Enclosure 2

Responsiveness Summary Concerning Comments Received on EPA's Public Notice Dated April 8, 2013, Regarding EPA's Decision to Add Water Quality Limited Segments to West Virginia's 2012 Section 303(d) List

Summary of Actions

Section 303(d) of the Clean Water Act (CWA) and U.S. Environmental Protection Agency (EPA)'s implementing regulations require states to identify water-quality limited segments (WQLSs) still requiring TMDLs where technology-based pollution controls are not stringent enough to implement any applicable water quality standard. In other words, states are required to identify all waters for which existing technology-based pollution controls or requirements are inadequate to provide for attainment and maintenance of water quality standards. The means by which a state identifies these waters is commonly referred to as a state's 303(d) list of impaired waters.

Pursuant to Section 303(d) of the CWA, on December 21, 2012, the West Virginia Department of Environmental Protection (WVDEP) submitted a list of impaired waters to the EPA for approval or disapproval. EPA reviewed the list of impaired waters and supporting documentation. EPA's review was based on whether the state developed its list in compliance with Section 303(d) of the CWA and EPA's implementing regulations, including whether the state reasonably considered existing and readily available water quality-related data and information and reasonably identified waters required to be listed.

In its submission, WVDEP determined not to evaluate existing and readily available biological data and not to identify certain waters as impaired because WVDEP interpreted recent state legislation as prohibiting WVDEP from utilizing its current West Virginia Stream Condition Index (WVSCI) methodology.

WVDEP cited as a basis for its decision not to evaluate certain data and identify certain waters as impaired the West Virginia Senate Bill 562 (SB 562) (codified as W. Va. Code § 22-11-7b(f)(2)), which had been enacted by the West Virginia Legislature shortly before West Virginia's draft 2012 Section 303(d) list was published for public comment. WVDEP stated in the narrative portion of its 2012 Section 303(d) list submission that it interprets SB 562 as "a mandate to secure prior Legislative approval of the assessment methodology under which WVDEP will make impairment decisions pursuant to the narrative criterion at 47 CSR 2-3.2i". Therefore, WVDEP did not evaluate for purposes of its 2012 Section 303(d) list new biological data against its narrative water quality criteria as applied to the aquatic life use and did not add any "new" water quality limited segments based on biological sampling information. EPA recognized WVDEP's interpretation that it is compelled by state law to refrain from evaluating biological sampling information for purposes of Section 303(d) pending completion of a new methodology. Since state law does not obviate federal requirements, EPA took action to ensure that federal requirements are satisfied, including the requirement to evaluate all

existing and readily available data to determine whether West Virginia's narrative water quality criteria for aquatic life are met. On March 25, 2013, EPA partially approved and partially disapproved the State's 2012 303(d) list.

As required by EPA regulations at 40 CFR § 130.7(d)(2), because EPA partially disapproved West Virginia's submission, EPA identified waters not meeting the state's water quality standards that should be added to the list. On Monday, April 8, 2013, EPA published a notice in the Federal Register (Federal Register/Vol. 78, No. 67/Monday, April 8, 2013/Notices [FRL–9798–8]) a Notice and Initial Request for Public Comment to solicit comments on its proposed listing of the water quality limited segments on the West Virginia's 2012 Section 303(d) list. As noted in EPA's March 25, 2013 action and discussed in detail below, EPA assessed the existing and readily available data in a manner that is substantially similar to WVDEP's historic use of the WVSCI methodology, to determine whether a particular water body is supporting W. Va. CSR § 47-2-3.2(e) & (i) as applied to the narrative water quality criteria for the protection of the aquatic life use.

EPA received comments from six parties regarding its proposed action. EPA has carefully considered all the comments received. Based on its consideration of the comments received, EPA has determined to revise the list of waters to be added to West Virginia's 2012 Section 303(d) as follows: EPA has removed eight waters from the published proposed list; added one water to the published proposed list; and revised the reach length for four waters. Details of the changes to the original proposed list can be found in Table 1 below. Accordingly, EPA has determined to add 248 waters to West Virginia's 2012 Section 303(d) list. The final list of waters that EPA is adding to West Virginia's 2012 Section 303(d) list can be found in Enclosure 1.

In addition, as part of its comments to EPA's additions, WVDEP proposed removal from the Section 303(d) list of twelve water quality limited segments that were previously identified on the 2010 or prior Section 303(d) lists based upon more recent sampling data demonstrating that those waters are no longer impaired. In its public notice draft 2012 Section 303(d) published May 11, 2012 – June 26, 2012, WVDEP had proposed to remove from the Section 303(d) list these twelve previously listed WQLSs based upon more recent sampling. WVDEP received numerous public comments on its determination not to utilize the WVSCI to add new waters to the Section 303(d) list, but did not receive any comments from the public addressing specifically the twelve WQLS that WVDEP proposed to remove from its Section 303(d) list based upon more recent sampling.

EPA is taking a separate action to approve WVDEP's proposal.

Table 1: Summary of Changes Made to Original EPA Proposed List of Waters to be added to WV's 2012 303(d) List

List of Waters Removed from EPA's Proposed List		
Stream Name	Stream Code	Reason
Gauley River	WVKG	Newer WVDEP data with WVSCI >68
Panther Creek	WVBST-60	Newer WVDEP data with WVSCI >68
Greenbrier River	WVKNG	Newer WVDEP data with WVSCI >68
Davis Creek	WVK-39	Newer WVDEP data with WVSCI >68
Hog Lick Run	WVMW-2-A	Noncomparable sample
Sweep Run	WVMW-2-C	Noncomparable sample
Sugarcamp Run	WVMW-55-C	Noncomparable sample
Wiley Branch	WVO-2-Q-28	Citizen-submitted data with WVSCI>68

List of Waters Added to EPA's Proposed List		
Stream Name	Stream Code	Reason
UNT/Little Creek RM 3.19	WVM-17-A-6	WVDEP data with WVSCI of 36.85

List of Waters from EPA's Proposed List with Modified Segments			
Stream Name	Stream Code	Revised Reach	Reason
Fork Creek	WVKC-14	Mouth to RM 3.6	WVDEP data at MP 3.6 with WVSCI >68
Moody Run	WVM-23-C	Mouth to RM 1.2	WVDEP data at MP 1.2 with WVSCI >68
Prickett Creek	WVM-19	Mouth to RM 7.7	WVDEP data at MP 7.7 with WVSCI >68
Freeman's Creek	WVMW-36	RM 1.1 to HW	WVDEP data at MP 1.1 with WVSCI >68

Summary of Public Comments

EPA received comments from the following commenters in response to our Public Notice Dated April 8, 2013, Regarding EPA's Decision to Add Waters to West Virginia's 2012 Section 303(d) List:

(1) Arch Coal, Inc., and its subsidiaries (Arch Coal), emailed comment letter with attached reports dated May 8, 2013 from John J. McDaniel Director of Engineering and Technical Services Arch Coal Inc. Eastern Operations. Attachment A: "Biological Monitoring Report Scotts Run and Unnamed Tributaries to Scotts Run" prepared for Patriot Mining Company, Inc. and prepared by All Star Ecology, LLC. Attachment B: "Acute Toxicity Bioassay Report" conducted for International Coal Group/Patriot Mining Company conducted by REI Consultants, Inc. Attachment C: "Chronic Toxicity Bioassay Report" conducted for International Coal Group/Patriot Mining Company conducted by REI Consultants, Inc.

(2) West Virginia Coal Association (WVCA), emailed comment letter dated May 8, 2013 from Jason D. Bostic, Vice President West Virginia Coal Association.

(3) Petra & John Wood, West Virginia, emailed comments on May 8, 2013.

(4) Twelvepole Watershed Association (TWA), email from Randall R. Maggard, President, Twelvepole Watershed Association dated May 3, 2013 with attached report.

(5) Kelly Brown, emailed comments May 8, 2013.

(6) West Virginia Department of Environmental Protection (WVDEP), email from John Wirts, Assistant Director, Watershed Assessment Branch with comment letter dated May 8, 2013 from Scott G. Mandirola, Director of Division of Water and Waste Management, WVDEP.

Arch Coal Comments and EPA Responses

Comment 1: Arch Coal asserts that EPA has misapplied the CWA requirements for 303(d) stream listings while reserving its disagreement with EPA's use of WVSCI to determine the biological integrity of a stream, the commenter concedes that the biological integrity of the stream is an indicator as to whether the stream is achieving West Virginia's narrative water quality criterion. The commenter asserts, however, that a determination of biological integrity is only the first step and that the Agency bears the burden of demonstrating that the biological impairment is the result of "effluent limits ... [which] are not stringent enough to implement any water quality standard."

EPA Response 1:

While the commenter is correct that CWA Section 303(d)(1)(a) directs identification of water quality limited segments as to which "[technology-based] effluent limitations ... are not stringent enough to implement any water quality standard," the commenter is incorrect to the extent it asserts that either a State or EPA bears the burden of demonstrating that the impairment is caused solely by insufficiently stringent applicable effluent limitations prior to listing. The term "effluent limitations" refers to limits on discharges from point sources of pollution. Section 303(d)(1)(a) also refers only to a certain type of effluent limitation, specifically, those "required by section 1311(b)(1)(A) and section 1311(b)(1)(B) of this title." The type of effluent limitation referenced by Section 303(d)(1)(a) is commonly referred to as "technology-based effluent limitations." Accordingly, Section 303(d)(1)(a) provides authority for identifying waters whenever application of technology-based effluent limitations to point source discharges to the water will not achieve water quality standards, such as when there are no point source discharges or where application of the technology-based effluent limitations applicable to the point source discharges will not achieve water quality standards. For example, it is well-established that waters that are impaired solely as a result of non-point sources are appropriately identified pursuant to CWA Section 303(d), even though there are no technology-based effluent limitations applicable to the water. *E.g., Pronsolino v. Nastri,* 291 F.3d 1123 (9th Cir. 2002), *cert. denied,* 523 U.S. 926 (2003).

Comment 2: Citing information from the U.S. Geological Survey, the commenter asserts that there are multiple factors that can affect the biological community in a stream (such as habitat, water quality, and hydrologic conditions etc). The commenter asserts that EPA disregarded its obligation to determine whether the alleged biological impairment was caused by effluent limitations that are not stringent enough to implement a water quality standard. Because the biological community can be impaired by factors other than pollutants, the commenter asserts that there is no authority to list streams on the Section 303(d) List based solely on biological data. By way of further explanation, the commenter asserts that if the stream is biologically impaired and a TMDL will not resolve the impairment, then the stream should be included in Category 4 of the Integrated Report, which is reserved for waters that are impaired or threatened but do not need a TMDL. The commenter asserts that EPA has the burden to demonstrate that a TMDL is required for these segments before they can be listed.

EPA Response 2:

To the extent the commenter asserts that EPA bears the burden of demonstrating that impairment is solely due to insufficiently stringent applicable effluent limits see Comment 1. To the extent the commenter asserts that, as a prerequisite to adding waters to the Section 303(d) list based upon biological data, a State or EPA bears the burden of eliminating all causes of impairment other than discharges of a pollutant from point or non-point sources, the commenter is incorrect.

Water quality standards consist of designated uses (such as aquatic life, primary and secondary contact recreation, etc.), narrative or numeric criteria designed to protect those uses, and an antidegradation policy. Unless specifically noted in its water quality standards, all waters in West Virginia are designated for the Propagation and Maintenance of Fish and Other Aquatic Life (CSR 47-2-6.1). Biological data provides the most direct measure of whether water is achieving this designated use.

EPA's regulations define water quality limited segments as: "Any segment where it is known that water quality does not meet applicable water quality standards ... even after the application of technology-based effluent limitations..." 40 C.F.R. 130.2(j). EPA has acknowledged that Section 303(d) (1) and (2) require the establishment of total maximum daily loads for waters that are impaired by pollutants, and for that reason EPA has been clear that it will not require waters to be included on a Section 303(d) list where it is established that the impairment is attributable solely to factors other than pollutants. This, however, is distinct from the situation where the cause of the impairment is unknown. In that case, EPA consistently has interpreted Section 303(d) and EPA's implementing regulations as requiring that the water be listed. EPA's 2006 Integrated Reporting Guidances explained:

> Must Category 5 include an impaired segment if the specific pollutant causing the impairment has not been identified? Yes, if a designated use is not supported and the segment is impaired or threatened, the fact that the specific pollutant is not known does not provide a basis for excluding the segment from Category 5. These segments must be listed unless the state can demonstrate that no

pollutant(s) causes or contribute to the impairment. Prior to establishing a TMDL for such segments the pollutant causing the impairment must be identified. If the assessment of the new data and information demonstrates that the use impairment is not associated with a pollutant and is attributable only to other types of pollution (e.g., flow or habitat alteration) the segment may be placed into Category 4c. EPA has developed guidance to assist states in identifying the causes of a biological impairment. This document, "Stressor Identification Guidance," was released in December 2000 (EPA 822-B-00-025). This document is also available on the Internet at:
http://www.epa.gov/ost/waterscience/biocriteria/stressors/stressorid.pdf.

Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the CWA (July 29, 2005) (available at http://water.epa.gov/lawsregs/lawsguidance/cwa/tmdl/2006IRG_index.cfm). Thus, where an impairment can be solely attributed to factors other than pollutants, EPA's longstanding interpretation is that states may choose whether to include such water quality limited segments on the Section 303(d) list. Where the cause of the impairment is not known and pollutants cannot be ruled out as causing or contributing to the impairment, EPA interprets Section 303(d) as requiring inclusion of the water quality limited segment on the Section 303(d) list.

Thus, where an impairment can be clearly attributed to factors other than pollutants, EPA's longstanding interpretation is that such water quality limited segments may, but do not have to be, included on the Section 303(d) list. Where the cause of the impairment is not known and pollutants cannot be ruled out as causing or contributing to the impairment, EPA interprets Section 303(d) as requiring inclusion of the water quality limited segment on the Section 303(d) list.

Here, the commenter asserts that biological impairments at issue "may" be caused by factors other than a pollutant,[1] but has provided no data indicating that any of the 19 waters that commenter asserts should not be added to the Section 303(d) list are impaired solely due to non-pollutant stressors. To the contrary, EPA has reviewed the list of waters, any water-specific information provided by the commenter, and information available in WVDEP's databases. Of the 19 waters that the commenter seeks to have removed from EPA's proposed addition's to West Virginia's 2012 Section 303(d) list, 16 have ambient levels of a pollutant (as measured by sampling for either conductivity or sulfate) that exceed pollutant levels that would be identified as "possible stressors" in WVDEP's stressor identification methodology for TMDL development. The remaining three (Little Creek, Jennie Creek and Snider Run) lack water chemistry data. Accordingly, there is no data in the record to support the commenter's assertion that the biological impairments of the 19 waters identified by the commenter "may" be caused by

[1] The commenter's assumption that impairment caused by habitat alteration is always independent of excessive pollutant inputs is not necessarily correct. Taking commenter's example, certain habitat indicators, such as embeddedness, may be due to excessive sedimentation caused by an excess of sediment, a pollutant. In addition, EPA notes that the commenter's remark that excessive instream temperature cannot be addressed by a TMDL is incorrect. Section 303(d) specifically provides for TMDLs to address temperature. *See* 33 U.S.C. 1313(d)(1)(B) & (D).

factors other than a pollutant and, with respect to 16 of those waters, there is some data demonstrating that a pollutant may be a cause of the impairment.

The biological data EPA relied on to list the waters is existing and readily available and demonstrates that the narrative aquatic life use water quality criterion (set forth in W. Va. CSR § 47-2-3.2(e) & (i)) is not being met. Here, EPA does not have data or information demonstrating that the impairment is not associated with a pollutant and is attributable only to other types of pollution and, as discussed above, the commenter has not provided any such data or information. Accordingly, EPA has authority to add waters to West Virginia's Section 303(d) list based solely upon biological data even if the specific pollutant causing or contributing to the impairment is unknown.

In addition, WVDEP's historic practice is consistent with EPA's position. WVDEP has stated that in its experience, examples of biological impairment caused solely by "pollution" to the exclusion of any "pollutant" are "few." *WVDEP Response to Public Comment, West Virginia's 2004 Integrated Report.*

Historically, WVDEP has included waters on its Section 303(d) list based solely upon biological data. At the time of TMDL development, West Virginia first conducts an extensive stressor identification analysis. If the stressor identification determines that the biological impairment is caused solely by habitat or some other non-pollutant stressor, the water is taken off the Section 303(d) list (Part 5 of West Virginia's Integrated Report) at that time.

Comment 3: Arch Coal asserts that EPA acted in direct contradiction to State law, specifically Senate Bill 562 (SB 562), which the commenter characterizes as "a significant legislative action which modified the West Virginia Water Pollution Act, W. Va. Code § 22-11-1 et seq. (WPCA). Since West Virginia water quality standards in 47 CSR 2 are developed under the authority of the WPCA, the water quality standards must be interpreted in light of the language in the WPCA."

EPA Response 3:

To the extent the commenter asserts that SB 562 has worked a change in West Virginia's water quality standards, EPA notes that WVDEP has taken the opposite position. In response to EPA's inquiry regarding the effect of SB 562 on West Virginia's water quality standards, Cabinet Secretary Huffman stated that SB 562 "does not constitute a revision to West Virginia's [water quality standards]," and "merely gives DEP the authority to propose legislative rules." *See* Letter from Cabinet Secretary Huffman to Regional Administrator Garvin dated December 20, 2012. Secretary Huffman went on to state: "The remainder of the language in SB 562 does nothing to change West Virginia's WQS as they existed before the amendment. Rather, the remainder of SB 562 merely gives direction to DEP on the parameters for the future proposed rule."

It is not necessary for purposes of its review of West Virginia's 2012 Section 303(d) list for EPA to determine whether or not SB 562 constitutes a revision of West Virginia's water quality standards. In reviewing and identifying water quality limited segments for

purposes of the 2012 Section 303(d) list, EPA must consider the currently applicable water quality standards. See 40 CFR 130.7(b)(3); 131.21. A modification of state water quality standards does not become effective for purposes of the CWA as an "applicable" water quality standard until and unless EPA has approved it. See 33 U.S.C. § 1313(c); 40 C.F.R. § 131.21(c). In this case, as noted above, WVDEP has not considered this law to modify West Virginia's water quality standards and has not made a submission to EPA of any such modifications. Regardless of whether or not SB 562 or any regulation that may be promulgated as a result of SB 562 ultimately is interpreted as constituting a change in West Virginia's water quality standards, it has not been approved as such by EPA at this time and therefore would not be a currently applicable water quality standard for purposes of federal law. In any case, for purposes of the Section 303(d) list, existing and readily available information must be considered by EPA with respect to W. Va. CSR § 47-2-3.2(e) & (i) as applied to the narrative criteria protecting the aquatic life use. As noted in EPA's March 25, 2013 action, WVDEP has acknowledged that WVSCI previously has been considered a valid tool for determining whether a particular water body is supporting W. Va. CSR § 47-2-3.2(e) & (i) as applied to the aquatic life use.

Comment 4: The commenter takes issue with EPA's statement that "Recognizing WVDEP's position that it is unable to carry out the requirement set forth in 40 CFR 130.7(b)(5), EPA has an obligation to take action to ensure that the federal requirement is satisfied." Rather, the commenter asserts WVDEP acted in compliance with the Legislature's direction to assess the holistic health of the ecosystem and that benthic data cannot be used alone to determine whether a stream is to be placed on the Section 303(d) list as biologically impaired. The commenter also took issue with EPA's determination that "WVDEP failed to evaluate existing and readily available information related to West Virginia's applicable narrative water quality criteria." According to the commenter, WVDEP has not excluded or rejected the benthic data; rather WVDEP has clearly considered the benthic data because it was provided to EPA as part of the database available and reviewed for the Section 303(d) listing process. The commenter further notes that WVDEP's past listing decisions for biological integrity have been challenged repeatedly. Because WVDEP only had benthic data in its database, insufficient information was available to list additional streams in 2012 for biological impairment. Moreover, 40 CFR 130.7(b)(5) does not require WVDEP to use a particular listing methodology. Instead it requires WVDEP simply to review and assess the available data as part of its methodology.

EPA Response 4:

To the extent that the commenter characterizes SB 562 as instructing WVDEP that benthic data alone cannot be used for purposes of CWA Section 303(d), that interpretation does not appear to be the required interpretation of the text of SB 562, which instructs WVDEP to promulgate regulations and states:

> West Virginia's narrative water quality standard requires evaluation of the holistic health of the aquatic ecosystem and a determination that the stream: (i) Supports a balanced aquatic community that is diverse in species composition; (ii) contains appropriate trophic levels of fish, in streams that have flows sufficient to support

fish populations; and (iii) the aquatic community is composed of benthic invertebrate assemblages sufficient to perform the biological functions necessary to support fish communities within the assessed reach, or, if the assessed reach has insufficient flows to support a fish community, in those downstream reaches where fish are present.

As discussed in EPA Response 3, WVDEP has informed EPA that it construes SB 562 as not describing a change in West Virginia's water quality standards, but simply as an instruction to promulgate and submit for legislative approval regulations for interpreting West Virginia's narrative water quality criteria and guidance as to what those regulations should contain. In its response to public comments received on its draft 2012 Section 303(d) list submission, WVDEP further stated that it views SB 562 as "a mandate to secure prior Legislative approval of the assessment methodology under which WVDEP will make impairment decisions pursuant to the narrative criterion at 47 CSR 2-3.2i." Accordingly, WVDEP is of the view that it currently lacks a legislatively approved methodology to make impairment decisions regarding its narrative criterion at 47 CSR 2-3.2i as applied to the aquatic life use. In making the statement: "Recognizing WVDEP's position that it is unable to carry out the requirement set forth in 40 CFR 130.7(b)(5), EPA has an obligation to take action to ensure that the federal requirement is satisfied," EPA was simply acknowledging WVDEP's interpretation of SB 562 as a matter of state law.

To the extent that the commenter asserts that WVDEP "evaluated" biological data because the data was made available to EPA as part of WVDEP's submission, EPA disagrees. WVDEP did assemble the existing and readily available information and included such assembled information as part of its Section 305(b) submission. Assembling the data, however, is not the same as evaluating it. Both activities are required by 40 CFR 130.7(b)(5) when a state is developing its 303(d) list. WVDEP has notified EPA that it will not be submitting identification of waters with respect to the narrative water quality criteria as applied to the aquatic life use until such time as a new methodology is developed and embodied in legislative rulemaking. Accordingly, WVDEP has interpreted SB 562 as a legislative instruction to indefinitely cease assessing waters against West Virginia's narrative water quality criteria as applied to the aquatic life uses pending future development of a new assessment methodology.

EPA has acknowledged WVDEP's interpretation of SB 562 for State law purposes. WVDEP's interpretation of State law, however, does not obviate the federal requirement that WVDEP must assemble *and evaluate* all existing and readily available data (40 CFR 130.7(b) (5)); identify *all* waterbodies that fail to meet currently applicable water quality standards (33 U.S.C. 1313(d) (1) (A)); and submit a biennial list of such waters to EPA for approval or disapproval (40 C.F.R. 130.7(d) (1)). *Cf. Sierra Club, Inc. v. Leavitt,* 488 F.3d 904, 913-14 (11th Cir. 2007) (state cannot avoid obligation to assemble and evaluate all existing and readily available data through state law limiting age of data that can be considered).

EPA has an obligation to ensure that the federal requirement is satisfied. See 40 C.F.R. § 130.7(d)(2) ("The Regional Administrator shall approve a list developed under 130.7(b) that is submitted after the effective date of this rule only if it meets the requirements of 130.7(b)). EPA agrees with the commenter that 40 CFR 130.7(b) (5) does not mandate use of any particular listing methodology. It does, however, require that existing and readily available data be evaluated; something that WVDEP did not do. As discussed elsewhere herein, WVDEP has acknowledged that for purposes of past Section 303(d) lists, WVSCI was a "valid" tool for assessing compliance with the narrative criteria as applied to the aquatic life use and for purposes of this action, EPA has determined to assess the data in a manner substantially similar to WVDEP's past methodology in order to avoid preempting any new methodology that WVDEP may develop pursuant to SB 562. To the extent the comment questions the use of biological assessment, see EPA response to Comment 6 & Comment 11.

Comment 5: Readily available data demonstrates that the EPA listing decisions were improper. The commenter states that it holds NDPES permits that discharge into or near the streams listed in its comment letter. The commenter objects to the inclusion of the streams listed in its comment letter on the West Virginia Section 303(d) list for biological impairment. The commenter asserts that it has conducted biological monitoring that demonstrates that low WVSCI scores are frequently caused by factors unrelated to insufficient effluent limitations, such as poor habitat. The commenter further observes that, while coal mining may affect habitat in some areas prior to reclamation, these effects are very transient in nature. Impacts due to other activities, in particular roads and residential construction, appear to be more permanent.

EPA Response 5:

While the commenter refers generally to having conducted biological monitoring that purports to demonstrate that low WVSCI scores "are frequently caused by factors unrelated to insufficient effluent limitations," such as poor habitat, apart from information related to Scotts Run, the commenter did not provide this information to EPA. WVDEP has stated that in its experience, examples of biological impairment caused solely by "pollution" to the exclusion of any "pollutant" are "few." *WVDEP Response to Public Comment, West Virginia's 2004 Integrated Report.* See Response to Comment 2. EPA's response to the information provided regarding Scotts Run is set forth in EPA's Response to Comment 6.

Comment 6: Arch Coal stated that EPA's methodology is faulty and disregards W. Va. Code §22-11- 7b(f). The commenter provided as an example, biological monitoring data conducted of Scotts Run in the Monongahela Watershed (October 2010, monitoring conducted by All-Star Ecology, LLC, of Scotts Run and Unnamed Tributaries to Scotts Run). The commenter summarized some of the finding from the AllStar Monitoring Report: the physical habitat at one of it stations was suboptimal, in part due to the impact from nearby roads and man-made bank alterations; marginal scores for vegetative protection and poor rating for riparian vegetative zone were a result of the mowed banks and close proximity houses and roads and an unnamed tributary have been negatively impacted by housing and road developments located in the vicinity. The

commenter also provide toxicity testing performed by the commenter) and concluded that this data indicates that the WVSCI score is not likely to be related to the mine effluent entering Scotts Run.

EPA Response 6:

EPA has reviewed the information regarding Scotts Run. To the extent the commenter states that any impairment in Scotts Run is not attributable to past or present coal mining activity, EPA does not propose to attribute the impairment to mining. EPA has identified the source of the impairment as "Unknown".

To the extent the commenter asserts that WVSCI scores yielded by the commenter's sampling efforts demonstrate that Scott's Run is not impaired, the WVSCI scores for the downstream Scotts Run station provided by the commenter are below 68 and, therefore, commenter's characterization of the WVSCI score at that location is incorrect, and that segment is appropriately added to the Section 303(d) list. While the WVSCI scores provided by the commenter for the upstream portion of Scott's Run are above 68, those samples were not consistent with the WVSCI sampling protocol in that they were taken outside the index period (in December) and contained less than 200 organisms in the subsample. Accordingly, the WVSCI scores provided by the commenter for the upstream portion of Scotts Run do not provide evidence to rebut the impaired WVSCI scores on which EPA based its proposed addition of Scott's Run to the Section 303(d) list.

To the extent the commenter asserts that its toxicity sampling rebuts any determination of impairment based upon biological assessment, the commenter is incorrect. Biological assessment, chemical samples, and toxicity testing each have both overlapping and unique attributes and sensitivities. Chemical sampling and toxicity testing are indirect estimators of biological conditions that assess the suitability of waters to support a healthy community, but they do not directly assess the community itself. Biological sampling directly evaluates the overall structure and/or functional characteristics of the aquatic community. For that reason, it has been EPA's longstanding policy (called the policy of independent application) that each method can provide valid and independently sufficient evidence of aquatic life use impairment, irrespective of the results of the other two approaches. In other words, if any one of the three assessment methods (biological sampling, chemistry sampling, or toxicity testing) identifies impairment, the water is considered impaired. *See* EPA, *Final Policy on the Use of Biological Assessments and Criteria in the Water Quality Program* (May 1991) (available at http://water.epa.gov/scitech/swguidance/standards/criteria/aqlife/biocriteria/upload/2002_10_24_npdes_pubs_owm0296.pdf).

Comment 7: Arch Coal also noted that while WVDEP has obtained data from the commenter, WVDEP has not incorporated the monitoring results in a format that is available for review by the Watershed Assessment Branch. Accordingly, WVDEP needs additional time to incorporate this information in the assessment of streams for biological integrity. Once WVDEP has developed a holistic approach as required by the

Legislature, these documents will be useful tools in determining whether certain streams should be included on the Section 303(d) list.

EPA Response 7:

EPA is unable to evaluate the referenced information because it was not provided by either WVDEP or the commenter. EPA encourages the commenter to submit existing and readily available data to WVDEP in connection with future Section 303(d) lists.

WVCA Comments and EPA Responses

Comment 8: WVCA took issue with EPA's statement "recognizing WVDEP's position that it is unable to carry out the requirements set for in 40 CFR 130.7(b)(5), EPA has an obligation to take action to ensure that the federal requirements are satisfied." WVCA felt the WVDEP did not ignore existing and readily available information, instead WVCA commented that WVDEP made decision consistent with the statutory instruction provided by the West Virginia legislature, that insect scores alone were to sufficient to classify stream biologically impaired. That is WVCA felt that that WVDEP did consider the information available and that it was just that EPA disagrees with West Virginia's decisions.

EPA Response 8:

See Response to Comments 4 and 6.

Comment 9: The commenter further asserts that EPA disregarded CWA Section 303(d)(1)(a), which requires that each state identify those waters within its boundaries for which the effluent limitations are not stringent enough to implement any water quality standard applicable to such waters. WVCA commented if the cause of the impairment cannot be linked to effluent limitation that the listing is not appropriate. The commenter asserted that to simply classify a stream as biologically impaired is not enough to satisfy the requirements of the CWA since biological condition can be influenced by other factors such as habitat and seasonal variations.

EPA Response 9:

See Response to Comments 1 and 2.

Comment 10: WVCA commented that it has long objected to the use of the WVSCI because WVSCI was never promulgated pursuant to the rulemaking procedures required by the West Virginia's Administrative Procedures Act, nor was WVDEP's WVSCI methodology lawfully promulgated as a water quality standard. The commenter asserts that EPA has inappropriately treated a methodology that has not undergone notice and comment rulemaking as a water quality standard.

EPA Response 10:

The commenter confuses the concept of "applicable water quality standards" with assessment to determine attainment of those standards. West Virginia's narrative water quality criteria at W. Va. CSR § 47-2-3.2(e) & (i) provide:

> 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:
>
> * * *
>
> 3.2.e. Materials in concentrations which are harmful, hazardous or toxic to man, animal or aquatic life;
>
> * * *
>
> [and] 3.2.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.

W. Va. CSR § 47-2-3.2(e) & (i) have been approved by EPA pursuant to CWA Section 303(c). W.Va. CSR § 47-2-3.2(e) & (i) are narrative expressions of water quality condition and applicable water quality standards for purposes of CWA Section 303(d).

Unlike numeric criteria, however, narrative criteria such as W. Va. CSR § 47-2-3.2(e) & (i) do not include a numeric endpoint against which instream conditions can be assessed. WVSCI is an assessment methodology for evaluating existing and readily available information against the applicable narrative water quality criteria expressed in W. Va. CSR § 47-2-3.2(e) & (i). WVSCI is not an applicable water quality standard and has not been treated as such by EPA.

All Region III states have developed assessment methodologies that allow them to compare instream conditions to applicable narrative criteria. Like WVSCI, these assessment methodologies are not themselves water quality standards, but rather a means to allow states to assess whether narrative water quality standards are being achieved. Unlike water quality standards, EPA does not approve or disapprove assessment methodologies, but rather reviews the Section 303(d) list to ensure that there is a sound scientific basis for including or excluding certain waters.

WVDEP has used the WVSCI assessment methodology for purposes of developing its 2002, 2004, 2006, 2008, and 2010 Section 303(d) lists. Each list was published in draft form for public comment. Accordingly, there has been ample opportunity for public comment and vetting on the WVSCI as an assessment methodology.

With respect to the appropriateness of WVSCI as an assessment methodology, see Response to Comment 11 and Comment 12.

Comment 11: The commenter asserts that WVSCI is narrowly focused and limited measurement of benthic and cannot serve as a sole factor in measuring compliance with West Virginia's narrative water quality standards. In fact WVCA says the EPA's own 1991 guidance [Final Policy on the Use of Biological Assessments and Criteria in the Water Quality Program (May 1991)] points out that a proper evaluation of an aquatic ecosystem does not rely exclusively on benthic macroinvertebrate composition.

EPA Response 11:

WVSCI is an assessment methodology for evaluating existing and readily available information against the applicable narrative water quality criteria expressed in W. Va. CSR § 47-2-3.2(e) & (i) as applied to the aquatic life use. A more detailed explanation of WVSCI is provided in EPA's March 25, 2013 decision rationale. As such, it directly evaluates the overall structure and/or functional characteristics of the aquatic community.

One of the most meaningful ways to answer basic questions about water quality is to directly observe the communities of plants and animals that live in waterbodies. Aquatic plants and animals -- especially benthic macroinvertebrates -- are constantly exposed to the effects of various stressors; therefore they reflect not only current conditions but also the cumulative impacts of stresses and changes in conditions over time. As all fly-fishermen know, the insects emerging from streams and rivers are good indicators of the water quality and serve as an important food source for both game and non-game fish.

Aquatic or "benthic" macroinvertebrates (which include aquatic larval stages of insects, crustaceans, worms, and mollusks) are a useful indicator of the health of the water. Macroinvertebrates are key organisms, and they reflect the quality of their environment and respond to human disturbance in fairly predictable ways. Macroinvertebrates are good indicators of watershed health because they live in the water for all or most of their life; they can be found in all streams, even the smallest streams that cannot support fish; they are relatively stationary and cannot escape pollution; they differ in their tolerance to amount and types of pollution; macroinvertebrate communities integrate the effects of stressors over time (i.e., pollution-tolerant taxa (or groups of organisms, such as phyla, class, family, genera, or species) will survive in degraded conditions and pollutant-intolerant taxa will die; thus, the composition of communities can tell us a lot about the quality of the water); they are easy to collect and to identify in the laboratory.

Different taxa are more sensitive to pollution and other stressors than other taxa. In a healthy stream, one would expect to find a high diversity of taxa and a large number of different taxa including species that are more sensitive to (i.e., less tolerant of) stressors.

The commenter's reference to statements in EPA's Policy on the Use of Biological Assessments and Criteria in the Water Quality Program (1991) takes those statements out of context. First, the Policy does not refer directly to macroinvertebrates or discuss the adequacy of assessing the macroinvertebrate community as a basis for determining

whether applicable narrative water quality criteria are achieved. Rather, the paragraph to which the commenter refers provides a broad recommendation for water quality criteria development, not assessments. Moreover, the policy points out that the goals of the CWA include restoring and maintaining the physical, chemical, *and biological* integrity of our Nation's waters.

Assessments of macroinvertebrate communities are widely recognized in the scientific community as a useful means for assessing the biological integrity of streams. Biological integrity represents the capability of supporting and maintaining a balanced, integrated, adaptive community of organisms having a species composition, diversity, and functional organization comparable to that of the natural habitat of the region. Macroinvertebrates are researched by almost every state and federal program that monitors streams and are also increasingly evaluated by volunteer organizations that monitor water quality.

Comment 12: WVCA provide a summary of the WVSCI that was developed by Tetra Tech to show that WVSCI is narrowly focused and is not a scientifically defensible basis for accurately measuring the aquatic ecosystem.

EPA Response 12:

Benthic macroinvertebrates are key indicators of stream health and EPA recognizes that the majority of states across the U.S. rely on this group of organisms in assessing Aquatic Life Uses under the CWA. EPA supports independently assessing multiple assemblages for attainment decisions but until methodologies are developed for other assemblages, EPA believes that benthic macroinvertebrates are an acceptable indicator for stream condition assessments. EPA has utilized WVDEP's WVSCI as the bioassessment tool; this tool has been used by WVDEP in prior listing cycles, and WVDEP has acknowledged that for purposes of past Section 303(d) lists, WVSCI was a "valid" tool for assessing compliance with the narrative criteria as applied to the aquatic life use.

To the extent the commenter asserts that fish must be used in assessments of biological condition, EPA respectfully disagrees. EPA supports independently assessing multiple assemblages; however consideration must be given to whether the assessment of a particular assemblage is appropriate for certain streams, such as those too small to naturally provide habitat for fish. By contrast, macroinvertebrates occur in most waters and therefore generally are a good assemblage for assessment. Assessment of the macroinvertebrate assemblage complimented by assessment of other assemblages can provide more refined picture of the health of the aquatic community. Where a methodology for assessing other assemblages does not exist, however, it is appropriate to rely on the macroinvertebrate assemblage to assess the quality of the aquatic life use.

The commenter's summary of WVSCI does not provide EPA with anything that shows that the WVSCI not scientifically defensible. No detailed analyses were provided by the commenter. However, EPA notes that genus-level macroinvertebrate assessments represent a more refined and rigorous scientific analysis of stream health and we continue to recommend that WVDEP rely on a more robust genus-level assessment tool in future listing cycles.

Comment 13: WVCA commented that any interpretation of West Virginia's narrative criteria must be consistent with the public policy goals of West Virginia Legislature. WVCA refers to and summarizes the West Virginia House Resolution No.111, a statement by Randy Huffman that WVSCI is a tool and not a stand-alone determination of compliance with the narrative criterion, a West Virginia letter to the U.S. Army Cops of Engineers that with respect to the adverse impact of mayflies the State cannot say there has been a violation of its narrative standards. For these reasons, the commenter asserts that EPA has inappropriately chosen WVSCI to place streams on the Section 303(d) list. And this action converts a methodology into a water quality standard.

EPA Response 13:

To the extent the commenter asserts that EPA has treated WVSCI as a water quality standard, see Response to Comment 10.

For a discussion of SB 562, which is part of West Virginia State law, see Response to Comment 4.

To the extent the commenter refers to West Virginia House Resolution No. 111, that document is a resolution from one of the two chambers in West Virginia's bicameral legislature and does not carry force of law. House Resolution No. 111 expresses the sense of West Virginia's House of Representatives that a stream supports West Virginia's narrative water quality criterion when it

> (a) supports a balanced aquatic community that is diverse in species composition; and (b) contains appropriate trophic levels of fish (in streams with sufficient flows to support fish populations); and (c) the aquatic community is not composed only of pollution tolerant species or the aquatic community is composed of benthic invertebrate assemblages sufficient to perform the biological functions necessary to support fish communities within the assessed reach (or, if the assessed reach has insufficient flows to support a fish community in those downstream reaches where fish are present.

WVSCI is one means, at a family level, to identify waters that lack a balanced aquatic community diverse in species composition and are composed of pollution tolerant species. While House Resolution No. 111 does not carry force of law, nothing in EPA's action would seem inconsistent with House Resolution No. 111.

To the extent the commenter refers to statements made by WVDEP Cabinet Secretary Huffman or in other communications by WVDEP, EPA notes that the statements to which the commenter refers were made in 2010. That same year WVDEP submitted to EPA West Virginia's 2010 Section 303(d) list, which utilized WVSCI as its means for assessing whether waters were achieving W. Va. CSR § 47-2-3.2(e) & (i) as applied to the aquatic life use. WVDEP also acknowledged in its 2012 Section 303(d)/305(b) narrative that WVSCI was a "valid" method for assessing waters against W. Va. CSR § 47-2-3.2(e) & (i) as applied to the aquatic life use in past years, including 2010.

Comment 14: WVCA commented that the EPA is using the WVSCI as a water quality standard and that the WVSCI cannot be a water quality standard because it has not been promulgated as on and approved by the West Virginia Legislature and EPA, then it cannot be use by federal agencies. At some point WVDEP made a decision to begin listing streams as biologically impaired based on the WVSCI. Yet at no point was the WVDEP WVSCI methodology ever lawfully promulgated as water quality standards. WVCA states that EPA should have reviewed and disapproved the policy, since it constitutes a new or revised water quality standards and summarized what it think is EPA two-part analysis of as what constitutes a new or revised water quality standard. And that by using the WVSCI scores to place a stream on the Section 303(d) list – WVSCI method defined, changed, and/or establishes a magnitude component regarding the level of protection to be applied in making an attainment decisions.

EPA Response 14:

See Response to Comment 10.

Comment 15: WVCA states that the passing SB 562 directs the WVDEP to develop a new methodology and that is why WVDEP decided not to add any new stream to it 2012 list using WVSCI.

EPA Response 15:

See Response to Comment 4.

Comment 16: WVCA commented that EPA decision to approve 1,176 water quality limited segments if unlawful because 472 of those segments were place on the list due to WVSCI scores, thereby treating WVSCI as a water quality standard the was never lawfully promulgated.

EPA Response 16:

See Response to Comment 10.

Comment 17: EPA's Partial Disapproval of WVDEPs Section 303(d) list and addition of stream based on WVSCI. WVCA commented that EPA continued WVDEP unlawful practices with the WVSCI and implemented its own version of a water quality standard.

EPA Response 17:

See Response to Comment 10.

Petra & John Wood Comments and EPA Responses

Comment 18: The commenter support of EPA's proposed additions to West Virginia's Section 303(d) list of water quality limited segments. The commenter also expresses support for EPA's recommendation that WVDEP move toward use of a genus-level biological assessment methodology (i.e., GLIMPSS) rather than continuing to rely on a family-level methodology of macroinvertebrate community assessment (i.e., WVSCI).

EPA Response 18:

EPA notes the comment in support of this action. EPA continues to believe that the Genus Level Index of Most Probable Stream Status (GLIMPSS) improves upon WVSCI and offers a more refined tool for assessing the structure and function of the aquatic ecosystem. EPA encourages WVDEP to incorporate GLIMPSS, which was developed by EPA and WVDEP scientists and has been published in a peer-reviewed journal, as part of any future methodology developed pursuant to SB 562.

Comment 19: The commenters also request that EPA consider revising the list of pollutants that are associated with biological impairment in West Virginia. The commenters refer to several scientific studies that point to statistically significant correlation between high concentrations of conductivity, sulfate, and total dissolved solids (TDS) with degradation of aquatic stream life linked to mining activities. The commenters state that WVDEP refuses to acknowledge sulfates and specific conductance as pollutants even though both are strongly correlated indicators of mining pollution and urges that WVDEP can and should set numerical limits on sulfate, conductivity and TDS. The commenters further note a water quality benchmark already exists for conductivity.

EPA Response 19:

To the extent the commenters suggest that WVDEP should set numeric water quality criteria for sulfates, conductivity and TDS, development of water quality criteria is beyond the scope of this action. The appropriate mechanism for addressing water quality standards is through CWA Section 303(c), not Section 303(d). This includes, for example, by participating in WVDEP's triennial water quality standards process. To the extent the commenter suggests that West Virginia's Water Quality Standards are insufficient for protection of beneficial water uses because they do not include certain numeric criteria, the commenter's recourse is primarily through the CWA Section 303(c) process. To the extent the commenters suggest that the Section 303(d) list should be expanded to include waters with concentrations of conductivity, sulfates, and/or TDS demonstrated to be associated with degradation of aquatic stream life, waters must be assessed for Section 303(d) purposes based upon applicable water quality standards. In the absence of numeric water quality criteria for conductivity, sulfates and TDS, the applicable water quality standards are W. Va. CSR § 47-2-3.2(e) & (i) as applied to the aquatic life use. While it would be appropriate for WVDEP to develop an assessment

methodology for W. Va. CSR § 47-2-3.2(e) & (i) as applied to the aquatic life use that considers as an indicator parameter ambient levels of conductivity, sulfates and TDS that have been associated with degradation of aquatic stream life through scientific studies, it is also appropriate to rely upon a direct measure of the structure and/or functional characteristics of the aquatic community. EPA notes that we used the WVSCI methodology as a direct measure of the structure and/or functional characteristics of the aquatic community. See Response to Comment 11. EPA continues to encourage WVDEP to use more refined assessment tools, including genus-level assessment methodologies, as it develops new methodologies for assessing compliance with W. Va. CSR § 47-2-3.2(e) & (i).

Comment 20: The commenters want EPA to urge the WVDEP to expedite the priority ranking of water quality limited segments where the cumulative adverse effects of mining on aquatic life are evident. For example, approximately 2172 acres of 9420 acres, or 23% of the Scotts Run watershed (Stream Code WVM-6), has already been surface mined and/or permitted for surface mining operations. The WVDEP should prioritize development of numeric TMDLs that represent attainment of the narrative water quality standards for conductivity, TDS and sulfate in these overdeveloped, overly stressed watersheds before any new NPDES permits associated with surface mining activities are issued, modified, or renewed.

EPA Response 20:

EPA regulations codify and interpret the requirement in Section 303(d)(1)(A) of the Act that states establish a priority ranking for listed waters. Those regulations at 40 CFR 130.7(b)(4) requires states to prioritize waters on their Section 303(d) lists for TMDL development, and also to identify those WQLSs targeted for TMDL development in the next two years. In prioritizing and targeting waters, states must, at a minimum, take into account the severity of the pollution and the uses to be made of such waters. See Section 303(d)(1)(A). As long as these factors are taken into account, the Act provides that states establish priorities. States may consider other factors relevant to prioritizing waters for TMDL development, including immediate programmatic needs, vulnerability of particular waters as aquatic habitats, recreational, economic and aesthetic importance of particular waters, degree of public interest and support, and state or national policies and priorities. See 57 Fed. Reg. 33040, 33045 (July 24, 1992) and EPA's 1991 Guidance.

While EPA agrees that the cumulative effects of many activities on a watershed are an important consideration, WVDEP historically has relied primarily upon its five-year Watershed Management Framework as a basis for scheduling TMDL development. This is the type of programmatic consideration that is referenced in EPA guidance.

Twelvepole Watershed Association Comments and EPA responses

Comment 21: The Twelvepole Watershed Association (TWA) requested the removal of Wiley Branch of East Fork of Twelvepole Creek based on this more recent data. TWA supplied a report that for it believes shows Wiley Branch is not impaired to be of high quality.

EPA Response 21:

EPA has reviewed the submission of macroinvertebrate data for Wiley Branch of Twelvepole Creek. The report contained macroinvertebrate data for two sampling stations named BM-UWB (upstream station) BM-DWB (downstream station). Site BM-UWB is on a tributary to Wiley Branch and was not part of EPA's proposed list of waters to be added to WV's 2012 303(d) list. The commenter submitted a WVSCI score for site BM-DWB that was slightly above the impairment threshold

While the samples submitted by the commenter were taken at the extreme outer edge of the WVSCI index period (see below), they were within the WVSCI index period and therefore are valid samples for purposes of EPA's action. Where there are WVSCI scores over time, with some above and others below the threshold of 68, it is EPA's understanding that WVDEP generally would rely upon the most recent valid sampling data. For purposes of this action, EPA is basing its determination only upon the most recent valid WVSCI score, a methodology substantially similar to the WVSCI methodology that WVDEP acknowledges was a valid means in the past of assessing compliance with West Virginia's currently applicable narrative water quality criteria as applied to the aquatic life uses. EPA is utilizing only the WVSCI score, rather than a weight of the evidence approach in order to avoid preempting WVDEP's completion of the methodology process pursuant to SB 562. Accordingly, EPA will remove Wiley Branch of Twelvepole Creek from its proposed list of waters to be added to West Virginia's 2012 Section 303(d) list.

EPA notes that the prior WVDEP samples in 2009 and 2010 scored as impaired. In addition, EPA also notes that the commenter's sample dates for 2010 and 2011 (October 7 and 9, respectively) fall on the extreme outer edge of the WVSCI index period. This late sample date could lead to a score that does not accurately reflect the aquatic community at the sample location, and with regard to the WVSCI reference dataset, is a statistical outlier within the distribution of the WVDEP sample window. The commenter's sample dates are beyond the maximum (100^{th} percentile) of WVDEP reference samples and greater than 2.3 standard deviations of the mean WVDEP sample date. This leads to less confidence in the WVSCI scores provided by the commenter. Moreover, given poorer habitat quality scores in 2011 and elevated concentrations of conductivity in 2010 and 2011, EPA believes there is a potential that samples taken at dates closer to the mean WVDEP sample date would likely show this stream is biologically impaired. Further, based on the genus-level data provided by the commenter, 2010 and 2011 samples fall below the impairment threshold for the Genus Level Index of Most Probable Stream Status (GLIMPSS) using Chironomidae at the family-level (GLIMPSS CF). In fact, all genus-based samples collected from mainstem Wiley Branch in 2009, 2010, and 2011 fail GLIMPSS (CF). EPA notes again that for purposes of this action, EPA has used WVSCI, not GLIMPSS or a weight of the evidence approach. It would not be appropriate to apply GLIMPSS or a weight of the evidence approach solely to this stream.

EPA recommends that to the extent there are pending permit applications for discharges to this watershed, WVDEP carefully consider the totality of the evidence of the condition of Wiley Branch. EPA further recommends that WVDEP consider re-sampling Wiley Branch in the April 15- May 30 and July 15 – September 1 timeframes prior to development of the 2014 Section 303(d) list.

Kelly Brown Comment and EPA Response

Comment 22: Commenter requested that Wolfe Creek under the Lower New Watershed section should be included on the Section 303(d) List, because it has high levels of dangerous contaminates in it (Chloride, Barium, Glycol, Iron, Lead, Manganese and TDS). Reason that the commenter gave included: that there seems to be a lot of adults and children in my area that have very serious health problems, especially kidney, liver and cancer and a primary concerns about Wolfe Creek it that it served as our only drinking water supply up until the fall of 2008. The commenter believes some of the contamination in Wolfe Creek is from acid mine drainage, but some of the toxic chemicals may be coming from the Class II Injection Wells and Sediment Pits located at the head of Wolfe Creek. The sediment pits are used for the disposal of Hydraulic Fracking wastewater and have a long history of overflowing and leaking into the adjacent stream, Wolfe Creek. Several concerned citizens and physicians have written letters to the WVDEP.

EPA Response 22:

EPA acknowledges the comment. EPA will relay the commenter's concerns to WVDEP. Wolf Creek is in Integrated Report Category 4a for waters that are impaired and have a TMDL developed. The Section 303(d) list or category 5 is for waters that are impaired that still need a TMDL. WVDEP has identified Wolf Creek of the Lower New Watershed as impaired and developed multiple TMDLs for the waterbody in 2008. Wolf Creek in the Lower New Watershed has approved TMDLs for fecal coliform, iron, organic enrichment and sedimentation. WVDEP has identified Wolf Creek as impaired for the following uses: potable water supply, trout water and water contact recreation. The Wolf Creek listing can be found in WVDEP's Integrated Report in Appendix B for waters with TMDLs developed on page B-82.

For more information on the Wolf Creek TMDLs, please see WV's New River Watershed TMDL Report:
http://www.dep.wv.gov/WWE/watershed/TMDL/grpd/Pages/default.aspx#lower new

WVDEP Comments and EPA Responses

Comment 23: WVDEP took issue with EPA's statement that WVDEP is unable to carry out the requirements set for in 40 CFR 130.7(b)(5), and that EPA has an obligation to take action to ensure that the federal requirements are satisfied. WVDEP commented that

when West Virginia legislature passed SB 562 it made a policy decision that the biologic health of a stream must be measured using more factors than a benthic macroinvertebrate score. For that reason WVDEP decline to include new biological impairments listing on the 2012 Section 303(d) list.

EPA Response 23:

See Response to Comment 4.

Comment 24: WVDEP commented that while in the past WVDEP has used WVSCI, WVDEP has historically utilized a gray zone of 60.6-68 to account for uncertainty. WVDEP acknowledges EPA's previously stated concerns with the grey zone, but points out that EPA had approved WVDEP Section 303(d) in the past.

EPA Response 24:

The commenter correctly notes that EPA previously has raised concerns regarding the statistical adequacy of WVDEP's use of a "gray zone" of 60.6-68 to account for uncertainty. While the commenter is correct that EPA had approved past WVDEP Section 303(d) lists that utilized the "gray zone," WVDEP fails to appreciate the context of those approvals. The fact that the "gray zone" as previously used by WVDEP is statistically unsupported came to EPA's attention after WVDEP had begun utilizing WVSCI for Section 303(d) purposes. In 2010, while EPA expressed concerns regarding WVDEP's use of the gray zone, it was also EPA's understanding at that time that WVDEP intended to move away from the WVSCI assessment methodology and by 2012 to use GLIMPSS as its methodology for assessing whether waters are achieving the narrative criteria as applied to the aquatic life use. EPA believed it was appropriate to allow WVDEP to use its limited resources to toward implementing the new GLIMPSS assessment methodology rather than revise listings based upon a statistically unsupported aspect of its longstanding WVSCI methodology.

With respect to EPA's action, it is EPA's intent to assess the existing and readily available water quality information as consistently as possible with WVDEP's prior assessments so as to avoid pre-empting any new methodologies that may be developed pursuant to SB 562. Having said that, EPA does not believe that it is appropriate for EPA to utilize a statistically unsupported aspect of WVDEP's use of WVSCI solely for purposes of consistency with WVDEP's past practices.

WVDEP's use of a precision estimate to establish the "gray zone" is not statistically supportable because the potential variability for which the gray zone is purported to account already is accounted for by variability in the reference sites.

WVDEP's gray zone purports to adjust for the possibility of the effects of measurement error by subtracting confidence intervals (based on the standard deviation of within-site variance calculated from replicate samples collected at several sites) from their initial threshold determination. This approach, however, is only appropriate if the reference

range is composed of an "error free" distribution of scores. Estimating the "error-free" distribution of reference site values can be fairly straightforward if multiple measurements are available for each reference site. However, this analysis must be performed *before* thresholds are determined. Any percentile estimated from a raw distribution of single reference site values will include the effects of sampling variability and measurement error, and further adjustment for sampling variability would account for sampling variability twice in the threshold determination (i.e., sampling variability would be double-counted). Accordingly, EPA did not use WVDEP's gray zone when proposing additional waters using the WVSCI methodology.

Comment 25: WVDEP provided suggested revision to EPA's list: Remove 3 streams because new sample show WSSCI > 68, remove 1 because of an approved TMDL, remove 3 streams because of non comparable samples, revise the scream length of 4 streams due WVCI > 68 in some segments, add one because WVSCI less than 68.

EPA Response 25:

EPA agrees with the comment. In addition to Wiley Branch (see Response to Comment 21), seven waters will be removed from the final list of waters to be added to WV's 2012 303(d) list. One water will be added to the final list and the reach will be revised for 4 waters. Thank you for the additional information.

Stream Name	Code	Recommendation	Reason
Gauley River	WVKG	Remove	New sample, WVSCI > 68
Panther Creek	WVBST-60	Remove	New sample, WVSCI > 68
Greenbrier River	WVKNG	Remove	New sample, WVSCI > 68
Davis Creek	WVK-39	Remove	Approved TMDL, May 2012
UNT/Little Creek RM 3.19	WVM-17-A-6	Add	WVSCI 36.85 entire length
Hog Lick Run	WVMW-2-A	Remove	Noncomparable sample
Sweep Run	WVMW-2-C	Remove	Noncomparable sample
Sugarcamp Run	WVMW-55-C	Remove	Noncomparable sample
Fork Creek	WVKC-14	Revise reach to "Mouth to 3.6"	WVSCI > 68 at MP 3.6
Moody Run	WVM-23-C	Revise reach to "Mouth to 1.2"	WVSCI > 68 at MP 1.2
Prickett Creek	WVM-19	Revise reach to "Mouth to 7.7"	WVSCI > 68 at MP 7.7
Freeman's Creek	WVMW-36	Revise reach to "1.1 to HW"	WVSCI > 68 at MP 1.1

Comment 26: WVDEP comments that a majority of the Region 3 states have some type of uncertainty adjustment in their listing methodologies. Yet EPA has eliminated such uncertainty in West Virginia list.

EPA Response 26:

While States and Tribes may incorporate uncertainty adjustments when developing procedures for evaluating stream data, contrary to the commenter's suggestion, the majority of Region III states do not incorporate an explicit uncertainty adjustment or "gray zone." EPA did not utilize a "gray zone" similar to that previously used by WVDEP because it is statistically invalid. (See Response to Comment 24). In 2010, EPA calculated a statistically valid uncertainty technique (e.g., interval/equivalence tests) for WVDEP, but WVDEP did not accept this calculation.

In addition, the methodology employed by WVDEP and EPA accounts for uncertainty. WVDEP's use (also used by EPA for purposes of this action) of a 5th percentile of reference condition as the acceptable exceedance probability for WVSCI accounts for some uncertainty to the extent that it is considerably less conservative (in terms of ensuring that all potential impairments are identified) than the acceptable exceedance probabilities used by surrounding states. Using the distribution of scores from the reference sites, a threshold score of 68.0, representing the 5th percentile of reference sites, was identified by WVDEP as the lowest WVSCI score that was considered as fully supportive of the narrative criteria as applied to the aquatic life uses. This means that 95% of reference sites had a higher score. As a general matter, the reference sites will have experienced some alteration and thus represent some degree of departure from truly natural conditions. To account for this, many states (Virginia for example) use 10th percentile of reference, or even the 25th percentile of reference. EPA agreed with WVDEP's use of the less conservative 5th percentile of reference because of the high quality and general confidence in West Virginia's reference samples as representative of something closer to natural conditions.

Comment 27: WVDEP commented that if EPA is going to add streams to West Virginia list then it should also take action to delete streams where more recent data includes WVSCI scores greater than 68.

EPA Response 27:

In its public notice draft 2012 Section 303(d) list (published May 11, 2012-June 26, 2012), WVDEP proposed to remove from the Section 303(d) list twelve WQLSs previously listed for biological impairment based upon WVSCI scores because more recent sampling had yielded WVSCI scores greater than 68. EPA's comments on the draft 2012 Section 303(d) list noted that WVDEP's proposed removal based on new WVSCI scores was inconsistent with WVDEP's position that, following SB 562, it lacked authority to evaluate new biological samples for the purpose of adding waters to the Section 303(d) list. Based on EPA's comment, WVDEP determined in its final 2012 Section 303(d) list not to remove those twelve waters.

EPA's implementing regulations expressly authorize EPA to add waters to a state's Section 303(d) list submission. In its partial approval/partial disapproval, EPA stated its view that, in light of EPA's action, it would be appropriate for WVDEP to evaluate the biological scores of the twelve WQLSs identified in its draft 2012 Section 303(d) list and to submit to EPA for review and approval or disapproval a revision removing those waters from the Section 303(d) list WQLSs where a new WVSCI score demonstrates lack of impairment. EPA construes WVDEP's comment as a submission by WVDEP proposing removal from the Section 303(d) list of the twelve waters. In a separate action, EPA will approve this submission by WVDEP and the omission of the twelve waters from West Virginia's Section 303(d) list.

Comment Received Outside the Public Comment Period

In addition to the foregoing, on June 21, 2013, EPA received a submission from Appalachian Mountain Advocates consisting of information previously provided by Appalachian Mountain Advocates to WVDEP. The public comment period for EPA's proposed action closed May 8, 2013. See 78 Fed. Reg. 20912, 20913 (April 8, 2013). EPA did not receive or grant any requests for an extension of the public comment period. Accordingly, the June 21, 2013 submission from Appalachian Mountain Advocates was submitted outside the public comment period and is not part of EPA's record. EPA notes that WVDEP had made changes to its Section 303(d) list based upon information submitted by Appalachian Mountain Advocates. EPA further notes that the data submitted on June 21, 2013 previously had been provided to EPA by WVDEP and was considered by EPA in connection with this action.