

Comment Response Document
Regarding the Draft “Appendix E: Evaluation of Turbidity Criteria Applicable to the Recreational and Aesthetic Designated Uses vs. Secchi Depth in the TMDL Scenario” Addendum to the 2007 Total Maximum Daily Load of Sediment/Total Suspended Solids in the Anacostia River Watershed, Montgomery and Prince George’s Counties, Maryland and The District of Columbia

The Maryland Department of the Environment (MDE) and The District Department of the Environment (DDOE) have conducted a public review of the Appendix E document referenced above. The public comment period was open from April 6, 2012 through May 7, 2012. DDOE and MDE received three sets of written comments. Responses are given either jointly by both agencies, or, where the responses of the jurisdictions differ, separate responses are provided by each.

Below is a list of commentors, their affiliation, the date comments were submitted, and the numbered references to the comments submitted. In the pages that follow, comments are summarized and listed with MDE’s and DDOE’s responses.

List of Commentors

Author	Affiliation	Date	Comment Number
B. H. Custer	None given	April 29, 2012	1
Leonard Benson, Chief Engineer	District of Columbia Water and Sewer Authority (DC Water)	May 4, 2012	2
Jennifer C. Chavez	Earthjustice (on behalf of Anacostia Riverkeeper and Friends of the Earth)	May 7, 2012	3 through 14

Comments and Responses

1. The commentor asks: “What, precisely, is the ‘margin of safety’ adverted to on page E-8 of the document?”

Response: The Clean Water Act requires that a margin of safety (MOS) be included as part of a TMDL in recognition of many uncertainties in the understanding and simulation of water quality in natural systems. For example, knowledge is incomplete regarding the exact nature and magnitude of pollutant loads from various sources and the specific impacts of those pollutants on the chemical and biological quality of complex, natural waterbodies. The MOS is intended to account for such uncertainties in a manner that is conservative from the standpoint of environmental protection.

Based on EPA guidance, the MOS can be achieved through two approaches. One approach is to reserve a portion of the loading capacity as a separate term in the TMDL, i.e., $TMDL = Load\ Allocation\ (LA) + Waste\ Load\ Allocation\ (WLA) + MOS$. The second approach is to incorporate the MOS as conservative assumptions used in the TMDL analysis. In the Anacostia River Sediment/TSS TMDL, the MOS is provided by several implicit conservative assumptions used in the modeling framework. For details, see p. 38 of the final 2007 TMDL: http://www.mde.state.md.us/programs/Water/TMDL/DraftTMDLforPublicComment/Pages/TMDL_PN_Anacostia_TSS_Appndx_E.aspx.

2. In a letter to DDOE, the commentor states that DC Water supports the decision not to change the TMDLs and the conclusion that 85% load reductions called for in the TMDLs are sufficient to achieve the water contact and aesthetic use designations. However, DC Water also believes that the ambient (background) NTU assumptions for the Anacostia in the District are far too conservative, and that if more realistic background assumptions are used in the analysis, DDOE can show that the TMDLs are sufficient to achieve 100% attainment of the District's NTU [turbidity] criterion. Because DC's turbidity criterion is expressed as a daily value not to exceed a 20 NTU "increase above ambient" and DC's water quality standards define "ambient" as "those conditions existing before or upstream of a source or incidence of pollution," the use of an accurate ambient NTU value is critical to correctly determining whether the TMDLs are sufficient to attain DC's NTU criterion. The commentor acknowledges the obligation to include a margin of safety in TMDLs, but believes using ambient NTU values of 0 and 20 is unrealistic and far too conservative in light of MD's daily NTU criterion of 150 (in MD waters upstream of DC's segments of the Anacostia). Therefore, the commentor believes 150 NTU should be used as the ambient condition to derive the DC criterion; comparing the resulting 170 NTU criterion (150 + 20) to the daily turbidity values in Table E-2 of Appendix E shows 100% attainment, even if the 170 NTU criterion is reduced to provide a 10-30% margin of safety. DC Water urges DDOE to add this to the analysis in the Appendix.

Response: DDOE and MDE agree with the commentor that the TMDL should not be changed and that the 85 percent load reductions called for in the TMDL are sufficient to achieve water contact and aesthetic use designations in both jurisdictions. We also agree that using an NTU of 0 is extremely conservative and similar to comparing the Anacostia River to tap water. That comparison clearly shows that even with a background at the extreme NTU of 0, the TMDL model results indicate that less than 10% of the daily NTU values are greater than 20 NTU.

Given the considerable variability of "ambient" conditions and DC's definition of them as "existing before or upstream of a source or incidence of pollution," the most appropriate representation of these conditions for assessing criteria attainment would be the turbidity levels of the waters entering the DC tidal

Anacostia from Maryland's portion of the river. The analysis conducted for Appendix E provides predicted daily average NTU levels in both MD and DC tidal waters under the TMDL scenario. A comparison of the predicted MD and DC turbidity values shows that the daily DC turbidity levels exceed the corresponding MD turbidity levels (the assumed ambient conditions in DC waters) by more than 20 NTUs (the amount above ambient allowed by DC's criterion) only 3.3% of the time over the entire 3-year simulation period.

EPA's guidance has recommended making non-attainment decisions with respect to conventional pollutants, including Total Suspended Solids, when more than 10% of measurements exceed the water quality criterion. According to DC's Integrated Reports, DC makes non-attainment decisions for conventional pollutants for their Section 303(d) lists based generally upon whether more than 10% of measurements exceed the water quality criterion. Scientific analysis in the Appendix E document provides clear and sufficient demonstration that the load reductions called for under the TMDL scenario will result in achieving the numeric water clarity criteria established in both MD and DC regulations and meet all of the applicable water quality standards.

3. The commentor states that the draft Appendix E does not resolve problems identified in the opinion and judgment issued by the DC District Court, i.e., that the Clean Water Act (CWA) require the evaluation of "whether the [TMDL] load levels, once implemented, will protect all applicable water quality standards, including all designated uses and all water quality criteria." In spite of the court's clear holding, the commentor continues, there is no indication in Draft Appendix E that the agencies assessed whether the TMDL load allocations would protect (1) standards for recreation and aesthetic enjoyment, or (2) standards for protection of various forms of aquatic life other than SAV. Instead, the District and Maryland are still focusing on their numeric criteria for turbidity and clarity, without analyzing or explaining whether or how those numeric criteria protect recreational and aesthetic uses, or standards for protection of fish, shellfish, and other aquatic wildlife. Further, there is no reasoned factual basis for the assertion that the Draft Appendix reflects "the best professional judgment of MDE and DC Department of the Environment that the 'aesthetic enjoyment' use and recreation use are attained by maintaining MD's and DC's numeric turbidity criteria." Consequently, in violation of the Clean Water Act ("CWA"), 33 U.S.C. § 1313(d), Draft Appendix E does not demonstrate compliance with the following water quality standards, each of which applies to the Anacostia River:
 1. The District's Class A use (Primary contact recreation) 21 DCMR § 1101.1 and 1101.2.
 2. The District's Class B use (Secondary contact recreation and aesthetic enjoyment). *Id.*
 3. The District's Class C use (Protection and propagation of fish, shellfish and wildlife). *Id.*

4. The District's criteria for all surface waters of the District, which require that waters "shall be free from substances in amounts or combinations that," among other things, "[p]roduce objectionable odor, color, taste, or turbidity." D.C. Mun. Regs. tit. 21, § 1104.
5. Maryland's general surface water use (protection of water contact recreation, fishing, and aquatic life and wildlife). Md. Code Regs. 26.08.02.07.
6. Maryland's Use I-P (protection of water contact recreation). Md. Code Regs. 26.08.02.02.B.(2).
7. Maryland's Use II (protection of shellfish harvesting waters and migratory fish spawning and nursery uses). Md. Code Regs. 26.08.02.07.
8. Maryland's criterion applicable to Uses I-P and II requiring that "[t]urbidity may not exceed levels detrimental to aquatic life." Md. Code Regs. 26.08.02.03-3.A.(5)(a), C.(5).

Response: MD and DC disagree and believe that the comment reflects the commentor's misreading of draft Appendix E and the two jurisdictions' water quality standards. While MD and DC agree that water quality standards consist of designated uses and criteria designed to achieve those uses, the commentor misinterprets how Appendix E demonstrates that the TMDL scenario will achieve all designated uses as defined in the two jurisdictions' water quality standards. DC's water quality standards state that: "Unless otherwise stated, the numeric criteria that shall be met to attain and maintain designated uses are as follows." 21 DCMR 1104.8. Thus, DC's water quality standards specifically state that achieving the numeric water quality criterion for turbidity will achieve the associated designated uses (including the aesthetic and recreational uses). Maryland's turbidity criteria are identified in a section of Maryland's regulations entitled: "Water Quality Criteria Specific to Designated Uses" (COMAR 26.08.02.03-03), including the recreational use (Maryland has no designated aesthetic use). Accordingly, Maryland's water quality standards also incorporate a determination by the State that achieving the numeric water quality criteria for turbidity will achieve the designated uses (including recreational uses). In other words, the determination that achieving the two jurisdictions' numeric turbidity criteria will achieve the recreational and aesthetic uses is *not* a determination made in the TMDL, but rather a determination embodied within the two jurisdictions' water quality standards. The TMDL is simply designed to achieve the applicable water quality standards. Indeed, the technical guidance document selectively quoted elsewhere by the commentor specifically recommends the use of a numeric criterion where there is a numeric criterion to protect the particular use. See EPA, *Protocol for Developing Sediment TMDLs* (EPA 841-B-99-004) (1999) at p. 1-3 & Figure 4-1.

To the extent the commentor disagrees with the determination embodied in the jurisdictions' applicable water quality standards, the commentor's disagreement is with the two jurisdictions' water quality standards, not with the TMDL. The

Clean Water Act provides a vehicle for expressing disagreement with water quality standards. That vehicle is embodied in Section 303(c) of the CWA, not Section 303(d). Accordingly, concerns regarding the adequacy of the water quality standards are beyond the scope of Section 303(d) and the TMDL.

With respect to the narrative criteria, the District Court stated that “While it is true that the CWA and applicable regulations do not mandate the translation of narrative criteria into specific limits, it is equally true that EPA is obligated under both to explain *how* the reduction in load levels will achieve applicable narrative criteria. This could be accomplished, for example, by examining the current loads and simulating how the water in the Anacostia would look under implemented loads.” Pp. 48-49. That is exactly what was done in Appendix E.

Finally, DC and MD disagree with the commentor that the District Court’s vacatur was based on a finding that the 2007 TMDL did not support the aquatic life designated use. To the contrary, the District Court’s final judgment clearly states that “EPA properly relied on the Secchi depth criterion in approving the Final TMDL *for protection of aquatic life.*” (emphasis added) Regardless, the water quality standards in both jurisdictions also express a determination that achieving the numeric turbidity criteria will protect the aquatic life use. 21 DCMR 1104.8; COMAR 26.08.02.03-03.

4. The commentor states that TMDLs require a separate analysis of designated uses, including those perceived to be “subjective” such as recreation and aesthetic enjoyment. The commentor further states that the draft Appendix “insinuates that the numeric criteria for turbidity and clarity are protective of all designated uses impaired by sediment and TSS.” This, the commentor adds, is misleading and lacks a basis in the record, i.e., neither MD nor DC offer any support whatsoever for the notion that the numeric criteria were adopted based on a demonstration that those criteria alone are sufficient “for the protection of” all the associated designated uses. Absent such a demonstration, the commentor concludes, there is no legal basis for the presumption that the numeric criteria are protective of the designated uses.

Response: A water quality standard is comprised of a designated use and criteria designed to protect that use. Numeric criteria are science-based, measurable benchmarks that enable a quantifiable assessment of water quality and, where established, are preferable to more general, “narrative” standards that express a desired water quality goal in terms that are not easily quantified or measured. Where there is an existing numeric criterion applicable to a particular pollutant, it is reasonable to use that criterion as the quantitative implementation of the narrative standard. See also Response to Comment #3.

5. The commentor states that MDE and DDOE must evaluate and demonstrate protection of recreational and aesthetic standards for the timeframe appropriate to

those standards, based on available information about human use of the Anacostia River. Likewise, the commentor adds, the TMDLs must be based on a demonstration that they will protect aquatic life uses in the river for the timeframe appropriate to that use (including protection of organisms other than SAV, such as vertebrate and invertebrate aquatic life).

Response: The commentor has misread the analysis in draft Appendix E. The commentor's assumption that the TMDL analysis is limited to whether the Secchi depth criteria or turbidity criteria will be achieved on a seasonal basis is mistaken. To the contrary, DC and MD agree that the TMDL must achieve the applicable water quality standards and that it is the applicable water quality standards that define the frequency with which they must be achieved. DC's turbidity criterion, which supports the recreational and aesthetic uses, is expressed as a numeric limit above background, without a duration/frequency expression. Maryland's turbidity criteria are expressed as a monthly average and as a maximum value not to be exceeded at any time. Appendix E provides a comparison of the model output of predicted turbidity levels on a *daily* basis under the TMDL scenario to the turbidity criteria.

With respect to Maryland, the model output demonstrated that the 30-day average turbidity values never exceed the 50 NTU monthly average standard and less than 0.1% of the daily values exceed the maximum value standard of 150 NTU, thereby demonstrating attainment of MD's numeric turbidity criteria applicable for protection of Use I-P (water contact recreation, protection of non-tidal warmwater aquatic life, drinking water supply). It should be noted that the 0.1% of daily values exceeding the maximum value of 150 NTU occurred in connection with record flooding, reported by the U.S. Geological Survey. Please see the last paragraph of the Response to Comment #12 with regard to the less than 0.1% exceedance of the 150 NTU.

With respect to DC, because the District's standard lacks a duration/frequency expression, DC has historically made impairment determinations consistent with longstanding EPA guidance that an exceedance rate of greater than 10% of samples is a good rule of thumb for identifying impairment for conventional pollutants, such as sediment. As set forth in Table 3.2 of DC's 2012 Section 303(d) list (and consistent with previous Section 303(d) lists), DC considers a waterbody as fully supporting its designated use when $\leq 10\%$ samples exceed the criterion, which is the case under the Anacostia TSS TMDL scenario, as demonstrated in Appendix E. See also Memorandum from Diane Regas, Director, Office of Wetlands, Oceans and Watersheds, to Water Division Directors, Regions I-X re *Guidance for 2006 Assessment, Listing, and Reporting Requirements Pursuant to Sections 303(d), 305(b), and 314 of the Clean Water Act* (July 29, 2005. See Response to Comment #3.

6. The commentor states that there is no indication in the Draft Appendix that the agencies even attempted to gather information about existing impairments of actual recreational and aesthetic uses of the Anacostia; much less, to evaluate what would be needed to support those uses for individuals who currently refrain from recreation in the river due to the current murky, unsavory conditions in the water column. Instead, the Draft Appendix again asserts – without supporting evidence – that achievement of the numeric turbidity criteria will ensure achievement of the narrative recreation and aesthetic enjoyment standards.

Response: DC and MD agree with the commentor that under current conditions the tidal portions of the Anacostia River are impaired for sediment. That is why under Section 303(d) of the CWA, both DC and MD have already made a determination that the Anacostia River is impaired by sediment and gathered data that support that impairment determination. The purpose of the TMDL is not to document existing impairments, but to establish loads that will allow the waterbody to achieve the applicable water quality standards. Thus, the focus is not on existing conditions, but rather on identifying loading scenarios that will eliminate the impairment. It is not necessary to gather new information about the existing impairment in order to revise the TMDL to address the recreation and aesthetic uses. The analysis in Appendix E is intended to demonstrate that the applicable standards protective of the uses in the Anacostia that are subject to impacts from sediment are met under the TMDL scenario. Conditions predicted under the TMDL scenario are indicative of a degree of water clarity, in terms of turbidity levels, that is sufficient to support aquatic life, recreation and aesthetic enjoyment. The analysis in Appendix E bears this out: the results indicate that under the TMDL, daily turbidity levels are less than 12 NTU in MD, and less than 20 NTU in DC waters, 90% of the time. See Figures 1 and 2 in Response to Comment #12 in this document.

7. The commentor states that the draft Appendix does not demonstrate that episodic spikes in sediment and TSS allowed by the TMDLs (when the maximum daily loads are discharged) are protective of recreational and aesthetic uses.

Response: DC and MD agree that under the TMDL scenario there will be periods of time when the water is turbid. However, DC and MD disagree with the commentor's assumption that, unless the water is clear every day of the year, the applicable water quality standard has not been achieved and the water is impaired. See Response to Comment #5.

Sediment transport is a natural part of the hydrological process. When it rains, erosion, transport and sedimentation of soil occur naturally. During those rain events, it is also natural that turbidity will increase. The TMDL accounts for the natural hydrological process while still ensuring that the applicable water quality standards will be achieved.

8. The commentor states that the assertion of “best professional judgment” [that the aesthetic enjoyment and recreation uses are attained by maintaining MD’s and DC’s numeric turbidity criteria] in the Draft Appendix is not entitled to deference without citing or providing an underlying basis, such as prior analysis or finding. The commentor cites EPA guidance that resorting to “best professional judgment” is appropriate only when needed information is unavailable. The commentor continues that neither jurisdiction can claim that information about recreational uses is unavailable, as there is no evidence that MD or DC attempted to reach out to the numerous boating, kayaking, and other facilities and organizations that exist for use of aquatic recreational users of the Anacostia River. The commentor adds a number of other recommendations in EPA guidance pertaining to ensuring development of adequate targets in Sediment TMDLs when exercising professional judgment, such as consulting with experts with local experience, documenting the thinking underlying the target, etc.

Response: The commentor quotes only selectively from the referenced guidance. The referenced guidance clearly contemplates in numerous places that, where there is a numeric criterion for sediment applicable to the designated use, the numeric criterion appropriately can be used as the TMDL endpoint. See pages 1-4, 3-1, and Figure 4-1. The various other endpoint approaches described in the referenced guidance are for use where there is no applicable numeric criterion and numeric TMDL endpoints must be derived by other means.

The commentor also appears to misinterpret the reference to best professional judgment. A footnote in Appendix E discusses the general narrative criteria that prohibit substances at levels that are “objectionable” or cause a “nuisance,” conditions that would impact recreation and aesthetic enjoyment of the water: “Both jurisdictions’ water quality standards reflect the best professional judgment of MDE and DC Department of the Environment that the ‘aesthetic enjoyment’ use and recreation use are attained by maintaining MD’s and DC’s numeric turbidity criteria.” Regarding the commentor’s reference to EPA’s draft guidance for Developing Water Quality Criteria for Suspended and Bedded Sediments (SABs); Potential Approaches at 16 (Draft, 2003), it should also be noted that:

- (1) The document is *draft* guidance.
- (2) The draft guidance applies to criteria development, not TMDL development. As noted elsewhere, concerns regarding the adequacy of the two jurisdictions’ water quality standards are beyond the scope of the TMDL, which must be designed to meet currently applicable standards.
- (3) The cited value (a Secchi Depth of four feet) is quoting a 1968 water quality criteria document from the Department of the Interior, prior to the promulgation of the Clean Water Act and the establishment of EPA. However, that document also acknowledges that there are different turbidity requirements and tolerance levels for mountain streams versus the Mississippi River and does not provide any

recommendation for a national turbidity standard. Moreover, it is worth noting that the commentor again cites only selectively from the draft guidance. On the immediately preceding page, the draft guidance states: “Most other designated uses of water bodies (possibly with the exception of drinking water source uses) where aquatic life uses overlap, may be protected by the potentially more stringent aquatic life criteria,” thus lending support to the assertion that the Secchi depth criterion is the most stringent and therefore protective of other uses, an assertion borne out by the analysis in Appendix E.

The reference to professional judgment in the footnote to which the commentor directs its comment simply documents that, in the course of establishing their water quality standards, both jurisdictions considered the established numeric turbidity criteria to be sufficiently stringent to satisfy the general narrative criteria prohibiting substances at levels that are “objectionable” or cause a “nuisance.” Thus, attaining the numeric turbidity criteria is expected to result in water clarity levels aesthetically acceptable to recreational users of the Anacostia. It was best professional judgment to use, rather than anecdotal, subjective testimony, the best available water quality monitoring data, a widely accepted modeling framework, a number of environmentally conservative assumptions, *and* established numeric water quality standards as the basis for developing a TMDL that will protect all sediment-related designated uses in the Anacostia River.

Further, the scientific literature and guidance generally recommends turbidity as a good surrogate measure for sediment for purposes of assessing recreational and aesthetic uses. In addition, review of EPA’s document entitled “Turbidity Water Quality Standards: a Compilation of State and Federal Criteria,” demonstrates that turbidity expressed as NTU is a common criteria used in the United States. While values vary, the EPA document demonstrates that 50 NTU is generally accepted as either an absolute or background value, even in pristine waters. For example, Alaska’s criteria for contact recreation provide that “turbidity units (NTU) may not exceed 5 nehelometric units above natural conditions *when the natural turbidity is 50 NTU or less and may not have more than 10% increase in turbidity when the natural turbidity is more than 50 NTU.*” (emphasis added) While neither Alaska’s nor any other State’s criteria are applicable to MD and DC, the compendium demonstrates that there is common acknowledgement that turbidity measured in NTUs is an appropriate numeric criteria to address the recreation and aesthetic uses and that NTUs greater than 50 NTU can be considered acceptable.. The modeling for Appendix E demonstrates that, under the TMDL scenario, monthly values in Maryland are always below 50 NTU and that average daily values in DC remain at 50 NTU or less approximately 98% percent of the time.

Lastly, to the extent that the commentor disagrees with the applicable water quality standards in the two jurisdictions, that issue is beyond the scope of this

TMDL and beyond the scope of Section 303(d) of the CWA and its implementing regulations, which clearly direct that TMDLs be designed to achieve the applicable water quality standards.

9. The commentor states that methods to directly assess recreational use and aesthetic enjoyment are available and that MD and DC could have performed a scientific assessment of these uses. In addition, the commentor notes that there are alternative methods for developing quantitative pollution limits based on narrative standards for recreational uses and aesthetic enjoyment and suggested two documents, EPA Protocol for Developing Sediment TMDLs, EPA 841-B-99-004 at 4-15 (October 1999) and draft EPA Developing Water Quality Criteria for Suspended and Bedded Sediments (SABs); Potential Approaches at 16 (Draft, August 2003), as sources for such alternatives.

Response: See Response to Comment 8. MDE and DDOE stand by their decision to develop the Anacostia Sediment/TSS TMDL using the approach, endpoint and methodology described therein. Appendix E provides further validation that setting the TMDL to protect the submerged aquatic vegetation, the aquatic life form most sensitive (i.e., vulnerable) to impacts from excessive levels of sediment, that all of the sediment-related water quality standards applicable to the designated use waters of the Anacostia River are also protected.

10. The commentor states that the modeling performed to demonstrate compliance with seasonal-average criteria does not demonstrate compliance with continuously applicable recreational and aesthetic uses. The commentor notes that this model simulation was presented to the court in *Anacostia Riverkeeper*, 798 F. Supp. 2d. at 248, citing the analysis that was submitted by Maryland and the District in response to public comments and discussed in the EPA's Decision Rationale on the 2007 TSS TMDLs at 4. The commentor continues that its inclusion in Draft Appendix E adds nothing to the evidence that the court in that case has already found insufficient to demonstrate compliance with recreational and aesthetic enjoyment standards. Further, the model compares two types of numeric criteria contained in Maryland and the District's water quality standards (criteria for turbidity measured in Secchi depth, and criteria for clarity measured in NTUs)*; it does not include a quantified analysis of the narrative criteria for recreation and aesthetic uses. The commentor states that the modeling performed to demonstrate compliance with seasonal-average criteria does not demonstrate compliance with continuously applicable recreational and aesthetic uses.

Response: The model simulation provided in Appendix E is a new analysis and was not presented to the court. As stated in Appendix E on pages E-6 and E-7 an analysis was conducted by converting the predicted daily Secchi depths generated for each model segment for each day of the three-year simulation period into

* Note: The commentor has confounded the metrics of the standards. The text should read "(criteria for clarity measured in Secchi depth, and criteria for turbidity measured in NTUs)".

turbidity expressed as NTU. The Secchi depths were converted to turbidity levels based on an empirical equation.

A daily turbidity value was determined by jurisdiction by averaging over the MD or DC segments. A 30-day moving average of the daily average turbidity values was also calculated for comparison to MD's monthly average criterion.

With regard to the selection of the jurisdictions' turbidity criteria as numeric endpoints for the TMDL, see Responses to Comments #3 & #8. With regard to the commenter's assertion that the water would not be considered fully supporting its designated use unless it achieved the applicable water quality standard 24 hours per day, 7 days per week, 365 days per year, see Response to Comment #5.

11. The commenter states that the use of "daily average turbidity values" in the modeling represented by figure E-7 is confusing, because for some segments the final TMDL contains no uniform "daily average" wasteload allocations.

Response: Appendix E does not have a Figure E-7. MD and DC assume the commenter is referring to Figure E-1 since it is the only Figure in Appendix E, however there are no "daily average turbidity values in Figure E-1. Figure E-1 provides a graph that depicts actual monitoring data, not modeling data. It is a graph of NTU measurements compared with Secchi depth measurements taken at the same time and the same location over the course of three years in the Anacostia River. It is this graph that was used to develop the empirical relationship between turbidity and Secchi depth. Other figures were provided by DC and MD to the commenter as part of a PowerPoint presentation during the public meeting. Those figures represent the modeled daily turbidity values over a 3-year period under the TMDL scenario. See also Response to Comment #12.

12. The commenter states that the use of "daily average turbidity values" in the Appendix E analysis appears to mask the difference between the model's simulated water clarity, and the water clarity conditions that will actually be allowed under the final TMDL during high-flow periods, due to the "flow variable" daily allocations allowed in the TMDL. The commenter states that there is no demonstration in Appendix E that the seasonal and annual caps needed to protect SAV are adequate to implement the recreation and aesthetic uses, particularly for frequent recreational users of the Anacostia. As a result, conditions that are very likely to impair recreational and aesthetic enjoyment will persist after implementation of the TMDLs. The commenter believes that the daily maximum daily loads approved in 2007 are enormous in comparison to their annual and seasonal counterparts. For example, the annually-based daily maximum load for the "DC Tidal Upper Anacostia" segment is 4220.79 tons/day), and the seasonally-based daily maximum load for that same segment is 1550.41 tons/day during the growing season, while the average annual load for that same segment is 6338.9 tons/year, and the growing season load is 3272.5 tons/season.

Response: With respect to the commentor’s reference to flow variable daily allocations, see Responses to Comments #5, #7 and #13. To the extent this comment expresses concern that the TMDL would allow the annual load to be discharged more than one day per year, see Response to Comment #13. The discussion in Appendix E clearly demonstrates that even under high flow conditions, turbidity standards will be attained. The graphs below are the daily output model results showing that under the TMDL scenario, Maryland and DC turbidity standards are achieved.

With regard to the one exceedance of the Maryland 150 NTU standard shown in Figure 1, it should be noted that the 0.1% of daily values exceeding the maximum value of 150 NTU reflects data associated with the blizzard of January 1996 and a snowmelt causing a record flooding in the DC area as reported by the U.S. Geological Survey. The Clean Water Act does not mandate that load limits be set so low as to satisfy applicable water quality standards in the most extreme weather conditions, but rather that the loads should account for critical conditions. All weather conditions but the most severe are accounted for in the TMDL.

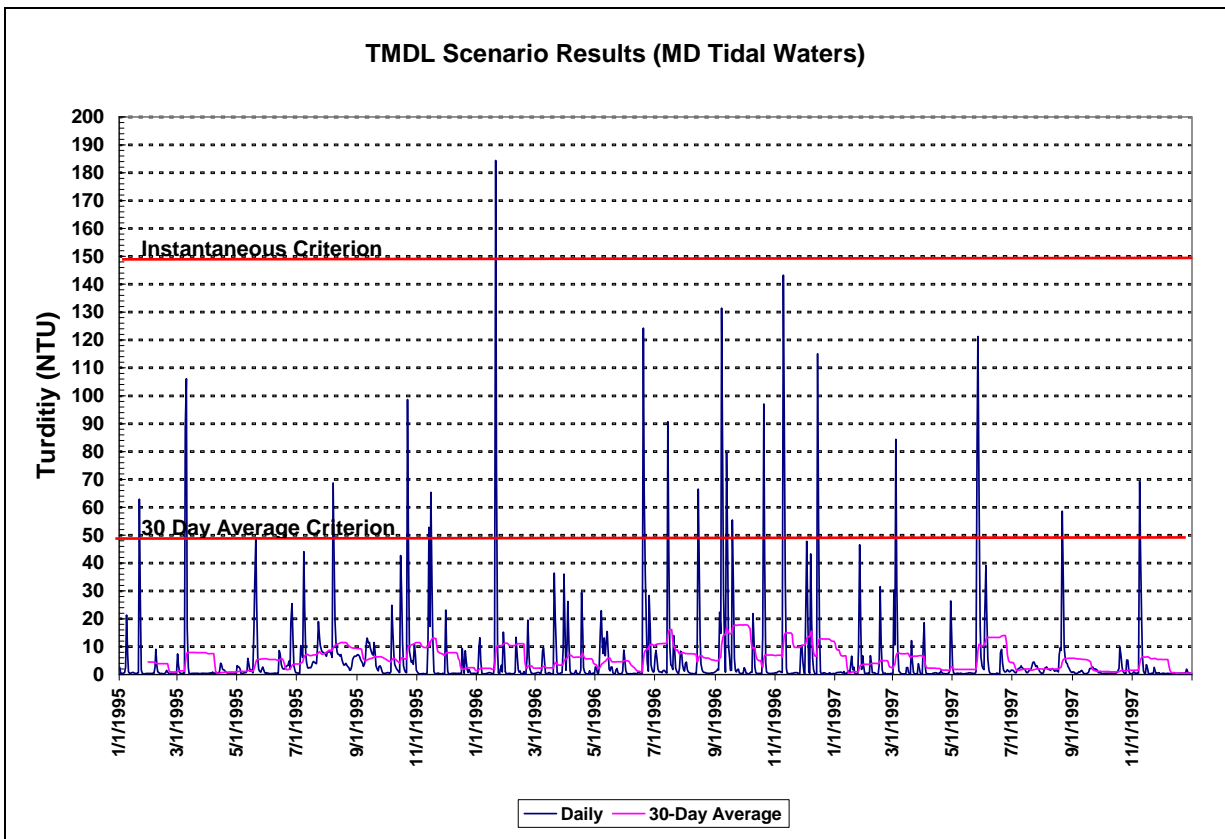


Figure 1. TMDL scenario results in MD tidal waters

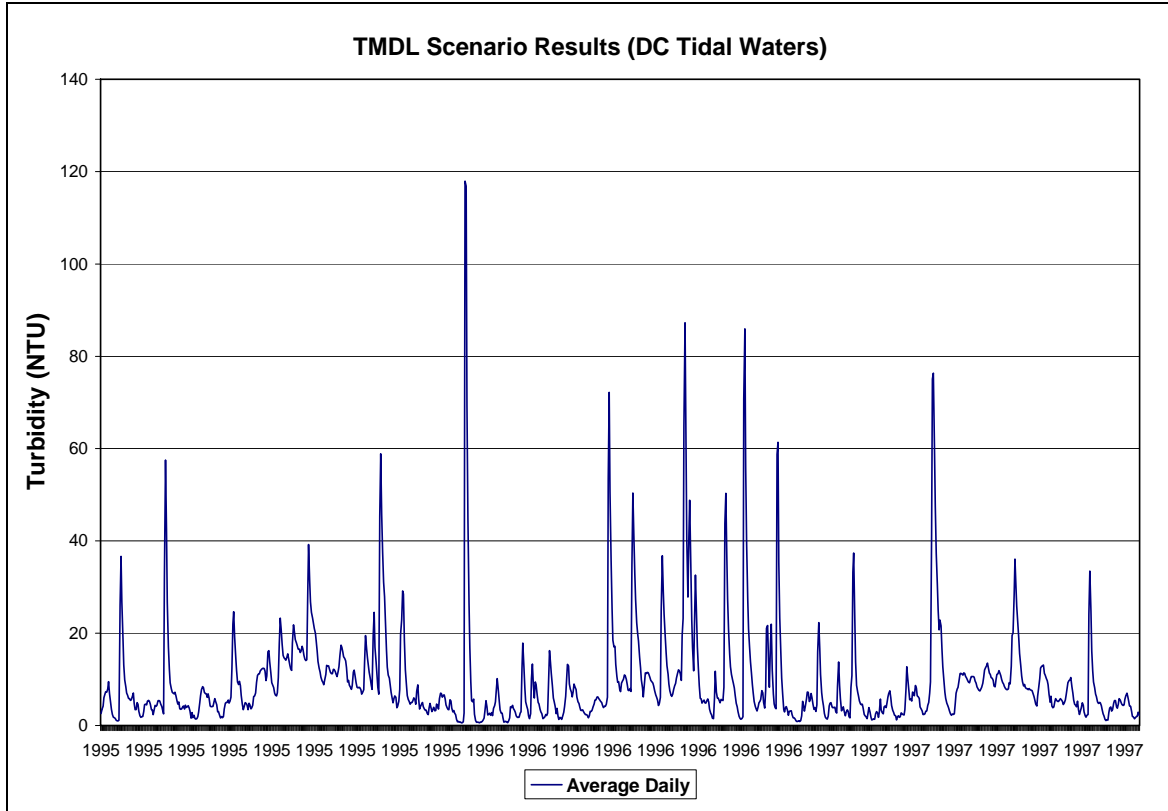


Figure 2. TMDL Scenario Results in DC Tidal Waters

- 13.** The commentor states that there is no express limit on the number of times per year or per season that the daily maximum load may be reached. In other words, nothing in the final TMDL or Draft Appendix E indicates that the annually-based daily maximum load for this segment may be discharged only one time per year (in order to remain below the 6338.9 tons/year annual load), or that the seasonally-based daily maximum load may be discharged only four times per year or only two times per season (in order to remain below the annual load and the seasonal load, respectively). As written, the final TMDL decision document suggests that these limits apply in the alternative to one another, *i.e.* either the annual load applies “or” the maximum daily load applies. (“The sediment TMDLs for both MD and DC tidal and non-tidal waters of the Anacostia are: 7097.6 tons/year annually (or 4302.65 tons/day maximum daily load) and 3396.1 tons/growing season for the growing season April 1 to October 31 (or 1632.27 tons/day maximum daily load). *Id.* at ii (emphasis added). If this interpretation is in error, the commentor states, then the final Appendix E must be revised to be explicit and clear on this point – for example, by stating that even if the daily maximum load is met on individual days, in no event may the annual average load be exceeded within one year, or the seasonal load be exceeded within one growing season.

Response: DC and MD agree that the intent of providing annual and seasonal loads – as well as daily loads – was to place a limit on the total amount of sediment loading per year and per season. It is generally understood that all pollutant loading caps established in a TMDL must be met in order to be in compliance with the TMDL. Sediment loads discharged to the Anacostia must be consistent with all of the stated allocations in the TMDL—annual average, seasonal, and maximum daily. To clarify this, the Appendix E document has been revised to include a statement that even if the allowed highest flow maximum daily load were to occur, the seasonal and average annual maximum allowable loads must still be met.

14. The commentor asserts that it is not sufficient to state that only a small percentage of estimated daily averages will exceed the applicable numeric water quality standards because, as the court in *Anacostia Riverkeeper* emphasized, TMDLs must assess whether the recreational and aesthetic uses will be achieved despite periodic exceedances of the numeric criteria. 798 F. Supp. 2d at 247, n. 31. Moreover, Maryland and the District’s water quality standards do not by their plain terms allow for a “write-off” of a certain percentage or number of exceedances of the numeric water quality criteria.

Response: See Responses to Comments #5 and #7.

15. The commentor states that “Draft Appendix E does not demonstrate protection of all aquatic life other than SAV, or how the final load allocations will prevent impairments of aquatic life uses other than SAV. SAV is just one narrow aspect of the designated uses for protection of aquatic life, fish, shellfish, and wildlife protection; aquatic life forms that are adversely affected by excessive turbidity are not limited to SAV.” Yet, the commentor continues, the Draft Appendix reflects no attempt to assess the needs of these other forms of aquatic life. While significant improvements in water clarity needed to support SAV may or may *improve* conditions for other forms of aquatic life, it cannot simply be assumed that the secchi depth and NTU criterion are *adequate* to protect all other aquatic life. If such an analysis was conducted when the numeric criteria were adopted, the agencies must provide proof of the continuing validity of that judgment.

Response: To the extent the commentor asserts that the scope of the District Court’s remand included the aquatic life use, DC and MD disagree. To the contrary, the District Court’s final judgment clearly states that “EPA properly relied on the Secchi depth criterion in approving the Final TMDL *for protection of aquatic life.*” (emphasis added).

Regardless, the TMDL, including Appendix E, is sufficient to protect aquatic life other than SAV. The water quality standards in both jurisdictions also express a determination that achieving the numeric turbidity criteria will protect the aquatic life use. 21 DCMR 1104.8; COMAR 26.08.02.03-03. As set forth in the

Response to Comment #3, DC's water quality standards state that: "Unless otherwise stated, the numeric criteria that shall be met to attain and maintain designated uses are as follows." 21 DCMR 1104.8. Thus, DC's water quality standards specifically state that achieving the numeric water quality criterion for turbidity will achieve the associated designated uses (including the aquatic life use). Maryland's turbidity criteria are identified in a section of Maryland's regulations entitled: "Water Quality Criteria Specific to Designated Uses" (COMAR 26.08.02.03-03), including the aquatic life use. Accordingly, Maryland's water quality standards also incorporate a determination by the State that achieving the narrative water quality criterion for turbidity will achieve the designated uses (including the aquatic life use). In other words, the determination that achieving the two jurisdictions' numeric turbidity criteria will achieve the aquatic life use is *not* a determination made in the TMDL, but rather a determination embodied within the two jurisdictions' water quality standards. The TMDL is simply designed to achieve the applicable water quality standards.

To the extent the commentor disagrees with the determination embodied in the jurisdictions' applicable water quality standards, the commentor's disagreement is with the two jurisdictions' water quality standards, not with the TMDL. The Clean Water Act provides a vehicle for expressing disagreement with water quality standards. That vehicle is embodied in Section 303(c) of the CWA, not Section 303(d). Accordingly, concerns regarding the adequacy of the water quality standard are beyond the scope of Section 303(d) and the TMDL.