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ENVIRONMENTAL PROTECTION

WATER RESOURCE MANAGEMENT

DIVISION OF WATER MONITORING AND STANDARDS

Ground Water Quality Standards; Discharges of Petroleum and Other Hazardous

Substances Rules

Proposed Amendments: N.J.A.C. 7:1E Appendix A and 7:9C-1.7 and 7:9C Appendix

Authorized By: Bob Martin, Commissioner, Department of Environmental Protection.

Authority: N.J.S.A. 13:1D-1 et seq., 13:1D-125 through 133, 13:1K-1 et seq., 58:10-23.11, 58:10-46 through 50, 58:10A-1 et seq., and 58:11A-1 et seq.

Calendar Reference: See Summary below for explanation of exception to calendar requirement.

DEP Docket Number: 03-17-03.

Proposal Number: PRN 2017-051.

A **public hearing** concerning this notice of proposal will be held on Friday, May 5, 2017, at 10:00 A.M. to 12:00 P.M. at:

New Jersey Department of Environmental Protection

Public Hearing Room, 1st Floor

401 East State Street

Trenton, NJ 08625

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Directions to the public hearing room are available on the Department of Environmental Protection's website at www.nj.gov/dep/where.htm.

Submit comments by June 2, 2017, electronically at www.nj.gov/dep/rules/comments. Each comment should be identified by the applicable N.J.A.C. citation, with the commenter's name and affiliation following the comment.

The Department encourages electronic submittal of comments. In the alternative, comments may be submitted on paper to:

Colin Emerle, Esq.

Attn.: DEP Docket No. 03-17-03

Office of Legal Affairs

Department of Environmental Protection

401 East State Street, 7th Floor

Mail Code 401-04L

PO Box 402

Trenton, New Jersey 08625-0402

Written comments may also be submitted at the public hearing. It is requested (but not required) that anyone submitting oral testimony at the public hearing provide a copy of any prepared text to the stenographer at the hearing.

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This rule proposal, as well as a Basis and Background document containing technical detail in support of the proposed amendments, may be viewed or downloaded from the Department's website at www.nj.gov/dep/rules.

The agency proposal follows:

Summary

As the Department has provided a 60-day comment period on this notice of proposal, this notice is exempted from the rulemaking calendar requirement pursuant to N.J.A.C. 1:30-3.3(a)5.

The Department is proposing amendments to the Ground Water Quality Standards (GWQS), N.J.A.C. 7:9C, to incorporate interim specific ground water quality criteria, interim practical quantitation levels (PQLs), and interim standards for 23 constituents of ground water as specific ground water quality criteria, PQLs, and standards. The Department is also proposing amendments providing that the Department may, in the appropriate case, use alternative values and/or modified equations in the derivation of interim specific and specific ground water quality criteria in order to ensure the criteria reflect the best available science. The Department is also proposing to add one of the constituents (specifically, perfluorononanoic acid or PFNA) to the List of Hazardous Substances at N.J.A.C. 7:1E Appendix A of the Discharges of Petroleum and Other Hazardous Substances rules.

Interim Specific Ground Water Quality Criteria (Class II-A) Proposed to be Incorporated as Specific Ground Water Quality Criteria

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The GWQS establish the designated uses for all the ground waters of the State, classify the ground waters based on the designated uses, and specify the ground water quality criteria that must be met to support the designated uses. N.J.A.C. 7:9C-1.7 sets forth the ground water quality criteria applicable to each class and subclass of ground water identified and described in the GWQS at N.J.A.C. 7:9C-1.5. The ground water quality criteria for Class II-A ground waters, which are ground waters for which the primary designated use is potable water supply, are established under N.J.A.C. 7:9C-1.7(c). The specific ground water quality criteria for constituent compounds and parameters (such as color and pH) in Class II-A ground water are listed in Appendix Table 1.

The Department may derive interim specific criteria for constituents not listed in Appendix Table 1 using the process outlined in the rule. The interim specific criteria and the supplemental information used in their derivation are made available to the public on the Department's website in the period before they are replaced by rule (that is, listed in Appendix Table 1).

The Department establishes interim specific and specific ground water quality criteria for ground water constituents in two ways: (1) where a maximum contaminant level (MCL) for a constituent is promulgated in the Department's Safe Drinking Water Act rules (N.J.A.C. 7:10), the health-based level used to establish the MCL is the specific ground water criterion for that constituent; and (2) for all other constituents, the Department develops criteria based on the weight of evidence available regarding the particular constituent's carcinogenicity, toxicity, public welfare, or organoleptic effects, as appropriate for the protection of potable water. The

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equations, data sources, and conventions for deriving interim specific and specific ground water quality criteria are set forth in the rule (see N.J.A.C. 7:9C-1.7(c)4).

The interim specific criteria for 23 ground water constituents are currently posted to the Department's website in a table at http://www.state.nj.us/dep/wms/bears/gwqs_interim_criteria_table.htm. The website table includes the same information about each of the interim specific ground water criteria as is included for each of the specific criteria promulgated in rule in Appendix Table 1, that is, the chemical name of the constituent, its Chemical Abstract Services Registry Number (CASRN), the interim specific criterion, and PQL (derived in accordance with N.J.A.C. 7:9C-1.9(c)3). For each constituent, the higher of the PQL and the interim specific criterion is identified because the higher of the two values is the applicable ground water quality standard, in accordance with N.J.A.C. 7:9C-1.9(c). Since, as noted previously, the supplemental information used in the derivation of the criteria is required to be posted when an interim specific criterion is established, the website table also includes, for each constituent, the effective date of the interim specific criterion and links to the corresponding fact sheet and/or technical support document.

The Department is proposing to replace the 23 interim specific ground water quality criteria in the website table with specific ground water quality criteria in the rule at Appendix Table 1, in accordance with N.J.A.C. 7:9C-1.7(c)2ii. The Department has reevaluated the interim specific ground water quality criteria and interim PQLs associated with them to ensure that they reflect the best available science. The Basis and Background document for this notice of proposal, which as noted previously is available from the Department's website, reflects the results of this reevaluation and explains the derivation of the proposed specific ground water

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quality criterion for each of the 23 constituents. Based on its reevaluation, the Department has determined that the criteria and PQLs for all but three of the constituents remain valid. With respect to these three, sufficient information is available to update the ground water quality criterion or PQL, as noted below and detailed in the Basis and Background document.

2-Hexanone. The specific ground water quality criterion for 2-hexanone is proposed as 40 micrograms per liter ($\mu\text{g/L}$), to replace the interim specific criterion of 300 $\mu\text{g/L}$. The PQL is proposed at one $\mu\text{g/L}$, which is the same as the interim PQL. As the higher of the two values is the specific criterion, the applicable ground water quality standard will be 40 $\mu\text{g/L}$.

Caprolactam. The PQL for caprolactam is proposed as 60 $\mu\text{g/L}$ (62.5 rounded pursuant to N.J.A.C. 7:9C-1.9(c)3i), to replace the interim PQL of 5,000 $\mu\text{g/L}$. The specific criterion is proposed as 4,000 $\mu\text{g/L}$ (3,500 rounded pursuant to N.J.A.C. 7:9C-1.7(c)4iii). As the higher of the two values is the specific criterion, the applicable ground water quality standard will be 4,000 $\mu\text{g/L}$.

Dinitro-o-cresol. The PQL for 4,6-dinitro-o-cresol is proposed as 0.03 $\mu\text{g/L}$, to replace the interim PQL of one $\mu\text{g/L}$. The specific criterion is proposed as 0.7 $\mu\text{g/L}$, which is the same as the interim specific criterion. As the higher of the two values is the specific criterion, the applicable ground water quality standard will be 0.7 $\mu\text{g/L}$.

With respect to the constituent strontium, the Department is proposing a specific criterion that differs from the interim specific criterion posted in the website table. In the website table, the interim specific criterion for strontium is shown as the derived value of 1,500 $\mu\text{g/L}$; however, the interim ground water quality standard is shown as 2,000 $\mu\text{g/L}$ (the derived interim specific criterion of 1,500 $\mu\text{g/L}$ rounded pursuant to N.J.A.C. 7:9C-1.7(c)4iii). In Appendix Table 1, the

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Department is proposing the specific criterion for strontium as 2,000 $\mu\text{g/L}$ (the rounded value).

The applicable ground water quality standard continues to be 2,000 $\mu\text{g/L}$ (the higher of the specific criterion of 2,000 $\mu\text{g/L}$ and the PQL of five $\mu\text{g/L}$).

With respect to the constituent perchlorate, the Department is proposing a PQL that differs from the interim PQL posted in the website table. In the website table, the interim PQL for perchlorate is shown as the derived value of 2.7 $\mu\text{g/L}$. The interim ground water quality standard is shown as five $\mu\text{g/L}$ (the higher of the interim specific criterion of five $\mu\text{g/L}$ and the PQL of 2.7 $\mu\text{g/L}$). In Appendix Table 1, the Department is proposing the PQL for perchlorate as three $\mu\text{g/L}$ (2.7 rounded pursuant to N.J.A.C. 7:9C-1.9(c)3i). The applicable ground water quality standard continues to be five $\mu\text{g/L}$ (the higher of the specific criterion of five $\mu\text{g/L}$ and the PQL of three $\mu\text{g/L}$).

The Department is also proposing amendments at Appendix Table 1 to delete the symbol for micrograms per liter ($\mu\text{g/L}$) in the fifth column because the explanation of terms specifies which units apply, replace the letter u with the symbol for micro (μ) where applicable, add “NA” (not available for this constituent) in blank cells where no data are available for the constituent, correct the reference to the Safe Drinking Water Act rules, and remove several terms and unit references from the “Explanation of Terms” because they are not used in the table.

Alternative Values and Modified Equations for the Derivation of Specific and Interim Specific Ground Water Quality Criteria

As explained above, the Department uses the equations, data sources, and conventions at N.J.A.C. 7:9C-1.7(c)4 to derive the interim specific or specific ground water quality criteria for

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Class II-A constituents for which an MCL has not been promulgated in the Department's Safe Drinking Water Act rules, N.J.A.C. 7:10. The rule sets default values for the variables in the equations, that is, for the components of the exposure assumption (average adult weight and assumed daily water consumption), for upper bound lifetime excess cancer risk and carcinogenic slope factor (referred to as a toxicity factor) if the constituent is classified as a carcinogen, and for relative source contribution, reference dose (toxicity factor), and uncertainty factor if the constituent is classified as a non-carcinogen or a carcinogen for which no carcinogenic slope factor is applicable. For both equations, the default toxicity factor is the value in USEPA's Integrated Risk Information System (IRIS) database.

Use of alternative values in the equations

As the Department explained in 2004, when it proposed these equations and default values (see 36 N.J.R. 4374(b), 4377), there are instances where criteria will be generated based on values other than the default values, for example, because the IRIS database does not have a toxicity factor for a particular constituent, or if the risk posed by a particular constituent is greater for children than for adults, such that the default exposure assumption is not appropriate. Further, USEPA guidance recommends the use of values specific to the constituent being evaluated, when available, because doing so strengthens the scientific basis for the derived criterion. See, for example, Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health (USEPA, 2000)

<https://nepis.epa.gov/Exe/ZyPDF.cgi/20003D2R.PDF?Dockey=20003D2R.PDF> (explaining USEPA's methodology for scientific human health assessments used by USEPA in developing

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recommended water quality criteria pursuant to the Federal Clean Water Act, as well as in risk assessments of drinking water contaminants pursuant to the Federal Safe Drinking Water Act); and <https://www.epa.gov/iris/basic-information-about-integrated-risk-information-system#guidance> (description of USEPA cancer guidelines, risk assessment guidelines, and risk assessment guidance documents).

Proposed new N.J.A.C. 7:9C-1.7(c)4iv provides that the Department will derive ground water quality criteria using the default values set forth in the equations at N.J.A.C. 7:9C-1.7(c)4i and ii, unless the Department determines that alternative values are more appropriate for the derivation of a particular specific or interim specific criterion. The determination will be made based on constituent-specific factors and/or data, as well as applicable USEPA guidance, generally accepted scientific evidence and methodologies, and/or applicable peer reviewed sources of information.

For example, for a given ground water constituent, the Department may determine to use an alternative value for the carcinogenic slope factor or reference dose in the equation at N.J.A.C. 7:9C-1.7(c)4i or ii because the IRIS database does not include a value (because one was not developed by USEPA) or the value in the IRIS database does not reflect current science. As another example, the Department may determine that the body weight and drinking water consumption rate of an infant or child is more appropriate than the body weight and drinking water consumption rate of an adult because the risk posed by the constituent is greater for children than for adults.

The Department might also determine to use a chemical-specific Relative Source Contribution (RSC) rather than the default RSC value of 20 percent in the equation at N.J.A.C.

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7:9C-1.7(c)4ii for non-carcinogens or carcinogens for which no carcinogenic slope factor is applicable. The RSC is a factor that is used in the development of MCLs based on non-carcinogenic effects to account for a person's exposure to the constituent from drinking water as compared to other sources including food, soil, air, and consumer products. The purpose of the RSC is to prevent total exposure from all sources from exceeding the reference dose. The default RSC of 20 percent means that, in the absence of a chemical-specific RSC, 20 percent of the reference dose is attributed to drinking water and 80 percent is attributed to non-drinking water sources. However, according to USEPA guidance, a higher, chemical-specific RSC should be used when sufficient documentation of non-drinking water sources is available showing that less than 80 percent of the reference dose comes from non-drinking water sources.

Use of modified equations

Rather than substitute alternative values for the default values in the equations at N.J.A.C. 7:9C-1.7(c)4i and ii, the Department may determine to use a modified equation because, based upon the weight of evidence available regarding a constituent's carcinogenicity, toxicity, organoleptic effects, or mode of action within the body, a criterion derived using the applicable equation is not adequately protective of human health. The Department is proposing new N.J.A.C. 7:9C-1.7(c)4v to provide that the Department may modify the equations at N.J.A.C. 7:9C-1.7(c)4i or ii if it determines that a modification to the equation is appropriate for purposes of deriving a particular specific or interim specific ground water quality criterion. The determination will be made based on constituent-specific factors and/or data, as well as applicable USEPA guidance, generally accepted scientific evidence and methodologies, and/or

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applicable peer reviewed sources of information. For example, the Department might determine to modify the equation at N.J.A.C. 7:9C-1.7(c)4ii if it is not possible to derive a reference dose for non-carcinogenic effects because the data indicate that there is no threshold for the effects (meaning, the effects are evident at any dose level, even the lowest level).

The use of alternative values and modified equations when necessary to adequately protect human health is consistent with existing N.J.A.C. 7:9C-1.9(c)3ii, which states that the Department shall establish ground water quality criteria (for constituents other than those for which an MCL has been established) based upon the weight of evidence available regarding each constituent's carcinogenicity, toxicity, public welfare, or organoleptic effects, as appropriate for the protection of potable water. The proposed new provisions both specify that the Department will explain the basis for using any alternative value or modified equation in supplemental information accompanying a new or revised interim specific ground water quality criterion made available to the public on the Department's website or in the Summary statement of the rulemaking for a new or revised specific ground water quality criterion.

Proposed Addition of PFNA to N.J.A.C. 7:1E, Appendix A: List of Hazardous Substances

N.J.A.C. 7:1E Appendix A to the Discharges of Petroleum and Other Hazardous Substances (DPHS) rules lists all the substances that, in addition to petroleum and petroleum products, are considered hazardous substances under the Spill Compensation and Control Act (Spill Act), N.J.S.A. 58:10-23.11 et seq. At this time, the Department is proposing to add perfluorononanoic acid (PFNA) to the DPHS Appendix A List of Hazardous Substances.

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PFNA is a fully fluorinated carboxylic acid historically used as a processing aid in the emulsion process used to make fluoropolymers, which are high-performance plastics that are resistant to harsh chemicals and high temperatures. PFNA is extremely persistent in the environment and highly soluble and highly mobile in water. PFNA is a developmental toxicant, liver toxicant, and immune system toxicant that bioaccumulates in humans.

The Spill Act establishes a comprehensive scheme to control the transfer and storage of hazardous substances and provides strict liability for cleanup and removal costs as a result of any discharge of a hazardous substance. A related statute, the Brownfield and Contaminated Site Remediation Act, provides that any person who has such liability pursuant to the Spill Act, including the discharger of a hazardous substance or a person in any way responsible for a hazardous substance that is discharged, is required to remediate the discharge of the hazardous substance. N.J.S.A. 58:10B-1.3a. The Spill Act also provides a fund for compensating businesses and other persons damaged by a discharge. To implement the Spill Act, the Department has promulgated three sets of rules: (i) rules establishing reporting, design, operational, and maintenance requirements applicable to major facilities (facilities and vessels having storage capacity for hazardous substances at or above certain defined thresholds) in the DPHS rules at N.J.A.C. 7:1E; (ii) rules regarding the processing of claims under the Spill Act for damages from the discharge or threatened discharge of a hazardous substance in the Processing of Damage Claims Pursuant to the Spill Compensation and Control Act rules (Spill Act Damage Claims rules) at N.J.A.C. 7:1J; and (iii) rules for the remediation of discharges in the Administrative Requirements for the Remediation of Contaminated Sites at N.J.A.C. 7:26C.

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The addition of PFNA to the DPHS Appendix A List of Hazardous Substances will render the owners and operators of major facilities that handle PFNA subject to all of the discharge prevention and control requirements of the Spill Act and DPHS rules, enable funding of PFNA remediation under the Spill Act, enable payment of damage claims regarding PFNA discharges pursuant to the Spill Act Damage Claims rules, and subject persons with Spill Act liability to the requirement to remediate discharges of PFNA.

Through USEPA's 2010/2015 PFOA Stewardship Program, eight major leading companies in the per- and polyfluoroalkyl substances (PFASs) industry have phased out the use of PFASs, which include PFNA (see <http://www.epa.gov/oppt/pfoa/pubs/stewardship/>). However, because environmental contamination caused by PFNA is anticipated to continue for the foreseeable future due to its persistence, as well as formation from precursor compounds, in the environment, the Department has determined that PFNA should be included in the DPHS Appendix A List of Hazardous Substances.

Social Impact

The Department anticipates that the proposed amendments to the GWQS and the DPHS Appendix A List of Hazardous Substances will have an overall positive social impact.

In New Jersey, approximately 40 percent of the potable water comes from ground water sources. Of the estimated total State population of 8.9 million, about 1.8 million people rely on ground water from about 2,900 public water supply wells, and about 1.2 million people rely on ground water from about 385,000 private domestic potable wells.

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The proposed amendments to the GWQS incorporating interim specific ground water quality criteria for 23 constituents of ground water as specific ground water quality criteria will ensure that current and scientifically based standards to protect, maintain, and restore ground water quality are in place. The proposed amendments that provide that the Department may use alternative values and modified equations in the derivation of specific and interim specific ground water quality criteria will provide appropriate flexibility for the Department to derive standards that are most protective of human health.

There will be a positive social impact from the proposed addition of PFNA to the DPHS Appendix A List of Hazardous Substances because any major facility storing or handling PFNA will be required to comply with the Spill Act and DPHS rules with respect to discharge prevention and control; persons with Spill Act liability will be required to remediate discharges of PFNA; the costs of remediation of PFNA discharges will be able to be funded using Spill Fund monies in accordance with the Spill Act; and damage claims resulting from PFNA discharges will be able to be paid under the Spill Act.

Economic Impact

The Department anticipates that the proposed amendments to the GWQS and the DPHS Appendix A List of Hazardous Substances will have an overall positive economic impact.

As explained in the Summary above, the proposed ground water quality standard for three constituents – 2-hexanone, caprolactam, and 4,6-dinitro-o-cresol – will be lower, and thus more stringent, than the corresponding interim ground water quality standard now in effect. As

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these are health-based standards and the proposed amendments are the result of additional information about health effects from exposure to these compounds, the public health will continue to be protected and costs related to potential health impacts due to exposure to these compounds in the environment, limited. However, the proposed standards, because they are more stringent than the interim standards, may result in additional costs related to environmental cleanups or treatment of water to be discharged under a New Jersey Pollutant Discharge Elimination System (NJPDDES) ground water discharge permit. The actual economic impact on persons remediating contaminated sites, or on facilities discharging to ground water pursuant to a NJPDDES permit, is site-specific and will depend on many factors, such as the increase in the portion of the plume that must be remediated, the volume and characteristics of wastewater being discharged, the contaminants in the wastewater or ground water, the number of additional monitoring wells required, and the type of treatment currently being implemented.

As of December 31, 2016, there were 14,357 active site remediation cases in New Jersey. Ground water contamination has been found in approximately 60 percent of those cases. The three more stringent ground water quality standards will be applied to all new cases in which any one or more of the three constituents is found, and to those existing cases in which any one or more of the three constituents is found and the person responsible for conducting the remediation has not obtained a Department-approved or licensed site remediation professional (LSRP)-certified remedial action work plan (RAW) or similar plan that describes the extent of contamination at a site and the remedial action to be implemented to address that contamination by the time these amendments to the GWQS are promulgated.

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As of December 31, 2016, of the 14,357 active site remediation cases, there were no active site remediation cases in which caprolactam was detected at concentrations above either the interim specific ground water quality standard or the proposed specific ground water quality standard. There were 13 active cases in which 2-hexanone was detected at concentrations between the interim and the proposed standard and the person responsible for conducting the remediation had not obtained an approved or certified RAW. There were two cases in which 4,6-dinitro-o-cresol was detected at concentrations between the interim and proposed standard and the person responsible for conducting the remediation had not obtained an approved or certified RAW. In all these cases, application of the proposed revised ground water quality standards might necessitate remediation of a more extensive area of ground water contamination, which could result in the person responsible for conducting the remediation incurring additional costs, for instance, for additional monitoring wells, additional sampling, and treatment of additional ground water. Because none of these three proposed ground water quality standards will be more stringent than the currently applicable interim standard by an order of magnitude, the "order of magnitude" provisions of the Brownfield and Contaminated Site Act, N.J.S.A. 58:10B-12(j) and -13(e), which would require additional remediation, will not be triggered.

If any existing facility that is deemed a major facility under the DPHS rules uses or stores PFNA, the facility would potentially incur the costs relating to preparing and submitting discharge prevention, containment and countermeasure plans, and discharge cleanup and removal plans; secondary containment for storage tanks, pipes, and process areas; and related requirements with respect to the use or storage of PFNA. The Department does not anticipate that any existing facilities that are not major facilities would be subject to the DPHS

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requirements, since the use of PFNA has been phased out pursuant to USEPA's 2010/2015 PFOA Stewardship Program (see the Summary above); the Department, therefore, does not anticipate future economic impacts related to use or storage of PFNA at such facilities.

The addition of PFNA to the DPHS Appendix A List of Hazardous Substances will, in accordance with the Spill Act, enable a person whose property has been damaged by a PFNA discharge to seek reimbursement from the Spill Fund for the cleanup and removal costs incurred in remediating the PFNA contamination, provided the person is not the party responsible for the discharge. Listing PFNA will also enable the Department to use Spill Fund monies, as necessary, to conduct remediation, and to undertake cost recovery actions against the party responsible for the discharge.

Environmental Impact

The proposed amendments to the GWQS and the DPHS Appendix A List of Hazardous Substances will have a positive environmental impact.

As noted in the Social Impact above, the proposed amendments to the GWQS incorporating interim specific ground water quality criteria for 23 constituents of ground water as specific ground water quality criteria will ensure that current and scientifically based standards to protect, maintain, and restore ground water quality are in place. The proposed amendments that provide that the Department may use alternative values and modified equations in the derivation of specific and interim specific ground water quality criteria will provide appropriate flexibility for the Department to derive standards that are most protective of human health. The proposed ground water quality standard for three constituents – 2-hexanone, caprolactam, and 4,6-dinitro-

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o-cresol – will be lower, and thus more stringent, than the corresponding interim ground water quality standard now in effect. Consequently, remediation required to achieve the more stringent standard will reduce potential adverse impacts to public health and the environment from these contaminants in the ground water.

The proposed amendment adding PFNA to the DPHS Appendix A List of Hazardous Substances will have a positive environmental impact because, pursuant to the Spill Act, the Department will have authority to direct persons with Spill Act liability to clean up and remove discharges of PFNA, and enable the Department to use Spill Fund monies as necessary to conduct remediation, and to undertake cost recovery actions against the party responsible for the discharge. In addition, persons whose property has been damaged by a PFNA discharge for which they are not responsible might be more likely to undertake remediation of the contamination because they will be able to seek reimbursement from the Spill Fund for the remediation costs.

Federal Standards Statement

Executive Order 27 (1994) and N.J.S.A. 52:14B-1 et seq. (P.L. 1995, c. 65), require that State agencies that adopt, readopt, or amend State rules that exceed any Federal standards or requirements include in the rulemaking document a Federal standards analysis.

The proposed amendments to the GWQS that incorporate interim specific ground water quality criteria for 23 constituents of ground water as specific ground water quality criteria, and that provide that the Department may use alternative values and modified equations in the derivation of specific and interim specific ground water quality criteria, do not exceed any

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Federal standards or requirements. The authority for the GWQS 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, standards, or requirements.

The DPHS rules 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. While there are Federal regulations promulgated pursuant to the Federal Water Pollution Control Act and the Comprehensive Environmental Response, Compensation and Liability Act that govern discharge prevention and reporting that are generally analogous to the DPHS rules, PFNA is not among the substances to which those Federal programs apply. The Department has determined that, because PFNA in the environment poses an unacceptable risk to public health, it is appropriate to include PFNA on the DPHS Appendix A List of Hazardous Substances. Doing so will enable the Department to, in accordance with the Spill Act, direct persons with Spill Act liability to remediate discharges of PFNA, use Spill Fund monies as necessary to conduct remediation, and undertake cost recovery actions against the party responsible for the discharge.

Jobs Impact

The Department evaluated this rulemaking to determine the impact of the proposed amendments to the GWQS and the DPHS Appendix A List of Hazardous Substances on job creation or retention in the State. The Department does not anticipate that the proposed amendments will impact employment. As discussed in the Economic Impact above, the

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implementation of the three proposed ground water quality standards that are more stringent than the existing interim ground water quality standards might result in additional costs for remediation; however, those costs will be site-specific and the resultant effect, if any, on employment would depend on the business operation decisions of the persons responsible for conducting the remediation. Similarly, any additional costs for facilities that handle or store PFNA, as described in the Economic Impact above, and the resultant effect, if any, on employment would likewise depend on the business operation decisions of the facilities.

Agriculture Industry Impact

In accordance with N.J.S.A. 52:14B-4(a)2, the Department has reviewed the proposed amendments to the GWQS and the DPHS Appendix A List of Hazardous Substances to determine the nature and extent of the impact of the proposed amendments on the agriculture industry. The proposed ground water quality standards for three constituents – 2-hexanone, caprolactam, and 4,6-dinitro-o-cresol – will be lower, and thus more stringent, than the corresponding interim ground water quality standards now in effect; however, none of the three constituents is used in agriculture and, therefore, there will be no impact to the agriculture industry. Similarly, because PFNA is not used in agriculture, its addition to the DPHS Appendix A List of Hazardous Substances will have no impact on the agriculture industry.

Regulatory Flexibility Analysis

As required by the New Jersey Regulatory Flexibility Act, N.J.S.A. 52:14B-16 et seq., the Department has evaluated any reporting, recordkeeping, and other compliance requirements

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that the proposed amendments to the GWQS and the DPHS Appendix A List of Hazardous Substances would impose on small businesses. The Regulatory Flexibility Act defines the term "small business" as any business that is a resident in the State, is independently owned and operated and not dominant in its field, and employs fewer than 100 full-time employees.

A small business responsible for conducting remediation of one of the ground water constituents for which the proposed ground water quality standard will be more stringent than the interim standard might have to conduct additional remediation to comply with the new standard, including the associated recordkeeping and reporting requirements. However, the risk to public health posed by the contamination is the same whether or not the person responsible for conducting the remediation is a small business. Consequently, the Department's rules governing site remediation do not provide any reduction in cleanup requirements based on small business status, except that those small businesses that meet the definition in the New Jersey Regulatory Flexibility Act, as well as the definition of small business set forth in the Administrative Requirements for the Remediation of Contaminated Sites at N.J.A.C. 7:26C-1.3, are not required to post financial assurance when engineering controls are installed as part of a remedial action.

The proposed amendment adding PFNA to the DPHS Appendix A List of Hazardous Substances will affect any small business that meets the threshold hazardous substance storage capacity requirements in the Spill Act and DPHS rules because it uses or stores PFNA. The Department expects there will be no new facilities (including any that are small businesses) that will be deemed major because of the addition of PFNA to the hazardous substance list. However, because of the risk to public health of a discharge of a hazardous substance, the

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discharge notification requirements of the DPHS rules that are applicable to any person responsible for a discharge will also apply to any small businesses responsible for a discharge of PFNA.

Housing Affordability Impact Analysis

In accordance with N.J.S.A. 52:14B-4, the Department has evaluated this rulemaking to determine the nature and extent of the impact, if any, of the proposed amendments to the GWQS and the DPHS Appendix A List of Hazardous Substances on the affordability of housing. The proposed amendments to the GWQS, which will ensure that current and scientifically based standards are in place for purposes of discharge to ground water permitting and ground water remediation, are extremely unlikely to evoke a change in the average costs associated with housing. To the extent the proposed amendment adding PFNA to the DPHS Appendix A List of Hazardous Substances would trigger additional discharge prevention and planning requirements for facilities subject to the DPHS rules, there would be no impact on the average costs of housing. To the extent the proposed amendment adding PFNA to the DPHS Appendix A List of Hazardous Substances makes it possible to use Spill Fund monies to cover the costs of remediating PFNA contamination, the Department does not expect there would be a change in the average costs associated with housing.

Smart Growth Development Impact Analysis

In accordance with N.J.S.A. 52:14B-4, the Department has evaluated this rulemaking to determine the impact, if any, of the proposed amendments to the GWQS and the DPHS

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Appendix A List of Hazardous Substances on housing production in Planning Areas 1 or 2, or within designated centers, under the State Development and Redevelopment Plan. The proposed amendments to the GWQS, which will ensure that current and scientifically based standards are in place for purposes of discharge to ground water permitting and ground water remediation, are extremely unlikely to evoke a change in housing production in Planning Areas 1 or 2, or within designated centers. To the extent the proposed amendment adding PFNA to the DPHS Appendix A List of Hazardous Substances would trigger additional discharge prevention and planning requirements for facilities subject to the DPHS rules, there would be no change in housing production in Planning Areas 1 or 2, or within designated centers. To the extent the proposed amendment adding PFNA to the DPHS Appendix A List of Hazardous Substances makes it possible to use Spill Fund monies to cover the costs of remediating PFNA contamination, the Department does not expect there would be a change in housing production in Planning Areas 1 or 2, or within designated centers.

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

CHAPTER 1E

DISCHARGES OF PETROLEUM AND OTHER HAZARDOUS SUBSTANCES

APPENDIX A

LIST OF HAZARDOUS SUBSTANCES

(Alphabetical Order)

| <u>Name</u> | <u>CAS Number</u> |
|--------------------------------------|-------------------|
| ... | |
| Perfluorononanoic acid (PFNA) | 375-95-1 |
| ... | |

*In accordance with N.J.A.C. 7:1E-1.7(b)2, this substance is not considered a hazardous substance for purposes of this chapter.

LIST OF HAZARDOUS SUBSTANCES

(Listed by CAS Number)

| <u>CAS Number</u> | <u>Name</u> |
|-------------------|--------------------------------------|
| ... | |
| 375-95-1 | Perfluorononanoic acid (PFNA) |
| ... | |

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CHAPTER 9C

GROUND WATER QUALITY STANDARDS

SUBCHAPTER 1. GROUND WATER QUALITY STANDARDS

7:9C-1.7 Ground water quality criteria

(a) – (b) (No change.)

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

1. – 3. (No change.)

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

i. – iii. (No change.)

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

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accordance with (c)2i above, or in the Summary statement of the rulemaking for a specific criterion.

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

5. – 6. (No change.)

(d) – (i) (No change.)

(Agency Note: the column headings of N.J.A.C. 7:9C Appendix Table 1 below are shown in permanent boldface and are not intended to indicate new text.)

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APPENDIX

Table 1

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

| <u>Constituent</u> | <u>CASRN</u> | <u>Ground Water Quality Criterion*</u> | <u>Practical Quantitation Level (PQL)*</u> | <u>Higher of PQL and Ground Water Quality Criterion [(µg/L)]*</u> |
|------------------------------------|--|--|---|--|
| ... | | | | |
| Asbestos | 1332-21-4 | $7 \times 10^6 \text{ f/L} > 10 [\mu\text{m}^a] \mu\text{m}^a$ | $10^6 \text{ f/L} > 10 [\mu\text{m}^a] \mu\text{m}^a$ | $7 \times 10^6 \text{ f/L} > 10 [\mu\text{m}^a] \mu\text{m}^a$ |
| ... | | | | |
| Caprolactam | 105-60-2 | 4,000 | 60 | 4,000 |
| ... | | | | |
| 1-Chloro-1,1-difluoroethane | 75-68-3 | 100,000 | 500 | 100,000 |
| ... | | | | |
| Cobalt | 7440-48-4 | 100 | 0.5 | 100 |
| Color | NA | 10 CU | 5 CU | 10 CU |
| ... | | | | |
| Cresols (mixed isomers) | 95-48-7 108-39-4 106-44-5 | 50 | 0.1 | 50 |
| ... | | | | |
| 1,1-Dichloro-1-fluoroethane | 1717-00-6 | 500 | 30 | 500 |
| ... | | | | |
| Dichlormid | 37764-25-3 | 600 | 50 | 600 |
| ... | | | | |
| 4,6-Dinitro-o-cresol | 534-52-1 | 0.7 | 0.03 | 0.7 |
| ... | | | | |
| 1,4-Dioxane | 123-91-1 | 0.4 | 0.1 | 0.4 |
| Diphenyl ether | 101-84-8 | 100 | 10 | 100 |
| ... | | | | |
| 2-Ethyl-1-hexanol | 104-76-7 | 200 | 0.5 | 200 |
| ... | | | | |

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| <u>Constituent</u> | <u>CASRN</u> | <u>Ground Water Quality Criterion*</u> | <u>Practical Quantitation Level (PQL)*</u> | <u>Higher of PQL and Ground Water Quality Criterion [(ug/L)]*</u> |
|---|--------------|--|--|---|
| Foaming agents (ABS/LAS) | NA | 500 | 0.5 | 500 |
| ... | | | | |
| Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX) | 121-82-4 | 0.3 | 0.5 | 0.5 |
| ... | | | | |
| 2-Hexanone | 591-78-6 | 40 | 1 | 40 |
| ... | | | | |
| 2-(2-Methyl-4-chlorophenoxy) propionic acid (MCP) | 93-65-2 | 7 | 0.5 | 7 |
| ... | | | | |
| 2-Methylnaphthalene | 91-57-6 | 30 | 10 | 30 |
| ... | | | | |
| Metolachlor | 51218-45-2 | 100 | 0.5 | 100 |
| ... | | | | |
| Nitrate and Nitrite | NA | 10,000 | 10 | 10,000 |
| ... | | | | |
| Odor | NA | 3[b] ^b | NA | 3[b] ^b |
| Oil & Grease & Petroleum Hydrocarbons | NA | None Noticeable | NA | None Noticeable |
| ... | | | | |
| Perchlorate | 14797-73-0 | 5 | 3 | 5 |
| Perfluorononanoic acid (PFNA) | 375-95-1 | 0.01 | 0.003 | 0.01 |
| pH | NA | 6.5-8.5 | NA | 6.5-8.5 |
| ... | | | | |
| Strontium | 7440-24-6 | 2,000 | 5 | 2,000 |
| ... | | | | |
| Taste | NA | None Objectionable | NA | None Objectionable |
| TDS (Total Dissolved Solids) | NA | 500,000 | 10,000 | 500,000 |
| ... | | | | |

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| <u>Constituent</u> | <u>CASRN</u> | <u>Ground Water Quality Criterion*</u> | <u>Practical Quantitation Level (PQL)*</u> | <u>Higher of PQL and Ground Water Quality Criterion [(µg/L)]*</u> |
|---|---|--|--|---|
| 1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113) | 76-13-1 | 20,000 | 0.3 | 20,000 |
| ... | | | | |
| 1,1,1-Trifluoroethane | 420-46-2 | 5,000 | 60 | 5,000 |
| ... | | | | |
| 2,4,6-Trinitrotoluene (TNT) | 118-96-7 | 1 | 0.3 | 1 |
| Tricresyl phosphate (mixed isomers) | 1330-78-5 563-04-2 78-32-0 | 3 | 0.1 | 3 |
| Tri-ortho-cresyl phosphate | 78-30-8 | 3 | 0.1 | 3 |
| ... | | | | |
| Microbiological Criteria ^m , Radionuclides & Turbidity | Standards promulgated in the Safe Drinking Water Act [Regulations] rules (N.J.A.C. 7:10[-1 et seq.]) | | | |

Explanation of Terms:

...

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

[µg = micrograms, L = liter, f= fibers,] CU = Standard Cobalt Units

b = **Threshold** Odor [Threshold] Number[, mg = milligrams, H = Hardness]

...

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

Table 2

(No change.)