



STATE OF WEST VIRGINIA
OFFICE OF THE SECRETARY OF STATE
CHARLESTON 25305

A. James Manchin
~~JAMES H. MCCARTNEY~~
SECRETARY OF STATE

STATE REGISTER FILING

I, Charles E. Andrews, M.D., Acting State Health Director,
Name Title or Position

West Virginia State Department of Health hereby submit to record
Department or Division

in the State Register on 8 1/2" x 11" paper two (2) copies of

() proposed rules and regulations concerning topics or
material not covered by existing rules and regulations;

(X) proposed rules and regulations superseding rules and
regulations already on file;

(X) a notice of hearing;

() findings and determinations;

() rules and regulations; or

() other - specify ()

FILED IN THE OFFICE OF
SECRETARY OF STATE OF
WEST VIRGINIA

THIS DATE 8-11-77

This filing pertains to

Chapter 1

Article 5

Series _____

Section 1 through 8, (except
Subsection 7.4), 10,
12 through 17

Page No. _____

August 10, 1977
Date Submitted

[Signature]
Signature of Person Authorizing this
Filing

NOTICE OF PUBLIC HEARING

PROPOSED PUBLIC WATER SUPPLY REGULATIONS

TAKE NOTICE, that the West Virginia State Board of Health, pursuant to the provisions of Article 3, Chapter 29A, of the Code of West Virginia as amended, will hold a public hearing on proposed amendments to Article 5, Public Water Supply Regulations, of Chapter 1, Part 3, of said Board's regulations beginning at 9:30 a.m., SEPTEMBER 12, 1977, in Rooms A and B, Building Number Seven, State Capitol Complex, Charleston, West Virginia. Interested persons are invited to present oral comments on the proposed amendments at said public hearing or to forward written comments to the Board in care of Director, Environmental Health Services, West Virginia State Department of Health, 1800 Washington Street, East, Charleston, West Virginia, 25305, by SEPTEMBER 12, 1977.

Copies of the proposed amendments may be obtained by writing in care of Director, Environmental Health Services, at the preceding address, or by telephoning 304-348-2981.

The public hearing originally scheduled for September 5, 1977, is hereby cancelled and rescheduled for September 12, 1977.


Charles E. Andrews, M.D.
Acting State Health Director

Date: 8-10-77

FILED IN THE OFFICE OF
SECRETARY OF STATE OF
WEST VIRGINIA

THIS DATE 8-11-77

N. H. DYER, M.D., M.P.H.
STATE DIRECTOR OF HEALTH



State of West Virginia

DEPARTMENT OF HEALTH

CHARLESTON 25305
August 10, 1977

The Honorable A. James Manchin
Secretary of State of
West Virginia
State Capitol Building
Charleston, West Virginia 25305

Dear Mr. Manchin:

Please find enclosed two copies of our proposed Public Water Supply Regulations, Notice of Public Hearing and completed State Register Filing application. This submittal and filing will enable the State Board of Health to conduct the required public hearing for the proposed regulations.

You will note that we have rescheduled the public hearing for September 12, 1977. It was originally scheduled for September 5, 1977. If you have questions regarding our hearing or the regulations, please contact this office.

Sincerely yours,

Charles E. Andrews, M.D.
Acting State Health Director

CEA/DAK/jmh

Enclosures

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WEST VIRGINIA

THIS DATE 8-11-77


Charles E. Andrews, M.D.
Acting State Health Director

Date: 8-10-77



STATE OF WEST VIRGINIA
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A. James Manchin
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Charles E. Andrews
 Signature of Person Authorizing this
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WEST VIRGINIA
DEPARTMENT OF HEALTH

PROPOSED
PUBLIC WATER SUPPLY REGULATIONS

FILED IN THE OFFICE OF
SECRETARY OF STATE OF
WEST VIRGINIA

THIS DATE 8-11-77

July 22, 1977

SECTION 1 GENERAL

1.1 Scope

This article replaces Section 1, 2, 3, 4, 5, 6, 7, (except Subsection 7.4), 8, 10, 12, 13, 14, 15, and 16, and 17, of Article 5, Chapter 1, "Public Water Supply Regulations". Sections 1, 2, 3, 4, 5, 6, 7, (except Subsection 7.4), 8, 10, 12, 13, 14, 15, 16, and 17 are hereby repealed. These regulations establish the rules and requirements of the West Virginia State Board of Health governing public drinking water systems, and production and distribution of bottled drinking water.

1.2 Authority: The authority for these regulations is provided under Chapter 16, Article 1, Public Health Laws, Code of West Virginia, 1931, as amended.

1.3 Initial Filing Date: On _____, as prescribed by Section 8, Article 3, Chapter 29A, of the Code, these proposed regulations were filed with the Secretary of State, with an attached notice of time, date and place for opportunity to submit data.

1.4 Notification of Opportunity to Submit Data: On September 12, 1977, at 9:30 a.m. in Rooms A and B, Building Number Seven, State Capitol Complex, Charleston, West Virginia, interested parties may submit data, objections, suggested amendments, views, evidence and arguments orally or in writing, as prescribed by Section 8, Article 3, Chapter 29A of the Code.

1.5 Final Adoption: On _____, the regulations were finally adopted by the State Board of Health as prescribed by Section 10, Article 3, Chapter 29A, of the Code.

1.6 Final Filing: On _____, the final version of the regulations as adopted by the Board of Health, with proposed effective date were filed in the state register, pursuant to Section 10, Article 3, Chapter 29A of the Code.

1.7 Governor's Regulations: On _____, as prescribed by Section 7, Article 3, Chapter 29A, of the Code, the regulations were filed with the Governor.

1.8 Legislative Rule Making Committees Regulations: On _____ ,
as proscribed by Section 7, Article 3, Chapter 29A of the Code, the regulations
were filed with the legislative rule making committee, to implement a federally
assisted program.

1.9 Proposed Effective Date: On _____ , these rules and
regulations will become effective, subject to action of the legislative rule
making review committee.

SECTION 2 DEFINITIONS

- 2.1 DIRECTOR - The State Director of Health or his authorized representative.
- 2.2 PERSON - Individual, partnership, association, syndicate, company, firm, trust, corporation, government, corporation, institution, department, division, bureau, agency, federal agency or any entity recognized by law.
- 2.3 PUBLIC WATER SYSTEM - Any water system or supply which regularly supplies or offers to supply, piped water to the public for human consumption, if serving at least an average of twenty-five individuals per day for at least sixty days per year, or which has at least fifteen service connections, and shall include: (1) Any collection, treatment, storage, and distribution facilities under the control of the owner or operator of such system and used primarily in connection with such system, and (2) Any collection or pretreatment storage facilities not under such control which are used primarily in connection with such system. A public water system shall not include a system which meets all of the following conditions: (1) Which consists only of distribution and storage facilities (and does not have any collection and treatment facilities); (2) which obtains all of its water from, but is not owned or operated by a public water system which otherwise meets the definition; (3) which does not sell water to any person; and (4) which is not a carrier conveying passengers in interstate commerce.
- 2.4 PERMIT - A written document issued by the Director giving a designated person permission to operate and/or construct, alter, or renovate a specific public water supply or system, or bottled water plant.

- 2.5 OPERATOR - A person who has been granted a written permit by the Director to operate a specific class of public water supply.
- 2.6 SOURCE WATER - Any surface or ground water supply used as a source of water for a public water system.
- 2.7 DRINKING WATER - Water free from contaminants in amounts sufficient to cause disease or harmful physiological effects with the microbiological, chemical, physical and radiological quality conforming to applicable regulations and standards of the State Department of Health.
- 2.8 CONTAMINANT - Any physical, chemical, microbiological, or radiological substance or matter in water.
- 2.9 MAXIMUM CONTAMINANT LEVEL - The maximum permissible level of a contaminant in water which is delivered to the free flowing outlet of the ultimate user of a public water system, except in the case of turbidity where the maximum permissible level is measured at the point of entry to the distribution system. Contaminants added to the water under circumstances controlled by the user, except those resulting from corrosion of piping and plumbing caused by water quality are excluded from this definition.
- 2.10 PUBLIC WATER SYSTEM TREATMENT PLANT - Facilities provided for the treatment of water by any one or any combination of the controlled processes of coagulation, sedimentation, absorption, filtration, disinfection or other processes which produce drinking water consistently meeting the requirements of the State Department of Health.
- 2.11 BOTTLED WATER - Any natural or artificial mineral, spring, well, distilled or other water bottled or containerized for use primarily as drinking water.

- 2.12 COMMUNITY WATER SYSTEM - A public water system which serves at least fifteen (15) service connections used by year-round residents or regularly serves at least twenty-five (25) year-round residents
- 2.13 NON-COMMUNITY WATER SYSTEM - Any public water system that is not a community water system.
- 2.14 DOSE EQUIVALENT - The product of the absorbed dose from ionizing radiation and such factors as account for differences in biological effectiveness due to the type of radiation and its distribution in the body as specified by the International Commission on Radiological Units and Measurements (ICRU).
- 2.15 REM - The unit of dose equivalent from ionizing radiation to the total body or any internal organ or organ system. A "millirem (mrem)" is 1/1000 of a rem.
- 2.16 GROSS ALPHA PARTICLE ACTIVITY - The total radioactivity due to alpha particle emissions inferred from measurements on a dry sample.
- 2.17 MAN-MADE BETA PARTICLE AND PHOTON EMITTERS - All radionuclides emitting beta particles and/or photons listed in Maximum Permissible Body Burdens and Maximum Permissible Concentration of Radionuclides in Air or Water for Occupational Exposure, NBS Handbook 69, except the daughter products of thorium-232, uranium-235 and uranium-238.

- 2.18 GROSS BETA PARTICLE ACTIVITY - The total radioactivity due to beta particle emission as inferred from measurements on a dry sample.
- 2.19 PICOCURIE (pCi) - That quantity of radioactive material producing 2.22 nuclear transformations per minute.
- 2.20 CONSECUTIVE SYSTEM - A public water system whose drinking water is supplied entirely by another public water system.
- 2.21 SANTTARY SURVEY - An on-site review of the water source, facilities, equipment, operation and maintenance of a public water system for the purpose of evaluating the adequacy of such source, facilities, equipment, operation and maintenance for producing and distributing drinking water.
- 2.22 CERTIFIED LABORATORY - A laboratory that meets federal and state requirements including those established for personnel, work space, equipment and procedures, and certified by the Director to analyze drinking water for specified maximum contaminant levels.

SECTION 3 PERMIT TO CONSTRUCT

- 3.1 On and after the effective date of these regulations, no person shall construct, or let a contract for any construction, except as provided for in Section 3.4, to a public water system, without obtaining a permit to construct from the Director.
- 3.2 No person shall begin construction, alter or renovate a public water system without first submitting plans and specifications to the Director for review and approval at least 45 days prior to the date on which approval by the Director is desired. The public water system shall be constructed, altered or renovated in accordance with the plans and specifications as approved by the Director, and in accordance with the West Virginia State Department of Health's "Design Standards for Public Water Supply Systems;" (Bulletin #EW-99).
- 3.3 Application for permit to construct shall be made to the Director on forms prescribed by the Director and shall be accompanied by an engineering report, maps, detailed plans and specifications of the public water system prepared by or under the direction of a registered professional engineer.
- 3.4 A permit to construct will not be required for any minor addition to, extension of, or alteration of an existing distribution system which will not affect the quality and quantity of water supply service rendered, providing the work is done in accordance with the provisions of the West Virginia State Department of Health Bulletin EW-99, "Design Standards for Public Water Supply Systems." Deviations from the standards must receive prior approval by the Director. Written requests (including plans

and specifications) for deviations, must be provided to the Director at least 15 days before the beginning of construction.

- 3.5 The Director shall have the authority to issue an order requiring a change in the source of the water supply or in the manner of collection, treatment, storage, or distribution facilities of the supply before delivery to the consumer as may be necessary to safeguard the public health.
- 3.6 A permit to construct may be revoked by the Director for failure to comply with the provisions of the permit and/or all applicable provisions of these regulations.

SECTION 4 PERMIT TO OPERATE

- 4.1 Application for a permit to operate a water system shall be made to the Director at least 30 days before the scheduled operation of the public water system. Applications shall be on forms prescribed by the Director, and signed by the applicant or his authorized representative.
- 4.2 No person directly or indirectly shall manage, operate or maintain a public water system in the State of West Virginia without first making an application to, and receiving from the Director permit to operate.
- 4.3 In the event of an intended change, or an actual change in the ownership of a public water system, a written application for a permit to operate shall be made to the Director by the current owner at least 15 days before the proposed or actual change.
- 4.4 Each person maintaining or operating a community public water system on the date these regulations become effective who does not already have a permit shall, within one year of the effective date, make application for a permit to operate.
- 4.5 Each person maintaining a non-community public water system on the date these regulations become effective, shall, within two years of the effective date, make application for a permit to operate.
- 4.6 A permit to operate shall be posted in a conspicuous place at the public water system.

SECTION 5 INSPECTIONS

- 5.1 Each community water system utilizing surface source water shall be inspected at least once per year. Other public water systems shall be inspected as determined by the Director.
- 5.2 The operator of the public water system shall, upon the request of the Director, permit access to all parts of the system and shall furnish all information and records required to be kept by Section 14 of these regulations.

SECTION 6 MICROBIOLOGICAL QUALITY REQUIREMENTS: MAXIMUM CONTAMINANT LEVELS: SAMPLING TECHNIQUE AND MONITORING FREQUENCY

6.1 Disinfection shall be required of all public water systems. Unless otherwise approved in writing by the Director, chlorine shall be the only type of disinfectant permitted for use by public water systems

6.2 Chlorine or any other approved disinfectant shall be applied at a point before entering the distribution system which will provide effective contact time; the minimum contact time shall be 30 minutes to the first consumer unless otherwise approved in writing by the Director. At the end of the contact time, the minimum free chlorine residuals at the various pH values shall comply with the requirements of the following table:

pH VALUE	FREE CHLORINE RESIDUAL
up to 7.0	0.4 mg/l
7.1 to 8.0	0.6 mg/l
8.1 to 9.0	1.0 mg/l

6.3 The owner or operator of a public water system using disinfectants shall determine the amount of free residual disinfectant in the drinking water at the treatment plant at least once per day, or more often if deemed necessary by the Director.

6.4 Chlorine residual testing equipment shall enable measurement of free residuals to the nearest 0.2 mg/l in the range of from 0.0 mg/l to 2.0 mg/l.

6.5 At least a trace of total chlorine residual will be maintained throughout the distribution system at all times, unless otherwise approved by the Director.

6.6 Water samples for microbiological analysis collected by a representative of the public water system shall be collected

from representative areas of each public water supply distribution system and submitted to the West Virginia State Hygienic Laboratory or a certified laboratory in standard sterilized water containers provided by said laboratory.

6.7 The frequency of water sample collection and microbiological examination for community water systems shall be in proportion to the population served as follows:

<u>POPULATION SERVED:</u>	<u>MINIMUM NUMBER OF SAMPLES PER MONTH:</u>
25 to 999	1
1,000 to 2,500	2
2,501 to 4,000	4
4,001 to 6,000	7
6,001 to 8,000	9
8,001 to 10,000	11
10,001 to 25,000	30
25,001 to 50,000	60
50,001 to 70,000	75
70,001 to 100,000	100
100,001 to 130,000	110
130,001 to 160,000	120
160,001 to 190,000	130
190,001 to 220,000	140
220,001 to 250,000	150
250,001 to 290,000	160
290,001 to 320,000	170

6.8 Based on a history of no coliform bacterial contamination and on a sanitary survey by the Director showing the water system to be supplied solely by a protected ground water source and free of sanitary defects, a community water system serving 25-1,000 persons, with written permission of the Director, may reduce its sampling frequency, except that in no case shall it be reduced to less than one per quarter.

6.9 The supplier of water for non-community water system shall sample for coliform bacteria in each calendar quarter during which the system provided water to the public unless the Director

determines that some other frequency is more appropriate.

6.10 The maximum contaminant levels for coliform bacteria are as follows:

A. When the membrane filter technique is used, the number of coliform bacteria shall not exceed any of the following:

1. One per 100 milliliters as the arithmetic mean of all samples examined per month; or,
2. Four per 100 milliliters in more than one sample when less than 20 are examined per month; or,
3. Four per 100 milliliters in more than five per cent of the samples when 20 or more are examined per month.

B. When the fermentation tube method and 10 milliliter standard portion are used, coliform bacteria shall not be present in any of the following:

1. More than 10 per cent of the portions examined in any month; or,
2. Three or more portions in more than one sample when less than 20 samples are examined per month; or,
3. Three or more portions in more than five per cent of the samples when 20 or more samples are examined per month.

C. When the fermentation tube method and 100 milliliter standard portions are used, coliform bacteria shall not be present in any of the following:

1. More than 60 per cent of the portions examined in any month; or,
2. Five portions in more than one sample when less than five samples are examined per month; or,
3. Five portions in more than 20 per cent of the samples when five or more samples are examined per month.

6.11 For community and non-community systems that are required to

sample at a rate of less than 4 times per month, compliance with maximum microbiological contaminant levels, shall be based on sampling during a 3 month period, unless at the discretion of the Director, compliance may be based upon sampling during a one-month period.

6.12 If coliform bacteria found in a single sample exceed four per 100 milliliters when the membrane filter technic is used, at least two consecutive daily check samples shall be collected and examined from the same sampling point. Additional check samples shall be collected daily, or at a frequency established by the Director, until the results obtained from at least two consecutive check samples show less than one coliform bacterium per 100 milliliter.

6.13 When coliform bacteria occur in three or more 10 milliliter portions of a single sample, when the fermentation tube method and 10 milliliter standard portions are used, at least two consecutive daily check samples shall be collected and examined from the same sampling point. Additional check samples shall be collected daily, or at a frequency established by the Director until the results obtained from at least two consecutive check samples show no positive tubes.

6.14 When coliform bacteria occur in all five of the 100 ml portions of a single sample when the fermentation tube method and 100 milliliter standard portions are used, at least two daily check samples shall be collected and examined from the same sampling point. Additional check samples shall be collected daily or at a frequency established by the Director until the results obtained from at least two consecutive check samples

show no positive tubes.

The location at which the check samples were taken pursuant to Section 6.12, 6.13, and 6.14 above, shall not be eliminated from future sampling without approval of the Director.

6.15 The results from all coliform bacterial analyses performed pursuant to this section, except for those results obtained from check samples and special purpose samples, shall be used to determine compliance with the maximum contaminant level for coliform bacteria. Check samples shall not be included in calculating the total number of samples taken each month to determine compliance with the required frequency of sampling as set out in Section 6.7.

6.16 When the presence of coliform bacteria in water has been confirmed by check samples taken from the same sampling point, the system owner or operator shall report those results to the Director within 48 hours. When a maximum contaminant level set forth in Sections 6.10 A, 6.10 B, 6.10 C, or 6.11 is exceeded, the system owner or operator shall report to the Director in accordance with Section 12 and notify the public as prescribed in Section 13.

Special purpose samples, such as those taken to determine whether disinfection practices following pipe placement, replacement or repair have been sufficient, shall not be used to determine compliance with the maximum contaminant levels for coliform bacteria.

6.17 A system owner or operator of a community water system or a non-community water system may, with the approval of the Director, substitute the use of free chlorine residual monitoring for not

more than 75 per cent of the samples required to be taken, provided, that the system owner or operator obtains residual samples at points which are representative of the conditions within the distribution system at the frequency of at least four residual samples for each substituted microbiological sample. When the system owner or operator exercises the option provided in this paragraph, they shall maintain no less than 0.2 mg/l free chlorine throughout the distribution system and shall make at least daily determinations of free chlorine residual. When a particular sampling point has been shown to have a free chlorine residual less than 0.2 mg/l, the water at the location shall be retested as soon as practicable, and in any event within one hour. If the original analysis is confirmed, this fact shall be reported to the Director within 48 hours. Also, if the analysis is confirmed, a sample for coliform bacterial analysis must be collected from that sampling point as soon as practicable and preferably within one hour, and the results of such analysis reported to the Director within 48 hours after the results are known to the supplier of water. Analysis for residual chlorine shall be made using DPD test in accordance with the 14th, or later edition, of "Standard Methods for the Examination of Water and Wastewater." The Director may withdraw approval of the use of chlorine residual substitution at any time.

SECTION 7 INORGANIC CHEMICAL REQUIREMENTS; MAXIMUM CONTAMINANT LEVELS; MONITORING FREQUENCY

7.1 The maximum contaminant level for nitrate is applicable to both community and non-community water systems. The levels for other inorganic chemicals apply only to community water systems and other systems as determined by the Director. Analysis for maximum contaminant levels shall be made in accordance with Section 11.

7.2 The following are the maximum contaminant levels for inorganic chemicals other than fluoride:

<u>CONTAMINANT</u>	<u>MILLIGRAMS PER LITER</u>
Arsenic	0.05
Barium	1.
Cadmium	0.010
Chromium	0.05
Lead	0.05
Mercury	0.002
Nitrate (as N)	10.
Selenium	0.01
Silver	0.05

7.3 Based on the annual average of the maximum daily air temperatures, the maximum contaminant levels for fluoride are:

<u>TEMPERATURE DEGREES FAHRENHEIT</u>	<u>MILLIGRAMS PER LITER</u>
53.7 and below	2.4
53.8 to 58.3	2.2
58.4 to 63.8	2.0
63.9 to 70.6	1.8
70.7 to 79.2	1.6
79.3 to 90.5	1.4

7.4 If the result of an analysis indicates that the level of any inorganic contaminant listed exceeds the maximum contaminant level, the system owner or operator shall report to the Director within 7 days and initiate three additional analyses

at the same sampling point within one month.

- 7.5 When the average of four analyses made pursuant to Section 7.4, rounded to the same number of significant figures as the maximum contaminant level for the substance in question, exceeds the maximum contaminant level, the system owner or operator shall notify the Director pursuant to Section 12 and give notice to the public pursuant to Section 13. Monitoring after public notification shall be at a frequency designated by the Director and shall continue until the maximum contaminant level has not been exceeded in two successive samples or until a monitoring schedule as a condition to a variance, exemption or enforcement action shall become effective.
- 7.6 Notwithstanding the provisions of Sections 7.4 and 7.5, compliance with the maximum contaminant level for nitrate shall be determined on the basis of the mean of two analyses. When a level exceeding the maximum contaminant level for nitrate is found, a second analysis shall be initiated within 24 hours, and if the mean of the two analyses exceeds the maximum contaminant level, the system owner or operator shall report their findings to the Director pursuant to Section 12 and shall notify the public pursuant to Section 13.
- 7.7 Analyses for inorganic contaminants shall be conducted for a community water system utilizing surface water on an annual basis.
- 7.8 Analyses for inorganic contaminants shall be conducted for a community water system using ground water at three year intervals.
- 7.9 Analyses for inorganic contaminants shall be conducted for non-community water suppliers at intervals as set by the Director.

SECTION 8.0 ORGANIC CHEMICAL REQUIREMENTS; MAXIMUM CONTAMINANT LEVELS; MONITORING FREQUENCY

- 8.1 The maximum contaminant level for organic chemicals applies only to community water systems. Analysis for maximum contaminant levels shall be made in accordance with Section 11.
- 8.2 The following are the maximum contaminant levels for organic chemicals:

<u>CONTAMINANT</u>	<u>MILLIGRAMS PER LITER</u>
A. Chlorinated hydrocarbons; Endrin (1, 2, 3, 4, 10, 10-hexachloro-6, 7-epoxy-1, 4, 4a, 5, 6, 7, 8, 8a-octa-hydro-1, 4-endo, endo-5, 8-dimethano naphthalene).	0.0002
Lindane (1,2,3,4,5,6-hexachloro-cyclohexane, gamma isomer).	0.004
Methoxychlor (1,1,1-Trichloro-2,2 - bis [p-methoxyphenyl] ethane).	0.1
Toxaphene (C ₁₀ H ₁₀ Cl ₈ -Technical chlorinated camphene, 67-69 per cent chlorine).	0.005
B. Chlorophenoxy: 2,4-D, (2,4-Dichlorophenoxyacetic acid).	0.1
2,4,5-TP Silvex (2,4,5-Trichlorophenoxypropionic acid).	0.01

- 8.3 The monitoring frequency for community water systems utilizing surface water sources, shall be at intervals required by the Director, but no less frequently than once every three years. The three year sampling program shall begin in accordance with Section 17.
- 8.4 The monitoring frequency for community water systems utilizing only ground water sources shall be set by the Director.
- 8.5 If the result of an analysis made pursuant to Section 8.3 and 8.4 above indicates that the level of any contaminant listed

in Section 8.2 above exceeds the maximum contaminant level, the system owner or operator shall report to the Director within 7 days and initiate three additional analyses within one month.

8.6 When the average of four analyses made pursuant to Section 8.5, rounded to the same number of significant figures as the maximum contaminant level for the substance in question, exceeds the maximum contaminant level, the system owner or operator shall report to the Director pursuant to Section 13. Monitoring after public notification shall be at a frequency designated by the Director and shall continue until the maximum contaminant level has not been exceeded in two successive samples or until a monitoring schedule as a condition to a variance, exemption or enforcement action shall become effective.

SECTION 9.0 RADIOLOGICAL REQUIREMENTS; MAXIMUM CONTAMINANT LEVELS;
MONITORING FREQUENCY

- 9.1 The maximum contaminant levels for radioactive materials applies only to community water systems. Analysis for maximum contaminant levels shall be made in accordance with Section 11.
- 9.2 The following are the maximum contaminant levels for radium 226; radium 228; and gross alpha particle radioactivity:
- A. Combined radium - 226 and radium - 228 - 5 pCi/l.
 - B. Gross alpha particle activity (including radium-226 but excluding radon and uranium) - 15 pCi/l.
- 9.3 The following are the maximum contaminant levels for beta particle and photon radioactivity from man-made radionuclides:
- A. The average annual concentration of beta particle and photon radioactivity from man-made radionuclides in drinking water shall not produce an annual dose equivalent to the total body or any internal organ greater than 4 millirem/year.
 - B. Except for the radionuclides listed in Table A, the concentration of man-made radionuclides causing 4 mrem total body or organ dose equivalents shall be calculated on the basis of a 2 liters per day drinking water intake using the 168 hour data listed in "Maximum Permissible Body Burdens and Maximum Permissible Concentration of Radionuclides in Air or Water for Occupational Exposure," NBS Handbook 69 as amended August, 1963, U. S. Department of Commerce. If two or more radionuclides are present, the sum of their annual dose equivalent to the total body or to any organ shall not exceed 4 millirem/year. Table A - Average annual concentrations assumed to produce a total body or organ dose of 4 mrem/year

<u>RADIONUCLIDE</u>	<u>CRITICAL ORGAN</u>	<u>pCi</u> <u>PER LITER</u>
Tritium	Total Body	20,000
Strontium-90	Bone Marrow	8

9.4 The monitoring frequency and requirements for gross alpha particle activity, radium-226 and radium-228 is as follows:

A. Compliance shall be based on the analysis of an annual composite of four consecutive quarterly samples or the average of the analyses of four samples obtained at quarterly intervals.

1. A gross alpha particle activity measurement may be substituted for the required radium-226 and radium-228 analysis provided. That the measured gross alpha particle activity does not exceed 5 pCi/l at a confidence level of 95 percent (1.65 sigma, where sigma is the standard deviation of the sample).

2. When the gross alpha particle activity exceeds 5 pCi/l, the same or an equivalent sample shall be analyzed for radium-226. If the concentration of radium-226 exceeds 3 pCi/l the same or an equivalent sample shall be analyzed for radium-228.

B. System owners or operators shall monitor at least once every four years following the procedure required by Section 9.4 A. At the discretion of the Director, when an annual record taken in conformance with Section 9.4 A has established that the average annual concentration is less than half the maximum contaminant levels established by Section 9.2, analysis of a single sample may be substituted for the quarterly sampling procedure required by Section 9.4 A.

1. More frequent monitoring shall be conducted when ordered by the Director in the vicinity of mining or other operations which may contribute alpha particles

radioactivity to either surface or ground water sources of drinking water.

2. A system owner or operator shall monitor in conformance with Section 9.4 A within one year of the introduction of a new water source for a community water system. More frequent monitoring shall be conducted when ordered by the Director in the event of possible contamination or when changes in the distribution system or treatment processing occur which may increase the concentration of radioactivity in finished water.

3. A community water system using two or more sources having different concentrations of radioactivity shall monitor source water, in addition to water from a free-flowing tap, when ordered by the Director.

4. Monitoring for compliance with Section 9.2 after the initial period need not include radium-228 except when required by the Director, provided, that the average annual concentration of radium-228 has been assayed at least once using the quarterly sampling procedure required by Section 9.4 A.

5. If the average annual maximum contaminant level for gross alpha particle activity or total radium as set forth in Section 9.2 is exceeded, the owner or operator of a community water system shall give notice to the Director pursuant to Section 12 and notify the public as required by Section 13.

Monitoring at quarterly intervals shall be continued until the annual average concentration no longer exceeds the

maximum contaminant level or until a monitoring schedule as a condition to a variance, exemption or enforcement action shall become effective.

SECTION 10 TURBIDITY REQUIREMENTS: MAXIMUM CONTAMINANT LEVELS;
MONITORING FREQUENCY

- 10.1 The maximum contaminant levels for turbidity apply to both community and non-community water systems using surface water sources in whole or in part. The levels may apply to special ground water situations specified by the Director. The maximum contaminant levels for turbidity in drinking water, measured at a representative entry point to the distribution system are:
- A. One nephelometric turbidity unit (NTU), as determined by a monthly average pursuant to Section 10.3, except that five or fewer turbidity units may be allowed if the supplier of water can demonstrate to the Director that the higher turbidity does not do any of the following:
 - 1. Interfere with disinfection;
 - 2. Prevent maintenance of an effective disinfectant agent throughout the distribution system; or
 - 3. Interfere with microbiological determination
 - B. Five turbidity units based on an average for two consecutive days pursuant to Section 10.3.
- 10.2 Analysis for maximum turbidity contaminant levels shall be made by the Nephelometric Method in accordance with Section 11, or other tests approved by the Director.
- 10.3 If the result of a turbidity analysis indicates that the maximum allowable limit has been exceeded, the sampling and measurement shall be confirmed by resampling as soon as practicable and preferably within one hour. If the resample analysis confirms that the maximum allowable limit has been exceeded, the system owner or operator shall report to the Director within 48 hours. The resample shall be the sample used for the purpose of calculating the monthly

average. If the monthly average of the daily samples exceeds the maximum allowable limit, or if the average of two samples taken on consecutive days exceeds 5 NTU, the system owner or operator shall report to the Director and notify the public as directed in Sections 12 and 13 respectively.

SECTION 11 APPROVED ANALYTICAL TECHNIQUES AND LABORATORIES

- 11.1 Analytical techniques, for other than organic contaminants shall be in accordance with the 14th, or later, edition of "Standard Methods for the Examination of Water and Wastewater," or Atomic Absorption Method, "Methods for Chemical Analyses of Water and Wastes," as published by the Environmental Protection Agency, Office of Technology Transfer, Wash. D.C. 1974.
- 11.2 Analyses for Organic contaminants shall be made in accordance with "Method for Organo-Chlorine Pesticides in Industrial Effluents," and "Methods for Chlorinated Phenoxy Acid Herbicides in Industrial Effluents," MDQARL, United States Environmental Protection Agency Cincinnati, Ohio, November 28, 1973.
- 11.3 For the purpose of determining compliance with the maximum microbiological contaminant levels, sample analyses may be considered only if they have been analyzed by the West Virginia Hygienic Laboratory or by a certified laboratory.
- 11.4 For the purpose of determining compliance with the maximum chemical and radiological contaminant levels and in accordance with Sections 11.1 and 11.2 samples may be considered only if they have been analyzed by the Environmental Health Services Laboratory, State Department of Health, or by a certified laboratory.
- 11.5 For the purpose of determining measurements of turbidity and free chlorine, samples may be considered only if they have been analyzed by a person approved by the Director, and analyzed in accordance with Section 11.1.

SECTION 12 REPORTING REQUIREMENTS

- 12.1 The owner or operator shall report to the Director within 40 days following a test, measurement, or analysis required to be made by these regulations, the results of that test, measurements or analysis.
- 12.2 The owner or operator shall report to the Director within 48 hours the failure to comply with any drinking water regulation, including failure to comply with the monitoring requirements.
- 12.3 The owner or operator is not required to report analytical results to the Director in cases where the State Hygienic Laboratory or the Environmental Health Services Laboratory performs the analysis.
- 12.4 At least once per month, or as otherwise directed by the Director, the owner or operator of the public water system shall submit to the Director a written summary of the public water system operation, test data, and such other information as may be required by the Director.
- 12.5 All reports and summaries required by Section 12 shall be submitted in a manner or form approved by the Director.

SECTION 13 PUBLIC NOTIFICATION

- 13.1 The owner or operator of a public water system shall notify the public when the maximum contaminant levels are exceeded; or fails to comply with applicable testing procedures and analytical techniques provided in Sections 6, 7, 8, 9, 10, and 11; or when maximum contaminant levels or schedules prescribed by a variance or exemption are exceeded; or when a variance or exemption is granted.
- 13.2 Community water systems shall notify the public by notice on or with the first set of water bills issued by the system when the provisions of Section 13.1 have not been complied with.
- 13.3 The owner or operator of a community water system shall notify the public once every three months, so long as the failure to comply for the reasons set out in Section 13.1 continue. In the event the system does not issue water bills at least every three months, then the notice shall be made or supplemented by a form of direct mail.
- 13.4 In addition to the requirements of Sections 13.2 and 13.3, if a community water system exceeds a maximum contaminant level, the system shall:
- A. Publish in a newspaper serving the general area for 3 consecutive days, notice of the failure. Notice shall be published within 14 days of learning of the failure.
 - B. Furnish a copy of the notice to radio and television stations serving the area served by the system. Notice shall be furnished within 7 days of learning of the failure.
 - C. If the area served by a community water system is not served by a daily newspaper of general circulation, notification required

by paragraph A herein shall be by publication on three consecutive weeks in a weekly newspaper of general circulation serving the area. If there is no weekly newspaper of general circulation in the area, notice shall be given by posting the notice in the courthouse in the area served by the systems.

13.5 If a non-community water system fails to comply with Section 13.1, the notice to the public shall be given by conspicuous posting, in a location where it can be seen by consumers.

13.6 Notices shall fairly inform the users of the system, disclosing all material facts, including the nature of the problem and where appropriate, a clear statement of the violation, and any preventative measures which should be taken by the public.

SECTION 14 CONTROL TESTS AND RECORD MAINTENANCE

- 14.1 Owners or operators of a public water system shall retain at a convenient location on or near its premises, records of microbiological, turbidity, radiological and chemical analyses, or a summary thereof. Microbiological, turbidity and radiological analysis records shall be kept for five years. Chemical analysis records shall be kept for ten years. Control tests and operational records shall be kept for five years.
- 14.2 The records shall include the date, place and time of sampling, and the name of the person who collected the sample; identification as to whether it was a routine distribution system sample, check sample, raw or drinking water sample, or other special purpose sample; the date of analysis; laboratory and person responsible for performing analysis; analytical technique or method used; and results of analysis.
- 14.3 The records of action taken by the system to correct violations shall be kept for three years after correction.
- 14.4 Copies of written reports relating to sanitary surveys of the system shall be kept for ten years.
- 14.5 Records concerning a variance or exemption shall be kept for not less than five years following the expiration of such variance or exemption.

SECTION 15 VARIANCES

15.1 The Director may grant one or more variances to a public water system from any requirement respecting a maximum contaminant level, upon a finding that:

A. Because of characteristics of the raw water sources which are reasonably available to the system, the system cannot meet the requirements respecting the maximum contaminant levels despite application of the best technology, treatment, techniques, or other means, which the Director finds are generally available (taking costs into consideration); and

B. The granting of a variance will not result in an unreasonable risk to the health of persons served by the system.

15.2 An owner or operator may request the granting of a variance by submitting same in writing to the Director. Owners or operators may submit a joint request for variances when they seek similar variances under similar circumstances. Written requests for a variance or variances shall include the following information:

A. The nature and duration of the variance requested.

B. Relevant analytical results of water quality sampling of the system, including results of tests conducted pursuant to the requirements of these regulations.

C. Variances shall include:

1. An explanation in full and evidence of the best available treatment, technology and techniques.

2. Relevant economic and legal factors.

3. A proposed compliance schedule, including the date each step toward compliance will be achieved. Such schedule

the request in the proposed variance or schedule and the information that the requesting person intends to submit at such hearing.

3. The signature of the individual making the request, or signature of the responsible person in the organization making the request.

D. The Director shall give notice in the manner set forth in Section 15.5 of any public hearing to be held pursuant to a request or on his own motion.

E. A hearing convened pursuant to Section 15.5 shall be conducted informal, orderly and expeditiously.

F. The variance or schedule shall become effective 30 days after notice is given for opportunity for a hearing.

15.6 Within 30 days after the public hearing the Director shall confirm, revise, or rescind the proposed variance or schedule.

SECTION 16 EXEMPTIONS

- 16.1 The Director may grant an exemption to a public water system from any requirement respecting a maximum contaminant level or any treatment technique requirement, or both, upon **finding** that:
- A. Due to compelling factors (which may include economic factors), the public water supply is unable to comply with such contaminant level or treatment technique requirement; and
 - B. The public water system was in operation on the effective date of such contaminant level or treatment technique requirement; and
 - C. The granting of an exemption will not result in an unreasonable risk to health.
- 16.2 An owner or operator may request the granting of an exemption for a public water system by submitting a request in writing to the Director. Owners or operators may submit a joint request for exemptions when they seek similar exemptions under similar circumstances. Any written request for an exemption or exemptions shall include the following information:
- A. The nature and duration of the exemption requested.
 - B. Relevant analytical results of water quality sampling of the system, including results of tests conducted pursuant to the requirements of these regulations.
 - C. Explanation of the compelling factors such as time or economic factors which prevent the system from achieving compliance.
 - D. Other pertinent information.
 - E. A proposed compliance schedule, including the date when each step toward compliance will be achieved.
 - F. Such other information as the Director may require.

- 16.3 A. The Director shall act on any exemption request submitted within 90 days of receipt of the request.
- B. The Director shall consider the following factors:
1. Construction, installation, or modification of treatment equipment or systems.
 2. The time needed to put into operation a new treatment facility to replace an existing system which is not in compliance.
 3. Economic feasibility of compliance.
- 16.4 A. The Director shall notify the applicant of his intention to issue a denial. Such notice shall include a statement of reasons for the proposed denial, and shall offer the applicant an opportunity to present within 30 days of receipt of the notice, additional information or argument to the Director. The Director shall make a final determination on the request within 30 days after receiving any such additional information or argument as submitted by the applicant.
- B. If the Director grants an exemption request submitted pursuant to Section 16.2, he shall notify the applicant of his decision in writing. The notice shall identify the facility covered, and shall specify the termination date of the exemption, and, provide that the exemption may be terminated upon a finding by the Director that the system has failed to comply with any requirement of a final schedule issued pursuant to Section 16.6.
- C. The Director shall propose a schedule for:
1. Compliance (including increments of progress) by the public water system with each maximum contaminant level requirement and treatment technique requirement

covered by the exemption; and

2. Implementation by the public water system of such control measures as the Director may require for each contaminant covered by the exemption.

D. The schedule shall be prescribed by the Director within one year after the granting of the exemption, ~~subsequent~~ to provision of opportunity for a hearing provided in Section 16.5.

- 16.5 A. Before schedule proposed by the Director pursuant to Section 16.4 may take effect, the Director shall provide notice and opportunity for public hearing on the schedule.
- B. Public notice of an opportunity for a hearing on an exemption schedule shall be circulated in a manner designed to inform interested persons and of the proposed schedule, and shall include at least the following:
1. Posting of a notice in the courthouse of each county served by the public water system, and publishing of a notice in a newspaper or newspapers of general circulation in the county served by the public water system.
 2. Such notice shall include a summary of the proposed schedule and shall inform interested persons that they may request a public hearing on the proposed schedule.
- C. Requests for a hearing may be submitted by any interested person. Frivolous or insubstantial requests for hearing may be denied by the Director. Requests must be submitted to the Director within 30 days after issuance of the public notices provided for in paragraph B. Such requests shall include the following information:
1. The name, address and telephone number of the individual, organization or other entity requesting a hearing;
 2. A brief statement of the interest of the person making the request on the proposed exemption or schedule.
 3. The signature of the individual making the request, or signature of the responsible person in the organization making the request.
- D. The Director shall give notice in the manner set forth in Section 16.5 B of any hearing to be held pursuant to a request

submitted by an interested person, or on his own motion.

Notice of the hearing shall be sent to the person requesting the hearing, if any. Notice of the hearing shall include a statement of the purpose, time, and location of the hearing, and the address and telephone number where interested persons may obtain further information concerning the hearing.

Notice of the hearing shall be given not less than 5 days prior to the time scheduled for the hearing.

- 16.6 A. Within 30 days after public hearing the Director may, revise the proposed schedule as necessary and prescribe the final schedule for compliance and interim measures for the public water system granted an exemption under Section 16.3.
- B. Such schedule shall require compliance by the public water system with each maximum contaminant level and treatment technique requirement prescribed, by no later than January 1, 1981.
- C. If the public water system has entered into an enforceable agreement to become part of a regional system, as determined by the Director, such schedule shall require compliance by the public water system with each maximum contaminant level and treatment technique requirement prescribed by not later than January 1, 1983.

SECTION 17 EFFECTIVE DATES FOR MONITORING

17.1 Community water systems will be required to monitor for maximum contaminants according to the following table:

	<u>WATER SOURCE</u>	<u>INITIAL SAMPLING</u>	<u>FREQUENCY</u>
Microbiological	Surface Ground	immediately immediately	See Section 6.7
Inorganic Chemicals	Surface Ground	June 24, 1978 June 24, 1979	every year every year
Organic Chemicals	Surface Ground	June 24, 1978 as directed by the Director	every 3 years as directed by Director
Turbidity	Surface Ground	immediately *none	once per day none
Nitrates	Surface Ground	June 24, 1978 June 24, 1979	every year every 3 years
Radiological	Surface Ground	June 24, 1979 June 24, 1979	every 4 years every 4 years

*except in specific cases as specified by the Director.

17.2 Non-community water systems will be required to monitor for maximum contaminants according to the following table:

	<u>WATER SOURCE</u>	<u>INITIAL SAMPLING</u>	<u>FREQUENCY</u>
Microbiological	Surface	June 24, 1979	*Quarterly
	Ground	June 24, 1979	*Quarterly
Inorganic Chemicals	DOES NOT APPLY		
Organic Chemicals	DOES NOT APPLY		
Turbidity	Surface	June 24, 1979	Once per day
	Ground	**Does not apply	Does not apply
Nitrates	Surface	June 24, 1979	as directed by the Director
	Ground	June 1, 1979	as directed by the Director
Radiological	DOES NOT APPLY		

*May be modified by Director based on sanitary survey.

**Except in specific cases as specified by the Director.

17.3 Consecutive systems may be regarded as a single system for monitoring purposes, if approved by the Director.

SECTION 18 BOTTLED WATER

- 18.1 No person shall manage, operate or maintain a bottled water treatment plant, or distribut bottled water in this state, without receiving a permit from the Director.
- 18.2 The procedure for applying for a permit or permits, shall be in accordance with Sections 3 and 4 of these regulations and the current "Bottled Water Design Standards" of the State Department of Health.
- 18.3 In addition to Section 13.2, operators of out of state bottled water treatment plants distributing water in West Virginia, shall include with their application, a copy of their most recent permit to operate from their State Health Department.
- 18.4 Source waters, plant facilities, treatment techniques, equipment, supplies, operations, and distribution methods shall be approved by the Director and must be in accordance with the State Health Department's "Design Standards for Public Water Supply Systems" and "Bottled Water Design Standards."
- 18.5 Bottled water treatment plants shall comply with Sections 6, 7, 8, 9, and 10 and 15 of these regulations as they apply to community water systems except that the monitoring frequency for micro-biological contaminants shall be not less than once each week.
- 18.6 Each in-state bottled water treatment plant shall be inspected every six months or as otherwise determined by the Director.
- 18.7 A permit issued by the Director may be revoked for failure to comply with provisions of these regulations.