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 DEPARTMENT OF ENVIRONMENTAL PROTECTION
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ENVIRONMENTAL PROTECTION
 THE COMMISSIONER
 DEP Docket No. 010-80-02

New, Revised, and Amended Rules Concerning Water Quality Standards

I, Jerry Fitzgerald English, Commissioner of Environmental Protection, pursuant to the authority of N.J.S.A. 13:1D-1 et seq., the Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq. and the Water Quality Planning Act, N.J.S.A. 58:11A-1 et seq. and in accordance with the applicable provisions of the Administrative Procedure Act, hereby adopt new, revised, and amended rules to be cited as N.J.A.C. 7:9-4.1 et seq., 7:9-5.1 et seq., and 7:9-6.1 et seq. concerning Surface Water Quality Standards, Treatment of Wastewaters Discharged Into Surface Waters of the State and Ground-Water Quality Standards. Pursuant to the same authority, I hereby repeal the existing subchapters 4, 8, 11 and 14 of chapter 9 of Title 7 of the New Jersey Administrative Code. The rules are substantially as proposed in the Notice published March 6, 1980 at 12 N.J.R. 108(c), but with subsequent, substantive changes not detrimental to the public in the opinion of the Department.

The provisions of Section 303 of the Federal Clean Water Act, as amended, 33 U.S.C. 1251 et seq. mandate that the State water pollution control agency adopt and, from time to time, review and, as appropriate, modify Surface Water Quality Standards. The Surface Water Quality Standards being adopted at this time contain a number of modifications to those standards adopted on November 18, 1974. In the opinion of the Department, the rules are consistent with the purpose and intent of the New Jersey Water Pollution Control Act, the Water Quality Planning Act, the Federal Clean Water Act, and the Federal Regulations governing water quality standards (40 CFR 35.1550). Upon adoption, the rules concerning Surface Water Quality Standards will be submitted to the Administrator of the United States Environmental Protection Agency for his determination that such standards meet the requirements of the Clean Water Act.

As part of the State's Continuing Planning Process required by Section 303 of the Clean Water Act and the Water Quality Planning Act, the new, revised and amended Water Quality Standards also become a portion of the (208) Areawide Water Quality Management Plans and supersede any classifications or provisions in those plans which are inconsistent with these rules.

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The rules concerning Surface Water Quality Standards contain sections regarding definitions, policy statements, designated uses and water quality criteria, and surface water classifications. The major revisions and additions to the standards consist of technical revisions to various classifications, standards for certain toxic substances, heat dissipation areas, and clarification of the State's Antidegradation Policy.

The rules concerning Treatment of Wastewaters Discharged Into Surface Waters of the State contain sections regarding definitions, policy statements, wasteload allocation objectives and procedures, minimum treatment requirements, procedures for modifying water quality based effluent limitations, and procedures for reclassifying specific segments for less restrictive uses. The major revisions and additions to the treatment requirements consist of a seasonal disinfection policy and designation of areas eligible for seasonal disinfection, procedures for establishing water quality based effluent limitations for individual dischargers, minimum treatment requirements for toxics, procedures for modifying water quality based effluent limitations, and procedures for reclassifying specific segments for less restrictive uses.

The rules concerning Ground-Water Quality Standards contain sections regarding definitions, statements of policy, ground water designated uses and quality criteria, ground water designated areas, effluent standards and discharger requirements, and procedures for modifying ground-water quality based effluent limitations. The sections of the rules which apply Statewide are new. Only minor and, in the opinion of the Department of Environmental Protection, inconsequential revisions have been made to the Ground-Water Quality Standards for the Central Pine Barrens adopted on January 23, 1978. The Central Pine Barrens Standards have been included in the Ground-Water Quality rules, N.J.A.C. 7:9-6.1 et seq., for the purpose of continuity and clarity.

Public hearings concerning the rules were held on May 12, 1980 in the Archives Exhibit Room, New Jersey State Library, Trenton; on May 13, 1980 at the Environmental Education Center, Basking Ridge; and on May 14, 1980 at Stockton State College, Pomona. Comments were accepted on the proposed rules until July 1, 1980. The Record of Proceedings for these rules will be maintained in the Enforcement and Regulatory Services Element, Division of Water Resources, 1474 Prospect Street, Trenton, New Jersey.

A Summary of Comments and Responses and a Table showing disposition of subject matter of sections repealed by DEP Docket Number 010-80-02 in provisions of Chapter 9 of Title 7 of the New Jersey Administrative Code are attached hereto for filing with the Office of Administrative Law, Division of Administrative Procedure.

Copies of the final rules and the Summary of Comments and Responses may be obtained from:

Assistant Director
Monitoring and Planning Element
Division of Water Resources
P.O. Box CN-029
Trenton, New Jersey 08625

In accordance with the provisions of the Administrative Procedure Act, the aforementioned rules are hereby adopted substantially as proposed to become effective immediately.

DATE:

March 3, 1981

Jerry Fitzgerald English
JERRY FITZGERALD ENGLISH
COMMISSIONER

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TABLE

Showing disposition of subject matter of sections repealed or reconstituted by DEP Docket Number 010-80-02 in provisions of Chapter 9 of Title 7 of the New Jersey Administrative Code.

<u>Former Section</u>	<u>New Section</u>
Subchapter 4 Surface Water Quality Standards	
7:9-4.4 Statement of Policy	7:9-4.5 Statements of Policy, and 7:9-5.4 Statements of Policy
7:9-4.5 Definitions	7:9-4.4 Definitions, and 7:9-5.3 Definitions
7:9-4.6 Surface Water class definitions and quality criteria	7:9-4.6 Fresh surface water designated uses and quality criteria
"	7:9-4.7 Tidal surface water designated uses and quality criteria
"	7:9-4.8 Coastal surface water designated uses and quality criteria
"	7:9-4.9 Designated uses and quality criteria Mainstem Delaware River and Delaware Bay
7:9-4.8 Surface water classifications	7:9-4.10 Surface water classi- fications
7:9-4.9 Designated use and quality criteria; Morses Creek	-----
Subchapter 8 Treatment of Wastewaters Discharged Into Waters of the State	
7:9-8.1 Scope	7:9-5.1 Scope of Rules
7:9-8.2 Construction	7:9-5.2 Construction
7:9-8.3 Practice where rules do not govern	-----
7:9-8.4 Domestic wastes, FW-2, FW-3, TW-1 discharged into waters of Atlantic Coastal Plain	7:9-5.11 Minimum Treatment Requirements

7:9-8.5 Industrial wastes, FW-2, FW-3, TW-1	7:9-5.11 Minimum Treatment Requirements
7:9-8.6 Domestic wastes, CW-1, CW-2	"
7:9-8.7 Industrial wastes, CW-1, CW-2	"
7:9-8.8 Individual treatment	"
7:9-8.9 Treatment standards	"
7:9-8.10 Domestic wastes, FW-2, FW-3, TW-1, TW-2 discharged into Delaware River Basin	"
7:9-8.11 Industrial wastes, FW-2, FW-3, TW-1, TW-2	"
7:9-8.12 Domestic wastes; main stem	"
7:9-8.13 Industrial wastes; main stem	"
7:9-8.14 Individual treatment	"
7:9-8.15 Treatment standards	"
7:9-8.16 Domestic waste, FW-2, FW-3, TW-1 discharged in Hackensack River Basin	"
7:9-8.17 Industrial waste, FW-2, FW-3, TW-1	"
7:9-8.18 Domestic wastes, TW-2, TW-3	"
7:9-8.19 Industrial wastes, TW-2, TW-3	"
7:9-8.20 Individual treatment	"
7:9-8.21 Treatment standards	"
7:9-8.22 Domestic wastes, FW-2, FW-3 discharged into Passaic River Basin, including Newark Bay	"
7:9-8.23 Industrial wastes, FW-2, FW-3	"
7:9-8.24 Domestic wastes, TW-2, TW-3	"
7:9-8.25 Industrial waste, TW-2, TW-3	"

7:9-8.26 Individual treatment 7:9-5.11 Minimum Treatment Requirements

7:9-8.27 Treatment standards "

7:9-8.28 Domestic wastes, FW-2, FW-3,
discharged into Raritan River Basin,
including Raritan Bay "

7:9-8.29 Industrial wastes, FW-2, FW-3 "

7:9-8.30 Domestic wastes, TW-1 "

7:9-8.31 Industrial waste, TW-1 "

7:9-8.32 Individual treatment "

7:9-8.33 Treatment standards "

7:9-8.34 Domestic wastes, FW-2, FW-3
discharged into Wallkill River
Basin "

7:9-8.35 Industrial waste; FW-2, FW-3 "

7:9-8.36 Individual treatment "

7:9-8.37 Treatment standards "

7:9-8.38 Treatment of domestic wastes;
FW-2 and FW-3 waters in Raritan
River Basin, including Raritan Bay "

7:9-8.39 Treatment of industrial wastes;
FW-2 and FW-3 waters "

7:9-8.40 Treatment of domestic wastes;
TW-1 waters "

7:9-8.41 Treatment of industrial wastes;
TW-1 waters "

7:9-8.42 Individual treatment "

7:9-8.43 Treatment standards "

Subchapter 11 Allocation of Waste Loads to Point Source Discharges

7:9-11.1 Definitions 7:9-5.3 Definitions

7:9-11.2 Objective 7:9-5.5 Objective of Wasteload Allocation

7:9-11.3 Policy

7:9-11.4 Waste load Allocation
procedure

7:9-11.5 Variations in discharge
loadings

Subchapter 14 Ground Water Quality Standards

7:9-14.1 Scope of rules

7:9-14.2 Construction

7:9-14.3 Practice where rules do
not govern

7:9-14.4 Statement of policy

7:9-14.5 Definitions

7:9-14.6 Ground water designated
uses and quality criteria;
GW-Central Pine Barrens

7:9-14.7 Ground water designated
area

7:9-14.8 Surface water classifications

7:9-5.4 Statements of Policy

7:9-5.6 Wasteload Allocation
Procedure

7:9-6.1 Scope of Rules

7:9-6.2 Construction

7:9-6.4 Statements of Policy,
and 7:9-4.5 Statements of
Policy

7:9-6.3 Definitions

7:9-6.5 Ground Water Designated
Uses and Quality Criteria,
and 7:9-6.6 Ground-Water
Quality Criteria

7:9-6.7 Ground Water Designated
Areas

7:9-4.10 Surface Water
Classifications

SUBCHAPTER 4
SURFACE WATER QUALITY STANDARDS

TABLE OF CONTENTS

<u>Subject</u>	<u>Page</u>
Scope of Rules	1
Construction	1
Definitions	1-6
Statement of Policy	7-11
Fresh Surface Water Designated Uses and Quality Criteria	
FW-1 Waters	11
FW-Lower Mullica River and Wading Rivers-Central Pine Barrens	11
FW-Central Pine Barrens	13
FW-2 Waters	14
Surface Water Quality Criteria	15-23
Tidal Surface Water Designated Uses and Quality Criteria	24
Surface Water Quality Criteria for Tidal Waters	25-29
Coastal Surface Water Designated Uses and Quality Criteria	30
Surface Water Quality Criteria for Coastal Waters	31-34
Designated Uses and Quality Criteria Main Stem Delaware River and Delaware Bay	
Zone 1	35-37
Zone 2	37-40

<u>Subject</u>	<u>Page</u>
Zone 3	40-43
Zone 4	43-45
Zone 5	45-47
Zone 6	47-50

Surface Water Classifications

Central Pine Barrens	50-52
Atlantic Coastal Plain	52-56
Delaware River Basin	56-67
Hackensack River Basin	67-68
Hudson River, Kill Van Kull, Arthur Kill	68-69
Passaic River Basin	70-74
Raritan River Basin	74-77
Wallkill River Basin	77-80

SUBCHAPTER 4 SURFACE WATER QUALITY STANDARDS

7:9-4.1 Scope of Rules

Unless otherwise provided by rule or statute, the following shall constitute the rules of the Department of Environmental Protection governing matters of policy with respect to the protection and enhancement of surface water resources, class definitions and quality criteria, use designation and quality criteria for the main stem of the Delaware River including the Delaware Bay, and the classification of surface waters of the State, pursuant to N.J.S.A. 13:1D-1 et. seq., the New Jersey Water Pollution Control Act, N.J.S.A. 58:10A-1 et. seq. and the Water Quality Planning Act, N.J.S.A. 58:11A-1 et. seq.

7:9-4.2 Construction

These rules shall be liberally construed to permit the department and its various divisions to discharge its statutory functions.

7:9-4.3 (Reserved)

7:9-4.4 Definitions

The following words and terms, when used in this subchapter, shall have the following meanings, unless the context clearly indicates otherwise.

"Acute Toxicity" means causing death or severe damage to an organism by poisoning during a brief exposure period, normally 96 hours or less.

"Agricultural Water Supply" means water used for livestock, horticulture, and silviculture.

"Ambient Temperature" means the temperature of a water body beyond the portion of that water body which is affected by the localized heated waste discharge or discharge complex; or the temperature of a water body that would exist without the addition of heat of artificial origin.

"Anadromous Fish" means fish that spend a part of their lives in the sea or lakes, but ascend rivers to spawn.

"Appropriate Sanitary Survey" means a survey that will be designed by the department on a case-by-case basis to accurately identify bacterial sources of contamination in a cost efficient, timely manner.

"Aquatic Substrata" means soil material and attached biota underlying the water.

"Bioaccumulation" means uptake and retention of environmental substances by an organism from its environment, as opposed to uptake from its food.

"Bioassay" means a determination of the concentration or dose of a given material necessary to affect a test organism under stated conditions.

"Biota" means the animal and plant life of the region; flora and fauna collectively.

"Calculable Changes" means changes to representative (as may be determined by the department) water quality data which may be demonstrated by any acceptable mathematical predictive tool.

"Chronic Toxicity" means causing death or damage to an organism by poisoning during prolonged exposure, which depending on the organism tested and the test conditions, may range from more than 96 hours to weeks, months, or years.

"Conservative Substance" means a substance that is relatively resistant to degradation.

"Cumulative Substance" means a substance that has the potential to be extracted from the water by an organism and increases in concentration within an organism until it exerts a toxic effect on that organism.

"Department" means New Jersey Department of Environmental Protection.

"Designated Area" means the geographic extent of waters where designated use and criteria described herein are to be protected or met.

"Designated Use" means present or potential uses of surface waters.

"Disinfection" means the removal, destruction or inactivation of pathogenic and indicator organisms in wastewaters.

"Epilimnion" means the upper region of a thermally stratified body of water which is freely circulating and extends from the surface to the thermocline; the epilimnion does not have a permanent temperature stratification.

"Flow-Through Bioassay" means a bioassay test technique which permits test solutions to flow into and out of the test chambers on a once through basis for the duration of the test.

"Fresh Tidal Waters" means waters affected by tidal action, the salinity concentration will generally be less than or equal to 3.5 parts per thousand at mean high tide.

"Head of Tide" means the extent of tidal waters the salinity concentration of which will generally be greater than 3.5 parts per thousand.

"Heat Dissipation Area" means a localized area of surface water, as may be designated by the department, into which thermal effluents may be discharged for the purpose of mixing, dispersing or dissipating such effluents without creating nuisances or hazardous conditions in compliance with this subchapter.

"High Quality Waters" means those surface waters having biological, chemical or physical characteristics which are better than water quality standards and the aquatic biological community or other uses are sensitive to changes in water quality.

"Hypolimnion" means the lower region of a stratified body of water that extends from the thermocline to the bottom of the lake and is cut off from circulation with the upper waters, thereby receiving no oxygen from the atmosphere while stratified.

"Important Species" means species which are commercially or recreationally valuable (e.g., within the top ten species landed--by dollar value); threatened or endangered; critical to the organization and maintenance of the ecological system; or necessary in the food web for the well-being of species identified in this definition.

"Industrial Water Supply" means water used for processing or cooling.

"Intermittent Stream" means a stream with less than one-tenth (0.1) cubic feet per second minimum consecutive 7 day flow with a 10 year recurrence interval, or a drainage area of less than one square mile.

"Lake, Pond or Reservoir" means any impoundment, whether naturally created or created in whole or in part by the building of structures for the retention of surface water.

"LC50" means the concentration of a toxicant which is lethal to fifty per cent of the organisms of a particular species under a given set of conditions in a specified length of time (i.e., 24, 48, 96 hours).

"Life-Cycle Toxicity Test" means a test that consists of exposing several groups of individuals of one species to different concentrations of a toxic agent throughout a life cycle in order to study the effect of the toxic agent on the survival, growth, and reproduction of the species. To ensure that all life stages and life processes are exposed, the test begins with embryos or nearly hatched larvae less than forty-eight hours old, continues throughout maturation and reproduction, and with fish, ends not less than thirty days (ninety days for salmonids) after the hatching of the next generation.

"Limiting Factor" means a factor whose absence, or excessive concentration, exerts some restraining influence upon a population through incompatibility with species requirements or tolerance.

"Maximum Acceptable Toxicant Concentration (MATC)" means the highest concentration of a toxicant that has no adverse effect on survival, growth, or reproduction of a species based on the results of a life-cycle or partial life-cycle test. A life-cycle or partial life-cycle test cannot produce a value for the MATC; a test can only produce limits within which the MATC must fall.

"Measurable Changes" means changes determined by any biological, chemical, or physical analytical method conducted in accordance with USEPA approved methods as identified in 40 C.F.R. 136 or other analytical methods (e.g., ecological indices) approved by the department.

"Mixing Zones" means localized areas of surface waters, as may be designated by the department, into which non-thermal wastewater effluents may be discharged for the purpose of mixing, dispersing or dissipating such effluents without creating nuisances or hazardous conditions in compliance with this subchapter.

"Natural Flow" means water flow that would exist in a waterway without the addition of flow of artificial origin.

"Natural Water Quality" means water quality that would exist in a waterway without the addition of water or water borne substances from artificial origin.

"NJDEP" means New Jersey Department of Environmental Protection.

"Nonconservative Substance" means a substance that degrades relatively quickly.

"Noncumulative Substance" means a substance that either does not have the potential to be extracted from the water by an organism, or does not increase in concentration within an organism to the point that it exerts a toxic effect on that organism.

"Nondegradation Waters" means those surface waters of the State whose water quality and water uses shall be preserved because of their outstanding resource value. This definition shall not apply to those surface waters that have special water quality standards, (e.g., FW-Central Pine Barrens and FW-Lower Mullica and Wading Rivers-Central Pine Barrens).

"Nonpersistent Substance" means a substance that degrades relatively quickly, having a one-half-life of less than 96 hours.

"Nontrout Waters" means waters that, because of their physical or chemical or biotic characteristics, are not suitable for trout but which, in general, are suitable for a wide variety of other fish species.

"NPDES" means National Pollutant Discharge Elimination System.

"Partial Life-Cycle Toxicity Test" means a test that consists of exposing several groups of individuals of one species to different concentrations of a toxic agent through part of a life-cycle in order to study the effect of the toxic agent on survival, growth, and reproduction. Partial life-cycle tests are conducted with fish species that require more than a year to reach sexual maturity so that the test can be completed in less than 15 months, but still expose all major life stages to the toxicant. With fish, exposure to the toxic agent begins with immature juveniles at least two months prior to active gonad development, continues through maturation and reproduction, and ends not less than 30 days (90 days for salmonids) after the hatching of the next generation.

"Persistent Substance" means a substance that is relatively resistant to degradation, having a one-half-life of 96-hours or more.

"Primary Contact Recreation" means recreational activities that involve significant ingestion risks and includes but is not limited to wading, swimming, diving, surfing, water skiing and other full-body contact activities.

"Public Hearing" is a legislative type hearing before a representative or representatives of the department providing the opportunity for public comment, but which does not include cross-examination.

"Secondary Contact Recreation" means recreational activities where the probability of significant contact or water ingestion is minimal and includes but is not limited to boating, fishing, and those other activities involving limited contact with surface waters incident to shoreline recreation.

"Stream Temperature" means temperature of a stream outside of the designated heat dissipation area.

"Surface Water Classifications" means surface waters of this State identified as Fresh (FW), Tidal (TW) and Coastal (CW). This includes both interstate and intrastate waters.

"Thermal Alterations" means the increase or decrease in temperature of surface waters, above or below the natural, that may be caused by the activities of man.

"Tidal Waters" means waters affected by tidal action, the salinity concentration of which will generally be greater than 3.5 parts per thousand at mean high tide.

"Total Residual Chlorine (TRC)" means all chemical species of dissolved gaseous chlorine and its oxidation products which can be detected by United States Environmental Protection Agency approved methods for the analysis of chlorine waters and wastewaters.

"Toxic Substances" means those substances, or combination of substances, which upon exposure, ingestion, inhalation or assimilation into any organism, either directly from the environment or indirectly through food chains, will, on the basis of information available to the department, cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions, including malfunctions in reproduction, or physical deformation, in such organisms or their offspring.

"Trout Maintenance Waters" means waters that support trout throughout the year or which have high potential for such use pending the correction of short term environmental alterations. Waters in which the biotic community is manipulated for the purpose of trout maintenance and which are otherwise not naturally suited for such purposes are not included.

"Trout Production Waters" means waters that are used by trout for spawning or nursery purposes during their first summer or which are considered to have high potential for such use pending the correction of short term environmental alterations.

"USEPA" means United States Environmental Protection Agency.

"Wildlife" means all undomesticated animals.

7:9-4.5 Statements of Policy

(a) The following are statements of general policy:

1. Water is vital to life and comprises an invaluable natural resource which is not to be abused by any segment of the State's population or its economy. It is the policy of this State to restore, enhance and maintain the chemical, physical and biological integrity of its waters, to protect public health, to safeguard fish and aquatic life and scenic and ecological values, and to enhance the domestic, municipal, recreational, industrial and other uses of water.

2. It is the policy of the department not to permit the introduction of substances into the waters of the State in concentrations which are known to be carcinogenic, mutagenic, or teratogenic. The department, to the maximum extent possible, will direct its control efforts to require the removal of such substances from wastewater discharges where such discharges are shown to already occur in the waters of the State.

3. It is the policy of the department that any other toxic substances in waters of the State shall not be at levels which are toxic to humans or to aquatic life or which bioaccumulate in aquatic organisms so as to render them unfit for human consumption.

4. Existing and intended uses of surface waters shall be maintained and protected. Where existing criteria are inadequate to support existing uses, such criteria shall be upgraded.

5. The department shall define the designated uses which are to be protected and maintained, identify those waters to which each designated use applies, and establish numerical or descriptive criteria for water quality substances in a manner that is consistent with the designated uses and policies described herein.

6. It is the objective of the department to restore tidal waters which are now at levels of quality below acceptable limits of quality for unrestricted shellfish harvesting to levels which permit such use.

(b) The following are statements of policy concerning interstate waters:

1. The designated uses and water quality criteria for the fresh and saline tidal tributaries (to head of tide) to the Delaware River, including the Delaware Bay, shall be as established at sections six and seven of this subchapter, or in accordance with the prevailing "Basin Regulations - Water Quality" adopted by the Delaware River Basin Commission as part of its Comprehensive Plan, whichever are more stringent.

2. The designated uses and water quality criteria for waters of the Interstate Sanitation District under the jurisdiction of the Interstate Sanitation Commission in the New Jersey-New York metropolitan area, shall be as established at section seven of this subchapter, or in accordance with the prevailing Interstate Sanitation Commission's Water Quality Regulations, whichever are more stringent.

(c) The following are statements of technical policy:

1. When existing water quality does not conform with the established minimum criteria solely as a result of natural causes, natural water quality characteristics shall prevail.

2. Except for intermittent streams, water quality criteria are expected to be maintained during periods when stream flows are at or greater than the minimum consecutive 7 day flow with a 10 year recurrence interval period.

3. Water quality criteria are expected to be maintained in intermittent streams during all natural flow conditions. When the intermittent stream does not contain natural flow of sufficient magnitude to determine water quality, the criteria to be maintained will be those pertaining to the measurable natural flow immediately downstream of the intermittent stream.

4. The following are statements of policy concerning non-thermal mixing zones:

i. In a non-thermal mixing zone, an area contiguous to discharge, receiving water quality may be allowed to fall below applicable water quality standards.

ii. If, in the judgment of the department, a mixing zone is appropriate, the department will determine the requirements for a non-thermal mixing zone on a case-by-case basis.

iii. The total area and volume of a body of water assigned to non-thermal mixing zones shall be limited to that which will not interfere with biological communities or populations of important species to a degree which is damaging to the ecosystem or which diminishes other beneficial uses disproportionately. Furthermore, significant mortality of aquatic life shall not occur within the non-thermal mixing zone.

iv. In streams, reservoirs, lakes, estuaries, and coastal waters, zones of passage are considered to be 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 of passage must be provided wherever non-thermal mixing zones are allowed.

5. All laboratories whose analytical data are to be incorporated by the department in its water quality monitoring or other activities shall be approved or certified by the department in accordance with Chapter 18 of this title.

6. As a guideline the substances listed below should not exceed the specified limits for the protection of potable water supplies:

	<u>mg/l</u>
i. Arsenic	0.05
ii. Barium	1.0
iii. Cadmium	0.01
iv. Chromium (Hexavalent)	0.05
v. Lead	0.05
vi. Mercury	0.002
vii. Selenium	0.01
viii. Silver	0.05

(d) The following are statements of policy concerning antidegradation:

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:

i. Nondegradation Waters are those waters currently classified as FW-1 in section 10 of this subchapter and whose uses and quality criteria are described at section 6 of this subchapter.

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:

- (1) FW-2 Trout Production waters and their tributaries;
- (2) Surface waters classified as FW-2 Trout Maintenance or FW-2 Nontrout which are upstream of surface waters classified as FW-2 Trout Production;
- (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 consistently 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.

3. The following are statements of policy concerning nondegradation of Central Pine Barrens water quality:¹

¹The designated uses and special water quality criteria for the Central Pine Barrens may be found at subsections 6(b), 6(c), and 6(e).

i. The department shall not, in the performance of its statutory duties, approve any activity which alone or in combination with other activities, will cause degradation in the existing surface water quality characteristics of the Central Pine Barrens. The State encourages rational and ecologically sound agricultural practices and other appropriate uses.

ii. The department's Central Pine Barrens water quality policy is not intended to interfere with water control in the operation of cranberry bogs or blueberry production.

7:9-4.6 Fresh surface water designated uses and quality criteria

(a) Designated uses and quality criteria for FW-1 waters

1. Designated uses: Fresh waters, including rivers, streams, lakes or other bodies of water which, because of their clarity, color, scenic setting, or other characteristic of aesthetic value or unique special interest, have been designated by authorized State agencies in conformance with laws pertaining to the use of private lands, to be set aside for posterity to represent the natural aquatic environment and its associated biota.

2. FW-1 quality criteria:

i. These waters, which are identified in section 10 of this subchapter shall be maintained as to quality in their natural state (set aside for posterity) and shall not be subject to any man-made wastewater discharges.

ii. Waters which originate wholly within State parks, forests and fish and wildlife lands, but not identified in section 10 of this subchapter shall not be subject to any new man-made wastewater discharges.

(b) Designated uses and quality criteria for FW-Lower Mullica and Wading Rivers - Central Pine Barrens

1. Designated uses: These waters shall be suitable for cranberry bog water supply and other agricultural uses; the maintenance, migration and propagation of the natural and established biota indigenous to this unique ecological system; public potable water supply after such treatment as shall be required by law or regulation; swimming; and other reasonable uses.

2. Class FW-Lower Mullica and Wading Rivers-Central Pine Barrens Quality Criteria:

i. Quality criteria for FW-Lower Mullica and Wading Rivers-Central Pine Barrens may be found in subsection (e) of this section and shall not apply to:

(1) Discharges which emanate from individual on-site sewage disposal systems which systems were in existence or for which a building permit had been issued prior to January 23, 1978, provided that such existing systems were installed and are operating in conformance with N.J.S.A. 58:11-23 et seq. and all regulations adopted thereunder; and all other appropriate Federal, State and local laws. Furthermore, any water quality standards in existence prior to January 23, 1978, shall remain in effect for previously existing individual on-site sewage disposal systems.

(2) Discharges from agricultural operations that were in existence prior to January 23, 1978, provided that such discharges are in compliance with existing best management practices, or other existing Federal, State, or local laws. Nothing in this subsection shall be construed to limit the ability of the US EPA or the NJ DEP to require additional control measures in conformance with future regulations regarding soil conservation, pesticides, best management practices, or other future Federal, State, or local laws. Furthermore, any water quality standards in existence prior to January 23, 1978, shall remain in effect for previously existing agricultural discharges.

(3) All point source discharges permitted prior to January 23, 1978, by the US EPA through the issuance of a NPDES permit, or by the NJ DEP through the issuance of State water pollution control permits, provided that such discharges are in compliance with all terms and conditions of the appropriate permit. Nothing in this subsection shall be construed to limit the ability of the US EPA or the NJ DEP to require:

(i) Technology based effluent control measures for classes of point sources, other than publicly owned treatment works, as may be required by Federal or State law;

(ii) Alternative effluent control strategies for publicly owned treatment works and other classes of point sources.

Furthermore, water quality standards in existence prior to January 23, 1978, shall remain in effect for these existing point source discharges.

ii. Seasonal or other natural conditions may cause a deviation in the water quality criteria. These deviations must be considered, after consulting with the department, in the design of any water resources project.

(c) Designated uses and quality criteria for FW-Central Pine Barrens

1. Designated uses: These waters shall be suitable for cranberry bog water supply and other agricultural uses; the maintenance, migration and propagation of the natural and established biota indigenous to this unique ecological system; public potable water supply after such treatment as shall be required by law or regulation; swimming; and other reasonable uses.

2. FW-Central Pine Barrens quality criteria:

i. Quality criteria for FW-Central Pine Barrens may be found in subsection (e) of this section and shall not apply to:

(1) Discharges which emanate from individual on-site sewage disposal systems which systems were in existence or for which a building permit had been issued prior to January 23, 1978, provided that such existing systems were installed and are operating in conformance with N.J.S.A. 58:11-23 et seq., and all regulations adopted thereunder; and all other appropriate Federal, State and local laws. Furthermore, any water quality standards in existence prior to January 23, 1978, shall remain in effect for previously existing individual on-site disposal systems.

(2) Discharges from agricultural operations that were in existence prior to January 23, 1978, provided that such discharges are in compliance with existing best management practices or other existing Federal, State, or local laws. Nothing in this subsection shall be construed to limit the ability of the US EPA or the NJ DEP to require additional control measures in conformance with future regulations regarding soil conservation, pesticides, best management practices, or other future Federal, State, or local laws. Furthermore, any water quality standards in existence prior to January 23, 1978, shall remain in effect for previously existing agricultural discharges.

(3) All point source discharges permitted prior to January 23, 1978, by the USEPA through the issuance of a NPDES permit or by the NJ DEP through the issuance of State water pollution control permits, provided that such discharges are in compliance with all terms and conditions of the appropriate permit. Nothing in this subsection shall be construed to limit the ability of the US EPA or the NJ DEP to require:

(i) Technology based effluent control measures for classes of point sources, other than publicly owned treatment works, as may be required by Federal or State law;

(ii) Alternative effluent control strategies for publicly owned treatment works and other classes of point sources.

Furthermore, any water quality standards in existence prior to January 23, 1978, shall remain in effect for these existing point source discharges.

ii. Seasonal or other natural conditions may cause a deviation in the water quality criteria. These deviations must be considered, after consulting with the Department, in the design of any water resources project.

(d) Designated uses and quality criteria for FW-2 waters

1. Designated uses:

i. Fresh surface waters, including fresh tidal waters which shall be suitable for public potable water supply after such treatment as shall be required by law or regulation.

ii. These waters shall also be suitable for the maintenance, migration and propagation of the natural and established biota; primary contact recreation; industrial and agricultural water supply and any other reasonable uses.

iii. The FW-2 classification is subdivided into three categories as follows:

- (1) FW-2 Trout Production
- (2) FW-2 Trout Maintenance
- (3) FW-2 Nontrout

2. FW-2 quality criteria: Quality criteria for FW-2 Trout Production, FW-2 Trout Maintenance, and FW-2 Nontrout are found in subsection (e) of this section.

(e) Surface Water Quality Criteria for Freshwater

(Concentrations are in micrograms per liter unless otherwise noted)

FW-Lower Mullica and Wading Rivers
Central Pine Barrens

FW- Central Pine Barrens FW-2-Trout Production FW-2-Trout Maintenance FW-2-Nontrout

Substance

FW-Lower Mullica and Wading Rivers - Central Pine Barrens and FW-Central Pine Barrens, the antidegradation policy may supersede the water quality criteria found in this section (7:9-4.6(e)).

Floating, colloidal, color and settleable solids; petroleum hydrocarbons and other oils and grease

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 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 Absorption-Infrared Measurement); the present criteria, however, are those of paragraph 1. above.

Turbidity (Nephelometric Turbidity Unit-NTU)

Maximum of 20.0 NTU at any time.

Maximum 30-day average of 15 NTU, a maximum of 50 NTU at any time.

Suspended solids-non-filterable residue (mg/l)

Maximum of 40.0 at any time.

Maximum of 25.0 at any time. Maximum of 40.0 at any time.

Taste and odor producing substances

None offensive to humans or which would produce offensive taste or odors in water supplies and biota used for human consumption. None which would render the waters unsuitable for the designated uses.

pH (Standard Units)

4.5-6.0

3.5-5.5

6.5-8.5

6.5-8.5

(e) Surface Water Quality Criteria for Freshwater

(Concentrations are in micrograms per liter unless otherwise noted)

Substance	FW-Lower Mullica and Wading Rivers Central Pine Barrens	FW- Central Pine Barrens	FW-2-Trout Production	FW-2-Trout Maintenance	FW-2-Nontrout
5 day Bio-chemical oxygen demand (mg/l)	Maximum of 5.0 at any time.	Maximum of 5.0 at any time. None which would render the waters unsuitable for the designated uses.			
Dissolved oxygen	Not less than 85% saturation at any time.	Not less than 85% saturation at any time.	Not less than 7.0 mg/l at any time.	24 hour average not less than 5.0 mg/l, but not less than 4.0 mg/l at any time, except as noted in paragraph ii. below.	i. 24 hour average not less than 5.0 mg/l, but not less than 4.0 mg/l at any time, except as noted in paragraph ii. below. ii. Not less than 4.0 mg/l at any time in the freshwater tidal portions of tributaries to the Delaware River, between Rancocas Creek and Big Timber Creek inclusive.

(e) Surface Water Quality Criteria for Freshwater

(Concentrations are in micrograms per liter unless otherwise noted)

Substance	FW-Lower Mullica and Wading Rivers Central Pine Barrens	FW-Central Pine Barrens	FW-2-Trout Production	FW-2-Trout Maintenance	FW-2-Nontrout
Temperature and heat dissipation areas.	Not to deviate more than 2.8°C (5.0°F) from ambient stream temperature.	Not to deviate more than 2.8°C (5.0°F) from ambient stream temperature.	Ambient temperatures shall prevail except where properly treated wastewater effluents may be discharged. Where such discharges occur, stream temperatures shall not deviate more than 0.6°C (1.0°F) from ambient stream temperature.	1. Streams: i. No heat may be added which would cause temperatures to exceed 1.1°C (2°F) over ambient at any time or which would cause temperatures in excess of 20°C (68°F). Temperatures shall be measured outside of heat dissipation areas.	1. Streams: i. No thermal alterations which would cause temperatures to deviate more than 2.8°C (5.0°F) at any time from ambient temperatures. No heat may be added which would cause temperatures to exceed 27.8°C (82°F) for small mouth bass or yellow perch waters or 30°C (86°F) for other nontrout waters. Temperatures shall be measured outside of heat dissipation areas.
				2. Lakes: i. No thermal alterations of more than 1.7°C (3°F) in the epilimnion of lakes and other standing waters. Temperatures shall be measured outside of heat dissipation areas.	

(e) Surface Water Quality Criteria for Freshwater

(Concentrations are in micrograms per liter unless otherwise noted)

FW-Lower Mullica and
Wading Rivers
Central Pine Barrens

Substance

FW- Central Pine Barrens

FW-2-Trout Production

FW-2-Trout Maintenance

FW-2-Nontrout

ii. Unless a special study shows that a discharge of a heated effluent into the hypolimnion or pumping water from the hypolimnion (for discharging back into the same water body) will be desirable with respect to designated water uses, such practices shall not be permitted.

Temperature
and heat dis-
sipation areas

3. Heat dissipation determinations: i. 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.

ii. Streams: Heat dissipation areas shall be limited to no more than one-quarter (1/4) of the cross section 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) surface measured from shore to shore at any flow. These limitations may be exceeded by special permission, on a case-by-case basis, when the applicant can demonstrate that a

(e) Surface Water Quality Criteria for Freshwater

(Concentrations are in micrograms per liter unless otherwise noted)

FW-Lower Mullica and
Wading Rivers
Central Pine Barrens

FW-Central Pine Barrens

FW-2-Trout Production

FW-2-Trout Maintenance FW-2-Nontrout

larger heat dissipation area will provide for passage of free-swimming and drifting organisms and not become injurious to or impair designated uses.

iii. Lakes, ponds, or reservoirs: 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.

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 life nor create conditions which allow the introduction or maintenance of populations of undesirable organisms.

(e) Surface Water Quality for Freshwater

(Concentrations are in micrograms per liter unless otherwise noted)

FW-Lower Mullica and
Wading Rivers
Central Pine Barrens

FW-Central Pine Barrens

FW-2-Trout Production

FW-2-Trout Maintenance

FW-2-Nontrout

Substance

Bacterial
quality
(MPN/100 ml)

1. Except as noted in paragraph two below, 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.

2. Fecal coliform levels shall not exceed a geometric average of 770/100 ml. in the freshwater tidal portion of tributaries to the Delaware River, between Rancocas Creek and Big Timber Creek inclusive.

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 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.

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).

Total dissolved
solids - filter-
able residue
(mg/l)

Maximum of 100 at
anytime

1. Not to exceed 500 mg/l or 133 per cent of background whichever is less. Notwithstanding this criterion, the department, after notice and opportunity for hearing, may authorize increases exceeding these limits provided the discharger responsible for such increases can demonstrate to the satisfaction of the department that such increases will not significantly affect the growth and propagation of indigenous aquatic biota or other designated uses, including public water supplies.

2. Any authorization by the department of such increases shall be conditioned upon utilization of the maximum practicable control technology.

(e) Surface Water Quality Criteria for Freshwater

(Concentrations are in micrograms per liter unless otherwise noted)

Substance	FW-Lower Mullica and Wading Rivers Central Pine Barrens	FW-Central Pine Barrens	FW-2-Trout Production	FW-2-Trout Maintenance	FW-2-Nontrout
Chloride (mg/l)			Maximum of 250.0 at anytime.	Maximum of 250.0 at anytime.	Maximum of 250.0 at anytime.
Sulfate (mg/l)			Maximum of 250.0 at anytime.	Maximum of 250.0 at anytime.	Maximum of 250.0 at anytime.
Nitrate nitrogen (mg/l)	Maximum of 3.0 at anytime.	Maximum of 2.0 at anytime.	None which would render the waters unsuitable for the designated uses.		
Phosphorus (mg/l)	Maximum of 0.7 at anytime	Maximum of 0.7 at anytime - phosphorus as phosphate.			

1. Lakes: Phosphorus as total P shall not exceed 0.05 in any reservoir, lake, pond, or in a tributary at the point where it enters such bodies of water, unless it can be demonstrated that total P is not a limiting factor considering the morphological, physical, chemical, and other characteristics of the water body.

2. Streams: Phosphorus as total P shall not exceed 0.1 in any stream, except at those locations in paragraph one above, where total P is determined to have a detrimental effect on stream use or to be the limiting factor considering the morphological, physical, chemical, and other characteristics of the water body.

(e) Surface Water Quality Criteria for Freshwater

(Concentrations are in micrograms per liter unless otherwise noted)

Substance	FW-Lower Mullica and Wading Rivers Central Pine Barrens	FW-Central Pine Barrens	FW-2-Trout Production	FW-2-Trout Maintenance	FW-2-Nontrout
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1. Allowing for natural conditions, 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. None which would cause standards for drinking water to be exceeded after appropriate treatment.
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-R 3-73-033), 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.

Ammonia (un-ionized; Maximum concentrations)	50.0	50.0	20.0	20.0	50.0
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(e) Surface Water Quality Criteria for Freshwater

(Concentrations are in micrograms per liter unless otherwise noted)

Substance	FW-Lower Mullica and Wading Rivers Central Pine Barrens	FW-Central Pine Barrens	FW-2-Trout Production	FW-2-Trout Maintenance	FW-2-Nontrout
Aldrin/dieldrin (Maximum concentrations)	0.003	0.003	0.003	0.003	0.003
Benzidine (Maximum concentrations)	0.1	0.1	0.1	0.1	0.1
DDT and metabolites (Maximum concentrations)	0.001	0.001	0.001	0.001	0.001
Endrin (Maximum concentrations)	0.004	0.004	0.004	0.004	0.004
Polychlorinated biphenyls (PCB) (Maximum concentrations)	0.001	0.001	0.001	0.001	0.001
Total residual chlorine (TRC) (Maximum concentrations)	3.0	3.0	3.0	3.0	3.0
Toxaphene (Maximum concentrations)	0.005	0.005	0.005	0.005	0.005

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
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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))	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.	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.	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.	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 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.

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)	0.1 of 96 hr LC50	0.1 of 96 hr LC50

7:9-4.9 Designated Uses And Quality Criteria Mainstem Delaware River And Delaware Bay

(a) Designated uses and quality criteria for Zone 1

1. Zone 1 designated uses:

For the non-tidal (fresh water) portion of the River down to the head of tide at Trenton (River Mile 133.4): Agricultural, industrial and public water supplies after reasonable treatment; wildlife, maintenance and propagation of resident gamefish and other aquatic life; spawning and nursery habitat for anadromous fish; passage of anadromous fish and primary contact recreation.

2. Zone 1 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 20 Nephelometric Turbidity Units (NTU) a maximum of 150 NTU at any time upstream from R.M. 183.66 (Phillipsburg, New Jersey).

(3) Maximum 30-day average of 30 NTU, a maximum of 150 NTU at any time from R.M. 183.66 to R.M. 133.4 (head of tide at Trenton).

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 6.0 and 8.5.

v. Dissolved oxygen:

24 hour average shall not be less than 5.0 mg/l. Not less than 4.0 mg/l at any time.

vi. Temperature:

(1) General: Shall not exceed 5° F (2.8° C) rise above ambient temperature until stream temperature reaches 87° F (30.6° C) except in 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 from R.M. 217.0 (Tocks Island) to R.M. 133.4 (Trenton) shall not be longer than 3,500 feet, or 20 times the average width of the stream, whichever is less, measured from the point where the waste discharge enters the stream.

As a guideline, heat dissipation areas upstream from R.M. 217.0 shall not be longer than 1,000 feet, or 20 times the average width of the stream, whichever is less, measured from the point where the waste discharge enters the stream.

(ii) Maximum width: Heat dissipation areas shall not exceed a maximum width of one-half the surface width of the stream or the width encompassing one-half of the entire cross-sectional area of the stream, whichever is less. Within any one heat dissipation area, only one shore shall be used in determining the limits of the area.

(iii) 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.

(iv) Rate of temperature change: The rate of temperature change in designated heat dissipation areas shall not cause mortality of fish.

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. 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 as of October 1, 1972 or 500 mg/l, whichever is less.

x. Total alkalinity:

Not less than 20 mg/l below R.M. 183.66.

xi. Phenols:

Not to exceed 0.005 mg/l.

xii. Synthetic detergents: (M.B.A.S.)

Not to exceed 0.5 mg/l.

(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 reasonable 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.

7:9-4.10 Surface Water Classifications

(a) The surface water classifications for Central Pine Barrens are:

1. Class FW-Central Pine Barrens is described as follows:

i. Mullica River Watershed

(1) Mullica River and tributaries upstream from Seventh Avenue, Sweetwater, Atlantic County (head of tide), except those designated FW-1.

(2) Freshwater segments of tributaries to the Mullica River between head of tide and Lower Bank Road bridge at Lower Bank, except those designated FW-1.

(3) Wading River and tributaries upstream from Charcoal Landing, Burlington County (head of tide), except those designated FW-1.

(i) Freshwater segments of tributaries to the Wading River between head of tide and Route 542 bridge.

(ii) Freshwater segment of Ives Branch and its tributaries from the 10 foot contour.

(4) West Branch Bass River and tributaries upstream from the Bass River State Forest boundary (where it crosses the West Branch Bass River, downstream of Stage Road), except those designated FW-1.

(5) East Branch Bass River and tributaries upstream from the Bass River State Forest boundary (where it crosses the East Branch Bass River, downstream of Stage Road), except those designated FW-1.

(6) Indian Cabin Creek and tributaries upstream from Egg Harbor City Lake.

- ii. Cedar Creek (Lacey Twp.) and tributaries upstream of Route 9 (head of tide) surrounded by the northern ridgeline; and the southern ridgeline west of the Garden State Parkway and the southern ridgeline (between the Garden State Parkway and Route 9) as defined by Lacey Road, Manchester Avenue, and Haines Road.
- iii. All fresh waters west of the Garden State Parkway bounded by the Mullica and Cedar Creek (Lacey Township) watersheds, except those designated FW-1.
- iv. Toms River Watershed:
 - (1) Davenport Branch and tributaries upstream from Route 530.
 - (2) Unnamed tributary to Michaels Branch through Keswick Grove and tributaries upstream from the east crossing of the Penn Central Railroad to source.
- v. Rancocas Creek Watershed:
 - (1) South Branch Rancocas Creek and tributaries upstream from Route 206 to source, except those designated FW-1.
 - (2) Jade Run and tributaries upstream from Route 206, except those designated FW-1.
 - (3) Mt. Misery Brook and tributaries upstream of the western intersection of the Lebanon State Forest boundary at Mt. Misery, except those designated FW-1.
 - (4) Tributaries to Pole Bridge Branch upstream of the Penn Central Railroad.
- vi. Those surface waters that flow through State and National parks, forests, and fish and wildlife lands.
 - (1) Greenwood Branch and tributaries within the boundaries of Greenwood Rancocas Reserve and Lebanon State Forest.
 - (2) Tributaries to Country Lake, Mirror Lake and Hanover Lake within the boundaries of the Whitesbog Fish and Wildlife Management Area and Lebanon State Forest.
 - (3) All surface waters within the Wharton Tract State Forest.
 - (4) All surface waters within the following portions of the Bass River State Forest:
 - (i) That portion located on the New Gretna and Oswego Lake USGS Quadrangle Maps which is uninterrupted by private lands and contiguous to the Ives Branch and Bartletts Branch watersheds lying both north and south of Stage Road.

(ii) That portion located on the New Gretna USGS Quadrangle Map which is uninterrupted by private lands and contiguous to and lying to the south of Stage Road.

(iii) That portion located on the New Gretna and Oswego Lake USGS Quadrangle Maps which is uninterrupted by private lands and contiguous to and lying to the southeast of the Garden State Parkway.

2. Class FW-Lower Mullica and Wading Rivers - Central Pine Barrens is described as follows:

- i. Mullica River and tidal portions of its tributaries, from head of tide to Lower Bank Road Bridge at Lower Bank.
- ii. Wading River and tidal portions of its tributaries, from head of tide to Route 542 Bridge.

(b) Atlantic Coastal Plain Classifications are:

1. Class FW-1 Note: (All boundaries referred to in i. through vii. as they existed at the time of adoption of these classifications).

(Manasquan River Watershed)

- i. Allaire State Park
 - (1) Those portions of the first and second southerly tributaries to the Manasquan River west of Hospital Road situated wholly within the Allaire State Park boundaries.
 - (2) The easterly tributary to the brook feeding Brisbane Lake situated wholly within the Allaire State Park boundaries downstream to its confluence with the westerly tributary.

(Cedar Creek Watershed)

- ii. Greenwood Forest Fish & Game Tract
 - (1) Webbs Mill Branch and tributaries situated wholly within the Greenwood Forest Tract boundaries.
 - (2) Chamberlain's Branch and five tributaries originating in and situated wholly within the Greenwood Forest Tract boundaries upstream from the blueberry farm exception, also other tributaries to

Chamberlain's Branch situated wholly within the Greenwood Forest Tract boundaries.

(Wading River Watershed)

iii. Greenwood
Forest Fish
& Game Tract

Westerly tributary to the Howardsville Cranberry Bog Reservoir and tributaries situated wholly within the Greenwood Forest Tract boundaries.

(Barnegat Bay Watershed)

iv. Island Beach
State Park

All the fresh water ponds on Island Beach State Park.

(Bass River Watershed)

v. Bass River
State Forest

(1) Tommy's Branch from its headwaters downstream to Bass River State Forest Recreation Area service road.

(2) Falkenburg Branch of Lake Absegami from its headwaters downstream to the Lake.

(Mullica River Watershed)

vi. Wharton Tract

(1) Deep Run and tributaries from its headwaters downstream to Springer's Brook.

(2) Skit Branch and tributaries from its headwaters downstream to confluence with Robert's Branch.

(3) Tulpehocken Creek and tributaries from its origin downstream to its confluence with Featherbed Branch.

(4) The westerly tributaries to Tulpehocken Creek and those natural ponds within the lands bounded by Hawkins Road, Hampton Gate Road, and Sandy Ridge Road.

(5) Stream in the southeasterly corner of the Wharton Tract lying between Ridge Road and Seaf Weeks Road down to the Wharton Tract Boundaries.

- (6) Brooks and tributaries to Batsto River between and immediately to the west of Tylertown and Crowleytown from its headwaters downstream to the head of tide at mean high water.
- (7) The easterly branches of the Batsto River from Batsto Village upstream to the confluence of Skits Branch.
- (8) Gun Branch from its headwaters downstream to U.S. Route 206.

(Great Egg Harbor River Watershed)

- vii. Tuckahoe Public Hunting and Fishing Grounds Hawkin's Creek and the next adjacent tributary to the Great Egg Harbor River lying to the north from their origin downstream to where the influence of impounding occurs.
- 2. Class FW-Central Pine Barrens (See subsection (a) of this section)
- 3. Class FW-2 Trout Production: None
- 4. Class FW-2 Trout Maintenance:
 - (Shark River Watershed)
 - i. Shark River and tributaries from Route 33 bridge downstream to Brighton Avenue Bridge in Glendola.
 - (Metedeconk River Watershed)
 - ii. Metedeconk River N/Br. (Lakewood) and tributaries from Aldrich Road downstream to Lanes Mills, except those segments designated FW-2 Nontrout.
 - iii. Muddy Ford Brook (Larrabee's Crossing) and tributaries, except those segments designated FW-2 Nontrout.
 - iv. Titmouse Brook and tributaries, entire length.
 - (Manasquan River Watershed)
 - v. Manasquan River and tributaries from Rt. 9 bridge downstream to the "Narrows" in the vicinity of the Meadows Marina except those designated FW-1 and FW-2 Nontrout.
 - vi. Mingamahone Brook (Farmingdale) and tributaries entire length, except those classified FW-1.

(Toms River Watershed)

- vii. Toms River and tributaries from Rt. 528 bridge downstream to Rt. 547 bridge in Whitesville.
- 5. Class FW-2 Nontrout:
 - i. Cranberry Brook and tributaries upstream from the intake of the Monmouth Consolidated Water Company near the New York-Long Branch Railroad Crossing.*
 - ii. Shark River and tributaries upstream from Route 33 bridge.*
 - iii. Jumping Brook and tributaries above intake of Monmouth Consolidated Water Company near Old Corlies Avenue.*
 - iv. Main stem of Manasquan River and tributaries upstream from Route 9.*
 - v. Absecon Creek and tributaries upstream from Atlantic City Reservoir Dam in the City of Absecon.*
 - vi. All other fresh nontidal and fresh tidal water basins or portions thereof in the Coastal Plain except those designated as FW-1, FW-Central Pine Barrens, and FW-2 Trout Maintenance.
- 6. Class FW-Lower Mullica and Wading Rivers - Central Pine Barrens (See subsection (a) of this section).
- 7. Class TW-1:
 - i. All tidal waters of Shark River and tributaries from head of saline influence downstream to surf waters.
 - ii. All tidal waters of Jumping Brook and tributaries downstream from head of saline influence downstream to Shark River and to surf waters.
 - iii. All tidal waters of the Manasquan River and tributaries downstream from two miles east of the Garden State Parkway to surf waters.
 - iv. All tidal waters situated wholly within Port Republic Fish and Wildlife Management Area.
 - v. All tidal waters situated wholly within Brigantine Wildlife Refuge.
 - vi. 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.

* Potable Water Supply

8. Class TW-2:

None

9. Class TW-3:

None

10. Class CW-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.

11. Class CW-2:

Ocean waters not included under Class CW-1 out to the three mile limit.

(c) Delaware River Basin Classifications are:

Note: Classifications of the Delaware River and Delaware Bay are contained in section 9 of this subchapter.

1. Class FW-1: Note: (All boundaries of State or National lands referred to in i. through x as they existed at the time of adoption of these classifications).

(Clove Brook Watershed)

i. High Point State Park

(1) The second and third northerly tributaries to Clove Brook, tributaries to Steenykill Lake, and tributaries downstream of Steenykill Lake to their confluence with Clove Brook or the High Point State Park boundaries which originate in High Point State Park.

(2) The northerly tributaries to Mill Brook due west of Steenykill Lake within the High Point State Park boundaries.*

(Shimers Brook Watershed)

ii. High Point State Park

All that portion and tributaries to Shimers Brook and tributaries within the High Point State Park boundaries.*

* Potable Water Supply

(Flat Brook Watershed)

iii. High Point
State Park and
Stokes State
Forest

All surface waters of the Flatbrook
Drainage within the boundaries of
High Point State Park and Stokes
State Forest except 1-9 below,
which are classified elsewhere.*

- (1) Saw Mill Pond and Big Flat Brook downstream.
- (2) Mashipacong Pond and its outlet stream
(Parker Brook) to its confluence with the
Big Flat Brook.
- (3) Lake Wapalanne and its outlet stream to
its confluence with the Big Flat Brook.
- (4) Lake Ocquittunk and waters connecting it with the
Big Flat Brook.
- (5) Stony Lake and its outlet stream (Stony Brook)
downstream to its confluence with the Big
Flat Brook.
- (6) Kittatinny Lake, that portion of its inlet
stream outside the Stokes State Forest boundaries,
its outlet stream including the Shotwell Camping
Area tributary to its confluence with the Big
Flat Brook.
- (7) Deer Lake, its outlet stream to Lake Ashroe,
Lake Ashroe and portions of its tributaries outside
the Stokes State Forest boundaries, and its outlet
stream to its confluence with the Big Flat Brook.
- (8) Lake Shawanni and its outlet stream to its
confluence with the Big Flat Brook.
- (9) Crigger Brook and tributary to its confluence
with the Big Flat Brook.

(Flat Brook Watershed)

iv. Fish and Game
Tracts

- (1) Tributary to the Little
Flat Brook originating north
of the Bevans-Layton Road
downstream to the first pond
adjacent to the Fish and Game
headquarters building.*

*Potable Water Supply

- (2) Two tributaries to the Big Flat Brook originating along Struble Road in Stokes State Forest downstream to their confluence with the Big Flat Brook on Fish and Game property boundaries.*

v. Worthington Tract

(Dunnfield Creek Watershed)

Sunfish pond, its outlet stream to the Delaware River, and all unnamed waters situated wholly within the Worthington Tract Boundaries.

(Pequest Watershed)

vi. Wittingham Tract

Northwesterly tributaries to the Pequest including Big Spring within the Wittingham Tract (southwest of Springdale) boundaries from their origin to their confluence with the Pequest River.*

vii. Johnsonburg Tract

Mud Pond and outlet stream down to the Erie-Lakawanna Railroad trestle north of Johnsonburg.*

viii. Allamuchy State Park

All tributaries located wholly within the Allamuchy State Park and which flow into Allamuchy Pond.*

(Musconetcong Watershed)

ix. Allamuchy State Park

All those tributaries to Deer Park Pond and to its outlet stream located wholly within Allamuchy State Park.*

(Steele Run Watershed)

x. Washington Crossing State Park

That portion of Steele Run in Washington Crossing State Park, located upstream of New Jersey Route 29.*

(Crosswicks Creek Watershed)

xi. Colliers Mills Fish & Game Tract

All tributaries to Lahaway Creek originating in the Colliers Mills Tract NNE of Archers Corner from their origin down to Lahaway Creek.*

* Potable Water Supply

(Rancocas Creek Watershed)

xii. Lebanon State Forest

- (1) Deer Park Branch and tributaries near Buckingham downstream to its confluence with Pole Bridge Branch.*
- (2) Tributaries to the South Branch of Mount Misery Brook situated wholly within Lebanon State Forest boundaries.*
- (3) Cooper Branch and tributaries downstream to Pakim Pond, and tributaries to Cooper Branch downstream of Pakim Pond situated wholly within the boundaries of Lebanon State Forest.*
- (4) Shinns Branch and tributaries situated wholly within the Lebanon State Forest boundaries.*
- (5) Jade Run situated within the Lebanon State Forest boundaries.*
- (6) MacDonald's Branch and tributaries situated within the Lebanon State Forest boundaries.*

(Rancocas Creek Watershed)

xiii. Pasadena Fish & Game Tract

The two easterly branches of the South Branch of Mount Misery Brook situated wholly within the Pasadena Tract boundaries.*

(Maurice River Watershed)

xiv. Glassboro Fish & Game Tract

That tributary to the Branch of Little East Run having its confluence just south of Stangor Avenue. First and second easterly tributaries to Little East Run north of Academy Avenue.

xv. Millville Fish & Game Tract

- (1) Joshua and Pine Branches of Buckshutem Creek to their confluences with Buckshutem Creek.
- (2) Gravelly Run downstream to the Millville Fish and Game Tract boundaries.

* Potable Water Supply

- xvi. Peaselee Fish & Game Tract
- (1) Middle Branch of Muskee Creek from its origin to the Peaselee Tract boundaries.
 - (2) Cedar Branch of the Manumuski River from its origin to the Peaselee Tract boundaries.
 - (3) Those portions of tributaries to Slab Branch situated wholly within the Peaselee Fish and Game Tract boundaries.
- (Nantuxent Creek Watershed)
- xvii. Millville Fish & Game Tract
- Cedar and Mile Branches to Shaw's Mill Pond.
- (Dividing Creek Watershed)
- xviii. Millville Fish & Game Tract
- (1) Those tributaries to Cedar Creek originating and situated wholly within the Fish and Game Millville Tract boundaries.
 - (2) Those portions of tributaries to Dividing Creek situated wholly within the Millville Fish and Game Tract boundaries north of Whitehead Station.
- (Middle Marsh Creek Watershed)
- xix. Dix Fish & Game Tract
- All fresh waters arising in and situated wholly within the Dix Tract boundaries.
- (West Creek Watershed)
- xx. Belleplain State Forest
- (1) The portion of that tributary to West Creek originating about 0.9 miles southeast from Hoffman's Mill and situated wholly within the Belleplain State Forest boundaries.
 - (2) Eastern Branch of the easterly tributary to Pickle Factory Pond from its origin to its confluence with the western branch.

- (3) Those tributaries to West Creek which originate approximately 0.5 miles upstream of Hoffman's Mill and which are located wholly within the Belleplaine State Forest boundaries.
- (East Creek Watershed)
- xxi. Belleplaine State Forest
- (1) All tributaries to Lake Nummi from their origin downstream to Lake Nummi.
- (2) Those two tributaries to Savages Run and portions thereof downstream of Lake Nummi that are situated wholly within the Belleplaine State Forest boundaries.
- (3) A stream and tributaries thereto originating just south of East Creek Mill Road, NNE of Eldora 1.2 + miles and situated wholly within the Belleplaine State Forest boundaries.
- xxii. Delaware Water Gap National Recreation Area (DWGNRA)
- (1) Van Campen's Brook above the Village of Millbrook.*
- (2) All tributaries to the Flatbrook running from the Kittatiny Ridge and situated wholly within the proposed DWGNRA boundaries.*
- (3) Rundle Brook upstream of Flatbrook Road.*
- (4) Smith Ferry Brook.*
- (5) Donkey's Corner Brook*
- (6) Sambo Island Brook and Pond.*
- (7) Coppermine Brook in Pahaquarry.*
- (8) Dunnfield Creek to Route I-80.*

2. Class FW- Central Pine Barrens (See subsection (a) of this section).

* Potable Water Supply

3. Class FW-2 Trout Production:

(Delaware River Tributaries (Sussex County))

- i. Clove Brook (Montague) and tributaries entire length except those segments designated FW-1.*
- ii. Sandyston Creek (Sandyston) and tributaries entire length.*
- iii. Shimers Brook (Millville) and tributaries entire length, except those segments designated FW-1*.
- iv. White Brook (Montague) and tributaries entire length.*

(Delaware River Tributaries (Warren County))

- v. Buckhorn Creek (Hutchinson) and tributaries entire length.*
- vi. Dunnfield Creek (Del. Water Gap) and tributaries except those segments designated FW-1.*
- vii. Lomisons Glen Brook (Lomisons Glen) and tributaries entire length.*
- viii. Van Campens Brook (Millbrook) and tributaries entire length except those segments designated FW-1.*

(Flat Brook Watershed)

- ix. Beer's Creek (Shaytown) and tributaries entire length.*
- x. Big Flat Brook and tributaries from confluence with Parker Brook downstream to and including Blewitt Tract, except those designated FW-1, FW-2 Trout Maintenance, and FW-2 Nontrout.*
- xi. Parker Brook (Montague) and tributaries entire length, except those segments designated FW-1.*
- xii. Shawanni Creek (Walpack) and tributaries entire length.*
- xiii. Stony Brook (Stokes S.F.) and tributaries entire length.*
- xiv. Tillman Brook (Walpack) and tributaries entire length.*
- xv. Tuttles Corner Brook (Tuttles Corner) and tributaries entire length.*

(Paulins Kill River Watershed)

- xvi. Paulins Kill East Branch and tributaries from Limecrest Quarry downstream to confluence with Paulins Kill West Branch, except those designated FW-2 Trout Maintenance.*

* Potable Water Supply

- xvii. Paulins Kill tributary (Emmens Station) and tributaries entire length.*
- xviii. Paulins Kill tributary (Stillwater Station) and tributaries entire length.*
- xix. Yard's Creek and tributaries entire length.*
- xx. Trout Brook (Middleville) and tributaries downstream to confluence with Pond Brook.*

(Pequest River Watershed)

- xxi. Bear Brook (Johnsonburg) and tributaries entire length.*
- xxii. Furnace Brook (Oxford) and tributaries upstream of railroad bridge at Oxford.*
- xxiii. Independence Creek (Alphano) and tributaries upstream of Alphano Road.*
- xxiv. Trout Brook (Tranquility) and tributaries except those designated FW-2 Nontrout.*

(Pohatcong Creek Watershed)

- xxv. Brass Castle Creek (Brass Castle) and tributaries entire length.*
- xxvi. Merrill Brook (Harmony) and tributaries entire length.*
- xxvii. Mill Brook (Broadway) and tributaries entire length.*
- xxviii. Pohatcong Creek and tributaries upstream from Karrsville Bridge.*

(Musconetcong River Watershed)

- xxix. Beatty's Brook (Penwell) and tributaries entire length.*
- xxx. Hances Brook (Rockport) and tributaries entire length.*
- xxxi. Musconetcong River (trib.) (Changewater) and tributaries entire length.*
- xxxii. Musconetcong River (trib.) (Franklin) and tributaries entire length.*
- xxxiii. Musconetcong River (trib.) (Port Murray) and tributaries entire length.*
- xxxiv. Schooley's Mt. Brook (Schooley's Mt.) and tributaries entire length.*

* Potable Water Supply

- xxxv. Stephensburg Creek (Stephensburg) and tributaries entire length.*
- xxxvi. West Portal Brook (West Portal) and tributaries entire length.*
(Delaware River Tributaries (Hunterdon County))
- xxxvii. Delaware River tributary (Holland) and tributaries entire length.*
- xxxviii. Little York Brook (Little York) and tributaries entire length.*
- xxxix. Spring Mills Brook (Spring Mills) and tributaries upstream of Route 519 bridge, Spring Mills.*
- 4. Class FW-2 Trout Maintenance:
(Delaware River Tributaries (Sussex County))
 - i. Lake Marcia.
(Flat Brook Watershed)
 - ii. Flat Brook and tributaries upstream from Delaware River except those segments designated FW-1, FW-2 Trout Production, and FW-2 Nontrout.*
 - iii. Stony Lake (Stokes State Forest).
(Paulins Kill Watershed)
 - iv. Blair Creek (Hardwick Center) and tributaries upstream from Paulins Kill River to, but not including, Bass Lake.*
 - v. Alms House Brook (Andover) and tributaries upstream from, but not including, County Farm Pond, except those segments designated FW-2 Nontrout.*
 - vi. Culver's Brook (Frankford), including Culver's Lake, and tributaries entire length.*
 - vii. Jacksonburg Creek (Blairstown) and tributaries entire length.*
 - viii. Paulina Creek (Paulina) and tributaries entire length.*
 - ix. Paulins Kill and tributaries from confluence of East Branch and West Branch downstream to Route 15 (Bench Mark 507) and from Paulins Kill Lake dam downstream to Delaware River except those segments designated FW-1, FW-2 Trout Production, and FW-2 Nontrout.*

* Potable Water Supply

- x. Sparta Junction Brook (Sparta Junction) and tributaries entire length.
- xi. Swartswood Creek (Swartswood) and tributaries, upstream of and including Swartswood Lake.*
(Pequest River Watershed)
- xii. Andover Junction Brook (Andover) and tributaries except those segments designated FW-2 Nontrout.*
- xiii. Bear Creek (Johnsonburg) and tributaries except those segments designated FW-1, FW-2 Trout Production and FW-2 Nontrout.*
- xiv. Trout Brook (Hope), entire length.*
- xv. Brookaloo Swamp (Hope) and tributaries entire length.*
- xvi. Honey Run (Hope) and tributaries, entire length.*
- xvii. Mountain Lake Brook (Mt. Lake) and tributaries, upstream of and including Mountain Lake, entire length.*
- xviii. New Wawayanda Lake (Andover).*
- xix. Gardners Lake (Andover Twp.)*
- xx. Lake Illif (Andover Twp.)*
- xxi. Pequest River and tributaries from source downstream to Tranquility Bridge and from Townsbury bridge to Delaware River, except those segments designated FW-1, FW-2 Trout Production, and FW-2 Nontrout.*
- xxii. Silver Lake.
- xxiii. Tar Hill Brook (Lake Lenape) and tributaries upstream of Lake Lenape.*
(Delaware River Tributaries (Warren County))
- xxiv. Delawanna Creek (Delaware) and tributaries entire length.*
- xxv. Lopatcong Creek (Harkers Hollow) from source downstream to Route 22 bridge.*
- xxvi. Pophandusing Creek (Belvidere) and tributaries entire length.*
(Pohatcong Creek Watershed)

* Potable Water Supply

- xxvii. Pohatcong Creek and tributaries from Karrsville Bridge to Delaware River, except those segments designated FW-2 Trout Production.*
(Musconetcong River Watershed)
- xxviii. Hatchery Brook (Hackettstown) and tributaries entire length.*
- xxix. Lake Hopatcong and tributaries entire length.*
- xxx. Lubbers Run (Byram) and tributaries entire length.*
- xxxi. Mine Brook (Mount Olive) and tributaries upstream of upper Mine Brook Reservoir.*
- xxxii. Musconetcong River and tributaries from Lake Hopatcong downstream to Delaware River except those segments designated FW-2 Trout Production and FW-2 Nontrout.*
- xxxiii. Wills Brook (Mount Olive) and tributaries entire length.*
- xxxiv. Cranberry Lake (Byram).
(Delaware River Tributaries (Hunterdon County))
- xxxv. Alexauken Creek (Lambertville) and tributaries entire length.*
- xxxvi. Hakiwokake Creek (Milford) and tributaries entire length, except those segments classified FW-2 Trout Production.*
- xxxvii. Hakiwokake Creek (trib.) (Wydner) and tributaries entire length.
- xxxviii. Hariwokake Creek (Frenchtown) and tributaries from Route 519 bridge downstream to Delaware River.*
- xxxix. Lockatong Creek (Raven Rock) and tributaries from Idell bridge downstream to Delaware River.*
- xL. Plum Brook (Sergeantsville) and tributaries entire length.*
- xLi. Spring Mills Brook (Milford) and tributaries from Route 519 bridge at Spring Mill downstream to confluence with Hakiwokake Creek.*
- xLii. Wichecheoke Creek (Stockton) and tributaries from confluence with Plum Brook downstream to Delaware River.*
(Delaware River Tributaries (Mercer County))
- xLiii. Moore Creek (Hopewell) and tributaries entire length.*

* Potable Water Supply

(Assunpink Creek Watershed)

xLiv. Assunpink Creek (Lawrence) and tributaries from Quaker Bridge downstream to but not including Whitehead Mill Pond, except those designated FW-2 Nontrout.*

5. Class FW-2 Nontrout:

i. The Delaware and Raritan Canal and tributaries, except those segments designated FW-2 Trout Maintenance.*

ii. All tributaries to main stem, Delaware River, upstream from and including Big Timber Creek except those designated as FW-1, FW-Central Pine Barrens, FW-2 Trout Production and FW-2 Trout Maintenance.*

iii. Laurel (Quinton) Lake and Elkinton Mill Pond, tributary to Alloways Creek upstream from their respective dams.*

iv. All streams in Cape May County upstream from head of tide or tidal barriers thereon.*

v. All fresh nontidal and fresh tidal tributaries to main stem, Delaware River, south of Big Timber Creek to Cape May County.

6. Class TW-1:

Tidal tributaries to main stem, Delaware River and Delaware Bay south from and including Oldman's Creek.

7. Class TW-2:

Tidal tributaries to main stem, Delaware River, south of Big Timber Creek and north of Oldman's Creek.

8. Class TW-3:

None

(d) Hackensack River Basin Classifications

1. Class FW-1:

None

2. Class FW-2 Trout Production:

None

3. Class FW-2 Trout Maintenance:

None

* Potable Water Supply

4. Class FW-2 Nontrout:
 - i. Hackensack River Basin above Oradell Dam.*
 - ii. Overpeck Creek and tributaries to tide dam and fresh nontidal and fresh tidal portions of tributaries to Hackensack River downstream from Oradell Dam.
 5. Class TW-1:

Hackensack River and all tidal portions of tributaries from Oradell Dam to confluence with Overpeck Creek.
 6. Class TW-2:
 - i. Overpeck Creek and tidal tributaries from tide dam to confluence with Hackensack River.
 - ii. Berry's Creek and all tidal tributaries to Hackensack River below its confluence with Overpeck Creek.
 - iii. Hackensack River main stem from Overpeck Creek to the confluence with Berry's Creek.
 7. Class TW-3:

Hackensack River main stem downstream of Berry's Creek.
- (e) Hudson River, Kill Van Kull, Arthur Kill Basin Classifications
1. Class FW-1:

None
 2. Class FW-2 Trout Production:

None
 3. Class FW-2 Trout Maintenance:

None
 4. Class FW-2 Nontrout:
 - i. Rahway River and tributaries above the Pennsylvania Railroad bridge.*
 - ii. Elizabeth River and tributaries above Broad Street Bridge, Elizabeth.
 - iii. Morses Creek and tributaries.
 - iv. Piles Creek and tributaries.
 - v. South Branch Rahway River to Hazelwood Avenue, Rahway.
 - vi. Smith Creek and tributaries.

* Potable Water Supply

- vii. Woodbridge Creek and tributaries.
 - viii. All other fresh nontidal and fresh tidal waters not mentioned in this subsection.
- 5. Class TW-1:
 - None
 - 6. Class TW-2:
 - i. 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.
 - ii. 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).
 - iii. Tidal portion of Rahway River and tidal portions of the tributaries from Route 1-9 crossing upstream to the Pennsylvania Railroad bridge.
 - iv. Tidal portion of South Branch Rahway River to head of tide (Hazelwood Avenue, Rahway).
 - v. All other tidal waters not mentioned herein.
 - 7. Class TW-3:
 - i. Kill Van Kull westerly from a north-south line connecting Constable Hook (Bayonne, New Jersey) to St. George (Staten Island, New York).
 - ii. Arthur Kill from an east-west line connecting Elizabethport (Elizabeth) with Bergen Point (Bayonne) to the Outerbridge Crossing.
 - iii. Tidal portion of Elizabeth River to Broad Street Bridge (Elizabeth).
 - iv. Tidal portion of Piles Creek.
 - v. Tidal portion of Rahway River from its mouth at the Arthur Kill to Route 1-9 crossing.
 - vi. Tidal portion of Smith Creek.
 - vii. Tidal portion of Woodbridge Creek.
 - viii. Tidal portion of Morses Creek.

(f) Passaic River Basin Including Newark Bay Classifications

1. Class FW-1:

(Wanaque Watershed)

i. A.S. Hewitt
State Forest

- (1) Cooley Brook, tributaries and Surprise Lake situated wholly within the Hewitt State Forest boundaries.
- (2) Green Brook, tributaries and West Pond situated wholly within the Hewitt State Forest boundaries.

(Pequannock Watershed)

ii. City of Newark
Holdings

- (1) Cedar Pond, Hanks Pond and all tributaries thereto.
- (2) Tributary to Pequannock River at Green Pond Junction.
- (3) Tributary to the Pequannock River joining the main stem 3500' + southeast of the Sussex-Passaic County line, in the vicinity of Jefferson.
- (4) Pacack Brook and tributaries thereto upstream of Canistear Reservoir situated wholly within the boundaries of Newark Watershed.
- (5) Cherry Ridge Brook and tributaries thereto north of Canistear Reservoir situated wholly within Wawayanda State Park and Newark Watershed boundaries.
- (6) The southern branch of the easterly tributary to Canistear Reservoir.
- (7) Pequannock River and tributaries thereto upstream from the confluence with Pacack Brook.
- (8) Northwestern tributary to Oak Ridge Reservoir.
- (9) Westerly tributary to Lake Stockholm Brook situated wholly within the Newark Watershed boundaries.

(10) Lud-Day Brook downstream to its confluence with a tributary from Camp Garfield.

(11) Brook between Hamburg Turnpike and Williamsville-Stockholm Road, downstream to its confluence with Lake Stockholm Brook, north of Route 23.

(Rockaway Watershed)

- iii. Berkshire Valley Fish & Game Tract Stephens Brook north of the Berkshire Valley Tract boundaries.
- 2. Class FW-2 Trout Production:
 - i. Bear Swamp Brook (Mahwah) and tributaries entire length.
 - ii. Stag Clove Brook (Mahwah) and tributaries entire length.
 - iii. Clinton Brook (Newfoundland) and tributaries from Clinton Reservoir Dam to Pequannock River.
 - iv. Kanouse Brook (Newfoundland) and tributaries entire length.*
 - v. Cooley Brook (West Milford) and tributaries except those segments classified FW-1.
 - vi. Green Brook (West Milford) and tributaries entire length, except those segments classified FW-1.
 - vii. Harmony Brook (Brookside) and tributaries entire length.
 - viii. Hewitt Brook (West Milford) and tributaries entire length.
 - ix. Jackson Brook (Mine Hill) and tributaries upstream of Hurd Park Pond (Dover).
 - x. Pequannock River (trib.) (Copperas Mtn.) and tributaries entire length.
 - xi. Saddle River and tributaries from State line downstream to Bergen County Rt. 2 bridge.
 - xii. West Brook (West Milford) and tributaries entire length.
 - xiii. Whippany River (Brookside) and tributaries from source downstream to Whitehead Rd. Bridge.

* Potable Water Supply

- xiv. Whippany River (trib.) (Mendham) and tributaries entire length.
- xv. Whippany River (trib.) (Brookside) and tributaries entire length.
- xvi. Mill Brook (Randolph) and tributaries upstream of Route 10.
- xvii. Pequannock River (Vernon) and tributaries from source downstream to confluence with Pacack Brook, except those segments designated FW-1.
- 3. Class FW-2 Trout Maintenance:
 - i. Hibernia Brook (Hibernia) and tributaries entire length.
 - ii. Indian Grove Brook (Somersetin) entire length.
 - iii. Green Pond (Rockaway Twp.)
 - iv. Jersey City Reservoir (Boonton)
 - v. Macopin Brook (Newfoundland) downstream from Echo Lake Dam.
 - vi. Passaic River and tributaries from source downstream to Route 202.
 - vii. Pequannock River and tributaries including Charlottesburg and Oak Ridge Reservoirs, except those classified as FW-1, FW-2 Trout Production, and FW-2 Nontrout from confluence with Pacack Brook downstream to Hamburg Turnpike (Bench Mark 257) in Bloomingdale.
 - viii. Post Brook (Bloomingdale) and tributaries from source downstream to Wanaque Reservoir.
 - ix. Primrose Brook (Harding) and tributaries from source downstream to Rt. 202 bridge.
 - x. Ringwood Brook (Ringwood) entire length.
 - xi. Russia Brook (Milton) and tributaries from Lake Hartung dam downstream to but not including Lake Swannanoa.
 - xii. Saddle River and tributaries from Bergen County Rt. 2 bridge downstream to Allendale Road bridge.
 - xiii. Sheppard Lake and tributaries entire length.

* Potable Water Supply

- xiv. Wanaque River and tributaries from Greenwood Lake to Wanaque Reservoir, including Greenwood Lake, Wanaque Reservoir, and their tributaries except those segments classified as FW-1, FW-2 Trout Production, and FW-2 Nontrout.*
- xv. Clinton Reservoir (West Milford) and tributaries, except those waters classified FW-1 and FW-2 Nontrout.
- xvi. Canistear Reservoir and tributaries, except those waters classified FW-1 and FW-2 Nontrout.
- xvii. Split Rock Reservoir (Rockaway Twp.)
- 4. Class FW-2 Nontrout:
 - i. Main stem and all tributaries to the Passaic River above Passaic Valley Water Commission intake at Little Falls, except those waters designated as FW-1, FW-2 Trout Production, and FW-2 Trout Maintenance.*
 - ii. Saddle River and tributaries and Ho-Ho-Kus Brook and tributaries upstream from the confluence of Saddle River and Ho-Ho-Kus Brook in the vicinity of the intake of the Hackensack Water Company, except those designated FW-2 Trout Production and FW-2 Trout Maintenance.*
 - iii. Saddle River from its confluence with Ho-Ho-Kus Brook downstream to head of saline influence, except those waters designated as FW-2 Trout Production and FW-2 Trout Maintenance.
 - iv. Haledon Reservoir and tributaries thereto.*
 - v. Main stem and tributaries of Passaic River between Dundee Lake Dam and Passaic Valley Water Commission intake at the Little Falls.
 - vi. Fresh nontidal and fresh tidal tributaries to the Passaic River, below Dundee Lake Dam.
 - vii. Fresh nontidal and fresh tidal portions of Bound Creek and its tributaries.
- 5. Class TW-1:
 - None
- 6. Class TW-2:
 - i. Passaic River upstream from confluence with Second River to head of tide at Dundee Dam.

* Potable Water Supply

- ii. Tidal portion of Saddle River and all other tidal portions of tributaries to the Passaic River.
- iii. Tidal portion of Bound Creek.
- iv. All other tidal waters not mentioned herein.
- 7. Class TW-3:
 - i. 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.
 - ii. Main stem of Passaic River from its mouth to point of entry of the Second River.
- (g) Raritan River Basin Including Raritan Bay - Sandy Hook Bay Classification
 - 1. Class FW-1:
 - None
 - 2. Class FW-2 Trout Production:
 - i. Black Brook (Polktown) and tributaries entire length.
 - ii. Burnett Brook (Ralston) and tributaries entire length.
 - iii. Capoolong Creek (Sydney) and tributaries entire length.
 - iv. Cold Brook (Oldwick) and tributaries entire length.
 - v. Dawson's Brook (Ironia) and tributaries entire length.
 - vi. Electric Brook (Schooley's Mt.) and tributaries from source downstream to, but not including, Camp Washington Pond.
 - vii. Flander's Brook (Flanders) and tributaries entire length.
 - viii. Frog Hollow Brook (Califon) and tributaries entire length.
 - ix. Gladstone Brook (St. Bernards School) and tributaries entire length.
 - x. Hacklebarney Brook (Hacklebarney) and tributaries entire length.
 - xi. Hickory Run (Califon) and tributaries entire length.
 - xii. Hollow Book (Pottersville) and tributaries entire length.

- xiii. India Brook and tributaries entire length.
- xiv. Lamington (Black) River and tributaries from confluence with Rhinehart Brook downstream to Camp Brady Bridge, Bedminster.
- xv. Ledgewood Brook (Ledgewood) and tributaries entire length.
- xvi. Little Brook (Califon) and tributaries entire length.
- xvii. Lomerson Brook (Pottersville) and tributaries entire length.
- xviii. Mulhockaway Creek (Pattenburg) and tributaries entire length.
- xix. Norton Brook (Norton) and tributaries entire length.
- xx. Peapack Brook (Gladstone) and tributaries entire length.
- xxi. Rockaway Creek (N. Br.) and tributaries from source downstream to Rt. 523 bridge.
- xxii. Stony Brook (Washington) and tributaries entire length.
- xxiii. Sun Valley Brook (Mt. Olive) and tributaries entire length.
- xxiv. Trout Brook (Hacklebarney) and tributaries entire length.
- xxv. Turkey Brook (Mt. Olive) and tributaries entire length.
- xxvi. Willoughby Brook (Buffalo Hollow) and tributaries entire length.
- xxvii. Spruce Run Creek (Glen Gardner) and tributaries downstream to but not including Spruce Run Reservoir.
- xxviii. Raritan River (S. Br.) and tributaries between the confluence with Turkey Brook and the confluence with Electric Brook, except those designated FW-2 Nontrout.
- xxix. Raritan River (North Branch) and tributaries from source downstream to, but not including Ravine Lake, except those designated FW-2 Trout Maintenance.
- xxx. Oakdale Creek (Chester) and tributaries entire length.
- xxxi. Rhinehart Brook (Hacklebarney) and tributaries entire length.
- 3. Class FW-2 Trout Maintenance:
 - i. Beaver Brook (Cokesbury) and tributaries entire length.
 - ii. Black (Lamington) River and tributaries from Rt. 206 to confluence with Rhinehart Brook; Camp Brady Bridge to Rt. 523, except those designated FW-2 Trout Production.

- iii. Green Brook (Watchung) and tributaries from source downstream to Rt. 22 bridge, except those designated FW-2 Nontrout.
- iv. McVickers Brook (Mendham) and tributaries entire length.
- v. Middle Brook (E. Br.) (Springdale) and tributaries entire length.
- vi. Prescott Brook (Stanton Station) and tributaries entire length.*
- vii. Raritan River (N. Br.) and tributaries from Ravine Lake Dam downstream to Rt. 512 bridge.*
- viii. Raritan River (S. Br.) and tributaries from confluence with Electric Brook downstream to downstream end of Packers Island, except those designated FW-2 Trout Production and FW-2 Nontrout.*
- ix. Rockaway Creek (N. Br.) (Whitehouse) and tributaries from Rt. 523 bridge downstream to confluence with Rockaway Creek (S Br.)*
- x. Rockaway Creek (S. Br.) (Whitehouse) and tributaries entire length.*
- xi. Round Valley Reservoir.*
- xii. Spruce Run and tributaries from and including Spruce Run Reservoir downstream to the Raritan River (S. Br.) except those designated FW-2 Trout Production.*

(Navesink Watershed)

- xiii. Hockhocks Creek and tributaries entire length.
- xiv. Pine Brook (Cooks Mills) and tributaries entire length.
- xv. Ramanassen (Hop) Brook (Holmdel) and tributaries, entire length.
- 4. Class FW-2 Nontrout:
 - i. The Delaware and Raritan Canal to the Deep Lock at New Brunswick.*
 - ii. The Raritan River and Millstone River and all tributaries above the intakes of the Elizabethtown Water Company at their confluence except those designated FW-2 Trout Production and FW-2 Trout Maintenance.*

* Potable Water Supply

- iii. The Middle Brook and tributaries above the intake of the Bound Brook Water Company downstream from the confluence of the West Branch Middle Brook and East Branch Middle Brook, except those designated FW-2 Trout Maintenance.*
- iv. The South River and tributaries above the intake of the Sayreville Water Department.*
- v. Lawrence Brook and tributaries above the intake of the New Brunswick Water Department at Weston's Mill Dam.*
- vi. The Swimming River and tributaries above the intake of the Monmouth Consolidated Water Company at the Swimming River Reservoir Dam, except those classified as FW-2 Trout Maintenance.*
- vii. The main stem of the Raritan River and all tributaries below the intake of the Elizabethtown Water Company to the Fieldsville Dam, except those designated FW-2 Trout Maintenance.
- viii. All other fresh nontidal and fresh tidal portions of tributaries to the Raritan River below Fieldsville Dam and to Raritan Bay - Sandy Hook Bay.
- ix. Tennent Brook and tributaries above the Tennent Pond Dam.*

5. Class TW-1:

- i. The mainstem 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.
- ii. Raritan Bay - Sandy Hook Bay and all tidal tributaries exclusive of the Arthur Kill.

6. Class TW-2:

None

7. Class TW-3:

None

(h) Wallkill River Basin Classification

1. Class FW-1:

(Lake Lookout Brook Watershed)

* Potable Water Supply

- i. Newark City Holdings, and Wawayanda Tract

Lake Lookout Brook and tributaries from its headwaters in the Newark City Holdings downstream through the State-owned Wawayanda Tract to its confluence with the outlet stream from Lake Wawayanda.*

(Laurel Pond Watershed)
- ii. Wawayanda Tract

Laurel Pond, including its outlet stream and tributaries down to the outlet stream from Lake Wawayanda.

(Sand Hills Brook Watershed)
- iii. Hamburg Mountain Tract

The upstream portion of Sand Hills Brook situated wholly within the Hamburg Mountain Tract boundaries.

(Black Creek Watershed)
- iv. Hamburg Mountain Tract

All those portions of three tributaries to Black Creek originating in the Hamburg Mountain Tract from their origin downstream to the tract boundaries.

(Franklin Pond Creek Watershed)
- v. Hamburg Mountain Tract

The first tributary to Franklin Pond Creek just south of Hamburg Mountain flowing toward the Wallkill River and situated wholly within the Hamburg Mountain Tract.

(Hamburg Creek Watershed)
- vi. Hamburg Mountain Tract

The third tributary just southwest of Hamburg Mountain flowing toward the Wallkill River and situated wholly within the Hamburg Mountain Tract.

(Lake Rutherford Watershed)
- vii. Sussex Borough Water Supply

Lake Rutherford northwest of Colesville.*

(Clove River Watershed)

* Potable Water Supply

viii. High Point State Park

Those portions of the two northernmost tributaries to Clove River situated wholly within the High Point State Park boundaries immediately east of Steenykill Lake.

(Rutgers Creek Watershed)

ix. High Point State Park

The Cedar Swamp headwaters of the tributary to Rutgers Creek situated wholly within the High Point State Park boundaries just south of the New Jersey-New York line.

2. Class FW-2 Trout Production:

Black Creek (trib.) (McAfee) and tributaries entire length.

3. Class FW-2 Trout Maintenance:

- i. Black Creek (McAfee) and tributaries from source downstream to Route 94 bridge, except those segments designated FW-1.
- ii. Glenwood Brook (Glenwood) and tributaries from outlet of Glenwood Lake downstream to State line.
- iii. Lounsbury Hollow Brook (Vernon Valley) and tributaries from outlet of Glenwood Lake downstream to Pochuck Creek.
- iv. Wawayanda Lake.
- v. Clove River (Wantage) and tributaries from source downstream to, but not including, Clove Acres Lake, except those designated FW-1.
- vi. Clove Creek (Colesville) and tributaries entire length.
- vii. Franklin Pond Creek (Franklin) and tributaries entire length, except those segments designated FW-1.
- viii. Hamburg Creek (Hamburg Mts.) and tributaries upstream from Route 517 bridge at Rudeville.
- ix. Papakating Creek (Frankford) and tributaries from source downstream to Route 629 bridge.
- x. Sparta Glen Brook (Sparta) and tributaries entire length.
- xi. Wallkill River and tributaries from confluence with Sprata Glen Brook downstream to Rt. 23 bridge, except those segments designated FW-2 Nontrout.
- xii. Willow (Quarryville) Brook (Wantage) and tributaries entire length.

4. Class FW-2 Nontrout:

- i. Wallkill River and tributaries downstream from Rt. 23 bridge to State line, except those segments designated FW-2 Trout Maintenance.
- ii. Branch of Pochuck Creek, supply of the Highland Lakes Improvement Company.*
- iii. All other segments of the Wallkill River Basin except those designated as FW-1, FW-2 Trout Production and FW-2 Trout Maintenance.

Note: See, "Classification of New Jersey Waters as Related to Their Suitability for Trout" Division of Fish, Game and Wildlife, for a more detailed listing of Trout Waters subclassifications and those segments "Pending Reclassification".

* Potable Water Supply

SWQS:BG:ss/1:H

SUBCHAPTER 5. TREATMENT OF WASTEWATER DISCHARGED INTO SURFACE
WATERS OF THE STATE

7:9-5.1 Scope of Rules

- (a) Unless otherwise provided by rule or statute, the following shall constitute the rules of the Department of Environmental Protection concerning matters of policy with respect to the protection and enhancement of surface waters of the State, disinfection, wasteload allocations, bioassay procedures, minimum treatment requirements, procedures for establishing water quality based effluent limitations, modification of water quality based effluent limitations, and procedures for reclassifying specific segments for less restrictive uses pursuant to the New Jersey Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq. and the Water Quality Planning Act, N.J.S.A. 58:11A-1 et seq.
- (b) This subchapter shall apply to the establishment of effluent limitations and other requirements applicable to discharge into the surface waters of the State.

7:9-5.2 Construction

These rules shall be liberally construed to permit the department and its various divisions to discharge its statutory functions.

7:9-5.3 Definitions

The following words and terms, when used in this subchapter, shall have the following meanings unless the context clearly indicates otherwise.

"Acceptable arrangement" means any combination of alternative configurations and levels of treatment under which water quality standards will be maintained.

"Alternative configuration" means the alternative juxtaposition of the number of point-source dischargers and discharger locations within a segment of study area.

"Alternative arrangement" means any combination of alternative configurations and levels of treatment.

"Ambient water quality" means the existing biological, chemical, and physical characteristics of a water body segment.

"Application factor" means a number applied to an acute toxicity test to estimate a concentration of a substance which protects all life stages of the test organism in

waters of varying quality, as well as to protect associated organisms within the aquatic environment that have not been tested and that may be more sensitive to the test constituent. In the instance where maximum acceptable toxicant concentration (MATC) has been independently determined, an application factor (AF) will equal the quotient of the MATC divided by the incipient LC50, when the incipient LC50 is known. When the incipient LC50 is not known, the AF will equal the quotient of the 96 hour LC50. (AF=MATC/96 hr. LC50).

"Bioassay" means a determination of the concentration of dose of a given material necessary to affect a test organism under stated conditions.

"BOD" means biochemical oxygen demand.

"Calculable Changes" means changes to representative (as determined by the Department) water quality data which may be demonstrated by any acceptable mathematical predictive tool.

"CBOD" means carbonaceous biochemical oxygen demand.

"COD" means chemical oxygen demand.

"Commissioner" means the Commissioner of Environmental Protection.

"Conservative Substance" means a substance that is relatively resistant to degradation.

"Department" means the New Jersey Department of Environmental Protection.

"Design conditions" means those hydrological and flow characteristics of a water body which are used as a basis for determining water quality standards.

"Discharge" means the releasing, spilling, leaking, pumping, pouring, emitting, emptying, or dumping of a pollutant into the waters of the State or onto land or into wells from which it might flow or drain into said waters.

"Discharger" means any person, corporation, municipality, sewerage authority or other legal entity, who causes, suffers, or allows any discharge.

"Disinfection" means the removal, destruction or inactivation of pathogenic and indicator organisms in wastewaters.

"High Quality Waters" means those surface waters having biological chemical, or physical characteristics which are better than applicable water quality standards and the aquatic biological community or other uses of which are sensitive to changes in water quality.

"Important Species" means species which are commercially or recreationally valuable (e.g., within the top ten species landed--by dollar value); threatened or endangered; critical to the organization and maintenance of the ecological system; or necessary in the food web for the well-being of species identified in this definition.

"LC50" means the concentration of a toxicant which is lethal to fifty percent of the organisms of a particular species under a given set of conditions in a specified length of time (i.e., 24, 48, 96 hours).

"Levels of treatment" means the degree of waste removal and concomitant residual wastewater effluent to be attained by any discharger.

"Measurable Changes" means changes determined by any biological, chemical, or physical analytical method conducted in accordance with USEPA approved methods as identified in 40 C.F.R. 136 or other analytical methods (e.g., ecological indices) approved by the Department.

"NBOD" means nitrogenous biochemical oxygen demand.

"Nonconservative Substance" means a substance that degrades relatively quickly.

"Nondegradation Waters" means those surface waters of the State whose water quality and water uses shall be preserved because of their outstanding State or National resource value. This definition shall not apply to those surface waters that have special water quality standards (e.g., FW-Central Pine Barrens and FW-Lower Mullica and Wading Rivers-Central Pine Barrens).

"Nonpersistent substance" means a substance that degrades relatively quickly, having a one-half-life of less than 96 hours.

"Outstanding National Resource Waters" means those surface waters of the State which, because of their exceptional recreational or ecological significance, shall be preserved from degradation. These waters include those segments currently classified as FW-1 in section 10 of subchapter 4 of this chapter and selected high quality waters such as tributaries upstream of FW-1 waters which currently receive no discharge.

"Persistent substance" means a substance that is relatively resistant to degradation, having a one-half-life of 96 hours or more.

"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, vessel, or other floating craft, from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture.

"Pollutant" means any dredged spoil, solid waste, incinerator residue, sewage, garbage, refuse, oil, grease, sewage sludge, munitions, chemical wastes, biological materials, radioactive substance, thermal waste, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal, or agricultural waste or other residue discharged or entering into the waters of the State.

"Reserve" means the hydrological, chemical or biological ability of a water body to accept additional waste loads beyond those allocated.

"Segment" means a portion of a study area, the surface waters of which have common hydrological characteristics (or flow regulation patterns), common natural physical, chemical, and biological processes and which have common reactions to external stresses, for example, the discharge of pollutants.

"Study area" means the geographical area which includes all water bodies for which wasteload allocations are to be assigned as a unit.

"TOC" means total organic carbon.

"Toxic Substance" means those substances, or combination of substances, which upon exposure, ingestion, inhalation or assimilation into any organism, either directly from the environment or indirectly through food chains, will, on the basis of information available to the department, cause death, disease, behavior abnormalities, cancer, genetic mutations, physiological malfunctions, including malfunctions in reproduction, or physical deformation, in such organisms or their offspring.

"USEPA" means the United States Environmental Protection Agency.

"Waste load" means the amount of chemical, physical or biological matter contained within a waste discharge.

"Wasteload allocation" means the assignment of maximum waste loads to point source discharges so as to conform to water quality standards.

"Water quality management planning" (water quality management plan) means the activities defined in, and referred to, in sections 208 and 303 of the Federal Clean Water Act and the Water Quality Planning Act, N.J.S.A. 58:11A-1 et seq.

"Water quality model" means any mathematical or analytical tool which is recognized by the scientific community and is subject to change by field verification and which is used to predict the hydrological, flow, chemical or biological characteristics of a water body.

"Water quality standards" means the designated uses and the physical, chemical, biological and esthetic characteristics of a water body as described by ambient water quality criteria, set forth in subchapter 4 of this chapter.

7:9-5.4 Statements of Policy

(a) The following are general statements of policy:

1. It shall be unlawful for any person to discharge any pollutant into waters of the State, except in conformity with a valid permit issued by the commissioner or by the Administrator of the United States Environmental Protection Agency, and that it shall be unlawful for any person to build, install, modify or operate any facility for the collection, treatment or discharge of any pollutant, except after approval by the department pursuant to regulations adopted by the commissioner.
2. The protection and enhancement of the quality and function of the waters of this State into which effluents are discharged is a principal objective of the Department of Environmental Protection when considering the approval of permits to discharge or the designs for proposed facilities for the collection, treatment or discharge of pollutants.
3. The minimum level of treatment required for any wastewater must be such that discharges shall meet technically based effluent limits as established under this subchapter or Sections 301, 306 and 307 of the Federal Clean Water Act, whichever is more stringent, and shall not cause the surface water quality criteria contained in subchapter 4 of this chapter to be contravened. Furthermore no discharger shall have the privilege of utilizing the entire theoretical capacity of a surface water to receive waste discharges.
4. Whenever the department finds that discharges of pollutants from a point source or group of point sources with the application of technically based effluent limitations at least as stringent as those required under sections 301, 306 and 307 of the Federal Clean Water Act or this subchapter

would interfere with the protection of high quality waters or the attainment and maintenance of applicable water quality standards, the department may establish more stringent water quality based effluent limitations which can reasonably be expected to protect high quality waters from degradation or attain and maintain water quality standards.

5. Water quality based effluent limitations shall be developed in accordance with the procedures described in section 6 of this subchapter, so that the provisions of the antidegradation policy and other provisions of the prevailing water quality standards as set forth in subchapter 4 of this chapter are met.
6. In the apportioning of waste loads to dischargers, the general objective is to minimize total expenditures, subject to social and environmental constraints, so that provisions of the antidegradation policy and other provisions of the prevailing water quality standards (subchapter 4 of this chapter) are met. To achieve this end, the State's policy does not preclude the assignment of different levels of treatment to different dischargers, if this will prove more beneficial over the study area. Levels of treatment assigned under section 6 of this subchapter, which are higher than those specified in section 11 of this subchapter, shall take precedence.
7. The State's antidegradation policy, as set forth in subchapter 4 of this chapter, shall apply to all waters of the State. Modifications of water quality based effluent limitations established to implement the antidegradation policy may be granted in accordance with the procedural rules found in section 12 of this subchapter. In those cases in which modifications are granted, effluent limits shall be established which are at least as stringent as the minimum level of treatment required for any wastewater discharge.
8. The policies for interstate waters are:
 - i. The minimum level of treatment for wastewater treatment facilities that discharge treated wastewater to the Delaware River, including the fresh and saline tidal tributaries to the Delaware River and Delaware Bay, shall be as established at subsections (g) through (l) of section 11 of this subchapter or in accordance with the current "Basin Regulations - Water Quality" and "Interpretive Guidelines" (and

subsequent revisions) adopted by the Delaware River Basin Commission as part of its Comprehensive Plan, whichever are more stringent.

- ii. The minimum level of treatment for wastewater treatment facilities that discharge treated wastewaters to waters of the Interstate Sanitation District under the jurisdiction of the Interstate Sanitation Commission in the New Jersey - New York metropolitan area, shall be as established at subsections (y) through (dd) and (ii) through (ll) of section 11 of this subchapter, or in accordance with the current Interstate Sanitation Commission's Water Quality Regulations (and subsequent revisions), whichever are more stringent.

(b) The following are statements of policy concerning disinfection of wastewater:

1. The department recognizes that chlorinated organic compounds resulting from the chlorination of wastewater effluents may be deleterious to human health and the aquatic environment.
2. To reduce the exposure of humans to possible carcinogens and aquatic life to toxicants, the department encourages the efficient use of chlorine if used as a disinfectant. However, in no event shall the reduced use of chlorine as a disinfectant, cause an increase in the risk of human's contracting pathogenic diseases.
3. The department encourages the use of alternatives to chlorination providing that the following can be demonstrated:
 - i. The alternative method is effective in the removal of viable pathogens and indicators of pathogenic organisms; and
 - ii. The alternative method is safe and has a less deleterious effect on the health of humans who may ingest or come into contact with waters receiving these discharges than chlorination; and
 - iii. The alternative method shall have a less deleterious effect on the aquatic environment, including its biota, than chlorination and shall not result in a contravention of prevailing surface water quality standards; and

iv. The alternative method will not produce levels of residual disinfectants and disinfection by-products that are conservative.

4. Unless it can be demonstrated that a disinfectant and its by-products are nonconservative, then the disinfectant and its by-products shall be considered to be conservative for purposes of determining water quality based effluent limitations.

5. The department shall require continuous year-round disinfection of all wastewaters which contain pathogenic organisms discharged into surface waters of the State, except in regions designated for seasonal disinfection, such that compliance with prevailing water quality standards is achieved.

6. The department will require seasonal disinfection from April 15 to October 15 in designated regions for the protection of the health and general welfare of the public.

i. Areas for seasonal disinfection are restricted to the State's surface waters where the waters can not be restored or used for primary contact recreation, shellfishing, or potable water supply in the foreseeable future and where contiguous waters with these designated uses are not degraded by seasonal disinfection.

ii. The designated areas eligible for seasonal disinfection are as follows:

(1) Hudson River between the George Washington Bridge and the confluence with Upper New York Bay;

(2) Upper New York Bay;

(3) Kill Van Kull, entire length;

(4) Arthur Kill, entire length;

(5) Newark Bay.

(c) The following are statements of policy concerning bioassay procedures:

1. 96 hour modified static or 96 hour flow-through bioassay will be utilized as definitive bioassays in determining the impact of a wastewater discharge which is presumed to be toxic to aquatic life.

2. The department shall establish from time to time a list of specific organisms to be used for conducting bioassays. Such organisms will be representative of the biota for the class of waters under consideration. This list presents organisms considered by the department as acceptable bioassay organisms for the waters in question. The department may allow or require the use of organisms not on the list when such organisms occur in the waters and are more sensitive to the specific wastewater discharge.
3. After notice and the opportunity for a public hearing, the department, utilizing scientific judgment, may establish an application factor (in terms of a factor to be applied to the 96 hour LC50 value) which is more restrictive than those set forth in subsections 6(e), 7(d) and 8(c) of subchapter 4 of this chapter. Such an application factor may be necessary to ensure adequate protection of organisms and life stages not tested, but which may be more sensitive to the test constituent(s).

7:9-5.5 Objective of Wasteload Allocation

- (a) The allocation of waste loads to point source dischargers forms the basis for water quality management planning, as required by sections 303(e) and 208 of the Federal Clean Water Act, and section 7 of the New Jersey Water Quality Planning Act, N.J.S.A. 58:11A-1 et seq.
- (b) The objective of wasteload allocations is to apportion the after-treatment, residual wastewater discharges in such a way that the antidegradation policy and any other provisions of the water quality standards (subchapter 4 of this chapter) are maintained under design conditions.

7:9-5.6 Wasteload Allocation Procedure

- (a) The general procedure which will be followed by the department in allocating waste loads to point source dischargers in a study area shall be as follows:
 1. Delineate the study area;
 2. Assemble all necessary water quality and hydrologic data for the water bodies in the study area for which wasteload allocations are to be done;

3. Develop water quality models, or other predictive water quality estimators, for the water bodies in the study area, which shall then be used to evaluate alternative arrangements of point source discharge configurations and treatment levels under design conditions;
4. Seasonal variations in discharge loadings may be approved by the department when it can be substantiated that treatment performance is limited by ambient conditions. Projected variations are subject to technical review by the department, and where great variability exists, the department may require the discharger to utilize alternate treatment processes;
5. Delineate the segments within the study area;
6. Determine alternative arrangements of point source discharge configurations and levels of treatment for each segment. In making this determination, the department shall take into consideration the contribution of pollution, if any, from nonpoint sources;
7. Analyze the alternative arrangements for each segment independently and eliminate from further consideration those which are unacceptable within the individual segments themselves;
8. Combine the acceptable arrangements for the segments into a set of alternative arrangements for the study area;
9. Analyze the alternative arrangements for the study area and eliminate those which are unacceptable;
10. Where appropriate, determine reserve for all acceptable arrangements for the waste load parameters being allocated;
11. Enumerate all acceptable arrangements for the study area, which shall be described by:
 - i. A configuration of point source dischargers;
 - ii. A level of treatment required for each of said dischargers;
 - iii. A specified reserve for each segment and parameter.
12. Evaluate all acceptable arrangements for the study area;

13. Select the best arrangement for the study area and thus for each segment contained therein, in conformity with this subchapter and other subchapters of this chapter;
 14. Allocate waste loads to the point source dischargers within the study area, in accordance with paragraph 12, of this subsection.
 15. Where the department allocates waste loads to point source dischargers as provided in paragraphs 1 through 13 of this subsection, the State will provide each affected point source discharger in the study area with notice and the opportunity to be heard and comment upon such wasteload allocations. The selected arrangement and wasteload allocation shall be formally adopted under the Water Quality Management Planning procedures, as a revision to the existing areawide Water Quality Management Plan, and will be binding upon all affected dischargers. Procedures for modifying surface water quality based effluent limitations set forth in section 12 of this subchapter are not applicable in this instance. However, the criteria for modification will be considered in assigning allocations and in review of the comments upon such allocations before final adoption.
- (b) The department may also allocate a waste load to a single point source discharger with notice and the opportunity to request a modification of the water quality based effluent limitations in accordance with section 12 of this subchapter. The general procedure which will be followed by the department in allocating a waste load to an individual point source discharge shall be as follows:
1. For High Quality Waters - Category One, as defined in section 5 of subchapter 4 of this chapter, draft water quality based effluent limitations will be assigned to a point source discharger so that the ambient biological, chemical, and physical characteristics of the segment will be protected from any measurable or calculable changes. The parameters to be considered are those contained in the water quality standards as set forth in subchapter 4 of this chapter and any other parameters that the department determines may have a detrimental effect on the existing instream uses.
 2. For High Quality Waters - Category Two, as defined in section 5 of subchapter 4 of this chapter, draft water quality based effluent limitations will be assigned to a point source discharger so as to allow for some degradation of those ambient water quality characteristics which are not critical

to the maintenance of existing instream uses in order to provide for necessary or justifiable economic or social development. Water quality standards as set forth in subchapter 4 of this chapter shall be maintained.

3. For Category Three waters in which ambient water quality is consistently worse than or equal to applicable water quality standards, as set forth in subchapter 4 of this chapter, draft water quality based effluent limitations will be assigned to a point source discharger so as to attain and maintain such water quality standards.
4. The following information shall be submitted by the applicant for a wasteload allocation:
 - i. Type of waste (domestic or industrial) to be discharged, accompanied by an analysis of the effluent characteristics;
 - ii. Type of treatment process and level of treatment being considered;
 - iii. United States Geological Survey Topographic Maps, 7.5 Quadrangle Series, showing treatment facility locations, discharge point, and if available, location of other treatment facilities on the receiving stream within five miles of the proposed discharge;
 - iv. Name and classification of receiving stream including a description of the stream's existing beneficial uses;
 - v. Stream analyses which shall include both a flow analysis to determine seven consecutive day - ten year recurrence interval low flow and a water quality analysis program which will be developed in coordination with the department.
5. The following methodologies will be utilized by the department in the development of draft water quality based effluent limitations for new or modified point source discharges to waters designated as Category Two or Three for the purpose of assigning such effluent limitations (See, N.J.A.C. 7:14A-2.12 for an explanation of modification):
 - i. In general, the effluent limitations developed for these categories shall take into consideration the contribution of nonpoint source loadings and, where practicable, some reserve capacity in the stream segment. The parameters to be considered will vary depending on type of discharge, the existing and potential use of the waters, and the ambient water quality. A number of technical analyses including water quality

mathematical modeling, simple mass balances combined with water quality surveys, and bioassays may be used to determine draft effluent limitation.

- ii. In developing water quality based effluent limitations to meet a dissolved oxygen criterion, limitations for CBOD and NBOD will be determined using a calibrated and verified water quality model developed for a particular stream, a simplified modeling approach as outlined in "Water Quality Assessment" (EPA-600/9-77-023), or other scientifically acceptable approaches.
- iii. For other parameters for which numerical criteria have been adopted, a simple mass balance or other scientifically acceptable procedures will be utilized to develop water quality based effluent limitations using the applicable water quality criterion as set forth in subchapter 4 of this chapter as the base. The following is an example of a formula which may be applied for developing wasteload allocations:

$$V_1 C_1 + V_2 C_2 = (V_1 + V_2) [P(C_1 - C_s) + C_s]$$

Where:

- V_1 = Upstream Low Flow
- V_2 = Effluent Design Flow
- C_1 = Upstream Concentration
- C_2 = Effluent Concentration Limitation (unknown)
- C_s = Water Quality Criterion
- P = Percent Reserve (where applicable)

- iv. In order to determine toxic substance effluent limitations, the applicant for such limitation shall submit to the department the results of a 24 hour screening bioassay and a laboratory chemistry analysis on the proposed effluent discharge used in the bioassay procedure. The methodology to be utilized in the conduct of the tests shall be approved by the department. The department will review each report and supporting data.
- v. If the effluent discharge is determined to be toxic, based on the initial static bioassay test results, the department shall, on a case-by-case basis, require definitive 96 hour bioassays (e.g. modified static or flow-through) to be performed as part of the application procedure, or as a pollution control permit condition, to provide further data for evaluation.

vi. The following are examples of additional formulae which may be utilized by the department to develop effluent limitations for toxic substances:

- (1) An effluent constituent formula may be utilized to determine the allowable effluent concentration of an identifiable active toxic constituent. The level of the toxic substance(s) in the effluent shall be limited so that the concentration in the receiving waters shall not exceed 1/20 (nonpersistent substance) or 1/100 (persistent substance) of the 96 hour LC50 concentration.

$$V_1 C_1 + V_2 C_2 = (V_1 + V_2) F [C_E D + (1-D)C_1]$$

Where:

- V_1 = Upstream Low Flow
- V_2 = Effluent Design Flow
- C_1 = Upstream Concentration
- C_2 = Effluent Concentration Limitation (unknown)
- D = Dilution (96 hour LC50 Concentration)
- F = Application Factor*
- C_E = Pure Effluent Concentration Used in Bioassay
- *1/20 for nonpersistent toxic substances.
- *1/100 for persistent toxic substances.

- (2) An effluent flow limitation formula may be utilized to determine the allowable flow of effluent containing an unidentified toxic substance(s) or where the specific parameter(s) causing a toxic effect on the biota cannot be isolated. The effluent toxicity shall be reduced or the effluent flow shall be limited so that the concentration of the toxic effluent in the receiving waters shall not exceed 1/20 (suspected nonpersistent substance) or 1/100 (suspected persistent substance) of the 96 hour LC50 concentration.

$$V_2 = \frac{V_1 (F \times D)}{1 - (F \times D)}$$

Where:

V_1 = Upstream Low Flow
 V_2 = Effluent Flow Limitation
(unknown)
F = Application Factor*
D = Dilution (96 hour LC50)

*1/20 where nonpersistent toxic substances are suspected.

*1/100 where persistent toxic substances are suspected.

vii. In those instances in which a bioassay is impracticable, the department may use as a reference, 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-R-3-73-033) other water quality criteria information published pursuant to section 304(a) of the Federal Clean Water Act, other reliable scientific information, or the results of other bioassays to determine effluent limitations.

6. The following methodology will be utilized by the department in the development of effluent limitations for existing wastewater treatment facilities which are currently in operation:

- i. For discharge to Category Three waters, the methodologies set forth in paragraph 5 of this subsection will be applied to develop effluent limitations which can reasonably be expected to attain or maintain water quality standards;
- ii. For discharges to Category One or Two waters, effluent limitations will be based on those limits developed by the department for the present design capacity when the permit to operate the facility was approved, or technically based effluent limitations required under sections 301, 306 or 307 of the Federal Clean Water Act, whichever is more stringent. In addition, the department may require more stringent limitations for specific pollutants which have been shown to be harmful to the designated uses of the waters, or which pose a threat to human health. An example of the latter would be the requirement of more stringent limitation of the discharge of chlorine residual.

7:9-5.7 Use of Indicators of Pollution Levels

In section 11 of this subchapter, in those instances in which, in the judgment of the department, it would be more appropriate to use TOC or COD as an indicator of pollution levels, the department will substitute those indicators or a combination of them in place of, or in combination with, BOD in establishing treatment requirements.

7:9-5.8 Dilute Industrial Process Wastewater

For dilute industrial process wastewater, the percent BOD (or other indicator) reduction as set forth in section 11 of this subchapter may be modified, upon request, provided it has been demonstrated to the satisfaction of the department that the highest degree of waste treatment determined to be practicable will be applied.

7:9-5.9 Effluent Limitations Related to Public Potable Water Supply Use

In those instances in which effluent limitations are established, pursuant to this subchapter, at a level calculated to protect the public potable water supply use of the receiving waters, the department may, at the request of the discharger, establish less stringent limitations which, in the opinion of the department, will protect all other designated uses of the receiving waters where it has been demonstrated by reference to the Statewide Water Supply Plan, as modified and adopted by the department, that the receiving waters are not now either directly or indirectly a source for public potable water supply and are not projected to be such a source for at least a 20 year period. In considering the establishment of less stringent limitations, the department shall take into account the conservative nature of the substances being discharged. This demonstration shall be made for each modification or renewal of the pollution control permit in which the effluent limitations appear.

7:9-5.10 Effluent Standard for Toxic Discharges

The effluent standard for toxic discharges is that, at a minimum, no effluent shall be more toxic than a 96 hour LC50 of 50 percent (by volume).

7:9-5.11 Minimum Treatment Requirements

- (a) Domestic wastes discharged into waters of the Atlantic Coastal Plain classified as FW-2 and TW-1 shall be treated as follows:

Domestic wastes, separately or in combination with industrial wastes, prior to discharge into waters of the Atlantic Coastal Plain classified as FW-2 or TW-1, shall be treated to a degree providing, as a minimum, 95 percent of reduction of biochemical oxygen demand at all times including any four-hour period of a day when the strength of the wastes to be treated might be expected to exceed average conditions; it is the objective of this subsection that the biochemical oxygen demand of effluents discharged shall not exceed 15 parts per million.

- (b) Industrial wastes discharged into waters of the Atlantic Coastal Plain classified as FW-2 or TW-1 shall be treated as follows:

Industrial wastes, prior to discharge into waters of the Atlantic Coastal Plain, classified as FW-2 or TW-1, shall be treated to a degree providing, as a minimum, 95 percent of reduction of biochemical oxygen demand at all times and such further reduction in biochemical oxygen demand as may be necessary to maintain water quality, after reasonable effluent dispersion, as specified in subchapter 4 of this chapter; it is the objective of this section that the biochemical oxygen demand of effluents discharged shall not exceed 15 parts per million.

- (c) Domestic wastes discharged into waters of the Atlantic Coastal Plain classified as CW-1 or CW-2 shall be treated as follows:

Henceforth, domestic wastes, separately or in combination with industrial wastes, prior to discharge into waters of the Atlantic Coastal Plain classified as CW-1 or CW-2, shall be treated providing, as a minimum, 85 percent of reduction of biochemical oxygen demand at all times, including any four hour period of a day when the strength of the wastes to be treated might be expected to exceed average conditions; it is the objective of this subsection that the biochemical oxygen demand of effluents discharged shall not exceed 40 parts per million.

- (d) Industrial wastes discharged into waters of the Atlantic Coastal Plain classified as CW-1 or CW-2 shall be treated as follows:

Henceforth, industrial wastes prior to discharge into waters of the Atlantic Coastal Plain, classified as CW-1 or CW-2, shall be treated to a degree providing, as a minimum, 85 percent of reduction of biochemical oxygen demand at all times and such further reduction of biochemical oxygen demand as may be necessary to

maintain water quality specified in subchapter 4 of this chapter.

- (e) It is recognized, especially in connection with some industrial wastes, that the pollution load imposed upon the waters of the Plain cannot be evaluated fully exclusively by the biochemical oxygen demand test; therefore, each industrial waste problem shall be considered individually and treatment shall be required as needed to effect compliance with the Water Quality Criteria established for the various classifications of waters in the Plain.
- (f) Treatment standards set forth in subsections (a) through (e) of this section are the minimum acceptable for the Atlantic Coastal Plain. Treatment more intensive than those set forth in subsections (a) through (e) of this section shall be provided whenever it is determined by the department that such treatment is necessary.
- (g) Domestic wastes discharged into waters of the Delaware River Basin classified as FW-2, TW-1, or TW-2 shall be treated as follows:

Henceforth, domestic wastes, separately or in combination with industrial wastes, prior to discharge into waters of the Delaware River Basin classified as FW-2, TW-1 and TW-2, shall be treated to a degree providing, as a minimum, 90 percent of reduction of biochemical oxygen demand at all times including any four-hour period of a day when the strength of the wastes to be treated might be expected to exceed average conditions; it is an objective of this subsection that the biochemical oxygen demand of effluents discharged shall not exceed 25 parts per million.

- (h) Industrial wastes discharged into waters of the Delaware River Basin classified as FW-2, TW-1, or TW-2 shall be treated as follows:

Henceforth, industrial wastes prior to discharge into waters of the Delaware River Basin, classified as FW-2, TW-1 and TW-2, shall be treated to a degree providing, as a minimum, 90 percent of reduction of biochemical oxygen demand at all times and such further reduction of biochemical oxygen demand as may be necessary to maintain water quality, after reasonable effluent dispersion, as specified in subchapter 4 of this chapter; it is the objective of this subsection that the biochemical oxygen demand of effluents discharged shall not exceed 25 parts per million.

- (i) Domestic wastes discharged into waters of the main stem Delaware River shall be treated as follows:

Henceforth, domestic wastes, separately or in combination with industrial wastes, prior to discharge into the waters of the "main stem" of the Delaware River shall be treated to a degree providing for conformity with "Water Quality Standards for the Delaware River Basin" as adopted by the Delaware River Basin Commission on April 26, 1967 by its Resolution No. 67-7 and subsequent revisions; it is the objective of this subsection that the biochemical oxygen demand of effluents discharged shall conform to all regulations of the Delaware River Basin Commission.

- (j) Industrial wastes discharged into waters of the main stem of the Delaware River shall be treated as follows:

Henceforth, industrial wastes prior to discharge into waters of the "main stem" of the Delaware River Basin shall be treated to a degree providing for conformity with "Water Quality Standards for the Delaware River Basin" as adopted by the Delaware River Basin Commission on April 26, 1967 by its Resolution No. 67-7 and subsequent revisions; it is the objective of this subsection that the biochemical oxygen demand of effluents discharged shall conform to all regulations of the Delaware River Basin Commission.

- (k) It is recognized, especially in connection with some industrial wastes, that the pollution load imposed upon the waters of the Basin cannot be evaluated fully exclusively by the biochemical oxygen demand test; therefore, each industrial waste problem shall be considered individually and treatment shall be required as needed to effect compliance with the Water Quality Standards established for the various classifications of waters in the Basin.

- (l) Treatment standards set forth in subsections (g) through (k) of this section are the minimum acceptable for the Delaware River Basin. Treatment more intensive than that set forth in subsections (g) through (k) of this section shall be provided whenever it is determined by the department that such treatment is necessary.

- (m) Domestic wastes discharged into waters of the Hackensack River Basin classified as FW-2 or TW-1 shall be treated as follows:

Henceforth, domestic wastes, separately or in combination with industrial wastes, prior to discharge into waters of the Hackensack River Basin classified as FW-2 or

TW-1 shall be treated to a degree providing, as a minimum, 90 percent of reduction of biochemical oxygen demand at all times, including any four hour period of a day when the strength of the wastes to be treated might be expected to exceed average conditions; it is the objective of this subsection that the biochemical oxygen demand of effluents discharged shall not exceed 25 parts per million.

- (n) Industrial wastes discharged into waters of the Hackensack River Basin classified as FW-2 or TW-1 shall be treated as follows:

Henceforth, industrial wastes, prior to discharge into waters of the Hackensack River Basin, classified as FW-2 or TW-1 shall be treated to a degree providing, as a minimum, 90 percent of reduction of biochemical oxygen demand at all times and such further reduction in biochemical oxygen demand as may be necessary to maintain water quality, after reasonable effluent dispersion, as specified in subchapter 4 of this chapter; it is the objective of this subsection that the biochemical oxygen demand of effluents discharged shall not exceed 25 parts per million.

- (o) Domestic wastes discharged into waters of the Hackensack River Basin classified as TW-2 or TW-3 shall be treated as follows:

Henceforth, domestic wastes, separately or in combination with industrial wastes, prior to discharge into waters of the Hackensack River Basin classified as TW-2 or TW-3 shall be treated to a degree providing, as a minimum, 85 percent of reduction of biochemical oxygen demand at all times, including any four hour period of a day when the strength of the wastes to be treated might be expected to exceed average conditions; it is the objective of this subsection that the biochemical oxygen demand of effluents discharged shall not exceed 40 parts per million.

- (p) Industrial wastes discharged into waters of the Hackensack River Basin classified as TW-2 or TW-3 shall be treated as follows:

Henceforth, industrial wastes, prior to discharge into waters of the Hackensack River Basin, classified as TW-2 or TW-3 shall be treated to a degree providing, as a minimum, 85 percent of reduction of biochemical oxygen demand at all times and such further reduction in biochemical oxygen demand as may be necessary to maintain water quality, after reasonable effluent dispersion, as specified in subchapter 4 of this chapter; it is the

objective of this subsection that the biochemical oxygen demand of effluents discharged shall not exceed 40 parts per million.

(q) It is recognized, especially in connection with some industrial wastes, that the pollution load imposed upon the waters of the Basin cannot be evaluated fully exclusively by the biochemical oxygen demand test; therefore, each industrial waste problem shall be considered individually and treatment shall be required as needed to effect compliance with the Water Quality Criteria established for the various classifications of waters in the Basin.

(r) Treatment standards set forth in subsections (m) through (q) of this section are the minimum acceptable for the Hackensack River Basin. Treatment more intensive than that set forth in subsections (m) through (q) of this section shall be provided whenever it is determined by the department in a particular situation that such treatment is necessary.

(s) Domestic wastes discharged into waters of the Passaic River Basin, including Newark Bay, classified as FW-2 shall be treated as follows:

Henceforth, domestic wastes, separately or in combination with industrial wastes, prior to discharge into waters of the Passaic River Basin classified as FW-2, shall be treated to a degree providing, as a minimum, 90 percent of reduction of biochemical oxygen demand at all times, including any four hour period of a day when the strength of the wastes to be treated might be expected to exceed average conditions; it is the objective of this subsection that the biochemical oxygen demand of effluents discharged shall not exceed 25 parts per million.

(t) Industrial wastes discharged into waters of the Passaic River, including Newark Bay, classified as FW-2 shall be treated as follows:

Henceforth, industrial wastes, prior to discharge into waters of the Passaic River Basin, classified as FW-2 shall be treated to a degree providing, as a minimum, 90 percent of reduction of biochemical oxygen demand at all times and such further reduction in biochemical oxygen demand as may be necessary to maintain water quality, after reasonable dispersion, as specified in subchapter 4 of this chapter; it is the objective of this subsection that the biochemical oxygen demand of effluents discharged shall not exceed 25 parts per million.

(u) Domestic wastes discharged into waters of the Passaic River Basin, including Newark Bay, classified as TW-2 or TW-3 shall be treated as follows:

Henceforth, domestic wastes, separately or in combination with industrial wastes, prior to discharge into waters of the Passaic River Basin classified as TW-2 or TW-3 shall be treated to a degree providing, as a minimum, 85 percent of reduction of biochemical oxygen demand at all times, including any four hour period of a day when the strength of the wastes to be treated might be expected to exceed average conditions; it is the objective of this subsection that the biochemical oxygen demand of effluents discharged shall not exceed 40 parts per million.

- (v) Industrial wastes discharged into waters of the Passaic River Basin, including Newark Bay, classified as TW-2 or TW-3 shall be treated as follows:

Henceforth, industrial wastes, prior to discharge into waters of the Passaic River Basin, classified as TW-2 or TW-3 shall be treated to a degree providing, as a minimum, 85 percent of reduction of biochemical oxygen demand at all times and such further reduction in biochemical oxygen demand as may be necessary to maintain water quality, after reasonable dispersion, as specified in subchapter 4 of this chapter; it is the objective of this subsection that the biochemical oxygen demand of effluents discharged shall not exceed 40 parts per million.

- (w) It is recognized, especially in connection with some industrial wastes, that the pollution load imposed upon the waters of the Basin cannot be evaluated fully exclusively by the biochemical oxygen demand test; therefore, each industrial waste problem shall be considered individually and treatment shall be required as needed to effect compliance with the Water Quality Criteria established for the various classifications of waters in the Basin.

- (x) Treatment standards set forth in subsections (s) through (w) of this section are the minimum acceptable for the Passaic River Basin. Treatment more intensive than that set forth in subsections (s) through (w) of this section shall be provided whenever it is determined by the department in a particular situation that such treatment is necessary.

- (y) Domestic wastes discharged into waters of the Raritan River Basin, including Raritan Bay and Sandy Hook Bay, classified as FW-2 shall be treated as follows:

Henceforth, domestic wastes, separately or in combination with industrial wastes, prior to discharge into waters of the Raritan River Basin classified as FW-2, shall be treated to a degree providing, as a minimum, 90 percent of reduction of biochemical oxygen demand at all times,

including any four hour period of a day when the strength of the wastes to be treated might be expected to exceed average conditions.

- (z) Industrial wastes discharged into waters of the Raritan River Basin, including Raritan Bay and Sandy Hook Bay, classified as FW-2 shall be treated as follows:

Henceforth, industrial wastes, prior to discharge into waters of the Raritan River Basin, classified as FW-2 shall be treated to a degree providing, as a minimum, 90 percent of reduction of biochemical oxygen demand at all times and such further reduction in biochemical oxygen demand as may be necessary to maintain water quality, after reasonable dispersion, as specified in subchapter 4 of this chapter.

- (aa) Domestic wastes discharged into waters of the Raritan River Basin, including Raritan Bay and Sandy Hook Bay, classified as TW-1 shall be treated as follows:

Henceforth, domestic wastes, separately or in combination with industrial wastes, prior to discharge into waters of the Raritan River Basin classified as TW-1, shall be treated to a degree providing, as a minimum, 85 percent of reduction of biochemical oxygen demand at all times, including any four hour period of a day when the strength of the wastes to be treated might be expected to exceed average conditions.

- (bb) Industrial wastes discharged into waters of the Raritan River Basin, including Raritan Bay and Sandy Hook Bay, classified as TW-1 shall be treated as follows:

Henceforth, industrial wastes, prior to discharge into waters of the Raritan River Basin, classified as TW-1 shall be treated to a degree providing, as a minimum, 85 percent of reduction of biochemical oxygen demand at all times and such further reduction in biochemical oxygen demand as may be necessary to maintain water quality, after reasonable dispersion, as specified in subchapter 4 of this chapter.

- (cc) It is recognized, especially in connection with some industrial wastes, that the pollution load imposed upon the waters of the Basin cannot be evaluated fully exclusively by the biochemical oxygen demand test; therefore, each industrial waste problem shall be considered individually and treatment shall be required as needed to effect compliance with the Water Quality Criteria established for the various classifications of waters in the Basin.

(dd) Treatment standards set forth in subsections (y) through (cc) of this section are the minimum acceptable for the Raritan River Basin. Treatment more intensive than that set forth in subsections (y) through (cc) of this section shall be provided whenever it is determined by the department in a particular situation that such treatment is necessary.

(ee) Domestic wastes discharged into waters of the Wallkill River Basin classified as FW-2 shall be treated as follows:

Henceforth, domestic wastes, separately or in combination with industrial wastes, prior to discharge into waters of the Wallkill River Basin classified as FW-2, shall be treated to a degree providing, as a minimum, 95 percent of reduction of biochemical oxygen demand at all times, including any four hour period of a day when the strength of the wastes to be treated might be expected to exceed average conditions; it is the objective of this subsection that the biochemical oxygen demand of effluents discharged shall not exceed 15 parts per million.

(ff) Industrial wastes discharged into waters of the Wallkill River Basin classified as FW-2 shall be treated as follows:

Henceforth, industrial wastes, prior to discharge into waters of the Wallkill River Basin, classified as FW-2 shall be treated to a degree providing, as a minimum, 95 percent of reduction of biochemical oxygen demand at all times and such further reduction in biochemical oxygen demand as may be necessary to maintain water quality, after reasonable dispersion, as specified in subchapter 4 of this chapter; it is the objective of this subsection that the biochemical oxygen demand of effluents discharged shall not exceed 15 parts per million.

(gg) It is recognized, especially in connection with some industrial wastes, that the pollution load imposed upon the waters of the Wallkill River Basin cannot be evaluated fully exclusively by the biochemical oxygen demand test; therefore, each industrial waste problem shall be considered individually and treatment shall be required as needed to effect compliance with the Water Quality Criteria established for the various classifications of waters in the Wallkill River Basin.

(hh) Treatment standards set forth in subsections (ee) through (gg) of this section are the minimum acceptable for the Wallkill River Basin. Treatment more intensive than that set forth in subsections (ee) through (gg) of

this section shall be provided whenever it is determined by the department in a particular situation that such treatment is necessary.

- (ii) Domestic wastes discharged into waters of the Hudson River, Kill Van Kull, and Arthur Kill Basins classified as FW-2, and TW-2 or TW-3 shall be treated as follows:

Domestic wastes, separately or in combination with industrial wastes, prior to discharge into waters of the Hudson River, Kill Van Kull, and Arthur Kill Basins classified as FW-2, TW-2, or TW-3 shall be treated to a degree providing, as a minimum, 85 percent of reduction of biochemical oxygen demand at all times, including any four hour period of a day when the strength of the wastes to be treated might be expected to exceed average conditions.

- (jj) Industrial wastes discharged into waters of the Hudson River, Kill Van Kull, and Arthur Kill Basins classified as FW-2, TW-2, or TW-3 shall be treated as follows:

Industrial wastes, prior to discharge into waters of the Hudson River, Kill Van Kull and Arthur Kill Basins classified as FW-2, TW-2, or TW-3 shall be treated to a degree providing, as a minimum, 85 percent of reduction of biochemical oxygen demand at all times and such further reduction in biochemical oxygen demand as may be necessary to maintain water quality, after reasonable dispersion, as specified in subchapter 4 of this chapter.

- (kk) It is recognized, especially in connection with some industrial wastes, that the pollution load imposed upon the waters of the Hudson River, Kill Van Kull, and Arthur Kill Basins cannot be evaluated fully exclusively by the biochemical oxygen demand test; therefore, each industrial waste problem shall be considered individually and treatment shall be required as needed to effect compliance with the Water Quality Criteria established for the various classifications of waters in the Hudson River, Kill Van Kull, and Arthur Kill Basins.

- (ll) Treatment standards set forth in subsections (ii) through (kk) of this section are the minimum acceptable for the Hudson River, Kill Van Kull, and Arthur Kill Basins. Treatment more intensive than that specified in subsections (ii) through (kk) of this section shall be provided whenever it is determined by the department in a particular situation that such treatment is necessary.

7:9-5.12 Procedures for Modifying Water Quality Based Effluent Limitations for Individual Dischargers

(a) The criteria for modifying water quality based effluent limitations where existing water quality is currently better than applicable water quality standards are as follows:

1. Whenever the department determines that ambient water quality within a segment is consistently better in quality than established water quality criteria, the department shall establish water quality based effluent limitations for new dischargers or those existing dischargers who propose to modify their discharge, which can reasonably be expected to protect the high quality waters from degradation. However, in those cases in which the department has established water quality based effluent limitations on a case-by-case basis, as provided for in section 6 of this subchapter, interested persons may request a modification of such effluent limitations. Such a request shall be made, in writing, within 30 days of receipt of the draft effluent limitations. If the department does not receive such a request for modification, the draft water quality based effluent limitations shall become final. In no case shall the department establish a water quality based effluent limitation less stringent than that necessary to maintain the ambient high quality water unless:

i. The applicant for such effluent limitation modification demonstrates to the satisfaction of the department, after public notice, including notice to affected municipalities, and a public hearing, that:

(1) There is no reasonable relationship between the economic and social costs of compliance with the Category One based effluent limitations and the benefits to be obtained in maintaining ambient water quality. Economic and social costs shall include any social and economic dislocation in the affected community or communities; and

(2) Some degradation of high quality waters should be allowed because of necessary and justifiable economic or social development; and

- (3) Alternative effluent limitations, at least as stringent as the technically based effluent limitations required by sections 301, 306, and 307 of the Federal Clean Water Act or State law will not interfere with or be injurious to instream water uses; or
 - ii. The department determines, after public notice, including notice to affected municipalities, of the opportunity for a public hearing that:
 - (1) Some degradation of high quality waters Category Two should be allowed because of necessary and justifiable economic or social development; and
 - (2) Alternative effluent limitations, at least as stringent as the technically based effluent limitations required by sections 301, 306, and 307 of the Federal Clean Water Act or State law will not interfere with or be injurious to instream water uses.
 2. In no case shall degradation be allowed in high quality waters which constitute an outstanding national resource such as waters of National and State parks and Wildlife refuges and waters of exceptional recreational or ecological significance.
 3. A surface water quality based effluent limitation modification, as set forth in this subsection, shall be granted for a time period not to exceed that of the pollution control permit in which the limitations appear. On review of the permit, the modified effluent limitations will be renewed if, in the opinion of the department, there has been no adverse effect on water quality and designated uses.
- (b) The criteria for modifying surface water quality based effluent limitations for Category Three waters where existing water quality is equal to or worse than applicable water quality standards are as follows:
1. Whenever the department determines that surface water quality is consistently worse than or equal to applicable water quality standards, and that discharges of pollutants from a point source or group of point sources with the application of technically based effluent limitations at least as stringent as those required under sections 301, 306, and 307 of the Federal Clean Water Act or

State law would interfere with the attainment and maintenance of applicable water quality standards, the department may establish more stringent effluent limitations which can reasonably be expected to attain and maintain water quality standards. However, in those cases in which the department has established water quality based effluent limitations on a case-by-case basis; as provided for in section 6 of this subchapter, the applicant may request a modification of such effluent limitations. Such a request shall be made, in writing, within 30 days of receipt of the draft effluent limitations. If the department does not receive such a request for modification, the draft water quality based effluent limitations shall become final. In no case shall the department establish a water quality based effluent limitation less stringent than that necessary to attain or maintain water quality standards unless the applicant for such effluent limitation modification demonstrates to the satisfaction of the department, after public notice, including notice to affected municipalities, and a public hearing, that:

- i. The existing designated use is not attainable because of natural background; or
 - ii. The existing designated use is not attainable because of irretrievable man-induced conditions; or
 - iii. There is no reasonable relationship between the economic and social costs of achieving the draft effluent limitations and the benefits to be obtained in maintaining or attaining water quality standards. Economic and social costs shall include any social and economic dislocation in the affected community or communities.
2. In no case shall the department establish effluent limitations less stringent than those required by Sections 301, 306, and 307 of the Federal Clean Water Act or those required to protect existing instream water uses.
 3. A surface water quality based effluent limitation modification, as set forth in this subsection, shall be granted for a time period not to exceed that of the pollution control permit in which the limitations appear. On review of the permit, the modified effluent limitations will not be renewed unless the criteria of this subsection are fully met.

(c) In no case shall the department grant a modification, as set forth in this section, establishing an effluent limitation less stringent than that currently permitted, to existing dischargers who propose to modify their discharge where water quality standards are not presently being met.

(d) Any request for a public hearing as set forth in this section shall identify the person requesting the hearing, shall state with particularity any objections to the draft effluent limitations, and shall state the issues which are proposed to be raised by such person for consideration at a hearing.

(e) In those cases in which a hearing has been held pursuant to this section, the effluent limitations established shall become final 30 days after notice of the decision unless an adjudicatory hearing is requested pursuant to N.J.A.C. 7:14A-8.10.

7:9-5.13 Procedures for Reclassifying Specific Segments for less Restrictive Uses

(a) The department shall maintain those water quality standards which are designated in subchapter 4 of this chapter. From time to time (but at least once each three year period beginning with the date of adoption of these rules), the department shall hold public hearings in accordance with section 303(c) of the Federal Clean Water Act and the Administrative Procedure Act, N.J.S.A. 52:14B-1 et seq. for the purpose of reviewing and, as appropriate, revising and adopting standards. Should the department decide at that time to reclassify a segment to allow less restrictive uses than those contained in subchapter 4 of this chapter, it shall follow the procedure set forth in subsections (d) and (e) of this section.

(b) In addition to the regularly scheduled review of water quality standards, the department will entertain petitions for the reclassification of segments for less restrictive uses at any time. The petition must be fully documented as outlined in subsection (d) of this section. Upon receipt of a petition for reclassification, the department shall review the documents submitted and, based upon such review, determine whether to conduct a public hearing to consider the reclassification.

(c) For the purpose of this subchapter, a "petitioner" for a reclassification means the department and any existing discharger to the segment.

- (d) The petitioner shall include in the petition for reclassification, appropriate water quality studies and analyses as well as environmental, economic, and social impact statements demonstrating satisfaction of the criterion, listed in paragraph one, two or three of subsection (e) of this section, upon which the petition for reclassification is based.
- (e) The department may establish less restrictive uses than those contained in subchapter 4 of this chapter only when a petitioner for a reclassification demonstrates to the satisfaction of the department, after public notice, including notice to affected persons, and a public hearing, that:
1. The existing designated use is not attainable because of natural background;
 2. The existing designated use is not attainable because of irretrievable man-induced conditions; or
 3. Application of effluent limitations for existing sources more stringent than those required pursuant to section 301(b)(2)(A) and (B) of the Federal Clean Water Act would be required and would result in substantial and widespread adverse economic and social impact.
- (f) Any reclassification for less restrictive uses, established pursuant to this section, shall be reviewed by the department at least once each three year period beginning with the date of adoption of such standard.
- (g) In those cases in which a thermal discharge is involved, the procedures for reclassifying segments for less restrictive uses shall be consistent with section 316 of the Federal Clean Water Act.

SUBCHAPTER 6 GROUND-WATER QUALITY STANDARDS

7:9-6.1 Scope of Rules

- (a) Unless otherwise provided by rule or statute, the following shall constitute the rules of the Department of Environmental Protection concerning matters of policy with respect to the protection and enhancement of ground-water resources, use classification, quality criteria, and the designated uses of ground waters of the State pursuant to N.J.S.A. 13:1D-1 et seq., the New Jersey Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq., and the Water Quality Planning Act, N.J.S.A. 58:11A-1 et seq.
- (b) This subchapter shall apply to the establishment of pollutant limitations and other requirements applicable to those discharger activities that cause pollutants to enter the ground waters of the State.

7:9-6.2 Construction

These rules shall be liberally construed to permit the Department and its various divisions to discharge its statutory functions.

7:9-6.3 Definitions

The following words and terms, when used in this subchapter shall have the following meanings unless the context clearly indicates otherwise.

"Agriculture water supply" means water used for livestock, horticulture, and silviculture.

"Best management practices" means procedures and methods to control to the extent feasible, pollution from nonpoint sources as described in (208) Areawide Water Quality Management Plans.

"Department" means the New Jersey Department of Environmental Protection.

"Designated area" means the geographic extent of waters where use classes and criteria described herein are to be protected or met.

"Designated use" means present or potential uses of ground water.

"Discharge" means the releasing, spilling, leaking, pumping, pouring, emitting, emptying or dumping of a pollutant into the waters of the State or onto land or into wells from which it might flow or drain into said waters.

"Discharger" means any person, corporation, municipality, sewerage authority or other legal entity, who causes, suffers, or allows any discharge.

"Effluent limitation" means any restriction on quantities, quality rates and concentration of chemical, physical, thermal, biological and other constituents or pollutants.

"Farming" means the cultivation of the land in order to produce commercial crops including both plant and animal products. Feedlots are excluded from this definition.

"Ground waters" means the portion of water beneath the earth's surface that is at or below the zone of saturation where all the openings are filled with water.

"Individual subsurface sewage disposal system" means a system for the disposal of sewage to the ground, which is so designed and constructed to treat sewage in a manner that will retain most of the settleable solids in a septic tank and to discharge the liquid portion to an adequate disposal area.

"Individual household waste" means an ordinary domestic waste which contains only trace amounts of toxic pollutants which occur incidentally in household products.

"Industrial water supply" means water used for processing or cooling.

"Natural background" means the innate level of a water quality parameter which occurs in water without the influence of man.

"Pollutant" means any dredged spoil, solid waste, incinerator residue, sewage, garbage, refuse, oil, grease, sewage sludge, munitions, chemical wastes, biological materials, radioactive substance, thermal waste, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal or agricultural waste or other residue discharged or entering into the waters of the State.

"Toxic pollutants" means those substances, or combination of substances, which after discharge and upon exposure, ingestion, inhalation or assimilation into any organism, either directly from the environment or indirectly through food chains, will, on the basis of information available to the department, cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions, including malfunctions in reproduction, or physical deformations, in such organisms or their offspring.

"Treatment works" means any device or systems, whether public or private, used in the storage, treatment, recycling or reclamation of municipal or industrial waste of a liquid nature including

intercepting sewers, outfall sewers, sewage collection systems, cooling towers and ponds, pumping power and other equipment and their appurtenances; extensions, improvements, remodeling, additions, and alterations thereof; elements essential to provide a reliable recycled supply such as standby treatment units and clear well facilities; and any other works including sites for the treatment process or for ultimate disposal of residues resulting from such treatment. Additionally, "treatment works" means any other method or system for preventing, abating, reducing, storing, treating, separating, or disposing of pollutants, including storm water runoff, or industrial waste in combined or separate storm water and sanitary sewer systems.

"Water quality criteria" means a designated concentration of a constituent that, when not exceeded, will protect an organism, an organismic community, or a prescribed water use or quality.

"Wildlife" means all undomesticated animals.

"Zone of saturation" means that portion of the earth's crust which is saturated with water.

7:9-6.4 Statements of Policy

- (a) Water is vital to life and comprises an invaluable natural resource which is not to be abused by any segment of the State's population or its economy. It is the policy of this State to restore, enhance, and maintain the chemical, physical and biological integrity of its waters, to protect public health, to safeguard fish and aquatic life and scenic and ecological values and to enhance the domestic, municipal, recreational, industrial and other uses of water.
- (b) It is the policy of the Department not to permit the introduction of pollutants into the ground waters of the State in concentrations which are known to be toxic, carcinogenic, mutagenic, or teratogenic. The Department, to the maximum extent possible, will direct its control efforts to require the removal of such pollutants from discharges where such discharges are shown to already occur in the waters of the State.
- (c) Existing and potential uses of ground water shall be maintained and protected. Where existing quality is inadequate to support designated uses, such quality shall be upgraded after the Department has evaluated the threat to public health and safety and the results of inaction relative to the protection of the present and potential uses of the resource.
- (d) The Department shall define the designated uses which are to be protected and maintained, identify those waters to which each designated use applies, and establish numerical or

descriptive criteria for water quality substances in a manner that is consistent with the designated uses and policies described in this section.

- (e) The purpose of these rules is to protect the ground waters of the State for use as agricultural, industrial, and potable water supplies and other reasonable uses, and as a supplement to surface waters for recreation, wildlife, fish and other aquatic life, agriculture, industry, and potable water supply.
- (f) Discharges to ground water which subsequently discharges into surface waters and which would cause a contravention of those surface water quality standards shall not be permitted.
- (g) Existing ground-water quality which exceeds those levels necessary to support designated uses shall be maintained and protected unless the State chooses 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 designated uses. Additionally no degradation shall be allowed in ground waters which constitute an outstanding National resource such as ground waters of National and State Parks, wildlife refuges, and wildlife management areas and ground waters of exceptional ecological significance.
- (h) Where existing ground-water quality does not meet the criteria listed herein, due primarily to man's activities, it is the policy and objective of the department that the quality be restored and upgraded to the minimum levels of quality stated in section 6 of this subchapter.
- (i) When existing water quality does not conform with the established minimum criteria solely as a result of natural causes, natural water quality characteristics shall prevail.
- (j) The following statements concern the nondegradation of Central Pine Barrens water quality.
 - 1. The Central Pine Barrens Area constitutes a unique and particularly fragile ecosystem compared with other coastal areas. Furthermore, the ground waters in the Central Pine Barrens have a major impact on the quantity and quality of the surface waters in the Central Pine Barrens. The vast high quality ground-water reservoir in the area necessitates a special State ground-water quality policy. In light of the vulnerable character of the area, the Department of Environmental Protection shall not, in the performance of its statutory duties, approve any activity which, alone or in combination with other activities, will cause degradation in the existing

ground-water quality characteristics of the Central Pine Barrens.

2. The State's Central Pine Barrens water quality policy is not intended to interfere with water use for the operation of cranberry bogs or blueberry production.

7:9-6.5 Ground Water Designated Uses And Quality Criteria

- (a) The Department will adopt as part of these regulations, after proper procedure, Water Quality Criteria and Effluent Limitations for additional toxic pollutants pursuant to the Clean Water Act, Sections 301, 304, and 307 of P.L. 92-500, as amended by P.L. 95-217 (33 U.S.C.A. 1251 et seq.).
- (b) When existing ground-water quality does not meet the criteria listed in section 6 of this subchapter, due primarily to man's activities, the department shall, after a review of all available scientific and technical data, determine whether it shall require dischargers, through a schedule of compliance or other manner deemed appropriate by the Department, to restore and upgrade the ground water to the minimum levels of quality stated in section 6 of this subchapter or contain the contamination within boundaries determined by the Department. The major considerations in making such a determination shall be whether, in the opinion of the Department, the degradation constitutes a threat to public health and safety or interferes with the present or potential uses of ground water.

The timing, nature, and extent of the compliance procedure shall be determined by the Department after a review of the specific factors affecting each individual case.

- (c) Class GW2 ground water having a natural total dissolved solids (TDS) concentration of 500 mg/l or less shall be suitable for potable, industrial, or agricultural water supply, after conventional water treatment (for hardness, pH, Fe, Mn, and chlorination) where necessary, or for the continual replenishment of surface waters to maintain the quantity and quality of the surface waters of the State, and other reasonable uses. Quality criteria for these waters may be found in section 6 of this subchapter.
- (d) Class GW3 ground water having a natural TDS concentration between 500 mg/l and 10,000 mg/l shall be suitable for conversion to fresh potable waters, or other reasonable beneficial uses. Quality criteria for these waters may be found in section 6 of this subchapter.
- (e) Class GW4 ground water having a natural total dissolved solids concentration in excess of 10,000 mg/l shall be suitable for any reasonable beneficial use. Effluent limits

and quality criteria will be determined on a case by case basis for these waters.

- (f) Class GW1 ground water in the Central Pine Barrens shall be suitable for potable water supply, agricultural water supply, continual replenishment of surface waters to maintain the existing quantity and high quality of the surface waters in the Central Pine Barrens, and other reasonable uses. Quality criteria for these waters may be found in section 6 of this subchapter.
- (g) Subdivision of the groundwater categories identified in this section shall follow the procedures in section 10 of this subchapter.

7:9-6.6 Ground-Water Quality Criteria

The maximum limits for a specific criterion shall be exceeded only as a result of natural conditions.

The Department may establish limits in the terms and conditions of a permit which will allow the secondary standards as identified in subsections 7:9-6.6(b) and (c) to be exceeded provided that there is no adverse effect upon the designated uses of ground water.

- (a) **Ground-Water Quality Criteria for the Central Pine Barrens:
Class GW1**

<u>Pollutant, Substance or Chemical</u>	<u>Ground-Water Quality Criteria</u>
1. Aldrin/Dieldrin	1. 0.003 ug/l
2. Arsenic and Compounds	2. 0.05 mg/l
3. Barium	3. 1.0 mg/l
4. Benzidine	4. 0.0001 mg/l
5. Cadmium	5. Natural Background
6. Chromium (Hexavalent) and Compounds	6. Natural Background
7. Cyanide	7. 0.2 mg/l
8. DDT and Metabolites	8. 0.001 ug/l
9. Endrin	9. 0.004 ug/l
10. Lead and Compounds	10. 0.05 mg/l
11. Mercury and Compounds	11. 0.002 mg/l
12. Nitrate-Nitrogen	12. 2.0 mg/l
13. Phenol	13. 0.3 mg/l
14. Polychlorinated Biphenyls	14. 0.001 ug/l
15. Radionuclides	15. Prevailing regulations adopted by the U.S.E.P.A. pursuant to sections 1412, 1415 and 1450 of the Public Health Services Act as amended by the Safe Drinking

16. Selenium and Compounds	16. Natural Background
17. Silver and Compounds	17. 0.05 mg/l
18. Toxaphene	18. 0.005 ug/l
19. Ammonia	19. 0.5 mg/l
20. BOD (5-day)	20. 3 mg/l
21. Chloride	21. 10 mg/l
22. Coliform Bacteria	22. a) by membrane filtration, not to exceed four per 100 ml in more than one sample when less than 20 are examined per month, or b) by fermentation tube, with a standard 10 ml por- tion, not to be present in three or more portions in more than one sample when less than 20 are examined per month, or c) prevailing criteria adopted pursuant to the Federal Safe Drinking Water Act (PL 93-523)
23. Color	23. None Noticeable
24. Copper	24. 1.0 mg/l
25. Fluoride	25. 2.0 mg/l
26. Foaming Agents	26. 0.5 mg/l
27. Iron	27. 0.3 mg/l
28. Manganese	28. 0.05 mg/l
29. Odor and Taste	29. None Noticeable
30. Oil and Grease and Petroleum Hydrocarbons	30. None Noticeable
31. pH (Standard Units)	31. 4.2-5.8
32. Phosphate, Total	32. 0.7 mg/l
33. Sodium	33. 10 mg/l
34. Sulfate	34. 15 mg/l
35. Total Dissolved Solids	35. 100 mg/l
36. Zinc and Compounds	36. 5 mg/l

(b) Ground-Water Quality Criteria Statewide where the Total Dissolved Solids (TDS, Natural Background) Concentration is less than or equal to 500 mg/l: Class GW2

<u>Pollutant, Substance</u> <u>Or Chemical</u>	<u>Ground Water</u> <u>Quality Criteria</u>
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Primary Standards/Toxic Pollutants

1. Aldrin/Dieldrin	1. 0.003 ug/l
2. Arsenic and Compounds	2. 0.05 mg/l
3. Barium	3. 1.0 mg/l

4. Benzidine	4. 0.0001 mg/l
5. Cadmium and Compounds	5. 0.01 mg/l
6. Chromium (Hexavalent) and Compounds	6. 0.05 mg/l
7. Cyanide	7. 0.2 mg/l
8. DDT and Metabolites	8. 0.001 ug/l
9. Endrin	9. 0.004 ug/l
10. Lead and Compounds	10. 0.05 mg/l
11. Mercury and Compounds	11. 0.002 mg/l
12. Nitrate-Nitrogen	12. 10 mg/l
13. Phenol	13. 3.5 mg/l
14. Polychlorinated Biphenyls	14. 0.001 ug/l
15. Radionuclides	15. Prevailing regulations adopted by the USEPA pursuant to sections 1412, 1415, and 1450 of the Public Health Services Act as amended by the Safe Drinking Water Act (PL 93-523)
16. Selenium and Compounds	16. 0.01 mg/l
17. Silver and Compounds	17. 0.05 mg/l
18. Toxaphene	18. 0.005 ug/l

Secondary Standards

19. Ammonia	19. 0.5 mg/l
20. Chloride	20. 250 mg/l
21. Coliform Bacteria	21. a) by membrane filtration, not to exceed four per 100 ml in more than one sample when less than 20 are examined per month, or b) by fermentation tube, with a standard 10 ml portion, not to be present in three or more portions in more than one sample when less than 20 are examined per month, or c) Prevailing criteria adopted pursuant to the Federal Safe Drinking Water Act (PL 93-523)
22. Color	22. None Noticeable
23. Copper	23. 1.0 mg/l
24. Fluoride	24. 2.0 mg/l
25. Foaming Agents	25. 0.5 mg/l
26. Iron	26. 0.3 mg/l
27. Manganese	27. 0.05 mg/l
28. Odor and Taste	28. None Noticeable
29. Oil and Grease and	29. None Noticeable

	Petroleum Hydrocarbons	
30.	pH (Standard Units)	30. 5-9
31.	Phenol	31. 0.3 mg/l
32.	Sodium	32. 50 mg/l
33.	Sulfate	33. 250 mg/l
34.	Total Dissolved Solids	34. 500 mg/l
35.	Zinc and Compounds	35. 5 mg/l

- (c) Ground Water Quality Criteria Statewide where the Total Dissolved Solids (TDS, Natural Background) Concentration is between 500 mg/l and 10,000 mg/l: Class GW3

Primary Statewide/Toxic Pollutants

<u>Pollutant, Substance or Chemical</u>	<u>Ground-Water Quality Criteria</u>
1. Aldrin/Dieldrin	1. 0.003 ug/l
2. Arsenic and Compounds	2. 0.05 mg/l
3. Barium	3. 1.0 mg/l
4. Benzidine	4. 0.0001 mg/l
5. Cadmium and Compounds	5. 0.01 mg/l
6. Chromium (Hexavalent) and Compounds	6. 0.05 mg/l
7. Cyanide	7. 0.2 mg/l
8. DDT and Metabolites	8. 0.001 ug/l
9. Endrin	9. 0.004 ug/l
10. Lead and Compounds	10. 0.05 mg/l
11. Mercury and Compounds	11. 0.002 mg/l
12. Nitrate-Nitrogen	12. 10 mg/l
13. Phenol	13. 3.5 mg/l
14. Polychlorinated Biphenyls	14. 0.001 ug/l
15. Radionuclides	15. Prevailing regulations adopted by the USEPA pursuant to sections 1412, 1415 and 1450 of the Public Health Services Act as amended by the Safe Drinking Water Act (PL 93-523)
16. Selenium and Compounds	16. 0.01 mg/l
17. Silver and Compounds	17. 0.05 mg/l
18. Toxaphene	18. 0.005 ug/l

Secondary Standards

19. Ammonia	19. 0.5 mg/l
20. Chloride	20. Natural Background
21. Coliform Bacteria	21. a) by membrane filtration, not to exceed four per 100 ml in more than one sample when less than 20 are examined per month, or

b) by fermentation tube, with a standard 10 ml portion, not to be present in three or more portions in more than one sample when less than 20 are examined per month, or
c) Prevailing criteria adopted pursuant to the Federal Safe Drinking Water Act (PL 93-523)

22. Color	22. None Noticeable
23. Copper	23. 1.0 mg/l
24. Fluoride	24. 2.0 mg/l
25. Foaming Agents	25. 0.5 mg/l
26. Iron	26. 0.3 mg/l
27. Manganese	27. 0.05 mg/l
28. Odor and Taste	28. None Noticeable
29. Oil and Grease and Petroleum Hydrocarbons	29. None Noticeable
30. pH (Standard Units)	30. 5-9
31. Phenol	31. 0.3 mg/l
32. Sodium	32. Natural Background
33. Sulfate	33. Natural Background
34. Total Dissolved Solids	34. Natural Background
35. Zinc and Compounds	35. 5 mg/l

7:9-6.7 Ground Water Designated Areas

- (a) All areas of the State shall be classified either: Statewide, except Central Pine Barrens; or Central Pine Barrens.
- (b) The Statewide designated area shall be all areas of the State except as provided in subsection (c) of this section.
- (c) The Central Pine Barrens Area (The Boundary of Central Pine Barrens is further clarified by the Official Map which is available for review at the New Jersey Department of Environmental Protection, Division of Water Resources or appropriate county planning board, board of health, or municipality.) boundaries will underlie the following surface water drainages;

1. Mullica River Watershed

- i. Mullica River and tributaries upstream from Lower Bank Road Bridge at Lower Bank to source.
- ii. Wading River and tributaries upstream of Route 542 Bridge to source.

- (A) Freshwater segment of Ives Branch and its tributaries from 10 foot contour crossing Ives Branch.

- iii. West Branch Bass River and tributaries upstream from the Bass River State Forest Boundary (where it crosses the West Branch of Bass River, downstream of Stage Road).
 - iv. East Branch Bass River and tributaries upstream from the Bass River State Forest boundary (where it crosses the East Branch Bass River, downstream of Stage Road).
 - v. Indian Cabin Creek and tributaries upstream from Egg Harbor City Lake to source.
- 2. Cedar Creek (Lacey Township) and tributaries upstream of Route 9, (head of tide) surrounded by the northern ridgeline; and the southern ridgeline west of the Garden State Parkway and the southern ridgeline (between the Garden State Parkway and Route 9) as defined by Lacey Road, Manchester Avenue, and Haines Road.
- 3. All fresh waters west of the Garden State Parkway bounded by the Mullica and Cedar Creek (Lacey Township) watersheds.
- 4. Toms River Watershed
 - i. Devanport Branch and tributaries upstream from Route 530 to source.
 - ii. Unnamed tributary to Michaels Branch through Keswick Grove and tributaries upstream from the east crossing of the Penn Central Railroad to source.
- 5. Rancocas Creek Watershed
 - i. South Branch Rancocas Creek and tributaries upstream from Route 206 to source.
 - ii. Jade Run and tributaries upstream from Route 206 to source.
 - iii. Mt. Misery Brook and tributaries upstream of the western intersection of the Lebanon State Forest boundary at Mt. Misery.
 - iv. Tributaries to Pole Bridge Branch upstream of the Penn Central Railroad.
- 6. The Central Pine Barrens boundary underlies the surface water drainages in the following State and National Park, Forests, and Fish and Wildlife lands.

- i. Greenwood Branch and tributaries within the boundaries of Greenwood Pancocas Reserve and Lebanon State Forest.
- ii. Tributaries to Country Lake, Mirror Lake and Hanover Lake within the boundaries of the Whitesbog Fish and Wildlife Management Area and Lebanon State Forest.
- iii. All waters within the Wharton Tract State Forest.
- iv. All waters within the following portions of the Bass River State Forest.
 - (A) That portion located on the New Gretna and Oswego Lake USGS Quadrangle Maps which is uninterrupted by private lands and contiguous to the Ives Branch and Bartletts Branch watersheds lying both north and south of Stage Road.
 - (B) That portion located on the New Gretna USGS Quadrangle Map which is uninterrupted by private lands and contiguous to and lying to the south of Stage Road.
 - (C) That portion located on the New Gretna and Oswego Lake USGS Quadrangle Maps which is uninterrupted by private lands and contiguous to and lying to the southeast of the Garden State Parkway.

7:9-6.8 Effluent Standards And Discharger Requirements

- (a) Any discharger of a pollutant onto the land or into the ground water, either directly or indirectly, shall obtain a permit pursuant to N.J.S.A. 58:10A-1 et seq., and regulations promulgated thereunder (N.J.A.C. 7:14A-1.1 et seq.).
- (b) The review of any discharge into the ground water or onto the land will consider all of the scientific and technical criteria and parameters as set forth in the most recent edition of the appropriate guidelines for that discharge as developed and published by the Department.
- (c) Where total dissolved solids are in excess of 10,000 mg/l discharger requirements and effluent limitations will be established on a case by case basis.
- (d) In developing effluent guidelines and limitations, special attention shall be given to protecting aquifer recharge areas.

7:9-6.9 Procedures for Modifying Ground-Water Quality Based Effluent Limitations

(a) The criteria for modifying ground-water quality based effluent limitations where existing ground-water quality is currently better than applicable ground-water quality criteria are as follows:

1. Whenever the Department determines that existing ground-water quality in an area is consistently better in quality than established ground-water quality criteria, the Department shall establish water quality based effluent limitations for new dischargers or those existing dischargers who propose to modify their discharge, which can reasonably be expected to protect the high quality waters from degradation. However, the applicant or any interested person may request a modification of such effluent limitations. Such a request shall be made, in writing, within 30 days of notice of intent to issue the NJPDES Permit. If the Department does not receive such a request for modification, the draft effluent limitations shall become final. In no case shall the Department establish a water quality based effluent limitation lower than that necessary to maintain the existing high water quality unless:

i. The applicant for such effluent limitations demonstrates to the satisfaction of the Department, after public notice, including notice to affected municipalities and, a public hearing, that:

(A) There is no reasonable relationship between the economic and social costs of achieving the draft effluent limitations and the benefits to be obtained in maintaining existing ground water quality. Economic and social costs shall include social and economic dislocation in the affected community or communities; and

(B) Some degradation of high quality waters should be allowed because of necessary and justifiable economic or social development; and

(C) A detailed scientific assessment shows that the alternative effluent limitations will not interfere with or be injurious to designated ground water uses; or

ii. The Department determines, after public notice including notice to affected municipalities, of the opportunity for a public hearing that:

- (A) Some degradation of high quality waters should be allowed because of necessary and justifiable economic and social development; and
 - (B) A detailed scientific assessment shows that the alternative effluent limitations will not interfere with or be injurious to designated ground water uses.
2. In no case shall degradation be allowed in ground waters which constitute an outstanding national resource such as waters underlying National and State parks, wildlife refuges, wildlife management areas and ground waters of exceptional ecological significance.
 3. A ground-water quality based effluent limitation modification shall be granted for a time period not to exceed that of the NJPDES Permit in which the limitations appear. On review of the permit, the modified effluent limitations will be renewed if, in the opinion of the Department, there has been no adverse effect on water quality or designated uses.
- (b) Criteria for modifying ground-water quality based effluent limitations where existing ground-water quality is equal to or worse than applicable ground-water quality criteria are as follows:
1. Whenever the Department determines that ground-water quality is consistently worse than or equal to applicable ground-water quality criteria, the Department may establish effluent limitations which can reasonably be expected to attain and maintain water quality standards. However, the applicant or any interested person may request a modification of such effluent limitations. Such a request shall be made, in writing, within 30 days of notice of intent to issue the NJPDES Permit. If the Department does not receive such a request for modification, the draft effluent limitations shall become final. In no case shall the Department establish a ground-water quality based effluent limitation less stringent than that necessary to attain or maintain water quality criteria unless the applicant for any such effluent limitation modification demonstrates to the Department, after a public hearing, that:
 - i. The existing designated use is not attainable because of natural background; or
 - ii. The existing designated use is not attainable because of irretrievable man-induced conditions; or

iii. There is no reasonable relationship between the economic and social costs of achieving the draft effluent limitations, and the benefits to be obtained in maintaining or attaining water quality criteria. Economic and social costs shall include social and economic dislocation in the affected community or communities.

2. In no case shall the Department establish effluent limitations less stringent than those required to protect existing ground-water uses.

3. A ground water quality based effluent limitation modification shall be granted for a time period not to exceed that of the NJPDES permit in which the limitations appear. On review of the permit, the variance will not be renewed unless the criteria of this subsection are fully met.

7:9-6.10 Procedures for Establishing Subclassifications for less Restrictive Uses

(a) The Department shall maintain those water quality standards which are designated in this sub-chapter. From time to time (but at least once each three year period beginning with the date of adoption of these rules), the Department shall hold public hearings in accordance with the Administrative Procedure Act, N.J.S.A. 52:14B-1 et seq., for the purpose of reviewing and, as appropriate revising and adopting standards. Should the Department decide at that time to establish a subclass of GW waters which allow less restrictive uses than those of section five of this subchapter, it shall follow the procedures set forth in subsections (e) and (f) of this section.

(b) In addition to the regularly scheduled review of water quality standards, the Department will entertain petitions for the subclassification of designated areas for less restrictive uses at any time. The petition must be fully documented as outlined in subsection (c) of this section. Upon receipt of a petition for subclassification, the Department shall review the documents submitted and, based upon such review, determine whether to conduct a public hearing to consider the subclassification.

(c) In reviewing a petition for subclassification for less restrictive uses, the Department shall refuse to consider a subclassification which, in the opinion of the Department, would constitute a threat to public health and safety.

(d) For the purpose of this section, a "petitioner" for subclassification means the Department and any existing discharger to the designated area.

- (e) The petitioner shall include in the petition for subclassification, appropriate groundwater quality studies and analyses as well as environmental, economic, and social impact statements demonstrating satisfaction of the criteria listed in paragraph one, and two or three of subsection (f) of this sections, upon which the petition for subclassification is based.
- (f) The Department may establish less restrictive uses than those contained in subsection (d) of section six of this subchapter when a petitioner for subclassification demonstrates to the satisfaction of the Department, after public notice, including notice to affected persons, and a public hearing, that:
1. The designated use is not being achieved because of the presence in the designated area of a pollutant or pollutants, other than TDS, and
 2. The designated use is not attainable because of irretrievable man-induced conditions; or
 3. The environmental, economic, and social costs of restoring the waters in order to attain the designated use bear no reasonable relationship to the environmental, economic, and social benefits to be obtained.
- (g) Any subclassification for less restrictive uses established pursuant to this section shall be for a specifically delineated area which shall not be extended through improper use of the groundwaters therein.
- (h) Subclassification for less restrictive uses shall be reviewed by the Department at least once each three year period beginning with the date of adoption of such subclassification.

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