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[New Hampshire Code of Administrative Rules](#)
[Env-Ws 1700](#)



STATE OF NEW HAMPSHIRE

SURFACE WATER QUALITY
REGULATIONS

CHAPTER 1700

December 10, 1999

NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES

TABLE OF CONTENTS

CHAPTER Env-Ws 1700 SURFACE WATER QUALITY REGULATIONS

PART Env-Ws 1701 INTRODUCTION

Section Env-Ws 1701.01 Purpose

Section Env-Ws 1701.02 Applicability

PART Env-Ws 1702 DEFINITIONS

Section Env-Ws 1702.01 Acute Toxicity

Section Env-Ws 1702.02 Antidegradation

Section Env-Ws 1702.03 Assimilative Capacity

Section Env-Ws 1702.04 Benthic Community

Section Env-Ws 1702.05 Benthic Deposit

Section Env-Ws 1702.06 Best Management Practices

Section Env-Ws 1702.07 Biological Integrity

Section Env-Ws 1702.08 Biota

Section Env-Ws 1702.09 CFR

Section Env-Ws 1702.10 Chronic Toxicity

Section Env-Ws 1702.11 Class A and B Waters

Section Env-Ws 1702.12 Clean Water Act

Section Env-Ws 1702.13 Community

Section Env-Ws 1702.14 Criterion

Section Env-Ws 1702.15 Cultural Eutrophication

Section Env-Ws 1702.16 Department

Section Env-Ws 1702.17 Designated Uses

Section Env-Ws 1702.18 Discharge

Section Env-Ws 1702.19 Dissolved Oxygen

Section Env-Ws 1702.20 Effluent Limitation(s)

Section Env-Ws 1702.21 EPA

Section Env-Ws 1702.22 Epilimnion

Section Env-Ws 1702.23 Existing Uses

Section Env-Ws 1702.24 High Quality Surface Waters

Section Env-Ws 1702.25 Industrial Waste

Section Env-Ws 1702.26 Maintain and Protect

Section Env-Ws 1702.27 Mixing Zone

Section Env-Ws 1702.28 Most Sensitive Use

Section Env-Ws 1702.29 Naturally Occurring Conditions

Section Env-Ws 1702.30 Nephelometric Turbidity Unit

Section Env-Ws 1702.31 Noncontact Cooling Water

Section Env-Ws 1702.32 Nonpoint Source

Section Env-Ws 1702.33 No Observed Effect Concentration

Section Env-Ws 1702.34 Nuisance Species

Section Env-Ws 1702.35 Other Wastes

Section Env-Ws 1702.36 Outstanding Resource Water

Section Env-Ws 1702.37 pH

Section Env-Ws 1702.38 Point Source

Section Env-Ws 1702.39 Pollutant

NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES

- Section Env-Ws 1702.40 Pollution
- Section Env-Ws 1702.41 Population
- Section Env-Ws 1702.42 Publicly Owned Treatment Works
- Section Env-Ws 1702.43 Radio Nuclide
- Section Env-Ws 1702.44 7Q10
- Section Env-Ws 1702.45 Sewage
- Section Env-Ws 1702.46 Surface Waters
- Section Env-Ws 1702.47 Tainting Substance
- Section Env-Ws 1702.48 Tidal Waters
- Section Env-Ws 1702.49 Toxicity Test
- Section Env-Ws 1702.50 Toxic Unit Chronic
- Section Env-Ws 1702.51 Waste
- Section Env-Ws 1702.52 Water Quality Standards
- Section Env-Ws 1702.53 Wetland
- Section Env-Ws 1702.54 Zone of Passage

PART Env-Ws 1703 WATER QUALITY STANDARDS

- Section Env-Ws 1703.01 Water Use Classifications
- Section Env-Ws 1703.02 Wetlands Criteria
- Section Env-Ws 1703.03 General Water Quality Criteria
- Section Env-Ws 1703.04 Class-Specific Criteria
- Section Env-Ws 1703.05 Combined Sewer Overflows
- Section Env-Ws 1703.06 Bacteria
- Section Env-Ws 1703.07 Dissolved Oxygen
- Section Env-Ws 1703.08 Benthic Deposits
- Section Env-Ws 1703.09 Oil and Grease
- Section Env-Ws 1703.10 Color
- Section Env-Ws 1703.11 Turbidity
- Section Env-Ws 1703.12 Slicks, Odors, and Surface Floating Solids
- Section Env-Ws 1703.13 Temperature
- Section Env-Ws 1703.14 Nutrients
- Section Env-Ws 1703.15 Gross Beta Radioactivity
- Section Env-Ws 1703.16 Strontium-90
- Section Env-Ws 1703.17 Radium-226
- Section Env-Ws 1703.18 pH
- Section Env-Ws 1703.19 Biological and Aquatic Community Integrity
- Section Env-Ws 1703.20 Human Health Criteria for Toxic Substances
- Section Env-Ws 1703.21 Water Quality Criteria for Toxic Substances
- Section Env-Ws 1703.22 Notes for Table 1703.1
- Section Env-Ws 1703.23 Conversion Factors for Metals
- Section Env-Ws 1703.24 Freshwater Aquatic Life Criteria for Metals
- Section Env-Ws 1703.25 Freshwater Aquatic Life Criteria for Ammonia
- Section Env-Ws 1703.26 Saltwater Acute Aquatic Life Criteria for Ammonia at a Salinity of 10g/kg
- Section Env-Ws 1703.27 Saltwater Acute Aquatic Life Criteria for Ammonia at a Salinity of 20g/kg
- Section Env-Ws 1703.28 Saltwater Acute Aquatic Life Criteria for Ammonia at a Salinity of 30g/kg

NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES

Section Env-Ws 1703.29 Saltwater Chronic Aquatic Life Criteria for Ammonia at a Salinity of 10g/kg

Section Env-Ws 1703.30 Saltwater Chronic Aquatic Life Criteria for Ammonia at a Salinity of 20g/kg

Section Env-Ws 1703.31 Saltwater Chronic Aquatic Life Criteria for Ammonia at a Salinity of 30g/kg

Section Env-Ws 1703.32 Aquatic Life Criteria for Pentachlorophenol

PART Env-Ws 1704 ALTERNATIVE SITE SPECIFIC CRITERIA

Section Env-Ws 1704.01 Purpose

Section Env-Ws 1704.02 Procedures

Section Env-Ws 1704.03 Modifications

PART Env-Ws 1705 FLOW STANDARDS

Section Env-Ws 1705.01 Assimilative Capacity

Section Env-Ws 1705.02 Low Flow Conditions

PART Env-Ws 1706 SAMPLING AND ANALYSIS

Section Env-Ws 1706.01 Procedure

PART Env-Ws 1707 MIXING ZONES

Section Env-Ws 1707.01 Designation

Section Env-Ws 1707.02 Minimum Criteria

PART Env-Ws 1708 ANTIDegradation

Section Env-Ws 1708.01 Purpose

Section Env-Ws 1708.02 Applicability

Section Env-Ws 1708.03 Submittal of Data

Section Env-Ws 1708.04 Protection of Existing Uses

Section Env-Ws 1708.05 Protection of Water Quality in ORW

Section Env-Ws 1708.06 Protection of Class A Waters

Section Env-Ws 1708.07 Protection of Water Quality in High Quality Waters

Section Env-Ws 1708.08 Assessing Waterbodies

Section Env-Ws 1708.09 Significant or Insignificant Determination

Section Env-Ws 1708.10 Demonstration of Economic or Social Development

Section Env-Ws 1708.11 Public Participation and Intergovernmental Coordination

Section Env-Ws 1708.12 Transfer of Water to Public Water Supplies

PART Env-Ws 1709 REMOVAL OF DESIGNATED USES

Section Env-Ws 1709.01 Requirements

CHAPTER Env-Ws 1700 SURFACE WATER QUALITY REGULATIONS

PART Env-Ws 1701 INTRODUCTION

Statutory Authority: RSA 485-A:8, VI

REVISION NOTE:

Document #7151, effective 12-10-99, made extensive changes to the wording, format, structure, and renumbering of rules from Chapter Env-Ws 430 now Chapter Env-Ws 1700. Document #7151 supersedes all prior filings for the sections in this chapter. The prior filings for former Chapter Env-Ws 430 include the following documents:

- #1881, eff 12-7-81
- #2707, eff 5-15-84; EXPIRED 5-15-90
- #4896, eff 8-3-90
- #6301, INTERIM, eff 8-2-96; EXPIRES 11-30-96
- #6351, eff 10-5-96

The rules in former Chapter Env-Ws 430 have been renumbered, amended and incorporated into Chapter Env-Ws 1700 as follows:

Env-Ws 1701.01 Purpose. The purpose of these rules is to establish water quality standards for the state's surface water uses as set forth in RSA 485-A:8, I, II, III and V. These standards are intended to protect public health and welfare, enhance the quality of water and serve the purposes of the Clean Water Act and RSA 485-A. These standards provide for the protection and propagation of fish, shellfish, and wildlife, and provide for such uses as recreational activities in and on the surface waters, public water supplies, agricultural and industrial uses, and navigation in accord with RSA 485-A:8, I and II.

Source. #7151, eff 12-10-99

Env-Ws 1701.02 Applicability.

(a) These rules shall apply to all surface waters.

(b) These rules shall apply to any person who causes point or nonpoint source discharge(s) of pollutants to surface waters, or who undertakes hydrologic modifications, such as dam construction or water withdrawals, or who undertakes any other activity that affects the beneficial uses or the level of water quality of surface waters.

Source. #7151, eff 12-10-99

PART Env-Ws 1702 DEFINITIONS

Env-Ws 1702.01 "Acute toxicity" means an adverse effect such as mortality or debilitation caused by an exposure of 96 hours or less to a toxic substance.

Source. #7151, eff 12-10-99

Env-Ws 1702.02 "Antidegradation" means a provision of the water quality standards that maintains and protects existing water quality and uses.

Source. #7151, eff 12-10-99

Env-Ws 1702.03 "Assimilative capacity" means the amount of a pollutant or pollutants that can safely be

NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES

released to a waterbody without causing violations of applicable water quality criteria or negatively impacting uses.

Source. #7151, eff 12-10-99

Env-Ws 1702.04 "Benthic community" mean the community of plants and animals that live on, over, or in the substrate of the surface water.

Source. #7151, eff 12-10-99

Env-Ws 1702.05 "Benthic deposit" means any sludge, sediment or other organic or inorganic accumulations on the bottom of the surface water.

Source. #7151, eff 12-10-99

Env-Ws 1702.06 "Best management practices" means those practices which are determined, after problem assessment and examination of all alternative practices and technological, economic and institutional considerations, to be the most effective practicable means of preventing or reducing the amount of pollution generated by point or nonpoint sources to a level compatible with water quality goals.

Source. #7151, eff 12-10-99

Env-Ws 1702.07 "Biological integrity" means the ability of an aquatic ecosystem to support and maintain a balanced, integrated, adaptive community of organisms having a species composition, diversity, and functional organization comparable to that of similar natural habitats of a region.

Source. #7151, eff 12-10-99

Env-Ws 1702.08 "Biota" means species of plants or animals occurring in surface waters.

Source. #7151, eff 12-10-99

Env-Ws 1702.09 "CFR" means the Code of Federal Regulations published by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Source. #7151, eff 12-10-99

Env-Ws 1702.10 "Chronic toxicity" means an adverse effect such as reduced reproductive success or growth, or poor survival of sensitive life stages, which occurs as a result of prolonged exposure to a toxic substance.

Source. #7151, eff 12-10-99

Env-Ws 1702.11 "Class A and B waters" means those surface waters that are legislatively classified as Class A or B waters pursuant to RSA 485-A:8, I, II and III.

Source. #7151, eff 12-10-99

Env-Ws 1702.12 "Clean Water Act" means the Federal Clean Water Act, Pub. L. 92-500 as amended by Pub. L. 95-217, Pub. L. 95-576, Pub. L. 96-483, Pub. L. 97-117, Pub. L. 100-4, 33 USC 1251 et seq.

Source. #7151, eff 12-10-99

Env-Ws 1702.13 "Community" means one or more populations co-occurring in surface waters.

Source. #7151, eff 12-10-99

NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES

Env-Ws 1702.14 "Criterion" means:

- (a) A designated concentration of a pollutant;
- (b) A narrative statement concerning that pollutant that when not exceeded, will protect an organism, a population, a community, or a prescribed water use; or
- (c) A numeric value or narrative statement related to other characteristics of the surface waters, such as flow and biological community integrity.

Source. #7151, eff 12-10-99

Env-Ws 1702.15 "Cultural eutrophication" means the human-induced addition of wastes containing nutrients to surface waters which results in excessive plant growth and/or a decrease in dissolved oxygen.

Source. #7151, eff 12-10-99

Env-Ws 1702.16 "Department" means the department of environmental services.

Source. #7151, eff 12-10-99

Env-Ws 1702.17 "Designated uses" means those uses specified in water quality standards for each waterbody or segment whether or not such uses are presently occurring.

Source. #7151, eff 12-10-99

Env-Ws 1702.18 "Discharge" means:

- (a) The addition, introduction, leaking, spilling, or emitting of a pollutant to surface waters, either directly or indirectly through the groundwater, whether done intentionally, unintentionally, negligently or otherwise; or
- (b) The placing of a pollutant in a location where the pollutant is likely to enter surface waters.

Source. #7151, eff 12-10-99

Env-Ws 1702.19 "Dissolved oxygen" (D.O.) means the oxygen dissolved as a gas in sewage, water or other liquid expressed in milligrams per liter (mg/l), parts per million (ppm), or percent saturation.

Source. #7151, eff 12-10-99

Env-Ws 1702.20 "Effluent limitation(s)" means any restriction(s) imposed by the department pursuant to RSA 485-A on quantities, discharge rates, characteristics, and concentrations of pollutants which are discharged to surface waters.

Source. #7151, eff 12-10-99

Env-Ws 1702.21 "EPA" means the United States Environmental Protection Agency.

Source. #7151, eff 12-10-99

NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES

Env-Ws 1702.22 "Epilimnion" means the upper, well-circulated warm layer of a thermally stratified lake, pond, impoundment or reservoir.

Source. #7151, eff 12-10-99

Env-Ws 1702.23 "Existing uses" means those uses, other than assimilation or waste transport, which actually occurred in the waterbody on or after November 28, 1975, whether or not they are included in the water quality standards.

Source. #7151, eff 12-10-99

Env-Ws 1702.24 "High quality surface waters" means all surface waters whose water quality is better than required by any aquatic life and/or human health water quality criteria contained in these rules or other criteria assigned to the surface water, or whose qualities and characteristics make them critical to the propagation or survival of important living natural resources.

Source. #7151, eff 12-10-99

Env-Ws 1702.25 "Industrial waste" means "industrial waste" as defined in RSA 485-A:2, VI, namely "any liquid, gaseous or solid waste substance resulting from any process of industry, manufacturing trade or business or from development of any natural resources."

Source. #7151, eff 12-10-99

Env-Ws 1702.26 "Maintain and protect" means to preserve the existing and designated uses of surface waters.

Source. #7151, eff 12-10-99

Env-Ws 1702.27 "Mixing zone" means a defined area or volume of the surface water surrounding or adjacent to a wastewater discharge where the surface water, as a result of the discharge, might not meet all applicable water quality standards.

Source. #7151, eff 12-10-99

Env-Ws 1702.28 "Most sensitive use" means the use which is most susceptible to degradation by a specific pollutant, combination of pollutants, or activity, such as:

- (a) Drinking;
- (b) Swimming;
- (c) Boating;
- (d) Fish and aquatic life propagation;
- (e) Fish consumption by higher level consumers including man; or
- (f) Irrigation.

Source. #7151, eff 12-10-99

NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES

Env-Ws 1702.29 "Naturally occurring conditions" means conditions which exist in the absence of human influences.

Source. #7151, eff 12-10-99

Env-Ws 1702.30 "Nephelometric turbidity unit" or "NTU" means a standard used to measure the optical property that causes light to be scattered and absorbed rather than transmitted in straight lines through water, as measured by a nephelometer.

Source. #7151, eff 12-10-99

Env-Ws 1702.31 "Noncontact cooling water" means water used for cooling which does not come into direct contact with any raw material, intermediate product, waste product or finished product and to which no pollutants, other than heat, have been added.

Source. #7151, eff 12-10-99

Env-Ws 1702.32 "Nonpoint source" means any source other than a point source as defined in Env-Ws 1702.38.

Source. #7151, eff 12-10-99

Env-Ws 1702.33 "No observed effect concentration" (NOEC) means the highest measured continuous concentration, in percent, of an effluent at which no adverse effects are observed on the aquatic test organisms.

Source. #7151, eff 12-10-99

Env-Ws 1702.34 "Nuisance species" means any species of flora or fauna living in or near the water whose noxious characteristics or presence in sufficient number or mass prevent or interfere with a designated use of those surface waters.

Source. #7151, eff 12-10-99

Env-Ws 1702.35 "Other wastes" means "other wastes" as defined in RSA 485-A:2, VIII, namely, "garbage, municipal refuse, decayed wood, sawdust, shavings, bark, lime, ashes, offal, oil, tar, chemicals and other substances other than sewage or industrial wastes, and any other substance harmful to human, animal, fish, or aquatic life."

Source. #7151, eff 12-10-99

Env-Ws 1702.36 "Outstanding Resource Water" or "ORW" means surface waters of exceptional recreational or ecological significance.

Source. #7151, eff 12-10-99

Env-Ws 1702.37 "pH" means a measure of the hydrogen ion concentration in a solution, expressed as the logarithm to the base 10, of the reciprocal of the hydrogen ion concentration in gram moles per liter.

Source. #7151, eff 12-10-99

Env-Ws 1702.38 "Point source" means a discernible, confined, and discrete conveyance from which pollutants are or might be discharged, excluding return flows from irrigated agriculture or agricultural stormwater runoff, and including but not limited to a:

- (a) Pipe;

NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES

- (b) Ditch;
- (c) Channel;
- (d) Tunnel;
- (e) Conduit;
- (f) Well;
- (g) Discrete fissure;
- (h) Container;
- (i) Rolling stock;
- (j) Concentrated animal feeding operation; or
- (k) Vessel or other floating craft.

Source. #7151, eff 12-10-99

Env-Ws 1702.39 "Pollutant" means "pollutant" as defined in 40 CFR 122.2.

Source. #7151, eff 12-10-99

Env-Ws 1702.40 "Pollution" means the man-made or man-induced alteration of the chemical, physical, biological, or radiological integrity of water.

Source. #7151, eff 12-10-99

Env-Ws 1702.41 "Population" means a group of individuals of one biological species co-occurring in time and space.

Source. #7151, eff 12-10-99

Env-Ws 1702.42 "Publicly owned treatment works" (POTW) means any device or system used in the treatment of municipal sewage and/or industrial wastewater which is owned by the state, or a political subdivision of the state.

Source. #7151, eff 12-10-99

Env-Ws 1702.43 "Radio nuclide" means a radioactive atomic nucleus specified by its atomic number, atomic mass and energy state.

Source. #7151, eff 12-10-99

Env-Ws 1702.44 "7Q10" means the lowest average flow which occurs for 7 consecutive days on an annual basis with a recurrence interval of once in 10 years on average, expressed in terms of volume per time period.

Source. #7151, eff 12-10-99

NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES

Env-Ws 1702.45 "Sewage" means "sewage" as defined in RSA 485-A:2, X, namely, "the water carried waste products from buildings, public or private, together with such groundwater infiltration and surface water as may be present."

Source. #7151, eff 12-10-99

Env-Ws 1702.46 "Surface waters" means "surface waters of the state" as defined in RSA:485-A:2, XIV and waters of the United States as defined in 40 CFR 122.2.

Source. #7151, eff 12-10-99

Env-Ws 1702.47 "Tainting substance" means any material that can impart objectionable taste, odor, or color to the flesh of fish or other edible aquatic organisms.

Source. #7151, eff 12-10-99

Env-Ws 1702.48 "Tidal waters" means those portions of the Atlantic Ocean within the jurisdiction of the state, and other surface waters subject to the rise and fall of the tide.

Source. #7151, eff 12-10-99

Env-Ws 1702.49 "Toxicity test" means a test to determine the toxicity of a chemical or an effluent that involves exposing test organisms in a laboratory setting to one or more concentrations of the chemical or dilutions of the effluent in accordance with standard laboratory procedures.

Source. #7151, eff 12-10-99

Env-Ws 1702.50 "Toxic unit chronic" (TU_c) means the reciprocal of the effluent dilution that causes no unacceptable effect to the test organisms by the end of the chronic exposure period. The TU_c can be calculated by dividing 100 by the chronic NOEC value.

Source. #7151, eff 12-10-99

Env-Ws 1702.51 "Waste" means "industrial waste" as defined in RSA 485-A:2,VI, and "other wastes" as defined in RSA 485-A:2,VIII.

Source. #7151, eff 12-10-99

Env-Ws 1702.52 "Water quality standards" means the combination of designated uses of surface waters and the water quality criteria for such surface waters based upon such uses.

Source. #7151, eff 12-10-99

Env-Ws 1702.53 "Wetland" means "wetland" as defined in Wt 101.87, namely "an area that is inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal conditions does support, a prevalence of vegetation typically adapted for life in saturated soil conditions." Wetlands include, but are not limited to, swamps, marshes, bogs and similar areas as delineated in accordance with Wt. 301.01.

Source. #7151, eff 12-10-99

NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES

Env-Ws 1702.54 "Zone of passage" means an area bordering a mixing zone and which is free from pollutants and which allows for unobstructed movement of aquatic organisms.

Source. #7151, eff 12-10-99

PART Env-Ws 1703 WATER QUALITY STANDARDS

Env-Ws 1703.01 Water Use Classifications.

(a) State surface waters shall be divided into class A and class B, pursuant to RSA 485-A:8, I, II and III. Each class shall identify the most sensitive use which it is intended to protect.

(b) All surface waters shall be restored to meet the water quality criteria for their designated classification including existing and designated uses, and to maintain the chemical, physical, and biological integrity of surface waters.

(c) All surface waters shall provide, wherever attainable, for the protection and propagation of fish, shellfish and wildlife, and for recreation in and on the surface waters.

(d) Unless the flows are caused by naturally occurring conditions, surface water quantity shall be maintained at levels adequate to protect existing and designated uses.

Source. #7151, eff 12-10-99

Env-Ws 1703.02 Wetlands Criteria.

(a) Subject to (b) below, wetlands shall be subject to the criteria listed in this part.

(b) Wherever the naturally occurring conditions of the wetlands are different from the criteria listed in these rules, the naturally occurring conditions shall be the applicable water quality criteria.

Source. #7151, eff 12-10-99

Env-Ws 1703.03 General Water Quality Criteria.

(a) The presence of pollutants in the surface waters shall not justify further introduction of pollutants from point and/or nonpoint sources.

(b) State surface waters shall retain their legislated classification even if they fail to meet any or all of the general, class-specific, or toxic criteria contained in this part.

(c) The following physical, chemical and biological criteria shall apply to all surface waters:

(1) All surface waters shall be free from substances in kind or quantity which:

- a. Settle to form harmful deposits;
- b. Float as foam, debris, scum or other visible substances;
- c. Produce odor, color, taste or turbidity which is not naturally occurring and would render it unsuitable for its designated uses;
- d. Result in the dominance of nuisance species; or
- e. Interfere with recreational activities;

NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES

(2) The level of radioactive materials in all surface waters shall not be in concentrations or combinations that would:

- a. Be harmful to human, animal or aquatic life or the most sensitive designated use;
- b. Result in radio nuclides in aquatic life exceeding the recommended limits for consumption by humans; or
- c. Exceed limits specified in EPA's national drinking water regulations or Env-Ws 300 whichever are more stringent; and

(3) Tainting substances shall not be present in concentrations that individually or in combination are detectable by taste and odor tests performed on the edible portions of aquatic organisms.

Source. #7151, eff 12-10-99

Env-Ws 1703.04 Class-Specific Criteria. In addition to the general water quality criteria specified in Env-Ws 1703.03, the class criteria specified in Env-Ws 1703.05 through Env-Ws 1703.32 shall apply to all surface waters. The surface waters in each classification shall satisfy all the provisions of the lower classifications.

Source. #7151, eff 12-10-99

Env-Ws 1703.05 Combined Sewer Overflows.

(a) To demonstrate that the class B criteria cannot reasonably be met in surface waters as a result of the combined sewer overflows, the applicant shall conduct and submit to the department, a use attainability analysis (UAA) in accord with 40 CFR Part 131.

(b) If, after public notice and comment, the department determines, based on the information provided in (a) above, that the UAA supports the establishment of less stringent criteria, it shall recommend a change in the classification of the waterbody to the legislature.

(c) Exceedances of class B criteria and uses shall be limited to those identified in the Combined Sewer Overflow Facilities Plan after full implementation of the control measures.

Source. #7151, eff 12-10-99

Env-Ws 1703.06 Bacteria.

(a) Uses and criteria associated with bacteria shall be as set forth in RSA 485-A:8, I, II, and V.

(b) Subject to (c) below, the bacteria criteria shall be applied at the end of a wastewater treatment facility's discharge pipe.

(c) For combined sewer overflows which discharge into non-tidal waters, a bacteria criteria of 1000 Escherichia coli per 100 milliliters shall be applied at the end of the combined sewer overflow's discharge pipe.

Source. #7151, eff 12-10-99

Env-Ws 1703.07 Dissolved Oxygen.

(a) Class A waters shall have a dissolved oxygen content of at least 75% saturation, based on a daily average, and an instantaneous minimum of at least 6 mg/l at any place or time except as naturally occurs.

(b) Except as naturally occurs, or in waters identified in RSA 485-A:8, III, or subject to (c) below, class B

NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES

waters shall have a dissolved oxygen content of at least 75% of saturation, based on a daily average, and an instantaneous minimum dissolved oxygen concentration of at least 5 mg/l.

(c) For the period from October 1st to May 14th, in areas identified by the fish and game department as cold water fish spawning areas of species whose early life stages are not directly exposed to the water, the 7 day mean dissolved oxygen concentration shall be at least 9.5 mg/l and the instantaneous minimum dissolved oxygen concentration shall be at least 8 mg/l. This period shall be extended to June 30 for a particular waterbody if the fish and game department determines it is necessary to protect spring spawners and late hatches of fall spawners.

(d) Unless naturally occurring or subject to (a) above, surface waters within the top 25 percent of depth of thermally unstratified lakes, ponds, impoundments and reservoirs or within the epilimnion shall contain a dissolved oxygen content of at least 75 percent saturation, based on a daily average and an instantaneous minimum dissolved oxygen content of at least 5 mg/l. Unless naturally occurring, the dissolved oxygen content below those depths shall be consistent with that necessary to maintain and protect existing and designated uses.

Source. #7151, eff 12-10-99

Env-Ws 1703.08 Benthic Deposits.

(a) Class A waters shall contain no benthic deposits, unless naturally occurring.

(b) Class B waters shall contain no benthic deposits that have a detrimental impact on the benthic community, unless naturally occurring.

Source. #7151, eff 12-10-99

Env-Ws 1703.09 Oil and Grease.

(a) Class A waters shall contain no oil or grease, unless naturally occurring.

(b) Class B waters shall contain no oil or grease in such concentrations that would impair any existing or designated uses.

Source. #7151, eff 12-10-99

Env-Ws 1703.10 Color.

(a) Class A waters shall contain no color, unless naturally occurring.

(b) Class B waters shall contain no color in such concentrations that would impair any existing or designated uses, unless naturally occurring.

Source. #7151, eff 12-10-99

Env-Ws 1703.11 Turbidity.

(a) Class A waters shall contain no turbidity, unless naturally occurring.

(b) Class B waters shall not exceed naturally occurring conditions by more than 10 NTUs.

(c) Waters identified in RSA 485-A:8, III shall contain no turbidity of unreasonable kind or quality.

Source. #7151, eff 12-10-99

Env-Ws 1703.12 Slicks, Odors, and Surface Floating Solids.

NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES

(a) Class A waters shall contain no slicks, odors, or surface floating solids unless naturally occurring.

(b) Class B waters shall contain no slicks, odors, or surface floating solids that would impair any existing or designated use, unless naturally occurring.

(c) Waters identified in RSA 485-A:8, III shall be free from slick, odors, and surface floating solids of unreasonable kind or quantity.

Source. #7151, eff 12-10-99

Env-Ws 1703.13 Temperature.

(a) There shall be no change in temperature in class A waters, unless naturally occurring.

(b) Temperature in class B waters shall be in accordance with RSA 485-A:8, II, and VIII.

Source. #7151, eff 12-10-99

Env-Ws 1703.14 Nutrients.

(a) Class A waters shall contain no phosphorus or nitrogen unless naturally occurring.

(b) Class B waters shall contain no phosphorus or nitrogen in such concentrations that would impair any existing or designated uses, unless naturally occurring.

(c) Existing discharges containing either phosphorus or nitrogen which encourage cultural eutrophication shall be treated to remove phosphorus or nitrogen to ensure attainment and maintenance of water quality standards.

(d) There shall be no new or increased discharge of phosphorus into lakes or ponds.

(e) There shall be no new or increased discharge(s) containing phosphorus or nitrogen to tributaries of lakes or ponds that would contribute to cultural eutrophication or growth of weeds or algae in such lakes and ponds.

Source. #7151, eff 12-10-99

Env-Ws 1703.15 Gross Beta Radioactivity. Class A and B waters shall not contain gross beta radioactivity in excess of 1000 picocuries per liter.

Source. #7151, eff 12-10-99

Env-Ws 1703.16 Strontium-90. Class A and B waters shall not contain strontium-90 in excess of 10 picocuries per liter.

Source. #7151, eff 12-10-99

Env-Ws 1703.17 Radium-226. Class A and B waters shall contain no radium-226 in excess of 3 picocuries per liter.

Source. #7151, eff 12-10-99

Env-Ws 1703.18 pH.

- (a) The pH of Class A waters shall be as naturally occurs.
- (b) The pH of Class B waters shall be 6.5 to 8.0, unless due to natural causes.
- (c) The pH of waters identified in RSA 485-A:8, III shall be 6.0 to 9.0, unless due to natural causes.

Source. #7151, eff 12-10-99

Env-Ws 1703.19 Biological and Aquatic Community Integrity.

(a) The surface waters shall support and maintain a balanced, integrated, and adaptive community of organisms having a species composition, diversity, and functional organization comparable to that of similar natural habitats of a region.

(b) Differences from naturally occurring conditions shall be limited to non-detrimental differences in community structure and function.

Source. #7151, eff 12-10-99

Env-Ws 1703.20 Human Health Criteria for Toxic Substances.

(a) The department shall use a risk factor of one in one million when determining human health criteria for all new discharges. The department shall also use a one in one million risk factor in determining human health criteria for all existing discharges unless it can be demonstrated by the applicant that the criteria obtained using the one in one million risk factor cannot be achieved because it is either technologically impossible or economically unfeasible. However, in no case shall the department allow a risk factor greater than one in one hundred thousand.

(b) For the protection of human health, class A and B waters shall not contain dioxin (2, 3, 7, 8 - TCDD) in excess of 0.001 ng/l, unless allowed under part Env-Ws 1707.

Source. #7151, eff 12-10-99

Env-Ws 1703.21 Water Quality Criteria for Toxic Substances.

(a) Unless naturally occurring or allowed under part Env-Ws 1707, all surface waters shall be free from toxic substances or chemical constituents in concentrations or combinations that:

- (1) Injure or are inimical to plants, animals, humans or aquatic life; or
- (2) Persist in the environment or accumulate in aquatic organisms to levels that result in harmful concentrations in edible portions of fish, shellfish, other aquatic life, or wildlife which might consume aquatic life.

(b) Unless allowed in part Env-Ws 1707 or naturally occurring, concentrations of toxic substances in all surface waters shall not exceed the recommended safe exposure levels of the most sensitive surface water use shown in Table 1703.1, subject to the notes as explained in Env-Ws 1703.22, as follows:

TABLE 1703.1

WATER QUALITY CRITERIA FOR TOXIC SUBSTANCES

<u>Chemical</u>	<u>Protection of Aquatic Life</u> <u>Concentration in ug/l</u>				<u>Protection of Human Health</u> <u>Units per Liter</u>	
	<u>Fresh Acute Criteria</u>	<u>Fresh Chronic Criteria</u>	<u>Marine Acute Criteria</u>	<u>Marine Chronic Criteria</u>	<u>Water & Fish Ingestion</u>	<u>Fish Consumption Only</u>
Acenaphthene	1,700	520	970	710	20ug ^j	20ug ^j
Acrolein	68	21	55	--	320ug	780ug
Acrylonitrile	7,550	2,600	--	--	0.059ug ^c	0.66ug ^c
Aldrin	3.0 ^k	--	1.3 ^k	--	0.13ng ^c	0.14ng ^c
Alkalinity	--	20,000	--	--	--	--
Aluminum	750	87	--	--	--	--
Ammonia ^a					--	--
Aniline	28	14	77	37	--	--
Anthracene	(see Polynuclear Aromatic Hydrocarbons)				9,600ug	110,000ug
Antimony	9,000	1,600	--	--	14ug ^l	4300ug
Arsenic	340 ^{d,i}	150 ^{d,i}	69 ^{d,i}	36 ^{d,i}	18ng ^{b,c}	140ng ^{b,c}
Asbestos	--	--	--	--	7,000,000 fibres ^c	--
Barium	--	--	--	--	1.0mg ^l	--
Benzene	5,300	--	5,100	700	1.2ug ^c	71ug ^c
Benzidine	2,500	--	--	--	0.12ng ^c	0.54ng ^c
Benzo(a) Anthracene	(see Polynuclear Aromatic Hydrocarbons)				0.0044ug ^c	0.049ug ^c
Benzo(a) Pyrene	(see Polynuclear Aromatic Hydrocarbons)				0.0044ug ^c	0.049ug ^c
Benzo(b) Fluoranthene	(see Polynuclear Aromatic Hydrocarbons)				0.0044ug ^c	0.049ug ^c
Benzo(g,h,i) Perylene	(see Polynuclear Aromatic Hydrocarbons)				--	--
Benzo(k) Fluoranthene	(see Polynuclear Aromatic Hydrocarbons)				0.0044ug ^c	0.049ug ^c
Beryllium	130	5.3	--	--	1	--
BHC	100 ^e	--	0.34 ^e	--	(see individual compounds)	
alpha-BHC	(see BHC)				3.9ng ^c	13ng ^c

NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES

<u>Chemical</u>	<u>Fresh Acute Criteria</u>	<u>Fresh Chronic Criteria</u>	<u>Marine Acute Criteria</u>	<u>Marine Chronic Criteria</u>	<u>Water & Fish Ingestion</u>	<u>Fish Consumption Only</u>
beta-BHC	(see BHC)				14ng ^c	46ng ^c
delta-BHC	(see BHC)				0.0123ug	0.0414ug
gamma-BHC(Lindane)	0.95	.08	.16 ^k	--	19ng ^c	63ng ^c
technical-BHC	--	--	--	--	0.0123 ug	0.0414 ug
Bis (2-Chloroethyl) Ether	(see Chloroalkyl ethers)				0.031 ^c	1.4 ^c
Bis (2-Ethylhexy)Phthalate	(see Phthalate esters)				1.8ug ^c	5.9ug ^c
Bromoform	(see Halomethanes)				4.3ug ^c	360ug ^c
4-Bromophenyl phenyl ether	(see Haloethers)				--	--
Butyl benzyl phthalate	(see Phthalate esters)				3000ug	5200ug
Cadmium ⁱ	0.95 ^{f,d}	0.80 ^{f,d}	42 ^d	9.3 ^d	--	--
Carbon Tetrachloride	35,200	--	50,000	--	0.25ug ^c	4.4ug ^c
Chlordane	2.4 ^k	0.0043 ^k	0.09 ^k	0.004 ^k	2.1ng ^c	2.2ng ^c
Chlorinated benzenes	250 ^e	50 ^e	160 ^e	129 ^e	(see individual compounds)	
Chlorobenzene	(See Chlorinated benzenes)				20ug ^j	20ug ^j
Chlorides	860,000	230,000	--	--	--	--
Chlorinated naphthalenes	1,600 ^e	--	7.5 ^e	--	(see individual compounds)	
Chlorine	19	11	13	7.5	1	--
Chloroalkyl ethers	238,000 ^e	--	--	--	(see individual compounds)	
Chloroethyl ether (Bis-2)	(see Chloroalkyl ethers)				.031ug ^c	1.4ug ^c
Chloroethyl vinyl ether-2	(see Chloroalkyl ethers)				--	--
Chlorodibromomethane	(see Halomethanes)				0.41ug ^c	34ug ^c
Chloroethoxy methane (Bis-2)	(see Chloroalkyl ethers)				--	--
Chloroform	28,900	1,240	(see Halomethanes)		5.7ug ^c	470ug ^c
Chloroisopropyl ether (Bis-2)	(see Chloroalkyl ethers)				1,400ug	170,000ug
p-Chloro-m-cresol	30	--	--	--	3,000ug ^j	3,000ug ^j
Chloromethyl ether (Bis)	(see Chloroalkyl ethers)				0.13ng ^c	0.78ng ^c
Chloronaphthalene 2	(see Chlorinated naphthalenes)				1,700ug	4,300ug

NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES

<u>Chemical</u>	<u>Fresh Acute Criteria</u>	<u>Fresh Chronic Criteria</u>	<u>Marine Acute Criteria</u>	<u>Marine Chronic Criteria</u>	<u>Water & Fish Ingestion</u>	<u>Fish Consumption Only</u>
Chlorophenol 2	4,380	2,000	--	--	0.1ug ^j	0.1ug ^j
Chlorophenol 3	--	--	--	--	0.1ug ^j	0.1ug ^j
Chlorophenol 4	--	--	29,700	--	0.1ug ^j	0.1ug ^j
Chlorophenoxy herbicides (2,4,5-TP)		--	--	--	10ug	--
Chlorophenoxy herbicides (2,4-D)--		--	--	--	100ug ^l	--
Chlorophenyl phenyl ether 4		(see Haloethers)			--	--
Chlorpyrifos	0.083	0.041	0.011	0.0056	--	--
Chloro-4 Methyl-3 Phenol	30	--	--	--	3,000ug ^j	3,000ug ^j
Chromium +6	16 ^{d,i}	11 ^{d,i}	1,100 ^{d,i}	50 ^{d,i}	1	--
Chromium+3	183 ^{f,d,i}	24 ^{f,d,i}	10,300	--	--	--
Chrysene	(see Polynuclear Aromatic Hydrocarbons)				0.0044ug ^c	0.049ug ^c
Copper ⁱ	3.6 ^{f,d}	2.7 ^{f,d}	4.8 ^d	3.1 ^d	1,000ug ^j	1,000ug ^j
Cyanide	22 ^m	5.2 ^m	1.0 ^m	1.0 ^m	700ug ^l	220,000ug
DDE(4,4')	1,050	--	14	--	0.59ng ^c	0.59ng ^c
DDD(4,4')	0.06	--	3.6	--	0.83ng ^c	0.84ng ^c
DDT(4,4')	1.1 ^k	0.001 ^k	0.13 ^k	0.001 ^k	0.59ng ^c	0.59ng ^c
Demeton	--	0.1	--	0.1	--	--
Dibenzo(a,h)Anthracene	(see Polynuclear Aromatic Hydrocarbons)				0.0044ug ^c	0.049ug ^c
Dibutyl Phthalate	(see Phthalate esters)				2.7mg	12mg
Dichlorobenzenes	1,120 ^e	763 ^e	1,970 ^e	--	(see individual compounds)	
Dichlorobenzene(1,2)	(see Dichlorobenzenes)				2,700ug ^l	17,000ug
Dichlorobenzene(1,3)	(see Dichlorobenzenes)				400ug	2600ug
Dichlorobenzene(1,4)	(see Dichlorobenzenes)				400ug ^l	2600ug
Dichlorobenzidine(3,3')	--	--	--	--	0.04ug ^c	0.077ug ^c
Dichlorobromomethane	(see Halomethanes)				0.56ug ^c	46ug ^c
Dichlorodifluoromethane	(see Halomethanes)				6.9mg ^c	570mg ^c
Dichloroethane(1,2)	118,000	20,000	113,000	--	0.38ug ^c	99ug ^c

NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES

<u>Chemical</u>	<u>Fresh Acute Criteria</u>	<u>Fresh Chronic Criteria</u>	<u>Marine Acute Criteria</u>	<u>Marine Chronic Criteria</u>	<u>Water & Fish Ingestion</u>	<u>Fish Consumption Only</u>
Dichloroethylenes	11,600 ^e	--	224,000 ^e	--	(see individual compounds)	
Dichloroethylene(1,1)	(see Dichloroethylenes)				0.057ug ^c	3.2ug ^c
Dichloroethylene(1,2-Trans)	(see Dichloroethylenes)				700ug ^l	140,000ug
Dichlorophenol(2,3)	--	--	--	--	0.04ug ^j	0.04ug ^j
Dichlorophenol(2,4)	2,020	365	--	--	93ug	790ug
Dichlorophenol(2,5)	--	--	--	--	0.5ug ^j	0.5ug ^j
Dichlorophenol(2,6)	--	--	--	--	0.2ug ^j	0.2ug ^j
Dichlorophenol(3,4)	--	--	--	--	0.3ug ^j	0.3ug ^j
Dichloropropanes	23,000 ^e	5,700 ^e	10,300 ^e	3,040 ^e	(see individual compounds)	
Dichloropropane(1,2)	(see Dichloropropanes)				0.52ug ^c	39ug ^c
Dichloropropenes	6,060 ^e	244 ^e	790 ^e	--	(see individual compounds)	
Dichloropropene(1,3)	(see Dichloropropenes)				10 ug	1700 ug
Dieldrin	0.24	0.056	0.71 ^k	0.0019 ^k	0.14ng ^c	0.14ng ^c
Diethyl Phthalate	--	--	--	--	23mg	120mg
Dimethyl Phenol(2,4)	1,300	530	270	110	400ug ^j	400ug ^j
Dimethyl Phthalate	(see Phthalate esters)				313mg	2.9g
Di-n-butyl Phthalate	(see Phthalate esters)				2.7mg	12mg
Dinitrotoluenes	330 ^e	230 ^e	590 ^e	370 ^e	(see individual compounds)	
Dinitrotoluene(2,4)	(see Dinitrotoluenes)				0.11ug ^c	9.1ug ^c
Dinitrotoluene(2,6)	(see Dinitrotoluenes)				--	--
Dinitro-o-cresol (2,4)	(see Nitrophenols)				13.4ug	765ug
Dinitro-o-cresol (4,6)	(see Nitrophenols)				13.4ug	765ug
Dinitrophenols	(see Nitrophenols)				70ug	14,000ug
Dinitrophenol(2,4)	(see Nitrophenols)				70ug	14,000ug
Di-n-octyl phthalate	(see Phthalate esters)				--	--
Diphenylhydrazine(1,2)	270	--	--	--	0.04ug ^c	0.54ug ^c
	<u>Fresh Acute</u>	<u>Fresh Chronic</u>	<u>Marine Acute</u>	<u>Marine Chronic</u>	<u>Water & Fish</u>	<u>Fish Consumption</u>

NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES

<u>Chemical</u>	<u>Criteria</u>	<u>Criteria</u>	<u>Criteria</u>	<u>Criteria</u>	<u>Ingestion</u>	<u>Only</u>
Di-2-ethylhexyl phthalate	(see Phthalate esters)				1.8ug ^c	5.9ug ^c
alpha-Endosulfan	0.22 ^k	0.056 ^k	0.034 ^k	0.0087 ^k	110ug	240ug
beta-Endosulfan	0.22 ^k	0.056 ^k	0.034 ^k	0.0087 ^k	110ug	240ug
Endosulfan Sulfate	--	--	--	--	110ug	240ug
Endrin	0.086	0.036	0.037 ^k	0.0023 ^k	0.76ug	0.81ug
Endrin Aldehyde	--	--	--	--	0.76ug	0.81ug
Ethylbenzene	32,000	--	430	--	3,100ug ^l	29,000ug
Fluorene	(see Polynuclear Aromatic Hydrocarbons)				1,300ug	14,000ug
Guthion	--	0.01	--	0.01	--	--
Haloethers	360 ^e	122 ^e	--	--	(see individual compounds)	
Halomethanes	11,000 ^e	--	12,000 ^e	6,400 ^e	(see individual compounds)	
Heptachlor	0.52 ^k	0.0038 ^k	0.053 ^k	0.0036 ^k	0.21ng ^c	0.21ng ^c
Heptachlor Epoxide	0.52 ^k	0.0038 ^k	0.053 ^k	0.0036 ^k	0.10ng ^c	0.11ng ^c
Hexachloroethane	980	540	940	--	1.9ug ^c	8.9ug ^c
Hexachlorobenzene	(see Chlorinated benzenes)				0.75ng ^c	0.77ng ^c
Hexachlorobutadiene	90	9.3	32	--	0.44ug ^c	50ug ^c
Hexachlorocyclo-hexane-(Technical)	(see BHC)				0.0123ug	0.0414ug
Hexachlorocyclopentadiene	7.0	5.2	7.0	--	1.0 ^j	1.0 ^j
Ideno(1,2,3-cd)Pyrene	(see Polynuclear Aromatic Hydrocarbons)				0.0044ug ^c	0.049ug ^c
Iron	--	1,000	--	--	0.3mg	--
Isophorone	117,000	--	12,900	--	36ug ^c	2,600ug ^c
Lead ⁱ	14 ^{f,d}	0.54 ^{f,d}	210 ^d	8.1 ^d	--	--
Malathion	0.1	0.1		0.1	--	--
Manganese	--	--	--	--	50ug	100ug
Mercury	1.4 ^{d,i,g}	0.77 ^{d,i,g}	1.8 ^{d,i,g}	0.94 ^{d,i,g}	0.05ug	0.051ug
Methoxychlor	--	0.03	--	0.03	100ug ^l	--
	Fresh Acute	Fresh Chronic	Marine Acute	Marine Chronic	Water & Fish	Fish Consumption

NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES

<u>Chemical</u>	<u>Criteria</u>	<u>Criteria</u>	<u>Criteria</u>	<u>Criteria</u>	<u>Ingestion</u>	<u>Only</u>
Methyl Bromide	(see Halomethanes)				48ug	4,000ug
Methyl Chloride	(see Halomethanes)				--	--
Methylene Chloride	(see Halomethanes)				4.7ug ^c	1,600ug ^c
2 Methyl-4,6-Dinitrophenol	(see Nitrophenols)				13.4ug	765ug
2-Methyl-4-chlorophenol	--	--	--	--	1,800ug ^j	1,800ug ^j
3-Methyl-4-chlorophenol	30	--	--	--	3,000ug ^j	3,000ug ^j
3-Methyl-6-chlorophenol	--	--	--	--	20ug ^j	20ug ^j
Mirex	--	0.001	--	0.001	--	--
Naphthalene	2,300	620	2,350	--	--	--
Nickel ⁱ	144.9 ^{f,d}	16.1 ^{f,d}	74 ^d	8.2 ^d	610ug	4,600ug
Nitrates	--	--	--	--	10mg	--
Nitrobenzene	27,000	--	6,680	--	17ug	30ug ^j
Nitrophenols	230 ^e	150 ^e	4,850 ^e	--	(see individual compounds)	
Nitrophenol 2	(see Nitrophenols)				--	--
Nitrophenol 4	(see Nitrophenols)				--	--
Nitrosamines	5,850 ^e	--	3,300,000 ^e	--	0.8ng	1.24ug
Nitrosodibutylamine N	(see Nitrosamines)				6.4ng	587ng
Nitrosodiethylamine N	(see Nitrosamines)				0.8ng	1,240ng
Nitrosodimethylamine N	(see Nitrosamines)				0.69ng ^c	8.1ug ^c
Nitrosodi-n-propylamine N	(see Nitrosamines)				0.005ug ^c	1.4ug ^c
Nitrosodiphenylamine N	(see Nitrosamines)				5.0ug ^c	16ug ^c
Nitrosopyrrolidine N	(see Nitrosamines)				16ng	91,900ng
Parathion	0.065	0.013	--	--	--	--
PCB	2.0 ^e	0.014 ^e	10.0 ^e	0.03 ^e	0.17ng ^{c,n}	0.17ng ^{c,n}
PCB-1242	(see PCB)				(see PCB)	(see PCB)
PCB-1254	(see PCB)				(see PCB)	(see PCB)
<u>Chemical</u>	<u>Fresh Acute Criteria</u>	<u>Fresh Chronic Criteria</u>	<u>Marine Acute Criteria</u>	<u>Marine Chronic Criteria</u>	<u>Water & Fish Ingestion</u>	<u>Fish Consumption Only</u>

NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES

PCB-1221	(see PCB)				(see PCB)	(see PCB)	
PCB-1248	(see PCB)				(see PCB)	(see PCB)	
PCB-1260	(see PCB)				(see PCB)	(see PCB)	
PCB-1016	(see PCB)				(see PCB)	(see PCB)	
Pentachlorinated Ethanes	7,240	1,100	390	281	--	--	
Pentachlorobenzene	(see Chlorinated benzenes)				3.5ug	4.1ug	
Pentachlorophenol	5.28 ^h	4.05 ^h	13	7.9	0.28ug ^c	8.2ug ^c	
Phenanthrene	(see Polynuclear Aromatic Hydrocarbons)						
Phenol	10,200	2,560	5,800	--	300ug ^j	300ug ^j	
Phthalate Esters	940 ^e	3 ^e	2,944 ^e	3.4 ^e	--	--	
Polychlorinated Biphenyls	(see PCB's)				--	--	
Polynuclear Aromatic Hydrocarbons	--	--	300 ^e	--	(see individual compounds)		
Pyrene	(see Polynuclear Aromatic Hydrocarbons)				960ug	11,000ug	
Selenium		5	290 ^{d,i}	71 ^{d,i}	170ug ^l	11,000ug	
Silver	0.32 ^{f,i,g}	--	1.9 ^{d,i,k}	--	105ug ^p	65mg ^p	
Sulfide-Hydrogen Sulfide	--	2.0	--	2.0	--	--	
Tetrachlorobenzene 1,2,4,5	(see Chlorinated benzenes)				2.3ug	2.9ug	
Tetrachloroethane 1,1,2,2	--	2,400	9,020	--	0.17ug ^c	11ug ^c	
		(see Tetrachloroethanes)					
Tetrachloroethanes	9,320 ^e	--	--	--	(see individual compounds)		
Tetrachloroethylene	5,280	840	10,200	450	0.80ug ^c	8.85ug ^c	
Tetrachlorophenol 2,3,5,6	--	--	440	--	--	--	
Tetrachlorophenol 2,3,4,6	--	--	--	--	1.0ug ^j	1.0ug ^j	
Thallium	1,400	40	2,130	--	1.7ug	6.3ug	
Toluene	--	--	--	--	6.8mg ^l	200mg	
Toxaphene	0.73	0.0002	0.21	0.0002	0.73ng ^c	0.75ng ^c	
Tributyltin TBT	0.46	0.063	0.37	0.01	--	--	
<u>Chemical</u>	<u>Fresh Acute Criteria</u>	<u>Fresh Chronic Criteria</u>	<u>Marine Acute Criteria</u>	<u>Marine Chronic Criteria</u>	<u>Water & Fish Ingestion</u>	<u>Fish Consumption Only</u>	

NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES

Trichlorinated Ethanes	18,000 ^c	--	--	--	(see individual compounds)	
Trichlorobenzene 1,2,4	(see Chlorinated benzenes)				260ug ^l	940ug
Trichloroethane 1,1,1	--	--	31,200	--	1	--
Trichloroethane 1,1,2	--	9,400	--	--	0.60ug ^c	42ug ^c
Trichloroethylene	45,000	21,900	2,000	--	2.7ug ^c	81ug ^c
Trichlorofluoromethane	(see Halomethanes)				10mg	860mg
Trichlorophenol 2,4,5	--	--	--	--	1.0ug ^j	1.0ug ^j
Trichlorophenol 2,4,6	--	970	--	--	2.0ug ^j	2.0ug ^j
Vinyl Chloride	--	--	--	--	2.0ug ^c	525ug ^c
Zinc ⁱ	36.2 ^{f,d}	36.5 ^{f,d}	90 ^d	81 ^d	5,000ug ^j	5,000ug ^j

Source. #7151, eff 12-10-99

Env-Ws 1703.22 Notes For Table 1703.1. The following shall apply to Table 1703.1:

(a) "a" shall indicate that the freshwater and saltwater aquatic life criteria for ammonia are shown in Env-Ws 1703.25 through Env-Ws 1703.31.

(b) "b" shall indicate that the criteria refers to the inorganic form only.

(c) "c" shall indicate that these criteria for the protection of human health are based on carcinogenicity. The human health criteria without this footnote are based on systemic toxicity.

(d) "d" shall indicate that criteria for these metals are expressed as a function of the water effect ratio (WER) as defined in 40 CFR 131.36(c). The values displayed in Table 1703.1 correspond to a WER of 1.0. To determine metals criteria for different WER's, the procedures described in the EPA publication "Interim Guidance on Determination and Use of Water-Effect Ratios for Metals" (EPA-823-B-94-001) shall be used.

(e) "e" shall indicate that the following classes of compounds have 2 or more isomers and the sum of the concentrations of each isomer shall meet the appropriate aquatic life criteria:

- (1) BHC;
- (2) Chlorinated benzenes;
- (3) Chlorinated naphthalenes;
- (4) Chloroalkyl ethers;
- (5) Dichlorobenzenes;
- (6) Dichloroethylenes;
- (7) Dichloropropanes;
- (8) Dichloropropenes;

- (9) Dinitrotoluenes;
- (10) Haloethers;
- (11) Halomethanes;
- (12) Nitrophenols;
- (13) Nitrosamines;
- (14) PCB;
- (15) Phthalate esters;
- (16) Polynuclear aromatic hydrocarbons;
- (17) Tetrachloroethanes; and
- (18) Trichlorinated ethanes.

(f) "f" shall indicate that the freshwater aquatic criteria for these metals are expressed as a function of the total hardness, as mg/l CaCO₃ of the surface water. The values displayed in Table 1703.1 correspond to a total hardness of 25 mg/l. To calculate aquatic life criteria for other hardness values between 25 mg/l and 400mg/l, expressed as calcium carbonate, the equations shown in Env-Ws 1703.24 shall be used. For hardness less than 25 mg/l, a hardness of 25 mg/l shall be used in the equations. For hardness values greater than 400 mg/l, a hardness of 400 mg/l shall be used in the equations.

(g) "g" shall indicate that, if the fresh or marine chronic criteria for total mercury exceeds 0.77 ug/l more than once in a 3-year period in the ambient water, the edible portion of aquatic species of concern shall be analyzed to determine whether the concentration of methyl mercury exceeds the FDA action level of 1.0 mg/kg.

(h) "h" shall indicate that the freshwater aquatic life criteria for pentachlorophenol are expressed as a function of pH. Values displayed in Table 1703.1 correspond to a pH value of 6.5. For other pH values, the formulas shown in Env-Ws 1703.32 shall be used.

(i) "i" shall indicate that the values presented for aquatic life protection are dissolved metals and were based on values shown in Tables 1703.2 and 1703.3. To calculate dissolved criteria for hardness dependent metals at hardness(s) greater than 25 mg/l, Table 1703.3 shall be used to calculate the total recoverable metal and Table 1703.2 shall be used to convert the total recoverable metal to a dissolved metal.

(j) "j" shall indicate that these human health criteria prevent taste and odor effects in fish and other aquatic life as prohibited in Env-Ws 1703.03(c)(3).

(k) "k" shall indicate that these criteria are based on EPA's 304(a) criteria in the 1980 documents listed below and were derived to be used as instantaneous maximum values, or to be applied after division by 2, to obtain a value comparable to an acute criterion derived using the 1985 Guidelines, when assessment is done using an averaging period:

- (1) Aldrin/Dieldrin, document number 440/5-80-019;
- (2) Chlordane, document number 440/5-80-027;
- (3) DDT, document number 440/5-80-038;

NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES

- (4) Endosulfan, document number 440/5-80-046;
- (5) Endrin, document number 440/5-80-047;
- (6) Heptachlor, document number 440/5-80-052;
- (7) Hexachlorocyclohexane, document number 440/5-80-054; or
- (8) Silver, document number 440/5-80-071.

(l) "1" shall indicate that a more stringent drinking water maximum contaminant level (MCL) has been issued by EPA.

(m) "m" shall indicate that this criteria is expressed as micrograms of free cyanide per liter.

(n) "n" shall indicate that this criteria applies to total PCBs or the sum of all of its congener or isomer analyses.

(o) "o" shall indicate that the freshwater acute criteria for selenium shall be calculated using the values for the fraction f_1 of selenite and f_2 of selenate measured in the receiving water. To calculate the acute criteria, in ug/l, the number 1 shall be divided by the sum of the fractions f_1 divided by 185.9 and f_2 divided by 12.83, as follows:

$$Acute\ Criteria = \frac{1}{\frac{f_1}{185.9} + \frac{f_2}{12.83}}$$

(p) "p" shall indicate that these human health criteria for silver shall be for the protection of humans from argyria.

Source. #7151, eff 12-10-99

Env-Ws 1703.23 Conversion Factors For Metals.

(a) Table 1703.2 shall be used when converting total recoverable metals to dissolved metals. These factors shall also be used as translators to go from dissolved metals criteria in Table 1703.1 to permit limits expressed as total recoverable metals. If the hardness of the receiving water is different than 25 mg/l, then Table 1703.2 shall also be used to calculate the total recoverable metal.

NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES

(b) Table 1703.2 shall be as follows:

TABLE 1703.2
Factors to Convert Total Recoverable Metals to Dissolved Metals

	FRESHWATER Conversion Factors		MARINE Conversion Factors
	Acute	Chronic	Acute & Chronic
Arsenic	1.0	1.0	1.0
Cadmium	$1.136672 - [(\text{Ln Hardness})(0.041838)]$	$1.101672 - [(\text{Ln Hardness})(0.041838)]$	0.994
Chromium (+3)	0.316	0.860	-
Chromium (+6)	0.982	0.962	0.993
Copper	0.960	0.960	0.83
Lead	$1.46203 - [(\text{Ln Hardness})(0.145712)]$	$1.46203 - [(\text{Ln Hardness})(0.145712)]$	0.951
Mercury	0.85	0.85	0.85
Nickel	0.998	0.997	0.990
Selenium	0.922	0.922	0.998
Silver	0.85	-	0.85
Zinc	0.978	0.986	0.946

Source. #7151, eff 12-10-99

Env-Ws 1703.24 Freshwater Aquatic Life Criteria For Metals.

(a) To calculate freshwater aquatic life criteria for metals, the values shown in Table 1703.3 shall be used.

TABLE 1703.3
Aquatic Life Criteria for Metals

	m_a	b_a	m_c	b_c
Cadmium	1.128	-3.6867	0.7852	-2.715
Copper	0.9422	-1.700	0.8545	-1.702
Chromium+3	0.8190	3.7256	0.8190	.6848
Lead	1.273	-1.460	1.273	-4.705

NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES

	m_a	b_a	m_c	b_c
Nickel	0.8460	2.255	0.8460	0.0584
Silver	1.72	-6.52	-----	-----
Zinc	0.8473	0.884	0.8473	0.884

(b) To calculate the acute criteria, in ug/l, for the metals shown Table 1703.3, the exponent "e" shall be raised to the power "x" where "x" is equal to the parenthetical expression " m_a " multiplied by the natural logarithm of the hardness and to which quotient the value " b_a " shall be added, as follows:

$$\text{Acute Criteria} = e^x \text{ where}$$

$$x = (m_a [\ln (\text{hardness})] + b_a)$$

(c) To calculate the chronic criteria, in ug/l, for the metals shown in Table 1703.3, the exponent "e" shall be raised to the power "x" where "x" is equal to the parenthetical expression " m_c " multiplied by the natural logarithm of the hardness and to which quotient the value " b_c " shall be added, as follows:

$$\text{Chronic Criteria} = e^x \text{ where}$$

$$x = (m_c [\ln (\text{hardness})] + b_c)$$

Source. #7151, eff 12-10-99

Env-Ws 1703.25 Freshwater Aquatic Life Criteria For Ammonia.

(a) Subject to (b) below, Table 1703.4 shall be used to calculate freshwater aquatic life criteria, in milligrams of nitrogen per liter, for ammonia.

(b) During the period from November 1 through May 31, the values of the freshwater aquatic life chronic criteria for ammonia shall be those shown in Table 1703.4 unless the department, after reviewing all technical and scientifically valid information, determines that:

- (1) No sensitive life stages of any fish species are ordinarily present in numbers affecting the sustainability of populations in the specific surface water during this time period; or
- (2) The specific surface water can fully support beneficial fisheries uses under different cold season ammonia concentration regimes.

(c) The revised criteria derived in accordance with Env-Ws 1703.25(b)(1) shall not exceed 3 times the appropriate value shown in Table 1703.4.

(d) The department shall use the May 1996 guidance "Biological Criteria, Technical Guidance for Streams and Small Rivers" (EPA 822-B-96-001) to determine the adequacy of the instream biological monitoring information.

(e) If the acute criteria obtained from Table 1703.4 is greater than 0.5 times the species mean acute value for a listed threatened or endangered species, or for a surrogate for such species, then the acute criteria shall be reset equal to 0.5 times the species mean acute value for that species or surrogate.

(f) If the chronic criteria obtained from Table 1703.4 is greater than the species mean chronic value of a listed threatened or endangered species, or for a surrogate for such species, then the chronic criteria shall be reset to the species mean chronic value for that species or surrogate.

NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES

TABLE 1703.4
Freshwater Aquatic Life Criteria For Ammonia

pH	Acute Criteria (Salmonids present)	Acute Criteria (Salmonids absent)	Chronic Criteria
6.0	36.7	55.0	3.63
6.1	36.2	54.2	3.61
6.2	35.5	53.2	3.59
6.3	34.7	52.0	3.56
6.4	33.7	50.5	3.52
6.5	32.6	48.8	3.48
6.6	31.3	46.8	3.42
6.7	29.8	44.6	3.36
6.8	28.1	42.0	3.28
6.9	26.2	39.1	3.19
7.0	24.1	36.1	3.08
7.1	22.0	32.8	2.96
7.2	19.7	29.5	2.81
7.3	17.5	26.2	2.65
7.4	15.4	23.0	2.47
7.5	13.3	19.9	2.28
7.6	11.4	17.0	2.07
7.7	9.65	14.4	1.87
7.8	8.11	12.1	1.66
7.9	6.77	10.1	1.46
8.0	5.62	8.40	1.27
8.1	4.64	6.95	1.09
8.2	3.83	5.72	0.935
8.3	3.15	4.71	0.795

TABLE 1703.4 (Continued)

NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES

Freshwater Aquatic Life Criteria for Ammonia

pH	Acute Criteria (Salmonids Present)	Acute Criteria Salmonids Absent)	Chronic Criteria
8.4	2.59	3.88	0.673
8.5	2.14	3.20	0.568
8.6	1.77	2.65	0.480
8.7	1.47	2.20	0.406
8.8	1.23	1.84	0.345
8.9	1.04	1.56	0.295
9.0	0.885	1.32	0.254

Source. #7151, eff 12-10-99

Env-Ws 1703.26 Saltwater Acute Aquatic Life Criteria for Ammonia at a Salinity of 10 g/kg. To calculate aquatic life acute saltwater criteria for ammonia, in mg of nh_3 per liter, for a salinity of 10 g/kg, the values shown in Table 1703.5 shall be used.

TABLE 1703.5
Acute Saltwater Aquatic Life Criteria (Salinity of 10 g/kg)

pH	TEMPERATURE (C)							
	0	5	10	15	20	25	30	35
7.0	270	191	131	92	62	44	29	21
7.2	175	121	83	58	40	27	19	13
7.4	110	77	52	35	25	17	12	8.3
7.6	69	48	33	23	16	11	7.7	5.6
7.8	44	31	21	15	10	7.1	5.0	3.5
8.0	27	19	13	9.4	6.4	4.6	3.1	2.3
8.2	18	12	8.5	5.8	4.2	2.9	2.1	1.5
8.4	11	7.9	5.4	3.7	2.7	1.9	1.4	1.0
8.6	7.3	5.0	3.5	2.5	1.8	1.3	0.98	0.75
8.8	4.6	3.3	2.3	1.7	1.2	0.92	0.71	0.56
9.0	2.9	2.1	1.5	1.1	0.85	0.67	0.52	0.44

Source. #7151, eff 12-10-99

Env-Ws 1703.27 Saltwater Acute Aquatic Life Criteria for Ammonia at a Salinity of 20 g/kg. To calculate

NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES

aquatic life acute saltwater criteria for ammonia, in mg of nh_3 per liter, for a salinity of 20 g/kg, the values shown in Table 1703.6 shall be used.

TABLE 1703.6
Acute Saltwater Aquatic Life Criteria (Salinity of 20 g/kg)

pH	TEMPERATURE (C)							
	0	5	10	15	20	25	30	35
7.0	291	200	137	96	64	44	31	21
7.2	183	125	87	60	42	29	20	14
7.4	116	79	54	37	27	18	12	8.7
7.6	73	50	35	23	17	11	7.9	5.6
7.8	46	31	23	15	11	7.5	5.2	3.5
8.0	29	20	14	9.8	6.7	4.8	3.3	2.3
8.2	19	13	8.9	6.2	4.4	3.1	2.1	1.6
8.4	12	8.1	5.6	4.0	2.9	2.0	1.5	1.1
8.6	7.5	5.2	3.7	2.7	1.9	1.4	1.0	0.77
8.8	4.8	3.3	2.5	1.7	1.3	0.94	0.73	0.56
9.0	3.1	2.3	1.6	1.2	0.87	0.69	0.54	0.44

Source. #7151, eff 12-10-99

Env-Ws 1703.28 Saltwater Acute Aquatic Life Criteria for Ammonia at a Salinity of 30 g/kg. To calculate aquatic life acute saltwater criteria for ammonia, in mg of nh_3 per liter, for a salinity of 30 g/kg, the values shown in Table 1703.7 shall be used.

TABLE 1703.7
Acute Saltwater Aquatic Life Criteria (Salinity of 30 g/kg)

pH	TEMPERATURE (C)							
	0	5	10	15	20	25	30	35
7.0	312	208	148	102	71	48	33	23
7.2	196	135	94	64	44	31	21	15
7.4	125	85	58	40	27	19	13	9.4
7.6	79	54	37	25	21	12	8.5	6.0
pH	TEMPERATURE (C)							

NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES

7.8	50	33	23	16	11	7.9	5.4	3.7
8.0	31	21	15	10	7.3	5.0	3.5	2.5
8.2	20	14	9.6	6.7	4.6	3.3	2.3	1.7
8.4	12.7	8.7	6.0	4.2	2.9	2.1	1.6	1.1
8.6	8.1	5.6	4.0	2.7	2.0	1.4	1.1	0.81
8.8	5.2	3.5	2.5	1.8	1.3	1.0	0.75	0.58
9.0	3.3	2.3	1.7	1.2	0.94	0.71	0.56	0.46

Source. #7151, eff 12-10-99

Env-Ws 1703.29 Saltwater Chronic Aquatic Life Criteria for Ammonia at a Salinity of 10 g/kg. To calculate aquatic life chronic saltwater criteria, in mg of nh_3 per liter, for ammonia, for a salinity of 10 g/kg, the values shown in Tables 1703.8 shall be used.

TABLE 1730.8
Chronic Saltwater Aquatic Life Criteria (Salinity of 10 g/kg)

pH	TEMPERATURE (C)							
	0	5	10	15	20	25	30	35
7.0	41	29	20	14	9.4	6.6	4.4	3.1
7.2	26	18	12	8.7	5.9	4.1	2.8	2.0
7.4	17	12	7.8	5.3	3.7	2.6	1.8	1.2
7.6	10	7.2	5.0	3.4	2.4	1.7	1.2	0.84
7.8	6.6	4.7	3.1	2.2	1.5	1.1	0.75	0.53
8.0	4.1	2.9	2.0	1.40	0.97	0.69	0.47	0.34
8.2	2.7	1.8	1.3	0.87	0.62	0.44	0.31	0.23
8.4	1.7	1.2	0.81	0.56	0.41	0.29	0.21	0.16
8.6	1.1	0.75	0.53	0.37	0.27	0.20	0.15	0.11
8.8	0.69	0.50	0.34	0.25	0.18	0.14	0.11	0.08
9.0	0.44	0.31	0.23	0.17	0.13	0.10	0.08	0.07

Source. #7151, eff 12-10-99

NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES

Env-Ws 1703.30 Saltwater Chronic Aquatic Life Criteria for Ammonia at a Salinity of 20 g/kg. To calculate aquatic life chronic saltwater criteria, in mg of nh_3 per liter, for ammonia, for a salinity of 20 g/kg, the values shown in Table 1703.9 shall be used.

TABLE 1703.9
Chronic Saltwater Aquatic Life Criteria (Salinity of 20 g/kg)

pH	TEMPERATURE (C)							
	0	5	10	15	20	25	30	35
7.0	44	30	21	14	9.7	6.6	4.7	3.1
7.2	27	19	13	9.0	6.2	4.4	3.0	2.1
7.4	18	12	8.1	5.6	4.1	2.7	1.9	1.3
7.6	11	7.5	5.3	3.4	2.5	1.7	1.2	0.84
7.8	6.9	4.7	3.4	2.3	1.6	1.1	0.78	0.53
8.0	4.4	3.0	2.1	1.5	1.0	0.72	0.50	0.34
8.2	2.8	1.9	1.3	.94	.66	.47	.31	.24
8.4	1.8	1.2	.84	.59	.44	.30	.22	.16
8.6	1.1	.78	.56	.41	.28	.20	.15	.12
8.8	.72	.50	.37	.26	.19	.14	.11	.08
9.0	.47	.34	.24	.18	.13	.10	.08	.07

Source. #7151, eff 12-10-99

Env-Ws 1703.31 Saltwater Chronic Aquatic Life Criteria for Ammonia at a Salinity of 30g/kg. To calculate aquatic life chronic saltwater criteria, in mg of nh_3 per liter, for ammonia, for a salinity of 30 g/kg, the values shown in Table 1703.10 shall be used.

TABLE 1703.10
Chronic Saltwater Aquatic Life Criteria (Salinity of 30 g/kg)

pH	TEMPERATURE (C)							
	0	5	10	15	20	25	30	35
7.0	47	31	22	15	11	7.2	5.0	3.4
7.2	29	20	14	9.7	6.6	4.7	3.1	2.2
7.4	19	13	8.7	5.9	4.1	2.9	2.0	1.4
7.6	12	8.1	5.6	3.7	3.1	1.8	1.3	0.90

TABLE 1703.10 Continued
Chronic Saltwater Aquatic Life Criteria (Salinity of 30 g/kg)

pH	TEMPERATURE (C)							
	7.5	5.0	3.4	2.4	1.7	1.2	0.81	0.56
7.8	4.7	3.1	2.2	1.6	1.1	0.75	0.53	0.37
8.0	3.0	2.1	1.4	1.0	0.69	0.50	0.34	0.25
8.2	1.9	1.3	0.90	0.62	0.44	0.31	0.23	0.17
8.4	1.2	0.84	0.59	0.41	0.30	0.22	0.16	0.12
8.6	0.78	0.53	0.37	0.27	0.20	0.15	0.11	0.09
8.8	0.50	0.34	0.26	0.19	0.14	0.11	0.08	0.07

Source. #7151, eff 12-10-99

Env-Ws 1703.32 Aquatic Life Criteria for Pentachlorophenol.

(a) To calculate the freshwater aquatic life acute criteria, in ug/l, for pentachlorophenol, the exponent "e" shall be raised to the power "x" where "x" is equal to the parenthetical expression 1.005 multiplied by the pH and to which quotient the value of 4.869 shall be subtracted, as follows:

$$\text{Acute Criteria} = e^x \text{ where}$$

$$x = [1.005 (\text{pH}) - 4.869]$$

(b) To calculate the freshwater aquatic life chronic criteria, in ug/l, for pentachlorophenol, the exponent "e" shall be raised to the power "x" where "x" is equal to the parenthetical expression 1.005 multiplied by the pH and to which quotient the value of 5.134 shall be subtracted, as follows:

$$\text{Chronic Criteria} = e^x \text{ where}$$

$$x = [1.005 (\text{pH}) - 5.134]$$

Source. #7151, eff 12-10-99

PART Env-Ws 1704 ALTERNATIVE SITE SPECIFIC CRITERIA

Env-Ws 1704.01 Purpose. The purpose of this part is to develop a procedure for determining alternative site specific criteria in the following cases:

- (a) For toxic substances not listed in Env-Ws 1703.21 through Env-Ws 1703.32;
- (b) Where site specific information is available which substantiates the use of different criteria; or
- (c) Where new information, not considered in the development of the criteria, is available.

Source. #7151, eff 12-10-99

NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES

Env-Ws 1704.02 Procedures.

(a) The procedure for determining alternative site specific criteria for the protection of human health shall be in accordance with EPA's draft Guidance on Assessment and Control of Bioconcentratable Contaminants in Surface Waters dated March 1991, and EPA's "Draft Revisions to the Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health," 63FR pages 43755 to 43828, dated August 14, 1998.

(b) The procedure for determining alternative site specific criteria for protection of aquatic life shall be as published in EPA's Interim Guidance on Determination and Use of Water-Effect Ratios for Metals dated February, 1994 and published in EPA's Water Quality Standards Handbook: Second Edition.

Source. #7151, eff 12-10-99

Env-Ws 1704.03 Modifications. If, based on the scientifically valid documentation presented by the applicant, the department determines that the proposed site specific criteria will protect the existing and designated uses of the waterbody, then the values obtained by those procedures for the protection of human health or aquatic life shall be formally incorporated into the state's water quality standards in subsequent amendments to these rules.

Source. #7151, eff 12-10-99

PART Env-Ws 1705 FLOW STANDARDS

Env-Ws 1705.01 Assimilative Capacity. Except for combined sewer overflows where 99 percent of the assimilative capacity shall be used to determine compliance, not less than 10 percent of the assimilative capacity of the surface water shall be held in reserve to provide for future needs.

Source. #7151, eff 12-10-99

Env-Ws 1705.02 Low Flow Conditions.

(a) The flow used to calculate permit limits shall be as specified in (b) through (d) below.

(b) For rivers and streams, the long-term harmonic mean flow, which is daily flow measurements divided by the sum of the reciprocals of the daily flows, shall be used to develop permit limits for all human health criteria for carcinogens.

(c) For tidal waters, the low flow condition shall be equivalent to the conditions that result in a dilution that is exceeded 99% of the time.

(d) For rivers and streams, the 7Q10 flow shall be used to apply aquatic life criteria and human health criteria for non-carcinogens.

Source. #7151, eff 12-10-99

PART Env-Ws 1706 SAMPLING AND ANALYSIS

Env-Ws 1706.01 Procedure. All procedures used for the purpose of collecting, preserving and analyzing samples shall be in conformance with 40 CFR Part 136 for wastewater and 40 CFR Part 141 for drinking water unless alternative procedures are specified in the surface water discharge permit.

Source. #7151, eff 12-10-99

PART Env-Ws 1707 MIXING ZONES

Env-Ws 1707.01 Designation.

(a) Mixing zones shall be prohibited in Class A waters.

(b) For Class B waters, the department shall designate a limited area or volume of the surface water as a mixing zone if the applicant provides sufficient scientifically valid documentation to allow the department to independently determine that all criteria in Env-Ws 1707.02 have been met.

Source. #7151, eff 12-10-99

Env-Ws 1707.02 Minimum Criteria. Mixing zones shall be subject to site specific criteria that, as a minimum:

(a) Meet the criteria in Env-Ws 1703.03(c)(1).

(b) Do not interfere with biological communities or populations of indigenous species;

(c) Do not result in the accumulation of pollutants in the sediments or biota;

(d) Allow a zone of passage for swimming and drifting organisms;

(e) Do not interfere with existing and designated uses of the surface water;

(f) Do not impinge upon spawning grounds and/or nursery areas of any indigenous aquatic species;

(g) Do not result in the mortality of any plants, animals, humans, or aquatic life within the mixing zone;

(h) Do not exceed the chronic toxicity value of 1.0 TUc at the mixing zone boundary; and

(i) Do not result in an overlap with another mixing zone.

Source. #7151, eff 12-10-99

Env-Ws 1707.03 Technical Standards. Mixing zones shall be established in accordance with the procedures delineated in the "Technical Support Document for Water Quality-based Toxics Control" EPA/505/2-90-001, published by the EPA on March 1991.

Source. #7151, eff 12-10-99

PART Env-Ws 1708 ANTIDegradation

Env-Ws 1708.01 Purpose. The purpose of these antidegradation provisions is to ensure that the following provisions of 40 CFR 131.12 are met:

(a) Existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected;

(b) For significant changes in water quality, where the quality of the surface waters exceeds levels necessary to support propagation of fish, shellfish, and wildlife, and recreation in and on the water, that quality shall be maintained and protected unless the department finds, after full satisfaction of the intergovernmental coordination and public participation provisions that, in accordance with Env-Ws 1708.10, allowing lower water quality is necessary to accommodate important economic or social development in the area in which the surface waters are

located. In allowing such degradation or lower water quality, the department shall assure water quality adequate to fully protect existing uses. Further, the department shall assure that the highest statutory and regulatory requirements shall be achieved for all new and existing point sources and that all cost effective and reasonable best management practices for nonpoint source control shall be implemented;

(c) For insignificant changes in water quality, where the quality of the surface waters exceeds levels necessary to support propagation of fish, shellfish, and wildlife, and recreation in and on the water, that quality shall be maintained and protected. In allowing such degradation or lower water quality, the department shall assure water quality adequate to protect existing uses fully. Further, the department shall assure that the highest statutory and regulatory requirements shall be achieved for all new and existing point sources and that all cost effective and reasonable best management practices for nonpoint source control shall be implemented;

(d) Where high quality surface waters constitute an outstanding resource waters (ORW), that water quality shall be maintained and protected; and

(e) In those cases where a potential water quality impairment is associated with a thermal discharge, the antidegradation provisions shall ensure that the requirements of section 316 of the Clean Water Act are met..

Source. #7151, eff 12-10-99

Env-Ws 1708.02 Applicability. Antidegradation shall apply to:

- (a) Any proposed new or increased activity, including point source and nonpoint source discharges of pollutants, that would lower water quality or affect the existing or designated uses;
- (b) A proposed increase in loadings to a waterbody when the proposal is associated with existing activities;
- (c) An increase in flow alteration over an existing alteration; and
- (d) All hydrologic modifications, such as dam construction and water withdrawals.

Source. #7151, eff 12-10-99

Env-Ws 1708.03 Submittal of Data. The applicant shall provide all information necessary to:

- (a) Identify all existing uses, including:
 - (1) Freshwater, estuarine, and marine aquatic life present in the affected surface waters;
 - (2) Other wildlife that use or are dependent on the affected surface waters;
 - (3) Presence of water quality and physical habitat that support, or would support, aquatic life or other animal or plant life;
 - (4) Presence of indigenous species and communities;
 - (5) Presence of a specialized use of the waterbody, such as a spawning area or as a habitat for a federally or state listed threatened or endangered species;
 - (6) Use of the surface waters for recreation in or on the water, such as fishing, swimming, and boating, or use of the surface waters for commercial activity; and
 - (7) Whether or not current instream conditions or uses of the surface waters conflict with achieving and maintaining goal uses of the CWA at Section 101(a)(2) and the primary CWA objective to restore and maintain the chemical, physical, and biological integrity of the nation's surface waters;

NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES

- (b) Determine the level of water quality necessary to maintain and protect those uses;
- (c) Evaluate the potential impacts on existing uses due to the proposed discharge or activity by itself, and in combination with other discharges or activities presently occurring;
- (d) Ensure that existing instream uses and the level of water quality necessary to protect those uses shall be maintained and protected.
- (e) Evaluate the magnitude, duration, and upstream and downstream extent of any lowering of high quality water due to the proposed discharge or activity by itself, and in combination with other discharges or activities presently occurring;
- (f) Evaluate other factors as necessary to determine whether the proposed activity would cause significant or insignificant degradation, in accordance with Env-Ws 1708.09;
- (g) If the discharge or activity is determined by the department to be significant, in accordance with Env-Ws 1708.08 and Env-Ws 1708.09, determine if a proposed lowering of water quality is necessary to achieve important economic or social development in accordance with Env-Ws 1708.10; and
- (h) Ensure that all water quality criteria applicable to the waterbody in question shall not be violated.

Source. #7151, eff 12-10-99

Env-Ws 1708.04 Protection of Existing Uses.

- (a) This section shall apply to all surface waters.
- (b) A proposed discharge or activity shall not eliminate any existing uses or the water quality needed to maintain and protect those uses.
- (c) Using the information provided at 1708.03, the department shall determine the existing uses for the waters in question.

Source. #7151, eff 12-10-99

Env-Ws 1708.05 Protection of Water Quality in ORW.

- (a) Surface waters of national forests and surface waters designated as natural under RSA 483:7-a, I shall be considered outstanding resource waters (ORW).
- (b) Water quality shall be maintained and protected in surface waters that constitute ORW, except that some limited point and nonpoint source discharges may be allowed providing that they are of limited activity which results in no more than temporary and short-term changes in water quality. "Temporary and short term" means that degradation is limited to the shortest possible time. Such activities shall not permanently degrade water quality or result at any time in water quality lower than that necessary to protect the existing and designated uses in the ORW. Such temporary and short term degradation shall only be allowed after all practical means of minimizing such degradation are implemented.

Source. #7151, eff 12-10-99

Env-Ws 1708.06 Protection of Class A Waters. In accordance with RSA 485-A:8, I, discharges of sewage or waste to Class A waters shall be prohibited. Proposed new or increased activities that the department determines do not involve the discharge of sewage or waste shall be reviewed in accordance with Env-Ws 1708.01 through Env-Ws 1708.12.

Source. #7151, eff 12-10-99

Env-Ws1708.07 Protection of Water Quality in High Quality Waters.

(a) Subject to (b) below, high quality waters shall be maintained and protected, except that insignificant changes in water quality, as determined by the department in accordance with Env-Ws 1708.09, shall be allowed.

(b) Degradation of significant increments of water quality, as determined in accordance with Env-Ws 1708.09, in high quality waters shall be allowed only if it can be demonstrated to the department, in accordance with Env-Ws 1708.10, that allowing the water quality degradation is necessary to accommodate important economic or social development in the area in which the receiving waters are located.

(c) Economic/social benefits demonstration and alternatives analysis shall not be required for authorization of an insignificant lowering of water quality; However, in allowing a lowering of water quality, significant or insignificant, all reasonable measures to minimize degradation shall be utilized.

(d) If the waterbody is Class A Water, the requirements of Env-Ws 1708.06 shall also apply.

Source. #7151, eff 12-10-99

Env-Ws 1708.08 Assessing Waterbodies.

(a) The applicant shall characterize the existing instream water quality and determine if there is remaining assimilative capacity for each parameter in question.

(b) Existing instream water quality shall be calculated in accordance with Env-Ws 1705.02. Existing water quality shall be established based on point sources discharging at their allowed loadings and the highest loadings anticipated from nonpoint sources.

(c) Where flow alteration is involved, establishment of existing conditions shall be based on the existing maximum allowed water withdrawals or impoundment, diversion, or fluctuation of stream flow, as appropriate.

(d) Remaining assimilative capacity shall be evaluated by comparing existing instream water quality, as specified in (b) and (c) above, to the state's instream water quality criteria.

(e) If the type and frequency of the proposed discharge or activity causes the waterbody to be impacted at flows other than those listed in Env-Ws 1705.02, the department shall require the applicant to evaluate the impact of the proposed discharge at those other flows.

(f) Subject to (h) below, if the department determines, based on the information submitted, that there is no remaining assimilative capacity, no further degradation with regard to that parameter shall be allowed.

(g) Subject to (h) below, if the department determines, based on the information submitted, that there is some remaining assimilative capacity, then the department shall proceed in accord with Env-Ws 1708.09.

(h) The above determinations shall take into account Env-Ws 1705.01 which requires the department to reserve no less than 10% of a surface water's assimilative capacity.

Source. #7151, eff 12-10-99

Env-Ws 1708.09 Significant or Insignificant Determination.

(a) Any discharge or activity that is projected to utilize 20% or more of the remaining assimilative capacity for a water quality parameter, in terms of either concentration or mass of pollutants, or volume or flow rate for water quantity, shall be considered a significant lowering of water quality. Any person who proposes such a discharge or activity shall be required to demonstrate that the proposed lowering of water quality is necessary to achieve important economic or social development, in accordance with Env-Ws 1708.10, in the area where the waterbody is located.

(b) Subject to (d) below, those activities which cause an insignificant lowering of water quality shall not be required to demonstrate that they are necessary to provide important economic or social development.

(c) Activities under (b) above shall include, but not be limited to:

- (1) Short term or intermittent discharges such as hydrostatic testing of pipelines, fire pump test water, and uncontaminated stormwater discharges or site clean-up activities;
- (2) Permanent discharges such as uncontaminated noncontact cooling water, uncontaminated groundwater seepage, or unchlorinated or dechlorinated swimming pool water;
- (3) Facilities whose nonpoint source runoff is controlled through the use of best management practices; and
- (4) Any discharge or activity that is projected to use less than 20% of the remaining assimilative capacity for a water quality parameter, in terms of either concentration or mass for pollutants.

(d) If the department determines that, because of the following factors, the effect of a discharge results in a greater impact to the water quality than that normally found in insignificant discharges, it shall determine that the proposed activity or discharge is significant, regardless of the proposed consumption of the remaining assimilative capacity, and require the applicant to demonstrate, in accordance with Env-Ws 1708.10, that a lowering of water quality is necessary to achieve an important economic or social development:

- (1) The magnitude, duration, and spacial extent of the proposed change in water quality;
- (2) The cumulative lowering of water quality over time resulting from the proposed activity in combination with previously approved activities;
- (3) The possible additive or synergistic effects of the activity in combination with existing activities;
- (4) The magnitude of the mass load independent of the total assimilative capacity or change in receiving water pollutant concentration;
- (5) The toxic or bioaccumulative characteristics of the pollutant(s) in question;
- (6) The potential to stress sensitive biological resources such as indigenous species, rare species, and threatened or endangered species and their habitat;
- (7) The potential to stress sensitive recreational uses or water supply uses; or
- (8) The quality and value of the resource.

Source. #7151, eff 12-10-99

Env-Ws 1708.10 Demonstration of Economic or Social Development.

(a) Unless the department determines from documentation provided by the applicant, or other available information, that a proposed new or increased discharge or other activity would result in an insignificant impact to the existing water quality of a high quality waterbody, the department shall require that the applicant provide documentation, in accordance with the procedures delineated in "Interim Economic Guidance for Water Quality Standards" EPA- 823-B-95-002, published by the EPA on March 1995, that the:

- (1) Proposed project or activity will provide an important economic or social development in the area where the waterbody is located; and
- (2) Lowering of water quality is necessary to accommodate the development.

(b) Where the department finds, based on the information provided in Env-Ws 1708.10(a) that a proposed project would provide an important economic or social development, it shall require that an alternatives analysis be developed, in accordance with Env-Ws 1708.10(c), to determine if it is possible to realize those benefits either without lowering water quality or with a reduced degree of degradation.

(c) To determine if the lowering of water quality is necessary to accommodate an important economic or social benefit, the department shall require the applicant to evaluate the following alternatives and submit technically and scientifically valid information describing the benefits and impacts of each alternative on water quality and the degree to which the economic or social benefits could be realized if the alternatives were implemented:

- (1) Alternative methods of production or operation;
- (2) Improved process controls;
- (3) Water conservation practices;
- (4) Wastewater minimization technologies;
- (5) Non-discharging alternatives;
- (6) Improved wastewater treatment facility operation;
- (7) Alternative methods of treatment, including advanced treatment beyond applicable technology requirements of the Clean Water Act; and
- (8) Alternative sites, and associated water quality impacts at those sites.

(d) The department shall make a preliminary determination, based on the information provided in Env-Ws 1708.10(a) and (c), to approve or deny the applicant's request.

(e) If the department approves the applicant's request, the department shall provide the opportunity for public comment on its preliminary decision in accordance with Env-Ws 1708.11.

Source. #7151, eff 12-10-99

Env-Ws 1708.11 Public Participation and Intergovernmental Coordination.

(a) The department shall provide the opportunity for public comment on preliminary decisions to allow any lowering of water quality.

(b) The department shall issue a written notice to the public, the municipality in which the activity is located or proposed to be located and all potentially affected municipalities. The notice shall invite written comments to be submitted to the department and shall provide an opportunity to request a public hearing. For activities related to state surface water discharge permits, this public notice shall be a part of the normal public participation procedures associated with the issuance of the permit.

(c) The notice shall be published in a newspaper of general circulation in the municipality where the proposed activity will occur and shall include the following information:

- (1) A description of the proposed activity;
- (2) A description of the surface waters involved and their use classification;
- (3) A statement of the department's antidegradation provisions;
- (4) A determination that existing uses and necessary water quality will be maintained and protected;
- (5) A summary of the expected impacts on high quality waters;
- (6) A determination that where a lowering of water quality is allowed, all applicable water quality criteria shall be met, designated uses protected, and any higher water quality achievable by the most stringent applicable technology-based requirements shall be maintained;
- (7) A discussion of any other information that is relevant to how the activity complies or does not comply with these provisions;
- (8) The summary of the important economic or social development, if applicable;
- (9) A summary of the alternatives analysis and a finding that the lowering of water quality is necessary; and
- (10) The name, address, and telephone number of the person in the department where all written comments or requests for public hearing can be sent.

(d) To fulfill intergovernmental coordination, the department shall submit a copy of the public notice to the following agencies requesting comments:

- (1) NH department of resources and economic development;
- (2) NH department of health and human services;
- (3) NH fish and game department;
- (4) NH office of state planning;
- (5) US EPA Region I;
- (6) US Army Corps of Engineers;
- (7) US Fish and Wildlife Service;

- (8) National Marine Fisheries Service;
- (9) Local river advisory committees, if applicable;
- (10) National Park Service; and
- (11) Natural Resources Conservation Service.

(e) The department shall respond to all comments received as a result of public participation and intergovernmental coordination. If a request to hold a public hearing is received, the department shall hold a public hearing, in accordance with the provisions of Env-C 203.

(f) Following this public participation process, the department shall, based on any further information submitted during the public hearing, make a final decision to allow or deny the proposed impact on water quality. If the application is denied, the applicant may revise the submittal to decrease or eliminate the projected impact to high quality waters, and resubmit the application for consideration under the full review process.

Source. #7151, eff 12-10-99

Env-Ws 1708.12 Transfer of Water to Public Water Supplies. The transfer of waters from rivers, streams, lakes, or ponds to waters used as a public water supply shall be subject to the following conditions:

- (a) Both the source water in the area of the withdrawal and the receiving water shall be acceptable for water supply uses after treatment;
- (b) The chemical and physical water quality parameters of the source water shall be at least equal to the water quality of the receiving water;
- (c) The biological characteristics of the source water shall be compatible with those of the receiving water and shall not contain species of aquatic life that would adversely affect the species of aquatic life in the receiving water; and
- (d) The transfer and withdrawal shall comply with the antidegradation provisions of this part.

Source. #7151, eff 12-10-99

PART Env-Ws 1709 REMOVAL OF DESIGNATED USES

Env-Ws 1709.01 Requirements.

(a) Before requesting that the state legislature remove a designated use, the department shall conduct a use attainability analysis in accord with 40 CFR Part 131.

(b) Based on the information provided in (1) above, the department may propose to the state legislature, after public notice and comment, that a designated use which is not an existing use be removed or that subcategories of a use be established when attaining the designated use is not feasible because:

- (1) Naturally occurring substance concentrations prevent the attainment of the use;
- (2) Natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of the use, unless these conditions can be compensated by the discharge of sufficient volume of effluent discharges without violating state water conservation requirements to enable uses to be met;

NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES

- (3) Human-caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place;
- (4) Dams, diversions or other types of hydrologic modifications preclude the attainment of the use, and it is not feasible to restore the water body to its original condition or to operate such modification in a way that would result in the attainment of the use;
- (5) Physical conditions related to the natural features of the water body, such as the lack of a proper substrate, cover, flow, depth, pools, riffles, unrelated to water quality, preclude attainment of aquatic life protection uses; or
- (6) Controls more stringent than those required by sections 301(b) and 306 of the Clean Water Act would result in substantial and widespread negative economic and social impact, as determined using the provisions delineated in "Interim Economic Guidance for Water Quality Standards", EPA-823-B-95-002, published by the EPA on March, 1995.

Source. #7151, eff 12-10-99