DELAWARE RIVER BASIN COMMISSION
Trenton, New Jersey

Administrative Manual - Part III

BASIN REGULATIONS - WATER QUALITY

Recodified and Revised to Include Amendments Through
February 27, 1974

DRAFT

4/20/74

Adopted as per Letter of 9/13/76

DELAWARE RIVER BASIN COMMISSION

AMENDMENTS TO THE ADMINISTRATIVE MANUAL --
BASIN REGULATIONS -- RELATING TO WATER SUPPLY

Legal References: Compact, Sections 3.7 and Article 4; Comprehensive Plan, Article "Water Supply Charges," added by Resolution No. 71-4 (April 7, 1971) and Compact, Section 15.1(b).

The Administrative Manual is hereby amended by adding new Articles to Part III, Basin Regulations, to read as follows:

Article 5-1

Section 5-1.1. Water supply policy. The provisions of Resolution 71-4 (Comprehensive Plan) relating to water supply charges, are incorporated herein and made a part hereof.

Section 5-1.2. Prohibition; Sanctions. Any person, firm, corporation or other entity, including a public corporation, body or agency, who shall use, withdraw or divert surface waters of the basin, shall pay such charges therefor as may be required by this Resolution. Any violation of this Resolution shall be subject to penalty as prescribed under Article 14.17 of the Compact. The Commission may also recover the value (according to the established water pricing schedules of the Commission) of any such taking, withdrawal, or diversion, and invoke the jurisdiction of the courts to enjoin any further use, taking or withdrawal, unless all charges under this Resolution are paid in full when due.

Section 5-1.3. Exempt Uses Under the Compact.

(a) Section 15.1(b) of the Delaware River Basin Compact provides that "no provision of Section 3.7 of the Compact shall be deemed to authorize the Commission to impose any charge for water withdrawals or diversions from the basin if such withdrawals or diversions could lawfully have been made without charge on the effective date of the Compact; ...". In compliance with this provision: There shall be no charge for water used in quantities not exceeding the legal entitlement of the user, determined as of October 27, 1961. Each user or taker may submit proof satisfactory to the Commission of the

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factors constituting legal entitlement, as defined in paragraph (b) hereof. In the absence of such proof of these conditions as of October 27, 1961, the quantity of water exempt from charge to each user will be the legal entitlement of the user determined as of March 31, 1971.

(b) For the purposes of paragraph (a) of this section:

1. "Legal entitlement", means the quantity or volume of water expressed in million gallons per month determined by the lesser of the following conditions:

(i) a valid and subsisting permit, issued under the authority of one of the signatory parties, if such permit was required as of October 27, 1961 or thereafter;

(ii) physical capability as required for such taking;

(iii) the total allocable flow without augmentation by the Commission, using a seven day, ten-year, low flow criterion measured at the point of withdrawal or diversion.

2. "Physical capability" means the capacity of pumps, water lines and appurtenances installed and operable, determined according to sound engineering principles. The physical capability specifically includes plant facilities actually using water, but excludes facilities which may have been installed in anticipation of future plant expansion not yet realized.

3. "Actual taking, use and diversion" means the quantities and volumes of water reported to or determined by the Commission for beneficial use, subject to audit and verification by field inspection and other appropriate procedures.

(c) Whenever adequate records of legal entitlement for agricultural irrigation purposes are not available to the Commission, such legal entitlement shall be measured by the maximum number of acres under irrigation by the user at any time during the year ending March 31, 1971, allowing one acre-foot of surface water annually per acre irrigated.

(d) Notwithstanding the provisions of (a), (b) and (c) there shall be no charge for water made available from storage where: (i) the cost of the storage facility has or will be otherwise paid for by the user, (ii) such storage controls a drainage area, and (iii) the use does not exceed the yield of such storage without augmentation from other surface water of the basin.

Section 5-1.4. Effective Date of Rates. Rates and charges shall apply to the use of all surface waters of the Basin not exempt hereunder by any person on and after the date of the first impoundment of water for water supply purposes at the Beltzville Reservoir (February 8, 1971).

Article 5-2

Section 5-2.1. Certificate of Entitlement.

(a) The Executive Director will issue to each known user a certificate of entitlement within 30 days after the effective date of these regulations subject to the provisions of paragraph (b). In addition, any other water user may apply for a certificate of entitlement at any time. A preliminary notice of entitlement shall be issued to each user. Such entitlement shall become final and take effect, unless the user shall file with the Commission, within twenty days after the service of the notice of entitlement, a request for hearing by the Commission. At such hearing the user may show cause why the proposed entitlement shall not take effect.

(b) The Executive Director shall schedule a hearing not less than ten days after receipt of a request for a hearing by the Commission. Hearings shall be conducted and the results thereof subject to review in accordance with Article 5 of the Commission's Rules of Practice and Procedure.

(c) A final certificate of entitlement will be issued either upon expiration of the time to request a hearing, where there has been no request, or in accordance with the determination of the Commission in the event of a hearing by the Commission.

(d) A certificate of entitlement is not transferrable, except as provided in paragraphs (e) and (f) below.

(e) Whenever ownership or possession of land in agricultural use is transferred, a certificate of entitlement with respect to such land shall be deemed to run with the land, so long as the water use continues to be for agricultural irrigation. Upon any such land transfer, the Executive Director will reissue a certificate of entitlement to the new user.

(f) A certificate of entitlement may be transferred in connection with a corporate reorganization within any of the following categories:

(i) whenever property is transferred to a corporation by one or more persons solely in exchange for stock or securities of the same corporation, provided that immediately after the exchange the same person or persons are in control of the transferee corporation, that is, they own 80% of the voting

stock and 80% of all other stock of the corporation;

(ii) whenever the transfer is an incident of a statutory merger or consolidation pursuant to the corporation laws of any state, the District of Columbia or the United States;

(iii) whenever the transfer is included in a transfer by a corporate holder of a certificate of entitlement of all or a part of its assets to another corporation if immediately after the transfer the transferor or one or more of its stockholders, or any combination thereof, are in control of the corporation to which the assets are transferred, and such transfer is in exchange solely for stocks or securities of the transferee corporation as a party to a reorganization within the meaning of Section 354 or Section 361 of the Internal Revenue Code;

(iv) where such transfer is required merely as a result of a change of the name, identity, form, or place of organization of a corporate holder of a certificate of entitlement.

Section 5-2.2. Measurement and Billing of Water Taken.

(a) The quantity and volume of waters used by each person shall be determined by meters, or other methods approved by the Commission, installed, maintained and read by or on behalf of the taker. Meters or other methods of measurement shall be subject to approval and inspection by the Commission as to installation, maintenance and reading.

(b) Each user of surface water who is not exceeding the amount specified in his "certificate of entitlement" shall annually, on or before January 31, file with the Commission, on a form to be prescribed by the Executive Director, a report of the user's physical capability, as defined, permit limitations, and the volume of water used during the preceding year.

(c) Each user of surface water who is taking an amount of water greater than the amount specified in his "certificate of entitlement" shall report his usage to the Commission on or before April 30, July 31, October 31, and January 31, of each year covering the next preceding calendar quarter respectively on forms to be prescribed by the Executive Director. The amount due for water usage in excess of the legal entitlement for each of the first three quarters of a calendar year shall be computed and paid by the user together with the report.

(d) The Commission will render a statement of the net amount due based on the fourth quarter report, including a negative or positive adjustment, so that the net total billing and payment for four quarters will equal the total water used during the four quarters less the user's legal entitlement, if any.

Section 5-2.3. Payment of Bills. The amount due for each quarter shall bear interest at the rate of 1% per month for each day it is unpaid beginning 30 days after the due date of the quarterly report for the first three quarters and 30 days after the bill is rendered for the fourth quarter.

Article 5-3

Section 5-3.1. Schedule of Water Charges. The Commission will, from time to time, after public notice and hearing, make, amend and revise a schedule of water charges. Until changed, the charge for water use not exempt shall be as follows:

(a) Four cents per thousand gallons for consumptive use; and

(b) Four-tenths of a mill per thousand gallons for non-consumptive use.

Section 5-3.2. Contracts; Minimum Charge. Subject to the exclusions for certificates of entitlement and exempt uses, the Executive Director may require contracts for any taking, use, withdrawal or diversion of waters of the basin. Each contract shall provide for a minimum annual payment in accordance with an estimated annual demand schedule, regardless of use, withdrawal, or diversion. The failure of any person to execute a contract under this section shall not affect the application of other requirements of this resolution.

Section 5-3.3. Exempt Use. The following uses shall be exempt from charge:

(a) Non-consumptive uses of less than 1,000 gallons during any day and less than 100,000 gallons during any quarter;

(b) Ballast water used for shipping purposes shall also be exempt from charge;

(c) Water taken, withdrawn or diverted from streams tributary to the river master's gauging station at Montague; and

(d) Water taken, withdrawn or diverted below R.M. 38 (the mouth of the Cohansey River) and such proportion of waters taken, diverted or withdrawn above R.M. 38 and below R.M. 92.4 (the mouth of the Schuylkill River) as the Executive Director may determine, on the basis of hydrologic studies, would have no discernible effect upon the maintenance of the salt front below the mouth of the Schuylkill River.

Section 5-3.4. Cooling Water. Water used exclusively for cooling purposes which is returned to the stream in compliance with the effluent requirements of applicable water quality standards, shall be charged at the non-consumptive use rate except that losses due to instream evaporation caused by cooling uses will be charged as consumptive use.

Section 5-3.5. Historical Use. A person who or which could not for any reason use, take, withdraw or divert waters of the basin from the place in question on March 31, 1971, shall not be entitled to use any surface water of the basin without charge.

Article 5-4

Section 5-4.1. Definitions. For the purposes of this Article, except as otherwise required by the context:

(a) "Person" means any person, corporation, partnership, association, trust or other entity, public or private.

(b) "Water user" means any person who uses, takes, withdraws or diverts surface waters within the Delaware River Basin.

(c) "Executive Director" means the Executive Director of the Delaware River Basin Commission.

(d) "Consumptive use" means the water lost due to transpiration from vegetation in the building of plant tissue, incorporated into products during their manufacture, lost to the atmosphere from cooling devices, evaporated from water surfaces, exported from the Delaware River Basin, or any other water use for which the water withdrawn is not returned to the surface waters of the Basin undiminished in quantity.

Section 5-4.2. Effective Date. This resolution shall take effect upon its adoption.

PREFACE

Resolution 74-1, adopted by the Commission on February 27, 1974, directed that the Basin Regulations - Water Quality be recodified so as to reflect all approved amendments. This document fulfills that requirement. For reference purposes, following is a summary of Commission actions on water quality standards and regulations to date.

Resolution	Date	Comments
62-14	July 25, 1962	INCODEL Standards added to Comprehensive Plan.
65-3	Feb. 24, 1965	Primary treatment required as a minimum, Basinwide.
67-2	March 2, 1967	Water quality standards for tidal waters adopted.
67-7	April 26, 1967	Water quality standards for non-tidal interstate streams; Resolution 67-2 recodified and incorporated; Resolution 65-3 repealed; Secondary treatment required as a minimum; Allocation of assimilative capacity policy adopted; INCODEL Standards repealed to the extent inconsistent with this resolution.
68-2	March 7, 1968	Water quality regulations adopted; Allocation of assimilative capacity procedures included; Abatement schedule procedures included; Resolution 67-7 incorporated and recodified in this resolution.
68-6	July 31, 1968	Regional policy for wastewater management adopted.
68-8	Sept. 25, 1968	Minor change in regulations on allocation procedure.
70-3	March 26, 1970	Nondegradation policy adopted; addition to water quality criteria; minor changes in definition of secondary treatment.
70-24	Nov. 24, 1970	Changes in dissolved oxygen and temperature criteria for trout waters.
72-1	Jan. 26, 1972	Interpretive Guideline No. 1 adopted.
72-14	Dec. 12, 1972	Groundwater quality standards adopted.
73-4	Jan. 24, 1973	Groundwater quality regulations adopted.
73-11	Oct. 31, 1973	Abatement schedules transferred to appropriate signatory agencies.
74-1	Feb. 27, 1974	Water quality standards and regulations amended primarily to be consistent with amendments to Federal Law (P.L. 92-500).

This recodification reflects all amendments above, including the INCODEL Standards saved from repeal by Resolution 67-7, and also includes Resolution 72-1.

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Section 1.10 General

1.10.1 Effect of the Comprehensive Plan. The Comprehensive Plan prescribes standards which govern the review of proposed new projects and action by the Commission to control and abate pollution with respect to existing facilities. Section X of the Comprehensive Plan, Water Quality Standards for the Delaware River Basin, (as reproduced in Article 3 herein), sets forth these water quality standards.

1.10.2 Project Review. The process by which the Commission will include projects in the Comprehensive Plan and review and screen proposed projects to determine their compatibility with the Plan is set forth in the Commission's Administrative Manual (Part II) - RULES OF PRACTICE AND PROCEDURE.

1.10.3 Control and Abatement.

A. These Regulations are adopted pursuant to Article 5 and Section 14.2 of the Compact, to implement the cited Water Quality Standards.

B. Where applicable state standards require higher quality water than these Standards and Regulations, state standards will be controlling.

Section 1.20 Definitions. For the purpose of these Regulations and for interpretation and application of the Comprehensive Plan, unless the context otherwise requires:

1.20.1 "Standards" means Section X of the Comprehensive Plan (as reproduced in Article 3 herein).

1.20.2 "Pollution" means the introduction into waters of the Basin of substances or properties which impair the uses specified in the Comprehensive Plan.

1.20.3 "Effluent quality requirements" mean the requirements relating to effluents which are prescribed by the Standards or by these Regulations.

1.20.4 "Waste assimilation" means the chemical, physical, and biological process resulting when waste substances or properties are introduced into Basin waters.

1.20.5 "Waste assimilative capacity" means the measure of a stream's capacity for waste assimilation without impairment of the uses designated by the Standards.

1.20.6 "Water uses" means the protected uses prescribed by the Standards, and without limitation thereto:

A. "Agricultural use" includes water used for livestock and for irrigation;

B. "Industrial use" includes water for processing and cooling;

C. "Public water supplies" include water suitable for drinking purposes and for other domestic, industrial, municipal or institutional uses;

D. "Wildlife" includes all undomesticated animals and fowl;

E. "Fish and other aquatic life" includes all species of resident, anadromous, and catadromous fish, shellfish, and other aquatic biota;

F. "Recreation" includes all water-contact sports.

G. "Recreation - secondary contact" restricts activities to where the probability of significant contact or water ingestion is minimal, encompassing but not limited to:

1. boating,
2. fishing,
3. those other activities involving limited contact with surface waters incident to shoreline recreation.

1.20.7 "Unregulated streams" means streams where the quantity of flow, including its distribution in time or place, are not significantly altered by the activities or works of man.

1.20.8 "Regulated streams" are streams where the quantity of flow, including its distribution in time or place, are altered by the activities or works of man.

1.20.9 Additional definitions. See 3.10.6 of Article 3 and Article 4 of these Regulations and Section 1.2 of the Compact.

ARTICLE 2

INTERSTATE COOPERATION

Section 2.10 Administrative Agreements. To avoid unnecessary duplication and achieve maximum efficiency, signatory agencies to the Delaware River Basin Compact concerned with pollution control will be utilized to the maximum practical extent in enforcing these Regulations. To that end, the Executive Director is authorized to enter into cooperative administrative agreements with these agencies.

Section 2.20 Additional Requirements. Any of the signatory parties may impose standards, including water quality criteria and effluent quality requirements, with respect to waste discharges within its jurisdiction in excess of those provided by the Comprehensive Plan and these Regulations.

ARTICLE 3

WATER QUALITY STANDARDS FOR THE DELAWARE RIVER BASIN [COMPREHENSIVE PLAN, SECTION X]

Section 3.10 Basinwide Surface Water Quality Standards

3.10.1 Application. This Section shall apply to all surface waters of the Delaware River Basin.

3.10.2 Water Uses

A. Uses paramount. Water uses shall be paramount in determining stream quality objectives which, in turn, shall be the basis for determining effluent quality requirements.

B. Uses to be protected. The quality of Basin waters shall be maintained in a safe and satisfactory condition for the following uses:

1. agricultural, industrial, and public water supplies after reasonable treatment, except where natural salinity precludes such uses;

2. wildlife, fish and other aquatic life;

3. recreation;

4. navigation;

5. controlled and regulated waste assimilation to the extent that such use is compatible with other uses;

6. such other uses as may be provided by the Comprehensive Plan.

3.10.3 Stream Quality Objectives

A. Limits

1. The waters of the Basin shall not contain substances attributable to municipal, industrial, or other discharges in concentrations or amounts sufficient to preclude the specified water uses to be protected. Within this requirement:

   a. the waters shall be substantially free from unsightly or malodorous nuisances due to floating solids, sludge deposits, debris, oil, scum, substances in concentrations or combinations which are toxic or harmful to human, animal, plant, or aquatic life, or that produce color, taste, odor of the water or taint fish or shellfish flesh;
   b. the concentration of total dissolved solids shall not exceed 133 percent of background.

2. In no case shall concentrations of substances exceed those values given for rejection of water supplies in the United States Public Health Service Drinking Water Standards.

B. Nondegradation of Interstate Waters. It is the policy of the Commission to maintain the quality of interstate waters, where existing quality is better than the established stream quality objectives, unless it can be affirmatively demonstrated to the Commission that such change is justifiable as a result of necessary economic or social development or to improve significantly another body of water. In implementing this policy, the Commission will require the highest degree of waste treatment determined to be practicable. No change will be considered which would be injurious to any designated present or future use.

3.10.4 Effluent Quality Requirements

A. Minimum treatment. All wastes shall receive a minimum of secondary treatment, regardless of the stated stream quality objective.

B. Disinfection. Wastes (exclusive of storm-water by-pass) containing human excreta or disease producing organisms shall be effectively disinfected before being discharged into surface bodies of water.

C. Public safety. Effluents shall not create a menace to public health or safety at the point of discharge.

D. Limits. Discharges shall not contain more than negligible amounts of debris, oil, scum, or other floating materials, suspended matter which will settle to form sludge, toxic substances, or substances or organisms that produce color, taste, odor of the water, or taint fish or shellfish flesh.

E. Allocation of capacity. Where necessary to meet the stream quality objectives, the waste assimilative capacity of the receiving waters shall be allocated in accordance with the doctrine of equitable apportionment.

3.10.5 Other Considerations

A. Combined sewers. Any new facility or project combining sanitary or industrial waste with stormwater drainage which would have a substantial effect on the quality of waters of the Basin shall not be permitted, whether or not any such project or facility discharges into an existing combined system.

B. Access and reports.

1. The Commission, or its duly authorized representatives, shall have access, at reasonable hours, to observe and inspect waste treatment facilities and to collect samples for analyses.

2. Upon written request, waste treatment facility operation reports shall be submitted to the Commission.

C. Zones. The Delaware River and Bay and their tributaries may be divided into zones which will facilitate the management of surface and underground water quality.

D. Streamflow. Numerical stream quality objectives are based on a minimum consecutive 7-day flow with a 10-year recurrence interval.

3.10.6 Definitions

A. Biochemical oxygen demand. Biochemical oxygen demand as determined under standard laboratory procedures for 5 days at 20° C.

B. Carbonaceous oxygen demand. That part of the ultimate oxygen demand associated with biochemical oxidation of carbonaceous, as distinct from nitrogenous, material.

C. Effective disinfection. The destruction of pathogenic organisms in such manner and under such controls as shall be prescribed by Commission regulations.

D. Secondary treatment.

1. The removal of practically all suspended solids at all times;

2. The reduction of the biochemical oxygen demand by at least 85 percent;

3. May include the in-plant control of industrial wastes as prescribed by the Commission.

E. River mile. The distance, in statute miles, of a location or item measured from "mile zero."

1. Delaware Bay and River.

a. Mile zero is located at the intersection of the centerline of the navigation channel and a line between the Cape May Light and the tip of Cape Henlopen.

b. Distances from mile zero are measured essentially along the centerline of the navigation channel up to the Trenton-Morrisville Toll Bridge (R.M. 133.4) and above that point along the State boundary line as shown on published quadrangle maps of the United States Geological Survey.

2. Tributaries.

a. Mile zero is located at the intersection of the centerline of the tributary and a line joining the opposite banks at its mouth.

b. Distances from mile zero are measured along the centerline of the tributary.

Section 3.20 Interstate Streams--Nontidal

3.20.1 Application. This Section shall apply to the interstate nontidal streams of the Delaware River Basin. The interstate nontidal streams of the Delaware River Basin are those rivers, lakes, and other waters that flow across or form a part of state boundaries.

3.20.2 Zone 1A

A. Description. Zone 1A is that part of the Delaware River extending from the confluence of the East and West Branches of the Delaware River at Hancock, New York, R.M. (River Mile) 330.7, to the Route 652 bridge at Narrowsburg, New York, R.M. 289.9.

B. Water uses to be protected. The quality of Zone 1A waters shall be maintained in a safe and satisfactory condition for the following uses:

1. a. public water supplies after reasonable treatment,
   b. industrial water supplies after reasonable treatment,
   c. agricultural water supplies;

2. a. maintenance and propagation of resident game fish and other aquatic life,
   b. maintenance and propagation of trout,
   c. spawning and nursery habitat for anadromous fish,
   d. wildlife;

3. a. recreation.

C. Stream quality objectives.

1. Dissolved oxygen
   a. not less than 5.0 mg/l at any time;
   b. minimum 24-hour average of 6.0 mg/l;
   c. not less than 7.0 mg/l in spawning areas whenever temperatures are suitable for trout spawning.

2. Temperature. Except in designated heat dissipation areas [See 4.30.6.F.1]
   a. not to exceed 5° F (2.8° C) rise above ambient temperature until stream temperature reaches 50° F (10.0° C),
   b. not to exceed 2° F (1.1° C) rise above ambient temperature when stream temperature is between 50° F (10.0° C) and 58° F (14.4° C),
   c. natural temperature will prevail above 58° F (14.4° C).

3. pH. Between 6.0 and 8.5

4. Phenols. Not to exceed 0.005 mg/l, unless due to natural conditions.

5. Threshold odor number. Not to exceed 24 at 60° C.

6. Synthetic detergents (M.B.A.S.). Not to exceed 0.5 mg/l.

7. Radioactivity
   a. alpha emitters - not to exceed 3 pc/l (picocuries per liter);
   b. beta emitters - not to exceed 1,000 pc/l.

8. Fecal coliform. Not to exceed 200 per 100 milliliters as a geometric average; samples shall be taken at such frequency and location as to permit valid interpretation.

9. Total dissolved solids. Not to exceed
   a. 133 percent of background, or
   b. 500 mg/l,
   whichever is less.

10. Turbidity. Unless exceeded due to natural conditions
    a. maximum 30-day average 10 units,
    b. maximum 150 units.

D. Effluent quality requirements

1. All discharges shall meet the effluent quality requirements of Section 3.10.

2. The carbonaceous oxygen demand from an outfall (exclusive of stormwater by-pass) shall not exceed that assigned by the Commission to maintain stream quality objectives.

3. No discharge shall exceed a biochemical oxygen demand of 50 mg/l.

4. The discharge of an effluent, after dispersion in the water of the river, shall not cause a reduction of the dissolved oxygen content of such water of more than five percent.

3.20.3 Zone 1B

A. Description. Zone 1B is that part of the Delaware River extending from the Route 652 bridge at Narrowsburg, New York, R.M. 289.9, to the U.S. Routes 6 and 209 bridge at Port Jervis, New York, R.M. 254.75.

B. Water uses to be protected. The quality of Zone 1B waters shall be maintained in a safe and satisfactory condition for the following uses:

1. a. public water supplies after reasonable treatment,
   b. industrial water supplies after reasonable treatment,
   c. agricultural water supplies;

2. a. maintenance and propagation of resident game fish and other aquatic life,
   b. spawning and nursery habitat for anadromous fish,
   c. passage of anadromous fish,
   d. wildlife;

3. a. recreation.

C. Stream Quality Objectives

1. Dissolved Oxygen
   a. not less than 4.0 mg/l at any time;
   b. minimum 24-hour average of 5.0 mg/l.

2. Temperature. Except in designated heat dissipation areas [See 4.30.6.F.1.]
   a. not to exceed 5° F (2.8° C) rise above ambient temperature until stream temperature reaches 87° F (30.6° C),
   b. natural temperature will prevail above 87° F (30.6° C).

3. pH. Between 6.0 and 8.5.

4. Phenols. Not to exceed 0.005 mg/l, unless due to natural conditions.

5. Threshold odor number. Not to exceed 24 at 60° C.

6. Synthetic detergents (M.B.A.S.). Not to exceed 0.5 mg/l.

7. Radioactivity
   a. alpha emitters - not to exceed 3 pc/l (picocuries per liter);
   b. beta emitters - not to exceed 1,000 pc/l.

8. Fecal coliform. Not to exceed 200 per 100 milliliters as a geometric average; samples shall be taken at such frequency and location as to permit valid interpretation.

9. Total dissolved solids. Not to exceed
   a. 133 percent of background, or
   b. 500 mg/l,
   whichever is less.

10. Turbidity. Unless exceeded due to natural conditions
    a. maximum 30-day average 10 units,
    b. maximum 150 units.

D. Effluent quality requirements.

1. All discharges shall meet the effluent quality requirements of Section 3.10.

2. The carbonaceous oxygen demand from an outfall (exclusive of stormwater by-pass) shall not exceed that assigned by the Commission to maintain stream quality objectives.

3. No discharge shall exceed a biochemical oxygen demand of 50 mg/l.

4. The discharge of an effluent, after dispersion in the water of the river, shall not cause a reduction of the dissolved oxygen content of such water of more than five percent.

3.20.4 Zone 1C

A. Description. Zone 1C is that part of the Delaware River extending from the U.S. Routes 6 and 209 bridge at Port Jervis, New York, R.M. 254.75, to Tocks Island Dam, R.M. 217.0 (proposed axis of dam).

B. Water uses to be protected. The quality of Zone 1C waters shall be maintained in a safe and satisfactory condition for the following uses:

1. a. public water supplies after reasonable treatment,
   b. industrial water supplies after reasonable treatment,
   c. agricultural water supplies;

2. a. maintenance and propagation of resident game fish and other aquatic life,
   b. spawning and nursery habitat for anadromous fish,
   c. passage of anadromous fish,
   d. wildlife;

3. a. recreation.

C. Stream quality objectives.

1. Dissolved oxygen
   a. not less than 4.0 mg/l at any time;
   b. minimum 24-hour average of 5.0 mg/l.

2. Temperature. Except in designated heat dissipation areas [See 4.30.6.F.1.]
   a. not to exceed 5° F (2.8° C) rise above ambient temperature until stream temperature reaches 87° F (30.6° C),
   b. natural temperature will prevail above 87° F (30.6° C).

3. pH. Between 6.0 and 8.5.

4. Phenols. Not to exceed 0.005 mg/l, unless due to natural conditions.

5. Threshold odor number. Not to exceed 24 at 60° C.

6. Synthetic detergents (M.B.A.S.). Not to exceed 0.5 mg/l.

7. Radioactivity
   a. alpha emitters - not to exceed 3 pc/l (picocuries per liter);
   b. beta emitters - not to exceed 1,000 pc/l.

8. Fecal coliform. Not to exceed 200 per 100 milliliters as a geometric average; samples shall be taken at such frequency and location as to permit valid interpretation.

9. Total dissolved solids. Not to exceed
   a. 133 percent of background, or
   b. 500 mg/l,
   whichever is less.

10. Turbidity. Unless exceeded due to natural conditions
    a. maximum 30-day average 20 units,
    b. maximum 150 units.

D. Effluent quality requirements.

1. All discharges shall meet the effluent quality requirements of Section 3.10.

2. The carbonaceous oxygen demand from an outfall (exclusive of stormwater by-pass) shall not exceed that assigned by the Commission to maintain stream quality objectives.

3. No discharge shall exceed a biochemical oxygen demand of 50 mg/l.

4. The discharge of an effluent, after dispersion in the water of the river, shall not cause a reduction of the dissolved oxygen content of such water of more than five percent.

3.20.5 Zone 1D

A. Description. Zone 1D is that part of the Delaware River extending from Tocks Island Dam, R.M. 217.0 (proposed axis of dam), to the mouth of the Lehigh River at Easton, Pennsylvania, R.M. 183.66.

B. Water uses to be protected. The quality of Zone 1D waters shall be maintained in a safe and satisfactory condition for the following uses:

1. a. public water supplies after reasonable treatment,
   b. industrial water supplies after reasonable treatment,
   c. agricultural water supplies;

2. a. maintenance and propagation of resident game fish and other aquatic life,
   b. spawning and nursery habitat for anadromous fish,
   c. passage of anadromous fish,
   d. wildlife;

3. a. recreation.

C. Stream quality objectives.

1. Dissolved oxygen
   a. not less than 4.0 mg/l at any time;
   b. minimum 24 hour average of 5.0 mg/l.

2. Temperature. Except in designated heat dissipation areas [See 4.30.6.F.2.]
   a. not to exceed 5° F (2.8° C) rise above ambient temperature until stream temperature reaches 87° F (30.6° C),
   b. natural temperature will prevail above 87° F (30.6° C).

3. pH. Between 6.0 and 8.5

4. Phenols. Not to exceed 0.005 mg/l, unless due to natural conditions.

5. Threshold odor number. Not to exceed 24 at 60° C.

6. Synthetic detergents (M.B.A.S.). Not to exceed 0.5 mg/l.

7. Radioactivity
   a. alpha emitters - not to exceed 3 pc/l (picocuries per liter);
   b. beta emitters - not to exceed 1,000 pc/l.

8. Fecal coliform. Not to exceed 200 per 100 milliliters as a geometric average; samples shall be taken at such frequency and location as to permit valid interpretation.

9. Total dissolved solids. Not to exceed
   a. 133 percent of background, or
   b. 500 mg/l,
   whichever is less.

10. Turbidity. Unless exceeded due to natural conditions
    a. maximum 30-day average 20 units,
    b. maximum 150 units.

D. Effluent quality requirements.

1. All discharges shall meet the effluent quality requirements of Section 3.10.

2. The carbonaceous oxygen demand from an outfall (exclusive of stormwater by-pass) shall not exceed that assigned by the Commission to maintain stream quality objectives.

3. No discharge shall exceed a biochemical oxygen demand of 50 mg/l.

4. The discharge of an effluent, after dispersion in the water of the river, shall not cause a reduction of the dissolved oxygen content of such water of more than five percent.

3.20.6 Zone 1E

A. Description. Zone 1E is that part of the Delaware River extending from the mouth of the Lehigh River at Easton, Pennsylvania, R.M. 183.66, to the head of tide-water at Trenton, New Jersey, R.M. 133.4 (Trenton-Morrisville Toll Bridge).

B. Water uses to be protected. The quality of Zone 1E waters shall be maintained in a safe and satisfactory condition for the following uses:

1. a. public water supplies after reasonable treatment,
   b. industrial water supplies after reasonable treatment,
   c. agricultural water supplies;

2. a. maintenance and propagation of resident game fish and other aquatic life,
   b. spawning and nursery habitat for anadromous fish,
   c. passage of anadromous fish,
   d. wildlife;

3. a. recreation.

C. Stream quality objectives.

1. Dissolved oxygen.
   a. not less than 4.0 mg/l at any time;
   b. minimum 24-hour average of 5.0 mg/l.

2. Temperature. Except in designated heat dissipation areas [See 4.30.6.F.2.]
   a. not to exceed 5° F (2.8° C) rise above ambient temperature until stream temperature reaches 87° F (30.6° C),
   b. natural temperature will prevail above 87° F (30.6° C).

3. pH. Between 6.0 and 8.5

4. Phenols. Not to exceed 0.005 mg/l, unless due to natural conditions.

5. Threshold odor number. Not to exceed 24 at 60° C.

6. Synthetic detergents (M.B.A.S.). Not to exceed 0.5 mg/l.

7. Radioactivity.
   a. alpha emitters - not to exceed 3 pc/l (picocuries per liter);
   b. beta emitters - not to exceed 1,000 pc/l.

8. Fecal coliform. Not to exceed 200 per 100 milliliters as a geometric average; samples shall be taken at such frequency and location as to permit valid interpretation.

9. Total dissolved solids. Not to exceed
   a. 133 percent of background, or
   b. 500 mg/l,
   whichever is less.

10. Turbidity. Unless exceeded due to natural conditions
    a. maximum 30-day average 30 units,
    b. maximum 150 units.

11. Alkalinity. Not less than 20 mg/l.

D. Effluent quality requirements.

1. All discharges shall meet the effluent quality requirements of Section 3.10.

2. The carbonaceous oxygen demand from an outfall (exclusive of stormwater by-pass) shall not exceed that assigned by the Commission to maintain stream quality objectives.

3. No discharge shall exceed a biochemical oxygen demand of 50 mg/l.

4. The discharge of an effluent, after dispersion in the water of the river, shall not cause a reduction of the dissolved oxygen content of such water of more than five percent.

3.20.7 Zone E

A. Description. Zone E is East Branch Delaware River extending from its source in the Town of Roxbury, Delaware County, New York, to its mouth at Hancock, New York, at R.M. 330.7 on the Delaware River.

B. Water uses to be protected. The quality of Zone E waters shall be maintained in a safe and satisfactory condition for the following uses:

1. a. public water supplies after reasonable treatment,
   b. industrial water supplies after reasonable treatment,
   c. agricultural water supplies;

2. a. maintenance and propagation of resident game fish and other aquatic life,
   b. maintenance and propagation of trout,
   c. wildlife;

3. a. recreation.

C. Stream quality objectives.

1. Dissolved oxygen
   a. not less than 5.0 mg/l at any time;
   b. minimum 24-hour average of 6.0 mg/l;
   c. not less than 7.0 mg/l in spawning areas whenever temperatures are suitable for trout spawning.

2. Temperature. Except in designated heat dissipation areas [See 4.30.6.F.5.]
   a. not to exceed 5° F (2.8° C) rise above ambient temperature until stream temperature reaches 50° F (10.0° C),
   b. not to exceed 2° F (1.0° C) rise above ambient temperature when stream temperature is between 50° F (10.0° C) and 58° F (14.4° C),
   c. natural temperature will prevail above 58° F (14.4° C).

3. pH. Between 6.0 and 8.5.

4. Phenols. Not to exceed 0.005 mg/l, unless due to natural conditions.

5. Threshold odor number. Not to exceed 24 at 60° C.

6. Synthetic detergents (M.B.A.S.). Not to exceed 0.5 mg/l.

7. Radioactivity.
   a. alpha emitters - not to exceed 3 pc/l (picocuries per liter);
   b. beta emitters - not to exceed 1,000 pc/l.

8. Fecal coliform. Not to exceed 200 per 100 milliliters as a geometric average; samples shall be taken at such frequency and location as to permit valid interpretation.

9. Total dissolved solids. Not to exceed
   a. 133 percent of background, or
   b. 500 mg/l,
   whichever is less.

D. Effluent quality requirements.

1. All discharges shall meet the effluent quality requirements of Section 3.10.

2. The carbonaceous oxygen demand from an outfall (exclusive of stormwater by-pass) shall not exceed that assigned by the Commission to maintain stream quality objectives.

3.20.8 Zone W1

A. Description. Zone W1 is West Branch Delaware River extending from its source in the town of Jefferson, Schoharie County, New York, to its mouth at Hancock, New York, at R.M. 330.71 on the Delaware River.

B. Water uses to be protected. The quality of Zone W1 waters shall be maintained in a safe and satisfactory condition for the following uses:

1. a. public water supplies after reasonable treatment,
   b. industrial water supplies after reasonable treatment,
   c. agricultural water supplies;

2. a. maintenance and propagation of resident game fish and other aquatic life,
   b. maintenance and propagation of trout,
   c. wildlife;

3. a. recreation.

C. Stream quality objectives.

1. Dissolved oxygen
   a. not less than 5.0 mg/l at any time;
   b. minimum 24 hour average of 6.0 mg/l;
   c. not less than 7.0 mg/l in spawning areas whenever temperatures are suitable for trout spawning.

2. Temperature. Except in designated heat dissipation areas [See 4.30.6.F.5]
   a. not to exceed 5° F (2.8° C) rise above ambient temperature until stream temperature reaches 50° F (10.0° C),
   b. not to exceed 2° F (1.1° C) rise above ambient temperature when stream temperature is between 50° F (10.0° C) and 58° F (14.4° C),
   c. natural temperature will prevail above 58° F (14.4° C).

3. pH. Between 6.0 and 8.5

4. Phenols. Not to exceed 0.005 mg/l, unless due to natural conditions.

5. Threshold odor number. Not to exceed 24 at 60° C.

6. Synthetic detergents (M.B.A.S.). Not to exceed 0.5 mg/l.

7. Radioactivity
   a. alpha emitters - not to exceed 3 pc/l (picocuries per liter);
   b. beta emitters - not to exceed 1,000 pc/l.

8. Fecal coliform. Not to exceed 200 per 100 milliliters as a geometric average; samples shall be taken at such frequency and location as to permit valid interpretation.

9. Total dissolved solids. Not to exceed
   a. 133 percent of background, or
   b. 500 mg/l,
   whichever is less.

D. Effluent quality requirements.

1. All discharges shall meet the effluent quality requirements of Section 3.10.

2. The carbonaceous oxygen demand from an outfall (exclusive of stormwater by-pass) shall not exceed that assigned by the Commission to maintain stream quality objectives.

3. In that part of the West Branch Delaware River extending from the New York-Pennsylvania boundary at R.M. 10.0 to its mouth at Hancock, New York, at R.M. 330.71 on the Delaware River:
   a. no discharge shall exceed a biochemical oxygen demand of 50 mg/l.
   b. the discharge of an effluent, after dispersion in the water of the river, shall not cause a reduction of the dissolved oxygen content of such water of more than five percent.

3.20.9 Zone W2

A. Description. Zone W2 is:

1. Sand Pond Creek extending from R.M. 1.8 at the confluence of Sherman Creek and Starboard Creek in Pennsylvania to its mouth in New York at R.M. 10.1 on the West Branch Delaware River;

2. Cat Hollow Brook extending from its source in New York to its mouth in Pennsylvania at R.M. 1.05 on Sand Pond Creek;

3. Sherman Creek in Pennsylvania extending from its source to its mouth at R.M. 1.8 on Sand Pond Creek;

4. an unnamed tributary of Sherman Creek extending from its source in New York to its mouth in Pennsylvania at R.M. 1.6 on Sherman Creek;

5. Starboard Creek extending from its source in Lake Oquaga in New York to its mouth in Pennsylvania at R.M. 1.81 on Sand Pond Creek.

B. Water uses to be protected. The quality of Zone W2 waters shall be maintained in a safe and satisfactory condition for the following uses:

1. a. public water supplies after reasonable treatment,
   b. industrial water supplies after reasonable treatment,
   c. agricultural water supplies;

2. a. maintenance and propagation of resident game fish and other aquatic life,
   b. maintenance and propagation of trout,
   c. wildlife;

3. a. recreation.

C. Stream quality objectives.

1. Dissolved oxygen
   a. not less than 5.0 mg/l at any time;
   b. minimum 24 hour average of 6.0 mg/l;
   c. not less than 7.0 mg/l in spawning areas whenever temperatures are suitable for trout spawning.

2. Temperature. Except in designated heat dissipation areas [See 4.30.6.F.5]
   a. not to exceed 5° F (2.8° C) rise above ambient temperature until stream temperature reaches 50° F (10.0° C),
   b. not to exceed 2° F (1.1° C) rise above ambient temperature when stream temperature is between 50° F (10.0° C) and 58° F (14.4° C),
   c. natural temperature will prevail above 58° F (14.4° C).

3. pH. Between 6.0 and 8.5

4. Phenols. Not to exceed 0.005 mg/l, unless due to natural conditions.

5. Threshold odor number. Not to exceed 24 at 60° C.

6. Synthetic detergents (M.B.A.S.). Not to exceed 0.5 mg/l.

7. Radioactivity
   a. alpha emitters - not to exceed 3 pc/l (picocuries per liter);
   b. beta emitters - not to exceed 1,000 pc/l.

8. Fecal coliform. Not to exceed 200 per 100 milliliters as a geometric average; samples shall be taken at such frequency and location as to permit valid interpretation.

9. Total dissolved solids. Not to exceed
   a. 133 percent of background, or
   b. 500 mg/l,
   whichever is less.

D. Effluent quality requirements.

1. All discharges shall meet the effluent quality requirements of Section 3.10.

2. The carbonaceous oxygen demand from an outfall (exclusive of stormwater by-pass) shall not exceed that assigned by the Commission to maintain stream quality objectives.

3.20.10 Zone N1

A. Description. Zone N1 is that part of the Neversink River extending from R.M. 0.5 at its confluence with Clove Brook to its mouth on the Delaware River at R.M. 253.64.

B. Water uses to be protected. The quality of Zone N1 waters shall be maintained in a safe and satisfactory condition for the following uses:

1. a. public water supplies after reasonable treatment,
   b. industrial water supplies after reasonable treatment,
   c. agricultural water supplies;

2. a. maintenance and propagation of resident game fish and other aquatic life,
   b. wildlife;

3. a. recreation.

C. Stream quality objectives.

1. Dissolved oxygen.
   a. not less than 4.0 mg/l at any time;
   b. minimum 24-hour average of 5.0 mg/l.

2. Temperature. Except in designated heat dissipation areas [See 4.30.6.F.5]
   a. not to exceed 5° F (2.8° C) rise above ambient temperature until stream temperature reaches 87° F (30.6° C),
   b. natural temperature will prevail above 87° F (30.6° C)

3. pH. Between 6.5 and 8.5

4. Phenols. Not to exceed 0.005 mg/l, unless due to natural conditions.

5. Threshold odor number. Not to exceed 24 at 60° C.

6. Synthetic detergents (M.B.A.S.). Not to exceed 0.5 mg/l.

7. Radioactivity
   a. alpha emitters - not to exceed 3 pc/l (picocuries per liter);
   b. beta emitters - not to exceed 1,000 pc/l.

8. Fecal coliform. Not to exceed 200 per 100 milliliters as a geometric average; samples shall be taken at such frequency and location as to permit valid interpretation.

9. Total dissolved solids. Not to exceed
   a. 133 percent of background, or
   b. 500 mg/l,
   whichever is less.

D. Effluent quality requirements.

1. All discharges shall meet the effluent quality requirements of Section 3.10.

2. The carbonaceous oxygen demand from an outfall (exclusive of stormwater by-pass) shall not exceed that assigned by the Commission to maintain stream quality objectives.

3.20.11 Zone N2

A. Description. Zone N2 is:

1. Clove Brook extending from its source in Steeny Kill Lake in New Jersey to its mouth in New York at R.M. 0.5 on the Neversink River;

2. an unnamed tributary of Clove Brook extending from its source in New York to its mouth in New Jersey at R.M. 1.0 on Clove Brook;

3. an unnamed tributary to the above unnamed tributary of Clove Brook extending from its source in New York to its mouth in New Jersey at R.M. 0.7 on the unnamed tributary of Clove Brook;

B. Water used to be protected. The quality of Zone N2 waters shall be maintained in a safe and satisfactory condition for the following uses:

1. a. public water supplies after reasonable treatment,
   b. industrial water supplies after reasonable treatment,
   c. agricultural water supplies;

2. a. maintenance and propagation of resident game fish and other aquatic life,
   b. maintenance and propagation of trout,
   c. wildlife;

3. a. recreation.

C. Stream quality objectives.

1. Dissolved oxygen
   a. not less than 5.0 mg/l at any time;
   b. minimum 24-hour average of 6.0 mg/l;
   c. not less than 7.0 mg/l in spawning areas whenever temperatures are suitable for trout spawning.

2. Temperature. Except in designated heat dissipation areas [See 4.30.6.F.5]
   a. not to exceed 5° F (2.8° C) rise above ambient temperature until stream temperature reaches 50° F (10.0° C),
   b. not to exceed 2° F (1.1° C) rise above ambient temperature when stream temperature is between 50° F (10.0° C) and 58° F (14.4° C),
   c. natural temperature will prevail above 58° F (14.4° C).

3. pH. Between 6.5 and 8.5

4. Phenols. Not to exceed 0.005 mg/l, unless due to natural conditions.

5. Threshold odor number. Not to exceed 24 at 60° C.

6. Synthetic detergents (M.B.A.S.). Not to exceed 0.5 mg/l.

7. Radioactivity
   a. alpha emitters - not to exceed 3 pc/l (picocuries per liter);
   b. beta emitters - not to exceed 1,000 pc/l.

8. Fecal coliform. Not to exceed 200 per 100 milliliters as a geometric average; samples shall be taken at such frequency and location as to permit valid interpretation.

9. Total dissolved solids. Not to exceed
   a. 133 percent of background, or
   b. 500 mg/l,
   whichever is less.

D. Effluent quality requirements.

1. All discharges shall meet the effluent quality requirements of Section 3.10.

2. The carbonaceous oxygen demand from an outfall (exclusive of stormwater by-pass) shall not exceed that assigned by the Commission to maintain stream quality objectives.

3.20.12 Zone C1

A. Description. Zone C1 is that part of the Christina River extending from its source in Pennsylvania to the head of tide water at R.M. 16.3 at the outlet of Smalley's Pond in Delaware.

B. Water uses to be protected. The quality of Zone C1 waters shall be maintained in a safe and satisfactory condition for the following uses:

1. a. public water supplies after reasonable treatment,
   b. industrial water supplies after reasonable treatment,
   c. agricultural water supplies;

2. a. maintenance and propagation of resident game fish and other aquatic life,
   b. wildlife;

3. a. recreation.

C. Stream quality objectives

1. Dissolved oxygen.
   a. not less than 4.0 mg/l at any time,
   b. minimum 24-hour average of 5.0 mg/l.

2. Temperature. Except in designated heat dissipation areas [See 4.30.6.F.5]
   a. not to exceed 5° F (2.8° C) rise above ambient temperature until stream temperature reaches 87° F (30.6° C),
   b. natural temperature will prevail above 87° F (30.6° C).

3. pH. Between 6.0 and 8.5

4. Phenols. Not to exceed 0.005 mg/l, unless due to natural conditions.

5. Threshold odor number. Not to exceed 24 at 60° C.

6. Synthetic detergents (M.B.A.S.). Not to exceed 0.5 mg/l.

7. Radioactivity
   a. alpha emitters - not to exceed 3 pc/l (picocuries per liter);
   b. beta emitters - not to exceed 1,000 pc/l.

8. Fecal coliform. Not to exceed 200 per 100 milliliters as a geometric average; samples shall be taken at such frequency and location as to permit valid interpretation.

9. Total dissolved solids. Not to exceed
   a. 133 percent of background, or
   b. 500 mg/l,
   whichever is less.

10. Turbidity
    a. Not to exceed
       1). the natural background by 10 units, or
       2). a maximum of 25 units,
       whichever is less.
    b. Increases not to be attributable to industrial waste discharges.

D. Effluent quality requirements.

1. All discharges shall meet the effluent quality requirements of Section 3.10.

2. The carbonaceous oxygen demand from an outfall (exclusive of stormwater by-pass) shall not exceed that assigned by the Commission to maintain stream quality objectives.

3.20.13 Zone C2

A. Description. Zone C2 is:

1. West Branch Christina River extending from its source in Maryland to its mouth on the Christina River in Delaware at R.M. 25.7;

2. Persimmon Run extending from its source in Maryland to its mouth on the West Branch Christina River in Delaware at R.M. 0.8;

3. East Branch Christina River extending from its source in Pennsylvania to its mouth on the Christina River at R.M. 30.2.

B. Water uses to be protected. The quality of Zone C2 waters shall be maintained in a safe and satisfactory condition for the following uses:

1. a. public water supplies after reasonable treatment,
   b. industrial water supplies after reasonable treatment,
   c. agricultural water supplies;

2. a. maintenance and propagation of resident game fish and other aquatic life,
   b. wildlife;

3. a. recreation.

C. Stream quality objectives.

1. Dissolved oxygen.
   a. not less than 4.0 mg/l at any time;
   b. minimum 24-hour average of 5.0 mg/l.

2. Temperature. Except in designated heat dissipation areas [See Sec. 4.30.6.F.5.]
   a. not to exceed 5° F (2.8° C) rise above ambient temperature until stream temperature reaches 87° F (30.6° C),
   b. natural temperature will prevail above 87° F (30.6° C).

3. pH. Between 6.0 and 8.5

4. Phenols. Not to exceed 0.005 mg/l, unless due to natural conditions.

5. Threshold odor number. Not to exceed 24 at 60° C.

6. Synthetic detergents (M.B.A.S.). Not to exceed 0.5 mg/l.

7. Radioactivity.
   a. alpha emitters - not to exceed 3 pc/l (picocuries per liter);
   b. beta emitters - not to exceed 1,000 pc/l.

8. Fecal coliform. Not to exceed 200 per 100 milliliters as a geometric average; samples shall be taken at such frequency and location as to permit valid interpretation.

9. Total dissolved solids. Not to exceed
   a. 133 percent of background, or
   b. 500 mg/l,
   whichever is less.

10. Turbidity
    a. Not to exceed
       1). the natural background by 10 units, or
       2). a maximum of 25 units,
       whichever is less.
    b. Increases not to be attributable to industrial waste discharges.

D. Effluent quality requirements.

1. All discharges shall meet the effluent quality requirements of Section 3.10.

2. The carbonaceous oxygen demand from an outfall (exclusive of stormwater by-pass) shall not exceed that assigned by the Commission to maintain stream quality objectives.

3.20.14 Zone C3

A. Description. Zone C3 is that part of White Clay Creek extending from its source in Pennsylvania to R.M. 14.7 at the Pennsylvania-Delaware State line.

B. Water uses to be protected. The quality of Zone C3 waters shall be maintained in a safe and satisfactory condition for the following uses:

1. a. public water supplies after reasonable treatment,
   b. industrial water supplies after reasonable treatment,
   c. agricultural water supplies;

2. a. maintenance and propagation of resident game fish and other aquatic life,
   b. maintenance and propagation of trout,
   c. wildlife;

3. a. recreation.

C. Stream quality objectives.

1. Dissolved oxygen
   a. not less than 5.0 mg/l at any time;
   b. minimum 24 hour average of 6.0 mg/l;
   c. not less than 7.0 mg/l in spawning areas whenever temperatures are suitable for trout spawning.

2. Temperature. Except in designated heat dissipation areas [See 4.30.6.F.5]
   a. not to exceed 5° F (2.8° C) rise above ambient temperature until stream temperature reaches 50° F (10.0° C),
   b. not to exceed 2° F (1.1° C) rise above ambient temperature when stream temperature is between 50° F (10.0° C) and 58° F (14.4° C),
   c. natural temperature will prevail above 58° F (14.4° C).

3. pH. Between 6.0 and 8.5

4. Phenols. Not to exceed 0.005 mg/l, unless due to natural conditions.

5. Threshold odor number. Not to exceed 24 at 60° C.

6. Synthetic detergents (M.B.A.S.). Not to exceed 0.5 mg/l.

7. Radioactivity
   a. alpha emitters - not to exceed 3 pc/l (picocuries per liter);
   b. beta emitters - not to exceed 1,000 pc/l.

8. Fecal coliform. Not to exceed 200 per 100 milliliters as a geometric average; samples shall be taken at such frequency and location as to permit valid interpretation.

9. Total dissolved solids. Not to exceed
   a. 133 percent of background, or
   b. 500 mg/l,
   whichever is less.

10. Turbidity
    a. Not to exceed
       1). the natural background by 10 units, or
       2). a maximum of 25 units,
       whichever is less.
    b. Increases not to be attributable to industrial waste discharges.

D. Effluent quality requirements.

1. All discharges shall meet the effluent quality requirements of Section 3.10.

2. The carbonaceous oxygen demand from an outfall (exclusive of stormwater by-pass) shall not exceed that assigned by the Commission to maintain stream quality objectives.

3.20.15 Zone C4

A. Description. Zone C4 is that part of White Clay Creek extending from R.M. 14.7 at the Pennsylvania-Delaware State line to its mouth on the Christina River in Delaware at R.M. 10.0.

B. Water uses to be protected. The quality of Zone C4 waters shall be maintained in a safe and satisfactory condition for the following uses:

1. a. public water supplies after reasonable treatment,
   b. industrial water supplies after reasonable treatment,
   c. agricultural water supplies;

2. a. maintenance and propagation of resident game fish and other aquatic life,
   b. wildlife;

3. a. recreation.

C. Stream quality objectives.

1. Dissolved oxygen.
   a. not less than 4.0 mg/l at any time,
   b. minimum 24-hour average of 5.0 mg/l.

2. Temperature. Except in designated heat dissipation areas [See 4.30.6.F.5.]
   a. not to exceed 5° F (2.8° C) rise above ambient temperature until stream temperature reaches 87° F (30.6° C),
   b. natural temperature will prevail above 87° F (30.6° C).

3. pH. Between 6.0 and 8.5

4. Phenols. Not to exceed 0.005 mg/l, unless due to natural conditions.

5. Threshold odor number. Not to exceed 24 at 60° C.

6. Synthetic detergents (M.B.A.S.). Not to exceed 0.5 mg/l.

7. Radioactivity
   a. alpha emitters - not to exceed 3 pc/l (picocuries per liter);
   b. beta emitters - not to exceed 1,000 pc/l.

8. Fecal coliform. Not to exceed 200 per 100 milliliters as a geometric average; samples shall be taken at such frequency and location as to permit valid interpretation.

9. Total dissolved solids. Not to exceed
   a. 133 percent of background, or
   b. 500 mg/l,
   whichever is less.

10. Turbidity
    a. Not to exceed
       1). the natural background by 10 units, or
       2). a maximum of 25 units,
       whichever is less.
    b. Increases not to be attributable to industrial waste discharges.

D. Effluent quality requirements.

1. All discharges shall meet the effluent quality requirements of Section 3.10.

2. The carbonaceous oxygen demand from an outfall (exclusive of stormwater by-pass) shall not exceed that assigned by the Commission to maintain stream quality objectives.

3.20.16 Zone C5

A. Description. Zone C5 is:

1. that part of Red Clay Creek extending from the confluence of the East and West branches of Red Clay Creek in Pennsylvania at R.M. 13.4 to R.M. 12.6, at the Pennsylvania-Delaware State Line;

2. West Branch Red Clay Creek extending from its source to its mouth on Red Clay Creek at R.M. 13.4.

B. Water uses to be protected. The quality of Zone C5 waters shall be maintained in a safe and satisfactory condition for the following uses:

1. a. public water supplies after reasonable treatment,
   b. industrial water supplies after reasonable treatment,
   c. agricultural water supplies;

2. a. maintenance and propagation of resident game fish and other aquatic life,
   b. maintenance and propagation of trout,
   c. wildlife;

3. a. recreation.

C. Stream quality objectives.

1. Dissolved oxygen
   a. not less than 5.0 mg/l at any time;
   b. minimum 24 hour average of 6.0 mg/l;
   c. not less than 7.0 mg/l in spawning areas whenever temperatures are suitable for trout spawning.

2. Temperature. Except in designated heat dissipation areas [See 4.30.6.F.5.]
   a. not to exceed 5° F (2.8° C) rise above ambient temperature until stream temperature reaches 50° F (10.0° C),
   b. not to exceed 2° F (1.1° C) rise above ambient temperature when stream temperature is between 50° F (10.0° C) and 58° F (14.4° C),
   c. natural temperature will prevail above 58° F (14.4° C).

3. pH. Between 6.0 and 8.5.

4. Phenols. Not to exceed 0.005 mg/l, unless due to natural conditions.

5. Threshold odor number. Not to exceed 24 at 60° C.

6. Synthetic detergents (M.B.A.S.). Not to exceed 0.5 mg/l.

7. Radioactivity
   a. alpha emitters - not to exceed 3 pc/l (picocuries per liter);
   b. beta emitters - not to exceed 1,000 pc/l.

8. Fecal coliform. Not to exceed 200 per 100 milliliters as a geometric average; samples shall be taken at such frequency and location as to permit valid interpretation.

9. Total dissolved solids. Not to exceed
   a. 133 percent of background, or
   b. 500 mg/l,
   whichever is less.

10. Turbidity
   a. Not to exceed
      1). the natural background by 10 units, or
      2). a maximum of 25 units,
      whichever is less.
   b. Increases not to be attributable to industrial waste discharges.

D. Effluent quality requirements

1. All discharges shall meet the effluent quality requirements of Section 3.10.

2. The carbonaceous oxygen demand from an outfall (exclusive of stormwater by-pass) shall not exceed that assigned by the Commission to maintain stream quality objectives.

3.20.17 Zone C6

A. Description. Zone C6 is that part of Red Clay Creek extending from R.M. 12.6 at the Pennsylvania-Delaware State line to its mouth on White Clay Creek in Delaware at R.M. 2.6.

B. Water uses to be protected. The quality of Zone C6 waters shall be maintained in a safe and satisfactory condition for the following uses:

1. a. public water supplies after reasonable treatment,
   b. industrial water supplies after reasonable treatment,
   c. agricultural water supplies;

2. a. maintenance and propagation of resident game fish and other aquatic life,
   b. wildlife;

3. a. recreation.

C. Stream quality objectives.

1. Dissolved oxygen.
   a. not less than 4.0 mg/l at any time;
   b. minimum 24-hour average of 5.0 mg/l.

2. Temperature. Except in designated heat dissipation areas [See 4.30.6.F.5.]
   a. not to exceed 5° F (2.8° C) rise above ambient temperature until stream temperature reaches 87° F (30.6° C),
   b. natural temperature will prevail above 87° F (30.6° C).

3. pH. Between 6.0 and 8.5

4. Phenols. Not to exceed 0.005 mg/l, unless due to natural conditions.

5. Threshold odor number. Not to exceed 24 at 60° C.

6. Synthetic detergents (M.B.A.S.). Not to exceed 0.5 mg/l

7. Radioactivity
   a. alpha emitters - not to exceed 3 pc/l (picocuries per liter);
   b. beta emitters - not to exceed 1,000 pc/l.

8. Fecal coliform. Not to exceed 200 per 100 milliliters as a geometric average; samples shall be taken at such frequency and location as to permit valid interpretation.

9. Total dissolved solids. Not to exceed
   a. 133 percent of background, or
   b. 500 mg/l,
   whichever is less.

10. Turbidity
    a. Not to exceed
       1). the natural background by 10 units, or
       2). a maximum of 25 units,
       whichever is less.

    b. Increases not to be attributable to industrial waste discharges.

D. Effluent quality requirements.

1. All discharges shall meet the effluent quality requirements of Section 3.10.

2. The carbonaceous oxygen demand from an outfall (exclusive of stormwater by-pass) shall not exceed that assigned by the Commission to maintain stream quality objectives.

3.20.18 Zone C7

A. Description. Zone C7 is:

1. Brandywine Creek extending from the confluence of the East and West Branches of Brandywine Creek in Pennsylvania at R.M. 20.0 to the head of tidewater at R.M. 2.0 at the Market Street Bridge in Wilmington, Delaware;

2. West Branch Brandywine Creek extending from its source to its mouth on Brandywine Creek at R.M. 20.0.

B. Water uses to be protected. The quality of Zone C7 waters shall be maintained in a safe and satisfactory condition for the following uses:

1. a. public water supplies after reasonable treatment,
   b. industrial water supplies after reasonable treatment,
   c. agricultural water supplies;

2. a. maintenance and propagation of resident game fish and other aquatic life,
   b. spawning and nursery habitat for anadromous fish,
   c. passage of anadromous fish,
   d. wildlife;

3. a. recreation.

C. Stream quality objectives.

1. Dissolved oxygen.
   a. not less than 4.0 mg/l at any time;
   b. minimum 24-hour average of 5.0 mg/l.

2. Temperature. Except in designated heat dissipation areas [See 4.30.6.F.5.]
   a. not to exceed 5° F (2.8° C) rise above ambient temperature until stream temperature reaches 87° F (30.6° C),
   b. natural temperatures will prevail above 87° F (30.6° C).

3. pH. Between 6.5 and 8.5

4. Phenols. Not to exceed 0.005 mg/l, unless due to natural conditions.

5. Threshold odor number. Not to exceed 24 at 60° C.

6. Synthetic detergents (M.B.A.S.). Not to exceed 0.5 mg/l.

7. Radioactivity
   a. Alpha emitters - not to exceed 3 pc/l (picocuries per liter);
   b. beta emitters - not to exceed 1,000 pc/l.

8. Fecal coliform. Not to exceed 200 per 100 milliliters as a geometric average; samples shall be taken at such frequency and location as to permit valid interpretation.

9. Total dissolved solids. Not to exceed
   a. 133 percent of background, or
   b. 500 mg/l,
   whichever is less.

10. Turbidity
    a. Not to exceed
       1). the natural background by 10 units, or
       2). a maximum of 25 units,
       whichever is less.
    b. Increases not to be attributable to industrial waste discharges.

11. Fluorides - not to exceed 1.0 mg/l.

D. Effluent quality requirements.

1. All discharges shall meet the effluent quality requirements of Section 3.10.

2. The carbonaceous oxygen demand from an outfall (exclusive of stormwater by-pass) shall not exceed that assigned by the Commission to maintain stream quality objectives.

3.20.19 Zone C8

A. Description. Zone C8 is Naaman Creek extending from its source in Pennsylvania to the head of tidewater to Delaware.

B. Water uses to be protected. The quality of Zone C8 waters shall be maintained in a safe and satisfactory condition for the following uses:

1. a. public water supplies after reasonable treatment,
   b. industrial water supplies after reasonable treatment,
   c. agricultural water supplies;

2. a. maintenance and propagation of resident game fish and other aquatic life,
   b. wildlife;

3. a. recreation.

C. Stream quality objectives.

1. Dissolved oxygen.
   a. not less than 4.0 mg/l at any time;
   b. minimum 24-hour average of 5.0 mg/l.

2. Temperature. Except in designated heat dissipation areas [See 4.30.6.F.5.]
   a. not to exceed 5° F (2.8° C) rise above ambient temperature until stream temperature reaches 87° F (30.6° C).
   b. natural temperature will prevail above 87° F (30.6° C)

3. pH. Between 6.0 and 8.5

4. Phenols. Not to exceed 0.005 mg/l, unless due to natural conditions.

5. Threshold odor number. Not to exceed 24 at 60° C.

6. Synthetic detergents (M.B.A.S.). Not to exceed 0.5 mg/l.

7. Radioactivity
   a. alpha emitters - not to exceed 3 pc/l (picocuries per liter);
   b. beta emitters - not to exceed 1,000 pc/l.

8. Fecal coliform. Not to exceed 200 per 100 milliliters as a geometric average; samples shall be taken at such frequency and location as to permit valid interpretation.

9. Total dissolved solids. Not to exceed
   a. 133 percent of background, or
   b. 500 mg/l,
   whichever is less.

D. Effluent quality requirements.

1. All discharges shall meet the effluent quality requirements of Section 3.10.

2. The carbonaceous oxygen demand from an outfall (exclusive of stormwater bypass) shall not exceed that assigned by the Commission to maintain stream quality objectives.

Section 3.30 Interstate Streams--Tidal

3.30.1 Application. This Section shall apply to the Delaware River Estuary and Bay, including the tidal portions of the tributaries thereof.

3.30.2 Zone 2

A. Description. Zone 2 is that part of the Delaware River extending from the head of tidewater at Trenton, New Jersey, R.M. (River Mile) 133.4 (Trenton-Morrisville Toll Bridge) to R.M. 108.4 below the mouth of Pennypack Creek, including the tidal portions of the tributaries thereof.

B. Water uses to be protected. The quality of Zone 2 waters shall be maintained in a safe and satisfactory condition for the following uses:

1. a. public water supplies after reasonable treatment,
   b. industrial water supplies after reasonable treatment,
   c. agricultural water supplies;

2. a. maintenance and propagation of resident fish and other aquatic life,
   b. passage of anadromous fish,
   c. wildlife;

3. a. recreation from R.M. 133.4 to R.M. 117.81.
   b. recreation-secondary contact from R.M. 117.81 to R.M. 108.4;

4. a. navigation.

C. Stream quality objectives.

1. Dissolved oxygen.
   a. 24 hour average concentration shall not be less than 5.0 mg/l.
   b. During the periods from April 1 to June 15, and September 16 to December 31, the dissolved oxygen shall not have a seasonal average less than 6.5 mg/l.

2. Temperature. Shall not exceed
   a. 5° F (2.8° C) above the average 24-hour temperature gradient displayed during the 1961-66 period, or
   b. a maximum of 86° F (30.0° C),
   whichever is less. [See 4.30.6.F.3]

3. pH. Between 6.5 and 8.5.

4. Phenols. Maximum 0.005 mg/l, unless exceeded due to natural conditions.

5. Threshold odor number. Not to exceed 24 at 60° C.

6. Synthetic detergents (M.B.A.S.). Maximum 30-day average 0.5 mg/l.

7. Radioactivity.
   a. alpha emitters - maximum 3 pc/l (picocuries per liter);
   b. beta emitters - maximum 1,000 pc/l.

8. Fecal coliform. Maximum geometric average
   a. 200 per 100 milliliters above R.M. 117.81,
   b. 770 per 100 milliliters below R.M. 117.81.
   Samples shall be taken at such frequency and location as to permit valid interpretation.

9. Total dissolved solids. Not to exceed
   a. 133 percent of background, or
   b. 500 mg/l,
   whichever is less.

10. Turbidity. Unless exceeded due to natural conditions
    a. maximum 30-day average 40 units,
    b. maximum 150 units;
    c. except above R.M. 117.81 during the period May 30 to September 15 when the turbidity shall not exceed 30 units.

11. Alkalinity. Between 20 and 100 mg/l.

12. Chlorides. Maximum 15 day average 50 mg/l.

13. Hardness. Maximum 30-day average 95 mg/l.

D. Effluent quality requirements.

1. All discharges shall meet the effluent quality requirements of Section 3.10.

2. The carbonaceous oxygen demand from all outfalls in the zone (exclusive of stormwater by-pass) shall not exceed that assigned by Commission regulations.

3. No discharge shall exceed a biochemical oxygen demand of 100 mg/l.

3.30.3 Zone 3

A. Description. Zone 3 is that part of the Delaware River extending from R.M. 108.4 to R.M. 95.0 below the mouth of Big Timber Creek, including the tidal portions of the tributaries thereof.

B. Water uses to be protected. The quality of Zone 3 waters shall be maintained in a safe and satisfactory condition for the following uses:

1. a. public water supplies after reasonable treatment,
   b. industrial water supplies after reasonable treatment,
   c. agricultural water supplies;

2. a. maintenance of resident fish and other aquatic life,
   b. passage of anadromous fish,
   c. wildlife;

3. a. recreation - secondary contact;

4. a. navigation.

C. Stream quality objectives.

1. Dissolved oxygen.
   a. 24-hour average concentration shall not be less than 3.5 mg/l.
   b. During the periods from April 1 to June 15, and September 16 to December 31, the dissolved oxygen shall not have a seasonal average less than 6.5 mg/l.

2. Temperature. Shall not exceed
   a. 5° F (2.8° C) above the average 24-hour temperature gradient displayed during the 1961-66 period, or
   b. a maximum of 86° F (30.0° C),
   whichever is less. [See 4.30.6.F.3]

3. pH. Between 6.5 and 8.5

4. Phenols. Maximum 0.005 mg/l, unless exceeded due to natural conditions.

5. Threshold odor number. Not to exceed 24 at 60° C.

6. Snythetic detergents (M.B.A.S.). Maximum 30-day average 1.0 mg/l.

7. Radioactivity.
   a. alpha emitters - maximum 3 pc/l (picocuries per liter);
   b. beta emitters - maximum 1,000 pc/l.

8. Fecal coliform. Maximum geometric average 770 per 100 milliliters. Samples shall be taken at such frequency and location as to permit valid interpretation.

9. Total dissolved solids. Not to exceed
   a. 133 percent of background, or
   b. 500 mg/l,
   whichever is less.

10. Turbidity. Unless exceeded due to natural conditions
   a. maximum 30-day average 40 units,
   b. maximum 150 units.

11. Alkalinity. Between 20 and 120 mg/l.

12. Chlorides. Maximum 200 mg/l.

13. Hardness. Maximum 30-day average 150 mg/l.

D. Effluent quality requirements.

1. All discharges shall meet the effluent quality requirements of Section 3.10.

2. The carbonaceous oxygen demand from all outfalls in the zone (exclusive of stormwater by-pass) shall not exceed that assigned by Commission regulations.

3.30.4 Zone 4

A. Description. Zone 4 is that part of the Delaware River extending from R.M. 95.0 to R.M. 78.8, the Pennsylvania-Delaware boundary line, including the tidal portions of the tributaries thereof.

B. Water uses to be protected. The quality of Zone 4 waters shall be maintained in a safe and satisfactory condition for the following uses:

1. a. industrial water supplies after reasonable treatment,

2. a. maintenance of resident fish and other aquatic life.
   b. passage of anadromous fish,
   c. wildlife;

3. a. recreation - secondary contact;

4. a. navigation.

C. Stream quality objectives.

1. Dissolved oxygen.
   a. 24-hour average concentration shall not be less than 3.5 mg/l.
   b. During the periods from April 1 to June 15, and September 16 to December 31, the dissolved oxygen shall not have a seasonal average of less than 6.5 mg/l.

2. Temperature. Shall not exceed
   a. 5° F (2.8° C) above the average 24-hour temperature gradient displayed during the 1961-66 period, or
   b. a maximum of 86° F (30.0° C),
   whichever is less. [See 4.30.6.F.3.]

3. pH. Between 6.5 and 8.5

4. Phenols. Maximum 0.02 mg/l, unless exceeded due to natural conditions.

5. Threshold odor number. Not to exceed 24 at 60° C.

6. Synthetic detergents (M.B.A.S.). Maximum 30-day average 1.0 mg/l.

7. Radioactivity.
   a. alpha emitters - maximum 3 pc/l (picocuries per liter);
   b. beta emitters - maximum 1,000 pc/l.

8. Fecal coliform. Maximum geometric average 770 per 100 milliliters. Samples shall be taken at such frequency and location as to permit valid interpretation.

9. Total dissolved solids. Not to exceed 133 percent of background.

10. Turbidity. Unless exceeded due to natural conditions
    a. maximum 30-day average 40 units,
    b. maximum 150 units.

11. Alkalinity. Between 20 and 120 mg/l.

12. Chlorides. Maximum 250 mg/l at R.M. 92.47.

D. Effluent quality requirements.

1. All discharges shall meet the effluent quality requirements of Section 3.10.

2. The carbonaceous oxygen demand from all outfalls in the zone (exclusive of stormwater by-pass) shall not exceed that assigned by Commission regulations.

3.30.5 Zone 5

A. Description. Zone 5 is that part of the Delaware River extending from R.M. 78.8 to R.M. 48.2, Liston Point, including the tidal portions of the tributaries thereof.

B. Water uses to be protected. The quality of Zone 5 waters shall be maintained in a safe and satisfactory condition for the following uses:

1. a. industrial water supplies after reasonable treatment,

2. a. maintenance of resident fish and other aquatic life,
   b. propagation of resident fish from R.M. 70.0 to R.M. 48.2
   c. passage of anadromous fish,
   d. wildlife;

3. a. recreation-secondary contact from R.M. 78.8 to R.M. 59.5,
   b. recreation from R.M. 59.5 to R.M. 48.2;

4. a. navigation.

C. Stream quality objectives.

1. Dissolved oxygen.
   a. 24-hour average concentration shall not be less than
      1). 3.5 mg/l at R.M. 78.8,
      2). 4.5 mg/l at R.M. 70.0,
      3). 6.0 mg/l at R.M. 59.5.
   b. During the periods from April 1 to June 15, and September 16 to December 31, the dissolved oxygen shall not have a seasonal average less than 6.5 mg/l in the entire zone.

2. Temperature
   a. Shall not be raised above ambient by more than
      1). 4° F (2.2° C) during September through May, nor
      2). 1.5° F (0.8° C) during June through August;
   b. nor shall maximum temperatures exceed 86° F (30.0° C).
   [See 4.30.6.F.4.]

3. pH. Between 6.5 and 8.5.

4. Phenols. Maximum 0.01 mg/l, unless exceeded due to natural conditions.

5. Threshold odor number. Not to exceed 24 at 60° C.

6. Synthetic detergents (M.B.A.S.). Maximum 30-day average 1.0 mg/l.

7. Radioactivity.
   a. alpha emitters - maximum 3 pc/l (picocuries per liter);
   b. beta emitters - maximum 1,000 pc/l.

8. Fecal coliform. Maximum geometric average
   a. 770 per 100 milliliters from R.M. 78.8 to R.M. 59.5,
   b. 200 per 100 milliliters from R.M. 59.5 to R.M. 48.2.
   Samples shall be taken at such frequency and location as to permit valid interpretation.

9. Turbidity. Unless exceeded due to natural conditions
   a. maximum 30-day average 40 units,
   b. maximum 150 units.

10. Alkalinity. Between 20 and 120 mg/l.

D. Effluent quality requirements.

1. All discharges shall meet the effluent quality requirements of Section 3.10.

2. The carbonaceous oxygen demand from all outfalls in the zone (exclusive of stormwater by-pass) shall not exceed that assigned by Commission regulations.

3.30.6 Zone 6

A. Description. Zone 6 is Delaware Bay extending from R.M. 48.2 to R.M. 0.0, the Atlantic Ocean, including the tidal portions of the tributaries thereof.

B. Water uses to be protected. The quality of Zone 6 waters shall be maintained in a safe and satisfactory condition for the following uses:

1. a. industrial water supplies after reasonable treatment,

2. a. maintenance and propagation of resident fish and other aquatic life,
   b. maintenance and propagation of shellfish
   c. passage of anadromous fish,
   d. wildlife;

3. a. recreation;

4. a. navigation.

C. Stream quality objectives.

1. Dissolved oxygen.
   a. 24-hour average concentration shall not be less than 6.0 mg/l;
   b. not less than 5.0 mg/l at any time unless due to natural conditions.

2. Temperature.
   a. Shall not be raised above ambient by more than
      1). 4° F (2.2° C) during September through May, nor
      2). 1.5° F (0.8° C) during June through August;
   b. nor shall maximum temperatures exceed 85° F (29.4° C).
   [See 4.30.6.F.4.]

3. pH. Between 6.5 and 8.5.

4. Phenols. Maximum 0.01 mg/l, unless exceeded due to natural conditions.

5. Threshold odor number. Not to exceed 24 at 60° C.

6. Synthetic detergents (M.B.A.S.). Maximum 30-day average 1.0 mg/l.

7. Radioactivity.
   a. alpha emitters - maximum 3 pc/l (picocuries per liter);
   b. beta emitters - maximum 1,000 pc/l.

8. Fecal coliform. Maximum geometric average 200 per 100 milliliters. Samples shall be taken at such frequency and location as to permit valid interpretation.

9. Coliform. MPN (most probable number) not to exceed U.S. Public Health Service's shellfish standards in designated shellfish areas.

10. Turbidity. Unless exceeded due to natural conditions
    a. maximum 30-day average 40 units,
    b. maximum 150 units.

11. Alkalinity. Between 20 and 120 mg/l.

D. Effluent quality requirements.

1. All discharges shall meet the effluent quality requirements of Section 3.10.

2. The carbonaceous oxygen demand from an outfall (exclusive of stormwater by-pass) shall not exceed that assigned by the Commission to maintain stream quality objectives.

Section 3.40 Groundwater--Basinwide

3.40.1 Application. This Section shall apply to the groundwater of the Delaware River Basin.

3.40.2 Description. Groundwater shall include all water beneath the surface of the ground.

3.40.3 Water Uses.

A. The quality of groundwater shall be maintained in a safe and satisfactory condition, except where such uses are precluded by natural quality, for use as:

1. domestic, agricultural, industrial, and public water supplies;

2. a source of surface water suitable for recreation, wildlife, fish and other aquatic life.

B. Other uses may be designated by the Commission.

3.40.4 Groundwater Quality Objectives.

A. Limits. The groundwaters of the Basin shall not contain substances or properties attributable to the activities of man in concentrations or amounts sufficient to endanger or preclude the water uses to be protected.

1. Within this requirement, the groundwaters shall be free from substances or properties in concentrations or combinations which are toxic or harmful to human, animal, plant, or aquatic life, or that produce color, taste, or odor of the waters.

2. Concentrations at any point shall not be degraded by the activities of man to exceed values specified by current U.S. Public Health Service Drinking Water Standards.

B. Nondegradation of Groundwaters. It is the policy of the Commission to prevent degradation of groundwater quality. In implementing this policy, the Commission will require the best water management determined to be practicable. No quality change will be considered which, in the judgment of the Commission, may be injurious to any designated present or future ground or surface water use.

3.40.5 Groundwater Quality Control.

A. Controls. The processing, handling, transportation, disposal, storage, excavation or removal of any solid, liquid, or gaseous material on or beneath the ground surface of the Basin shall be conducted in such manner and with such facilities, in accordance with such regulations and requirements as the Commission may prescribe, as to prevent any of the criteria or requirements of this Section from being violated.

B. Limitations.

1. No substances or properties which are in harmful or toxic concentrations or that produce color, taste, or odor of the water shall be permitted or induced by the activities of man to become groundwater.

2. Heat discharges which may adversely affect groundwater shall be regulated by the Commission.

3. Notwithstanding any other criteria or requirements of this Section, the Commission may establish requirements, conditions, or prohibitions which, in its judgment, are necessary to protect groundwater quality.

4. Certain activities otherwise prohibited by 3.40.5.A, such as approved solid or liquid waste disposal systems or fertilizer applications for farming practices, may be permitted subject to such requirements as may be prescribed.

Section 3.50 Regional Requirements. It shall be the policy of the Commission to promote and encourage planning for regional solutions to water pollution problems. The use of regional water pollution control facilities providing optimum combinations of efficiency, reliability and service area will be required throughout the Delaware River Basin to the maximum extent feasible. The Commission will cooperate with industries and state, county and municipal agencies seeking a regional solution to water pollution problems. The Commission may provide planning, and, when necessary, constructing, financing and operating services required for regional solutions to water pollution problems where other appropriate agencies do not provide such services.

ARTICLE 4

APPLICATION OF STANDARDS

Section 4.10 Water Uses. Protected water uses are as prescribed by the Comprehensive Plan. In the interpretation and application of the Standards and these Regulations, the purpose of protection of such water uses shall control the meaning. It is the further purpose of this part to preserve and protect the quality of Basin waters in a safe and adequate condition for the uses specified in the Comprehensive Plan.

Section 4.20 Water Quality Criteria. Stream quality objectives as set forth in the Standards shall be the criteria under these Regulations.

4.20.1 Purpose. It is the purpose and intent of the stream quality objectives specified in the Comprehensive Plan to apply to artificial (man-made, as opposed to natural) causes of pollution.

4.20.2 Additional Specifications. The Standards have set limits for most of the significant and commonly used indicators which are pertinent to water quality management in the Basin. When a need arises, or upon application to the Commission, additional indicators and limits will be defined.

A. Total dissolved solids. Stream assimilative capacity for the purposes of 4.30.5.E shall be based upon the concept that stream concentration of dissolved solids shall not be increased by waste discharges by more than one-third over background levels as of October 1, 1972.

4.20.3 Water Quality Measurements. Water quality shall be measured outside of mixing areas when such areas have been designated for particular discharges.

4.20.4 Tributaries to Interstate Waters. Waste discharged into, or permitted to flow into or be placed in any intrastate tributary of interstate waters shall be treated to such extent as may be necessary:

A. to maintain the waters of such intrastate tributary, immediately above its confluence with such interstate waters, in a condition at least equal to the water quality criteria specified for the receiving interstate waters;

B. so that the assimilation of such waste by the interstate waters will not result in a violation of such water quality criteria.

Section 4.30 Effluent Quality Requirements

4.30.1 Prohibited Discharges. No person, firm, partnership, corporation, association or other entity, including any of the signatory parties, any political subdivision, agency department or instrumentality of any of them, shall cause or permit any pollution or violate the effluent quality requirements or allocations of stream assimilative capacity imposed by or determined pursuant to this Article.

4.30.2 Oxygen Demand.

A. Biochemical oxygen demand. The biochemical oxygen demand (BOD) shall mean the oxygen utilized during the first five days of aerobic decomposition at 20° C consistent with the latest edition of "Standard Methods for the Examination of Water and Wastewater," published jointly by the American Public Health Association, the American Water Works Association, and the Water Pollution Control Federation.

B. Carbonaceous oxygen demand. The carbonaceous oxygen demand of wastes forms the basis of allocating the capacity of the receiving waters to assimilate the oxygen demand generated by the waste discharges. The carbonaceous, or first stage, oxygen demand is defined as the oxygen utilized in the carbonaceous reaction, as distinguished from that utilized in the nitrogenous or second stage reaction. The carbonaceous oxygen demand is calculated by projecting the logarithmic rate of carbonaceous oxidation to completion.

C. Nitrogenous oxygen demand. The Commission will consider the nitrogenous demand of wastes, which generates a further gross oxygen demand upon the receiving waters, in establishing treatment requirements where appropriate.

4.30.3 Minimum Treatment

A. General

1. All wastes shall be treated to remove practically all suspended solids and shall receive such additional treatment as determined by the Commission upon consideration of the waste assimilative capacity of the receiving stream and as required to meet the limitations of Section 3.10 of the Standards.

2. Wastes containing biodegradable matter shall receive a minimum of secondary treatment as defined in the Standards.

3. Biodegradable and other waste matter to be treated or reduced shall not include that incorporated in influent waters, unless special circumstances as determined by the Commission require such inclusion.

B. BOD reduction.

1. The 85 percent minimum BOD reduction for secondary treatment will be determined by an average of samples taken over each period of thirty consecutive days of the year.

2. It is recognized that optimum efficiency may not be achieved with certain secondary treatment facilities during the colder months. A slight deviation may be permitted by the Commission when it results from reduced plant efficiency caused by temperatures below 59° F (15° C).

4.30.4 Effective Disinfection. Effective disinfection is defined as the destruction of pathogenic organisms. Since isolation of pathogenic organisms in water is not routine, the test for the fecal oliform group of organisms will be used as an indicator.

A. Coliform requirement. Effective disinfection means the treatment of wastes such that the number of organisms of the fecal coliform group remaining after treatment does not exceed:

1. 200 per 100 milliliters as a geometric average;

2. 1000 per 100 milliliters in more than 10 percent of the samples taken over a period of thirty consecutive days.

B. Chlorination

1. Chlorination facilities shall be designed to obtain a minimum contact time of 15 minutes at peak hourly flow.

2. After the required contact time, maintenance of a free chlorine residual of 1.0 milligram per liter at all times, as determined by the orthotolidine-arsenite (OTA) test, will be considered satisfactory if the effluent is found to meet the coliform requirements of this Section.

C. Other methods, other tests. Other methods of achieving effective disinfection and other tests which satisfactorily demonstrate that effective disinfection has been achieved may be approved by the Commission.

4.30.5 Other Substances in Effluents

A. Color. For municipal, industrial, or sanitary wastes, the effluent:

1. shall not impart objectionable color to the receiving waters,

2. shall not exhibit more than
   a. true color of 100 units on the platinum cobalt scale, or
   b. the natural color of the receiving waters,
   whichever is greater.

B. Dissolved substances. Dissolved and colloidal substances, including nutrients, discharged in waste effluents shall be limited where necessary to prevent deposition of sediments, formation of flocculent materials, or excessive aquatic growths, that impair protected uses, violate water quality criteria, or generate additional oxygen demands upon the receiving waters.

C. pH.

1. Between 6 and 9.

2. Where streams have high acidity levels a discharge with a pH greater than 9 may be permitted.

D. Ammonia.

1. In non-tidal waters, not to exceed a 30-day average of 20 mg/l as nitrogen.

2. In tidal waters, not to exceed a 30-day average of 35 mg/l as nitrogen.

E. Total dissolved solids.

1. Not to exceed 1,000 mg/l.

2. A discharge with a greater concentration may be permitted:
   a. provided that stream background will not be increased by more than 1.6 percent,
   b. except that this percentage may be modified upon application, to reflect physical conditions of the stream in relation to the water quality criteria and the present and foreseeable discharge along the affected reach.

3. Where necessary, more stringent requirements may be imposed upon specified discharges, based upon the stream assimilative capacity for appropriate stream reaches as determined in accordance with 4.20.2.A.

4. Requirements for discharges to waters affected by ocean salinity or mine drainage may be modified as related to such stream conditions.

5. Stream background is defined as the quality of the receiving stream unaffected by the waste discharge in question.

4.30.6 Temperature

A. Trout waters. In waters classified for trout use the discharge of waste effluents shall not increase the ambient temperature of the receiving waters by more than 5° F (2.8° C) until stream temperatures reach 50° F (10.0° C), nor by more than 2° F (1.1° C) when stream temperatures are between 50° F (10.0° C) and 58° F (14.4° C), nor shall such discharge result in stream temperature exceeding 58° F (14.4° C), which temperatures shall be measured in the stream outside of heat dissipation areas as described in 4.30.6.F.

B. Other nontidal waters. In nontidal waters other than described in 4.30.6.A, the discharge of waste effluents shall not increase the ambient temperature of the receiving waters by more than 5° F (2.8° C), nor shall such discharge result in stream temperature exceeding 87° F (30.6° C), which temperatures shall be measured in the stream outside of heat dissipation areas as described in 4.30.6.F.

C. Zones 2, 3, and 4. The induced temperature increase 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, which temperatures shall be measured outside of designated heat dissipation areas as described in 4.30.6.F.

1. The average 24-hour temperature gradient displayed during the 1961-1966 period may be interpolated from the following table, which is based on available records:

Date	Zone 2 R.M. 133.4 to 108.4		Zone 3 R.M. 108.4 to 95.0		Zone 4 R.M. 95.0 to 78.8	
(1)	(2a) °F	(2b) °C	(3a) °F	(3b) °C	(4a) °F	(4b) °C
Jan. 1	37	2.8	41	5.0	42	5.6
Feb. 1	35	1.7	35	1.7	36	2.2
Mar. 1	38	3.3	38	3.3	40	4.4
Apr. 1	46	7.8	46	7.8	47	8.3
May 1	58	14.4	58	14.4	58	14.4
June 1	71	21.7	71	21.7	72	22.2
July 1	79	26.1	79	26.1	80	26.7
Aug. 1	81	27.2	81	27.2	81	27.2
Sept. 1	78	25.6	79	26.1	78	25.6
Sept. 15	76	24.4	77	25.0	76	24.4
Oct. 1	70	21.1	70	21.1	70	21.1
Nov. 1	59	15.0	61	16.1	60	15.6
Dec. 1	46	7.8	50	10.0	50	10.0
Dec. 15	40	4.4	45	7.2	45	7.2

D. Zone 5. The induced increase above ambient temperature shall not exceed 4° F (2.2° C) from September to May and 1.5° F (0.8° C) from June to August, or a maximum of 86° F (30.0° C), whichever is less, which temperatures shall be measured outside of designated heat dissipation areas as described in 4.30.6.F.

E. Zone 6. The induced increase above ambient temperature shall not exceed 4° F (2.2° C) from September to May and 1.5° F (0.8° C) from June to August, or a maximum of 85° F (29.4° C), whichever is less, which temperatures shall be measured outside of designated heat dissipation areas as described in 4.30.6.F.

F. Heat dissipation areas. The limitations specified above may be exceeded by special permit in heat dissipation areas designated on a case-by-case basis, subject to the following conditions:

1. Zones 1A, 1B, and 1C
   a. Maximum length. As a guideline, heat dissipation areas shall not be longer than 1000 feet, or twenty times the average width of the stream, whichever is less, measured from the point where the waste discharge enters the stream.
   b. 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.

2. Zones 1D and 1E
   a. Maximum length. As a guideline, heat dissipation areas shall not be longer than 3500 feet, or twenty times the average width of the stream, whichever is less, measured from the point where the waste discharge enters the stream.
   b. 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.

3. Zones 2, 3, and 4
   a. Maximum length. As a guideline, heat dissipation areas shall not be longer than 3500 feet, measured from the point where the waste discharge enters the stream.
   b. 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.
   c. Maximum cross-section. Heat dissipation areas shall not exceed a maximum of one-quarter of the cross-sectional area of the stream.

4. Zones 5 and 6

   a. Maximum length. As a guideline, heat dissipation areas shall not be longer than 3500 feet, measured from the point where the waste discharge enters the stream.

5. All other zones

   a. Maximum length. As a guideline, heat dissipation areas shall not be longer than 1000 feet, or twenty times the average width of the stream, whichever is less, measured from the point where the waste discharge enters the stream.

   b. 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.

6. Adjacent heat dissipation areas. Where waste discharges would result in heat dissipation areas in such close proximity as to impair protected uses, additional limitations may be prescribed to avoid such impairment.

7. Other considerations.

   a. The rate of temperature change in designated heat dissipation areas shall not cause mortality of fish or shellfish.

   b. The determination of heat dissipation areas in tidal waters 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 provisions for the passage of free-swimming and drifting organisms so that negligible or no effects are produced on their populations.

G. Definitions.

1. Ambient temperature is the temperature of a water body unaffected by the heated waste discharge or waste discharge complex.

2. Natural temperature is the temperature of a water body unaffected by artificial sources of waste heat.

3. Stream temperature is the temperature of the stream outside of the heat dissipation area.

4.30.7 Allocation of Capacity

A. Basinwide. Where necessary to maintain stream quality objectives or protect water uses in a given zone, the waste assimilative capacity of the receiving waters shall be allocated by the Commission among individual dischargers in accordance with the doctrine of equitable apportionment.

1. Commission procedure.

   a. Whenever the Commission determines that allocations of a stream's waste assimilative capacity are necessary in a zone, the Executive Director shall find and determine an allocation for each waste discharge in that zone.

   b. Such determination shall be governed by the Commission's Rules of Practice and Procedure relating to review, hearing and decision of objections thereto.

2. Allocations not a property right. Allocations are not transferable except upon consent of the Commission.

3. Limitations.

   a. No allocation will exceed the residual after treatment as required in accordance with 4.30.3 of this Article.

   b. No allocation will exceed the residual after treatment necessary to meet any other requirements.

4. Reserve. In each zone, as part of the initial allocation, and each subsequent reallocation, a reserve may be set aside by the Commission.

   a. The reserve in each zone shall be utilized to accommodate new discharges or major changes which occur subsequent to the initial allocation, or any reallocation, when appropriate in the judgment of the Commission.

   b. Individual allocations or portions thereof which are no longer needed because use of the facilities to which they are assigned is discontinued or substantially decreased shall be returned to the reserve.

   c. Where improved waste management practice results in a reduction of the load discharged to less than the allocation, the unused portion of the allocation shall not revert to the reserve.

5. Reallocations.

   a. All allocations shall be subject to review by the Commission and, after such review, the Commission may make such reallocation as it deems necessary.

   b. If any factors upon which an individual allocation is based change significantly, application shall be made for reallocation.

   c. Whenever the reserve in a zone approaches depletion, or when the full use of the assimilative capacity is approached, or when, in the judgment of the Commission, the allocations existing at that time are no longer equitable, the capacity in the zone, minus a reserve, will be reallocated among the waste dischargers in that zone.

6. Regionalization. Whenever two or more waste dischargers with separate allocations formulate a regional plan for water quality control, allocations may be revised by the Commission.

7. Design streamflow. For the purpose of determining the waste assimilative capacity of a stream, the following design minimum streamflows will be used:

   a. Unregulated streams. Where streams are unregulated, a minimum consecutive 7-day (average) flow with a 10-year recurrence interval shall be the design flow.

   b. Regulated streams. Where the pattern of regulation is such as to result in weekly, daily, or hourly variations in flow significantly different from the natural pattern of variation, the above design flow may reflect the effects of these variations.

   c. Lakes and reservoirs. Wherever waste discharges may affect the protected uses of lakes or reservoirs, the Commission, after consultation with the appropriate States, will determine the characteristics upon which to base effluent quality requirements in relation to the special characteristics of the receiving body of water.

   d. Tidal waters. Wherever waste discharges may affect the protected uses or the water quality criteria of tidal waters, the Commission, after consultation with the appropriate States, will determine the characteristics upon which to base effluent quality requirements in relation to the special characteristics of the receiving body of water.

B. Delaware River Estuary

1. Carbonaceous oxygen demand. Pursuant to the provisions of 3.10.4.E of the Standards, the Commission determines that the 1964 carbonaceous oxygen demand of the effluent load to Zones 2, 3, 4, and 5 exceeded the waste assimilative capacity of those zones to meet the stream quality objectives. Accordingly, the total carbonaceous oxygen demand exerted by the sum of all waste discharges to each of these zones shall be reduced to the following:

Zone 2	18,600 pounds per day
Zone 3	144,800 pounds per day
Zone 4	91,000 pounds per day
Zone 5	67,600 pounds per day

a. Reserve. In Zones 2, 3, 4, and 5, as a part of the initial allocation, and each subsequent reallocation, a reserve of about 10 percent of the total permissible load to the zone may be set aside by the Commission.

b. Allocation to individual dischargers.
   1). Within Zones 2, 3, 4, and 5, the pounds of carbonaceous oxygen demand prescribed above, minus the reserve, will be allocated among individual dischargers.
   2). Allocations will be based upon the concept of uniform reduction of raw waste in a zone.

c. Allowable variations.
   1). The number of pounds in the discharge permitted by the allocation will be determined by an average of samples taken over each period of thirty consecutive days of the year.
   2). It is recognized that optimum efficiency may not be achieved with certain secondary treatment facilities during the colder months. A discharge exceeding the allocation may be permitted by the Commission when it results from reduced plant efficiency caused by temperatures below 59° F (15° C), provided that the pounds discharged by any individual discharger shall not exceed its allocation by more than an average of two-thirds over any consecutive ten days.

d. Allocations from the reserve. Allocations from the reserve will be made upon the same principles as provided in 4.30.7.B.1.b. based upon the concept of uniform raw waste reduction in a zone at the time the allocation is made.

e. Reallocations. Reallocations will be made upon the same principles as provided by 4.30.7.B.1.b, provided that where the waste reduction by any discharger results in lower poundage input than it has been allocated such poundage differential will not be returned to the reserve in the absence of conditions requiring a reallocation for the zone.

f. Tidal tributaries.

1). Wastes discharged to the portions of tributaries of the Delaware River Estuary affected by tidal action are included in the total permissible load in each zone, and poundage allocations will be assigned to these dischargers on the same basis as effluents discharged directly to the estuary.

2). However, additional requirements may be imposed if any one or group of waste dischargers complying with estuary load allocations exceeds the waste assimilative capacity of the tidal tributary.

4.30.8 Tests, Sampling, and Analysis Procedures.

A. Records.

1. Adequate records shall be kept by the discharger of the operation of each facility which discharges waste effluents to Basin waters, as required by the member pollution control agencies, or as may be required by the Commission.

2. Such records shall be made available to the Commission upon request of the Executive Director.

B. Sampling facilities. Facilities, subject to Commission approval, shall be provided for each discharge so that representative samples may be readily collected under safe conditions.

C. Sampling.

1. Samples shall be taken by the discharger in such manner and in such number as shall be determined by the Commission upon consideration of the volume, location, and characteristics of the wastes, sufficient to permit the Commission to determine the quality of waste treatment influents and effluents and evaluate in-plant reductions.

2. Samples may be composited, continuously or hourly, in proportion to flow over 24 hours, or over a working cycle, as appropriate.

D. Bioassays. The Commission may require bioassays to demonstrate that waste discharges are neither toxic nor harmful and will not taint fish or shellfish flesh beyond the mixing zone.

E. Analysis procedures. Samples shall be analyzed and bioassays performed in accordance with the procedures in the latest edition of "Standard Methods for the Examination of Water and Wastewater," or as prescribed by the Commission.

F. Access. The Commission, its officers, agents, and employees shall have access to observe and inspect waste treatment and in-plant control facilities and to collect samples for analyses.

4.30.9 Other Considerations.

A. Intrastate tributaries. In addition to the requirements of this Article, effluent quality requirements on intrastate tributaries shall include such regulations as the State in which the tributary is located may impose in order to comply with the water quality criteria provided by 4.20.4.

B. Operations.

1. Waste treatment operations shall not be curtailed at any time of the year.

2. Operations shall be under the supervision of an operator qualified in training and experience.

Section 4.40 Groundwater Quality Requirements

4.40.1 Prohibited Activities. No person, firm, partnership, corporation, association or other entity, including any of the signatory parties, any political subdivision, agency, department or instrumentality of any of them, shall cause or permit any pollution of groundwaters or violate the groundwater quality objectives or control requirements imposed by or determined pursuant to this Section or Section 3.40.

4.40.2 Enforcement Procedures. The enforcement procedure of Section 4.50 with respect to effluent quality requirements for discharges shall be deemed applicable to the enforcement of this Section and Section 3.40. For the purposes thereof, the word "discharger" as used in Section 4.50 includes any party affected by this Section.

Section 4.50 Enforcement Procedures

4.50.1 Scope. The Standards will be enforced with respect to effluent quality requirements in accordance with this Section. It is intended that such enforcement procedures will be administered with due recognition of the laws and requirements of the signatory parties, and with the utilization to the maximum practical extent of the functions, powers and duties of water pollution control agencies of the signatory parties in accordance with administrative agreements which may be entered into by and between the Commission and such agencies.

4.50.2 Abatement Schedules and Permits.

A. Abatement schedules approved by the Commission prior to October 1, 1973, shall be referred to the appropriate agency of the signatory parties, respectively, for all further proceedings.

B. On and after October 1, 1973, each discharger shall comply with the requirements for an abatement schedule under the laws and regulations of the appropriate signatory parties.

C. A copy of each abatement schedule and permit, and any revision or amendment thereof, shall be promptly filed with the Commission by the agency of the signatory party issuing it.

D. Each agency of a signatory party which issues or approves an abatement schedule or a discharge permit relating to waters of the Basin shall provide for the use of the Commission an annual report of such actions including the progress of abatement measures thereunder, in such form as the Executive Director may request.

4.50.3 Waste Load Allocations. Waste load allocations will be made by the Executive Director in accordance with these Regulations. Every allocation shall be met:

A. by an existing waste treatment facility;

B. in accordance with an abatement schedule duly adopted and approved by a signatory party, with respect to an existing project;

C. at all times with respect to a new project.

4.50.4 Inspection and Surveillance.

A. The Commission, its officers, agents, and employees may inspect the operations of waste treatment and in-plant control facilities of any waste discharger and may install, operate, and maintain facilities for monitoring and surveillance of effluents as well as water quality objectives.

B. Provision for such monitoring and surveillance shall be deemed to be part of every order, determination, or permit of the Commission approving an allocation or an abatement schedule for any waste discharger.

4.50.5 Noncompliance; Notice.

A. Whenever the Executive Director determines that there is cause to conclude that a waste discharger may be in violation of these Regulations, the Director shall serve upon the waste discharger a notice of hearing, requiring the waste discharger to show cause within 20 days thereafter, at a hearing to be conducted by a hearing officer designated by the Director, why a citation for non-compliance should not be issued.

B. Following the hearing, the officer shall determine whether the waste discharger is in fact in violation of these Regulations and upon such finding shall recommend to the Executive Director an appropriate determination.

C. If the Executive Director determines that the waste discharger is in violation, he shall cause to be issued and served upon the waste discharger a citation for noncompliance.

D. A copy of the citation shall also be served and filed with the water pollution control agency of the signatory State in which the violation occurs.

4.50.6 Order of Abatement; Sanctions.

A. Order. An order of abatement shall be issued by the Executive Director, following a citation for noncompliance, whenever:

1. The state pollution control agency has not taken appropriate and timely action to obtain compliance, or

2. There is a disagreement between two or more States regarding satisfactory compliance by a waste discharge, or

3. A waste discharge involves a federally-owned or operated facility, or

4. There is doubt or conflict of jurisdiction among the States.

B. Sanctions. The Commission may invoke the sanctions of the Compact for violation of these Regulations following the issuance of an order of abatement by the Executive Director.

INTERPRETIVE GUIDELINE NO. 1

On January 26, 1972 the Delaware River Basin Commission adopted Interpretive Guideline No. 1, as Resolution No. 72-1, directing that the following numerical definitions be used as guidelines by the Commission staff in administering Sections 3.10.3.A, 3.10.4.A, 3.10.4.C, and 3.10.4.D of the Water Quality Standards, and that they be administered in accordance with the procedures of the Basin Regulations - Water Quality.

A. Stream Quality Objectives

(1) Limits.

a. Toxic substances.

(i) The concentration of a toxic substance in Basin waters shall not exceed one-twentieth of the TL_{50} value at 96 hours, as determined by appropriate bioassays, except in designated mixing areas. Criteria for combinations of toxic substances will be based upon the same principle.

(ii) The substances listed below shall not exceed the specified limits or one-twentieth of the TL_{50} value at 96 hours, whichever is lower.

	limit mg/l
Arsenic	0.05
Barium	1.0
Cadmium	0.01
Chromium (hexavalent)	0.05
Lead	0.05
Mercury	0.005
Selenium	0.01
Silver	0.05

(iii) The concentration of a persistent pesticide[1] in Basin waters shall not exceed one one-hundredth of the TL_{50} value at 96 hours, as determined by appropriate bioassay.

b. Oil. No readily visible oil.

[1] Persistent pesticides are defined as natural and synthetic materials having a half-life of greater than 96 hours, which are used to control unwanted or noxious animals or plants. They include fungicides, herbicides, insecticides, fumigants and rodenticides.

B. Effluent Quality Requirements

(1) Suspended solids. For municipal and industrial waste treatment facilities, at least 90 percent removal as determined by an average of samples taken over each period of 30 consecutive days of the year and not to exceed 100 mg/l, whichever is less.

(2) Public safety.

a. Temperature. Maximum 110° F (43.3° C) where readily accessible to human contact.

(3) Limits.

a. Oil. Not to exceed 10 mg/l; no readily visible oil.

b. Debris, scum, or other floating materials. None.

c. Toxicity.

(i) Not more than 50 percent mortality in 96 hours in an appropriate bioassay test with a 1:1 dilution. Wastes containing chlorine may be dechlorinated prior to the bioassay test.

(ii) Notwithstanding the results of the tests prescribed in paragraph (i) above, the substances listed below being accumulative or conservative, shall not exceed the following specified limits in an effluent.

	limit mg/l
Arsenic	0.1
Barium	2.0
Cadmium	0.02
Chromium (hexavalent)	0.10
Copper	0.20
Lead	0.10
Mercury	0.01
Selenium	0.02
Zinc	0.60

(iii) Persistent pesticides - not to exceed one one-hundredth of the TL_{50} value at 96 hours as determined by appropriate bioassay.

d. Odor. Not to exceed a threshold number of 250.

e. BOD.

(i) The former INCODEL Standards which were saved from repeal by Resolution 67-7 remain applicable; that is, no discharge shall exceed a 24-hour average of 50 mg/l in Zone 1 and 100 mg/l in Zone 2. A slight deviation may be permitted by the Commission when it results from reduced secondary treatment plant efficiency caused by wastewater temperatures below 59° F (15° C).

(ii) In Zones 2, 3, 4 and 5 a waste shall receive not less than zone percent reduction in addition to meeting allocation requirements.

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