

**1150 GROUND WATER**

1150.1 Sections 1150 through 1158 shall describe the following categories:

- (a) Classes of ground waters within the District;
- (b) Establish criteria to protect the designated uses;
- (c) Establish the concepts of Enforcement Standards and Early Warning Values;  
and
- (d) Provide ground water monitoring requirements.

1150.2 Ground water in the District is not currently being used as a potable water source; however, where attainable, it shall be protected for beneficial uses, including surface water recharge, drinking water in other jurisdictions, and potential future use as a raw drinking water source in the District. Ground waters shall be protected from pollution because the lack of this protection might result in the following:

- (a) Large future cleanup costs of contaminated ground water;
- (b) Contaminated ground water becoming a potential health hazard to the public;
- (c) Contaminated ground water mixing with and contaminating adjacent surface waters;
- (d) Contaminated ground water mixing with and contaminating the ground water of adjacent jurisdictions; or
- (e) Harm to or loss of sensitive flora or fauna.

**SOURCE:** Final Rulemaking published at 40 DCR 4203 (July 2, 1993); renumbered by Final Rulemaking published at 41 DCR 1075 (March 4, 1994).

**1151 APPLICABILITY OF GROUND WATER STANDARDS**

1151.1 The ground water standards and ground water classifications shall apply to all ground waters of the District.

1151.2 Whenever point source ground water pollution occurs, the numerical and enforcement standards of §1109 shall be applied.

**SOURCE:** Final Rulemaking published at 40 DCR 4203, 4204 (July 2, 1993); renumbered by Final Rulemaking published at 41 DCR 1075 (March 4, 1994).

**1152 BENEFICIAL USE CLASSES FOR GROUND WATER**

1152.1 The following ground waters shall be classified as Class G1 if they are of drinking water quality:

- (a) Ground waters that are highly vulnerable to contamination;
- (b) Ground waters in recharge areas of drinking water aquifers of adjacent jurisdictions;
- (c) Ground waters that are hydrologically connected to surface waters of the District including designated antidegradation segments; and
- (d) Ground waters that discharge to a sensitive ecological system that supports a unique habitat.

1152.2 The following ground waters shall be classified as Class G2:

- (a) Ground waters that are of drinking water quality but are not classified as G 1;
- (b) Ground waters in recharge areas of drinking water aquifers of adjacent jurisdictions but are not drinking water quality;
- (c) Ground waters that are hydrologically connected to surface waters of the District including designated antidegradation segments but are not of drinking water quality; and
- (d) Ground waters that are not of drinking water quality but can be made suitable for drinking water by conventional treatment processes.

1152.3 Class G3 ground waters shall be those that can neither be grouped under Class G1 nor under Class G2.

11.52.4 In order to adequately maintain and preserve ground water quality within the District, where land use is affecting or has the potential to affect ground water quality, the Director, Department of Consumer and Regulatory Affairs, shall identify areas that are highly vulnerable to ground water contamination. Class G1, G2, G3 ground water shall then be designated as ground water vulnerable to ground water contamination.

**SOURCE:** Final Rulemaking published at 40 DCR 4203, 4204 (July 2, 1993); renumbered by Final Rulemaking published at 41 DCR 1075 (March 4, 1994).

**1153 [RESERVED]**

## **1154 GROUND WATER CLASSIFICATION**

1154.1 All ground waters shall be classified as Class G1 until enough information that warrants a different classification is provided to or obtained by the Director and evaluated.

**SOURCE:** Final Rulemaking published at 40 DCR 4203, 4205 (July 2, 1993); renumbered by Final Rulemaking published at 41 DCR 1075 (March 4, 1994).

**1155 GROUND WATER STANDARDS**

1155.1 For the protection of the designated use of the ground water and the hydrologically connected water bodies, narrative and numerical criteria, enforcement standards and early warning values for each ground water class shall be provided in this section in order to establish upper contaminant levels that shall not be exceeded.

1155.2 The following narrative criteria shall apply to all ground waters of the District:

- (a) All ground waters shall at all places and at all times be free from pollution in the form of oil, carcinogens, toxicants, and other substances in concentrations which might present a health hazard or render the ground water unusable; and
- (b) All ground waters shall at all places and at all times be free from domestic, industrial, agricultural, or other man-induced non-thermal components of discharges in concentrations which, alone or in combination with other substances or components of discharges:
  - (1) Are harmful to plants, animals or other organisms;
  - (2) Are carcinogenic, mutagenic, teratogenic, or toxic in toxic amounts to human beings;
  - (3) Are acutely toxic to biological species of the aquatic community within surface waters affected by the ground water at the point of contact with surface waters;
  - (4) Pose a serious danger to the public health, safety or welfare;
  - (6) Create or constitute a nuisance; or
  - (7) Impair the reasonable and beneficial use of adjacent waters within and outside the District.

1155.3 Numerical criteria for Class G1 ground waters shall be the most restrictive and are as follows:

<b>Constituent</b>	<b>Criterion</b>	<b>Early Warning Value</b>
Trace Metals & Inorganics (maximum mg/L unless noted otherwise)		
Primary		
Arsenic	0.05	0.01**
Barium	1.0	0.2**
Cadmium	0.005	0.002**
Chromium, hexavalent	0.1	0.01**
Chromium, trivalent	0.1	0.01**
Cyanide, free	0.2	0.04**
Fluoride	4.0	0.4**
Lead	0.05	0.01**
Mercury	0.002	0.0005+
Nitrates	10.0	2.0**
Nitrite	1.0	0.5*
Selenium	0.05	0.002**
Silver	0.05	0.05+
Secondary		
Turbidity (NTU)	5.0	NA
Chloride	250.0	125.0*
Copper	1.0	0.5*

Constituent	Criterion	Early Warning Value
Secondary (Continued)		
Iron	0.3	0.15*
Manganese	0.05	0.025*
Sulfate	250.0	125.0*
Total dissolved solids	500.0	250.0*
Zinc	5.0	2.5*
Organics (maximum ug/l)		
Benzene	5.0	2.0+
Carbon tetrachloride	5.0	1.0+
Dichlorobenzene (para)	75.0	2.0+
Dichloroethylene (1,1-)	7.0	1.0+
Dichloroethylene (cis-1,2-)	70.0	1.0+
Dichloroethylene (trans-1,2)	100.0	1.0+
Endrin	0.2	0.1+
Ethylbenzene	700.0	2.0+
Hexachlorocyclohexane (Lindane)	4.0	0.2+
Methoxychlor	100.0	2.0+
1,1,1-Trichloroethane	200.0	5.0+
1,2-Dichloroethane	5.0	0.5+
Tetrachloroethylene	5.0	0.5+
Toluene	11000.0	2.0+
Total Trihalomethanes	100.0	0.5+
Toxaphene	5.0	2.0+
Trichloroethylene	5.0	1.0+
2,4-D	100.0	10.0+
2,4,5-TP Silvex	10.0	2.0+
Vinyl chloride	2.0	2.0+
Xylenes	10,000.0	5.0+
Radionuclides (maximum activity, pCi/L)		
Combined Radium-226 & Radium-228	5.0	1.0**
Gross alpha particle activity	15.0	3.0**
Gross beta particle activity-	50.0	10.0**
Microbiological (maximum organisms/ml)		
Fecal Coliform	1.0	NA
Acidity (allowable range, standard units)		
pH	6.5 to 8.5	NA

\*\* : Early Warning Value is 20% of criterion.

\* : Early Warning Value is 50% of criterion.

+ : Early Warning Value for synthetic chemicals that have no natural source is at the practical quantitation limit.

NA: Not Applicable.

- 1155.4 For the purposes of §§1150 through 1158 of this chapter, the enforcement standard shall be the value assigned to any contaminant, which if exceeded, may result in the Director initiating enforcement action.
- 1155.5 Except as specified in §1155.6, the enforcement standards shall be established based on the following:
- (a) For Class G1, where a criterion is established, the enforcement standard shall be the criterion if the criterion is not exceeded in the background water quality;
  - (b) For Class G1, if a criterion is established and exceeded in the background water quality, the enforcement standard shall be the background concentration;
  - (c) When a criterion is not established for a Class G1 ground water, the enforcement standard shall be based on the best available scientific knowledge including, but not limited to, the background water quality, the use of U.S. Environmental Protection Agency water quality criteria and Health Advisories, other states water quality criteria, and risk assessment calculations. The value utilized will depend on technological and economic factors;
  - (d) When a specific activity which does or may contaminate ground water is being regulated by the Director and a criterion is not established, the enforcement standard may be established by the Director through, but not limited to, a waste discharge permit or other permit, order or a memorandum of understanding with other regulating agencies; and
  - (e) For a Class G2 or Class G3 ground water, the enforcement standard shall be based on the best available scientific knowledge including, but not limited to, the background water quality, the use of U.S. Environmental Protection Agency water quality criteria and Health Advisories, other states water quality criteria, and risk assessment calculations. The value utilized will depend on the class of ground water, and technological and economic factors.
- 1155.6 A request for variation from the enforcement standards of §1155.5 for any class of ground water can be made to the Director. The request, by the responsible party, shall be based on both the technological and economic analyses. The responsible party shall demonstrate to the satisfaction of the Director that cleanup to the enforcement standard is both technologically and economically infeasible. The request shall propose an alternate cleanup level.
- 1155.7 Early Warning Values (“EWV”) shall be established to protect ground waters from contamination and to avoid costly remediation by providing for early detection of increasing contaminant concentrations before the criteria or enforcement standards are exceeded.

- 1155.8 EWW's shall be applicable to facilities or activities with a potential to contaminate ground water and which are required to monitor the impact of their activities on ground water quality.
- 1155.9 Whenever a criterion or an enforcement standard is set above background level, an EWW or trend analysis shall be utilized.
- 1155.10 Early Warning Values shall be determined by one of the following items:
- (a) When the regulated substance is not found in the background water quality or is present in levels lower than the criterion or the enforcement standard then the EWW shall be as follows:
    - (1) Practical quantitation limit for all synthetic constituents for which no natural source exists;
    - (2) Twenty percent (20%) of the criterion or enforcement standard for substances of health concern;
    - (3) Fifty percent (50%) of the criterion or enforcement standard for substances of public welfare concern; or
    - (4) EWW for specific criteria are according to § 1155.3; or
  - (b) When the regulated substance is found in the background water quality in a concentration that exceeds the criterion or enforcement standard for that substance, then the EWW shall be set between background and the criterion or enforcement standard in such a way that increasing or decreasing contaminant levels will be detected.
- 1155.11 If the permittee or responsible party desire, a trend analysis in place of fixed values for EWWs may be used. The trend analysis shall use a scientifically sound and valid statistical procedure appropriate to the discharge and shall provide a ninety-nine percent (99%) level of confidence. The design and implementation of the trend analysis shall be the responsibility of the permittee and shall be approved by the Director. Response levels shall be defined for each trend analysis, but at a minimum shall include those levels as defined in § 1155.3.
- 1155.12 It shall not be considered a violation of §§1150 through 1158 of this chapter when pollutants are detected in concentrations exceeding an EWW unless the following occurs:
- (a) The pollutant concentrations exceed the numerical criterion of §1155.3 and the enforcement standards of §1155.5; and
  - (b) There is failure to inform the Director or respond as required in §1155.13.
- 1155.13 The following procedures shall apply when a substances is detected at the point of compliance and an EWW is attained or exceeded, or a net change in concentration is detected through an approved trend analysis:

- (a) The permittee or responsible party shall notify the Director, in writing, within thirty (30) days; and
- (b) Upon receiving notification, the Director may require the permittee or responsible party to perform one of the following:
  - (1) No action;
  - (2) Resample wells to verify results;
  - (3) Revise the monitoring plan including increased monitoring; or
  - (4) Complete a report documenting the extent of contamination, contamination sources and discuss alternative methods of operation.

**SOURCE:** Final Rulemaking published at 40 DCR 4203, 4205 (July 2, 1993); renumbered by Final Rulemaking published at 41 DCR 1075 (March 4, 1994).

**1156 [RESERVED]**

**1157 GROUND WATER MONITORING FOR POTENTIAL CONTAMINATION**

- 1157.1 Except as specified in §1157.2, the monitoring requirements shall apply to the owners and operators of landfills, solid waste piles (other than piles of gravel, resident soils and other such material), land spreading disposal facilities, surface impoundments of wastes and solid waste discharge facilities.
- 1157.2 The monitoring requirements shall not pertain to other programs and activities of the Department of Consumer and Regulatory Affairs already covered by a promulgated rule that has specific monitoring requirements including the federal discharge permits program and Hazardous Waste Management, 20 DCMR 40.
- 1157.3 All permitted facilities requiring ground water monitoring shall submit for approval, a ground water monitoring program to determine representative background water quality and the quality of the water passing the point of compliance.
- 1157.4 Background monitoring points shall be located at points where potential sources of ground water contamination from the permitted site will not affect ground water quality.
- 1157.5 The monitoring program shall include, but not be limited to, the uppermost aquifer and any aquifer in the point of compliance that is hydrologically connected to the surface waters of the District and antidegradation segments and drinking water aquifers of adjacent jurisdictions. At a minimum, the monitoring program shall include the following:



- (a) One (1) upgradient well and three (3) downgradient wells installed at appropriate locations and depth to yield ground water samples from the uppermost aquifer and all hydrologically connected aquifers below the active portion of the facility;
- (b) All monitoring wells shall be cased to maintain the integrity of the monitoring well bore hole. The casing shall allow collection of representative water samples. The well shall be constructed in such a manner as to prevent contamination of the samples, the sampled strata, water bearing aquifers and prevent contamination between aquifers;
- (c) A sampling and analysis plan;
- (d) A quality assurance and quality control plan;
- (e) A quarterly sampling frequency for the first two (2) years. If early warning values are not reached or a trend analysis shows no significant contamination, sampling frequency will either be reduced or discontinued on approval of the Director; and
- (f) Submittal of an annual report of monitoring results not withstanding requirements pursuant to §1155.12.

1157.6 Monitoring may be required for nonpermitted point and non-point source activities with a potential to contaminate ground water.

**SOURCE:** Final Rulemaking published at 40 DCR 4203, 4210 (July 2, 1993); renumbered by Final Rulemaking published at 41 DCR 1075 (March 4, 1994).

## **1158 ENFORCEMENT**

1158.1 This chapter shall be enforced pursuant to the Water Pollution Control Act of 1984, D.C Law 5-188, as amended.

1158.2 All laboratory examinations of ground water samples collected to determine compliance with these water quality standards shall be performed in accordance the procedures approved by the U.S. Environmental Protection Agency.

1158.3 All field analyses and measurements of ground water to determine compliance with these water quality standards shall be conducted in accordance with standard procedures specified by the Director.

1158.4 Nothing in these water quality standards shall be interpreted as alleviating any discharger from meeting more stringent water quality standards of downgradient jurisdictions.

1158.5 Primary contact recreation shall be prohibited in the Potomac and Anacostia Rivers and Rock Creek until such time as the standards in §1101.2 for Class A beneficial use are consistently maintained.

**SOURCE:** Final Rulemaking published at 40 DCR 4203,4210 (July 2,1993); and renumbered by Final Rulemaking published at 41 DCR 1075 (March 4, 1994).