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N.J.A.C. 7:9C

Ground Water Quality Standards

Statutory Authority: N.J.S.A. 58:10A-1 et seq. and 58:11A-1 et seq.

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CHAPTER 9C
GROUND WATER QUALITY STANDARDS

SUBCHAPTER 1. GROUND WATER QUALITY STANDARDS

7:9C-1.1 Scope of chapter

(a) Unless otherwise provided by statute, this chapter constitutes the rules of the Department of Environmental Protection concerning ground water classification, designated uses of ground water, and ground water quality criteria and constituent standards, pursuant to the Water Pollution Control Act (N.J.S.A. 58:10A-1 et seq.) and the Water Quality Planning Act (N.J.S.A. 58:11A-1 et seq.).

(b) This chapter provides the basis for protection of ambient ground water quality, through the establishment of constituent standards for ground water pollutants. These constituent standards are applicable to the development of: ground water protection standards pursuant to the New Jersey Pollutant Discharge Elimination System (NJPDES; N.J.A.C. 7:14A); ground water remediation standards; and other requirements and regulatory actions applicable to discharges that cause or may cause pollutants to enter the ground waters of the State, including non-point and diffuse sources regulated by the Department. Other relevant laws through which the Ground Water Quality Standards may be applied include, but are not limited to, the Spill Compensation and Control Act (N.J.S.A. 58:10-23.11 et seq.), the Brownfield and Contaminated Site Remediation Act (N.J.S.A. 58:10B-1 et seq.), the Site Remediation Reform Act (N.J.S.A. 58:10C-1 et seq.), the Solid Waste Management Act (N.J.S.A. 13:1E-1 et seq.), the Industrial Site Recovery Act (N.J.S.A. 13:1K-6 et seq.), the Underground Storage of Hazardous Substances Act (N.J.S.A. 58:10A-21 et seq.), the Realty Improvement Sewerage and Facilities Act (N.J.S.A. 58:11-23 et seq.), and the Pesticide Control Act of 1971 (N.J.S.A. 13:1F-1 et seq.).

(c) This chapter constitutes the Department's primary basis for setting numerical criteria for limits on discharges to ground water and standards for ground water remediation.

7:9C-1.2 Policies

(a) It is the policy of this State to restore, enhance and maintain the chemical, physical, and biological integrity of its waters, to protect public health, to safeguard fish and aquatic life and scenic and ecological values, and to enhance the domestic, municipal, recreational, industrial and other uses of water.

(b) Discharges to ground water that subsequently discharges into surface waters shall not be permitted by the applicable regulatory program if such discharges would cause a contravention of surface water quality standards applicable to those surface waters. That is, those discharges must achieve compliance with both these standards and the surface water quality standards (N.J.A.C. 7:9B).

(c) When existing ground water quality does not meet the constituent standards determined pursuant to N.J.A.C. 7:9C-1.7, 1.8 and 1.9, due to human activities, the Department shall, after a review of relevant and available scientific and technical data, determine in the context of the applicable regulatory programs the management actions necessary (including, but not limited to, the requirement of remedial actions) to restore or enhance ground water quality pursuant to the policies of this chapter.

(d) The Department shall not approve discharges or activities posing a significant risk of discharges, within the jurisdiction of and subject to regulation by the Pinelands Commission, that would contravene the rules of the Pinelands Commission with regard to the protection of ground water or surface water quality.

7:9C-1.3 Construction

This chapter shall be liberally construed to permit the Department to implement its statutory functions.

7:9C-1.4 Definitions

The following words and terms, when used in this subchapter, shall have the following meanings:

“ACL” means alternative concentration limit.

"Agricultural water" means water used for crop production, livestock, horticulture and silviculture.

"Alternative concentration limit" or “ACL” means a constituent standard or narrative description of actions, discharge controls and water quality requirements that is less stringent than the ground water quality requirements of N.J.A.C. 7:9C-1.7, 1.8 and 1.9, due to a Departmental determination pursuant to NJPDES regulations (N.J.A.C. 7:14A-10.8(b)). In order to approve an ACL, the Department must find that the relevant constituent standard(s) cannot be achieved through technologically practicable means.

"Applicable regulatory program" means any of the Department's programs which implement the regulations issued pursuant to the statutes cited in N.J.A.C. 7:9C-1.1(b) or in any other regulations that specifically cite this chapter.

"Aquifer" means a saturated geologic formation(s) or unit(s) which is sufficiently permeable to transmit water to a pumping well in usable and economic quantities. The upper level of an unconfined aquifer may vary over time; "aquifer" applies to the full saturated zone at any time.

"Aquitard" means a hydrogeologic confining unit(s) that exhibits limited permeability, bounding one or more aquifers, that does not readily yield water to wells or springs, but may serve as a storage unit for ground water and may release this water to adjacent ground water units or

surface waters. Such confining units are further defined and listed in N.J.A.C. 7:9C-1.5(f)1 or may be established through reclassification under N.J.A.C. 7:9C-1.10.

"Background water quality" means the concentration of constituents in ground water which is determined to exist directly upgradient of a discharge but not influenced by the discharge, or is otherwise representative of such concentration of constituents as determined using methods and analyses consistent with the requirements of N.J.A.C. 7:14A-10.11(g).

“Carcinogen” means a constituent capable of inducing a cancer response, including Group A (Human Carcinogen), Group B (Probable Human Carcinogen) or Group C (Possible Human Carcinogen) categorized in accordance with the USEPA Guidelines for Carcinogen Risk Assessment, 51 Fed. Reg. 33992, 1986, incorporated herein by reference, as amended or supplemented.

"Classification area" means the geographic extent (lateral and vertical) of a geologic formation(s) or unit(s) wherein ground water is classified for designated uses, as described in N.J.A.C. 7:9C-1.5.

"Classification exception area" means an area within which one or more constituent standards and designated uses are suspended in accordance with N.J.A.C. 7:9C-1.6.

“Conservation restriction” means the restricting of development on property as that term is defined under the New Jersey Conservation Restriction and Historic Preservation Restriction Act, N.J.S.A. 13:8B-1 et seq.

"Constituent" means a specific chemical substance (that is, element or compound) or water quality parameter (for example, temperature, odor, color).

"Constituent standard" means the required maximum level or concentration or the required range of levels or concentrations (as applicable) for a constituent in a classification area, as established in N.J.A.C. 7:9C-1.7, 1.8 and 1.9(a) and (b). The constituent standards shall be the basis for the Department's regulation of ground water quality effects of past, present or future discharges to ground water or the land surface, pursuant to applicable authorities as defined in N.J.A.C. 7:9C-1.1.

"Conventional water supply treatment" means the chemical and physical treatment of ground water supplies for microbiological contaminants and undesirable naturally occurring substances resulting in treated water that meets all the primary and secondary standards for those constituents stipulated by the New Jersey Safe Drinking Water Act regulations (N.J.A.C. 7:10-12.1 et seq.)

"Criteria" means ground water quality criteria.

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

"Designated use" means a present or potential use of ground water which is to be maintained, restored and enhanced within a ground water classification area, as determined by N.J.A.C. 7:9C-1.5. Designated uses may include any human withdrawal of ground water (for example, for potable, agricultural and industrial water), the discharge of ground water to surface waters of the State which support human use or ecological systems, or the direct support of ecological systems.

"Discharge" means an intentional or unintentional action or omission resulting in the releasing, spilling, leaking, pumping, pouring, emitting, emptying or dumping of a pollutant at any time into the waters of the State, onto land or into wells from which it might flow or drain into said waters, or into waters or onto lands outside the jurisdiction of the State, which pollutant enters the waters of the State. "Discharge" includes, without limitation, the release of any pollutant into a municipal treatment works.

"Discharger" means any person, corporation, municipality, government agency or authority or other legal entity, who causes or allows a discharge, either through action or omission.

"Extensive exceedance", as used in N.J.A.C. 7:9C-1.10, means a condition where ground water quality in an area exceeds the criteria of N.J.A.C. 7:9C-1.7 for one or more constituents over the vast majority of the subject area for such constituent(s) and that such exceedances are not attributable to the past or present discharges of a single discharger or any group of active NJPDES permitted discharges.

"FW1" means those surface fresh waters defined as such in the Surface Water Quality Standards, N.J.A.C. 7:9B and shown on maps maintained by the Department.

"Ground water" means the portion of water beneath the land surface that is within the saturated zone.

“Ground water quality criteria” means the designated levels or concentrations of constituents that, when exceeded, will prohibit or significantly impair a designated use of water. Criteria may be “specific” (listed for each constituent in Appendix Table 1), “interim specific” (derived using a standard method, for constituents not listed in Appendix Table 1), or “interim generic” (as listed for carcinogenic and non-carcinogenic Synthetic Organic Chemicals in Appendix Table 2).

"Hazardous pollutant" means:

1. Any toxic pollutant;
2. Any substance regulated as a pesticide under the Federal Insecticide, Fungicide and Rodenticide Act, Pub.L.92-516 (7 U.S.C. _ 136 et seq.);
3. Any substance the use or manufacture of which is prohibited under the Federal Toxic Substances Control Act, Pub.L.94-469 (15 U.S.C. _ 2601 et seq.);
4. Any substance identified as a known carcinogen by the International Agency for Research on Cancer;

5. Any hazardous waste as designated pursuant to section 3 of P.L.1981, c.279 (N.J.S.A.13:1E-51) or the "Resource Conservation and Recovery Act," Pub.L.94-580 (42 U.S.C. 6901 et seq.); or
6. Any hazardous substance as defined pursuant to section 3 of P.L.1976, c.141 (N.J.S.A. 58:10-23.11b).

“HUC 11” or “hydrologic unit code 11” means an area within which water drains to a particular receiving surface water body, also known as a watershed, which is identified by an 11-digit hydrologic unit boundary designation, delineated within New Jersey by the United States Geological Survey.

"Industrial water" means water used for processing, heating or cooling in a manufacturing process.

"Natural Area" means an area of land or water, designated by the Department under N.J.A.C. 7:5A-1.13 and shown on maps maintained by the Office of Natural Lands Management, Division of Parks and Forestry, of the Department, which is owned in fee simple or in which a conservation restriction is held by the Department.

"Natural quality" means the concentration or level of constituents which occurs in ground water of a hydrologic unit without the influence of human activity, other than the effects of regional precipitation of air pollutants (for example, acid precipitation). The natural quality for SOCs is established as zero (0.0) except where the SOCs are the result of air transport from outside the State, enter the State from ground water transport of pollutants having their origins in other states, or are created entirely by natural processes. Where natural quality for other constituents is not ascertainable from generally acceptable scientific studies, the lowest concentrations known to exist within the same or a similar hydrologic unit and setting (that is, depth) within the classification area shall be used to represent the natural quality, provided, however, that for pH, corrosivity and hardness, the most representative concentration shall be used.

“Non-carcinogen” means a constituent not categorized as a carcinogen, including Group D (Not Classifiable as to Human Carcinogenicity) or Group E (Evidence of Non-Carcinogenicity for Humans) categorized in accordance with the USEPA Guidelines for Carcinogen Risk Assessment, 51 Fed. Reg. 33992, 1986, incorporated herein by reference, as amended or supplemented.

"NJPDES" means the New Jersey Pollutant Discharge Elimination System (N.J.A.C. 7:14A).

"NJPDES permit action" means a draft or final NJPDES permit, a permit equivalent, or a decision that a discharge is not to be regulated by NJPDES, as determined pursuant to the NJPDES regulations.

"Organoleptic effect" means an offensive taste, foul odor or other adverse aesthetic consequence caused by pollutants in a water supply and rendering the water supply unfit for potable use.

"PQL" means practical quantitation level.

"Pollutant" means any dredged spoil, solid waste, incinerator residue, sewage, garbage, refuse, oil, grease, sewage sludge, munitions, chemical wastes, biological materials, radioactive substance, thermal waste, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal or agricultural or other residue discharged into the waters of the State. "Pollutant" includes both hazardous and nonhazardous pollutants. "Industrial, municipal or agricultural or other residue" specifically includes, without limitation, constituents that are not considered wastes (that is, process chemicals) prior to discharge, but which are discharged and may or do degrade natural or existing ground water quality.

"Potable water" means water suitable for household consumption, primarily as drinking water, based upon human health, welfare and aesthetic considerations.

"Practical quantitation level" (PQL) means the lowest concentration of a constituent that can be reliably achieved among laboratories within specified limits of precision and accuracy during routine laboratory operating conditions. "Specified limits of precision and accuracy" are the criteria which have been included in applicable regulations including, but not limited to, those regulations listed at N.J.A.C. 7:9C-1.9 or are listed in the calibration specifications or quality control specifications of an analytical method.

"Saturated Zone" means the zone in which all the subsurface voids in the rock or soil are filled with water.

"SOC" means Synthetic Organic Chemical.

"Soils" means any naturally occurring or man-made unconsolidated mineral and organic matter on the surface of the earth that has been subjected to and influenced by geologic and environmental factors. "Soils" also includes fill or overburden.

"Source water" means the supply source of water (for example, private wells, public water supply) to a discharger, where the source water becomes part of a discharge.

"Surface water" means water at or above the land's surface which is neither ground water nor contained within the unsaturated zone. "Synthetic organic chemicals" (SOCs) means any compounds that contain at least one carbon atom and that result from purposeful chemical synthesis, whether as products, by-products, or waste, or from the purposeful refinement of naturally occurring substances. Where a chemical substance is sometimes found in nature and sometimes synthesized, it shall be considered an SOC only to the extent or in the proportion produced or isolated by human activity. Naturally occurring organic chemicals in their natural location are not considered a pollutant pursuant to the Ground Water Quality Standards. An SOC may be considered to be in its natural location, if, by background sampling and modeling, it is shown that such SOC has migrated to that point from the place it naturally occurred.

"Technologically practicable means" means the best available treatment or remedial technology, from an engineering perspective; "best" means that technology which achieves the

most stringent numerical values attainable for a constituent at a contaminated site or for a NJPDES-regulated discharge; "available" means field-demonstrated technology although such technology need not be in common commercial use.

"Toxic pollutant" means any pollutant identified pursuant to the Federal Water Pollution Control Act Amendments of 1972 (Pub.L.92-500, 33 U.S.C. _ 1251 et seq.), or any pollutant or combination of pollutants, including disease causing agents, which after discharge and upon exposure, ingestion, inhalation or assimilation into any organism, either directly or indirectly by ingestion through food chains, will, on the basis of information available to the Department, cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions, including malfunctions in reproduction, or physical deformation, in such organisms or their offspring.

"USEPA" means the United States Environmental Protection Agency.

"Unsaturated zone" (vadose zone) means the subsurface volume between the land's surface and the top of a saturated zone.

"Waters of the State" means the ocean and its estuaries, all springs, streams and bodies of surface or ground water, whether natural or artificial, within the boundaries of this State or subject to its jurisdiction.

"Zone of Contribution" means the volume of a geologic formation or unit that directly contributes ground water to a pumping well over time, or a Well Head Protection Area as defined by the Department pursuant to the Federal Safe Drinking Water Act Amendments of 1986.

7:9C-1.5 Ground water classification system and designated uses

(a) Ground water is classified according to the hydrogeologic characteristics of the ground water resource and the designated use(s) which are to be maintained, restored and enhanced within the classification area. Classifications are regional in nature and do not reflect localized infringements on designated uses due to natural quality or pollution incidents. Ground water users should not assume that existing ground water quality everywhere meets the criteria for classification areas established herein, in view of the potential for variations in natural quality or for localized pollution caused by human activity. Additional uses may be made of ground water in any classification area, subject to applicable Department rules, but these uses are not directly protected through this chapter.

(b) The Department shall preferentially protect the primary designated use for each classification area, and shall protect any secondary designated uses to the extent that such uses are viable using water of sufficient quality for the primary use and that the primary use is not impaired.

(c) There are three major classes of ground water, as defined in paragraphs (d) through (f) below. They are:
- Class I Ground Water of Special Ecological Significance
- Class II Ground Water for Potable Water Supply

- Class III Ground Water With Uses Other Than Potable Water Supply

(d) The primary designated use for Class I ground water is the maintenance of special ecological resources supported by the ground water within the classification area. Secondary designated uses are potable water, agricultural water and industrial water to the extent that these uses are viable using water of natural quality and do not impair the primary use, such as by altering ground water quality.

1. Class I-A - Exceptional Ecological Areas: Class I-A ground water shall consist of all ground waters within those classification areas, listed at (d)1(iii) below or designated by the Department through the reclassification procedure in N.J.A.C. 7:9C-1.10, which satisfy either (d)1i or ii below. In addition, ground waters within those areas listed in (d)1iii below are classified as Class I-A ground waters, because the Department has determined that they satisfy the requirements of either (d)i or ii below. The Department may approve a Class I-A classification area if the ground water within that area:

   i. Contributes to the transmittal of ground water to surface water in FW1 watersheds; and

      (1) The area involved is under government ownership (fee simple or conservation restriction); or

      (2) Is owned by a private entity that petitions the Department for reclassification of the property to Class I-A pursuant to N.J.A.C. 7:9C-1.10; or

   ii. Contributes to the transmittal of ground water to the land surface or to surface water in areas of exceptional ecological value. Areas of exceptional ecological value satisfy the conditions described in (d)1ii(1), (2) or (3) below, and also satisfy the conditions described in both (d)1ii(4) and (5) below:

      (1) Support threatened or endangered species as determined by the United States Department of the Interior pursuant to the Endangered Species Act, 16 U.S.C. 1531 et seq., or by the Department pursuant to the Endangered and Nongame Species Conservation Act, N.J.S.A 23:2A-1 et seq.

      (2) Support biotic communities within Natural Areas.

      (3) Serve other exceptional ecological values such as being a part of or supporting state, nationally or internationally rare, threatened or endangered habitats where there is a significant risk that ground water pollution would impair or imperil the ecological values.

      (4) The quality and transmittal of ground water is essential to the survival or maintenance of the exceptional ecological resource contained within the classification area.

(5) The area involved is of sufficient size to provide meaningful control of ground water quality to protect the target resource, based upon the biotic resource and local hydrogeology and is under government ownership (fee simple or conservation restriction), or is owned by a private entity that petitions the Department for reclassification of the property to Class I-A pursuant to N.J.A.C. 7:9C-1.10.

iii. Ground water within the following areas are herein classified as Class I-A:

(1) Watersheds of FW1 surface waters;

(2) The Natural Areas as designated by the Department pursuant to N.J.A.C. 7:5A-1.13.

2. Class I-PL--Pinelands: The classification area for Class I-PL consists of all ground water in the Cohansey and Kirkwood Formations located within the Pinelands area as designated by the Pinelands Protection Act, N.J.S.A. 13:18A-1 et seq. (as indicated in figure 1 in the Appendix, incorporated herein by reference), other than those ground water areas classified as Class I-A.

i. Class I-PL (Preservation Area): The primary designated use is the support and preservation of unique and significant ecological resources of the Pinelands, through the restoration, maintenance and preservation of ground water quality in its natural state. Secondary designated uses include compatible agricultural uses in conformance with N.J.A.C. 7:50-6 et seq. and potable water uses.

ii. Class I-PL (Protection Area): The primary designated use is the preservation of Pinelands plant and animal species and their habitats through the protection and maintenance of the essential characteristics of Pinelands ground water quality. Secondary designated uses include potable and agricultural water.

(e) The primary designated use for Class II ground waters is the provision of potable ground waters with conventional water supply treatment, either at their current water quality (Class II-A) or subsequent to enhancement or restoration of regional water quality so that the water will be of potable quality with conventional water supply treatment (Class II-B). Both existing and potential potable water uses are included in the designated use.

1. Class II-A shall consist of all ground water of the State, except for ground water designated in Classes I, II-B or III. The primary designated use for Class II-A ground water shall be potable water and conversion (through conventional water supply treatment, mixing or other similar technique) to potable water. Class II-A secondary designated uses include agricultural water and industrial water.

2. Specific Class II-B areas, designated uses and constituent standards will be established through rule or through reclassification pursuant to N.J.A.C. 7:9C-1.10. The designated uses of Class II-B areas generally may include any reasonable use (other than potable use).

Designated uses of Class II-B ground water shall not exacerbate existing ground water pollution or impede the ability to enhance or restore the quality of the ground water so that it will be potable or convertible to potable use with conventional water supply treatment, mixing or other similar techniques. Class II-B shall consist only of ground waters:

i. That exhibit extensive exceedance of one or more of the ground water quality criteria in N.J.A.C. 7:9C-1.7(c) within the proposed Class II-B area, due to past discharges of ground water pollutants;

ii. Where restoration of the ground water, where polluted, cannot be achieved using technologically practicable means;

iii. Where the conditions listed in (e)2(1) through (4) below exist within the proposed Class II-B area, and there is no indication in the projections of the Department, public water supply systems serving the area, or municipalities of the area that those conditions will cease to exist within the next 25 years:

(1) No public community water supply well or Zone of Contribution for such a well exists;

(2) Less than five percent of the potable water supply for the area subject to the petition is derived from ground water from within the proposed Class II-B area;

(3) Less than five percent of the potable water supply for any municipality (or portion thereof) within the Class II-B area is derived from ground water from within the proposed Class II-B area; and

(4) No significant concentration of domestic water supply wells exists;

iv. Where no significant risk of pollution migration into Class I or II-A areas exists;

v. Where a reliance on natural attenuation processes can be relied on over the vast majority of the area for the restoration of ground water quality for criteria identified pursuant to (e)2i above and does not pose a significant risk to public health, safety and welfare; and

vi. Where the reclassification requirements of N.J.A.C. 7:9C-1.10 are met.

3. Class II-B Classification Areas-(Reserved)

(f) The Class III ground waters are not suitable for potable water due to natural hydrogeologic characteristics or natural water quality. Class III includes geologic formations or units that are aquitards or have a natural quality that is unsuitable for conversion to potable water (for example, saline ground water).

1. Class III-A ground water consists of ground water in those aquitards that are described below. The primary designated use for Class III-A ground water is the release or transmittal of ground water to adjacent classification areas and surface water, as relevant. Secondary designated uses in Class III-A include any reasonable uses. Class III-A ground water includes portions of the saturated zones (that meet the criteria below) of the Woodbury Formation, Merchantville Formation, Marshalltown Formation, Navesink Formation, Hornerstown Formation, aquitard formations of the Potomac-Raritan-Magothy aquifer system and the Kirkwood aquifer system, portions of the glacial moraine and glacial lake deposits, and other geologic units having the characteristics of an aquitard, excepting Class I areas. These named aquitards (excluding glacial units) outcrop approximately in municipalities depicted in Figure 2 in the Appendix. Class III-A areas shall have the following characteristics:

   i. Average at least 50 feet in thickness within the Class III-A area;

   ii. Have a typical hydraulic conductivity of approximately 0.1 ft/day or less within the Class III-A area; and

   iii. Have an areal extent within the Class III-A area of at least 100 acres.

2. Any interested party may provide evidence to the Department to demonstrate that an area meets the descriptive criteria of Class III-A. Upon review and verification of such evidence the Department may provide concurrence that the Class III-A classification applies to the area of interest.

3. Class III-B ground water consists of all geologic formations or units which contain ground water having natural concentrations or regional concentrations (through the action of salt-water intrusion) exceeding 3,000 mg/l Chloride or 5,000 mg/l Total Dissolved Solids, or where the natural quality of ground water is otherwise not suitable for conversion to potable uses. The designated uses for Class III-B ground water consist of any reasonable uses for such ground water other than potable water, using water of existing quality. The classification area includes ground water in parts of formations as indicated in Figures 3 through 5 in the Appendix.

4. Class III-B areas are subject to field verification wherever necessary. Areas not indicated on the maps may also qualify as Class III-B, subject to Department concurrence through an applicable regulatory program. The precise borders of Class III-B areas shall be confirmed using site specific data in the context of applicable regulatory programs. Any interested party may provide evidence to the Department to demonstrate that an area meets the descriptive criteria of Class III-B. Upon review and verification of such evidence the Department may provide concurrence that the Class III-B classification applies to the area of interest.

7:9C-1.6 Exceptions to the classification system

(a) The Department may establish a Classification Exception Area only when the Department determines that constituent standards for a given classification are not being met or will not be met in a localized area due to: natural quality; localized effects of a discharge approved through a NJPDES permit action; pollution caused by human activity within a contaminated site as defined by the Department in the context of an applicable regulatory program (for example, Site Remediation Program); or an ACL as approved by the Department pursuant to NJPDES. In the context of an applicable regulatory program, the Department shall determine or describe appropriate boundaries for each Classification Exception Area and include the written description of the boundaries in the appropriate permit action along with specifications as to which constituents the exception applies. Classification Exception Areas may only be established when constituent standards are not being met or will not be met due to the conditions set forth above and shall not be established for the purpose of sanctioning violations of constituent standards.

(b) Where natural quality for any constituent contravenes the criteria established in N.J.A.C. 7:9C-1.7 such that the primary designated use is not viable within a limited area, the Department may establish a Classification Exception Area within which the Department shall define appropriate designated uses and constituent standards, based upon the natural quality. Such Classification Exception Areas shall remain in effect as long as the primary designated use of the original classification area is not viable using ground water at natural quality.

(c) Where the Department defines, through a NJPDES permit action, an area of temporary noncompliance with specific constituent standards related to the localized effects of a permitted discharge, the ground water within that area of noncompliance shall be a Classification Exception Area for those constituents only. All other constituent standards shall apply within the Classification Exception Area. All designated uses in these Classification Exception Areas will be suspended during the life of the Classification Exception Area. Constituent standards of the surrounding classification area shall apply at the perimeter of the Classification Exception Area for the specified constituents. The Classification Exception Area shall have the same life as the approved NJPDES permit action, after which the original classification, designated uses and constituent standards shall apply.

(d) Where a discharge has resulted or will result in localized ground water quality that contravenes one or more constituent standards, the Department may define that area as a Classification Exception Area for specified constituents pursuant to (or in accordance with) a NJPDES permit action or the remediation of a contaminated site in the context of an applicable regulatory program. All other constituent standards shall apply within the Classification Exception Area. All designated uses in each Classification Exception Area will be suspended during the life of the Classification Exception Area. Constituent standards of the surrounding classification area shall apply at the perimeter of the Classification Exception Area for the specified constituents. The Department shall restrict or require the restriction of potable ground water uses within any Classification Exception Area where there is or will be an exceedance of the Primary Drinking Water Quality Standards (in N.J.A.C. 7:10). Where the Department defines the Classification Exception Area through a NJPDES permit action, the Classification Exception Area shall have the same life as the approved NJPDES permit action, after which the original classification, designated uses and constituent standards shall apply. Other regulatory actions creating the

Classification Exception Area shall specify the longevity of the exception, after which the original classification, designated uses and constituent standards shall be applicable.

7:9C-1.7 Ground water quality criteria

(a) Ground water quality criteria for Class I-A areas are the natural quality for each constituent. Class I-A is a nondegradation classification where natural quality is to be maintained or restored. The Department shall not approve any discharge to ground water or approve any human activity which results in a degradation of natural quality within a Class I-A classification area.

(b) Ground water quality criteria for Class I-PL are as follows:

1. Within Class I-PL (Preservation Area), ground water quality criteria shall be the natural quality for each constituent. Class I-PL (Preservation Area) is a nondegradation classification in which natural quality shall be maintained or restored. The Department shall not approve any discharge or any other activity which would result in the degradation of natural quality within a Class I-PL (Preservation Area) classification area. However, the provisions of this paragraph (b)1 shall not apply to activities that are in conformance with N.J.A.C. 7:50-6 et seq.

2. Ground water quality criteria for Class I-PL (Protection Area) shall be the background water quality. The Department shall not approve any discharge or any other activity which would result in the degradation of background water quality in the Class I-PL (Protection Area) classification area. However, the provisions of this paragraph (b)2 shall not apply to activities that are in conformance with N.J.A.C. 7:50-6 et seq.

3. The Department shall not approve any discharge to ground water within the Class I-PL classification area which results in a violation of the Surface Water Quality Standards applicable to the Pinelands National Reserve, as established in N.J.A.C. 7:9B or successor rules.

(c) Ground water quality criteria for Class II-A areas are established as follows:

1. Specific criteria for ground water quality in Class II-A areas are listed in Appendix Table 1.
2. The Department may establish an interim specific criterion, pursuant to (c)3 below, for a constituent not listed in Appendix Table 1.

   i. The Department shall maintain and make available to the public on its website and by request a listing of all interim specific criteria and the supplemental information used in their derivation.

   ii. Interim specific criteria shall be replaced with specific criteria as soon as reasonably possible by rule.

3. The Department shall establish ground water quality criteria as follows:

   i. If the Department promulgates in the Safe Drinking Water Act rules at N.J.A.C. 7:10 a maximum contaminant level (MCL) for a constituent, the health-based level used to establish the MCL shall be the specific ground water quality criterion for the constituent.

   ii. For all other constituents, the Department shall develop ground water quality criteria for Class II-A ground water based upon the weight of evidence available regarding each constituent's carcinogenicity, toxicity, public welfare or organoleptic effects, as appropriate for the protection of potable water, pursuant to (c)4 below.

4. Except as provided at (c)4iv and v below, the Department shall use the equations, data sources and conventions at (c)4i through iii below to derive specific and interim specific ground water quality criteria:

   i. For constituents classified as carcinogens, the criteria shall be derived using the following equation:

$$\text{Criterion } (\mu g/L) = \frac{\text{Upper Bound Lifetime Excess Cancer Risk} \times \text{Average Adult Weight} \times \text{Conversion Factor}}{\text{Carcinogenic Slope Factor} \times \text{Assumed Daily Water Consumption}}$$

Where the default values are:

Average Adult Weight	= 70 kg
Assumed Daily Water Consumption	= two liters per day
Upper Bound Lifetime Excess Cancer Risk	= 1×10^{-6}
Conversion Factor	= 1,000 μg/mg
Carcinogenic Slope Factor	= value from the United States Environmental Protection Agency (USEPA) Integrated Risk Information System (IRIS) data base, http://www.epa.gov/iris/, incorporated herein by reference, as $(mg/kg/day)^{-1}$

   ii. For constituents categorized as non-carcinogens and for constituents classified as carcinogens for which no carcinogenic slope factor is available, the criterion shall be derived using the following equation:

$$\text{Criterion } (\mu g/L) = \frac{\text{Reference Dose} \times \text{Average Adult Weight} \times \text{Conversion Factor} \times \text{Relative Source Contribution}}{\text{Assumed Daily Water Consumption} \times \text{Uncertainty Factor}}$$

Where the default values are:

Average Adult Weight	= 70 kg
Relative Source Contribution	= 20 Percent
Assumed Daily Water Consumption	= two liters per day
Conversion Factor	= 1,000 *u*g/mg
Reference Dose	= value from the USEPA IRIS data base, http://www.epa.gov/iris/, incorporated herein by reference, as (mg/kg/day)
Uncertainty Factor	= 10 for carcinogens for which no carcinogenic slope factor is applicable; 1 for non-carcinogens

iii. The criteria derived by the equations in this paragraph shall be rounded to one significant figure.

iv. If the Department determines, based on constituent-specific factors and/or data, as well as applicable USEPA guidance, generally accepted scientific evidence and methodologies, and/or peer-reviewed sources of information, that use of an alternative value(s) is more suitable than a default value in the equation at (c)4i or ii above for the derivation of a particular specific or interim specific criterion, the Department shall derive the criterion using the alternative value(s). The Department will explain the basis for using any alternative value in, as applicable, the supplemental information accompanying an interim specific criterion made available to the public on the Department's website in accordance with (c)2i above, or in the Summary statement of the rulemaking for a specific criterion.

v. If the Department determines, based on constituent-specific factors and/or data, as well as applicable USEPA guidance, generally accepted scientific evidence and methodologies, and/or peer-reviewed sources of information, that use of a modified equation is more suitable than the equation at (c)4i or ii above for the derivation of a particular specific or interim specific criterion, the Department shall derive the criterion using the modified equation. The Department will explain the basis for using a modified equation in, as applicable, the supplemental information accompanying an interim specific criterion made available to the public on the Department's website in accordance with (c)2i above, or in the Summary statement of the rulemaking for a specific criterion.

5. The Department shall publish in the New Jersey Register a notice of administrative change subsequent to (the effective date of this amendment):

i. To modify or add a new specific criterion to Appendix Table 1 when the Department promulgates in the Safe Drinking Water Act rules at N.J.A.C. 7:10 a new or revised maximum contaminant level (MCL) for a ground water constituent; or

ii. To modify a specific criterion in Appendix Table 1 where the USEPA revises the carcinogenic slope factor or reference dose data contained in the Integrated Risk

Information System (IRIS) database on which a specific ground water quality criterion in Appendix Table 1 is based.

iii. The notice of administrative change shall identify the constituent, the basis for the administrative change and the revised criterion to be listed in Appendix Table 1.

6. For a Synthetic Organic Chemical not listed in Appendix Table 1, the applicable interim generic criterion in Appendix Table 2 shall apply until an interim specific criterion is developed or a specific criterion is promulgated in accordance with this subsection.

(d) The ground water quality criteria for Class II-B ground waters shall be the Class II-A criteria.

(e) The ground water quality criteria for Class III-A areas shall be the criteria of the most stringent classification for vertically or horizontally adjacent ground waters that are not Class III-A, unless the Department concludes (in the context of an applicable regulatory program) that there is no significant potential for the migration of ground water pollutants to that classification area. If there is significant potential for pollutant migration, the criteria shall be those of the classification area determined to be downgradient of the Class III-A area. If there is no significant potential for pollutant migration, criteria shall be determined for such Class III-A areas on a case by case basis in the context of applicable regulatory programs. In each case where there is no significant potential for pollutant migration, the criteria shall be no more stringent than necessary to ensure that there will be no:

1. Impairment of existing uses of the ground water;

2. Resulting violation of Surface Water Quality Standards;

3. Release of pollutants to the ground surface, structures or air in concentrations that pose a threat to human health;

4. Reasonable potential for a change in hydraulic gradient that could cause pollutants to migrate from the Class III-A area to any classification area other than Class III.

(f) The ground water quality criteria for Class III-B areas shall be determined on an area by area basis in response to case by case needs, in the context of applicable regulatory programs. In each case, the criteria shall be no more stringent than necessary to ensure that there will be no:

1. Impairment of existing uses of ground water;

2. Resulting violation of Surface Water Quality Standards;

3. Release of pollutants to the ground surface, structures or air in concentrations that pose a threat to human health;

4. Violation of constituent standards for downgradient classification areas to which there is a significant potential for migration of ground water pollutants.

(g) Where ground water that receives pollutants from a discharge(s) subsequently flows to surface waters, the Department shall regulate such discharges as necessary so as not to exceed the Surface Water Quality Standards applicable to that body of surface water. The discharger may request application of only the ground water quality standards by showing, to the satisfaction of the Department, and in the context of the applicable regulatory procedure, that the flow of ground water pollutants into the surface water will not cause a violation of the Surface Water Quality Standards.

(h) For constituents for which specific or interim specific criteria have been derived, the Department may evaluate potential toxicological interactions between or among constituents in ground water by the sum of the risk levels of constituents with health-based criteria that are based on carcinogenic risk, and by utilizing the hazard index approach described in the USEPA Guidelines for the Health Risk Assessment of Chemical Mixtures (51 FR 34014 (1986), and any subsequent revisions) for non-carcinogens. Additional actions and more stringent criteria may be required when either of the following conditions exists:

1. The total risk level for all carcinogens present in ground water exceeds 1×10^{-4}; or

2. There is a Hazard Index of greater than one for non-carcinogenic effects.

(i) The Department shall regulate discharges for compliance with each specific, interim specific and generic criterion applicable to the discharge pursuant to this section.

7:9C-1.8 Antidegradation policy

(a) The Department shall protect existing ground water quality that is better than criteria from significant degradation. The Department shall not approve any further degradation of ground water quality where background water quality contravenes the criteria.

(b) The antidegradation policy at (a) above shall be implemented as follows:

1. The Department shall not approve a new or expanded discharge to Class I ground water if the discharge would result in the degradation of natural quality of the ground water, unless the discharge is to Class I-PL ground water and the project or activity associated with the discharge is in conformance with N.J.A.C. 7:50-6.

2. The Department shall not approve a new or expanded discharge to ground water in the Highlands preservation area unless the project or activity associated with the discharge conforms with the Highlands Water Protection and Planning Act Rules, N.J.A.C. 7:38. "Highlands preservation area" means that portion of the Highlands region so designated by N.J.S.A. 13:20-7b.

3. Excluding those in the Highlands preservation area subject to (b)2 above, the Department shall not approve a discharge from a new or expanded domestic treatment works to Class II or Class III ground water that requires a water quality management plan amendment

pursuant to N.J.A.C. 7:15 unless the Department determines, through the plan amendment process, that existing ground water quality will be maintained. A nitrate concentration of 2 mg/L, which is representative of the average existing ground water quality Statewide, shall be used in determining that existing ground water quality is maintained on a HUC 11 basis.

4. Excluding those in the Highlands preservation area subject to (b)2 above, the Department shall not approve a discharge from a new or expanded domestic treatment works to Class II or Class III ground water that requires a NJPDES discharge to ground water permit pursuant to N.J.A.C. 7:14A unless the Department determines, through the NJPDES permit process, that the total nitrate load to the property served by the treatment works, when expressed as a concentration, shall not exceed 6 mg/L nitrate. The nitrate concentration of 6 mg/L nitrate represents half of the sum of 2 mg/L nitrate, which is representative of the average existing ground water quality Statewide, and the ground water quality criterion for nitrate of 10 mg/L (that is, 10,000 ug/L) set forth in Appendix Table 1.

5. Excluding those in the Highlands preservation area subject to (b)2 above, the Department shall not approve a discharge from a new or expanded industrial treatment works to Class II or Class III ground water that requires a NJPDES industrial discharge to ground water permit pursuant to N.J.A.C. 7:14A unless the Department determines, through the NJPDES permit process, that the total load of each constituent discharged to the property served by the treatment works, when expressed as a concentration, shall not exceed half of the sum of background water quality for that constituent and the applicable ground water quality criterion, where background water quality does not exceed such criterion.

7:9C-1.9 Constituent standard modifications and practical quantitation levels

(a) When constituents at background water quality exceed the criteria in N.J.A.C. 7:9C-1.7, the Department shall consider the following modifications in the development of constituent standards in the context of applicable regulatory programs:

1. For discharges that derive their source water from directly upgradient of the discharge, the constituent standards shall not be more stringent than the background water quality (that is, the source water quality);

2. For other discharges:

   i. In areas where the criteria for the constituent are exceeded within the area due to natural quality, the constituent standards shall be established as the background water quality.

   ii. In other areas, the constituent standards shall be established such that the volume and concentration of ground water exceeding the criteria are not increased by discharges.

(b) The Department may define Classification Exception Areas as provided for in N.J.A.C. 7:9C-1.6 within which the provisions of N.J.A.C. 7:9C-1.7, 1.8 and (a) above do not apply regarding specified constituents.

(c) Where a constituent standard (the criterion as adjusted by the antidegradation policy and applicable criteria exceptions) is of a lower concentration than the relevant PQL (in Appendix Table 1), the Department shall not (in the context of an applicable regulatory program) consider the discharge to be causing a contravention of that constituent standard so long as the concentration of the constituent in the affected ground water is less than the relevant PQL.

1. Where interim specific criteria are derived by the Department, interim PQLs shall also be derived for those constituents as appropriate.

2. Specific PQLs are not provided for interim generic ground water criteria. The numeric interim generic ground water criteria shall be used as the constituent standard unless a PQL applicable for an interim generic criteria is approved by the Department and published with the interim generic criteria in accordance with (c)3 below.

3. Selection and derivation of PQLs shall be as follows:

i. PQLs shall be rounded to one significant figure using standard methods.

ii. PQLs listed in Appendix Table 1 were, and additional PQLs shall be, derived or selected for each constituent using the most sensitive analytical method providing positive constituent identification from (c)3ii(1) and (2) below, in that order of preference:

(1) PQLs derived from Method Detection Limit (MDL) data from the New Jersey Department of Health and Senior Services Laboratory (DHSS) multiplied by 5;

(2) PQLs derived from laboratory performance data that has been evaluated by the Department using the method of Sanders, Lippincott and Eaton (See Sanders, P. et al., "Determining Quantitation Levels for Regulatory Purposes." J. Amer. Water Works Assoc., 1996, March pp. 104-114).

iii. The Department may approve an alternative PQL. An alternative PQL shall be approved when the evidence (in the context of an applicable regulatory program) establishes that:

(1) Based upon site-specific, ground water matrix considerations, a PQL listed in Appendix Table 1 for a constituent is not valid;

(2) An alternative PQL is more appropriate for that constituent with regard to compliance with this chapter;

(3) The alternative PQL has been determined through rigorous laboratory analysis using methods appropriate to the site-specific ground water matrix and constituent(s), including, without limitation, the derivation of an MDL using the methodology specified by Appendix B of 40 CFR Part 136; and

(4) The alternative PQL does not result in nondetection of any target constituent due to masking effects of other target constituents, non-target constituents, or natural substances.

iv. The approval of an alternative PQL shall be applicable to the regulation of ground water quality affected by the discharge for which it is derived, and its approval and utilization shall be subject to the same procedural requirements as any other aspect of the regulatory decision.

4. Where ground water pollutants affect surface water quality within the meaning of N.J.A.C. 7:9C-1.7(g), more sensitive analytical techniques such as bioassays or bioaccumulation assays may be required by the Department.

7:9C-1.10 Procedures for reclassification of ground water

(a) Reclassification of ground water areas shall be accomplished through rulemaking in accordance with the Administrative Procedure Act, N.J.S.A. 52:14B-1 et seq.

(b) Any interested person may seek to have any ground water area reclassified by filing a petition with the Department. For the purposes of this subsection, interested persons shall include, but not be limited to:

1. Any State, county or municipal governmental entity with jurisdiction over the area that is proposed for reclassification; and

2. Any person residing or discharging in the area that is proposed for reclassification.

(c) Petitions shall comply with and shall be reviewed in compliance with N.J.S.A. 52:14B-4 and N.J.A.C. 7:1D-1.1.

(d) For purposes of this subsection, ground water areas subject to petition for reclassification shall constitute at least a significant portion of one or more geologic units or formations. In no event shall a reclassification area consist only of an area underlying property owned by a single person (except in the case of reclassification to and from Class I-A), an area affected only by one discharge, or an area affected only by a set of discharges owned or controlled by a single person.

(e) In setting forth the reasons for its petition, the petitioner shall describe the proposed reclassification area (both lateral and vertical), and shall include appropriate ground water quality and hydrogeologic analyses, as well as statements regarding the environmental, economic and social impacts of the proposed reclassification.

(f) In order to grant a petition to propose a rule amendment to apply a more stringent classification to a ground water area, the Department must find that the petitioner has established that the subject area has the characteristics of the more stringent classification.

(g) In order to grant a petition to propose a rule amendment to apply a less stringent classification to a ground water area, the Department must find that the petitioner has established that:

1. The designated use cannot be maintained in the subject area;

2. Based upon an analysis of background water quality of constituent standards in downgradient areas and of ground water flow vectors and gradients, contaminant attenuation, flow barriers and potential for induced movement, the reclassification will not result in significant risk of the following:

   i. Impairment to existing uses of ground water or significant potential for pollutant migration to downgradient classification areas;

   ii. Degradation of downgradient surface water quality in violation of the surface water quality standards;

   iii. Degradation of the quality of source water for public water supply wells in violation of the provisions of N.J.A.C. 7:9C-1.7, 1.8 and 1.9; or

   iv. Significant threats to public health, safety and welfare; and

3. The subject area has the characteristics of the less stringent classification.

(h) The petitioner shall provide public notice of the petition by mailing a copy of a summary of the petition, including all subsequent amendments, to:

1. All owners of residences or facilities identified by local health officials or by the petitioner during the preparation of the petition as operators of wells in the subject area;

2. The mayor or governing body, and the planning board and environmental commission of all municipalities in which any part of the subject area is located;

3. All public water systems utilizing ground or surface water from the subject area;

4. All local or county health agencies with jurisdiction over any part of the subject area; and

5. Any other interested party who requests a copy of the petition summary in writing to either the Department or the petitioner.

(i) The petitioner shall cause public newspaper notice of the petition to be published, in two daily, and one weekly, newspapers (if available) that are distributed in the municipalities of the subject area, which notice shall include a brief summary of the petition.

7:9C-1.11 Severability

THIS IS A COURTESY COPY OF THIS RULE. ALL OF THE DEPARTMENT'S RULES ARE COMPILED IN TITLE 7 OF THE NEW JERSEY ADMINISTRATIVE CODE.

If any provision of this chapter or any application of any such provision is held to be invalid, such invalidity shall not affect any other provision or application, and to this end, the provisions of this chapter are declared to be severable.

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APPENDIX

Table 1

Specific Ground Water Quality Criteria - Class II-A and Practical Quantitation Levels

Constituent	CASRN	Ground Water Quality Criterion*	Practical Quantitation Level (PQL)*	Higher of PQL and Ground Water Quality Criterion*
Acenaphthene	83-32-9	400	10	400
Acetone	67-64-1	6,000	10	6,000
Acetophenone	98-86-2	700	10	700
Acrolein	107-02-8	4	5	5
Acrylamide	79-06-1	0.008	0.2	0.2
Acrylonitrile	107-13-1	0.06	2	2
Adipates (Di(2-ethylhexyl)adipate) (DEHA)	103-23-1	30	3	30
Alachlor	15972-60-	0.4	0.1	0.4
Aldicarb sulfone	1646-88-4	7	0.3	7
Aldrin	309-00-2	0.002	0.04	0.04
Aluminum	7429-90-5	200	30	200
Ammonia (Total)	7664-41-7	3,000	200	3,000
Aniline	62-53-3	6	2	6
Anthracene	120-12-7	2,000	10	2,000
Antimony (Total)	7440-36-0	6	3	6
Arsenic (Total)	7440-38-2	0.02	3	3
Asbestos	1332-21-4	$7X10^6$f/L>10µm[a]	10^6f/L>10µm[a]	$7X10^6$f/L>10µm[a]
Atrazine	1912-24-9	3	0.1	3
Barium**	7440-39-3	6,000	200	6,000
Benz(a)anthracene	56-55-3	0.05	0.1	0.1
Benzene	71-43-2	0.2	1	1
Benzidine	92-87-5	0.0002	20	20
Benzo(a)pyrene (BaP)	50-32-8	0.005	0.1	0.1
Benzo(b)fluoranthene (3,4-	205-99-2	0.05	0.2	0.2
Benzo(k)fluoranthene	207-08-9	0.5	0.3	0.5
Benzoic acid	65-85-0	30,000	50	30,000
Benzyl alcohol	100-51-6	2,000	20	2,000
Beryllium	7440-41-7	1	1	1
alpha-BHC- (alpha-HCH)	319-84-6	0.006	0.02	0.02
beta-BHC (beta-HCH)	319-85-7	0.02	0.04	0.04
gamma-BHC (gamma-HCH/Lindane)	58-89-9	0.03	0.02	0.03
1,1-Biphenyl	92-52-4	400	10	400
Bis(2-chloroethyl) ether	111-44-4	0.03	7	7
Bis(2-chloroisopropyl) ether	108-60-1	300	10	300
Bis(2-ethylhexyl) phthalate (DEHP)	117-81-7	2	3	3
Bromodichloromethane	75-27-4	0.6	1	1
Bromoform	75-25-2	4	0.8	4
n-Butanol (n-Butyl alcohol)	71-36-3	700	20	700
tertiary-Butyl alcohol (TBA)	75-65-0	100	2	100
Butylbenzyl phthalate	85-68-7	100	1	100
Cadmium	7440-43-9	4	0.5	4
Camphor	76-22-2	1,000	0.5	1,000

Constituent	**CASRN**	**Ground Water Quality Criterion***	**Practical Quantitation Level (PQL)***	**Higher of PQL and Ground Water Quality Criterion***
Caprolactam	105-60-2	4,000	60	4,000
Carbofuran	1563-66-2	40	0.5	40
Carbon disulfide	75-15-0	700	1	700
Carbon tetrachloride	56-23-5	0.4	1	1
Chlordane	57-74-9	0.01	0.5	0.5
Chloride	16887-00-	250,000	2,000	250,000
4-Chloroaniline (p-Chloroaniline)	106-47-8	30	10	30
Chlorobenzene (Monochlorobenzene)	108-90-7	50	1	50
1-Chloro-1,1-difluoroethane	75-68-3	100,000	500	100,000
Chloroform	67-66-3	70	1	70
2-Chloronaphthalene	91-58-7	600	10	600
2-Chlorophenol	95-57-8	40	20	40
Chlorpyrifos	2921-88-2	20	0.1	20
Chromium (Total)	7440-47-3	70	1	70
Chrysene	218-01-9	5	0.2	5
Cobalt	7440-48-4	100	0.5	100
Color	NA	10 CU	5 CU	10 CU
Copper	7440-50-8	1,300	4	1,300
Cresols (mixed isomers)	95-48-7 108-39-4 106-44-5	50	0.1	50
Cumene (Isopropyl benzene)	98-82-8	700	1	700
Cyanide (free Cyanide)	57-12-5	100	6	100
2,4-D (2,4-Dichlorophenoxyacetic acid)	94-75-7	70	2	70
Dalapon (2,2-Dichloropropionic acid)	75-99-0	200	0.1	200
4,4'-DDD (p,p'-TDE)	72-54-8	0.1	0.02	0.1
4,4'-DDE	72-55-9	0.1	0.01	0.1
4,4'-DDT	50-29-3	0.1	0.1	0.1
Demeton	8065-48-3	0.3	1	1
Dibenz(a,h)anthracene	53-70-3	0.005	0.3	0.3
Dibromochloromethane	124-48-1	0.4	1	1
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	0.02	0.02	0.02
Di-n-butyl phthalate	84-74-2	700	1	700
1,2-Dichlorobenzene (ortho)	95-50-1	600	5	600
1,3-Dichlorobenzene (meta)	541-73-1	600	5	600
1,4-Dichlorobenzene (para)	106-46-7	75	5	75
3,3-Dichlorobenzidine	91-94-1	0.08	30	30
1,1-Dichloro-1-fluoroethane	1717-00-6	500	30	500
Dichlorodifluoromethane (Freon 12)	75-71-8	1,000	2	1,000
1,1-Dichloroethane (1,1-DCA)	75-34-3	50	1	50
1,2-Dichloroethane	107-06-2	0.3	2	2
1,1-Dichloroethylene (1,1-DCE)	75-35-4	1	1	1
cis-1,2-Dichloroethylene	156-59-2	70	1	70
trans-1,2-Dichloroethylene	156-60-5	100	1	100
Dichlormid	37764-25-	600	50	600
2,4-Dichlorophenol (DCP)	120-83-2	20	10	20
1,2-Dichloropropane	78-87-5	0.5	1	1
1,3-Dichloropropene (cis and trans)	542-75-6	0.4	1	1
Dieldrin	60-57-1	0.002	0.03	0.03

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Constituent	CASRN	Ground Water Quality Criterion*	Practical Quantitation Level (PQL)*	Higher of PQL and Ground Water Quality Criterion*
Diethyl phthalate	84-66-2	6,000	1	6,000
Diisodecyl phthalate (DIDP)	26761-40-	100	3	100
Diisopropyl ether (DIPE)	108-20-3	20,000	5	20,000
2,4-Dimethyl phenol	105-67-9	100	20	100
4,6-Dinitro-o-cresol	534-52-1	0.7	0.03	0.7
2,4-Dinitrophenol	51-28-5	10	40	40
2,4-Dinitrotoluene/2,6-Dinitrotoluene Mix	25321-14-	0.05	10	10
Di-n-octyl phthalate	117-84-0	100	10	100
Dinoseb	88-85-7	7	2	7
1,4-Dioxane	123-91-1	0.4	0.1	0.4
Diphenyl ether	101-84-8	100	10	100
Diphenylamine	122-39-4	200	20	200
1,2-Diphenylhydrazine	122-66-7	0.04	20	20
Diquat	85-00-7	20	2	20
Endosulfan (alpha and beta)	115-29-7	40	0.1	40
alpha-Endosulfan (Endosulfan I)	959-98-8	40	0.02	40
beta-Endosulfan (Endosulfan II)	33213-65-	40	0.04	40
Endosulfan sulfate	1031-07-8	40	0.02	40
Endothall	145-73-3	100	60	100
Endrin	72-20-8	2	0.03	2
Epichlorohydrin	106-89-8	4	5	5
Ethion	563-12-2	4	0.5	4
Ethyl acetate	141-78-6	6,000	10	6,000
Ethylbenzene	100-41-4	700	2	700
Ethylene dibromide (1,2-Dibromoethane)	106-93-4	0.0004	0.03	0.03
Ethylene glycol	107-21-1	300	200	300
Ethylene glycol monomethyl ether	109-86-4	7	20,000	20,000
Ethyl ether	60-29-7	1,000	50	1,000
2-Ethyl-1-hexanol	104-76-7	200	0.5	200
Fluoranthene	206-44-0	300	10	300
Fluorene	86-73-7	300	1	300
Fluoride	7782-41-4	2,000	500	2,000
Foaming agents (ABS/LAS)	NA	500	0.5	500
Formaldehyde	50-00-0	100	30	100
Glyphosate	1071-83-6	700	30	700
Hardness (as CaCO3)	NA	250,000	10,000	250,000
Heptachlor	76-44-8	0.008	0.05	0.05
Heptachlor epoxide	1024-57-3	0.004	0.2	0.2
Hexachlorobenzene	118-74-1	0.02	0.02	0.02
Hexachlorobutadiene	87-68-3	0.4	1	1
Hexachlorocyclopentadiene	77-47-4	40	0.5	40
Hexachloroethane	67-72-1	2	7	7
Hexahydro-1,3,5-trinitro-1,3,5-triazine	121-82-4	0.3	0.5	0.5
Hexane (n-Hexane)	110-54-3	30	5	30
2-Hexanone	591-78-6	40	1	40
Indeno (1,2,3-cd)pyrene	193-39-5	0.05	0.2	0.2
Iron	7439-89-6	300	20	300
Isophorone	78-59-1	40	10	40
Lead (Total)	7439-92-1	5	5	5

Constituent	**CASRN**	**Ground Water Quality Criterion***	**Practical Quantitation Level (PQL)***	**Higher of PQL and Ground Water Quality Criterion***
Malathion	121-75-5	100	0.6	100
Manganese	7439-96-5	50	0.4	50
Mercury (Total)	7439-97-6	2	0.05	2
Methanol	67-56-1	4,000	70	4,000
Methoxychlor	72-43-5	40	0.1	40
Methyl acetate	79-20-9	7,000	0.5	7,000
Methyl bromide (Bromomethane)	74-83-9	10	1	10
2-(2-Methyl-4-chlorophenoxy) propionic	93-65-2	7	0.5	7
Methylene chloride	75-09-2	3	1	3
Methyl ethyl ketone (2-Butanone) (MEK)	78-93-3	300	2	300
2-Methylnaphthalene	91-57-6	30	10	30
Methyl Salicylate	119-36-8	4,000	50	4,000
Methyl tertiary butyl ether (MTBE)	1634-04-4	70	1	70
Metolachlor	51218-45-	100	0.5	100
Mirex	2385-85-5	0.1	0.08	0.1
Molybdenum	7439-98-7	40	2	40
Naphthalene	91-20-3	300	2	300
Nickel (Soluble salts)	7440-02-0	100	4	100
Nitrate	14797-55-	10,000	100	10,000
Nitrite	14797-65-	1,000	10	1,000
Nitrate and Nitrite	NA	10,000	10	10,000
Nitrobenzene	98-95-3	4	6	6
N-Nitrosodimethylamine	62-75-9	0.0007	0.8	0.8
N-Nitrosodiphenylamine	86-30-6	7	10	10
N-Nitrosodi-n-propylamine (Di-n-	621-64-7	0.005	10	10
Odor	NA	3[b]	NA	3[b]
Oil & Grease & Petroleum Hydrocarbons	NA	None Noticeable	NA	None Noticeable
Oxamyl	23135-22-	200	1	200
Parathion	56-38-2	4	0.08	4
PBBs (Polybrominated biphenyls)	67774-32-	0.004	0.001	0.004
PCBs (Polychlorinated biphenyls)	1336-36-3	0.02	0.5	0.5
Pentachlorophenol	87-86-5	0.3	0.1	0.3
Perchlorate	14797-73-	5	3	5
Perfluorononanoic acid (PFNA)***	375-95-1	0.013	0.005	0.013
Perfluorooctanoic acid (PFOA)	335-67-1	0.014	0.006	0.014
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	0.013	0.004	0.013
pH	NA	6.5-8.5	NA	6.5-8.5
Phenol	108-95-2	2,000	10	2,000
Picloram	1918-02-1	500	1	500
Pyrene	129-00-0	200	0.1	200
Salicylic acid	69-72-7	80	30	80
Selenium (Total)	7782-49-2	40	4	40
Silver	7440-22-4	40	1	40
Simazine	122-34-9	0.3	0.8	0.8
Sodium	7440-23-5	50,000	400	50,000
Strontium	7440-24-6	2,000	5	2,000
Styrene	100-42-5	100	2	100
Sulfate	14808-79-	250,000	5,000	250,000
Taste	NA	None	NA	None Objectionable

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Constituent	**CASRN**	**Ground Water Quality Criterion***	**Practical Quantitation Level (PQL)***	**Higher of PQL and Ground Water Quality Criterion***
TDS (Total dissolved solids)	NA	500,000	10,000	500,000
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746-01-6	0.0000002	0.00001	0.00001
1,1,1,2-Tetrachloroethane	630-20-6	1	1	1
1,1,2,2-Tetrachloroethane	79-34-5	1	1	1
Tetrachloroethylene (PCE)	127-18-4	0.4	1	1
2,3,4,6-Tetrachlorophenol	58-90-2	200	3	200
Tetrahydrofuran	109-99-9	10	10	10
Thallium	7440-28-0	0.5	2	2
Toluene**	108-88-3	600	1	600
Toxaphene	8001-35-2	0.03	2	2
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon	76-13-1	20,000	0.3	20,000
2,4,5-TP (2-(2,4,5-	93-72-1	60	0.6	60
1,2,4-Trichlorobenzene	120-82-1	9	1	9
1,1,1-Trichloroethane (TCA)	71-55-6	30	1	30
1,1,2-Trichloroethane	79-00-5	3	2	3
1,1,1-Trifluoroethane	420-46-2	5,000	60	5,000
Trichloroethene (TCE)	79-01-6	1	1	1
Trichlorofluoromethane (Freon 11)	75-69-4	2,000	1	2,000
2,4,5-Trichlorophenol	95-95-4	700	10	700
2,4,6-Trichlorophenol	88-06-2	1	20	20
1,2,3-Trichloropropane (TCP)***	96-18-4	0.0005	0.03	0.03
2,4,6-Trinitrotoluene (TNT)	118-96-7	1	0.3	1
Tricresyl phosphate (mixed isomers)	1330-78-5 563-04-2 78-32-0	3	0.1	3
Tri-ortho-cresyl phosphate	78-30-8	3	0.1	3
Vanadium pentoxide	1314-62-1	60	1	60
Vinyl acetate	108-05-4	7,000	5	7,000
Vinyl chloride	75-01-4	0.08	1	1
Xylenes (Total)	1330-20-7	1,000	2	1,000
Zinc	7440-66-6	2,000	10	2,000
Microbiological criteria[m], Radionuclides & Turbidity	Standards promulgated in the Safe Drinking Water Act rules (N.J.A.C. 7:10)			

Explanation of Terms:

* = Ground water quality criteria and PQLs are expressed as micrograms per liter (*u*g/L) unless otherwise noted. Table 1 criteria are all maximum values unless clearly indicated as a range for which the minimum value is to the left and the maximum value is to the right.

** = revised via administrative change (see 39 N.J.R. 3538(a)).

*** = revised via administrative change (see 50 N.J.R. 1963(a)).

PQL = Practical quantitation level as defined in N.J.A.C. 7:9C-1.4

CASRN = Chemical Abstracts System Registration Number

NA = not available for this constituent.

a = Asbestos criterion is measured in terms of fibers/liter longer than 10 micrometers (f/L > 10 µm)

CU = Standard Cobalt Units

b = Threshold Odor Number

(Total) means the concentration of metal in an unfiltered sample following treatment with hot dilute mineral acid (as defined in "Methods for Chemical Analysis of Water & Wastes", USEPA-600/4-79-020, March 1979) or other

digestion defined by the analytical method. However samples that contain less than 1 nephelometric turbidity unit (NTU) and are properly preserved, may be directly analyzed without digestion.

m = Pursuant to prevailing Safe Drinking Water Act rules, any positive result for fecal coliform is in violation of the MCL and is therefore an exceedance of the ground water quality criteria.

Table 2

Interim Generic Ground Water Quality Criteria

Interim Generic Criteria--Synthetic Organic Chemicals (SOC)

Constituent	Criteria
SOCs defined as carcinogens in N.J.A.C. 7:9C-1.4 lacking specific or interim specific criteria	5 ug/l each 25 ug/l total
SOCs defined as non-carcinogens in N.J.A.C. 7:9C-1.4 lacking specific or interim specific criteria	100 ug/l each 500 ug/ l total

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Figure 1

New Jersey Ground Water Classification System

Class I-PL - New Jersey Pinelands

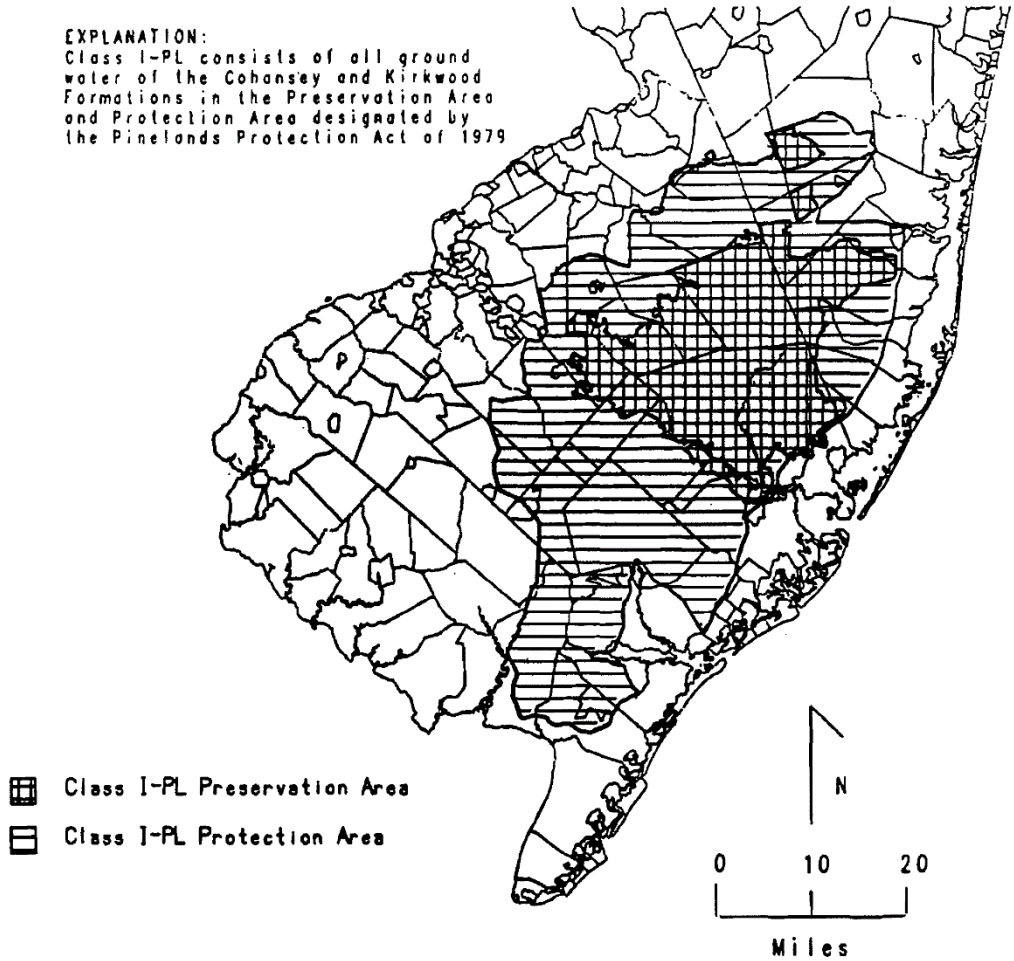

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FIGURE 2

New Jersey Ground Water Classification System

Class IIIA - Aquitards of the New Jersey Coastal Plain

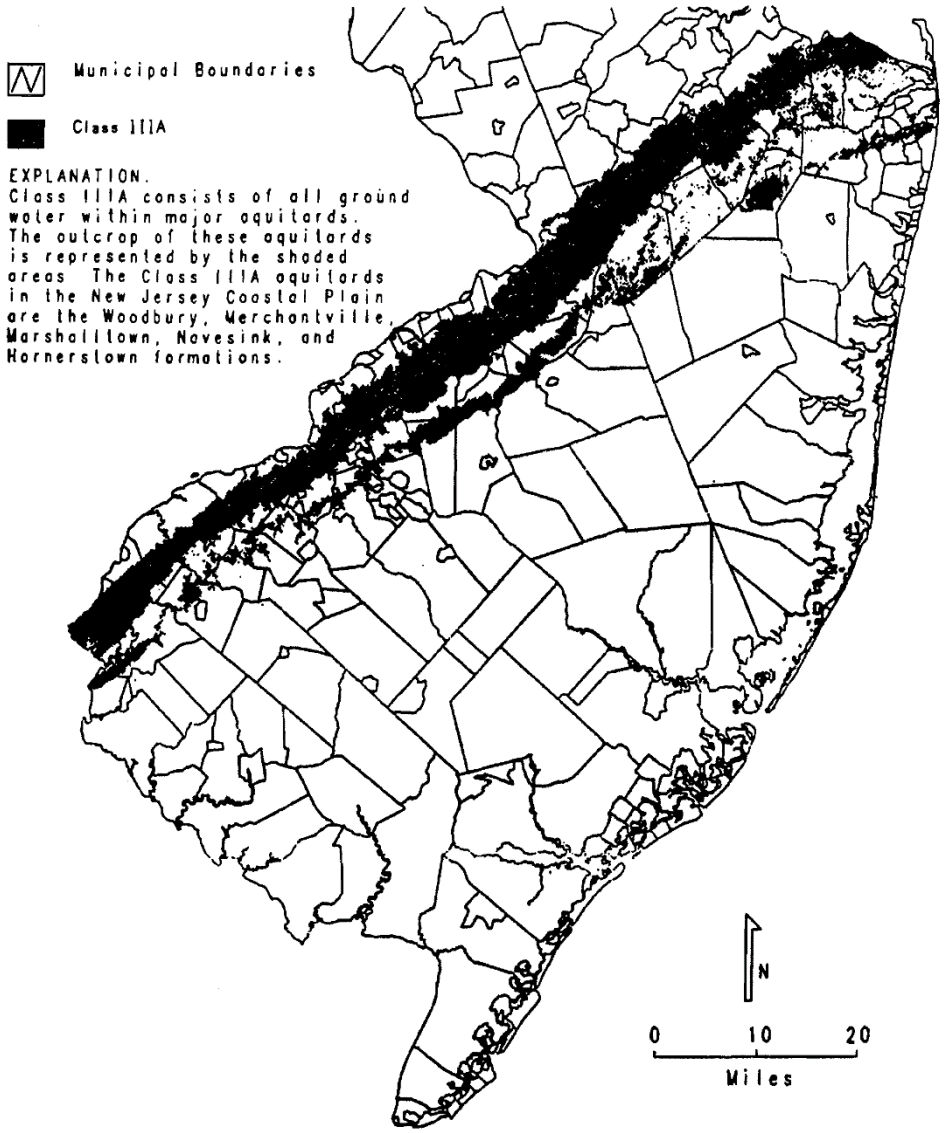

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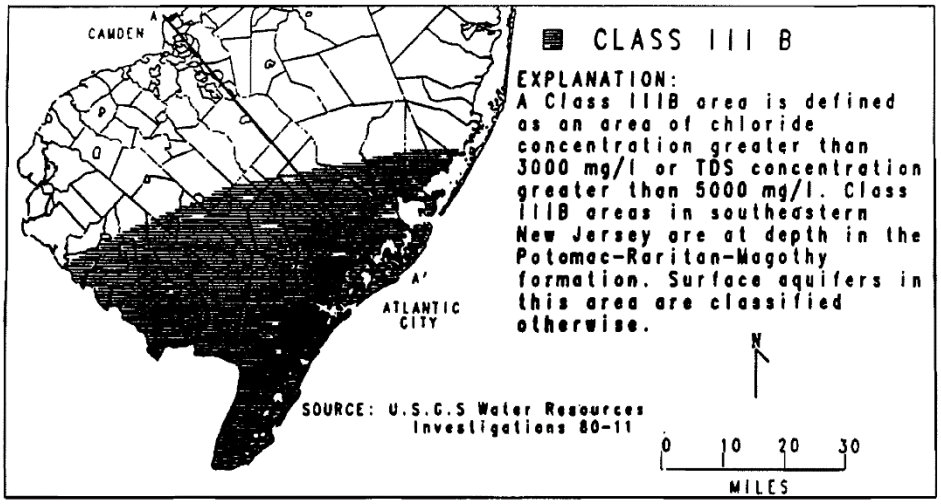
FIGURE 3

NEW JERSEY GROUND WATER CLASSIFICATION SYSTEM

CLASS IIIB

CRETACEOUS POTOMAC-RARITAN-MAGOTHY FORMATION



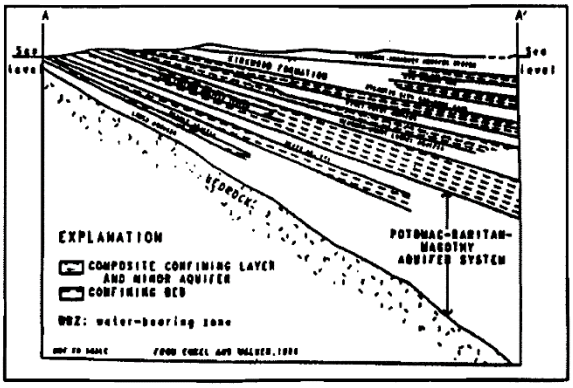


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FIGURE 4

NEW JERSEY GROUND WATER CLASSIFICATION SYSTEM

CLASS IIIB

FARRINGTON AQUIFER

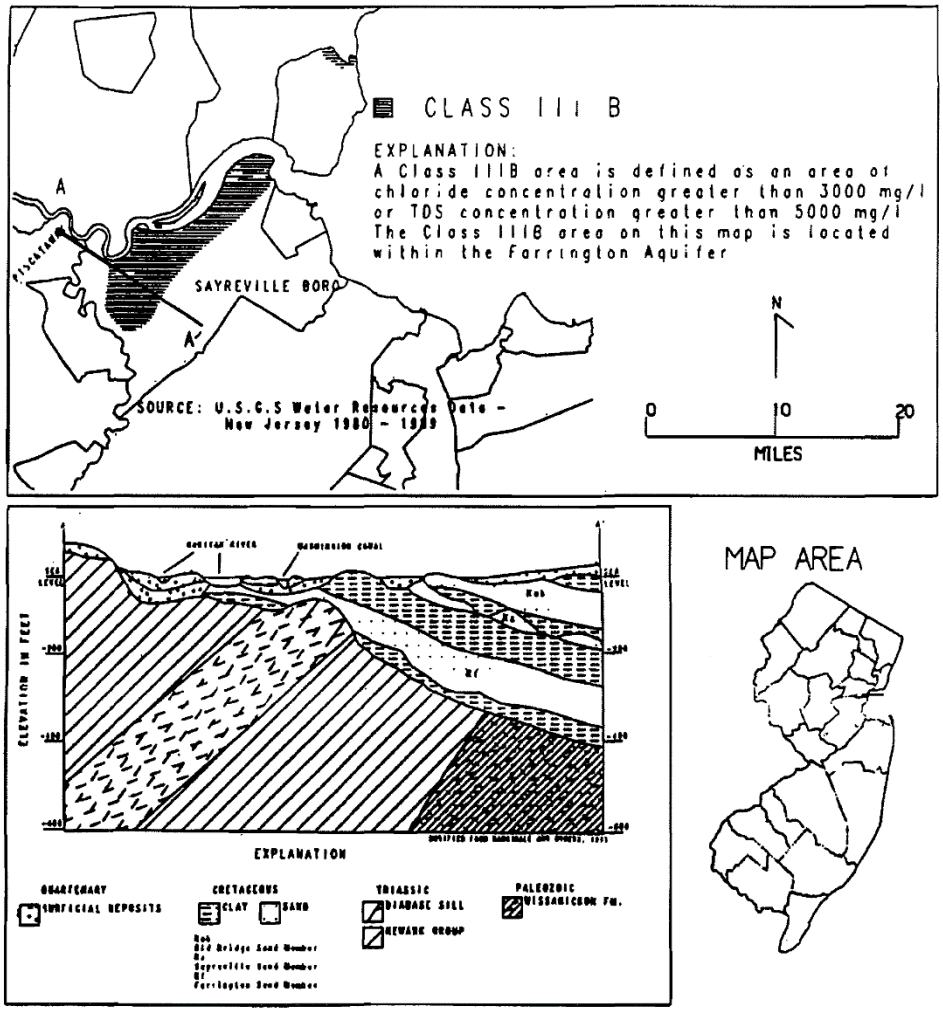

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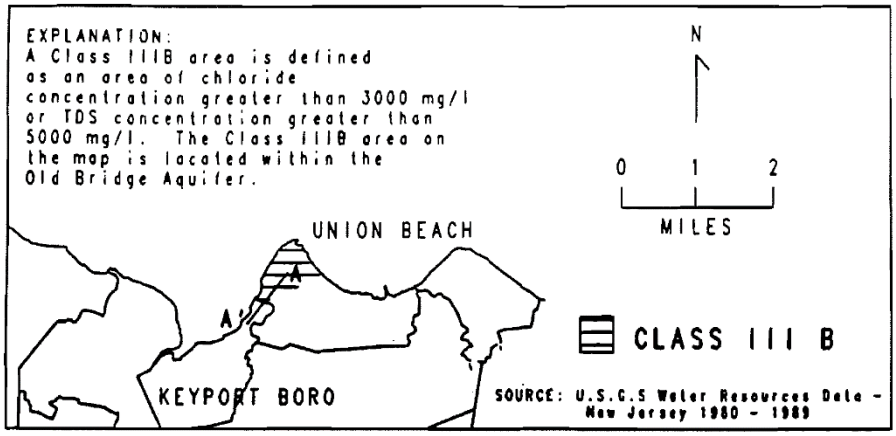
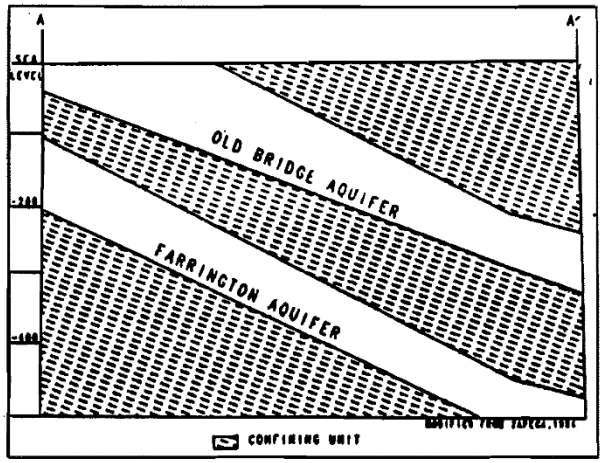
FIGURE 5

NEW JERSEY GROUND WATER CLASSIFICATION SYSTEM

CLASS IIIB
OLD BRIDGE AQUIFER





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