UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

JAN 9 2006

Lisa McClung, Director
Water and Waste Management Division
West Virginia Department of Environmental Protection
601 57th Street, S.E.
Charleston, West Virginia 25304

Dear Ms. McClung:

The West Virginia Environmental Quality Board (EQB) submitted complete packages in support of a revision to its *Requirements Governing Water Quality Standards* (WQS regulations) to the U.S. Environmental Protection Agency (EPA), on January 13, 2005, and May 23, 2005.[1] The State submitted this revision for EPA review, pursuant to Section 303(c)(1) of the Clean Water Act (CWA) and 40 C.F.R. Part 131. In the first submission, the revision was adopted through an emergency rule. Following the emergency rule, the West Virginia Legislature enacted the revision as a permanent modification of the regulations. The WQS regulations as modified by the Legislature were then resubmitted to EPA.

The revision to the West Virginia WQS regulations temporarily modifies the chronic aluminum criterion from 87 μg/L to 750 μg/L for all waters except for trout waters (in trout waters, the chronic aluminum criterion of 87 μg/L continues to apply). The purpose of this letter is to approve West Virginia's revised aluminum criteria as consistent with the requirements of the CWA and the applicable Federal regulations at 40 C.F.R Part 131. The specific provision that EPA is approving in accordance with Section 303(c)(3) of the CWA and 40 C.F.R. Part 131 and the rationale for the approval are enclosed with this letter. West Virginia's revised Water Quality Standards approved today are now effective for CWA purposes.

Please note that the State regulatory language provides that the modification of the aluminum chronic criteria apply only until July 4, 2007. Under the State regulations, in July 4, 2007, the chronic criterion will revert to 87 ug/L dissolved aluminum applicable in all waters,

[1] The submissions by West Virginia were deemed complete when EPA received the certification from the State Attorney General that the revisions were duly adopted pursuant to State law. See 40 C.F.R. 131.6. EPA received West Virginia's Letter of Certification on May 26, 2005.

which was previously approved by EPA. Nonetheless, EPA's approval of the criteria as modified is based on a finding that the criteria are protective of the aquatic life use regardless of whether they apply temporarily or permanently.

Under the Endangered Species Act (ESA), EPA has the obligation to determine if our approval of this modification to West Virginia's Water Quality Standards regulation will adversely affect threatened and endangered species and their critical habitat in West Virginia. EPA has initiated the consultation process required under Section 7(a)(2) of the ESA. As part of this process, EPA has conducted a biological evaluation that finds that our approval action will not likely adversely affect these species or their critical habits. We are approving the West Virginia revised aluminum criteria pending completion of ESA section 7(a)(2) consultation with the U.S. Fish and Wildlife Service. Please note that in approving West Virginia criteria subject to the consultation, EPA may need to revise its approval decision if the consultation identifies a situation where the approved criteria may not be adequate.

If you have any questions concerning this letter please contact Ms. Cheryl Atkinson at (215) 814 3392.

Sincerely,

Jon M. Capacasa, Director
Water Protection Division

EPA Region III Approval Rationale
West Virginia Amendments
Virginia Title Legislative Rule Series 1
Requirements Governing Water Quality Standard

The revision to the aluminum criteria submitted by West Virginia to EPA consists of a footnote applicable to the aluminum chronic criteria, which reads:

> e. Until July 4, 2007, the aluminum criteria will be implemented as follows: the chronic aluminum criterion shall be 87 $\mu g/l$ for trout waters (as defined in section 2.20 of this rule)[2] and shall be 750 $\mu g/l$ for all other water of the states. The implementation of the interim criteria provides time for a study to develop aluminum criteria for water of the state, which are based upon sound science and are protective of aquatic life.

Prior to this revision, West Virginia regulations included EPA-approved acute and chronic aluminum criteria of 750 $\mu g/L$ and 87 $\mu g/L$ dissolved aluminum respectively, applicable to all waters designated for aquatic life use.[3] The effect of the revision is to amend the aluminum criteria as follows:

- Freshwater Acute Criterion = 750 $\mu g/L$ dissolved aluminum (applicable in all waters) *and*,
- Freshwater Chronic Criteria = 87 $\mu g/L$ dissolved aluminum (applicable in trout waters only) and 750 $\mu g/L$ dissolved Aluminum (applicable in non-trout waters).

West Virginia modified its aluminum criteria thus, in light of stream data presented by the WV Department of Environmental Protection, which purports to show, that waters that are considered impaired based on the chronic aluminum criterion of 87 $\mu g/l$ have thriving aquatic communities and have no physical signs of impairment.

The revision at hand does not impact the acute criterion, which EPA approved in April

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[2] Section 2.20. "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. Appendix A of the West Virginia regulations lists state waters designated as trout waters.

[3] EPA has approved the application of West Virginia's aluminum criteria to dissolved aluminum as protective of aquatic life. See EPA's April 17, 2003 approval letter sent to West Virginia.

2003. Further, the revision only impacts non-trout waters. Thus EPA considered whether the chronic criterion as revised still protects the aquatic life use in those waters. Although the modification of the chronic criterion is applicable only until July 4, 2007, EPA's review under the CWA of the criterion is no different than if the criterion applied permanently: whether the criterion as modified is protective of the use.

Discussion of EPA's Review

EPA's recommended aquatic life aluminum criteria of 87 μg/l for chronic exposure and 750 μg/l for acute exposure were published in the 1988 document *Ambient Water Quality Criteria for Aluminum* (EPA 440/5-86-008, August 1988). Using EPA's 1985 guidelines for deriving criteria for protection of aquatic life, the final chronic value for aluminum calculated from chronic toxicity data was 748 μg/L, which would have supported a chronic criterion of 750 μg/L. However, because some data showed greater toxicity of aluminum to brook trout and striped bass specifically, EPA decided to lower the chronic criterion to 87 μg/l in order to protect these two recreationally important species.

West Virginia has retained the chronic 87 μg/l aquatic life aluminum criterion for trout streams. For all other, West Virginia has amended its 87 μg/l chronic criterion to 750 μg/l. This is consistent with the rationale supporting EPA's recommended criteria. Trout are protected by the lower chronic criterion, but in all other waters, the criterion calculated through EPA's guidelines is protective of the aquatic life use. Striped bass, the other species which led to the adoption of a lower recommended chronic criterion, is not a recreationally important species in West Virginia waters. It is not a native species of West Virginia waters - striped bass is an anadromous fish which must spent part of its life cycle in salt water, while West Virginia is a landlocked state. West Virginia does not stock striped bass in its waters; specimens occasionally found in West Virginia are likely to be from the fish stocked in neighboring states. While West Virginia does do annual stocking of hybrid striped bass, hybrid striped bass does not reproduce naturally and thus does not form natural populations. Therefore, other than in trout waters, there is no reason to lower the chronic criterion calculated using EPA guidelines.

As provided in the West Virginia regulations, the modification of the aluminum criteria is effective only till July 4, 2007. In that date, the applicable chronic criterion reverts to 87 μg/L in all waters. EPA already deemed that criterion protective, and in any case, it would be more protective than the criterion which the Agency is hereby approving.

In light of these considerations, West Virginia's criteria for aluminum as revised are protective of the aquatic life use.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

SEP 0 8 2009

Scott G. Mandirola, Director
Water and Waste Management Division
West Virginia Department of Environmental Protection
Charleston, West Virginia 25304

Dear Mr. Mandirola,

The U.S. Environmental Protection Agency (EPA) has completed its review of the revisions to West Virginia's Title 47 Legislative Rule of the Department of Environmental Protection (WVDEP) *Series 2 Requirements Governing Water Quality Standards* (WV WQS Rule). The revisions addressed today were submitted to EPA in a package dated July 31, 2008, pursuant to Section 303(c)(1) of the Clean Water Act (CWA) and 40 C.F.R. Part 131. The WVDEP Associate General Counsel certified on July 31, 2008 that these revisions were duly adopted in accordance with State law and became effective July 1, 2008. EPA Region III received this package on August 6, 2008.

Based on a review of the WVDEP submission and supporting documentation, EPA finds (with one exception) the new or revised provisions that we reviewed are consistent with the CWA and EPA's implementing regulation at 40 CFR Part 131. The enclosure to this letter lists the provisions EPA is approving today and two provisions that WVDEP revised and submitted to EPA but upon which EPA is not acting for reasons explained in that document. This enclosure also discusses the bases for EPA's approval of the provisions upon which we are acting.

Under the Endangered Species Act, EPA has the obligation to determine if our approval of this modification to West Virginia's Water Quality Standards regulation will adversely affect threatened and endangered species and their critical habitat in West Virginia. EPA's biological evaluation found no adverse affect to threatened or endangered species. EPA has completed consultation with U.S. Fish and Wildlife Service and received concurrence with the Agency's findings on October 6, 2008.

I would like to extend my deep appreciation to you and your staff for WVDEP's exceptional efforts and commitment to work with EPA, to meet our CWA responsibilities. If you have any questions concerning this letter please contact Ms. Cheryl Atkinson at (215) 814-3392.

Sincerely,

Victoria P. Binetti

for Jon M. Capacasa, Director
Water Protection Division

Enclosure

ENVIRONMENTAL PROTECTION AGENCY, REGION III
WEST VIRGINIA REQUIREMENTS GOVERNING WATER QUALITY STANDARDS
2008 TRIENNIAL REVIEW

Today's EPA Region III action letter addresses the revisions to the Title 47 Legislative Rules West Virginia Department of Environmental Protection (DEP) Series 2 Requirements Governing Water Quality Standards (WVWQS rule) submitted to EPA Region III in a letter dated July 31, 2008.

Approval of New and Revised Items

Clerical and Minor Revisions

The following revisions are minor and/or clerical revisions to the State's water quality rules and do not impact the scope of the designated uses or the protectiveness of the water quality criteria:

1. "Stream or stream segment" was replaced with "water" in the definition of "Trout waters" because lakes are also included among such waters.

2. In several sections of WVWQS rule "water body" was replace with "water" or "waters" in an effort to be consistent throughout the WVWQS rule.

3. References to "Board" or "rule making authority" were changed to "Secretary" to reflect current authority.

4. The term "not to exceed" in Table 1 of Appendix E was deleted where it conflicts with aquatic life footnotes 1 and 2.

5. The phrase "[c]oncentration not to be exceeded unless otherwise noted" was added to footnotes 3 and 4 to insure proper application of the human health criteria.

6. In Appendix E, Table 1, Section 8.13, the term "Primary Contact Recreation" was replaced with "Water Contact Recreation" to be consistent with Category C designation as outlined in Section 6.4 of the WVWQS rule.

West Virginia Waters

1. The Section 7.2.d.6.1 (Stony River) variance was deleted because it expired on December 31, 1998. Since then, the applicable temperature criteria have been those in Appendix E, already approved as protective, and more stringent than the criteria in the variance.

2. Section 7.2.d.9 specifically designated Blackwater River as a trout stream, which was repetitive because Blackwater is listed on the trout list in Appendix A. Therefore, Section 7.2.d.9 has been amended. This minor correction does not affect the designation of Blackwater River as a trout stream.

3. The Section 7.2.d.14 Youghiogheny River use exclusion was removed. West Virginia did a documentation search and no justification was found for this use exclusion.

4. In Section 7.2.d.19.3 (Ward Hollow of Davis Creek) the variance for the Union Carbide Corporation's discharge to Ward Hollow of Davis Creek was extended from July 1, 2008 to July 1, 2010. EPA first approved the variance for chloride in September 2006. The basis for the approval was that naturally occurring chloride concentrations prevent attainment. West Virginia asserts in its July 2008 Rationale Document that the natural conditions that led to the variance still apply and that the variance provisions are consistent with 40 CFR 131.10(g). The Region finds that the variance is still consistent with the CWA. See September 26, 2006, letter from Jon Capacasa, EPA Region III Water Protection Division Director to Lisa McClung, WVDEP Water and Waste Management Division.

5. The Section 7.2.d.20.3 (Simmons Creek) variance was deleted because it expired on May 30, 1998. Since then the applicable temperature criteria have been those in Appendix E, already approved as protective, and more stringent than the criteria in the variance.

6. Section 7.2.d.34.1 (Pats Branch) was added to exclude Category A (Public Water Supply) and Category D1 (Irrigation) use designations for Pats Branch, from its confluence with the Guyandotte River to a point 1000 feet upstream. The remaining designated uses applicable to this section of Pats Branch are Category B1 (Warm Water Fishery), Category C (Water Contact Recreation) and Subcategory D3 (wildlife). The Region has reviewed the following documents submitted by the State in support of the State's use designation changes:

   - Application for a Use Determination of Downstream Segment of Pats Branch, dated May 8, 2006, prepared by Triad Engineering for Hunting Alloys Corporation.

   - Pats Branch Storm Sewer Study dated October 2006, prepared by Triad Engineering for Special Metal Corporation.

   - Use Removal Request Information Sheet, prepared by WVDEP.

   - Rationale Document dated July 31, 2008, prepared by WVDEP.

- Memo from Pat Campbell to Jason Morgan dated March 20, 2006, regarding a Survey Reconnaissance of Pats Branch.

To remove a designated use, the State has to show that the use is not an existing use and that the use is not attainable due to one of the reasons listed in 40 CFR 131.10(g). In addition, EPA considers whether the revised use designations and criteria are consistent with other requirements of 40 CFR Part 131, including the provision under 40 CFR 131.10(b) ensuring the protection of downstream waters.

The documents in support of the use change describe the physical conditions of the stream segment to which the use removal applies: the stream segment begins when Pats Branch enters a six-foot diameter concrete culvert beneath the Huntington Alloys Corporation facility. The culvert runs about 25 feet below the ground surface for about 600 feet. Pats Branch then resurfaces about 50 feet before a flood wall. At this location there is also a City of Huntington combined sewer overflow discharge point. Pats Branch then continues in another underground culvert for 350 feet, going beneath the flood wall until it discharges into the Guyandotte River via a submerged pipe. According to the State, Pats Branch has been channeled through underground culverts in this segment for at least forty (40) years. West Virginia asserts that because of these physical conditions this segment of Pats Branch cannot be used for drinking water or for irrigation. Based upon construction drawings, data base searches, personal interviews and physical surveys, the State asserts that this section of Pats Branch does not have water intake pipes or other evidence that suggests that the stream segment is used as a drinking water source or source of irrigation. The stream segment does not have adjacent residential or agriculture areas and does not have ground water wells within one mile of the downstream segment of Pats Branch. The State also asserts that, based on a review of stream monitoring data, the use removal will cause no measurable impacts to downstream waters.

The State bases this use change on 40 CFR 131.10(g)(4), which provides for use removal when "dams, diversions or other types of hydrologic modifications preclude the attainment of the use and it is not feasible to restore the water to its original condition or to operate such modification in a way that would result in the attainment of the use." The State asserts hydrological modifications preclude restoring Pats Branch to its original condition and restoration is infeasible because of the "heavy industrialization of the area and the City of Huntington flood wall."

Based on review of the WVWQS revisions and the supporting evidence, the Region has concluded that the revisions are consistent with federal requirements at 40 CFR Section 131.10. Accordingly, the Region approves the Category A and D1 use exclusion from Pats Branch.

Appendix E Human Health Based Criteria

The State adopted several revisions to the Human Health criteria established in Appendix E, Table 1, as outlined below.

- Appendix E, Table 1, Section 8.4 - The State's prior human health criterion of 50ug/L arsenic was based on the Maximum Contaminant Level (MCL) for drinking water established by EPA under the Safe Drinking Water Act (SDWA). The State here revised its criterion in accordance with EPA's new MCL of 10 ug/L. Adoption of the MCL for arsenic is appropriate for the protection of water supply uses (see Section 3.2.4 of the Water Quality Standards Handbook). Accordingly, the Region approves the revision.

- Appendix E, Table 1, Section 8.23 - The rule updates the benzene criterion for Human Health Category C from 71 ug/L to the EPA recommended value of 51 ug/L. The criterion meets the requirement of 40 CFR 131.11 and is scientifically defensible as explained in 65 Fed. Reg 66443 (Nov. 3, 2000) and supporting documents. Accordingly, the Region approves the revision.

- Appendix E, Table 1, Section 8.13.1 now includes a Fecal Coliform criterion to protect Category A use in the non-recreation season of November–April on the Ohio River. This change makes the criteria consistent with the Ohio River Valley Water Sanitation Commission (ORSANCO) Water Quality Standards. Specifically, during the non-recreation season (November 1st to April 1st) the maximum allowable level of fecal coliform from the Ohio River shall not exceed 2,000 counts per 100 mL as a monthly geometric mean based on not less than 5 samples per month. The West Virginia rationale document asserts that the ORSANCO fecal coliform criteria of 2,000 counts per 100 mL (for the protection of public water supply uses) are based on EPA's Blue Book recommendation which states that "[I]n light of the capability of the chlorination treatment process for raw surface water, it is recommended that the geometrical means of fecal coliform and total coliform densities in raw surface water sources not exceed 2,000/100 ml and 20,000/100 ml, respectively." The criterion meets the requirement of 40 CFR 131.11 and is scientifically defensible. Accordingly, the Region approves the criterion.

- Appendix E, Table 1, Section 8.23 - The halomethanes criterion has been removed and replaced with the four individual halomethane criteria for Bromoform, Dichlorobromomethane, Methyl Bromide and Methylene Chloride. All of these criteria are the same as the EPA's current National Recommended Water Quality Criteria under CWA Section 304(a) for the protection of human health. The criteria meet the requirement of 40 CFR 131.11 and are scientifically defensible as explained in 65 Fed. Reg 66443 (Nov. 3, 2000) and supporting documents. Accordingly, the Region approves the revision.

- Appendix E, Table 1, Section 8.23 - The criterion for polynuclear aromatic hydrocarbons (PAH) has been removed and replaced with the individual criteria for the compounds that make up this group. The 12 PAH compounds for which the State has adopted new criteria are: Acenaphthene, Anthracene, Benzo(a) Anthracene, Benzo(a) Pyrene, Benzo(b) Fluoranthene, Benzo(k) Fluoranthene, Chrysene, Dibenzo (a,h) Anthracene, Fluorene, Ideno (1,2,3-cd) Pyrene, Pyrene, and 2-Chloronaphthalene. All of the new PAH criteria are consistent with the latest CWA Section 304(a) criteria recommendations for the protection of human health. The criteria meet the requirement of 40 CFR 131.11 and are scientifically defensible as explained in 65 Fed. Reg 66443 (Nov. 3, 2000) and supporting documents. Accordingly, the Region approves the revision.

- A footnote was added to the phthalate esters group in Appendix E, Table 1, Section 8.23 to clarify which phthalates are included in the total. This minor clarification does not change the scope of the criteria.

- Appendix E, Table 1, Section 8.27 - The selenium criterion for Category A is changed from10ug/l to 50ug/l to make it consistent with the Maximum Contaminant Level for drinking water set by EPA under the Safe Drinking Water Act. Because the criterion is protective of the use, the Region approves the revision.

Appendix E Aquatic Life Based Criteria

- In Appendix E, Table 1, Section 8.1, the dissolved aluminum chronic criterion for warm water aquatic life was changed from 87xCF to 750xCF, and Footnote e was deleted. Prior to this revision, Footnote e provided that the chronic criterion for warm water aquatic life was to be 750xCF until July 2007. EPA approved that chronic criterion on January 9, 2006 as protective of the use and consistent with the CWA regulations. In June 2007, the DEP filed a temporary emergency rule to continue to apply the modified chronic criterion, and EPA approved the emergency rule on July 5, 2007. The current revision modifies the chronic criterion permanently. Because EPA has already found that the criterion is protective of the use and consistent with the CWA regulations, therefore, the Region approves this revision. See January 9, 2006, letter from Jon Capacasa, EPA Region III Water Protection Division Director to Lisa McClung, WVDEP Water and Waste Management Division.

- Appendix E, Table 1, Section 8.4.1 - The dissolved trivalent arsenic chronic and acute criteria have been updated from 360ug/L and 190ug/L to 340ug/L and 150ug/L based on the EPA recommended criteria. The units (ug/l) were added to the dissolved trivalent arsenic column in Appendix E, Table 1 to clarify the units. The criteria meet the requirement of 40 CFR 131.11 and are scientifically defensible as explained in 65 Fed. Reg. 31682 (May, 2000) and supporting documents. Accordingly, the Region approves the revision.

- Appendix E, Table 1, Sections 8.4.1 and 8.9.1 - The correction factors (CF) were removed for dissolved trivalent arsenic and chromium, dissolved hexavalent because the EPA values are based on dissolved criteria not total. Therefore they do not need to be converted. Because these changes meet the requirements of 40 CFR 131.11, the Region approves the revision.

- Appendix E, Table 1, Sections 8.7.2, 8.7.3, 8.10.1, 8.10.2, 8.19.1, 8.18.2, 8.28.2, 8.34 and 8.34.1 - The revisions for cadmium, copper, nickel, silver and zinc formulas are consistent with the latest CWA Section 304(a) criteria recommendations for the protection of aquatic life issued by EPA. Accordingly, the Region approves the revision. The criteria meet the requirement of 40 CFR 131.11 and are scientifically defensible as explained in 65 Fed. Reg. 31682 (May, 2000) and supporting documents.

Antidegradation Tier 2.5 designation

Section 4.1.c. Tier 2.5 Protection of the WVWQS rule was removed. This leaves a three-tiered antidegradation approach, including Tiers 1, 2 and 3. West Virginia also amended its Tier 3 definition to include within Tier 3 some waters previously classified as Tier 2.5. Five categories of streams previously under Tier 2.5 will now be classified as Tier 3. As revised, the WVWQS rule on antidegradation is consistent with EPA's antidegradation regulation at 40 CFR 131.12. The Tier 2.5 classification which the State removed was at the discretion of the State to have a more stringent provision. Accordingly, all revisions to the antidegradation section of this WVWQS rule are approved today.

Revisions Where EPA is Taking No Action

Today the Region is taking no action on the revision to Section 7.2.d.16.2, which extended the Weirton Steel Corporation socio-economic variance from July 1, 2007 until July 1, 2009. The variance expired on July 1, 2009, and this is therefore no longer effective.

EPA is also deferring action on the proposed lake nutrient criteria in Section 8.3, together with the definition of cool water lakes in Section 2.2 and Appendix F listing cool water lakes. EPA is currently evaluating the scientific justification for the proposed lake nutrient criteria. Additional, more recent data offered by WV in March 2009 as additional justification for the proposed criteria is being evaluated by EPA to determine if the new data is applicable and whether or not that data provides any additional scientific support to the submitted rationale. After a full evaluation of the scientific defensibility of the criteria, EPA will conclude the review of these new criteria.