

ARGUED MARCH 2, 2006

No. 05-5015

IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

FRIENDS OF THE EARTH,

Plaintiff-Appellant,

v.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, ET AL.,

Defendant-Appellees,

and

DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY,

Intervenor-Defendant-Appellee.

ON APPEAL FROM THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

SUPPLEMENTAL BRIEF FOR THE FEDERAL APPELLEES

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UNITED STATES COURT OF APPEALS FOR THE DISTRICT OF COLUMBIA CIRCUIT

No. 05-5015

FRIENDS OF THE EARTH, Plaintiff-Appellant,

v.

ENVIRONMENTAL PROTECTION AGENCY, ET AL., Defendant-Appellees.

APPELLEE EPA'S SUPPLEMENTAL BRIEF ON MOOTNESS

1. EPA submits that changes to the District of Columbia's water quality standards for dissolved oxygen (DO) and turbidity render Appellant's challenge moot, and the appeal should be dismissed. In the alternative, EPA requests that the Court remand the TMDLs to give EPA and the District an opportunity to revise them consistent with recently approved changes in the District's water quality standards.

2. The challenged total maximum daily loads (TMDLs) were established in 2001 and 2002 to address impaired water quality because of failure to achieve the then-applicable water quality standards for DO and turbidity. Pursuant to 40 C.F.R. § 130.2(g)-(i), the TMDLs established wasteload allocations for point sources and load allocations for nonpoint sources that identify maximum amounts of biochemical oxygen demand (BOD) pollutants and total suspended solids (TSS) that can be discharged into the Anacostia River and still achieve the DO and turbidity water quality standards. The BOD TMDL was designed to achieve the then-applicable water quality criteria of 5.0 mg/l minimum daily average and 5.0 mg/l one-hour minimum (March - June) and 4.0 mg/l one-hour minimum (July - February) (JA 677-678). The TSS TMDL was designed to achieve the narrative criterion for turbidity, which EPA translated into a numerical endpoint concentration of "less than 15 mg/l" of TSS derived from studies of effects of TSS on aquatic vegetation (JA 747-749). EPA used this numerical endpoint TSS

concentration because the then-applicable District of Columbia turbidity standard consisted solely of a narrative criterion and did not establish any numeric criteria (*ibid.*).

3. After the establishment of the TMDLs, the District of Columbia adopted, and EPA approved, new and revised numeric water quality criteria applicable to DO and turbidity. (Copy attached). *See* 40 C.F.R. § 131.21(e) (a state's water quality standard remains applicable for Clean Water Act purposes until EPA approves a change). The DO criteria now reflect EPA's recent guidance for protecting the Chesapeake Bay and apply to all tidally influenced Class C waters, including the Anacostia and some or all of its tributaries within the District of Columbia. *See* 21 DCMR 1104.8, Table 1, Note 3. The DO criteria now set a limit of a seven-day mean average of 6.0 mg/l and instantaneous minimum of 5.0 mg/l for February 1 - May 31, and a 30-day mean of 5.5 mg/l, a seven-day mean of 4.0 mg/l and an instantaneous minimum of 3.2 mg/l (4.3 mg/l at water temperatures greater than 29 degrees Celsius in tidally influenced waters) for June 1 - January 31. 52 D.C. Register 9621, 9628-29 (Oct. 28, 2005) (to be codified at 21 D.C. Mun. Regulations Ch. 11, § 1104.8 (Table 1)). The District's water quality standards applicable to turbidity also now include a numeric measurement of the "Secchi Depth," a measurement of water clarity, and set a seasonal requirement for tidally influenced waters of 0.8 meters. 52 D.C. Register at 9628-29 (to be codified at 21 D.C. Mun. Reg. Ch. 11, § 1104.8 (Table 1)).

4. The wasteload allocations and load allocations in TMDLs are not self-executing. Wasteload allocations for point sources are implemented through NPDES permits issued pursuant to 33 U.S.C. § 1342. EPA's regulations provide that NPDES permits shall ensure that "[e]ffluent limits developed to protect a narrative water quality criterion, a numeric water quality criterion, or both, are consistent with the assumptions and requirements of any available wasteload allocation for the discharge prepared by the State and approved by EPA pursuant to 40 C.F.R. 130.7 [the provision for establishing TMDLs]." 40

C.F.R. § 122.44(d)(1)(vii)(B).¹ One “assumption” underlying a TMDL is that the TMDL is “established at a level necessary to implement the applicable water quality standards.” 33 U.S.C. § 1313(d)(1)(C).

Like TMDLs, effluent limits in permits are designed to implement applicable water quality standards. 33

U.S.C. § 1311(b)(1)(C). As EPA has noted (JA 17, 43 FR 60665 (Dec. 28, 1978):

Since TMDLs must be established at levels necessary to implement the applicable water quality standards, any change in numerical criteria for pollutants contained in water quality standards will impact the TMDLs calculated for such a pollutant. Therefore, TMDLs should be reviewed each time the corresponding water quality standards are revised.

5. Because of the subsequently approved changes in the District’s standards for DO and turbidity, the assumption that the BOD and TSS TMDLs at issue in this appeal are set at a level necessary to implement the currently-applicable water quality standard is no longer an operative assumption. In this situation, 40 C.F.R. § 122.44(d)(1)(vii)(B) applies as follows. EPA would expect to use factual information from these TMDLs as inputs, for example, location of sources and loadings of pollutants. However, in establishing water quality-based effluent limits in new or re-issued permits, EPA would recognize that the underlying assumption that the TMDLs are set at a level necessary to implement the applicable water quality standards is not operative; therefore, 40 C.F.R. 122.44(d)(1)(vii)(B) does not require EPA to derive permit limits consistent with the wasteload allocations in these TMDLs. Rather than basing permit limits directly on the wasteload allocations in these TMDLs, EPA would derive a new wasteload allocation or utilize any other appropriate method to set the permit limits at a level necessary to implement the subsequently approved water quality standards, and the TMDLs would be subsequently revised to implement the new standards.

¹ Load allocations for nonpoint sources are implemented through voluntary and/or cooperative approaches, and in some cases as required by State or local law. See Pronsolino v. Nastri, 291 F.3d 1123, 1126-27 (9th Cir. 2002).

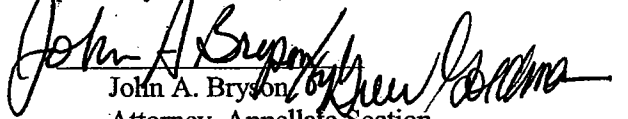
6. Article III of the Constitution limits the jurisdiction of the Federal courts to live cases and controversies, and bars the Federal courts from issuing advisory opinions. A federal court does not have jurisdiction "to give opinions upon moot questions or abstract propositions, or to declare principles or rules of law which cannot affect the matter in issue in the case before it." Church of Scientology of California v. United States, 506 U.S. 9, 12 (1992); Mills v. Green, 159 U.S. 651, 653 (1895). A request for judicial review of an action is moot if the action has no continuing adverse impact and the court cannot grant effective relief. Southwestern Bell Tel. Co. v. FCC, 168 F.3d 1344, 1350 (D.C. Cir. 1999). Appellant's claim of injury is based upon Appellant's assertion that the wasteload allocations in the TMDLs would be the basis for permit limits pursuant to 40 C.F.R. 122.44(d)(1)(vii)(B), and would be insufficient to implement the water quality standards (see pages 28 - 47 of Appellant's Initial Brief and pages 16 - 24 of Appellant's Reply Brief). Permit limits need to be as stringent as necessary to meet the new water quality standards, independent of the wasteloads in the challenged TMDLs (see 33 U.S.C. §1311(b)(1)(C) and 40 C.F.R. §122.44(d)(1)(vii)(A)). Such wasteload allocations will not be translated directly into permit limits without further analysis as to their suitability for implementing the newly approved water quality standards. Therefore, a court order setting aside these TMDLs will provide no effective relief to Appellant. Appellant's challenge under the APA to the TMDLs is no longer a live case or controversy and moots all issues that have been raised in that challenge. Those issues include the challenge to the determination that the TMDLs are designed to implement the currently applicable water quality standards as well as Appellant's legal challenge to the agency's interpretation of the statutory requirement to set a "total maximum daily load." When there is no longer a live case or controversy, the Court may not decide the issues raised by the parties for to do so would violate the Article III prohibition

on issuing advisory opinions. Northwest Pipeline Corporation v. FERC, 863 F.2d 73, 76-77 (D.C. Cir. 1988).² Therefore, this case should be dismissed as moot.

7. In the event the Court decides that Appellant's challenge to these TMDLs is not moot, EPA requests that, as an alternative to deciding the case on the merits, the Court remand the approval of the BOD TMDL and establishment of the TSS TMDL to EPA, without vacating them, so the TMDLs may be revised in light of the District of Columbia's new water quality standards. See Florida Power & Light Co. v. Lorion, 470 U.S. 729, 744 (1985); Southwestern Bell Tele. Co. v. Federal Communications Comm'n, 10 F.3d 892, 896 (D.C. Cir. 1993), *cert denied*, 512 U.S. 1204 (1994). EPA believes that such revision will require application of a new or more refined model and consideration of more recent data, as well as additional public comment. As part of such revision, EPA would reconsider the appropriateness of annual and seasonal loads. EPA estimates such revision would take approximately 18 months.

(Declaration of Thomas Henry).

Respectfully submitted,


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90-5-1-4-17228

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No exception to the mootness doctrine applies here. While the issues raised here may be capable of repetition, there is no basis for concluding they would evade review. A TMDL has no automatic expiration date, and the ones here were issued four and five years ago, a sufficiently long time to allow review. Nor is EPA required to show that its allegedly wrongful behavior could not reasonably be expected to occur. See Friends of the Earth, Inc. v. Laidlaw Environmental Services, 528 U.S. 167, 190 (2000). This case has gone moot not by an act of voluntary compliance by EPA but by the independent action of the District of Columbia in adopting changed water quality standards.

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing Motion of the Defendant-Appellees for Leave to File a Supplemental Brief Addressing Mootness were served this 6th day of March, 2006, by first-class mail, postage prepaid, and by email, on the following counsel of record:

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OCT 28 2005

DISTRICT OF COLUMBIA REGISTER

DEPARTMENT OF HEALTH

NOTICE OF FINAL RULEMAKING

The Director of the Department of Health (DOH), pursuant to the authority set forth in §§ 5 and 21 of the Water Pollution Control Act of 1984, as amended, effective March 16, 1985 (D.C. Law 5-188; D.C. Official Code §§ 8-103.04 and 8-103.20), and Mayor's Order 98-50, April 15, 1998, hereby gives notice of final rulemaking action taken by DOH on October 4, 2005 to amend Chapter 11 of Title 21 of the District of Columbia Municipal Regulations (DCMR), (Water Quality Standards). This rulemaking replaces 21 DCMR Chapter 11, Water Quality Standards, §§ 1100 to 1106, 1158, and 1199. Ground water regulations at §§ 1151 to 1157 are not being amended.

The Environmental Health Administration, Water Quality Division, conducted a triennial review of the water quality standards as required by the Water Pollution Control Act of 1984 and the Federal Clean Water Act. On March 18, 2005, DOH published the Notice of Proposed Rulemaking in the D.C. Register (52 DCR 2744) which revised the criteria for the classes of beneficial uses of the District's waters by adding narrative criteria for Class C waters; added numeric criteria for an additional 34 constituents including E. coli; and updated the numeric criteria for over 100 constituents. The rulemaking also added several definitions.

Notice of the proposed rulemaking was sent directly to interested parties. On May 3, 2005, DOH conducted a public hearing to solicit comments on the rulemaking. DOH carefully considered the comments received from the public for this final rulemaking. The final version of these rules contains modifications that were not present in the Notice of Proposed Rulemaking. These modifications serve to clarify the intent, meaning or application of the rules, but no substantive alterations have been made to the proposed rulemaking.

These final rules will take effect upon publication of this notice in the D.C. Register.

Title 21 of the District of Columbia Municipal Regulations, Chapter 11, Water Quality Standards, is amended as follows:

A. Sections 1100 to 1106 are amended to read as follows:

1100 PURPOSE AND SCOPE

1100.1 This chapter establishes the revised Water Quality Standards (WQS) for the waters of the District of Columbia, as authorized by section 5 of the Water Pollution Control Act of 1984, effective March 16, 1985 (D.C. Law 5-188; D.C. Official Code § 8-103.01 *et seq.*).

1101 SURFACE WATERS

1101.1

For the purposes of the water quality standards, the surface waters of the District shall be classified on the basis of their (i) current uses, and (ii) future uses to which the waters will be restored. The categories of beneficial uses for the surface waters of the District shall be as follows:

<u>Categories of Uses that Determine Water Quality Standards</u>	<u>Classes of Water</u>
Primary contact recreation	A
Secondary contact recreation and aesthetic enjoyment	B
Protection and propagation of fish, shellfish, and wildlife	C
Protection of human health related	D
to consumption of fish and shellfish	
Navigation	E

1101.2

The surface waters of the District are designated for beneficial use classes according to the categories delineated in subsection 1101.1 as follows:

CLASSIFICATION OF THE DISTRICT'S WATERS

<u>Surface Waters of the District</u>	<u>USE CLASSES</u>	
	<u>Current Use</u>	<u>Designated Use</u>
Potomac River	B, C, D, E	A, B, C, D, E
Potomac River tributaries (except as listed below)	B, C, D	A, B, C, D
Battery Kemble Creek	B, C, D	A, B, C, D
C & O Canal	B, C, D, E	A, B, C, D, E
Rock Creek	B, C, D, E	A, B, C, D, E
Rock Creek tributaries	B, C, D, E	A, B, C, D, E
Tidal Basin	B, C, D, E	A, B, C, D, E
Washington Ship Channel	B, C, D, E	A, B, C, D, E
Oxon Run	B, C, D	A, B, C, D
Anacostia River	B, C, D, E	A, B, C, D, E
Anacostia River tributaries (except as listed below)	B, C, D	A, B, C, D
Hickey Run	B, C, D	B, C, D

CLASSIFICATION OF THE DISTRICT'S WATERS

<u>Surface Waters of the District</u>	<u>USE CLASSES</u>	
	<u>Current Use</u>	<u>Designated Use</u>
Watts Branch	B, C, D	B, C, D
Wetlands	C, D	C, D

1101.3

The Director may remove a designated use, establish a partial use, or establish sub-categories of a use for a particular surface water segment or body if a use attainability analysis can demonstrate that attaining the designated use is not feasible because:

- (a) Naturally occurring pollutant concentrations prevent the attainment of the use;
- (b) Natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges without violating the District's water conservation requirements to enable uses to be met;
- (c) Human caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place;
- (d) Dams, diversions or other types of hydrologic modifications preclude the attainment of the use, and it is not feasible to restore the waterbody to its original condition or, to operate the modification in a way that would result in the attainment of the use;
- (e) Physical conditions related to the natural features of the waterbody, such as the lack of proper substrate, cover, flow, depth, pools, riffles, and the like unrelated to water quality, preclude attainment of aquatic life protection uses; or
- (f) Controls more stringent than those required by sections 301(b) and 306 of the Federal Clean Water Act would result in substantial and widespread economic and social impact.

1101.4

A designated use specified in section 1101 may not be removed, and a partial use that involves the removal of the designated use, may not be established if:

- (a) The use is actually attained in the surface water segment or body on or

after November 28, 1975, unless a use requiring more stringent criteria is added; or

- (b) The uses will be attained by implementing effluent limits required under sections 301(b) and 306 of the Federal Clean Water Act and by implementing cost-effective and reasonable best management practices for nonpoint source control.

1101.5

If a permittee requests the Director to conduct a use attainability analysis and provides a reasonable basis for the need, the Director shall:

- (a) Conduct a public meeting in the watershed of the affected segment or waterbody to inform the public of the nature of the use change requested and the basis of the request, and solicit the opinions and views of the public prior to determining whether to conduct a use attainability analysis;
- (b) Inform the permittee and the public of the decision;
- (c) Inform the permittee of the approximate costs of the analysis and the schedule. The permittee shall pay the costs of performing the analysis, in the amount specified by the Director;
- (d) Not allow the permittee to perform the analysis;
- (e) Form an advisory group of citizens and affected parties who will meet periodically during the course of the study;
- (f) Hold a public hearing concerning the preliminary finding of the use attainability analysis prior to concluding the study;
- (g) Submit the analysis to the United States Environmental Protection Agency (EPA) for review and approval, if the Director determines that a modification or change in the uses of the segment or waterbody is justified; and
- (h) Modify or remove the use in accordance with federal and District procedures for revising water quality standards upon receipt of approval by the EPA.

1102 ANTIDEGRADATION POLICY

1102.1 TIER I: Existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected.

1102.2 TIER II: If the water quality of the surface waters of the District exceeds the water quality criteria necessary to sustain the existing uses, those waters shall be maintained at that quality. The water quality will not be allowed to degrade unless the District finds, after full satisfaction of the intergovernmental coordination and public participation of the District's continuing planning process as required in 40 CFR Part 130, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. In allowing the degradation to lower water quality, the District shall ensure water quality adequate to protect existing uses fully. Further, the District shall ensure that the highest statutory and regulatory requirements for all new and existing point sources and all cost effective and reasonable best management practices for nonpoint source control.

1102.3 TIER III: Where high quality waters constitute an outstanding national resource, such as waters of the national and District parks and wildlife refuges and waters of exceptional recreational or ecological significance, those waters shall be designated Outstanding National Resource Waters (ONRW) and the water quality in the ONRW shall be maintained, protected and designated as below:

- (a) New point and nonpoint source discharges, treated or otherwise, shall be prohibited in these segments;
- (b) Increases in loadings or new pollutants from existing point and nonpoint source discharges shall be prohibited in these segments;
- (c) Short-term degradation of the water quality shall be permitted after the permittee provides an opportunity for public participation; and submits to the Department a report that describes the matter on which the public was consulted; summarizes the views, significant comments, criticisms and suggestions of the public and other local and federal government agencies; and sets forth the specific responses in terms of modifications of the proposed action or an explanation for rejection of proposals made by the public and other local and federal government agencies. However, all practical means of minimizing the degradation shall be implemented; and
- (d) Designation of ONRWs shall be adopted after full satisfaction of the intergovernmental coordination of the District's agencies and public participation provisions of the District's continuing planning process as required in 40 CFR Part 130.

1102.4 SPECIAL WATERS OF THE DISTRICT OF COLUMBIA (SWDC): Any segment or segments of the surface waters of the District that are of water quality better than needed for the current use or have scenic or aesthetic importance shall be designated as Special Waters of the District of Columbia (SWDC). The water quality in SWDC designated segments of the District's surface waters shall be maintained at or above the current level by implementing the following:

- (a) Existing nonpoint source discharges, storm water discharges and storm sewer discharges to SWDC segments shall be controlled through implementation of best management practices and regulatory programs;
- (b) Construction or development projects, such as roads, bridges, and bank stabilization of the streams in which a SWDC designated segment is located, which may lead to pollution of the water, shall be permitted on a case-by-case basis to ensure that there are no long-term adverse water quality effects and that no impairment of the designated uses of the segment occurs; or
- (c) Short term degradation of water quality in a SWDC segment due to construction projects may be permitted provided that prior notice is given to the public and other local and federal government agencies, and provided that the builder of the construction project submits a report to the Department which summarizes the views, significant comments, criticisms and suggestions of the public and other local and federal government agencies; and sets forth the specific responses in terms of modifications of the proposed action or an explanation for rejection of proposals made by the public and other local and federal government agencies.

1102.5 The following waters of the District shall be designated as SWDC segments:

- (a) Rock Creek and its tributaries, and
- (b) Battery Kemble Creek and its tributaries.

1103 WETLANDS

1103.1 In a wetland, the numerical and the narrative criteria shall be applied to the column of water above the wetland in accordance with the designated use.

1103.2 Wetlands with rooted vascular aquatic vegetation, except those specifically constructed or created as waste water treatment devices and except as provided in D.C. Official Code §§ 8-103.03(d) and 8-103.06(a)(3), shall be protected from significant adverse hydrologic modifications, excessive sedimentation, deposition of toxic substances in toxic amounts, nutrient imbalances, and other adverse anthropogenic impacts.

1104 STANDARDS

- 1104.1 The surface waters of the District shall be free from substances in amounts or combinations that do any one of the following:
- (a) Settle to form objectionable deposits;
 - (b) Float as debris, scum, oil, or other matter to create a nuisance;
 - (c) Produce objectionable odor, color, taste, or turbidity;
 - (d) Cause injury to, are toxic to, or produce adverse physiological or behavioral changes in humans, plants, or animals;
 - (e) Produce undesirable or nuisance aquatic life or result in the dominance of nuisance species; or
 - (f) Impair the biological community that naturally occurs in the waters or depends upon the waters for its survival and propagation.
- 1104.2 For the waters of the District with multiple designated uses, the most stringent standards or criteria shall govern.
- 1104.3 Class A waters shall be free of discharges of untreated sewage, litter and unmarked submerged or partially submerged man-made structures that would constitute a hazard to the users of Class A waters.
- 1104.4 The aesthetic qualities of Class B waters shall be maintained. Construction, placement or mooring of facilities not primarily and directly water oriented is prohibited in, on, or over Class B waters unless:
- (a) The facility is for the general public benefit and service, and
 - (b) Land based alternatives are not available.
- 1104.5 Class C streams shall be maintained to support aquatic life and shall not be placed in pipes.
- 1104.6 Within tidally influenced Class C waters, concentrations of chlorophyll *a* in free-floating microscopic aquatic plants (algae) shall not exceed levels that result in ecologically undesirable consequences such as reduced water clarity, low dissolved oxygen, food supply imbalances, proliferation of species deemed potentially harmful to aquatic life or humans or aesthetically objectionable conditions or otherwise render tidal waters unsuitable for designated uses.

- 1104.7 Class E waters shall be free of unmarked submerged or partially submerged man-made objects that pose a hazard to users of these waters.
- 1104.8 Unless otherwise stated, the numeric criteria that shall be met to attain and maintain designated uses are as follows (Tables 1 through 3):

Table 1

Constituent	Criteria for Classes		
	A	B	C
Bacteriological (MPN/100 mL)			
E. coli ¹			
Geometric Mean (Maximum 30 day geometric mean for 5 samples)	126		
Single Sample Value	410		
Fecal coliform ² (Maximum 30 day geometric mean for 5 samples)	200	1000	
Physical			
Dissolved oxygen ³ (mg/L)			
February 1 through May 31			
7-day mean			6.0
Instantaneous minimum			5.0
June 1 through January 31			
30-day mean			5.5
7-day mean			4.0
Instantaneous minimum ⁴			3.2
Temperature (°C)			
Maximum			32.2
Maximum change above ambient			2.8
PH			
Greater than	6.0	6.0	6.0
And less than	8.5	8.5	8.5
Turbidity increase above ambient (NTU)	20	20	20
Secchi Depth ^{3,5} (m)(seasonal segment average)			
April 1 through October 31			0.8
Total dissolved gases (maximum % saturation)			110
Hydrogen sulfide (maximum µg/L)			2.0
Oil & grease (mg/L)			10.0
Biological			
Chlorophyll <i>a</i> ^{3,5} (µg/L)(seasonal segment average)			
July 1 through September 30			25

Notes:

¹ This criterion shall apply to E. coli bacteria determined by the Director to be of non-

wildlife origin based on best scientific judgment using available information. The geometric mean criterion shall be used for assessing water quality trends and for permitting. The single sample value criterion shall be used for assessing water quality trends only.

² Fecal coliform shall continue to be used as a standard until December 31, 2007.

³ Attainment of the dissolved oxygen, water clarity and Chlorophyll *a* water quality criteria that apply to tidally influenced Class C waters will be determined following the guidelines documented in the 2003 United States Environmental Protection Agency publication: Ambient Water Quality Criteria for Dissolved Oxygen, Water Clarity and Chlorophyll *a* for the Chesapeake Bay and its Tidal Tributaries, EPA-903-R-03-002, April 2003.

⁴ At temperatures greater than 29°C, in tidally influenced waters, an instantaneous minimum dissolved oxygen concentration of 4.5 mg/L shall apply.

⁵ Shall apply to tidally influenced waters only.

Table 2

Constituent ¹	Criteria for Classes		
	C		D ²
Trace metals and inorganics in µg/L, except where stated otherwise (see Notes below)	CCC 4-Day Avg	CMC 1-Hour Avg	30-Day Avg
Ammonia, total mg N/L	See Note 7	See Note 8	
Antimony, dissolved			640
Arsenic ³ , dissolved	150	340	0.14c
Cadmium ^{4,5} , dissolved	[II] ^{CF}	[II.A] ^{CF}	
Chlorine, total residual	11	19	
Chromium ⁴ , hexavalent, dissolved	11 ^{CF}	16 ^{CF}	
Chromium ^{4,5} , trivalent, dissolved	[III] ^{CF}	[III.A] ^{CF}	
Copper ^{4,5} , dissolved	[III] ^{CF}	[III.A] ^{CF}	
Cyanide, free	5.2	22	140
Iron, dissolved	1000		
Lead ^{4,5} , dissolved	[IV] ^{CF}	[IV.A] ^{CF}	
Mercury ⁴ , total recoverable	0.77	1.4	0.15
Methylmercury (mg/kg, fish tissue residue)			0.3
Nickel ^{4,5} , dissolved	[V] ^{CF}	[V.A] ^{CF}	4600
Selenium, total recoverable	5	20	4200
Silver ^{4,5} , dissolved		[VI] ^{CF}	65000
Thallium, dissolved			0.47
Zinc ^{4,5} , dissolved	[VII] ^{CF}	[VII] ^{CF}	26000

Notes:

¹ For constituents without numerical criteria, standards have not been developed at this time. However, the National Pollutant Discharge Elimination System (NPDES) permitting authority shall address constituents without numerical standards in NPDES permit actions by using the narrative criteria for toxics contained in these water quality standards.

² The Class D Human Health Criteria for metals will be based on Total Recoverable metals.

³ The letter "c" after the Class D Human Health Criteria numeric value means that the criteria is based on carcinogenicity of 10^{-6} risk level.

⁴ The superscript "CF" means that the criterion derived from the formula under Note 5 is multiplied by the conversion factor in Table 2a as specified in subsection 1105.10.

Table 2a. Conversion Factors

Constituent	CCC	CMC
Cadmium	$1.101672 - \{(\ln \text{hardness})(0.041838)\}$	$1.136672 - \{(\ln \text{hardness})(0.041838)\}$
Chromium III	0.860	0.316
Chromium VI	0.962	0.982
Copper	0.960	0.960
Lead	$1.46203 - \{(\ln \text{hardness})(0.145712)\}$	$1.46203 - \{(\ln \text{hardness})(0.145712)\}$
Mercury	0.85	0.85
Nickel	0.997	0.998
Silver	—	0.85
Zinc	0.986	0.978

⁵ The formulas for calculating the criterion for the hardness dependent constituents indicated above are as follows:

[I] The numerical CCC criterion for cadmium in $\mu\text{g/L}$ shall be given by:

$$e^{(0.7409(\ln(\text{hardness})) - 4.719)}$$

[I.A] The numerical CMC criterion for cadmium in $\mu\text{g/L}$ shall be given by:

$$e^{(1.0166(\ln(\text{hardness})) - 3.924)}$$

[II] The numerical CCC criterion for trivalent chromium in $\mu\text{g/L}$ shall be given by:

$$e^{(0.8190(\ln(\text{hardness})) + 0.6848)}$$

[II.A] The numerical CMC criterion for trivalent chromium in $\mu\text{g/L}$ shall be given by:

$$e^{(0.8190(\ln(\text{hardness})) + 3.7256)}$$

[III] The numerical CCC criterion for copper in $\mu\text{g/L}$ shall be given by:

$$e^{(0.8545(\ln(\text{hardness}))-1.702)}$$

[III.A] The numerical CMC criterion for copper in $\mu\text{g/L}$ shall be given by:

$$e^{(0.9422(\ln(\text{hardness}))-1.700)}$$

[IV] The numerical CCC criterion for lead in $\mu\text{g/L}$ shall be given by:

$$e^{(1.2730(\ln(\text{hardness}))-4.705)}$$

[IV.A] The numerical CMC criterion for lead in $\mu\text{g/L}$ shall be given by:

$$e^{(1.2730(\ln(\text{hardness}))-1.460)}$$

[V] The numerical CCC criterion for nickel in $\mu\text{g/L}$ shall be given by:

$$e^{(0.8460(\ln(\text{hardness}))+0.0584)}$$

[V.A] The numerical CMC criterion for nickel in $\mu\text{g/L}$ shall be given by:

$$e^{(0.8460(\ln(\text{hardness}))+2.255)}$$

[VI] The numerical CMC criterion for silver in $\mu\text{g/L}$ shall be given by:

$$e^{(1.7200(\ln(\text{hardness}))-6.590)}$$

[VII] The numerical CCC criterion for zinc in $\mu\text{g/L}$ shall be given by:

$$e^{(0.8473(\ln(\text{hardness}))+0.884)}$$

[VII.A] The numerical CMC criterion for zinc in $\mu\text{g/L}$ shall be given by:

$$e^{(0.8473(\ln(\text{hardness}))-0.884)}$$

⁶ Hardness in the equations (I) through (VII.A) in Note 5 above shall be measured as mg/L of Calcium Carbonate (CaCO_3). The minimum hardness allowed for use in those equations shall not be less than 25 mg/L , as CaCO_3 , even if the actual ambient hardness is less than 25 mg/L as CaCO_3 . The maximum hardness value allowed for use in those equations shall not exceed 400 mg/L , as CaCO_3 , even if the actual ambient hardness is greater than 400 mg/L as CaCO_3 .

⁷ Criteria Continuous Concentration (CCC) for Total Ammonia:

- (a) The CCC criterion for ammonia (in mg N/L) (i) shall be the thirty (30)-day average concentration for total ammonia computed for a design flow specified in subsection 1105.5; and (ii) shall account for the influence of the pH and temperature as shown in Table 2b and Table 2c. The highest four (4)-day average within the thirty (30)-day period shall not exceed 2.5 times the CCC.
- (b) The CCC criterion in Table 2b for the period March 1st through June 30th was calculated using the following formula, which shall be used to calculate unlisted values: $\text{CCC} = [(0.0577/(1+10^{7.688-\text{pH}})) + (2.487/(1+10^{\text{pH}-7.688}))] \times \text{MIN}(2.85, 1.45)$

$\times 10^{0.028 \times (25-T)}$], where MIN indicates the lesser of the two values (2.85, $1.45 \times 10^{0.028 \times (25-T)}$) separated by a comma.

- (c) The CCC criterion in Table 2c for the period July 1st through February 28/29th, was calculated using the following formula, which shall be used to calculate unlisted values: $CCC = [(0.0577/(1+10^{7.688-pH})) + (2.487/(1+10^{pH-7.688}))] \times [1.45 \times 10^{0.028 \times (25-MAX(T,7))}]$, where MAX indicates the greater of the two values (T,7) separated by a comma.

Table 2b. Total Ammonia (in milligrams of Nitrogen per liter) CCC criterion for various pH and temperatures for March 1st through June 30th:

pH	Temperature (°C)									
	0	14	16	18	20	22	24	26	28	30
6.50	6.67	6.67	6.06	5.33	4.68	4.12	3.62	3.18	2.80	2.46
6.60	6.57	6.57	5.97	5.25	4.61	4.05	3.56	3.13	2.75	2.42
6.70	6.44	6.44	5.86	5.15	4.52	3.98	3.42	3.00	2.64	2.32
6.80	6.29	6.29	5.72	5.03	4.42	3.89	3.42	3.00	2.64	2.32
6.90	6.12	6.12	5.56	4.89	4.30	3.78	3.32	2.92	2.57	2.25
7.00	5.91	5.91	5.37	4.72	4.15	3.65	3.21	2.82	2.48	2.18
7.10	5.67	5.67	5.15	4.53	3.98	3.50	3.08	2.70	2.38	2.09
7.20	5.39	5.39	4.90	4.31	3.78	3.33	2.92	2.57	2.26	1.99
7.30	5.08	5.08	4.61	4.06	3.57	3.13	2.76	2.42	2.13	1.87
7.40	4.73	4.73	4.30	3.97	3.49	3.06	2.69	2.37	2.08	1.83
7.50	4.36	4.36	3.97	3.49	3.06	2.69	2.37	2.08	1.83	1.61
7.60	3.98	3.98	3.61	3.18	2.79	2.45	2.16	1.90	1.67	1.47
7.70	3.58	3.58	3.25	2.86	2.51	2.21	1.94	1.71	1.50	1.32
7.80	3.18	3.18	2.89	2.54	2.23	1.96	1.73	1.52	1.33	1.17
7.90	2.80	2.80	2.54	2.24	1.96	1.73	1.52	1.33	1.17	1.03
8.00	2.43	2.43	2.21	1.94	1.71	1.50	1.32	1.16	1.02	0.897
8.10	2.10	2.10	1.91	1.68	1.47	1.29	1.14	1.00	0.879	0.773
8.20	1.79	1.79	1.63	1.43	1.26	1.11	0.973	0.855	0.752	0.661
8.30	1.52	1.52	1.39	1.22	1.07	0.941	0.827	0.727	0.639	0.562
8.40	1.29	1.29	1.17	1.03	0.906	0.796	0.700	0.615	0.541	0.475
8.50	1.09	1.09	0.990	0.870	0.765	0.672	0.591	0.520	0.457	0.401
8.60	0.920	0.920	0.836	0.735	0.646	0.568	0.499	0.439	0.386	0.339
8.70	0.778	0.778	0.707	0.622	0.547	0.480	0.422	0.371	0.326	0.287
8.80	0.661	0.661	0.601	0.528	0.464	0.408	0.359	0.315	0.277	0.208
8.90	0.565	0.565	0.513	0.451	0.397	0.349	0.306	0.269	0.237	0.208
9.00	0.486	0.486	0.442	0.389	0.342	0.300	0.264	0.232	0.204	0.179

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Table 2c. Total Ammonia (in milligrams of Nitrogen per liter) CCC criterion for various pH and temperatures for July 1st through February 28th/29th:

pH	Temperature (°C)									
	0-7	8	9	10	11	12	13	14	15*	16*
6.50	10.8	10.1	9.51	8.92	8.36	7.84	7.35	6.89	6.46	6.06
6.60	10.7	9.99	9.37	8.79	8.24	7.72	7.24	6.79	6.36	5.97
6.70	10.5	9.81	9.20	8.62	8.08	7.58	7.11	6.66	6.25	5.86
6.80	10.2	9.58	8.98	8.42	7.90	7.40	6.94	6.51	6.10	5.72
6.90	9.93	9.31	8.73	8.19	7.68	7.20	6.75	6.33	5.93	5.56
7.00	9.60	9.00	8.43	7.91	7.41	6.95	6.52	6.11	5.73	5.37
7.10	9.20	8.63	8.09	7.58	7.11	6.67	6.25	5.86	5.49	5.15
7.20	8.75	8.20	7.69	7.21	6.76	6.34	5.94	5.57	5.22	4.90
7.30	8.24	7.73	7.25	6.79	6.37	5.97	5.60	5.25	4.92	4.61
7.40	7.69	7.21	6.76	6.33	5.94	5.57	5.22	4.89	4.59	4.30
7.50	7.09	6.64	6.23	5.84	5.48	5.13	4.81	4.51	4.23	3.97
7.60	6.46	6.05	5.67	5.32	4.99	4.68	4.38	4.11	3.85	3.61
7.70	5.81	5.45	5.11	4.79	4.49	4.21	3.95	3.70	3.47	3.25
7.80	5.17	4.84	4.54	4.26	3.99	3.74	3.51	3.29	3.09	2.89
7.90	4.54	4.26	3.99	3.74	3.51	3.29	3.09	2.89	2.71	2.54
8.00	3.95	3.70	3.47	3.26	3.05	2.86	2.68	2.52	2.36	2.21
8.10	3.41	3.19	2.99	2.81	2.63	2.47	2.31	2.17	2.03	1.91
8.20	2.91	2.73	2.56	2.4	2.25	2.11	1.98	1.85	1.74	1.63
8.30	2.47	2.32	2.18	2.04	1.91	1.79	1.68	1.58	1.48	1.39
8.40	2.09	1.96	1.84	1.73	1.62	1.52	1.42	1.33	1.25	1.17
8.50	1.77	1.66	1.55	1.46	1.37	1.28	1.20	1.13	1.06	0.990
8.60	1.49	1.40	1.31	1.23	1.15	1.08	1.01	0.951	0.892	0.836
8.70	1.26	1.18	1.11	1.04	0.976	0.915	0.858	0.805	0.754	0.707
8.80	1.07	1.01	0.944	0.885	0.829	0.778	0.729	0.684	0.641	0.601
8.90	0.917	0.860	0.806	0.756	0.709	0.664	0.623	0.584	0.548	0.513
9.00	0.790	0.740	0.694	0.651	0.610	0.572	0.536	0.503	0.471	0.442

*At 15°C and above, the criterion for July 1st through February 28th/29th is the same as the criterion for March 1st through June 30th.

⁸ Criteria Maximum Concentration (CMC) for Total Ammonia:

- (a) The CMC criterion for total ammonia (in mg N/L) (i) shall be the one (1)-hour average concentration for total ammonia, computed for a design flow specified in subsection 1105.5; and (ii) shall account for the influence of the pH as shown in Table 2d.
- (b) The CMC criterion was calculated using the following formula, which shall be used to calculate unlisted values: $CMC = [(0.411/(1+10^{7.204-pH}))] + [58.4/(1+10^{pH-7.204})]$.

Table 2d. Total Ammonia (in milligrams of Nitrogen per liter) CMC criterion for various pH:

pH	CMC	pH	CMC	pH	CMC	pH	CMC
6.50	48.8	7.20	29.5	7.90	10.1	8.60	2.65
6.60	46.8	7.30	26.2	8.00	8.40	8.70	2.20
6.70	44.6	7.40	23.0	8.10	6.95	8.80	1.84
6.80	42.0	7.50	19.9	8.20	5.72	8.90	1.56
6.90	39.1	7.60	17.0	8.30	4.71	9.00	1.32
7.00	36.1	7.70	14.4	8.40	3.88		
7.10	32.8	7.80	12.1	8.50	3.20		

Table 3

Constituent ¹	CAS Number	Criteria for Classes		
		C		D ²
		CCC 4-Day Avg	CMC 1-Hour Avg	30-Day Avg
Organics (µg/L)				
Acrolein	107028	10.0		290
Acrylonitrile	107131	700.0		0.25,c
Aldrin	309002	0.4	3.0	0.000050,c
Benzene	71432	1000		51.0,c
Carbon Tetrachloride	56235	1000		1.6,c
Chlordane	57749	0.0043	2.4	0.00081,c
Chlorinated benzenes (except Di)		25.0		
Chlorobenzene	108907			1600
1,2-Dichlorobenzene	95501	200		1300
1,3-Dichlorobenzene	541731	200		960
1,4-Dichlorobenzene	106467	200		190
Hexachlorobenzene	118741			0.00029,c
Pentachlorobenzene	608935			1.5
1,2,4,5-Tetrachlorobenzene	95943			1.1
1,2,4-Trichlorobenzene	120821			70
Chlorinated ethanes		50		
1,2-Dichloroethane	107062			37.0,c
Hexachloroethane	67721			3.3,c
1,1,2,2-Tetrachloroethane	79345			4.0,c
1,1,2-Trichloroethane	79005			16.0,c
Chlorinated naphthalene				
2-Chloronaphthalene	91587	200		1600
Chlorinated phenols				
2-Chlorophenol	95578	100		150

Constituent ¹	CAS Number	Criteria for Classes		
		C		D ²
		CCC 4-Day Avg	CMC 1-Hour Avg	30-Day Avg
Organics (µg/L)				
2,4-Dichlorophenol	120832	200		290.0
Pentachlorophenol ³	87865	[I]	[LA]	3.0,c
2,4,5-Trichlorophenol	95954			3600
2,4,6-Trichlorophenol	88062			2.4,c
Chloroalkyl ethers		1000		
Bis(2-Chloroethyl)Ether	111444			0.53,c
Bis(2-Chloroisopropyl)Ether	108601			65,000
Bis(Chloromethyl)Ether	542881			0.00029
3,3-Dichlorobenzidine	91941	10		0.028,c
Dichloroethylenes		1000		
1,1-Dichloroethylene	75354			7,100,c
1,2-Trans-Dichloroethylene	156605			10,000
1,2-Dichloropropane	78875	2000		15,c
Dichloropropenes		400		
1,3-Dichloropropene	542756			21
Dieldrin	60571	0.056	0.24	0.000054,c
2,4-Dimethylphenol	105679	200		850
2,4-Dinitrotoluene	121142	33		3.4,c
Dioxin (2,3,7,8-TCDD)	1746016			0.0000000051,c
1,2-Diphenylhydrazine	122667	30		0.20,c
Endosulfan		0.056	0.22	89
Alpha-Endosulfan	959988	0.056	0.22	89
Beta-Endosulfan	33213659	0.056	0.22	89
Endosulfan sulfate	1031078			89
Endrin	72208	0.036	0.086	0.060
Endrin aldehyde	7421934			0.30
Ethylbenzene	100414	40		2,100
Halomethanes		1000		
Bromoform	75252			140,c
Chloroform	67663	3000		470.0,c
Chlorodibromomethane	124481			13.0,c
Dichlorobromomethane	75274			17.0,c
Methyl Bromide	74839			1,500
Methyl Chloride	74873			
Methylene chloride	75092			590,c
Heptachlor	76448	0.0038	0.52	0.000079,c
Heptachlor epoxide	1024573	0.0038	0.52	0.000039,c
Hexachlorobutadiene	87683	10		18.0,c

Constituent ¹	CAS Number	Criteria for Classes		
		C		D ²
		CCC 4-Day Avg.	CMC 1-Hour Avg.	30-Day Avg.
Organics (µg/L)				
Hexachlorocyclohexane				
alpha-BHC	319846			0.0049,c
beta-BHC	319857			0.017,c
gamma-BHC (Lindane)	58899	0.08	0.95	1.8,c
Hexachlorocyclopentadiene	77474	0.5		1,100
Isophorone	78591	1000		960,c
Manganese	7439965			100
Methoxychlor	72435	0.03		
Mirex	2385855	0.001		
Naphthalene	91203	600		
Nitrobenzene	98953	1000		690
Nitrophenols		20		
2-Methyl-4,6- Dinitrophenol	534521			280
2,4-Dinitrophenol	51285			5,300
Dinitrophenols	25550587			5,300
Nitrosamines		600		1.24
N-Nitrosodibutylamine	924163			0.22
N-Nitrosodiethylamine	55185			1.24
N-Nitrosodimethylamine	62759			3.0,c
N-Nitrosodi-n-Propylamine	621647			0.51,c
N-Nitrosodiphenylamine	86306			6.0,c
N-Nitrosopyrrolidine	930552			34,c
Organochlorides				
4,4'-DDD	72548	0.001	1.1	0.00031,c
4,4'-DDE	72559	0.001	1.1	0.00022,c
4,4'-DDT	50293	0.001	1.1	0.00022,c
Organophosphates				
Guthion	86500	0.01		
Malathion	121755	0.1		
Parathion	56382	0.013	0.065	
Phenol	108952			1,700,000
Phthalate esters		100		
Bis(2-Ethylhexyl) Phthalate	117817			2.2,c
Butylbenzyl Phthalate	85687			1,900
Diethyl Phthalate	84662			44,000
Dimethyl Phthalate	131113			1,100,000
Di-n-Butyl Phthalate	84742			4,500
Polychlorinated biphenyls ⁴		0.014		0.000064,c

Constituent ¹	CAS Number	Criteria for Classes		
		C		D ²
		CCC 4-Day Avg	CMC 1-Hour Avg	30-Day Avg
Organics (µg/L)				
Polynuclear aromatic hydrocarbons				
Acenaphthene	83329	50		990
Acenaphthylene	208968			
Anthracene	120127			40,000
Benzidine	92875	250		0.00020,c
Benzo(a)Anthracene	56553			0.018,c
Benzo(a)Pyrene	50328			0.018,c
Benzo(b)Fluoranthene	205992			0.018,c
Benzo(k)Fluoranthene	207089			0.018,c
Chrysene	218019			0.018,c
Dibenzo(a,h) Anthracene	53703			0.018,c
Fluoranthene	206440	400		140.0
Fluorene	86737			5,300
Indeno(1,2,3-cd) Pyrene	193395			0.018,c
Phenanthrene	85018			
Pyrene	129000			4,000
Tetrachloroethylene	127184	800		3.3,c
Toluene	108883	600		15000
Toxaphene	8001352	0.0002	0.73	0.00028,c
Tributyltin (TBT)	—	0.072	0.46	
Trichloroethylene	79016	1000		30.0,c
Vinyl chloride	75014			2.4,c

Notes:

¹ For constituents without numerical criteria, standards have not been developed at this time. However, permit writers shall address these constituents in NPDES permit actions using the narrative criteria for toxics contained in these water quality standards.

² The letter "c" after the Class D Human Health Criteria numeric value means that the criterion is based on carcinogenicity of 10^{-6} risk level.

³ The formulas for calculating the concentrations of substances indicated above are as follows:

[I] The numerical CCC criterion for pentachlorophenol in µg/L shall be given by:

$$e^{(1.005(\text{pH}) - 5.134)}$$

[I.A] The numerical CMC criterion for pentachlorophenol in µg/L shall be given by:

$$e^{(1.005(\text{pH}) - 4.869)}$$

⁴ The polychlorinated biphenyls (PCB) criterion applies to total PCBs (e.g., the sum of all congener or all isomer or homolog or Aroclor analyses.)

1105 IMPLEMENTATION AND APPLICABILITY

1105.1 Where the discharge of pollutants in quantities that prevent the attainment of, or violates, the surface water quality standards, the Director may grant a variance from a water quality standard that is the basis of a water quality-based effluent limitation included in a National Pollutant Discharge Elimination System (NPDES) permit. A water quality standard variance applies only to the permittee requesting the variance and only to the pollutant or pollutants specified in the variance. A variance does not affect, or require the Director to modify, the corresponding water quality standard for the waterbody as a whole. A variance may be granted only if the discharger can justify every three (3) years through a public hearing process that attaining the water quality standard is not feasible because at least one (1) of the following conditions exists:

- (a) Irretrievable and irreversible conditions that prevent the attainment of the standards;
- (b) The application of technology sufficient to attain the standards is more stringent than that required by sections 301(b) and 306 of the Federal Clean Water Act, and the application of the technology would result in substantial and widespread adverse economic and social impacts; or
- (c) One or more of the reasons specified in subsection 1101.3.

1105.2 The Director shall not grant a variance from the water quality standards if:

- (a) The variance will result in loss of protection for an existing use, or
- (b) The permittee fails to make the demonstrations required under subsection 1105.1.

1105.3 Variances approved by the Director shall include all permit conditions needed to implement those parts of the variance so approved. The permit conditions shall, at a minimum, require:

- (a) Compliance with an initial effluent limitation that, at the time the variance is granted, represents the level currently achievable by the permittee, and that is no less stringent than that achieved under the previous permit;
- (b) That reasonable progress be made toward attaining the water quality standards for the waterbody as a whole through appropriate conditions; and

- (c) A provision that allows the permitting authority to reopen and modify the permit based upon any triennial water quality standards revisions to the variance.

1105.4

The Director shall establish and incorporate into the water quality certification of the permittee's discharge permit, all conditions needed to implement the variance as determined pursuant to this section. A variance may be renewed, subject to the requirements of this section. As part of any renewal application, the permittee shall again demonstrate that attaining water quality standards is not feasible based on the requirements of subsection 1105.1. The permittee's application shall also contain information concerning the permittee's compliance with the conditions incorporated into its permit as part of the previous variance pursuant to this section. The Director may deny renewal of a variance if the permittee did not substantively comply with the conditions of the previous variance.

1105.5

The design flow to be used for establishing permit limitations for discharges to the District waters shall be as follows:

- (a) The numerical criteria for classes A, B, and C(CCC), as delineated in subsection 1104.8, shall not apply at flows less than the average seven-day (7-day) low flow, which has a probability of occurrence of once in ten (10) years;
- (b) The numerical criteria for class C(CMC), as delineated in subsection 1104.8, shall not apply at flows less than the average one-day (1-day) low flow, which has a probability of occurrence of once in ten (10) years;
- (c) For carcinogenic pollutants under class D, as delineated in subsection 1104.8, the design flow shall be the harmonic mean flow, and for noncarcinogenic pollutants under class D the design flow shall be the average thirty-day (30-day) low flow, which has the probability of occurrence of once in five (5) years. The categorization of pollutants to be carcinogenic or non carcinogenic is shown under the Class D column for Human Health Criteria;
- (d) The numerical criteria for clarity shall not apply at flows greater than the long-term seasonal average flow; and
- (e) For chlorophyll *a*, the design flow shall be the average seasonal flow for July 1 through September 30.

1105.6

High flow conditions in the District of Columbia waters are defined as follows:

- (a) For the Potomac River, the following conditions shall be considered a high flow:
 - (i) A flow that may result due to a rainfall with an average intensity greater than two-tenths of an inch (0.2") per hour for a period of one (1) hour in the portion of the District of Columbia contributory to the Potomac River, or
 - (ii) A flow equivalent to a three hundred percent (300%) increase in flow during a twenty-four (24) hour period.
- (b) For the Anacostia River, the following conditions shall be considered a high flow:
 - (i) A flow that may result due to a rainfall with an average intensity greater than two-tenths of an inch (0.2") per hour for a period of one (1) hour in the portion of the District of Columbia contributory to the Anacostia River, or
 - (ii) A flow equivalent to a three hundred percent (300%) increase in flow during a twenty-four (24) hour period.
- (c) For Rock Creek and tributaries, the following conditions shall be considered a high flow:
 - (i) A flow that may result due to a rainfall with an average intensity greater than two-tenths of an inch (0.2") per hour for a period of one (1) hour in the portion of the District of Columbia contributory to Rock Creek, or
 - (ii) A flow equivalent to a three hundred percent (300%) increase in flow during a twenty-four (24) hour period.
- (d) For other tributaries to the Potomac and Anacostia Rivers, a flow equivalent to a five hundred percent (500%) increase in flow during a twenty-four (24) hour period, shall be considered a high flow.

1105.7

The Director may allow mixing zones for point source discharges of pollutants on a case-by-case basis, where it is demonstrated that allowing a small area impact will not adversely affect the waterbody as a whole. The following conditions shall apply:

- (a) In the nontidal waters, the permissible size of the mixing zone shall be determined by the ability of organisms to pass through the mixing zone and the size of the receiving waterbody.

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- (b) Mixing zones shall be free from discharged substances that will settle to form objectionable deposits; float to form unsightly masses; or produce objectionable color, odor, or turbidity;
- (c) A mixing zone, or two (2) or more mixing zones, shall not form a barrier to the movements of aquatic life, nor cause significant adverse impact on aquatic life in shallow areas that serve as a nursery;
- (d) The concentration of a substance in the mixing zone shall not be lethal to passing organisms, as determined by the appropriate EPA method;
- (e) Mixing zones shall be positioned in a manner that provides the greatest protection to aquatic life and the designated uses of the water;
- (f) Within the estuary, the cross-sectional area occupied by a mixing zone shall not exceed ten percent (10%) of the numerical value of the cross-sectional area of the waterway, and the width of the mixing zone shall not occupy more than one third (1/3) of the width of the waterway;
- (g) Within the estuary, mixing zones may move with the prevailing hydraulic and meteorological conditions;
- (h) The numerical standards for Criteria Continuous Concentration (CCC) in subsection 1104.8 must be met at the edge of the mixing zone and therefore the CMC criteria will be met within some portions of the mixing zone;
- (i) The mixing zone shall be implemented in accordance with the EPA Technical Support Document for Water Quality-Based Toxics Control, EPA-505-2-90-001, March 1991; and
- (j) The mixing zone shall be approved by the Director.

1105.8 Any permit issued pursuant to section 7 of the Water Pollution Control Act of 1984 (D.C. Official Code § 8-103.06) shall be based on the designated uses and other provisions of these water quality standards.

1105.9 When the Director requires a new water quality standard-based effluent limitation in a discharge permit, the permittee shall have no more than three (3) years to achieve compliance with the limitation, unless the permittee can demonstrate that a longer compliance period is warranted. A compliance schedule shall be included in the permit.

1105.10 The numerical criteria for dissolved cadmium, hexavalent chromium, trivalent

chromium, copper, lead, nickel, silver, and zinc shall be calculated by multiplying the criteria for these metals as specified in Table 2 of subsection 1104.8 by the EPA Conversion Factors specified in Appendix B of the EPA National Recommended Water Quality Criteria: 2002, EPA-822-R-02-047, November 2002. This conversion is required because the numerical values for these metals in Table 2 of this Chapter were established for total recoverable metals, but are being used for dissolved metals.

1106**SITE-SPECIFIC STANDARDS****1106.1**

If requested, the Director may allow a person to conduct a site-specific study to change the numerical criteria when at least one (1) of the following conditions exists:

- (a) The species, or endangered species, at the site are more or less sensitive than those included in the national criteria data set; or
- (b) Physical or chemical characteristics of the site alter the biological availability or toxicity of the chemical.

1106.2

If the criteria in subsection 1104.8 are found to be unsuitable for the District waters based upon the conditions described in subsection 1106.1, when requested to do so, the Director may adopt site-specific criteria for Class C waters, except for mercury and selenium, or for Class D waters, only when a site-specific study necessitates.

1106.3

When requested to do so, based upon the conditions described in subsection 1106.1 and, if warranted, the Director shall allow site-specific studies to generate scientific information regarding:

- (a) The Water Effect Ratio for metals specific to the District waters;
- (b) The sensitivities of the aquatic organisms prevalent in the District;
- (c) The toxicity of chemicals to the fish in the District waters and related human health effects; and
- (d) Any other compelling factors that merit consideration for changing the numerical standards in subsection 1104.8.

1106.4

A person or persons planning to conduct a site-specific study shall submit a complete plan of study to the Director for approval, and the site-specific study shall be carried out only after the Director approves the study in writing, subject to the requirements set forth in this section.

- 1106.5 The Director shall provide advance notice to all discharge permittees and applicants for discharge permits prior to the initiation of any site-specific study.
- 1106.6 All site-specific studies and adoption of site-specific criteria shall be subject to the following requirements:
- (a) Once the Director has approved the study, it shall be concluded in accordance with the approved plan;
 - (b) A person or persons conducting a site-specific study subject to subsection 1106.3 shall submit to the Director for review and approval all data, analyses, findings, reports, and other information the Director deems necessary;
 - (c) The Director shall seek review of the findings of the site-specific studies and other relevant information by the public, as well as by appropriate local and federal government agencies and consider their concerns before adopting any less stringent site-specific criterion based on those findings; and
 - (d) If the study concludes that a more stringent criterion is needed for Class C or D waters than provided in subsection 1104.8, then the Director shall modify the standards to reflect the more stringent level of protection.
- 1106.7 If a study is conducted to determine the Water Effect Ratio (WER) for metals and the criteria are in the dissolved form, the WER must be based on the dissolved fraction of the metals. If the study is conducted to determine the WER for metals and the criteria are in the total recoverable form, the WER must be based on the total recoverable fraction of the metals. If WERs are to be developed, EPA guidance Interim Guidance on Determination and Use of Water Effect Ratios for Metals, EPA-823-B-94-001, February 1994, shall be used and at a minimum, the following conditions shall be met unless the Director approves a deviation or alternate method:
- (a) If a WER study concludes that an existing criterion is not stringent enough, then the criterion shall be made more stringent;
 - (b) At least two (2) sensitive indicator species, a fish and at least one (1) invertebrate, shall be used to determine toxicity in laboratory water and water collected from the site;
 - (c) The LC_{50} in the laboratory water must be comparable to the LC_{50} data developed by EPA;
 - (d) Water samples collected from the site shall be representative of critical

low flow. A minimum of eight (8) samples per location per season shall be evaluated;

- (e) Samples shall be taken at the edge of the mixing zone unless multiple discharges are involved. At least one (1) sample shall be reasonably well mixed with the flow of the receiving water, or the sample shall be well outside the regulatory mixing zone;
- (f) Laboratory water shall be same as the water used by EPA and adjusted for site water characteristics and hardness;
- (g) The trace metal shall be added in the form of a highly soluble inorganic salt;
- (h) The chemical and physical characteristics, both dissolved and total recoverable metal concentrations, hardness, pH, alkalinity, suspended solids, organic carbon, temperature, and specific metal binding ligands (where known to be important), and any other water quality characteristic that affects bioavailability and toxicity of the water should be monitored during the toxicity tests;
- (i) A WER that is large or that is based on highly variable tests may be rejected;
- (j) The WER shall be the geometric mean of the two (2) species; and
- (k) All chemical, biochemical, biological, and other appropriate analyses shall be conducted using EPA-approved methods.

1106.8 If a site-specific study is conducted to determine the Class D Human Health Criteria and related human health effects, at a minimum, the study shall incorporate the following information:

- (a) Bioconcentration factors of the substances in the commonly consumed fish in the District;
- (b) Percent lipids in the commonly consumed fish in the District; and
- (c) Information regarding the consumption by the public of fish caught from the District waters.

1106.9 The determination of subsection 1106.8 (a) and (b) shall be made using EPA-approved methods.

1106.10 The criteria, based upon a site-specific study and information collected through

the study, shall be calculated using relations developed by EPA Technical Support Document for Water Quality-Based Toxics Control, EPA-505-2-90-001, March 1991, minus the component for drinking water, as follows:

- (a) For noncarcinogens:

$$\text{NEW CRITERIA} = (\text{RfD} \times \text{WT}) / (\text{FC} \times \text{L} \times \text{FM} \times \text{BCF})$$

where RfD is the reference dose from the EPA Integrated Risk Information System (IRIS) database, WT is seventy (70) kilograms, FC is the daily fish consumption by the exposed population in kilograms per day, L is the ratio of lipid fraction of fish tissue consumed to three percent (3%), FM is the food chain multiplier and BCF is the bioconcentration factor for fish with three percent (3%) lipid.

- (b) For carcinogens:

$$\text{NEW CRITERIA} = (\text{RL} \times \text{WT}) / (q1^* \times \text{FC} \times \text{L} \times \text{FM} \times \text{BCF})$$

where WT, FC, L, FM, and BCF are as stated above; RL is 10^{-6} and $q1^*$ is the carcinogenic potency factor from the EPA IRIS database.

1106.11

If the effluent limitation for a metal in a discharge permit is specified as "total recoverable", and the criterion for it in subsection 1104.8 is specified as "dissolved", either of the following two (2) approaches based on The Metals Translator: Guidance for Calculating a Total Recoverable Permit Limit From a Dissolved Criterion, EPA-823-B-96-007, June 1996, may be used, subject to prior review and approval by the Director:

- (a) The criterion may be used as total recoverable for the purpose of establishing effluent limitations; or
- (b) A site-specific ratio between the dissolved and total recoverable metal may be developed by systematic monitoring and analysis of the effluent and of the receiving water at the edge of the mixing zone during periods that reflect the environmental conditions upon which the permit was issued. This ratio shall incorporate considerations to avoid toxicity to aquatic organisms from deposition to the sediment outside of the mixing zone. The ratio of dissolved to total recoverable metal shall then be used to determine the total recoverable effluent limits based on the dissolved metal criterion.

1106.12

The Director may establish additional requirements for adopting site-specific water quality standards.

B. Section 1158 is amended to read as follows:**1158 ENFORCEMENT**

- 1158.1.1 This chapter shall be enforced pursuant to the Water Pollution Control Act of 1984, as amended, effective March 16, 1985 (D.C. Law 5-188; D.C. Official Code §§ 8-103.15, 8-103.16, and 8-103.17), and the Water Pollution Enforcement Regulations, (21 DCMR Chapter 22).
- 1158.2 All laboratory examinations of samples collected to determine compliance with these water quality standards shall be performed in accordance the procedures approved by the United States Environmental Protection Agency.
- 1158.3 All field analyses and measurements of water to determine compliance with these water quality standards shall be conducted in accordance with standard procedures specified by the Director.
- 1158.4 Nothing in these water quality standards shall be interpreted as alleviating any discharger from meeting more stringent water quality standards of downgradient jurisdictions.
- 1158.5 Primary contact recreation shall be prohibited in the Potomac and Anacostia Rivers and Rock Creek until such time as the standards in subsection 1104.8 for Class A beneficial use are consistently maintained.

C. Section 1199 is amended to read as follows:**1199 DEFINITIONS**

- 1199.1 When used in this chapter, the following terms shall have the meanings ascribed:

Acute toxic - the concentration of a substance that is lethal to fifty percent (50%) of the test organisms within ninety-six (96) hours, also referred to as the LC₅₀.

Adverse natural conditions - an unanticipated grave natural disaster or other natural phenomenon of an exceptional, inevitable and irresistible character, the effects of which could not have been prevented or avoided by the exercise of due care or foresight.

Ambient - those conditions existing before or upstream of a source or incidence of pollution.

Anadromous fish - fish that spend most of their lives in saltwater but migrate into freshwater tributaries to spawn.

Aquatic Life - all animal and plant life including, but not limited to, rooted underwater grasses found in the District waters.

Background water quality - the levels of chemical, physical, biological, and radiological constituents or parameters in the water upgradient of a facility, practice, or activity and which have not been affected by that facility, practice, or activity.

Best management practices (BMPs) - schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants to the waters of the District. BMPs also include practices found to be the most effective and practical means of preventing or reducing point and non-point source pollution to levels that are compatible with water quality goals.

Contamination - an impairment of water quality by biological, chemical, physical, or radiological materials which lowers the water quality to a degree that creates a potential hazard to the environment or public health or interferes with a designated use.

Criteria - any of the group of physical, chemical, biological, and radiological water quality parameters and the associated numerical concentrations or levels that compose the numerical standards of the water quality standards and that define a component of the quality of the water needed for a designated use.

CCC or Criteria Continuous Concentration - the highest concentration of a pollutant to which aquatic life can be exposed for an extended period of time (four-day (4-day) average) without deleterious effects at a frequency that does not exceed more than once every three (3) years.

CMC or Criteria Maximum Concentration - the highest concentration of a pollutant to which aquatic life can be exposed for a short period of time (one-hour (1-hour) average) without deleterious effects at a frequency that does not exceed more than once every three (3) years.

Consumption of Fish and Shellfish - the human ingestion of fish and shellfish, that are not chemically contaminated at a level that will cause a significant adverse health impact, caught from the District's waters.

Current use - the use that is generally and usually attained based upon the water quality in the waterbody.

Department - the Department of Health, or a successor agency.

Designated use - the use specified for the waterbody in these water quality standards whether or not they are being attained.

Director - the Director of the Department, or his or her designee.

Early warning value - a concentration that is a percentage of or practical quantitation limit, for a ground water quality criterion or enforcement standard.

EPA - United States Environmental Protection Agency.

Enforcement standard - the value assigned to a contaminant for the purpose of regulating an activity, which may be the same as the criterion for that contaminant.

Existing use - the use actually attained in the waterbody on or after November 28, 1975.

Federal Clean Water Act - the Federal Water Pollution Control Act, approved October 18, 1972 (86 Stat. 816; 33 U.S.C. § 1251 *et seq.*), as amended.

Ground water - underground water, excluding water in pipes, tanks, and other containers created or set up by people.

Harmonic mean flow - the number of daily flow measurements divided by the sum of the reciprocals of the flows. It is the reciprocal of the mean of the reciprocals.

High quality waters - waters of a quality that is better than needed to protect fishable and swimmable streams.

Landfill - a disposal facility or part of a facility at which solid waste is permanently placed in or on land and which is not a landspreading facility.

Landspreading disposal facility - a facility that applies sludge or other solid wastes onto the land or incorporates solid waste in the soil surface at greater than vegetative utilization and soil conditioners/immobilization rates.

LC₅₀ or lethal concentration - the numerical limit or concentration of a test material mixed in water that is lethal to fifty percent (50%) of the aquatic organisms exposed to the test material for a period of ninety-six (96) hours.

Load or Loading - the total quantity of a pollutant in a given period of time.

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Mixing zone - a limited area or a volume of water where initial dilution of a discharge takes place and where numerical water quality criteria may be exceeded but acute toxic conditions are prevented from occurring.

MPN - a statistically derived estimate of the "Most Probable Number" of bacteria colonies in a volume of one hundred milliliters (100 mL) water sample.

Narrative criteria - a condition that should not be attained in a specific medium to maintain a given designated use and that is generally expressed in a "free from" format.

Navigation - the designated use for certain District waters. This designation applies to waters that are subject to the ebb and flow of the tides, or waters that are presently used, may have been used, or may be used for shipping, travel, and transportation of interstate or foreign commerce by vessel.

Nonpoint source - any source from which pollutants are or may be discharged other than a point source.

Numerical criteria - the maximum level of a contaminant, or the minimum level of a constituent, or the acceptable range of a parameter in water to maintain a given designated use.

Permit or Permitted - a written authorization issued or certified by the Director under pertinent laws and regulations for an activity, facility, or entity to discharge, treat, store, or dispose of materials or wastes.

Point of compliance - the point or points where the water quality enforcement standard or criterion must not be exceeded.

Point source - any discrete source of quantifiable pollutants, including a municipal treatment facility discharge, residential, commercial or industrial waste discharge, a combined sewer overflow; or any discernible, confined, and discrete conveyance, including any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, or concentrated animal feeding operation from which contaminants are or may be discharged.

Pollution - the man-made or man-induced alteration of the chemical, physical, biological, or radiological integrity of water.

Pollutant - any substance that may alter or interfere with the restoration or maintenance of the chemical, physical, radiological, or biological integrity of the waters of the District, including dredged soil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, hazardous wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment,

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Surface waters - all rivers, lakes, ponds, wetlands, inland waters, streams, and all other water and water courses within the jurisdiction of the District of Columbia.

Tidally influenced waters - surface waters within the Potomac River, the Anacostia River and all embayments and tributaries to these rivers under the influence of tidal exchange.

Toxic substance - any substance or combination of substances that, after discharge and upon exposure, ingestion, inhalation, or assimilation into any organism, either directly from the environment or indirectly by ingestion through food chains, may cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunctions in reproduction), or physical deformities, in the organism or its offspring.

Trend analysis - a statistical methodology used to detect net changes or trends in contaminant levels over time.

Water Effect Ratio or WER - the ratio of the site water LC_{50} value to the laboratory water LC_{50} value.

Waters of the District or District waters - flowing and still bodies of water, whether artificial or natural, whether underground or on land, so long as in the District of Columbia, but excludes water on private property prevented from reaching underground or land watercourses, and also excludes water in closed collection or distribution systems.

Wetland - a marsh, swamp, bog, or other area periodically inundated by tides or having saturated soil conditions for prolonged periods of time and capable of supporting aquatic vegetation.

Wildlife - all animal life whether indigenous or migratory regardless of life stage including, but not limited to, birds, anadromous and semi-anadromous fish, shellfish, and mammals including sensitive species, that are found in or use the District waters.

1199.2

When used in this chapter, the following abbreviations shall have the meaning ascribed:

°C	-	degrees centigrade
CaCO ₃	-	Calcium Carbonate
CF	-	Conversion Factor
m	-	meter
mg/L	-	milligrams per liter
mg N/L	-	milligrams of Nitrogen per liter
mL	-	milliliter

UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

FRIENDS OF THE EARTH,

Plaintiff-Appellant,

v.

ENVIRONMENTAL PROTECTION
AGENCY, ET AL.,

Defendant-Appellees.

No. 05-5015

DECLARATION OF THOMAS M. HENRY

1. My name is Thomas M. Henry. I am the Total Maximum Daily Loads ("TMDL") Program Manager for the Office of Watersheds, Water Protection Division, Region III of the U.S. Environmental Protection Agency ("EPA"). As TMDL Program Manager, I have responsibility for coordinating the approval and establishment of TMDLs in the states in Region III, including the District of Columbia. I make this Declaration in support of the Appellee's Supplemental Brief on Mootness. This Declaration is based upon my personal knowledge and information obtained by me in the course of my duties.

2. In 2001, EPA approved a TMDL for biochemical oxygen demand ("BOD TMDL") discharges to the Anacostia River and its tributaries. The BOD TMDL was developed by the District of Columbia in compliance with the schedule set forth in the Consent Decree entered in Kingman Park Civic Ass'n, Friends of the Earth, and Anacostia Watershed Society v. U.S. Environmental Protection Agency, Case No. 1:98CV00758 (D.D.C.). As part of its approval, EPA found that the District's BOD TMDL was established at a level necessary to implement the then-applicable District of Columbia water quality criteria for dissolved oxygen ("DO"), which were 5 mg/l minimum daily average, 5.0 mg/l one-hour minimum (March - June), and 4.0 mg/l one-hour minimum (July - February).

3. In 2002, EPA established a TMDL for discharges of total suspended solids ("TSS TMDL") to the Anacostia River and its tributaries. The TSS TMDL was established by EPA in compliance with the schedule set forth in the Consent Decree entered in Kingman Park Civic Ass'n, Friends of the Earth, and Anacostia Watershed Society v. U.S. Environmental Protection Agency, Case No. 1:98CV00758 (D.D.C.). The TSS TMDL was established at a level necessary to implement the applicable District of Columbia narrative water quality criterion for turbidity. At that time, the District's water quality standards applicable to

turbidity consisted solely of a narrative criterion with no numeric criteria. As part of the TSS TMDL, EPA used data and analysis developed by its Chesapeake Bay Program to identify an appropriate numeric endpoint of 15 mg/l TSS to achieve the narrative turbidity criterion.

4. Subsequent to the establishment of the BOD and TSS TMDLs, EPA approved changes in the District of Columbia water quality standards for DO and turbidity.

5. The now-applicable turbidity water quality standard consists of both the previous narrative criterion and a numeric measurement of "Secchi depth" of 0.8 meters for all Class C tidal waters, including the Anacostia River and some or all of its tributaries. 52 D.C. Register at 9628-29 (to be codified at 21 D.C. Mun. Reg. Ch. 11, § 1104.8 (Table 1)). "Secchi depth" is a measurement of water clarity defined as the mean depth of the point where a weighted white disk 20 cm in diameter disappears from view.

6. The TSS TMDL established in 2002 does not take into account the Secchi depth measurement that is now part of the water quality standards for turbidity.

7. The now-applicable water quality criteria for DO consists of a seven-day mean average of 6.0 mg/l and instantaneous minimum of 5.0 mg/l for February 1 - May 31, and a 30-day mean of 5.5 mg/l, a seven-day mean of 4.0 mg/l and an instantaneous minimum of 3.2 mg/l (4.3 mg/l at water temperatures greater than 29 degrees Celsius in tidally influenced waters) for June 1 - January 31. 52 D.C. Register 9621, 9628-29 (Oct. 28, 2005) (to be codified at 21 D.C. Mun. Regulations Ch. 11, § 1104.8 (Table 1)).

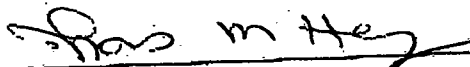
8. The now-applicable water quality criteria for DO did not exist at the time that EPA approved the BOD TMDL.

9. EPA, as the permit issuing authority for the District of Columbia, would use information in these TMDLs as one factual input, for example, information they provide as to relative allocations, critical conditions, flow, etc. Because the applicable water quality standards subsequently were changed, EPA would not base water quality-based effluent limits for new or re-issued permits directly on the wasteload allocations in these TSS and BOD TMDLs. Instead, EPA would derive a new wasteload allocation or utilize any other appropriate method to set the permit limits at a level necessary to implement the subsequently approved water quality standards, and the TMDLs would be subsequently revised to implement the new standards.

10. If these TMDLs were to be revised to a level necessary to implement the subsequently approved water quality standards for DO and turbidity, EPA and/or the District of Columbia may need to use a new or revised model, and to gather and analyze any relevant data generated since the establishment and approval of these TMDLs in 2001 and 2002. In addition, the TMDLs would have to undergo an appropriate public notice and comment period. EPA estimates that the process of revising these TMDLs would take approximately eighteen (18) months.

Pursuant to 28 U.S.C. § 1746, I declare under penalty of perjury that the foregoing is true and correct.

Executed on March 6, 2006



Thomas M. Henry
TMDL Program Manager Coordinator
Water Protection Division
U.S. Environmental Protection Agency
Region III