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ENVIRONMENTAL PROTECTION

LAND USE MANAGEMENT

WATER MONITORING AND STANDARDS

Ground Water Quality Standards

Proposed Readoption and

Recodification with Amendments:

N.J.A.C. 7:9-6 as N.J.A.C. 7:9C

Proposed: October 4, 2004 at 36 N.J.R. 4374(b)
Adopted: _____, by Bradley M. Campbell,
Commissioner, Department of Environmental Protection
Filed: _____ **(without change)**.
Authority: N.J.S.A. 13:1D et seq., 58:10A-1 et seq.,
N.J.S.A.58:11A-1 et seq.
DEP Docket Number: 16-04-09/405
Effective Dates: _____, Readoption
_____, Amendments
Expiration Date: _____

The Department of Environmental Protection (Department) hereby readopts with amendments the Ground Water Quality Standards (GWQS), N.J.A.C. 7:9-6, and recodifies them in a separate subchapter at N.J.A.C. 7:9C. Under the GWQS rules, the Department designates ground water classifications throughout the State, assigns designated uses of the ground water within each classification, and establishes water quality criteria to support those uses. The water quality criteria are numerical values assigned to each constituent (pollutant). The GWQS also

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contain technical and general policies to ensure that the designated uses can be adequately protected.

The adopted amendments update language and outdated references throughout the rules. Additionally, regarding Class II-A waters, the Department is (1) codifying as specific criteria approximately 50 criteria that the Department had been using as interim specific criteria and codifying the corresponding practical quantitation limits (PQLs) to reflect current scientific information in risk assessment and analytical capability; (2) clarifying the section describing how ground water quality criteria are derived; (3) revising the methodology for developing health-based criteria for constituents classified as Group C carcinogens to be consistent with other programs that develop standards; and (4) establishing a mechanism for updating criteria by notice of administrative change where the Department promulgates new or revised maximum contaminant levels (MCLs) or where the EPA revises the toxicity information which was used to develop the existing criteria.

The Department published the proposed readoption and recodification with amendments in the New Jersey Register at 36 N.J.R. 4374(b) on October 4, 2004. A notice of administrative correction to a table in the proposal summary was published on November 15, 2004 (see 36 NJR 5057(a)). The comment period for the proposal was extended from December 3, 2004 for thirty days (see 36 N.J.R. 5636) and closed on January 3, 2005.

Summary of Hearing Officer's Recommendations and Agency Response:

A public hearing on this proposal was held at 3:00 p.m. on November 15, 2004 at the Department of Environmental Protection, 401 East State Street, Public Hearing Room, First Floor, Trenton, New Jersey. Debra Hammond, Chief of the Bureau of Water Quality Standards and Assessment, served as the hearing officer. Twelve people attended the meeting and two offered comments. The Hearing Officer recommended that the Department adopt the rules with amendments as proposed. The Department has accepted the Hearing Officer's recommendations. A transcript of the public hearing is available for inspection in accordance with applicable law by contacting:

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Department of Environmental Protection
Office of Legal Affairs
Attn: DEP Docket Number 16-04-09/405
401 East State Street
P.O. Box 402
Trenton, New Jersey 08625-0402

Summary of Public Comments and Agency Responses:

The following people and entities timely submitted written and/or oral comments.

Number	Last Name/ First Name	Affiliation
1.	Abbott Parson, Merry and Morris, John J.	Honeywell
2.	Bealer, Buddy J.	Shell Oil Products U.S.
3.	Brown, Gary R.	RT Environmental Services, Inc.
4.	Egenton, Michael	NJ Chamber of Commerce
5.	Foster-Sitar, Leann	American Littoral Society
6.	Goldberg, Richard J.	Commerce and Industry Association of NJ
7.	Goldstein, Kenneth	Sadat Associates, Inc.
8.	Jersey Central Power & Light Company	
9.	Kinkela, John	Lenox China
10.	Kraham, Susan	Rutgers Environmental Law Clinic (on behalf of Delaware Riverkeeper Network, NJ Conservation Foundation, NJ Environmental Federation, NY/NJ Baykeeper, Pinelands Preservation Alliance, Sierra Club (NJ Chapter) and NJ Public Interest Research Group)
11.	Willner, Andrew and Mans, Deborah A.	NY/NJ Baykeeper
12.	Maxwell, John A.	New Jersey Petroleum Council
13.	McLean, Emory T.	Civil & Environmental Consultants, Inc.
14.	Meyer, Gene	El Paso Corporation Environmental

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		Remediation
15.	O'Mally, Doug	New Jersey Public Interest Resource Group
16.	Proctor, Deborah	Exponent
17.	Randazzo, Peter J.	Brown & Caldwell for Tierra Solutions, Inc.
18.	Russo, Anthony	Chemistry Council of NJ
19.	Senior, Steven T.	Technical Regulations Advisory Coalition
20.	Shanks, Jeff	Waste Management
21.	Sims, Thomas D.	Department of the Air Force
22.	Site Remediation Industry Network of New Jersey ("SRIN")	(on behalf of Chemistry Council of NJ, Honeywell, El Paso Corporation Environmental Remediation, Jersey Central Power & Light Company, Lenox China, New Jersey Petroleum Council, New Jersey State Chamber of Commerce and Shell Oil Products U.S.)
23.	Tell, Joan G	Merck & Co., Inc.
24.	Tittel, Jeff	Sierra Club
25.	Van Abs, Daniel J.	NJ Water Supply Authority
26.	Wittenberg, Nancy	NJ Builders Association

The timely submitted comments and the agency's responses are summarized below. The number in parentheses after each comment identifies the respective commenters listed above.

GENERAL COMMENTS

1. COMMENT: The Department's current practices regarding ground water remediation do not provide adequate opportunity for the regulated community to develop and propose alternative standards for ground water remediation, including re-classification of specific hydrogeologic units, on the basis of demonstrated and verifiable, site-specific factors. Given these deficiencies, the Department should re-examine its classifications of New Jersey's ground water resources and associated practices before a final rule is developed. (1, 2, 4, 8, 9, 12, 14, 18, 22)

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2. COMMENT: The Department should affirm a commitment to the principles of risk-based corrective action that have been adopted by the EPA and many states, and should establish restoration goals for contaminated ground water only on a site-specific basis. The Department should establish multiple sets of numeric and narrative ground water remediation standards, each reflecting a different use of ground water and reasonable potential for exposure to contamination. These standards should be applied to specific hydrogeologic units based upon the current and reasonably expected future use of the ground water. (1, 2, 4, 8, 9, 12, 14, 18, 22)

3. COMMENT: The Department's current policies and practices regarding ground water remediation assume unrealistically that all contaminated ground water can/should be restored to drinking water standards. Numeric remediation standards should be set by considering reasonably expected future use of the ground water, which is often not as a drinking water resource. (1, 2, 4, 8, 9, 12, 14, 18, 22)

4. COMMENT: The Department should consider the effect that quantity has on ground water and stream base flow quality. The Department should provide language that maintains ground water quantity as a part of its ground water quality criteria and anti-degradation policies. (5)

5. COMMENT: The proposed GWQS should recognize that maintained replenishment of storm water is critical to water quality. The Department should identify current regulatory impediments to this policy, as well as establish standards and best management practices (BMPs) to ensure appropriate ground water quality. (5)

6. COMMENT: This rule proposal does not further the stated policies of the New Jersey Water Pollution Control Act (restoration and maintenance of the chemical, physical and biological integrity of the State's waters, protecting public health, safeguarding fish and aquatic life, etc.). These policies should have been addressed in the rule proposal instead of reserving them for the Request for Public Comment published in the New Jersey Register on October 4, 2004 at 36 N.J.R. 4400(a). (11)

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7. COMMENT: The Department should re-examine its classifications of New Jersey's ground water resources and associated practices before a final rule is developed. (1, 2, 4, 8, 9, 12, 14, 18, 22)

8. COMMENT: The proposal fails to provide more protection in special areas, such as wellhead protection areas, reservoir drainages, sole source aquifers, septic areas, Pinelands, Highlands, or exceptional ecological areas. (10)

9. COMMENT: Classification of Class I-A ground water should not be limited to ground waters below public lands. Private activities on private lands that may impact public ground water resources need to be regulated, when appropriate, to protect the special ecological functions recognized by the Class I-A criteria. (10)

10. COMMENT: Class I-A waters at N.J.A.C. 7:9C-1.5 should be expanded to include all other areas with special ecological resources including Category One watersheds. (5)

RESPONSE TO COMMENTS 1 THROUGH 10: The purpose of the Ground Water Quality Standards (GWQS) is to designate Statewide ground water classifications, assign designated uses of the ground water within each classification and establish standardized water quality criteria to support those uses. The GWQS also contain technical and general policies to ensure that the designated uses can be adequately protected. As such, except as provided for Class III ground waters, the GWQS are not designed or intended to be altered on a site-specific basis.

The Department provides flexibility to remediate ground water on a site-specific basis through the implementation of the Technical Requirements for Site Remediation rules at N.J.A.C. 7:26E ("Technical Rules"). Pursuant to the Technical Rules, site-specific conditions are evaluated and appropriate remedial measures are required to ensure protection of public health and the environment. As part of this evaluation, the practicality and effectiveness of a particular remedial measure are considered. See N.J.A.C. 7:26E, Subchapter 6.

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The concerns raised in the comments regarding remediation standards, stream base flow and storm water are addressed by other regulatory programs through the Technical Rules at N.J.A.C. 7:26E, the Storm Water Management Rules at N.J.A.C. 7:8, and the Water Quality Management Planning Rules at N.J.A.C. 7:15.

To prevent the current rules from expiring, the Department is readopting the GWQS with amendments to ground water quality criteria and the Class I-A ground water classifications (adding 36 new ground water quality criteria, and expanding the Class I-A designation to 12 additional Natural Areas). At the time the Department proposed these amendments to the GWQS, the Department also solicited public comment on the general ground water classification procedure and uses, the anti-degradation policy and the procedures for reclassifying ground water. See Request for Public Comment published in the New Jersey Register on October 4, 2004 at 36 N.J.R. 36 N.J.R. 4400(a). Eight persons responded to the Request for Public Comment. The Department is currently reviewing the responses and intends to address these issues in a future rulemaking effort.

11. COMMENT: Class II-B ground water should not be made to be cleaned up to the same standard as Class II-A water. (21)

12. COMMENT: The Department has classified ground water throughout the majority of the State as Class II-A, suggesting that it is suitable for a drinking water supply without treatment for removal of chemical substances. However, large areas of ground water in the State have not been, are not currently, and likely never will be used for potable purposes. (1, 2, 4, 8, 9, 12, 14, 18, 22)

13. COMMENT: It is inappropriate to establish these stringent standards calculated based on an upper bound lifetime excess cancer risk of 10^{-6} for Class II-B ground waters, which, according to proposed N.J.A.C. 7:9C-1.5(e)2, has a primary designated use which “may include any reasonable use (other than potable use).” (21)

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RESPONSE TO COMMENTS 11 THROUGH 13: The primary designated use for both Class II-A and Class II-B ground water is potable water with conventional water supply treatment, either at the current water quality or subsequent to enhancement or restoration (see N.J.A.C. 7:9C-1.5(e)). Concerns about preserving New Jersey's water resources are growing as contaminated water supplies have been discovered in many parts of New Jersey. Constraints on the potable use of the waters of the State as a result of such contamination, New Jersey's growing population and its increasing demand for potable water, and the frequency of drought emergencies, increase the likelihood that New Jersey will need to use all of its aquifers in the near future. As treatment technology advances and the need for drinking water increases, ground water sources not currently used as a water supply should be available for future water supply needs. Therefore, it is appropriate to remediate ground water classified as Class II-B to the same ground water quality criteria as Class II-A, even in those areas not currently used for water supply.

14. COMMENT: The Department's policy regarding ground water remediation should emphasize response actions that are essential for protection of public health and prevention of contamination of useable ground water resources, including migration of existing contamination. (14)

RESPONSE: The Department agrees with the commenter. In accordance with the Technical Requirements for Site Remediation rules at N.J.A.C. 7:26E ("Technical Rules"), a responsible party must propose a remedial action that protects public health and the environment. The proper design and implementation of ground water remedial actions are governed by the Technical Rules.

15. COMMENT: Allowing ground water to reach PQL standards through natural attenuation is a dangerous proposition, because it will allow toxins to mix through the aquifer over the next thirty years until the standard is reached. (24)

16. COMMENT: The Department should develop a different risk assessment for wells instead of using the current statewide system. Additionally, at these sites, cleanup should proceed until

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the ground water has been remediated to the cleanup criteria, and not just to the PQL, and natural attenuation should never be permitted as the cleanup method of choice. (24)

RESPONSE TO COMMENT 15 AND 16: The Department does not believe that separate ground water quality criteria should be established for ground water that has impacted drinking water wells. The risk assessment methodology used to develop the numeric criteria for Class II ground water is based on the assumption that the ground water will be used as drinking water. As such, there is no need to use different risk assessment approaches when potable wells are impacted since all ground water in the State (except Class III waters) is considered potable or potentially potable.

All remediation methods must comply with the Technical Requirements for Site Remediation rules at N.J.A.C. 7:26E (“Technical Rules”). When current analytical methods do not allow quantification of the ground water quality criteria, the PQL is the ground water quality criteria. The Department appreciates the commenter’s concerns about using natural attenuation as a remedial measure and its potential long-term effects on ground water. These concerns were evaluated when the Department adopted the Technical Rules at N.J.A.C. 7:26E. For a discussion of this evaluation, see 34 NJR 170(a) for the proposal notice and 35 N.J.R. 710(a) for the adoption notice concerning the proposal and adoption of the Technical Rules.

17. COMMENT: The Department should not use the GWQS as remediation standards under the Technical Requirements for Site Remediation rules at N.J.A.C. 7:26E (“Technical Rules”) or as permit limitations under the New Jersey Pollutant Discharge Elimination System (NJPDDES) program. As an alternative, the Department should consider the attributes of the fate and transport of ground water contamination in different aquifers, as is done with surface water permit limits. (7)

RESPONSE: The Ground Water Quality Standards establish the designated uses of ground waters and the classifications and criteria to protect those designated uses. The commenter’s concerns and suggestions regarding the use of the Ground Water Quality Standards (GWQS) by the New Jersey Pollutant Discharge Elimination System (NJPDDES) and Site Remediation and

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Waste Management programs can be addressed only in the context of the promulgation and implementation of the NJPDES rules at N.J.A.C. 7:14A and the Technical Requirements for Site Remediation rules at N.J.A.C. 7:26E, respectively.

18. COMMENT: The commenter objects to the proposal because it does not reintroduce the septic rule. (15)

RESPONSE: The septic rule was adopted in 2001 at Subchapter 8 of the Water Quality Management Planning Rules, N.J.A.C. 7:15. The subchapter as adopted was held invalid by the Appellate Division on procedural grounds. See In re Adopted Amendments N.J.A.C. 7:15-8, 349 N.J. Super. 320 (App. Div. 2002). The septic rule was not part of the Ground Water Quality Standards (GWQS) and there are no plans to make these requirements a part of the GWQS at this time.

19. COMMENT: The Department should amend N.J.A.C. 7:9C-1.5, 1.7, and 1.8 to include ground water quality standards that recognize and protect the direct connection between ground and surface waters. (5)

RESPONSE: The Department is readopting and recodifying existing N.J.A.C. 7:9-6.7(g) at N.J.A.C. 7:9C-1.7(g) without change. Pursuant to this subsection of the Ground Water Quality Standards (GWQS) rule, discharges to ground water that subsequently flow to surface waters must comply with the Surface Water Quality Standards at N.J.A.C. 7:9B. This rule recognizes the direct connection between ground and surface water and requires the protection of the affected surface water to prevent a violation of the applicable Surface Water Quality Standard.

20. COMMENT: At N.J.A.C. 7:9C-1.4, the Department has not defined what constitutes “non-compliance” with the ground water quality standards. The commenter recommends that 95 percent upper confidence limits of the mean be compared to the standards unless a number of replicate measurements are taken and all of these measurements are less than the decision limits. (21)

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RESPONSE: The Department does not agree that “non-compliance” should be defined in the Ground Water Quality Standards (GWQS) at N.J.A.C. 7:9C-1.4. Non-compliance or a finding that ground water is contaminated by a discharge is determined by those programs that implement the GWQS. See the New Jersey Pollutant Discharge Elimination System (NJPDES) rules, N.J.A.C. 7:14A and the Technical Requirements for Site Remediation, N.J.A.C. 7:26E (“Technical Rules”). Note that the GWQS at N.J.A.C. 7:9C-1.6(c) allow the establishment of a CEA in areas of temporary non-compliance or where a discharge will result in localized ground water quality that contravenes a ground water quality criterion.

21. COMMENT: The summary of the rule proposal must be changed to make clear that only cases in which a Remedial Action Workplan (RAW) or signed record of decision (ROD) has been approved will be exempt from the changed standards. (10,21,24)

22. COMMENT: The final rule should state, “Remediation standards based on new GWQS will be applied to new cases and to cases for which the responsible party has not submitted a Remedial Action Workplan (RAW) or similar document or does not have a signed ROD in place at the time of promulgation of these rules.” (21)

RESPONSE TO COMMENTS 21 AND 22: The effect of changes to the ground water remediation standards on approved RAWs are governed by the Brownfield and Contaminated Site Remediation Act at N.J.S.A. 58:10B-12(j). This section provides that where ground water remediation standards change by an order of magnitude or more, the Department may compel additional remediation, even if the Department has approved a RAW. A ROD is issued under the Federal Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. §§9601 et seq., and its implementing regulations. The decision to reopen a ROD based on revisions to the New Jersey Ground Water Quality Standards (GWQS) is a decision made by EPA.

23. COMMENT: The proposal does not address the issue of grandfathering existing facilities that discharge into areas where criteria may change. (21,26)

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RESPONSE: As indicated in the summary at 36 N.J.R. 4375, the discharge limitations for a new facility seeking a New Jersey Pollutant Discharge Elimination System (NJPDDES) permit for a Discharge to Ground Water will be based upon the new Ground Water Quality Standards (GWQS). Existing facilities may continue to operate under their existing NJPDDES permits. At the time of permit renewal or at such time as a facility seeks to expand its discharge, the discharge limitation may be revised based upon the GWQS in effect at the time of permit issuance.

24. COMMENT: The Department should not repeal the Class II-B reclassification rules; it should finalize the method for Class II-B reclassification. (6)

RESPONSE: At this time, the Department is readopting the existing Class II-B ground water classification process. However, the Request for Public Comment published concurrently with the proposal requested comments on whether to repeal the Class II-B classification. The Department will review the comments received and develop amendments to the Ground Water Quality Standards (GWQS) as appropriate.

N.J.A.C. 7:9C-1.6: Exceptions to the classification system

25. COMMENT: The rule proposal should limit the use of Classification Exception Areas (CEAs). (10,11)

26. COMMENT: The Department should end the practice of granting CEAs in the coastal zone where wellhead protection areas, water supply source areas or ecologically sensitive resources demand clean water. (5)

27. COMMENT: N.J.A.C. 7:9C-1.6 should be revised to recognize that where water supply and/or wellhead protection, ecological sensitivity and site remediation collide, no CEA can be granted absent a specific showing of “no harm” to the coastal watershed and the potable water supply source. (5)

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RESPONSE TO COMMENTS 25 THROUGH 27: A Classification Exception Area (CEA) is not a ground water remedy. The Department uses CEAs as a temporary measure for identifying localized areas where the ground water quality criterion for a constituent is not or may not be met due to contamination, a New Jersey Pollutant Discharge Elimination System (NJPDDES) discharge to ground water, or natural conditions. CEAs are useful in all areas, including coastal watersheds, water supply areas, and environmentally sensitive areas. CEAs provide notice to the public and within the Department as to where an area is impacted and are therefore important for determining where new ground water wells may be installed and whether additional requirements to protect drinking water supply are needed.

28. COMMENT: There should be requirements of public notice when CEAs are being proposed. At a minimum, this notice should include publication in the New Jersey Register as well as notice to water companies and any private landowners with wells in the vicinity of the CEA. The Department could also provide this information on its website and as an accessible database with a specific CEA data layer. (24)

RESPONSE: While the Ground Water Quality Standards (GWQS) allow the establishment of CEAs, the establishment and implementation of Classification Exception Area (CEAs), including notification requirements, are contained in program rules. For example, the Technical Requirements for Site Remediation (“Technical Rules”) at N.J.A.C. 7:26E-8.3(b)5 require public notification in connection with establishing a CEA. Specifically, copies of the certified letters must be sent to municipal and county clerks, the local, county and regional health departments, the designated County Environmental Health Act agency and the county planning board, based on the location of the CEA. The Department’s Water Supply Programs are notified, as is the Pinelands Commission, if the ground water CEA will be located within the jurisdiction of that Commission. Each owner of any real property within the CEA must also be notified if the CEA is located in a ground water use area. However, the Technical Rules do not contemplate notification of water companies as suggested by the commenter.

In addition, the Department provides locational information on its web site under I-Map NJ at <http://www.nj.gov/dep/gis/depsplash.htm>. Data are available in this interactive mapping

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application, which is intended to provide New Jersey well drillers, environmental consultants and the public with graphical and tabular information about the presence, extent, and type of contamination in the ground water and soils at locations where potable wells may be placed.

N.J.A.C. 7:9C-1.7: Ground water quality criteria

29. COMMENT: In November 1995, the Risk Assessment and Risk Management Study Commission established by the Industrial Sites Remediation Act, recommended that the Department adopt a cancer risk management policy that was less stringent than 10^{-6} . The Department should use the Commission's recommended risk management policy to develop ground water quality standards, which is similar to EPA's and those of many other states. (1, 2, 4, 8, 9, 12, 14, 18, 22)

30. COMMENT: The rule does not provide adequate information concerning the basis for risk determinations. The rule proposal does not identify which criteria were based on children's risk assessment methods. Nor does it explain how the EPA risk range of 1×10^{-4} to 1×10^{-7} was integrated into the proposal. The proposal also fails to identify what non-cancer health effects provided the bases for these standards. (10)

RESPONSE TO COMMENTS 29 AND 30: As noted in the proposal summary (see 36 N.J.R. 4374(b)), the Department developed a Basis and Background document that provides additional information on the derivation of the criteria proposed in the Ground Water Quality Standards (GWQS). Table A in the Basis and Background document shows which criteria are based on either carcinogenic or non-carcinogenic effects, and where changes to the default assumptions include changes based on children were made. For example, the criteria for nitrate and nitrite were based on the body weight of an infant and child, respectively.

The Department developed health-based criteria for constituents classified as carcinogens by using a slope factor as indicated in the equation at N.J.A.C. 7:9C-1.7(c)4i. For most criteria, the assumptions used in the equation are two liters of water per day and 70 kg as adult body weight. The health-based criteria for non-carcinogens are based on a reference dose as indicated

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in the equation at N.J.A.C. 7:9C-1.7(c)4ii. For most criteria, the assumptions used in the equation are two liters of water per day and 70 kg as adult body weight.

The Department selected a cancer risk value within the ranges recommended by EPA. The 1983 amendments to the Safe Drinking Water Act (N.J.S.A. 58-12A-1 et seq.), require that the maximum contaminant levels (MCLs) are set at a level such that cancer will not result in more than one in one million persons ingesting that chemical for a lifetime. The designated use for Class II-A ground water is potable water. Therefore, it is reasonable for the Department to use a lifetime risk level of 1×10^{-6} as the basis for the risk assessment for the ground water quality criteria.

31. COMMENT: The priority for data sources for carcinogenic potency factors and reference doses is given in N.J.A.C. 7:9C- 1.7(c)3i. The EPA's HEAST is listed as the third tier reference. The Department should replace the reference to HEAST with the following EPA reference: "EPA 2003. Memorandum: Human Health Toxicity Values in Superfund Risk Assessments (OSWER Directive 9285.7-53)." (21)

32. COMMENT: The Department should reevaluate all of its current and proposed numeric ground water quality and remediation standards in light of the hierarchy for sources of current toxicity values recommended by the U.S. Environmental Protection Agency (EPA 2003). (1, 2, 4, 8, 9, 12, 14, 18, 22)

RESPONSE TO COMMENTS 31 AND 32: As described in the proposal summary, under the existing rule, for each constituent for which the Department calculates a ground water quality criterion, the Department utilized one of the four data sources for carcinogenic slope factor for carcinogens or reference dose for non-carcinogens listed at existing subsection N.J.A.C. 7:9-6.7 (c)3i. These four data sources were: (1) information which forms the basis for drinking water standards adopted by the Department pursuant to the Safe Drinking Water Act (SDWA); (2) IRIS; (3) the EPA's Health Effects Assessment Summary Tables (HEAST); and (4) other pertinent health-based data. Under the rules as amended, the Department has modified the hierarchy. The Department will continue to use the health-based levels used to establish the

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MCLs as specific criteria in Appendix Table 1 as the first tier. See N.J.A.C. 7:9C-1.7(c)3i. For all constituents for which the Department has not established an MCL, the Department will develop criteria for Class II-A based upon the weight of evidence available regarding each constituent's carcinogenicity, toxicity, public welfare or organoleptic effects, as appropriate for the protection of the potable water use. As outlined in the equations at N.J.A.C. 7:9C-1.4(c)4i and ii, if a toxicity value from IRIS has been developed, the Department will utilize IRIS as the source for the carcinogenic slope factor or reference dose (toxicity factors) (see N.J.A.C. 7:9C-1.7(c)4) and will calculate the specific criteria for those constituents using the equations at N.J.A.C. 7:9C-1.7(c)4. If an IRIS value has not been developed, the Department will use information from other sources, including Provisional Peer Reviewed Toxicity Values (PPRTV) or other peer-reviewed sources of information.

The OSWER memorandum referenced by the commenter updates the hierarchy of human health toxicity values and provides guidance for the sources of toxicity information that should generally be used in performing human health risk assessments at Comprehensive Environmental Response Compensation and Liability Act sites (Superfund). The hierarchy under the OSWER memorandum is Tier 1, IRIS; Tier 2, PPRTV; Tier 3, Other. The Department's hierarchy is generally consistent with this approach. Where an MCL is not available, the Department uses the toxicity information from IRIS. Consistent with the OSWER memo, where the constituent is not addressed in IRIS, other data sources such as PPRTV or other peer-reviewed sources of information are used.

33. COMMENT: The Department should establish relative source contribution values on a chemical-specific basis for those substances with significant human exposures via sources other than drinking water. It is not scientifically appropriate to use a default value of 20 percent for the relative source contribution in deriving ground water quality criteria, because most of the regulated substances do not have significant background sources of human exposure. (1, 2, 4, 6, 8, 9, 12, 14, 18, 22)

RESPONSE: Exposure to constituents may occur through inhalation, from food, or from contact with contaminated soil, in addition to the consumption of water. In most cases, there is not

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enough specific information to develop a chemical-specific Relative Source Contribution factor (RSC) at N.J.A.C. 7:9C-1.7(c)4. The default value of 20 percent is used by both EPA and the Department (in developing drinking water MCLs). Since criteria development for the Ground Water Quality Standards (GWQS) is based on established methods and assumptions used in developing drinking water standards, the Department also uses the default value of 20 percent for ground water criteria. However, if chemical-specific RSC information is available, the Department may consider it in developing the ground water quality criteria.

34. COMMENT: The Department should provide additional information regarding the conservativeness of its assumption that individuals consume 2 liters of water per day (2 L/day). The 2 L/day consumption rate overestimates typical drinking-water intake rates for most of the U.S. population. (16)

RESPONSE: Two liters of water consumption per day is a standard assumption used by the Department and EPA to account for individual daily drinking water intake. The exposure assumptions are intended to be reasonably conservative values that protect the majority of the population, not necessarily mean values. The EPA Exposure Factors Handbook (EPA/600/C-99/001, 1997) shows that the 90th percentile for tap water consumption in adults is 2.2 L per day (Table 3-30), indicating that 2 L per day is protective of somewhat less than 90 percent of the population and is therefore not an extreme value.

35. COMMENT: The commenter supports the proposal to adopt Interim Specific Criteria. (24).

RESPONSE: The Department acknowledges the commenters support for the incorporation of the interim specific criteria into Appendix Table 1.

36. COMMENT: The Department should develop health-based criteria for other chemicals (such as styrene and cyanide). (24)

RESPONSE: The Department may utilize the provision at N.J.A.C. 7:9C-1.7(c)2 to develop and implement interim specific ground water quality criteria for those constituents not listed in

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Appendix Table 1 as needed. Interim specific ground water quality criteria are to be incorporated into Appendix Table 1 as soon as possible. Specific ground water quality criteria were promulgated for both styrene and cyanide in 1993.

37. COMMENT: Revisions to numeric standards through a “notice of administrative change” pursuant to proposed N.J.A.C. 7:9C-1.7(c)5 does not provide the regulated community an opportunity to comment on changes to the standards and accordingly violates the Administrative Procedure Act, N.J.S.A. 52:14B-1 et seq. (6)

RESPONSE: The health-based criteria for the Ground Water Quality Standards (GWQS) in Appendix Table 1 are either the health-based level used to establish the MCL pursuant to the Safe Drinking Water Act or, for constituents for which there is no MCL, derived using the equations at N.J.A.C. 7:9C-1.7. The administrative update provision adopted at N.J.A.C. 7:9C-1.7(c)5 will enable the Department to update criteria derived using the adopted equations only if EPA revises the toxicity information contained in IRIS or if the Department adopts new or revised MCLs in the Safe Drinking Water Act rule (N.J.A.C. 7:10).

The Department does not believe that updating the criteria for constituents by notice of administrative change is a violation of the Administrative Procedure Act. New health-based levels that are used establish or update the MCLs and that will be the specific ground water quality criteria under these rules, are only adopted only after rulemaking. During the rulemaking process, the public is provided an opportunity to comment on the new and revised health-based levels.

Furthermore, as explained in the summary of the proposal at 36 N.J.R. 4377, for those criteria that are based on information provided in the EPA’s IRIS database, EPA’s revisions to IRIS are subject to a comprehensive internal and external peer review process prior to their inclusion in the database. As explained by EPA, IRIS is in the first tier of the recommended hierarchy as the generally preferred source of human health toxicity values. IRIS generally contains reference doses (RfDs), reference concentrations (RfCs), cancer slope factors, drinking water unit risk values, and inhalation unit risk values, that have gone through a peer review and

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EPA consensus review. IRIS normally represents the official Agency scientific position regarding the toxicity of the chemicals based on the data available at the time of the review.” OSWER Directive 9285.7-53.

The public can access information regarding IRIS by the Internet and telephone and at a public reading room.

38. COMMENT: Imposition of the Department’s policy that the GWQC criteria are developed to protect public health without consideration of analytical feasibility, treatability, and cost stated in the proposal may burden industry and the regulated community with added analytical costs. As currently proposed, additional analyses will be required to meet the new GWQS. (20)

39. COMMENT: The Department should not consider economics when setting PQL standards. (24)

40. COMMENT: The methodology that allows the use of the PQL instead of the health-based criteria is arbitrary and capricious. (24)

RESPONSE TO COMMENTS 38 THROUGH 40: The Ground Water Quality Standards at N.J.A.C. 7:9C are promulgated pursuant to the Water Pollution Control Act and the Water Quality Planning Act and are based on protecting public health and the environment and therefore, do not consider analytical feasibility, treatability, and cost. However, the Department recognizes that certain health-based criteria are set at levels that are below current analytical capability. For this reason, the Department has established the standard at the practical quantitation level (PQL). Generally, the analytical methods the Department selected for determining the PQLS are standard methods that are used in the analysis of ground water. Although there may be some additional analytical expenses as a result of these amendments, it is important that the analytical method selected can detect to a level that most reliably approaches the health-based criteria.

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Maximum Contaminant Levels (MCLs)

41. COMMENT: It is not technically possible to meet the revised ground water quality criteria for arsenic. Iron and manganese, which are ubiquitous background contaminants, must be removed before arsenic can be treated. This will be an issue for both water treatment and remediation sites. (3)

RESPONSE: Water treatment plants are required to comply with the Safe Drinking Water Program maximum contaminant levels (MCLs). The New Jersey-specific MCL of 5 ug/l for arsenic becomes effective January 23, 2006 (see 36 N.J.R. 5383(b)). The Department considered the feasibility of removing arsenic from drinking water in the development of the MCL. The remediation method for arsenic at a contaminated site must be addressed in the context of the remediation of a specific site and is not germane to the setting of statewide criteria.

42. COMMENT: Several inconsistencies between the Safe Drinking Water Act standards (N.J.A.C. 7:10) and the proposed revisions to the GWQS make the application of the revisions impracticable. For example, the Department lowered the safe drinking water standard for arsenic in ground water from 10 ug/l to 5 ug/l, while the Department proposed to lower the specific ground water quality criterion for arsenic from 8 ug/l to 3 ug/l. While the Department distinguishes the methodologies in establishing drinking water standards (laboratory and treatability limitations) versus the GWQS (health-based criteria versus laboratory limitations), the net result is confusing. In this particular example, a consistent level of 4 ug/l of arsenic in ground water will result in the need for vertical and horizontal delineation of the arsenic, as well as establishment of a classification exception area for the water, which is permitted to be consumed from a potable well, within the CEA. Since ground water can be used for drinking water purposes, the Department should establish the same standards for both safe drinking water and ground water. (6)

43. COMMENT: Actual MCLs rather than health-based MCLs should be used as the basis for establishing GWQS. (21)

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44. COMMENT: The Department should consider using an MCL-based ground water standard.
(24)

RESPONSE TO COMMENTS 42 THROUGH 44: The health-based criteria that form the ground water quality criteria and Safe Drinking Water Act MCLs are developed following similar risk assessment methodology. Both the MCLs and the ground water quality criteria may be modified to address analytical capabilities of certified laboratories.

The Department recognizes that the Safe Drinking Water Act standard for a particular constituent may be different from the ground water quality criterion for that same constituent. This difference occurs because the Department does not consider the issues of treatment and feasibility (which are left to the Site Remediation and New Jersey Pollutant Discharge Elimination System (NJPDDES) programs) in deriving a ground water quality criterion. For example, MCLs developed by the Safe Drinking Water Program apply to water purveyors and it is appropriate to evaluate the feasibility and cost of treatment when determining MCLs. These MCLs may be revised in the future as new treatment technologies become available. It should also be noted that the ground water quality criterion for a particular constituent is the health-based level used to establish the MCL and is derived using the equations at N.J.A.C. 7:9C-1.7. Where the analytical methods are not currently capable of measuring compliance with the health-based standards, the Department uses the practical quantitation level (PQL) as the ground water quality criterion.

Because the Ground Water Quality Standards (GWQS) establish the environmental goals to protect the drinking water use, the regulatory programs may consider treatment feasibility when developing site-specific remedial actions. The Department does not believe it is appropriate to consider the feasibility or cost of treatment in establishing the GWQS. Since the MCLs developed by the Safe Drinking Water Program apply to water purveyors, it is appropriate to evaluate the feasibility and cost of treatment when determining MCLs. These MCLs may be revised in the future as new treatment technologies become available.

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The New Jersey-specific MCL for arsenic of 5 ug/l becomes effective January 23, 2006 (see 36 N.J.R. 5383(b)). The specific ground water quality criterion for arsenic adopted herein is 3 ug/l. The difference in standards is because current drinking water treatment capabilities limit the arsenic MCL to 5 ug/l, while analytical limitations resulted in the specific ground water quality criterion of 3 ug/l. The actual health-based criterion for arsenic is 0.02 ppb. For purposes of identifying and remediating contaminated sites, it is important to know the extent of the contamination to the lowest measurable concentration. Potentially, over time, treatment technologies may improve or the PQLs may decrease.

45. COMMENT: The use of PQLs instead of MCLs violates New Jersey's Safe Drinking Water Act since all ground water is considered potable and the MCL determines safe drinking levels while the PQLs are generally between 4 to 10 times larger. (24)

46. COMMENT: MCLs should be used as the basis for determining the GWQS. (21)

RESPONSE TO COMMENTS 45 AND 46: The use of PQLs as the specific ground water quality criteria in Appendix Table 1 does not violate the New Jersey Safe Drinking Water Act. The Ground Water Quality Standards (GWQS) are promulgated in accordance with the Water Pollution Control Act and the Water Quality Planning Act, not the Safe Drinking Water Act. The PQL is the lowest concentration level of a constituent that can be reliably measured and reported during routine laboratory operating conditions. The ground water quality criteria are human health-based and will sometimes result in a concentration that is lower than the lowest concentration that is measurable using approved analytical methods.

The PQLs that are the ground water quality criteria in Appendix Table 1 are not often 4 to 10 times higher than MCLs established pursuant to the Safe Drinking Water rules. Similar to the process established in the GWQS, the adopted Drinking Water MCL is the PQL if the PQL is above the health-based MCL. If the PQL is below the health-based criterion, the MCL is set at the level of the health-based MCL. The Department may also consider the feasibility of treatment when establishing an MCL. Therefore, it is possible that the ground water quality criteria promulgated in Appendix Table 1 are more stringent than the drinking water MCL. The

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Department modifies the ground water quality criteria based on analytical limitations only to establish the appropriate goals to protect the drinking water use. Subsequently, the implementing programs must address the lack of feasible treatment to achieve the ground water quality criteria.

47. COMMENT: A constituent may exist in ground water at a level that is lower than the MCL (and thus acceptable to drink), but that is greater than the ground water quality criteria, and must therefore be remediated at great expense under the Department's Site Remediation Program regulations. One example of this is lead, which has an MCL of 15 ug/l and a proposed ground water quality criterion of 5 ug/l. Beryllium is another example; the proposed ground water quality criterion is 1 ug/l, which is less than the MCL of 4 ug/l. There are other examples in the proposed rules. A well-known example is the trihalomethanes group, which exists in water supplies as a result of chlorination. These compounds have an MCL of 100 ug/l. However, if any of the constituents were present in ground water as a result of a discharge, the Department would require remediation. (7)

RESPONSE: The Department considers different factors when modifying the health-based criteria to establish the ground water quality criteria as opposed to the drinking water MCLs. The Department does not consider technical feasibility in determining the Ground Water Quality Standards (GWQS). Feasibility and other implementation issues may be addressed by the related regulatory programs.

As noted by the commenter, the basis for developing the drinking water standard for lead differs from that of most other constituents. Lead is regulated by the Safe Drinking Water Program by a treatment technique that requires systems to control the corrosiveness of their water. If more than 10 percent of tap water samples exceed the action level of 15 ug/l, water systems must take additional steps to reduce lead levels in drinking water. Elevated lead in drinking water is most commonly due to corrosion from the distribution system, rather than the source water. The Department has adopted a ground water quality criterion for lead based on an analysis of lead's health effects as discussed in the Basis and Background. Similarly, the Department considered beryllium's health effects when promulgating the standard of 1 ug/l.

In addition, the MCL for trihalomethanes is not based solely on the health effects of bromodichloromethane, dibromochloromethane, bromoform and chloroform. Under the Federal drinking water rule for disinfectants and disinfectant byproducts, which the Department incorporated by reference into its Safe Drinking water Act rules, the MCL has been set at 80 ug/l to balance the potential public health benefits of drinking water disinfection with the potential adverse health effects of exposure to these byproducts. (See 63 Fed. Reg. 69390, December 16, 1998). The Department has adopted ground water quality criteria for bromodichloromethane, dibromochloromethane, bromoform and chloroform. These ground water quality criteria are based on the standard health-based risk assessment approach at N.J.A.C. 7:9C-1.7.

48. COMMENT: The Department should develop and implement procedures for independent peer review of the risk assessment data, methods, and assumptions. (1, 2, 4, 8, 9, 12, 14, 18, 22)

49. COMMENT: The Department did not propose to update any of its previously established MCLs to incorporate current toxicological assessments from the EPA's Integrated Risk Information System (IRIS). The Department should update the MCLs to incorporate the IRIS information. (1, 2, 4, 8, 9, 12, 14, 18, 22)

RESPONSE TO COMMENTS 48 and 49: As indicated in the summary to the Ground Water Quality Standards (GWQS) rule proposal at 36 N.J.R. 4376, the primary source for the ground water quality criteria is the health-based levels used to establish the current MCLs. The Department last updated the risk assessments used to derive the MCLs in 1996. The New Jersey Drinking Water Quality Institute (NJDWQI), established by the 1983 amendments to the Safe Drinking Water Act (SDWA), is responsible for developing and recommending to the Department MCLs for hazardous contaminants in drinking water. The NJDWQI is currently reviewing the existing health-based criteria including toxicity information from IRIS used as the basis for the MCLs. In the GWQS, the Department is adopting a new provision at N.J.A.C. 7:9C-1.7(c)5i that will enable the Department to incorporate new health-based ground water quality criteria into the rule by notice of administrative change, once the Safe Drinking Water Program promulgates the new MCLs.

All other ground water quality criteria in Appendix Table 1 were derived using EPA assessment methods and assumptions. The methodology adopted at N.J.A.C. 7:9C-1.7 is analogous to that used for drinking water risk assessment. Since most of New Jersey's ground water is classified as Class II-A and the designated use is potable water supply, the criteria in Appendix Table 1 are established to protect the drinking water use. The data used as the basis for the criteria come from the peer reviewed scientific literature or databases including the EPA Integrated Risk Information System (IRIS).

Procedure for Calculating criteria for Group C Carcinogens

50. COMMENT: The Department's proposed approach to establishing numeric GWQS for Group C carcinogens should not be adopted. The Department should submit its entire proposed approach for Group C carcinogens to an independent peer review before a final rule is developed. (1, 2, 4, 8, 9, 12, 14, 18, 22)

51. COMMENT: The Department provides no scientific basis for reducing the non-cancer reference dose by an additional uncertainty factor of 10 to account for potential cancer effects of Group C carcinogens. (1, 2, 4, 8, 9, 12, 14, 18, 21, 22)

52. COMMENT: If cancer potency factors are available for Group C carcinogens, they should be used to calculate criteria using the equation in proposed N.J.A.C. 7:9C-1.7(c)(4)(i). If potency factors are not available, the equation in proposed N.J.A.C. 7:9C-1.7(c)(4)(ii) should be the basis of criteria development. There is no sound toxicological basis for using adjusted reference dose values for cancer potency factors. (21)

53. COMMENT: The Department identified a change in its policy of assessing Class C carcinogens that differs from that currently employed by EPA. The basis for this change is scientifically incorrect. With the proposed policy, the Department places Class C carcinogens at a level of concern above that deemed appropriate by the technical bodies responsible for such designations. Rather than establishing standards for Class C carcinogens at the 10^{-5} risk, the

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Department is proposing to set these standards at the 10^{-6} risk the most conservative of EPA's practices. (21)

RESPONSE TO COMMENTS 50 THROUGH 53: Group C carcinogens consist of "possible human carcinogens." As explained in the proposal summary, the Department's approach to Group C carcinogens combines the approaches used by the EPA Office of Water and the EPA Superfund program. The Department is adopting equations to derive health-based criteria for carcinogens and non-carcinogens. The health-based criteria for those constituents listed as Group C may be derived using the equation at N.J.A.C. 7:9C-1.7(c)4i if an acceptable slope factor is available. If a slope factor is not available, the health-based criterion can be derived using the non-carcinogen equation at N.J.A.C. 7:9C-1.7(c)4ii using an additional uncertainty factor of 10. Since the reference dose for these chemicals is based on non-carcinogenic effects, which may be unrelated to the carcinogenic effects of the chemical, it is a prudent, public health protective policy to include the additional uncertainty factor in the risk assessment.

When a criterion is based on a slope factor, the risk level used is 1×10^{-6} , which is the target risk level for criteria and guidance based on a carcinogenic endpoint. This approach is consistent with a practice of the EPA Superfund and Ambient Water Quality Criteria programs. If no slope factor is available, the additional uncertainty factor of 10 is included. This approach is used by the EPA Office of Drinking Water in developing its maximum contaminant level goals (MCLGs) (equivalent to health-based MCLs) for drinking water contaminants. The New Jersey Drinking Water Quality Institute also uses this approach when developing the human health basis for drinking water standards. This approach is being used consistently in the Department for development of health-based standards for ground water, surface water, drinking water, and soils.

54. COMMENT: The Department has deviated from EPA's practices by including chemicals as Group C that have not been given that designation by EPA. (21)

RESPONSE: The Department's Group C designations are consistent with the EPA Group C designations for all criteria based on information in IRIS. Where constituents are not addressed

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in IRIS, the Department has evaluated the toxicity information pursuant to EPA criteria for carcinogen classification.

55. COMMENT: The Department's proposed policy for Class C carcinogens is not compatible with the EPA programs as evidenced by the EPA Drinking Water Criteria for these constituents. For example, butylbenzyl phthalate is a Class C carcinogen according to EPA and the Drinking Water Equivalent Level (DWEL) is 7 mg/l. However, the Department's proposed standard is 0.1 mg/l, which is 70 times lower than the DWEL. (21)

RESPONSE: The Department's formulas for developing criteria for constituents classified as Group C are compatible with existing EPA programs. As indicated in the summary of the rule proposal and in response to Comments 50 through 53, the Department evaluated the approaches used by the EPA Superfund Program and the EPA Office of Drinking Water and determined that it was appropriate to have a consistent approach within the Department. The DWELs developed by EPA are not the equivalent of the Federal MCL or MCLGs or New Jersey's health-based MCLs. The DWELs do not consider the relative source contribution (RSC), which is used in the development of EPA MCLs and MCLGs as well as ground water quality criteria for non-carcinogens. In addition, the Department has included an additional uncertainty factor of 10 for possible human carcinogens to address possible carcinogenicity. These two factors account for the difference between the EPA DWEL and the ground water quality criterion for butylbenzyl phthalate.

The Department derived the butylbenzyl phthalate standard of 0.1 mg/l by multiplying the DWEL of 7mg/l by the RSC factor of 20 percent and dividing the result by the additional uncertainty factor of 10 for possible human carcinogens. The 0.1 mg/l value is achieved after rounding.

N.J.A.C. 7:9C-1.8: Antidegradation policy

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56. COMMENT: The Department should consider adopting specific Class I-A ground water quality criteria, use designations, management strategies and anti-degradation policies that are specifically geared to protecting coastal watersheds. (5)

57. COMMENT: The rules should strengthen and implement the antidegradation policy. (8, 19)

58. COMMENT: The Department should revise its anti-degradation policies for Class II ground waters and combine the anti-degradation review and best available treatment/alternatives analysis approach of the surface water quality program. (5)

59. COMMENT: The rule should include specific ground water criteria for the Highlands Protection Area based on the Highlands Water Protection and Planning Act. The Hydrologic Unit Code (HUC 14s) of these high quality waters should have a much more restrictive standard to meet the antidegradation standards of the Clean Water Act. There is a direct correlation between ground water and the base flow of streams. The higher levels of contaminants and nutrients in ground water will also impact our surface waters. (24)

60. COMMENT: This rule fails to implement the antidegradation policy, strengthen and implement current GWQS standards and classification criteria, provide more protection in special areas, include the septic rules, implement C1 and Highlands commitments, limit the use of Classification Exception Areas (CEAs) and create a link between ground water and surface water. (10)

61. COMMENT: In order to support the Highlands Act, the rule should have taken the approach in Class I-A areas of non-degradation, which would base the compliance target on existing background ground water quality. (10)

62. COMMENT: The Department should revise the current practice of allowing degradation to 50 percent of the difference between background level and the 10mg/L human health-based standard, to be more reflective of the protections called for in the recently enacted Highlands legislation. (10)

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63. COMMENT: There is no real anti-degradation policy in effect, nor is there a Class I-A system for areas of high ground water ecological significance such as the Category 1 watersheds. (24)

64. COMMENT: The rule should include amendments to antidegradation protections. (15)

RESPONSE TO COMMENTS 56 THROUGH 64: As described in the proposal, concurrently with this proposal, the Department published a Request for Public Comment (see 36 N.J.R. 36 N.J.R. 4400(a)) on sections of the rule not proposed for change at this time. The Department specifically requested input on many of the topics identified by the commenters. The Department will review the comments received and promulgate amendments as appropriate. With respect to the comments regarding classification and designations in the Highlands, it should be noted that the adopted Ground Water Quality Standards (GWQS) presently compliment the requirements of the Highlands Water Protection and Planning Act at N.J.S.A. 13:20-1 et seq. Additional issues on waters in the Highlands can be addressed in future rulemaking.

N.J.A.C. 7:9C-1.9: Constituent standard modification and PQLs

65. COMMENT: In order to monitor contamination with respect to a fixed decision limit, the quantitation limit must be some fraction of the decision limit and should not be equal to the decision limit; values less than the decision limit will be estimated values. Setting the decision limit to the quantitation limit adversely impacts statistical evaluations. Therefore, GWQS should not be set at PQL. Water quality standards should be set at levels that are several times greater than PQLs. (21)

RESPONSE: Statistical analysis is irrelevant with respect to the criterion establishment, but it may or may not be relevant in a compliance context with respect to the specific regulatory program. For general discussion of PQLs, see the response to Comments 38 through 40.

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66. COMMENT: Multi-laboratory statistical evaluations should be performed to determine required PQLs, rather than relying solely on the New Jersey Department of Health and Senior Services Laboratory. (1, 2, 4, 8, 9, 10, 12, 14, 18, 21, 22)

67. COMMENT: The PQLs are based on outdated values. (24)

68. COMMENT: PQLs should be maintained at the current level until New Jersey Quantitation Levels (NJQLs) are developed or, at a minimum, the preliminary data collected in support of NJQLs should be compared to the proposed PQLs and used to moderate the changes to the PQLs. (20)

69. COMMENT: Many of the proposed PQLs have been established on an intra-laboratory basis using MDLs obtained from a single laboratory, the New Jersey Department of Health and Senior Services Laboratory. In the proposal summary, the Department acknowledges that PQLs should be inter-laboratory in nature by identifying an initiative to establish a New Jersey Quantitation Level (NJQL) by collecting MDL data from the New Jersey certified laboratory community. This contradicts the premise used to develop the proposed PQLs. For this multi-laboratory initiative, the commenter recommends that, along with MDL data, some measurement of accuracy at the PQL be obtained from each laboratory so that there will be a demonstration of both precision and accuracy at any subsequently determined PQL. (20)

70. COMMENT: PQLs (and certified laboratory regulations) must be revised downward to reflect the method/parameter specific and analytical performance of the top 10 percent of Department-certified State laboratories. (24)

71. COMMENT: During the SWQS stakeholder process in 1996, the Department made specific public commitments to survey and work with the commercial laboratory community to revise laboratory certification regulations, and to upgrade the science behind analytical limits and methods. This work was to be done prior to any PQL regulations. However, it appears that despite these commitments, the Department still lacks adequate and current science and data to support the GWQS and PQLs. (10)

RESPONSE TO COMMENTS 66 THROUGH 71: The Department agrees that multi-laboratory statistical evaluations are best for developing PQLs. The Department's Office of Quality Assurance (OQA) is currently developing a database for the collection of performance information related to the various analytical methods for which that Office offers certification through the National Environmental Laboratory Accreditation Conference (NELAC) process. Method detection and calibration data will be collected and evaluated via appropriate statistical techniques to determine laboratory performance and capability for the variety of parameters that the Department utilizes for regulatory compliance determinations. The Department plans to use this information to develop New Jersey Quantitation Levels (NJQLs).

The Department developed PQLs for the 1993 adoption of the Ground Water Quality Standards (GWQS) using multi-laboratory data generated in the early 1990s. As part of this rulemaking, the Department updated the existing PQLs and developed new PQLs for those criteria not currently listed in Appendix Table 1 using performance data provided primarily by the New Jersey Division of Health and Senior Services because NJQLs based upon inter-laboratory data are not yet available. However, the DHSS has an abundance of intra-laboratory precision and accuracy data for method detection limits. The Department anticipates amending the GWQS once NJQLs are established.

The development of NJQLs based upon inter-laboratory data or the top ten percent of the laboratory community will be addressed in the Regulations Governing the Certification of Laboratories and Environmental Measurements ("Lab Certification Rules"), N.J.A.C. 7:18 et seq. However, since the Department currently uses the PQL as the standard when current analytical methods are not capable of quantifying at health-based criteria, it is appropriate to review and update these values now rather than wait until the Lab Certification Rules are promulgated.

72. COMMENT: According to the Basis and Background document for this rule, the proposed PQLs are mostly derived from some multiple of the 40 CFR Part 136 MDL procedure. The EPA Office of Water proposed changes to this procedure (68 Fed. Reg. 11,770, 11,791 (March 12,

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2003)). Due to numerous comments describing technical deficiencies in the current procedure and what was proposed in the rule, it was recently decided that a Federal Advisory Committee should be formed to make recommendations on its content, 69 Fed. Reg. 77972-3 (December 29, 2004). It may be prudent to evaluate the results of this process before establishing new MDL-based PQLs. (20)

RESPONSE: The Department is aware of the ongoing Federal issues concerning the development of MDL-based PQLs. However, since the Department currently uses the PQL as the standard when current analytical methods are not capable of quantifying at criteria, it is appropriate to review and update these values now rather than wait until EPA concludes its process. When EPA develops a new protocol, the Department will evaluate the MDL based PQLs and revise the PQLs as appropriate.

73. COMMENT: A scientifically valid definition of a quantitation limit is required. PQL should not be defined as an arbitrary multiple of the MDL. (10, 21, 24)

74. COMMENT: Multiplying the MDL by 5 is arbitrary, not based on current science, and under protective. The PQLs will weaken enforcement. (10)

75. COMMENT: Multiplying the MDL by 5 is an abuse of authority (24).

RESPONSE TO COMMENTS 73 THROUGH 75: The method detection limit (MDL) and the practical quantitation level (PQL) are two performance measures used to estimate the limits of performance of analytic chemistry methods for measuring contaminants. The MDL is defined as "the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero" (40 CFR Part 136 Appendix B). MDLs can be operator, method, laboratory, and matrix specific. MDLs are not necessarily reproducible within a laboratory or between laboratories on a daily basis due to day-to-day analytical variability and the difficulty of measuring an analyte at very low concentrations.

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As stated in the summary at 36 N.J.R. 4378, the Department multiplied the Minimum Detection Level (MDL) by 5 and established that value as the PQL. This is consistent with the current approach used by EPA's Office of Ground Water and Drinking Water. EPA recommended the EPA-derived MDL be multiplied by a factor of 5 or 10. The 5 or 10 multiplier was used to account for the variability and uncertainty that can occur at the MDL. For more information see: EPA Protocol for the Review of Existing National Primary Drinking Water Regulations, 2003 (EPA 815-R-03-002).

In implementing PQLs in the Ground Water Quality Standards (GWQS), the Department has historically used the value of five as the median upper boundary of the inter-laboratory MDL distribution from the New Jersey certified laboratory community. See Sanders, Lippincott and Eaton in "Determining Quantitation Levels for Regulatory Purposes." Journal of the American Water Works Association, March 1996, p. 104-114. Establishing the PQL at a level which is five times the MDL provides a reliable quantitation level that most laboratories can be expected to meet during day-to-day operations.

76. COMMENT: The commenter opposes the PQL methodology, especially for parameters with PQLs above health-based standards. The Department should adopt a rule that provides that the PQL may be the default effective limit, but not the compliance limit for a permit, cleanup plan, or scientific investigation like a dilution study or ground water model. (10)

RESPONSE: The Department establishes the ground water quality criteria in accordance with the formulas at N.J.A.C. 7:9C-1.7(c)4. PQLs are developed in accordance with N.J.A.C. 7:9C-1.9, where current analytical methods do not allow for quantification at the health-based levels. For these constituents, the PQL becomes the ground water quality criteria. The Department requires a responsible party to model the extent of contamination and develop a Remedial Action Workplan that will achieve compliance with the ground water remediation standards. See the Technical Requirements for Site Remediation at N.J.A.C. 7:26E.

77. COMMENT: PQLs for several parameters are higher than the calculated health standards. The commenter suggests that, until more sensitive analytical methods are brought on line by the

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certified commercial laboratory community, the Department should impose interim implementation policies to protect public health for these parameters. These could include additional sampling and monitoring requirements by water purveyors and private well testing at high quality commercial or research laboratories that use more sensitive methods, and a directive to the certified laboratories to develop and procure more sensitive and currently available research laboratory methods to lower the PQL to the calculated health standards in 5 years. (10, 24)

RESPONSE: The Department disagrees with the commenters' suggestion that the Department should require interim implementation policies. The Department has updated the PQLs using the most sensitive EPA approved methods that are commercially available, which in most cases are the Drinking Water Program methods. The commenters' suggestion to require additional monitoring by water purveyors or owners of private wells for those constituents where a ground water quality criterion has been established at the PQL is not feasible since this additional monitoring would be conducted using the same EPA approved analytical methods. The Department relies on the expertise at EPA to develop analytical methods. Therefore, until new EPA approved methods are available and capable of quantifying the constituents at the health-based criteria level, the Department will continue to use the PQLs established in Appendix Table 1.

78. COMMENT: The Department should complete a risk assessment for each health-based limit that is lower than the associated PQL. (10)

RESPONSE: As part of this rulemaking, the Department reevaluated the health-based criteria for each constituent listed in Appendix Table 1 using the most current scientific information. The derivation of the ground water quality criteria is based on the risk assessment method at N.J.A.C. 7:9C-1.7(c)4 to ensure that these criteria are protective of human health and the environment as well as the designated uses.

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79. COMMENT: There are 43 instances where the standards have been weakened. Given better technical equipment in laboratories and health-based criteria, there is no excuse for any weakening of standards and these should be immediately withdrawn and revised. (24)

RESPONSE: By referring to 43 instances where the standards are weakened, the commenter is apparently referring to the 49 PQL-driven standards proposed by the Department. The use of PQLs is addressed in the response to Comments 38 through 40.

Comments on individual ground water quality criteria

80. COMMENT: The proposed standards for several polyaromatic hydrocarbons, especially benzo(b)fluoranthene, have been lowered so significantly that virtually every site in an urban area in New Jersey will require extensive and costly ground water testing, as well as an eventual Classification Exception Area. (6)

RESPONSE: As indicated in the economic impact statement of the proposal at 36 N.J.R. 4385, more stringent constituent standards may result in different remediation requirements. The size of a ground water contamination plume could be significantly greater for a more stringent standard. Delineation requirements for a larger plume would likely require more wells, more monitoring, and the remediation of such a plume could take more time. These impacts will be dependent upon the presence of other contaminants and other site-specific factors. The issues concerning the remediation of benzo(b)fluoranthene at contaminated sites is an issue that is best addressed pursuant to the Technical Requirements for Site Remediation at N.J.A.C. 7:26E.

81. COMMENT: Chemical analyses are rarely performed for a single target, such as acrylonitrile or 1,2-dibromo-3-chloropropane (DBCP). The analytical methodology is designed to examine groups of analytes simultaneously. The new PQLs appear to have been established for individual compounds without regard for their behavior in the context of multi-target analysis. (20)

82. COMMENT: The proposed PQLs are derived primarily from MDLs developed for clean, finished drinking water samples under the EPA 500 series of analytical methods. These methods

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have limited utility for native ground water samples and experience matrix effects that interfere with the sensitivity for these and other types of samples. The broad application of MDLs and PQLs derived from drinking water methods to other matrices and methods may be inappropriate. (20)

RESPONSE TO COMMENTS 81 AND 82: For a majority of the constituents, the Department selected drinking water methods (EPA 500 series) due to their greater sensitivity. In most cases, the Department has selected methods that analyze multiple parameters of similar chemical characteristics in a single analysis. Method 524.2 was used to establish the PQL for acrylonitrile and several other constituents. Method 504.1 was used to establish the PQL for 1, 2- dibromo-3- chloropropane (DBCP). The party conducting the remediation is expected to select an analytical method to appropriately characterize ground water quality. Therefore, as long as the concentrations are quantifiable, any approved analytical method can be used. In addition, N.J.A.C. 7:9C-1.9(c), allows the Department to approve an alternative PQL address problems such as matrix interference.

83. COMMENT: The EPA-derived cancer slope factor for benzene is currently a range (from 0.015 to 0.055 per milligrams per kilogram per day (kg-day/mg)), based upon a detailed toxicological review that was subject to an independent peer review under EPA's IRIS program. EPA's slope factor for benzene was adopted in IRIS in January 2000. By comparison, the slope factor obtained by the New Jersey Drinking Water Quality Institute (NJDWQI) in 1987 and adopted by the Department is 0.23 kg-day/mg, suggesting higher cancer potency than EPA's current value, by approximately four to five times. The NJDWQI-derived cancer slope factor for benzene has never been subject to an independent peer review. In addition, it does not reflect any consideration of toxicity data that have become available during the past 17 years. According to the EPA, its cancer slope factors are derived by methods that are more likely than not to over-estimate cancer potency to human populations. Consequently, the Department does not need to establish a higher slope factor than EPA has for benzene in order to protect the citizens of New Jersey. (1, 2, 4, 8, 9, 12, 14, 18, 22)

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RESPONSE: The specific ground water quality criterion for benzene is based on the current MCL developed by the New Jersey Drinking Water Quality Institute (NJDWQI), and was not updated as part of this rulemaking. The toxicity information used to develop the existing MCL is currently being reviewed. Once the Department promulgates the revised MCL for benzene in the Safe Drinking Water Act rules at N.J.A.C. 7:10, the Ground Water Quality Standards (GWQS) will be updated by notice of administrative change in accordance with N.J.A.C. 7:9C-1.7(c)5i.

84. COMMENT: The proposed tert-Butyl Alcohol (TBA) standard is 100 ug/l. The Department has not set forth the specific technical basis for this value. The IRIS database does not include promulgated health-based toxicity parameters for TBA. The Department should not have based their reference dose (RfD) on a lowest observed adverse effect level (LOAEL) for increased severity of nephropathy in female rats. (2)

85. COMMENT: TBA is not listed by EPA as a Class C carcinogen, and no TBA cancer classification was located in the EPA IRIS database. An uncertainty factor of 10,000 is unwarranted for TBA. (2)

86. COMMENT: The Department should apply a Relative Source Contribution (RSC) of 1 for TBA, because there are no alternative sources of TBA in diet. (2)

87. COMMENT: The TBA criterion is a drinking water value and should not be used as a ground water quality criterion. (2)

RESPONSE TO COMMENTS 84 THROUGH 87: The ground water quality criterion for TBA, as well as all of the other ground water quality criteria, is developed based on exposure through use as drinking water. Therefore, the exposure assumptions used are the same as those used for the development of health-based drinking water criteria. The Department developed the risk assessment for TBA based upon its review of available scientific literature. The Department classified TBA as a possible human carcinogen (Group C) because of the increased incidence of thyroid neoplasms seen in mice. The increased severity of nephropathy in female rats chronically exposed to tert-butyl-alcohol, used as the endpoint in the risk assessment, was

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reported in both the National Toxicology Program final report (National Toxicology Program (1995) Toxicology and Carcinogenesis Studies of t-Butyl Alcohol (CAS No. 75-65-0 in F344 Rats and B6C3F1 Mice (Drinking Water Studies) TR 436), and in a peer reviewed journal article (Cirvello, J.D., Radovsky, A., Heath, J.A., Farnell, D.R., and Lindamood, C. (1995) Toxicity and Carcinogenicity of t-Butyl Alcohol in Rats and Mice Following Chronic Exposure in Drinking Water. *Tox. Ind. Health* 11, 151-165).

TBA is a volatile chemical and exposure may occur through inhalation, as well as from water or food. The Relative Source Contribution factor of 20 percent is a default value used in the absence of specific information demonstrating that a different value should be used. Should a chemical specific RSC be developed for TBA, the Department could amend the criteria in a future rulemaking.

The Department believes that the additional levels of uncertainty are appropriate for TBA. The RfD is based on a lowest observed adverse effect level (LOAEL) in rats. Consistent with the EPA methodology, the Department has applied an uncertainty factor of 10 to convert a LOAEL to a no observed adverse effect level (NOAEL), a factor of 10 for interspecies conversion, and a factor of 10 to protect the sensitive members in the human population. Since the Department has classified TBA as Group C possible human carcinogen, the criterion is derived using the formula at N.J.A.C. 7:9C-1.7(c)4ii, which includes an additional uncertainty factor of 10 to protect for possible carcinogenicity.

88. COMMENT: The proposed revision for the specific ground water quality criterion for total chromium was developed using toxicological data for hexavalent chromium, and ignores the significant difference in toxicity between trivalent and hexavalent chromium. Trivalent chromium is essentially insoluble under most environmental conditions, so the presence of soluble chromium in ground water is most likely to be present in the hexavalent form. The Department should adopt separate standards for trivalent and hexavalent chromium (as opposed to regulating total chromium based on hexavalent chromium). (1, 13, 16, 21)

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89. COMMENT: The presumptive approach of regulating total chromium on the basis of hexavalent chromium toxicity is no longer reasonable when methods exist to evaluate the concentrations of individual chromium species that have significantly different human health toxicities. (13)

90. COMMENT: The Cr (III) specific ground water quality criterion should be 36.8 mg/L or 53 mg/L depending on the selection of the RSC factor. (16)

91. COMMENT: No Relative Source Contribution (RSC) is needed for Cr (III) or CR (IV) specific ground water quality criterion; the RSC should equal 100 percent. (16)

92. COMMENT: At a minimum, based on the bioavailability of ingested hexavalent chromium, the Department should assume 100 percent Relative Source Contribution (RSC) of hexavalent chromium in drinking water and retain the current specific ground water quality criterion and EPA MCL of 100 ppb for hexavalent chromium, not total chromium. (21)

93. COMMENT: The specific ground water quality criterion for hexavalent chromium should be 105 ppb. (16)

94. COMMENT: The method for developing the proposed chromium specific ground water quality criterion contains multiple conservative assumptions. The use of a conservative yet more reasonable approach to setting a hexavalent chromium specific ground water quality criterion should be employed by the Department. (1)

95. COMMENT: A hexavalent chromium specific ground water quality criterion of 100 ppb will address health risks related to dissolved chromium in ground water. (1)

96. COMMENT: EPA's MCL and the Department's specific ground water quality criterion are based on the non-cancer reference dose (RfD) for hexavalent chromium. Therefore, the impact to ground water soil standard and the proposed specific ground water quality criterion should be identified as hexavalent chromium, not total chromium. (1,21)

RESPONSE TO COMMENTS 88 THROUGH 96: Hexavalent and trivalent chromium exist in water in a dynamic equilibrium that is dependent on factors such as pH, dissolved oxygen, and presence of reducing agents. There is evidence indicating that trivalent chromium may convert to hexavalent chromium during chlorination for the disinfection of drinking water (54 Fed. Reg. 22075, May 22, 1989). For this reason, the drinking water standard for chromium (that was developed by EPA and is in effect in New Jersey) is based on the total concentration of the trivalent and hexavalent forms of dissolved chromium. Based on these factors, the Department determined that separate hexavalent and trivalent chromium specific ground water quality criteria are unnecessary.

The total chromium specific ground water quality criterion was derived using the non-carcinogen formula at N.J.A.C. 7:9C-1.7(c)4ii. The recommended default Relative Source Contribution (RSC), in the absence of chemical-specific data, is 20 percent. However, EPA, in its development of the chromium MCL, determined that a relative source contribution of 70 percent is appropriate for chromium (54 Fed. Reg. 22075, May 22, 1989). In addition, EPA revised the reference dose for hexavalent chromium in the EPA IRIS database (revised as of September 3, 1998) to 0.003mg/kg/d. The new RSC and reference dose information were used to develop the new ground water quality criterion of 70 ug/l for total chromium. Should EPA update the toxicity factors in IRIS in the future, the Department will update the criteria using N.J.A.C. 7:9C-1.7(c)5ii.

97. COMMENT: The standard for chromium in ground water should be lowered considerably. A standard of 10 ppb would be more appropriate, given the recent problems with chromium in New Jersey especially when it is dispersed in ground water. The reaction between chromium in ground water results in the conversion of hexavalent chromium from trivalent chromium, which causes serious health problems and is a known carcinogen. Therefore, this interim standard should be health-based and consistent with the Appendix Table 1 Interim Specific Criteria, or 10 ppb, until the final standard from the Chromium Task Force can be adopted. (24)

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RESPONSE: The Department recognizes that hexavalent chromium is more toxic than trivalent chromium, and that there is a possibility of conversion between these two forms. Therefore, the criterion for total chromium is based on the toxicity of both the trivalent and hexavalent forms of dissolved chromium. Chromium is known to be carcinogenic through inhalation, but is not considered an oral carcinogen by EPA and is not treated as a carcinogen in the development of ground water quality criteria. As a result of new toxicity information published by the EPA, the Department has revised the ground water quality criterion for total chromium from 100 ug/l to 70 ug/l. The Department does not have toxicity information, which would support the development of a criterion of 10 ug/l for chromium as recommended by the commenter.

When the commenter refers to the Chromium Task Force, it is assumed that the commenter is referring to the Department's Chromium Workgroup. The Chromium Workgroup also evaluated the issue of oral toxicity of hexavalent chromium in detail, and did not recommend that it be treated as an oral carcinogen.

98. COMMENT: The methyl tertiary butyl ether (MTBE) standard should be lowered. (10, 24)

99. COMMENT: The proposed level of 70 ug/l for MTBE is unacceptable. Other states lowered their standard to 25 ug/l and there is enough scientific research showing that the standard should be 10 ug/l or lower. (24)

RESPONSE TO COMMENTS 98 AND 99: The ground water quality criterion for MTBE is based on the Department's health-based MCL for MTBE. The criterion is based on effects of MTBE observed during a sub-chronic oral study of MTBE in rats, and on the results of cancer studies in laboratory animals. These studies were also used as the basis for the Department's classification of MTBE as a Group C carcinogen. See New Jersey Drinking Water Quality Institute (NJDWQI), Maximum Contaminant Level Recommendations for Hazardous Contaminants in Drinking Water, Appendix A, Health-Based Maximum Contaminant Level Support Documents and Addenda, p. A-41 (September 26, 1994). The Department is aware that EPA is currently in the process of reviewing the toxicological literature in order to develop a risk assessment for oral MTBE exposure for its IRIS database, and the Department will evaluate this

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assessment when and if it becomes available. Additionally, MTBE is being reviewed by the NJDWQI as part of its overall review of the MCLs developed by the Department. If there is a need to revise the criterion for MTBE, it will be addressed after the NJDWQI review is completed. If the Department adopts a new MCL pursuant to the Safe Drinking Water Program, the Department will update the MTBE ground water quality criteria using the new provision at N.J.A.C. 7:9C-1.7(c)5i.

100. COMMENT: The nitrate level should be lowered; the Department should re-examine and establish a nitrate standard that is adequately protective of estuarine water quality. (5, 10, 24)

101. COMMENT: The current 10mg/L nitrate standard is not protective enough. The new nitrate standard should be lowered to address anti-degradation, cumulative loadings, site-specific or regional concerns, surface and ground water interaction, and ecological impacts. (10)

102. COMMENT: Weakening the nitrate standard to 10,000 ug/l undermines the state's ability to regulate septic densities and protect environmentally sensitive areas. (24)

103. COMMENT: The standard for nitrates in the Pinelands should be lowered to 1,000 ug/l. (24)

104. COMMENT: The nitrate standard will undermine efforts by the Department and/or the Highlands Council to come up with septic densities to protect ground water and therefore eliminate one of the most important tools used to limit densities in environmentally sensitive areas. (24)

105. COMMENT: The Department's proposed weakening of the ammonia standard from 200 ug/l to 3000 ug/l is improper. This will lead to sprawl and over-development in rural areas, since it will allow for the massive expansion for community onsite wastewater systems. (24)

RESPONSE TO COMMENTS 100 THROUGH 105: Contrary to the commenter's assertion, the nitrate standard has not been weakened through this rulemaking. The specific ground water

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quality criteria for nitrate and ammonia were derived in accordance with the formulas established at N.J.A.C. 7:9C-1.7(c)4. The ground water in the Pinelands, designated as Class I-PL, uses the natural background ground water quality criteria. See N.J.A.C. 7:9C-1.7(b). The Department is exploring antidegradation alternatives to limit the impacts of development, and concurrently with the Ground Water Quality Standards (GWQS) proposal, the Department published a Request for Public Comment (see 36 N.J.R. 4400). The Department will review the comments received and amend the antidegradation provisions as appropriate in a future rulemaking.

106. COMMENT: The EPA-derived oral reference dose (RfD) value for 1,1-DCE is currently 0.05 milligrams per kilogram per day (mg/kg-day) based upon a detailed toxicological review that was subject to an independent peer review under EPA's IRIS program. EPA's RfD for 1,1-DCE was adopted in IRIS in August 2002. By comparison, the RfD obtained by the NJDWQI in 1987 and adopted by the Department is 0.0014 mg/kg-day, suggesting greater non-cancer toxicity than the EPA's current value by a factor of approximately 36. The NJDWQI-derived RfD for 1,1-DCE has probably never been subject to an independent peer review. In addition, the RfD does not reflect any consideration of toxicity data that have become available during the past 17 years. According to the EPA, its non-cancer RfD is an estimate of a daily oral exposure to the human population (including sensitive subgroups) that is likely to be without an appreciable risk of deleterious effects during a lifetime. Given that EPA considers its RfD for 1,1-DCE to be protective of human health, including sensitive subgroups, the Department does not need to establish a lower RfD in order to protect the citizens of NJ. (1, 2, 4, 8, 9, 12, 14, 18, 22)

107. COMMENT: Ignoring EPA's new carcinogen classification and weight of evidence for 1,1 dichloroethene (DCE) as well as the current verified reference dose (RfD), the Department used a 10-fold safety factor to derive the 0.001 mg/l criterion. However, this factor was applied to the old reference dose (0.0014 mg/kg/d) not the new verified RfD in IRIS (0.05 mg/kg/d). Based on the Department's methodology, the ground water criterion should be 0.35 mg/l using the 20 percent relative source contribution. Even if the 10-fold factor were applied, it would be 0.035 mg/l. EPA's DWEL is 2 mg/l for DCE using 100 percent relative source contribution. (21)

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RESPONSE TO COMMENTS 106 AND 107: The specific ground water quality criterion for 1,1-dichloroethene (DCE) is based on the current MCL developed by the New Jersey Drinking Water Quality Institute (NJDWQI) and was not updated as part of this rulemaking. The NJDWQI is currently reviewing the toxicity basis for the MCLs. Once the Department adopts new or revised MCLs, the Department will update the specific ground water quality criteria by notice of administrative change in accordance with N.J.A.C. 7:9C-1.7(c)5i. As indicated in Response to Comment 55, the Drinking Water Equivalent Levels are not used to develop health-based criteria for the Ground Water Quality Standards (GWQS) or the drinking water MCLs.

108. COMMENT: By not defining what constitutes a “synthetic organic chemical,” it is not clear which organic chemicals not listed in Appendix Table 1 and for which there are no interim specific criteria on the State’s website will default to the values in Appendix Table 2. The Department should define what constitutes a “synthetic organic chemical.” The Department should consider defining the term consistent with EPA Office of Ground Water and Drinking Water, which states that the term applies primarily to pesticides. (21)

RESPONSE: Synthetic Organic Chemicals (SOCs) is defined in the Ground Water Quality Standards (GWQS) at N.J.A.C. 7:9C-1.4. According to this definition, a SOC must contain at least one carbon atom and result from purposeful chemical synthesis. The Department does not believe that SOCs should be limited only to pesticides because there are numerous man-made compounds that qualify under the definition of SOC at N.J.A.C. 7:9C-1.4, and that may impact public health and the environment.

109. COMMENT: Use and enforcement of 100 ug/l (individual) and 500 ug/l (total) for synthetic organic chemicals (SOCs) is arbitrary. Unless these values can be scientifically defended in support of protection of human health-based criteria, they must be eliminated from the GWQS. Applying an interim generic criterion specific to an SOC is not appropriate. For example, the current specific ground water quality criterion for 4-methyl-2-pentanone (MIBK) is 400 ug/l. The Department eliminated the specific ground water quality criterion for MIBK based on the lack of toxicity data regarding this compound. However, in actuality, the elimination of a

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specific ground water quality criterion for MIBK, would result in a more stringent remediation standard, based on arbitrary default value of 100 ug/l as an interim specific SOC criterion. (6)

RESPONSE: The interim generic criteria listed in Appendix Table 2 are the default ground water quality criteria for synthetic organic chemicals. Where toxicity information is available to develop a specific criteria using the formulas at N.J.A.C. 7:9C-1.7(c)4, the Department may establish a specific criteria that is different from the values listed in Appendix Table 2. In the case of MIBK, on April 25, 2003, IRIS issued an update on April 25, 2003 indicating that an oral RfD cannot be developed because no critical effect was identified after sub-chronic exposure and no chronic oral studies were available. Based on this new information, the Department determined that the health-based criteria could no longer be supported. As a result, the criteria for MIBK reverted back to the interim generic criteria listed in Appendix Table 2. There are potentially thousands of SOCs that might otherwise not be regulated but for the default values set forth in Appendix Table 2. The use of default values in this instance, is consistent with the goals of the Water Pollution Control and the Water Quality Management Planning Act, which are to restore, enhance and maintain the chemical, physical and biological integrity of the waters.

110. COMMENT: Hydrogen sulfide is not an SOC. By definition, an SOC must contain at least one carbon atom, which hydrogen sulfide does not. Therefore, applying an interim generic criterion specific to an SOC is not appropriate. (6)

RESPONSE: In the Table summarizing the changes to the Ground Water Quality Standards (GWQS) at 36 N.J.R. 4382, the Department indicated that hydrogen sulfide would be deleted from Appendix Table 1 because of insufficient toxicity information and incorrectly indicated through a footnote that hydrogen sulfide would be regulated as an interim generic criterion. The Department agrees with the commenter that hydrogen sulfide is not a Synthetic Organic Compound. Accordingly, Hydrogen Sulfide will not be regulated pursuant to Appendix Table 2.

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111. COMMENT: The Department's policy directive concerning expanded use of market tools has the potential to undercut implementation of the GWQS and has not been properly subject to Administrative Procedure Act review. (10, 24)

RESPONSE: The comment does not address the GWQS. Rather, it articulates an objection to the Department's policy directive concerning the "expanded use of market tools." This policy directive is not the subject of the GWQS rulemaking initiative and is therefore beyond the scope of this adoption.

112. COMMENT: The Department has no legal basis or enabling authority to adopt the "Cleanup Star" Program or the Policy Directive, nor to allow private consultants to certify compliance with GWQS. (24)

RESPONSE: The comment concerns methods of certifying compliance with the GWQS. The GWQS rules do not contain any provisions regarding certification. The Technical Rules for Site Remediation (Technical Rules), N.J.A.C. 7:26E, do contain provisions regarding certification of compliance and thus, this comment is beyond the scope of this rulemaking effort.

113. COMMENT: The Department must review and subject to rulemaking, its "areawide brownfield reuse program." The goals of the directive will impact ground water, and must be consistent with GWQS policies, antidegradation requirements, GWQS classifications, and standards. In addition, while the goals are commendable, the directive lacks a legislative basis, and will most likely conflict with required antidegradation analysis. (10, 24)

RESPONSE: The comment concerns brownfield reuse. The GWQS do not deal with this issue and brownfield reuse is not the subject of this rulemaking initiative and is therefore beyond the scope of this proposal.

114. COMMENT: It is illegal to issue a no further action letter when a CEA has been established but ground water has not been cleaned up to meet applicable standards. The NFA

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may not be issued until the ambient ground water actually meets the GWQS. This is not authorized by and is inconsistent with the GWQS. (24)

115. COMMENT: The Department must eliminate its policy of issuing No Further Action letters for ground water when a Classification Exception Area has been established for a brownfield site and natural attenuation has been approved as the appropriate remedial action. The NFA should not be issued until the ambient ground water actually meets the GWQS. (10, 24)

RESPONSE to 114 and 115: These comments concern when and how the Department issues no further action letters. No further action letters are not a topic that is addressed in the GWQS. Rather, their issuance is governed by the Technical Rules, N.J.A.C. 7:26E. Accordingly, any comment regarding the issuance of NFAs is beyond the scope of the GWQS rulemaking effort.

116. COMMENT: The Department's policy directive concerning the "Cleanup Star" program has not been properly subject to Administrative Procedure Act review. (10)

117. COMMENT: The Department's exemption of sites from natural resource damages on the basis of qualifying for the "Cleanup Star" program is ultra vires, arbitrary and capricious. (24)

118. COMMENT: The Department's exclusion of sites from natural resource damages claims on the basis of an alleged impediment to cleanup or redevelopment is ultra vires, arbitrary and capricious. (24)

119. COMMENT: Policy 2002-003 has not been adopted via rulemaking procedures and provides no opportunity for public participation in implementation, and therefore can not be applied as a regulatory criterion. (24)

120. COMMENT: In practice, ground water is not being cleaned up at a significantly large percentage of sites with CEAs. Failure to restrict the use of CEAs has the potential to limit the effectiveness of the State's natural resource damages program. (10)

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121. COMMENT: As requested by the Industrial Sites Remediation Act's Risk Assessment and Risk Management Study Commission, the Department should establish a Risk Assessment and Risk Management Science Advisory Board to guide the Department and Governor in human health-related matters regarding site remediation, site re-utilization, and evaluation of future risk assessment policy. (1, 2, 4, 8, 9, 12, 14, 18, 22)

RESPONSE TO COMMENTS 116 THROUGH 121: These comments regarding the "Cleanup Star" program, the areawide brownfield reuse program, Policy directive 2002-003, the Risk Assessment and Risk Management Study Commission and its findings, remediation standards, no further action letters, and natural resource damages are beyond the scope of this proposal.

Federal Standards Analysis

Executive Order No. 27 (1994) and P.L. 1995, c.65 (amending N.J.S.A. 52:14B-1 et seq.) require State agencies that adopt, readopt or amend rules that exceed any Federal standards or requirements to include in the rulemaking document a Federal standards analysis.

The Ground Water Quality Standards (GWQS) provide the basis for protection of ambient ground water quality in New Jersey by establishing constituent standards for ground water pollutants. These constituent standards are applicable to the development of effluent limitations and discharge requirements pursuant to the New Jersey Pollutant Discharge Elimination System (NJPDDES), N.J.A.C. 7:14A; to develop minimum ground water remediation standards pursuant to the Brownfield and Contaminated Site Remediation Act, N.J.S.A. 58:10B-1 et seq.; and other requirements and regulatory actions applicable to discharges that cause or may cause pollutants to enter the ground waters of the State. The authority for setting these standards comes solely from New Jersey law and has no Federal counterpart. The GWQS are not promulgated under the authority of, or in order to implement, comply with, or participate in any program established under Federal law or under a State statute that incorporates or refers to Federal law, Federal standards or Federal requirements. The GWQS do not contain any standards

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or requirements that exceed those required by Federal law. The GWQS provides the associated ground water standards that are relevant to the New Jersey Underground Injection Control program, RCRA D, and RCRA C ground water monitoring programs at 40 CFR 144-146, 258, and 264. These Federal programs are implemented through the NJPDES program.

Full text of the readoption may be found in the New Jersey Administrative Code at N.J.A.C. 7:9C.

Full text of the adopted amendments follows (additions indicated in boldface with asterisks ***thus***; deletions from proposal indicated in brackets with asterisks ***[thus]***):

(No change from proposal.)

Based on consultation with staff, I hereby certify that the above statements, including the Federal Standards Analysis addressing the requirements of Executive Order No. 27 (1994), permits the public to understand accurately and plainly the purposes and expected consequences of this readoption and recodification with amendments. I hereby authorize this readoption and recodification with amendments.

DATE: _____

Bradley M. Campbell, Commissioner
Department of Environmental Protection