the most severe hydrologic condition at which water quality standards must be met. In classifying the inland waters of the Commonwealth and in applying these standards to such waters, the critical low flow condition at and above which these standards must be met is the average minimum consecutive seven day flow to be expected once in ten years, unless otherwise stated by the Division in these standards. In artificially regulated waters, the critical low flow will be established by the Division through agreement with the Federal, state or private interest controlling the flow. The minimum flow established in such agreement will become the critical low flow under this section for those waters covered by the agreement.

Regulation 2.4 Procedures for Sampling and Analysis. For the purpose of collecting, preserving and analyzing samples in connection with these water quality standards, the fourteenth edition of Standard Methods for the Examination of Water and Wastewater published by the American Public Health Association, or Methods for Chemical Analysis of Water and Wastes published by the U.S. Environmental Protection Agency should be used. Where a method is not given in these publications, the latest procedures of the American Society for Testing Materials (ASTM) shall be used, or any other equivalent method approved by the Director.

PART 3 MINIMUM WATER QUALITY CRITERIA AND ASSOCIATED USES

Regulation 3.1 Description of Contents. This part sets forth the Classes to be used by the Division in classifying the waters of the Commonwealth according to the uses for which the waters shall be enhanced, maintained and protected. For each class, the most sensitive beneficial uses are identified and minimum criteria for water quality in the water column are established. The minimum criteria in Reg. 3.4 have been developed by applying the criteria contained in the EPA publication Quality Criteria for Water (EPA-440/9-76-023) to account for local conditions including, but not limited to:

a) The characteristics of the biological community

b) Temperature, weather and flow characteristics, and

c) Synergistic and antagonistic effects of combinations of pollutants.

Regulation 3.2 Coordination with Federal Criteria. The Division will use the EPA publication entitled Quality Criteria for Water, EPA-440/9-76-023 as guidance in establishing case-by-case discharge limits for pollutants not specifically listed in these standards but included under the heading "Other Constituents" in Regulation 3.4, for identifying bioassay application factors and for interpretations of narrative criteria. Where the minimum criteria specifically listed by the Division in this part differ from those contained in the federal criteria, the provisions of the specifically listed criteria in these standards shall apply.

Regulation 3.3 Classes and Designated Uses. The waters of the Commonwealth will be assigned to one of the classes listed below. Each class is defined by the most sensitive, and therefore governing, uses which it is intended to protect. The classes are:

Class SA - Waters assigned to this class are designated for the uses of protection and propagation of fish, other aquatic life and wildlife; for primary and secondary contact recreation; and for shellfish harvesting without depuration in approved areas.

Class SB - Waters assigned to this class are designated for the uses of protection and propagation of fish, other aquatic life and wildlife; for primary and secondary contact recreation; and for shellfish harvesting with depuration (Restricted Shellfish Areas).

Class SC— Waters assigned to this class are designated for the protection and propagation of fish, other aquatic life and wildlife; and for secondary contact recreation.

Regulation 3.4 Minimum Criteria. The following minimum criteria are adopted and shall be applicable to all waters of the Commonwealth.

A. These minimum criteria are applicable to all waters of the Commonwealth, unless criteria specified for individual classes are more stringent.

Parameter	Criteria
1. Aesthetics	All waters shall be free from pollutants in concentrations or combinations that: a) Settle to form objectionable deposits; b) Float as debris, scum or other matter to form nuisances; c) Produce objectionable odor, color, taste or turbidity; or d) Result in the dominance of nuisance species.
2. Radioactive Substances	Shall not exceed the recommended limits of the United States Enviornmental Protection Agency's National Drinking Water Regulations.
3. Tainting Substances	Shall not be in concentrations or combinations that produce undesirable flavors in the edible portions of aquatic organisms.
4. Color, Turbidity, Total Suspended Solids	Shall not be in concentrations or combinations that would exceed the recommended limits on the most sensitive receiving water use.
5. Oil and Grease	The water surface shall be free from floating oils, grease and petrochemicals and any concentrations or combinations in the water column or sediments that are aesthetically objectionable or deleterious to the biota are prohibited. For oil and grease of petroleum origin the maximum allowable discharge concentration is 15 mg/l.
6. Nutrients	Shall not exceed the site-specific limits necessary to control accelerated or cultural eutrophication.

7.	Other Constituents	Waters shall be free from pollutants in concentrations or combinations that a) Exceed the recommended limits on the most sensitive receiving water use; b) Injure, are toxic to, or produce adverse physiological or behavioral responses in humans or aquatic life; or c) Exceed site-specific safe exposure levels determined by bioassay using sensitive resident species.

C. Coastal and Marine Waters - the following additional minimum criteria are applicable to coastal and marine waters.

For Class SA waters:

	Parameter	Criteria
1.	Dissolved Oxygen	Shall be a minimum of 6.0 mg/l.
2.	Temperature	None except where the increase will not exceed the recommended limits on the most sensitive water use.
3.	pH	Shall be in the range of 6.5-8.5 standard units and not more than 0.2 units outside of the naturally occurring range.
4.	Total Coliform Bacteria	Shall not exceed a median value of 70 MPN per 100 ml and not more than 10% of the samples shall exceed 230 MPN per 100 ml in any monthly sampling period.

For Class SB waters:

	Parameter	Criteria
1.	Dissolved Oxygen	Shall be a minimum of 6.0 mg/l.
2.	Temperature	None except where the increase will not exceed the recommended limits on the most sensitive water use.
3.	pH	Shall be in the range of 6.5-8.5 and not more than 0.2 units outside of the naturally occurring range.
4.	Total Coliform Bacteria	Shall not exceed a median value of 700 MPN per 100 ml and not more than 20% of the samples shall exceed 1000 MPN per 100 ml during any monthly sampling period, except as provided in Regulation 2.1.

For Class SC waters:

Parameter	Criteria
1. Dissolved Oxygen	Shall be a minimum of 6.0 mg/l.
1. Temperature	None except where the increase will not exceed the recommended limits on the most sensitive water use.
3. pH	Shall be in the range of 6.5-8.5 standard units and not more than 0.2 units outside the naturally occurring range.
4. Fecal Coliform Bacteria	Shall not exceed a log mean for a set of samples of 1000 MPN per 100 ml, nor shall more than 10% of the total samples exceed 2500 MPN per 100 ml during any monthly sampling period, except as provided in Regulation 2.1.

PART 4 ANTIDEGRADATION PROVISIONS

Regulation 4.1 Protection of Existing Uses. In all cases, from and after the date these regulations become effective, the quality of the waters of the Commonwealth shall be maintained and protected to sustain existing beneficial uses.

Regulation 4.2 Protection of High Quality Waters. From and after the date these regulations become effective, waters designated by the Division in Regulation 5.5 whose quality is or becomes consistantly higher than that quality necessary to sustain the national goal uses shall be maintained at that higher level of quality unless limited degradation is authorized by the Division. Limited degradation may be allowed by the Division as a variance from this regulation as provided in Section 4.6.

Regulation 4.3 Protection of Low Flow Waters. Certain waters will be designated by the Division in Regulation 5.5 of these standards for protection under this section due to their inability to accept pollutant discharges. New or increased discharges of pollutants to waters so designated are prohibited unless a variance is granted by the Division as provided in Regulation 4.6.

Regulation 4.4 National Resource Waters. Waters which constitute an outstanding national resource as determined by their outstanding recreational, ecological and/or aesthetic values shall be preserved. These waters shall be designated for preservation by the Division in Regulation 5.5 of these standards. Waters so designated may not be degraded and are not subject to a variance procedure. New discharges of pollutants to such waters are prohibited. Existing discharges shall be eliminated unless the discharger is able to demonstrate that:

a) Alternative means of disposal are not reasonably available or feasible; and

b) The discharge will not affect the quality of the water as a national resource.

Regulation 4.5 Control of Eutrophication. The discharge of nutrients, primarily phosphorus or nitrogen, to waters of the Commonwealth will be limited or prohibited by the Division as necessary to prevent excessive eutrophication of such waters. There shall be no new or increased discharges of nutrients into lakes and ponds, or tributaries thereto. Existing discharges containing nutrients which encourage eutrophication or growth of weeds or algae shall be treated. Activities which may result in non-point discharges of nutrients shall be conducted in accordance with the best management practices reasonably determined by the Division to be necessary to preclude or minimuze such discharges of nutrients.

Regulation 4.6 Variances. A variance to authorize a discharge in water designated for protection under regulation 4.2 may be allowed by the Division where the applicant demonstrates that:

1) The proposed degradation will not result in water quality less than specified for the class; and

2) The adverse economic and social impacts specifically resulting from imposition of controls more stringent than secondary treatment to maintain the higher water quality are substantial and widespred in comparision to other economic factors and are not warranted by a comparison of the economic, social and other benefits to the public resulting from maintenance of the higher quality water.

In addition to the above, the applicant for a variance to authorize a discharge into waters designated for protection under Regulation 4.3 must demonstrate that:

3) Alternative means of disposal are not reasonably available or feasible.

In any proceeding where such variance is at issue, the Division shall circulate a public notice in accordance with the procedures set forth in G.L. c30A, §3. Said notice shall state that a variance is under consideration by the Division, and indicate the Director's tentative determination relative thereto. To the extent feasible, the variance proceeding shall be conducted as part of any pending discharge permit proceedings pursuant to G.L. c.21, §43. In any variance procedure, the burden of proof relative to justifying the variance shall be on the party requesting the variance. Any variance granted pursuant to this regulation shall not extend beyond the expiration date of the permit.

PART 5 BASIN CLASSIFICATIONS AND MAPS

Regulation 5.5 Classifications. For the purpose of applying the Massachusetts Water Quality Standards, the waters of the Commonwealth are hereby classified as shown in the following tables which are a part of these regulations. Columns 1 and 2 of the tables describes the segment. Column 3 identifies the applicable classification of the segment. Column 4 identifies the use or uses for which the segment is designated; (P&S) means primary and secondary contact recreation, (Sn) means seasonal fishery, (O) means open shellfishing, (R) means restricted shellfishing. Column 5 identifies the applicable provisions of Part 4 and Regulatin 5.3.

TABLE

MERRIMACK RIVER BASIN

DRAINAGE AREA 12

BOUNDARY	MILE POINTS	CLASSIFICATION	DESIGNATED USES	OTHER RESTRICTIONS
Merrimack River				
Creek Brook confluence to Atlantic Ocean	21.9 - 0.0	SB	Marine Fishery Shellfishing (R) Recreation (P&S)	
The Basin in the Merrimack River Estuary, Newbury and Newburyport	-	SA	Marine Fishery Shellfishing (O) Recreation (P&S)	
Tidal portion	1.3 - 0.0	SB	Marine Fishery Shellfishing (R) Recreation (P&S)	
Plum Island River				
Entire Length	3.6 - 0.0	SA	Marine Fishery Shellfishing (O) Recreation (P&S)	Regulation 4.4
Other surface waters in the Merrimack River Drainage Area subject to the rise and fall of the tide unless otherwise denoted above.		SB	-	Regulation 4.2, MGL, Ch. 132A, Sec. 13-16

Massachusetts

TABLE 15

PARKER AND IPSWICH RIVER BASINS

DRAINAGE AREA 16 & 17

BOUNDARY	MILE POINTS	CLASSIFICATION	DESIGNATED USES	OTHER RESTRICTIONS
Ipswich River				
Tidal portion	4.5 - 0.0	SA	Marine Fishery Shellfishing (O) Recreation (P&S)	
Tidal portion	2.3 - 0.0	SA	Marine Fishery Shellfishing (O) Recreation (P&S)	Regulation 4.3
Tidal portion	4.5 - 0.0	SA	Marine Fishery Shellfishing (O) Recreation (P&S)	
Other surface waters subject to the rise and fall of the tide in the Ipswich and Parker River Basins unless otherwise denoted above		SA		

TABLE 15

PARKER AND IPSWICH RIVER BASINS

DRAINAGE AREA 16 & 17 (CON'T.)

BOUNDARY	MILE POINTS	CLASSIFICATION	DESIGNATED USES	OTHER RESTRICTIONS
Parker River				
Tidal portion	9.0-0.0			Regulation 4.4, MGL, Ch. 132A, Sec. 13-18
Mill River				
Tidal portion	2.3-0.0			Regulation 4.2, MGL Ch. 132A, Sec. 13-16

TABLE 16

NORTH COASTAL BASIN

DRAINAGE AREA 18

BOUNDARY	MILE POINTS	CLASSIFICATION	DESIGNATED USES	OTHER RESTRICTIONS
The Essex River and its tributaries in Essex	-	SA	Marine Fishery Shellfishing (O) Recreation (P&S)	
Essex Bay	-	SA	Marine Fishery Shellfishing (O) Recreation (P&S)	Regulation 4.2, MGL, Ch. 132A, Sec. 13-18
Annisquam River	-	SA	Marine Fishery Shellfishing (O) Recreation (P&S)	
Rockport Harbors	-	SB	Marine Fishery Shellfishing (R) Recreation (P&S)	MGL, Ch.132A, Sec. 13-1
Glouchester Harbor	-	SB	Marine Fishery Shellfishing (R) Recreation (P&S)	MGL, Ch. 132A, Sec. 13-
Manchester Harbor	-	SB	Marine Fishery Shellfishing (R) Recreation (P&S)	

TABLE 16 (CONTINUED)

BOUNDARY	MILE POINTS	CLASSIFICATION	DESIGNATED USES	OTHER RESTRICTIONS
Beverly Harbor		SB	Marine Fishery Shellfishing (R) Recreation (P&S)	MGL, Ch. 132A, Sec. 13-18
Salem Harbor	-	SB	Marine Fishery Shellfishing (R) Recreation (P&S)	MGL, Ch.132A, Sec. 13-18
Winthrop		SA	Marine Fishery Shellfishing (R) Recreation (P&S)	
Salem-Beverly Harbor	-	SA	Marine Fishery Shellfishing (O) Recreation (P&S)	MGL, Ch. 132A, Sec. 13-1
Marblehead Harbor	-	SA	Marine Fishery Shellfishing (O) Recreation (P&S)	MGL,Ch. 132A, Sec. 13-18
Massachusetts Bay (Marblehead)	-	SA	Marine Fishery Shellfishing (O) Recreation (P&S)	MGL, Ch. 132A, Sec. 13-1
Nahant Bay	-	SA	Marine Fishery Shellfishing (O) Recreation (P&S)	
Saugus River	-	SB	Marine Fishery Shellfishing (R) Recreation (P&S)	

TABLE 16 (CONTINUED)

BOUNDARY	MILE POINTS	CLASSIFICATION	DESIGNATED USES	OTHER RESTRICTIONS
Pines River	-	SB	Marine Fishery Shellfishing (R) Recreation (P&S)	Regulation 4.2
Lynn Harbor	-	SB	Marine Fishery Shellfishing (R) Recreation (P&S)	
Other surface waters in the North Coastal Drainage Area subject to the rise and fall of the tide unless otherwise denoted above		SB		Regulation 4.2 MGL, Ch. 132A Sec. 13-18

TABLE 17

BOSTON HARBOR AND THE WEYMOUTH RIVER

DRAINAGE AREAS 19 & 19d

BOUNDARY	MILE POINTS	CLASSIFICATION	DESIGNATED USES	OTHER RESTRICTIONS
Boston Harbor				
Inside a line from the Southerly Tip of Deer Island to Boston Light-house to Point Allerton in Hull except as denoted below	-	SB	Marine Fishery Shellfishing (R) Recreation (S)	
Boston Inner Harbor Westerly inside a line from the Southern Tip of Governors Island to Fort Independence	-	SC	Marine Fishery Recreation (S)	
Dorchester Bay	-	SB	Marine Fishery Shellfishing (R) Recreation (P&S)	
Quincy Bay	-	SA	Marine Fishery Shellfishing (O) Recreation (P&S)	

TABLE 17 (CONTINUED)

BOUNDARY	MILE POINTS	CLASSIFICATION	DESIGNATED USES	OTHER RESTRICTIONS
Hingham Harbor	-	SA	Marine Fishery Shellfishing (O) Recreation (P&S)	
Hull Bay	-	SB	Marine Fishery Shellfishing (R) Recreation (P&S)	
Weir River	-	SB	Marine Fishery Shellfishing (R) Recreation (P&S)	
Other surface waters subject to the rise and fall of the tide in the Boston Harbor and Weymouth River Basins unless otherwise denoted above		SB		

TABLE 18

MYSTIC RIVER BASIN

DRAINAGE AREA 19a

BOUNDARY	MILE POINTS	CLASSIFICATION	DESIGNATED USES	OTHER RESTRICTIONS
Amelia Earhart Dam to confluence with the Chelsea River	2.0 - 0.0	SC	Marine Fishery Recreation (S)	

TABLE 19

NEPONSET RIVER BASIN

DRAINAGE AREA 19b

BOUNDARY	MILE POINTS	CLASSIFICATION	DESIGNATED USES	OTHER RESTRICTIONS
Neponset River Tidal Portion	4.2 - 0.0	SB	Marine Fishery Shellfishing (R) Recreation (P&S)	

TABLE 23

THE ISLANDS

DRAINAGE AREA 24

BOUNDARY	MILE POINTS	CLASSIFICATION	DESIGNATED USES	OTHER RESTRICTIONS
All surface waters subject to the rise and fall of the tide of Dukes County and Nantucket Drainage Areas	-	SA	Marine Fishery Shellfishing (O) Recreation (P&S)	Regulation 4.2, MGL, Ch. 132A, Sec. 13-18

TABLE 25

BUZZARDS BAY

DRAINAGE AREA 25

BOUNDARY	MILE POINTS	CLASSIFICATION	DESIGNATED USES	OTHER RESTRICTIONS
Buttermilk Bay	-	SA	Marine Fishery Shellfishing (O) Recreation (P&S)	
Onset Bay	-	SA	Marine Fishery Shellfishing (O) Recreation (P&S)	
Horseshoe Pond to confluence	4.4 - 0.0	SA	Marine Fishery Shellfishing (O) Recreation (P&S)	Regulation 4.3
Wareham River				
Entire Length	-	SA	Marine Fishery Shellfishing (O) Recreation (P&S)	Regulation 4.3
Country Road to confluence	2.1 - 0.0	SA	Marine Fishery Shellfishing (O) Recreation (P&S)	Regulation 4.3
Sippican Harbor	-	SA	Marine Fishery Shellfishing (O) Recreation (P&S)	

TABLE 22

CAPE COD

DRAINAGE AREA 23

BOUNDARY	MILE POINTS	CLASSIFICATION	DESIGNATED USES	OTHER RESTRICTIONS
Cape Cod Canal, Sandwich	-	SB	Marine Fishery Shellfishing (R) Recreation (P&S)	
Cape Cod Canal, Bourne	-	SB	Marine Fishery Shellfishing (R) Recreation (P&S)	
Waters in and adjacent to the Cape Cod National Seashore	-	SA	Marine Fishery Shellfishing (O) Recreation (P&S)	Regulation 4.4
Falmouth Inner Harbor, Falmouth	-	SB	Marine Fishery Shellfishing (R) Recreation (P&S)	
Other surface waters of the Cape Code Drainage Area subject to the rise and fall of the tide, unless otherwise denoted above	-	SA	Marine Fishery Shellfishing (O) Recreation (P&S)	Regulation 4.2, MGL, 132A, Sec. 13-18

TABLE 21 (CON'T)

BOUNDARY	MILE POINTS	CLASSIFICATION	DESIGNATED USES	OTHER RESTRICTIONS
Jones River				
Jones River Estuary	2.5 - 0.0	SA	Marine Fishery Shellfishing (O) Recreation (P&S)	
Duxbury and Kingston Bays	-	SA	Marine Fishery Shellfishing (O) Recreation (P&S)	
Plymouth Harbor	-	SA	Marine Fishery Shellfishing (Q) Recreation (P&S)	MGL, Ch. 132A, Sec. 13-18
Plymouth Bay	-	SA	Marine Fishery Shellfishing (O) Recreation (P&S)	MGL, Ch. 132A
Other surface waters in the South Coastal Basin subject to the rise and fall of the tide	-	SA		Regulation 4.2, MGL, Ch. 132A, Sec. 13-18

TABLE 21 (Con't)

BOUNDARY	MILE POINTS	CLASSIFICATION	DESIGNATED USES	OTHER RESTRICTIONS
South River				
Entire Length	10.6-0.0	SA	Marine Fishery Shellfishing (O) Recreation (P&S)	Regulation 4.3
Green Harbor	-	SA	Marine Fishery Shellfishing (O) Recreation (P&S)	Regulation 4.3

TABLE 21

SOUTH COASTAL BASIN

DRAINAGE AREA 21 & 22

BOUNDARY	MILE POINTS	CLASSIFICATION	DESIGNATED USES	OTHER RESTRICTIONS
Cohasset Harbor	-	SA	Marine Fishery Shellfishing(R) Recreation(P&S)	
The Gulf	—	SB	Marine Fishery Shellfishing(R) Recreation(P&S)	
Scituate Harbor	-	SA	Marine Fishery Shellfishing(O) Recreation (P&S)	
North River				
Curtis Crossing Dam to Third Herring Brook	12.7-16.7	SB	Marine Fishery Shellfishing (R) Recreation(P&S)	Regulation 4.4
Third Herring Brook to Main Street, Marshfield	10.7-2.0	SA	Marine Fishery Shellfishing(O) Recreation (P&S)	Regulation 4.4
Main Street to Massachusetts Bay	2.0-0.0	SA	Marine Fishery Shellfishing (O) Recreation (P&S)	
Brant Rock to a point 1000 feet North	-	SA	Marine Fishery Shellfishing (O) Recreation (P&S)	

TABLE 24

BUZZARDS BAY

DRAINAGE AREA 25

BOUNDARY	MILE POINTS	CLASSIFICATION	DESIGNATED USES	OTHER RESTRICTIONS
Buttermilk Bay	-	SA	Marine Fishery Shellfishing (O) Recreation (P&S)	
Onset Bay	-	SA	Marine Fishery Shellfishing (O) Recreation (P&S)	
Wewantic River				
Horseshoe Pond to confluence	4.4 - 0.0	SA	Marine Fishery Shellfishing (O) Recreation (P&S)	Regulation 4.3
Wareham River				
Entire Length	-	SA	Marine Fishery Shellfishing (O) Recreation (P&S)	Regulation 4.3
Sippican River				
Country Road to confluence	2.1 - 0.0	SA	Marine Fishery Shellfishing (O) Recreation (P&S)	Regulation 4.3
Sippican Harbor	-	SA	Marine Fishery Shellfishing (O) Recreation (P&S)	

TABLE 24 (CONTINUED)

BOUNDARY	MILE POINTS	CLASSIFICATION	DESIGNATED USES	OTHER RESTRICTIONS
Aucoot Cove	-	SA	Marine Fishery Shellfishing (O) Recreation (P&S)	
Mettapoisett Harbor	-	SA	Marine Fishery Shellfishing (O) Recreation (P&S)	
Nasketucket Bay	-	SA	Marine Fishery Shellfishing (O) Recreation (P&S)	
Westport River, West Branch				
Entire Length	-	SA	Marine Fishery Shellfishing (O) Recreation (P&S)	Regulation 4.3
Other surface waters in the Buzzards Bay Drainage Area subject to the rise and fall of the tide	-	SA	-	
Acushnet River				
Main Street to Rt. 6	4.5 - 1.2	SB	Marine Fishery Shellfishing (R) Recreation (P&S)	Regulation 4.3

TABLE 24 (CONTINUED)

BOUNDARY	MILE POINTS	CLASSIFICATION	DESIGNATED USES	OTHER RESTRICTIONS
Inner New Bedford Harbor	1.2 - 0.0	SB	Marine Fishery Shellfishing (R) Recreation (P&S)	
Outer New Bedord Harbor	-	SA	Marine Fishery Shellfishing (O) Recreation (P&S)	
Clark Cove, New Bedford - Dartmouth	-	SA	Marine Fishery Shellfishing (O) Recreation (P&S)	
Apponagansett Bay, Dartmouth	-	SA	Marine Fishery Shellfishing (O) Recreation (P&S)	
Slocums River	-	SA	Marine Fishery Shellfishing (O) Recreation (P&S)	Regulation 4.3
Westport River, East Branch				
Old Colony Road to confluence	10.0 - 0.0	SA	Marine Fishery Shellfishing (O) Recreation (P&S)	Regulation 4.3

TABLE 24 (CONTINUED)

BOUNDARY	MILE POINTS	CLASSIFICATION	DESIGNATED USES	OTHER RESTRICTIONS
Westport River, West Branch				
Entire Length	-	SA	Marine Fishery Shellfishing (O) Recreation (P&S)	Regulation 4.3
Other surface waters in the Buzzards Bay Drainage Area subject to the rise and fall of the tide	-	SA	-	Regulation 4.2 MGL, Ch. 132A Sec. 13-18

TABLE 25

TAUNTON RIVER BASIN

DRAINAGE AREA 26

BOUNDARY	MILE POINTS	CLASSIFICATION	DESIGNATED USES	OTHER RESTRICTIONS
Taunton River				
Rt. 24 Bridge to mouth	21.7 - 2.7	SB	Marine Fishery Shellfishing (R) Recreation (P&S)	
Mount Hope Bay	-	SB	Marine Fishery Shellfishing (R) Recreation (P&S)	
East of line from Brayton Point to Bouy(1967)	-	SB	Marine Fishery Shellfishing(R) Recreation(P&S)	
West of line from Brayton Point to Bouy 4(1967)	-	SA	Marine Fishery Shellfishing(O) Recreation(P&S)	
Lee and Cole Rivers				
Estuary	-	SA	Marine Fishery Shellfishing(O) Recreation(P&S)	

State of Mississippi Marine Water Quality Standards

Reference:

Water Quality Criteria for Intrastate and

Interstate Coastal Waters

February 25, 1982

Mississippi Dept. of Natural Resources

Bureau of Pollution Control

P.O. Box 10385

Jackson, MI 39209

WATER QUALITY CRITERIA FOR INTRASTATE, INTERSTATE AND COASTAL WATERS

STATE OF MISSISSIPPI

SECTION I. GENERAL CONDITIONS:

1. 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 decides to allow limited degradation where economically and socially justified. In no event, however, may degradation of water quality interfere with or become injurious to existing instream 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 receiving waters which the Commission determines to be of exceptionally high quality, the policy shall be to maintain that existing high quality.

2. The limiting values of water quality herein described shall be measured by the Commission in waters under consideration as determined by good sanitary engineering practice and after consultation with affected parties. Samples shall be taken from points so distributed over the area and depth of the waters being studied as to permit a realistic appraisal of such actual or potential damage to water use or aquatic life as may exist. Samples shall be analyzed in accordance with the latest edition of "Standard Methods for the Examination of Water and Wastewater" or other methods acceptable to the Commission.

3. Certain waters of the State may not fall within desired or prescribed limitations as outlined. In such instances the Commission may authorize exceptions to these limits, under the following conditions:

a. The existing designated use is not attainable because of natural background conditions; or

b. the existing designated use is not attainable because of irretrievable man-induced conditions; or

c. the application of effluent limitations for existing sources more stringent than those required pursuant to Section 301(b) (2) (A) and (B) of the Federal Water Pollution Control Act Amendments of 1972, in order to attain the existing designated use, would result in substantial and widespread adverse economic and social impact.

In no case shall it be permissible to deposit or introduce materials into waters of the State which will cause impairment of the reasonable or legitimate use of said waters.

4. In view of the fact that industry is continuing to produce new materials whose characteristics and effects are unknown at this time, such 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 Environmental Protection Agency pursuant to Section 304(a) of the Federal Water Pollution Control Act Amendments of 1972. The use of such information should be limited to that part applicable to the indigenous aquatic community found in the State of Mississippi.

5. All criteria contained herein shall apply to all stages of streamflow greater than or equal to the 7-day, 10-year minimum flow in unregulated, natural streams, and the legally guaranteed minimum flow in regulated streams. This requirement shall not be interpreted to permit any unusual waste discharges during periods of lower flow.

6. In open ocean waters there shall be no oxygen demanding substances added which will depress the dissolved oxygen content below 5.0 mg/l.

7. The Mississippi River is classified for Fish and Wildlife use, 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
T.D.S.	425 mg/l

From Vicksburg south to the Mississippi-Louisiana border

Chlorides	75 mg/l
Sulfates	120 mg/l
T.D.S.	400 mg/l

8. It is recognized that limited areas of mixing are unavoidable; however, mixing zones shall not be used for waste treatment nor considered as a substitute for waste treatment. Mixing zone limits shall be defined by the Commission on a case-by-case basis. In all cases mixing zones shall be restricted to as small an area as feasible. Adequate zones of passage for the migration and free movement of fish and other aquatic biota shall be maintained. Where there are several mixing zones close together, they shall all be on the same side so that the passageway is continuous.

Also, mixing zones shall not interfere with the established community of aquatic organisms nor adversely affect recreational uses of an area. Any mixing zone shall be free from materials in concentrations that exceed the 96-hour LC_{50} for biota significant to the indigenous aquatic community and shall comply with the general provisions of Section I and II of these standards.

SECTION II. MINIMUM CONDITIONS APPLICABLE TO ALL WATERS:

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, or other conditions in such degree as to create a nuisance.

4. Waters shall be free from substances attributable to municipal, industrial, agricultural or other discharges in concentrations or combinations which are toxic or harmful to humans, animal or other aquatic life.

5. Municipal wastes, industrial wastes, or other wastes shall receive effective treatment or control in accordance with Sections 301, 306 and 307 of the Federal Water Pollution Control Act Amendments of 1972. A degree of treatment greater than defined in these sections may be required when necessary to protect legitimate water uses.

Disapproved by EPA 7/25/77 See attached Federal criteria promulgated on 10/30/79

6. Dissolved Oxygen: For diversified warm water biota, including game fish, the daily dissolved oxygen concentration shall be maintained at a minimum of not less than 4.0 mg/l during the low 7-day, once-in-ten-years flow. However, at all greater flows dissolved oxygen shall be maintained at not less than 5.0 mg/l, assuming there are normal seasonal and daily variations above this level; except that under extreme conditions, with the same stipulations as to seasonal and daily variations, the dissolved oxygen level may range between 5.0 mg/l and 4.0 mg/l for short periods of time, provided that the water quality is maintained in favorable conditions in all other respects.

7. Toxic Substances, Color, Taste and Odor Producing Substances: There shall be no substances added, whether alone or in combination with other substances, that will impair the use of waters from that which it is classified. The concentration of toxic pollutants shall not exceed one-tenth (1/10th) of the 96-hour median tolerance limit based on available data. The concentration of toxic pollutants that are cumulative and/or persistent may be further limited on a case-by-case basis.

Available references to be used in determining toxicity limitations shall include, but not be limited to Quality Criteria for Water [Section 304(a)], Federal Regulations under Section 307, and Federal Regulations under Section 1412 of the Public Health Service Act as amended by the Safe Drinking Water Act (Pub. L. 93-523). The use of such information should be limited to that part applicable to the indigenous aquatic community found in the State of Mississippi.

8. pH: The normal pH of the waters shall be 6.0 to 8.5 and shall not be caused to vary more than 1.0 unit; however, should the background pH be outside the 6.0 to 8.5 limits, it shall not be changed more than 1.0 unit unless after the change the pH will fall within the 6.0 to 8.5 limits, and the Commission determines that there will be no detrimental effect on stream usage as a result of the greater pH change.

9. Temperature: The maximum temperature rise above natural temperatures shall not exceed 5°F in streams, lakes and reservoirs nor shall the maximum water temperature exceed 90°F, except that in the Tennessee River the temperature shall not exceed 86°F. 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 discharge of any heated waste into any coastal or estuarine waters shall not raise temperatures more than 4°F above natural during the period October through May nor more than 1.5°F above natural for the months June through September. There shall be no thermal block to the migration of aquatic organisms. Requirements for zones of passage as referenced in Section I (8) shall apply. In addition to the general requirements of Section I (2), the 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, Section I (3) shall apply on a case-by-case basis.

SECTION III. SPECIFIC WATER QUALITY CRITERIA:

1. PUBLIC WATER SUPPLY:

Water in this classification is for use as a source of raw water supply for drinking and food processing purposes. The water treatment process shall be approved by the Mississippi State Board 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 (Pub. L. 93-523).

In considering the acceptability of a proposed site for disposal of bacterially-related wastewater in or near waters with this classification, the Permit Board shall consider the relative proximity of the discharge to water supply intakes.

a. Bacteria: Fecal coliform shall not exceed 2000/100 ml as a geometric mean (either MPN or MF count) based on at least 5 samples taken over a 30-day period nor exceed a maximum of 4000/100 ml in any one sample.

b. Chlorides (Cl): There shall be no substances added which will cause the chloride content to exceed 250 mg/l in freshwater streams.

c. Specific Conductance: There shall be no substances added to increase the conductivity above 500 micromhos/cm for freshwater streams.

d. Dissolved Solids: There shall be no substances added to the waters which will cause the dissolved solids to exceed 500 mg/l for freshwater streams.

e. 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.

f. Phenolic Compounds: There shall be no substances added which will cause the phenolic content to be greater than 0.001 mg/l (phenol).

g. 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.

h. Specific Chemical Constituents: Considering Section II, 7, in no case shall the following concentrations (dissolved) be exceeded at any time:

Constituent	Concentration (mg/l)
Arsenic	0.05
Barium	1.0
Cadmium	0.01
Chromium (hexavalent)	0.05
Cyanide	0.025
Fluoride	1.2
Lead	0.05
Mercury	0.002
Nitrate (as N)	10.0
Selenium	0.01
Silver	0.05

2. SHELLFISH HARVESTING AREAS:

Waters classified for this use 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, Manual of Operations, Part I, Sanitation of Shellfish Growing Areas, as published by the U. S. Public Health Service.

In considering the acceptability of a proposed site for disposal of bacterially-related wastewater in or near waters with this classification, the Permit Board shall consider the relative proximity of the discharge to shellfish harvesting beds.

a. Bacteria: The median fecal coliform MPN (Most Probable Number) of the water shall not exceed 14 per 100 ml, and not more than ten percent (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 pollutional conditions.

3. RECREATION:

The quality of waters in this classification are to be suitable for recreational purposes, including such water contact activities as swimming and water skiing. The waters shall also be suitable for use for which waters of lower quality will be satisfactory.

In considering the acceptability of a proposed site for disposal of bacterially-related 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.

a. Bacteria: Fecal coliform shall not exceed a geometric mean of 00 per 100 ml nor shall more than ten percent (10%) of the samples examined during any month exceed 400 per 100 ml.

b. Specific Conductance: There shall be no substances added to increase the conductivity above 1000 micromhos/cm for freshwater streams.

c. 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.

4. FISH AND WILDLIFE:

Waters in this classification are intended for fishing and for propagation of fish, aquatic life, and wildlife.

a. Bacteria: Fecal coliform shall not exceed a geometric mean of 2000/100 ml, nor shall more than ten percent (10%) of the samples examined during any month exceed 4000/100 ml.

b. Specific Conductance: There shall be no substances added to increase the conductivity above 1000 micromhos/cm for freshwater streams.

c. 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.

d. Phenolic Compounds: There shall be no substances added which will cause the phenolic content to exceed 0.05 mg/l (phenol).

SECTION IV. WATER USES IN STREAMS:

All of the streams not specifically listed below shall be classified as Fish and Wildlife with the exception of Ephemeral Streams which are designated on a case-by-case basis and noted on specific discharge permits. Streams carrying other Classifications are:

Waters	From	To	Classification
Pearl River	Byram Bridge	Miss. Sound	Recreation
COASTAL BASIN			
Bangs Lake	Headwaters	Miss. Sound	Shellfish Harvesting
Bayou Cumbest	Headwaters	Miss. Sound	Shellfish Harvesting
Biloxi Bay	Highway 90	Miss. Sound	Shellfish Harvesting
Davis Bayou	Headwaters	Biloxi Bay	Shellfish Harvesting

Waters	From	To	Classification
Graveline Bay	Headwaters	Graveline Bayou	Shellfish Harvesting
Graveline Bayou	Graveline Bay	Miss. Sound	Shellfish Harvesting
Jourdan River	Confluence of Dead Tiger & Catahoula Creeks	Highway 603	Recreation
Jourdan River	Highway 603	St. Louis Bay	Recreation
Mallini Bayou	St. Louis Bay	St. Louis Bay	Shellfish Harvesting
Miss. Sound	Contiguous	Miss. Coastline	Recreation
Pass Christian Reef-Henderson Point			Shellfish Harvesting
St. Louis Bay	Harrison-Hancock Counties		Shellfish Harvesting
Wolf River	Ms. Hwy 26	St. Louis Bay	Recreation
Tuxachanie Creek	Headwaters	Tchoutachbouffa River	Recreation
Tchoutacabouffa River	Headwaters	Biloxi Bay	Recreation

§ 120.34 Mississippi.

The water quality standards applicable to intrastate, interstate, and coastal waters of Mississippi, adopted by the Mississippi Air and Water Pollution Control Commission on April 12, 1977, are amended as follows:

Section III. Specific Water Quality Criteria.

1. Public water supply—a. Dissolved oxygen. Dissolved oxygen concentrations shall be maintained at a daily average of not less than 5.0 mg/1 with an instantaneous minimum of not less than 4.0 mg/1 in streams; shall be maintained at a daily average of not less than 5.0 mg/1 with an instantaneous minimum of not less than 4.0 mg/1 in estuaries and in the tidally affected portions of streams; and shall be maintained at a daily average of not less than 5.0 mg/1 with an instantaneous minimum of not less than 4.0 mg/1 in the epilimnion (i.e., the surface layer of lakes and impoundments that are thermally stratified, or 5 feet from the water's surface (mid-depth if the lake or impoundment is less than 10 feet deep at the point of sampling) for lakes and impoundments that are not stratified.

Epilimnion samples may be collected at the approximate mid-point of that zone (i.e., the mid point of the distance or if the epilimnion is more than 5 feet in depth, then at 5 feet from the water's surface.

2. Shellfish-harvesting areas—a. Dissolved oxygen. Dissolved oxygen concentrations shall be maintained at a daily average of not less than 5.0 mg/1 with an instantaneous minimum of not less than 4.0 mg/1 in streams; shall be maintained at a daily average of not less than 5.0 mg/1 with an instantaneous minimum of not less than 4.0 mg/1 in estuaries and in the tidally-affected portions of streams; and shall be maintained at a daily average of not less than 5.0 mg/1 with an instantaneous minimum of not less than 4.0 mg/1 in the epilimnion (i.e., the surface layer of lakes and impoundments that are thermally stratified, or 5 feet from the water's surface (mid-depth if the lake or impoundment is less than 10 feet deep at the point of sampling) for lakes and impoundments that are not stratified.

Epilimnion samples may be collected at the approximate mid-point of that zone (i.e., the mid point of the distance or if the epilimnion is more than 5 feet in depth, then at 5 feet from the water's surface.

3. Recreation—a. Dissolved oxygen. Dissolved oxygen concentrations shall be maintained at a daily average of not less than 5.0 mg/1 with an instantaneous minimum of not less than 4.0 mg/1 in streams; shall be maintained at a daily average of not less than 5.0 mg/1 with an instantaneous minimum of not less than 4.0 mg/1 in estuaries and in the tidally-affected portions of streams; and shall be maintained at a daily average of not less than 5.0 mg/1 with an instantaneous minimum of not less than 4.0 mg/1 in the epilimnion (i.e., the surface layer of lakes and impoundments that are thermally stratified, or 5 feet from the water's surface (mid-depth if the lake or impoundment is less than 10 feet deep at the point of sampling) for lakes and impoundments that are not stratified.

Epilimnion samples may be collected at the approximate mid-point of that zone (i.e., the mid point of the distance or if the epilimnion is more than 5 feet in depth, then at 5 feet from the water's surface.

4. Fish and wildlife—a. Dissolved oxygen. Dissolved oxygen concentrations shall be maintained at a daily average of not less than 5.0 mg/1 with an instantaneous minimum of not less than 4.0 mg/1 in streams; shall be maintained at a daily average of not less than 5.0 mg/1 with an instantaneous minimum of not less than 4.0 mg/1 in estuaries and in the tidally affected portions of streams; and shall be maintained at a daily average of not less than 5.0 mg/1 with an instantaneous minimum of not less than 4.0 mg/1 in the epilimnion (i.e., the surface layer of lakes and impoundments that are thermally stratified, or 5 feet from the water's surface (mid-depth if the lake or impoundment is less than 10 feet deep at the point of sampling) for lakes and impoundments that are not stratified.

Epilimnion samples may be collected at the approximate mid-point of that zone (i.e., the mid point of the distance or if the epilimnion is more than 5 feet in depth, then at 5 feet from the water's surface.

(Sec. 303(c), Clean Water Act, as amended (33 U.S.C. 1313(c))

[44 FR 25227, Apr. 30, 1979]

State of New Hampshire Marine Water Quality Standards

New Hampshire Water Quality Standards
April 1977

New Hampshire Water Supply and Pollution
Control Commission
105 London Road
P.O. Box 95
Concord, NH 03301

NEW HAMPSHIRE

Antidegradation

In all cases, existing instream beneficial water uses will be maintained and protected. Any actions that would become injurious to existing uses cannot be undertaken. Waste assimilation and transport are not recognized beneficial uses.

Existing high quality waters will be maintained at their existing high quality unless the New Hampshire Water Supply and Pollution Control Commission decides to allow limited degradation where economically or socially justified. If limited degradation is allowed, it cannot result in violation of water quality criteria that describe the base levels necessary to sustain the State and National Water Quality goal uses of protection and propagation of fish, shellfish, and wildlife and recreation in and on the water.

In all cases, high quality water which constitutes an outstanding State or National resource will be maintained and protected.

Any determinations concerning thermal discharge limitations under Section 316(a) of Public Law 92-500 will be considered in compliance with the anti-degradation policy.

TABLE I

USE CLASSIFICATIONS[1] AND WATER QUALITY STANDARDS
AS OF NOVEMBER 1, 1976

BASED ON CHAPTER 149 REVISED STATUTES ANNOTATED AND REGULATIONS

OF THE

NEW HAMPSHIRE WATER SUPPLY AND POLLUTION CONTROL COMMISSION

OPTIMUM USES

	Class A	Class B	Class C
	Potentially acceptable for water supply uses after disinfection. No discharge of sewage, wastes or other polluting substances into waters of this classification. (Quality uniformly excellent.)	Acceptable for swimming and other recreation, fish habitat and, after adequate treatment, for use as water supplies. No disposal of sewage or wastes unless adequately treated. (High aesthetic value.)	Acceptable for recreational boating, fishing, and industrial water supply with or without treatment, depending on individual requirements. (Third highest quality.)
Dissolved Oxygen	Not less than 75% of saturation, nor less than 6 ppm^2 in cold water fisheries.	Not less than 75% of saturation, nor less than 6 ppm^2 in cold water fisheries unless naturally occurring.	Not less than 5 ppm^2 in warm water fisheries, nor less than 6 ppm^2 in cold water fisheries unless naturally occurring.
Coliform Bacteria	Not more than 50 coliforms per 100 ml unless naturally occurring.	Not more than 240 coliforms per 100 ml in fresh water, unless naturally occurring. Not more than 70 coliforms per 100 ml in waters used for growing or taking of shellfish for human consumption.	Not to exceed an average value of 1000 coliforms per 100 ml in any group of samples, nor shall any single sample exceed 2500 coliforms per 100 ml except when such waters are subject to overflow from a combined sewer system or as naturally occurs.
pH(acidity-alkalinity)	As naturally occurs.	6.5 - 8.0 or as naturally occurs.	6.0 - 8.5 or as naturally occurs.
Substances potentially toxic	None unless naturally occurring.	Not in toxic concentrations or combinations.	Not in toxic concentrations or combinations.
Sludge Deposits	None.	No unreasonable kinds or quantities unless naturally occurring.	No unreasonable kinds or quantities, unless naturally occurring.
Oil and Grease	None.	No unreasonable kinds or quantity.	No unreasonable kinds or quantity.

(continued from other side)

TABLE I

USE CLASSIFICATIONS[1] AND WATER QUALITY STANDARDS
AS OF NOVEMBER 1, 1976

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OPTIMUM USES

	Class A	Class B	Class C
	Potentially acceptable for water supply uses after disinfection. No discharge of sewage, wastes or other polluting substances into waters of this classification. (Quality uniformly excellent.)	Acceptable for swimming and other recreation, fish habitat, and, after adequate treatment, for use as water supplies. No disposal of sewage or wastes unless adequately treated. (High aesthetic value.)	Acceptable for recreational boating, fishing, and industrial water supply with or without treatment, depending on individual requirements. (Third highest quality.)
Color	Not in unreasonable quantities, unless naturally occurring.	Not in unreasonable quantities, unless naturally occurring.	Not in unreasonable quantities, unless naturally occurring.
Turbidity	Not to exceed 5 standard turbidity units unless naturally occurring.	Not to exceed 10 standard turbidity units in cold water fisheries. Not to exceed 25 standard turbidity units in warm water fisheries unless naturally occurring.	Not to exceed 10 standard turbidity units in cold water fisheries. Not to exceed 25 standard turbidity units in warm water fisheries unless naturally occurring.
Slicks, Odors and Surface-Floating Solids	None unless naturally occurring.	No unreasonable kinds, quantities or duration unless naturally occurring.	No unreasonable kinds, quantities or duration unless naturally occurring.
Temperature	No artificial rise.	NHF&GD, NEIWPCC, or NTAC-DI[3] requirements - whichever provides most effective control.	NHF&GD, NEIWPCC or NTAC-DI[3] requirements - whichever provides most effective control.
Phosphorous	None, except as naturally occurs.	None in such concentrations[4] that would impair any usages assigned to this class, unless naturally occurring.	None in such concentrations[4] that would impair any usages assigned to this class unless naturally occurring.

(continued from other side)

TABLE I

USE CLASSIFICATIONS[1] AND WATER QUALITY STANDARDS
AS OF NOVEMBER 1, 1976

BASED ON CHAPTER 149 REVISED STATUTES ANNOTATED AND REGULATIONS

OF THE

NEW HAMPSHIRE WATER SUPPLY AND POLLUTION CONTROL COMMISSION

OPTIMUM USES

	Class A	Class B	Class C
	Potentially acceptable for water supply uses after disinfection. No discharge of sewage, wastes or other polluting substances into waters of this classification. (Quality uniformly excellent.)	Acceptable for swimming and other recreation, fish habitat, and, after adequate treatment, for use as water supplies. No disposal of sewage or wastes unless adequately treated. (High aesthetic value.)	Acceptable for recreational boating, fishing, and industrial water supply with or without treatment, depending on individual requirements. (Third highest quality.)
Gross Beta Radioactivity	Not greater than 1000 picocuries[5] per liter.	Not greater than 1000 picocuries[5] per liter.	Not greater than 1000 picocuries[5] per liter.
Strontium-90	Not greater than 10 picocuries[5] per liter.	Not greater than 10 picocuries[5] per liter.	Not greater than 10 picocuries[5] per liter.
Radium-226	Not greater than 3 picocuries[5] per liter.	Not greater than 3 picocuries[5] per liter.	Not greater than 3 picocuries[5] per liter.
Phenol	Not to exceed .001 ppm.[2]	Not to exceed .001 ppm.[2]	Not to exceed .002 ppm.[2]

[1] The waters in each classification shall satisfy all provisions of all lower classifications.

[2] ppm = parts per million.

[3] NHF&GD - New Hampshire Fish and Game Department
NEIWPCC - New England Interstate Water Pollution Control Commission
NTAC-DI - National Technical Advisory Committee, Department of Interior.

[4] Generally less than 0.015 ppm.

[5] One picocurie is one trillionth of a curie, which is a standard measure of radioactivity.

NOTE:
(a) RSA 149 in initial enactment provided for Class D, however, no waters in the State are so classified, nor currently are any being contemplated for such classification.
(b) Obviously, "acts of God" are exempt from control.
(c) The preceding shall apply to all times except during periods when the receiving stream flows are less than the minimum average ten-day low flow which occurs once in twenty years.

CHAPTER 149

149:3 **Standards for Classification of Surface Waters of the State.** For purposes of classification there shall be four classes or grades of surface waters as follows:

I. Class A waters shall be of the highest quality and shall contain not more than fifty coliform bacteria per one hundred milliliters. There shall be no discharge of any sewage or wastes into waters of this classification. The waters of this classification shall be considered as being potentially acceptable for water supply uses after disinfection.

II. Class B* waters shall be of the second highest quality and shall have no objectionable physical characterictics, shall be near saturation for dissolved oxygen, and shall contain not more than two hundred forty coliform bacteria per one hundred milliliters. There shall be no disposal of sewage or waste into said waters except those which have received adequate treatment to prevent the lowering of the physical, chemical or bacteriological characteristics below those given above, nor shall such disposal of sewage or waste be inimical to fish life or to the maintenance of fish life in said receiving waters. The pH range for said waters shall be 6.5 to 8.0 except when due to natural causes. Any stream temperature increase associated with the discharge of treated sewage, waste or cooling water shall not be such as to appreciably interfere with the uses assigned to this class. The waters of this classification shall be considered as being acceptable for bathing and other recreational purposes and, after adequate treatment, for use as water supplies. 1963, 26:2. 1967, 147:4

III. Class C waters shall be of the third highest quality and shall be free from slick, odors, turbidity, and surface-floating solids of unreasonable kind or quantity, shall contain not less than five parts per million of dissolved oxygen; shall have a hydrogen ion concentration within the range of pH 6.0 to 8.5 except when due to natural causes; and shall be free from chemicals and other materials and conditions inimical to fish life or the maintenance of fish life. Any stream temperature increase associated with the discharge of treated sewage, waste or cooling water shall not be such as to appreciably interfere with the uses assigned to this class. The waters of this classification shall be considered as being acceptable for recreational boating, fishing, or for industrial water supply uses either with or without treatment depending upon individual requirements. 1967, 147:5

IV. Class D waters shall be the lowest classification and shall be free from slick, sludge deposits, odors, and surface-floating materials of unreasonable kind, quantity or duration, taking into consideration the necessities of the industries involved, and shall contain not less than two parts per million of dissolved oxygen at all times. Any stream temperature increase associated with the discharge of treated sewage, waste or cooling water shall result in a receiving water temperature not in excess of 90°F The waters of this classification shall be aesthetically acceptable. Such water shall also be suitable for certain industrial purposes, power and navigation. 1967, 147:6

*Chapter 147:15, Laws of 1967, provides that: All surface waters of the state heretofore or hereafter classified as Class B-1 or Class B-2 waters are hereby reclassified as Class B waters.

IV-a. Notwithstanding anything contained in this chapter to the contrary, the commission in submitting classifications relating to interstate waters to the New England Interstate Water Pollution Control Commission for review and approval, as provided for under the terms of Article V of the compact whereby the interstate commission was created by RSA 488, shall submit such classifications in accordance with the standards of water quality as currently adopted by said interstate water pollution control commission provided, however, that the standards for any classification thus submitted for review and approval shall not be less than, nor exceed the standards of the classification duly adopted by the General Court as provided for in RSA 149:6 or 7. 1969, 337:2

IV-b. Tidal waters utilized for swimming purposes shall satisfy all conditions contained in paragraph II above. Those tidal waters used for growing or taking of shellfish for human consumption shall, in addition to the foregoing requirements not contain a coliform bacteria count greater than seventy on an MPN basis. 1969, 337:2

IV-c. Notwithstanding anything contained in this chapter to the contrary, the commission shall have the authority to adopt such stream classification criteria as may be issued from time to time by the Federal Environmental Protection Agency or its successor agency insofar as said criteria may relate to the water uses specified in RSA 149:3, I, II, and III. Provided, however, that the criteria thus issued shall not result in standards that are less than nor exceed the standards of the classification duly enacted by the general court as provided for in RSA 149:6 or 7. 1973, 590:3

V All tests and sampling for the purpose of examination of waters shall be performed and carried out in a reasonable manner and whenever practicable, in accordance with the current edition of the Standard Methods for Examination of Water and Sewage as published jointly by the American Public Health Association and the American Water Works Association. Near saturation for dissolved oxygen shall mean a dissolved oxygen content at least seventy-five percentum of saturation. The waters in each classification shall satisfy all the provisions of all lower classifications. The minimum treatment for the lowest classification shall be as follows:

(a) For sewage, primary treatment and disinfection resulting in substantially complete disinfection and removal of all settleable and floatable materials. 1963, 47:1. 1967, 147:7

(b) For industrial wastes, such treatment, not to exceed primary treatment or its equivalent, as the commission shall determine after due consideration of the provisions of paragraph IV above. Appeal from any such determination shall be in the manner provided for in section 14 thereof. 1963, 47:1. 1967, 147:7

V-a. In prescribing minimum treatment provisions for thermal wastes discharged to interstate waters, the commission shall adhere to the water quality requirements and recommendations of the New Hampshire fish and game department, the New England Interstate Water Pollution Control Commission, or the National Technical Advisory Committee of the Department of the Interior, whichever requirements and recommendations provide the most effective level of thermal pollution control 1969, 337:3

VI. Subject to the provisions of RSA 149:8, III, the fish and game department may use rotenone or similar compounds in the conduct of its program to reclaim the public waters of the state for game fishing 1955, 82:1 1973, 590:4

APPENDIX II

RULES & REGULATIONS IMPLEMENTING RSA 149

Additional Water Quality Standards Adopted October, 1973

1. The water quality standards appearing in RSA 149:3-I, II, III and IV and those hereinafter adopted shall apply at all times except during periods when receiving stream flows are less than the minimum average ten-day flow which occurs once in twenty years.

2. All methods of sample collection, preservation, handling, and analysis shall conform to one or more of those published in the following references or the latest editions thereof:

   a. STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTE-WATERS, 13th Edition, 1971, American Public Health Association, New York, New York 10019.

   b. AMERICAN SOCIETY FOR TESTING AND MATERIALS STANDARDS, Part 23, "Water; Atmospheric Analysis, 1970;" American Society for Testing and Materials, Philadelphia, Penn. 19103

   c. METHODS FOR CHEMICAL ANALYSIS OF WATER AND WASTES, April, 1971, Environmental Protection Agency, Water Quality Office, Analytical Quality Control Laboratory, 1014 Broadway, Cincinnati, Ohio 45268.

   d. And such other methods as EPA may, from time to time, prescribe.

3. Bioassay procedures and application factors used in establishing limits on toxic substances shall, as a minimum, be no less rigorous than the recommendations for bioassays and application factors contained in the National Technical Advisory Committee's report to the Secretary of the Interior on WATER QUALITY CRITERIA, April 1, 1968 or latest revision thereof.

4. The Commission may consider mixing zones, except as otherwise provided in these water quality standards or by statute, and where mixing zones are allowed they shall conform to the latest requirements of the Environmental Protection Agency or to the requirements of the Commission which shall be no less rigorous than existing Federal requirements.

5. For cold water fisheries the dissolved oxygen concentration shall be not less than 6 mg/l at any time, and for warm water fisheries not less than 5 mg/l at any time.

6. Turbidities in surface waters managed for cold water fisheries shall not exceed 10 Standard Turbidity Units.

RULES & REGULATIONS IMPLEMENTING RSA 149
(Continued)

7. Turbidity in surface waters managed for warm water fisheries shall not exceed 25 Standard Turbidity Units.

8. Gross Beta radioactivity shall never be greater than 1,000 picocuries per liter.

9. Strontium-90 radioactivity shall never be greater than 10 picocuries per liter.

10. Radium-226 shall never be greater than 3 picocuries per liter.

11. For Class A and B waters the phenol concentration shall not exceed 0.001 mg/l.

12. For Class C waters the phenol concentration shall not exceed 0.002 mg/l.

13. All surface waters of New Hampshire shall be deemed suitable for cold water fisheries unless otherwise designated by the New Hampshire Fish and Game Department.

14. For Class C waters the coliform bacteria concentration shall not exceed a log mean of 1000 organisns/100 ml in any group of samples nor shall any single sample exceed 2500 organisms/100 ml except when such waters are subject to overflow from a combined sewer system.

15. In Class A, B, and C streams and saline waters, there shall be no phosphorus in such concentrations that would impair any usages assigned to the specific class involved. Where treatment to remove phosphorus is required under this regulation such treatment shall remove phosphorus to the maximum extent technically feasible.

16. In all lakes and ponds.

    a. There shall be no new point discharge of wastewater containing phosphorus. In addition, there shall be no new discharge of wastewater containing phosphorus to tributaries of lakes or ponds that would encourage eutrophication or growth of weeds or algae in such lakes or ponds.

    b. Any point discharge of wastewater existing as of the date of adoption of these rules and regulations and containing phosphates in concentrations which encourage eutrophication or growth of weeds or algae, shall be treated to remove such phosphates to the maximum extent technically feasible.

17. The above rules and regulations shall not apply to any condition due to natural causes.

RULES & REGULATIONS IMPLEMENTING RSA 149
(Continued)

18. If any rule or regulation contained herein is declared invalid for any reasons such declaration shall in no way affect the validity of all other rules and regulations hereunder.

19. Notwithstanding anything contained above in paragraphs 1-18 all surface waters of the State classified A, B, or C "shall be free from chemicals and other materials and conditions inimical to fish life or the maintenance of fish life."

State of New Jersey Marine Water Quality Standards

Reference:

New Jersey Surface Water Quality Standards

March 1981

State of New Jersey

Dept. of Environmental Protection

Trenton, NJ 08625

NEW JERSEY

Antidegradation Statements

1. Existing instream water uses shall be maintained and protected. No further water quality degradation which would interfere with or become injurious to existing water uses is allowable. Existing high quality waters which are better than those levels necessary to support propagation of fish, shellfish and wildlife and recreation in and on the water shall be maintained and protected unless the State chooses, after full satisfaction of the intergovernmental coordination and public participation provisions of the State's continuing planning process, to allow lower water quality as a result of necessary and justifiable economic or social development. In no event, however, may degradation of water quality interfere with or become injurious to existing instream water uses. Additionally, no degradation shall be allowed in high quality waters which constitute an outstanding National or State resource. This antidegradation policy shall be applied as follows:

ii. High Quality Waters-Category One are waters having biological, chemical, or physical characteristics which are better than quality standards. The uses of these high quality waters are so sensitive to any change in chemical or physical characteristics that it is presumed that any measurable or calculable degradation of the instream characteristics will lead to eventual change or harm to the uses in these surface waters. The existing biological, chemical, or physical characteristics of High Quality Waters-Category One which are critical to the maintenance of existing instream uses will be protected from any measurable or calculable changes. Surface waters identified as High Quality Waters-Category One are:

(3) Shellfish waters classified as approved in chapter 12 of this title; or

(4) Other high quality surface waters and their tributaries which flow through, or border, State and National Parks, Forests, and Fish and Wildlife lands.

iii. High Quality Waters-Category Two are waters having biological, chemical or physical characteristics which are better than water quality standards. The uses of these high quality waters are sensitive to changes in chemical or physical characteristics. However, these uses may be capable of being maintained within some range of change to the instream chemical or physical characteristics as may be determined by studies relating biological and other use characteristics to chemical and physical characteristics of aquatic ecosystems. The High Quality Waters-Category Two are those waters having biological, chemical, or physical characteristics better than water quality standards and not identified as Nondegradation Waters or High Quality Waters-Category One.

iv. Category Three waters are those waters in which ambient water quality is consistenty worse than or equal to applicable water quality standards. Existing and intended uses of these waters shall be attained or maintained.

2. In all situations where a lower classification of water may impinge upon a higher classification of water, the department, in implementing these standards, shall ensure the quality and uses of the higher classification are protected.

General Criteria

The concentration of a nonpersistent or noncumulative or hazardous substance in the State's waters shall not exceed one-twentieth (0.05) of the LC_{50} value at 96 hours, as determined by appropriate bioassays.

The concentration of a persistent or cumulative toxic or hazardous substance in the State's waters shall not exceed one one-hundredth of the LC_{50} value at 96 hours, as determined by appropriate bioassays. A persistent substance is defined as a substance that is relatively resistant to degradation, having a one-half-life of 96 hours or more.

7:9-4.7 Tidal surface water designated uses and quality criteria

(a) Designated uses and quality criteria for TW-1 waters

1. Designated uses:

i. These waters shall be suitable for shellfish harvesting where permitted.

ii. These waters shall also be suitable for the maintenance, migration and propagation of the natural and established biota; and for primary contact recreation; industrial and agricultural water supply and any other reasonable uses.

2. Quality criteria: Quality criteria for TW-1 waters are found in subsection (d) of this section. Where trout are considered to be an important species in waters classified as TW-1, the quality criteria for FW-2 Trout Maintenance which are found in subsection (e) of section six of this subchapter shall apply.

(b) Designated use and quality criteria for TW-2 waters

1. Designated uses: These waters shall be suitable for secondary contact recreation; the propagation and maintenance of fish populations; the migration of anadromous fish; the maintenance of wildlife and other reasonable uses.

2. Quality criteria: Quality criteria for TW-2 waters are found in subsection (d) of this section.

(c) Designated uses and quality criteria for TW-3 waters

1. Designated uses: These waters shall be suitable for secondary contact recreation; the maintenance of fish populations; the migration of anadromous fish; the maintenance of wildlife and other reasonable uses.

2. Quality criteria: Quality criteria for TW-3 waters are found in subsection (d) of this section.

(d) *Surface water quality criteria for tidal waters*
(Concentrations are in micrograms per liter unless otherwise noted)

Substance	TW-1	TW-2	TW-3
Antidegradation policy	The antidegradation policy may supersede water quality criteria found in this section (7:9-4.7(d)).		
Floating, colloidal, color, settleable, and suspended solids (non-filterable residue); petroleum hydrocarbons and other oils and greases	1. None noticeable in the water or deposited along the shore, or on the aquatic substrata in quantities detrimental to the natural biota. None which would render the water unsuitable for the designated uses.		
	2. For "Petroleum Hydrocarbons" the goal is none detectable utilizing the Federal-Environmental Monitoring and Support Laboratory Method (Freon Extractable-Silica Gel Adsorption-Infrared Measurement); the present criteria, however, are those of paragraph 1 above.		
Turbidity (NTU)	Maximum 30-day average of 10 NTU, a maximum of 30 NTU at any time.		Maximum 30-day average of 15 NTU, a maximum of 50 NTU at any time.
Taste and odor producing substances	None offensive to humans or which would produce offensive taste or odors in biota used for human consumption. None which would render the waters unsuitable for the designated uses.		
pH (Standard Units)	6.5-8.5	6.5-8.5	6.5-8.5
Dissolved oxygen (mg/l)	24 hour average not less than 5.0. Not less than 4.0 at any time.	Not less than 4.0 at any time.	Not less than 3.0 at any time.

(d) Surface water quality criteria for tidal waters
(Concentrations are in micrograms per liter unless otherwise noted)

Substance	TW-1	TW-2	TW-3
Temperature and heat dissipation areas	1. No heat shall be added which would cause temperatures to deviate from ambient stream temperatures by more than 2.2°C (4°F) during September through May, nor more than 0.8°C (1.5°F) during June through August, nor shall temperatures exceed 29.4°C (85°F). 2. Temperatures shall be measured outside of designated heat dissipation areas. 3. Heat dissipation area determinations: The determination of designated heat dissipation areas in tidal rivers, creeks, streams, and bay waters, shall take into consideration the extent and nature of such waters so as to meet the intent and purpose of the criteria and standards including provision for the passage of free-swimming and drifting organisms so that negligible or no effects are produced on their populations: i. Tidal rivers, creeks, and streams - Heat dissipation areas shall be limited to no more than one-quarter (1/4) of the cross-sectional area and/or volume of flow of the body of water, leaving at least three-quarters (3/4) free as a zone of passage including a minimum of one-third (1/3) the surface measured from shore to shore at any stage of tide. These limitations may be exceeded by special permission, on a case-by-case basis, when the applicant can demonstrate that a larger heat dissipation area will provide for passage of free-swimming and drifting organisms and not become injurious to or impair designated uses. ii. Bay waters - Heat dissipation areas will be developed on a case-by-case basis and will provide for passage of free-swimming and drifting organisms and not become injurious to or impair designated uses.		

(d) Surface water quality criteria for tidal waters
(Concentrations are in micrograms per liter unless otherwise noted)

Substance	TW-1	TW-2	TW-3
	4. Adjacent heat dissipation areas: Where waste discharges would result in heat dissipation areas in such close proximity to each other as to impair protected uses, additional limitations may be prescribed to avoid such impairment.		
	5 Temperature changes in designated heat dissipation areas shall not cause mortality of the aquatic biota nor create conditions which allow the introduction or maintenance of populations of undesirable organisms.		
Radioactivity	Prevailing regulations adopted by the U.S. Environmental Protection Agency pursuant to sections 1412, 1445, and 1450 of the Public Health Services Act, as amended by the Safe Drinking Water Act (PL 93-523).		
Bacterial quality (MPN/100 ml)	1. Approved shellfish harvesting waters: where shellfish harvesting is permitted, requirements established by the National Shellfish Sanitation Program as set forth in its current manual of operation shall apply.	Fecal coliform levels shall not exceed a geometric average of 770/100 ml.	Fecal coliform levels shall not exceed a geometric average of 1500/100 ml.
	2. All other waters: Fecal coliform levels shall not exceed a geometric average of 200/100 ml, nor should more than 10 per cent of the total samples taken during any 30-day period exceed 400/100 ml.		

(d) Surface water quality criteria for tidal waters
(Concentrations are in micrograms per liter unless otherwise noted)

Substance	TW-1	TW-2	TW-3
	3. Samples shall be obtained at sufficient frequencies and at locations and during periods which will permit valid interpretation of laboratory analyses. Appropriate sanitary surveys shall also be carried out as a supplement to such sampling and laboratory analyses. As a guideline and for the purpose of these regulations, a minimum of five samples taken over a 30-day period should be collected, however, the number of samples, frequencies, and locations will be determined by the department in any particular case.		
Total dissolved solids - Filterable residue (mg/l)	None which would render the water unsuitable for the designated uses.		
Toxic or hazardous substances	1. None, either alone or in combination with other substances, in such concentrations as to affect humans or be detrimental to the natural aquatic biota, produce undesirable aquatic life, or which would render the waters unsuitable for the designated uses.		
	2. The concentration of a nonpersistent or noncumulative toxic or hazardous substance in the State's waters shall not exceed one-twentieth (0.05) of the 96 hour LC50 value, as determined by appropriate bioassays.		
	3. The concentration of a persistent or cumulative toxic or hazardous substance in the State's waters shall not exceed one one-hundredth (0.01) of the 96 hour LC50 value, as determined by appropriate bioassays.		

(d) Surface water quality criteria for tidal waters
(Concentrations are in micrograms per liter unless otherwise noted)

Substance	TW-1	TW-2	TW-3
	4. QUALITY CRITERIA FOR WATER (United States Environmental Protection Agency, 1976), WATER QUALITY CRITERIA 1972 (National Academy of Sciences, National Academy of Engineering, March 1973, EPA-R3-73-033), other water quality criteria information published pursuant to Section 304(a) of the Clean Water Act of 1977, or other scientific information, shall be used for recommending toxicity levels of pollutants which may affect designated uses.		
Aldrin/dieldrin (Maximum concentration)	0.003	0.003	0.003
Benzidine (Maximum concentration)	0.1	0.1	0.1
DDT and metabolites (Maximum concentration)	0.001	0.001	0.001
Endrin (Maximum concentration)	0.004	0.004	0.004
Polychlorinated biphenyls (PCB) (Maximum concentration)	0.001	0.001	0.001
Total residual chlorine (TRC) (Maximum concentration)	10.0	10.0	10.0
Toxaphene (Maximum concentration)	0.005	0.005	0.005
Ammonia (Total as N) (Maximum concentration)	0.1 of 96 hr LC50	0.1 of 96 hr LC50	0.1 of 96 hr LC50

7:9-4.8 Coastal surface water designated uses and quality criteria

(a) Designated uses and quality criteria for CW-1 waters are:

1. Designated uses: The waters of the Atlantic Ocean within 1500 feet from mean low tide shoreline or to a bottom depth of 15 feet below the mean low tide elevation, whichever is more distant from the mean low tide shoreline shall be suitable for shellfish harvesting where permitted, for primary contact recreation; the maintenance, migration and propagation of the natural and established biota; and any other reasonable uses.

2. Quality criteria: Quality criteria for CW-1 waters are found in subsection (c) of this section.

(b) Designated uses and quality criteria for CW-2 waters are:

1. Designated uses: Atlantic Ocean waters beyond those established under CW-1 to the three mile limit shall be suitable for shellfish harvesting where permitted; for secondary contact recreation; the maintenance, migration and propagation of the natural and established biota and any other reasonable uses.

2. Quality criteria: Quality criteria for CW-2 waters for found in subsection (c) of this section.

(c) Surface water quality criteria for coastal waters
(Concentrations are in micrograms per liter unless otherwise noted)

Substance	CW-1	CW-2
Antidegradation policy	The antidegradation policy may supersede the water quality criteria found in this section (7:9-4.8(c))	
Floating, colloidal, color, suspended (filterable residue) and settleable solids petroleum hydrocarbons and other oils and greases	1. None noticeable in the water or deposited along the shore or on the aquatic substrata in quantities detrimental to the natural biota None which would render the waters unsuitable for the designated uses. 2. For "Petroleum Hydrocarbons" the goal is none detectable utilizing the Federal EPA Environmental Monitoring and Support Laboratory Method (Freon Extractable - Silica Gel Adsorption - Infrared Measurement); the present criteria, however, are those of paragraph 1. above.	
Turbidity (NTU)	Levels shall not exceed 10.0 NTU.	Levels shall not exceed 10.0 NTU.
Taste and odor producing substances	None offensive to humans or which would produce offensive taste or odors in biota used for human consumption. None which would render the waters unsuitable for human consumption.	
pH(Standard Units)	Natural pH conditions shall prevail.	Natural pH conditions shall prevail.
Dissolved oxygen(mg/l)	Not less than 5.0 at any time	Not less than 5.0 at any time.
Temperature and heat dissipation areas	No heat may be added directly to these waters. As a result of any heat which may be added elsewhere, the temperature shall not deviate from ambient temperatures by more than 2.2°C (4°F) during September through May, nor more than 0.8°C (1.5°F) during June through August, nor shall temperatures exceed 26.7°C (80°F).	1. No heat may be added which would cause temperatures to deviate from ambient temperatures by more than 2.2°C (4°F) during September through May, nor more than 0.8°C (1.5°F) during June through August, nor shall temperatures exceed 26.7°C (80°F). 2. Temperatures shall be measured outside of designated heat dissipation areas.

(c) *Surface water quality criteria for coastal waters*
(Concentrations are in micrograms per liter unless otherwise noted)

Substance	CW-1	CW-2
		3. Heat dissipation area determinations: The determination of designated heat dissipation areas shall take into special consideration the extent and nature of such waters so as to meet the intent and purpose of the criteria and standards including provision for the passage of free-swimming and drifting organisms so that negligible or no effects are produced on their populations. 4. Adjacent heat dissipation areas: Where waste discharges would result in heat dissipation areas in such close proximity to each other as to impair protected uses, additional limitations may be described to avoid such impairment. 5. Temperature changes in designated heat dissipation areas shall not cause mortality of the aquatic biota nor create conditions which allow the introduction or maintenance of populations of undesirable organisms.
Radioactivity	Prevailing regulations adopted by the U.S. Environmental Protection Agency pursuant to Sections 1412, 1445, and 1450 of the Public Health Services Act, as amended by the Safe Drinking Water Act (PL 93-523).	
Bacterial quality (MPN/100 ml)	1. Approved shellfish harvesting waters: Where harvesting of shellfish is permitted, requirements established by the National Shellfish Sanitation Program as set forth in its current manual of operations shall apply.	
	2. All other waters: Fecal coliform levels shall not exceed a geometric average of 50/100 ml.	2. All other waters: Fecal coliform levels shall not exceed a geometric average of 200/100 ml nor should more than 10 per cent of the total samples taken during any 30-day period exceed 400/100 ml.

(c) Surface water quality criteria for coastal waters
(Concentrations are in micrograms per liter unless otherwise noted)

Substance	CW-1	CW-2
	3. Samples shall be obtained at sufficient frequencies and at locations and during perids which will permit valid interpretation of laboratory analyses. Appropriate sanitary surveys shall also be carried out as a supplement to such sampling and laboratory analyses. As a guideline and for the purpose of these regulations, a minimum of five samples taken over a 30-day period should be collected, however, the number of samples, frequencies and locations will be determined by the department in any particular case.	
Toxic or hazardous substances	1. None, either alone or in combination with other substances, in such concentrations as to affect humans or be detrimental to the natural aquatic biota, produce undesirable aquatic life, or which would render the waters unsuitable for the designated uses 2. The concentration of a nonpersistent or noncumulative toxic or hazardous substance in the State's waters shall not exceed one-twentieth (0 05) of the 96 hour LC50 value, as determined by appropriate bioassays. 3. The concentration of a persistent or cumulative toxic or hazardous substance in the State's waters shall not exceed one one-hundredth (0.01) of the 96 hour LC50 value, as determined by appropriate bioassays. 4. QUALITY CRITERIA FOR WATER (United States Environmental Protection Agency, 1976), WATER QUALITY CRITERIA 1972 (National Academy of Sciences, National Academy of Engineering, March 1973, EPA-R3-73-033), other water quality criteria information published pursuant to Section 304(a) of the Clean Water Act of 1977, or other scientific information, shall be used for recommending toxicity levels of pollutants which may affect designated uses.	
Aldrin/dieldrin (Maximum concentration)	0.003	0.003
Benzidene (Maximum concentration)	0.1	0.1
DDT and metabolites (Maximum concentration)	0.001	0.001

(c) Surface water quality criteria for coastal waters
(Concentrations are in micrograms per liter unless otherwise noted)

Substance	CW-1	CW-2
Endrin (Maximum concentration)	0.004	0.004
Polychlorinated biphenyls (PCB) (Maximum concentration)	0.001	0.001
Total residual chlorine (TRC) (Maximum concentration)	10.0	10.0
Toxaphene (Maximum concentration)	0.005	0.005
Ammonia (Total as N) (Maximum concentration)	0.1of 96 hr LC50	0.1of 96 hr LC50

WATER CLASSIFICATIONS

A. Class TW-1

1. All tidal waters of Shark River and tributaries from head of tide to surf waters.
2. All tidal waters of Jumping Brook and tributaries downstream from head of saline influence downstream to Shark River and to surf waters.
3. All tidal waters of the Manasquan River and tributaries downstream from two miles east of the Garden State Parkway to surf waters.
4. All tidal waters situated wholly within Port Republic Fish and Wildlife Management Area.
5. All tidal waters situated wholly within Brigantine Wildlife Refuge.
6. All other tidal waters of the Plain downstream from the head of tide to surf waters except those designated FW-Lower Mullica and Wading Rivers - Central Pine Barrens.
7. Tidal tributaries to main stem, Delaware River and Delaware Bay south, from and including Oldman's Creek.
8. Hackensack River and all tidal portions of tributaries from Oradell Dam to confluence with Overpeck Creek.
9. The main stem of the Raritan River and tidal tributaries from Fieldsville Dam to the mouth of the Raritan River, except those portions classified as FW-2 Nontrout.
10. Raritan Bay - Sandy Hook Bay and all tidal tributaries exclusive of the Arthur Kill.

B. Class TW-2

1. Overpeck Creek and tidal tributaries from tidal dam to confluence with Hackensack River.
2. Berry's Creek and all tidal tributaries to Hackensack River below its confluence with Overpeck Creek.
3. Hackensack River main stem from Overpeck Creek to the confluence with Berry's Creek.
4. Passaic River upstream from confluence with Second River to head of tide at Dundee Dam.
5. Tidal portion of Saddle River and all other tidal portions of tributaries to the Passaic River
6. Tidal portion of Bound Creek.
7. All other tidal waters of the Passaic Basin not mentioned herein.
8. Hudson River and its New Jersey tidal tributaries from a north-south line connecting Constable Hook (Bayonne, New Jersey) to St. George (Staten Island, New York) to the Bergen County (New Jersey) - Rockland County (New York) line.
9. Arthur Kill and its New Jersey tidal tributaries between Outerbridge Crossing and a line connecting Ferry Point (Perth Amboy, New Jersey) to Wards Point (Staten Island, New York).
10. Tidal portion of Rahway River and tidal portions of the tributaries crossing upstream to the Pennsylvania Rail road bridge.
11. Tidal portion of South Branch Rahway River to head of tide (Hazelwood Avenue, Rahway)

12. All other tidal waters of the Hudson River, Arthur Kill, and Kill Van Kull basins not mentioned herein.
13. Tidal tributaries to main stem, Delaware River, south of Big Timber Creek and north of Oldman's Creek.

C. Class TW-3

1. Kill Van Kull westerly from a north-south line connecting Constable Hook (Bayonne, New Jersey) to St. George (Staten Island, New York).
2. Arthur Kill from an east-west line connecting Elizabethport (Elizabeth) with Bergen Point (Bayonne) to the Outerbridge Crossing.
3. Tidal portion of Elizabeth River to Broad Street Bridge (Elizabeth).
4. Tidal portion of Piles Creek.
5. Tidal portion of Rahway River from its mouth at the Arthur Kill to Route 1-9 crossing.
6. Tidal portion of Smith Creek
7. Tidal portion of Woodbridge Creek.
8. Tidal portion of Morses Creek.
9. Newark Bay north of an east-west line connecting Elizabethport (Elizabeth) with Bergen Point (Bayonne) up to the mouth of the Passaic River and up to the mouth of the Hackensack River.
10. Main stem of Passaic River from its mouth to point of entry of the Second River
11. Hackensack River main stem downstream of Berry's Creek.

D. Class CW-1

1. Ocean waters within 1,500 feet from mean low tide to a depth of 15 feet, whichever is more distant from the mean low tide line, from Sandy Hook to Cape May Point.

E. Class CW-2

1. Ocean waters not included under Class CW-1 out to the three mile limit.

7:9-4.9 Designated Uses And Quality Criteria Mainstem Delaware River And Delaware Bay

(b) Designated uses and quality criteria for Zone 2

1. Zone 2 designated uses:

For that portion of the Delaware River from head of tidewater at Trenton R.M. 133.4 (Trenton-Morrisville Toll Bridge) to R.M. 108.4 below the mouth of Pennypack Creek (Pennsylvania): Agricultural, industrial and public water supplies after reasonable treatment, wildlife, maintenance and propagation of resident fish and other aquatic life, passage of anadromous fish; recreation (primary contact recreation from R.M. 133.4 to R.M. 117.81 (Bristol-Burlington Bridge); secondary contact recreation below R.M. 117.81 to R.M. 108.4) and navigation.

2. Zone 2 quality criteria:

i. Floating, suspended, colloidal and settleable solids; oil, grease, color and turbidity:

(1) None noticeable in the water or deposited along the shore or on the aquatic substrata in quantities detrimental to the natural biota. None which would render the waters unsuitable for the designated uses.

(2) Maximum 30-day average of 40 Nephelometric Turbidity Units (NTU) a maximum of 150 NTU at any time, except above R.M. 117.81 during the period May 30 to September 15 when the turbidity shall not exceed 30 NTU at any time.

ii. Toxic or deleterious substances, including but not limited to mineral acids, caustic alkali, cyanides, heavy metals, carbon dioxide, ammonia or ammonium compounds, chlorine, phenols, pesticides:

None, either alone or in combination with other substances, in such concentrations as to affect humans or be detrimental to the natural aquatic biota, produce undesirable aquatic life, or which would render the water unsuitable for the designated uses. None which would cause standards for drinking water to be exceeded after appropriate treatment.

iii. Taste and odor producing substances:

None offensive to humans or which would produce offensive tastes and/or odors in water supplies and biota used for human consumption. None which would render the waters unsuitable for the designated uses.

iv. pH:

Between 6.5 and 8.5.

v. Dissolved oxygen:

24 hour average concentration shall not be less than 5.0 mg/l. During the periods from April 1 to June 15 and September 16 to December 31 the seasonal average shall not be less than 6.5 mg/l.

vi. Temperature:

(1) General: Shall not exceed 5° F (2.8° C) above the average 24 hour temperature gradient displayed during the 1961-1966 period, or a maximum of 86° F (30.0° C) whichever is less. Temperatures shall be measured outside of designated heat dissipation areas.

(2) Heat dissipation areas: The limitations specified above may be exceeded in designated heat dissipation areas by special permission on a case-by-case basis, subject to the following conditions:

(i) Maximum length: As a guideline, heat dissipation areas shall not be longer than 3,500 feet, measured from the point where the waste discharge enters the stream.

(ii) Maximum width: Heat dissipation areas shall not exceed a maximum width of two-thirds the surface width measured from shore to shore at any stage of tide. Within any one heat dissipation area only one shore shall be used in determining the limits of the area.

(iii) Maximum cross section: Heat dissipation areas shall not exceed a maximum of one-fourth of the cross sectional area of the stream.

(iv) Adjacent heat dissipation areas: Where waste discharges would result in heat dissipation areas in such close proximity to each other as to impair protected uses, additional limitations may be prescribed to avoid such impairment.

(v) Rate of temperature change: The rate of temperature change in designated heat dissipation areas shall not cause mortality of fish or shellfish.

(vi) Heat dissipation area determinations: The determination of heat dissipation areas shall take into special consideration the extent and nature of the receiving waters so as to meet

the extent and purpose of the criteria and standards including provision for the passage of free-swimming and drifting organisms so that negligible or no effects are produced on their populations.

vii. Radioactivity:

Current U.S. Public Health Service Drinking Water Standards shall apply.

viii. Bacterial quality:

Fecal coliform not to exceed 200/100 ml as a geometric average above R.M. 117.81 and 770/100 ml below R.M. 117.81. Samples shall be taken at such frequency and location as to permit valid interpretation. Appropriate sanitary surveys shall be carried out as a supplement to such sampling and laboratory analyses.

ix. Total dissolved solids:

Not to exceed 133 percent of background as of October 1, 1972 or 500 mg/l, whichever is less.

x. Total alkalinity:

Between 20 and 100 mg/l.

xi. Phenols:

Not to exceed 0.005 mg/l.

xii. Synthetic detergents: (M.B.A.S.)

Maximum 30-day average 0.5 mg/l.

xiii. Chlorides:

Maximum 15-day average 50 mg/l.

xiv. Hardness:

Maximum 30-day average 95 mg/l.

(c) Designated uses and quality criteria for Zone 3

1. Zone 3 designated uses:

For that portion of the Delaware River from R.M. 108.4 below mouth of Pennypack Creek (Pennsylvania) to R.M. 95.0 below the mouth of Big Timber Creek (New Jersey): Agricultural, industrial and public water supplies after resaonable treatment; wildlife, maintenance of resident fish and other aquatic life, passage of anadromous fish; secondary contact recreation; and navigation.

2. Zone 3 quality criteria:

i. Floating, suspended, colloidal and settleable solids; oil, grease, color and turbidity:

(1) None noticeable in the water or deposited along the shore or on the aquatic substrata in quantities detrimental to the natural biota. None which would render the waters unsuitable for the designated uses.

(2) Maximum 30-day average of 40 Nephelometric Turbidity Units (NTU) a maximum of 150 NTU at any time.

ii. Toxic or deleterious substances, including but not limited to mineral acids, caustic alkali, cyanides, heavy metals, carbon dioxide, ammonia or ammonium compounds, chlorine, phenols, pesticides:

None, either alone or in combination with other substances, in such concentrations as to affect humans or be detrimental to the natural aquatic biota, produce undesirable aquatic life, or which would render the water unsuitable for the designated uses. None which would cause standards for drinking water to be exceeded after appropriate treatment.

iii. Taste and odor producing substances:

None offensive to humans or which would produce offensive tastes and/or odors in water supplies and biota used for human consumption. None which would render the waters unsuitable for the designated uses.

iv. pH:

Between 6.5 and 8.5.

v. Dissolved oxygen:

24 hour average concentration shall not be less than 3.5 mg/l. During the periods from April 1 to June 15 and September 16 to December 31 the seasonal average shall not be less than 6.5 mg/l.

vi. Temperature:

(1) General: Shall not exceed 5° F (2.8° C) above the average 24 hour temperature gradient displayed during the 1961-1966 period, or a maximum of 86° F (30.0° C) whichever is less. Temperatures shall be measured outside of designated heat dissipation areas.

(2) Heat dissipation areas: The limitations specified above may be exceeded in designated heat dissipation areas by special permission on a case-by-case basis, subject to the following conditions:

(i) Maximum length: As a guideline, heat dissipation areas shall not be longer than 3,500 feet, measured from the point where the waste discharge enters the stream.

(ii) Maximum width: Heat dissipation areas shall not exceed a maximum width of two-thirds the surface width measured from shore to shore at any stage of tide. Within any one heat dissipation area only one shore shall be used in determining the limits of the area.

(iii) Maximum cross section: Heat dissipation areas shall not exceed a maximum of one-fourth of the cross sectional area of the stream.

(iv) Adjacent heat dissipation areas: Where waste discharges would result in heat dissipation areas in such close proximity to each other as to impair protected uses, additional limitations may be prescribed to avoid such impairment.

(v) Rate of temperature change: The rate of temperature change in designated heat dissipation areas shall not cause mortality of fish or shellfish.

(vi) Heat dissipation area determinations: The determination of heat dissipation areas shall take into special consideration the extent and nature of the receiving waters so as to meet the extent and purpose of the criteria and standards including provision for the passage of free-swimming and drifting organisms so that negligible or no effects are produced on their populations.

vii. Radioactivity:

Current U.S. Public Health Service Drinking Water Standards shall apply.

viii. Bacterial quality:

Fecal coliform not to exceed 770/100 ml as a geometric average. Samples shall be taken at such frequency and location as to permit valid interpretation. Appropriate sanitary surveys shall be carried out as a supplement to such sampling and laboratory analyses.

ix. Total dissolved solids:

Not to exceed 133 per cent of background or 500 mg/l, whichever is less.

x. Total alkalinity:

Between 20 and 120 mg/l.

xi. Phenols:

Not to exceed 0.005 mg/l.

xii. Synthetic detergents (M.B.A.S.)

Maximum 30-day average 1.0 mg/l.

xiii. Chlorides:

Maximum 200 mg/l.

xiv. Hardness:

Maximum 30-day average 150 mg/l.

(d) Designated uses and quality criteria for Zone 4

1. Zone 4 designated uses:

For that portion of the Delaware River from R.M. 95.0 below mouth of Big Timber Creek (New Jersey) to R.M. 78.8 (Pennsylvania-Delaware Line): Industrial water supply after reasonable treatment; wildlife, maintenance of resident fish and other aquatic life, passage of anadromous fish; secondary contact recreation; and navigation.

2. Zone 4 quality criteria:

i. Floating, suspended, colloidal and settleable solids; oil, grease, color and turbidity:

(1) None noticeable in the water or deposited along the shore or on the aquatic substrata in quantities detrimental to the natural biota. None which would render the waters unsuitable for the designated uses.

(2) Maximum 30-day average of 40 Nephelometric Turbidity Units (NTU) a maximum of 150 NTU at any time.

ii. Toxic or deleterious substances, including but not limited to mineral acids, caustic alkali, cyanides, heavy metals, carbon dioxide, ammonia or ammonium compounds, chlorine, phenols, pesticides:

None, either alone or in combination with other substances, in such concentrations as to affect humans or be detrimental to the natural aquatic biota, produce undesirable aquatic life, or which would render the water unsuitable for the designated uses.

iii. Taste and odor producing substances:

None offensive to humans or which would produce offensive tastes and/or odors in biota used for human consumption. None which would render the waters unsuitable for the designated uses.

iv. pH:

Between 6.5 and 8.5.

v. Dissolved oxygen:

24 hour average concentration shall not be less than 3.5 mg/l. During the periods from April 1 to June 15 and September 16 to December 31 the seasonal average shall not be less than 6.5 mg/l.

vi. Temperature:

(1) General: Shall not exceed 5° F (2.8° C) above the average 24 hour temperature gradient displayed during the 1961-1966 period, or a maximum of 86° F (30.0° C) whichever is less. Temperatures shall be measured outside of designated heat dissipation areas.

(2) Heat dissipation areas: The limitations specified above may be exceeded in designated heat dissipation areas by special permission on a case-by-case basis, subject to the following conditions:

(i) Maximum length: As a guideline, heat dissipation areas shall not be longer than 3,500 feet, measured from the point where the waste discharge enters the stream.

(ii) Maximum width: Heat dissipation areas shall not exceed a maximum width of two-thirds the surface width measured from shore to shore at any stage of tide. Within any one heat dissipation area only one shore shall be used in determining the limits of the area.

(iii) Maximum cross section: Heat dissipation areas shall not exceed a maximum of one-fourth of the cross sectional area of the stream.

(iv) Adjacent heat dissipation areas: Where waste discharges would result in heat dissipation areas in such close proximity to each other as to impair protected uses, additional limitations may be prescribed to avoid such impairment.

(v) Rate of temperature change: The rate of temperature change in designated heat dissipation areas shall not cause mortality of fish or shellfish.

(vi) Heat dissipation area determinations: The determination of heat dissipation areas shall take into special consideration the extent and nature of the receiving waters so as to meet the extent and purpose of the criteria and standards including provision for the passage of free-swimming and drifting organisms so that negligible or no effects are produced on their populations.

vii. Radioactivity:

Current U.S. Public Health Service Drinking Water Standards shall apply.

viii. Bacterial quality:

Fecal coliform not to exceed 770/100 ml as a geometric average. Samples shall be taken at such frequency and location as to permit valid interpretation. Appropriate sanitary surveys shall be carried out as a supplement to such sampling and laboratory analyses.

ix. Total dissolved solids:

Not to exceed 133 percent of background as of October 1, 1972.

x. Total alkalinity:

Between 20 and 120 mg/l.

xi. Phenols:

Not to exceed 0.02 mg/l.

xii. Synthetic detergents: (M.B.A.S.)

Maximum 30-day average 1.0 mg/l.

xiii. Chlorides:

Maximum 250 mg/l at R.M. 92.47.

(e) Designated uses and quality criteria for Zone 5

1. Zone 5 designated uses:

For that portion of the Delaware River from R.M. 78.8 (Pennsylvania-Delaware Line) to R.M. 48.2 (Liston Point, Delaware: Industrial water supply after reasonable treatment, navigation, wildlife, passage of anadromous fish, from R.M. 78.8 to R.M. 48.2; maintenance of resident fish and other aquatic life from R.M. 78.8 to R.M. 70.0; propagation of resident fish and other aquatic life from R.M. 70.0 to R.M. 48.2; secondary contact recreation from R.M. 78.8 to R.M. 59.5 (Chesapeake and Delaware Canal, Delaware); primary contact recreation from R.M. 59.5 to R.M. 48.2.

2. Zone 5 quality criteria:

i. Floating, suspended, colloidal and settleable solids; oil, grease, color and turbidity:

(1) None noticeable in the water or deposited along the shore or on the aquatic substrata in quantities detrimental to the natural biota. None which would render the waters unsuitable for the designated uses.

(2) Maximum 30-day average of 40 Nephelometric Turbidity Units (NTU) a maximum of 150 NTU at any time.

ii. Toxic or deleterious substances, including but not limited to mineral acids, caustic alkali, cyanides, heavy metals, carbon dioxide, ammonia or ammonium compounds, chlorine, phenols, pesticides:

None, either alone or in combination with other substances, in such concentrations as to affect humans or be detrimental to the natural aquatic biota, produce undesirable aquatic life, or which would render the water unsuitable for the designated uses.

iii. Taste and odor producing substances:

None offensive to humans or which would produce offensive tastes and/or odors in biota used for human consumption. None which would render the waters unsuitable for the designated uses.

iv. pH:

Between 6.5 and 8.5.

v. Dissolved oxygen:

24 hour average concentration shall not be less than 3.5 mg/l at R.M. 78.8, 4.5 mg/l at R.M. 70.0 and 6.0 mg/l at R.M. 59.5. During the periods from April 1

to June 15 and September 16 to December 31 the seasonal average shall not be less than 6.5 mg/l in the entire zone.

vi. Temperature:

(1) General: Shall not be raised above ambient by more than 4° F (2.2° C) during September through May nor more than 1.5° F (0.8° C) during June through August, nor shall maximum temperatures exceed 86° F (30.0° C). Temperatures shall be measured outside of designated heat dissipation areas.

(2) Heat dissipation areas: The limitations specified above may be exceeded in designated heat dissipation areas by special permission on a case-by-case basis, subject to the following conditions:

(i) Maximum length: As a guideline, heat dissipation areas shall not be longer than 3,500 feet, measured from the point where the waste discharge enters the stream.

(ii) Adjacent heat dissipation areas: Where waste discharges would result in heat dissipation areas in such close proximity to each other as to impair protected uses, additional limitations may be prescribed to avoid such impairment.

(iii) Rate of temperature change: The rate of temperature change in designated heat dissipation areas shall not cause mortality of fish or shellfish.

(iv) Heat dissipation area determinations: The determination of heat dissipation areas shall take into special consideration the extent and nature of the receiving waters so as to meet the intent and purpose of the criteria and standards including provision for the passage of free-swimming and drifting organisms so that negligible or no effects are produced on their populations.

vii. Radioactivity:

Current U.S. Public Health Service Drinking Water Standards shall apply.

viii. Bacterial quality:

Fecal coliform not to exceed 770/100 ml as a geometric average from R.M. 78.8 to R.M. 59.5 and 200/100 ml from

R.M. 59.5 to R.M. 48.2. Samples shall be taken at such frequency and location as to permit valid interpretation. Appropriate sanitary surveys shall be carried out as a supplement to such sampling and laboratory analyses.

ix. Total alkalinity:

Between 20 and 120 mg/l.

x. Phenols:

Not to exceed 0.01 mg/l.

xi. Synthetic detergents: (M.B.A.S.)

Maximum 30-day average 1.0 mg/l.

(f) Designated uses and quality criteria for Zone 6

1. Zone 6 designated uses:

For that portion of the Delaware Bay from R.M. 48.2 (Liston Point, Delaware) to R.M. 0.0 (Atlantic Ocean): Industrial water supply after reasonable treatment; wildlife, maintenance and propagation of resident fish, shellfish and other aquatic life, and passage of anadromous fish; primary contact recreation; and navigation.

2. Zone 6 quality criteria:

i. Floating, suspended, colloidal and settleable solids; oil, grease, color and turbidity:

(1) None noticeable in the water or deposited along the shore or on the aquatic substrata in quantities detrimental to the natural biota. None which would render the waters unsuitable for the designated uses.

(2) Maximum 30-day average of 40 Nephelometric Turbidity Units (NTU) a maximum of 150 NTU at any time.

ii. Toxic or deleterious substances, including but not limited to mineral acids, caustic alkali, cyanides, heavy metals, carbon dioxide, ammonia or ammonium compounds, chlorine, phenols, pesticides:

None, either alone or in combination with other substances, in such concentrations as to affect humans or be detrimental to the natural aquatic biota, produce undesirable aquatic life, or which would render the water unsuitable for the designated uses.

iii. Taste and odor producing substances:

None offensive to humans or which would produce offensive tastes and/or odors in biota used for human consumption. None which would render the waters unsuitable for the designated uses.

iv. pH:

Between 6.5 and 8.5.

v. Dissolved oxygen:

24 hour average concentration shall not be less than 6.0 mg/l. Not less than 5.0 mg/l at any time, unless due to natural conditions.

vi. Temperature:

(1) General: Shall not be raised above ambient by more than 4° F (2.2° C) during September through May nor more than 1.5° F (0.8° C) during June through August, nor shall maximum temperatures exceed 85° F (29.4° C). Temperatures shall be measured outside of designated heat dissipation areas.

(2) Heat dissipation areas: The limitations specified above may be exceeded in designated heat dissipation areas by special permission on a case-by-case basis, subject to the following conditions:

(i) Maximum length: As a guideline, heat dissipation areas shall not be longer than 3,500 feet, measured from the point where the waste discharge enters the stream.

(ii) Adjacent heat dissipation areas: Where waste discharges would result in heat dissipation areas in such close proximity to each other as to impair protected uses, additional limitations may be prescribed to avoid such impairment.

(iii) Rate of temperature change: The rate of temperature change in designated heat dissipation areas shall not cause mortality of fish or shellfish.

(iv) Heat dissipation area determinations: The determination of heat dissipation areas shall take into special consideration the extent and nature of the receiving waters so as to meet the intent and purpose of the criteria and standards including provision for the passage of free-swimming and drifting organisms so that negligible or no effects are produced on their populations.

vii. Radioactivity:

Current U.S. Public Health Service Drinking Water Standards shall apply.

viii. Bacterial quality:

(1) Approved shellfish harvesting waters: Where harvesting of shellfish is permitted, requirements established by the National Shellfish Sanitation Program as set forth in its current manual of operations shall apply.

(2) All other waters: Fecal coliform levels shall not exceed a geometric average of 200/100 ml.

Samples shall be obtained at sufficient frequencies and at locations and during periods which will permit valid interpretation of laboratory analyses. Appropriate sanitary surveys shall be carried out as a supplement to such sampling and laboratory analyses.

ix. Total alkalinity:

Between 20 and 120 mg/l.

x. Phenols:

Not to exceed 0.01 mg/l.

xi. Synthetic detergents: (M.B.A.S.)

Maximum 30-day average 1.0 mg/l.

State of New York Marine Water Quality Standards

Reference:

Subchapter B (6 NY CRR 600.1)

Classes and Standards of Quality

and Purity assigned to Fresh Surface

and Tidal Salt Waters

1978

New York State Dept. of Environmental Conservation

Albany, NY 12225

Classes and Standards for Saline Surface Waters

The following items and specifications shall be the standards applicable to all New York Saline Surface Waters which are assigned the classification of SA, SB, SC or SD, in addition to the specific standards which are found in this part under the heading of each such classification.

Quality Standards for Saline Surface Waters

Items	Specifications
1. Garbage, cinders, ashes, oils, sludge or other refuse	None in any waters of the marine district as defined by Environmental Conservation Law (§ 17-0105).
2. pH	The normal range shall not be extended by more than one-tenth (0.1) pH unit.
3. Turbidity	No increase except from natural sources that will cause a substantial visible contrast to natural conditions. In cases of naturally turbid waters, the contrast will be due to increased turbidity.

Items	Specifications
4. Color	None from man-made sources that will be detrimental to anticipated best usage of waters.
5. Suspended, colloidal or settleable solids	None from sewage, industrial wastes or other wastes which will cause deposition or be deleterious for any best usage determined for the specific waters which are assigned to each class.
6. Oil and floating substances	No residue attributable to sewage, industrial wastes or other wastes, nor visible oil film nor globules of grease.
7. Thermal Discharges	No discharge which will be injurious to fishlife or make the waters unsafe or unsuitable for the specific waters which are assigned to each class. See Part 704.

CLASS SA

Best usage of waters. The waters shall be suitable for shellfishing for market purposes and primary and secondary contact recreation.

Quality Standards for Class SA Waters

Items	Specifications
1. Coliform	The median MPN value in any series of samples representative of waters in the shellfish growing area shall not be in excess of seventy (70) per 100 ml.
2. Dissolved Oxygen	Shall not be less than 5.0 mg/l at any time.
3. Toxic wastes and deleterious substances	None in amounts that will interfere with use for primary contact recreation or that will be injurious to edible fish or shellfish or the culture or propagation thereof, or which in any manner shall adversely affect the flavor, color, odor or sanitary condition thereof or impair the waters for any other best usage as determined for the specific waters which are assigned to this class.

CLASS SB

Best usage of waters. The waters shall be suitable for primary and secondary contact recreation and any other use except for the taking of shellfish for market purposes.

Quality Standards for Class SB Waters

Items	Specifications
1. Coliform	The monthly median coliform value for 100 ml of sample shall not exceed 2400 from a minimum of 5 examinations and provided that not more than 20% of the samples shall exceed a coliform value of 5000 for 100 ml of sample and the monthly geometric mean fecal coliform value for 100 ml of sample shall not exceed 200 from a minimum of 5 examinations. This standard shall be met during all periods when disinfection is practiced.
2. Dissolved Oxygen	Shall not be less than 5.0 mg/l at any time.
3. Toxic Wastes and deleterious substances	None in amounts that will interfere with use for primary contact recreation or that will be injurious to edible fish or shellfish or the culture or propagation thereof, or which in any

Items	Specifications
3. Toxic Wastes (continued)	manner shall adversely affect the flavor, color, odor or sanitary condition thereof, or impair the waters for any other best usage as determined for the specific waters which are assigned to this class.

CLASS SC

Best usage of waters. The waters shall be suitable for fishing and all other uses except for primary contact recreation and for the taking of shellfish for market purposes.

Quality Standards for Class SC Waters

Items	Specifications
1. Coliform	The monthly geometric mean total coliform value for 100 ml of sample shall not exceed 10,000 and the monthly geometric mean fecal coliform value for 100 ml of sample shall not exceed 2000 from a minimum of 5 examinations. This standard shall be met during all periods when disinfection is practiced.
2. Dissolved Oxygen	Shall not be less than 5.0 mg/l at any time.
3. Toxic wastes and deleterious substances	None in amounts that will interfere with use for secondary contact recreation or that will be injurious to edible fish or shellfish or the culture or propagation thereof, or which in any manner shall adversely affect the flavor, color, odor or sanitary condition thereof or impair the waters for any other best usage as determined for the specific waters which are assigned to this class.

CLASS SD

Best usage of waters. All waters not primarily for recreational purposes, shellfish culture or the development of fishlife and because of natural or man-made conditions cannot meet the requirements of these uses.

Quality Standards for Class SD Waters

Items	Specifications
1. Dissolved Oxygen	Shall not be less than 3.0 mg/l at any time.
2. Toxic wastes and deleterious substances	None alone or in combination with other substances or wastes in sufficient amounts to prevent survival of fish life or impair the waters for any other best usage as determined for the specific waters which are assigned to this class.

Section 702.3

Special Classes and Standards for the Lower Hudson River, Arthur Kill, Kill Van Kull, Harlem River, Raritan Bay and Lower East River Drainage Basins, New York Bay area, Nassau County including Long Island Sound, Suffolk County, Upper East River, Long Island Sound Drainage Basins, within Queens, Bronx and Westchester counties and Jamaica Bay Drainage Basin within Kings and Queens counties including a certain portion of Rockaway Inlet.

a. This section applies to the waters within the following areas, which constitute the Interstate Sanitation District:

1. The drainage basin of the Lower Hudson River from the mouth to northern Westchester-Rockland county lines, except Saw Mill River and Sparkill Creek drainage basins.

2. The drainage basins of Arthur Kill, Kill Van Kull, and Harlem River, and Raritan Bay.

3. The drainage basin of Lower East River from the mouth to a line across East River north of Wards Island between Stony Point in Bronx County and Lawrence Point in Queens County.

4. New York Bay including Gravesend Bay, Coney Island Creek, Atlantic Basin, Erie Basin, Gowanus Bay, Gowanus Canal. The Narrows and Atlantic Ocean waters off Coney Island lying westerly of a north-south line from Light Inlet at the south easterly tip of Coney Island Peninsula to the south tip of Rockaway Point, thence along the jetty to Rockaway jetty light, thence due south to the New York-New Jersey boundary line.

5. Nassau County including the waters of Long Island Sound between Nassau-Queens and Nassau-Suffolk county lines and the waters of Atlantic Ocean to the three mile limit between said county lines.

6. The area within Suffolk County lying west of a north-south topographical limit line and its extensions to a point in Long Island Sound at the New York-Connecticut State boundary line due north of Miller Place Beach and to Blue Point on the south mainland thence southward across Great South Bay to Water Island, thence three miles due south to a point in the Atlantic Ocean at the south State boundary line.

7. Certain tidal waters which are within the Upper East River and Long Island Sound drainage basins within Queens, Bronx, and Westchester counties.

8. Jamaica Bay drainage basin within Kings and Queens counties and including Rockaway Inlet east of a north-south line drawn from Light Inlet at the south easterly tip of Coney Island peninsula near Manhattan Beach to the westerly shoreline west of Lookout Tower on Rockaway Point.

b. Said classes and standards of quality and purity applicable thereto are set forth hereinafter and designated Class I and Class II.

CLASS I

Best usage of waters. The waters shall be suitable for secondary contact recreation and any other usage except for primary contact recreation and shellfishing for market purposes.

Quality Standards for Class I Waters

Items	Specifications
1. Garbage, cinders, ashes, oils, sludge or other refuse	None in any waters of the marine district as defined by Environmental Conservation Law (§17-0105).
2. Coliform	The monthly geometric mean total coliform value for 100 ml of sample shall not exceed 10,000 and the monthly geometric mean fecal coliform value for 100 ml of sample shall not exceed 2000 from a minimum of 5 examinations. This standard shall be met during all periods when disinfection is practiced.
3. Dissolved Oxygen	Shall not be less than 4.0 mg/l at any time.
4. pH	The normal range shall not be extended by more than one-tenth (0.1) pH unit.
5. Turbidity	No increase except from natural sources that will cause a substantial visible

Items	Specifications
5. Turbidity (Continued)	contrast to natural conditions. In cases of naturally turbid waters, the contrast will be due to increased turbidity.
6. Color	None from man-made sources that will be detrimental to anticipated best usage of waters.
7. Taste- and odor-producing substances, toxic wastes and deleterious substances	None in amounts that will interfere with use for secondary contact recreation or that will be injurious to edible fish or shellfish or the culture or propagation thereof, or which in any manner shall adversely affect the flavor, color, odor or sanitary conditions thereof, or impair the waters for any other best usage as determined for the specific waters which are assigned to this class.
8. Suspended, colloidal or settleable solids	None from sewage, industrial wastes or other wastes which will cause deposition or be deleterious for any best usage determined for the specific waters which are assigned to this class.
9. Oil and floating substances	No residue attributable to sewage, industrial wastes or other wastes, nor visible oil film nor globules of grease.

10.	Thermal Discharges	No discharge which will be injurious to fishlife or make the waters unsafe or unsuitable for any best usage determined for the specific waters which are assigned to this class. See Part 704.

CLASS II

Best usage of waters. All waters not primarily for recreational purposes, shellfish culture or the development of fishlife.

Quality Standards for Class II Waters

Items	Specifications
1. Floating solids, settleable solids, sludge deposits	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.
2. Garbage, cinders, ashes, oils, sludge or other refuse	None in any waters of the marine district as defined by Environmental Conservation Law (§17-0105).
3. Dissolved Oxygen	An average of not less than 30% saturation during any week of the year, provided such saturation levels insure adequate oxygen to support fish and shellfish life at all times.
4. Toxic wastes, oil, deleterious substances, colored or other wastes, or thermal discharges	None alone or in combination with other substances or wastes in sufficient amounts to be injurious to edible fish and shellfish, or the

4.	Toxic wastes (Continued)	culture or propagation thereof, or which shall in any manner affect the flavor, color, odor or sanitary condition of such fish or shellfish so as to injuriously affect the sale thereof, or which shall cause any injury to the public and private shellfisheries of this State. See Part 704 for thermal discharges.

Definitions

The several terms, words or phrases hereinafter mentioned shall be construed as follows:

(a) *Waters index number* as appearing in table I shall mean that number or abbreviation assigned to any designated waters or portion thereof for the purpose of identification.

(1) The numbering or index system used to identify specific waters of New York State was adapted from that used by the New York State Conservation Department in its biological survey series of reports on watersheds of the State. The primary waters of a drainage area, such as a river, large lake, bay or sound, is usually referred to by name or an abbreviation. Tributaries of primary river waters are consecutively numbered progressing upstream from the mouth. Tributaries of primary lake, bay or sound waters are consecutively numbered in a clockwise order from a defined point usually the outlet of the primary waters. Subtributaries are numbered as

encountered along the tributary proceeding from its mouth to the source, and in like manner all of its other stream courses are so numbered. Ponds and lakes are numbered in the order they are encountered within the system. Tributaries of such lakes and ponds are numbered consecutively as they enter, progressing clockwise around the lake or pond from its outlet or mouth. The numbers assigned to such lakes and ponds are prefixed by the letter P. When isolated lakes and ponds are referenced by a waters index number, it is merely for convenience of their identification and location within a subdrainage basin, and it is not necessarily indicative of their being tributary to any waters to which no surface connection is shown on the reference maps.

(b) The abbreviations *trib* and *tribs* indicating tributary and tributaries, and the terms *subtributary* and *subtributaries* shall mean any stream, pond, or other body of surface water; where no tributary, tributaries, sub-

tributary or subtributaries are mentioned, the specifically designated waters shall include only the stream, pond, or other body of water referenced by such waters index number; where tributary, tributaries, subtributary or subtributaries are mentioned after the waters index number, the specifically designated waters shall include the stream, pond, or other body of water referenced by such waters index number and all tributaries and subtributaries thereof, which are shown on the reference maps, excluding numbered ponds, unless exceptions are expressly stated.

(c) *Name* as appearing in table I shall mean the name by which the specifically designated waters are known and which name may appear on the reference maps. In cases of specifically designated waters which have no name, the named waters to which the unnamed waters are tributary are identified as far as possible.

(d) *Comments*. The column headed "Comments" contains designations of segments or sections of waters under consideration to which a particular assignment of a class and standards shall apply. Also included in

in this column is any useful information pertinent to the classification or standards.

(e) *Map ref. no.* as appearing in table I. means map reference number and indicates one or more of the following numbered maps reproduced herein completely, or in part, on which maps the specifically designated waters and their index numbers are shown within the topographical limit line of the described drainage basins or areas.

Item No	Water Index Number	Name	Description	Map No		
						New York
1	H portion	Hudson River	From Battery to New York-New Jersey state line opposite Hastings on Hudson within boundaries of New York State	Q-21sw R-23se R-21sw R-21nw S-23ne S-21nw		
2	H portion	Hudson River	From New York-New Jersey state line opposite Hastings on Hudson to Bear Mountain Bridge.	P-24sw Q-21sw Q-21se Q-21nw Q-21ne S-21se	SB	SB
8	H-7 and trib.	Trib. of Hudson	Tidal portion.	R-21nw	I	I
9	H-8	Skunk Hollow Brook	Tidal portion.	Q-21sw	I	I
10	H-10	Trib. of Hudson River		Q-21sw	I	I
11	H-1 and tribs.	North Brook and	Tidal portion.	Q-21sw	I	I
12	H-12	Crumkill Creek		Q-21sw	I	I
14	H-14 and trib	Barney Brook and	Tidal portion.	Q-21se	I	I
17	H-15	Trib. of Hudson River	Tidal portion.	Q-24se	I	I
18	H-16 and trib.	Sunnyside Brook and	Tidal portion.	Q-24se	I	I
19	H-17 and tribs	Sheldon Brook and	Tidal portion.	Q-24se	I	I
20	H-20 portion	Pocantico River	From mouth to P 29. Tidal portion.	Q-24se	SB	
50	H-20a	Trib. of Hudson River		Q-24se	I	
52	H-21	Nyack Brook	Tidal portion.	Q-24	I	
53	H-22,23,24 and	Tribs. of Hudson	Tidal portions.	Q-24se	I	I
54	H-26 and trib.	Trib. of Hudson	Tidal portion.	Q-24ne	I	
56	H-26a	Kemey's Cove		Q-24ne	I	
57	H-27 and trib.	Sparta Brook	Tidal portion.	Q-24ne	I	I
59	H-29 portion	Sing Sing Creek	From mouth to N.Y.C. Railroad.	Q-24ne	I	I
67	H-31 portion	Croton River	Tidal portion from mouth to 0.1 mile upstream from trib. 2.	Q-24nw Q-24ne	SB	SB
484	H-33	Trib. of Hudson River		Q-21nw	I	I
485	H-33a	Trib. of Hudson River	Tidal portion.	Q-21nw	I	I
486	H-34	Trib. of Hudson River	Tidal portion.	Q-21sw	I	I
488	H-40	Trib. of Hudson River	Tidal portion.	Q-21nw	I	I
490	H-43 portion	Lake Tiorati Brook	Tidal portion. Fresh water portion	Q-24nw	I	I
493	H-43-1	Minisceango Creek	Tidal Portion	Q-24nw	I	I
528	H-44	Furnace Brook	Tidal portion	Q-21nw	I	I
529	H-44-1a	Trib. of Furnace Brook	Tidal portion.	Q-24nw	I	
530	H-44-1b and trib.1b-P 155a	Trib. of Furnace Brook and subtrib		Q-24nw	I	
542	H-46 and tribs. 46-3,46-4,46-3-1, 46-3-2,46-3-3, 46-3-1-P 157a, 46-3-2-P 157b	Trib. of Hudson	Tidal portion.	Q-24nw	I	

Item No.	Water Index No.	Name	Comments	Map Ref. No.	Class	
543	H-47 [illegible]	Trib. of Hudson River	Tidal portion.	Q-24nw	I	I
545	H-47 and tribs. 47-P 158,47-P 159	Trib. of Hudson River and subtribs.	Tidal portion.	Q-24nw	I	I
546	H-48a and trib. 48a-2	Trib. of Hudson River and subtrib.	Tidal portion.	Q-24nw	I	I
550	H-49	Trib. of Hudson River	Tidal portion.	Q-24nw	I	I
554	H-50a,50b,50c and trib.50b-P 161c	Tribs. of Hudson River and subtribs.	Tidal portions.	P-24sw	I	I
556	H-51 portion	Dickey Brook	From mouth to New York City Railroad culvert at 0.7 mile upstream from mouth.	P-24sw	I	I
561	H-53	Trib. of Hudson River	Tidal portion.	P-24sw	I	I
563	H-54 and trib. 54-P 163	McGregory Brook and trib.	Tidal portion.	P-24sw	I	I
564	H-55 portion	Peekskill Creek	From mouth to 0.8 mile upstream from mouth.	P-24sw	SC	SC
638	H-56 and tribs. 56-1a,56-2, 56-P 165e	Trib. of Hudson River and subtribs.	Tidal portion.	P-24sw	I	I
639	H-57,57a and trib. 57a-1	Tribs. of Hudson River	Tidal portions.	P-24sw	I	I
640	H-58 and tribs. 58-1,58-1a,58-1b, 58-2,58-3,58-4 and tribs. 58-1-2, 58-2-1,58-3-2	Doddletown Brook and tribs. and subtribs.	Tidal portions.	P-24sw	I	I
641	H-59	Brocey Brook	Tidal portion.	P-24sw	I	I
643	H-60	Trib. of Hudson River	Tidal portion.	P-24sw	I	I

MORICHES BAY AREA - Suffolk Co. 6-NYCRR-920

WATERS INDEX NUMBERS	NAME	CLASSIFICATIONS	MAP KEY NO.	CLASS	STANDARDS
NB-1	Narrow Bay portion as described	All portions of Narrow Bay except those portions designated as item no. 2, Narrow Bay, shall be considered as that body of tidal water, as shown on the reference maps, exclusive of tribs. and estuaries described later in this table situated northerly of Great South Beach and extending from a line passing due south through Smith Point to a line passing due south through the easternmost extremity of Forge Point.	1, 2	SA	SA
NB-2	Narrow Bay portion as described	Those portions of Narrow Bay situated northerly of a line connecting the southernmost extremity of Smith Point with point of land as shown on reference map as approximately at longitude 72 degrees 50 minutes 56 seconds west and latitude 40 degrees 44 minutes 43 seconds north; and those portions of Narrow Bay northerly of a line connecting aforesaid point of land with the point of land as shown on reference map as approximately at longitude 72 degrees 49 minutes 6 seconds west and latitude 40 degrees 45 minutes 32 seconds north.	1, 2	SA	SA
176d	Trib. of Narrow Bay	Enters Narrow Bay approximately 0.25 mile north of southernmost extremity of Smith Point.	1, 2	SC	SC

MORICHES BAY AREA (Continued)

[illegible]	NAME	[illegible]	MAP REF. NO.	CLASS	STANDARDS
176c	John's Neck Creek	Enters Narrow Bay approximately 0.7 mile northeast of southernmost extremity of Smith Point.	2	SC	SC
176b	Trib. of Narrow Bay	Enters Narrow Bay approximately 0.2 mile east of John's Neck Creek.	2	SC	SC
176a	Trib. of Narrow Bay	Enters Narrow Bay approximately 1.25 miles northeasterly of southernmost extremity of Smith Point.	2	SC	SC
176	Pattersquash Creek	Enters Narrow Bay approximately 0.55 mile northwest of Pattersquash Island. Mouth of Pattersquash Creek shall be considered to be a line constructed perpendicular to channel axis of Pattersquash Creek passing through point approximately one-fourth mile due north of Latitude line 40 degrees 45 minutes 00 seconds as shown on reference map.	2	SC	SC
MB-2, MB-4	Moriches Bay portions as described	Those portions of Moriches Bay which are situated northerly of line connecting southernmost extremity of Masbury Point with point of land as shown on reference map located approximately 0.5 mile easterly from mouth of Terrell River.	2	SA	SA
175 and tribs. shown on reference map	Trib. of Moriches Bay	Enters Moriches Bay approximately 0.5 mile southwest of Masbury Point.	2	SC	SC

MORICHES BAY (Continued)

[illegible]	NAME	[illegible]	MAP REF. NO.	CLASS	STANDARDS
174 portion as described	Forge River	That portion of Forge River from mouth to line connecting northerly bank of Ely Creek at its mouth with northerly bank of trib. 4a at its mouth designated as item no. 22. Mouth of Forge River shall be considered to be represented by line perpendicular to channel axis of Forge River passing through southernmost extremity of Masbury Point.	2	SA	SA
174 portion as described	Forge River	That portion of Forge River northerly of line connecting north banks of Ely Creek and trib. 4a as described under item no. 14.	2	SC	SC
174-1	Trib. of Forge River	Enters Forge River from west approximately 0.5 mile west and slightly north of Masbury Point.	2	SC	SC
174-2 portion as described	Old Neck Creek	From mouth upstream a distance of 1500 feet. Enters Moriches Bay approximately 0.75 mile northwest of Masbury Point.	2	SC	SC
174-2 portion as described	Old Neck Creek	From point 1500 feet above mouth of Old Neck Creek to head of tide water.	2	SC	SC
174-3	Poospatuck Creek	Enters Forge River approximately 1.0 mile northwest of Masbury Point.	2	SC	SC

MORICHES BAY (Continued)

[illegible]	NAME	[illegible]	MAP REF. NO.	CLASS	STANDARDS
174-4 portion as described	Ely Creek	Enters Forge River approximately 1.5 miles northwest of Masbury Point. From mouth upstream distance of one-fourth mile measured along channel axis.	2	SC	SC
174-4 portion as described	Ely Creek	From point one-fourth mile above mouth to head of tide water.	2	SC	SC
174-4a	Trib. of Forge River	Enters Forge River approximately 0.5 mile north of Poospatuck Creek.	2	SC	SC
172	Areskand Creek	Enters Moriches Bay approximately 0.6 mile easterly from Senix Creek.	2	SC	SC
171 and tribs.	Orchard Neck Creek	Enters Moriches Bay approximately 0.65 mile easterly from Areskand Creek.	2	SC	SC
170a and tribs.	Trib. of Moriches Bay	Enters Moriches Bay approximately 0.5 mile east of Orchard Neck Creek.	2	SD	SD
170 or P 846 portion as described	Terrell River	From mouth upstream a distance of 1000 feet.	2	SC	SC
170 or P 846 portion as described	Terrell River	From point 1000 feet above mouth of head of tidewater.	2	SD	SD
170-1, 2	Tribs. of Terrell River	Enter Terrell River from east at points approximately 0.35 and 0.6 mile above mouth, respectively.	2	SD	SD
173	Senix Creek	From mouth to head of tidewater. Enters Moriches Bay approximately 0.55 mile northeast of Masbury Point.	2	SC	SC

MORICHES BAY (Continued)

WATERS INDEX NUMBERS	NAME	COMMENTS	MAP REF. NO.	CLASS	STANDARDS
173-1 portion as described	West Senix Creek	From mouth upstream distance of 3,000 feet measured along channel axis. Enters Senix Creek approximately 0.1 mile above mouth of Senix Creek.	2	SC	SC
173-1 portion as described	West Senix Creek	From point 3,000 feet above mouth of West Senix Creek to head of tidewater.	2	~~SD~~ SC	~~SD~~ SC
175b	Trib. of Narrow Bay	Enters Narrow Bay approximately 0.75 mile east of Pattersquash Creek.	2	SC	SC
175a	Trib. of Narrow Bay	Enters Narrow Bay approximately 1.0 mile easterly of Pattersquash Creek.	2	SC	SC
[illegible]ne	Other unnamed tribs. to Narrow Bay and Moriches Bay	All tidal salt waters which are tributary from north to Narrow Bay or Moriches Bay, which are shown on reference map but are not specifically designated in this table.	2	SC	SC
MB-1, MB-3, MB-5, MB-6	Moriches Bay portions as described	All portions of Moriches Bay except those portions designated as item no. 12. Moriches Bay shall be considered as that body of tidal water as shown on reference maps, exclusive of tribs., estuaries and coves as described later in this table situated northerly of Great South Beach, Pikes Beach and Westhampton Beach and extending from line passing due south through easternmost extremity of Forge Point to line passing due south through southernmost extremity of Potunk Point.	2, 3	SA	SA

MORICHES BAY (Continued)

WATERS INDEX NUMBERS	NAME	DESCRIPTION	MAP REF. NO.	CLASS	STANDARDS
TC-1	Southerly half of Tuthill Cove	That portion of Tuthill Cove which is situated southerly of line extending across and perpendicular to channel axis of Tuthill Cove at point midway between mouth of trib. 169a, designated as item no. 40 and line connecting two Tuthill Points as shown on reference map. Mouth of Tuthill Cove shall be considered to be represented by line connecting two Tuthill Points as shown on reference map.	2,3	SA	SA
TC-2	Northerly half of Tuthill Cove	That portion of Tuthill Cove situated northerly of line extending across and perpendicular to channel axis of Tuthill Cove at point midway between mouth of trib. 169a and line connecting two Tuthill Points as shown on reference maps.	2	SA ~~SC~~	SA SC
I69a	Trib. of Tuthill Cove	Enters Tuthill Cove between Paquatuck and Adelaide Avenues.	2	SD	SD
HC-1	Southerly half of Hart's Cove	That portion of Hart's Cove situated southerly of line extending across and perpendicular to channel axis of Hart's Cove at point midway between mouth of trib. 169 designated as item no. 44 and line connecting Haven Point and Tuthill Point across mouth of Hart's Cove. Mouth of Hart's Cove shall be considered as represented by line connecting Haven Point and Tuthill Point.	2,3	SA	SA

MORICHES BAY (Continued)

WATERS INDEX NUMBERS	NAME	COMMENTS	MAP REF. NO.	CLASS	STANDARDS
HC-2 portion as described	Portion of northerly half of Hart's Cove	That portion of Hart's Cove situated northerly of line extending across and perpendicular to channel axis of Hart's Cove at point midway between mouth of trib. 169 designated as item no. 44 and mouth of Hart's Cove and southerly of line constructed 0.25 mile north of and parallel to aforesaid described line.	2,3	SA ~~SB~~	SA ~~SB~~
163c	Trib. of Moriches Bay	Enters Moriches Bay approximately 0.25 mile east of trib. 164.	3	SC	SC
163a, 163b	Tribs. of Moriches Bay	Enter Moriches Bay approximately 0.2 mile and 0.4 mile, respectively, west of Speonk Point.	3	SC	SC
SPC	Speonk Cove	Mouth of Speonk Cove shall be considered as represented by line connecting Speonk Point with westerly bank of trib. 162c, at its mouth, designated as item no. 70.	3	SA ~~SC~~	SA ~~SC~~
163	Speonk River	Enters at upper terminus of Speonk Cove.	3	SC ~~SD~~	SC SD
HC-2 portion as described	Portion of northerly half of Hart's Cove	That portion of Hart's Cove situated northerly of line 0.25 mile north of and parallel to line extending across and perpendicular to channel axis of Hart's Cove at point midway between mouth of trib. 169 and mouth of Hart's Cove.	2,3	SC ~~SB~~	SC ~~SB~~
169	Trib. of Hart's Cove	Enters at upper terminus of Hart's Cove.	2	SD	SD

MORICHES BAY (Continued)

[illegible]	NAME	[illegible]	MAP REF. NO.	CLASS	STANDARDS
169-1	Trib. to trib. of Hart's Cove	Enters trib. 169 approximately 0.15 mile north of mouth of 169.	3	SD	SD
168a and trib.	Trib. of Hart's Cove	Enters from east approximately 0.3 mile west of Haven Point.	3	SC ~~SD~~	SC ~~SD~~
SC-1	Southerly half of Seatuck Cove	That portion of Seatuck Cove situated southerly of line connecting north banks of mouths of tribs. 168 and 165, designated as item nos. 50 and 51, respectively. Mouth of Seatuck Cove shall be considered to be represented by line connecting Haven Point and westerly bank of trib. 164a at its mouth, designated as item no. 63.	3	SA	SA
SC-2	Northerly half of Seatuck Cove	That portion of Seatuck Cove situated northerly of line connecting north banks of mouths of tribs. 168 and 165.	3	SA ~~SC~~	SA ~~SC~~
168 portion as described	Trib. of Seatuck Cove	From mouth to head of tidewater. Enters Seatuck Cove from west approximately 0.6 mile north of Haven Point.	3	SC	SC
165	Trib. of Seatuck Cove	Enters Seatuck Cove from east approximately 0.75 mile southerly of East Branch.	3	SC	SC
167	Seatuck Creek	Enters Seatuck Cove approximately 0.3 mile westerly of East Branch.	3	SC ~~SD~~	SC ~~SD~~

MORICHES BAY (Continued)

WATERS INDEX NUMBERS	NAME	COMMENTS	MAP REF. NO.	CLASS	STANDARDS
167-1 portion as described	Trib. of Seatuck Creek	Enters Seatuck Creek approximately 0.2 mile west of mouth of Seatuck Creek. From mouth to head of tidewater.	3	SC	SC
164a	Trib. of Moriches Bay	Enters Moriches Bay approximately 0.5 mile southeast of trib. 165.	3	SC	SC
164	Trib. of Moriches Bay	Enters Moriches Bay approximately 0.05 mile east of trib. 164a.	3	SD	SD
166 portion as described	East Branch	Enters Seatuck Cove at upper terminus of Seatuck Cove. From mouth to head of tidewater.	3	SC	SC
BC	Beaverdam Cove	Mouth of Beaverdam Cove shall be considered as represented by line connecting Apautuck Point with point of land extending into Moriches Bay approximately 0.15 mile south of mouth of trib. 161a designated as item no. 79.	3	SA	SA
162 portion as described	Beaverdam Creek	Enters at upper terminus of Beaverdam Cove. Mouth to head of tidewater.	3	SC	SC
162c	Trib. of Moriches Bay	Enters Moriches Bay approximately 0.25 mile east of mouth of Speonk River.	3	SC	SC
162a	Trib. of Moriches Bay	Enters Moriches Bay approximately 0.3 mile west of Apautuck Point.	3	SD	SD
162b	Trib. of Moriches Bay	Enters Moriches Bay approximately 0.4 mile east of trib. 162c.	3	SC	SC

MORICHES BAY (Continued)

[illegible]	NAME	[illegible]	SUB-SECT. NO.	CLASS	STANDARDS
161 and trib.	Trib. of Moriches Bay	Enters Moriches Bay approximately 0.5 mile west of Potunk Point.	3	SD	SD
160a	Trib. of Moriches Bay	Enters Moriches Bay approximately 0.1 mile northwest of Potunk Point.	3	SC	SC
AO portion as defined	Atlantic Ocean	Extending from shore three miles between a line passing due south through Smith Point to a line passing due south through Potunk Point.	1,2,3	SA	SA
161a, 161b	Tribs. of Beaverdam Cove	Enter Beaverdam Cove approximately 0.1 and 0.4 mile, respectively, southeast of mouth of Beaverdam Creek.	3	SC	SC
167-1a, 1b	Tribs. of Seatuck Creek	Enter from east and west, respectively, approximately 0.35 and 0.5 mile, respectively, above mouth of Seatuck Creek.	3	SD	SD

SUFFOLK COUNTY - PECONIC RIVER - FLANDERS BAY 6-NYCRR-921

WATERS INDEX NUMBER	NAME	DESCRIPTION	MAP REF. NO.	CLASS	STANDARDS
FB-1	Flanders Bay east	Flanders Bay east shall be considered as that body of tidal water, as shown on the reference map, exclusive of tribs. and estuaries described later in this table, lying between a line from Red Cedar Point, Town of Southampton, to Miamogue Point, Twon of Riverhead, and a line from center of Reeves Creek to northwestern boundary of Reeves Bay and continued to northeastern boundary of Reeves Bay.	2	SA	SA
FB-2	Flanders Bay center	Flanders Bay center shall be considered as that body of tidal water lying between a line from center of Reeves Creek to northwestern boundary of Reeves Bay and a line from west shore of Reeves Creek to southern point of Indian Island and continued to northwestern boundary of Reeves Bay.	2	SA	SA
108	Trib. of Flanders Bay east	Enters Flanders Bay east from north approximately 1.9 miles west of Miamogue Point.	2	SC	SC
FB-3	Flanders Bay west	Flanders Bay west shall be considered as that body of tidal water lying between line from southern point of Indian Island to northwestern boundary of Reeves Bay and line due south from mouth of Sawmill Creek.	2	SC	SC
105	Trib. of Flanders Bay east	Enters Flanders Bay east from north approximately 0.3 mile west of Miamogue Point.	2	SC	SC

SUFFOLK COUNTY - PECONIC RIVER - FLANDERS BAY (Continued)

[illegible] NUMBER	NAME	DESCRIPTION	MAP REF. NO.	CLASS	STANDARDS
105a including P 508	Trib. of Flanders Bay east	Enters Flanders Bay east from north approximately 0.7 mile west of Miamogue Point.	2	SB	SB
106	Trib. of Flanders Bay east	Enters Flanders Bay east from north approximately 1.5 miles west of Miamogue Point.	2	SD	SD
107 and tribs. 1 and 2, portion as described	Trib. of Flanders Bay east	Enters Flanders Bay east from north approximately 1.6 miles west of Miamogue Point. Tidal section.	2	SC	SC
109 and tribs. 1 and 2	Reeves Creek	Enters Flanders Bay east and Flanders Bay center from north approximately 2.2 miles west of Miamogue Point.	2	SC	SC
110 portion as described	Meetinghouse Creek	Enters Flanders Bay center on north side of Indian Island. From mouth to Long Island Railroad, Montauk branch.	2	SC	SC
110 portion as described	Meetinghouse Creek	Above Long Island Railroad, Montauk branch.	2	SD	SD
110-1 portion as described	Terry's Creek	Enters Meetinghouse Creek from west approximately 0.25 mile from mouth. Tidal section.	2	SC	SC
111 portion as described	Sawmill Creek	Enters Flanders Bay west at northwest corner. Tidal section, east of Long Island Railroad, Montauk branch.	2	SC	SC
112 portion as described	Peconic River	Enters Flanders Bay west from west. Tidal section, east of Peconic Avenue dam - Riverhead.	2	SC	SC

SUFFOLK COUNTY - PECONIC RIVER - FLANDERS BAY (Continued)

WATERS INDEX NUMBERS	NAME	DESCRIPTION	MAP REF. NO.	CLASS	STANDARDS
RB	Reeves Bay	Reeves Bay shall be considered as that body of tidal water lying southwest of Flanders Bay east, as shown on reference map.	2	SA	SA
RB-113	Trib. of Reeves Bay	Enters Reeves Bay from west approximately 1.0 mile southwest of northwestern boundary of Reeves Bay	2	SC	SC
RB-113a	Trib. of Reeves Bay	Enters Reeves Bay from south approximately 0.5 mile southwest of northeastern boundary of Reeves Bay.	2	SC	SC
RB-114, portion as described	Goose Creek	Enters Reeves Bay from southeast approximately 0.2 mile southwest of northeastern boundary of Reeves Bay. Tidal section, north of Flanders Road.	2	SC	SC
116 portion as described	Mill Creek	Enters Flanders Bay east from south approximately 1.5 miles west of Red Cedar Point. Tidal section, north of Flanders Road.	2	SC	SC
117 portion as described and tribs. 1 and 2	Hubbard Creek	Enters Flanders Bay east from south approximately 0.9 mile southwest of Red Cedar Point, tidal section.	2	SC	SC
115 portion as described	Birch Creek	Enters Flanders Bay east from south approximately 2.1 miles west of Red Cedar Point. Tidal section, north of Flanders Road.	2	SC	SC
68 portion as described including tribs. 1, 2, 3	Wading River	Enters Long Island Sound at West Landing. Tidal section.	2	SC	SC
112-2 portion as described	Trib. of Peconic River	Enters Peconic River from south approx. 0.9 west of mouth. Tidal section, north of Flandus Rd.	2	SC	SC

SUFFOLK COUNTY - PECONIC RIVER - FLANDERS BAY (Continued)

[illegible] Index Numbers	Name	Description	Map Ref. No.	Class	Standards
LIS	Long Island Sound	Between point 1.25 miles west of West Landing, Town of Brookhaven, and point 1.6 miles east of Jacobs Point, Town of Riverhead.	2	SA	SA
69 portion as described	Trib. of Long Island Sound	Enters Long Island Sound from southeast approximately 5.0 miles east of West Landing. Tidal section.	2	SB	SB

SUFFOLK COUNTY - GREAT SOUTH BAY 6-NYCRR-922

WATERS INDEX NUMBER	NAME	DESCRIPTION	MAP REF. NO.	CLASS	STANDARDS
AO portion as described	Atlantic Ocean	Portion extending three miles seaward from Great South Beach between a line passing due south through Blue Point and a line passing due south through Smith Point.	2	SA	SA
GSB portion as described	Great South Bay	That portion of Great South Bay situated southerly of a line connecting southernmost end of Blue Point with southernmost extremity of Howell Point and extending from a line passing due south through Blue Point to a line passing due south through Howell Point.	2	SA	SA
PB	Patchogue Bay	Patchogue Bay shall be considered as that body of tidal water exclusive of tribs. and estuaries situated northerly of a line connecting southernmost extremities of Blue Point and Howell Point.	2	SA	SA
188	Trib. of Patchogue Bay	Enters Patchogue Bay from northwest approximately 0.5 mile north of Blue Point.	2	SD	SD
187 portion as described	Trib. of Patchogue Bay (Tidewater section)	Enters Patchogue Bay from northwest approximately 1.0 mile northeast of Blue Point. Mouth to 0.4 mile above mouth.	2	SC	SC
186 portion as described	Tuthills Creek (Tidewater section)	Enters Patchogue Bay from northwest approximately 1.5 miles northeast of Blue Point. Mouth to West Lake (P 390).	2	SC	SC

SUFFOLK COUNTY - GREAT SOUTH BAY (Continued)

WATERS INDEX NUMBERS	NAME	DESCRIPTION	MAP REF. NO.	CLASS	STANDARDS
185 portion as described	Patchogue Creek (Tidewater section)	Enters Patchoque Bay from north 1.7 miles northeast of Blue Point. Mouth to Long Island Railroad tracks (approximately 0.8 mile).	2	SC	SC
183 portion as described	Mud Creek	Enters Patchogue Bay from north approximately 0.7 mile east of Swan Creek described as item 17. Tidewater section.	2	SC	SC
181 portion as described including P 881	Hedges Creek (Tidewater section)	Enters Patchogue Bay from north approximately 1.1 miles west of Howell Point. Mouth to approximately 1 mile above mouth.	2	SB	SB
180	Howell Creek	Enters Patchogue Bay from north approximately 0.5 mile west of Howell Point.	2	SC	SC
184a	Trib. of Patchogue Bay	Enters Patchogue Bay from north approximately 0.5 mile east of Patchogue Creek described as items 10 and 11.	2	SD	SD
184 portion as described	Swan Creek (Tidewater section)	Enters Patchogue Bay from north approximately 1.0 mile south of Village of East Patchogue. Mouth to P 884 approximately 1.4 miles.	2	SC	SC
GSB portion as described	Great South Bay	The portion of Great South Bay situated southerly of a line connecting southernmost extremities of Howell Point and Smith Point between lines passing due south through Howell Point and due south through Smith Point.	2	SA	SA

SUFFOLK COUNTY - GREAT SOUTH BAY (Continued)

[illegible]	NAME	DESCRIPTION	[illegible]	CLASS	STANDARDS
BB	Bellport Bay	That body of tidal water located northerly of a line between southernmost extremities of Howell Point and Smith Point excluding tribs. and estuaries.	2	SA	SA
P 880	Pond	Tidal pond located 0.5 mile northeast of Howell Point.	2	SC	SC
179 portion as described and trib.	Trib. of Bellport Bay	Enters Bellport Bay from north approximately 1.3 miles northeast of Howell Point. Tidewater section.	2	SC	SC
178 portion as described and tribs.	Beaverdam Creek	Enters Bellport Bay from north approximately 0.7 mile east of Village of Bellport. Tidewater section.	2	SC	SC
[illegible] portion as described and trib. 1	Carmans River (Tidewater section)	Enters Bellport Bay approximately 2.0 miles northwest of Smith Point. Mouth to bridge on Long Island Railroad approximately three miles.	2	SC	SC
Long Island Sound	Long Island Sound	That part of Long Island Sound located between a line extending due north through westerly limit of Miller Place Beach which is approximately 1.5 miles west of Woodhull Landing and a line due north passing through a point 1.1 miles west of West Landing and extending to N. Y. State	2	SA	SA

SUFFOLK COUNTY - GREAT SOUTH BAY (Continued)

WATERS INDEX NUMBERS	NAME	DESCRIPTION	MAP REF. NO.	CLASS	STANDARDS
SB-SBH	Stony Brook Harbor		R-27nw	SA	SA
LIS-65	Trib. of Long Island Sound		R-27nw	SA	SA
LIS-P 339	Flax Pond		R-27nw	SA	SA
LIS-PJH portion	Port Jefferson Harbor	From harbor entrance south to a line running between LILCO bulkhead and beach house at end of Beach Road, Belle Terre; excluding Setauket Harbor and Conscience Bay.	R-27ne	SA	SA
LIS-PJH portion	Port Jefferson Harbor	Remainder.	R-27ne	SC	SC
LIS-PJH-SH	Setauket Harbor		R-27ne	SA	SA
LIS-MSH	Mount Sinai Harbor		R-27ne	SA	SA
LIS-PJH-CB	Conscience Bay		R-27ne R-27nw	SA	SA
LIS-PJH-CB-66 portion	Trib. of Conscience Bay	Mouth of outlet of p340a	R27ne	I	I
AO	Atlantic Ocean	To three miles out, Nassau County line east to line running south of Blue Point and Water Island	S-26sw S-26nw S-27nw S-27ne	SA	SA
GSB	Great South Bay	Excluding all adjacent creeks and canals.	S-26nw S-26ne S-27nw S-27ne	SA*	SA*
GSB-188a	Namkee Creek		S-27ne	SC	SC
GSB-188b	Herman's Creek		S-27ne	SC	SC
GSB-189 portion	Brown Creek	Mouth to Middle Road	S-27ne R-27se	SC	SC

SUFFOLK COUNTY - SHINNECOCK BAY 6-NYCRR-923

[illegible] CODE NUMBERS	NAME	DESCRIPTION	MAP REF. NO.	CLASS	STANDARDS
AO portion as described	Atlantic Ocean	Extending from shore a distance of three miles and between a line extending due south from Potunk Point south of Westhampton beach and a line extending due south of Mecox Coast Guard Station which is south of Bridgehampton.	R-29c R-29d R-30c R-30b	SA	SA
P 790 portion as described	Mecox Bay except Hayground Cove	Large bay located to southeast of Water Mill.	R-30b	SA	SA
P 790 portion as described	Hayground Cove	Trib. of Mecox Bay at north. From mouth 1,500 feet up cove to line extending across cove from first point on westerly shore.	R-30b	SA	SA
P 790 portion as described	Hayground Cove	From point 1,500 feet to point 3,250 feet up cove or between lines extending across cove between first and second points above mouth on westerly shore.	R-30b	SB	SB
P 790 portion as described	Hayground Cove	From point 3,250 feet above cove to upper limit of tidewater.	R-30b	SD	SD
P 790-A including P 808	Trib. of Mecox Bay and Channel Pond	Enters Mecox Bay from southwest at southwest corner of bay.	R-30b	SC	SC
P 790-5 portion as described	Calf Creek	Enters Hayground Cove just above mouth from northeast. Mouth to Mecox Road.	R-30b	SA	SA
P 790-1 and trib.	Burnett Creek	Enters Mecox Bay from west.	R-30b	SA	SA
P 790-2 portion as described	Mill Creek	Enters Mecox Bay from northwest. Mouth to N.Y. Route 27	R-306	SA	SA
P 790-2 portion as described	Mill Creek	N.Y. Route 27 to source	R306	SC	SC
P 790-6	Swan Creek	Enters Mecox Bay from northeast.	R-30b	SC	SC

SUFFOLK COUNTY - SHINNECOCK BAY (Continued)

[illegible]	NAME	DESCRIPTION	MAP REF. NO.	CLASS	STANDARDS
P 790-7	Sams Creek	Enters Mecox Bay at extreme easterly point.	R-30b	SC	SC
P 818 and trib.	Halsey Neck Pond	Located approximately 0.2 mile inshore from ocean and north of Halsey Neck. Connected with Taylor Creek by open ditch.	R-30c	SC	SC
SI	Shinnecock Inlet		R-30c	SA	SA
SB	Shinnecock Bay		R-29d R-30a R-30c	SA	SA
SB-143	Taylor Creek	Enters Shinnecock Bay at extreme easterly point.	R-30c	SA	SA
SB-144	Heady Creek	Enters Shinnecock Bay from north near easterly end.	R-30c	SA	SA
SB-145 and P 821, 146 including trib. 1 and P 823 and P 823a, 146a, including P 824	Tribs. of Mecox Bay, (P 821-Old Fort Pond), (P 823-Middle Pond), (P 824-Far Pond)	Enter Mecox Bay from north at northeastern point of bay.	R-30c	SA	SA
SB-120 portion as described	Shinnecock Canal	From Shinnecock Bay to locks.	R-29b	SC	SC
SB-146b and trib.	Trib. of Shinnecock Bay	Enters bay from north approximately 0.5 mile northwest of Pouquogue Point.	R-29d	SC	SC
SB-152a and P 831a	Unnamed trib. of Shinnecock Bay and unnamed pond	Enters Shinnecock Bay from west approximately 0.75 mile north of Pine Neck Point.	R-29d	SC	SC
SB-148 and P 825	Trib. of Mecox Bay and Penny Pond	Enters Mecox Bay from north approximately 0.7 mile northwest of Pouquogue Point.	R-29d	SA	SA

SUFFOLK COUNTY - SHINNECOCK BAY (Continued)

[illegible]	NAME	DESCRIPTION	MAP REF. NO.	CLASS	STANDARD
SB-149	Wells Creek	Enters Shinnecock Bay from north approximately 1.0 mile northwest of Pouquogue Point.	R-29d	SC	SC
SB-150	Smith Creek	Enters Shinnecock Bay from north of East Point.	R-29d	SA	SA
SB-TB	Tiana Bay		R-29d	SA	SA
SB-TB-151	Trib. of Tiana Bay	Enters Tiana Bay at northerly point.	R-29d	SA	SA
SB-154	Trib. of Shinnecock Bay	Enters Shinnecock Bay from west approximately 0.4 mile north of Phillips Point.	R-29d	SC	SC
SB-155 portion as described	Phillips Creek	Enters Shinnecock Bay from northwest just west of Phillips Point. From mouth to end of Breeze Point Road.	R-29d	SA	SA
SB-155 portion as described	Phillips Creek	From Braeze Point Road to head of tide water.	R-29d	SC	SC
SB-155-1	Stone Creek	Enters Phillips Creek from west just above mouth.	R-29d	SB	SB
SB-153	Weesuck Creek	Enters Shinnecock Bay from north at easterly edge of East Ouoque. Mouth of Weesuck Ave.	R-29d	SA	SA
SB-153 incl. trib. 1	Weesuck Creek	From Weesuck Ave. to P831b.	R-29d	SC	SC
P790-2	Mill Creek	Enters Mecox from northwest St. Mouth to N.Y. Rte. 27	R-30b	SA	SA

SUFFOLK COUNTY - SHINNECOCK BAY (Continued)

[illegible] Index Numbers	Name	Description	Map Ref. No.	Class	Standard
SB- 136	Pennyman Creek	Enters Shinnecock Bay at easterly end of Quogue Canal.	R-29d	SA	SA
Qg-C	Quogue Canal	Stands between Shinnecock Bay and Quantuck Bay	R-29d	SA	SA
Qg-C-P 834	Ogden Pond	Enters Quogue Canal from north in southerly edge of Quogue.	R-29d	SA	SA
QB	Quantuck Bay		R-29d	SA	SA
QB-157	Trib. of Quantuck Bay	Enters Quantuck Bay from north directly north of westerly end of Quogue Canal.	R-29d	SD	SD
QB-158 portion as described and trib. 1	Quantuck Creek	Enters Quantuck Bay from north at most northerly point. Mouth to N.Y. Route.	R-29d	SA	SA
QB-158 portion as described	Quantuck Creek	From N.Y. Route 27 to outlet of p 835a just north of Long Island Railroad.	R-29d	SC	SC
QB-159 portion as described	Aspatuck River	Enters Quantuck Bay from west between Exchange Point and Quioque Point. Mouth to Main Road.	R-29d	BA	SA
Qt-C	Quantuck Canal uncluding bay area	Between Quantuck Bay and Potunk Point.	R-29c	SA	SA
160					
160	Unnamed stream	Trib. of small bay which surrounds Reedy Island and is at westerly end of Quantuck Canal. Enters bay from north.	R-29c	SC	SC

SUFFOLK COUNTY - EASTERN SECTION 6-NYCRR-924

Index Number	Name	Description	Map Ref. No.	Class	Standards
LIS portion	Long Island Sound	All waters of LIS in New York State, east of a line running north from Luce Landing to the New York-Connecticut boundary and north of a line extending from Orient Point, through Plum Island to Great Gull Island.	R-29ne Q-29se Q-31nw P-31se Q-30sw Q-30ne	SA	SA
LIS 70 and P 361	Trib. of Long Island Sound		R-29ne	SC	SC
LIS-71 and P 366	Mattituck Creek		Q-29se R-29ne	SA	SA
LIS-71-1 portion	Trib. of Mattituck Creek	From mouth to Reeve Avenue Bridge.	Q-29se R-29ne	SA	SA
LIS-71-1 portion	Trib. of Mattituck Creek	Tidal section.	Q-29se R-29ne	SC	SC
LIS-72 and P 376	Goldsmith Inlet		Q-30sw	SA	SA
LIS-P 386, P 388	Unnamed ponds		Q-30sw Q-30ne	SD	SD
GB	Gardiners Bay	East of a line extending from Claaves Point to Hay Beach Point on North Fork and east of a line extending from Mashomack Point to Barcalona Point on South Fork, to a line running south from Plum Island through Gardiners Island to Alberts Landing, including Orient Harbor, Long Beach Bay, Northwest Harbor.	Q-30se Q-31sw Q-31nw	SA	SA
GB-LBB	Long Beach Bay	North of a line extending from Browns Point to Orient State Park. Includes Little Bay and Narrow River. (Part of Gardiners Bay.)	Q-30ne	SA	SA

Waters Index Number	Name (6NYC RR 924)	Comments	Ref. No.	Class	Standards New York
GB-73,74,75a, 75b,75c	Tribs. of Gardiners Bay		Q-30ne	SD	
GB-75	Trib. of Gardiners Bay		Q-30ne	SA	SA
GB-76 and P 395	Dam Pond		Q-30ne	SA	SA
GB-77a and P 396 portion	Marion Lake	Northeast of bridge.	Q-30se Q-30ne	SA	SA
GB-77a and P 396	Marion Lake	Southwest of bridge.	Q-30se Q-30ne	SC	SC
GB-P 397	Spring Pond		Q-30se	SA	SA
GB-P 399	Unnamed pond		Q-30se	SC	SC
GB-CI	Coecles Inlet	Northwest of a line running between Reel Point and Sungic Point.	Q-30se	SA	SA
GB-P 439a	Unnamed pond		Q-30se	SC	SC
GB-P 450a	Unnamed pond		Q-30se	SC	SC
GB-NWH	Northwest Harbor	East of a line running from Cedar Point to Barcelona Point.	Q-30se Q-31sw	SA	SA
GB-136 and P 713	Northwest Creek		Q-30se R-30ne Q-31sw	SA	SA
GB-137 portion	Trib. of Gardiners Bay	Tidal portion	Q-31sw	SC	SC
GB-137-P726	Alewife Pond		Q 31sw	SC	SC
GB-TMI	Threemile Harbor		Q-31sw R-31nw	SA	SA
GB-138	Hands Creek		Q-31sw	SC	SC
Gardiners Island -	Ponds and streams	Tidal portions.	Q-31se	SD	

SUFFOLK COUNTY - EASTERN SECTION (Continued)

[illegible] NUMBERS	NAME	DESCRIPTION	MAP REF. NO.	CLASS	STANDARDS
SIS-SI-4a and P 451a, 5 and P 452, 6 and P 455, 6a and P 456a, 6b and P 456,7	Tribs. of Shelter Island Sound		Q-30se	SC	SC
SIS-WNH	West Neck Harbor	North of a line running from West Neck Point to Wards Point.	Q-30se	SA	SA
SIS-SI-8 and P 457	Dickerson Creek		Q-30se	SA	SA
SIS-SI-8a	Menantic Creek		Q-30se	SA	SA
SIS-SI-9 and P 461	West Neck Creek and Bay		Q-30se	SA	SA
SIS-77 and P 400	Gull Pond		Q-30se	SC	SC
SIS-78	Stirling Creek and Basin		Q-30se	SA	SA
SIS-79	Trib. of Shelter Island Sound		Q-30sw	SC	SC
SIS-79-1 portion and P 408	Trib. of Shelter Island Sound	Tidal section.	Q-30sw	SC	SC
SIS-79-2 portion	Moores Drain	Tidal section.	Q-30sw	SC	SC
SIS-P 414, P 415	Unnamed ponds		Q-30sw	SC	SC
SIS-80a	Trib. of Shelter Island Sound		Q-30sw	SC	SC
SIS-80	Trib. of Shelter Island Sound		Q-30sw	SA	SA

SUFFOLK COUNTY - EASTERN SECTION (Continued)

WATERS INDEX NUMBERS	NAME	DESCRIPTION	MAP REF. NO.	CLASS	STANDARDS
SIS-80b and P 418	Trib. of Shelter Island Sound		Q-30sw	SC	SC
SIS-80c and P 418b, 81 and P 418a	Tribs. of Shelter Island Sound		Q-30sw	SA	SA
SIS-P 420	Hashamomuck Pond		Q-30sw	SA	SA
SIS-82 and P 421,83 and P 422	Tribs. of Shelter Island Sound		Q-30sw	SC	SC
SIS-83a	Town Creek		Q-30sw	SA	SA
SIS-83b portion	Jockey Creek	Below Oaklawn Avenue Bridge.	Q-30sw	SA	SA
SIS-83b portion	Jockey Creek	Above Oaklawn Avenue Bridge.	Q-30sw	SC	SC
SIS-84 and P 423	Goose Creek		Q-30sw	SA	SA
SIS-85 and P 428, 86 and P 429, 87 and P 430, P 672	Tribs. of Shelter Island Sound		Q-30sw Q-30se	SC	SC
SIS-126 and P 674	Noyack Creek		R-30ne Q-30se	SA	SA
SIS-127 and P 676	Mill Creek		R-30ne	SC	SC
SIS-128	Trib. of Shelter Island Sound		Q-30se	SC	SC
SIS-128-1 and P 678	Subtrib. of Shelter Island Sound		Q-30se	SC	SC
SIS-P 685,P 685a, 129 and P 686	Tribs. of Shelter Island Sound		Q-30se	SD	SD
SIS-129a and P 689	Trib. of Shelter Island Sound		Q-30se	SC	SC

SUFFOLK COUNTY - EASTERN SECTION (Continued)

[illegible]	NAME	DESCRIPTION	MAP REF. NO.	CLASS	STANDARDS
SIS-132 portion	Ligonee Brook	Mouth to Brick Kiln Road.	R-30ne	SC	SC
SIS-130 and P 696	Trib. of Shelter Island Sound	P 696 is fresh pond.	Q-30se	SC	SC
SIS-SH	Sag Harbor	Harbor, northeast of Sag Harbor-New Haven Bridge to breakwater and a line extending from breakwater to stream 130.	Q-30se	SA	SA
SIS-SHC	Sag Harbor Cove	All of cove southwest of Sag Harbor-North Haven Bridge.	Q-30se R-30ne	SA	SA
SIS-131 and P 697	Trib. of Shelter Island Sound		Q-30se	SD	SD
SIS-133	Trib. of Shelter Island Sound		R-30ne	SD	SD
SIS-133-P 709	Unnamed pond		R-30ne	SC	SC
SIS-134 portion	Trib. of Shelter Island Sound	Tidal portion.	R-30ne Q-30se	SC	SC
SIS-135 and P 712	Trib. of Shelter Island Sound		Q-30se	SC	SC
LPB	Little Peconic Bay	From a line extending southerly from New Suffolk through Robbins Island to Cow Neck Point and east to a line running from Cedar Beach Point to Jessup Neck and including Cutchoque Harbor.	R-30nw Q-30sw	SA	SA
LPB-88 and P 467	Cedar Beach Creek		Q-30sw	SA	SA
LPB-88a, 88b and P 470	Tribs. of Little Peconic Bay		Q-30sw	SC	SC

SUFFOLK COUNTY - EASTERN SECTION (Continued)

[illegible] Index Numbers	Name	Description	Map Ref. No.	Class	Standards
LPB-89 and P 472	Corey Creek		Q-30sw	SA	SA
LPB-90 and P 473	Richmond Creek		Q-30sw	SA	SA
LPB-91	Little Creek		Q-30sw	SA	SA
LPB-_CH	Cutchoque Harbor	Part of Little Peconic Bay - north of a line running from New Suffolk to Nassau Point.	Q-30sw R-30nw	SA	SA
LPB-92 and P 477,92a and P 478	Tribs. of Little Peconic Bay		R-30nw	SA	SA
LPB-93 and P 480 and tribs. 93-1a, 93-2	Mud-East Creeks and tribs.		Q-30sw	SA	SA
LPB-94 and P 484	Wickam Creek		Q-30sw	SA	SA
LPB-95	Trib. of Little Peconic Bay		R-30nw	SC	SC
LPB-P 653	Unnamed pond		R-30nw	SC	SC
LPB-123 and P 659	North Sea Harbor		R-30nw	SA	SA
LPB-123-P 659a	Davis Creek		R-30nw	SA	SA
LPB-123-P 659a-P 664	Turtle Cove		R-30nw	SA	SA
LPB-123-1 portion	Trib. of North Sea Harbor		R-30nw	SC	SC
LPB-124 and P 665	Wooley Pond		R-30nw	SA	SA
LPB-125 and P 667	Fresh Pond		R-30nw	SC	SC

SUFFOLK COUNTY - EASTERN SECTION (Continued)

WATERS INDEX NUMBERS	NAME	DESCRIPTION	MAP REF. NO.	CLASS	STANDARDS
GPB	Great Peconic Bay	From a line extending southerly from Miamogue Point to Red Cedar Point, east to a line extending southerly from New Suffolk through Robins Island to Cow Neck Point.	R-20ne R-30nw	SA	SA
GPB-96	West Creek		Q-30sw R-30nw	SA	SA
GPB-96-1 portion	Trib. of West Creek	Tidal portion.	Q-30sw R-30nw	SC	SC
GPB-97 portion	Downs Creek	Tidal portion.	Q-30sw R-30sw	SA	SA
GPB-98 portion	Halls Creek	Tidal portion.	R-29ne	SA	SA
GPB-99	Deep Hole Creek		R-29ne	SA	SA
GPB-99 P-492	Unnamed pond		R-29ne	SA	SA
GPB-100 portion	Trib. of Great Peconic Bay	Tidal portion.	R-29ne	SA	SA
GPB-100-2	Subtrib. of Great Peconic Bay		R-29ne	SC	SC
GPB-101 portion	Trib. of Great Peconic Bay	Tidal portion.	R-29ne	SC	SC
GPB-103	Trib. of Great Peconic Bay	Tidal portion.	R-29ne	SD	SD
GPB-119 and P 645	Trib. of Great Peconic Bay		R-29ne	SA	SA
GPB-118 and P 644	Red Creek Pond		R-29ne	SA	SA
GPB-102	Brush Creek	Tidal portion	R-29ne	SC	SC
GPB-120	Shinnecock Canal	From Shinnecock Light to Locks.	R-29ne	SC	SC
GPB-121	Trib. of Great Peconic Bay		R-30nw	SA	SA
GPB-104 portion	Trib of Great Peconic Bay	Tidal portion	R-29ne	SC	SC

SUFFOLK COUNTY - EASTERN SECTION (Continued)

[illegible]	NAME	DESCRIPTION	MAP REF. NO.	CLASS	STANDARDS
GPB-121 P 647	Cold Spring Pond		R-30nw	SA	SA
GPB-121 P647-1	Trib. of Cold Spring Pond		R-30nw	SD	SD
GPB-122	Sebonac Creek		R-30nw	SA	SA
GPB-122 P 648	Bullhead Bay		R-30nw	SA	SA
GPB-122a and P 651 and tribs.	Little Sebonac Creek and tribs.		R-30nw	SA	SA
GPB-122a P 652	Scallop Pond		R-30nw	SA	SA
BIS	Block Island Sound	All waters within New York State, east of a line running from Plum Island to Alberts Landing, including Napeague Bay, Napeague Harbor and Fort Pond Bay.	P-32sw Q-31nw Q-32sw	SA	SA
BIS-141 portion and P 749	Trib. of Block Island Sound	From mouth to inlet of P 749	R-31ne	SC	SC
BIS-NH	Napeague Harbor	Part of Block Island Sound-southeast of a line running from Goff Point to Hicks Island.	Q-31se R-31ne	SA	SA
BIS-142 and P 752	Napeague Pond		Q-31se	SA	SA
BIS-P 761	Montauk Harbor		Q-32sw	SA	SA
BIS-P 761- P 762	Little Reed Pond		Q-32sw	SC	SC
BIS-P 764	Oyster Pond		Q-32sw	SA	SA
BIS-P 766 P 766a, P 767 P 767a	Unnamed ponds		Q-32sw	SD	SD

SUFFOLK COUNTY - EASTERN SECTION (Continued)

[illegible]	NAME	DESCRIPTION	MAP REF. NO.	CLASS	STANDARDS
AO portion	Atlantic Ocean	From a line running southerly from Mecox Coast Guard Station, east to Montauk Point and extending three miles from shore.	R-30ne R-31nw Q-32sw Q-31se Q-31ne	SA	SA
AO-P 786	Sagaponack Pond		R-30ne	SA	SA
AO-P 780	Georgica Pond		R-31nw	SA	SA
AO-P 786-2-P789a	Unnamed pond		R-30ne	SC	SC
Fishers Island-P 1101	Bench Pond		P-32sw P-31se	SA	SA
Fishers Island P 1102	Island Pond		P-32sw P-31se	SA	SA
[illegible] and P732, 5 and [illegible]1, 7 and 747, [illegible]739	Ponds and Streams on Gardiners Island	Tidal Portions	Q-31se Q-31sw	SA	SA
P731, P736, P737, P737a, P738, P743, P744, 6 and 745, P746, P746a	Ponds and Streams on Gardiners Island	Tidal Portions	Q-31se Q-31sw	SC	SC

Waters Index Number	Name	Comments	Map Ref. No.	Class	Std
GB-140 and P 729	Hog Creek		Q-31sw	SA	SA
GB-AH	Acabonack Harbor		Q-31sw	SA	SA
SIS	Shelter Island Sound	All waters east from a line extending south from Cedar Beach Point to Jessup Neck, to a line extending from Cleaves Point to Hay Beach Point on the North Fork and from Mashomack Point to Barcelona Point on the South Fork, including Noyack Bay, Sag Harbor Bay.	Q-30se Q-30sw R-30ne	SA	SA
SIS-SI-1 and P 431	Crab Creek		Q-30se	SC	SC
SIS-DH	Dering Harbor	South of a line running from Dering Point to Shelter Island Ferry.	Q-30se	SA	SA
SIS-SI-2a and P 434	Chase Creek		Q-30se	SC	SC
SIS-SI-2b and P 436	Gardiners Creek		Q-30se	SC	SC
SIS-SI-3 and P 451b	Trib. of Shelter Island Sound		Q-30se	SC	SC
SIS-SI-4	Trib. of Shelter Island Sound		Q-30se	SD	SD.

WATERS INDEX NUMBER	NAME	DESCRIPTION	MAP REF. NO.	CLASS	STANDARDS
LIS	Long Island Sound	East from Nassau-Suffolk County line to a line running north from Miller Place Beach and north to the New York-Connecticut boundarie	R-26nw R-26ne R-27nw R-27ne	SA	SA
CSH	Cold Spring Harbor	Within Suffolk County including Inner Harbor.	R-26nw	SA	SA
CSH-51	Trib. of Cold Spring Harbor	Tidal portion.	R-26nw	I	I
CSH 52 and P 206	Tribs. of Cold Spring Harbor		R-26nw	SA	SA
HB	Huntington Bay	Area bounded on west by a line running south from East Beach, on the east by a line running south from West Beach and on the north by a line running east from East Fort Point.	R-26nw	SA	SA
HB-LH	Lloyd Harbor	Waters east of a line running south from East Beach.	R-26nw	SA	SA
HB-HH portion	Huntington Harbor	South of a line running from Wendower Road to Elbertsons Point	R-26nw	SA	SA
HB-HH portion	Huntington Harbor.	Remainder.	R-26nw	SA	SA
HB-NB	Northport Bay	East of a line running south from West Beach excluding Centerport Harbor and Northport Harbor.	R-26ne R-26nw	SA	SA
HB-NB-CH	Centerport Harbor	Southeast of a line running west from land spit and including Mill Pond.	R-26ne R-26nw	SA	SA
HB-NB-NH	Northport Harbor	Waters south of a line running west from Bluff Point.	R-26ne	SA	SA
LIS-58 and P 269	Trib. of Long Island Sound		R-26nw	SA	SA

SUFFOLK COUNTY - Western

WATERS INDEX NUMBERS	NAME	DESCRIPTION	MAP REF. NO.	CLASS	STANDARDS
LIS-59 portion	Crab Meadow Brook	Mouth to Trib. 1.	R-26ne	SA	SA
LIS-61 portion	Sunken Meadow Creek	Tidal portion.	R-26ne R-27nw	I	I
LIS-62 portion	Nissequogue River	Mouth to Jericho Turnpike	R-27nw R-27sw	SC	SC
GSB-190 portion	Green Creek	Mouth to Montauk Highway.	S-27ne	SC	SC
GSB-190 P 899	Unnamed Pond		S-27ne	SC	SC
GSB-191	Indian Creek		S-27ne	SC	SC
GSB-192 and 192a	Tribs. of Great South Bay		S-27ne S-27nw	SC	SC
GSB-193 portion	Connetquot River	Mouth to Montauk Highway.	S-27nw	SC	SC
GSB-193a	Heckscher Canal		S-27nw	SC	SC
GSB-194a	Quintuck Creek		S-27nw	SC	SC
GSB-193-1 and 1a	Tribs. of Connet-quot River		S-27nw	SC	SC
GSB-193-2 portion	Trib. of Connet-quot River	Mouth to Montauk Highway.	S-27nw	SC	SC
GSB-193-2 P 901	Unnamed Pond		S-27nw	SC	SC
GSB-201	Brightwaters Canal		S-26ne	I	I
GSB-202	Thorn Canal		S-26ne	I	I
GSB-202a	Isbrandsen Canal		S-26ne	I	I
SB-SBH-64	West Meadow Creek		R-27nw	SA	SA
SB	Smithtown Bay	Waters south of a line running between mouth of Crab Meadow Brook and Crane Point.	R-26ne R-27nw	SA	SA

SUFFOLK COUNTY-Western (Cont.)

WATERS INDEX NUMBERS	NAME	COMMENTS	MAP REF. NO.	CLASS	STANDARD
CSH-P 204	Unnamed pond		R-26nw	I	I
LIS-P 209	Unnamed pond		R-26nw	I	I
HB-NB-CH-56a	Trib. of Centerport Harbor		R-26nw	I	I
LIS-PJH-CB-66 portion	Trib. of Conscience Bay	Mouth to outlet of P 340a	R-27ne	I	I
GSB-194 portion	Champlin Creek	Mouth to outlet of P 910.	S-27nw	I	I
GSB-194b, 194c and 195	Tribs. of Great South Bay		S-27nw	I	I
GSB-196 portion	Orowoc Creek	From mouth to Montauk Hwy.	S-27nw	I	I
GSB-197 portion	Awixa Creek	From mouth to Montauk Hwy.	S-27nw	I	I
GSB-198 portion	Penataquit Creek	From mouth to Montauk Hwy.	S-27nw	I	I
GSB-199	Watchogue Creek		S-27nw	I	I
GSB-199a	Trib. of Great South Bay		S-27nw	I	I
GSB-200	Lawrence Creek		S-27nw S-26ne	I	I
GSB-201	Brightwaters Canal		S-26ne	I	I
GSB-202	Thorn Canal		S-26ne	I	I
GSB-202a	Isbrandsen Canal		S-26ne	I	I
GSB-203 portion	Thompsons Creek	From mouth to Montauk Hwy.	S-26ne	I	I
GSB-204 portion	Trues Creek	Mouth to Montauk Hwy.	S-26ne	I	I
GSB-204a	Trib. of Great South Bay		S-26ne	I	I
GSB-205 portion	Willets Creek	From mouth to Montauk Hwy.	S-26ne	I	I
GSB-206	Skookwams Creek		S-26ne	I	I
GSB-207 portion	Sampawams Creek	From mouth to Montauk Hwy.	S-26ne	I	I
GSB-208 portion and tribs. 1 and 1a	Carlls River	From mouth to Montauk Hwy.	S-26ne	I	I

SUFFOLK COUNTY-Western (Cont.)

WATERS INDEX NUMBER	NAME	COMMENTS	MAP REF. NO.	CLASS	STANDARD
GSB-209 and trib. 1	West Babylon Creek		S-26ne	I	I
GSB-210-Portion	Santapogue Creek	Mouth to Montauk Hwy.	S-26ne	I	I
GSB-211 portion	Neguntatogue Creek	Mouth to Montauk Hwy.	S-26ne	I	I
GSB-212 portion	Trib. of Great South Bay	From mouth to Montauk Hwy.	S-26ne S-26nw	I	I
GSB-212a and 212b	Tribs. of Great South Bay		S-26ne S-26nw	I	I
GSB-213 portion	Trib. of Great South Bay	Mouth to Montauk Hwy.	S-26nw	I	I
GSB-213a and 213b	Tribs of Great South Bay		S-26nw	I	I
GSB-214	Howell Creek		S-26nw	I	I
GSB-214a	Trib. of Great South Bay		S-26nw	I	I
GSB-215 portion	Woods Creek	Mouth to Merrick Road	S-26nw	I	I
GSB-216 portion	Amityville Creek	Mouth to Merrick Road	S-26nw	I	I
GSB-217	Narraskatuck Creek	Within Suffolk County.	S-26nw	I	I

EAST RIVER 6-NYCRR-935

[illegible] Index Numbers	Name	Description	Map Ref. No.	Class	Standards
		UPPER EAST RIVER AND TRIBUTARIES			
ER portion	East River (10.1-12.3)	From a line drawn across the river between Stony Point in Bronx County and Lawrence Point in Queens County, to the lines drawn across the river from Hunts Point in Bronx County and Sanford Point in Queens County, intersecting at the easterly point of Rikers Island.	R-24sw R-24se	SD	SD
ER portion	East River (12.3-14.5)	From lines drawn across the river from Hunts Point in Bronx County and Sanford Point in Queens County intersecting at the easterly point of Rikers Island, to Whitestone Bridge connecting Old Ferry Point in Bronx County to Francis Lewis Park in Queens County.	R-24se	I	I
ER portion	East River (14.5-17.0)	From Whitestone Bridge connecting Old Ferry Point in Bronx County to a line drawn across the river between Throgs Neck Point in Bronx County and Willets Point in Queens County.	R-24se	SB	SB
		LONG ISLAND SOUND AND TRIBUTARIES			
LIS portion	Long Island Sound	From a generally north-south line drawn from Throgs Neck Point to Willets Point to another generally north-south line drawn from Premium Point to Flashing Red Buoy #2 near Huckleberry Island, thence through Execution Rocks Lighthouse, including Little Neck Bay portion in Queens County.	R-24se R-24ne R-25nw	SB	SB

	4	LI-8	Steinway Creek		R-215w	SD	SD
	5	LI-9	Trib. of East River	Enters stream at Bowery Bay	R-216w	SD	SD
	6	LI-12 portion	Flushing Creek	Mouth to Tide Gate Bridge in Flushing Meadow Park	R-218e	I	I
11		LI-14, 15	Tribs. of East River	Enter at Powell Cove	R-245E	I	
13		LI-19	Alley Creek	Mouth to P 113	R-245E R-255W	I	
17		LI-20 portion	Trib. of Little Neck Bay	From mouth to sewer terminus	R-255W	I	
18		ER-1 portion	Bronx River	Mouth to East Fremont Avenue Bridge	R-247E R-248E	I	
47		ER-4 and Trib. 1	Westchester Creek and Hurtley Creek		R-265E	I	

EAST RIVER (Continued)

WATERS INDEX NUMBERS	NAME	COMMENTS	MAP REF. NO.	CLASS	STANDARDS
		Eastchester Bay in Bronx County and shore waters in Bronx and Westchester Counties within the described portion of the Sound.			
LIS portion	Long Island Sound	From a generally north-south line drawn from Premium Point to Flashing Red Buoy #2 near Huckleberry Island, thence through Execution Rocks Lighthouse to the New York-Connecticut State boundary line within Westchester County, excluding waters within the one-mile square of the sewer outfalls of New Rochelle, Mamaroneck and Blind Brook and the below-described Long Island South shore waters of Larchmont Harbor, Milton Harbor, the cove areas reaching from Milton Point to the southern tip of Manursing Island and Port Chester Harbor and adjacent Sound Waters.	R-24ne R-25nw	SA	SA
LIS portion	Long Island Sound	Waters of the Sound within the one square mile area geometrically formed by the sides of a square one mile in length with the south side parallel to the Westchester-Nassau County line and which area is located with its center at the terminus of the New Rochelle Water Pollution Control Plant (located about 0.65 mile southeast of Premium Point and 0.9 mile northeast of the northern tip of Huckleberry Island).	R-24ne R-25nw	SB	SB

EAST RIVER (Continued)

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
LIS portion	Long Island Sound	Waters of the Sound within the one square mile area geometrically formed by the sides of a square one mile in length with the south side parallel to the Westchester-Nassau County line and which area is located with its center at the terminus of the Mamaroneck Water Pollution Control Plant (located about 1.5 miles southeast of Orienta Point and 1.2 miles southwest of Milton Point).	R-25nw	SB	SB
LIS portion	Long Island Sound	Waters of the South within the one square mile area geomatrically formed by the sides of a square one mile in length with the south side parallel to the Westchester-Nassau County line and which area is located with its center at the terminus of the Blind Brook Water Pollution Control Plant (located about 1.2 miles northeasterly of Parsonage Point and 1.0 mile southwesterly of the southeasterly tip of Manursing Island). :	R-25nw	SB	SB
LIS portion	Long Island Sound, Larchmont Harbor	Waters not indexed lying north of a line drawn between Umbrella Point at Larchmont and Edgewater Point on Satans Toe.	R-25nw	SB	SB

EAST RIVER (Continued)

WATERS INDEX NUMBER	NAME	CRITERIA	MAP REF. NO.	CLASS	STANDARDS
LIS portion	Long Island Sound Port Chester Harbor	Waters within Westchester County not indexed, lying westerly of a line drawn from the northernmost tip of North Manursing Island to Navigation Light at tip of breakwater off Byram Point, Connecticut.	R-25nw	SB	SB
LIS 1 portion	Weir Creek		R-24se	SB	SB
LIS 2 portion including Trib. 1, Trib. 2 and tribs., Trib. 2a, Trib. 3, and Trib. 5	Hutchinson River	Mouth to East Colonial Avenue Bridge. Trib. 1 is Givan Creek. Trib. 2 is Mill Creek.	R-24se R-24ne	SB	SB
LIS portion	Long Island Sound, Mamaroneck Harbor	Waters not indexed lying northerly of a line drawn in a northeasterly direction from the southern tip of the sea wall at Orienta Point near the Orienta Yacht Club at the foot of Rushmore Avenue in Mamaroneck, to a point on the mainland immediately north of Spike Island at the intersection of the shoreline and the extension of the line to the center gable of a large stone and stucco residence at No. 6 Shore Road in the Greenhaven section within the City of Rye.	R-25nw	SB	SB
LIS portion	Long Island Sound, Milton Harbor	Waters not indexed lying northerly of a line drawn from the northeastern tip of Maries Neck peninsula and extending southeasterly across the harbor to a point at the intersection of the mainland shore of Pine Neck peninsula and the extension of the line to the center section of the	R-25nw	SB	SB

EAST RIVER (Continued)

Item No.	Waters Index Number	Name	Comments	Map Ref.	Class	Standar
66.	LIS 6 portion	Premium River	Mouth to Boston Post Road. (Remaining portion is sewered.)	R-24NE	I	I
69	LIS 7 portion	East Creek	Mouth to Boston Post Road (Remaining portion is sewered.)	R-25NW	I	I
70	LIS 8 portion	Mamaroneck River	Mouth to Boston Post Road	R-25NW	I	I
88	LIS 9 portion	Beaver Swamp Brook	Mouth to Trib. 1: Tidal portion	R-25NW	I	I
93	LIS 9a, 10	Otter Creek Mill Pond		R-25NW	I	I
94	LIS 11 portion	Blind Brook	Mouth to Cross Country Parkway Bridge	R-25NW	I	I
101	LIS 12	Playland Lake		R-25NW	I	I
102	LIS 13 portion	Byram River	Mouth to Boston Post Road	R-25NW	SC	SC

EAST RIVER (Continued)

[illegible]	NAME	[illegible]	MAP REF. NO.	CLASS	STANDARDS
		Wainwright House located on Stuyvesant Avenue about 0.3 mile northerly of Milton Point.			
LIS portion	Long Island Sound, Unnamed cove areas	Shore waters of the Sound not indexed, lying northerly of lines drawn from Milton Point on Pine Neck to Parsonage Point on Pine Neck; thence from Parsonage Point to the south tip of Pine Island on Pine Neck; thence from the northernmost tip of Pine Island to the light buoy 0.2 mile off Rye Beach, thence to the southernmost tip of Manursing Island.	R-25nw	SB	SB
LIS portion	Long Island Sound, off Port Chester Harbor	Waters of the Sound not indexed and within Westchester County lying north of a line projected from the southernmost tip on Manursing Island to the south tip of the southernmost Calf Island in Connecticut and lying south of a line drawn from the northernmost tip of North Manursing Island to Navigation Light at tip of breakwater off Byram Point, Connecticut.	R-25nw	SB	SB

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[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
LIS portion	Long Island Sound	Waters within Nassau County west of a line extending from the northerly tip of Hewlett Point in a northeasterly direction to the Westchester County-Nassau County-Bronx County boundary intersection.	R-24se R-25sw R-25nw R-25ne	SB	SB
LIS portion	Long Island Sound	Waters within Nassau County east of a line extending from the northerly tip of Hewlett Point in a northeasterly direction to the Westchester County-Nassau County-Bronx County boundary intersection.	R-25sw R-25nw R-25ne R-25se	SA	SA
LNB	Little Neck Bay	Waters within Nassau County, southeast of a line extending from Elm Point to Willets Point.	R-24se R-25sw	SB	SB
LNB-P 119a	Udalls Mill Pond	Northwest side of Great Peninsula.	R-25sw R-24se	I	I
MB portion	Manhasset Bay	Waters southeast of a line running from Hewlett Point to Barker Point, southeast of a line running from Plum Point to Port Washington Yacht Club Dock and north of a line running directly east from a dock at foot of Harbor Way, Kings Point (V).	R-24se R-25sw	SA	SA
MB portion	Manhasset Bay	Waters northeast of a line running from Plum Point to Port Washington Yacht Club dock.	R-25sw	SB	SB

NASSAU COUNTY (Continued)

WATERS INDEX NUMBER	NAME	COMMENTS	MAP REF. NO.	CLASS	STANDARDS
MB portion	Manhasset Bay	Waters south of a line running directly east from a dock at foot of Harbor Way, Kings Point (V) to a line running easterly from Harbor Way south to a line running easterly from the Kings Point and Village of Great Neck boundary.	R-25sw	SC	SC
OBH	Oyster Bay Harbor	Waters southwest of a line running from Plum Point to Clove Point, excluding Mill Neck Creek.	R-25se R-25ne	SA	SA
OBH-MNC	Mill Neck Creek	Waters west of Bayville Bridge, including Oak Neck Creek.	R-25ne	SA	SA
OBH-MNC-44 portion	Trib. of Mill Neck Creek	Mouth to P 150.	R-25ne	SC	SC
MDB-PC	Parsonage Cove	North of a line extending east from a monument on the westerly shore to the east shore.	S-25ne S-25se	SB	SB
MDB-231 portion	Parsonage Creek	Mouth to Foxhurst Road.	S-25ne	SC	SC
MDB-232a portion	Barnum's Channel	Remaining portion.	S-25sw	I	I
MDB-SC	Shell Creek		S-25sw	SB	SB
MDB-RC portion	Reynolds Channel	East of a line extending northwesterly from Bob Canal to the southerly tip of Garrett Marsh.	S-25se S-25sw	SA	SA
MDB-RC (portion)	Reynolds Channel	From a line extending northwesterly from Bob Jones Canal to the southerly tip of Garrett Marsh to Atlantic Beach Bridge.	S-25sw	SB	SB

NASSAU COUNTY (Continued)

[illegible] Index Numbers	Name	Description	Map Ref. No.	Class	Standards
MDB-ERI	East Rockaway Inlet	Waters within Nassau County, west of the Atlantic Beach Bridge.	S-25sw	SA	SA
HB	Hempstead Bay	Waters within Nassau County, west of Long Beach Boulevard to Atlantic Beach Bridge excluding Reynolds Channel and creeks and canals from the mainland.	S-25nw	SA	SA
MDB-232a portion	Barnum's Channel	From Garrett Lead to confluence with Shell Creek.	S-25sw	SB	SB
HH portion	Hempstead Harbor	Waters north of Bar Beach except waters northeast of a line running from light at end of breakwater at Morgan Memorial Park to pilings at foot of Shore Road.	R-25sw	SA	SA
HH portion	Hempstead Harbor	Waters northeast of a line running from light at end of breakwater at Morgan Memorial Park to pilings at foot of Shore Road.	R-25sw	SB	SB
HH portion	Hempstead Harbor	Waters south of Bar Beach.	R-25sw	SB	SB
MDB	Middle Bay	Waters west of the Meadowbrook Parkway to Long Beach Boulevard excluding creeks and canals from the mainland, the Narrows, Long Creek, Baldwin Bay Parsonage Cove, Shell Creek, and Reynolds Channel, and including Jones Inlet and part of Jones Bay.	S-25ne S-25se S-25nw S-25sw	SA	SA

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MDB-LN	The Narrows		S-25se S-25ne	SB	SB
MDB-228 portion	Freeport Creek	Mouth to Mill Road.	S-25ne	SC	SC
MB-25 portion	Trib. of Manhasset Bay	Tidal portion.	R-25sw	I	I
MB portion	Manhasset Bay	Remainder.	R-25sw	I	I
MB-22 and P 119	Trib. of Manhasset Bay	Northeast side of Kings Point	R-24se R-25sw	SC	SC
MB-23 portion	Trib. of Manhasset Bay	Tidal portion.	R-25sw	I	I
MB-24 portion	Trib. of Manhasset Bay	Tidal portion.	R-25sw	I	I
MB-30 and P 127	Sheets Creek Channel		R-25sw	I	I
EB-232c	Reed Channel		S-25nw	I	I
EB-HIC	Hog Island Channel		S-25sw	SB	SB
EB-IPC	Island Park Channel		S-25nw	SC	SC
EB-233 portion	East Rockaway Channel	Mouth to trib. 1.	S-25nw	I	I
EB-235	Macy Channel		S-25nw	SC	SC
EB-235a	Georges Creek		S-25nw	SC	SC
EB-236	Woodmere Channel		S-25nw	SA	SA
EB	East Bay	Waters west of Wantagh State Parkway to the Meadowbrook State Parkway excluding creeks and canals from the mainland.	S-25se S-25ne	SA	SA
EB-224a	Wantagh Canal		S-25ne	I	I
EB-224 portion	Bellmore Creek	Mouth to Merrick Road	S-25ne	SC	SC

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
OBH-48 portion	Trib. of Oyster Bay Harbor	Tidal portion	R-25se	I	I
SOB-221 portion	Seaford Creek	Mouth to Merrick Road.	S-26nw	SC	SC
OBH-47 portion	Trib. of Oyster Bay Harbor	From mouth to P 156.	R-25ne R-25se	SC	SC
LIS-41 and P 145	Desoris Pond		R-25ne R-25nw	SA	SA
CSH portion	Cold Spring Harbor	Portion within Nassau County, excluding the Inner Harbor.	R-26sw R-26nw	SA	SA
CSH-portion	Cold Spring Harbor	Inner Harbor within Nassau County.	R-26sw	SA	SA
MDB-229a	Hudson Channel		S-25ne S-25se	I	I
MDB-LC portion	Long Creek	North of a line running west from foot of Grove Street.	S-25ne S-25se	SB	SB
MDB-LC portion	Long Creek	Remainder.	S-25se	SA	SA
MDB-229b	Woodcleft Canal		S-25ne S-25se	I	I
MDB-229c	Randall Bay		S-25ne S-25se	I	I
MDB-BB	Baldwin Bay	Northeast of a line extending southeasterly from a monument at most southerly tip of land on the westerly shore to a monument on the northwesterly tip of Smith Meadow Island.	S-25se S-25ne	SB	SB
MDB-230 portion	Milburn Creek	Mouth to Merrick Road.	S-25ne S-25se	SC	SC

NASSAU COUNTY (Continued)

WATERS INDEX NUMBER	NAME	DESCRIPTION	MAP REF. NO.	CLASS	STANDARDS
JB	Jamaica Bay	Waters of Jamaica Bay within Nassau County including parts of Head of Bay Basin and Head of Bay.	S-24ne S-24se S-25nw	SB	SB
JB-238a	Mott Basin	Within Nassau County.	S-24ne	I	I
AO	Atlantic Ocean	To three miles out, Queens County-Nassau County line to Nassau County-Suffolk County line.	S-25sw S-25se S-24se	SA	SA
SOB	South Oyster Bay	Waters west of the Nassau-Suffolk County line to the Wantagh State Parkway, excluding creeks and canals from the mainland.	S-26nw S-26sw S-25ne S-25se	SA	SA
SOB-220	Massapequa Creek	Mouth to Seacrest Pl.	S-26nw	SB	SB
SOB-220	Massapequa Creek	Seacrest Pl. to Merrick Road	S-26nw	SC	SC

NASSUA COUNTY

[illegible]	NAME	[illegible]	SUB REF. NO.	CLASS	[illegible]
MB-26 and P 122c	Leeds Pond		R-25sw	I	I
MB-28 and P 124	Trib. of Manhasset Bay		R-25sw	I	I
MB-29 and P 125	Mill Pond		R-25sw	I	I
MB-30 and P 127	Sheets Creek Channel		R-25sw	I	I
MB-31 and P 128	Trib. of Manhasset Bay		R-25sw	I	I
HH-33	Trib. of Hempstead Harbor		R-25sw	I	I
HH-38 portion	Glen Cove Creek	Mouth to inlet of P 143	R-25sw	I	I
HH-38-P 142	Unnamed Pond	Marina off Glen Cove Creek	R-25sw	I	I
LIS-42	Frost Creek		R-25ne	I	I
LIS-43	Trib. of Long Island Sound		R-25ne	I	I
CBH-MNC-45	Beaver Brook	From mouth to P 150a	R-25ne	I	I
CSH-49	Trib. of Cold Spring Harbor		R-26nw	I	I
SCB-217	Marraskatuck Creek	Within Nassau County	S-26nw	I	I
SCB-218 portion	Carman Creek	Mouth to Merrick Road.	S-26nw	I	I
SCB-219 portion	Jones Creek	Mouth to Merrick Road including P 966.	S-26nw	I	I
SCB-220 portion	Massapequa Creek	Mouth to Seacrest Place	S-26nw	SB	SB
SCB-220 portion	Massapequa Creek	Seacrest Place to Merrick Rd.	S-26nw	SC	SC
SCB-222 portion	Seamans Creek	Mouth to Merrick Road	S-26nw	I	I
SCB-223	Cedar Creek		S-25ne	I	I
EB-225 portion	Newbridge Creek	Mouth to Merrick Road	S-25ne	I	I
EB-226 portion	Cedar Swamp Creek	Mouth to Merrick Road	S-25ne	I	I

NASSUA COUNTY

EB-227	Simmond Creek		S-25ne	I	I
MDB-228-1 portion	Trib. of Freeport Creek	Mouth to Merrick Road.	S-25ne	I	I
MDB-229	Emory Creek		S-25ne	I	I
MDB-229c	Randall Bay		S-25ne S-25se	I	I
MDB-231-2	Trib. of Parsonage Creek		S-25ne	I	I
MDB-231-P 996	Unnamed Pond		S-25ne	I	I
MOB-232	Bedell Creek		S-25nw S-25sw	I	I
EB-232b	Trib. of Hempstead Bay		S-25nw S-25sw	I	I
EB-223 portion	Mill River	Trib. 1 to P 1005	S-25nw	I	I
EB-223-1	Powell Creek		S-25nw	I	I
EB-234	Thirton Creek		S-25nw	I	I
EB-234a	Mallow Reach		S-25nw	I	I
EB-234a-1	Trib. of Mallow Reach		S-25nw	I	I
EB-237	Bannister Creek		S-25nw	I	I
EB-237-1	Trib. of Bannister Creek		S-25n2	I	I
EB-237a	Trib. of Hemstead Bay	Within Nassau County	S-25nw	I	I
JB-238	Inwood Creek		S-24ne	I	I
JB-239	Trib. of Jamica Bay		S-25nw S-25sw	I	I
JB-240 portion	Motts Creek	Mouth to Arbuckle Ave.	S-25nw	I	I
JB-241 portion	Hook Creek	Mouth to trib. 3-waters within Nassau County	S-25nw	I	I
MB-32 portion	East Creek	Tidal portion.	R-25sw	I	I
HH-38-P 143	Unnamed pond	Pond in Pratt Park.	R-25sw	I	I
LIS-40 and P 145a	West Pond		R-25nw	I	I
SOB-219-1	Trib. of Jones Creek		S-26nw	I	I
EB-227a	Mud Creek		S-25ne	I	I
MDB-231-1	Trib. of Parsonage Creek		S-25ne	I	I

WATERS INDEX NUMBERS	NAME	COMMENTS	MAP REF. NO.	CLASS	STANDARDS
		ATLANTIC OCEAN AND NEW YORK BAY			
Atlantic Ocean, portion		That portion of the ocean within New York State opposite Rockaway peninsula bounded on the west by a line from the tip of Rockaway Point, thence south along the jetty to Rockaway jetty light, thence due south to the state boundary line; and bounded on the north by the shore of Rockaway peninsula from the western tip of the Nassau-Queens county line at East Rockaway Inlet; and bounded on the east by the Nassau-Queens county line along East Rockaway Inlet, thence south to the state boundary line.	S-24sw S-24se S-24sw	SA	SA
Atlantic Ocean and east lower New York Bay, portions		Ocean and bay waters within New York State opposite Coney Island peninsula and Staten Island bounded on the west by a north-south line drawn from the south limits of Fort Wadsworth Military Reservation and passing through West Bank Light to New York-New Jersey boundary line; and bounded on the north by a line drawn from the south limits of Fort Wadsworth Military Reservation and extending southeasterly to Norton Point at the western tip of Coney Island peninsula near Sea Gate, thence extending the line along south shore of Coney Island to Light Inlet at southeasterly tip of Coney Island peninsula near Manhattan Beach; and bounded on east by north-south line beginning at described Light Inlet and extending southward to south tip of Rockaway jetty light, thence due south to New York-New Jersey boundary line.	S-23se S-24sw	SB	SB
Lower New York Bay, west portion		That portion of Bay within New York State bounded on east by north-south line drawn from south limits of Fort Wadsworth Military Reservation and passing through West Bank Light to New York-New Jersey boundary line; and bounded on west by north-south line drawn from south tip of Crookes Point to Point Comfort at Keansburg, New Jersey.	S-23se S-23sw T-23nw T-23ne	SB	SB
Upper New York Bay including The Narrows, Atlantic Basin, Erie Basin, Gowanus Bay		That portion of Bay within New York bounded on south by line from tip of Fort Wadsworth to tip of Fort Hamilton; and bounded on west by shore of Staten Island north of tip of Fort Wadsworth, thence by north-south line across mouth of Kill Van Kull from northernmost point of Staten Island to easternmost point at Constable Point, Bayonne, New Jersey, thence by New York-New Jersey boundary	S-23ne S-24se S-24nw	I	I

WATERS INDEX NUMBERS	NAME	COMMENTS	MAP REF. NO.	CLASS	STANDARDS
Upper New York Bay including The Narrows, Atlantic Basin, Erie Basin, Gowanus Bay (Continued)	line from mouth of Hudson River; and bounded on north by true east-west line passing through southernmost tip of Manhattan Island at the Battery and intersecting state boundary line, thence by line extending from same point at the Battery across mouth of Lower East River to western tip of pier 17 at Brooklyn; thence bounded on east by western shore of Brooklyn from pier 17 south to Fort Hamilton.				
	Erie Basin	That portion of Upper New York Bay bounded on the north and east by the western shore of Brooklyn, on the south and west by the peninsula which separates the Basin from Gowanus Bay and Red Hook channel, including the outlet of the Basin:	bounded on the northwest by a line from the northernmost point of the Basin peninsula to the point on the western shore of Brooklyn defined by the projection of Van Brunt Street.	S-23ne	SD	SD
	Lower New York Bay including Gravesend Bay	That portion of Bay south of The Narrows and bounded on north by line from tip of Fort Wadsworth Military reservation to Norton Point at western tip of Coney Island peninsula near Sea Gate, including Gravesend Bay.		S-23se S-24sw	I	I
LI 1 and tribs.	Gowanus Canal	Trib. of Gowanus Bay.		S-24nw	SD	SD
		RARITAN BAY				
	Raritan Bay portion	That portion of Bay within New York State bounded on east by north-south line drawn from south tip of Crookes Point to Point Comfort at Keansburg, New Jersey, and bounded on west by north-south line drawn from Cupola at Mount Loretto Girls Home to Conaskonk Point at Union Beach, New Jersey.		S-23sw T-23nw		
		That segment north of line drawn from black Buoy "39" to south tip of Crooks Point including Great Kills Harbor.			SB	SB
		That segment south of line drawn from Black Buoy "39" to south tip.			SA	SA
	Raritan Bay portion	That portion of Bay within New York State bounded on east by north-south line drawn from Cupola at Mount Loretto Girls Home to Conaskonk Point at Union Beach, New Jersey, and bounded on west by north-south line from terminus of Page Avenue projected to south shore		S-23sw T-23nw	SB	SB

NEW YORK CITY (Continued)

WATERS INDEX NUMBERS	NAME	COMMENTS	MAP REF. NO.	CLASS	STANDARDS
	Raritan Bay portion (Continued)	of Staten Island, thence through boundary beacon to New York-New Jersey boundary line.			
	Raritan Bay portion	That portion of Bay within New York State bounded on east by north-south line drawn from terminus of Page Avenue projected to south shore of Staten Island, thence through boundary beacon to New York-New Jersey boundary line, and bounded on west by line from southern-most point of Staten Island at Ward Point to New York-New Jersey boundary line at Great Beds Lighthouse.	T-22ne T-23nw	SB	SB
	Raritan Bay portion	That sector of Bay within New York State off mouth of Arthur Kill bounded on south by line from southern-most point of Staten Island at Ward Point to New York-New Jersey boundary line at Great Beds Lighthouse, and bounded on north by line at mouth of Arthur Kill from southernmost point of Staten Island at Ward Point to south-ernmost point of Perth Amboy, New Jersey, at Ferry Point.	T-22ne T-23nw	I	I
		ARTHUR KILL, NEWARK BAY and KILL VAN KULL			
SI (0.0-2.0)* portion	Arthur Kill	That portion within New York State from mouth (at an east-west line drawn from southernmost point of Staten Island at Ward Point to southern-most point of Perth Amboy, New Jersey, at Ferry Point) to Outerbridge Crossing.	S-22se S-23sw T-22ne T-23nw	I	I

NEW YORK CITY (Continued)

WATERS INDEX NUMBERS	NAME	COMMENTS	MAP REF. NO.	CLASS	STANDARDS
SI (2.0-12.9) portion	Arthur Kill	That portion within New York State from Outerbridge Crossing to Newark Bay outlet.	S-22se S-23sw S-23nw	SD	SD
SI (12.9-14.6) portion	Newark Bay	Southern portion of Bay lying north of Staten Island within New York State between outlet to Arthur Kill and outlet to Kill Van Kull.	S-23nw	SD	SD
SI(14.6-18.0) portion	Kill VanKull	That portion within NY State from outlet of Newark Bay to mouth of Kill Van Kull (at north-south line drawn from northernmost point of Staten Island to easternmost point at Constable Point, Bayonne, N.J.	S-23nw	SD	SD
		STATEN ISLAND TRIBUTARIES			
SI I and tribs.	New Creek	Tidal estuary and freshwater tribs.	S-23se		
		Tidal portion.		I	I
SI 2	Great Kills Creek	Enters Great Kills Harbor at Great Kills Park.	S-23sw S-23se		
		Tidal portion.		I	I
SI 2a and tribs.	Oakwood Creek	Drains Oakwood Beach and Great Kills Park areas.	S-23se		
		Tidal portion.		I	I
SI 3 and P 1050	Lipsett Avenue stream	Tidal portion.	S-23sw	I	I
SI P 1051 and trib.	St. Joseph's or Arbutus Lake	Tidal portion.	S-23sw	I	I
SI 4 and trib., P 1054a	Lemmon Creek	Tidal portion.	S-23sw	SC	SC
SI 5	Bedell Avenue creek	Tidal estuary.	S-23sw	I	I
SI 6 portion	Mill Creek	Tidal portion.	S-23sw	I	I
SI 7a, 7b, 7c and P 1061	Unnamed waters	Tidal portions.	S-23sw	SD	SD

NEW YORK CITY (Continued)

WATERS INDEX NUMBERS	NAME	COMMENTS	MAP REF. NO.	CLASS	STANDARDS
SI 7d portion and tribs.	Sleight Creek	Tidal portions.	S-23sw	SD	SD
SI 7e and tribs	Benedic Creek		S-23sw	SD	SD
SE 8 portion	Fresh Kills	Mouth to trib. 1	S-23sw	SD	SD
SI 9, 9a and 9b including tribs	Neck Creek, Sawmill Creek and unnamed trib.		S-23sw	SD	SD
SI 9c and tribs.	Unnamed stream		S-23sw	SD	SD
SI 8 portion	Fresh Kills	From trib. 1 to Richmond Hill Road culvert.	S-23sw	SC	SC
SI 8 portion	Fresh Kills	From Richmond Hill Road culvert to source. Tidal portion.	S-23sw	SC	SC
SI 8-1 and tribs. except trib. 8-1-1	Main Creek		S-23sw	SC	SC
SI 8-1-1	Springville Creek	Tidal portion.	S-23sw	SC	SC
SI 16	Unnamed trib. of Kill Van Kull	Tidal portion.	S-23ne	SD	SD
SI 15	Unnamed trib. of Kill Van Kull	Tidal portion.	S-23ne	SD	SD
SI 9d and tribs.	Old Place Creek	Tidal portion.	S-23nw	SD	SD
SI 14 and tribs. exclud. ponds	Bodine Creek	Tidal portions.	S-23nw	SD	SD
SI 8-1a,3 and trib, includ. Pro 67a, 2 and tribs 4,5	Unnamed tribs, of Fresh Kills	Tidal portions	S-23sw	SC	SC
ER (0.0-0.3)*	East River	LOWER EAST RIVER Sector at mouth of river and lying between following described lines: line drawn from southernmost tip of Manhattan Island at the Battery and extending southeastward to western tip to pier 17 in Brooklyn, and true east-west line drawn from southernmost tip of Manhattan Island at the Battery and extending to east shore of East River in Brooklyn.	S-23ne	I	I

NEW YORK CITY (Continued)

WATERS INDEX NUMBERS	NAME	COMMENTS	MAP REF. NO.	CLASS	STANDARDS
ER 1 portion	Harlem River	From Washington Bridge to junction with Hudson River at Spuyten Duyvil (at line extending easterly shores of Hudson River across Spuyten Duyvil Channel).	R-24sw R-24nw	I-I	I-I
ER (0.3-10.1)	East River	From true east-west line passing through southernmost tip of Manhattan Island at the Battery and extending to east shore of East River in Brooklyn to line across River north of Wards Island between Stony Point in Bronx County and Lawrence Point in Queens County. Excludes outlet channel of Harlem River (from line drawn by extending 101st Street in Manhattan to southwesterly tip of Wards Island) and excluding Little Hell Gate Outlet (northerly of line drawn from Stony Point to Sunken Meadow's navigation bell on Wards Island.	S-23ne S-24nw R-24sw	SD	SD
LI 4 and tribs	Newtown Creek or English Kills		S-24nw	SD	SD
ER 1 portion and tribs. 1a, 1b	Harlem River, Little Hell Gate Bronx Kill	Harlem River from junction with Lower East River (at line drawn by extending 101st Street in Manhattan to southwesterly tip of Wards Island) to Washington Bridge; Little Hell Gate from junction with Harlem River to junction with Lower East River (at line drawn from Stony Point to Sunken Meadow navigation bell on Wards Island); Bronx Kill from junction with Harlem River to junction with Little Hell Gate.	R-24sw	SD	SD

* Segment of waters measured upstream from mouth of East River

	Waters Index Number	Name	Comments	Map Ref. No.	Class	
		Rockaway Inlet and Jamaica Bay	Waters extending east of a north-south line drawn from Light Inlet at southeasterly tip of Coney Island peninsula near Manhattan Beach to westerly shoreline west of lookout tower on Rockaway Point. Includes Gerritsen Inlet, Dead Horse Bay, Head of Bay and all waters of Jamaica Bay and Rockaway Inlet for which a waters index number has not been assigned within Kings and Queens counties.	S-24sw S-24nw S-24se S-24ne S-25nw	SB	SI
2	LI 237a,237b, 237c,237d,238a	LI 237a unnamed, Barbadoes Basin Vernam Basin Sommerville Basin Motts Basin respectively	Waters or portions thereof within Queens County.	S-24se	I	I
3	LI 241 portion	Hook Creek	Mouth to trib. 3, portion within Queens County.	S-25nw	I	I
4	LI 241-1 portion	Trib. of Hook Creek	Mouth to P 1023.	S-25nw	I	I
7	LI 241-1a, LI 241-1 and tribs.	Tribs. of Hook Creek		S-25nw S-24ne	I	I
8	LI 241a portion	Thurston Basin	Channel portion.	S-24ne S-25nw	I	
12	LI 247	Bergen Basin		S-24ne	I	I
13	LI 248 and tribs.	Hawtree Basin		S-24ne	I	I
14	LI 248a	Shellbank Basin		S-24ne	I	I
15	LI 248b	Unnamed trib. to Jamaica Bay		S-24ne	I	I
16	LI 249 and tribs.	Old Mill Creek and tribs.		S-24ne	I	I
17	LI 249a, 250,250a	Hendrix Creek, Fresh Creek, Paerdegat Basin		S-24ne S-24nw S-24sw	I	I
18	LI 250b and basins	Mill Basin including East Mill Basin		S-24sw	SB	
19	LI 251 and trib. 2	Gerritsen Creek Mill Creek		S-24sw	SB	SI
20	LI 251-1	Plumb Beach Channel and Shellbank Creek		S-24sw	SB	S
21	LI 252a	Sheepshead Bay		S-24sw	I	

CLASSIFICATIONS AND WATER QUALITY STANDARDS APPLICABLE TO SURFACE WATERS OF NORTH CAROLINA

SEPTEMBER 1979

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Raleigh, NC 27611

.0201 ANTIDEGRADATION STATEMENT

It is the policy of the Environmental Management Commission to maintain, protect, and enhance water quality within the State of North Carolina. Pursuant to this policy, the Environmental Management Commission will not approve any project or development which would result in the significant degradation of waters whose existing quality is better than the assigned water quality standards, unless such degradation is found by the commission to be justifiable to provide necessary economic and social development. In such cases, those pollution control measures necessary to maintain high water quality will be required where physically and economically feasible. Prior to approval of any project or development which will result in the significant degradation of water quality, the commission will solicit, through public notice or public hearing or both, comments from the public and intergovernmental agencies relative to the project or development and anticipated water quality degradation. In cases where the project or development requires a NPDES permit, the Environmental Management Commission shall publish in conjunction with the public notices required by 15 NCAC 2H .0109(a) (regarding application for a NPDES permit) and 15 NCAC 2H .0109(b) (regarding a public hearing on a NPDES permit application) a statement that such project or development is anticipated to result in significant degradation. Furthermore, the commission shall consider the present and anticipated usage of said water, including any uses not specified by the assigned classification (such as waters of exceptional recreational or ecological significance), and will not allow degradation of any waters which would result in the impairment of those uses for an extended period of time. In implementing this policy, the commission will keep the United States Environmental Protection Agency informed and will provide it with such information as it will need in discharging its responsibility under the Federal Water Pollution Control Act as amended October 18, 1972, and December 28, 1977.

History Note: Statutory Authority G.S. 143-214.1;
Eff. February 1, 1976;
Amended Eff. September 9, 1979.

.0202 DEFINITIONS

Tidal salt waters shall mean all tidal waters which are so designated by the Environmental Management Commission and which generally have a natural chloride ion content in excess of 500 parts per million.

Estuarine waters shall mean those tidal salt waters assigned S classifications.

0208 STANDARDS FOR TOXIC SUBSTANCES AND TEMPERATURE

The concentration of toxic substances in the receiving water, when not specified elsewhere in this Section, shall not exceed one-one hundredth (0.01) of the 96-hour LC50. If it is affirmatively demonstrated that a toxic substance has a half-life of less than 96 hours or is not biocumulative, the maximum concentration shall not exceed one-twentieth (0.05) of the 96-hour LC50. If it is affirmatively demonstrated that the standard for a particular toxic substance as specified in Rule .0211 or .0212 of this Section is inappropriate for a specific stream segment, the commission may revise the applicable standard on a case-by-case basis in accordance with the provisions of Section 143-214.1 of the General Statutes of North Carolina. Upon a case-by-case determination that thermal discharges to ponds, lakes, or reservoirs which serve or may serve as a source and/or receptor of industrial cooling water provide for the maintenance of the designated best use throughout a reasonable portion of the water body, the otherwise applicable temperature standards as given in Rules .0211 and .0212 of this Section may not apply, in which case the commission shall establish a separate water quality standard for temperature for each such lake, pond, or reservoir. Such revisions shall be indicated in the schedules of classifications with the revised standard and shall provide for the designated best use classification applicable to the stream segment in question.

History Note: Statutory Authority G.S. 143-214.1;
Eff. February 1, 1976;
Amended Eff. September 9, 1979.

0212 TIDAL SALT WATER CLASSIFICATIONS AND QUALITY STANDARDS

(a) General. The standards of water quality peculiar to each of the respective classifications shall be those specified in (b) through (d) of this Rule. The standards of water quality applicable to all tidal salt waters are as follows:

(1) chlorophyll a: not greater than 40 ug/l in lakes, sounds, estuaries, and other slow-moving waters (not applicable during the months of December through March);

(2) gases, total dissolved: not greater than 110 percent of saturation;

exceed 50 picocuries per liter; nor shall the maximum average annual activity level for tritium exceed 20,000 picocuries per liter;

(E) selenium: not greater than 0.01 mg/l or if more stringent, one one-hundredth (0.01) the 96-hour LC50;

(L) sulfide, hydrogen, undissociated: not greater than 2.0 ug/l.

(b) Class SA Waters

(1) Best Usage of Waters. Shellfishing for market purposes and any other usage specified by the "SB" or "SC" classification;

(2) Conditions Related to Best Usage. Waters will meet the sanitary and bacteriological standards given in the 1965 revision of the "National Shellfish Sanitation Program Manual of Operations: Part 1, Sanitation of Shellfish Growing Areas," recommended by the public health service and will be considered safe and suitable for shellfish culture;

(3) Quality standards applicable to class SA waters:

(A) floating solids; settleable solids; sludge deposits: none attributable to sewage, industrial wastes or other wastes;

(B) sewage, industrial wastes, or other wastes: none which are not effectively treated to the satisfaction of the commission in accordance with the requirements of the division of health services;

(C) pH: range between 6.8 and 8.5;

(D) dissolved oxygen: not less than 5.0 mg/l, except that swamp waters may have lower values if caused by natural conditions;

(E) toxic wastes; oils; deleterious substances; colored or other wastes: except as specified in this Subdivision only such amounts, whether alone or in combination with other substances or wastes as will not make the waters unsafe or unsuitable for fish and shellfish or their propagation, impair the palatability of same, or impair the waters for any other best usage established for this class:

manganese: not greater than 0.1 mg/l;

(F) organisms of coliform group: total coliform group not to exceed a median MPN or MF of 70/100 ml, and not more than 10 percent of the samples shall exceed an MF count of 230/100 ml (or an MPN of 230/100 ml for a five-tube decimal dilution test

or 330/100 ml where a three-tube decimal dilution is used) in those areas most probably exposed to fecal contamination during the most unfavorable hydrographic and pollution conditions;

(G) temperature: shall not be increased above the natural water temperature by more than 0.8 degrees C (1.44 degrees F) during the months of June, July, and August nor more than 2.2 degrees C (3.96 degrees F) during other months and in no case to exceed 32 degrees C (89.6 degrees F) due to the discharge of heated liquids.

(c) Class SB Waters

(1) Best Usage of Waters. Primary recreation and any other usage specified by the "SC" classification;

(2) Conditions Related to Best Usage. The waters will meet accepted sanitary standards of water quality for outdoor bathing places and will be of sufficient size and depth for primary recreation purposes;

(3) Quality standards applicable to class SB waters:

(A) floating solids; settleable solids; sludge deposits: none attributable to sewage, industrial wastes or other wastes;

(B) sewage, industrial wastes, or other wastes: none which are not effectively treated to the satisfaction of the commission; In determining the degree of treatment required for such waters when discharged into waters to be used for bathing, the commission will take into consideration quantity and quality of the sewage and wastes involved and the proximity of such discharges to the waters in this class;

(C) pH: shall be normal for the waters in the area, which generally shall range between 6.0 and 8.5, except that swamp waters may have a low of 4.3;

(D) dissolved oxygen: not less than 5.0 mg/l, except that swamp waters may have lower values if caused by natural conditions;

(E) toxic wastes; oils; deleterious substances; colored or other wastes: only such amounts, whether alone or in combination with other substances or wastes as will not make the waters unsafe or unsuitable for bathing, injurious to fish or shellfish, or adversely affect the palatability of same, or impair the waters for any other best usage established for this class;

(F) organisms of coliform group: (applicable only during the months of May through September;

during other months the coliform organism standard for class "SC" waters shall apply: fecal coliforms not to exceed a log mean of 200/100 ml (either MPN or MF count) based on at least five consecutive samples examined during any 30-day period and not to exceed 400/100 ml in more than 20 percent of the samples examined during such period (not applicable during or immediately following periods of rainfall);

(G) temperature: shall not be increased above the natural water temperature by more than 0.8 degrees C (1.44 degrees F) during the months of June, July, and August nor more than 2.2 degrees C (3.96 degrees F) during other months and in no case to exceed 32 degrees C (89.6 degrees F) due to the discharge of heated liquids.

(d) Class SC Waters

(1) Best Usage of Waters. Fishing, secondary recreation, and any other usage except primary recreation or shellfishing for market purposes;

(2) Conditions Related to Best Usage. The waters will be suitable for fishing, fish and wildlife propagation, secondary recreation, and other uses requiring waters of lower quality;

(3) Quality standards applicable to class SC waters:

(A) floating solids; settleable solids; sludge deposits: only such amounts attributable to sewage, industrial wastes or other wastes, as will not, after reasonable opportunity for dilution and mixture of same with the receiving waters, make the waters unsafe or unsuitable for fish, shellfish, and wildlife, or impair the waters for any other best usage established for this class;

(B) pH: shall be normal for the waters in the area, which generally shall range between 6.0 and 8.5, except that swamp waters may have a minimum of 4.3;

(C) dissolved oxygen: not less than 5.0 mg/l, except that swamp waters may have lower values if caused by natural conditions;

(D) toxic wastes; oils; deleterious substances; colored or other wastes: only such amounts, whether alone or in combination with other substances or wastes as will not render the waters injurious to fish and shellfish, adversely affect the palatability of same, or impair the waters for any other best usage established for this class;

(E) organisms of coliform group: fecal coliforms not to exceed a log mean of 1,000/100 ml (MPN or MF count) based upon at least five consecutive samples examined during any 30-day period; nor exceed 2,000/100 ml in more than 20 percent of the samples examined during such period (not applicable during or immediately following periods of rainfall);

(F) temperature: shall not be increased above the natural water temperature by more than 0.8 degrees C (1.44 degrees F) during the months of June, July, and August nor more than 2.2 degrees C (3.96 degrees F) during other months and in no case to exceed 32 degrees C (89.6 degrees F) due to the discharge of heated liquids.

History Note: Statutory Authority G.S. 143-214.1;
Eff. February 1, 1976;
Amended Eff. September 9, 1979; March 1, 1977.

.0213 REVISIONS TO DISSOLVED OXYGEN STANDARDS

For class "C" and "SC" waters, the commission, on its own initiative or pursuant to a request under G.S. 150A-16 by affected dischargers, may grant revisions to the dissolved oxygen standard for certain stream segments, where the commission finds that:

(1) Natural background conditions in the stream segment preclude the attainment of a daily average dissolved oxygen concentration of 5.0 mg/l; or

(2) Irretrievable and uncontrollable man-induced conditions preclude the attainment of a daily average dissolved oxygen concentration of 5.0 mg/l; or

(3) Application of effluent limitations for existing sources in the stream segment more stringent than present waste treatment technology in order to attain and maintain a daily average dissolved oxygen concentration of 5.0 mg/l would result in substantial adverse economic and social impact.

Any such revisions shall be established in accordance with G.S. 143-214.1 and shall be indicated in the schedule of classifications. The revised dissolved oxygen standard shall be established at the highest level economically attainable but shall be no lower than the level attainable with the application of present waste treatment technology by dischargers to the stream segment. Dischargers to such waters shall provide treatment at least as stringent as present waste treatment technology.

CLASSIFICATIONS AND WATER QUALITY STANDARDS
ASSIGNED TO
THE WATERS OF THE CAPE FEAR RIVER BASIN

Name of Stream	Description	Classification Class	Classification Date	Index No.
Northeast Cape Fear River	From mouth of Ness Creek to Cape Fear River	SC Sw	4/1/59	18-74-(61)
Alligator Creek	From source to Cape Fear River	SC Sw	4/1/59	18-75
Greenfield Creek	From Greenfield Lake to Cape Fear River	SC Sw	4/1/59	18-76
Redmond Creek	From source to Brunswick River	SC Sw	4/1/59	18-77-2
King Creek Restricted Area (Spicer Bay)	Inside a line beginning at a point on the mainland and running due south 100 yards to reflector buoy #43 in the Intracoastal Waterway, thence along the south side of the Intracoastal Waterway Channel 1,200 yards to flashing light channel marker #39, thence due north 200 yards to a point on the mainland, then along the shore line to the point of beginning to include	SC Sw	4/1/59	18-87-4
Bradley Creek	From source to Intracoastal Waterway	SC Sw	4/1/59	18-87-24-4
Telfairs Creek	From source to Snows Cut	SC Sw	4/1/59	18-87-31-1
Walden Creek	From source to Cape Fear River	SC Sw	4/1/59	18-88-1
White Spring Creek	From source to Walden Creek	SC Sw	4/1/59	18-88-1-1
Nigis Creek	From source to Walden Creek	SC Sw	4/1/59	18-88-1-2
Nancys Creek	From source to Walden Creek	SC Sw	4/1/59	18-88-1-3
Gum Log Branch	From source to Nancys Creek	SC Sw	4/1/59	18-88-1-3-1
Governors Creek	From source to Walden Creek	SC Sw	4/1/59	18-88-1-4
Fishing Creek	From source to Governors Creek	SC Sw	4/1/59	18-88-1-4-1
Price Creek	From source to Cape Fear River	SC Sw	4/1/59	18-88-3
Beaverdam Creek	From source to Intracoastal Waterway	SC Sw	4/1/59	18-88-9-1
Polly Gully Creek	From source to Beaverdam Creek	SC Sw	4/1/59	18-88-9-1-1
Dutchman Creek (North side of Intracoastal Waterway)	From source to Intracoastal Waterway	SC Sw	4/1/59	18-88-9-3-(1)
Jump and Run Creek	From source to Dutchman Creek	SC Sw	4/1/59	18-88-9-3-2
Calf Gully Creek	From source to Dutchman Creek	SC Sw	4/1/59	18-88-9-3-3
Cottage Creek	From source to Intracoastal Waterway	SC Sw	4/1/59	18-88-9-4
Atlantic Ocean	The waters of the Atlantic Ocean contiguous to that portion of the Cape Fear River Basin that extends from the eastern edge of the Lumber River Basin to the eastern end of Oak Island	SB	4/1/59	99-(2)
Atlantic Ocean	The waters of the Atlantic Ocean contiguous to that portion of the Cape Fear River Basin that extends from the edge of the White Oak River Basin to the southwestern end of Smith Island at a point called Baldhead.	SB	4/1/59	99-(3)

Reference Material to Regulation 15 NCAC 2B .0311; Cape Fear River Basin, entitled CLASSIFICATIONS AND WATER QUALITY STANDARDS ASSIGNED TO THE WATERS OF THE CAPE FEAR RIVER BASIN, has been amended effective 8-9-81 as follows:

Name of Stream	Description	Class	Index No.
Cape Fear River (excluding areas described below)	From upstream mouth of Toomers Creek to Atlantic Ocean	SC	18-(71)
Brunswick River	From source to Cape Fear River	SC	18-77
Intracoastal Waterway	From southern edge of White Oak River Basin to Cape Fear River at western end of Snows Cut exclusive of restricted areas listed below	SA	18-87
Turkey Creek	From source to Intracoastal Waterway	SA	18-87-1
Everett Bay	Entire Bay excluding that portion in King Creek Restricted Area	SA	18-87-2
Stump Sound	Entire Sound excluding that portion in King Creek Restricted Area	SA	18-87-3
Hardison Creek	From source to Intracoastal Waterway	SA	18-87-5
Batts Mill Creek (Barlow Creek)	From source to Intracoastal Waterway	SA	18-87-6
County Line Branch	From source to Batts Mill Creek	SA	18-87-6-1
Cypress Branch	From source to Batts Mill Creek	SA	18-87-6-
Old Mill Creek	From source to Intracoastal Waterway	SA	18-87-7
Beckys Creek (Bishops Creek)	From source to Intracoastal Waterway	SA	18-87-8
Virginia Creek	From source to Intracoastal Waterway	SA	18-87-9
Mullet Run	From source to Virginia Creek	SA	18-87-9-1
Topsail Sound	Entire Sound	SA	18-87-10
Banks Channel	From New Topsail Inlet to Topsoil Sound	SA	18-87-10-1
Nixons Creek	From source to Intracoastal Waterway	SA	18-87-11
Old Topsoil Creek	From source to Intracoastal Waterway	SA	18-87-12
Howard Channel	From Old Topsail Inlet to Intracoastal Waterway	SA	18-87-13
Mill Creek (Betts Creek)	From source to Intracoastal Waterway	SA	18-87-14
Long Point Channel	From Old Topsail Inlet to Intracoastal Waterway	SA	18-87-15
Green Channel	From Rich Inlet to Intracoastal Waterway	SA	18-87-16
Cedar Snag Creek	From Green Channel to Intracoastal Waterway	SA	18-87-17
Butler Creek	From Nixon Channel to Intracoastal Waterway	SA	18-87-18
Futch Creek	From source to Intracoastal Waterway	SA	18-87-19

Name of Streat	Description	North Carolina Class	Index No.
[illegible]on Channel	From Rich Inlet to Intracoastal Waterway	SA	18-87-20
Middle Sound	Entire Sound excluding that portion in Wrightsville Restricted Area	SA	18-87-21
Pages Creek	From source to Intracoastal Waterway	SA	18-87-22
Howe Creek	From source to Intracoastal Waterway	SA	18-87-23
Wrightsville Restricted Area	In any of the waters within a line beginning at a point of beach on the northeast shore of Masonboro Inlet extending in a northeasterly direction along the shore of the Atlantic Ocean to a point on the shore 1,100 yards beyond the northeast shore of Moore Inlet (closed), thence due northwest through channel marker #124 of the Intracoastal Waterway to a point on the mainland, thence in a southwesterly direction along the mainland to a point on Money Point, thence due southeast through the Intracoastal Waterway Channel marker #128 to the point of beginning to include Lees Cut, Motts Channel, Banks Channel, Bradley Creek, to its beginning, that portion of the Intracoastal Waterway between channel marker #124 and #128, and all tidal creeks on the morthwest side of the Intracoastal Waterway between these markers exclusive of the bathing area noted below.	SC	18-87-24
Lees Cut	From source to Intracoastal Waterway	SC	18-87-24-1
Motts Channel	From Banks Channel to Intracoastal Waterway	SC	18-87-24-2
Banks Channel	Entire channel excluding that portion in Wrightsville Bathing Area	SC	18-87-24-3
Wrightsville Bathing Area (Banks Channel)	All waters inside a line beginning at the point of beach on the northeast shore of Masonboro Inlet and running in a northeasterly direction along the northwest shore of Wrightsville Beach Island (sound side) to the causeway to the sewage treatment plant, thence northerly along the sound side of the causeway to the north end of same, thence in a southeasterly direction to the northeast end of Harbour Island, thence along southeast shore of Harbour Island to the southwest end, thence in a southwesterly direction along the southeast boundaries of the marshes to a point opposite reference marker #7, thence due south to the point of beginning, exclusive of marsh sloughs tributary to the sound.	SB	18-87-24-5

Name of Stream	Description	Class	Index No.
Shinn Creek	From Masonboro Inlet to Intracoastal Waterway	SA	18-87-25
Hewletts Creek	From source to Intracoastal Waterway	SA	18-87-26
Masonboro Channel	From Masonboro Inlet to Intracoastal Waterway	SA	18-87-27
Whiskey Creek (Purviance Creek)	From source to Intracoastal Waterway	SA	18-87-28
Everett Creek	From source to Intracoastal Waterway	SA	18-87-29
John Creek	From source to Intracoastal Waterway	SA	18-87-30
Myrtle Sound Restricted Area	All waters within a line beginning at Picket Rock and running southeast to the Intracoastal Waterway channel marker #153 thence running south-southeast to the south side of the Carolina Beach Inlet, thence in a southerly direction along the shore-line through the Carolina Beach boat basin, thence in a northerly direction along the shore line to the south bank of Snows Cut, thence in a straight line to the north bank of Snows Cut, on the western side of Myrtle Sound, thence in a northerly direction along the shore-line to the point of beginning.	SA	18-87-31
Snows Cut	From Myrtle Sound Restricted Area to Cape Fear River	SC	18-87-31
Lower Cape Fear Restricted Area	All waters inside a line beginning in the Cape Fear River at the mouth of Snows Cut and running in a southerly direction along the shoreline to the basin breakwater, thence along the breakwater to its southwestern end, thence in a southwesterly direction along the eastern side of Shellbed Creek and Muddy Slough to a point on the southern side of Cedar Creek, thence in a southwesterly direction across the mouth of Cape Creek to a point on the southwestern side of the mouth of Bald-head Creek, thence across the mouth of the Cape Fear River to the eastern end of Oak Island, thence in a northwesterly direction along the Atlantic Ocean to a point on the beach, thence due north through the Intra-coastal Waterway Channel Marker F1, R. "22" to the mainland, thence along the shoreline in a easterly direction to the eastern side of the boat basin at Southport, thence in a northerly direction to Andersons Landing, thence in a straight line across Cape Fear River to the point of beginning, exclusive of shellfish areas listed below.	SC	18-88

Name of Stream	Description	Class	North Carolina Index No.
[illegible]ows Marsh	Entire Marsh	SC	18-88-2
[illegible]helbed Creek	From Muddy Slough to Cape Fear River	SC	18-88-4
Middle Creek	From Muddy Slough to Cape Fear River	SC	18-88-5
Bowensville Creek	From Muddy Slough to Cape Fear River	SC	18-88-6
Muddy Slough	Entire Slough excluding that portion in Lower Cape Fear Shellfishing Area	SC	18-88-7
Lower Cape Fear Shellfishing Area	All waters inside a line beginning at the northern end of the breakwater at the basin and running in a southerly direction along the breakwater to its southwestern end and continuing in a southwesterly direction along the eastern side of Shellbed Creek and Muddy Slough to a point on the southern side of Cedar Creek, thence in a southwesterly direction across the mouth of Cape Fear to a point on the southwestern side of the mouth of Baldhead Creek, thence along the shore line of Smith Island to Cape Fear point, thence in a north-north-easterly direction along the Atlantic Ocean shore to the northern side of the New Inlet, thence along the shore line of the basin to the point of beginning.	SA	18-88-8
The Basin	Entire Basin	SA	18-88-8-1
[illegible]uzzard Bay	Entire Bay	SA	18-88-8-2
Muddy Slough	Entire Slough excluding that portion in Lower Cape Fear Restricted Area	SA	18-88-8-2-1
Still Creek	From Muddy Slough to Buzzard Bay	SA	18-88-8-2-2
Burriss Creek	From Muddy Slough to Buzzard Bay	SA	18-88-8-2-3
Cedar Creek	From Cape Fear River to Buzzard Bay	SA	18-88-8-2-4
Cape Creek	From source to Cape Fear River	SA	18-88-8-3
Bay Creek	From source to Cape Creek	SA	18-88-8-3-1
Deep Creek	From source to Bay Creek	SA	18-88-8-3-1-1
Bald Head Creek	From source to Cape Fear River	SA	18-88-8-4
Fishing Creek	From source to Bald Head Creek	SA	18-88-8-4-1
Intracoastal Waterway	From Channel Marker Fl, R. "22" to Cape Fear River	SC	18-88-9
Elizabeth River	That section of Elizabeth River exclusive of the Elizabeth River Shellfishing Area	SC	18-88-9-2-(1)
Elizabeth River Shellfishing Area	That section of Elizabeth River within a line beginning at the mouth of Molasses Creek and running northeast to a point of marsh at the junction of Elizabeth River and Dutchman Creek, thence in a northwesterly direction along the north bank of the river to the southside of the Intracoastal Waterway, thence in a westerly direction along the southside of the Intracoastal Waterway to the mouth of Denis Creek, thence in a southeasterly direction along the south bank of the river to the point of beginning, including all tributaries within this line.	SA	18-88-9-2-(2)

Name of Stream	Description	Class	Index No.
Denis Creek	From source to Elizabeth River	SA	18-88-9-2-3
Piney Point Creek	From source to Elizabeth River	SA	18-88-9-2-4
Molasses Creek	From source to Elizabeth River	SA	18-88-9-2-5
Coward Creek	From source to Molasses Creek	SA	18-88-9-2-5-1
Dutchman Creek Shellfish Area	That section of Dutchman Creek within a line beginning at a point of marsh at the junction of Dutchman Creek and Elizabeth River and running due north to a point of marsh on the north bank of Dutchman Creek, thence in a northwesterly direction along the east bank to the southside of the Intracoastal Waterway thence in a westerly direction along the southside of the Intracoastal Waterway to the west bank of Dutchman Creek, thence in a southeasterly direction to the point of beginning, including all tributaries within this line.	SA	18-88-9-3-(4)
Doshers Creek	From Intracoastal Waterway to Cape Fear River	SC	18-88-10
Smokehouse Creek	From source to Cape Fear River	SC	18-88-11
Boathouse Creek	From source to Cape Fear River	SC	18-88-12
Caswell Basin	Entire Basin	SC	18-88-13

CLASSIFICATIONS AND WATER QUALITY STANDARDS
ASSIGNED TO
THE WATERS OF THE WHITE OAK RIVER BASIN

Name of Stream	Description	Classification Class	Classification Date	Index No.
NEW RIVER	From Blue Creek to Atlantic Coast Line Railroad Trestle	SB	6/1/56	19-(7)
Blue Creek	From source to New River	SC	6/1/56	19-8
Mill Creek	From source to New River	SC	6/1/56	19-9
Deep Gully Creek	From source to Mill Creek	SC	6/1/56	19-9-1
Chainey Creek	From source to New River	SC	6/1/56	19-10
NEW RIVER	From Atlantic Coast Line Railroad Trestle to line extending across the river from Grey Point to point of land approximately 2200 yards downstream from mouth of Duck Creek	SC	6/1/56	19-(11)
Brinson Creek	From source to New River	SC	6/1/56	19-12
Edwards Creek	From source to New River	SC	6/1/56	19-13
Strawhorn Creek	From source to Edwards Creek	SC	6/1/56	19-13-1
Wilson Bay	Entire Bay	SC	6/1/56	19-14
Stick Creek	From source to New River	SC	6/1/56	19-15
Northeast Creek	From source to New River	SC	6/1/56	19-16
Mill Run	From source to Southwest Creek	SC	6/1/56	19-17-7
Morgan Bay	Entire Bay	SC	6/1/56	19-18
Lewis Creek	From source to New River	SC	6/1/56	19-19
Wallace Creek	From source to New River	SB	6/1/60	19-20
Bearhead Creek	From source to Wallace Creek	SB	6/1/56	19-20-1
Beaverdam Creek	From source to Wallace Creek	SB	6/1/56	19-20-2
Town Creek	From source to New River	SC	6/1/56	19-21
Farnell Bay	Entire Bay	SC	6/1/56	19-22
Cogdels Creek (Coglin Creek)	From source to New River	SC	6/1/56	19-23
Frenchs Creek	From source to New River	SC	6/1/56	19-24
Jumping Run	From source to Frenchs Creek	SC	6/1/56	19-24-1
Cowhead Creek	From source to Frenchs Creek	SC	6/1/56	19-24-2
Duck Creek	From source to New River	SC	6/1/56	19-25
Whitehurst Creek	From source to New River	SC	6/1/56	19-26
NEW RIVER	From a line extending across New River from Grey Point to a point of land approximately 2200 yards downstream from mouth of Duck Creek to Atlantic Ocean; including all unnamed bays, creeks, and other waters except restricted areas #1 and #2 described below.	SA	6/1/60	19-(27)
Goose Creek	From source to New River	SC	6/1/56	19-28
Two Pole Branch	From source to New River	SC	6/1/56	19-29
Stones Bay	Entire Bay	SA	6/1/56	19-30
Mill Creek	From source to Stones Bay	SA	6/1/56	19-30-1
Muddy Creek	From source to Stones Bay	SA	6/1/56	19-30-2
Stones Creek	From source to Stones Bay	SA	6/1/56	19-30-3
Millstone Creek	From source to Stones Creek	SA	6/1/56	19-30-3-1
New River Restricted Area #1	All waters within 1,000 yards of earthen dock at the United States Marine Corps Rifle Range	SC	6/1/56	19-31
Everett Creek	From source to New River	SA	6/1/56	19-32
Ellis Cove	Entire Cove	SA	6/1/56	19-33
Sneads Creek	From source to Ellis Cove Bay	SA	6/1/56	19-33-1
Fannie Creek	From source to New River	SA	6/1/56	19-34
Wheeler Creek	From source to New River	SA	6/1/56	19-35
Courthouse Bay	Entire Bay	SA	6/1/56	19-36
New River Restricted Area #2	All waters within a line beginning at the Government Dock in front of U.S. Coast Guard Detachment Barracks at Marines and running a southwest course 1,000 yards to Channel Marker #13, thence a southeasterly course 1,000 yards to Flash Beacon #11, thence a northeasterly course 500 yards to a point on the mainland at Wilkins' Bluff, thence following the shoreline to the Government Dock	SC	6/1/56	19-37

Name of Stream	Description	Classification Class	Classification Date	Index No.
Traps Bay	Entire Bay	SA	6/1/56	19-38
Traps Creek	From source to Traps Bay	SA	6/1/56	19-38-1
Toms Creek	From source to Traps Bay	SA	6/1/56	19-38-2
Intracoastal Waterway	From northeastern boundary of Cape Fear River Basin to New River including all unnamed bays, guts, and channels	SA	6/1/56	19-39
Rogers Bay	Entire Bay	SA	6/1/56	19-39-1
Goose Bay	Entire Bay	SA	6/1/56	19-39-2
Alligator Bay	Entire Bay	SA	6/1/56	19-39-3
Mill Creek	From source to Alligator Bay	SA	6/1/56	19-39-3-1
Chadwick Bay	Entire Bay	SA	6/1/56	19-39-4
Fullard Creek (Salt Branch)	From source to Chadwick Bay	SA	6/1/56	19-39-4-1
Biglins Creek	From source to Fullard Creek	SA	6/1/56	19-39-4-1-1
Charles Creek	From source to Fullard Creek	SA	6/1/56	19-39-4-1-2
Bumps Creek	From source to Fullard Creek	SA	6/1/56	19-39-4-1-3
Hell Gate Creek	From source to Intracoastal Waterway	SA	6/1/56	19-39-5
Wards Channel	From Intracoastal Waterway to New River	SA	6/1/56	19-40
Intracoastal Waterway	From New River to Whiteoak River	SA	6/1/56	19-41
Howard Bay	Entire Bay	SA	6/1/56	19-41-1
Mile Hammock Bay	Entire Bay	SA	6/1/56	19-41-2
Salliers Bay	Entire Bay	SA	6/1/56	19-41-3
Holover Creek	From source to Salliers Bay	SA	6/1/56	19-41-3-1
Gillets Creek	From source to Intracoastal Waterway	SA	6/1/56	19-41-4
Freeman Creek	From source to Intracoastal Waterway	SA	6/1/56	19-41-5
Browns Swamp	From source to Freeman Creek	SA	6/1/56	19-41-5-1
Clay Bank Branch	From source to Freeman Creek	SA	6/1/56	19-41-5-2
Mirey Branch	From source to Freeman Creek	SA	6/1/56	19-41-5-3
Banks Channel	From Browns Inlet to Intracoastal Waterway	SA	6/1/56	19-41-6
Browns Inlet	From Atlantic Ocean to Intracoastal Waterway	SA	6/1/56	19-41-7
Browns Creek	From source to Intracoastal Waterway	SA	6/1/56	19-41-8
Shacklefoot Channel	From Bear Creek to Intracoastal Waterway	SA	6/1/56	19-41-9
Bear Creek	From Shacklefoot Channel to Intracoastal Waterway	SA	6/1/56	19-41-10
Bear Creek	From source to Intracoastal Waterway	SA	6/1/56	19-41-11
Mill Creek	From source to Bear Creek	SA	6/1/56	19-41-11-1
Saunders Creek	From Bear Creek to Intracoastal Waterway	SA	6/1/56	19-41-12
Bear Inlet	From Atlantic Ocean to Intracoastal Waterway	SA	6/1/56	19-41-13
Goose Creek	From source to Intracoastal Waterway	SA	6/1/56	19-41-14
Cow Channel	From Bogue Inlet to Intracoastal Waterway	SA	6/1/56	19-41-15
Queen Creek	From source to Intracoastal Waterway	SA	6/1/56	19-41-16
Bell Swamp	From source to Queen Creek	SA	6/1/56	19-41-16-1
Pasture Branch	From source to Queen Creek	SA	6/1/56	19-41-16-2
Halls Creek	From source to Queen Creek	SA	6/1/56	19-41-16-3
Parrot Swamp	From source to Queen Creek	SA	6/1/56	19-41-16-4
Dicks Creek	From source to Queen Creek	SA	6/1/56	19-41-16-5
Bogue Inlet	From Atlantic Ocean to Intracoastal Waterway	SA	6/1/56	19-41-17
	WHITE OAK RIVER DRAINAGE AREA			
WHITE OAK RIVER	From Hunters Creek to Atlantic Ocean with exception of restricted shellfish area adjacent to Swansboro	SA	6/1/56	20-(18)
Webb Creek	From source to White Oak River	C	6/1/56	20-19
Taylor Creek	From source to White Oak River	C	6/1/56	20-20
Pitts Creek (Hargetts Creek)	From source to White Oak River	SA	6/1/56	20-21
Cales Creek	From source to White Oak River	SA	6/1/56	20-22
Hadnot Creek	From source to White Oak River	SA	6/1/56	20-23
Schoolhouse Branch	From source to Hadnot Creek	SA	6/1/56	20-23-1

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Name of Stream	Description	Classification Class	Classification Date	Index No.
Steep Hill Branch	From source to Hadnot Creek	SA	6/1/56	20-23-2
Caleb Branch (City Weeks Branch)	From source to Hadnot Creek	SA	6/1/56	20-23-3
Godfry Branch	From source to White Oak River	SA	6/1/56	20-24
Hargetts Creek	From source to White Oak River	SA	6/1/56	20-25
Holland Mill Creek	From source to White Oak River	SA	6/1/56	20-26
Cartwheel Branch	From source to Holland Mill Creek	SA	6/1/56	20-26-1
Hampton Bay	Entire Bay	SA	6/1/56	20-27
Stevens Creek	From source to White Oak River	SA	6/1/56	20-28
Pettiford Creek Bay	Entire Bay	SA	6/1/56	20-29
Pettiford Creek	From source to Pettiford Creek Bay	SA	6/1/56	20-29-1
Mill Creek	From source to Pettiford Creek	SA	6/1/56	20-29-1-1
Starkey Creek	From source to Pettiford Creek Bay	SA	6/1/56	20-29-2
Mullet Gut	From source to Starkey Creek	SA	6/1/56	20-29-2-1
Dubling Creek	From source to White Oak River	SA	6/1/56	20-30
Boathouse Creek	From source to White Oak River	SA	6/1/56	20-31
White Oak River Restricted Area	That portion of White Oak River within an area bounded by a line running in an easterly direction from a point below mouth of Foster Creek to east end of Swansboro Bridge, thus in a northerly direction to southern tip of island just off Mt. Pleasant, thus to Mt. Pleasant, including Dennis (Demkis), Foster, and Wards Creeks.	SC	6/1/56	20-32
Ward Creek	From source to White Oak River	SC	6/1/56	20-33
Dennis Creek (Demkis Creek)	From source to White Oak River	SC	6/1/56	20-34
Foster Creek	From source to White Oak River	SC	6/1/56	20-35
Bogue Sound (Including Intracoastal Waterway from White Oak River to Beaufort Inlet)	From Bogue Inlet to Beaufort Inlet	SA	6/1/56	20-36
Deer Creek	From source to Bogue Sound	SA	6/1/56	20-36-1
Hunting Island Creek	From source to Bogue Sound	SA	6/1/56	20-36-2
Taylor Bay	Entire Bay	SA	6/1/56	20-36-3
Goose Creek	From source to Bogue Sound	SA	6/1/56	20-36-4
Sanders Creek	From source to Goose Creek	SA	6/1/56	20-36-4-1
Archer Creek (Piney Cr.)	From source to Bogue Sound	SA	6/1/56	20-36-5
Sanders Creek	From source to Bogue Sound	SA	6/1/56	20-36-6
East Prong Sanders Cr.	From source to Sanders Creek	SA	6/1/56	20-36-6-1
Sikes Branch	From source to East Prong Sanders Creek	SA	6/1/56	20-36-6-1-1
Broad Creek	From source to Bogue Sound	SA	6/1/56	20-36-7
West Prong Broad Creek	From source to Broad Creek	SA	6/1/56	20-36-7-1
Hannah Branch	From source to West Prong Broad Creek	SA	6/1/56	20-36-7-1-1
Sandy Branch	From source to Hannah Branch	SA	6/1/56	20-36-7-1-1-1
Wolf Branch	From source to West Prong Broad Creek	SA	6/1/56	20-36-7-1-2
East Prong Broad Creek	From source to Broad Creek	SA	6/1/56	20-36-7-2
Gales Creek	From source to Bogue Sound	SA	6/1/56	20-36-8
East Prong Gales Creek	From source to Gales Creek	SA	6/1/56	20-36-8-1
Jumping Run	From source to Bogue Sound	SA	6/1/56	20-36-9
Spooner Creek	From source to Bogue Sound	SA	6/1/56	20-36-10
Peltier Creek	From source to Bogue Sound	SA	6/1/56	20-36-11
Hoop Pole Creek	From source to Bogue Sound	SA	6/1/56	20-36-12
Money Island Bay	Entire Bay	SA	6/1/56	20-36-13
Money Island Slough	From source to Money Island Bay	SA	6/1/56	20-36-13-1
Allen Slough	From source to Money Island Bay	SA	6/1/56	20-36-13-2
Harbor Channel	Entire Channel	SA	6/1/56	20-36-14
Tar Landing Bay	Entire Bay	SA	6/1/56	20-36-15
Fishing Creek	From source to Tar Landing Bay	SA	6/1/56	20-36-15-1
Fort Macon Creek	From source to Bogue Sound	SA	6/1/56	20-36-16

Name of Stream	Description	Classification Class	Classification Date	Index No.
NEWPORT RIVER	From Little Creek Swamp to a line across Newport River from point of land at northside of the mouth of Calico Creek to Gallant Point	SA	6/1/56	21-(17)
Little Creek Swamp	From source to Newport River	SA	6/1/56	21-18
Mill Creek	From source to Newport River	SA	6/1/56	21-19
Big Creek	From source to Newport River	SA	6/1/56	21-20
Little Creek	From source to Newport River	SA	6/1/56	21-21
Harlowe Creek	From source (at N.C. Hwy. #101) to Newport River	SA	6/1/56	21-22
Harlowe Canal	From Neuse River Basin Boundary (at Craven-Carteret County Line) to Harlowe Creek (at N.C. Hwy. #101)	SA	6/1/56	21-22-1
Alligator Creek	From source to Harlowe Creek	SA	6/1/56	21-22-2
Oyster Creek	From source to Newport River	SA	6/1/56	21-23
Core Creek (Intracoastal Waterway - Adams Creek Canal)	From Neuse River Basin boundary to Newport River	SA	6/1/56	21-24
Eastman Creek	From source to Core Creek	SA	6/1/56	21-24-1
Bell Creek	From source to Core Creek	SA	6/1/56	21-24-2
Ware Creek	From source to Newport River	SA	6/1/56	21-25
Russell Creek	From source to Newport River	SA	6/1/56	21-26
Wading Creek	From source to Newport River	SA	6/1/56	21-27
Gable Creek	From source to Newport River	SA	6/1/56	21-28
Willis Creek	From source to Newport River	SA	6/1/56	21-29
Crab Point Bay	Entire Bay	SA	6/1/56	21-30
Calico Creek	From source to Newport River	SC	6/1/56	21-32
Town Creek	From source to Newport River	SC	6/1/56	21-33
Taylor Creek	From North River to Newport River	SC	6/1/56	21-34
Back Sound	From Newport River to Core Sound	SA	6/1/56	21-35
North River	From source to Back Sound	SA	6/1/56	21-35-1
Feltons Creek	From source to North River	SA	6/1/56	21-35-1-1
Deep Creek	From source to North River	SA	6/1/56	21-35-1-2
Crabbing Creek	From source to North River	SA	6/1/56	21-35-1-3
Lynch Creek	From source to North River	SA	6/1/56	21-35-1-4
Thomas Creek	From source to North River	SA	6/1/56	21-35-1-5
Fulcher Creek	From source to North River	SA	6/1/56	21-35-1-6
Ward Creek	From source to North River	SA	6/1/56	21-35-1-7
Gillikin Creek	From source to Ward Creek	SA	6/1/56	21-35-1-7-1
North Leopard Creek	From source to Ward Creek	SA	6/1/56	21-35-1-7-2
South Leopard Creek	From source to Ward Creek	SA	6/1/56	21-35-1-7-3
Newby Creek	From source to North River	SA	6/1/56	21-35-1-8
Goose Bay	Entire Bay	SA	6/1/56	21-35-1-9
Gibbs Creek	From source to North River	SA	6/1/56	21-35-1-10
Davis Bay (Cheney Bay)	Entire Bay	SA	6/1/56	21-35-1-11
Turner Creek	From source to Davis Bay	SA	6/1/56	21-35-1-11-1
The Straits	From Core Sound to North River	SA	6/1/56	21-35-1-12
Sleepy Creek	From source to The Straits	SA	6/1/56	21-35-1-12-1
Whitehurst Creek	From source to The Straits	SA	6/1/56	21-35-1-12-2
Westmouth Bay	Entire Bay	SA	6/1/56	21-35-1-12-3
Henry Jones Creek	From source to Westmouth Bay	SA	6/1/56	21-35-1-12-3-1
Janes Creek	From source to The Straits	SA	6/1/56	21-35-1-12-4
Brooks Creek	From source to North River	SA	6/1/56	21-35-1-13
Whale Creek	From source to Back Sound	SA	6/1/56	21-35-2
Cabs Creek	From source to Back Sound	SA	6/1/56	21-35-3
Bald Hill Bay	Entire Bay	SA	6/1/56	21-35-4

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Name of Stream	Description	Classification Class	Classification Date	Index No.
Johnson Bay	Entire Bay	SA	6/1/56	21-35-5
Blinds Hammock Bay	Entire Bay	SA	6/1/56	21-35-6
The Ditch	From Lighthouse Bay to Blinds Hammock Bay	SA	6/1/56	21-35-6-1
Core Sound	From northern boundary of White Oak River Basin (a line from Hall Point to Drum Inlet) to Back Sound	SA	6/1/56	21-35-7
Point of Grass Creek	From source to Core Sound	SA	6/1/56	21-35-7-1
Atlantic Harbor Restricted Area	The waters included within a line running 800 yards south from Steep Point toward Flashing Light #24, thence in a northeasterly direction to a point 800 yards due south of White Point, and thence to White Point on the shore.	SC	6/1/56	21-35-7-2
Little Port Branch	From source to Atlantic Harbor Restricted Area, Core Sound	SC	6/1/56	21-35-7-2-1
Styron Bay	Entire Bay	SA	6/1/56	21-35-7-3
Glover Creek	From source to Styron Bay	SA	6/1/56	21-35-7-3-1
Annis Run	From source to Styron Bay	SA	6/1/56	21-35-7-3-2
Styron Creek	From source to Styron Bay	SA	6/1/56	21-35-7-3-3
Cedar Creek	From source to Styron Creek	SA	6/1/56	21-35-7-3-3-1
Nigger Creek	From source to Core Sound	SA	6/1/56	21-35-7-4
Horsepen Creek	From source to Core Sound	SA	6/1/56	21-35-7-5
Sheep Pen Creek	From source to Core Sound	SA	6/1/56	21-35-7-6
Gutter Creek	From source to Core Sound	SA	6/1/56	21-35-7-7
Cedar Inlet	From Old Channel to Core Sound	SA	6/1/56	21-35-7-8
Old Channel	From Core Sound to Cedar Inlet	SA	6/1/56	21-35-7-8-1
Yaupon Hammock Gut	Entire Gut	SA	6/1/56	21-35-7-9
Nelson Bay	From mouth of Salters Creek to a line extending from mouth of Broad Creek due east across Nelson Bay	SC	6/1/56	21-35-7-10-(1)
Salters Creek	From source to Nelson Bay	SC	6/1/56	21-35-7-10-2
Mingo Creek	From source to Nelson Bay	SC	6/1/56	21-35-7-10-3
Broad Creek	From source to Nelson Bay	SC	6/1/56	21-35-7-10-4
Nelson Bay	From a line extending from mouth of Broad Creek due east across Nelson Bay to Core Sound	SA	6/1/56	21-35-7-10-(5)
Lewis Creek	From source to Nelson Bay	SA	6/1/56	21-35-7-10-6
Pasture Creek	From source to Nelson Bay	SA	6/1/56	21-35-7-10-7
Willis Creek	From source to Core Sound	SA	6/1/56	21-35-7-11
Fulchers Creek	From source to Core Sound	SA	6/1/56	21-35-7-12
Brett Bay	Entire Bay	SA	6/1/56	21-35-7-13
Maria Creek	From source to Brett Bay	SA	6/1/56	21-35-7-13-1
Fork Creek	From source to Brett Bay	SA	6/1/56	21-35-7-13-2
Head of the Hold	Entire Bay	SA	6/1/56	21-35-7-14
The Swash	Entire Bay	SA	6/1/56	21-35-7-15
Great Island Creek	From source to Core Sound	SA	6/1/56	21-35-7-16
Horse Island Creek	From source to Great Island Creek	SA	6/1/56	21-35-7-16-1
Fortin Bay	Entire Bay	SA	6/1/56	21-35-7-17
Oyster Creek	From source to Core Sound	SA	6/1/56	21-35-7-18
Great Island Bay	Entire Bay	SA	6/1/56	21-35-7-19
Johnson Creek	From source to Core Sound	SA	6/1/56	21-35-7-20
Spit Bay	Entire Bay	SA	6/1/56	21-35-7-21
Jarrett Bay	Entire Bay	SA	6/1/56	21-35-7-22
Smyrna Creek	From source to Jarrett Bay	SA	6/1/56	21-35-7-22-1
Ditch Cove	From source to Jarrett Bay	SA	6/1/56	21-35-7-22-2
Broad Creek	From source to Jarrett Bay	SA	6/1/56	21-35-7-22-3
Great Creek	From source to Jarrett Bay	SA	6/1/56	21-35-7-22-4
Howland Creek	From source to Jarrett Bay	SA	6/1/56	21-35-7-22-5

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Name of Stream	Description	Classification Class	Classification Date	Index No.
Williston Creek	From source to Jarrett Bay	SA	6/1/56	21-35-7-22-6
Wade Creek	From source to Jarrett Bay	SA	6/1/56	21-35-7-22-7
Jump Run	From source to Core Sound	SA	6/1/56	21-35-7-23
Middens Creek	From source to Core Sound	SA	6/1/56	21-35-7-24
Tush Creek	From source to Core Sound	SA	6/1/56	21-35-7-25
Great Marsh Creek	From source to Core Sound	SA	6/1/56	21-35-7-26
Deer Pond	Entire pond	SA	6/1/56	21-35-7-27
Horsepen Creek	From source to Core Sound	SA	6/1/56	21-35-7-28
Lewis Creek	From source to Core Sound	SA	6/1/56	21-35-7-29
Zack Creek	From source to Core Sound	SA	6/1/56	21-35-7-30
Mullet Cove	Entire cove	SA	6/1/56	21-35-7-31
Sheep Pen Creek	From source to Core Sound	SA	6/1/56	21-35-7-32
Codds Creek	From source to Core Sound	SA	6/1/56	21-35-7-33
Try Yard Creek	From source to Codds Creek	SA	6/1/56	21-35-7-33-1
Hogpen Bay	Entire Bay	SA	6/1/56	21-35-7-34
Caggs Creek	From source to Hogpen Bay	SA	6/1/56	21-35-7-34-1
Rawson Creek	From source to Core Sound	SA	6/1/56	21-35-7-35
Iron Creek	From source to Core Sound	SA	6/1/56	21-35-7-36
Lighthouse Bay	Entire Bay	SA	6/1/56	21-35-7-37
Barden Inlet	From Atlantic Ocean to Core Sound	SA	6/1/56	21-35-7-38
Atlantic Ocean	The waters of the Atlantic Ocean contiguous to that portion of the White Oak River Basin that extends from the northern boundary of White Oak River Basin (southwest side of Drum Inlet) to the southern boundary of White Oak River Basin (northern boundary of Cape Fear River Basin at the southwest side of the mouth of Goose Bay in the Intracoastal Waterway.	SB	7/1/73	99-(4)

Reference Material to Regulation 15 NCAC 2B .0312; White Oak River Basin, entitled CLASSIFICATIONS AND WATER QUALITY STANDARDS ASSIGNED TO THE WATERS OF THE WHITE OAK RIVER BASIN, has been amended effective ~~12-13-79~~ as follows:

Name of Stream	Description	Class	Index No
White Oak River (Formerly a portion of the Restricted Area)	That portion of White Oak River from the east end of Swansboro Bridge (N.C.Hwy. 24), thus in a northerly direction to southern tip of island just off Mt. Pleasant, thus to Mt. Pleasant, thence along the shore line to the west end of Swansboro Bridge, thence across bridge to east end.	SA	20-32
Newport River (Formerly a portion of the restricted area)	All waters within a line extending across Newport River from a point of land on north side of Calico Creek to Gallant Point and following shore line to Lennoxville Point, thence in a southwesterly direction to Shackleford Point, thence across mouth of Beaufort Inlet to a point of land at western side of Beaufort Inlet, thence following the Morehead City Channel in Intracoastal Waterway to Channel Marker #21, thence westerly to a Flashing Light due south of 17th St., thence north to foot of 17th St., thence following shore line around Morehead City to point of land on north side of mouth of Calico Creek, excluding Taylor, Calico, and Town Creeks, and the area which is described below will remain Class SC.	SA	21-(31)

	(The mouth of Calico Creek is defined as beginning at a point of land on the north shore at Lat. 34° 43' 46", Long. 76° 43' 07", thence across the creek in a straight line to a point of land on the south shore at Lat. 34° 43' 36", Long. 76° 43' 05". The mouth of Town Creek is defined as beginning at a point of land on the north shore at Lat. 34° 43' 41", Long. 76° 40' 04", thence across the creek in a straight line to a point of land on the south shore at Lat. 34° 43' 23", Long. 76° 40' 04". The mouth of Taylor Creek is defined as beginning at a point of land on the north shore at Lat. 34° 43' 07", Long. 76° 40' 13", thence across the creek in a straight line to a point of land on the south shore at Lat. 34° 42' 55", Long. 76° 40' 10".)		
Newport River (Morehead City Harbor restricted area)	All waters within a line beginning at a point of land near the south end of 11th Street in Morehead City at Lat. 34° 43' 08", Long. 76° 43' 04"; thence in straight line to the western end of Sugarloaf Island; thence along the north shore of the Island to the eastern end of the Island; thence in a straight line to Channel Marker C "1" near the western end of the Turning Basin; thence in a straight line to a point in the Turning Basin at Lat. 34° 42' 50", Long.76° 41' 36"; thence in a northerly direction to a point in Intracoastal Waterway at Lat. 34° 43' 25", Long. 76° 41' 40" adjacent to the channel leading to Morehead City Yacht Basin; thence in a straight line in a westerly direction to a point of land on the Morehead City Mainland at Lat. 34° 43' 23", Long. 76° 42' 24".	SC	21-(31)

CLASSIFICATIONS AND WATER QUALITY STANDARDS
ASSIGNED TO
THE WATERS OF THE PASQUOTANK RIVER BASIN

Name of Stream	Description	Classification Class	Classification Date	Index No.
ALBEMARLE SOUND	All waters south and east of a line running in a southerly direction from Horniblow Point on the north shore of Albemarle Sound to a point of land on the south side of the mouth of Black Walnut Swamp, thence in a southerly direction to a point of land on east side of mouth of Roanoke River.	SB	7/1/73	30
Currituck Sound	From source to Wright Memorial Bridge at Albemarle Sound	SC	4/6/61	30-1
Knotts Island Bay	That portion within North Carolina	SC	4/6/61	30-1-1
Knotts Island Channel	From North Carolina-Virginia State Line to Knotts Island Bay	SC	4/6/61	30-1-1-1
Capsies Creek	From source to North Carolina-Virginia State Line	SC	4/6/61	30-1-1-1-1
Porpoise Slough	From source to North Carolina-Virginia State Line	SC	4/6/61	30-1-1-1-2
North Landing River	From North Carolina-Virginia State Line to Currituck Sound	SC	4/6/61	30-1-2
Bellows Bay	Entire Bay	SC	4/6/61	30-1-3
Nigger Bay	Entire Bay	SC	4/6/61	30-1-4
South Channel	Entire Channel	SC	4/6/61	30-1-5
Coinjock Bay	Entire Bay	SC	4/6/61	30-1-6
Piney Island Bay	Entire Bay	SC	4/6/61	30-1-6-1
Cedar Island Bay	Entire Bay	SC	4/6/61	30-1-6-2
Cedar Bay	Entire Bay	SC	4/6/61	30-1-6-3
Ships Bay	Entire Bay	SC	4/6/61	30-1-7
Raccoon Bay	Entire Bay	SC	4/6/61	30-1-8
Whale Head Bay	Entire Bay	SC	4/6/61	30-1-9
Parker Creek	From source to Currituck Sound	SC	4/6/61	30-1-10
Sanders Bay	Entire Bay	SC	4/6/61	30-1-11
Wells Bay	Entire Bay	SC	4/6/61	30-1-12
Beasley Bay	Entire Bay	SC	4/6/61	30-1-13
Neals Creek	From source to Currituck Sound	SC	4/6/61	30-1-14
Poplar Branch Bay	Entire Bay	SC	4/6/61	30-1-15
Webster Creek	From source to Currituck Sound	SC	4/6/61	30-1-16
Jean Guite Creek	From source to Currituck Sound	SC	4/6/61	30-1-17
Hog Quarter Creek	From source to Currituck Sound	SC	4/6/61	30-1-18
North River	From source to Albemarle Sound	SC	4/6/61	30-2
Taylor Bay	Entire Bay	SC	4/6/61	30-2-5
Intracoastal Waterway	From Coinjock Bay to Taylor Bay	SC	4/6/61	30-2-5-1
Bump Landing Creek	From source to Taylor Bay	SC	4/6/61	30-2-5-2
Narrow Bridge Creek	From source to North River	SC	4/6/61	30-2-6
Great Creek	From source to North River	SC	4/6/61	30-2-7
Deep Creek	From source to North River	SC	4/6/61	30-2-8
Goose Pond	From source to North River	SC	4/6/61	30-2-9
Hunting Creek	From source to North River	SC	4/6/61	30-2-10
Lutz Creek	From source to North River	SC	4/6/61	30-2-11
Barnette Creek	From source to North River	SC	4/6/61	30-2-12
Duck Creek	From source to North River	SC	4/6/61	30-2-13
Broad Creek	From source to North River	SC	4/6/61	30-2-14
Little Broad Creek	From source to North River	SC	4/6/61	30-2-15
Pasquotank River	From Norfolk-Southern Railroad Bridge to a line across the River from Hospital Point to Cobb Point	SC	4/6/61	30-3-(7)
Pasquotank River	From a line across River from Hospital Point to Cobb Point to a line across River from Miller Point to Pool Point	SB	4/6/61	30-3-(12)
Areneuse Creek	From source to N.C. Highway #343	C Sw	9/1/74	30-3-13-(1)
Areneuse Creek	From N.C. Highway #343 to Pasquotank River	SB	4/6/61	30-3-13-(2)

Name of Stream	Description	Classification Class	Date	Index No.
Mill Dam Creek	From N.C. Highway #343 to Areneuse Creek	SB	4/6/61	30-3-13-3-(2)
Pasquotank River	From a line across the River from Miller Point to Pool Point to Albemarle	SC	4/6/61	30-3-(15)
New Begun Creek	From mouth of Wilson Creek to Pasquotank River	SC	4/6/61	30-3-16-(2)
Little Flatty Creek	From source to Pasquotank River	SC	4/6/61	30-3-18
Big Flatty Creek	From source to Albemarle Sound	SC	4/6/61	30-4
Chapel Creek	From Pasquotank County SR 1103 to Big Flatty Creek	SC	4/6/61	30-4-1-(2
Dam Creek	From source to Big Flatty Creek	SC	4/6/61	30-4-2
Little River	From mouth of Halls Creek to Albemarle Sound	SC	4/6/61	30-5-(2)
Deep Creek	From source to Little River	SC	4/6/61	30-5-4
Swamp Creek (Symonds Creek)	From N.C. Highway #170 to Little River	SC	4/6/61	30-5-5-(2)
Perquimans River	From Norfolk-Southern Railroad Bridge to a line across the River from Barrow Point to Ferry Point	SC	4/6/61	30-6-(3)
Mill Creek	From Perquimans County SR 1214 near Windfall to Perquimans River	SC	4/6/61	30-6-5-(2)
Raccoon Creek	From Perquimans County SR 1336 (Harvey Neck Bridge) to Perquimans River	SC	4/6/61	30-6-6-(3)
Perquimans River	From a line across the River from Barrow Point to Ferry Point to Albemarle Sound	SB	4/6/61	30-6-(7)
Sutton Creek	From a point 1.0 mile above Perquimans River to Perquimans River	SC	4/6/61	30-6-8-(2)
Canaan Cove Creek	From its narrows to Perquimans River	SC	4/6/61	30-6-9-(2)
Muddy Creek	From source to Perquimans River	SC	4/6/61	30-6-10
Minzies Creek (Minns Cr.)	From source to Albemarle Sound	SC	4/6/61	30-7
Yeopim River	From source to Albemarle Sound	SC	4/6/61	30-8
Yeopim Creek	From a point 2.0 miles above Yeopim River to Yeopim River	SC	4/6/61	30-8-4-(2)
Kendrick Creek (Mackeys Creek)	From U.S. Hwy. 64 at Roper to Albemarle Sound	SC	7/1/73	30-9-(2)
Bull Bay	Entire Bay	SB	7/1/73	30-14
Scuppernong River	From mouth of Riders Creek (First Creek) to Bull Bay	SC	4/6/61	30-14-4-(9)
Alligator River	From mouth of Northwest Fork to Albemarle Sound	SC Sw	4/6/61	30-16-(7)
Scouts Bay	Entire Bay	SC Sw	4/6/61	30-16-9
Gum Neck Creek	From source to Alligator River	SC Sw	4/6/61	30-16-10
Georgia Bay	Entire Bay	SC Sw	4/6/61	30-16-11
Intracoastal Waterway (Pungo River-Alligator River Canal)	From Currituck-Fairfield Township line to Alligator River	SC Sw	4/6/61	30-16-12
Winn Bay	Entire Bay	SC Sw	4/6/61	30-16-13
Stumpy Creek Bay	Entire Bay	SC Sw	4/6/61	30-16-14
Grapevine Bay	Entire Bay	SC Sw	4/6/61	30-16-17
Rattlesnake Bay	Entire Bay	SC Sw	4/6/61	30-16-17-1
The Straits	From source to Alligator River	SC Sw	4/6/61	30-16-18
The Frying Pan	From source to The Straits	SC Sw	4/6/61	30-16-18-1
Coopers Creek	From source to The Frying Pan	SC Sw	4/6/61	30-16-18-1-1
Basnight Canal	From source to The Frying Pan	C Sw	9/1/74	30-16-18-1-2
Babbitt Bay	Entire Bay	SC Sw	4/6/61	30-16-18-1-3
Milltail Creek	From source to Alligator River	SC Sw	4/6/61	30-16-20
Boat Bay	Entire Bay	SC Sw	4/6/61	30-16-20-1

Name of Stream	Description	Classification Class	Classification Date	Index No.
Deer Creek	From source to South Lake	SC Sw	4/6/61	30-16-23-2-3
Deep Bay	Entire Bay	SC Sw	4/6/61	30-16-23-2-4
Broad Creek	From source to South Lake	SC Sw	4/6/61	30-16-23-2-5
Tom Mann Creek	From source to Albemarle Sound	SC	4/6/61	30-17
Peter Mashoes Creek	From source to Albemarle Sound	SC	4/6/61	30-18
Gar Gut (Davis Pond)	From source to Peter Mashoes Creek	SC	4/6/61	30-18-1
Spence Creek	From source to Peter Mashoes Creek	SC	4/6/61	30-18-2
Poster Gut	From source to Spence Creek	SC	4/6/61	30-18-2-1
Kitty Hawk Bay	Entire Bay	SC	4/6/61	30-19
Colington Creek	From Kill Devil Hills Bridge north to Kitty Hawk Bay	SC	4/6/61	30-19-1
Croatan Sound	From a line running from a point of land on the southern side of mouth of Peter Mashoes Creek on Dare County	SC	4/6/61	30-20-(1)
Second Creek	From source to Alligator River	SC Sw	4/6/61	30-16-21
Little Alligator River	From source to Alligator River	SC Sw	4/6/61	30-16-22
Goose Pond	Entire Pond	SC Sw	4/6/61	30-16-22-1
East Lake	Entire Lake	SC Sw	4/6/61	30-16-23
The Frying Pan	From source to East Lake	SC Sw	4/6/61	30-16-23-1
South Lake	From source to East Lake	SC Sw	4/6/61	30-16-23-2
Northeast Prong South Lake	From source to South Lake	SC Sw	4/6/61	30-16-23-2-1
Liehue Gut	From source to Northeast Prong South Lake	SC Sw	4/6/61	30-16-23-2-1-1
Hooker Gut	From source to South Lake	SC Sw	4/6/61	30-16-23-2-2
	mainland to Northwest Point on Roanoke Island to William B. Umstead Memorial Bridge			
Croatan Sound	From William B. Umstead Memorial Bridge to a line running from a point of land just below Long Wretch Creek on Dare County mainland to the Southern tip of Smith Island south of Roanoke Island	SA	4/6/61	30-20-(2)
Spencer Creek	From source to Croatan Sound	SA	4/6/61	30-20-3
Unnamed Canal at Manns Harbor	From source to Spencer Creek	SC	4/6/61	30-20-3-1
Callaghan Creek	From source to Croatan Sound	SA	4/6/61	30-20-4
Baum Creek	From source to Croatan Sound	SA	4/6/61	30-20-5
Oyster Creek	From source to Croatan Sound	SA	4/6/61	30-20-6
Cedar Bush Bay	Entire Bay	SA	4/6/61	30-20-7
Cut Through	Entire Area of the Cut Through	SA	4/6/61	30-20-8
Hog I Creek	Entire Creek	SA	4/6/61	30-20-9
Long Wretch Creek	From source to Croatan Sound	SA	4/6/61	30-20-10
Smith Creek	Entire Creek	SA	4/6/61	30-20-11
Roanoke Sound	From a line running from Northwest Point on Roanoke Island northward to Rhodoms Point on Colington Island, thence a line running eastward through Wright Memorial Monument, to a line running from the southern tip of Smith Island south of Roanoke Island to southern tip of Bodie Island at North Point.	SA	7/1/73	30-21
Buzzard Bay	Entire Bay	SC	4/6/61	30-21-1
Colington Creek	From Kill Devil Hills Bridge south to Buzzard Bay	SC	4/6/61	30-21-1-1
Otis Cove	Entire Bay	SC	4/6/61	30-21-2
Shallowbag Bay	Entire Bay	SC	4/6/61	30-21-3
Scarboro Creek	From source to Shallowbag Bay	SC	4/6/61	30-21-3-1
Doughs Creek	From source to Shallowbag Bay	SC	4/6/61	30-21-3-2
Pond Island	The waters surrounding the Island within 1,000 feet from shore	SC	4/6/61	30-21-4
Johns Creek	From source to Roanoke Sound	SA	4/6/61	30-21-5
Sand Beach Creek	From source to Johns Creek	SA	4/6/61	30-21-5-1

Name of Stream	Description	Classification Class	Classification Date	Index No.
Rockhall Creek	Entire Creek	SA	4/6/61	30-21-6
Broad Creek	From source to Roanoke Sound	SA	4/6/61	30-21-7
Mill Creek	From source to Roanoke Sound	SC	4/6/61	30-21-8
Oyster Creek	Entire Creek	SA	4/6/61	30-21-9
Georges Creek	From source to Roanoke Sound	SA	4/6/61	30-21-10
Lighthouse Bay	Entire Bay	SA	4/6/61	30-21-11
Blossie Creek	Entire Creek	SA	4/6/61	30-21-12
Motts Creek	From source to Roanoke Sound	SC	4/6/61	30-21-13
Pamlico Sound	From Croatan and Roanoke Sounds to a line running from Sandy Point south of Stumpy Point Bay to the northeast tip of Ocracoke Island	SA	4/6/61	30-22
Oregon Inlet	Entire Inlet	SA	4/6/61	30-22-1
Eagle Nest Bay	Entire Bay	SA	4/6/61	30-22-2
Goat Island Bay	Entire Bay	SA	4/6/61	30-22-3
The Trench	From source to Pamlico Sound	SA	4/6/61	30-22-4
Pea Island Creek	Entire Creek	SA	4/6/61	30-22-5
Pea Island Bay	Entire Bay	SA	4/6/61	30-22-6
Terrapin Creek Bay	Entire Bay	SA	4/6/61	30-22-7
Terrapin Creek	From source to Terrapin Creek Bay	SA	4/6/61	30-22-7-1
Stumpy Point Bay	Entire Bay	SA	4/6/61	30-22-8
Beach Slue	Entire area of Beach Slue	SA	4/6/61	30-22-9
Wreck Creek	Entire Creek	SA	4/6/61	30-22-10
Round Hammock Bay	Entire Bay	SA	4/6/61	30-22-11
Pauls Ditch	From source to Pamlico Sound	SA	4/6/61	30-22-12
Blackmar Gut	From source to Pamlico Sound	SA	4/6/61	30-22-13
North Drain	From source to Pamlico Sound	SA	4/6/61	30-22-14
Midgett Cove	From source to Pamlico Sound	SA	4/6/61	30-22-15
Clarks Bay	Entire Bay	SA	4/6/61	30-22-16
No Ache Bay	Entire Bay	SA	4/6/61	30-22-17
Gull Island Bay	Entire Bay	SA	4/6/61	30-22-18
Phipps Cove	From source to Pamlico Sound	SA	4/6/61	30-22-19
The Drain	From source to Pamlico Sound	SA	4/6/61	30-22-20
Spencer Creek	From source to Pamlico Sound	SA	4/6/61	30-22-21
Mill Creek	From source to Pamlico Sound	SA	4/6/61	30-22-22
Peters Ditch	From source to Pamlico Sound	SA	4/6/61	30-22-23
Askins Creek	From source to Pamlico Sound	SA	4/6/61	30-22-24
Boat Creek	From source to Pamlico Sound	SA	4/6/61	30-22-25
Long Point Creek	From source to Pamlico Sound	SA	4/6/61	30-22-26
Cape Creek	From source to Pamlico Sound	SA	4/6161	30-22-27
Brooks Creek	From source to Pamlico Sound	SA	4/6/61	30-22-28
Joe Saur Creek	From source to Pamlico Sound	SA	4/6/61	30-22-29
Sandy Bay	Entire Bay	SA	4/6/61	30-22-30
The Slash	From source to Sandy Bay	SA	4/6/61	30-22-30-1
Duck Ponds and Isaac Pond	Entire ponds and connecting streams to The Slash	SA	4/6/61	30-22-30-1-1
Austin Creek (Clubhouse Creek)	From source to Pamlico Sound	SA	4/6/61	30-22-31
Goose Creek	From source to Pamlico Sound	SA	4/6/61	30-22-32
Hatteras Inlet	Entire Inlet	SA	4/6/61	30-22-33
Atlantic Ocean	The waters of the Atlantic Ocean contiguous to that portion of Pasquotank River Basin that extends from the North Carolina-Virginia State Line to the northeast tip of Ocracoke Island.	SB	4/6/61	99-(7)

(1) Fecal Coliform Exception. These waters are not considered satisfactory for boating or wading.

CLASSIFICATIONS AND WATER QUALITY STANDARDS

ASSIGNED TO

THE WATERS OF THE TAR-PAMLICO RIVER BASIN

Name of Stream	Description	Classification Class	Classification Date	Index No.
PAMLICO RIVER	From U.S. Hwy. 17 bridge (mouth of Tar River) at Washington to a line projected from the downstream Corporate Limit Line of the Town of Washington Park in a southwesterly direction across Pamlico River to a Point of Land 800 yards downstream from Rodman Point	SC	6/6/62	29-(1)
Runyon Creek	From U.S. Hwy. 264 to Pamlico River	SC	6/6/62	29-3-(2)
Rodman Creek	From a point one-half mile above mouth to Pamlico River	SC	6/6/62	29-4-(2)
PAMLICO RIVER	From a line projected from the downstream Corporate Limit Line of the Town of Washington Park in a southwesterly direction across Pamlico River to a Point of Land 800 yards downstream from Rodman Point to a line across Pamlico River from Cousin Point to Hickory Point	SB	6/6/62	29-(5)
Chocowinity Bay	From source to a line across the Bay from the upstream mouth of Cedar Creek to the upstream mouth of Silas Creek	SC	6/6/62	29-6-(1)
Crawford Creek	From source to Chocowinity Bay	SC	6/6/62	29-6-2
Chocowinity Creek	From N.C. Hwy. 33 to Crawford Creek	SC	6/6/62	29-6-2-1-(8)
Taylor Creek	From source to Chocowinity Bay	SC	6/6/62	29-6-3
Sidney Creek	From source to Chocowinity Bay	SC	6/6/62	29-6-4
Chocowinity Bay	From a line across the Bay from the upstream mouth of Cedar Creek to the upstream mouth of Silas Creek to Pamlico River	SB	6/6/62	29-6-(5)
Cedar Creek	From source to Chocowinity Bay	SC	6/6/62	29-6-6
Silas Creek	From a point one-quarter mile above mouth to Chocowinity Bay	SC	6/6/62	29-6-7-(2)
Hills Creek	From source to Pamlico River	SC	6/6/62	29-8
Blounts Bay (inside a line from Hill Point to Mauls Point)	From source to Pamlico River	SB	7/1/73	29-9
Blounts Creek	From Herring Run to Blounts Bay	SC	6/6/62	29-9-1-(3)
Alligator Gut	From source to Blounts Creek	SC	6/6/62	29-9-1-9
Yeats Creek	From a point 1.0 mile above mouth to Blounts Creek	SC	6/6/62	29-9-1-10-(2)
Dupree Creek	From source to Yeats Creek	SC	6/6/62	29-9-1-10-3
Martin Gut	From source to Blounts Bay	SC	6/6/62	29-9-2
Taylor Gut	From source to Blounts Bay	SC	6/6/62	29-9-3
Broad Creek	From a point 1.0 mile above Beaufort County SR 1325 to Pamlico River	SB	9/1/74	29-10-(3)
Little Goose Creek	From a point 0.5 mile below Beaufort County SR 1334 to Pamlico River	SC	6/6/62	29-11-(2)
Flatty Creek	From source to Little Goose Creek	SC	6/6/62	29-11-4
Nevil Creek	From a point 0.5 mile below Beaufort County SR 1100 to Pamlico River	SC	6/6/62	29-12-(2)
Jack Creek	From a point three-fourths mile above mouth to Nevil Creek	SC	6/6/62	29-12-4-(2)
Mallard Creek	From a point three-fourths mile below Beaufort County SR 1334 to Pamlico River	SC	6/6/62	29-13-(2)
Great Gut	From source to Pamlico River	SC	6/6/62	29-14

Name of Stream	Description	Classification Class	Classification Date	Index No.
Duck Creek	From unnamed tributary 1.3 miles above mouth to Pamlico River	SC	6/6/62	29-16-(2)
Barris Creek	From Mill Gut to Pamlico River	SC	6/6/62	29-18-(2)
Bath Creek	From source to a line across Bath Creek from the upstream side of mouth of Glebe Creek to Handys Point	SC	6/6/62	29-19-(1)
Tankard Creek	From U.S. Hwy. 264 to Bath Creek	SC	6/6/62	29-19-3-(2)
Harvey Creek	From Beaufort County SR 1339 to Bath Creek	SC	6/6/62	29-19-4-(2)
Boyd Creek	From unnamed tributary 0.5 mile above mouth to Bath Creek	SC	6/6/62	29-19-5-(2)
Adams Creek	From source to Bath Creek	SC	6/6/62	29-19-6
Bath Creek	From a line across Bath Creek from the upstream side of mouth of Glebe Creek to Handys Point to Pamlico River	SB	9/1/74	29-19-(7)
Glebe Creek	From source to Bath Creek	SC	6/6/62	29-19-8
Back Creek	From source to Carter Creek	SC	6/6/62	29-19-9-(1)
Back Creek	From Carter Creek to Bath Creek	SB	9/1/74	29-19-9-(2)
Carter Creek	From source to Back Creek	SC	6/6/62	29-19-9-3
Slade Gut	From source to Back Creek	SC	6/6/62	29-19-9-4
Cradle Gut	From source to Bath Creek	SC	6/6/62	29-19-10
Plum Point Gut	From source to Bath Creek	SC	6/6/62	29-19-11
Archbell Gut	From source to Bath Creek	SC	6/6/62	29-19-12
Teachs Gut	From source to Bath Creek	SC	6/6/62	29-19-13
Mill Gut	From source to Pamlico River	SB	6/6/62	29-20
Durham Creek	From a point 2.0 miles upstream from Tan Swamp to Pamlico River	SC	6/6/62	29-21-(2)
Crawford Mill Run	From a point 0.5 mile above mouth to Durham Creek	SC	6/6/62	29-21-4-(2)
Brown Run	From source to Durham Creek	SC	6/6/62	29-21-5
Porter Creek	From Beaufort County SR 1946 (near junction with Beaufort County SR 1936) to Durham Creek	SC	6/6/62	29-21-6-(2)
Gar Gut	From source to Pamlico River	SB	6/6/62	29-22
Mixon Creek	From source to Pamlico River	SC	6/6/62	29-23
Gaylord Bay	Entire Bay	SC	6/6/62	29-24
Huddy Gut	From source to Pamlico River	SC	6/6/62	29-25
Saint Clair Creek	From N.C. Hwy. 92 to Pamlico River	SC	6/6/62	29-26-(2)
PAMLICO RIVER AND PAMLICO SOUND	From a line across Pamlico River from Cousin Point to Hickory Point to Pamlico Sound and Pamlico Sound within a line beginning at Sandy Point and extending southerly to northeast tip of Ocracoke Island, thence along the Ocean Side of Ocracoke Island to its southwest tip, thence northwesterly to Little Propoise Point	SA	6/6/62	29-(27)
South Creek	From a point three-fourths mile downstream from Beaufort County SR 1924 to Pamlico River	SA	6/6/62	29-28-(4)
Bailey Creek	From Atlantic Coast Line Railroad to South Creek	SA	6/6/62	29-28-6-(2)
Whitehurst Creek	From Beaufort County SR 1940 to South Creek	SA	6/6/62	29-28-7-(2)
Little Creek	From a point three-fourths mile above mouth to South Creek	SA	6/6/62	29-28-9-(2)
Jacobs Creek	From a point 0.5 mile above mouth to South Creek	SA	6/6/62	29-28-10-(2)
Drinkwater Creek	From a point 0.5 mile above mouth to Jacobs Creek	SA	6/6/62	29-28-10-3-(2)
Short Creek	From source to South Creek	SA	6/6/62	29-28-11

Name of Stream	Description	Class	Classification Date	Index No.
Tooley Creek	From a point 0.5 mile below Beaufort County SR 1945 to South Creek	SA	6/6/62	29-28-12-(2)
Long Creek	From a point 1.5 miles above mouth to South Creek	SA	6/6/62	29-28-13-(2)
Schooner Creek	From source to South Creek	SA	6/6/62	29-28-14
Bond Creek	From Beaufort County SR 1912 to South Creek	SA	6/6/62	29-28-15-(2)
Alligator Gut	From source to Bond Creek	SA	6/6/62	29-28-15-3
Flannigan Gut	From source to Bond Creek	SA	6/6/62	29-28-15-4
Muddy Creek	From Beaufort County SR 1912 to Bond Creek	SA	6/6/62	29-28-15-5-(2)
Robin Gut	From source to Muddy Creek	SA	6/6/62	29-28-15-5-3
Wilson Gut	From source to Muddy Creek	SA	6/6/62	29-28-15-5-4
Sheepskin Creek	From source to Muddy Creek	SA	6/6/62	29-28-15-5-5
North Creek	From Beaufort County SR 1722 at Ransomville to Pamlico River	SA	6/6/62	29-29-(2)
Garrett Gut	From source to North Creek	SA	6/6/62	29-29-4
East Fork North Creek	From source to North Creek	SA	6/6/62	29-29-5
Ross Creek	From source to East Fork North Creek	SA	6/6/62	29-29-5-1
Bailey Creek	From source to East Fork North Creek	SA	6/6/62	29-29-5-2
Frying Pan Creek	From source to North Creek	SA	6/6/62	29-29-6
Little Ease Creek	From source to North Creek	SA	6/6/62	29-29-7
Davis Creek	From source to Pamlico River	SA	6/6/62	29-30
Strawhorn Creek	From source to Pamlico River	SA	6/6/62	29-31
Cypress Branch	From source to Strawhorn Creek	SA	6/6/62	29-31-1
East Prong Cypress Branch	From source to Cypress Branch	SA	6/6/62	29-31-1-1
Reed Hammock Ditch	From source to Pamlico River	SA	6/6/62	29-32
Goose Creek	From source to Pamlico River	SA	6/6/62	29-33
Upper Spring Creek	From source to Goose Creek	SA	6/6/62	29-33-1
Intracoastal Waterway	From N.C. Hwy. 304 to Upper Spring Creek	SA	6/6/62	29-33-1-1
Hunting Creek	From source to Upper Spring Creek	SA	6/6/62	29-33-1-2
Cow Gallus Creek	From source to Upper Spring Creek	SA	6/6/62	29-33-1-3
Little Kernel Tree Branch	From source to Campbell Creek	SC	6/6/62	29-33-2-4
Big Kernel Tree Branch	From source to Campbell Creek	SC	6/6/62	29-33-2-5
Campbell Creek	From N.C. Hwy. 33 to Goose Creek	SA	6/6/62	29-33-2-(2)
Barnett Gut	From source to Campbell Creek	SC	6/6/62	29-33-2-7
Alligator Gut	From source to Campbell Creek	SC	6/6/62	29-33-2-8
Pate Creek	From source to Campbell Creek	SC	6/6/62	29-33-2-9
Dumplin Gut	From source to Campbell Creek	SC	6/6/62	29-33-2-10
Welshman Gut	From source to Campbell Creek	SC	6/6/62	29-33-2-11
Lee Creek	From source to Campbell Creek	SA	6/6/62	29-33-2-12
Carrie Creek	From source to Campbell Creek	SA	6/6/62	29-33-2-13
Smith Creek	From source to Campbell Creek	SA	6/6/62	29-33-2-14
Camphion Gut	From source to Campbell Creek	SA	6/6/62	29-33-2-15
Cuff Tarkiln Creek	From source to Campbell Creek	SA	6/6/62	29-33-2-16
Myrtle March Gut	From source to Campbell Creek	SA	6/6/62	29-33-2-17
Pasture Gut	From source to Campbell Creek	SA	6/6/62	29-33-2-18
Eastham Creek	From source to Goose Creek	SA	6/6/62	29-33-3
Alligator Creek	From source to Eastham Creek	SA	6/6/62	29-33-3-1
Long Creek	From source to Eastham Creek	SA	6/6/62	29-33-3-2
Slade Landing Creek	From source to Eastham Creek	SA	6/6/62	29-33-3-3
Mallard Creek	From source to Eastham Creek	SA	6/6/62	29-33-3-4
Otter Creek	From source to Eastham Creek	SA	6/6/62	29-33-3-5
Mud Gut	From source to Goose Creek	SA	6/6/62	29-33-4
Sand Beach Creek	From source to Goose Creek	SA	6/6/62	29-33-5
Snode Creek	From source to Goose Creek	SA	6/6/62	29-33-6
Neezar Gut	From source to Snode Creek	SA	6/6/62	29-33-6-1
Tetterton Gut	From source to Snode Creek	SA	6/6/62	29-33-6-2
Big Pond Gut	From source to Snode Creek	SA	6/6/62	29-33-6-3
Schoolhouse Gut	From source to Snode Creek	SA	6/6/62	29-33-6-4
Northeast Prong	From source to Snode Creek	SA	6/6/62	29-33-6-5
Facing Gut	From source to Snode Creek	SA	6/6/62	29-33-6-6
Wilkerson Creek	From source to Goose Creek	SA	6/6/62	29-33-7
Peterson Creek	From source to Goose Creek	SA	6/6/62	29-33-8
Paton Creek	From source to Goose Creek	SA	6/6/62	29-33-9
Dixon Creek	From source to Goose Creek	SA	6/6/62	29-33-10
Big Marsh Gut	From source to Dixon Creek	SA	6/6/62	29-33-10-1

Name of Stream	Description	Classification Class	Classification Date	Index No.
Convoy Gut	From source to Dixon Creek	SA	6/6/62	29-33-10-2
Lower Spring Creek	From source to Goose Creek	SA	6/6/62	29-33-11
Pitch Hole Gut	From source to Lower Spring Creek	SA	6/6/62	29-33-11-1
Persimmon Tree Landing Gut	From source to Lower Spring Creek	SA	6/6/62	29-33-11-2
Tar Landing Gut	From source to Lower Spring Creek	SA	6/6/62	29-33-11-3
Gray Gut	From source to Lower Spring Creek	SA	6/6/62	29-33-11-4
Mill Creek	From source to Lower Spring Creek	SA	6/6/62	29-33-11-5
Betty Creek	From source to Lower Spring Creek	SA	6/6/62	29-33-11-6
Overton Creek	From source to Lower Spring Creek	SA	6/6/62	29-33-11-7
Old House Cove	From source to Lower Spring Creek	SA	6/6/62	29-33-11-8
Hatter Creek	From source to Goose Creek	SA	6/6/62	29-33-12
Pungo River	From Shallop Creek to U.S. Hwy. 264 at Leechville	SC	6/6/62	29-34-(5)
Cow Gut	From source to Pungo River	SC	6/6/62	29-34-7
Lowes Ditch	From source to Pungo River	SC	6/6/62	29-34-8
Herring Run	From source to Pungo River	SC	6/6/62	29-34-9
Knights Creek	From source to Pungo River	SC	6/6/62	29-34-10
Clark Mill Creek	From a point 0.5 mile above Hyde County SR 1300 to Pungo River	SC	6/6/62	29-34-11-(2)
Pungo River	From U.S. Hwy. 264 at Leechville to a line across Pungo River from Woodstock Point to Quilley Point	SB	9/1/74	29-34-(12)
Crabtree Bay	Entire Bay	SC	6/6/62	29-34-13
Mount Olive Creek	From source to Crabtree Bay	SC	6/6/62	29-34-13-1
Russell Creek	From source to Crabtree Bay	SC	6/6/62	29-34-13-2
Sophie Island Creek	From source to Pungo River	SC	6/6/62	29-34-14
Styron Creek	From source to Sophie Island Creek	SC	6/6/62	29-34-14-1
Queen Creek	From source to Pungo River	SC	6/6/62	29-34-15
Back Landing Bay	Entire Bay	SC	6/6/62	29-34-16
Bateman Creek	From source to Pungo River	SC	6/6/62	29-34-17
Intracoastal Waterway (Pungo River-Alligator River Canal)	From Currituck-Fairfield Township Line to Pungo River	SC	6/6/62	29-34-18
Wilkerson Creek	From source to Intracoastal Waterway	SC	6/6/62	29-34-18-1
Rutman Creek	From source to Intracoastal Waterway	SC	6/6/62	29-34-18-2
Dip Creek	From source to Pungo River	SC	6/6/62	29-34-19
Poster Creek	From source to Pungo River	SC	6/6/62	29-34-20
Horse Island Creek	From source to Pungo River	SC	6/6/62	29-34-21
Galloway Creek	From source to Pungo River	SC	6/6/62	29-34-22
Tarklin Creek	From source to Pungo River	SC	6/6/62	29-34-23
Scranton Creek	From a point 1.0 mile upstream from U.S. Hwy. 264 to Pungo River	SC	6/6/62	29-34-24-(2)
Corkenson Creek	From source to Pungo River	SC	6/6/62	29-34-25
Smith Creek	From source to Pungo River	SC	6/6/62	29-34-26
Crooked Creek	From source to Pungo River	SC	6/6/62	29-34-27
Upper Dowery Creek	From source to Pungo River	SC	6/6/62	29-34-28
Flax Pond	From source to Pungo River	SC	6/6/62	29-34-29
Sandy Gut	From source to Pungo River	SC	6/6/62	29-34-30
Lower Dowery Creek	From source to Pungo River	SC	6/6/62	29-34-31
Cutting Sedge Creek	From source to Lower Dowery Creek	SC	6/6/62	29-34-31-1
Battalina Creek	From source to Pungo River	SC	6/6/62	29-34-32
Tooleys Creek	From source to Pungo River	SC	6/6/62	29-34-33
Pantego Creek	From U.S. Hwy. 264 at Pantego to Pungo River	SC	6/6/62	29-34-34-(2)
Cuckolds Creek (Chuckolds Creek)	From source to Pantego Creek	SC	6/6/62	29-34-34-3
Ingoes Creek	From source to Pantego Creek	SC	6/6/62	29-34-34-4
Broad Creek	From source to Pantego Creek	SC	6/6/62	29-34-34-5
Deep Run	From source to Broad Creek	SC	6/6/62	29-34-34-5-2
Clark Creek	From source to Broad Creek	SC	6/6/62	29-34-34-5-3
Shoemaker Creek	From source to Pantego Creek	SC	6/6/62	29-34-34-6
Pungo Creek	From source to Pungo River	SC	6/6/62	29-34-35

Name of Stream	Description	Classification Class	Classification Date	Index No.
Old Mill Creek	From source to Pungo Creek	SC	6/6/62	29-34-35-2
Burbage Gut	From source to Pungo Creek	SC	6/6/62	29-34-35-3
Jack Creek	From source to Pungo Creek	SC	6/6/62	29-34-35-4
Smith Creek	From source to Pungo Creek	SC	6/6/62	29-34-35-5
Scott Creek	From source to Pungo Creek	SC	6/6/62	29-34-35-6
Vale Creek	From source to Pungo Creek	SC	6/6/62	29-34-35-7
Little Creek	From source to Pungo Creek	SC	6/6/62	29-34-35-8
Fishing Creek	From source to Pungo River	SC	6/6/62	29-34-36
Kenyon Bay	Entire Bay	SC	6/6/62	29-34-37
Pungo River	From a line across Pungo River from Woodstock Point to Quilley Point to Pamlico River	SA	6/6/62	29-34-(38)
Sparrows Gut	From source to Pungo River	SA	6/6/62	29-34-39
Slade Creek	From source to Pungo River	SA	6/6/62	29-34-40
Jones Creek	From source to Slade Creek	SA	6/6/62	29-34-40-1
Jarvis Creek	From source to Slade Creek	SA	6/6/62	29-34-40-2
Raffing Creek	From source to Slade Creek	SA	6/6/62	29-34-40-3
Becky Creek (Becky Branch)	From source to Slade Creek	SA	6/6/62	29-34-40-4
Neal Creek	From source to Slade Creek	SA	6/6/62	29-34-40-5
Wood Creek	From source to Slade Creek	SA	6/6/62	29-34-40-6
Spellman Creek	From source to Slade Creek	SA	6/6/62	29-34-40-7
Speer Creek	From source to Slade Creek	SA	6/6/62	29-34-40-8
Church Creek	From source to Slade Creek	SA	6/6/62	29-34-40-9
Speer Gut	From source to Church Street	SA	6/6/62	29-34-40-9-1
Allison Creek	From source to Slade Creek	SA	6/6/62	29-34-40-10
Foreman Creek	From source to Allison Creek	SA	6/6/62	29-34-40-10-1
Jordan Creek	From source to Pungo River	SA	6/6/62	29-34-41
Alligator Gut	From source to Jordan Creek	SA	6/6/62	29-34-41-1
Snederker Gut	From source to Jordan Creek	SA	6/6/62	29-34-41-2
Spring Creek	From source to Jordan Creek	SA	6/6/62	29-34-41-3
Tarkiln Creek Bay	Entire Bay	SA	6/6/62	29-34-42
Tarkiln Creek	From source to Tarkiln Creek Bay	SA	6/6/62	29-34-42-1
Great Gut	From source to Pungo River	SA	6/6/62	29-34-43
Little Gut	From source to Pungo River	SA	6/6/62	29-34-44
Island Creek	From source to Pungo River	SA	6/6/62	29-34-45
Fortescue Creek	From source to Pungo River	SA	6/6/62	29-34-46
Log Creek	From source to Fortescue Creek	SA	6/6/62	29-34-46-1
Old Field Creek	From source to Fortescue Creek	SA	6/6/62	29-34-46-2
Seer Creek	From source to Fortescue Creek	SA	6/6/62	29-34-46-3
Snell Creek	From source to Fortescue Creek	SA	6/6/62	29-34-46-4
Cox Creek	From source to Fortescue Creek	SA	6/6/62	29-34-46-5
Warner Creek	From source to Fortescue Creek	SA	6/6/62	29-34-46-6
Salt Pit Creek	From source to Fortescue Creek	SA	6/6/62	29-34-46-7
Pasture Creek	From source to Fortescue Creek	SA	6/6/62	29-34-46-8
Dixon Creek	From source to Fortescue Creek	SA	6/6/62	29-34-46-9
Liniar Bay	Entire Bay	SA	6/6/62	29-34-47
Satterthwaite Creek	From source to Pungo River	SA	6/6/62	29-34-48
Wrights Creek	From source to Pungo River	SA	6/6/62	29-34-49
North Prong Wrights Creek	From source to Wrights Creek	SA	6/6/62	29-34-49-1
South Prong Wrights Creek	From source to Wrights Creek	SA	6/6/62	29-34-49-2
Bradley Creek	From source to South Prong Wrights Creek	SA	6/6/62	29-34-49-2-1
Crooked Creek	From source to Pungo River	SA	6/6/62	29-34-50
Hobb Creek	From source to Pungo River	SA	6/6/62	29-34-51
Great Gut Bay	Entire Bay	SA	6/6/62	29-34-52
Great Gut	From source to Great Gut Bay	SA	6/6/62	29-34-52-1
Oyster Creek	From source to Pamlico River	SA	6/6/62	29-35
Bill Daniels Gut	From source to Oyster Creek	SA	6/6/62	29-35-1
Bull Gut	From source to Oyster Creek	SA	6/6/62	29-35-2
River Ditch	From source to Oyster Creek	SA	6/6/62	29-35-3
Duck Creek	From source to Oyster Creek	SA	6/6/62	29-35-4
Cedar Island Thorofare	From source to Oyster Creek	SA	6/6/62	29-35-5
Middle Prong Oyster Creek	From source to Oyster Creek	SA	6/6/62	29-35-6
Wallace Caraway Gut	From source to Middle Prong Oyster Creek	SA	6/6/62	29-35-6-1

Name of Stream	Description	Classification Class	Classification Date	Index No.
Sampson Landing Creek	From source to Middle Prong Oyster Creek	SA	6/6/62	29-35-6-2
James Creek	From source to Middle Prong Oyster Creek	SA	6/6/62	29-35-6-3
Israel Gut	From source to James Creek	SA	6/6/62	29-35-6-3-1
Horse Island Creek	From source to James Creek	SA	6/6/62	29-35-6-3-2
Cow Creek	From source to James Creek	SA	6/6/62	29-35-6-3-3
Clark Creek	From source to Middle Prong Oyster Creek	SA	6/6/62	29-35-6-4
Little Clark Creek	From source to Clark Creek	SA	6/6/62	29-35-6-4-1
Boat Creek	From source to Clark Creek	SA	6/6/62	29-35-6-4-2
Abel Bay	Entire Bay	SA	6/6/62	29-36
Bell Bay	Entire Bay	SA	6/6/62	29-36-1
Bell Creek	From source to Bell Bay	SA	6/6/62	29-36-1-1
Berry Creek	From source to Bell Bay	SA	6/6/62	29-36-1-2
Box Creek	From source to Bell Bay	SA	6/6/62	29-36-1-3
Marie Creek	From source to Abel Bay	SA	6/6/62	29-36-2
Boar Creek	From source to Pamlico River	SA	6/6/62	29-37
Willow Creek	From source to Pamlico River	SA	6/6/62	29-38
Marsh Rock Creek	From source to Pamlico River	SA	6/6/62	29-39
Long Creek	From source to Pamlico River	SA	6/6/62	29-40
Mouse Harbor	Entire Bay	SA	6/6/62	29-41
Mouse Harbor Ditch	From source to Mouse Harbor	SA	6/6/62	29-41-1
Southward Bay	Entire Bay	SA	6/6/62	29-41-2
Cedar Creek	From source to Southward Bay	SA	6/6/62	29-41-2-1
Island Creeks	From sources to Southward Bay	SA	6/6/62	29-41-2-2
Voliva Cove	Entire Cove	SA	6/6/62	29-41-2-3
Fate Cove	Entire Cove	SA	6/6/62	29-41-2-4
House Cove	Entire Cove	SA	6/6/62	29-41-2-5
Hog Cove	Entire Cove	SA	6/6/62	29-41-3
Flat Cove	Entire Cove	SA	6/6/62	29-41-4
Oak Cove	Entire Cove	SA	6/6/62	29-41-5
Long Creek	From source to Mouse Harbor	SA	6/6/62	29-41-6
Lighthouse Creek	From source to Mouse Harbor	SA	6/6/62	29-41-7
Spencer Bay	Entire Bay	SA	6/6/62	29-42
Germantown Bay	Entire Bay	SA	6/6/62	29-42-1
Long Creek	From source to Germantown Bay	SA	6/6/62	29-42-1-1
Midgette Creek	From source to Germantown Bay	SA	6/6/62	29-42-1-2
Little Hammock Creek	From source to Germantown Bay	SA	6/6/62	29-42-1-3
Swan Creek (Swine Creek)	From source to Germantown Bay	SA	6/6/62	29-42-1-4
Jeanette Creek	From source to Germantown Bay	SA	6/6/62	29-42-1-5
Ditch Creek	From source to Germantown Bay	SA	6/6/62	29-42-1-6
Chellybelle Creek	From source to Spencer Bay	SA	6/6/62	29-42-2
House Creek	From source to Spencer Bay	SA	6/6/62	29-42-3
Striking Bay	Entire Bay	SA	6/6/62	29-43
Rose Bay	Entire Bay	SA	6/6/62	29-44
Rose Bay Creek	From source to Rose Bay	SA	6/6/62	29-44-1
Rose Bay Canal	From Boundary Canal to Rose Bay Creek	SC	6/6/62	29-44-1-1
Tooley Creek	From source to Rose Bay	SA	6/6/62	29-44-2
Lighwood Snag Bay	Entire Bay	SA	6/6/62	29-44-3
Middle Shoal Creek (Mill Show Creek)	From source to Rose Bay	SA	6/6/62	29-44-4
Deep Bay	Entire Bay	SA	6/6/62	29-44-5
Old Haulover	From source to Deep Bay	SA	6/6/62	29-44-5-1
The Haulover	From Swanquarter Bay to Deep Bay	SA	6/6/62	29-44-5-2
Bernice Creek	From source to Deep Bay	SA	6/6/62	29-44-5-3
Middle Creek	From source to Deep Bay	SA	6/6/62	29-44-5-4
Drum Cove	Entire Cove	SA	6/6/62	29-44-5-5
Tolers Bay	Entire Bay	SA	6/6/62	29-45
White Perch Bay	Entire Bay	SA	6/6/62	29-46
Shell Bay	Entire Bay	SA	6/6/62	29-47
Judith Narrows	From White Perch Bay to Shell Bay	SA	6/6/62	29-47-1
The Blowout	From Bernice Creek to Shell Bay	SA	6/6/62	29-47-2
Shell Narrows	From Swanquarter Bay to Shell Bay	SA	6/6/62	29-47-3
Smokehouse Cove	Entire Cove	SA	6/6/62	29-48
Swanquarter Bay	Entire Bay	SA	6/6/62	29-49
Shingle Creek	From source to Swanquarter Bay	SA	6/6/62	29-49-1

Name of Stream	Description	Classification Class	Classification Date	Index No.
Cowpen Creek	From source to Swanquarter Bay	SA	6/6/62	29-49-2
Oyster Creek	From source to Swanquarter Bay	SA	6/6/62	29-49-3
Eastard Bay	Entire Bay	SA	6/6/62	29-49-4
Caffee Bay	Entire Bay	SA	6/6/62	29-49-5
Island Creek	From source to Caffee Bay	SA	6/6/62	29-49-5-1
Crab Cove (Crabb Cove)	Entire Cove	SA	6/6/62	29-50
Great Island Narrows	From Juniper Bay to Swanquarter Bay	SA	6/6/62	29-51
Raccoon Creek	From source to Great Island Narrows	SA	6/6/62	29-51-1
Juniper Bay	Entire Bay	SA	6/6/62	29-52
Juniper Bay Creek	From source to Juniper Bay	SC	6/6/62	29-52-1
Hydeland Canal	From source to Juniper Bay Creek	SC	6/6/62	29-52-1-1
Juniper Canal	From source to Juniper Bay Creek	SC	6/6/62	29-52-1-2
Quarter Canal	From source to Juniper Bay Creek	SC	6/6/62	29-52-1-3
Northwest Creek	From source to Juniper Bay	SA	6/6/62	29-52-2
Rattlesnake Creek	From source to Juniper Bay	SA	6/6/62	29-52-3
Old Haulover	From source to Juniper Bay	SA	6/6/62	29-52-4
Doe Creek	From source to Juniper Bay	SA	6/6/62	29-52-5
Buck Creek	From source to Juniper Bay	SA	6/6/62	29-52-6
Laurel Creek	From source to Juniper Bay	SA	6/6/62	29-52-7
Cunning Harbor Bay	Entire Bay	SA	6/6/62	29-53
West Bluff Bay	Entire Bay	SA	6/6/62	29-54
Southwest Bay	Entire Bay	SA	6/6/62	29-55
East Bluff Bay	Entire Bay	SA	6/6/62	29-56
Harbor Creek	From source to East Bluff Bay	SA	6/6/62	29-56-1
Juniper Creek	From source to East Bluff Bay	SA	6/6/62	29-56-2
Sage Bay	Entire Bay	SA	6/6/62	29-57
Outfall Canal	From Lake Mattamuskeet to Sage Bay	SC	6/6/62	29-57-1
Lake Mattamuskeet	Entire Lake	SC	6/6/62	29-57-1-1
Sanger Creek	From source to Pamlico Sound	SA	6/6/62	29-58
Middle Creek	From source to Pamlico Sound	SA	6/6/62	29-59
Wysocking Bay	Entire Bay	SA	6/6/62	29-60
Hickory Creek Bay	Entire Bay	SA	6/6/62	29-60-1
Hickory Creek	From source to Hickory Creek Bay	SA	6/6/62	29-60-1-1
Old Hill Bay	Entire Bay	SA	6/6/62	29-60-2
Douglas Bay	Entire Bay	SA	6/6/62	29-60-3
Gray Ditch	From Lake Mattamuskeet to Wysocking Bay	SC	6/6/62	29-60-4
Boundary Canal (South Side)	From Outfall Canal to Gray Ditch	SC	6/6/62	29-60-4-1
Lone Tree Creek	From source to Wysocking Bay	SA	6/6/62	29-60-5
Hillerys Cove	Entire Cove	SA	6/6/62	29-61
Brooks Creek	From source to Pamlico Sound	SC	6/6/62	29-62
Feds Creek	From source to Pamlico Sound	SC	6/6/62	29-63
Jeanette Creek	From source to Pamlico Sound	SA	6/6/62	29-64
Back Creek	From source to Pamlico Sound	SA	6/6/62	29-65
Middle Town Creek	From source to Pamlico Sound	SA	6/6/62	29-66
Cedar Creek	From source to Pamlico Sound	SA	6/6/62	29-67
Burrus Creek	From source to Pamlico Sound	SA	6/6/62	29-68
Lone Tree Creek	From source to Pamlico Sound	SA	6/6/62	29-69
Far Creek	From U.S. Hwy. 264 to a line extending due north and due south across Far Creek at flash beacon #9	SC	6/6/62	29-70-(2)
Kitty Creek	From source to Far Creek	SC	6/6/62	29-70-3
Far Creek	From a line extending due north and due south across Far Creek at flash beacon #9 to Pamlico Sound	SA	6/6/62	29-70-(4)
Waupopin Creek	From source to a line beginning on the southwestern side of Waupopin Creek 300 yeards from its junction with Far Creek, and running due northeast to the northeastern shore of Waupopin Creek	SC	6/6/62	29-70-5-(1)
Waupopin Canal	From Lake Mattamuskeet to Waupopin Creek	SC	6/6/62	29-70-5-2
Boundary Canal (West, North, and East Sides)	From source to Waupopin Canal	SC	6/6/62	29-70-5-2-1
Rose Bay Canal	From Lake Mattamuskeet to Boundary Canal	SC	6/6/62	29-70-5-2-1-1

Name of Stream	Description	Classification Class	Classification Date	Index No.
Waupopin Creek	From a line beginning on the southwestern side of Waupopin Creek 300 yards from its junction with Far Creek, and running due northeast to the northeastern shore of Waupopin Creek to Far Creek	SA	6/6/62	29-70-5-(3)
Oyster Creek	From source to Far Creek	SA	6/6/62	29-70-6
Berrys Bay	Entire Bay	SA	6/6/62	29-71
Otter Creek	From source to Pamlico Sound	SA	6/6/62	29-72
Long Shoal River	From U.S. Hwy. 264 to Pamlico Sound	SA	6/6/62	29-73-(2)
Deep Creek	From source to Long Shoal River	SA	6/6/62	29-73-4
Muddy Creek	From source to Long Shoal River	SA	6/6/62	29-73-5
Clark Creek	From source to Long Shoal River	SA	6/6/62	29-73-6
Broad Creek	From source to Long Shoal River	SA	6/6/62	29-23-7
Pains Bay	Entire Bay	SA	6/6/62	29-74
Pains Creek	From source to Pains Bay	SA	6/6/62	29-74-1
Parched Corn Bay	Entire Bay	SA	6/6/62	29-75
Sandy Bay	Entire Bay	SA	6/6/62	29-76
Cockrel Creek	From source to Pamlico Sound	SA	6/6/62	29-77
Shingle Creek	From source to Pamlico Sound	SA	6/6/62	29-78
North Bitterswash Creek	From source to Pamlico Sound	SA	6/6/62	29-79
South Bitterswash Creek	From source to Pamlico Sound	SA	6/6/62	29-80
Knoll Creek	From source to Pamlico Sound	SA	6/6/62	29-81
Knoll House Creek	From source to Pamlico Sound	SA	6/6/62	29-82
Try Yard Creek	From source to Pamlico Sound	SA	6/6/62	29-83
Little Swash Opening	From source to Pamlico Sound	SA	6/6/62	29-84
Old Hammock Creek	From source to Pamlico Sound	SA	6/6/62	29-85
Island Creek	From source to Pamlico Sound	SA	6/6/62	29-86
Sand Hole Creek	From source to Pamlico Sound	SA	6/6/62	29-87
Northern Pond	Entire Pond	SA	6/6/62	29-88
Mary Anns Pond	Entire Pond	SA	6/6/62	29-89
Silver Lake at Ocracoke Village	Entire Lake	SC	6/6/62	29-90
Old Slough	From source to Pamlico Sound	SA	6/6/62	29-91
Atlantic Ocean	The waters of the Atlantic Ocean contiguous to that portion of the Tar-Pamlico River Basin that extends from the northeast tip of Ocracoke Island to the southwest tip of Ocracoke Island	SB	6/6/62	99-(6)

(1) Fecal Coliform Exception. These waters are not considered satisfactory for boating or wading usage.

(2) Dissolved Oxygen Exception. The dissolved oxygen concentration in these waters shall not be less than 2.0 mg/l.

(4) Dissolved Oxygen Exception. The dissolved oxygen concentration in these waters shall not be less than 4.0 mg/l.

CLASSIFICATIONS AND WATER QUALITY STANDARDS

ASSIGNED TO

THE WATERS OF THE NEUSE RIVER BASIN

Name of Stream	Description	Classification Class	Classification Date	Index No.
Swift Creek	From mouth of Bear Branch to Neuse River	SC Sw	4/1/60	27-97-(6)
The Gut	From source to Bachelor (Batchelder) Creek	SC Sw	4/1/60	27-98-3
Renny Creek	From source to Neuse River	SC Sw	4/1/60	27-99
Trent River	From mouth of Deep Gully to mouth of Brice Creek	SB Sw	4/1/60	27-101-(31)
Trent River	From mouth of Brice Creek to Neuse River	SC Sw	4/1/60	27-101-(39)
Brice Creek	From Craven County SR 1004 to Trent River	SC Sw	4/1/60	27-101-40-(7)
Bridge Creek	From source to Trent River	SC Sw	4/1/60	27-101-41
Lawson Creek	From source to Trent River	SC Sw	4/1/60	27-101-42
Lane Branch	From source to Lawson Creek	SC Sw	4/1/60	27-101-42-1
Scotts Creek	From source to Neuse River	SC Sw	4/1/60	27-102
Duck Creek	From source to Neuse River	SC Sw	4/1/60	27-103
NEUSE RIVER	From a line across Neuse River from Johnson Point to McCotter Point to a line across Neuse River from Wilkinson Point to Cherry Point	SB Sw	4/1/60	27-(104)
Northwest Creek	From source to Neuse River	SC Sw	4/1/60	27-105
Upper Broad Creek	From N.C. Hwy. 55 Bridge to Neuse River	SC Sw	4/1/60	27-106-(4)
Sasses Branch	From source to Upper Broad Creek	SC Sw	4/1/60	27-106-5
Deep Run	From source to Upper Broad Creek	SC Sw	4/1/60	27-106-6
Goose Creek	From Scotts Store road (Pamlico County SR 1100) to Neuse River	SC Sw	4/1/60	27-107-(6)
Black Creek	From source to Goose Creek	SC Sw	4/1/60	27-107-7
Gaston Swamp	From source to Goose Creek	SC Sw	4/1/60	27-107-8
Alexander Swamp	From source to Goose Creek	SC Sw	4/1/60	27-107-9
Cypress Creek	From source to Goose Creek	SC Sw	4/1/60	27-107-10
Otter Creek	From source to Neuse River	SC Sw	4/1/60	27-108
Crooked Run	From source to Otter Creek	SC Sw	4/1/60	27-108-1
Lower Duck Creek	From source to Neuse River	SC Sw	4/1/60	27-109
Dam Creek	From source to Neuse River	SC Sw	4/1/60	27-110
Beard Creek	From source to Neuse River	SC Sw	4/1/60	27-111
East Prong Beard Creek	From source to Beard Creek	SC Sw	4/1/60	27-111-1
Cedar Gut	From source to Beard Creek	SC Sw	4/1/60	27-111-2
Purifoy Gut	From source to Beard Creek	SC Sw	4/1/60	27-111-3
Caraway Creek	From source to Beard Creek	SC Sw	4/1/60	27-111-4
Slocum Creek	From source to Neuse River	SC Sw	4/1/60	27-112
Cedar Creek	From source to Slocum Creek	SC Sw	4/1/60	27-112-3
Alligator Gut	From source to Slocum Creek	SC Sw	4/1/60	27-112-4
Mill Creek	From source to Slocum Creek	SC Sw	4/1/60	27-112-5
Hunters Branch	From source to Mill Creek	SC Sw	4/1/60	27-112-5-1
Tucker Creek	From source to Slocum Creek	SC Sw	4/1/60	27-112-6
Daniels Branch	From source to Tucker Creek	SC Sw	4/1/60	27-112-6-1
Goodwin Creek	From source to Tucker Creek	SC Sw	4/1/60	27-112-6-2
Sandy Run	From source to Tucker Creek	SC Sw	4/1/60	27-112-6-3
Miry Branch	From source to Sandy Run	SC Sw	4/1/60	27-112-6-3-1
Anderson Creek	From source to Slocum Creek	SC Sw	4/1/60	27-112-7
Mill Creek	From source to Neuse River	SC Sw	4/1/60	27-113
Smith Gut	From source to Neuse River	SC Sw	4/1/60	27-114
Hancock Creek	From source to Neuse River	SC Sw	4/1/60	27-115
Mococks Branch	From source to Hancock Creek	SC Sw	4/1/60	27-115-1
Deep Branch	From source to Hancock Creek	SC Sw	4/1/60	27-115-2
Shop Branch	From source to Hancock Creek	SC Sw	4/1/60	27-115-3
Dolls Gut	From source to Hancock Creek	SC Sw	4/1/60	27-115-4
Jacks Branch	From source to Hancock Creek	SC Sw	4/1/60	27-115-5
Little John Creek	From source to Hancock Creek	SC Sw	4/1/60	27-115-6
Cahoogue Creek	From source to Hancock Creek	SC Sw	4/1/60	27-115-7
Spe Branch	From source to Cahoogue Creek	SC Sw	4/1/60	27-115-7-1
Barney Branch	From source to Cahoogue Creek	SC Sw	4/1/60	27-115-7-2
Still Gut	From source to Cahoogue Creek	SC Sw	4/1/60	27-115-7-3

Name of Stream	Description	Classification Class	Classification Date	Index No.
Reeds Gut	From source to Hancock Creek	SC Sw	4/1/60	27-115-8
Still Gut	From source to Reeds Gut	SC Sw	4/1/60	27-115-8-1
Alligator Gut	From source to Neuse River	SC Sw	4/1/60	27-116
Gum Branch	From source to Neuse River	SC Sw	4/1/60	27-117
Bay River	From source to a line across Bay River from Darby Point to Bell Point	SC Sw	4/1/60	27-150-(1)
North Prong Bay River	From source to Bay River	SC Sw	4/1/60	27-150-2
South Prong Bay River	From source to Bay River	SC Sw	4/1/60	27-150-3
Neal Creek	From source to South Prong Bay River	SC Sw	4/1/60	27-150-3-1
Armstrong Creek	From source to Bay River	SC Sw	4/1/60	27-150-4
Raccoon Creek	From source to Bay River	SC Sw	4/1/60	27-150-5
Trent Creek	From source to Bay River	SC Sw	4/1/60	27-150-6
Fork Run	From source to Trent Creek	SC Sw	4/1/60	27-150-6-1
Southwest Fork	From source to Trent Creek	SC Sw	4/1/60	27-150-6-2
Thomas Creek	From source to Trent Creek	SC Sw	4/1/60	27-150-6-3
Rattlesnake Branch	From source to Trent Creek	SC Sw	4/1/60	27-150-6-4
Alligator Creek	From source to Trent Creek	SC Sw	4/1/60	27-150-6-5
Turtle Gut	From source to Trent Creek	SC Sw	4/1/60	27-150-6-6
Chapel Creek	From source to Bay River	SC Sw	4/1/60	27-150-7
Whitehurst Creek	From source to Chapel Creek	SC Sw	4/1/60	27-150-7-1
Bee Tree Creek	From source to Chapel Creek	SC Sw	4/1/60	27-150-7-2
Punch Bowl	From source to Chapel Creek	SC Sw	4/1/60	27-150-7-3
Swindell Bay	From source to Bay River	SC Sw	4/1/60	27-150-8
Mason Creek	From source to Bay River	SC Sw	4/1/60	27-150-9
Lewis Creek	From source to Mason Creek	SC Sw	4/1/60	27-150-9-1
Harper Creek	From source to Bay River	SC Sw	4/1/60	27-150-10
Tempe Gut	From source to Bay River	SC Sw	4/1/60	27-150-11
Moore Creek	From source to Bay River	SC Sw	4/1/60	27-150-12
Chappel Creek	From source to Moore Creek	SC Sw	4/1/60	27-150-12-1
Newton Creek	From source to Bay River	SC Sw	4/1/60	27-150-13
Smith Creek	From source to Bay River	SC Sw	4/1/60	27-150-14
Vandemere Creek	From source to Bay River	SC Sw	4/1/60	27-150-15
Little Vandemere Creek	From source to Vandemere Creek	SC Sw	4/1/60	27-150-15-1
Long Creek	From source to Vandemere Creek	SC Sw	4/1/60	27-150-15-2
Cedar Creek	From source to Vandemere Creek	SC Sw	4/1/60	27-150-15-3
Log Pond Creek	From source to Vandemere Creek	SC Sw	4/1/60	27-150-15-4
Atlantic Ocean	The waters of the Atlantic Ocean contiguous to that portion of the Neuse River Basin that extends from the southwest tip of Ocracoke Island to the southwest side of Drum Inlet	SB	4/1/60	99-(5)

Reference Material to Regulation 15 NCAC 2B .0315 Neuse River Basin, entitled CLASSIFICATION AND WATER QUALITY STANDARDS ASSIGNED TO THE WATERS OF THE NEUSE RIVER BASIN, has been amended effective 8-9-81 as follows:

Name of Stream	Description	Class	Index No.
Neuse River (including Pamlico Sound)	From a line across Neuse River from Wilkinson Point to Cherry Point to its mouth, and Pamlico Sound and Core Sound within a line beginning at Little Porpoise Point and extending in a southeast direction to the southwest tip of Ocracoke Island, thence southwest along the ocean side of the Outer Banks to the southwest side of Drum Inlet, thence in a northwest direction to Hall Point	SA	27-(118)
Cherry Branch	From source to Neuse River	SA	27-119
King Creek	From source to Neuse River	SA	27-120
Gatlin Creek	From source to Neuse River	SA	27-121
Sassafras Branch	From source to Neuse River	SA	27-122
Clubfoot Creek	From source to Neuse River	SA	27-123
Harlowe Canal	From White Oak River Basin Boundary (Craven-Carteret County Line) to Clubfoot Creek	SA	27-123-1
Mortons Mill Pond	From source to Clubfoot Creek	SA	27-123-2
West Prong Mortons Mill Pond	From source to Mortons Mill Pond	SA	27-123-2-1
East Prong Mortons Mill Pond	From source to Mortons Mill Pond	SA	27-123-2-2
Gulden Creek	From source to Clubfoot Creek	SA	27-123-3
Mitchell Creek	From source to Clubfoot Creek	SA	27-123-4
Big Branch	From source to Mitchell Creek	SA	27-123-4-1
Snake Branch	From source to Mitchell Creek	SA	27-123-4-2
Long Creek	From source to Neuse River	SA	27-124
Dawson Creek	From source to Mouth of Tarkiln Creek	SC	27-125-(1)
Fork Run	From source to Dawson Creek	SC	27-125-2
Wheeler Gut	From source to Dawson Creek	SC	27-125-3
Deep Run	From source to Dawson Creek	SC	27-125-4
Granny Gut	From source to Dawson Creek	SC	27-125-5
Dawson Creek	From mouth of Tarkiln Creek to Neuse River	SA	27-125-(6)
Tarkiln Creek	From source to Dawson Creek	SC	27-125-7
Great Neck Creek	From source to Neuse River	SA	27-126
Courts Creek (Coaches Creek)	From source to Neuse River	SA	27-127
Adams Creek	From source to Neuse River	SA	27-128
Adams Creek Canal (Intracoastal Waterway)	From the White Oak River Basin Boundary (Craven-Carteret County Line) to Adams Creek	SA	27-128-1
Isaac Creek	From source to Adams Creek	SA	27-128-2
Back Creek (Black Creek)	From source to Adams Creek	SA	27-128-3
Kearney Creek	From source to Adams Creek	SA	27-128-4
Kellum Creek	From source to Adams Creek	SA	27-128-5
Cedar Creek	From source to Adams Creek	SA	27-128-6
Cullie Creek	From source to Cedar Creek	SA	27-128-6-1
Jonaquin Creek	From source to Cedar Creek	SA	27-128-6-2

Name of Stream	Description	Class	Index No.
Dumpling Creek	From source to Adams Creek	SA	27-128-7
Sandy Huss Creek	From source to Adams Creek	SA	27-128-8
Delamar Creek	From source to Adams Creek	SA	27-128-9
Godfrey Creek	From source to Adams Creek	SA	27-128-10
Greens Creek (Oriental Restricted Area)	Inside a line beginning at a point on the northwest side of the mouth of Whittaker Creek and running due southeast 100 yards to a stake in Neuse River, thence running in a southwesterly direction 100 yards from shore to a stake due south of Whorton's Point; thence in a straight line to flash beacon #6; thence in a straight line to Windmill Point; thence in a northly direction and following the shore line of Shop Gut, Greens Creek, Kershaw Creek, Smith Creek, Morris Creek, Camp Creek (Oriental Harbor), Raccoon Creek, and the Oriental Seawall to the point of beginning	SC	27-129
Kershaw Creek	From Source to Greens Creek	SC	27-129-1
Smith Creek	From source to Greens Creek	SC	27-129-2
Morris Creek	From source to Smith Creek	SC	27-129-2-1
Camp Creek (Oriental Harbor)	From source to Smith Creek	SC	27-129-2-2
Raccoon Creek	From source to Greens Creek	SC	27-129-3
Shop Gut	From source to Greens Creek	SC	27-129-4
Whittaker Creek	From source to Neuse River	SA	27-130
Garbacon Creek	From source to Neuse River	SA	27-131
Berrys Creek	From source to Neuse River	SA	27-132
Pierce Creek	From source to Neuse River	SA	27-133
Orchard Creek	From source to Neuse River	SA	27-134
Bright Creek	From source to Orchard Creek	SA	27-134-1
Pasture Creek	From source to Orchard Creek	SA	27-134-2
Old House Creek	From source to Orchard Creek	SA	27-134-3
South River	From source to Neuse River	SA	27-135
West Fork South River	From source to South River	SA	27-135-1
East Fork South River	From source to South River	SA	27-135-2
Rick Island Gut	From source to East Fork South River	SA	27-135-2-1
Miry Gut	From source to South River	SA	27-135-3
Elisha Creek	From source to South River	SA	27-135-4
Neal Creek	From source to South River	SA	27-135-5
Duck Creek	From source to South River	SA	27-135-6
Buck Creek	From source to South River	SA	27-135-7
Doe Creek	From source to South River	SA	27-135-8
Southwest Creek	From source to South River	SA	27-135-9
Eastman Creek	From source to South River	SA	27-135-10
Little Creek	From source to South River	SA	27-135-11
Royal Creek	From source to South River	SA	27-135-12
Coffee Creek	From source to South River	SA	27-135-13
Dixon Creek	From source to South River	SA	27-135-14
Old House Creek	From source to South River	SA	27-135-15
Mulberry Creek	From source to South River	SA	27-135-16
Big Creek	From source to South River	SA	27-135-17
Hardy Creek	From source to South River	SA	27-135-18

Name of Stream	Description	Class	Index No.
Horton Bay	From source to South River	SA	27-135-19
Herring Pond	Entire pond and connecting stream to South River	SA	27-135-20
Brown Creek	From source to Neuse River	SA	27-136
Turnagain Bay	From source to Neuse River	SA	27-137
Sanborns Gut	From source to Turnagain Bay	SA	27-137-1
Big Gut	From source to Turnagain Bay	SA	27-137-2
Deep Gut	From source to Turnagain Bay	SA	27-137-3
Broad Creek	From source to Turnagain Bay	SA	27-137-4
Pitman Creek	From source to Broad Creek	SA	27-137-4-1
Parsons Creek	From source to Broad Creek	SA	27-137-4-2
Abraham Bay	From source to Turnagain Bay	SA	27-137-5
Tump Gut	From source to Turnagain Bay	SA	27-137-6
Mulberry Point Creek	From source to Turnagain Bay	SA	27-137-7
Cedar Bay	From source to Neuse River	SA	27-138
Little Creek	From source to Neuse River	SA	27-139
Gum Tricket Creek	From source to Neuse River	SA	27-140
Broad Creek	From source to Neuse River	SA	27-141
Ship Creek	From source to Broad Creek	SA	27-141-1
Gideon Creek	From source to Broad Creek	SA	27-141-2
Brown Creek	From source to Broad Creek	SA	27-141-3
Spice Creek	From source to Brown Creek	SA	27-141-3-1
Coffee Creek	From source to Brown Creek	SA	27-141-3-2
Tar Creek	From source to Broad Creek	SA	27-141-4
Pasture Creek	From source to Broad Creek	SA	27-141-5
Parris Creek	From source to Broad Creek	SA	27-141-6
Burton Creek	From source to Broad Creek	SA	27-141-7
Pittman Creek	From source to Broad Creek	SA	27-141-8
Mill Creek	From source to Broad Creek	SA	27-141-9
Cedar Creek	From source to Broad Creek	SA	27-141-10
Green Creek	From source to Broad Creek	SA	27-141-11
Piney Point Creek	From source to Neuse River	SA	27-142
Rattan Bay	From source to Neuse River	SA	27-143
South Bay	From source to Rattan Bay	SA	27-143-1
East Bay	From source to Rattan Bay	SA	27-143-2
North Bay	From source to Rattan Bay	SA	27-143-3
Swan Creek	From source to Neuse River	SA	27-144
Wading Creek	From source to Neuse River	SA	27-145
Maw Bay	From source to Neuse River	SA	27-146
Maw Point Creek	From source to Neuse River	SA	27-147
West Bay	From source to Pamlico Sound	SA	27-148
Long Bay	From source to West Bay	SA	27-148-1
Flag Creek	From source to Long Bay	SA	27-148-1-1
Golden Creek	From source to Long Bay	SA	27-148-1-2
Bonneys Creek	From source to Long Bay	SA	27-148-1-3
Henrys Creek	From source to Long Bay	SA	27-148-1-4
Fur Creek	From source to Long Bay	SA	27-148-1-5
Stump Bay	From source to Long Bay	SA	27-148-1-6
Old Canal	From source to Stump Bay	SA	27-148-1-6-1
Piney Island Bay	From source to Long Bay	SA	27-148-1-7
Owens Bay	From source to Long Bay	SA	27-148-1-8
Jacks Bay	From source to Long Bay	SA	27-148-1-9
West Thorofare Bay	From source to West Bay	SA	27-148-2
Bull Creek	From source to Thorofare Bay West	SA	27-148-2-1

Name of Stream	Description	Class	Index No.
Cadduggen Creek	From source to West Thorofare Bay	SA	27-148-2-2
Goose Bay	From source to West Thorofare Bay	SA	27-148-2-3
Merkle Bay	From source to West Bay	SA	27-148-3
Deep Bend	From source to West Bay	SA	27-148-4
Nameless Bay	From source to West Bay	SA	27-148-5
Green Point Cove	From source to West Bay	SA	27-148-6
Dowdy Bay	From source to West Bay	SA	27-148-7
Point of Island Bay	From source to West Bay	SA	27-148-8
Newstump Bay	From source to West Bay	SA	27-148-9
North Bay	From source to West Bay	SA	27-148-10
Core Sound	From Northeastern limit of White Oak River Basin (a line from Hall Point to Drum Inlet) to Pamlico Sound	SA	27-149
Thorofare Bay	From source to Core Sound	SA	27-149-1
Thorofare	From West Thorofare Bay to Thorofare Bay	SA	27-149-1-1
Merkle Hammock Creek	From source to Thorofare Bay	SA	27-149-1-2
Barry Bay	From source to Thorofare Bay	SA	27-149-1-3
Rumley Bay	From source to Core Sound	SA	27-149-2
John Day Ditch	From source to Rumley Bay	SA	27-149-2-1
Lewis Creek	From source to Core Sound	SA	27-149-3
Southwest Prong Lewis Creek	From source to Lewis Creek	SA	27-149-3-1
Big Gut	From source to Lewis Creek	SA	27-149-3-2
Cedar Island Bay	Entire Bay, including all inlets, coves, and Bays, not otherwise named in the schedule of classifications	SA	27-149-4
Great Pond	From source to Cedar Island Bay	SA	27-149-4-1
Back Bay	Entire Bay, including all inlets coves, and bays, not otherwise named in the schedule of classifications.	SA	27-149-4-2
Great Pond	From Pamlico Sound to Back Bay	SA	27-149-4-2-1
Noras Cove	Entire Cove	SA	27-149-4-2-2
End of Island Slough	From Pamlico Sound to Back Bay	SA	27-149-4-2-3
Snake Gut	From Pamlico Sound to Back Bay	SA	27-149-4-2-4
Fullers Ditch	From Pamlico Sound to Back Bay	SA	27-149-4-2-5
The Passage	From Pamlico Sound to Back Bay	SA	27-149-4-2-6
Deep Slough	From Pamlico Sound to the Passage	SA	27-149-4-2-6-1
Drum Pond	From source to Back Bay	SA	27-149-4-2-7
Goose Bay	Entire Bay	SA	27-149-4-2-8
Oyster Creek	From Core Sound to Goose Bay	SA	27-149-4-2-8-1
Great Ditch	From Core Sound to Goose Bay	SA	27-149-4-2-9
Hog Island Narrows	From Cedar Island Bay to Back Bay	SA	27-149-4-2-10
Bay River	From a line across Bay River from Darby Pt. to Bell Pt. to Pamlico Sound	SA	27-150-(16)
Little Pasture Creek	From source to Bay River	SA	27-150-17
Rice Creek	From source to Bay River	SA	27-150-18
Mesic Creek	From source to Bay River	SA	27-150-19
Ball Creek	From source to Bay River	SA	27-150-20
Simpson Creek	From source to Ball Creek	SA	27-150-20-1
Pasture Creek	From source to Ball Creek	SA	27-150-20-2

Name of Stream	Description	Class	Index No.
Cabin Creek	From source to Ball Creek	SA	27-150-20-3
Harris Creek	From source to Bay River	SA	27-150-21
Gascon Creek	From source to Bay River	SA	27-150-22
Barnes Creek	From source to Bay River	SA	27-150-23
Potter Creek	From source to Bay River	SA	27-150-24
Oyster Creek	From source to Bay River	SA	27-150-25
Bonner Bay	From source to Bay River	SA	27-150-26
Spring Creek	From source to Bonner Bay	SA	27-150-26-1
Richardson Creek	From source to Spring Creek	SA	27-150-26-1-1
Maul Run	From source to Spring Creek	SA	27-150-26-1-2
Horton Creek	From source to Spring Creek	SA	27-150-26-1-3
Bryan Creek	From source to Spring Creek	SA	27-150-26-1-4
Ives Creek	From source to Bryan Creek	SA	27-150-26-1-4-1
Long Creek	From source to Bonner Bay	SA	27-150-26-2
Deep Oak Gut	From source to Long Creek	SA	27-150-26-2-1
Cow Gallus Creek	From source to Long Creek	SA	27-150-26-2-2
Dipping Vat Creek	From source to Long Creek	SA	27-150-26-2-3
Riggs Creek	From source to Bonner Bay	SA	27-150-26-3
Savannah Creek	From source to Riggs Creek	SA	27-150-26-3-1
Morris Creek	From source to Riggs Creek	SA	27-150-26-3-2
Raff Creek	From source to Riggs Creek	SA	27-150-26-3-3
Sheephead Creek	From source to Bonner Bay	SA	27-150-26-4
Little Bear Creek	From source to Bay River	SA	27-150-27
Blossum Pond Creek	From source to Little Bear Creek	SA	27-150-27-1
Bear Creek	From source to Bay River	SA	27-150-28
Bennett Creek	From source to Bear Creek	SA	27-150-28-1
Win Creek	From source to Bear Creek	SA	27-150-28-2
Plum Creek	From source to Bear Creek	SA	27-150-28-3
Riggs Creek	From source to Bear Creek	SA	27-150-28-4
Cox Creek	From source to Bear Creek	SA	27-150-28-5
Garden Creek	From source to Bear Creek	SA	27-150-28-6
Harper Creek	From source to Bear Creek	SA	27-150-28-7
Catchall Creek	From source to Bear Creek	SA	27-150-28-8
Chadwick Creek	From source to Bay River	SA	27-150-29
No Jacket Creek	From source to Bay River	SA	27-150-30
Gale Creek	From source to Bay River	SA	27-150-31
Intracoastal Waterway	From Jones Bay to Gale Creek	SA	27-150-31-1
Jumpover Creek	From source to Intracoastal Waterway	SA	27-150-31-1-1
Raccoon Creek	From source to Gale Creek	SA	27-150-31-2
Whealton Creek	From source to Gale Creek	SA	27-150-31-3
Tar Creek	From source to Gale Creek	SA	27-150-31-4
Ditch Creek	From source to Gale Creek	SA	27-150-31-5
Ditch Creek Canal	From Ditch Creek (Jones Bay) to Ditch Creek (Gale Creek)	SA	27-150-31-5-1
Sheeppen Creek	From source to Bay River	SA	27-150-32
Hogpen Creek	From source to Bay River	SA	27-150-33
Yaupon Creek	From source to Bay River	SA	27-150-34
Dump Creek	From fource to Bay River	SA	27-150-35
Rockhole Bay	From source to Bay River	SA	27-150-36
Fisherman Bay	From source to Bay River	SA	27-150-37
Sound Bay	From source to Pamlico Sound	SA	27-151
Jones Bay	From source to Pamlico Sound	SA	27-152
Intracoastal Waterway	From N.C. Hwy. 304 Bridge of Jones Bay	SA	27-152-1
Henry Creek	From source to Jones Bay	SA	27-152-2

Name of Stream	Description	Class	Index No.
Bills Creek	From source to Jones Bay	SA	27-152-3
Doll Creek	From source to Jones Bay	SA	27-152-4
Lambert Creek	From source to Jones Bay	SA	27-152-5
Ditch Creek	From source to Jones Bay	SA	27-152-6
Sheepneck Creek	From source to Ditch Creek	SA	27-152-6-1
Dowdy Creek	From source to Ditch Creek	SA	27-152-6-2
Drum Creek	From source to Jones Bay	SA	27-152-7
Little Eve Creek	From source to Jones Bay	SA	27-152-8
Little Drum Creek	From source to Jones Bay	SA	27-152-9
Coot Creek	From source to Jones Bay	SA	27-152-10
Fishing Bay	From source to Pamlico Sound	SA	27-153
Middle Bay	From source to Pamlico Sound	SA	27-154
Capp Creek	From source to Middle Bay	SA	27-154-1
Leary Canal	From Porpoise Creek to Capp Creek	SA	27-154-1-1
Preston Bay	From source to Middle Bay	SA	27-154-2
Flower Bay	From source to Middle Bay	SA	27-154-3
Roundabout Bay	From source to Middle Bay	SA	27-154-4
Little Oyster Creek	From source to Middle Bay	SA	27-154-5
Big Oyster Creek	From source to Pamlico Sound	SA	27-155
Big Porpoise Bay	From source to Pamlico Sound	SA	27-156
Porpoise Creek	From source to Big Porpoise Bay	SA	27-156-1
Little Porpoise Bay	From source to Pamlico Sound	SA	27-157

CLASSIFICATIONS AND WATER QUALITY STANDARDS
ASSIGNED TO
THE WATERS OF THE LUMBER RIVER BASIN

Name of Stream	Description	Class	Classification Date	Index No.
Intracoastal Waterway	From Cape Fear River Basin at Buoy Fl R ev. 4 sec "22" to North Carolina-South Carolina State Line, including all sloughs, sounds, inlets and connecting channels	SA	12/1/63	15-25
Lockwoods Folly River	From mouth of Royal Oak Swamp to ~~mouth of Mill Creek~~ Brunswick Co. SR	SC	~~12/1/63~~ 12/13/79	15-25-1-(11)
Pamlico Creek (Pompeys Creek)	From Brunswick County SR 1115 to Lockwoods Folly River	SC	12/1/63	15-25-1-15-(2)
Lockwoods Folly River	From mouth of Mill Creek to Intracoastal Waterway	SA	12/1/63	15-25-1-(17)
Mill Creek	From Brunswick County SR 1112 to Lockwoods Folly River	SA	12/1/63	15-25-1-18-(2)
Mullet Creek	From source to Lockwoods Folly River	SA	12/1/63	15-25-1-19
Lockwoods Creek	From source to Lockwoods Folly River	SA	12/1/63	15-25-1-20
Spring Creek	From source to Lockwoods Folly River	SA	12/1/63	15-25-1-21
Shallotte River	From N.C. Hwy. 130 to mouth of the Mill Pond	SC	12/1/63	15-25-2-(5)
Sharron Creek (Grissett Swamp)	From Williams Branch to Shallotte River	SC	12/1/63	15-25-2-9-(2)
Shallotte River	From mouth of The Mill Pond to Intracoastal Waterway	SA	12/1/63	15-25-2-(10)
The Mill Pond	From a point 1.0 mile below Brunswick County SR 1145 to Shallotte River	SA	12/1/63	15-25-2-11-(2)
Lockwood Folly River	From Brunswick County SR 1200 to mouth of Mill Creek	SA	12/13/79	15-25-1-(17)
Sams Branch	From proposed dam approximately 3/4 mile upstream from Shallotte River channel to Shallotte River	SA	12/1/63	15-25-2-12-(2)
Middle Dam Creek	From source to Shallotte River	SC	12/1/63	15-25-2-13
The Swash	From source to Shallotte River	SA	12/1/63	15-25-2-14
Shallotte Creek	From Bell Branch to Shallotte River	SA	12/1/63	15-25-2-15-(3)
Saucepan Creek	From source to Shallotte River	SA	12/1/63	15-25-2-16
Jinnys Branch	From Brunswick County SR 1143 to Saucepan Creek	SA	12/1/63	15-25-2-16-1-(2)
Little Saucepan Creek	From source to Saucepan Creek	SC	12/1/63	15-25-2-16-2
Old Mill Creek	From source to Saucepan Creek	SC	12/1/63	15-25-2-16-3
Goose Creek	From source to Brunswick County SR 1143	C Sw	12/1/63	15-25-2-16-4-(1)
Goose Creek	From Brunswick County SR 1143 to Saucepan Creek	SA	12/1/63	15-25-2-16-4-(2)
Big Gut Slough	From source to Intracoastal Waterway	SA	12/1/63	15-25-3
Kilbart Slough	From source to Intracoastal Waterway	SA	12/1/63	15-25-4
Calabash Creek	From source to North Carolina-South Carolina State Line	SA	12/1/63	15-25-5
Hangman Branch	From source to Calabash Creek	SA	12/1/63	15-25-5-1
Atlantic Ocean	The waters of the Atlantic Ocean contiguous to that portion of the Waccamaw River Drainage Area of the Lumber River Basin extending from the Cape Fear River Basin to the North Carolina-South Carolina State Line	SB	12/1/63	99-(1)

(1) **Fecal Coliform Exception. These waters are not considered satisfactory for boating or wading usage.**

State of Oregon Marine Water Quality Standards

Reference:

Oregon Administrative Rules

Chapter 340 Division 41

June 1980

Oregon Dept. of Environmental Quality

1234 S.W. Morrison Street

Portland, OR 97205

WATER POLLUTION

DIVISION 41

STATE-WIDE WATER QUALITY MANAGEMENT PLAN; BENEFICIAL USES, POLICIES, STANDARDS, AND TREATMENT CRITERIA FOR OREGON

[ED. NOTE: The Tables and Figures referred to within the text of this division may be found at the end of this division.]

Preface

340-41-001 The rules which follow, together with the applicable laws of the State of Oregon and the applicable regulations of the Environmental Quality Commission, set forth Oregon's plans for management of the quality of public waters within the State of Oregon.

Under this plan, the Department of Environmental Quality will continue to manage water quality by evaluating each discharge and activity, whether existing or a new proposal, on a case-by-case basis, based on best information currently available and within the limiting framework of minimum standards, treatment criteria, and policies which are set forth in the plan.

The EQC recognizes that the deadlines for adoption of this plan prevented thorough involvement by local government in the development and review of the plan. Accordingly, the Department will review the contents of this plan with affected local governments and will use their comments and suggestions in preparing amendments for consideration by the EQC not later than December, 1977. At a minimum, the processes of coordination with local governments will consist of the following elements:

(1) Work with county coordinators to set up meetings to explain the plan to groups of local governments and solicit their comments.

(2) Provide copies of the plan and supporting documents to any affected local governments who have not already received them.

(3) Seek input from councils of governments.

(4) Upon request, visit local level governments to discuss the plan.

(5) Work with statewide associations of local governments and others to inform local governments of the plan.

Stat. Auth.: ORS Ch. 468
Hist: DEQ 128, f. & ef. 1-21-77,

Definitions

340-41-005 [SA 26, f. 6-1-67;
Repealed by DEQ 128, f. & ef. 1-21-77]

Definitions

340-41-006 Definitions applicable to all basins unless context requires otherwise:

(1) "BOD" means 5-day 20° C. Biochemical Oxygen Demand.

(2) "DEQ" or "Department" means the Oregon State Department of Environmental Quality.

(3) "DO" means dissolved oxygen.

(4) "EQC" means the Oregon State Environmental Quality Commission.

(5) "Estuarine waters" means all mixed fresh and oceanic waters in estuaries or bays from the point of oceanic water intrusion inland to a line connecting the outermost points of the headlands or protective jetties.

(6) "Industrial waste" means any liquid, gaseous, radioactive, or solid waste substance or a combination thereof resulting from any process of industry, manufacturing, trade, or business, or from the development or recovery of any natural resources.

(7) "Marine waters" means all oceanic, offshore waters outside of estuaries or bays and within the territorial limits of the State of Oregon.

(8) "mg/l" means milligrams per liter.

(9) "Pollution" means such contamination or other alteration of the physical, chemical, or biological properties of any waters of the state, including change in temperature, taste, color, turbidity, silt, or odor of the waters, or such radioactive or other substance into any waters of the state which either by itself or in connection with any other substance present, will or can reasonably be expected to create a public nuisance or render such waters harmful, detrimental, or injurious to public health, safety, or welfare, or to domestic, commercial, industrial, agricultural, recreational, or other legitimate beneficial uses or to livestock, wildlife, fish or other aquatic life, or the habitat thereof.

(10) "Public water" means the same as "waters of the state".

(11) "Sewage" means the water-carried human or animal waste from residences, buildings, industrial establishments, or other places together with such groundwater infiltration and surface water as may be present. The admixture with sewage as herein defined of industrial wastes or wastes, as defined in sections (6) and (13) of this rule, shall also be considered "sewage" within the meaning of this division.

(12) "SS" means suspended solids.

(13) "Wastes" means sewage, industrial wastes, and all other liquid, gaseous, solid, radioactive, or other substances which will or may cause pollution or tend to cause pollution of any water of the state.

(14) "Waters of the state" include lakes, bays, ponds, impounding reservoirs, springs, wells, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Pacific Ocean within the territorial limits of the State of Oregon, and all other bodies of surface or underground waters, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters which do not combine or effect a junction with natural surface or underground waters), which are wholly or partially within or bordering the state or within its jurisdiction.

(15) "Low flow period" means the flows in a stream resulting from primarily groundwater discharge or baseflows augmented from lakes and storage projects during the driest period of the year. The dry weather period varies across the state according to climate and topography. Wherever the low flow period is indicated in the Water Quality Management Plans, this period has been approximated by the inclusive months. Where applicable in a waste discharge permit, the low flow period may be further defined.

(16) "Secondary treatment" as the following context may require for:

(a) "Sewage wastes" means the minimum level of treatment mandated by EPA regulations pursuant to Public Law 92-500.

(b) "Industrial and other waste sources" imply control equivalent to best practicable treatment (BPT).

Stat. Auth.: ORS Ch. 468
Hist: DEQ 128, f. & ef. 1-21-77

Highest and Best Practicable Treatment and Control Required

340-41-010 [SA 26, f. 6-1-67;
Repealed by DEQ 128, f. & ef. 1-21-77]

chemical substances, toxic materials, radioactivity, turbidities, color, odor, and other deleterious factors at the lowest possible levels.

(2) No wastes shall be discharged and no activities shall be conducted which either alone or in combination with other wastes or activities will cause violation of the following standards in the waters of the Mid Coast Basin:

(a) Dissolved oxygen (DO):

(A) Fresh waters: DO concentrations shall not be less than 90 percent of saturation at the seasonal low, or less than 95 percent of saturation in spawning areas during spawning, incubation, hatching, and fry stages of salmonid fishes.

(B) Marine and estuarine waters (outside of zones of upwelled marine waters naturally deficient in DO): DO concentrations shall not be less than 6 mg/l for estuarine waters, or less than saturation concentrations for marine waters.

(b) Temperature:

(A) Fresh waters: No measurable increases shall be allowed outside of the assigned mixing zone, as measured relative to a control point immediately upstream from a discharge when stream temperatures are 64° F. or greater; or more than 0.5° F. increase due to a single-source discharge when receiving water temperatures are 63.5° F. or less; or more than 2° F. increase due to all sources combined when stream temperatures are 62° F. or less, except for specifically limited duration activities which may be authorized by DEQ under such conditions as DEQ and the Department of Fish and Wildlife may prescribe and which are necessary to accommodate legitimate uses or activities where temperatures in excess of this standard are unavoidable and all practical preventive techniques have been applied to minimize temperature rises. The Director shall hold a public hearing when a request for an exception to the temperature standard for a planned activity or discharge will in all probability adversely affect the beneficial uses.

(B) Marine and estuarine waters: No significant increase above natural background temperatures shall be allowed, and water temperatures shall not be altered to a degree which creates or can reasonably be expected to create an adverse effect on fish or other aquatic life.

(c) Turbidity (Jackson Turbidity Units, JTU): No more than a 10 percent cumulative increase in natural stream turbidities shall be allowed, as measured relative to a control point immediately upstream of the turbidity causing activity. However, limited duration activities necessary to address an emergency or to accommodate essential dredging, construction or other legitimate activities and which cause the standard to be exceeded may be authorized provided all practicable turbidity control techniques have been applied and one of the following has been granted:

(A) Emergency activities: Approval coordinated by DEQ with the Department of Fish and Wildlife under conditions they may prescribe to accommodate response to emergencies or to protect public health and welfare.

(B) Dredging, Construction or other Legitimate Activities: Permit or certification authorized under terms of Section 401 or 404 (Permits and Licenses, Federal Water Pollution Control Act) or OAR 141-85-100 et seq. (Removal and Fill Permits, Division of State Lands), with limitations and conditions governing the activity set forth in the permit or certificate.

(d) pH (hydrogen ion concentration): pH values shall not fall outside the following ranges:

(A) Marine waters: 7.0 — 8.5.

(B) Estuarine and fresh waters: 6.5 — 8.5.

(e) Organisms of the coliform group where associated with fecal sources (MPN or equivalent MF using a representative number of samples):

Water Quality Standards Not to be Exceeded (To be adopted pursuant to ORS 468.735 and enforceable pursuant to ORS 468.720, 468.990, and 468.992.)

340-41-245 (1) Notwithstanding the water quality standards contained below, the highest and best practicable treatment and/or control of wastes, activities, and flows shall in every case be provided so as to maintain dissolved oxygen and overall water quality at the highest possible levels and water temperatures, coliform bacteria concentrations, dissolved

(A) Marine waters and estuarine shellfish growing waters: A fecal coliform median concentration of 14 organisms per 100 milliliters, with not more than 10 percent of the samples exceeding 43 organisms per 100 ml.

(B) Estuarine waters other than shellfish growing waters: A log mean of 200 fecal coliform per 100 milliliters based on a minimum of 5 samples in a 30-day period with no more than 10 percent of the samples in the 30-day period exceeding 400 per 100 ml.

(f) Bacterial pollution or other conditions deleterious to waters used for domestic purposes, livestock watering, irrigation, bathing, or shellfish propagation, or otherwise injurious to public health shall not be allowed.

(g) The liberation of dissolved gases, such as carbon dioxide, hydrogen sulfide, or other gases, in sufficient quantities to cause objectionable odors or to be deleterious to fish or other aquatic life, navigation, recreation, or other reasonable uses made of such waters shall not be allowed.

(h) The development of fungi or other growths having a deleterious effect on stream bottoms, fish or other aquatic life, or which are injurious to health, recreation, or industry shall not be allowed.

(i) The creation of tastes or odors or toxic or other conditions that are deleterious to fish or other aquatic life or affect the potability of drinking water or the palatability of fish or shellfish shall not be allowed.

(j) 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 industry shall not be allowed.

(k) Objectionable discoloration, scum, oily sleek, or floating solids, or coating of aquatic life with oil films shall not be allowed.

(l) Aesthetic conditions offensive to the human senses of sight, taste, smell, or touch shall not be allowed.

(m) Radioisotope concentrations shall not exceed maximum permissible concentrations (MPC's) in drinking water, edible fishes or shellfishes, wildlife, irrigated crops, livestock and dairy products, or pose an external radiation hazard.

(n) The concentration of total dissolved gas relative to atmospheric pressure at the point of sample collection shall not exceed one hundred and ten percent (110%) of saturation, except when stream flow exceeds the 10-year, 7-day average flood. However, for Hatchery receiving waters and waters of less than 2 feet in depth, the concentration of total dissolved gas relative to atmospheric pressure at the point of sample collection shall not exceed one hundred and five percent (105%) of saturation.

(o) Dissolved chemical substances: Guide concentrations listed below shall not 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 340-41-242: (mg/l)

Arsenic (As)	0.01
Barium (Ba)	1.0
Boron (Bo)	0.5
Cadmium (Cd)	0.003
Chromium (Cr)	0.02
Copper (Cu)	0.005
Cyanide (Cn)	0.005
Fluoride (F)	1.0
Iron (Fe)	0.1
Lead (Pb)	0.05
Manganese (Mn)	0.05
Phenols (totals)	0.001
Total dissolved solids	100.0
Zinc (Zn)	0.01

(p) Pesticides and other Organic Toxic Substances shall not exceed those criteria contained in the 1976 edition of the EPA publication "Quality Criteria for Water". These criteria shall apply unless supporting data show conclusively that beneficial uses will not be adversely affected by exceeding a criterion by a specific amount or that a more stringent criterion is warranted to protect beneficial uses.

(3) Where the natural quality parameters of waters of the Mid Coast Basin are outside the numerical limits of the above assigned water quality standards, the natural water quality shall be the standard.

(4) Mixing zones:

(a) The Department may suspend the applicability of all or part of the water quality standards set forth in this rule, except those standards relating to aesthetic conditions, within a defined immediate mixing zone of specified and appropriately limited size adjacent to or surrounding the point of waste water discharge.

(b) The sole method of establishing such mixing zone shall be by the Department defining same in a waste discharge permit.

(c) In establishing a mixing zone in a waste discharge permit, the Department:

(A) May define the limits of the mixing zone in terms of distance from the point of the waste water discharge or the area or volume of the receiving water or any combination thereof;

(B) May set other less restrictive water quality standards to be applicable in the mixing zone in lieu of the suspended standards; and

(C) Shall limit the mixing zone to that which in all probability, will:

(i) Not interfere with any biological community or population of any important species to a degree which is damaging to the ecosystem; and

(ii) Not adversely affect any other beneficial use disproportionately.

(5) Testing methods: The analytical testing methods for determining compliance with the water quality standards contained in this rule shall be in accordance with the most recent edition of **Standard Methods for the Examination of Water and Waste Water published jointly by the American Public Health Association, American Water Works Association, and Water Pollution Control Federation**, unless the Department has published an applicable superseding method, in which case testing shall be in accordance with the superseding method; provided, however, that testing in accordance with an alternative method shall comply with this rule if the Department has published the method or has approved the method in writing.

[**Publications**: The publication(s) referred to or incorporated by reference in this rule are available from the office of the Department of Environmental Quality.]

Stat. Auth.: ORS Ch. 468
Hist: DEQ 128, f. & ef. 1-21-77; DEQ 1-1980, f. & ef. 1-9-80

WATER USE CLASSIFICATIONS

Beneficial Uses	Mid Coast Basin Estuary and Adjacent Marine Waters	South Coast Basin Estuary and Adjacent Marine Waters	North Coast - Lower Columbia River Basin Estuary and Adjacent Marine Waters
Public Domestic Water Supply			
Private Domestic Water Supply			
Industrial Water Supply	X	X	X
Irrigation			
Livestock Watering			
Anadromous Fish Passage	X	X	X
Salmonid Fish Rearing	X	X	X
Salmonid Fish Spawning	X	X	X
Resident Fish & Aquatic Life	X	X	X
Wildlife & Hunting	X	X	X
Fishing	X	X	X
Boating	X	X	X
Water Contact Recreation	X	X	X
Aesthetic Quality	X	X	X
Hydro Power			
Commercial Navigation & Transportation	X	X	X

Beneficial Uses	Umpqua R. Estuary to Head of Tide-water and Adjacent Marine Waters	Rogue River Estuary and Adjacent Marine Waters
Public Domestic Water Supply		
Private Domestic Water Supply		
Industrial Water Supply	X	X
Irrigation		
Livestock Watering		
Anadromous Fish Passage	X	X
Salmonid Fish Rearing	X	X
Salmonid Fish Spawning		
Resident Fish & Aquatic Life	X	X
Wildlife & Hunting	X	X
Fishing	X	X
Boating	X	X
Water Contact Recreation	X	X
Aesthetic Quality	X	X
Hydro Power		
Commercial Navigation & Transportation	X	X

PUERTO RICO MARINE WATER QUALITY STANDARDS

Reference:

Water Quality Standards Regulation

Commonwealth of Puerto Rico

November 1976

Commonwealth of Puerto Rico

Environmental Quality Board

La Fortaleza

San Juan, Puerto Rico 00910

PUERTO RICO

Pursuant to the intent of these regulations, the following water quality standards are promulgated for the coastal and surface waters of the Commonwealth of Puerto Rico.

The following water quality standards shall apply at all times, except for surface waters during periods when their flows are less than the average minimum seven-day low flow which occurs once in any ten years.

General Water Quality Standards

All waters shall meet generally accepted aesthetic qualifications and shall be capable of supporting diversified aquatic life. These waters shall, except as specifically noted, meet the following quality standards:

Solids and Other Matter - The waters of Puerto Rico shall not contain materials attributable to discharges that will settle to form objectionable deposits. Nor will they contain floating debris, scum, oil and other floating

materials attributable to discharges in amounts sufficient to be unsightly or deleterious.

Color, Odor, Taste or Turbidity - The waters of Puerto Rico shall be free from color, odor, taste or turbidity attributable to discharges in such a degree as to create a nuisance.

Substances in toxic concentration or combinations thereof - The waters of Puerto Rico shall not contain substances in concentrations or combinations which are toxic or which produce undesirable physiological responses in human, fish or other animal life, and plants.

A. Specific standards for some substances:

(1) Coastal Waters

The maximum allowable concentrations of certain substances in the receiving coastal waters shall be the following:

SUBSTANCE	COASTAL WATERS Limit (mg/l)
Arsenic (As)	0.15
Barium (Ba)	1.0
Boron (B)	4.8
Cadmium (Cd)	0.005
Carbon (Chloroform extract)	28.0
Chlorides (Cl)	---
Chromium (Cr)(hexavalent)	0.05
Chromium (Cr)(trivalent)	0.30
Copper (Cu)	0.05
Cyanide (CN)	0.01
Detergents (Methylene blue)(active substances)	0.5
Fluorides (F)	1.3
Iron (Fe)	0.200
Lead (Pb)	0.015
Manganese (Mn)	0.100
Mercury (Hg)	0.001
Nitrogen (NO_3,NO_2,NH_3)	5.0
Nitrate plus Nitrite (as N)	---
Phenols	0.010
Selenium (Se)	0.01
Silver (Ag)	0.001
Sulfate (SO_4)	2800.
Uranil (UO_2)	0.500
Zinc (Zn)	0.050

B. Specific Standards for Pesticides

(1) Organochlorines - Organochlorine pesticide residues in surface and coastal waters shall not exceed 1/100 of the TLm 96 hour of approved species. In no case shall these pesticides exceed the concentration (micrograms per liter) or ppb listed.

SUBSTANCE	CONCENTRATION
Aldrin-Dieldrin	0.002
Chlordane	0.004
DDT	0.001
Endosulfan	0.001
Endrin	0.001
Heptachlor	0.001
Lindane	0.004
Methoxychlor	0.020
Mirex	0.001
Toxaphene	0.005
Perthane	0.070

(2) Organophosphorus and non-persistent pesticides - Organophosphorus and non-persistent pesticide residues in surface and coastal waters shall not exceed 1/10 of the TLm 96 hour approved species. In no case shall

the following pesticides exceed the concentration (micrograms per liter or ppb) listed:

SUBSTANCE	CONCENTRATION
Demeton	0.100
Guthion	0.010
Malathion	0.100
Parathion	0.004
Coumaphos	0.010
Dursban	0.040
Fenthion	0.400
Naled	0.400
2,4-D	80.000
2,4,5-TP (Silvex)	10.000

C. Standards for combinations of toxic materials - When two or more toxic materials are or may be present at the same time in a body of water, the applicable water quality standard for each material shall be determined by means of bioassay or any other applicable method approved by the Board so as to account for the chronic effect of such combinations of toxic materials.

(1) When the allowable concentration for combination of toxic materials is determined by bioassay and the presence of toxic substances is caused by only one discharge, the applicable water quality standard in the boundary of the Initial Mixing Zone for any of the toxic substances will be 1/z of the concentration of that substance multiplied by the dilution factor resulting from bioassay with the said discharge, i.e.:

Cc = 1/z X Cd x (T1m 96 hours or more)

where:

Cc = applicable water quality standard in the body of water for any of the toxic substances present in the discharge.

Cd = concentration of the toxic substance in the discharge.

z = will equal 10 for non-persistent toxicants, and will equal 100 for

persistent toxicants or substances which tend to accumulate in the biological food chain.

(2) When the presence of toxic substances is caused by more than one discharge, and to these discharges cannot be assigned a single Initial Mixing Zone nor separate Initial Mixing Zones without overlapping, the allowable concentration for any toxic substance in that body of water shall be determined by the Board on a case-by-case basis, in accordance with the intent expressed in this subsection and upon request of the persons responsible for the discharges.

Radioactive Materials - The concentration of Radium-226 and Strontium-90 shall not exceed 3 and 10 picocuries per liter, respectively. In the absence of Strontium-90 and alpha emitters, the gross beta concentrations shall not exceed 1,000 picocuries per liter.

Temperature

A. No heat may be added to the waters of Puerto Rico which would cause the monthly arithmetic mean of the maximum daily temperature at any site, prior to the addition of any heat, to be exceeded by more than 1.5°F, or which would cause the temperature at any site to exceed 94°F.

B. No discharge or combination of discharges into the waters of Puerto Rico shall be injurious to fish or shellfish or the culture or propagation of a balanced indigenous population thereof (nor in any way affect desired use).

C. Thermal discharges shall be confined to the epilimnetic layer of stratified lakes.

D. The rate of temperature change shall not be more than 1°F per hour and shall not exceed a total of 5°F in any 24 hour period except when due to natural causes.

Suspended, Colloidal or Settleable Solids - Solids from wastewater sources shall not cause deposition in, or be deleterious to, the designated uses of the waters.

Use Classifications

Class SA

A. Usages and/or description - Coastal waters whose existing characteristics should not be altered in order to preserve the existing natural phenomena. Toward that end, these waters are not intended to be used for any activity, such as swimming, boating and skiing, that might be detrimental to the existing natural phenomena.

B. Standards

(1) Dissolved Oxygen - Shall contain not less than 5 milligrams per liter (mg/l) except when due to natural causes.

(2) Coliforms - The fecal coliform geometric average of a series of representative samples (at least five samples) of the waters taken over a period of a month shall not exceed 70 per 100 milliliters (70/100 ml), and not more than 20 percent of the samples shall exceed 200/100 ml.

(3) pH - Shall always lie between 7.3 and 8.5 except when natural causes alter such limits.

(4) Color - Shall not be altered except by natural causes.

(5) Turbidity - Shall not be altered except by natural causes. A Secchi disc shall be visible at a minimum depth of one meter.

(6) Total Dissolved Solids - Shall not be altered except by natural causes.

(7) Chlorides - (Not applicable)

(8) Taste and Odor-Producing Substances - Shall contain none in amounts that will interfere with the preservation or enjoyment of existing natural phenomena.

(9) Nutrients - Shall not be altered except by natural causes. Phosphorous as total P shall not exceed 25 ppb.

Class SB

A. Usages and/or description - Coastal waters intended for uses where the human body may come in direct contact with the water (such as complete body submergence); and for use in propagation and preservation of desirable species.

B. Standards

(1) Dissolved Oxygen - Shall contain not

less than 5 mg/l except when natural Puerto Rico phenomena cause this value to be depressed.

(2) Coliforms

i. The fecal coliform monthly geometric average of a series of representative samples (at least five samples) of the waters taken over a period of a month shall not exceed 200/100 ml, and not more than 20 percent of the samples exceed 400/100 ml.

ii. In shellfish growing areas, the total coliform monthly geometric average of a series of representative samples (at least five samples) of the waters taken over a period of a month shall not exceed 70/100 ml, and not more than 20 percent of the samples exceed 230/100 ml.

(3) pH - Shall always lie between 7.3 and 8.5 except when natural phenomena cause the value of the pH to fall outside this range. No materials that extend normal ranges of pH at any location by more than 0.1 pH units should be introduced into salt water portions of tidal tributaries or coastal waters. At no time should the introduction of foreign materials cause the pH to be less than 7.3 nor greater than 8.5.

(4) Color - Shall not be altered by other than natural phenomena except when it can be proven that such change in color is harmless to biota and aesthetically acceptable.

(5) Turbidity - A Secchi disc shall be visible at a minimum depth of 1 meter.

(6) Total Dissolved Solids - (Not applicable)

7) Chlorides

(Not applicable.)

8) Taste and odor-producing substances

Shall contain none in amounts that will interfere with use for primary contact recreation or will render any undesirable taste or odor to aquatic life.

9) Nutrients

(Note: The maximum allowable limits of phosphorus and other nutrients shall be established by the Board as soon as adequate technical information about their concentrations in the waters of the Commonwealth of Puerto Rico becomes available).

2.2.3 Class SC

A. Usages and/or description:

Coastal waters intended for uses where the human body may come in indirect contact with the water (such as fishing, boating, etc.), and for use in propagation and maintenance of desirable species.

B. Standards:

1) Dissolved oxygen

Shall contain not less than 4 mg/l except when natural conditions cause this value to be depressed.

(2) Coliforms - The coliform geometric average of a series of representative samples (at least five samples) of the waters taken over a period of a month shall not exceed 10,000/100 ml total coliform or 2,000/100 ml fecal coliform. Not more than 20 percent of the samples shall exceed 4,000/100 ml fecal coliform.

(3) pH - Shall always lie between 7.3 and 8.5 except when natural phenomena cause the value of the pH to fall outside this range. No materials that extend normal ranges of pH at any location by more than 0.1 pH units should be introduced into salt water portions of tidal tributaries or coastal waters. At no time should the introduction of foreign materials cause the pH to be less than 7.3 nor greater than 8.5.

(4) Color - Shall not be altered by other than natural phenomena except when it can be proven that such change in color is harmless to biota and aesthetically acceptable.

(5) Turbidity - A Secchi disc shall be visible at a minimum depth of 1 meter.

(6) Total Dissolved Solids - (Not applicable.)

(7) Chlorides - (Not applicable)

(8) Taste and Odor-Producing Substances - Shall contain none in amounts that will render any undesirable taste or odor to edible aquatic life.

(9) Nutrients - Phosphorus as total P shall not exceed 25 ppb.

CLASSIFICATION OF THE WATERS OF PUERTO RICO ACCORDING TO THEIR INTENDED USE

Coastal Waters

Class SA

Shall include bioluminescent lakes and bays such as La Parguera and Monsio Jose on the Southern Coast, Bahia de Mosquito in Vieques, and those special areas which may be designated by the Board.

Class SB

1. From Bahia Parguera to Punta Guanajibo in Mayaguez.
2. From Punta Algarrobo in Mayaguez to Punta Boqueron in Aguadilla.
3. From Punta Borinquen in Aguadilla to Punta Maracayo in Arecibo.
4. From Punta Caracoles in Arecibo to Punta Salinas in Catano.
5. From San Juan (Punta del Morro) to Playa Sardinera in Fajardo.
6. From Playa de Fajardo to Punta Cabra de Tierra in Ceiba.

7. From Punta Cascajo in Ceiba to Playa de Naguabo.
8. From El Morrillo to Punta Icacos in Yabucoa.
9. From Punta Yeguas in Yabucoa to Punta Rodeo in Aguirre.
10. From Punta Colchones in Salinas to Punta Carenero in Ponce.
11. From Punta Cuchara in Ponce to Cayo Parguera in Guayanilla.
12. From Punta Verraco in Guayanilla to Bahía de Guánica.
13. From Bahía de Guánica to Bahía Parguera in Lajas.
14. Isla de Culebra except the port of Dewey.
15. From Punta Mulos east to Bahía Mosquito in Vieques.
16. From Bahía Mosquito to Cayo de Tierra in Vieques.
17. From Cayo Real west to Puerto Isabel Segunda.
18 Isla Monito.

19. Isla Desecheo.

20. Isla de la Mona.

21. Isla Caja de Muertos.

22. Cayo Icacos.

23. Cayos de Cana Gorda, Guanica.

24. All lagoons not classified under any other class in these Regulations.

Shellfish Growth Areas

Those areas that are designated by the Board as "Shellfish growth areas The existing water quality regulations established by both the U S Public Health Service and the Department of Health of the Commonwealth of Puerto Rico shall be applied to this classification. This classification will be applied 100 meters beyond the physical and geographical areas limiting the shellfish growth areas.

Class SC

1. Mayaguez Bay - from Punta Guanajibo to Punta Algarrobo.
2. Aguadilla Bay - from Punta Boqueron to Punta Borinquen.
3. Arecibo Bay - from Punta Maracayo to Punta Caracoles.
4. San Juan Bay including Laguna San Jose - from Punta Salinas to Punta del Morro.
5. Fajardo Bay - from Playa Sardinera to Playa de Fajardo.
6. Roosevelt Roads - from Punta Cabra de Tierra to Punta Cascajo.
7. Port of Naguabo - from Playa de Naguabo to El Morrillo.
8. Port of Yabucoa - from Punta Icacos to Punta Yeguas.
9. Jobos Bay and Laguna de las Mareas - from Punta Rodeo to Punta Colchones.
10. Guayanilla and Tallaboa Bays - from Cayo Parguera to Punta Verraco.
11. Port of Ponce from Punta Carenero to Punta Cuchara.
12. Guánica Bay inland waters north of the mouth.
13. Port of Dewey in Culebra.
14. Port of Isabel Segunda in Vieques.
15. Puerto Real in Vieques - between Cayo de Tierra and Cayo Real.

State of Rhode Island Marine Water Quality Standards

Rhode Island Water Quality Regulations Dec. 19

Department of Environmental Management
75 Davis St.
Providence, Rhode Island 02908

RHODE ISLAND

Antidegradation

No new discharges permitted into Class A, SA, B, or SB waters. This prohibition shall not apply where it is demonstrated by the applicant to the state that the discharge under most adverse conditions will not impair any usages specifically assigned to the class and the waters will not be degraded below existing classification. Most adverse conditions shall include but not be limited to minimum dilution predictable and complete disruption in operation at any treatment system. This prohibition shall not apply to normal stormwater drainage.

Waters whose existing quality is better than the established standards as of the date on which such standards become effective will be maintained at such high quality unless it has been affirmatively demonstrated to the Director and after a public hearing that a change is justifiable as a result of necessary economic or social development and will not result in a significant loss of a use presently possible in such waters. Any industrial, public, or private pro-

ject or development which would constitute a new source of pollution or an increased source of pollution to high quality waters will be required to provide the highest and best practicable means of waste treatment to maintain high water quality. In implementing this policy, the Administrator of the Federal Environmental Protection Agency will be kept advised and will be provided with such information as he will need to discharge his responsibilities under the Federal Water Pollution Control Act, as amended.

In the review of EPA NPDES permits, no approval will be given unless or until the Director has information on existing water quality for the substances to be discharged.

STATE OF RHODE ISLAND
DEPARTMENT OF HEALTH
DIVISION OF WATER POLLUTION CONTROL

WATER QUALITY CRITERIA FOR SEA WATER

Item	Class SA	Class SB	Class SC
	Suitable for all sea water uses including shellfish harvesting for direct human consumption (approved shellfish areas), bathing and other water contact sports.	Suitable for bathing, other recreational purposes, industrial cooling and shellfish harvesting for human consumption after depuration (restricted shellfish area); excellent fish and wildlife habitat; good aesthetic value.	Suitable fish, shellfish and wildlife habitat; suitable for recreational boating and industrial cooling; good aesthetic value.
1. Dissolved Oxygen	Not less than 6.0 mg/l at any time	Not less than 5.0 mg/l at any time	Not less than 5 mg/l during at least 16 hours of any 24-hour period nor less than 4 mg/l at any time
2. Sludge deposits-solid refuse-floating solids-oils-grease-scum	None allowable	None allowable	None except that amount that may result from the discharge from a waste treatment facility providing appropriate treatment

SEA WATER (Continued)

Item	Class SA	Class SB	Class SC
3. Color and turbidity	None in such concentrations that will impair any usages specifically assigned to this Class	None in such concentrations that would impair any usages specifically assigned to this Class	None in such concentrations that would impair any usages specifically assigned to this Class
4. Coliform bacteria per 100 ml	Not to exceed a median MPN of 70 and not more than 10% of the samples shall ordinarily exceed an MPN of 230 for a 5-tube decimal dilution or 330 for a 3-tube decimal dilution	Not to exceed a median value of 700 and not more than 2300 in more than 10% of the samples	None in such concentrations that would impair any usages specifically assigned to this Class
5. Fecal coliform bacteria/100 ml	(See Note S.9)	(See Note S.9)	
6. Taste and odor	None allowable	None in such concentrations that would impair any usages specificially assigned to this Class and none that would cause taste and odor in edible fish or shellfish	None in such concentrations that would impair any usages specifically assigned to this Class and none that would cause taste and odor in edible fish or shellfish

Item	Class SA	Class SB	Class SC
7. pH	6.8 - 8.5	6.8 - 8.5	6.5 - 8.5
8. Allowable temperature increase	(See Note S.10)	(See Note S.10)	(See Note S.10)
9. Chemical constituents (See Note S.4)	None in concentrations or combinations which would be harmful to human, animal or aquatic life or which would make the waters unsafe or unsuitable for fish or shellfish or their propagation, impair the palatability of same, or impair the waters for any other uses	None in concentrations or combinations which would be harmful to human, animal or aquatic life or which would make the waters unsafe or unsuitable for fish or shellfish or their propagation, impair the palatability of same, or impair the waters for any other usage assigned to this Class	None in concentrations or combinations which would be harmful to human, animal or aquatic life or which would make the waters unsafe or unsuitable for fish or shellfish or their propagation, or impair the water for any other usage assigned to this Class
10. Radioactivity	(See Note S.7)	(See Note S.7)	(See Note S.7)

NOTES: SEA WATER

S.1 Sea waters are those waters subject to the rise and fall of the tide.

S.2 All sewage treatment plant effluents shall receive disinfection before discharge to sea waters.

S.3 The water quality standards do not apply to conditions brought about by natural causes.

S.4 The waters shall be substantially free of pollutants that will:

a. Unduly affect the composition of bottom fauna,
b. Unduly affect the physical or chemical nature of the bottom,
c. Interfere with the propagation of fish and shellfish,
d. Undesirably alter the qualitative and quantitative character of the biota.
e. The latest edition of Environmental Protection Agency Water Quality Criteria for Water, the latest edition of Water Quality Criteria State of California, and other scientifically acceptable criteria will be used as guidelines in assessing impacts of chemical constituents in the issuance of permits and implementing other water quality improvement programs.

S.5 Bacteriological surveys of sea waters should include sampling during periods when the most unfavorable hydrographic and pollution conditions prevail.

S.6 Any water falling below the standards of quality for a given Class shall be considered unsuitable for the uses indicated for that Class. Waters falling below the standards of quality for Class SD shall be Class SE and considered to be in a nuisance condition.

NOTES: SEA WATER (Continued)

S.7 The level of radioactive materials in all waters shall not be in concentrations or combinations which would be harmful to human, animal or aquatic life, or result in concentration in organisms producing undesirable conditions.

S.8 In the case of thermal discharges into tidal rivers or estuaries, where mixing zones are allowed, the mixing zone will be limited to no more than 1/4 of the cross sectional area and/or volume of flow of stream or estuary, leaving at least 3/4 free as a zone of passage. In wide estuaries and oceans, the limits of mixing zones will be established by the Director.

S.9 As a guide, pending further research, for Class SA waters a fecal coliform criteria of a median value of 15 per 100 ml not more than 10% of the samples exceeding 50 per 100 ml and for Class SB waters and a fecal coliform criteria of a median value of 50 per 100 ml and not more than 500 per 100 ml in 10% of the samples collected, will be used.

S.10 Temperature increase: None except where the increase will not exceed the recommended limit on the most sensitive receiving water use and in no case exceed 83°F or in any case raise the normal temperature more than 1.5°F, 15 June through September and not more than 4°F from October through 15 June. All measurements shall be made at the boundary of such mixing zones as is found to be reasonable by the Director.

S.11 The latest edition of the federal publication Water Quality Criteria will be considered in the interpretation and application of bioassay results. Bioassays will be performed according to the latest edition of Standard Methods for the Examination of Water and Wastewater (APHA).

S.12 The latest edition of Standard Methods for Examination of Water and Wastewater, APHA, will be followed in the collection, preservation, and analysis of samples. Where a method is not given, the latest procedures of the American Society for Testing Materials (ASTM) will be followed. Other methods recommended by the Environmental Protection Agency (EPA) can be used, if legally acceptable.

REVISIONS IN WATER QUALITY CLASSIFICATION - SEA WATER

Area	Existing Classification	Revised Classification
Upper Narragansett Bay in the vicinity of North Farm on the Bay south of line from the northernmost extremity of the breakwater at the North Farm marina easterly to the shore, and east and north of the breakwater at the North Farm marine (5 Acres)	SA	SB
The waters in the vicinity of Quonset Point within 1,500 feet of shore from the western end of the carrier pier to a point 1,000 feet north of Quonset Point (148 Acres)	SB & SC	SC
The waters in the vicinity of Quonset Point, exclusive of those waters described above, north and east of a line from the southeastern corner of the boundary fence at Electric Boat to [illegible]eral Rock buoy, north of a line from Sauga Point to Buoy (Fl 4 sec) 3, north and west of a line from Buoy (Fl 4 sec) 3, to Buoy (Qk Fl) 13, north and west of a line from Buoy (Qk Fl) 13, to Buoy (Qk Fl R) 12, west of a line from Buoy (Qk Fl R) 12, to nun buoy 18 and south and west of a line from nun buoy 18 to a point approximately 3,000 feet north of Quonset Point (459 Acres)	SA,SB,SC	SB
Former SB areas around Quonset Point (296 Acres)	SB	SA
The waters within 1,000 feet of any point on the shore line of Gould Islands (250 Acres)	SC	SA

REVISIONS (Continued)

Area	Existing Classification	Revised Classification
The waters in the vicinity of Coasters Harbor which are within 500 feet of the Newport marine outfall sewer (18 Acres)	SB	SC
The waters in the vicinity of Taylor Point which are within 300 feet of the Jamestown marine outfall sewer (7 Acres)	SA	SC
The waters in the vicinity of Taylor Point, exclusive of those waters described above, south of a line from the northernmost extremity of Taylor Point to can buoy 13, north of a line from a point of land approximately 1,000 feet south of the Newport Bridge to the northernmost extremity of Rose Island, and within 1,000 feet of the shoreline of Jamestown (49 Acres)	SA	SB
The waters in the vicinity of East Ferry west of a line from Bryer Point to a point approximately 1,500 feet south of Narragansett Avenue (61 Acres)	SC	SB
The waters in the vicinity of Wharton's Shipyard which are south and west of a line from a point of land approximately 3,000 feet north of Bull Point to the northernmost of "the Dumplings," and west of a line from the northernmost of "the Dumplings" to a point of land approximately 1,000 feet north of Bull Point (17 Acres)	SA	SB
The waters in the vicinity of South Ferry within 500 feet of the University of Rhode Island Narragansett Bay Campus Marine Outfall sewer (9 Acres)	SB	SC

REVISIONS (Continued)

Area	Existing Classification	Revised Classification
The waters in the vicinity of Condon Street at Narragansett Pier, Narragansett (28 Acres)	SC	SA
The waters in the vicinity of Tucker's Dock which are within 500 feet of the South Kingstown/Narragansett Regional Sewage Treatment Plant outfall (18 Acres)	SA	SC
The waters in the vicinity of Tucker's Dock, exclusive of those waters described above, which are within 2,500 feet of any point on the shoreline between Continental Road and Hazard Avenue (207 Acres)	SA	SB
The waters in the vicinity of Scarborough within 500 feet of the marine outfall sewer located approximately 2,000 feet, bearing 133° from a point of land at the northern boundary of Fort Nathaniel Greene (18 Acres)	SB	SC
The waters in the vicinity of Scarborough which are more than 500' but less than 1,500' away from the marine outfall sewer located approximately 2,000 bearings 133° from a point of land at the northern boundary of Fort Nathaniel Green (144 Acres)	SA & SB	SB
Upper point Judith Pond north of Can Buoy 25 including the Saugatucket River downstream of the Main Street Dam (43 Acres)	SC	SB
The waters in the vicinity of Galilee within 500 feet of the shore from the breachway to a point approximately 600 feet west of Great Island Road (39 Acres)	SA	SB

REVISIONS (Continued)

Area	Existing Classification	Revised Classification
The waters in the vicinity of Jerusalem within 500 feet of the shore from the breachway to a point approximately 1,000 feet north of the State Pier (23 Acres)	SA	SB
The waters in the vicinity of Snug Harbor within 500 feet of shore from Gooseberry Road to High Point (24 Acres)	SA	SB
The waters in the vicinity of Old Harbor which are within 500 feet of the Block Island marine outfall sewer (12 Acres)	SA & SB	SC
The waters in the vicinity of Old Harbor, exclusive of the waters described above, which are within 1,000 feet from shore from a point 1,000 feet north of the Block Island marine outfall sewer to a point 1,000 feet south of the marine outfall sewer (31 Acres)	SA & SB	SB
The waters in the vicinity of Old Harbor west of a line from the fixed red light at the end of the northern breakwater to the shore at Pebbly Beach which are not included in the SB & SC areas above (23 Acres)	SB	SA
The waters in the vicinity of Fort Adams, Newport, which are within 300 feet of the Fort Adams marine outfall sewer (4.1 Acres)	SB	SC

State of South Carolina Marine Water Quality Standards

SOUTH CAROLINA
DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL

Effective - July 24, 1981

REGULATION 61-68. WATER CLASSIFICATION-STANDARDS SYSTEM

Promulgated pursuant to Section 48-1-40 of the 1976 Code, as amended.

Superseding previous Regulation 68, filed with the Secretary of State on December 21, 1976.

Office of Environmental Quality Control

and Environmental Control

2600 Bull Street

Columbia, SC 29201

A. DEFINITIONS

(17) Tidal salt waters means those waters whose elevation is subject to changes due to oceanic tides and which have chloride ion content in excess of 250 milligrams per liter (mg/l) (salinity = 0.48 o/oo).

B. PROTECTION OF EXISTING QUALITY

(1) Existing water uses shall be maintained and protected. No lowering of quality which would interfere with or hurt existing uses is allowable.

(2) Existing high quality ground waters and surface waters whose quality exceeds levels necessary to support recreation and propagation of fish, shellfish and wildlife shall not be lowered in quality unless and until it has been affirmatively demonstrated to the Department that such change is consistent with the Act, the Clean Water Act (P.L.92-500, 95-217) and related regulations and that such change will not interfere with or hurt any existing water uses. Any industrial, public or private project or development which could constitute a new source of pollution or an increased source of pollution into such high quality waters shall be required by the Department as part of the initial project design to insure a treatment level consistent with the Act, the Clean Water Act (P.L. 92-500, 95-217) and related regulations.

(3) No degradation shall be allowed in high quality waters which constitute an outstanding recreational or ecological resource. These surface waters shall be classified using the Class AA or Class SAA described in Section D. of this regulation.

C. RULES APPLICABLE TO ALL CLASSES AND STANDARDS

The General Assembly of South Carolina in the Act has declared the following policy:

> "It is declared to be the public policy of the State to maintain reasonable standards of purity of the water resources of the State, consistent with the public health, safety and welfare of its citizens, maximum employment, the industrial development of the State, the propagation and protection of terrestrial and marine flora and fauna, and the protection of physical property and other resources. It is further declared that to secure these purposes and the enforcement of the provisions of this Act, the Department of Health and Environmental Control shall have authority to abate, control and prevent pollution."

The classes and standards described in Section D. of this regulation implement the above State policy by protecting the waters of South Carolina. Also consistent with the above policy, the Department does adopt general rules for all waters of South Carolina as follows:

(1) Any discharge into State waters must be permitted by the Department and receive a degree of treatment and/or control which shall produce an effluent which is consistent with the Act, the Clean Water Act (P.L. 92-500, 95-217), this regulation and related regulations. No permit issued by the Department shall be interpreted as creating any vested right in any person. Additionally, any discharge into State waters containing sanitary wastes shall be effectively disinfected as necessary to meet the appropriate standards in Section D. of this regulation.

(2) All ground waters and surface waters of the State shall at all times, regardless of flow, be free from:

(a) 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 with water uses;

(b) Floating debris, oil, grease, scum and other floating material attributable to sewage, industrial waste or other waste in amounts sufficient to be unsightly to such a degree as to create a nuisance or that interfere with water uses;

(c) Material attributable to sewage, industrial or other waste which produce taste or odor or change the existing color or physical, chemical or biological conditions in the receiving waters to such a degree as to create a nuisance or interfere with water uses; and,

(d) High temperature, toxic, corrosive or other deleterious substances attributable to sewage, industrial waste or other waste in concentrations or combinations which interfere with water uses, or which are harmful to human, animal, plant or aquatic life.

(3) It may be inappropriate for all water bodies to be classified within one of the classes described in Section D. In some waters, treatment requirements, after consideration of all alternatives, may be so stringent as to be environmentally or technologically impractical, the treatment costs may cause adverse social or economic effects or may not result in corresponding environmental benefits. Water quality standards may also be unattainable because of established conditions that cannot be feasibly changed.

In situations such as above, reclassification of individual waters may be warranted and a classified use different from those in Section D. along with different numeric standards for one or more constituents designated. Where it can be justified based on environmental, technological, beneficial impact, or economic restraints, individual waters may be reclassified for protection of an attainable use and standards

designated for that use. This could have the effect of designation of less sensitive uses which require less restrictive water quality standards. However, this shall not allow lowering existing use and standards in areas where they are being attained as required in Section B. of this regulation.

In waters which are individually reclassified through the above process, consideration will be given to placing a mandatory review date on the classification action to periodically ensure that the classified use is still valid and justifiable.

(4) Because of natural conditions some waters of the State may have characteristics outside the limits established by the numeric standards in Section D. The standards will not be considered violated when values outside those standards are caused by natural conditions. Based upon these facts the Department shall take a two fold approach in dealing with these type waters where necessary:

(a) Waters which due to natural conditions have lower dissolved oxygen or pH values shall be recognized separately. Waters in Class A, Class B, Class SA, and Class SB to which natural standards apply shall be designated in the listing of stream classifications (Regulation 61-69) using the labels (4 mg/l D.O.) (5-8 pH) and/or (5-8.5 pH). These designations will be applied by the Department based on technical analyses.

(b) Separate numeric standards may be established for other waters which have natural conditions outside existing numeric standards. This action shall be based on scientific evidence for those specific waters. The protection and propagation of a balanced indigenous population of fauna and flora and the existing uses shall be maintained. Designation of such waters shall be made by the Department and shall be subject to public participation and administrative procedures for establishing regulations.

(5) It is recognized that waters will vary in their ability to successfully assimilate nutrient loadings. Due to the many factors which have a bearing on the effects of nutrients upon waters, careful consideration must be given relative to the control of nutrients reaching these waters. Therefore, loadings of nutrients into waters and specific nutrient standards for specific waters will be addressed on a case-by-case basis. Conditions to be considered shall include, but not be limited to, such factors as the hydrology and morphometry of the body, the existing and projected trophic state, the characteristics of the loadings and existing and classified water uses.

(6) Intermittent streams shall be considered waters of the State and those streams shall meet the quality standards and use restrictions specified for waters to which they are tributary.

(7) (a) All fresh waters of the State, other than those classified AA and A-TROUT or referred to in (7)(c), shall not exceed a maximum temperature of 90°F (32.2°C) at any time nor shall a maximum temperature rise above temperatures existing under natural conditions exceed 5°F (2.8°C) as a result of the discharge of heated liquids unless an appropriate temperature criteria or mixing zone, as provided below, has been established. The water temperature at the inside boundary of the mixing zone shall not be more than 18°F (10°C) greater than that of water unaffected by the heated discharge. The appropriate temperature criteria or the size of the mixing zone shall be determined on an individual project basis and shall be based on biological, chemical, engineering and physical considerations. Any such determination shall assure the protection and propagation of a balanced, indigenous population of shellfish, fish and wildlife in and on a body of water to which the heated discharge is made and shall allow passage of aquatic organisms.

(b) The temperature of tidal salt waters, other than those waters classified SAA and those waters inside approved mixing zones, shall not exceed a weekly average temperature of 4°F (2.2°C) above temperatures existing under natural conditions during the fall, winter or spring, nor a weekly average of 1.5°F (0.8°C) above temperatures existing under natural conditions during the summer. The size of the mixing zone shall be determined on an individual project basis and shall be based on biological, chemical, engineering and physical considerations. Any such determination shall assure the protection and propagation of a balanced, indigenous population of shellfish, fish and wildlife in and on a body of water to which a heated discharge is made. Further, the mixing zone shall be kept at a minimum and shall allow the passage of aquatic organisms.

(8) The standards of Section C. (7)(a)-(c) and Section D. of this regulation are applicable to any waters when the flow rate is equal to or greater than the minimum seven day average flow rate that occurs with an average frequency of once in ten years (7Q10). The general standards of Section C.(2) of this regulation are applicable to all waters regardless of flow.

(9) It is recognized that the ability of the land above the water table to assimilate and treat wastes will vary depending on the soil type, depth to water table, waste volume and character, and expected life of the facility. Due to the many factors which have bearing on the effects of wastes upon aquifer quality, careful consideration must be given relative to waste disposal on or in the land and acceptable loadings shall be determined only after all factors of a project are considered.

(10) Tests or analytical determinations to determine compliance or non-compliance with standards shall be made in accordance with methods and procedures approved by the Department and the U.S. Environmental Protection Agency (EPA).

(11) In making any tests or analytical determination on waters to determine compliance or non-compliance with water quality standards, representative samples shall be collected as approved by the Department and EPA. Consideration of representative samples will include the following:

(a) Samples shall be so distributed over time and flow, and from points over the area and depth of the waters being studied as to permit a realistic appraisal of such actual or potential damage to water use or aquatic life as may exist.

(b) Bioassay and biological assessment methods may be employed in appropriate situations to determine abnormal nutrient enrichment, median tolerance limits (TLm), concentration of toxic substances, acceptable instream concentrations or acceptable effluent concentrations.

(c) Temporal distribution of samples in waters under a tidal influence shall be such as to cover the full range of tidal conditions.

(12) Criteria published by the EPA pursuant to Section 304(a) of the Clean Water Act (P.L. 92-500, 95-217) or other documents approved by the Department shall be used as a guide to determine levels, which protect water use, of parameters other than those given in Section C. (7)(a)-(c) and Section D. of this regulation.

(5) CLASS SAA - tidal salt waters which constitute an outstanding recreational or ecological resource and/or waters suitable for uses that require the absence of pollution. Suitable also for uses listed in Class SA, Class SB, and Class SC.

QUALITY STANDARDS FOR CLASS SAA WATERS

ITEMS	SPECIFICATIONS
(a) Garbage, cinders, ashes, oils, sludge, or other refuse.	None allowed.
(b) Treated wastes, thermal discharges, toxic wastes, deleterious substances, colored or other wastes.	None allowed.

(c)	Dissolved oxygen.	Not less than 5 mg/l.
(d)	Organisms of coliform group.	Not to exceed a MPN total coliform median of 70/100 ml, nor shall more than 10% of the samples exceed an MPN of 230/100 ml, where all tests are made using the five tube dilution method.
(e)	pH.	Not to vary from levels existing under natural conditions.
(f)	Temperature.	Not to vary from levels existing under natural conditions.
(g)	Turbidity.	Not to vary from levels existing under natural conditions.

(6) CLASS SA - tidal salt waters suitable for harvesting of clams, mussels, or oysters for market purposes or human consumption except within buffer zones designated by the Department. These buffer zones are consistent with this classification. Suitable also for uses listed in Class SB and Class SC.

QUALITY STANDARDS FOR CLASS SA WATERS

	ITEMS	SPECIFICATIONS
(a)	Garbage, cinders, ashes, oils sludge or other refuse.	None allowed.
(b)	Treated wastes, toxic wastes, deleterious substances, colored or other wastes except in (a) above.	None alone or in combination with other substances or wastes in sufficient amounts: to be adversely affect the taste, color, odor or sanitary condition of clams, mussels, or oysters for human consumption; or to impair the waters for any other best usage as determined for the specific waters which are assigned to these classes. Documents referred to in Section C. (12) of this regulation shall be used as a guide in determining levels which protect water use.

(c) Dissolved oxygen.	Daily average not less than 5 mg/l, with a low of 4 mg/l, except that specified waters may have an average of 4 mg/l due to natural conditions.
(d) Organisms of coliform group.	Not to exceed an MPN total coliform median of 70/100 ml, nor shall more than 10% of the samples exceed an MPN of 230/100 ml, where all tests are made using the five tube dilution method.
(e) pH.	Shall not vary more than 3/10 of a pH unit above or below that of effluent-free waters in the same geological area having a similar total salinity, alkalinity and temperature, but not lower than 6.5 or above 8.5.
(f) Temperature.	As prescribed in C. (7) of this regulation.

(7) CLASS SB - tidal salt waters suitable for primary contact recreation. Suitable also for uses listed in Class SC with the same exception.

QUALITY STANDARDS FOR CLASS SB WATERS

ITEMS	SPECIFICATIONS
(a) Garbage, cinders, ashes, oils, sludge or other refuse.	None allowed.
(b) Treated wastes, toxic wastes, deleterious substances, colored or other wastes except in (a) above.	None alone or in combination with other substances or wastes in sufficient amounts: to make the waters unsafe or unsuitable for primary contact recreation; or to impair the waters for any other best usage as determined for the specific waters which are assigned

		to these classes. Documents referred to in Section C.(12) of this regulation shall be used as a guide in determining levels which protect water use.
(c)	Dissolved oxygen.	Daily average not less than 5 mg/l, with a low of 4 mg/l, except that specified waters may have an average of 4 mg/l due to natural conditions.
(d)	Fecal coliform.	Not to exceed a geometric mean of 200/100 ml, based on five consecutive samples during any 30 day period; nor shall more than 10% of the samples in any 30 day period exceed 400/100 ml.
(e)	pH.	Shall not vary more than one-half of a pH unit above or below that of effluent-free waters in the same geological area having a similar total salinity, alkalinity and temperature, but not lower than 6.5 or above 8.5.
(f)	Temperature.	As prescribed in C. (7) of this regulation.

(8) CLASS SC - tidal salt waters suitable for secondary contact recreation, crabbing, and fishing, except harvesting of clams, mussels, or oysters for market purposes or human consumption. Also suitable for the survival and propagation of marine fauna and flora.

QUALITY STANDARDS FOR CLASS SC WATERS

	ITEMS	SPECIFICATIONS
(a)	Garbage, cinders, ashes, sludge or other refuse.	None allowed.
(b)	Treated wastes, toxic wastes, deleterious substances, colored or other wastes except in (a) above.	None alone or in combination with other substances or wastes in sufficient amounts: to be

		harmful to the survival of marine fauna or flora or the culture or propagation thereof; to adversely affect the taste, color, odor, or sanitary condition of fish for human consumption; to make the waters unsafe or unsuitable for secondary contact recreation; to impair the waters for any other best usage as determined for the specific waters which are assigned to these classes. Documents referred to in Section C.(12) of this regulation shall be used as a guide in determining levels which protect water use.
(c)	Dissolved oxygen.	Not less than 4 mg/l.
(d)	Fecal coliform.	Not to exceed a geometric mean of 1000/100 ml based on five consecutive samples during any 30 day period; nor exceed 2000/100 ml in more than 20% of the samples examined during such period.
(e)	pH.	Shall not vary more than one pH unit above or below that of effluent-free waters in the same geological area having a similar total salinity, alkalinity and temperature but not lower than 6.5 or above 8.5.
(f)	Temperature.	As prescribed in C. (7) of this regulation.

E. SEPARABILITY

Should any section, paragraph or other part of this regulation be declared invalid for any reason, the remainder shall not be affected.

[illegible] CLASSIFICATIONS

FOR THE STATE OF

SOUTH CAROLINA

as adopted by the

SOUTH CAROLINA DEPARTMENT OF

HEALTH AND ENVIRONMENTAL CONTROL

I. Authority For Adoption Of Classifications:

SECTION 48-1-60. CLASSIFICATION AND STANDARDS OF QUALITY AND PURITY OF THE ENVIRONMENT AUTHORIZED AFTER NOTICE AND HEARING

It is recognized that, due to variable factors, no single standards of quality and purity of the environment is applicable to all ambient air, land or waters of the State. In order to attain the objectives of this chapter, the Department, after proper study and after conducting a public hearing upon due notice, shall adopt rules and regulations and classification standards. The classification and the standards of quality and purity of the enivronment shall be adopted by the Department in relation to the public use or benefit to which such air, land or waters are or may, in the future, be put. Such classification and standards may from time to time be altered or modified by the Department.

The adoption of a classification of the waters and the standards of quality and purity of the environment shall be made by the Department only after public hearing on due notice as provided by this chapter.

SECTION 48-1-80. CONSIDERATIONS IN FORMULATING CLASSICIATION AND STANDARDS FOR WATER

In adopting the classification of waters and the standards of purity and quality, consideration shall be given to:

(1) The size, depth, surface area covered, volume, direction, rate of flow, stream gradient and temperature of the water;

(2) The character of the district bordering such water and its peculiar suitability for the particular uses and with a view to conserving it and encouraging the most appropriate use of the lands bordering on such water for residential, agricultural, industrial or recreational purposes;

(3) The uses which have been made, are being made or may be made of such waters for transportation, domestic and industrial consumption, irrigation, bathing, fishing and fish culture, fire prevention, sewage disposal or otherwise; and

(4) The extent of present detilement or fouling of such waters which has already occurred or resulted from past discharges therein.

II. Criteria for Classes:

All adopted classifications must conform to the standards contained within the latest edition of the Water Classification Standards System for the State of South Carolina.

III. Tributary To Classified Waters:

In any case where waters are not classified and are tributary to classified waters, they shall meet the quality standards and use restrictions specified for the classified water.

IV. Significance Of Dates:

The filing date or effective date after each body of water represents the date on which the adopted classification was filed with the South Carolina Secretary of State, or was published as final regulations in the State Register.

V. Status Of Classifications:

The classification for all bodies of water contained herein supersedes all previous classifications.

Date: September 15, 1980

ARCHER CREEK: Beaufort County
That portion from Port Royal to U.S. Government Parris Island Bridge, Class SB. Filed March 15, 1968.
From the Bridge to Broad River, Class SA. Filed March 15, 1968.

ASHEPOO RIVER: Colleton County
That portion to salt water intrusion, Class B. Filed August 7, 1972.
Salt water intrusion to Atlantic Ocean, Class SA. Filed November 5, 1955.

ASHLEY RIVER: Dorchester and Charleston Counties
That portion to salt water intrusion, Class B. Filed September 27, 1954; August 7, 1972.
Salt water intrusion to Charleston Harbor, Class SC. Filed September 27, 1954.

BATTERY CREEK: Beaufort County
The entire stream tributary to Beaufort River, Class SB. Filed March 15, 1968.

BEAUFORT RIVER: Beaufort County
The entire stream tributary to Port Royal Sound, Class SB. Filed November 5, 1955.

BEES CREEK Jasper County
The entire stream tributary to Coosawhatchie River, Class SC. Filed November 5, 1955.

BLACK RIVER: Lee, Sumter, Clarendon, Williamsburg and Georgetown Counties
From the headwaters to the confluence with Pocotaligo River, Class B (swamp). Filed June 8, 1956.
From this point to the junction with U.S. 701, Class A (swamp). Filed June 8, 1956.
From U.S. 701 to Winyah Bay, Class SB. Filed June 8, 1956.

BRICKYARD CREEK: Beaufort County
The entire stream tributary to Beaufort River, Class SA. Filed November 5, 1955.

BRICKYARD CREEK: Charleston County
The entire stream tributary to Ashley River, Class SC. Filed September 27, 1954.

BROAD CREEK: Beaufort County
The entire stream tributary to Calibogue Sound, Class SA. Filed March 15, 1968.

BROAD RIVER: Jasper and Beaufort Counties
The entire stream tributary to Port Royal Sound, Class SA. Filed November 5, 1955.

CALIBOGUE SOUND: Beaufort County
The entire sound tributary to Atlantic Ocean, Class SA. Filed March 15, [illegible].

CAPE ROMAIN HARBOR: Charleston County
The entire stream tributary to Atlantic Ocean, Class SA. Filed March 15, 1968.

CHARLESTON HARBOR: Charleston County
From Battery to Atlantic Ocean, Class SC. Filed March 15, 1968.

CHOWAN CREEK: Beaufort County
The entire stream tributary to Beaufort River, Class SA. Filed November 5, 1955.

CLARK SOUND: Charleston County
The entire sound tributary to Charleston Harbor, Class SC. Filed March 15, 1968.

COASTAL WATER: Georgetown and Horry Counties
From the land to the limits of State jurisdiction, Class SA. Filed March 15, 1968.

COASTAL WATER: Jasper, Beaufort and Colleton Counties
Coastal waters offshore to the land to the limits of State jurisdiction, Class SA. Filed March 15, 1968.

COASTAL WATERS: Charleston County
From the land to the limits of State jurisdiction, Class SA. Filed March 15, 1968.

COLLETON RIVER: Beaufort County
The entire stream tributary to Port Royal Sound, Class SA. Filed November 5, 1955.

COMBAHEE-SALKEHATCHIE RIVER: Barnwell, Bamberg, Allendale, Hampton, Colleton and Beaufort Counties
That portion of the stream to salt water intrusion, Class A. November 5, 1955.
From salt water intrusion to St. Helena Sound, Class SA. Filed November 5, 1955.

COOPER RIVER: Berkeley and Charleston Counties
That portion of the stream from U.S. 52 to a point approximately 30 miles above the junction of the Ashley and Cooper Rivers, Class B. Filed September 27, 1954; February 24, 1953.
That portion below that point to the junction of the Ashley and Cooper Rivers, Class SC. Filed February 24, 1953.

COOPER RIVER: Beaufort County
The entire stream tributary to Calibouge Sound, Class SA. Filed November 5, 1955.

COOSAW RIVER: Beaufort County
The entire stream tributary to St. Helena Sound, Class SA. Filed November 5, 1955.

COOSAWHATCHIE RIVER: Allendale, Hampton and Jasper Counties
Headwaters to salt water intrusion, Class A. Filed November 5, 1955.
Salt water intrusion to Broad River, Class SA. Filed November 5, 1955.

COPAHEE SOUND: Charleston County
The entire sound, Class SA. Filed March 15, 1968.

FIELDS CUT: Jasper County
The entire stream, Class SB. Filed March 15, 1968.

FOLLY RIVER: Charleston County
The entire stream tributary to Stono River, Class SA. Filed March 15, 1968.

FRIPP INLET: Beaufort County
The entire stream tributary to Atlantic Ocean, Class SA. Filed November 5, 1955.

GRAYS SOUND: Charleston County
The entire sound, Class SA. Filed March 15, 1968.

HAMLIN SOUND: Charleston County
The entire sound, Class SA. Filed March 15, 1968.

HARBOR RIVER: Beaufort County
The entire stream tributary to St. Helena Sound and Fripp Inlet, Class SA. Filed November 5, 1955.

INTRACOASTAL WATERWAY: Horry and Georgetown Counties
From the North Carolina line to salt water intrusion, Class A. June 8, 1956.
From salt water intrusion to Winyah Bay, Class SA. Filed June 8, 1956.
From Winyah Bay to South Santee River, Class SB. Filed March 15, 1968.

INTRACOASTAL WATERWAY: Charleston County
That portion of the waterway from South Edisto River to S.C.L. Railroad Bridge over Stono River, Class SA. Filed March 15, 1968.
From the S.C.L. Bridge to the confluence to Elliott Cut and the Stono River, Class SA. Effective August 1, 1979.
From confluence of Elliott Cut and the Stono River through Charleston Harbor to Ben Sawyer Bridge, Class SC. Filed March 15, 1968.
From Ben Sawyer Bridge to South Santee River, Class SA. Filed March 15, 1968.

JERICHO CREEK: Beaufort County
The entire stream tributary to Battery Creek, Class SB. Filed March 15, 1968.

MAY RIVER: Beaufort County
The entire stream tributary to Calibogue Sound, Class SA. Filed November 5, 1955.

MORGAN RIVER: Beaufort County
The entire stream tributary to St. Helena Sound, Class SA. Filed November 5, 1955.

MUD CREEK: Jasper County
The entire stream between Savannah River and Wright River, Class SB. Filed March 15, 1968.

MARTIN CREEK: Oconee County
The entire stream tributary to Hartwell Reservoir, Class B. Filed August 7, 1

NEW CHEHAW RIVER: Colleton County
The entire stream tributary to St. Helena Sound, Class SA. Filed March 15, 1968.

NEW RIVER: Beaufort and Jasper Counties
The entire stream tributary to Atlantic Ocean, Class SB. Filed November 5, 1955.

NORTH EDISTO: Charleston County
The entire stream tributary to Atlantic Ocean, Class SA. Filed February 16, 1966.

NORTH SANTEE RIVER: Georgetown County
That fresh water portion of the stream, Class B. Filed August 7, 1972.
From U.S. 17 to 1000 feet below the Intracoastal
Waterway, Class SB. Filed February 15, 1962.
From that point to the Atlantic Ocean, Class SA. Filed February 15, 1962.

OLD CHEHAW RIVER: Colleton County
The entire stream tributary to Combahee River, Class SA. Filed March 15, 1968.

PORT ROYAL SOUND: Beaufort County
The entire sound tributary to Atlantic Ocean, Class SA. Filed November 5, 195[illegible]

RAMSHORN CREEK: Beaufort County
The entire stream between New River
and Cooper River, Class SA. Filed November 5, 1955.

SAINT HELENA SOUND: Beaufort and Colleton Counties
The entire sound tributary to Atlantic Ocean, Class SA. Filed March 15, 1968.

SALKEHATCHIE-COMBAHEE RIVER: Barnwell, Bamberg, Allendale, Colleton, Hampton and Beaufort Counties
From headwaters to Salt water intrusion, Class A. Filed November 5, 1955.
From salt water intrusion to St. Helena Sound, Class SA. Filed November 5, 1955.

SAMPIT RIVER: Georgetown County
From the headwaters to salt water intrusion, Class B (swamp). Filed August 7, 1972.
From salt water intrusion to Winyah Bay, Class SC. Filed June 8, 1956.

SHEM CREEK: Charleston County
The entire stream tributary to Charleston Harbor, Class SC. Filed March 15, 1968.

SOUTH EDISTO RIVER: Charleston and Colleton Counties
The entire stream tributary to Atlantic Ocean, Class SA. Filed February 15, 1956.

SWAMP (near North, S.C.): Orangeburg County
The entire stream tributary to North Fork
Edisto River, Class B (swamp). Filed August 7, 1972.

STONO RIVER: Charleston County
That portion extending eastward to S.C.L. Railroad
Bridge, Class SA. Filed March 15, 1968.
From the S.C.L. Railroad Bridge to Abbapoola Creek, Class SA. Effective August 1, 1979.
From Abbapoola Creek to Folly River, Class SA. Filed March 15, 1968.

TRENCHARDS INLET: Beaufort County
The entire inlet tributary to Atlantic Ocean, Class SA. Filed November 5, 1955.

WADMALAW RIVER: Charleston County
The entire stream tributary to North Edisto River, Class SA. Filed March 15, 1968.

WADMALAW SOUND: Charleston County
The entire sound tributary to Wadmalaw River, Class SA. Filed March 15, 1968.

WANDO RIVER: Charleston and Berkeley Counties
The entire stream tributary to Cooper River
at Charleston Harbor, Class SB. Filed March 15, 1968.

WAPPOO CREEK: Charleston County
The entire stream tributary to Stono River, Class SC. Filed March 15, 1968.

WHALE BRANCH: Beaufort County
The entire stream between Broad River and Coosaw River, Class SA. Filed November 5, 1955.

WINYAH BAY: Georgetown County
The entire bay tributary to Atlantic Ocean, Class SC. Filed June 8, 1956.

WRIGHT RIVER: Jasper County
The entire stream tributary to Atlantic Ocean, Class SB. Filed November 5, 1955.

Territory of American Samoa Marine Water Qulaity Standards

Reference:

Water Quality Standards for American Samoa

May 21, 1981

Environmental Quality Commission

Office of the Governor

American Samoa Government

Pago Pago, American Samoa 96799

WATER QUALITY STANDARDS FOR AMERICAN SAMOA

ADOPTED

May 21, 1981

I. INTRODUCTION

These standards of water quality and the classification of the waters of the Territory of American Samoa, according to their present and future beneficial uses, have been prepared as required by the federal Water Pollution Control Act of 1972, as amended, and in accordance with the Territorial Environmental Quality Act, 24.0101 - 24.0169 ASCA.

II. POLICIES

A. Waters whose existing quality is better than the established standards will be maintained at their existing high quality. These and other waters of the Territory will not be lowered in quality unless it has been affirmatively demonstrated to the Environmental Quality Commission and the Environmental Protection Agency (EPA) that such change is justifiable as a result of necessary economic or social development, and will not interfere with or become injurious to any assigned uses made of, or presently possible in such waters. Any public or private development, which would constitute a new source of pollution to high quality waters, is required, as a part of the initial project design, to provide the degree of waste treatment necessary to preserve this high quality.

B. Village septic tanks and cesspool construction and operation shall be governed by public health regulations, water quality standards, building codes, and sewer system use regulations.

C. The American Samoa Government may review these standards or develop additional water quality standards based upon measurements of selected physical, biological and chemical indicators for the waters of the Territory.

1. The Environmental Quality Commission (EQC) will review existing standards at least once every three years.

2. The Department of Health, Public Health Office, in cooperation with the Environmental Quality Commission, will develop and carry out an ongoing water quality monitoring program for fresh-water impoundments and streams, embayments, and the nearshore and off-shore open coastal waters of American Samoa.

3. The Department of Health, Public Health Office and the EQC will anually (a) analyze all available water quality data; (b) assess the natural statistical variation of selected water quality indicators for fresh-water impoundments and streams, embayments, nearshore and offshore coastal waters, and oceanic waters of American Samoa; and (c) recommend to the Environmental Quality Commission any necessary revisions to existing water quality criteria, standards, or policies for fresh-water impoundments and streams, embayments, nearshore and off-shore open coastal waters and oceanic waters of American Samoa.

III. DEFINITIONS

As used in these standards and in concurrence with the Clean Water Act (P.L. 95-217):

A. "Discharge of a pollutant" and "Discharge of pollutants" each means (A) any addition of any pollutant to navigable waters from any point source, (B) any addition of any pollutant to the waters of the contiguous zone or the ocean from any point source other than a vessel or other floating craft.

B. "Environmental Quality Commission (EQC) means the Environmental Quality Commission of the American Samoa Government.

C. "Natural" means free of substances or conditions, or a combination of both, at a specific time and place, which are attributable to the activities of man.

D. "Person" means any individual, partnership, firm, state, association, municipality, public or private corporation, subdivision or agency of the Territory, trust, estate or any other legal entity or interstate body.

E. "Point source" means any discernable, confined and discrete conveyance including, but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged.

F. "Pollutant" means dredged spoil, sediment, solid waste, petroleum products, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, excavated material and industrial, municipal and agriculture waste discharged into water.

G. "Pollution" means the man-made or man-induced alteration of the physical, chemical, biological, and/or radiological integrity of territorial waters.

H. "Receiving water" means any water body receiving a pollutant.

I. "Zone of Mixing" means a defined area of receiving water around a point source within which specific modifications of applicable water quality standards are permitted by the Environmetal Quality Commission.

J. "Process waste water" means any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct or waste product.

K. "Light penetration depth" means the depth reached by one percent of the sunlight incident on the surface of a body of water. Below the light penetration depth no significant amount of photosynthesis occurs.

L. "Initial dilution" means the process which results in the rapid and irreversible turbulent mixing of wastewater with water around the point of discharge.

IV. CLASSIFICATION OF WATERS AND ALLOWABLE USES

A. Fresh Surface Waters

1. Decription:

Fresh surface waters include all perennial and intermittent fresh water streams, all natural and artifical impoundments, springs, seeps and wetlands, including coastal wetlands not surface connected to the ocean.

2. Objective:

All fresh surface waters are to remain in as nearly their natural state as possible. Fresh surface waters (except coastal wetlands) and ground waters are designated for public or domestic water supply and shall be protected and preserved so that they will meet the National Interim Primary Drinking Water Regulations (NIPDWR) and those standards in the Public Health Service Drinking Water Standards which are not superseded by the NIPDWR. Consequently, there shall be no discharges of treated or untreated sewage, industrial wastes, or other material attributable to the activities of man into fresh surface waters.

3. Protected Uses:

a. Potable water supply;

b. The support and propagation of aquatic life and wildlife;

c. Aesthetic enjoyment; and

d. Compatible recreation in and on the water e.g. fishing and swimming.

4. Prohibited Uses (Include But Are Not Limited To):

   a. Bathing, as well as washing clothes and dishes;

   b. Point-source discharges;

   c. Animal pens over or adjacent to any impoundment or stream (25.1604 ASCA);

   d. Dead animal disposal (25.1606 ASCA);

   e. Dredging and filling activities;

   f. Hazardous and radioactive waste discharges; and

   g. Dumping of solid waste.

5. Zones Of Mixing Will Not Be Permitted In Fresh Surface Waters.

B. Embayments

1. Description:

An embayment is a body of water subject to tidal action and bounded by headlands which restrict the exchange of water with the open ocean. A bay or lagoon is an embayment if the ratio of the volume of water in the bay (in cu. ft.) to the cross-sectional area (sq. ft.) of the bay at the entrance is more than 700 determined at mean lower low water. Consequently, the residence time of water in embayments, as opposed to open coastal areas, allows for the accumulation of land drainage materials which influence water quality and marine ecosystems.

Examples of embayments are Pago Pago Harbor beginning at a line drawn from Blunt's Point to Breaker's Point and Pala Lagoon inside of a line drawn from the eastern most point of the airport to the nearest part of Coconut Point.

2. Objective:

All embayments are to remain in as nearly their natural state as possible.

3. Pago Pago Harbor:

A large, deep and majestically beautiful seaport, Pago Pago Harbor has been designated by the American Samoa Government to be developed into a transshipment center for the South Pacific. In addition, the fishing and canning industry, which is important to the economic development of the territory, is located in Pago Pago Harbor. The surrounding area is the population center of Tutuila.
The EQC realizes that industrial development will stress the water quality in the harbor. At the same time, the harbor is widely used as a source of recreation and food by many of the island's residents. Recognizing its unique position as an embayment where water quality has been degraded from the natural condition, the EQC has established a separate set of water quality standards for Pago Pago Harbor.

a. Protected Uses:

1. Recreation and subsistence fishing;

2. Boat launching ramps and designated mooring areas;

3. Subsistence food gathering, e.g. shellfish harvesting;

4. Aesthetic enjoyment;

5. Whole and limited body contact recreation, e.g. bathing, swimming, snorkeling and SCUBA diving;

6. Support and propagation of marine life;

7. Industrial water supply; and

8. Mari-culture development.

b. Prohibited Uses (Include But Are Not Limited To):

1. Dumping or discharge of solid waste;

2. Animal pens over or adjacent to any shoreline (25.1604 ASCA);

3. Dredging and filling activities, except when permitted to provide compliance with water quality standards;

4. Hazardous and radioactive waste discharges; and

5. Discharge of oil sludge, oil refuse, fuel oil, or bilge water from any vessel or shoreside facility (20.1714 ASCA).

c. Zones of mixing will be allowed in Pago Pago Harbor by EQC permit only. No zones of mixing will be allowed within 500 ft. of Goat Island Point or beneath this surface area to the bottom of the harbor. This under water area contains a reef that has been designated by the Office of Marine Resources to be preserved for recreational diving and reef observation. The area is accessible to locals and hotel residents.

4. Special Embayments:

Fagatele Bay is unique because of its pristine water quality, remote location and rich under water resources. The Office of Marine Resources has proposed to designate Fagatele Bay as an under water reserve. Therefore the EQC has assigned specific water quality standards to prohibit any reduction in water quality in the bay.

Pala Lagoon is a shallow embayment that is important as a breeding ground to the marine life of the territory. It has been designated by the Coastal Zone Management Plan as a special area. Therefore, the EQC has also classified the Pala Lagoon as a special embayment.

a. Protected Uses:

1. Recreation and subsistence fishing;

2. Subsistence food gathering, e.g. shellfish harvesting;

3. Aesthetic enjoyment;

4. Whole and limited body contact recreation, e.g. bathing, swimming, snorkeling, surfing, and SCUBA diving;

5. Support and propagation of marine resources; and

6. Mari-culture development.

b. Prohibited Uses (Include But Are Not Limitied To):

1. Dumping or discharge of solid or industrial waste material;

2. Animal pens over or adjacent to any shoreline (25.1604 ASCA);

3. Dredging and filling activities, except when in compliance with applicable permits and water quality standards;

4. Hazardous and radioactive waste discharges; and

5. Discharge of oil sludge, oil refuse, fuel oil, or bilge water from any vessel, or shoreside facility (20.1714 ASCA).

c. Zones of mixing will not be allowed in Pala Lagoon or Fagatele Bay.

5. Other Embayments:

All embayments of the territory excluding Pago Pago Harbor, Pala Lagoon, and Fagatele Bay are included in this category.

a. Protected Uses:

1. Recreational and subsistence fishing;

2. Boat launching ramps and designated mooring areas;

3. Subsistence food gathering, e.g. shellfish harvesting;

4. Aesthetic enjoyment;

5. Whole and limited body contact recreation, e.g. bathing, swimming, snorkeling, surfing, and SCUBA diving;

6. Support and propagation of marine life; and

7. Mari-culture development.

b. Prohibited Uses (Include But Are Not Limited To):

1. Dumping or discharge of solid or industrial waste material;

2. Animal pens over or adjacent to any shoreline (25.1604 ASCA);

3. Dredging and filling activities, except when permitted to provide compliance with water quality standards;

4. Hazardous and radioactive waste discharges; and

5. Discharge of oil sludge, oil refuse, fuel oil, or bilge water from any vessel or shoreside facility (20.1714 ASCA).

c. Zones of mixing will be allowed in the embayments included in this section by EQC permit only.

C. Open Coastal Waters:

1. Description:

Open coastal waters begin at the shoreline and extend seaward to the 100 fathom (600 feet or

183 meter) depth contour from mean lower low water. This category includes small bays with good water movement which do not qualify as embayments. This classification is divided into two divisions which are determined by distance from shore and water depth.

Nearshore open coastal waters are those waters within 1,000 feet of the shore. If the water depth at the 1,000 feet distance from the shore is less than 20 fathoms (120 feet) the nearshore waters extend to the 20 fathom (120 feet) depth contour from mean lower low water.

2. Objectives:

a. All nearshore open coastal waters are to remain in or as nearly in their natural state as possible.

b. All offshore open coastal waters are presently close to their natural state. It is the intent of these standards to sustain this high quality.

3. Protected Uses:

a. Commercial, subsistence and recreational fishing;

b. Scientific research;

c. Whole and limited body contact recreation e.g. swimming, snorkeling, surfing, and SCUBA diving;

d. Harbors and boat launching ramps;

e. Commercial and recreational boating;

f. The support and propagation of marine life; and

g. Aesthetic enjoyment.

4. Prohibited Uses (Include But Are Not Limited To):

American Samoa

a. Offshore oil recovery;

b. Dumping or discharge of solid or industrial waste material;

c. Discharge of oil sludge, oil refuse, fuel oil, or bilge waters from any vessel or shoreside facility (20.1714 ASCA);

d. Animal pens over any stream, river, bay, ocean or other body of fresh or salt water (25.1604 ASCA);

e. Dredging and filling activities, except when permitted to provide compliance with water quality standards; and

f. Hazardous and radioactive waste discharges.

5. Zones of mixing will be allowed in open coastal waters by EQC permit only. No zones of mixing will be permitted in Manu'a off Ofu Park and between Ofu Park and the Ofu-Olosega Bridge or in the channel between Ofu and Olosega within 1,000 feet of the bridge.

D. Oceanic Waters:

1. Description:

Oceanic waters extend from the 100 fathom (600 feet or 183 meters) depth contour from mean lower low water seaward.

2. Objectives:

All oceanic waters are presently close to their natural state. It is the intent of these standards to sustain this high quality.

3. Protected Uses:

a. Commercial, subsistence and recreational fishing;

b. Scientific research;

c. Commercial and recreational boating;

d. The support and propagation of marine life;

e. Power generation and acceptable thermal discharges;

f. Aesthetic enjoyment; and

g. Whole or limited body contact recreation.

4. Prohibited Uses (Include But Are Not Limited To):

a. Discharge of oil sludge, oil refuse, fuel oil, or bilge waters from any vessel (20.1714 ASCA);

b. Dumping of solid or industrial waste materials without an Environmental Protection Agency ocean dumping permit, except where permitted by exclusions in the federal ocean dumping regulations; and

c. Hazardous and radioactive waste discharges.

V. ZONES OF MIXING

The activities of man will result in the production of a variety of effluents that must be discharged into the waters of the territory for disposal. Although the policy of the EQC is to maximize the quality of all waters in American Samoa, the EQC realizes that for a variety of reasons it will not always be feasible to generate effluents whose quality equals or exceeds that required of the receiving water. Therefore, effluents discharged into waters of certain water quality categories will be allowed an area of initial dilution called a zone of mixing. In the zone of mixing some water quality parameters will be assigned maximum concentrations that are less stringent than permitted in the waters surrounding the zone of mixing. Areas where zones of mixing will not be allowed and the water quality parameters that can be changed in a zone of mixing are listed in the following criteria and procedures. The criteria and procedures must be complied with to establish a zone of mixing.

A. Criteria:

A zone of mixing can only be granted by the Environmental Quality Commission if the application and the supporting information clearly shows that all of the following conditions have been met:

1. The beginning or continuation of the function or operation involved in a discharge by the granting of the zone of mixing is in the public interest; and

2. The proposed discharge does not substantially endanger human health or safety; and

3. Compliance with the existing water quality standards at the point of discharge would produce serious economic hardships without equal or greater benefit to the public; and

4. Alterations generated by a proposed discharge do not disrupt the marine ecology of the receiving waters outside the zone of mixing; and

5. A zone of mixing shall not be granted for fresh surface waters, Pala Lagoon, Fagatele Bay, that portion of Pago Pago Harbor described in section IV.B.3.c. , or in those waters in Manu'a described in section IV.C.5 . Those water quality parameters which are subject to zones of mixing are chlorophylla, light penetration depth, nutrients, pH, temperature, turbidity, and fecal coliform. Furthermore, those water quality parameters which are subject to zones of mixing must conform to alternative within-zone limits determined by the EQC. The zone of mixing is defined in section V.B.4.g . Determinations of effluent limits for toxic substances must comply with section VI .A.8,9 ; and

6. The proposed discharges shall be substantially free fror visible floating materials, grease, oil, scum, foam and other floating matter attributable to sewage, industrial wastes, or other activities; and

7. The proposed discharge will not result in a lowering of water quality outside the zone of mixing so as to violate the standards of Section VI as they may be applicable.

B. <u>Procedures To Apply For Zone Of Mixing</u>:

1. Every application for a zone of mixing shall be accompanied by a complete and detailed description of present conditions, how present conditions compare to standards, and such other information as the Commission may prescribe.

2. Application for a zone of mixing for an existing discharge must be filed within six months of the effective date of these standards. The EQC will certify a proposed NPDES permit (initial issuance

or reissuance) only if conformance with the standards is demonstrated or a zone of mixing approved.

3. Each application for a zone of mixing shall be reviewed in light of the descriptions, statements, plans, histories, and other supporting information as may be submitted upon the request of the EQC and the effect or probable effect on the water quality standards established in Section VI of these standards.

4. A zone of mixing, or a renewal, shall be granted within the requirements of this section for the following time periods and conditions:

   a. If a zone of mixing is granted on the grounds that there is no technically and/or financially efficient means known, or available, for the adequate prevention, control, or abatement of the discharge involved, it shall be only until the necessary means of prevention, control, or abatement becomes practicable and it shall be subject to the taking of any substitute or alternative measures that the EQC may prescribe.

      No renewal of a zone of mixing granted under this section shall be allowed without a thorough review of known and available means of preventing, controlling or abating the discharge involved.

   b. The Environmental Quality Commission may permit a zone of mixing for a period not exceeding five years. Any zone of mixing approval is subject to EPA concurrence.

   c. Every zone of mixing granted under this section shall include, but not be limited to, grantee requirements to perform effluent and receiving water sampling and testing and to report the results of each test to the Environmental Quality Commission. A program of research to develop practicable alternatives to the methods of treatment or control in use by the grantee may be required as a condition of the zone of mixing.

   d. Any zone of mixing granted pursuant to this section may be renewed periodically on terms and conditions (for periods not exceeding five years) which would be appropriate for the initial granting of a zone of mixing, provided that:

(1) the applicant for renewal has met all of the conditions specified in the previously prescribed zone of mixing; and

(2) no renewal shall be granted except on application therefore. Any such application shall be made at least 120 days prior to the expiration of the current zone of mixing permit.

e. The Environmental Quality Commission on its own motion, or upon the application of any person, shall terminate a zone of mixing if, after a hearing, it is determined that:

(1) the water area outside the zone of mixing does not meet the standards applicable to that water as given in section VI; or

(2) the zone of mixing granted will unreasonable interfere with any actual or probable use of the water area; or

(3) if any NPDES permit condition is not being met and the discharger has failed to take action to bring the effluent into compliance.

Such termination shall be made only after a hearing held by the Environmental Quality Commission in accordance with the Administrative Procedures Act of the American Samoa Code. Upon such termination, the standards of water quality applicable thereto shall be those established for the water as otherwise classified.

f. Upon expiration of the period stated in the zone of mixing, the zone of mixing shall automatically terminate and no rights shall be vested to the grantee. If a renewal of a zone of mixing has been applied for as specified in Section V.B.4.d the zone of mixing shall continue until the renewal is approved or denied by the EQC.

g. Whenever an application is approved, the zone of mixing shall be defined as the initial dilution volume and shall be determined by PLUME or some other EQC approved model. The initial dilution volume is to be the only dispersion zone that will be considered as a zone of mixing. Water quality standards will be strictly enforced in the waters adjacent to the zone of mixing. Requirements for discharge permits shall be determined to assure compliance with the zone of mixing at zero current and worst case receiving water conditions and to assure protection of adjacent waters under other current conditions.

Further, the following will be considered by the EPA in determining whether to grant or deny a zone of mixing:

(1) Protected uses of the body of water;

(2) Existing natural conditions of the receiving water;

(3) Character of the effluent;

(4) Adequacy of the design of the outfall and diffuser system to achieve the desired dispersion and assimilation in the receiving water; and

(5) Other pertinent policies or plans of Territorial agencies.

h. No part of a shoreline, reef or bottom substrate shall be included in any zone of mixing.

i. No zone of mixing granted pursuant to this section shall be construed to prevent or limit the application of any emergency provisions or procedures provided by law.

VI. STANDARDS OR WATER QUALITY

A. The following standards apply to all fresh surface water, embayments, open coastal water and oceanic waters of the Territory,..(2,4,7,8,9,10,11,12 and 13 shall apply as a minimum within the zone of mixing.)

1. They shall be substantially free from materials attributable to sewage, industrial wastes, or other activities of man that will produce color, odor, or taste, either of itself or in combinations, or in the biota.

2. They shall be substantially free from visible floating materials, grease, oil, scum, foam, and other floating matter attributable to sewage, industrial wastes, or other activities of man.

3. They shall be substantially free from materials attributable to sewage, industrial wastes, or other activities of man that will produce visible turbidity or settle to form deposits.

4. They shall be free from substances and conditions or combinations thereof attributable to sewage, industrial wastes, or other activities of man which may be toxic to humans, other animals, plants, and aquatic life.

5. The number of fecal coliform bacterial shall not exceed a geometric mean of 100 per 100 milliliters nor exceed 200/100 milliliters in more than 10% of samples. In areas where shellfish are collected, coliform concentrations shall comply with U.S. Public Health Service Shellfish Standards, in its latest revision.

6. The temperature shall not deviate more than 1.5°F from conditions which would occur naturally and shall not hourly fluctuate more than 1.0 degree Farenheit nor exceed 85 degrees Fahrenheit due to the influence of other than natural causes.

7. Radioactivity:

   a. Since human exposure to any ionizing radiation is undesirable, the concentration of radioactivity in natural waters will be maintained at the lowest practicable level.

   b. No radioactive materials shall be present in natural waters as a consequence of the failure of an installation to exercise appropriate controls to eliminate releases.

   c. The concentration of radioactivity shall not:

      1. Result in accumulations of radioactivity in edible plants and animals that present a hazard to consumers or are harmful to aquatic life, as recommended by the Federal Radiation Council in the Radiation Protection Guides;

2. Exceed 1/30 of the MPC values given for continuous occupational exposures in the National Bureau of Standards Handbook No. 68, as revised; or

3. Exceed the current National Interim Primary Drinking Water regulations for waters used for public or domestic supplies.

8. Substances of Unknown Toxicity:

a. All effluents containing materials attributable to the activities of man shall be considered harmful and not permissible until acceptable bioassay tests have shown otherwise. It is the obligation of the persons producing the effluent to demonstrate that it is harmless, at the request of the Environmental Quality Commission.

b. Compliance with Section VI, A-4 of these standards will be determined by use of indicator organisms, analysis of species diversity, population density, growth anomalies, bioassays of appropriate duration or other appropriate methods as specified by the Environmental Quality Commission.

c. The survival of aquatic life in any waters shall not be less than that for the same water body in areas unaffected by sewage, industrial wastes or other activities of man, or, when necessary, for other control water that is consistent with the requirements for "Experimental Water" as described in Standard Methods for the Examination of Water and Wastewater (latest available edition). As a minimum, compliance with the objective as stated in the previous sentence shall be evaluated with a 96 hour bioassay.

d. In addition, effluent limits based upon acute bioassays of effluents will be prescribed where appropriate, additional numerical receiving water limits including the water quality criteria used to support toxic effluent standards identified under Section 307 (a) of the Federal Water Pollution Control Act of 1972, as amended, will apply; further, numerical receiving water limits for specific toxicants will be established as sufficient data becomes available; and source control of toxic substances will be encouraged.

9. Maximum allowable pesticides concentrations shall conform to national guidelines as stated in the Quality Criteria for Water.

10. Currents are important for transporting nutrients, larvae, and sedimentary materials, for flushing and purifying wastes, and for maintaining patterns of scour and fill. To protect these functions, there shall be no changes in basin geometry or fresh water inflow that will alter current patterns in such a way as to adversely affect existing biological populations or sediment distribution, except where significant public benefits shall accrue from the proposed action and all other permits, territorial and federal, have been approved.

11. Soil particles resulting from erosion on land involved in earthwork, such as the construction of public works; highways, subdivisions; recreational, commercial, or industrial developments; or the cultivation and management of agricultural lands shall not enter any water of the territory. This standard shall be deemed met upon a showing that the land on which the erosion occurred or is occurring is being managed in accordance with soil conservation practices acceptable to the Director of Agriculture, the EQC and the Director of Health, and that a comprehensive conservation program is being actively pursued, or that the discharge has received the best degree of treatment or control, and that the severity of impact of the residual soil reaching the receiving body of water is deemed to be acceptable.

12. To protect estuarine organisms, 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% of existing, except where significant benefits accrue from the project and other permits, Territorial and Federal, have been approved.

13. Total residual chlorine shall not exceed 20 ug/l.

B. The following standards apply specifically to all fresh surface waters of the territory:

Parameter	Median not to exceed the given value	Not to exceed the given value 10% of the time	Not to exceed the given value 2% of the time
Turbidity (NTU)	5	8	12
Total phosphorous (ug P/l)	150	250	350
Total Nitrogen (ug N/l)	300	650	1000
TSS (mg/l)	5	10	15

Dissolved oxygen: Not less than 75% saturation or less than 6.0 mg/l. If the natural level of D.O. is less than 6.0 mg/l, the natural level shall become the standard.

The pH range shall be 6.5 to 8.0 and be within 0.5 pH units of that which would occur naturally except for the fresh water lakes on Aunu'u Island where the minimum pH can be 6.0.

C. The following standards apply specifically to Pago Pago Harbor:

Parameter	Median not to exceed the given value	Not to exceed given value 10% of the time	Not to exceed given value 2% of the time
Turbidity (NTU)	0.75	1.0	1.5
Total phosphorous (ug P/l)	30	60	90
Total Nitrogen (ug N/l)	200	350	500
Chlorophyll a (ug/l)	1.0	3.0	5.0
Light penetration depth (ft)	65*	45*	35*

Dissolved oxygen: Not less than 70% saturation or less than 5.0 mg/l. If the natural level of D.O. is less than 5.0 mg/l, the natural level shall become the standard.

The pH range shall be 6.5 to 8.6 and be within 0.2 pH units of that which would occur naturally.

*To exceed given value 50, 90 and 98% of the time respectively.

D. The following standards apply specifically to Embayments excluding Pago Pago Harbor, Fagatele Bay and Pala Lagoon.

Parameter	Median not to exceed the given value	Not to exceed given value 10% of the time	Not to exceed given value 2% of the time
Turbidity (NTU)	.35	.45	.60
Total phosphorous (ug P/l)	20	40	60
Total nitrogen (ug N/l)	150	250	350
Chlorophyll a (ug/l)	.50	1.5	3.0
Light penetration depth (ft)	120*	100*	75*

Dissolved oxygen: Not less than 75% saturation or less than 5.0 mg/l. If the natural level of D.O. is less than 5.0 mg/l, the natural level shall become the standard.

The pH range shall be 6.5 to 8.6 and be within 0.2 pH units of that which would occur naturally.

*To exceed given value 50, 90 and 98% of time respectively.

The following standards apply specifically to Fagatele Bay and Pala Lagoon.

Parameter	Median not to exceed given value	Not to exceed given value 10% of the time	Not to exceed given value 2% of the time
Turbidity (NTU) Fagatele Bay only	.25	.35	.50
Turbidity (NTU) Pala Lagoon only	.75	1.5	2.5
Total phosphorous (ug P/l)	15	36	60
Total nitrogen (ug N/l)	135	220	300
Chlorophyll a (ug/l)	.35	.60	1.0
Light penetration depth (ft) Fagatele Bay only	130*	110*	90*

Dissolved oxygen: Not less than 80% saturation or less than 5.5 mg/l. If the natural level of D.O. is less than 5.5 mg/l, the natural level shall become the standard.

The pH range shall be 6.5 to 8.6 and be within 0.2 pH units of that which would occur naturally.

*To exceed given value 50,90 and 98% of time respectively.

F. THE FOLLOWING APPLY SPECIFICALLY TO OPEN COASTAL NEARSHORE WATERS:

Parameter	Median not to exceed given value	Not to exceed given value 10% of the time	Not to exceed given value 2% of the time
Turbidity (NTU)	.25	.35	.45
Total phosphorous (ug P/l)	15	30	50
Total Nitrogen (ug/l)	130	210	~~280~~
Chlorophyll a (ug/l)	.25	.50	.75
Light penetration depth (ft.)	130*	110*	90*

Dissolved oxygen: Not less than 80% of saturation or less than 5.5 mg/l. If the natural level of D.O. is less than 5.5 mg/l, the natural level shall become the standard.

The pH range shall be 6.5 to 8.6 and within 0.2 pH units of that which would occur naturally.

*To exceed given value 50, 90 and 98% of time respectively.

G. The following standards apply specifically to Oceanic water:

Parameter	Median not to exceed given value	Not to exceed given value 10% of the time	Not to exceed given value 2% of the time
Turbidity (NTU)	.20	.29	.36
Total phosphorous (ug P/l)	11	23	35
Total Nitrogen (ug N/l)	115	180	230
Chlorophyll a (ug/l)	.18	.40	.65
Light penetration depth (ft)	150*	132*	120*

Dissolved oxygen: Not less than 80% of saturation or less than 5.5 mg/l. If the natural level of D.O is less than 5.5 mg/l, the natural level shall become the standard.

The pH range shall be 6.5 to 8.6 and within 0.2 pH units of that which would occur naturally.

*To exceed given value 50, 90 and 98% of time respectively.

H. It is specifically recognized that the establishment of additional or revised, numerical standards is likely as sufficient supporting data becomes available.

VII. PERMITS

No point or non-point source discharges, or treated/untreated sewage or wastes from other than natural causes, shall be allowed into embayments, open coastal waters, oceanic waters or ground water of the territory without application to, review by, and written permission from the Environmental Quality Commission.

VIII. ENFORCEMENT

Enforcement of these Water Quality Standards shall be in accordance with the applicable provisions of the territorial Environmental Quality Act, 24.0101 - 24.0169 ASCA.

TERRITORY OF GUAM

MARINE WATER QUALITY STANDARDS

Reference:

Guam Water Quality Standards

Septemaber 25, 1981

Guam Environmental Protection Agency

P.O. Box 2999

Agan, Guam 96910

STATEMENT OF POLICY

It shall be the public policy of Guam to:

1. conserve, protect, maintain, and improve the quality of the waters for drinking water supply and food processing, for the growth and propagation of aquatic life, for marine research and for the conservation of coral reefs and wilderness areas, and for domestic, agricultural, commercial, industrial, recreational and other legitimate uses;

2. provide that no pollutant discharge into any water be allowed, unless (a) the discharge first receives processing which will assure the pollutant removal or provide the control technology necessary to protect the designated beneficial uses of the waters, and (b) the discharge meets the effluent limitations established for that discharge; and

3. provide for the prevention, abatement and control of new and existing water pollution.

Further, under the terms of U.S. Public Law 95-217:

1. it is the national goal that the discharge of pollutants into navigable waters be eliminated by 1985;

2. it is the national goal that wherever attainable, an interm goal of water quality, which provides for the protection and propagation of fish, shellfish and wildlife, and provides for recreation in and on the water, be achieved by July 1, 1983; and

3. it is the national policy that the discharge of toxic pollutants in toxic amounts be prohibited.

To assist in obtaining this goal all discharges will be controlled (permitted) either through the National Pollutant Discharge Elimination System (NPDES) or through the Guam Environmental Protection Agency's local permit program.

Therefore, pursuant to the authority contained in the Water Pollution Control Act (Sections 57043(d) and 57047 of Chapter III, Title LXI of the Government Code of Guam), which authorized the formulation of standards of water purity and classification of water according to the most beneficial uses of each waters, the Guam Environmental Protection Agency hereby adopts the following standards of water quality for Guam.

Waters whose existing quality was better than the established standards as of April 1968, will be maintained at the same high quality existing at that time.

Waters whose existing quality is less than the established standards for their use due to the presence of substances, conditions, or combinations thereof attributable to domestic, commercial and industrial discharges or agricultural, construction and other land-use practices, shall be improved to comply with the established standards. However, in such cases where the natural conditions are of lower quality than criteria assigned, the natural conditions shall constitute the water quality criteria. Water quality criteria in boundary areas shall be established so that the most stringent standard applies.

Waters will not be lowered in quality unless and until it has been affirmatively demonstrated to the Administrator of the Guam Environmental Protection Agency that such a change is justifiable as a result of necessary social, environmental, or economic development, and that such development will not interfere with or become injurious to any uses made of, or potentially possible in, such waters. Any industrial, public or private project or development will require, as part of the initial project design, provision for the pollutant removal or control technology necessary to protect the designated use of receiving waters or maintain the existing high quality of the receiving waters.

The purpose of these Water Quality Standards is to prevent degradation of water resources resulting from pollution sources. It is not the intent of these standards to restrict activities which may cause pollution but rather to regulate such activities or practices that may cause a water resource to be degraded.

SECTION I

CATEGORIES OF WATERS

The following categories of waters relate to the different liquid components of the hydrologic cycle. All categories of water, Marine, Surface and Groundwater are referenced on the Water Classification Map. Scaled down copies of these maps are included in these standards enabling readers to understand their relative position, application and use.

A. MARINE WATER

This major type of water includes all coastal waters offshore from the mean high tide level, estuarine waters, lagoons and bays, as well as brackish and other inland waters that are subject to the ebb and flow of the tides. Refer to Water Classification Map.

Category M-1 EXCELLENT

The uses to be protected in this category of waters are conservation of wilderness areas including protection of aquatic life, marine scientific research, aesthetic enjoyment and recreation activities which are compatible with the intended use. This category of water shall remain free from pollution attributable to domestic, commercial and industrial discharges, shipping and intensive boating, or maricultural, construction and other practices which may impair their intended use. Furthermore, there shall be no zones of mixing within this category water.

Category M-2 GOOD

The uses attributed to this category of waters are intended to protect the propagation and survival of a balanced and indigenous population of marine organisms particularly shellfish and coral reefs. Other important and intended uses include mariculture activities, aesthetic enjoyment and compatible recreation inclusive of whole body contact and related activities.

Category M-3 FAIR

General use, commercial and industrial uses are intended for this category of marine water. Specific intended uses include the following: shipping and navigation, marinas, protection of aquatic life, industrial cooling, water supply, aesthetic enjoyment and compatible recreation of a limited body contact nature.

B. GROUNDWATER

This major type of water encompasses all subsurface waters and includes basal and parabasal water, perched water, all water below the groundwater table, water percolating through the unsaturated zone (Vadose Water), all saline waters below and along the perimeter of the basal fresh-water body (freshwater lens), and water on the surface that has been collected with the specific intent of rechanging or disposing of that water to the subsurface by means of injection, infiltration, percolation or other means. Refer to Water Classification Map.

Category G-1 RESOURCE ZONE

The primary use of groundwater within this zone is for drinking (human consumption) and this use must be protected. Virtually all water of the saturated zone of Guam is included. Specifically it includes all water occurring in the saturated zone below the groundwater table, all vadose water occurring in an unsaturated zone interval extending 100 feet (30.5 m) above any water table, all water of the basal and parabasal freshwater bodies (the freshwater lens), and all water of and below the freshwater/salt-water transition zone beneath the basal water body.

Because any water discharges within this zone will (by definition) be tributary to groundwater bodies which are actual or potential sources of fresh, potable water supply, no pollutant discharges to the groundwater within this zone will be allowed.

Category G-2 RECHARGE ZONE

Water within this zone is tributary to, replenishes and recharges the Category G-1 groundwater and must be of drinking water quality before it enters the Resource Zone. All water discharges within the Recharge Zone must receive treatment to the degree necessary to protect the underlying Category G-1 groundwater from any contamination.

Category G-2 includes all waters which are collected and recharged or disposed of within a zone which is bounded above by G-3 and below by G-1. Vertically, this zone extends from 20 ft (6 m) below the surface to the upper surface of the Category G-1 waters. Methods which may result in discharges to groundwater within this zone consist primarily of dry/injection wells.

It is recognized that water within this zone will percolate through soil/rock media before reaching the Resource Zone. In this way it may undergo some degree of natural treatment consisting of filtration and subsequent purification. However, the degree of treatment is not easily demonstrated. Thus,

due to the need to protect G-1 waters and considering the difficulty in tracing pollutants reaching the G-1 zone to a particular source, discharge limitations have been established to regulate discharges to the G-2 zone. All discharges must meet the discharge limitations established in Table III of Section III.

All discharges within this zone which are not required to have construction and/or discharge operating permits under existing regulations may be required by the Agency to obtain such permits under these regulations. It is not the intent of these standards to require a discharge to have more than one permit.

Category G-3 BUFFER ZONE

Category G-3 includes all waters which are collected and disposed of or recharged at or near the existing ground surface. Vertically, the zone for this category extends from the surface to 20 ft (6 m) below the surface. Disposal methods which may result in discharges to groundwater within this zone include, but are not limited to, ponding basins, rapid infiltration, slow rate land treatment (surface or spray distribution) and all subsurface discharges (seepage, leaching).

For reasons similar to those discussed for Category G-2, discharge limitations for G-3 are also established in Table III Section III. Discharges of less than 10,000 gallons per day (gpd) within the G-3 zone are designated by G-3a. Water quality criteria for all discharges within zone G-3 which are greater than 10,000 gpd are designated G-3b. This differentiation in criteria addresses the fact that minor discharges typified by small scattered individual dwelling units probably have less adverse impact on underlying groundwater than major point source discharges and thus are allowed less restrictive water quality limits (i.e. equivalent to primary treatment).

All discharges within this zone which are not required to have construction and/or discharge permits under existing regulations may be required by the Agency to obtain such permits under these regulations (refer to the Underground Injection Control Regulations).

C. SURFACE WATERS

This major type of water encompasses the majority of surface fresh-water and includes, (1) waters that flow continuously over land surfaces in a defined channel or bed, such as streams and rivers, (2) standing water in basins such as lakes, marshes, swamps, ponds and reservoirs, either natural or man-made and (3) all waters flowing over the land either as unconfined sheet runoff, or as runoff confined to channels with intermittent flow. Refer to Water Classification Map. Waters not included under the Surface Water Category are those waters which

are collected with the specific intent of disposal by recharging them into the ground (i.e., ponding basins).

Category S-1 HIGH

Surface waters within this zone are used for drinking water resources, conservation of wilderness areas, and propagation and preservation of aquatic life and aesthetic enjoyment. It is the objective that these waters shall be kept free of substances or conditions attributable to domestic, commercial and industrial discharges, or agricultural, construction or other land-use practices that impair their uses. No pollutant discharges will be permitted into S-1 waters via discharge or as a result of land uses adjacent to S-1 waters. Mixing zones will not be allowed within the boundaries of Category S-1.

Category S-2 MEDIUM

Surface waters within this zone are used for recreational purposes including water contact recreation, for use as potable water supply after adequate treatment is provided, and for propagation and preservation of aquatic wildlife and aesthetic enjoyment.

Category S-3 LOW

Surface waters within this zone are primarily used for commercial, agricultural and industrial water supply. Aesthetic enjoyment and compatible recreation are acceptable in this zone, as well as maintenance of aquatic life. Compatible recreation may include limited body contact activities. All discharges within this zone which are not required to have construction and/or discharge permits under existing regulations may be required by the Agency to obtain such permits under these regulations.

SECTION II

WATER QUALITY CRITERIA

A. GENERAL CRITERIA APPLICABLE TO ALL TERRITORIAL WATERS

All waters shall meet generally accepted aesthetic qualifications, shall be capable of supporting desirable aquatic life, and shall be free from substances, conditions or combinations thereof attributable to domestic, commercial and industrial discharges or agricultural, construction and land-use practices or other human activities that:

1. cause visible floating materials, debris, oils, grease, scum, foam or other floating matter;

2. produce visible turbidity, settle to form deposits or otherwise adversely affect desirable aquatic life;

3. produce objectionable color, odor, or taste, directly or by chemical or biological action;

4. are toxic or harmful to humans, animals, plants or desirable aquatic life; and

5. induce the growth of undersirable aquatic life.

Analytical testing methods for these criteria shall be in accordance with the most recent editions of Standard Methods for the Examination of Water and Wastewater (APHA, AWWA, WPCF), Methods for Chemical Analysis of Water and Wastes (U. S. Environmental Protection Agency), and other methods accptable to GEPA and possessing adequate procedural precision and accuracy.

Effects of high temperature, biocides, pathogenic organisms, toxic, corrosive, or other deleterious substances at levels or combinations sufficient to be toxic or harmful to human, animal, plant or aquatic life or in amounts sufficient to interfere with any beneficial use of the water, shall be evaluated as a minimum, by use of a 96-hour bioassay as described in the most recent addition of Standard Methods for the Examination of Water and Wastewater. Survival of test organisms shall not be less than that of controls which utilize appropriate water. Failure to determine presence of toxic substances by this method shall not preclude determination of excessive levels of toxic substances on the basis of other criteria or methods.

B. SPECIFIC NUMERICAL WATER QUALITY CRITERIA

1. Microbiological Requirements

	Applicable to	
Concentrations of total coliform bacteria at any point shall not be increased from natural conditions at any time.	M-1	S-1
The total coliform bacteria count shall not exceed an arithmetic mean of 70 per 100 ml during any 30-day period nor shall any sample exceed 400 per 100 ml at any time.	M-2	S-2
The total coliform bacteria count shall not exceed an arithmetic mean of 200 per 100 ml during any 30-day period nor shall any sample exceed 400 per 100 ml at any time.	M-3	S-3

To determine compliance with the above microbiological requirements where a "30-day period" is specified, a minimum of four samples shall be collected at approximately equal intervals

NOTE: Where shellfish are collected for human consumption, the microbiological standard for M-1 waters shall apply.

2. pH

	Applicable to	
The pH of fresh and estuarine waters shall be 6.5-8.5 and 7.0-9.0 for marine waters. Variations of more than ± 0.2 pH units from ambient shall not be allowed except due to natural causes.	M-1 M-2	S-1
The pH of fresh and estuarine waters shall be 6.4-8.5 and 7.0-9.0 for marine waters. Variations of more than ± 0.5 pH units from ambient shall not be allowed except due to natural causes.	M-3	S-2 S-3

3. Nutrients

Phosphorus:

Orthophosphate (PO_4-P) shall not exceed 0.025 mg/l	M-1	
Orthophosphate (PO_4-P) shall not exceed 0.05 mg/l	M-2	S-1
Orthophosphate (PO_4-P) shall not exceed 0.10 mg/l	M-3	S-2 S-3

Nitrogen:

Nitrate-nitrogen (NO_3-N) shall not exceed 0.20 mg/l	M-1	
Nitrate-nitrogen (NO_3-N) shall not exceed 0.20 mg/l	M-2	S-1
Nitrate-nitrogen (NO_3-N) shall not exceed 0.50 mg/l	M-3	S-2 S-3

Guam has a unique situation, in that its groundwater is high in nitrate-nitrogen (up to 10 mg/l). Wastewater discharges which contain groundwater, such as sewage treatment plant effluent or irrigation return flow, will violate the above criteria unless extraordinary treatment measures are used.

It is not the intent of these standards to require treatment in excess of advanced secondary for any discharge. Point source discharges will be regulated by permit specifying effluent standards and operational requirements. Activities which may result in non-point discharges of nutrients shall be conducted in accordance with the best management practices reasonably determined by the Agency to be necessary to preclude or minimize such discharges of nutrients.

In all cases, discharges containing nutrients, primarily nitrogen and/or phosphorus shall be treated to the extent necessary to prevent the growth of aquatic species which create a public nuisance or interfere with beneficial uses as defined in Section I.

4. Dissolved Oxygen

Concentrations of dissolved oxygen shall not be decreased below 75 per cent saturation at any time, as influenced by salinity or naturally occurring temperature variations. Where natural conditions cause lower dissolved oxygen levels, controllable water quality factors shall not cause further reductions.

All Wate of the Territor

Table I. Saturation D. O

Freshwater			Marine Water		
Sat. mg/ℓ	75% Sat. mg/ℓ	Temperature °C	Salinity ppt	Sat. mg/ℓ	75% Sat. mg/ℓ
7.6	5.6	30	32	6.2	4.6
8.2	6.2	26	32	6.7	5.0

5. Total Dissolved Solids and Salinity

Marine-Waters: Total dissolved solids 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.

All Marine and Estuarine Waters of the Territory

Fresh-Water: 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.

S-1
S-2
S-3

6. Total Suspended Solids

Concentrations of suspended matter at any point shall not be increased from ambient conditions at any time, and should not exceed 10 mg/ℓ except when due to natural conditions.

M-1 S-1

Concentrations of suspended matter at any point shall not be increased more than 10% from ambient at any time, and should not exceed 80 mg/ℓ except when due to natural conditions

M-2 S-2

Concentrations of suspended matter at any point shall not be increased more than 25% from ambient at any time and should not exceed 400 mg/ℓ except when due to natural conditions.

M-3 S-3

7. Turbidity

Turbidity at any point, as measured by nephelometric turbidity units (NTU), shall not exceed 3 NTU over ambient conditions except when due to natural conditions.

M-1 S-1

Turbidity values (NTU) at any point shall not exceed 5 NTU over ambient conditions except when due to natural conditions.	M-2 S-2 M-3 S-3

8. Radioactive Materials

Discharges of radioactive materials at any level into any waters of the territory is strictly prohibited. However, monitoring efforts indicate that naturally occurring background counts for some radioactive elements are found in fresh and marine waters.	All Waters of the Territory

9. Temperature

Water temperature shall not be changed more than 1.0°C (1.8°F) from ambient conditions, outside an established mixing zone.	All Waters of the Territory

10. Concentrations of Oil or Petroleum Products

Those that exceed the limits described below are unacceptable.	M-1 S-1 M-2 S-2 M-3 S-3

a) Detectable as a visible film, sheen, discoloration of the surface, or by odor;

b) causes tainting of fish or invertebrates, damage to the biota, or objectionable taste in drinking water; or

c) forms an oil deposit on the shores or bottom of the receiving body of water.

11. Pesticides

Concentrations of pesticides shall not exceed one percent (0.01) of the 24-hour LC_{50} value determined using the receiving water in question and the most sensitive species of aquatic organism affected.

Where the concentration based on the LC_{50} data exceeds the recommended maximum concentrations, the maximum concentrations shall constitute the criteria.

For the listing of all pesticides (Organochlorides, Organophosphates, Carbamates, Herbicides, Fungicides, Defolliants, and Botanicals) please refer to the U. S. EPA listing of 65 toxic pollutants, and to the 1972 Water Quality Criteria "Blue Book."

NOTE:

The setting or publishing of maximum concentrations (limits) for specific pesticides and other toxics should in no way be construed as official approval or authorization for their use where such use is contrary to U. S. Environmental Protection Agency or other Federal or local regulations which now exist or may be enacted at some future time.

12. Toxic Substances

In order to provide maximum protection for the propagation of fish and wildlife, concentrations of toxic substances (persistent or non-persistent, cumulative or non-cumulative); (a) shall not exceed 0.05 of the 96-hour LC_{50} at any time or place, nor should the 24-hour average concentration exceed 0.01 of the 96-hour LC_{50} or, (b) shall not exceed levels calculated by multiplying the appropriate application factor by the 96-hour LC_{50} values determined by using the most sensitive species of aquatic organism affected. Whichever value (a or b) is less shall be the maximum allowable concentration, unless this value exceeds the Maximum Numerical Limit, then the numerical limit shall constitute the maximum allowable concentration.

Criteria for the 65 toxic pollutants listed by EPA under authority of Section 307 (a) (1) will be as published in summary form in 45 FR 79318 or any subsequent revision and are incorporated by reference into the Guam Water Quality Standards. A list of the 65 toxic pollutants is given in Appendix A.

In addition to the 65 listed toxics, Table II taken from the 1972 Water Quality Criteria report, U. S. EPA, known as the "Blue Book", shows the maximum allowable concentrations and application factors for additional toxic substances.

Table II. Additional Toxic Pollutants not included in Appendix A.

*Substance	Maximum Numerical Limit		Application Factor
	Marine Water	Fresh Water	
Aluminum	0.2 mg/l	1.0 mg/l	.01
Ammonia	0.02 mg/l		.05
Barium	0.5 mg/l		.05
Boron	5.0 mg/l		.1
Bromine (free)	0.1 mg/l		-
(as Bromate)	100 mg/l		-
[1]Chlorine (free, residual)	0.01 mg/l		.1
Fluoride	1.5 mg/l	0.8 mg/l	.1
Iron	0.05 mg/l	3.0 mg/l	-
Manganese	0.02 mg/l		.02
Molybdenum	-		.05
Sulfide	0.005 mg/l		.1 (Applicable to 20-day LC_{50} data)
[2]Uranium	0.0 mg/l		.01
Vanadium	-		.05

*Total amounts in indicated chemical state or form

[1]Greater concentrations of Chlorine may be used to treat a source of drinking water in order to meet the requirements of Subsection II.B.1. of these standards.

[2]Naturally occurring Uranium has been reported in concentrations of 0.003 mg/l (seawater) and 0.00004 mg/l (river water).

NOTE: *Whenver natural concentrations of any toxic substance or element occur and exceed the limits established in these standards, this greater concentration shall constitute the limit, provided that this natural concentration was not directly affected by man-induced causes.*

SECTION III

EFFLUENT LIMITATIONS

A. GENERAL CRITERIA

The Agency reserves the right to amend or extend the following criteria as improved standard methods are developed or revisions consistent with the enhancement of water quality are justified:

1. All sewage shall be treated to the degree required by the Agency to achieve standards of water quality prior to being discharged to the waters of the Territory. Industrial waters and other wastes shall also be treated to the degree required by the Agency.

2. Dilution of the effluent from any wastewater source is not acceptable as a method of treatment of wastes in order to meet the standards set forth in this Section. Rather, it shall be the obligation of any person discharging pollutants of any kind to the waters of the Territory to provide the best pollutant removal or control consistent with technological feasibility, economic reasonableness, and sound engineering judgment. In making a determination as to what degree of treatment is the best pollutant removal or control within the meaning of this paragraph, any person shall consider the following:

   a) the degree of waste reduction that can be achieved by process change, improved housekeeping and recovery of individual waste components for reuse; and

   b) whether individual process wastewater streams should be segregated or combined.

3. Measurement of pollutant concentrations to determine compliance with the effluent limitations shall be made by the discharger at the point immediately following the final treatment process and before mixing with other waters. Points of measurement shall be designated by the Agency in an individual permit, after consideration of the elements contained in this section. If necessary, the concentrations so measured shall be recomputed to exclude the effect of any dilution that is improper under this standard.

4. Every person discharging effluent to the waters of the Territory shall submit operating reports to the Agency at a frequency to be determined by the Agency. Such reports shall contain information regarding the

volume of effluent discharged, and the concentrations of those physical, chemical and bacteriological parameters which shall be specified by the Agency; and any additional information the Agency may reasonably require.

5. In addition to other requirements no effluent shall, alone, or in combination with other sources, cause a violation of any applicable Water Quality Standard. If the Agency finds that a discharge which complies with treatment requirements under the Authority of Section III-A would cause or is causing a violation of Water Quality Standards, the Administrator shall take appropriate action under Section 57048 of the Water Pollution Control Act to require the discharge to meet whatever effluent limits are necessary to ensure compliance with the Water Quality Standards. When such a violation is caused by the cumulative effect of more than one source, several sources may be joined in a schedule of compliance. Measures necessary for effluent reductions will be determined on the basis of technical feasibility, economic reasonableness, and fairness to all dischargers.

B. MIXING ZONES IN RECEIVING WATERS

Whenever a Water Quality Standard is more restrictive than the corresponding effluent standard then an opportunity may be allowed by the Agency for the mixture of an effluent with its receiving water provided that the zone in which mixing occurs will not adversely affect the designated uses of the receiving waters. If mixing zones are used, Water Quality Standards for a receiving water must be met at every point outside of the boundaries of the designated mixing zone. The following criteria apply to all mixing zones:

1. Whenever mixing zones are allowed, zones of passage, i.e., continuous water routes of the volume, area, and quality necessary to allow passage of free-swimming and drifting organisms with no significant effects produced on their populations, shall be provided.

2. Where two or more mixing zones are in close proximity, they shall be so defined that a continuous zone of passage for aquatic life is available.

3. Biologically important areas, including spawning and nursery areas, shall be protected.

4. No criteria shall be set aside in the mixing zone which shall cause conditions in the mixing zone to be lethal to aquatic life and wildlife which may enter the zone or injurious to human health in the event of a temporary exposure.

5. The area or volume of an individual mixing zone shall be limited to an area or volume that will minimize impacts on uses.

6. The discharge shall not violate the basic standards applicable to all waters (Section II A and Section III E) nor shall it unreasonably interfere with any actual or probable use of the water within the mixing zone.

7. Appropriate water quality criteria will be established for a zone of mixing to ensure that receiving water standards are met outside the zone.

C. BOUNDARIES OF NON-THERMAL MIXING ZONES

Non-thermal discharges shall be permitted by the National Pollutant Discharge Elimination System (NPDES) permit process or through the Guam Environmental Protection Agency's local permit program only after careful analysis of the nature of the effluent and a thorough study to assess the consequences of the effluent upon the environment. Mixing zones for non-thermal discharges shall be based on the following models, taking into consideration the criteria in Section III B above.

1. Mixing zones for Non-Thermal Discharges into Surface Waters.

   For non-thermal discharges into streams and rivers the mixing zone will be limited to no more than 1/4 of the cross sectional area and/or volume of flow of the stream, leaving at least 3/4 free as a Zone of Passage. The mixing zone shall not extend more than 5 stream widths downstream from the point of discharge. Mixing zones will not be allowed in standing bodies of water.

2. Mixing zones for Non-Thermal Discharges into Coastal Waters.

   For non-thermal discharges to coastal waters the mixing zone shall be equal in depth to the depth of the water over the diffuser, in width to twice the depth of the water plus the width of the diffuser, and in length to twice the depth of the water plus the length of the diffuser, with the diffuser geographically centered within the mixing zone.

All discharges to marine waters will comply with the Ocean Discharge Criteria promulgated under Section 403 (c) of the federal Clean Water Act.

D. MIXING ZONES FOR THERMAL DISCHARGES

Thermal discharges pertain to effluent water with a temperature component either above or below ambient conditions of the receiving body of water. All thermal discharges, existing or proposed, into receiving bodies of water shall be subject to criteria established in Section 316 (a) of the Federal Water Pollution Control Act (FWPCA), Public Law 95-217. Thermal discharges shall be permitted by the National Pollutant Discharge Elimination System (NPDES) permit process or through the Guam Environmental Protection Agency's local permit program only after careful analysis of the nature of the effluent and a thorough study to assess the consequences of the effluent upon the environment.

1. All Above-Ambient Discharges:

a) Shall conform to a zone of mixing defined for that particular discharge on a case-by-case basis. This zone of mixing shall be defined by the following references or other references depicting appropriate thermal mixing zone models.

- Water Quality Criteria, March 1973. EPA.
- Quality Criteria for Water, July 1976. EPA.
- Biological Methods for the Assessment of Water Quality. American Society of Testing and Materials, July 1976.

And take into consideration the following criteria:

- Time of exposure
- Concentration of effluent
- Depth of discharge
- Type of environment
- Volume of discharge
- Mass emission rate of critical materials
- Aesthetics and the assessment of damage to biota on the population basis

Although final authority in defining a zone of mixing rests with the GEPA, it is intended that cooperation between the discharger and the Agency will result in the most appropriate zone.

b) Shall not increase the temperature of the receiving body of water to cause substantial damage or

harm to the flora and fauna or interfere with the beneficial uses assigned therein.

c) Shall comply with all other water quality criteria as defined in these standards, unless specific criteria are established in the discharge permit.

d) These zones of mixing shall be monitored by the discharger on a regular schedule established by the NPDES Permit and/or GEPA Discharge Permit, to ensure compliance with established criteria.

e) If the Agency, pursuant to notice and opportunity for public hearings, finds evidence that a discharge has caused substantial damage, it may require conversion of such discharge to an approved alternative method. In making such a determination, the Agency may consider:

1. The nature and extent of damage to the environment.
2. Projected lifetime of discharge.
3. Adverse economic and environmental impacts, marine and terrestrial, resulting from such conversion.
4. All available data, reports, surveys and projects related to the discharge.
5. Such other factors which may prove to be appropriate.

2 Above-Ambient Discharges in Existence Prior to Approval of These Standards.

a) Shall be given special attention when defining a zone of mixing. All criteria established for part D-1 above, shall apply with special emphasis on specific criteria listed in part D-1a.

b) It is the intent of this section to establish a reasonable zone of mixing for discharges not in compliance with existing laws, codes and practices.

c) Description of mixing zones for Tanguisson and Piti/Cabras Power Plants.

1. Tangussion Power Plant Zone of Mixing

The zone of mixing for the Tanguisson Power Plant is defined as a rectangle of approximately 10,000 m^2 with the following reference points.

Northern boundary - North side of intake channel

Southern boundary - 1969 ft (600 m) south of intake channel

Eastern boundary - Shoreline at mean high tide

Western boundary - 591 ft (180 m) off-shore or a depth of approximately 23 ft (7 m)

2. Piti/Cabras Zone of Mixing

The zone of mixing for the Piti/Cabras Power Plants combined is inclusive of all water in the Commercial Port and Piti Channel area bordered by a line from the GORCO Tanker mooring and the Navy Fuel Pier on Dry Dock Island. Because of the topography of this area, no zone of passage can be designated.

3. Below-Ambient Discharges.

All below-ambient discharges shall follow the same guidelines set down for thermal discharges and be evaluated on a case-by-case basis.

E. PROHIBITED DISCHARGES

No person shall cause or permit:

1. the discharge of any wastes or wastewaters regardless of volume, unless authorized by the Administrator under Section 57045 of the Water Pollution Control Act or unless subject to control or modification required by a schedule of compliance established by the GEPA Board of Directors;

2. the discharge of any pollutant in toxic amounts, including substances which accumulate to toxic amounts during the expected life of organisms in the receiving water, or which produce deleterious genetic, physiological, or behavioral effects on the organisms;

3. the discharge of any radiological, chemical, or biological warfare agent or radioactive wastes;

4. any discharge which would substantially impair anchorage and navigation, including any discharge which the Secretary of the Army, acting through the Chief of Engineers, finds would result in this damage;

5. any discharge to which the Administrator of the United States Environmental Protection Agency has objected in writing pursuant to any right to object provided by the Federal Water Pollution Control Act, as amended;

6. any discharge which is in conflict with an approved Territorial plan;

7. the discharge of sewage from vessels while moored, berthed or docked, or underway in waters of the Territory except through a Coast Guard approved Marine Sanitation Device; and

8. any pollutant discharge into M-1, S-1, or G-1 waters as defined in Section I of these Standards.

F. LAND TREATMENT AND/OR DISPOSAL OF WASTEWATER(S)

1. Approval of land treatment and/or disposal of liquid waste material(s) requires that:

a) wastewaters shall be restricted to the premises of the disposal site unless otherwise authorized by the Board;

b) provision shall be made by the discharger for monitoring the quality of the effluent with the exception of single family dwelling units unless there are more than five (5) units connected to a single system, or the Agency requires it after identifying a potential hazard.

c) all data and reports resulting from the groundwater monitoring program shall be submitted to the Agency.

d) land treatment and/or disposal shall not create a public health hazard, a nuisance condition, or an air pollution problem;

e) these standards cannot be applied to water/wastewater to be reused to produce products which may

end up in the human food chain, such as crops, animal feed or animal products. The Agency will consider such reuse on a case-by-case basis using available guidelines.

2. The evaluation for a permit for land treatment and/or disposal of wastewater(s) should include, but not necessarily be limited to, consideration of the following items:

   a) The type of wastewater(s) proposed for disposal. (In general, the wastewater(s) should be biologically degradable but other wastewater(s) will be considered provided it can be shown that disposal of said wastewater(s) will not adversely affect the designated use of the receiving waters.)

   b) The nature of the earth material(s) underlying the disposal site. (The applicant must provide reasonable assurance that the earth material(s) underlying the proposed disposal site will not allow direct rapid movement of pollutants into underlying groundwaters.)

   c) The vegetative cover of the disposal site. (The selection of a vegetative cover should reflect the disposal season(s), the duration and frequency of disposal and the response of the vegetative cover to the wastewater. If the wastewater proves too strong for plant growth, a higher degree of treatment and/or disposal over a larger area may be required.)

3. Improperly and/or inadequately treated sewage shall not be allowed to accumulate on the ground surface in such a manner that it may create a health hazard and/or a nuisance condition.

4. It shall be a violation of these standards to store, dispose of, or allow to accumulate any deleterious material adjacent to or in the immediate vicinity of any streams, rivers, or marine waters in a manner that such material will directly or indirectly enter such waters. Such material shall include, but not be limited to sewage sludge, trash, rubbish, garbage, oil, gasoline, chemicals, sawdust, accumulations of manure, and stockpiles of soil.

5. In case of accidental spills of deleterious materials, responsible persons in charge shall immediately notify the Administrator of any such spills and make every reasonable effort to contain spilled material

in such a manner that it will not pollute waters of the Territory.

6. Wastewater discharged to disposal wells for underground disposal shall receive, prior to discharge, treatment necessary to protect potable water resources and any adjacent marine waters or fresh surface waters. See Table III.

G. EFFLUENT DISCHARGE LIMITATIONS FOR GROUNDWATER CATEGORIES G-2 and G-3

Any water percolating to the groundwater table is in a state of transition from being a discharge to becoming part of a useable body of water. Because of the difficulty involved in tracing the source and eliminating pollutants after they have reached the groundwater table, limitations for discharges to G-2 and G-3 waters are established in Table III. This Table provides criteria for some common water quality parameters. The Agency will set limits for other parameters as necessary on case-by-case basis.

The Agency will allow the application of G-3a discharge limitations to flows greater than 10,000 gallons per day if it can be shown by an engineering feasibility study that there will be no significant adverse effect on the waters of the Territory.

The Agency also reserves the right to set more stringent standards than those shown in Table III if there is reason to believe that significant environmental damage will result from any discharge. Effluent limitations have not been set for G-1 waters because the Agency does not anticipate such discharges. However, should such discharges be contemplated into G-1 waters, they must be of drinking water quality and meet drinking water standards.

TABLE III

Limitations for Discharges to Categories G-2 and G-3

Groundwater Category	Fecal Coliform	COD (mg/l)	pH	Chlorides (mg/l)	Ortho-phosphate (PO_4-P) (mg/l)	Nitrate-Nitrogen (NO_3-N) (mg/l)	MBAS (mg/l)	Oil & Grease (mg/l)
G-2	200/100 ml	20	6-10	250	10	10	.5	5
G-3a (<10,000 gpd)	-(2)	300	6-10	250(1)	25	100(3)	-(2)	50
G-3b (>10,000 gpd)	40(4)/100 ml	50	6-10	250(1)	25	50(3)	-(2)	50

(1) in the buffer zone this limit is increased to 1000 mg/l

(2) concentrations to be established on a case-by-case basis by the Agency

(3) for animal feedlot operations higher discharge limitations may be permitted on a case-by-case basis

(4) daily average

TRUST TERRITORIES OF THE PACIFIC

MARINE WATER QUALITY STANDARDS

Trust Territory of the Pacific Islands
Marine and Fresh Water Quality Standard Regulation
March 1980

Dept. of Health Services
Siapan, CM 96950

Commonwealth of the Northern Mariana Islands
(The water quality standards for the Trust Territory contained in the April 1978 publication of " A Compilation of Water Quality Standards for Marine Waters" continues to apply to the Northern Marine Islands.)

Dept. of Public Health and Environmental Services
Dr. Torres Hospital
Siapan, CM 96950

Trust Territories of
the Pacific

adopted 3-3-80

PROPOSED AMENDMENTS TO

TITLE 63
PUBLIC HEALTH, SAFETY AND WELFARE

CHAPTER 13
AIR, LAND AND WATER POLLUTION

SUBCHAPTER VII
MARINE AND FRESH WATER QUALITY STANDARD REGULATIONS

PART 1 AUTHORITY

Under and by virtue of the provisions of Public Law 4C-78 (63 TTC 501 et seq) of the Trust Territory Code, and the Federal Water Pollution Control Act Amendments of 1972 and 1977, 33 USC 466 et seq, these Regulations and any further amendments, and any other applicable laws, the following Marine and Fresh Water Quality Standard Regulations are hereby promulgated.

PART 2 INTRODUCTION

It is the purpose of the rules and regulations to identify the uses for which the various waters of the Trust Territory shall be maintained and protected, to specify the water quality standards required to maintain the designated uses, and to prescribe regulations necessary for implementing, achieving and maintaining the specified water quality. These regulations were developed in close cooperation with the U.S. Environmental Protection Agency in order that, consistent with T.T. P.L. 4C-78, they may also serve the purposes of the Federal Water Pollution Control Act, as amended.

Pursuant to the authority contained in the T.T. P.L. 4C-78, which authorized the issuance of regulations to maintain and upgrade the quality of the waters of the Trust Territory in order to protect health, welfare, and property, and to assure that no pollutants are discharged into the waters without being given the degree of treatment or control necessary to prevent pollution, and to adopt water quality standards, the Trust Territory Environmental Protection Board adopts the following rules and regulations.

PART 3 POLICY

It is the policy of the Trust Territory of the Pacific Islands that:

(A) The maintenance of water quality that will provide for the propagation

of aquatic life and for recreation in and on the water is an historic and legitimate right of the people of the Trust Territory of the Pacific Islands.

(B) The achievement of the water quality goals of the Trust Territory is in the public interest and that achievement of these goals should not represent an unreasonable barrier to economic or social development.

(C) Waters whose existing quality is better than the quality specified by these standards shall be maintained at that high quality.

(D) Waters whose existing quality is less than the quality specified by these standards shall be improved to comply with these standards.

(E) No waters of the Territory shall be lowered in overall quality unless it has been affirmatively demonstrated to the Trust Territory Environmental Protection Board or its authorized agent that such a change is a necessary result of economic or social development, is in the best interest of the people of the Trust Territory and will not permanently impair any beneficial use assigned to the waters in question. *"DETERMINATIONS MADE UNDER THIS POLICY SHALL BE MADE AFTER FULL OPPORTUNITY FOR PUBLIC PARTICIPATION AND INTERGOVERNMENTAL COORDINATION."*

(F) To the extent practicable, all new point sources of pollution shall not be to near-shore or fresh surface waters.

(G) There shall be no direct or indirect discharge of sewage or other waste into any planned or intended ground or surface source of drinking water.

(H) All sewage and waste will receive a degree of treatment necessary to protect the beneficial uses of the waters of the Trust Territory before discharge.

PART 4 DEFINITIONS

As used herein, unless the context otherwise requires, the term:

~~(A) Board means the Trust Territory Environmental Protection Board or its~~

THIS PAGE CONTAINS AMENDMENTS

authorized agent.

(B) Coastal Waters includes "near-shore waters", "off-shore waters", and those brackish, fresh and salt waters that are subject to ebb and flow of the tide.

(C) Dilution Ratio as used in Part 7(B)(2) is the dilution ratio at the plume centerline after initial dilution.

(D) Initial Dilution means the dilution that the wastewater has achieved with the receiving water at the centerline of the mixing zone "*(SEE DEFINITION (E))*" where the mixture surfaces or the density of the misture becomes equal to the density of the surrounding receiving water. The "initial dilution" will be calculated by using the procedure "Users Guide and Documentation for Outfall Plume Model". ("Users Guide and Documentation for Outfall Plume Model", D.J. Baumgartner, D.S. Trent, and K.V. Byram. Working Paper #80, EPA, Pacific Northwest Water Laboratory, May 1971. Available by writing National Technical Information Service, 5285 Port Royal Road, Springfield, Virginia 22151. Order Number NTISPB 204-557, $3.00).

(E) Mixing Zone means a defined area around a point source in which specific water quality criteria may be revised in accordance with Part 7(B)(1) of these standards. A zone of mixing is the volume of water near the point of discharge within which the waste immediately mixes with ocean water due to the momentum of the waste discharge and the difference in density between the waste and the receiving water "*(SEE DEFINITION (D))*."

(F) Natural means free of substances or conditions, or a combination of both, attributable to the activities of man.

(G) Natural Conditions or Natural Occurring means that state of water quality that would exist, at a specific time and place, in the absence of the activities of man.

(H) Near-Shore Waters means (a) all coastal waters lying within a defined reef area; and (b) all coastal waters up to 1,000 feet off-shore where there is no defined reef area.

THIS PAGE CONTAINS AMENDMENTS

(I) Non-Point Source means any origin from which pollutants emanate in an unconfined and unchannelled manner, including but not limited to surface and leachate seeps.

(J) Off-Shore Waters means all coastal waters beyond the limit defined for "near-shore waters".

(K) Person means an individual, corporation, partnership, firm, group, association, public or private institution, territory, municipality, commission, political subdivision of a territory, or federal agency.

(L) Point Source means any discernable, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, vessel or other floating craft, from which pollutants are or may be discharged.

(M) Pollutant means dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, and industrial, municipal, and agricultural waste.

(N) Pollutant Discharge means either a point source or non-point source of pollutant discharge.

PART 5 WATER USE CLASSIFICATION

(A) Classification of Coastal Water Uses

Coastal waters are classified in accordance with uses to be protected in each class as follows:

(1) Class AA Waters

The uses to be protected in this class of waters are oceanographic research, the support and propagation of shell fish and other marine life, conservation of coral reefs and wilderness areas, compatible recreation, and other aesthetic enjoyment.

It is the objective of this class of waters that they remain in as nearly their natural, pristine state as possible with an absolute minimum of pollution from any source. To the extent possible, the wilderness character of such areas shall be protected. No zone of mixing will be permitted in these waters.

The classification of any water area as Class AA shall not preclude other uses of such waters compatible with these objectives and in conformance with the standards applicable to them.

(2) Class A Waters

The uses to be protected in this class of waters are recreational (including fishing, swimming, bathing, and other water-contact sports), aesthetic enjoyment, and the support and propagation of aquatic life.

It is the objective for this class of waters that their use for recreational purposes and aesthetic enjoyment not be limited in any way. Such waters shall be kept clean of any trash, solid materials or oil, and shall not act as receiving waters for any effluent which has not received the best degree of treatment or control practicable under existing technological and economic conditions and compatible with the standards established for this class.

(3) Class B Waters

The uses to be protected in this class of waters are small boat harbors, commercial and industrial shipping, bait fishing, compatible recreation, the support and propagation of aquatic life, and aesthetic enjoyment.

It is the objective for this class of waters that discharge of any pollutant be controlled to the maximum degree possible and that sewage and industrial effluents receive the best degree of treatment control practicable under existing technological and economic conditions and compatible with the standards established for this class.

The Class B designation shall apply only to a limited area next to boat docking facilities in bays and harbors. The rest of the water area in such bay or harbor shall be Class A unless given some other specific designation.

(B) Classification of Fresh Water Uses

Fresh waters are classified in accordance with the uses to be protected as follows:

(1) Class 1 Waters

The uses to be protected in this class of waters are drinking water supply, food processing, the support and propagation of aquatic life, and compatible recreation.

It is the objective of this class of waters that they remain in as nearly their natural state as possible with an absolute minimum of pollution from any source. To the extent possible, the wilderness character of such areas shall be protected. Waste discharges into these waters are prohibited.

(2) Class 2 Waters

The uses to be protected in this class of waters are bathing, swimming, the support and propagation of aquatic life, compatible recreation, and agricultural water supply.

It is the objective of this class of waters that their use for recreational purposes, propagation of fish and other aquatic life and agricultural and industrial water supply not be limited in any way. Such waters shall be kept clean of trash, solid materials and oils, and shall not act as receiving waters for any effluent which has not received the best degree of treatment or control practical under technologic and economic conditions and compatible with the standards established for this class.

PART 6 WATER QUALITY STANDARDS

(A) Basic Criteria Applicable to All Surface Waters

All waters shall be capable of supporting desirable aquatic life and be suitable for recreation in and on the water.

In furtherance of this goal, all waters shall be:

(1) Free of visible floating materials, oils, grease, scum and other floating matter attributable to the activities of man.

(2) Free from materials attributable to sewage, industrial waste or other activities of man that produce visible turbidity or settle out to form deposits.

(3) Free from materials attributable to sewage, industrial waste or other activities of man that produce objectionable color, odor or taste directly or by chemical or biological action in the water or biota.

(4) Free from substances attributable to the activities of man that induce undesirable aquatic life or degrade the indigenous biota.

(5) Free from substances and conditions attributable to the activities of man that may be toxic or cause irritation to humans, animals, or plants.

(B) Specific Water Quality Criteria for Surface Waters — Applicable To:

(1) Microbiological Requirements

The median total coliform bacteria content shall not exceed 70 per 100 ml for any 10 consecutive samples nor shall any single sample exceed 230 per 100 ml. — AA, 1

Fecal coliform content shall not exceed an arithmetic mean of 200 per 100 ml for any 10 consecutive samples nor shall any single sample exceed 400 per 100 ml — A, B, 2

In areas where shellfish are harvested for human consumption, the microbiological standards for AA waters shall apply. — A, B, 2

(2) pH Units

pH variation shall not be greater than 0.2 units from natural conditions but not lower than 6.5 or higher than 8.5 from other than natural causes.	AA, A, 1
pH variation shall not be greater than 0.5 units from natural conditions but not lower than 6.5 or higher than 8.5 from other than natural causes.	B, 2

(3) Nutrient Material

The ratio of total nitrogen to total phosphorus concentration shall not vary by more than 10% from the naturally occuring ratio.	All Waters
The concentrations of total nitrogen and total phosphorus shall not vary by more than 10% from the natural conditions.	All Waters

Except for natural causes, nutrient concentration shall not exceed:

Total Phosphorus	
0.025 mg/l	AA
0.050 mg/l	A
0.100 mg/l	B
0.200 mg/l	1, 2
0.050 mg/l	Fresh waters entering lakes or reservoirs (at point of entry) and freshwater lakes and reservoirs.

Total Nitrogen	
0.400 mg/l	AA
0.750 mg/l	A, 1
1/500 mg/l	B, 2

(4) Dissolved Oxygen

Dissolved oxygen concentration shall not vary by more than 25% from natural conditions.	All Waters

Except for natural causes, dissolved oxygen concentration shall not be less than:

6.0 mg/l or 75% of saturation, whichever is greater	AA, 1
5.0 mg/l	A, "B", 2

(5) Total Dissolved Solids, Salinity, Currents

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 which would otherwise adversely affect the indigenous biota and natural sedimentary patterns. — All Waters

(6) Temperature

Temperature shall not vary by more than 1.5°F(0.9°C) from the natural conditions. — All Waters

(7) Turbidity

Turbidity, as measured by a secchi disch or "NEPHOLOMETRIC" Turbidity Units "(NTU)", shall not be altered from natural conditions by more than:

5%	AA, 1
10%	A, 2
20%	B

(8) Radioactive Materials

The concentration of radioactive materials in water shall not exceed 1/30th of the maximum permissible limits established for continuous occupational exposure given in the National Bureau of Standards Handbook No. 69. — All Waters

No radionuclide or combination of radionuclides shall — All Waters

be present in amounts that would exceed the maximum permissible levels established in the National Primary Drinking Water Regulations.

The concentration of radioactive materials in water shall not result in the accumulation of radioactivity in plants or animals that would result in a hazard to humans or aquatic life. — All Waters

(9) Oil and Petroleum Products

The concentration of oil or petroleum products shall not: — All Waters

(a) Be detectable as a visible film, sheen or discoloration of the surface or cause an objectionable odor.

(b) Cause tainting of fish or other aquatic life, be injurious to the indigenous biota or cause objectionable taste in drinking water.

(c) Form an oil deposit on beaches or shoreline or on the bottom of a body of water.

(10) Toxic Substances

Criteria for toxic substances are given as either a maximum concentration or are determined by multiplying the stated application factor by the concentration determined to be lethal to 50% of the most sensitive indigenous organism after 96 hours of exposure (96 LC_{50}). 96 LC_{50} values shall be determined by using bioassay procedures consistent with those described in the latest edition of Standard Methods for the Examination of Water and Wastewater. 96 LC_{50} values shall be determined by using the most sensitive indigenous organism to the substance in question. When both an application factor and a maximum concentration are given, the lesser of the two — All Waters

shall constitute the water quality standard.

Toxic Substance Table

Substance	Marine		Fresh			
			Class 1		Class 2	
	Limit	Factor	Limit	Factor	Limit	Factor
Unionized Ammonia NH_3	0.01 mg/l	0.1	0.02 mg/l	0.05	0.02 mg/l	0.05
Arsenic	0.01 mg/l	0.01	0.050 mg/l			
Barium	0.5 mg/l	0.05	1.0 mg/l			
Beryllium	0.1 mg/l	0.01	11 ug/l			
Boron	5.0 mg/l	0.1				
Cadium	5 ug/l	0.01	4.0 ug/l		4.0 ug/l	
Total Residual Chlorine	10 ug/l	0.1	10 ug/l		10 ug/l	
Chromium	50 ug/l	0.01	50 ug/l		100 ug/l	
Copper	0.01 mg/l	0.1	1.0 mg/l	0.1		0.1
Cyanide	5.0 ug/l	0.1	5.0 ug/l	0.05	5.0 ug/l	0.05
Iron	0.05 mg/l		0.3 mg/l		1.0 mg/l	
Lead	0.01 mg/l	0.01	0.03 mg/l	0.01	0.03 mg/l	0.01
Manganese	0.02 mg/l	0.02	*"0.05 mg/ℓ"*			
Mercury	0.10 ug/l		0.05 ug/l		0.05 ug/l	
Nickel	0.002 mg/l	0.01		0.01		0.01
Aldrin	0.003 ug/l	0.01	0.003 ug/l	0.01	0.003 ug/l	0.01
Dieldrin	0.003 ug/l	0.01	0.003 ug/l	0.01	0.003 ug/l	0.01
Chlordane	0.004 ug/l	0.01	0.01 ug/l		0.01 ug/l	
Malathion	0.1 ug/l	0.01	0.1 ug/l		0.1 ug/l	
Methoxychlor	0.03 ug/l	0.01	0.03 ug/l		0.03 ug/l	
Mirex	0.001 ug/l	0.01	0.001 ug/l		0.001 ug/l	
Parathion	0.04 ug/l	0.01	0.04 ug/l		0.04 ug/l	
Toxaphene	0.005 ug/l	0.01	0.005 ug/l		0.005 ug/l	
Phenol	1 ug/l	0.01	1 ug/l	0.05	1 ug/l	0.05
Elemental Phosphorus	0.1 ug/l	0.01	0.1 ug/l		0.1 ug/l	
Phthalate Esters		0.01	3 ug/l		3 ug/l	

PCB	0.001 ug/l	0.01	0.001 ug/l		0.001 ug/l	
2,4,D		0.01	100 ug/l			
2,4,5-TP		0.01	10 ug/l			
DDT	0.001 ug/l	0.01	0.001 ug/l		0.001 ug/l	
Demeton	0.1 ug/l	0.01	0.1 ug/l		0.1 ug/l	
Endosulfan	0.001 ug/l	0.01	0.003 ug/l		0.003 ug/l	
Endrin	0.004 ug/l	0.01	0.004 ug/l		0.004 ug/l	
Guthion	0.01 ug/l	0.01	0.01 ug/l		0.01 ug/l	
Heptachlor	0.001 ug/l	0.01	0.001 ug/l		0.001 ug/l	
Lindane	0.004 ug/l	0.01	0.01 ug/l		0.01 ug/l	
Selenium	0.005 ug/l	0.01	10 ug/l	0.01		0.01
Silver	1 ug/l	0.01	50 ug/l	0.01		0.01
Hydrogen Sulfide (Undissociated)	2 ug/l		2 ug/l		2 ug/l	
Zinc	0.02 ug/l	0.01	5 mg/l	0.01		0.01

"GENERAL TOXIC STANDARDS:"

No substance or combination of substances*"INCLUDING OIL AND PETROLEUM PRODUCTS,"* shall be present in surface waters in amounts that exceed 0.01 times the 96 LC_{50} concentration unless it can be demonstrated to the Board that a higher concentration has no adverse effect, chronic or acute, on the intended uses of the water body in question.

In the absence of a specific standard, the general standards shall apply.

(C) General Considerations

(1) All methods of sample collection, preservation, and analysis used to determine compliance with these standards shall be in accordance with those specified in the current edition of Standard Methods for the Examination of Water and Wastewater. Samples should be collected at approximately equal intervals and under those conditions of tide, rainfall, and time of day when pollution is most likely to be maximum.

(2) Whenever natural conditions are of lower quality than an assigned

water quality criteria, the natural conditions shall constitute the water quality criteria.

(3) Whenever two (2) numeric criteria are in conflict, the more stringent criteria shall constitute the water quality criteria.

(4) Pollutant discharges to either surface or ground waters shall be controlled so as to protect not only the receiving water but also those waters into which the initial receiving waters may flow.

PART 7 IMPLEMENTATION MEASURES

(A) General Measures

(1) It shall be in violation of these standards for any person to initiate any project which may represent a new or increased source of pollution, either point source or non-point source, without first obtaining written approval of the Board. It will be incumbent upon the person initiating the project to demonstrate to the Board that the project will not directly or indirectly impair any beneficial uses of the affected waters. The Board may place conditions on the construction and/or operation of the project as necessary to mitigate or eliminate any adverse water quality impacts associated with the project. The Board may withhold approval for any project until the project has received all necessary local and federal permits and clearances or has demonstrated that such clearances will be obtained at the appropriate time.

(2) Any point source of discharge will be in violation of these standards unless it has received a discharge permit under the National Pollutant Discharge Elimination System (NPDES) from the U.S. Environmental Protection Agency or its authorized agent.

(3) It shall be in violation of these standards for any person to store, sispose of or allow to accumulate any hazardous substances in such a manner that the substances may enter the sxrface or graound waters of the Trust Territory without first obtaining written approval of the Board. Such substances

include, but are not limited to, petroleum products, pesticides, radioactive substances and toxic chemicals. The Board may require persons handling hazardous materials to implement measures to reduce the possibility of contaminating the surface or ground waters of the Trust Territory. In the event of an accidental spill or discharge of hazardous materials, the responsible person shall immediately notify the Board and take all reasonable measures to contain the material so that it will not contaminate the surface or ground waters of the Trust Territory. Failure to notify the Board within twenty-four (24) hours and take reasonable mitigation measures shall constitute a violation of these standards.

(B) Mixing Zones

(1) General

The water quality criteria in Part 6(B) shall apply within a mixing zone unless specific alternative criteria have been approved by the Board and concurred upon by the U.S. Environmental Protection Agency. Mixing zones will not be granted in lieu of reasonable control measures to reduce point source pollutant discharges but will be granted to compliment the application of reasonable controls.

(2) New Discharges

All new point source discharges beginning after the effective date of these regulations shall apply to the Board for a zone of mixing on forms supplied by the Board, unless it can be demonstrated that the discharge will meet the applicable water quality standards at the point of discharge. It shall be a violation of these standards for any person to commence discharging from a new point source without either obtaining a valid mixing zone from the Board or demonstrating to the Board's satisfaction that a mixing zone is not required.

Any application for a zone of mixing must contain the following:

(a) Evidence that a NPDES permit has been applied for and will be obtained.

(b) A description of the waste to be discharged including flow rate and pollutant types and quantities.

(c) The location of the discharge and a description of the disposal method (e.g., outfall size, number and type of diffusers, etc.).

(d) Evidence that the concentration of toxic substances persent in the discharge will not violate water quality standards for toxic substances.

(e) Identification of those substances for which the mixing zone is required.

(f) Either:

i. A certification for each substance identified in (e) above, that after initial mixing, the concentration of the substance will not exceed the applicable water quality standard. The following equation shall be used to calculate concentration after initial dilution:

$$C_f = \frac{C_e + C_b (D_I)}{D_I + 1}$$

C_f = Concentration after mixing

C_e = Effluent concentration (instantaneous maximum)

C_b = Background concentration

D_I = Dilution ratio; or,

ii. A description of the shape, size, volume and other physical characteristics of the mixing zone required for each pollutant in the discharge so that the applicable water quality standsrds will be achieved at the boundary of the zone. The mixing zone shall be defined under those conditions of tide, wind, runoff, density stratification and discharge that would require the largest zone of mixing.

iii. Method (i) above should be used over method (ii) whenever possible.

(g) Evidence that the basic water quality standarcs [Part 6(A)] will not be violated within the mixing zone.

(h) A proposed schedule of effluent and receiving water monitoring

to determine compliance with the proposed mixing zone.

(3) Existing Discharges

All existing point source discharges must apply to the Board for a mixing zone or demonstrate that one is not required within eighteen (18) months of the effective date of these standards. The application procedure is identical to the one for new sources.

(4) It shall be in violation of these standards for any person to knowingly present false or misleading information to the Board in an application for a mixing zone.

(5) Determination by the Board

(a) Review of Application

In reviewing a mixing zone application, the Board will consider:

(i) Present and anticipated uses of the water body.

(ii) Whether an adequate zone of passage will exist for the movement of aquatic life.

(iii) The proximity of other mixing zones.

(iv) Whether the granting of a mixing zone is in the public interest.

The Board may request additional information from the applicant that is deemed relevant to the Board's determination.

(b) Issuance of Mixing Zone

The Board may either approve, conditionally approve or disapprove a mixing zone application after conducting a public hearing on the application. The Board will notify the applicant in writing of its determination after receiving EPA concurrence. The notification will include, but is not limited to:

(i) The duration of the mixing zone.

(ii) Any conditions placed upon the Board's approval of the application. Conditions may include:

(a) Effluent and receiving water monitoring and reporting

(b) A timetable for the reduction or elimination of the discharge.

(iii) The parameters for which the mixing zone is being granted and the alternative criteria that will apply within the mixing zone.

If the Board disapproves a mixing zone application, it will notify the applicant of the reasons for the disapproval.

PART 8 CLASSIFICATION AND ESTABLISHMENT OF WATER USE AREAS

"UNLESS OTHERWISE CLASSIFIED BELOW, ALL COASTAL, NON-TIDAL BRACKISH AND SALINE SURFACE WATERS SHALL BE CLASSIFIED AS AA AND ALL FRESH SURFACE WATERS ARE CLASSIFIED AS 1."

The following classification of water uses shall apply to the following areas:

(A) Coastal Water Areas and Non-Tidal Brackish and Saline Surface Water Areas

(1) TRUK

(a) Moen

Class AA

i. Goolong, Oror en Peipiei, and Litiebu

ii. Beyond reef flats in Peniesene and Penia

iii. Winipes to Wichap and Neauo

iv. Mwan Village

Class A

i. Unun en Wunefeisu

ii. Unun en Neauo to Oror en Nemset

Class B

i. Mwan Municipal Office to Tunnuk

ii. Pou Bay

iii. Wichen Stream discharge

iv. Oror en Newman

v. Unun en Nukusei

vi. Unun en Neaup, immediate vicinity of school

vii. Refuse dump between Southfield and Mwan Village

THIS PAGE CONTAINS AMENDMENTS

(b) Dublon

Class AA

i. Nechap to Elin

Class A

i. Nukuno to Nechap

Class B

i. Elin to Nukuno

(c) Fefan

Class AA

i. All areas not otherwise classified.

Class A

i. Polle Village

ii. Ununo Beach

iii. Nepuchor Sapore

Class B

i. Nessa, Ununo, Saporanong, Kukuwu, and Sapota dock, piggery, and toilet areas

(d) Uman

Class AA

i. Aranga to Sapou

ii. All areas not otherwise classified.

Class A

i. Sapou to Nepon

Class B

i. Saputiw to Nesarau

(e) Tsis

Class AA

i. All areas not otherwise classified.

Class A

i. Unoso area

Class B

i. Dock area of village

(f) Udot

Class AA

i. Penia to Fonomo

ii. Fouchap

iii. Wonip to S.E. tip

iv. S.E. tip to Monowe

v. Monowe to Mantiw

vi. Mantiw to Penia

Class A

i. S.E. tip

ii. Kum

Class B

i. Fonomo to Fouchap

ii. Monowe

iii. Mantiw

iv. Penia

(g) Eot

Class AA

i. All areas not otherwise classified

Class A

i. Western side of island

Class B

i. Village dock area

(h) Tol

Class AA

i. All areas not otherwise classified

Class A

i. Malaio and Sapou beach areas

Class B

i. Netut, Wichikuno, Fason, Winifei waterfronts

ii. Munnien to Faro

iii All village dock areas

iv. Foupe fish plant area

(i) Patta

Class AA

i. All areas not otherwise classified

Class A

i. Faut Beach

ii. Michikei

Class B

i. Dock and village area of Fanip and Peniemwan

(j) Parem

Class AA

i. All areas not otherwise classified

Class A

i. Neawachang

ii. Epsiton Point, Darik Island

Class B

i. Dock and village area of Fanip

ii. Waterfront between Unun Faut and Unun Supun

(k) Fona, Eden, Fanapangues, Ramamum, Pis Moen

Class AA

i. All areas not otherwise classified

Class B

i. Dock areas

(2) PALAU (BELAU)

(a) Babelthaup (Babeldaob)

Class AA

i. All areas not otherwise classified

Class B

i. Village docks

(b) Koror (Oreor)

Class AA

i. All areas not otherwise classified

Class A

i. Meyuns

ii. Eang

iii. Cholebdechal (Oleblechol)

iv. Ngiritang

v. M-Dock (Shinghatoba) point

vi. Ngetmeduch

vii. Mechang

Class B

i. Malakal (Ngemelachel) Harbor

ii. M-Dock (Shinghatoba) including S.E. of Ngerbeched shore

iii. Kemangel Toachel, excluding T-Dock (Ngerekemais)

iv. Metukerademul to E. side of old Japanese dock (Derromel)

v. Ngereksong

(c) Peleliu (Beliliou)

Class AA

i. All areas not otherwise classified

Class A

i. Ngebad to Ngarekeiukel point

ii. Southern side of island

Class B

i. Akalakul (Elochel) dock

(d) Angaur (Ngeaur)

Class AA

i. All areas not otherwise classified

Class A

i. Pkulanlagalp (Bkulamekaeb) point to Medorem

ii. Beach south of Pkulangelul (Bkulengeluul) point

iii. Beach between Ngedeloch point and Medorem

Class B

i. Angaur (Ngeaur) Harbor

(3) KOSRAE

(a) Lelu

Class AA

i. All areas not otherwise classified

Class A

i. Ocean side near Lelu causeway

Class B

i. Lelu Harbor

(b) Malem

Class AA

i. All areas

(c) Utwa

Class AA

i. All areas not otherwise classified

Class B

i. Immediate vicinity of village

(d) Tafunsak

Class AA

i. All areas not otherwise classified

Class B

i. Okak Harbor

(4) YAP

Class A

i. All areas not otherwise classified

Class B

i. Tomil Harbor southward to 1/2 mile part Tora Bay

ii. Between Dalipebinaw and Weloy

iii. Southern tip of Tomil

(5) PONAPE

(a) Kolonia and Nett

Class AA

i. All areas not otherwise classified

Class A

i. Immediately below the Nan Madol Hotel

ii. Northeast of Nett Point

Class B

i. Tawenmokot water from the Sokehs bridge to the commercial port except the area immediately below the Nan Madol Hotel

ii. Kolonia waterfront east of the Teketik causeway to the Dau Sokole bridge

(b) Uh

Class AA

i. Waterfront areas around Depehk and Takaieu

Class A

i. All areas not otherwise classified

Class B

i. Awak Powe Bay

ii. Area in vicinity of Nan Uh dock

(c) Madolenihmw

Class AA

i. Nan Madol ruins

ii. Waterfront areas of Temwen-Tamworoi, Enipoas, Akak, Wapor, Loht, Taunpil, Nantamworoi

iii. Areas of Alokap, Ipwitek, Areu, Oha, Lukop, Metipw, and Dolapwail

Class A

i. Islands off Temwen Island

Class B

i. Bay between Temwen, Sapwalapw and Tamworoi

(d) Kitti

Class AA

i. Waters of Penia, Mwatok, Mwatok Harbor, Roi, Loiap and Rohnkitti

ii. Area between Penia and Meilap

Class A

i. Nalap and Kehpara Island waters

ii. Area of the barrier reef, mangroves and bird sanctuary island of Dawahk

Class B

i. Rohnkitti, Pohk, Wone and Wonik areas

(e) Sokehs

Class AA

i. All areas not otherwise classified

Class B

i. Waterfront areas of Deh, Likie, Danpei, and Mwalok

(6) MARSHALLS

(a) Majuro and Laura

Class AA

i. Area between the fisheries comples to the tip of Laura

ii. Oceanside and eastern end of Laura Beach

Class A

i. Area of Eastern Gateway Hotel

ii. Tip of Laura

Class B

i. From Rita to Eastern Gateway Hotel

ii. From the Eastern Gateway Hotel to the area beyond the fish market

(b) Ebeye

Class AA

i. Water on the ocean side of the island

Class A

i. Southern end of the island

Class B

(c) Gugeegue

Class AA

i. Ocean side of the island

Class A

i. All areas not otherwise classified

Class B

i. Immediate vicinity of the dock

(B) Fresh Water Areas

(1) Class 1 Waters

All sources of fresh surface waters on all islands whether publicly or privately owned for domestic, culinary, or food processing purposes.

(2) Class 2 Waters

All fresh surface waters not included in Class 1. .

PART 9 PENALTY

Any person found guilty of violation of any of the provisions of this regulation shall be subject to enforcement action under 63 TTC Section 507, 508, and 509.

PART 10 SEVERABILITY CLAUSE

If any provision of this regulation or the application of any provision of this regulation to any person or circumstances is held invalid, the application of such provision to other persons or circumstances and the remainder of this regulation shall not be affected thereby.

PART 11 DATE OF EFFECT

This regulation shall be effective ten (10) days from their publication herein in the Trust Territory Register.

PART 12 REPEAL OF FORMER REGULATION

This regulation repeals Release No. 17-73, published in the Territorial Register, Volume 1, Number 8, concerning Standards of Water Quality for the Trust Territory of the Pacific Islands.

State of Texas Marine Water Quality Standards

Texas Water Quality Standards
April 1981

Texas Dept. of Water Resources
P.O. Box 13246
Austin, TX 78711

GENERAL STATEMENT

I. Authority

Pursuant to the authority contained in Section 26.023 of the Texas Water Code, as amended, the Texas Water Development Board on behalf of the Texas Department of Water Resources adopts the following stream standards.

II. Policy Statement

It is the policy of this State and the purpose of this chapter to maintain the quality of water in the State consistent with the public health and enjoyment, the propagation and protection of terrestrial and aquatic life, the operation of existing industries, and the economic development of the State; to encourage and promote the development and use of regional and area-wide waste collection, treatment, and disposal systems to serve the waste disposal needs of the citizens of the State; and to require the use of all reasonable methods to implement this policy (Section 26.003, Texas Water Code, as amended).

III. Antidegradation Statement

In implementing the legislative policy expressed in Section 26.003, it is the policy of the Texas Department of Water Resources that:

1. The waters in the State whose existing quality is better than the applicable water quality standards described herein as of the date when these standards become effective will as provided hereafter be maintained at their high quality, and no waste discharges may be made which will result in the lowering of the quality of these waters unless and until it has been demonstrated to the Texas Department of Water Resources that the change is justifiable as a result of necessary economic or social development.

2. Water uses identified in the numerical criteria of these standards will be maintained. Identified uses will be reviewed when appropriate and changes, if necessary, will be proposed and justified in accordance with 40 CFR, 35.1550(c)(2)(3) and (4). Additionally, no degradation shall be allowed in high quality waters within or adjacent to National Parks and Wildlife refuges or wild and scenic rivers designated by law if such degradation would significantly impact the use of an area for its designated purposes. Existing instream water uses shall be protected consistent with provisions of Chapter 11 of the Texas Water Code and in accordance with Section 101(g) of the Federal Clean Water Act.

3. The Department will not authorize or approve any waste discharge which will result in the quality of any of the waters in the State being reduced below the water quality standards without complying with the Federal and State laws applicable to the amendment of water quality standards.

4. Anyone making a waste discharge from any industrial, public or private project of development which would constitute a new source of pollution or an increased source of pollution to any of the waters in the State will be required, as part of the initial project design to provide the highest and best degree of waste treatment available under existing technology consistent with the best practice in the particular field affected under the conditions applicable to the project or development.

The Executive Director will keep the Environmental Protection Agency informed of its activities and will furnish to the agency such reports in such form, and containing such information as the Administrator of the Environmental Protection Agency may from time to time reasonably require to carry out his functions under the Federal Water Pollution Control Act, 33 U.S.C., 1251, et seq. Additionally, the Executive Director will consult and cooperate with the Environmental Protection Agency on all matters affecting the federal interest.

IV. Classification of Surface Waters

The surface waters of the State have been divided into the following categories for ease of classification.

1. River Basin Waters - those surface inland waters comprising the major rivers and their tributaries, including listed impounded waters, and including the tidal portion of the river to the extent that it is confined in a channel.

2. Coastal Basin Waters - those surface inland waters, including listed impounded waters, exclusive of (1) above, discharging or flowing or otherwise communicating with bays or the gulf including the tidal portion of streams to the extent that they are confined in channels.

3. Bay Waters - all tidal waters exclusive of those included in river basin waters, coastal basin waters, and gulf waters.

4. Gulf Waters - those waters which are not included in or form a part of any bay or estuary but which are a part of the open waters of the Gulf of Mexico to the limit of Texas' jurisdiction.

V. Description of Standards

The General Statement is an integral part of the Standards and the Standards shall be interpreted in accord with the General Statement.

The Standards consist of three parts:

1. General Criteria applicable to all surface waters of the State except as otherwise provided herein.

2. Numerical Criteria applicable to specific surface waters designated in the standards.

3. Water Uses deemed desirable for specific surface waters designated in the Standards.

   The designation of a segment as desirable for a particular water usage reflects the objective of the Texas Department of Water Resources to attain and maintain a quality of water appropriate to a specific water usage for a stream segment.

VI. General Criteria

The general criteria enumerated below are applicable to all surface waters of the State at all times and specifically apply with respect to substances attributed to waste discharges or the activities of man as opposed to natural phenomena. Natural waters may, on occasion, have characteristics outside the limits established by these criteria; in which these criteria do not apply. The criteria adopted herein relate to the condition of waters as affected by waste discharges or man's activities. The following criteria do not override a specific exception to any one or more of the following if the exception is specifically stated in a water quality standard.

1. Taste and odor producing substances shall be limited to concentrations in the waters of the State that will not interfere with the production of potable water by reasonable water treatment methods, or impart unpalatable flavor to food fish, including shellfish, or result in offensive odors arising from the waters, or otherwise interfere with the reasonable use of the waters.

2. The surface waters of the State shall be maintained so as to be essentially free of floating debris and suspended solids conducive to the production of putrescible sludge deposits or sediment layers which would adversely affect benthic biota or any lawful uses.

3. The surface waters of the State shall be maintained so as to be essentially free of settleable suspended solids conducive to changes in the flow characteristics of stream channels, to the untimely filling of reservoirs, lakes, and bays.

4. The surface waters of the State shall be maintained in an aesthetically attractive condition.

5. There shall be no substantial change in turbidity from ambient conditions due to waste discharges.

6. There shall be no foaming or frothing of a persistent nature.

7. There shall be no discharge of radioactive materials in excess of that amount regulated by the Texas Radiation Control Act, Article 4590(f), Revised Civil Statutes, State of Texas and Texas Regulation for Control of Radiation.

Radioactivity levels in the surface waters of Texas, including the radioactivity levels in both suspended and dissolved solids for the years 1958 through 1960, were measured and evaluated by the Environmental Sanitation Services Section of the Texas Department of Health in a report prepared for and at the direction of the Health Department by the Sanitary Engineering Research Laboratory at the University of Texas. The document is entitled, "Report on Radioactivity--Levels in Surface Waters--1958-1960" pursuant to contract No. 4413-407 and is dated June 30, 1960. This document comprises an authoritative report on background radioactivity levels in the surface waters in the State and quite importantly sets out the locations where natural radioactive deposits have influenced surface water radioactivity. The impact of radioactive discharges that may be made into the surface waters of Texas will be evaluated and judgments made on the basis of the information in the report which was at the ime made, and may still be the only comprehensive report of its kind in the nation.

Radioactivity in fresh waters associated with the dissolved minerals (measurements made on filtered samples) shall not exceed those enumerated in the Interim Primary Drinking Water Regulations, December 1977, or latest revision, unless such conditions are of natural origin.

8. The surface waters of the State shall be maintained so that they will not be toxic to man, fish and wildlife, and other terrestrial and aquatic life.

With specific reference to public drinking water supplies, toxic materials not removable by ordinary water treatment techniques shall not exceed those enumerated in the Interim Primary Drinking Water Regulations, December, 1977, or latest revision.

For a general guide, with respect to fish toxicity, receiving waters outside mixing zones should not have a concentration of nonpersistent toxic materials exceeding 1/10 of the 96-hour LC50, where the bioassay is made using fish indigenous to the

receiving waters. Similarly, for persistent toxicants, the concentrations should not exceed 1/20 of the 96-hour LC50.

For evaluations of toxicity, bioassay techniques will be selected as suited to the purpose at hand. As a general guideline, bioassays will be conducted using fish indigenous to the receiving waters, and water quality conditions (temperature, hardness, pH, salinity, dissolved oxygen, etc.) which approximate those of the receiving waters.

9. At the present time sufficient information is not available concerning (1) cause-effect relationships between nutrient concentrations and water quality, and (2) nutrient cycling mechanisms in Texas waters, to establish appropriate water quality standards for nutrients. As such information becomes available standards for nutrients will be established, if appropriate. Decisions regarding the establishment of nutrient standards will be made on a case-by-case basis by the Department after proper hearing and public participation. The establishment of a schedule for decisions as to the need for the nutrient standards which should be adopted is not feasible at this time.

10. The surface waters of the State shall be maintained so that no oil, grease, or related residue will produce a visible film of oil or globules of grease on the surface, or coat the banks and bottoms of the watercourse.

11. A dissolved oxygen concentration of at least 2.0 mg/L shall be maintained in all waters of the State, with the exception of intermittent streams and inland effluent dominated streams, for all flow conditions for which a dissolved oxygen limit is not enumerated elsewhere in these Standards (note also Section IX.4).

12. The quality of surface waters of the State, other than intermittent streams and those segments with specifically identified desired uses and numerical criteria, will be protected so that certain minimal uses such as navigation, agricultural water supply, or industrial water supply will be maintained. The foregoing statement is not to be construed to mean that the criteria enumerated in Quality Criteria for Water shall be applied in determining suitable water quality for the uses identified.

13. Consistent with its water resource management responsibilities, the State has determined that in most areas of the State the use of man-made impoundments for industrial cooling accomplishes both water conservation and water quality management objectives. While numerical criteria for temperature are not established for all such reservoirs, temperatures in these reservoirs and all other surface waters of the State shall be maintained so as not to interfere with the reasonable use of such waters for beneficial purposes consistent with the Policy Statement and in accordance with water rights permits.

VII. Numerical Criteria

The numerical criteria apply to the specific waters identified. A detailed description of the inland segment boundaries is contained in Appendix B - Segment Descriptions. Boundaries of coastal and estuarine segments have not yet been precisely defined; however, approximations are illustrated in the Segment Identification Maps, Texas River and Coastal Basins, Texas Department of Water Resources, LP-132, October 1980. Stream standards are established and specifically apply with respect to substances attributed to waste discharges or the activities of man as opposed to natural phenomena. Other surface waters are covered by the criteria in the General Statement and Section IX, 4.

Chemical concentration parameters, with the exception of dissolved oxygen and pH, apply to the approximate midpoint of the segment. The numerical values shown represent arithmetic average conditions over a period of one year. Compliance is determined from at least four measurements per segment by averaging measurements from all monitoring stations within the segment to allow for reasonable gradients within the segment. Whenever an unusual chemical concentration is found, an investigation of its origin will be made and such action as is warranted initiated. These chemical parameters, as identified in the numerical criteria will be maintained through the permit review process. Salinity levels in estuarine areas are discussed in Section XI, (2) Estuarine Salinity.

The dissolved oxygen values are minimum values which are applicable except as qualified in Section IX. For short periods of time, diurnal variations of 1.0 mg/L below the standard specified in the table shall be allowed for no more than 8 hours during any 24-hour period.

The pH range represents maximum and minimum conditions throughout the segment except as qualified in Section IX.

The temperature limitations are intended to be applied with judgment and are applicable to the waters specifically identified herein with the qualifications enumerated in Section IX. Temperature standards are composed of two parts, a maximum temperature and a maximum temperature differential attributable to heated effluents.

Tidal River Reaches, Bay and Gulf Waters:

	Fall (Winter, Spring)	Summer (June, July August)
Maximum Temp. Diff.	4°F	1.5°F
Maximum Temperature	95°F	95°F

The specific temperature differentials shall not apply where the temperature increase is due to the discharge of a treated domestic (sanitary) sewage effluent.

The maximum temperature differential applies only to temperatures below the maximum criteria. If a recorded temperature exceeds the maximum criteria for a specific segment it will be considered a violation of the Water Quality Standards.

Bacteriological water quality standards consist of two parts: (1) a measure of general quality, and (2) a limit on variations from the general quality.

For all waters except gulf and bay waters, the measure of general quality is the logarithmic mean (geometric mean) of fecal coliform determinations. The number specified in the tables applies to the logarithmic mean of data from a representative sampling of not less than 5 samples collected over not more than 30 days. All aspects of the sampling shall be such that a truly representative result is obtained. For routine observation and evaluation of water quality, lesser numbers of samples collected over longer periods will be used. In bay waters (exclusive of bay waters in the buffer zone), the number specified in the tables applies to the median total coliform density as specified in the "National Shellfish Sanitation Program Manual or Operations, Part 1, Sanitation Shellfish Growing Areas", 1965 Revision, or latest revision.

The limit on variations from the general bacteriological quality on all waters except gulf and bay waters is a fecal coliform density which shall not be equaled or exceeded in more than 10% of the samples. This density is twice the numerical criteria specified in the table. In the instance of gulf and bay waters (exclusive of the buffer zone), the criteria for shellfish growing water shall apply.

VIII. Water uses

1. Contact recreation waters

Surface waters suitable for contact recreation shall not exceed a logarithmic mean (geometric mean) fecal coliform content of 200 organisms per 100 ml from a representative sampling of not less than 5 samples collected over not more than 30 days, as determined by either multiple-tube fermentation or membrane filter techniques. No more than 10 percent of the total samples taken during any 30-day period shall exceed a logarithmic mean fecal coliform content of 400 organisms per 100 ml.

Simple compliance with bacteriological standards does not insure that waters are safe for primary contact recreation, such as swimming. Long-standing public health principles mandate that a watershed sanitary survey be conducted in order to adequately evaluate the sanitary hazards potentially present on any natural watercourse.

2. Noncontact recreation

Surface waters for general or noncontact recreation should, with specific and limited exceptions, be suitable for human use in recreation activities not involving significant risks of ingestion. These waters shall not exceed a logarithmic mean (geometric mean) fecal coliform content of 2,000/100 ml, nor equal or exceed 4,000/100 ml in more than 10 percent of the samples, except in specified mixing zones adjacent to outfalls.

3. Domestic raw water supply

It is the goal that the chemical quality of all surface waters used for domestic raw water supply conform to the Interim Drinking Water Regulations. However, it must be realized that some surface waters are being used that cannot meet these standards. Since in these cases it is the only source available, these surface waters may be deemed suitable for use as a domestic raw water supply, where the chemical constituents do not pose a potential health hazard.

The evaluation of raw water for domestic use cannot be reduced to simply counting bacteria of any kind and the foregoing must be used with judgment and discretion. This paragraph is not intended to limit the responsibilities and authorities of responsible local governments or local health agencies.

4. Propagation of fish and wildlife

The water quality requirements necessary to support the propagation of fish and wildlife are too diverse to be defined by a single set of numerical criteria. Different, but equally desirable, biological communities may have substantially different water quality requirements. Also, the impact of a given chemical or physical component on a biological community can be assessed only when the other components of the system are known since synergistic and antagonistic interactions are common. Determination of the suitability of a stream for the propagation of fish and wildlife is most effectively accomplished by an assessment which considers both the physical-chemical parameters of the stream and the biological community present in the stream.

Specific criteria do exist with respect to shellfish waters. In shellfish areas in the bays and outside the buffer zones, the total coliform criteria shall be limited and guided by the latest revision of the U. S. Public Health Service Manual, "Sanitation of Shellfish Growing Areas".

IX. Application of Standards

1. Flow Criteria

The flow criteria as defined below and listed specifically for each segment at the referenced stations (See Appendix A) apply only to river and coastal basin waters. They do not apply to reservoir, estuarine, or gulf waters. Flow conditions were computed from historic USGS daily streamflow records where available. In cases where there was not a USGS flow station at the TDWR monitoring station, the base flow condition was interpolated/extrapolated from the nearest comparable USGS stations. The seven-day, two-year low flows shown in Appendix A were calculated using USGS data. When the calculated seven-day, two-year low flow was less than 0.1 cfs the base flow was set at 0.1 cfs.

The flows will be recomputed periodically to reflect any alterations in the hydrologic characteristics of a segment which may result from upstream activities in the basin, including construction of new reservoirs, climatological trends or other phenomena.

a. Chemical Parameters: The water quality standards exclusive of temperature, dissolved oxygen, and pH, but including chlorides, sulfates, and total dissolved solids represent annual arithmetic mean concentrations which shall not be exceeded for any year. The measurements that shall be used to compute the annual arithmetic mean will be only those taken when the flow at the time of sampling equals or exceeds the specified flow criterion. At least four (4) measurements per year are required to determine compliance with standards.

b. The dissolved oxygen and pH standards represent minimum and minimum/maximum values, respectively, and shall apply at all times that the daily flow equals or exceeds the specified flow criterion.

c. Temperature: The temperature standard represents a maximum value that shall apply at all times that the daily flow exceeds the specified flow criterion.

d. Other Parameters and General Criteria: The general criteria and the numberical criteria not specifically discussed above shall apply at all times regardless of flow unless specifically excepted under Section IX, 4.

e. The flow criteria identified in Appendix A are solely for the purpose of defining the conditions under which the numerical water quality standards apply to a given water body. The Appendix A flow criteria are not for the purpose of regulating flows in water bodies in any manner or requiring that minimun flows be maintained in the referenced water bodies.

2. Mixing Zones

Where mixing zones are specifically defined in a valid waste discharge permit issued by the Texas Department of Water Resources or a National Pollutant Discharge Elimination System Permit, the defined zone shall apply.

Where the mixing zone is not so defined, a reasonable zone shall be allowed. Because of varying local physical, chemical and biological conditions, no single criterion is applicable in all cases. In no case, however, where fishery resources are considered significant, shall the mixing zone allowed preclude the passage of free-swimming and drifting aquatic organisms to the extent of significantly affecting their populations. Normally mixing zones should be limited to no more than 25 percent of the cross-sectional area and/or volume of flow of the stream or estuary, leaving at least 75 percent free as a zone of passage unless otherwise defined by specific Board Order or Permit. Where specific mixing zones are defined consideration will be given to the guidance in Chapter 5, Guidelines for State and Areawide Water Quality Management Program Development, (1976) in establishing the mixing zone.

3. Buffer Zones in Bay and Gulf Waters

For all bay and gulf waters, exclusive of those contained in river or coastal basins as defined in Section IV, a buffer zone of 1,000 feet measured from the shorelines at ordinary high tide is hereby established. In this zone, the bacteriological requirements enumerated in other sections of these standards shall not apply. In these zones, the logarithmic mean (geometric mean) density of fecal coliform organisms shall not exceed 200/100 ml nor shall more than 10% of the total samples exceed 400/100 ml. The foregoing percentages are applicable when examining data from not less than 5 samples collected over not more than 30 days. For routine observation and evaluation of water quality, lesser numbers of samples collected over longer periods will be used.

4. Exceptions

The Water Quality Standards will not apply to treated effluents and, except General Criteria, will not apply to:

a. water in mixing zones as defined in this section or in a waste discharge operating under a valid permit issued by the Texas Department of Water Resources or the National Pollutant Discharge Elimination System, or

b. dead-end barge and dead-end ship channels constructed for navigation purposes unless specifically designated in the tables. This does not include finger canals to marinas or other developments.

In dead-end barge canals and dead-end ship channels, intermittent streams, and inland effluent dominated streams, a minimum goal shall be to maintain a concentration of 2.0 mg/L dissolved oxygen except in areas where it is not feasible or justifiable. Nothing in this statement precludes requiring waste treatment over and above that required to meet a 2.0 mg/L dissolved oxygen standard.

X. Determination of Compliance

In making any tests or analytical determination on classified surface waters to determine compliance

or noncompliance with water quality standards, representative samples shall be collected at locations approved by the Texas Department of Water Resources.

1. Collection and Preservation of Samples

In tidal river reaches, the temperature standards apply to the fresh water layer in stratified situations similar to impoundments.

2. Estuarine Salinity

It is recognized that the maintenance of proper salinity gradients during various periods of the year within estuarine waters is very important to the continuation of balanced and desirable populations of estuarine dependent marine life. The dominant force in determining salinity gradients is weather -- although gradients can be affected by waste discharges; modifications in the flow regime of in-flow rivers and streams, by the construction of impoundments, water diversions, etc.; and by physical alterations of gulf passes and other interconnections between estuarine and gulf waters. Since the dominant force controlling salinity gradients is beyond control, meaningful salinity standards cannot be enforced. Careful consideration, however, will always be given to all activities of any nature which can or might detrimentally affect salinity gradients in estuarine waters.

All phases of the natural mineral composition of estuarine and marine waters commonly known as salinity or salinity gradient are outside the scope of these standards, but are not outside the scope of the interest, responsibility, and authority of the several State agencies concerned with water quality, quantity, development, regulations, and administration. For the State's purposes, using both existing data and data yet to be collected, the State proposes to adopt carefully considered estuarine salinity criteria upon which future State evaluations and regulatory actions might be based. Such evaluations and regulatory actions shall not be precluded because of the absence of established salinity standards.

SEGMENT DESCRIPTIONS

SEGMENT	DESCRIPTION
0501	Sabine River Tidal from the mouth of Sabine River at the northernmost point of Sabine Island .4 mile upstream from the confluence of Black Bayou and 5.0 miles east of SH 87 in Orange County to Morgan's Bluff 2.6 miles east of SH 87 and 2.4 miles south of the Newton-Orange County Line in Orange County.
0601	Neches River Tidal - from 1.5 miles downstream of SH 87 (Rainbow) Bridge in Jefferson County to the temporary salt water barrier 7.0 miles upstream from the IH 10 Bridge in Orange County.
0702	Intracoastal Waterway - Port Bolivar to Sabine-Neches Canal from the SH 87 bridge across the Intracoastal Canal in Port Arthur to the confluence of Houston Ship Channel .8 mile east of the end of SH 87 at the ferry landing on Bolivar Peninsula.
0703	Sabine-Neches Canal - south tip of Pleasure Island to 1.5 miles downstream from the SH 87 (Rainbow) bridge and .2 mile west of Stewt's Island.
0801	Trinity River Tidal from the confluence of Trinity River and Anahuac Channel in Chambers County at Anahuac to a point 1.9 miles downstream from US 90 bridge at Liberty which is the confluence of the Trinity River and Liberty Barge Canal in Liberty County.
0802	Trinity River from the end of tidal zone (Segment 0801) to Livingston Dam.

SEGMENT DESCRIPTIONS (CONT.)

SEGMENT	DESCRIPTION
0901	Cedar Bayou tidal from a point 0.7 mile downstream from Tri-City Beach Road drawbridge on the Harris-Chambers County line to a point 1.4 miles upstream from the IH 10 Bridge.
1001	San Jacinto River Tidal - from approximately 200 yards below IH-10 in Harris County to Lake Houston Dam.
1003	East Fork San Jacinto River - above Lake Houston from a point 4.4 miles downstream from Houston City Boundary at Lake Houston, .5 mile east of the end of Dunnam Road and 2.7 miles south of the Harris/Montgomery County line, .4 mile southeast of Champion Rod and Gun Club Roads and end at a dam .2 mile east of SH 405, .1 mile northeast of the Dodge Jr. High School, 1.6 miles north of US 190 in Walker County.
1005	Houston Ship Channel from Morgan's Point Channel light .4 mile north of the Harris-Chambers County line to a point in mid-channel due north of the SH 134 ferry landing at San Jacinto confluence and including the tidal portion of the San Jacinto River to approximately 200 yards below IH 10 Bridge.
1006	Houston Ship Channel - San Jacinto River confluence at a point in mid-channel due north of the south ferry landing on SH 134 to the Turning Basin at a point in mid-channel approximately 200 yards northeast of the end of 75th Street in Houston and including tidal portions of tributaries.
1007	Houston Ship Channel-Turning Basin from end of Segment 1006.
1101	Clear Creek tidal from its confluence with Clear Lake to the FM 528 Bridge in Harris and Galveston Counties.

SEGMENT DESCRIPTIONS
(CONT.)

SEGMENT	DESCRIPTION
1103	Dickinson Bayou Tidal from a point 1.3 miles downstream from SH 146 Bridge on Dickinson Bayou to a point 2.5 miles upstream from Arcadia Cemetery Road, 3.7 miles west of FM 646 and .7 mile south of FM 517 in Galveston County.
1105	Bastrop Bayou Tidal - from a point .7 mile downstream (east) of mid-channel of the Intracoastal Waterway to a point 2.0 miles upstream from FM 1495.
1107	Chocolate Bayou Tidal from a point .3 mile downstream from FM 2004 Bridge at Chocolate Bayou in Brazoria County to a point 2.6 bayou miles downstream from SH 35 Bridge in Brazoria County.
1109	Oyster Creek Tidal from the confluence of Oyster Creek and the Intracoastal Waterway 1.7 miles above SH 332 Bridge in Brazoria County to a point approximately 100 yards upstream from FM 2004 Bridge in Brazoria County.
1111	Old Brazos River Channel from confluence of the Intracoastal Waterway .4 mile inland from the Coast Guard Station at Surfside in Brazoria in Brazoria County to a point approximately .4 mile east of SH 288.
1113	Armand Bayou Tidal - from its confluence with Clear Lake to a point 0.5 miles downstream from Red Bluff - Genoa Road in Harris County.
1201	Brazos River Tidal from the mouth of the Brazos River 6.0 miles downstream from the SH 36 Bridge in Brazoria County to the SH 332 Bridge at Brazoria, Texas in Brazoria County.

SEGMENT DESCRIPTIONS
(CONT.)

SEGMENT	DESCRIPTION
1301	San Bernard River Tidal from a point in Brazoria County .9 mile downstream from the Intracoastal Waterway confluence to a point 2 miles upstream from the SH 35 Bridge in Brazoria County.
1303	Cedar Lakes - measured from a point in Brazoria County .6 mile northwest of the mouth of the San Bernard River to a point .8 mile south of the convergence of the Intracoastal Waterway and the Brazoria-Matagorda County line.
1304	Caney Creek Tidal from the confluence with the Intracoastal Waterway 2.0 miles downstream from FM 457 Bridge in Matagorda County to a point 2.6 miles southeast of intersection of FM 457 and 521 which is a point in the Gainesmore Community in Matagorda County and 7.6 miles downstream from the confluence with Linnville Bayou.
1401	Colorado River tidal from the mouth of the river at the Gulf of Mexico 6.7 miles downstream from the Intracoastal Waterway to a point in Matagorda County 1.3 miles downstream from the Missouri Pacific Railroad Bridge.
1501	Tres Palacios Creek Tidal from a point 2.3 miles downstream from the FM 521 bridge to a point 1 mile upstream from the confluence of Wilson Creek in Matagorda County.
1601	Lavaca River Tidal from the mouth of the Lavaca River on the Jackson-Calhoun County line 2.7 miles NNW of the intersection of SH 35 and FM 1593 in Calhoun County to the point of confluence of Navidad River approximately .1 mile upstream from FM 616 in Jackson County.
1701	Victoria Barge Canal - San Antonio Bay to Victoria Turning Basin.
1801	Guadalupe River Tidal from the mouth of the Guadalupe 7.6 miles downstream from the SH 35 Bridge on the Calhoun-Refugio County line to the Guadalupe-Blanco River Authority Salt Water Barrier 0.4 mile downstream from the confluence with the San Antonio River.

SEGMENT DESCRIPTIONS (CONT.)

SEGMENT	DESCRIPTION
2001	Mission River Tidal from the mouth at Mission Bay 1.8 miles east of FM 136 in Refugio County to a point 4.6 miles downstream from the US 77 Bridge in Refugio County.
2003	Aransas River Tidal from the mouth at the FM 136 Bridge on the Refugio-Aransas County line to a point 4.1 miles south of FM 1360 and 11.5 miles east of US 77.
2004	Aransas River above tidal from a point 4.1 miles south FM 1360 and 11.5 miles east of US 77 to the confluence of west Aransas Creek and Poesta Creek near Skidmore in Bee County.
2101	Nueces River Tidal from the mouth at Nueces Bay 5.3 miles north of IH 37 in Corpus Christi to the Salt Water Barrier 1.5 miles south of the IH 37 and US 77 Interchange near Calallen.
2102	Nueces River from the Salt Water Barrier 1.5 miles south of the IH 37 and US 77 Interchange near Calallen to Wesley Seale Dam.
2201	Arroyo Colorado - from where it enters the Laguna Madre between Willacy and Cameron Counties to Hwy 1016 2 miles south of Mission in Hidalgo County.
2301	Rio Grande Tidal - Gulf of Mexico 2.9 miles south of SH 4 in Cameron County to a point 6.7 miles downstream from the International Bridge in Brownsville.
2302	Rio Grande - from a point 6.7 miles downstream from the International Bridge in Brownsville to Falcon Dam.
2501	Gulf of Mexico - Beginning at the Gulf Shoreline and extending to the limit of Texas' jurisdiction, from Sabine Pass to Brazos Santiago Pass.

TEXAS SURFACE WATER QUALITY STANDARDS
FRESH AND TIDAL WATERS

SEGMENT		WATER USES DEEMED DESIRABLE				CRITERIA						
NUMBER	DESCRIPTION	CONTACT RECREATION	NONCONTACT RECREATION	PROPAGATION OF FISH & WILDLIFE	DOMESTIC RAW WATER SUPPLY	CHLORIDE (mg/l) avg. not to exceed	SULFATE (mg/l) avg. not to exceed	TOTAL DISSOLVED SOLIDS (mg/l) avg. not to exceed	DISSOLVED OXYGEN (mg/l) not less than	pH RANGE	COLIFORM FECAL/ (100ml) - log. avg. not more than (see Gen. Statement)	TEMPERATURE °F (see Gen. Statement)
1301	San Bernard River Tidal	X	X	X					4.0	6.5-9.0	200	95
1401	Colorado River Tidal	X	X	X					4.0	6.5-9.0	200	95
1303	Cedar Lakes *	X	X	X					4.0	6.5-9.0	*	95
1304	Caney Creek Tidal	X	X	X					4.0	6.5-9.0	200	95
1201	Brazos River Tidal	x	x	x					4.0	6.5-9.0	200	95

* Shellfish sanitation bacteriological standards apply - 70/100 ml total coliform

TEXAS SURFACE WATER QUALITY STANDARDS
FRESH AND TIDAL WATERS

SEGMENT NUMBER	SEGMENT DESCRIPTION	WATER USES DEEMED DESIRABLE: CONTACT RECREATION	NONCONTACT RECREATION	PROPAGATION OF FISH & WILDLIFE	DOMESTIC RAW WATER SUPPLY	CRITERIA: CHLORIDE (mg/l) avg. not to exceed	SULFATE (mg/l) avg. not to exceed	TOTAL DISSOLVED SOLIDS (mg/l) avg. not to exceed	DISSOLVED OXYGEN (mg/l) not less than	pH RANGE	COLIFORM: FECAL/ (100ml) - log. avg. not more than (see Gen. Statement)	TEMPERATURE °F (see Gen. Statement)
1501	Tres Palacios Creek Tidal	X	X	X					5.0	6.5-9.0	200	95
1601	Lavaca River Tidal	X	X	X					4.0	6.5-9.0	200	95
1801	Guadalupe River Tidal - Guadalupe Bay to Guadalupe-Blanco River Authority salt water barrier	X	X	X					5.0	6.5-9.0	200	95
2001	Mission River Tidal	X	X	X					4.0	6.5-9.0	200	95
2003	Aransas River Tidal	X	X	X					4.0	6.5-9.0	200	95
2301	Rio Grande Tidal		X	X					5.0	6.5-9.0	1,000	95
2302	Rio Grande - Tidal to Falcon Dam	X	X	X	X	270	350	880	5.0	6.5-9.0	200	90

TEXAS SURFACE WATER QUALITY STANDARDS

FRESH AND TIDAL WATERS

SEGMENT NUMBER	SEGMENT DESCRIPTION	WATER USES DEEMED DESIRABLE: CONTACT RECREATION	WATER USES DEEMED DESIRABLE: NONCONTACT RECREATION	WATER USES DEEMED DESIRABLE: PROPAGATION OF FISH & WILDLIFE	WATER USES DEEMED DESIRABLE: DOMESTIC RAW WATER SUPPLY	CRITERIA: CHLORIDE (mg/l) avg. not to exceed	CRITERIA: SULFATE (mg/l) avg. not to exceed	CRITERIA: TOTAL DISSOLVED SOLIDS (mg/l) avg. not to exceed	CRITERIA: DISSOLVED OXYGEN (mg/l) not less than	CRITERIA: pH RANGE	CRITERIA: COLIFORM FECAL/ (100ml) - log. avg. not more than (see Gen. Statement)	CRITERIA: TEMPERATURE °F (see Gen. Statement)
0601	Neches River Tidal		X	X					2.5*	6.0-8.5	2,000	95
0501	Sabine River Tidal	X	X	X					4.0	6.0-8.5	200	95
0511	Cow Bayou Tidal	X	X	X					4.0	6.0-8.5	200	95
0702	Intracoastal Waterway - Port Bolivar to Sabine-Neches Canal		X	X					4.0	6.5-9.0	2,000	95
0703	Sabine-Neches Canal - Stewt's Island to U. S. Coast Guard Station		X	X					4.0	6.5-9.0	2,000	95
2101	Nueces River Tidal - Nueces Bay to salt water barrier	X	X	X					5.0	6.5-9.0	200	95
2102	Nueces River - Salt water barrier west of US 77 near Calallen to Wesley Seale Dam	X	X	X	X	250	250	500	5.0	6.5-9.0	200	91

TEXAS SURFACE WATER QUALITY STANDARDS
FRESH AND TIDAL WATERS

SEGMENT NUMBER	SEGMENT DESCRIPTION	WATER USES DEEMED DESIRABLE: CONTACT RECREATION	NONCONTACT RECREATION	PROPAGATION OF FISH & WILDLIFE	DOMESTIC RAW WATER SUPPLY	CRITERIA: CHLORIDE (mg/l) avg. not to exceed	SULFATE (mg/l) avg. not to exceed	TOTAL DISSOLVED SOLIDS (mg/l) avg. not to exceed	DISSOLVED OXYGEN (mg/l) not less than	pH RANGE	COLIFORM: FECAL/ (100ml) - log. avg. not more than (see Gen. Statement)	TEMPERATURE °F (see Gen. Statement)
0901	Cedar Bayou Tidal	X	X	X					4.0	6.5-9.0	200	95
0801	Trinty River Tidal	X	X	X					4.0	6.5-9.0	200	95
0802	Trinity River - Tidal to Livingston Dam	X	X	X	X	125	100	600	5.0	6.5-9.0	200	93
1113	Armand Bayou Tidal	X	X	X					4.0	6.5-9.0	200	95
1101	Clear Creek Tidal		X	X					4.0	6.5-9.0	2,000	95
1103	Dickinson Bayou Tidal	X	X	X					4.0	6.5-9.0	200	95
1105	Bastrop Bayou Tidal	X	X	X					4.0	6.5-9.0	200	95
1107	Chocolate Bayou Tidal	X	X	X					4.0	6.5-9.0	200	95
1109	Oyster Creek Tidal		X	X					4.0	6.5-9.0	1,000	95
1111	Old Brazos River Channel	X	X						4.0	6.5-9.0	200	95

TEXAS SURFACE WATER QUALITY STANDARDS

FRESH AND TIDAL WATERS

SAN JACINTO RIVER BASIN		WATER USES DEEMED DESIRABLE				CRITERIA						
SEGMENT		CONTACT RECREATION	NONCONTACT RECREATION	PROPAGATION OF FISH & WILDLIFE	DOMESTIC RAW WATER SUPPLY	CHLORIDE (mg/l) avg. not to exceed	SULFATE (mg/l) avg. not to exceed	TOTAL DISSOLVED SOLIDS (mg/l) avg. not to exceed	DISSOLVED OXYGEN (mg/l) not less than	pH RANGE	COLIFORM: FECAL/ (100ml) - log. avg. not more than (see Gen. Statement)	TEMPERATURE °F (see Gen. Statement)
NUMBER	DESCRIPTION											
1001	San Jacinto River Tidal - 200 yards below I.H. 10 Bridge to Lake Houston Dam	X	X	X					4.0	6.5-9.0	200	95
												*
1003	East Fork San Jacinto River - above Lake Houston		X	X	X	80	40	400	5.0	6.0-8.5	2,000	91
1005	Houston Ship Channel - Morgan's Point to San Jacinto River confluence, including tidal portion of San Jacinto River to 200 yards below I.H. 10 Bridge		X	X					4.0	6.5-9.0	1,000	95
1006	Houston Ship Channel - San Jacinto River confluence to Turning Basin, including tidal portions of tributaries*								2.0	6.5-9.0	*2,000	95
1007	Houston Ship Channel - Turning Basin*								1.5	6.5-9.0	2,000	95

* The toxicity clause applies to this segment in order to preserve segment 1005 and Galveston Bay, not this segment, as a fishery resource.

TEXAS SURFACE WATER QUALITY STANDARDS
FRESH AND TIDAL WATERS

SEGMENT NUMBER	SEGMENT DESCRIPTION	WATER USES DESIRABLE: CONTACT RECREATION	WATER USES DESIRABLE: NONCONTACT RECREATION	WATER USES DESIRABLE: PROPAGATION OF FISH & WILDLIFE	WATER USES DESIRABLE: DOMESTIC RAW WATER SUPPLY	CRITERIA: CHLORIDE (mg/l) avg. not to exceed	CRITERIA: SULFATE (mg/l) avg. not to exceed	CRITERIA: TOTAL DISSOLVED SOLIDS (mg/l) avg. not to exceed	CRITERIA: DISSOLVED OXYGEN (mg/l) not less than	CRITERIA: pH RANGE	CRITERIA: COLIFORM FECAL/ (100ml) - log. avg. not more than (see Gen. Statement)	CRITERIA: TEMPERATURE °F (see Gen. Statement)
LAVACA-GUADALUPE COASTAL BASIN												
1701	Victoria Barge Canal - San Antonio Bay to Victoria Turning Basin		X	X					4.0	6.5-9.0	2,000	95

TEXAS SURFACE WATER QUALITY STANDARDS

FRESH AND TIDAL WATERS

NUECES-RIO GRANDE COASTAL BASIN		WATER USES DEEMED DESIRABLE				CRITERIA						
SEGMENT		CONTACT RECREATION	NONCONTACT RECREATION	PROPAGATION OF FISH & WILDLIFE	DOMESTIC RAW WATER SUPPLY	CHLORIDE (mg/l) avg. not to exceed	SULFATE (mg/l) avg. not to exceed	TOTAL DISSOLVED SOLIDS (mg/l) avg. not to exceed	DISSOLVED OXYGEN (mg/l) not less than	pH RANGE	COLIFORM FECAL/ (100ml) - log. avg. not more than (see Gen. Statement)	TEMPERATURE °F (see Gen. Statement)
NUMBER	DESCRIPTION											
2201	Arroyo Colorado		X	X					4.0	6.5-9.0	2,000	95

TEXAS SURFACE WATER QUALITY STANDARDS

BAY & GULF WATERS

SABINE-NECHES ESTUARY		WATER USES DEEMED DESIRABLE			CRITERIA			
							COLIFORM	TEMP.
SEGMENT NUMBER	SEGMENT DESCRIPTION	CONTACT RECREATION	NONCONTACT RECREATION	PROPAGATION OF FISH & WILDLIFE	DISSOLVED OXYGEN (mg/l) not less than	pH RANGE	TOTAL/ (100 ml) - median not more than (see Gen. Statement)	FALL, WINTER & SPRING not to exceed 4°F rise SUMMER not to exceed a 1.5°F rise
2411	Sabine Pass - U. S. Coast Guard Station to end of jetties	X	X	X	5.0	6.5-9.0	70	95
2412	Sabine Lake	X	X	X	4.0	6.5-9.0	70	95

TEXAS SURFACE WATER QUALITY STANDARDS
BAY & GULF WATERS

SEGMENT NUMBER	SEGMENT DESCRIPTION	WATER USES DEEMED DESIRABLE: CONTACT RECREATION	WATER USES DEEMED DESIRABLE: NONCONTACT RECREATION	WATER USES DEEMED DESIRABLE: PROPAGATION OF FISH & WILDLIFE	CRITERIA: DISSOLVED OXYGEN (mg/l) not less than	CRITERIA: pH RANGE	CRITERIA: COLIFORM: TOTAL/ (100 ml) - median not more than (see Gen. Statement)	CRITERIA: TEMP.: FALL, WINTER & SPRING not to exceed 4°F rise SUMMER not to exceed a 1.5°F rise
2421	Upper Galveston Bay	X	X	X	4.0	6.5-9.0	70	95
2422	Trinity Bay	X	X	X	4.0	6.5-9.0	70	95
2423	East Bay	X	X	X	4.0	6.5-9.0	70	95
2424	West Bay	X	X	X	4.0	6.5-9.0	70	95
2425	Clear Lake	X	X	X	4.0	6.5-9.0	200*	95
2426	Tabbs Bay	X	X	X	4.0	6.5-9.0	200*	95
2427	San Jacinto Bay	X	X	X	4.0	6.5-9.0	200*	95
2428	Black Duck Bay	X	X	X	4.0	6.5-9.0	200*	95
2429	Scott Bay	X	X	X	4.0	6.5-9.0	200*	95

* Contact recreation bacteriological standards apply - 200/100 ml fecal coliform

TEXAS SURFACE WATER QUALITY STANDARDS

BAY & GULF WATERS

TRINITY-SAN JACINTO ESTUARY		WATER USES DEEMED DESIRABLE			CRITERIA			
							COLIFORM	TEMP.
SEGMENT NUMBER	SEGMENT DESCRIPTION	CONTACT RECREATION	NONCONTACT RECREATION	PROPAGATION OF FISH & WILDLIFE	DISSOLVED OXYGEN (mg/l) not less than	pH RANGE	TOTAL/ (100 ml) - median not more than (see Gen. Statement)	FALL, WINTER & SPRING not to exceed 4°F rise SUMMER not to exceed a 1.5°F rise
2430	Burnett Bay	X	X	X	4.0	6.5-9.0	200*	95
2431	Moses Lake	X	X	X	4.0	6.5-9.0	200*	95
2432	Chocolate Bay	X	X	X	4.0	6.5-9.0	70	95
2433	Bastrop Bay - including Oyster Lake	X	X	X	4.0	6.5-9.0	70	95
2434	Christmas Bay	X	X	X	4.0	6.5-9.0	70	95
2435	Drum Bay	X	X	X	4.0	6.5-9.0	70	95
2436	Barbours Cut	X	X		4.0	6.5-9.0	200*	95
2437	Texas City Ship Channel		X		4.0	6.5-9.0	1,000**	95
2438	Bayport Channel		X		4.0	6.5-9.0	1,000**	95
2439	Lower Galveston Bay	X	X	X	4.0	6.5-9.0	70	95

* Contact recreation bacteriological standards apply - 200/100 ml fecal coliform

** Refers to Fecal Coliform count and not total coliform count

TEXAS SURFACE WATER QUALITY STANDARDS

BAY & GULF WATERS

SEGMENT NUMBER	DESCRIPTION	WATER USES DEEMED DESIRABLE: CONTACT RECREATION	WATER USES DEEMED DESIRABLE: NONCONTACT RECREATION	WATER USES DEEMED DESIRABLE: PROPAGATION OF FISH & WILDLIFE	CRITERIA: DISSOLVED OXYGEN (mg/l) not less than	CRITERIA: pH RANGE	CRITERIA: COLIFORM	CRITERIA: TEMP.
	LAVACA-MATAGORDA ESTUARY							
2411	East Matagorda Bay	X	X	X	5.0	6.5-9.0	TOTAL/ (100 ml - median not more than (see Gen. Statement)	FALL, WINTER & SPRING not to exceed 4°F rise SUMMER not to exceed a 1.5°F rise
							70	95

TEXAS SURFACE WATER QUALITY STANDARDS

BAY & GULF WATERS

LAVACA-TRES PALACIOS ESTUARY		WATER USES DEEMED DESIRABLE			CRITERIA			
							COLIFORM	TEMP.
SEGMENT NUMBER	DESCRIPTION	CONTACT RECREATION	NONCONTACT RECREATION	PROPAGATION OF FISH & WILDLIFE	DISSOLVED OXYGEN (mg/l) not less than	pH RANGE	TOTAL/ (100 ml) - median not more than (See Gen. Statement)	FALL, WINTER & SPRING not to exceed rise SUMMER not to exceed a 1.5°F rise
2451	Matagorda Bay - including Powderhorn Lake and Turtle Bay	X	X	X	5.0	6.5-9.0	70	95
2452	Tres Palacios Bay	X	X	X	5.0	6.5-9.0	70	95
2453	Lavaca Bay - including Chocolate Bay	X	X	X	5.0	6.5-9.0	70	95
2454	Cox Bay	X	X	X	5.0	6.5-9.0	70	95
2455	Keller Bay	X	X	X	5.0	6.5-9.0	70	95
2456	Carancahua Bay	X	X	X	5.0	6.5-9.0	70	95

TEXAS SURFACE WATER QUALITY STANDARDS

BAY & GULF WATERS

SEGMENT		WATER USES DEEMED DESIRABLE			CRITERIA		
		CONTACT RECREATION	NONCONTACT RECREATION	PROPAGATION OF FISH & WILDLIFE	DISSOLVED OXYGEN mg/l not less than	pH RANGE	COLIFORM	TEMP.
GUADALUPE ESTUARY								
2461	Espiritu Santo Bay - Saluria to Steamboat Pass	X	X	X	5.0	6.5 - 9.0	TOTAL/ (100 ml) - median not more than (see Gen. statement) 70	FALL, WINTER & SPRING not to exceed 4°F rise SUMMER not to exceed a 1.5°F rise 95
2462	San Antonio Bay including Hynes Bay and Guadalupe Bay	X	X	X	5.0	6.5 - 9.0	70	95
2463	Mesquite Bay	X	X	X	5.0	6.5-9.0	70	95

TEXAS SURFACE WATER QUALITY STANDARDS

BAY & GULF WATERS

MISSION-ARANSAS ESTUARY

SEGMENT NUMBER	SEGMENT DESCRIPTION	WATER USES DEEMED DESIRABLE: CONTACT RECREATION	WATER USES DEEMED DESIRABLE: NONCONTACT RECREATION	WATER USES DEEMED DESIRABLE: PROPAGATION OF FISH & WILDLIFE	CRITERIA: DISSOLVED OXYGEN (mg/l) not less than	CRITERIA: pH RANGE	CRITERIA: COLIFORM: TOTAL/ (100 ml) - median not more than (see Gen. Statement)	CRITERIA: TEMP.: FALL, WINTER & SPRING not to exceed 4°F rise SUMMER not to exceed a 1.5°F rise
2471	Aransas Bay	X	X	X	5.0	6.5-9.0	70	95
2472	Copano Bay including Port Bay	X	X	X	5.0	6.5-9.0	70	95
2473	St. Charles Bay	X	X	X	5.0	6.5-9.0	70	95

TEXAS SURFACE WATER QUALITY STANDARDS

BAY & GULF WATERS

NUECES ESTUARY		WATER USES DEEMED DESIRABLE			CRITERIA			
							COLIFORM	TEMP.
SEGMENT NUMBER	DESCRIPTION	CONTACT RECREATION	NONCONTACT RECREATION	PROPAGATION OF FISH & WILDLIFE	DISSOLVED OXYGEN (mg/l) not less than	pH RANGE	TOTAL/ (100 ml) - median not more than (see Gen. Statement)	FALL, WINTER & SPRING not to exceed 4°F rise SUMMER not to exceed a 1.5°F rise
2481	Corpus Christi Bay	X	X	X	5.0	6.5-9.0	70	95
2482	Nueces Bay	X	X	X	5.0	6.5-9.0	70	95
2483	Redfish Bay	X	X	X	5.0	6.5-9.0	70	95
2484	Corpus Christi Inner Harbor - US 181 bridge to Viola Turning Basin		X	X	3.0	6.5-9.0	1,000	95
2485	Oso Bay	X	X	X	5.0	6.5-9.0	70	95

TEXAS SURFACE WATER QUALITY STANDARDS

BAY & GULF WATERS

LAGUNA MADRE ESTUARY

SEGMENT		WATER USES DEEMED DESIRABLE			CRITERIA			
NO.	DESCRIPTION	CONTACT RECREATION	NONCONTACT RECREATION	PROPAGATION OF FISH & WILDLIFE	DISSOLVED OXYGEN not less than	pH RANGE	COLIFORM TOTAL /100 ml - median not more than (see Gen. Statement)	TEMP. FALL, WINTER & SPRING not to exceed °F rise SUMMER not to exceed a 1.5°F rise
2491	Laguna Madre	X	X	X	5.0	6.5-9.0	70	95
2492	Baffin Bay	X	X	X	4.0	6.5-9.0	70	95
2493	South Bay	X	X	X	5.0	6.5-9.0	70	95
2494	Brownsville Ship Channel		X	X	5.0	6.5-9.0	1,000	95

TEXAS SURFACE WATER QUALITY STANDARDS

BAY & GULF WATERS

GULF OF MEXICO

SEGMENT		WATER USES DEEMED DESIRABLE			CRITERIA			
							COLIFORM	TEMP.
NUMBER	DESCRIPTION	CONTACT RECREATION	NONCONTACT RECREATION	PROPAGATION OF FISH & WILDLIFE	DISSOLVED OXYGEN (mg/l) not less than	pH RANGE	TOTAL/ (100 ml) - median not more than (see Gen. Statement)	FALL, WINTER & SPRING not to exceed 4°F rise SUMMER not to exceed a 1.5°F rise
2501	Gulf of Mexico - beginning at Gulf shoreline and extending to the limit of Texas' jurisdiction, from Sabine Pass to Brazos Santiago Pass	X	X	X	5.0	6.5-9.0	70	95

State of Virginia Marine Water Quality Standards

Reference:

Commonwealth of Virginia

Water Quality Standards

1977

Virginia State Water Control Board

P.O. Box 11143

Richmond, VA 23230

VIRGINIA

1.01 General Standard

All State waters shall be maintained at such quality as will permit all reasonable, beneficial uses and will support the propagation and growth of all aquatic life, including game fish, which might reasonably be expected to inhabit them.

All State waters shall be free from substances attributable to sewage, industrial waste, or other waste in concentrations, amounts, or combination which contravene established standards or interfere directly or indirectly with reasonable, beneficial uses of such water or which are inimical or harmful to human, animal, plant, or aquatic life. Specific substances to be controlled include, but are not limited to: floating debris, oil, scum, and other floating materials; toxic substances, substances that produce color, tastes, turbidity, odors, or settle to form sludge deposits, and heated substances.

1.06 Antidegradation Policy (Existing)

Waters whose existing quality is better than the established standards as of the date on which such

standards become effective will be maintained at high quality; provided that the Board has the power to authorize any project or development, which would constitute a new or an increased discharge of effluent to high quality water, when it has been affirmatively demonstrated that a change is justifiable to provide necessary economic or social development; and provided, further, that the necessary degree of waste treatment to maintain high water quality will be required where physically and economically feasible. Present and anticipated use of such waters will be preserved and protected.

2.05 Coliform Bacteria - Shellfish Water

In open ocean or estuarine waters in specific areas where leased private or public shellfish beds are present, the following standard for fecal coliform bacteria will apply:

> The median fecal coliform value for a sampling station shall not exceed an MPN of 14 per 100 ml of sample and not more than 10% of samples shall exceed 43 for a 5 tube, 3 dilution test or 49 for a 3 tube, 3 dilution test.

6.00 Water Quality Criteria - Surface Water

Cadmium	5.0 ug/l - Class I and II waters Class III, IV, V, and VI waters: 0.4 ug/l - soft water* 1.2 ug/l - hard water
Chlorine	.5 ug/l - Class I and II waters 1 ug/l - Class III, IV, V, and VI waters
Chromium (total)	100 ug/l - All waters
Copper	For freshwater and marine aquatic life, 0.1 times a 96-hour LC_{50} as determined through nonaerated, continuous flow bioassay, using the receiving water or comparable water as the diluent and using a sensitive resident species.
Cyanide	5.0 ug/l - All waters
Iron	1.0 mg/l - Class III, IV, V, and VI waters
Lead	0.01 times the 96-hour LC_{50} value as determined through continuous flow bioassay, using the receiving or comparable water as the diluent and soluble lead measurements (non-filterable lead using an 0.45 micron filter), for sensitive freshwater fish species.
Manganese	100 ug/l - Class I and II waters
Mercury	0.10 ug/l - Class I and II waters 0.05 ug/l - Class III, IV, V, and VI waters
Nickel	0.01 times the 96-hour LC_{50} as determined through continuous flow bioassay using the receiving or comparable water as the diluent and using a sensitive resident species

* Soft water generally is considered to be less than 100 mg/l hardness as $CaCO_3$ and hard water generally is 100 mg/l $CaCO_3$ or greater.

Phenol	1 ug/l - All waters
Phthalate Ester	3 ug/l - Class III, IV, V, and VI waters (3 ug/l is a goal for Class I and II waters pending additional effect data)
Polychlorinated biphenyls	No discharge is permitted
Selenium	For marine and aquatic life 0.01 of the 96-hour LC_{50} as determined through continuous flow bioassay using receiving or comparable dilution water and using a sensitive resident fish species.
Silver	No discharge is permitted
Zinc	For freshwater aquatic life 0.01 of the 96-hour LC_{50} as determined through continuous flow bioassay using receiving or comparable dilution water and using a sensitive resident species
Nutrients	In impounded waters, the total phosphates as phosphorous (P) should not exceed 50 ug/l in any stream where it enters a lake or reservoir nor 25 ug/l within the lake or reservoir
Oil and Grease	0.01 of the lowest continuous flow 96-hour LC_{50} to several important freshwater and marine species, each having a demonstrated high susceptibility to oils and petrochemicals

Pesticides

Aldrin/Dieldrin	.003 ug/l - All waters
Chlordane	0.004 ug/l - Class I and II 0.01 ug/l - Class II, IV, V and VI waters
DDT	0.001 ug/l - All waters
Demeton	0.1 ug/l - All waters
Endosulfan	0.001 ug/l - Class I and II waters 0.003 ug/l - Class III, IV, V, and VI waters
Endrin	0.004 ug/l - All waters
Guthion	0.01 ug/l - All waters
Heptachlor	0.001 ug/l - All waters
Kepone	None - no discharge
Lindane	0.004 ug/l - Class I and II waters 0.01 ug/l - Class III, IV, V, and VI waters
Malathion	0.01 ug/l - All waters
Methoxychlor	0.03 ug/l - All waters
Mirex	None - no discharge
Parathion	0.04 ug/l - All waters
Toxaphene	None - no discharge

2.00 RULES WITH SPECIFIC APPLICATION BASED ON CLIMATE, GEOGRAPHICAL AREA, OR USES

2.01 Classification of Waters Within the State

Class	Geographical Area or Other Description of Waters	Dissolved Oxygen mg/l Minimum	Dissolved Oxygen mg/l Daily Average	pH	Temperature °F-C Rise above Natural*	Temperature °F-C Maximum	**Max Hourly Change
I	Open Ocean	5.0	--	6.0-8.5	3°C	--	2°C
II	Estuarine (Tidal Water - Coastal Zone to Fall Line)	4.0	5.0	6.0-8.5	3°C	--	2°C

* Natural temperature is that temperature of a body of water (measured instantaneously) due solely to natural conditions without the influence of any point-source discharge. Any rise above natural temperature allowed by the Board shall be determined on a case-by-case basis and in no instance shall exceed 3°C except in the case of Class VI waters where it shall not exceed 1°C.

** The maximum hourly temperature change of 2°C is to apply beyond the boundaries of mixing zones and does not apply to temperatures caused by natural conditions.

2.02 Subclasses to Complement Major Water Class Designations

SUBCLASS A

Waters generally satisfactory for use as public or municipal water supply, secondary contact recreation, propagation of fish and aquatic life, and other beneficial uses.

Coliform Organisms - Fecal coliforms (multiple-tube fermentation or MF count) not to exceed a log mean of 1000/100 ml. Not to equal or exceed 2000/100 ml in more than 10% of samples.

Monthly average value not more than 5000/100 ml (MPN or MF count). Not more than 5000 MPN/100 ml in more than 20% of samples in any month. Not more than 20,000/100 ml in more than 5% of such samples.*

SUBCLASS B

Waters generally satisfactory for use as public or municipal water supply, primary contact recreation (prolonged intimate contact; considerable risk of ingestion), propagation of fish and other aquatic life, and other beneficial uses.

Coliform Organisms - Fecal coliforms (multiple-tube fermentation or MF count) within a 30-day period not to exceed a log mean of 200/100 ml. Not more than 10% of samples within a 30-day period will exceed 400/100 ml.

Monthly average not more than 2400/100 ml (MPN or MF count). Not more than 2400/100 ml in more than 20% of samples in any month. Not applicable during, nor immediately following, periods of rainfall.*

* With the exception of the coliform standard for shellfish waters, the enforceable standards will be those pertaining to fecal coliform organisms. The MPN concentrations are retained as administrative guides for use by water treatment plant operators.

KEY TO SPECIAL STANDARDS

a. In those sections of Class IA, IB, IIA and IIB waters within this State where leased private, or public shellfish beds are present, the following bacterial standards shall be established in addition to other bacterial standards adopted for the protection of primary or secondary recreation:

Coliform organisms - The median MPN shall not exceed 70/100 ml, and not more than 10% of the samples ordinarily shall exceed an MPN of 230/100 ml for a 5-tube decimal dilution test (or 330/100 ml, where a 3-tube decimal dilution is used) in those portions of the area most probably exposed to fecal contamination during the most unfavorable conditions.

In addition, the shellfish area is not to be so contaminated by radionuclides, pesticides, herbicides, or fecal material so that consumption of the shellfish might be hazardous.*

* Based on National Shellfish Sanitation Program Manual of Operations.

Section	Basin and Section Description	Class	Special Standards
	POTOMAC RIVER BASIN Potomac River Subbasin		
1	Tidal tributaries of the Potomac River from Smith Point to Upper Machodoc Creek.	II B	a
2	Upper Machodoc Creek and the tidal portions of its tributaries.	II B	a
3	Tidal portions of the tributaries to the Potomac River from Upper Machodoc Creek to Marlboro Point.	II B	
4	Tidal portions of tributaries to the Potomac River to include Aquia Creek and its tidal tributaries from Marlboro Point to Brent Point.	II B	
5	Tidal portion of tributaries to the Potomac River from Brent Point to Shipping Point, including tidal portions of Chopawamsic Creek and its tidal tributaries.	II A	
6	Tidal portion of tributaries to the Potomac River from Shipping Point to Chain Bridge.	II B	
	JAMES RIVER BASIN (LOWER)		
1	James River and its tidal tributaries from Old Point Comfort - Fort Wool to Barrett Point (Buoy 64), except prohibited or spoil areas, unless otherwise designated.	II B	a
1b	Eastern Branch of the Elizabeth River from its confluence with the Elizabeth River to end of navigable waters.	II B	a

Section	Basin and Section Description	Class	Special Standards
	JAMES RIVER BASIN (LOWER) (Continued)		
1d	Southern Branch of the Elizabeth River from its confluence with the Elizabeth River to the lock at Great Bridge.	II B	a
1f	Nansemond River and its tributaries from its confluence with the James River to Suffolk (dam at Lake Meade), unless otherwise designated.	II B	a
	JAMES RIVER BASIN (MIDDLE)		
2	James River and its tidal tributaries from Buoy 64 near Barrett's Point upstream to the fall line at Richmond, to include the Chickahominy River and its tidal tributaries from the mouth upstream to Walker's Dam and the Appomattox River and its tidal tributaries from the mouth upstream to the head of tidal waters (approximately at the Route 1/301 Bridge across the Appomattox), unless otherwise designated.	II B	
2a	James River from City Point to a point 5 miles above American Tobacco Company's raw water intake and the Appomattox River from Hopewell's raw water intake to a point 5 miles upstream.	II B	Public Water Supply
	RAPPAHANNOCK RIVER BASIN		
1	Rappahannock River and the tidal portions of its tributaries from Stingray and Windmill Points to Route 1 Alternate Bridge at Fredericksburg.	II B	a

Section	Basin and Section Description	Class	Special Standards
	RAPPAHANNOCK RIVER BASIN (Continued)		
1a	Hoskins Creek from the confluence with the Rappahannock River to its tidal headwaters.	II	A
	CHOWAN AND DISMAL SWAMP BASIN Chowan River Subbasin		
1	Blackwater River and its tidal tributaries from the Virginia-North Carolina State line to the end of tidal waters at approximately State Route 6-1 at river mile 20.90; Nottoway River and its tidal tributaries from the Virginia-North Carolina State line to the end of tidal waters at approximately Route 674.	II	A
	CHOWAN AND DISMAL SWAMP BASIN Albermarle Sound Subbasin		
1	Back Bay and its tributaries in the City of Virginia Beach to the Virginia-North Carolina State line and the Northwest River and its tidal tributaries from the Virginia-North Carolina State line to the free flowing portion, and North Landing River and its tidal tributaries from the Virginia-North Carolina State line to the Great Bridge Lock.	II	B

Section	Basin and Section Description	Class	Special Standards
	CHESAPEAKE BAY, ATLANTIC OCEAN AND SMALL COASTAL BASINS		
1	The Atlantic Ocean and its tidal tributaries from Cape Henry Light (Latitude 36° 55.6' North; Longitude 76° 00.4' West) east to the three mile limit and south to the North Carolina State line. The Atlantic Ocean and its tidal tributaries from Cape Henry Light to Thimble Shoal Channel (Latitude 36° 57.30' North; Longitude 76° 02.30' West) from Thimble Shoal Channel to Smith Island (Latitude 37° 07.4' North; Longitude 75° 54.4' West), east of the east-west divide boundary on the Eastern Shore of Virginia to the three mile limit and north to the Virginia-Maryland State line.	I B	a
2	Chesapeake Bay and its tidal tributaries from Old Point Comfort Tower (Latitude 37° 00' North; Longitude 76° 18.8' West) to Thimble Shoal Light (Latitude 37° 00.9' North; Longitude 76° 14.4' West) to and along the south side of Thimble Shoal Channel to its eastern end (Latitude 36° 57.3' North; Longitude 76° 02.3' West) to Smith Island (Latitude 37° 07.4' North; Longitude 75° 54.4' West), north to the Virginia-Maryland border following the east-west divide boundary on the Eastern Shore of Virginia, west along the Virginia-Maryland border to the Virginia Coast, (Latitude 37° 53.23' North; Longitude 76° 14.25' West) and south following the Virginia Coast to Old Point Comfort Tower (previously described), unless otherwise designated.	II B	a

Section	Basin and Section Description	Class	Special Standards
	CHESAPEAKE BAY, ATLANTIC OCEAN AND SMALL COASTAL BASINS (Continued)		
3	Chesapeake Bay from Old Point Comfort Tower (Latitude 37° 00' North; Longitude 76° 18.8' West) to Thimble Shoal Light (Latitude 37° 00.9' North; Longitude 76° 14.4' West) along the south side of Thimble Shoal Channel to Cape Henry Light (Latitude 36° 55.6' North; Longitude 76° 00.4' West).	II B	a
3a	Little Creek from its confluence with Chesapeake Bay (Lynnhaven Roads) to end of navigable waters.	II B	a
3b	Tidal portions of Lynnhaven watershed from its confluence with the Chesapeake Bay (Lynnhaven Roads) to and including Lynnhaven Bay, Western Branch Lynnhaven River, Eastern Branch Lynnhaven River, Long Creek, Broad Bay and Linkhorn Bay. Thalia Creek and its tributaries to the end of tidal waters. Great Neck Creek and Little Neck Creek from their confluence with Linkhorn Bay and their tidal tributaries. Rainey Gut and Crystal Lake from their confluence with Linkhorn Bay.	II B	a
3e	London Bridge Creek from its confluence with the Eastern Branch of Lynnhaven River to the end of tidal waters. Wolfsnare Creek from its confluence with the Eastern Branch Lynnhaven River to the fall line.	II B	

Section	Basin and Section Description	Class	Special Standards
	YORK RIVER BASIN		
1	York River and the tidal portions of its tributaries from Goodwin Neck and Sandy Point upstream to Thorofare Creek and Little Salem Creek near West Point; Mattaponi River and the tidal portions of its tributaries from Little Salem Creek to the end of tidal waters; Pamunkey River and the tidal portions of its tributaries from Thorofare Creek near West Point to the end of tidal waters.	II B	a

Virgin Islands Marine Water Quality Standards

Reference:

Chapter 7. Water Pollution Control

Water Quality Standards for Coastal Waters

of the Virgin Islands

1973

U.S. Virgin Islands

Bureau of Environmental Samtation

Virgin Islands Dept. of Health

General Water Quality Criteria

All surface waters shall meet generally accepted aesthetic qualifications and shall be capable of supporting diversified aquatic life. These waters shall be free of substances attributable to municipal, industrial, or other discharges or wastes as follows:

(a) Materials that will settle to form objectionable deposits.

(b) Floating debris, oil, scum, and other matter.

(c) Substances producing objectionable color, odor, taste, or turbidity.

(d) Materials, including radionuclides, in concentrations or combinations which are toxic or which produce undesirable physiological responses in human, fish, and other animal life, and plants.

(e) Substances and conditions or combinations thereof in concentrations which produce undesirable aquatic life.

CLASS A

Best Usage of Waters

Preservation of natural phenomena requiring special conditions, such as the Natural Barrier Reef at Buck Island, St. Croix, and the Under Water Trail at Trunk Bay, St. John.

Quality Criteria

Existing natural conditions shall not be changed.

CLASS B

Best Usage of Waters

For propagation of desirable species of marine life and for primary contact recreation (swimming, water skiing, et cetera).

Quality Criteria

(1) Dissolved Oxygen - Not less than 5.5 mg/l from other than natural conditions.

(2) pH - Normal range of pH must not be extended at any location by more than ± 0.1 pH unit. At no time shall the pH be less than 7.0 or greater than 8.3.

(3) Temperature - Not to exceed 90°F at any time, nor as a result of waste discharge to be greater than 1.5°F above natural. Thermal policy section shall also apply. Virgin Islands

(4) Bacteria - Shall not exceed a geometric (log) mean of 70 fecal coliforms per 100 ml by MF or MPN count.

(5) Dissolved Gas - Total dissolved gas pressure shall not exceed 110 percent of existing atmospheric pressure.

(6) Phosphorus - Phosphorus as total P shall not exceed 50 ug/l in any coastal waters.

(7) Suspended, Colloidal, or Settleable Solids - None from waste water sources which will cause deposition or can be deleterious from the designated uses.

(8) Oil and Floating Substances - No residue attributable to waste water nor visible oil film nor globules of grease.

(9) Radioactivity -

(A) Gross Beta - 1000 picocuries per liter, in the absence of Sr 90 and alpha emitters.

(B) Radium - 226:3 picocuries per liter.

(C) Strontium - 90:10 picocuries per liter.

(10) Taste and Odor Producing Substances - None in amounts that will interfere with the use for primary contact recreation, potable water supply or will render any undesirable taste or odor to edible aquatic life.

(11) Color and Turbidity - A secchi disc shall be visible at a minimum depth of one meter.

CLASS C

Best Usage of Waters

For the propagation of desirable species of marine life and secondary contact recreation (boating, fishing, wading, et cetera).

Quality Criteria

(1) Dissolved Oxygen - Not less than 5.0 mg/l from other than natural conditions.

(2) pH - Normal range of pH must not be

extended at any location by more than ± 0.1 pH unit. At no time shall the pH be less than 6.7 or greater than 8.5.

(3) Bacteria - Shall not exceed a geometric (log) mean of 1,000 fecal coliforms per 100 ml by MF or MPN count.

(4) Taste and Odor Producing Substances - None in amounts that will interfere with the use for potable water supply or will render any undesirable taste or odor to edible aquatic life.

(5) Other provisions for Class B waters shall apply.

Thermal Policy

(a) Fish and other aquatic life shall be protected from thermal blocks by providing for a minimum 75 percent stream or estuarine cross-section and/or volumetric passageway, including a minimum of one half of the surface as measured from water edge to water edge at any stage of tide.

(b) In non-passageway the surface water temperature shall not exceed 90°F.

(c) No heat may be added except in designated mixing zones which would cause temperatures to exceed 90°F, or which would cause the monthly mean of the maximum daily temperature at any site, prior to the addition of any heat, to be exceeded by more than 1.5°F.

(d) No discharge or combination of discharges shall be injurious to fish or shellfish or the culture or propagation of a balanced indigenous population thereof.

(e) Rate of temperature change outside the mixing zone shall not be more than 1°F per hour, nor to exceed 5°F in any 24-hour period except when natural phenomena cause these limits to be exceeded.

(f) Unless specific conditions, such as spawning ground, migratory routes, or other sections of conditions from these regulations are applicable, the mixing zone should be defined by a sphere with a specified point as the center (not necessarily the outfall but limited to one point for each installation) and a radius equal to the square root of the volume of discharge (A) expressed as millions of gallons per day, times 200 feet; and in no case exceed 3/4 mile.

The formula is:

$$\frac{2}{\sqrt{A}} \times 200 = \text{radius of mixing zone}$$

Mixing Zones

The need, location, size and depth of the mixing zones in surface waters and estuaries shall be established according to the following mixing zone criteria and boundaries.

(a) Mixing Zone Criteria

(1) Mixing zones shall be provided solely for mixing. Mixing must be accomplished as quickly as possible through the use of devices which insure that the waste is mixed with the allocated dilution water in the smallest practicable area.

(2) For the protection of aquatic life resources, the mixing zones must not be used for or be considered as a substitute for waste treatment facilities.

(3) At the boundary of the mixing zone the water should comply with all the water quality standards set forth for its classifi-

cation. If, after complete mixing with the available dilution water, these requirements are not met, the effluent must be adequately pretreated until the standards are met.

(4) No conditions shall be permitted to exist within the mixing zone, (A) that are rapidly lethal (i.e., exceed the 96-hour median tolerance limit) to locally important and desirable indigenous aquatic life, (B) that prohibit planktonic organisms from being carried through the mixing zone. These organisms will be exposed to its conditions only for the period of time required to drift through the mixing zone and will survive without undue damage or stress while they are passing through.

(5) Maximum vertical dispersion of wastewater discharge flow shall be provided for in the mixing zone.

(6) Mixing zones shall not intersect spawning or nursery areas, migratory routes, water intake, nor mouths of rivers.

(7) Suspended solids in wastewaters being discharged shall not settle in measurable amounts in the mixing zones.

(b) Mixing Zone Boundaries

(1) The mixing zone must be located in such a manner as to allow at all times passageways for the movement or drift of the biota (pelagic or invertebrate organisms). The width of the mixing zone and the volume of flow in it shall depend on and will be determined by the nature of the water current and/or the estuary. The area, depth, and volume of the flow must be sufficient to provide a usable and desirable passageway for fish and other aquatic organisms.

(2) The passageway must contain at least 75 percent of the cross sectional area and/or volume of flow of the estuary, and should extend to at least 50% of the width.

(3) A mixing zone shall not overlap with an adjacent mixing zone.

Antidegradation

Waters whose existing quality is better than the established standards as of the date on which such standards become effective will be maintained at their existing high quality. These and other waters of the Virgin Islands will not be lowered in quality unless and until it has been affirmatively demonstrated to the Territory's water pollution control agency and the Environmental Protection Agency that such change is justifiable as a result of necessary economic or social development and will not interfere with or become injurious to any assigned uses made of, or presently possible in, such waters. Any industrial, public or private project or development which would constitute a new source of pollution or an increased source of pollution to high quality waters will be required, as part of the initial project design, to provide the highest and best practicable degree of waste treatment available under existing technology, and since these are also Federal standards, these waste treatment requirements will be developed cooperatively.

Analytical Procedures

The analytical procedures used as methods of analysis to determine the chemical, bacteriological, biological, and radiological quality of waters sampled shall be in accordance with the latest edition of "Standard Methods for the Examination of Water and Waste Water" or other methods approved by the Virgin Islands Department of Health and the Environmental Protection Agency.

Applicability of Standards

The proceeding criteria will be applicable to all Virgin Islands Coastal Waters at all places and at all times.

Natural Waters

Natural waters may, on occasion, have characteristics outside of the limits prescribed by these criteria. The criteria contained herein do not relate to violation of standards resulting from natural forces.

Legal Limits

(a) Class A (natural phenomena)

(1) Within 0.5 miles of the boundaries

of Buck Island's Natural Barrier Reef, St. Croix.

(2) Trunk Bay, St. John.

(b) Class B (marine life and primary contact recreation)

(1) All other coastal waters not classified Class A or Class C.

(c) Class C (marine life and secondary contact recreation)

(1) St. Thomas

(A) St. Thomas Harbor beginning at Rupert Rock and extending to Haulover Cut.

(B) Crown Bay enclosed by a line from Hassel Island at Haulover Cut to Regis Point at West Gregerie Channel.

(C) Krum Bay

(2) St. Croix

(A) Christiansted Harbor from Fort Louise August to Golden Rock.

(B) Frederiksted Harbor from La Grange to Fisher Street.

(C) Hess Oil Virgin Islands Harbor.

(D) Martin-Marietta Alumina Harbor.

State of Washington Marine Water Quality Standards

Washington Water Quality Standards
January 1978
Dept. of Ecology
P.O. Box 829
Olympia, Washington 98504

WASHINGTON STATE
WATER QUALITY STANDARDS

December 19, 1977

Water Quality Planning
Office of Water Programs
Department of Ecology
Olympia, Washington
98504

WAC 173-201-010 PURPOSE. The purpose of this chapter is to establish water quality standards for surface waters of the state of Washington pursuant to the provisions of chapter 90.48 RCW and the policies and purposes thereof.

WAC 173-201-020 WATER USE AND QUALITY CRITERIA. The water use and quality criteria set forth in WAC 173-201-035 through 173-201-050 are established in conformance with present and potential water uses of said surface waters and in consideration of the natural water quality potential and limitations of the same. Nonetheless, the dynamic nature of the process is also recognized. Hence, frequent review of these uses and criteria is anticipated; and revisions will be undertaken as additional information is developed.

WAC 173-201-025 DEFINITIONS.

(1) Background Conditions: The biological, chemical, and physical conditions of a water body, upstream from the point or nonpoint source of any discharge under consideration. Background sampling location in an enforcement action would be upstream from the point of discharge, but not upstream from other inflows. If several discharges to any water body exist, and enforcement action is being taken for possible violations to the standards, background sampling would be undertaken immediately upstream from each discharge.

(2) Fecal Coliform: That portion of the coliform group which is present in the intestinal tracts and feces of warmblooded animals as detected by the product of acid or gas from lactose in a suitable culture medium within 24 hours at 44.5 degrees plus or minus 0.2 degrees Celsius.

(3) Mean Detention Time: The time obtained by dividing a reservoir's mean annual minimum total storage by the 30-day ten-year low-flow from the reservoir.

(4) Median Value: That value of a group of measurements that falls in the middle when the measurements are arranged in order of magnitude. If the number of measurements is even, the median value would be the value halfway between the two middle measurements.

(5) Permit: A document issued pursuant to RCW 90.48.160 et seq. or RCW 90.48.260 or both, specifying the waste treatment and control requirements and waste discharge conditions.

(6) pH: The negative logarithm of the hydrogen ion concentration.

(7) Surface Waters of the State: Include lakes, rivers, ponds, streams, inland waters, saltwaters, and all other surface waters and water courses within the jurisdiction of the state of Washington.

(8) Temperature: Temperature expressed in degrees Celsius.

(9) Turbidity: The clarity of water expressed as nephelometric turbidity units (NTU) and measured with a calibrated turbidimeter.

(10) Upwelling: Upwelling is a direct result of wind stress on the sea surface. As winds blow parallel to a coast, the net flow of water is at an angle of about 45° toward the sea. This flow causes cold bottom water to move upward to replace the warmer surface water moving offshore. The cold water is rich in dissolved nutrients and has a low dissolved oxygen content.

WAC 173-201-035 GENERAL CONSIDERATIONS. The following general guidelines shall apply to the water quality criteria and classifications set forth in WAC 173-201-020 through WAC 173-201-085 hereof:

(1) At the boundary between waters of different classifications, the water quality criteria for the higher classification shall prevail.

(2) In brackish waters of estuaries, where the fresh and marine water quality criteria differ within the same classification, the criteria shall be interpolated on the basis of salinity; except that the marine water quality criteria shall apply for dissolved oxygen when the salinity is one part per thousand or greater and for fecal coliform organisms when the salinity is ten parts per thousand or greater.

(3) The water quality criteria herein established shall not apply within an authorized dilution zone adjacent to or surrounding a wastewater discharge.

(4) Generally, waste discharge permits, whether issued pursuant to the National Pollutant Discharge Elimination System or otherwise, shall be conditioned in such manner as to authorize discharges which meet the water quality standards.

(a) However, persons discharging wastes in compliance with the terms and conditions of permits shall not be subject to civil and criminal penalties on the basis that discharge violates receiving water standards.

(b) Permits shall be subject to modification by the department of ecology whenever it appears to the department the discharge violates receiving water standards. Modification of permits, as provided herein, shall be subject to review in the same manner as originally issued permits.

(5) Nonpoint Sources and Water Quality Standards.

(a) It is recognized that many activities not subject to a waste discharge permit system are now being performed in the state, which result in conflicts with the receiving water quality standards of this chapter. Further, the department has not developed a program which, in a reasonable or fully satisfactory manner, provides methods or means for meeting such standards. Persons conducting such activities shall not be subject to civil or criminal sanctions for violation of water quality standards if the activities are either:

(i) Conducted in accordance with management practices set forth by rules of the department.

For example, promulgation of regulations by the department which set forth approved management practices or other effluent limits shall be accomplished so that activities conducted within such regulations, (i.e., Forest Practices Rules and Regulations chapter 173-202 WAC and Title 222 WAC) will achieve compliance with water pollution control laws. When the regulations are violated, the water quality standard can be enforced as described in WAC 173-201-045; or,

(ii) Subject to a regulatory order issued by the department relating to specific activities as provided for in WAC 173-201-100(2).

(b) Management practices or regulatory orders described in WAC 173-201-035(5) hereof, shall be subject to modification by the department of ecology whenever it appears to the department that the discharge violates receiving water standards. Modification of management practices or regulatory orders, as provided herein, shall be subject to review in the same manner as the originally issued management practices or regulatory orders.

(6) The water quality criteria herein established for total dissolved gas shall not apply when the stream flow exceeds the 7-day, 10-year frequency flood.

(7) The total area and/or volume of a receiving water assigned to a dilution zone shall be as described in a valid discharge permit as needed and be limited to that which will:

(a) not cause acute mortalities of sport, food, or commercial fish and shellfish species of established biological communities within populations or important species to a degree which damages the ecosystem.

(b) not diminish aesthetic values or other beneficial uses disproportionately.

(8) The antidegradation policy of the state of Washington, as generally guided by chapter 90.48 RCW, Water Pollution Control Act, and chapter 90.54 RCW, Water Resources Act of 1971, is stated as follows:

(a) It shall be the intent of this policy that existing beneficial uses shall be maintained and protected and no further degradation which would interfere with or become injurious to existing beneficial uses will be allowed.

(b) No degradation will be allowed of waters lying in national parks, national recreation areas, national wildlife refuges, national scenic rivers, and other areas of national ecological importance.

(c) Whenever receiving waters of a classified area are of a higher quality than the criteria assigned for said area, the existing water quality shall be protected and waste and other materials and substances shall not be allowed to enter such waters which will reduce the existing quality thereof, except, in those instances where:

(i) It is clear that overriding considerations of the public interest will be served, and

(ii) All wastes and other materials and substances proposed for discharge into the said waters shall be provided with all known, available, and reasonable methods of treatment before discharge.

(d) Whenever the natural conditions of said waters are of a lower quality than the criteria assigned, the natural conditions shall constitute the water quality criteria.

(e) The criteria established in WAC 173-201-045 may be modified for a specific water body on a short-term basis when necessary to accommodate essential activities, respond to emergencies, or to otherwise

protect the public interest. Such modification shall be issued in writing by the director or his designee subject to such terms and conditions as he may prescribe.

(f) In no case, will any degradation of water quality be allowed if this degradation interferes with or becomes injurious to existing water uses and causes long-term and irreparable harm to the environment.

(g) It shall be the policy of the state of Washington that no waste discharge permit be issued which will violate established water quality criteria for the said waters, except, as provided for under WAC 173-201-035(8)(e).

(9) Due consideration will be given to the precision and accuracy of the sampling and analytical methods used, as well as existing conditions at the time, in the application of the criteria.

(10) The analytical testing methods for these criteria shall be in accordance with the most recent editions of "Standard Methods for the Examination of Water and Wastewater," published by the American Public Health Association, American Water Works Association, and the Water Pollution Control Federation, and "Methods for Chemical Analysis of Water and Wastes," published by EPA, and other or superseding methods published and/or approved by the department following consultation with adjacent states and concurrence of the Environmental Protection Agency.

(11) Deleterious concentrations of radioactive materials for all classes shall be as determined by the lowest practicable concentration attainable and in no case shall exceed:

(a) 1/100 of the values listed in WAC 402-24-220 (Column 2, Table II, Appendix A, Rules and Regulations for Radiation Protection); or,

(b) The United States Environmental Protection Agency Drinking Water Regulations for radionuclides, as published in the Federal Register of July 9, 1976, or subsequent revisions thereto.

(12) Deleterious concentrations of toxic, or other nonradioactive materials, shall be determined by the department in consideration of the "Quality Criteria for Water," published by EPA 1976, and as revised, as the authoritative source for criteria and/or other relevant information, if justified.

(13) Nothing in this chapter shall be interpreted to be applicable to those aspects of governmental regulation of radioactive wastes which have been preempted from state regulation by the Atomic Energy Act of 1954, as amended, as interpreted by the United States Supreme Court in cases of Northern States Power Co. v. Minnesota 405 U.S. 1035 (1972) and Train v. Colorado Public Interest Research Group 426 U.S. 1 (1976).

WAC 173-201-045 GENERAL WATER USE AND CRITERIA CLASSES. The following criteria shall apply to the various classes of surface waters in the state of Washington:

(1) CLASS AA (EXTRAORDINARY).

(a) General Characteristic. Water quality of this class shall markedly and uniformly exceed the requirements for all or substantially all uses.

(b) Characteristic Uses. Characteristic uses shall include, but are not limited to, the following:

(i) Water supply (domestic, industrial, agricultural).

(ii) Wildlife habitat, stock watering.

(iii) General recreation and aesthetic enjoyment (picnicking, hiking, fishing, swimming, skiing, and boating).

(iv) General marine recreation and navigation.

(v) Fish and shellfish reproduction, rearing, and harvesting.

(c) Water Quality Criteria.

(i) Fecal Coliform Organisms.

(A) Freshwater - Fecal Coliform Organisms shall not exceed a median value of 50 organisms/100 ml, with not more than 10 percent of samples exceeding 100 organisms/100 ml.

(B) Marine water - Fecal Coliform Organisms shall not exceed a median value of 14 organisms/100 ml, with not more than 10 percent of samples exceeding 43 organisms/100 ml.

(ii) Dissolved Oxygen.

(A) Freshwater - Dissolved Oxygen shall exceed 9.5 mg/l.

(B) Marine water - Dissolved oxygen shall exceed 7.0 mg/l except when the natural phenomenon of upwelling occurs, natural dissolved oxygen levels can be degraded by up to 0.2 mg/l by man-caused activities.

(iii) Total dissolved gas - the concentration of total dissolved gas shall not exceed 110 percent of saturation at any point of sample collection.

(iv) Temperature - water temperatures shall not exceed 16.0° Celsius (freshwater) or 13.0° Celsius (marine water) due to human activities. Temperature increases shall not, at any time, exceed $t = 23/(T+5)$ (freshwater) or $t = 8/(T-4)$ (marine water).

When natural conditions exceed 16.0° Celsius (freshwater) and 13.0° Celsius (marine water), no temperature increase will be allowed which will raise the receiving water temperature by greater than 0.3° Celsius.

For purposes hereof, "t" represents the permissive temperature change across the dilution zone; and "T" represents the highest existing temperature in this water classification outside of any dilution zone.

Provided that temperature increase resulting from nonpoint source activities shall not exceed 2.8° Celsius, and the maximum water temperature shall not exceed 16.3° Celsius (freshwater).

(v) pH shall be within the range of 6.5 to 8.5 (freshwater) or 7.0 to 8.5 (marine water) with a man-caused variation within a range of less than 0.2 units.

(vi) Turbidity shall not exceed 5 NTU over background turbidity when the background turbidity is 50 NTU or less, or have more than a 10 percent increase in turbidity when the background turbidity is more than 50 NTU.

(vii) Toxic, radioactive, or deleterious material concentrations shall be less than those which may affect public health, the natural aquatic environment, or the desirability of the water for any use.

(viii) Aesthetic values shall not be impaired by the presence of materials or their effects, excluding those of natural origin, which offend the senses of sight, smell, touch, or taste.

(2) CLASS A (EXCELLENT).

(a) General Characteristic. Water quality of this class shall meet or exceed the requirements for all or substantially all uses.

(b) Characteristic Uses. Characteristic uses shall include, but are not limited to, the following:

(i) Water supply (domestic, industrial, agricultural).

(ii) Wildlife habitat, stock watering.

(iii) General recreation and aesthetic enjoyment (picnicking, hiking, fishing, swimming, skiing, and boating).

(iv) Commerce and navigation.

(v) Fish and shellfish reproduction, rearing, and harvesting.

(c) Water Quality Criteria.

(i) Fecal Coliform Organisms

(A) Freshwater - Fecal Coliform Organisms shall not exceed a median value of 100 organisms/100 ml, with not more than 10 percent of samples exceeding 200 organisms/100 ml.

(B) Marine water - Fecal Coliform Organisms shall not exceed a median value of 14 organisms/100 ml, with not more than 10 percent of samples exceeding 43 organisms/100 ml.

(ii) Dissolved Oxygen.

(A) Freshwater - Dissolved oxygen shall exceed 8.0 mg/l.

(B) Marine water - Dissolved oxygen shall exceed 6.0 mg/l, except when the natural phenomenon of upwelling occurs, natural dissolved oxygen levels can be degraded by up to 0.2 mg/l by man-caused activities.

(iii) Total Dissolved Gas - the concentration of total dissolved gas shall not exceed 110 percent of saturation at any point of sample collection.

(iv) Temperature - water temperatures shall not exceed 18.0° Celsius (freshwater) or 16.0° Celsius (marine water) due to human activities. Temperature increases shall not, at any time, exceed $t = 28/(T + 7)$ (freshwater) or $t = 12/(T - 2)$ (marine water).

When natural conditions exceed 18.0° Celsius (freshwater) and 16.0° Celsius (marine water), no temperature increase will be allowed which will raise the receiving water temperature by greater than 0.3° Celsius.

For purposes hereof, "t" represents the permissive temperature change across the dilution zone; and "T" represents the highest existing temperature in this water classification outside of any dilution zone.

Provided that temperature increase resulting from nonpoint source activities shall not exceed 2.8° Celsius, and the maximum water temperature shall not exceed 18.3° Celsius (freshwater).

(v) pH shall be within the range of 6.5 to 8.5 (freshwater) or 7.0 to 8.5 (marine water) with a man-caused variation within a range of less than 0.5 units.

(vi) Turbidity shall not exceed 5 NTU over background turbidity when the background turbidity is 50 NTU or less, or have more than a 10 percent increase in turbidity when the background turbidity is more than 50 NTU.

(vii) Toxic, radioactive, or deleterious material concentrations shall be below those of public health significance, or which may cause acute or chronic toxic conditions to the aquatic biota, or which may adversely affect any water use.

(viii) Aesthetic values shall not be impaired by the presence of materials or their effects, excluding those of natural origin, which offend the senses of sight, smell, touch, or taste.

(3) CLASS B (GOOD).

(a) General Characteristic. Water quality of this class shall meet or exceed the requirements for most uses.

(b) Characteristic Uses. Characteristic uses shall include, but are not limited to, the following:

(i) Industrial and agricultural water supply.

(ii) Fishery and wildlife habitat.

(iii) General recreation and aesthetic enjoyment (picnicking, hiking, fishing, and boating).

(iv) Stock watering.

(v) Commerce and navigation.

(vi) Shellfish reproduction and rearing, and crustacea (crabs, shrimp, etc.) harvesting.

(c) Water Quality Criteria.

(i) Fecal Coliform Organisms.

(A) Freshwater - Fecal Coliform Organisms shall not exceed a median value of 200 organisms/100 ml, with not more than 10 percent of samples exceeding 400 organisms/100 ml.

(B) Marine water - Fecal Coliform Organisms shall not exceed a median value of 100 organisms/100 ml, with not more than 10 percent of samples exceeding 200 organisms/100 ml.

(ii) Dissolved Oxygen.

(A) Freshwater - Dissolved oxygen shall exceed 6.5 mg/l or 70 percent saturation whichever is greater.

(B) Marine water - Dissolved oxygen shall exceed 5.0 mg/l or 70 percent saturation, whichever is greater, except when the natural phenomenon of upwelling occurs, natural dissolved oxygen levels can be degraded by up to 0.2 mg/l by man-caused activities.

(iii) Total Dissolved Gas - the concentration of total dissolved gas shall not exceed 110 percent of saturation at any point of sample collection.

(iv) Temperature - water temperatures shall not exceed 21.0° Celsius (freshwater) or 19.0° Celsius

(marine water) due to human activities. Temperature increases shall not, at any time, exceed $t = 34/(T+9)$ (freshwater) or $t = 16/T$ (marine water).

When natural conditions exceed 21.0° Celsius (freshwater) and 19.0° Celsius (marine water), no temperature increase will be allowed which will raise the receiving water temperature by greater than 0.3° Celsius.

For purposes hereof, "t" represents the permissive temperature change across the dilution zone; and "T" represents the highest existing temperature in this water classification outside of any dilution zone.

Provided that temperature increase resulting from nonpoint source activities shall not exceed 2.8° Celsius, and the maximum water temperature shall not exceed 21.3° Celsius (freshwater).

(v) pH shall be within the range of 6.5 to 8.5 (freshwater) and 7.0 to 8.5 (marine water) with a man-caused variation within a range of less than 0.5 units.

(vi) Turbidity shall not exceed 10 NTU over background turbidity when the background turbidity is 50 NTU or less, or have more than a 20 percent increase in turbidity when the background turbidity is more than 50 NTU.

(vii) Toxic, radioactive, or deleterious material concentrations shall be below those which adversely affect public health during characteristic uses, or which may cause acute or chronic toxic conditions to the aquatic biota, or which may adversely affect characteristic water uses.

(viii) Aesthetic values shall not be reduced by dissolved, suspended, floating, or submerged matter not attributed to natural causes, so as to affect water use or taint the flesh of edible species.

(4) CLASS C (FAIR).

(a) General Characteristic. Water quality of this class shall meet or exceed the requirements of selected and essential uses.

(b) Characteristic Uses. Characteristic uses shall include, but are not limited to, the following:

(i) Cooling water.

(ii) Commerce and navigation.

(iii) Fish passage.

(iv) Boating.

(c) Water Quality Criteria.

(i) Fecal Coliform Organisms: (Marine water) shall not exceed a median value of 200 organisms/100 ml, with not more than 10 percent of samples exceeding 400 organisms/100 ml.

(ii)* Dissolved Oxygen.

Marine water - Dissolved oxygen shall exceed 4.0 mg/l or 50 percent saturation, whichever is greater, except when the natural phenomenon of upwelling occurs, natural dissolved oxygen levels can be degraded by up to 0.2 mg/l by man-caused activities.

(iii) Total dissolved gas - the concentration of total dissolved gas shall not exceed 110 percent saturation at any point of sample collection.

(iv) Temperature - water temperatures shall not exceed 24.0° Celsius (freshwater) or 22.0° Celsius (marine water) due to human activities. Temperature increases shall not, at any time, exceed $t = 39/(T+11)$ (freshwater) or $t = 20/(T+2)$ (marine water).

When natural conditions exceed 24.0° Celsius (freshwater) and 22.0° Celsius (marine water), no temperature increase will be allowed which will raise the receiving water temperature by greater than 0.3° Celsius.

For purposes hereof, "t" represents the permissive temperature change across the dilution zone; and "T" represents the highest existing temperature in this water classification outside of any dilution zone.

(v) pH shall be within the range of 6.5 to 9.0 (freshwater) or 6.5 to 9.0 (marine water) with a man-caused variation within a range of less than 0.5 units.

(vi) Turbidity shall not exceed 10 NTU over background turbidity when the background turbidity is 50 NTU or less, or have more than a 20 percent increase in turbidity when the background turbidity is more than 50 NTU.

(vii) Toxic, radioactive, or deleterious material concentrations shall be below those which adversely affect public health during characteristic uses, or which may cause acute or chronic toxic conditions to the aquatic biota, or which may adversely affect characteristic water uses.

(viii) Aesthetic values shall not be interfered with by the presence of obnoxious wastes, slimes, aquatic growths, or materials which will taint the flesh of edible species.

(5) LAKE CLASS.

(a) General Characteristic. Water quality of this class shall meet or exceed the requirements for all or substantially all uses.

(b) Characteristic Uses. Characteristic uses for waters of this class shall include, but are not limited to, the following:

(i) Water supply (domestic, industrial, agricultural).

(ii) Wildlife habitat, stock watering.

(iii) General recreation and aesthetic enjoyment (picnicking, hiking, fishing, swimming, skiing, and boating).

(iv) Fish and shellfish reproduction, rearing, and harvesting.

(c) Water Quality Criteria.

(i) Fecal Coliform Organisms - (lakes and impoundments) shall not exceed a median value of 50 organisms/100 ml, with not more than 10 percent of samples exceeding 100 organisms/100 ml.

(ii) Dissolved oxygen - no measurable decrease from natural conditions.

(iii) Total dissolved gas - the concentration of total dissolved gas shall not exceed 110 percent of saturation at any point of sample collection.

(iv) Temperature - no measurable change from natural conditions.

(v) pH - no measurable change from natural conditions.

(vi) Turbidity shall not exceed 5 NTU over background conditions.

(vii) Toxic, radioactive, or deleterious material concentrations shall be less than those which may affect public health, the natural aquatic environment, or the desirability of the water for any use.

(viii) Aesthetic values shall not be impaired by the presence of materials or their effects, excluding those of natural origin, which offend the senses of sight, smell, touch, or taste.

WAC 173-201-050 CHARACTERISTIC USES TO BE PROTECTED. The following is a noninclusive list of uses to be protected by the various classifications for fresh and marine surface waters:

USES F = FRESHWATER M = MARINE WATER	WATERCOURSE CLASSIFICATION				
	LAKE	AA	A	B	C
FISHERIES					
Salmonid					
Migration	F	F M	F M	F M	F M
Rearing	F	F M	F M	F M	
Spawning	F	F	F		
Warm Water Game Fish					
Rearing	F	F	F	F	
Spawning	F	F	F	F	
Other Food Fish	F	F M	F M	F M	
Commercial Fishing	F	F M	F M	F M	
Shellfish	F	M	M	M	
WILDLIFE	F	F M	F M	F M	
RECREATION					
Water Contact	F	F M	F M		
Boating and Fishing	F	F M	F M	F M	F M
Environmental					
Aesthetics	F	F M	F M	F M	F M
WATER SUPPLY					
Domestic	F	F	F		
Industrial	F	F M	F M	F M	F M
Agricultural	F	F	F	F	F
NAVIGATION	F	F M	F M	F M	F M
LOG STORAGE & RAFTING	F	F M	F M	F M	F M
HYDRO-POWER	F	F	F	F	F

WAC 173-201-085 SPECIFIC CLASSIFICATIONS -- MARINE WATER. Specific marine surface waters of the state of Washington are classified as follows:

(1)	Bellingham Bay east of a line bearing 185° true from entrance of boat basin (light No. 2), except as otherwise noted.	Class B
(2)	Bellingham Bay, inner, easterly of a line bearing 142° true through fixed green navigation light at southeast end of dock (approximately 300 yards northeast of bell buoy "2") to the east boat basin jetty.	Class B
(3)	Budd Inlet south of latitude 47° 04' N. (south of Priest Point Park).	Class B
(4)	Coastal waters Pacific Ocean from Ilwaco to Cape Flattery.	Class AA
(5)	Commencement Bay from south and east of a line bearing 258° true from "Brown's point" and north and west of line bearing 225° true through the Hylebos waterway light.	Class A