

WEST VIRGINIA
SECRETARY OF STATE
KEN HECHLER
ADMINISTRATIVE LAW DIVISION

Form #1

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OFFICE OF WEST VIRGINIA
SECRETARY OF STATE

NOTICE OF PUBLIC HEARING ON A PROPOSED RULE

DEP -
AGENCY: Environmental Quality Board TITLE NUMBER: 46

RULE TYPE: Legislative; CITE AUTHORITY 22B-3-4

AMENDMENT TO AN EXISTING RULE: YES X NO

IF YES, SERIES NUMBER OF RULE BEING AMENDED: 1

TITLE OF RULE BEING AMENDED: Requirements Governing Water Quality Standards

IF NO, SERIES NUMBER OF NEW RULE BEING PROPOSED:

TITLE OF RULE BEING PROPOSED:

DATE OF PUBLIC HEARING: July 18, 1995 TIME: 7:00 PM

LOCATION OF PUBLIC HEARING: 1615 Washington Street, East
Charleston, West Virginia

COMMENTS LIMITED TO: ORAL , WRITTEN , BOTH X

COMMENTS MAY ALSO BE MAILED TO THE FOLLOWING ADDRESS: Environmental Quality Board
1615 Washington Street East

The Department requests that persons wishing to make comments at the hearing make an effort to submit written comments in order to facilitate the review of these comments.

Charleston, WV 25311-2126

The issues to be heard shall be limited to the proposed rule.

ATTACH A **BRIEF** SUMMARY OF YOUR PROPOSAL

Yusuf Chaffield
Authorized Signature

12.80

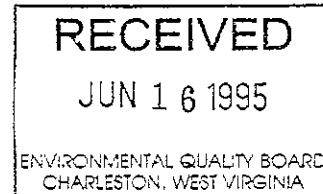


BUREAU OF ENVIRONMENT
10 McJunkin Road
Nitro, WV 25143-2506

GASTON CAPERTON
GOVERNOR

LAIDLEY ELI MCCOY, PH.D.
COMMISSIONER

June 16, 1995



Ms. Judy Cooper
Director, Administrative Law Division
Secretary of State's Office
Building 1, Suite 157K
Charleston, West Virginia 25305

RE: 46 CSR 1 - "Requirements Governing Water Quality Standards"

Dear Ms. Cooper:

This is to advise you that I am giving approval for the filing of the above-captioned rule as a proposed amendment to an existing legislative rule.

Your cooperation in this regard is very much appreciated. If you have any questions or require additional information, please feel free to contact Roger T. Hall at 759-0515.

Sincerely yours,

Laidley Eli McCoy, Ph.D.
Director

LEM;RTH:cc

Attachment

STATEMENT OF CIRCUMSTANCES REQUIRING
AMENDMENTS TO 46 CSR 1

The current language of section 5.2.b.B requires that discharges within five miles above a drinking water intake must meet water quality standards at the "end of pipe". During the last triennial review of the Water Quality Standards rule, completed in August of 1994, the Board received comments from various industries who maintain that meeting standards at the end of pipe, rather than having an allowance for mixing within the receiving stream, results in unduly burdensome costs. The Board also received comments from agencies and individuals who expressed serious concerns regarding the elimination of the protective buffer provided by the requirements of the five mile rule.

In this proposal, the Board has attempted to respond to all of the comments received and concerns expressed with regard to this provision. The proposed provisions are consistent with the Federal Clean Water Act and regulations promulgated thereunder.

SUMMARY OF PROPOSED AMENDMENTS TO 46 CSR 1

The changes proposed herein include amending the current language of the "five mile rule". The current requirements which apply in the zone five miles above a drinking water intake have been deleted, and new language has been proposed in section 5.2 which describes requirements for mixing zones for human health criteria. The rule does not change the Chief's authority to limit discharges within a distance of 1/2 mile above a drinking water intake.

In brief, the current requirement that water quality standards be met at the "end of pipe" in waters which serve as public water supplies (Use Category A) has been changed to allow mixing zones to be assigned in Category A waters at the request of a discharger. Such mixing zones would allow limited mixing to occur within the receiving waters. Any mixing zone allowed according to the proposed changes must be sized to prevent significant human health risks. Mixing zones would not be allowed for bioaccumulative pollutants and would not be allowed in waters with a 7Q10 flow of less than 5 cubic feet per second.

Amended language occurs in sections 5.2, 6.2 and 7.2 of the rule.

APPENDIX B

FISCAL NOTE FOR PROPOSED RULES

Rule Title: Requirements Governing Water Quality Standards

Type of Rule: Legislative Interpretive Procedural

Agency: Environmental Quality Board

Address: 1615 Washington St. E.
Charleston, WV 25311

1. Effect of Proposed Rule

	ANNUAL FISCAL YEAR				
	INCREASE	DECREASE	CURRENT	NEXT	THEREAFTER
<u>ESTIMATED TOTAL COST</u>	\$	\$	\$	\$	\$
PERSONAL SERVICES					
CURRENT EXPENSE					
REPAIRS & ALTERNATIONS			N/A		
EQUIPMENT					
OTHER					

2. Explanation of above estimates:

3. Objectives of these rules:

To establish narrative and numeric water quality standards to apply to the waters of the State of West Virginia. The amendments proposed at this time provide new requirements for meeting numeric standards in Category A, Public Water Supply waters.

Rule Title: Requirements Governing Water Quality Standards

4. Explanation of Overall Economic Impact of Proposed Rule.

A. Economic Impact on State Government.

None anticipated.

B. Economic Impact on Political Subdivisions; Specific Industries; Specific groups of Citizens.

The proposed amendments will make discharge requirements less stringent under certain circumstances and will therefore result in lower costs for wastewater treatment for some dischargers.

C. Economic Impact on Citizens/Public at Large.

None anticipated.

Date: June 14, 1995

Signature of Agency Head or Authorized Representative

Libby Chatfield
Technical Advisor
Environmental Quality Board

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LEGISLATIVE RULES
ENVIRONMENTAL QUALITY BOARD

JUN 16 2 21 PM '95

SERIES 1
REQUIREMENTS GOVERNING WATER
QUALITY STANDARDS

OFFICE OF WEST VIRGINIA
SECRETARY OF STATE

§46-1-1. General.

1.1. Scope. -- These rules establish requirements governing the discharge or deposit of sewage, industrial wastes and other wastes into the waters of the State and establish water quality standards for the waters of the State standing or flowing over the surface of the State. It is declared to be the public policy of the State of West Virginia to maintain reasonable standards of purity and quality of the water of the State consistent with (1) public health and public enjoyment thereof; (2) the propagation and protection of animal, bird, fish, and other aquatic and plant life; and (3) the expansion of employment opportunities, maintenance and expansion of agriculture and the provision of a permanent foundation for healthy industrial development. (See W. Va. Code § 22-11-2)

1.2. Authority. -- W. Va. Code §22B-3-4

1.3. Filing Date.

1.4. Effective Date.

§46-1-2. Definitions.

The following definitions in addition to those set forth in W. Va. Code §22-11-3, shall apply to these rules unless otherwise specified herein, or unless the context in which used clearly requires a different meaning:

2.1. "Conventional treatment" is the treatment of water as approved by the State Health Department to assure that the water is safe for human consumption.

2.2. "Cumulative" means a pollutant which increases in concentration in an organism by successive additions at different times or in different ways (bio-accumulation).

2.3. "Designated uses" are those uses specified in water quality standards for each water body or segment whether or not they are being attained. (See section 6.2)

2.4. "Existing uses" are those uses actually attained in a water body on or after November 28, 1975, whether

or not they are included in the water quality standards.

2.5. The "Federal Act" means the Clean Water Act (also known as the Federal Water Pollution Control Act) Public Law 92-500, as amended by Public Law 100-4, 33 U.S.C. 1251, et seq.

2.6. "High quality waters" are those waters whose quality is equal to or better than the minimum levels necessary to achieve the national water quality goal uses.

2.7. "Intermittent streams" are streams which have no flow during sustained periods of no precipitation and which do not support aquatic life whose life history requires residence in flowing waters for a continuous period of at least six (6) months.

2.8. "Outstanding national resource waters" are those whose unique character, ecological or recreational value or pristine nature constitutes a valuable national or State resource.

2.9. "Natural" or "naturally occurring" values or "natural temperature" shall mean for all of the waters of the State:

a. Those water quality values which exist unaffected by -- or unaffected as a consequence of -- any water use by any person; and

b. Those water quality values which exist unaffected by the discharge, or direct or indirect deposit of, any solid, liquid or gaseous substance by any person.

2.10. "Non-point source" shall mean any source other than a point source from which pollutants may reach the waters of the State.

2.11. "Persistent" shall mean a pollutant and its transformation products which under natural conditions degrade slowly in an aquatic environment.

2.12. "Point source" shall mean any discernible, confined and discrete conveyance, including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock or vessel or other floating craft, from which pollutants are or may be discharged. This term does not include agricultural stormwater discharges and return flows from irrigated agriculture.

2.13. "Representative important species of aquatic life" shall mean those species of aquatic life whose

protection and propagation will assure the sustained presence of a balanced aquatic community. Such species are representative in the sense that maintenance of water quality criteria will assure both the natural completion of the species' life cycles and the overall protection and sustained propagation of the balanced aquatic community.

2.14. The "State Act" or "State Law" shall mean the West Virginia Water Pollution Control Act, W. Va. Code §22-11-1.

2.15. "Total recoverable" refers to the digestion procedure for certain heavy metals as referenced in 40 CFR 136, as amended June 15, 1990, Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act.

2.16. "Trout waters" are streams or stream segments which sustain year-round trout populations. Excluded are those streams or stream segments which receive annual stockings of trout but which do not support year-round trout populations.

2.17. "Water quality criteria" shall mean levels of parameters or stream conditions that are required to be maintained by these regulations. Criteria may be expressed as a constituent concentration, levels, or narrative statement, representing a quality of water that supports a designated use or uses.

2.18. "Water quality standards" means the combination of water uses to be protected and the water quality criteria to be maintained by these rules.

2.19. "Wetlands" are those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas.

2.20. "Wet weather streams" are streams that flow only in direct response to precipitation or whose channels are at all times above the water table.

§46-1-3. Conditions Not Allowable In State Waters.

3.1. Certain characteristics of sewage, industrial wastes and other wastes cause pollution and are objectionable in all waters of the State. Therefore, the Environmental Quality Board does hereby proclaim that the following general conditions are not to be allowed in any of the waters of the State.

3.2. No sewage, industrial wastes or other wastes present in any of the waters of the State shall cause therein or materially contribute to any of the following conditions thereof:

- a. Distinctly visible floating or settleable solids, suspended solids, scum, foam or oily slicks;
- b. Deposits or sludge banks on the bottom;
- c. Odors in the vicinity of the waters;
- d. Taste or odor that would adversely affect the designated uses of the affected waters;
- e. Materials in concentrations which are harmful, hazardous or toxic to man, animal or aquatic life;
- f. Distinctly visible color;
- g. Concentrations of bacteria which may impair or interfere with the designated uses of the affected waters;
- h. Requiring an unreasonable degree of treatment for the production of potable water by modern water treatment processes as commonly employed; and
- i. Any other condition, including radiological exposure, which adversely alters the integrity of the waters of the State including wetlands; no significant adverse impact to the chemical, physical, hydrologic, or biological components of aquatic ecosystems shall be allowed.

§46-1-4. Anti-Degradation Policy.

4.1. It is the policy of the State of West Virginia the waters of the state shall be maintained and protected as follows:

- a. Existing water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected. Existing uses are those uses actually attained in the water body on or after November 28, 1975, whether or not they are included as designated uses within these water quality standards.
- b. The existing high quality waters of the State must be maintained at their existing high quality unless it is determined after satisfaction of the intergovernmental coordination of the State's continuing planning process and opportunity for public comment and hearing that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located.

If limited degradation is allowed, it shall not result in injury or interference with existing stream water uses or in violation of State or Federal water quality criteria that describe the base levels necessary to sustain the national water quality goal uses of protection and propagation of fish, shellfish and wildlife and recreating in and on the water.

In addition, the Board and the chief shall assure that all new and existing point sources shall achieve the highest established statutory and regulatory requirements applicable to them and shall assure the achievement of cost-effective and reasonable best management practices for non-point source control.

A. High quality waters are those waters meeting the definition at section 2.6 herein.

B. High quality waters include but are not limited to the following:

(a) Streams designated by the West Virginia Legislature under the West Virginia Natural Stream Preservation Act, pursuant to W. Va. Code Section 22-13-5, and

(b) Streams listed in West Virginia High Quality Streams, Fifth Edition, prepared by the Wildlife Resources Division, Department of Natural Resources (1986).

(c) Streams or stream segments which receive annual stockings of trout but which do not support year-round trout populations.

c. In waters which constitute a water of special concern no activities which result in the reduction of ambient water quality shall be allowed. Waters of special concern include:

A. All Federally designated rivers under the "Wild and Scenic Rivers Act" Public Law 95-542 as amended, 16 U.S.C. 1271, et seq .

B. All naturally reproducing trout streams.

C. All streams and other bodies of water in State and National Forests and Recreation Areas.

D. National Rivers. "National Parks and Recreation Act of 1978." Public Law 95-625, as amended, 16 U.S.C.1, et seq.

d. In all cases, waters which constitute an outstanding national resource shall be maintained and protected and improved where necessary. Outstanding national resource

waters include, but are not limited to, all streams and rivers within the boundaries of Wilderness Areas designated by The Wilderness Act (16 U.S.C. 1131 et seq.) within the State.

Additional waters may be nominated for inclusion in that category by any interested party or by the Board on its own initiative. To designate a nominated water as an outstanding national resource water, the Board shall follow the public notice and hearing provisions as provided in 46 C.S.R. 6.

e. All applicable requirements of Section 316 (a) of the Federal Act shall apply to modifications of the temperature water quality criteria provided for in these rules.

§46-1-5. Mixing Zones.

5.1. In the permit review and planning process or upon the request of a permit applicant or permittee, the chief may establish on a case-by-case basis an appropriate mixing zone.

5.2 The following guidelines and conditions are applicable to all mixing zones:

a. The chief will assign, on a case-by-case basis, definable geometric limits for mixing zones for a discharge or a pollutant or pollutants within a discharge. Applicable limits shall include, but may not be limited to, the linear distances from the point of discharge, surface area involvement, volume of receiving water, and shall take into account other nearby mixing zones. Mixing zones shall take into account the mixing conditions in the receiving stream (i.e: whether complete or incomplete mixing conditions exist). Mixing zones will not be allowed until applicable limits are assigned by the chief in accordance with this section.

b. Concentrations of pollutants which exceed the acute criteria for protection of aquatic life set forth in Appendix E shall not exist at any point within an assigned mixing zone or in the discharge itself unless a zone of initial dilution is assigned. A zone of initial dilution may be assigned on a case-by-case basis at the discretion of the chief. The zone of initial dilution is the area within the mixing zone where initial dilution of the effluent with the receiving water occurs, and where the concentration of the effluent will be its greatest in the water column. Where a zone of initial dilution is assigned by the Chief, the size of the zone shall be determined using one of the four alternatives outlined in Section 4.3.3 of EPAs Technical Support Document for Water Quality-based Toxics Control (EPA/505/2-90-001 PB91-127415, March 1991). Concentrations of pollutants shall not exceed the acute criteria at the edge of the assigned zone of initial dilution. ~~Chronic criteria for the protection of aquatic life and criteria for the protection of~~

~~human health from the consumption of fish tissue~~ may be exceeded within the mixing zone but shall be met at the edge of the assigned mixing zone.

c. Concentrations of pollutants which exceed the criteria for the protection of human health set forth in Appendix E shall not be allowed at any point unless a mixing zone has been assigned by the Chief. Human health criteria may be exceeded within an assigned mixing zone, but shall be met at the edge of the assigned mixing zone. Mixing zones for human health criteria shall be sized to prevent significant human health risks and shall be developed using reasonable assumptions about exposure pathways. No mixing zones for human health criteria shall be assigned for bioaccumulative pollutants. No mixing zone for human health criteria shall be established on a stream which has a seven (7) day, ten (10) year return frequency of 5 cfs or less.

d. Mixing zones, including zones of initial dilution, shall not interfere with fish spawning or nursery areas or fish migration routes; shall not overlap public water supply intakes or bathing areas; cause lethality to or preclude the free passage of fish or other aquatic life; nor harm any endangered species.

e. The mixing zone shall not exceed one-third (1/3) of the width of the receiving stream, and in no case shall the mixing zone exceed one-half (1/2) of the cross-sectional area of the receiving stream.

f. In lakes and other surface impoundments, the volume of a mixing zone shall not affect in excess of ten (10) percent of the volume of that portion of the receiving waters available for mixing.

g. A mixing zone shall be limited to an area or volume which will not adversely alter the existing or designated uses of the receiving water, nor be so large as to adversely affect the integrity of the water body.

h. Mixing zones shall not:

A. Be used for, or considered as, a substitute for technology-based requirements of the Clean Water Act and other applicable State and Federal laws.

B. Extend downstream at any time a distance more than five times the width of the receiving watercourse at the point of discharge.

C. Cause or contribute to any of the conditions prohibited in Section 46-1-3.

D. Be granted where instream waste concentration of a discharge is greater than 80%.

E. Overlap one another.

h i. In the case of thermal discharges, a successful demonstration conducted under Section 316(a) of the Clean Water Act shall constitute compliance with all provisions of this section.

± j. The Chief may waive the requirements of subsections (d) and (g)(B) above if a discharger provides an acceptable demonstration of:

A. Information defining the actual boundaries of the mixing zone in question; and

B. Information and data proving no violation of subsection (c) and (f) above by the mixing zone in question.

‡ k. Upon implementation of a mixing zone in a permit, the permittee shall provide documentation that demonstrates to the satisfaction of the Chief that the mixing zone is in compliance with the provisions outlined in subsections (b), (d) and (g)(B).

* l. In order to facilitate a determination or assessment of a mixing zone pursuant to this section, the chief may require a permit applicant or permittee to submit such information as deemed necessary.

§46-1-6. Water Use Categories.

6.1. These rules establish general Water Use Categories and Water Quality Standards for the waters of the State. Unless otherwise designated by these rules, at a minimum all waters of the State are designated for the Propagation and maintenance of Fish and Other Aquatic Life (Category B) and for Water Contact Recreation (Category C) consistent with Clean Water Act goals. Incidental utilization for whatever purpose may or may not constitute a justification for assignment of a water use category to a particular stream segment.

a. Waste assimilation and transport are not recognized as designated uses. The classification of the waters must take into consideration the use and value of water for public water supplies, protection and propagation of fish, shellfish and wildlife, recreation in and on the water, agricultural, industrial and other purposes including navigation. Subcategories of a use may be adopted and appropriate

criteria set to reflect varying needs of such subcategories of uses, for example to differentiate between trout water and other waters. (See subsection 4.1.d.)

b. At a minimum, uses are deemed attainable if they can be achieved by the imposition of effluent limits required under Sections 301 (b) and 306 of the Federal Clean Water Act and use of cost-effective and reasonable best management practices for non-point source control. Seasonal uses may be adopted as an alternative to reclassifying a water body or segment thereof to uses requiring less stringent water quality criteria. If seasonal uses are adopted, water quality criteria will be adjusted to reflect the seasonal uses; however, such criteria shall not preclude the attainment and maintenance of a more protective use in another season. A designated use which is not an existing use may be removed, or subcategories of a use may be established if it can be demonstrated that attaining the designated use is not feasible because:

A. Application of effluent limitations for existing sources more stringent than those required pursuant to Section 301 (b) and Section 306 of the Federal Act in order to attain the existing designated use would result in substantial and widespread adverse economic and social impact; or

B. Naturally-occurring pollutant concentrations prevent the attainment of the use; or

C. Natural, ephemeral, intermittent or low flow conditions of water levels prevent the attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges to enable uses to be met; or

D. Human-caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place; or

E. Dams, diversions or other types of hydrologic modifications preclude the attainment of the use, and it is not feasible to restore the water body to its original condition or to operate such modification in a way that would result in the attainment of the use; or

F. Physical conditions related to the natural features of the water body, such as the lack of a proper substrate, cover, flow, depth, pools, riffles, and the like, unrelated to water quality, preclude attainment of aquatic life protection uses.

c. The State shall take into consideration the

quality of downstream waters and shall assure that its water quality standards provide for the attainment of the water quality standards of downstream waters.

d. In establishing a less restrictive use or uses, or subcategory of use or uses, and the water quality criteria based upon such uses, the Board shall follow the requirements for revision of water quality standards as required by W. Va. Code §22B-3-4 and Section 303 of the Federal Act and the regulations thereunder. Any revision of water quality standards shall be made with the concurrence of EPA. The Board's administrative procedural regulations for applying for less restrictive uses or criteria shall be followed.

6.2. Category A -- Water Supply, Public. -- This category is used to describe waters which, after conventional treatment, are used for human consumption. This category includes streams on which the following are located:

- a. All community domestic water supply systems;
- b. All non-community domestic water supply systems, (i.e. hospitals, schools, etc.);
- c. All private domestic water systems; and
- d. All other surface water intakes where the water is used for human consumption; ~~and~~

~~e. Shall apply to the stream segment extending upstream from the intake for a distance as defined in subsection 7.2.a.B of this series. (See Appendix B for partial listing of category A waters; see section 7.2.a.B. for additional requirements for category A waters.)~~

6.3. Category B -- Propagation and maintenance of fish and other aquatic life. -- This category includes:

- a. Category B1 -- Warm water fishery streams. -- Streams or stream segments which contain a fish population composed overwhelmingly of warm water species. (These are primarily sport fisheries and may be stocked with trout seasonally.)
- b. Category B2 -- Trout Waters. -- As defined in Section 2.16 (See Appendix A for a representative list.)
- c. Category B3 -- Small non-fishable streams. -- Streams or stream segments which because of their size or flow patterns do not offer sport fishing; they generally contain populations of minnows, darters, aquatic invertebrates, etc.

d. Category B4 -- Wetlands. -- As defined in section 2.19; certain numeric stream criteria may not be appropriate for application to wetlands (see Appendix E).

6.4. Category C -- Water contact recreation. -- This category includes swimming, fishing, water skiing and certain types of pleasure boating such as sailing in very small craft and outboard motor boats. See Appendix D for a representative list of category C waters.

6.5. Category D. -- Agriculture and wildlife uses.

a. Category D1 -- Irrigation. -- This category includes all stream segments used for irrigation.

b. Category D2 -- Livestock watering. -- This category includes all stream segments used for livestock watering.

c. Category D3 -- Wildlife. -- This category includes all stream segments and wetlands used by wildlife.

6.6. Category E -- Water supply industrial, water transport, cooling and power. -- This category includes cooling water, industrial water supply, power production, commercial and pleasure vessel activity, except those small craft included in Category C.

a. Category E1 -- Water Transport. -- This category includes all stream segments modified for water transport and having permanently maintained navigation aides.

b. Category E2 -- Cooling Water. -- This category includes all stream segments having one (1) or more users for industrial cooling.

c. Category E3 -- Power production. -- This category includes all stream segments extending from a point 500 feet upstream from the intake to a point one half (1/2) mile below the wastewater discharge point. (See Appendix C for representative list)

d. Category E4 -- Industrial. -- This category is used to describe all stream segments with one (1) or more industrial users. It does not include water for cooling.

§46-1-7. West Virginia Waters.

7.1. Major River Basins and their Alphanumeric System. All streams and their tributaries in West Virginia shall be individually identified using an alphanumeric system as

identified in the "Key to West Virginia Stream Systems and Major Tributaries" (1956) as published by the Conservation Commission of West Virginia and revised by the West Virginia Department of Natural Resources, Division of Wildlife (1985).

a. J - James River Basin. All tributaries to the West Virginia - Virginia State line.

b. P - Potomac River Basin. All tributaries of the main stem of the Potomac River to the West Virginia - Maryland - Virginia State line to the confluence of the North Branch and the South Branch of the Potomac River and all tributaries arising in West Virginia excluding the major tributaries hereinafter designated:

A. S - Shenandoah River and all its tributaries arising in West Virginia to the West Virginia - Virginia State line.

B. PC - Cacapon River and all its tributaries.

C. PSB - South Branch and all its tributaries.

D. PNB - North Branch and all tributaries to the North Branch arising in West Virginia.

c. M - Monongahela River Basin. The Monongahela River Basin main stem and all its tributaries excluding the following major tributaries which are designated as follows:

A. MC - Cheat River and all its tributaries except those listed below:

(a) MCB - Blackwater River and all its tributaries.

B. MW - West Fork River and all its tributaries.

C. MT - Tygart River and all its tributaries except those listed below:

(a) MTB - Buckhannon River and all its tributaries.

(b) MTM - Middle Fork River and all its tributaries.

D. MY - Youghigheny River and all its

tributaries to the West Virginia - Maryland State line.

d. O Zone 1 - Ohio River - Main Stem. The main stem of the Ohio River from the Ohio - Pennsylvania - West Virginia State line to the Ohio - Kentucky - West Virginia State line.

e. O Zone 2 - Ohio River - Tributaries. All tributaries of the Ohio River excluding the following major tributaries:

A. LK - Little Kanawha River. The Little Kanawha River and all its tributaries excluding the following major tributary which is designated as follows:

(a) LKH - Hughes River and all its tributaries.

B. K - Kanawha River Zone 1. The main stem of the Kanawha River from mile point 0, at its confluence with the Ohio River, to mile point 72 near Diamond, West Virginia.

C. K - Kanawha River Zone 2. The main stem of the Kanawha River from mile point 72 near Diamond, West Virginia and all its tributaries from mile point 0 to the headwaters excluding the following major tributaries which are designated as follows:

(a) KP - Pocatalico River and all its tributaries.

(b) KC - Coal River and all its tributaries.

(c) KE - Elk River and all its tributaries.

(d) KG - Gauley River. The Gauley River and all its tributaries excluding the following major tributaries which are designated as follows:

(A) KG-19 - Meadow River and all its tributaries.

(B) KG-34 - Cherry River and all its tributaries.

(C) KGC - Cranberry River and all its tributaries.

(D) KGW - Williams River and all its tributaries.

(e) KN - New River. The New River from its confluence with the Gauley River to the Virginia - West Virginia State line and all tributaries excluding the following major tributaries which are designated as follows:

(A) KNG - Greenbrier River and all its tributaries.

(B) KNB - Bluestone River and all its tributaries.

(C) KN-60 - East River and all its tributaries.

(D) K(L)-81-(1) - Bluestone Lake.

D. OG - Guyandotte River. The Guyandotte River and all its tributaries excluding the following major tributary which is designated as follows:

(a) OGM - Mud River and all its tributaries.

E. BS - Big Sandy River. The Big Sandy River to the Kentucky - Virginia - West Virginia State lines and all its tributaries arising in West Virginia excluding the following major tributary which is designated as follows:

(a) BST - Tug Fork and all its tributaries.

7.2. Applicability of Water Quality Standards. The following shall apply at all times unless a specific exception is granted in this section:

a. Water Use Categories as described in Section 6.

A. Based on meeting those Section 6 definitions, tributaries or stream segments may be classified for one or more Water Use Categories. When more than one use exists, they shall be protected by criteria for the use category requiring the most stringent protection.

B. ~~In each segment extending upstream from the intake of a water supply public (Water Use Category A), for a distance of five (5) miles or to the headwater, must be protected by prohibiting the discharge of any pollutants in excess of the concentrations designated for this Water Use Category in Section 8. Provided, however, that within a zone extending one half~~

(1/2) mile above the intake, the Chief, Water Resources Section, Division of Natural Resources, may establish for any discharge, effluent limitations for the protection of human health that require additional removal of ~~these pollutants~~ than would otherwise be provided by this rule. - (If a watershed is not significantly larger than ~~either of the two (2)~~ this zones above the intake, the water supply section may include the entire upstream watershed to its headwaters.

b. In the absence of any special application or contrary provision, water quality standards shall apply at all times when flows are equal to or greater than the minimum mean seven (7) consecutive day drought flow with a ten (10) year return frequency (7Q10). NOTE: Exceptions do not apply to trout waters nor the requirements of Section 3.

c. Exceptions: Numeric water quality standards shall not apply: (See section 7.2.d for site specific revisions)

A. When the flow is less than 7Q10;

B. In wet weather streams (or intermittent streams, when they are dry or have no measurable flow): Provided, That the existing and designated uses of downstream waters are not adversely affected;

~~C. In the zone of initial dilution of any mixing zones which are established pursuant to Section 5 of these rules;~~ In any assigned zone of initial dilution of any mixing zone where a zone of initial dilution is required by section 5.2.b herein, or in any assigned mixing zone for human health criteria or aquatic life criteria for which a zone of initial dilution is not assigned;

D. Where lesser quality is due to natural conditions. In such cases the naturally occurring values shall be the applicable criteria.

d. Site-specific applicability of water use categories and water quality criteria - State-wide water quality standards shall apply except where site-specific numeric criteria, variances or use removals have been approved following application and hearing, as provided in 46 C.S.R. 6. (See §8.3 and §8.4) The following are approved site-specific criteria, variances and use removals:

A. James River - (Reserved)

B. Potomac River

(a) Except for the unnamed tributary of the South Branch of Buzzard Run above and below Prather Pond

shall not have Water Use Category A; therefore may contain fluoride not to exceed 2.0 mg/l.

(b) Except that a site-specific numeric criterion for aluminum, not to exceed 500 ug/l, shall apply to the section of Opequon Creek from Turkey Run to the Potomac River.

C. Shenandoah River - (Reserved)

D. Cacapon River - (Reserved)

E. South Branch - (Reserved)

F. North Branch

(a) Except that the Stony River downstream from the limit of the thermal mixing zone (as established by Board Order of 11/20/75) for the Mount Storm Lake wastewater treatment facility to its confluence with the North Branch of the Potomac River is exempt from the 5°F above natural temperature rise; however, the maximum temperature outside the mixing zone shall not exceed 87°F at any time during the months of May through November and not exceed 73°F at any time during the months of December through April.

G. Monongahela River

(a) Except that flow in the main stem of the Monongahela River, as regulated by the Tygart Reservoir, operated by the U. S. Army Corps of Engineers, is based on a minimum flow of 345 cfs. at Lock and Dam No. 8, river mile point 90.8. This exception does not apply to tributaries of the Monongahela River.

(b) Except that site-specific numeric criteria shall apply to an unnamed tributary to the Monongahela River mainstem at approximately 3700 feet upstream of mile point 125, which may contain suspended solids not to exceed 60 mg/l, oil and grease not to exceed 15 mg/l, Ammonia-Nitrogen not to exceed 30 mg/l, total phenols not to exceed .10 mg/l, total cyanide not to exceed .05 mg/l, total manganese not to exceed 4 mg/l, total zinc not to exceed 1.5 mg/l, total copper not to exceed 1.0 mg/l, Benzene not to exceed .05 mg/l, Napthalene not to exceed .05 mg/l and Benzo (a) Pyrene not to exceed .05 mg/l and iron not to exceed 4 mg/l for the months June through November and 7 mg/l for the months of December through May.

H. Cheat River - (Reserved)

I. Blackwater River - (Reserved)

- J. West Fork River - (Reserved)
- K. Tygart River - (Reserved)
- L. Buckhannon River - (Reserved)
- M. Middle Fork River - (Reserved)
- N. Youghiogheny River

(a) Water Use Categories A and E are excluded from the tributaries of the Youghiogheny River in West Virginia which flow into Maryland.

- O. Ohio River Main Stem - (Reserved)
- P. Ohio River Tributaries.

(a) Except that site-specific numeric criteria shall apply to the stretch of Conners Run (0-77-A), a tributary of Fish Creek, from its mouth to the discharge from Conner Run impoundment, which shall not have the Water Use Category A and may contain arsenic not to exceed 200 ug/l; selenium not to exceed 62 ug/l; and iron not to exceed 3.5 mg/l as a monthly average and 7 mg/l as a daily maximum.

(b) Except that site-specific numeric criteria shall apply to that segment of Harmon Creek (0-97) from its confluence with the Ohio River to a point 2.2 miles upstream, which shall not have the Water Use Category A designation. Therefore, at any time the temperature shall not exceed 100°F, total iron shall not exceed 4.0 mg/l and total fluoride shall not exceed 2.0 mg/l, each as thirty (30) day average values to be determined from four (4) weekly samples.

(c) Except in the stretch of Cow Creek (0-55) from its mouth to a point approximately 2,300 feet upstream, the Water Use Category A shall not apply.

- Q. Little Kanawha River. - (Reserved)
- R. Hughes River - (Reserved)
- S. Kanawha River Zone 1 - Main Stem

(a) For the Kanawha River main stem, Zone 1, Water Use Category A shall not apply; and

(b) The minimum flow shall be 1,960 cfs at the Charleston gauge.

- T. Kanawha River Zone 2 and Tributaries.

(a) For the main stem of the Kanawha River only, the minimum flow shall be 1,896 cfs at mile point 72.

(b) Except the stretch between the mouth of Little Scary Creek (K-31) and the Little Scary impoundment shall not have Water Use Category A or B1 and shall have Water Use Category B3. The following site-specific numeric criterion shall apply to that section: arsenic not to exceed 200 ug/l and selenium not to exceed 62 ug/l; and copper not to exceed 105 ug/l as a daily maximum nor 49 ug/l as a 4-day average.

(c) Except for Ward Hollow (K-39-A), a small tributary of Davis Creek which may contain chlorides not to exceed 540 mg/l.

(d) Except for Simmons Creek (K-54) from its mouth to a point 1200 feet upstream to which the following site-specific numeric criterion shall apply: a maximum daily temperature not to exceed 38°C (100°F) nor a monthly average temperature to exceed 34°C.

U. Pocatalico River - (Reserved)

V. Coal River - (Reserved)

W. Elk River - (Reserved)

X. Gauley River - (Reserved)

Y. Meadow River - (Reserved)

Z. Cherry River - (Reserved)

AA. Cranberry River - (Reserved)

BB. Williams River - (Reserved)

CC. New River

(a) Except the stretch of Laurel Creek (KN-5), a tributary of the New River, from the confluence of Dempsey Branch and Laurel Creek to a point 1.7 miles below, where the site-specific numeric criterion for iron shall be 2.0 mg/l total iron, and from that point to the confluence of Laurel Creek and the New River, the site-specific numeric criterion for iron shall be 1.0 mg/l total iron.

DD. Greenbrier River

(a) Water Use Category A and B2 shall not apply to that segment of the East Fork of the Greenbrier River (KNG-78) from the reservoir located at the tannery to the

confluence with the West Fork; Provided that all trout water (B2) standards shall not be violated in the mainstem Greenbrier River.

EE. Bluestone River - (Reserved)

FF. Bluestone Lake

(a) Category E Water Uses are deleted in Bluestone Lake and temperature rise shall be limited to no more than 3°F above natural not to exceed 81°F at any time during the months of May through November and not to exceed 73°F at any time during December through April.

GG. East River - (Reserved)

HH. Guyandotte River - (Reserved)

II. Mud River - (Reserved)

JJ. Big Sandy River - (Reserved)

KK. Tug Fork River - (Reserved)

§46-1-8. Specific Water Quality Criteria.

8.1. Charts of specific water quality criteria are included in Appendix E.

a. Specific state (i.e. total, total recoverable, valence, etc.) of any parameter to be analyzed shall follow 40 CFR 136, Guidelines Establishing Test Procedures for Analysis of Pollutants Under the Clean Water Act, as amended, June 15, 1990. (See also Series II, Section 7.3 of these regulations)

b. An "X" or numerical value in the use columns of Appendix E shall represent the applicable criteria.

c. Charts of water quality criteria in Appendix E shall be applied in accordance with major stream and use applications, Sections 6 and 7.

8.2. Criteria for Toxicants.

a. Toxicants which are carcinogenic have human health criteria (Water Use Categories A and C) based upon an estimated risk level of one additional cancer case per one million persons (10^{-6}) and are indicated in Appendix E with an endnote (^b).

c. A final determination on the critical design flow for carcinogens is not made in this rule, in order to permit further review and study of that issue. Following the conclusion of such review and study, the Legislature may again take up the authorization of this rule for purposes of addressing the critical design flow for carcinogens: Provided, That until such time as the review and study of the issue is concluded or until such time as the Legislature may again take up the authorization of this rule, the regulatory requirements for determining effluent limits for carcinogens shall remain as they were on the date this rule was proposed.

8.3. Variances from Specific Water Quality Criteria. A variance from numeric criteria may be granted to a discharger if it can be demonstrated that the conditions outlined in subsections 6.1.b.A - F limit the attainment of one or more specific water quality criteria. Variances shall apply only to the discharger to whom they are granted and shall be reviewed by the Board at least every three years. In granting a variance, the requirements for revision of water quality standards in 46 CSR Series 6 shall be followed.

8.4. Site-specific numeric criteria. The Board may establish numeric criteria different from those set forth in Appendix E for a stream or stream segment upon a demonstration that existing numeric criteria are either over-protective or under-protective of the aquatic life residing in the stream or stream segment. A site-specific numeric criterion will be established only where the numeric criterion will be fully protective of the aquatic life and the existing and designated uses in the stream or stream segment. The site-specific numeric criterion may be established by conducting a Water Effects Ratio study pursuant to the procedures outlined in EPAs "Interim Guidance on the Determination and Use of Water-Effect Ratios for Metals" (February 1994); other methods may be used with prior approval by the Board. In adopting site-specific numeric criteria, the requirements for revision of water quality standards set forth in 46 CSR 6 shall be followed.

§46-1-9. Establishment Of Safe Concentration Values.

When a specific water quality standard has not been established by these rules and there is a discharge or proposed discharge into waters of the State, the use of which has been designated a Category B1, B2, B3 or B4, such discharge may be regulated by the chief where necessary to protect State water through establishment of a safe concentration value as follows:

9.1. Establishment of a safe concentration value shall be based upon data obtained from relevant aquatic field studies, standard bioassay test data which exists in substantial available scientific literature, or data obtained from specific

tests utilizing one (1) or more representative important species of aquatic life designated on a case-by-case basis by the chief and conducted in a water environment which is equal to or closely approximates that of the natural quality of the receiving waters.

9.2. In those cases where it has been determined that there is insufficient available data to establish a safe concentration value for a pollutant, the safe concentration value shall be determined by applying the appropriate application factor as set forth below to the 96-hour LC 50 value. Except where the chief determines, based upon substantial available scientific data that an alternate application factor exists for a pollutant, the following appropriate application factors shall be used in the determination of safe concentration values:

a. Concentrations of pollutants or combinations of pollutants that are not persistent and not cumulative shall not exceed 0.10 (1/10) of the 96-hour LC 50.

b. Concentrations of pollutants or combinations of pollutants that are persistent or cumulative shall not exceed 0.01 (1/100) of the 96-hour LC 50.

9.3. Persons seeking issuance of a permit pursuant to these rules authorizing the discharge of a pollutant for which a safe concentration value is to be established using special bioassay tests pursuant to subsection 9.1 of this section shall perform such testing as approved by the chief and shall submit all of the following in writing to the chief:

a. A plan proposing the bioassay testing to be performed.

b. Such periodic progress reports of the testing as may be required by the chief.

c. A report of the completed results of such testing including, but not limited to, all data obtained during the course of testing, and all calculations made in the recording, collection, interpretation and evaluation of such data.

9.4. Bioassay testing shall be conducted in accordance with methodologies outlined in the following documents: U.S. EPA Office of Research and Development Series Publication, Methods for Measuring the Acute Toxicity (EPA/600/4-90/027F, August 1993, 4th Edition) or Short Term Methods for Estimating Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms (EPA/600/4-89/001), March 1989; Standard Methods for the Examination of Water and Wastewater (18th Edition); or ASTM Practice E 729-88 for

Conducting Acute Toxicity Tests with Fishes, Macroinvertebrates and Amphibians as published in Volume 11.04 of the 1988 Annual Book of ASTM Standards. Test waters shall be reconstituted according to recommendations and methodologies specified in the previously cited references or methodologies approved in writing by the chief.

PARAMETER	USE DESIGNATION					
	AQUATIC LIFE			HUMAN HEALTH		ALL OTHER USES
	B1, B3, B4	B2	C ³	A ⁴		
	ACUTE ¹	CHRON ²			ACUTE ¹	CHRON ²

8.1 Aluminum (ug/l) Not to exceed: (See 7.1.d.B(b))	750	87	750	87		
8.2 Ammonia (ug/l): Un-ionized ammonia (UA) shall be determined from values of total ammonia-N, pH and temperature according to the following equation: $UA = \frac{1.2(\text{total ammonia-N})}{1+10^{(pKa-pH)}}$ where pKa = 0.0902 + 2730/(273.2 + T) and T = temperature (°C) The concentration of un-ionized ammonia (NH3) shall not exceed 50 ug/l.						50

PARAMETER	USE DESIGNATION							ALL OTHER USES	
	AQUATIC LIFE			HUMAN HEALTH		CHRON ²	C ³		A ⁴
	B1, B3, B4	B2	ACUTE ¹	ACUTE ¹	CHRON ²				
	ACUTE ¹	CHRON ²							

8.2.1 Acute and chronic aquatic life criteria for ammonia shall be determined using the tables and formulae in the National Criteria section of USEPAS Ambient Water Quality Criteria for Ammonia - 1984 (EPA 440/5-85-001, January 1985)	X	X	X	X	X				
8.3 Antimony (ug/l) Not to exceed:							4300	14	
8.4 Arsenic ^b (ug/l) Not to exceed:							50	50	100
8.4.1 Trivalent Arsenic Not to exceed:	360	190	360	190					
8.5 Barium (mg/l) Not to exceed:								1.0	
8.6 Beryllium (ug/l)		130		130				.0077	

PARAMETER	USE DESIGNATION							ALL OTHER USES
	AQUATIC LIFE			HUMAN HEALTH		C ³	A ⁴	
	B1, B3, B4		B2	ACUTE ¹	CHRON ²			
	ACUTE ¹	CHRON ²	ACUTE ¹					

8.7 Cadmium (ug/l) Hardness Soluble Cd (mg/l CaCO ₃)										
0 - 35 1.0										
36 - 75 2.0										
76 - 150 5.0										
> 150 10.0										X
8.7.1 Not to exceed 10 ug/l in the Ohio River (O Zone 1) main stem (see section 7.1.d)										X
8.7.3 The four-day average concentration of total recoverable cadmium shall not exceed the value determined by the following equation: $Cd = e^{(0.7852(\ln(\text{hardness})))^{-3.490}}$								X		
8.7.4 The one-hour average concentration of total recoverable cadmium shall not exceed the value determined by the following equation: $Cd = e^{(1.128(\ln(\text{hardness})))^{-3.628}}$										X

PARAMETER	USE DESIGNATION						
	AQUATIC LIFE			HUMAN HEALTH		ALL OTHER USES	
	B1, B3, B4	B2	C3	A4			
	ACUTE ¹	CHRON ²	ACUTE ¹	CHRON ²			

8.8 Chloride (mg/l) Not to exceed:	860 ¹	230	860	230	250	250	
8.9 Copper (ug/l) Not to exceed:						1000	
8.9.1 The four-day average concentration of total recoverable copper shall not exceed the value determined by the following equation ² : $Cu = e^{(0.8545[\ln(\text{hardness})] - 1.465)}$		X		X			
8.9.2 The one-hour average concentration of total recoverable copper shall not exceed the value determined by the following equation ² : $Cu = e^{(0.9422[\ln(\text{hardness})] - 1.464)}$	X		X				
8.10 Cyanide (ug/l) (As free cyanide HCN+CN ⁻) Not to exceed:	22	5.0	22	5.0	5.0	5.0	5.0

PARAMETER	USE DESIGNATION						
	AQUATIC LIFE				HUMAN HEALTH		ALL OTHER USES
	B1, B3, B4	CHRON ²	ACUTE ¹	B2	C ³	A ⁴	
							ACUTE ¹

8.13 Fluoride (mg/l) Not to exceed:							1.4	
8.13.1 Not to exceed 2.0 for category D uses								X
8.14 Hexavalent chromium (ug/l) Not to exceed:	16	11	16	7.2			50	
8.15 Iron ^c (mg/l) Not to exceed:		1.5		0.5			1.5	

PARAMETER	USE DESIGNATION					
	AQUATIC LIFE			HUMAN HEALTH		ALL OTHER USES
	B1, B3, B4	B2	C ³	A ⁴		
	ACUTE ¹	CHRON ²	ACUTE ¹	CHRON ²		

<p>8.15.1 Effluent limitations which may result in a concentration of up to 3.5 mg/l total iron in the stream are allowable upon a demonstration to the Chief by the applicant that such concentration will not have an adverse impact upon designated stream uses. This demonstration is subject to EPA approval and must show either: (1) that the stream is supporting designated uses while containing total iron concentrations higher than the applicable criteria or (2) the stream does not have an aquatic life use to protect. Notwithstanding Section 4 herein, this demonstration shall be the only demonstration required before the Chief and the Board with respect to</p>						
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PARAMETER	USE DESIGNATION						
	AQUATIC LIFE				HUMAN HEALTH		ALL, OTHER USES
	B1, B3, B4	CHRON ²	ACUTE ¹	B2	CHRON ²	C ³	
							ACUTE ¹

water quality related effluent limitations. This exception does not apply to trout waters.									
8.16 Lead (ug/l) Not to exceed:			X						50
8.16.1 The four-day average concentration of total recoverable lead shall not exceed the value determined by the following equation ^a : $Pb = e^{(1.273(\ln(\text{hardness})) - 4.705)}$							X		
8.16.2 The one-hour average concentration of total recoverable lead shall not exceed the value determined by the following equation ^a : $Pb = e^{(1.273(\ln(\text{hardness})) - 1.46)}$								X	
8.17 Manganese (mg/l) Not to exceed:									1.0
									1.0

PARAMETER	USE DESIGNATION						ALL OTHER USES
	AQUATIC LIFE			HUMAN HEALTH		A ⁴	
	B1, B3, B4		B2	C ³	A ⁴		
	ACUTE ¹	CHRON ²	ACUTE ¹				

8.18 Mercury The total organism body burden of any aquatic species shall not exceed 0.5 ug/g as methylmercury.						0.5	0.5	
8.18.1 Total mercury in any unfiltered water sample shall not exceed (ug/l):	2.4		2.4			0.15	0.14	
8.18.2 Methylmercury (water column) Not to exceed (ug/l):					.012			
8.19 Nickel (ug/l) Not to exceed:					50	4600	510	
8.19.1 The four-day average concentration of nickel shall not exceed the value determined by the following equation ^a : $Ni = e^{(0.046(\ln(\text{hardness})))1.1645}$				X				

PARAMETER	USE DESIGNATION						
	AQUATIC LIFE				HUMAN HEALTH		ALL OTHER USES
	B1, B3, B4		B2		C ³	A ⁴	
	ACUTE ¹	CHRON ²	ACUTE ¹	CHRON ²			

8.19.2 The one-hour average concentration of total recoverable nickel shall not exceed the value determined by the following equation ^a : $Ni = e^{(0.846[\ln(\text{hardness})] + 3.361)}$	X				X				
8.20 Nitrate (as Nitrate-N) (mg/l)									10
8.21 Nitrite (as Nitrite-N) (mg/l) Not to exceed:		1.0			.060				
8.22 Organics									
Chlordane ^b (ng/l)	2400	4.3	2400	4.3	0.46	0.46	0.46	0.46	0.46
DDT ^b (ng/l)	1100	1.0	1100	1.0	0.024	0.024	0.024	0.024	0.024
Aldrin ^b (ng/l)	3.0	0.071	3.0	0.071	0.071	0.071	0.071	0.071	0.071
Dieldrin ^b (ng/l)	2500	1.9	2500	1.9	0.071	0.071	0.071	0.071	0.071
Endrin (ng/l)	180	2.3	180	2.3	2.3	2.3	2.3	2.3	2.3
Toxaphene ^b (ng/l)	730	0.2	730	0.2	0.73	0.73	0.73	0.73	0.73
PCB ^b (ng/l)		14.0		14.0	0.045	0.045	0.045	0.045	0.045

PARAMETER	USE DESIGNATION							ALL OTHER USES	
	AQUATIC LIFE			HUMAN HEALTH		B2	A ⁴		
	B1, B3, B4	ACUTE ¹	CHRON ²	ACUTE ¹	CHRON ²				C ³
	ACUTE ¹								

Methoxychlor (ug/l)		0.03				0.03	0.03	0.03	0.03
Dioxin (2,3,7,8-TCDD) ^b (pg/l)							0.014	0.013	0.014
Acrylonitrile ^b (ug/l)							0.66	0.059	
Benzene ^b (ug/l)							71	0.66	
1,2-dichlorobenzene (mg/l)							17	2.7	
1,3-dichlorobenzene (mg/l)							2.6	0.4	
1,4-dichlorobenzene (mg/l)							2.6	0.4	
2,4-dinitrotoluene ^b (ug/l)							9.1	0.11	
Hexachlorobenzene ^b (ng/l)							0.77	0.72	
Carbon tetrachloride ^b (ug/l)							4.4	0.25	
Chloroform ^b (ug/l)		15.7				15.7	470	0.19	
Halomethanes (ug/l)							15.7	0.19	

PARAMETER	USE DESIGNATION							ALL OTHER USES
	AQUATIC LIFE			HUMAN HEALTH		C ³	A ⁴	
	B1, B3, B4	B2	CHRON ²	ACUTE ¹	CHRON ²			

1,2-dichloroethane ^b (ug/l)						99	0.035	
1,1,1-trichloroethane ^b (mg/l)							12	
1,1,2,2-tetrachloroethane (ug/l)	10.7				10.7	11	0.17	
1,1-dichloroethylene ^b (ug/l)						3.2	0.03	
Trichloroethylene ^b (ug/l)						81	2.7	
Tetrachloroethylene ^b (ug/l)						8.85	0.8	
Toluene ^b (mg/l)						200	6.8	
Polynuclear Aromatic Hydrocarbons (PAH) ^b (ug/l)						0.031	.0028	
Phthalate esters (ug/l)	3.0				3.0			

PARAMETER	USE DESIGNATION							ALL OTHER USES
	AQUATIC LIFE			HUMAN HEALTH		C ³	A ⁴	
	B1, B3, B4		B2	ACUTE ¹	CHRON ²			
	ACUTE ¹	CHRON ²						

Vinyl chloride ^b (chloroethene) (ug/l)						525	2.0	
alpha-BHC (alpha-Hexachloro-cyclohexane) ^b (ug/l)						0.013	.0039	
beta-BHC (beta-Hexachloro-cyclohexane) ^b (ug/l)						0.046	0.014	
gamma-BHC (gamma-Hexachloro-cyclohexane) ^b (ug/l)	2.0	0.08	2.0	0.08		0.063	0.019	
Chlorobenzene (mg/l)						21	0.68	
Ethylbenzene (mg/l)						29	3.1	
Heptachlor ^b (ng/l)	520	3.8	520	3.8		0.21	0.21	
2-methyl-4,6-Dinitrophenol (ug/l)						765	13.4	
Fluoranthene (ug/l)						370	300	

PARAMETER	USE DESIGNATION						ALL OTHER USES
	AQUATIC LIFE			HUMAN HEALTH			
	B1, B3, B4	B2	CHRON ²	C ³	A ⁴	CHRON ²	

<p>8.22.1 The organic chemicals listed in §8.22 shall not exceed the specified water quality criteria. When the specified criteria are less than the practical laboratory quantification level, instream values will be calculated from discharge concentrations and flow rates and from fish body burden, where applicable.</p>							
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PARAMETER	USE DESIGNATION						ALL OTHER USES
	AQUATIC LIFE			HUMAN HEALTH			
	B1, B3, B4	B2	CHRON ²	C ³	A ⁴		
	ACUTE ¹	ACUTE ¹		CHRON ²			

<p>8.22.2 The following body burden criteria shall not be exceeded in edible tissues of fish:</p> <p><u>Parameter</u> <u>Body Burden</u></p> <p>Chlordane 1.0 (ug/g) DDT 0.1 (ug/g) Aldrin 0.3 (ug/g) Dieldrin 0.3 (ug/g) Endrin 1.0 (ug/g) Toxaphene 2.0 (ug/g) PCB 6.4 (pg/g) Dioxin</p>							
<p>8.23 pH^c No values below 6.0 nor above 9.0. Higher values due to photosynthetic activity may be tolerated.</p>	X				X		X
<p>8.24 Phenolic materials (ug/l) Not to exceed:</p>						5	5

PARAMETER	USE DESIGNATION						ALL OTHER USES
	AQUATIC LIFE			HUMAN HEALTH		A ⁴	
	B1, B3, B4	CHRON ²	ACUTE ¹	B2	C ³		

8.27 Silver								
Hardness	Silver (ug/l)							
0-50	1							
51-100	4							
101-200	12							
>201	24				X			
8.27.1								
0-50	1							
51-100	4							
101-200	12							
201-400	24							
401-500	30							
501-600	43				X			
8.27.2 The one-hour average concentration of total recoverable silver shall not exceed the value determined by the following equation: Ag=e ^{(1.72[ln(hardness)]-6.52)}								
8.28 Temperature								
Temperature rise shall be						X		

PARAMETER	USE DESIGNATION						ALL OTHER USES
	AQUATIC LIFE			HUMAN HEALTH		A ⁴	
	B1, B3, B4	B2	CHRON ²	C ³			
	ACUTE ¹	ACUTE ¹			CHRON ²		

<p>8.28.1 For the Kanawha River Main Stem (K-1): Temperature rise shall be limited to no more than 5°F above natural temperature, not to exceed 90°F in any case.</p>	X					
<p>8.28.2 For the Bluestone R (KNB), Bluestone Lake (KN-60) East River (KNE), New River (KN), Gauley R. (KG) and Greenbrier River (KNG): Temperature rise shall be limited to no more than 5°F above natural temperature, not to exceed 81°F at any time during the months of May through November and not to exceed 73°F at any time during December through April.</p>					X	

PARAMETER	USE DESIGNATION						ALL OTHER USES
	AQUATIC LIFE			HUMAN HEALTH			
	B1, B3, B4		B2	C3		A4	
	ACUTE ¹	CHRON ²	ACUTE ¹	CHRON ²			

8.28.4 For Ohio River Main Stem (01) (Section 7.1.d):							
Dates	Period	Ave.	Inst.				
Jan 1-31		45°F	50°F				
February		45	50				
March 1-15		51	56				
March 16-31		54	59				
April 1-15		58	64				
April 16-30		64	69				
May 1-15		68	73				
May 16-31		75	80				
June 1-15		80	85				
June 16-30		83	87				
July 1-31		84	89				
August 1-31		84	89				
Sept 1-15		84	87				
Sept 16-30		82	86				
Oct 1-15		77	82				
Oct 16-31		72	77				
Nov 1-30		67	72				
Dec 1-31		52	57				
8.29 Thallium (ug/l)				X		6.3	1.7

PARAMETER	USE DESIGNATION						ALL OTHER USES
	AQUATIC LIFE			HUMAN HEALTH			
	B1, B3, B4	B2	CHRON ²	C ³	A ⁴		
	ACUTE ¹	ACUTE ¹		CHRON ²			

8.30 Threshold odor ^c Not to exceed a threshold odor number of 8 at 104°F as a daily average.			X							
8.31 Total Residual Chlorine (ug/l - measured by amperometric or equivalent method) Not to exceed:										
8.31.1 No chlorinated discharge allowed	19		11						10	10
						X				

PARAMETER	USE DESIGNATION					
	AQUATIC LIFE			HUMAN HEALTH		ALL OTHER USES
	B1, B3, B4	B2	C ³	A ⁴		
	ACUTE ¹	CHRON ²	ACUTE ¹	CHRON ²		

<p>8.32 Turbidity No point or non-point source to West Virginia's waters shall contribute a net load of suspended matter such that the turbidity exceeds 10 NTU's over background turbidity when the background is 50 NTU or less, or have more than a 10% increase in turbidity (plus 10 NTU minimum) when the background turbidity is more than 50 NTUs.</p>							
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PARAMETER	USE DESIGNATION						ALL OTHER USES	
	AQUATIC LIFE			HUMAN HEALTH				
	B1, B3, B4	B2	CHRON ²	ACUTE ¹	CHRON ²	C ³		A ⁴

<p>This limitation shall apply to all earth disturbance activities and shall be determined by measuring stream quality directly above and below the area where drainage from such activity enters the affected stream. Any earth disturbing activity continuously or intermittently carried on by the same or associated persons on the same stream or tributary segment shall be allowed a single net loading increase.</p>								

PARAMETER	USE DESIGNATION						
	AQUATIC LIFE				HUMAN HEALTH		ALL OTHER USES
	B1, B3, B4 ACUTE ¹	B2 CHRON ²	ACUTE ¹	CHRON ²	C ³	A ⁴	

8.33.1 The four-day average concentration of total recoverable zinc shall not exceed the value determined by the following equation ^a : $Zn = e^{(0.8473[\ln(\text{hardness})] + 0.7614)}$								
8.33.2 The one-hour average concentration of total recoverable zinc shall not exceed the value determined by the following equation ^a : $Zn = e^{(0.8473[\ln(\text{hardness})] + 0.8604)}$	X						X	

- 1 One hour average concentration not to be exceeded more than once every three years on the average, unless otherwise noted.
- 2 Four-day average concentration not to be exceeded more than once every three years on the average, unless otherwise noted.
- 3 These criteria have been calculated to protect human health from toxic effects through fish consumption, unless otherwise noted.
- 4 These criteria have been calculated to protect human health from toxic effects through drinking water and fish consumption, unless otherwise noted.

PARAMETER	USE DESIGNATION					
	AQUATIC LIFE			HUMAN HEALTH		ALL OTHER USES
	B1, B3, B4	B2	CHRON ²	C ³	A ⁴	
	ACUTE ¹	ACUTE ¹				CHRON ²

a Hardness as calcium carbonate (mg/l). The minimum hardness allowed for use is this equation shall not be less than 25 mg/l, even if the actual ambient hardness is less than 25 mg/l. The maximum hardness value for use in this equation shall not exceed 400 mg/l even if the actual hardness is greater than 400 mg/l.

b Known or suspected carcinogen. Human health standards are for a risk level of 10⁻⁶

c May not be applicable to wetlands (B4) - site-specific criteria are desirable.