UNITED STATES DISTRICT COURT
FOR THE MIDDLE DISTRICT OF PENNSYLVANIA

AMERICAN FARM BUREAU FEDERATION, *et al.*,	
Plaintiffs,	
v.	**Case No. 11-cv-00067-SHR**
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY,	
Defendant.	

MEMORANDUM IN SUPPORT OF PLAINTIFFS' JOINT MOTION FOR SUMMARY JUDGMENT

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AR0000108	U.S. Environmental Protection Agency, Chesapeake Bay Final TMDL Document (Dec. 29, 2010) (Section 4)
AR0000152	U.S. Environmental Protection Agency, Chesapeake Bay Final TMDL Document (Dec. 29, 2010) (Section 5)
AR0000250	U.S. Environmental Protection Agency, Chesapeake Bay Final TMDL Document (Dec. 29, 2010) (Section 7)
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AR0000295	U.S. Environmental Protection Agency, Chesapeake Bay Final TMDL Document (Dec. 29, 2010) (Section 9)
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[1] Citations to the Administrative Record filed by EPA in this Court are designated "AR." Documents that the parties agree were inadvertently omitted from that filing (Doc. 86) or that this Court has held should be included in the record (Doc. 92) are attached hereto as Exhibits 1-10.

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AR0032818	U.S. Department of Agriculture, Assessment of the Effects of Conservation Practices on Cultivated Cropland in the Chesapeake Bay Region (Review Draft – Oct. 2010)
AR0032981	Jeff Corbin, U.S. EPA Region 3, presentation entitled "Update on the Bay TMDL and What's Just Around the Corner"

Exhibit Number	Description
1	Email from Jeffrey Corbin, EPA to Russ Perkinson, Va. Dept. of Conservation and Recreation, and Alan Pollock, Va. Dept. of Envtl. Quality, (Mar. 22, 2010)
2	Email from Kelly Shenk, EPA, to Russ Perkinson, *et al.* (Oct. 28, 2010)
3	U.S. Environmental Protection Agency, *Guidance on the Development, Evaluation, and Application of Environmental Models*, EPA/100/K-09/003 (Mar. 2009)
4	U.S. Environmental Protection Agency, Scenario Builder and the Chesapeake Bay Program Office (July 28, 2009)
5	U.S. Environmental Protection Agency, Chesapeake Bay Phase 5 Community Watershed Model (Sept. 11, 2008 version)
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7	Chesapeake Bay Program Office, Modeling Subcommittee: 2nd STAC Review of Phase 5 WSM (Apr. 29, 2008)
8	Chesapeake Bay Program Office, Water Quality Steering Committee: Summary of Decisions, Actions, and Issues (Mar. 17, 2008)
9	U.S. Environmental Protection Agency, Correspondence: E-Mail from Gary Shenk Regarding Modeling Meeting on CEAP and Chesapeake Bay Watershed Model Comparative Analysis (Sept. 15, 2010)
10	LimnoTech, Comparison of Draft Load Estimate Cultivated Cropland in the Chesapeake Bay Watershed (Dec. 8, 2010)

Plaintiffs American Farm Bureau Federation, Pennsylvania Farm Bureau, The Fertilizer Institute, National Pork Producers Council, National Corn Growers Association, National Chicken Council, U.S. Poultry & Egg Association, National Turkey Federation, and the National Association of Home Builders (collectively, "Plaintiffs") file this memorandum in support of their joint motion for summary judgment.

INTRODUCTION

This action challenges the Chesapeake Bay Total Maximum Daily Load for Nitrogen, Phosphorus and Sediment ("Final TMDL") issued by the U.S. Environmental Protection Agency ("EPA") on December 29, 2010. *See* 76 Fed. Reg. 549 (Jan. 5, 2011) (notice of availability); *see also* AR0000001-AR0003790. While labeled a "TMDL," long known as an "informational tool" in the Clean Water Act ("CWA" or "the Act"), EPA's Final TMDL for the Chesapeake Bay is in fact much more. Unprecedented in scope and complexity and estimated to cost tens of billions of dollars to implement, the Final TMDL breaches limits on EPA's statutory authority and encroaches on regulatory territory that Congress expressly reserved for the states. Further, the Final TMDL is based on an extraordinarily difficult technical analysis that could not be done properly with EPA's models.

EPA's Final TMDL does far more than identify a "total" pollutant load as authorized under the CWA. It imposes detailed pollutant "allocations" among sources throughout the Bay's vast watershed and dictates that all pollutant control measures be in place by 2025, with 60 percent completed by 2017. These mandatory allocations of allowable pollutant loading among farms, towns, and homeowners amount to nothing short of a federal TMDL implementation plan. This plan directly encroaches on state authority over land and water quality planning – not only in states bordering the Bay, but in states hundreds of miles away. EPA's action is not authorized under the Act.

In addition to lacking statutory authority, EPA erred in its technical analysis in the Final TMDL. To settle a lawsuit, in May 2010, EPA agreed to issue the Chesapeake Bay TMDL in fewer than eight months – by December 31, 2010. The Agency met its deadline, but in the rushed process it unlawfully failed to provide the public with adequate information to effectively comment on the several linked computer models on which the Final TMDL depends. It also used those models for purposes beyond their predictive capabilities and relied on inaccurate assumptions. Those modeling defects are fatal even if EPA had the authority (which it does not) for the Final TMDL.

TMDLs are but one element of the cooperative federalism prescribed by the Act. EPA has other authority under the CWA to work with states to protect and

enhance the Bay. EPA must work with the tools Congress gave it. The Agency cannot usurp authorities reserved solely for the states, nor create new authorities with no statutory basis. When EPA's action is highly technical, it must disclose its underlying technical analysis in time for meaningful public comment. When EPA relies on modeling, it must use models appropriate for the task with good data. The Final TMDL is defective in each of these areas, and Plaintiffs respectfully request that the Court vacate it in its entirety.

LEGAL AND FACTUAL BACKGROUND

I. Statutory And Regulatory Requirements

The CWA leaves the task of controlling water pollution largely to the states: it expressly recognizes, preserves, and protects "the primary responsibilities and rights of States to prevent, reduce, and eliminate pollution [and] to plan the development and use . . . of land and water resources." 33 U.S.C. § 1251(b) (2011) (emphasis added). The Act also bars any interpretation of its provisions that would "impair [] or in any manner affect[] any right or jurisdiction of the States with respect to the waters (including boundary waters) of such States[,]" except as otherwise "expressly provided" by the statute. *Id.* § 1370(2).

Of particular relevance here, states are responsible for:

(i) establishing water quality standards for waters within their boundaries, *see* 33 U.S.C. § 1313(c);

(ii) identifying which waters are not meeting those standards (commonly called "impaired" waters) and calculating a total maximum daily pollutant load – a TMDL – for those waters, *see id.* § 1313(d); and

(iii) generating plans to, among other things, implement water quality standards. *See id.* §§ 1313(e), 1288(b), 1329(b).

Authorized federal involvement in these state actions is carefully limited. If EPA disapproves of or objects to state action or inaction, it has authority under the Act to step into a state's shoes and establish water quality standards, identify impaired waters, and/or establish TMDL(s). *See* 33 U.S.C. §§ 1313(c)(3)-(4), 1313(d)(2). Under no circumstances, however, does the Act authorize EPA to assume state responsibility to develop a planning process or TMDL implementation plan.

Before discussing each of the aforementioned state actions in detail, it is important to highlight the CWA's distinction between point and nonpoint sources. A "point source" is "any discernible, confined and discrete conveyance . . . from which pollutants are or may be discharged." *Id.* § 1362(14). Many point source discharges are regulated under the Section 402 permitting program. *See id.* § 1342. States may assume primary responsibility for administration and enforcement of the Section 402 permitting program upon EPA approval. *Id.* §§ 1342(b), 1342(c)(1). But EPA retains authority, in specified circumstances, to object to

state-issued permits. *See* 33 U.S.C. § 1342; 40 C.F.R. §§ 122.4(a) and (d), 122.44(c)-(d).

Nonpoint sources are not defined in the CWA, but generally include any source of water pollution other than a point source discharge. *See Nat'l Wildlife Fed'n v. Gorsuch*, 693 F.2d 156, 165-66 (D.C. Cir. 1982). Nonpoint sources may be regulated by the states. But "nothing in the CWA demands that a state adopt a regulatory system for nonpoint sources." *Defenders of Wildlife v. EPA*, 415 F.3d 1121, 1124 (10th Cir. 2005).

A. Adoption Of Water Quality Standards

The CWA places primary authority with each state to adopt water quality standards for its water bodies. *Id.* § 1313(c)(2)(A). Each state must designate one or more uses for each of its water bodies (such as recreation, drinking water supply, or aquatic life uses) and identify water quality criteria (characteristics) necessary to protect these uses. *Id.* § 1313(c)(2)(A); 40 C.F.R. §§ 131.10 and 131.11. Importantly, EPA regulations provide that when a state designates uses and the appropriate criteria for those uses, it must "take into consideration the water quality standards of downstream waters and shall ensure that its water quality standards" are protective of downstream waters. *See* 40 C.F.R. § 131.10(b) (emphasis added). State-promulgated standards are subject to EPA review and approval to ensure that they meet the CWA's requirements. 33 U.S.C.

§ 1313(c)(2)-(3). Each state must also, at least once every three years, review its water quality standards. *See id.* § 1313(c)(1).

EPA has limited authority under the Act to "step in and promulgate water quality standards itself." *Am. Paper Inst., Inc. v. EPA*, 996 F.2d 346, 349 (D.C. Cir. 1993). EPA may only do so if "(1) it determines that a state's proposed new or revised standard does not measure up to CWA requirements and the state refuses to accept EPA-proposed revisions to the standard or (2) a state does not act to promulgate or update a standard but, in the EPA's view, a new or revised standard is necessary to meet CWA muster." *Id.* (citing 33 U.S.C. § 1313(c)(3)-(4)).

Under this regulatory scheme, EPA-approved state water quality standards in an upstream state must be protective of water quality standards in receiving waters in downstream states. If they are not, the CWA allows EPA to step in and establish whatever new standards are necessary in those upstream states to meet the requirements of the Act. 33 U.S.C. § 1313(c)(4). To illustrate, if the water quality standards applicable to Pennsylvania streams are not sufficiently stringent to allow for the downstream waters in Virginia to attain their standards, EPA may step in and issue new water quality standards for the Pennsylvania segments.

B. Listing Impaired Waters And Establishing TMDLs For Those Waters

CWA section 303(d) requires each state to (i) identify those waters "within its boundaries" for which limitations on point source discharges are not stringent enough to implement the standards "applicable to such waters" and (ii) establish a priority ranking of these waters. 33 U.S.C. § 1313(d)(1)(A). For each listed ("impaired") water, the state must establish a TMDL for pollutants that EPA identifies as "suitable for such calculation." *Id.* § 1313(d)(1)(C). The Act does not define the term "total maximum daily load," but it directs that a TMDL be established "at a level necessary to implement the applicable water quality standards." *Id.*

A TMDL is a calculation – a number – which EPA acknowledges is meant to be an "informational tool." AR0000062 (quoting *Pronsolino v. Nastri*, 291 F.3d 1123, 1129 (9th Cir. 2002)). The calculations used to establish TMDLs must be subject to public review. 40 C.F.R. § 130.7(c)(1)(ii). EPA regulations go beyond the CWA itself to define a TMDL as the sum of (i) the loading from existing or future point sources ("wasteload allocations" or "WLAs") and (ii) the loading from existing or future nonpoint sources of pollution or from natural background sources ("load allocations" or "LAs"). *See* 40 C.F.R. § 130.2.

Like water quality standards, state lists of impaired waters and TMDLs are subject to EPA review and approval. 33 U.S.C. § 1313(d)(2). If EPA disapproves

a TMDL, or if a state fails to establish a required TMDL, EPA has 30 days to establish a TMDL. *Id.*

Because EPA is authorized to establish TMDLs only as a backstop for the state, EPA's authority is derivative of the states' authority under 33 U.S.C. § 1313(d). EPA can only exercise the authority a state would have when establishing a TMDL for its waters. For example, a state cannot assign pollutant allocations to other states during the TMDL process, as EPA recently acknowledged. *See* U.S. EPA Region 10, Review of the Spokane River Dissolved Oxygen (DO) TMDL, at 16 (May 20, 2010), *available at* http://www.ecy.wa.gov/programs/wq/tmdl/spokaneriver/dissolved_oxygen/SpokDOtmdl-EPAapproval052010.pdf. Likewise, EPA cannot assign pollutant allocations to upstream states when establishing a TMDL to implement the water quality standards of a downstream state.

Because EPA regulations require that water quality standards be protective of downstream waters, *see* 40 C.F.R. § 131.10(b), a TMDL established at a level necessary to implement Pennsylvania's water quality standards should also be protective of the downstream segments of the watershed in Maryland. If it is not, EPA can step in and promulgate water quality standards for Pennsylvania waters that will protect waters in Maryland. *See* 33 U.S.C. § 1313(c)(3)-(4). Those protective standards could then be implemented in Pennsylvania through TMDLs

and other programs established by Pennsylvania. This statutorily authorized procedure protects downstream waters while preserving the cooperative federalism required by the CWA. The Final TMDL, in contrast, disregards the standards applicable to Pennsylvania waters and imposes "allocations" for those waters to achieve downstream standards in another state.

C. States Have The Primary Responsibility Over TMDL Implementation – EPA's Role Is Limited To Section 402 Permit Terms

In keeping with congressional policy to preserve and protect the primary responsibilities and rights of each state over its planning for the development and use of its land and water resources, the CWA "puts the responsibility for implementation of TMDLs on the states." *Sierra Club v. Meiburg*, 296 F.3d 1021, 1031 (11th Cir. 2002). Implementation of TMDLs may be achieved through a number of mechanisms under the Act. For example, most states have authority to administer the section 402 permitting program regulating point source discharges. *See* 33 U.S.C. § 1342. Section 402 permits must contain effluent limits that are consistent with applicable WLAs in a TMDL. *See* 40 C.F.R. § 122.44(d)(1)(vii)(B). Reductions in nonpoint source pollution can be attained through state programs aided by the section 319 planning and grant funding program. 33 U.S.C. § 1329. The Act assigns responsibility to the states to prepare waste treatment management plans (33 U.S.C. § 1288), non-point source

management plans (33 U.S.C. § 1329), and a continuing planning process (33 U.S.C. § 1313(e)), "which is essentially a plan for how the state is going to clean up pollution." *Meiburg*, 296 F.3d at 1026.

States have the responsibility for TMDL implementation even in cases where EPA establishes the TMDL itself. *See Meiburg*, 296 F.3d at 1031. Thus, regardless of the calculations and assumptions that underlie EPA's establishment of a TMDL, the state retains flexibility to choose "both if and how it [will] implement the [] TMDL." *Pronsolino*, 291 F.3d at 1140; *see also* 40 C.F.R. § 130.2.

State TMDL implementation plans are not part of the TMDL itself and are not subject to EPA review and approval. *See Meiburg*, 296 F.3d at 1030 n.10 (finding that 33 U.S.C. § 1313(d) and 40 C.F.R. § 130.7 unambiguously do not "indicate[] or even impl[y] that TMDLs include implementation plans"); *see also Bravos v. Green*, 306 F. Supp. 2d 48, 57 (D.D.C. 2004) ("[T]here is no statutory language requiring submission to or approval of a State's implementation plan by the EPA[.]") (emphasis added); *see also* AR0022603 ("EPA is not required to and does not approve TMDL implementation plans."). Moreover, nothing in the Act authorizes establishment or modification of an implementation plan by EPA, even if a state fails to prepare one.

This is not to say that EPA has no role in TMDL implementation. EPA retains oversight authority over section 402 permitting, including permit limits "required to implement any applicable water quality standard." 33 U.S.C. §1311(b)(1)(C). EPA may even block a state-issued section 402 permit that does not comply with the CWA. *See id.* § 1342(d)(2). For example, if an upstream state, *e.g.*, New York, proposes to issue a permit containing limits that would cause a violation of the applicable water quality standards of a downstream state(s), *e.g.*, Virginia or Maryland, EPA may object to the issuance of that permit. *See Arkansas v. Oklahoma*, 503 U.S. 91, 102-03 (1992). In addition, by EPA rule, TMDLs are incorporated into section 402 permits for point source discharges. *See* 40 C.F.R. § 122.44(d)(1)(vii)(B). Moreover, although states are responsible for managing pollution from nonpoint sources, EPA may influence such management through grant funding. *See, e.g.*, *Pronsolino*, 291 F.3d at 1140; *Meiburg*, 296 F.3d at 1026.

Last, where waters within one state are not attaining their water quality standards in part due to nonpoint sources of pollution in other states, EPA has the ability to convene an interstate management conference "to develop an agreement among such States to reduce the level of pollution in such [waters] resulting from nonpoint sources and to improve the water quality of such [waters]." 33 U.S.C. § 1329(g)(1).

II. The Challenged Regulatory Action

EPA's Final TMDL is the "largest and most complex thus far" of the 40,000 TMDLs completed to date across the United States. *See* AR0000003. The Final TMDL goes beyond establishing the total amounts of nitrogen, phosphorus, and sediment that can be discharged into each of the 92 tidal segments of the Chesapeake Bay without violating those waters' applicable water quality standards: it also imposes detailed pollutant allocations to source categories and even to specific facilities throughout the 64,000-square mile Bay watershed. When assigning pollutant allocations, EPA reached beyond the four tidal jurisdictions whose water quality standards the Final TMDL is designed to implement, and it allocated maximum daily loads to sources and waters far upstream in three headwater states.

A. EPA's Final TMDL Covers The Entire Chesapeake Bay Watershed While Ignoring Upstream Water Quality Standards

The Final TMDL sets for the entire Chesapeake Bay an aggregate limit of 185.9 million pounds of nitrogen, 12.5 million pounds of phosphorus, and 6.45 billion pounds of sediment per year. *See* AR0000001. These numbers represent EPA's determination of the total loads compatible with water quality standards applicable to the 92 tidal segments of the Chesapeake Bay.

As explained by EPA, "[t]he [Final] TMDL is actually a combination of 92 smaller TMDLs for individual Chesapeake Bay tidal segments and includes

pollution limits that are sufficient to meet state water quality standards" for those 92 tidal segments. AR0000003. The 92 tidal segments are located in Virginia, Maryland, Delaware, and the District of Columbia. *See* AR0000075; AR0000924. The applicable water quality standards for the 92 tidal segments were established by each of those jurisdictions and approved by EPA. *See* AR0000924.

Interestingly, for some of the 92 tidal segments addressed in the Final TMDL, the state in which the segment lies already has an EPA-approved TMDL. *See* AR0000077-80. For those segments, EPA did not wait to determine whether the state has implemented the existing TMDL such that the applicable water quality standards are now being attained. Instead, EPA declared that "[f]or watersheds and waterbodies where both local TMDLs and Chesapeake Bay TMDLs have already been developed or established for nitrogen, phosphorus, and sediment, the more stringent of the TMDLs will apply." AR0000073.

For some of the other 92 "impaired" tidal segments, EPA issued a TMDL despite acknowledging that there is insufficient information upon which to determine whether water quality standards actually are being achieved in those segments. *See* AR0000077-80.

Although the Final TMDL expressly does not take into account water quality standards in the upstream states of New York, Pennsylvania, and West Virginia – because EPA identified the applicable standards as "those . . . established by

Virginia, DC, Maryland, and Delaware (and approved by EPA) for the 92 impaired tidal Bay segments," AR0000924 – the Final TMDL nevertheless assigns pollutant allocations to sources and water bodies in the three upstream states. *See* AR0000295-328. EPA established those upstream allocations even though many of the waters in those states are currently meeting the water quality standards established by those states,[2] and even though it made no determination under 33 U.S.C. § 1313(c) that those water quality standards are not stringent enough to protect the Chesapeake Bay tidal waters downstream, and has taken no action to modify the water quality standards of those upstream states.

B. Imposition Of Detailed Pollutant Allocations

Although implementation of TMDLs involves difficult policy choices concerning land use and regulation that are left to the states under the CWA, EPA's allocations in the TMDL micro-manage implementation by dictating the distribution of loadings among numerous source categories and even individual sources throughout the watershed. *See* AR0000295-AR0000328, AR0000616-AR0000619. Specifically, EPA established annual and daily WLAs for specific

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[2] *See, e.g.,* AR0031948, 952 (comments filed by the State of New York, noting that none of the streams and rivers in the New York portion of the Chesapeake Bay Watershed are impaired); AR0001034 (EPA's acknowledgement that the Susquehanna River is not on Pennsylvania's impaired waters list for nutrients or sediments).

sectors (regulated agriculture, regulated stormwater, and wastewater) and for 478 individual permitted facilities in each of the seven jurisdictions. *See id.* EPA also established annual and daily LAs for certain nonpoint source sectors ("agriculture, forest, nontidal atmospheric deposition, onsite septic, and urban") within each jurisdiction. *See id.*

EPA's detailed allocations are based on its evaluation and modification of allocations that EPA required the states to propose. *See* AR0000295. EPA locked in those allocations despite recognizing that "there are limitless combinations of loadings." AR0023980. EPA's detailed allocations constrain the states responsible for implementing the Final TMDL. Revisions to EPA's allocations require EPA approval. *See* AR0000333.

Importantly, many of EPA's pollutant allocations affect sources hundreds of miles upstream from the Bay and its tidal waters. And many of the waters that receive discharges or runoff from these sources are achieving their water quality standards.[3] Rather than taking action under 33 U.S.C. § 1313(c) to promulgate new water quality standards for those upstream states, EPA has instead used the Final TMDL, which seeks to implement the water quality standards of only Virginia, DC, Maryland, and Delaware, as a means to assign allocations to source categories and individual sources in the entire 64,000-square mile watershed,

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3 *See supra*, note 2.

including in the three upstream jurisdictions (New York, West Virginia, and Pennsylvania). EPA has dictated the timeline on which states are to achieve those allocations, declaring that "all pollution control measures needed to fully restore the Bay and its tidal rivers [are to be] in place by 2025." AR0000001. EPA also set an "interim goal that 60 percent of the reductions to achieve applicable [water quality standards] occur by no later than 2017." AR0000251.

C. Federalization Of State Implementation Plans

The Final TMDL was the result of an extra-statutory process through which EPA imposed an "accountability framework" on the states and individual sources within the Chesapeake Bay watershed. EPA required states to submit Watershed Implementation Plans ("WIPs") before the Draft TMDL[4] was even proposed, reversing the sequence for TMDL development and implementation planning envisioned by the CWA and EPA's regulations. According to EPA, "the WIPs are the roadmap for how the jurisdictions . . . will achieve and maintain the [Final] TMDL[.]" AR0000255. EPA used the WIPs to develop the "assumptions" that were incorporated into the models used to establish the Final TMDL and into the TMDL itself. *See* AR0000262-63; AR0000637-38 (best management practice implementation rate).

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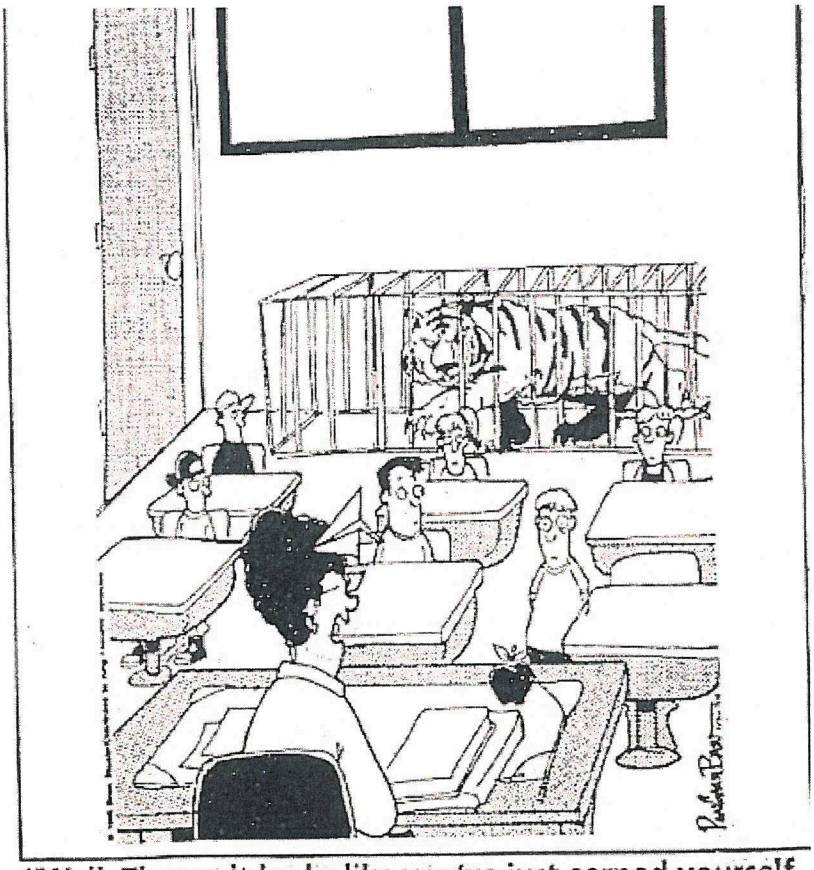
[4] The sections and appendices of the Draft TMDL are available at AR0023773 through AR0024418.

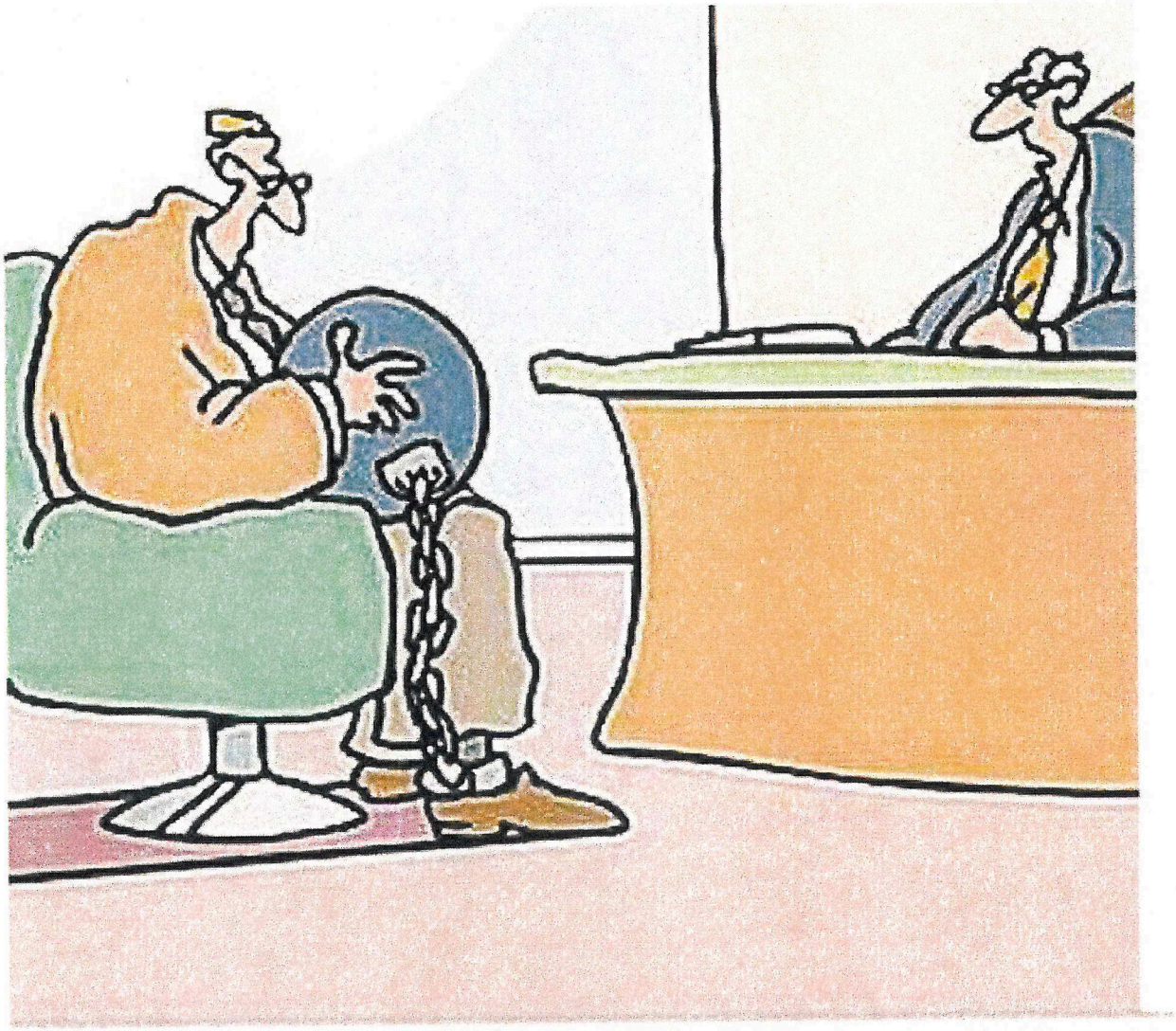
Despite EPA's portrayal of the process of revising state WIPs as "cooperative," materials contained in EPA presentations demonstrate that the process was anything but. The following slides from two separate EPA presentations show coercion, not cooperation:

It's a new day for restoring local streams, rivers and the Chesapeake Bay



"Well, Timmy, it looks like you've just earned yourself 10 minutes in the cage with Mr. Whiskers."

AR0032986.



"You dropped the ball. You must have known there would be consequences."

AR0027660. Emails from EPA further illustrate how EPA exerted pressure over states. *See, e.g.*, Email from Jeffrey Corbin, EPA to Russ Perkinson, Va. Dept. of Conservation and Recreation, and Alan Pollock, Va. Dept. of Envtl. Quality, (Mar. 22, 2010) (attached as Ex. 1) (inquiring whether Virginia had "a better understanding of what needs to be in the WIPs and how EPA will judge the

adequacy of the WIPs"); Email from Kelly Shenk, EPA, to Russ Perkinson, *et al.* (Oct. 28, 2010) (attached as Ex. 2) ("It's important to stress that in the absence of significant revisions . . . EPA will be forced to retain [EPA-imposed] allocations in the Final TMDL.").

EPA rejected the WIPs initially submitted by all seven jurisdictions, concluding that pollution controls were insufficient and that none of the draft WIPs provided "reasonable assurance" that the identified pollution controls would be implemented to achieve nutrient and sediment reduction targets. *See* AR0024035; AR0024039-41. EPA imposed "backstop measures" and accompanying threats of retaliatory actions in the Draft TMDL. *See* AR0024050-52; AR0024032-33; *see also* Ex. 2 (noting that "reasonable assurance [is] need[ed] to remove the federal backstops"). EPA threatened to regulate currently unregulated sources, such as smaller livestock and poultry operations. *See* AR0024032. EPA also threatened to object to state-issued discharge permits to individual sources, *see id.*, even though disagreement with a state's WIP is not one of the grounds for objections in EPA's regulations. *See* 40 C.F.R. § 123.44. Other EPA threats included: (a) promulgating federal numeric nutrient standards, (b) requiring unreasonable additional point source reductions, (c) engaging in increased federal enforcement activity, and (d) withholding grant money to states for reasons not intended by Congress, all because it did not agree with a state's WIP. *See* AR0024032-33.

Under this pressure, each of the seven jurisdictions revised their implementation plans in an effort to avoid the threatened "backstop" measures in the Draft TMDL. *See* AR0000266. EPA nonetheless left three backstop measures in place. *See* AR0000283, AR0000287. Specifically, because EPA was not satisfied with the load reductions proposed in New York's implementation plan, EPA stepped in and reduced the WLA for wastewater facilities. *See* AR0000284-85. EPA thus overrode the State's decision as to how much of the total load should be allocated to wastewater facilities with section 402 permits. As a result, future permit limits must be made more stringent in order to meet the new EPA-imposed number. *See* AR0000265-66.

Similarly, EPA overrode the decisions of West Virginia and Pennsylvania as to how to allocate loads to animal feeding operations (WV) and stormwater sources (PA) that do not require section 402 permits. Rather than keeping the allocated loads for those sources in the LA category (*i.e.*, the category for nonpoint sources and natural background), EPA shifted 75% of the allocations for West Virginia animal feeding operations to the point source category, and it shifted 50% of the Pennsylvania stormwater sources to that category. *See* AR0000277. EPA then locked in the revised allocations when it issued the Final TMDL.

D. Use Of Flawed Model Networks

The Final TMDL sets ceilings on pollutant loadings for the Bay's 92 tidal segments and is intended to achieve compliance with the water quality standards adopted for those segments by Maryland, Delaware, Virginia, and the District of Columbia for dissolved oxygen, water clarity, and chlorophyll-*a* (used as a surrogate for algae). However, the Final TMDL also includes detailed allocations and implementation instructions. To incorporate these *ultra vires* elements into the Final TMDL, EPA analyzed current pollutant loadings from the myriad sources in the 64,000 square mile watershed. Due to a relatively limited monitoring program, EPA does not know the sources of the pollutants that enter the Bay.[5] Thus, to develop its Final TMDL, EPA had to estimate the loading of pollutants from various sources and their impact on water quality with computer modeling techniques that attempt to simulate real-world conditions.

EPA developed a complicated network of interrelated models to try to accomplish that objective. In fact, the Final TMDL is based almost entirely on computer modeling and simulations, as the following graphic shows.

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[5] EPA monitors pollutant loadings in the Bay itself from a network of approximately 150 stations that are currently sampled 14 times a year, AR0000154-55, and from only 85 stations outside the tidal segments in the 64,000 square mile watershed. AR0000163.

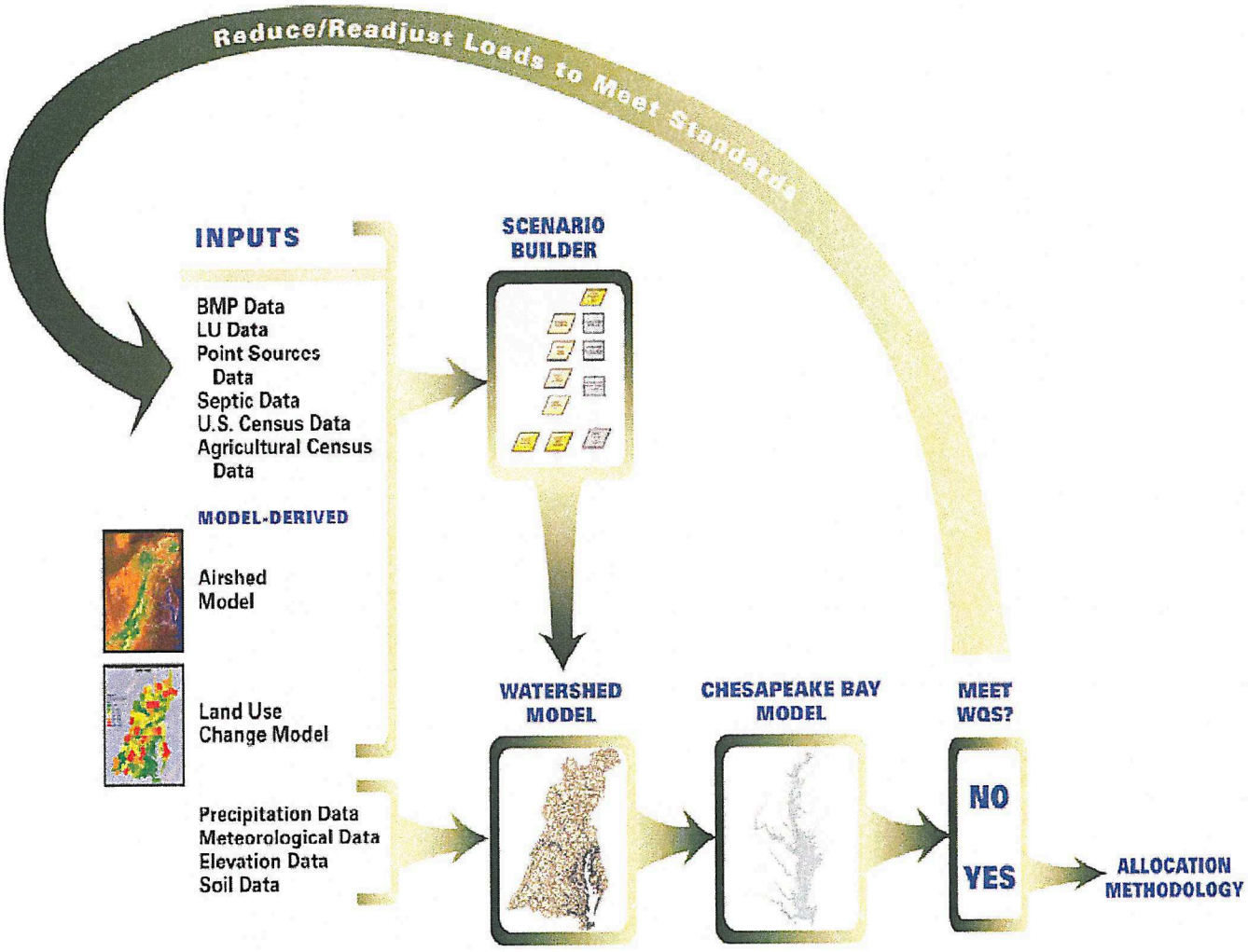

Figure 5-8. Chesapeake Bay TMDL modeling framework.

AR0000170. EPA's simulations are so interdependent that a flaw in one model can undermine the accuracy and validity of the entire network, and as will be explained in Argument Part II.B, *infra*, the models upon which the Final TMDL is based are plagued with numerous errors (known to EPA during the development of the Final TMDL) and compounding uncertainties.

E. Inadequate Public Review And Comment

Despite its complexity, EPA allowed the public only 45 days to review the 370-page Draft TMDL document itself, 1,672 pages of appendices, and poorly organized and incomplete technical support material that is referenced throughout the Draft TMDL. *See* 75 Fed. Reg. 57,776 (Sept. 22, 2010). Although Plaintiffs, along with numerous other organizations and members of the public requested EPA to provide additional time to comment, EPA denied all requests.

Worse than its failure to provide sufficient time for review and comment on the Draft TMDL, EPA withheld much of the information needed to provide meaningful comment during that period. Despite the critical importance of the models to the development of the Draft and Final TMDL, EPA provided the public with outdated and incomplete documentation for its models, as explained in Argument Part II.B, *infra*. This severely handicapped the public's ability to determine whether the model inputs and resulting outputs were an accurate representation of water quality impacts in the Bay watershed.

STANDARD OF REVIEW

The standard of review of the challenged EPA action in this case is governed by the APA, which provides that this Court "shall hold unlawful and set aside agency action, findings, and conclusions found to be . . . arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law; . . . in excess of

statutory jurisdiction, authority, or limitations, or short of statutory right; [or] [] without observance of procedure required by law." *Natural Res. Def. Council, Inc. v. EPA* ("*NRDC*"), 790 F.2d 289, 296 (3d Cir. 1986).

In determining whether EPA exceeded its statutory authority, the court should apply the two-step test from *Chevron U.S.A., Inc. v. Natural Res. Def. Council, Inc.*, 467 U.S. 837, (1984). *See NRDC*, 790 F.2d at 297. Under *Chevron*, if a statute reflects that Congress directly addressed the exact question at issue, the Court and the agencies "'must give effect to the unambiguously expressed intent of Congress.'" *Id.* (quoting *Chevron*, 467 U.S. at 842-43). If the Court determines that "the statute is silent or ambiguous with respect to the specific issue, the question for the court is whether the agency's answer is based on a permissible construction of the statute." *Chevron*, 467 U.S. at 843. Notably, "[t]he judiciary is the final authority on issues of statutory construction and must reject administrative constructions which are contrary to clear congressional intent." *NRDC*, 790 F.2d at 297. Moreover, even if EPA's interpretation of a statute survives analysis under *Chevron*, "substantive aspects of [the] agency action" can nevertheless be invalidated as arbitrary and capricious. *Id.* at 297-98.

ARGUMENT

I. EPA Unlawfully Exceeded Its CWA Authority By Establishing A Mandatory Watershed-Wide Implementation Plan

The Final TMDL is far more than the "informational tool" authorized by the CWA. *See* AR0000062. The Final TMDL is a watershed-wide federal implementation plan that EPA unlawfully used to override the CWA's scheme of cooperative federalism. The Act does not authorize EPA to require or prescribe State implementation under the guise of setting TMDLs. EPA exceeded its statutory authority and usurped state policy jurisdiction when it locked in and – in some cases, overrode – state implementation decisions such as how to allocate pollutant loading among sources.

Congress made it clear that nothing in the Act shall "be construed as impairing or in any manner affecting any right or jurisdiction of the States with respect to [their] waters" unless "expressly provided" in the Act. *See* 33 U.S.C. §§ 1251(b), 1370. EPA nevertheless asserts that the Act provides it with "ample authority to establish the [Final] TMDL," relying principally on sections 303(d) and 117(g) of the Act (33 U.S.C. §§ 1313(d), 1267(g)), as well as a recent Executive Order, consent decrees, a memorandum of understanding, and a settlement agreement. *See* AR00000921-22. EPA's position is untenable. As we explain below, neither section 303(d), nor section 117(g), nor any Executive Order,

consent decree, memorandum of understanding, nor settlement agreement confers upon EPA the authority to impose implementation decisions on a state.

A. CWA Section 303 Does Not Authorize EPA To Dictate Implementation Requirements

As outlined above, the CWA envisions a step-by-step approach to restoring impaired waters: (i) establishment of water quality standards; (ii) identification of waters that do not meet those standards, (iii) establishment of TMDLs for those waters at levels necessary to implement the standards; and (iv) state planning to achieve water quality standards using TMDLs and other tools. States bear the primary responsibility for the first three actions, but EPA action is authorized in the event of state inaction or insufficient action. *See* 33 U.S.C. § 1313(c), (d).

In contrast, States have exclusive authority over the last category – implementation. The Act does not give EPA any backstop authority to take over state implementation plans, even in instances where EPA establishes a TMDL for a state. *See Meiburg*, 296 F.3d at 1031 & n.10 (finding that the Act and its implementing regulations unambiguously do not "indicate[] or even impl[y] that TMDLs include implementation plans" and declaring that "[t]he responsibility for implementing the TMDLs once they were established [by EPA] was left to Georgia, as it is in the Clean Water Act itself.") (emphasis added). TMDL implementation involves difficult policy decisions that are historically left to state and local governments. *See Pronsolino*, 291 F.3d at 1140 (finding no federalism

concerns because implementation of an EPA-established TMDL was properly left to the State of California and emphasizing that the state remained free to "cho[o]se both if and how it would implement the [] TMDL") (emphasis added); *see also Hess v. Port Auth. Trans-Hudson Corp.*, 513 U.S. 30, 44 (1994) ("regulation of land use [is] a function traditionally performed by local governments"); *FERC v. Mississippi*, 456 U.S. 742, 768 n.30 (1982) (describing land use regulation as "perhaps the quintessential state activity"). Under the Act's scheme of cooperative federalism, EPA cannot lawfully dictate a state's implementation decisions.

Unlike the CWA provisions for setting water quality standards and identifying impaired waters (33 U.S.C. § 1313(c), (d)), the provision that concerns TMDL implementation – 33 U.S.C. § 1313(e) – does not authorize EPA to take over implementation planning in the event of state inaction or insufficient action. In fact, the provision allowing EPA to establish (but not implement) TMDLs under certain circumstances provides that, upon establishment by EPA, "the State shall incorporate [such TMDLs] into its current plan under [33 U.S.C. § 1313(e)]." *Id.* § 1313(d)(2). That Congress included language clearly authorizing EPA to act in the place of states in subsections (c) and (d) of 33 U.S.C. § 1313 while "omit[ing] equivalent language in [subsection (e)] cannot be deemed unintentional or immaterial." *Railway Labor Execs. Ass'n v. Nat'l Mediation Bd.*, 29 F.3d 655, 666 (D.C. Cir. 1994). It is well established that "where Congress includes particular

language in one section of a statute but omits it in another section of the same Act, it is generally presumed that Congress acts intentionally and purposely in the disparate inclusion or exclusion." *Riverkeeper, Inc. v. EPA*, 475 F.3d 83, 102 n.36 (2d Cir. 2007).

EPA's own guidance acknowledges that "Section 303(d) does not establish any new implementation authorities beyond those that exist elsewhere in State, local, Tribal, or Federal law." AR0022978. Accordingly, EPA's role in TMDL implementation is limited to exercising its authority over section 402 permitting for point source discharges. *See* 33 U.S.C. §§ 1311(b)(1)(C), 1342(d)(2). EPA may also influence state implementation by providing grant money for state nonpoint source pollution management programs. *See* 33 U.S.C. §§ 1288(f), 1329(h); *see also Bravos v. Green*, 306 F. Supp. 2d 48, 52 (D.D.C. 2004) ("Unlike [section 402] permits, TMDLs are not federally enforceable . . . . Rather, to encourage compliance, the EPA may use federal grants to encourage the States to address nonpoint source pollution and accomplish the loading reductions established in a TMDL."). Under no circumstances, however, can EPA establish or otherwise take over TMDL implementation plans for states.

That EPA's role is so limited is crucial in the TMDL context because TMDL implementation raises questions about the control of nonpoint source pollution, which Congress intended for state and local governments to resolve. *See* S. Rep.

No. 95-370, at 8-9 (1977), *reprinted in* 1977 U.S.C.C.A.N. 4326, 4334-35 ("In 1972, Congress made a clear and precise distinction between point sources, which would be subject to direct Federal regulation, and nonpoint sources, control of which was specifically reserved to State and local governments . . . judging that these matters were appropriately left to the level of government closest to the sources of the problem.") (emphasis added); *see also id.* at 4336 ("It may be that the States will be reluctant to develop [adequate] control measures . . . and it may be that some time in the future a Federal presence can be justified and afforded. But for the moment, it is both necessary and appropriate to make a distinction as to the kinds of activities that are to be regulated by the Federal Government and the kinds of activities which are to be subject to some measure of local control.").

In sum, Congress quite purposefully did not authorize EPA to prescribe TMDL implementation, even when EPA itself establishes a TMDL. Given the Act's careful balance of cooperative federalism, states remain free to determine both if and how to implement TMDLs, including those established by EPA such as the Final TMDL at issue in this case.

B. Section 117(g) Does Not Authorize EPA To Dictate Implementation Requirements

Contrary to EPA's assertions, section 117(g) of the CWA does not authorize the challenged action in this case. *See* AR0000063-64. That section provides that EPA "shall ensure that management plans are developed and implementation is

begun by signatories to the Chesapeake Bay Agreement to achieve and maintain [] the nutrient goals of the Chesapeake Bay Agreement[.]" 33 U.S.C. § 1267(g).

In fact, the legislative history demonstrates that EPA cannot rely on section 117(g) to justify the Final TMDL. Nothing in section 117(g) "provides EPA with any additional regulatory authorities." H.R. Rep. No. 106-550, at 3 (2000). Congress expected that EPA would meet the goals of that section – *i.e.*, "to ensure that management plans are developed and that implementation is begun" – through the "award of implementation grants," not through unprecedented actions like mandatory federal allocations throughout the watershed. *Id.* Thus, section 117(g) is not an independent source of federal authority for the Final TMDL, and it did nothing to alter the CWA's balance of cooperative federalism. *See supra* at Background Part I.C.

In short, CWA section 117(g) is not the "express" authorization that is necessary for EPA to impinge on the powers that Congress specifically reserved to the States. *See* 33 U.S.C. § 1370. Given the legislative history discussed above, EPA cannot plausibly invoke section 117(g) as the basis for injecting itself into matters of TMDL implementation.

C. Neither Executive Order 13508, Nor Any Consent Decree, Memorandum Of Understanding, Nor Settlement Agreement Confers Authority On EPA To Dictate Implementation Requirements

EPA's attempts to rely on sources of authority outside of the CWA fall flat. EPA cites to the following as support for the Final TMDL: (i) "Executive Order 13508–*Chesapeake Bay Protection and Restoration*;" (ii) consent decrees requiring EPA to address certain impaired waters in Virginia, DC, and Delaware; (iii) a memorandum of agreement with the State of Maryland that established a schedule for addressing impaired waters; and (iv) a 2010 settlement agreement that resolved a suit against EPA alleging a failure to carry out duties under CWA section 117(g). *See* AR0000064-67; AR0000922-23. But clearly none of those sources can expand the authority granted to EPA by Congress in the CWA. *See, e.g.*, *Meiburg*, 296 F.3d at 1034 ("[C]onsent decree[s] do[] not supplant the Act itself."); *Levy v. Urbach*, 651 F.2d 1278, 1282 (9th Cir. 1981) ("Consistency with the authorizing statute is as much a predicate for validity for an Executive Order as for an agency regulation."). Simply put, the CWA does not authorize EPA to assume state responsibility for TMDL implementation planning, and no amount of executive branch action can change how Congress divided authority between EPA and the States.

D. EPA's Regulations Do Not Authorize EPA To Impose TMDL Implementation Requirements On The States

EPA has stated that because its regulations, 40 C.F.R. § 130.2(i), define a TMDL as the sum of WLAs and LAs, "EPA was required by the CWA and its regulations to establish the TMDL's allocations (including allocations for headwater States like New York)[.]" AR0000924 (emphasis added). Contrary to EPA's suggestion, nothing in the statute requires that an entity establishing a TMDL also impose allocations among all sources. The statute only requires the calculation of a number that represents the total amount of a given pollutant that a waterbody can receive without violating its water quality standards. *See* 33 U.S.C. § 1313(d)(1)(C).[6]

Similarly, nothing in EPA's regulations authorizes such action. EPA's regulations must be interpreted in a manner that is consistent with the CWA, and EPA cannot reallocate the division of authority that Congress set forth in the statute. *See United States v. Larionoff*, 431 U.S. 864, 873 (1977) ("[R]egulations, in order to be valid, must be consistent with the statute under which they are promulgated."). An interpretation of EPA's regulations that provides that any WLAs and LAs are purely "informational" and remain subject to revision by the

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[6] If Congress had intended TMDLs to include detailed allocations among all sources, one would expect it to have allowed more than 30 days for TMDL establishment by EPA in the event state efforts fall short. *See* 33 U.S.C. § 1313(d)(2).

states during implementation would be consistent with Congress's reservation of authority to the states. *See* 33 U.S.C. § 1251(b). Such an interpretation also is consistent with the plain language of the regulation, which defines a TMDL as the "sum," and not as the allocations. By contrast, if 40 C.F.R. § 130.2(i) is interpreted to justify EPA establishment of allocations that must be implemented, as EPA has purported to do here on its own timeline, that regulation is *ultra vires*. At bottom, EPA has no authority to impose allocations as binding elements of a TMDL subject only to revision by EPA. Thus, EPA's regulations cannot be interpreted to authorize the allocation action taken by EPA in the Final TMDL. *See Pronsolino*, 291 F.3d at 1140.

E. The Detailed Allocations And EPA-Imposed Backstops Unlawfully Impose Implementation Requirements On The States

EPA simply refused to abide by the above-detailed limitations on its role in TMDL implementation: the Final TMDL assigns detailed allocations to hundreds of source categories and individual sources subject to revision only by EPA, locking in and overriding state decisions regarding the implementation of best management practices. EPA used the Final TMDL to override the State's discretion to make the policy choices Congress had reserved for them and them alone. EPA also followed through with its threats and imposed "backstop" measures where it did not agree with a state's WIP. Such backstop measures involved shifting pollutant loads from the nonpoint source category (LAs) to the

point source category (WLAs), as well as changing obligations regarding the implementation of best management practices, thereby overriding state policy choices on how best to implement the TMDL. The CWA does not authorize such EPA intrusion into states' implementation authority.

1. The Detailed Allocations Intrude Upon State Implementation Authority

According to EPA, the detailed allocations in the Final TMDL resulted from EPA's evaluation of the various state WIPs. *See* AR0000295. Specifically, EPA evaluated each jurisdiction's proposed allocations and implementation strategies and incorporated them into the Final TMDL, either as proposed or with "backstop" changes. *See* AR0000262-63. Because the Final TMDL sets forth a binding allocation scenario, the affected jurisdictions are no longer free to choose "both if and how [to] implement the [Final TMDL]." *Pronsolino*, 291 F.3d at 1140 (emphasis added). The Final TMDL has disrupted the balance of cooperative federalism in the CWA by restricting the states' ability to control land use.

When EPA incorporated the WLAs and LAs from state WIPs into the Final TMDL, it locked those implementation decisions into place and established a federal timeline for implementation. *See* AR0000256 (specific controls and practices are to be implemented by 2017 and 2025); *see also* AR0000001 (same). Moreover, EPA appointed itself as the only entity holding the key: future revisions to those allocations must go through EPA. *See* AR0000333 ("Based on possible

updates to the model and on jurisdictions WIPs, EPA will consider revising the [Final] TMDL, if appropriate, in 2012 and 2017.") (emphasis added); *see also* AR0000256 (same). By locking the WLAs and LAs into place, EPA crossed the line from TMDL calculation into TMDL implementation.

2. EPA Unlawfully Imposed "Backstop" Adjustments To State Implementation Plans

In addition to incorporating WLAs and LAs from the WIPs into the Final TMDL, EPA unilaterally changed the allocations in three state WIPs (New York, Pennsylvania, and West Virginia). *See* AR0000277; AR0000271-73. Specifically, EPA applied the following changes:

- Making New York's WLA for wastewater sources more stringent based on its view that "New York's WIP did not reduce loads enough," which means that future point source permits must include more stringent limits in order to meet EPA's reduced WLA, *see* AR0000284-85; AR0000265;
- Shifting 50% of the pollutant loads that Pennsylvania allocated to stormwater sources that are not subject to section 402 permitting from the LA category to the WLA category, *see* AR0000287; and
- Shifting 75% of the pollutant loads that West Virginia allocated to animal feeding operations that are not subject to section 402 permitting from the LA category to the WLA category and

> "assum[ing] full implementation of barnyard runoff control, waste management, and mortality composting practices required under a [point source] permit on these [operations]," *see* AR0000292; AR0000637-38.

EPA's so-called "backstops" violate the CWA because they override state decisions on TMDL implementation. Nothing in the Act or EPA regulations allows EPA to change states' TMDL implementation plans.[7] *See supra* at Background Part I.C. How best to allocate the total load amongst source categories or whether to regulate sources that are not subject to federal permitting are decisions that Congress reserved for the states. Such decisions involve policy choices regarding land use that are "traditionally [made] by local governments." *Hess*, 513 U.S. at 44.[8]

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[7] In fact, EPA has taken the position that it does not even approve implementation plans. *See* AR0022603.

[8] EPA's arguments that the WIPs are not part of the Final TMDL (AR0000049) and that it did not "direct their specific terms" (AR0000926) are unconvincing. Correspondence from EPA confirms that EPA dictated the contents of WIPs. *See, e.g.*, Exs. 1, 2. EPA's backstops changed the allocations of three states and the plans for the implementation of best management practices of one state, and the Final TMDL incorporated those changes. *See* AR0000263-64; AR0000260-61.

F. EPA Lacks The Authority Under The CWA To Require TMDL Implementation Under The Banner Of "Reasonable Assurance"

EPA's TMDL purports to require "'reasonable assurance' [by the affected States] that the point and nonpoint source loadings [*i.e.*, allocations] will be achieved and applicable water quality standards will be attained." *See* AR0000008. EPA attempted to revise its TMDL regulations in July 2000 to incorporate such a reasonable assurance requirement, *see* 65 Fed. Reg. 43586 (July 13, 2000), but Congress blocked implementation of the revised regulations. *See* 68 Fed. Reg. 13608, 13609 (Mar. 19, 2003). Upon reconsideration, EPA withdrew the revised regulations in March of 2003. *See id.*

EPA's "reasonable assurance" requirement is simply an attempt by EPA to unlawfully insert itself into TMDL implementation. Neither the statute nor its implementing regulations authorizes EPA to require that a TMDL or a particular allocation scheme will be implemented. The statute provides only that a TMDL is to be established at a level necessary to implement water quality standards and must be incorporated into the state's planning process under section 303(e). *See* 33 U.S.C. § 1313(d)(2). Questions of whether and how that level is to be met are matters of implementation left to the states. *See, e.g.*, *Pronsolino*, 291 F.3d at 1140.

It is widely recognized that "the CWA does not give EPA authority to regulate sources of nonpoint pollution" and that "it is the responsibility of the

states, through the exercise of state law, to implement TMDLs that establish load allocations for nonpoint sources." Br. of Appellant-Petit. (EPA), *Sierra Club. v. Meiburg*, No. 01-14587, 2001 U.S. 11th Cir. Briefs LEXIS 87, at *9 (filed Sept. 11, 2001); *accord Defenders of Wildlife*, 415 F.3d at 1124. Given its lack of authority over nonpoint sources, EPA cannot lawfully require states to provide "reasonable assurance" that LAs will be achieved.[9]

In short, the "reasonable assurance" requirement in the Final TMDL lacks any basis in the CWA. This Court should reject EPA's attempts to bootstrap authority over TMDL implementation into the process of establishing or approving a TMDL. All portions of the Final TMDL that arose out of EPA's unauthorized "reasonable assurance" requirement, particularly the detailed allocation scenario and the "backstops" that change both allocations and use of best management practices, are *ultra vires* and should be vacated.

G. Upstream Allocations In A TMDL Are Contrary To The CWA

Although EPA established the Final TMDL "to implement the tidal Bay [water quality] standards" – *i.e.*, those standards adopted by Maryland, Virginia, D.C., and Delaware, *see* AR0000925 – the Final TMDL goes further and sets forth allocations for waterbodies in three headwater jurisdictions, New York,

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[9] EPA's own "Guidelines for Reviewing TMDLs under Existing Regulations issued in 1992," issued on May 20, 2002, further discredits its position on reasonable assurance. *See* AR0022599-605.

Pennsylvania, and West Virginia, and, in some cases, for individual sources in those jurisdictions.[10] *See* AR0000296-328. That EPA would rather shortcut statutory procedures by establishing "allocations" for waters in upstream states (a mechanism that is not provided for in the Act) instead of establishing new water quality standards that comply with 40 C.F.R. § 131.10(b) for those upstream states (a mechanism that clearly is provided for in the Act) does not justify ignoring the statute. As explained below, EPA's upstream allocations violate the CWA, in part by circumventing the CWA's assignment of pollutant allocation authority to the states.

1. EPA Cannot Expand Its TMDL Authority Beyond The Authority Of The Downstream States For Whom EPA Is Acting

When establishing a TMDL for a state, EPA's authority is derivative of the state's under section 1313(d). *See* 33 U.S.C. § 1313(d)(2). EPA does not acquire additional authority merely because an interstate waterbody is involved. Thus,

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[10] Based on EPA's own definition of a TMDL (*i.e.*, the sum of WLAs and LAs, *see* 40 C.F.R. § 130.2(i)), it appears as though the Final TMDL is actually a collection of hundreds of TMDLs, including many established for waterbodies in the three headwater jurisdictions. EPA admitted that the Final TMDL "implement[s] the tidal Bay standards, not the headwater States' own 'upstream' standards." AR0000925. In the event this Court determines that the "allocations" established by EPA for various headwaters at Section 9 of the Final TMDL are, in actuality, TMDLs, it should have little difficulty concluding that such TMDLs violate the CWA because they were not established at "level[s] necessary to implement the applicable water quality standards" in the headwater jurisdictions. 33 U.S.C. § 1313(d)(1)(C).

because states have no authority to allocate pollutant loadings for waterbodies and sources outside of their boundaries when establishing TMDLs under section 1313(d), EPA also lacks that authority. *Cf.* U.S. EPA Region 10, Review of the Spokane River Dissolved Oxygen (DO) TMDL 16 (May 20, 2010), *available at* http://www.ecy.wa.gov/programs/wq/tmdl/spokaneriver/dissolved_oxygen/SpokDOtmdl-EPAapproval052010.pdf ("EPA interprets the CWA and its regulations to preclude [a] State from establishing, within [a] TMDL, load and wasteload allocations for pollutant sources located outside the boundaries of that State).

In fact, the Chesapeake Bay TMDL is the first instance where EPA has alleged that a TMDL can assign allocations to upstream sources in other states. As demonstrated by the Spokane River TMDL referenced above, EPA has previously taken the position that contributions from upstream sources were part of the background loading.[11]

Thus, EPA cannot lawfully assign allocations to sources or source categories in upstream states within a TMDL established to achieve the water quality standards of downstream states. EPA provides no plausible argument as to why the Act and its implementing regulations allow it to do so in the Final TMDL.

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[11] *See also* AR0031954-56 (comments filed by the State of New York, noting that the EPA-approved Long Island Sound nutrient TMDL specifies that New York and Connecticut lack authority to require reductions from out of state sources and that in approving that TMDL EPA took the position that assumptions in the TMDL regarding reductions from upstream sources were not binding allocations).

Instead, EPA posits that because it has authority to establish a TMDL for the four tidal jurisdictions, "it follows logically that . . . EPA also must have authority to establish allocations within the entire Bay watershed at levels necessary to implement the water quality standards applicable to those [tidal] segments." AR0000923 (emphasis added). Without such authority, EPA maintains that: (i) the four tidal jurisdictions must shoulder all of the burden to meet the Bay's water quality standards; or (ii) EPA is left to merely assume reductions from New York, Pennsylvania, and West Virginia. *See id.* EPA pleads that in order to meet "the CWA's goals and objectives," EPA must be allowed to use a TMDL to limit pollutant loadings from sources in upstream states. *Id.*

In fact, EPA has a lawful alternative: if necessary, EPA can revise the upstream state's water quality standards to be consistent with downstream standards, a procedure that would preserve the primary role of the upstream states in protecting water quality and provide the basis for protective upstream TMDLs. Moreover, contrary to EPA's apparent belief, the CWA does not grant EPA omnibus authority "to meet the CWA's goals and objectives." Instead, EPA authorities are carefully prescribed in ninety-four separate statutory sections. The argument that a statute's general goals somehow expand the express authority granted by a statute is routinely dismissed by courts. As the Supreme Court has observed:

> [N]o legislation pursues its purposes at all costs. Deciding what competing values will or will not be sacrificed to the achievement of a particular objective is the very essence of legislative choice – and it frustrates rather than effectuates legislative intent simplistically to assume that whatever furthers the statute's primary objective must be the law.

Rodriguez v. United States, 480 U.S. 522, 525-26 (1987) (emphasis added).

There are obvious flaws in EPA's position. Under EPA's new interpretation of the CWA, as expressed in the Final TMDL and EPA's response to comments, a state could establish a TMDL that purports to bind facilities in upstream states. For example, the State of Louisiana could establish a TMDL with allocations to sources and streams in each of the 31 states in the Mississippi River Basin. Nothing in the text of the Act supports the conclusion that Congress allocated so much power to one state over its sister states.

Likewise, EPA cannot lawfully allocate pollutant loadings to New York, Pennsylvania, and West Virginia in the Final TMDL. If EPA wants to assign responsibility to sources in those states, it is within EPA's discretionary authority under the CWA to object to section 402 permits issued by those states if such permits are inconsistent with the water quality standards of affected downstream states. *See Arkansas*, 503 U.S. at 105-07. Or, if EPA believes that the water quality standards adopted by those upstream jurisdictions do not "provide for the attainment and maintenance of the water quality standards of downstream waters," *see* 40 C.F.R. § 131.10(b), it can establish new standards for each jurisdiction. *See*

33 U.S.C. § 1313(c)(4). EPA cannot, however, use a TMDL to assign allocations to sources in jurisdictions beyond those whose water quality standards are the target of the TMDL. The Act simply does not authorize EPA's choice here.

Moreover, the Agency's reliance on the Supreme Court's decision in *Arkansas v. Oklahoma* and other lower court cases to justify the allocations in upstream states is misplaced. *See* AR0000923-24. Remarkably, EPA claims that *Arkansas* provides it with authority, in the context of establishing a TMDL, to establish pollutant allocations for upstream sources. *See id.* Even a cursory reading of that decision reveals that the court's holding addressed only EPA's authority to object to a state's issuance of a CWA point source permit (under 33 U.S.C. § 1342) for failing to ensure compliance with a downstream state's water quality standards. *See Arkansas*, 503 U.S. at 105-07. The decision is free from any mention of the term TMDL or 33 U.S.C. § 1313(d). *See generally* 503 U.S. 91. Nothing in 33 U.S.C. § 1313(d), or any other provision of the Act, supports EPA's strained reading of the *Arkansas* decision. Neither the CWA itself, nor the Supreme Court's interpretation of select provisions therein, allows EPA to establish the upstream allocations in the Final TMDL.

As for the remaining cases that EPA relies on, EPA itself acknowledges that none of those cases addressed, let alone upheld, authority to set allocations for upstream states in a TMDL. *See* AR0000923. At bottom, the authorities that EPA

cites do not support its attempt to allocate loads within New York, Pennsylvania, and West Virginia.

2. EPA Has Lawful Options To Address Waters In Upstream States

The CWA does not leave EPA powerless with respect to water quality in the three headwater jurisdictions of the Bay. As discussed above, controlling discharges from point sources in headwater states through EPA's section 402 (33 U.S.C. § 1342) oversight and objection authority is something EPA can do on a permit-by-permit basis under *Arkansas*. If necessary, EPA can establish upstream water quality standards (and associated TMDLs) in accordance with 33 U.S.C. § 1313(c)-(d). It cannot, however, simply declare new regulatory authorities that circumvent Congress's carefully crafted scheme.

II. EPA Violated The APA By Restricting Public Access To Critical Information And Engaging In Arbitrary And Capricious Rulemaking

The Chesapeake Bay TMDL covers an enormous area. AR000068. Like the territory it covers, the administrative record that supports the Bay TMDL is immense, dwarfing that of most agency actions. The record includes a complex network of environmental models and technical information. *See, e.g.*, AR0000152-96. Those models include Scenario Builder, the watershed model, and the water quality and sediment transport model, all explained below.

Despite its enormity and complexity, EPA gave the public only 45 days to review the record and comment on the pollutant loading and allocation scheme disclosed to the public for the first time in its entirety in the Draft TMDL. *See* 75 Fed. Reg. at 57,776. The abbreviated comment period limited the public's ability to participate meaningfully in the rulemaking process. *See* 5 U.S.C. § 553(c); *Texaco, Inc. v. Fed. Power Comm'n*, 412 F.2d 740, 744 (3d Cir. 1969). This procedural deficiency was compounded by EPA's failure to provide key information to the public during the notice and comment period. Together, these failures violate the APA.

Notwithstanding these deficiencies, the information the public was able to review, albeit briefly, confirms that there are fundamental errors in EPA's modeling. EPA made assumptions regarding land use and the movement of nutrients and sediment that are inaccurate, which means that these assumed sources of pollutants and their associated loadings were modeled in error. Modeling errors lead to allocation errors, resulting in an arbitrary and capricious action.

A. EPA Withheld Important Information From The Public During The Comment Period

Even if 45 days were enough time to review the Draft TMDL and underlying record, EPA failed to provide the public with the core documentation and information that would allow the public to understand – let alone evaluate – how EPA arrived at the allocation scheme in the Draft and Final TMDL.

Documentation is an essential component of environmental modeling. *See* U.S. Environmental Protection Agency, *Guidance on the Development, Evaluation, and Application of Environmental Models*, EPA/100/K-09/003, at 37 (Mar. 2009) (attached as Ex. 3). It ensures that proper modeling practices are followed and allows model users, stakeholders, and decision makers to understand the process of model development and application.

According to EPA's *Guidance on the Development, Evaluation, and Application of Environmental Models*, the development and implementation of environmental models must be "transparent" so that "they can be used reasonably and effectively in a regulatory decision." *Id.* EPA's guidance requires that "[a]ll technical information . . . be documented in a manner that decision makers and stakeholders can readily interpret and understand." *Id.* at 38. When models are not transparent, the decisions they support run afoul of the APA. As explained by the Second Circuit:

> When the basis for a proposed rule is a scientific decision, the scientific material which is believed to support the rule should be exposed to the view of interested parties for their comment. One cannot ask for comment on a scientific paper without allowing the participants to read the paper. . . . To suppress meaningful comment by failure to disclose the basic data relied upon is akin to rejecting comment altogether. . . . The inadequacy of comment in turn leads in the direction of arbitrary decision-making.

United States v. Nova Scotia Food Prods. Corp., 568 F.2d 240, 252 (2d Cir. 1977). Here, EPA suppressed meaningful comment on the three core models underlying

the Final TMDL: Scenario Builder, the watershed model, and the water quality and sediment transport model.

1. Key Components Of "Scenario Builder" Were Not Provided To The Public For Review

The Scenario Builder model is a cornerstone of the Bay TMDL modeling network. It is used to estimate sediment and nutrient loads from various land-based activities in the watershed and the effectiveness of best management practices in reducing loads from various sources, particularly agriculture and urban runoff. *See* AR0000179-80 (providing a description and schematic of the key parameters modeled by Scenario Builder). The information from Scenario Builder is put into the watershed model, which simulates the fate, transport, and delivery of those pollutants to the Bay. The water quality and sediment transport model then analyzes the impact from the pollutant loading to estimate compliance with water quality standards. *See* AR0000180, 189. Scenario Builder has been in development since 2003. *See* U.S. Environmental Protection Agency, Scenario Builder and the Chesapeake Bay Program Office, at 35 (July 28, 2009) (attached as Ex. 4). But despite this long history and its importance to the Bay TMDL, EPA remarkably failed to provide the public with key components of the model for review during the public comment period. *See, e.g.,* AR0000984; AR0003559; AR0003567; AR0001363-64.

In fact, the only information that was available for Scenario Builder at the opening of the public comment period was a single document describing how the model was developed, and even that information was hard to find. *See* AR0000954-55; AR0001321; AR0001527-29. A description of how the model was developed does not substitute for access to the model itself, particularly when the model is intended to be used by local planning organizations. *See* AR0014814. Essentially, EPA was forcing the public to buy a car based only on the word of the car salesman (and without a test drive). Under pressure, EPA made some of the missing Scenario Builder information "publicly available" on November 2 and 3, 2011 – just six days before the close of the public comment period. *See* AR0001336; AR0001482-84; AR0003477.

The Third Circuit has found that "a regulated party *automatically* suffers prejudice when members of the public . . . are denied access to the *complete* public record." *Hanover Potato Prods., Inc. v. Shalala*, 989 F.2d 123, 130 n.9 (3d Cir. 1993) (emphasis added). Where factual or technical information is critical to the rulemaking, it "should be available to the public in such a way as to provide adequate opportunity for comment . . . ." *Sierra Club v. Costle*, 657 F.2d 298, 397 n.484 (D.C. Cir. 1981); *see also Nova Scotia*, 568 F.2d at 252. EPA's failure to provide the public with access to key Scenario Builder information limited the

public's ability to fully analyze the technical science underlying the Final TMDL. EPA's failure to disclose this information violates the APA.

2. Key Documentation For The Watershed Model Was Not Provided To The Public For Review

The watershed model calculates the fate and transport of pollutants throughout the Chesapeake Bay watershed. It takes information from Scenario Builder and other models regarding the location, timing, and amount of sediment and nutrients entering the Bay watershed and simulates how, and in what amounts, those pollutants are deposited in the Bay itself. *See* AR0000169-71.

Despite its critical importance, EPA failed to provide the public with complete and accurate documentation for the model. Numerous commenters noted that the documentation provided by EPA (and cited in the Draft TMDL) was outdated, incomplete, and, for certain portions of the model, missing altogether. *See, e.g.,* AR001531-32; AR0001607-08; AR0003559. The documentation that was provided related to Phase 5 of the watershed model and was created in 2008, two years prior to EPA's calibration effort for the version (version 5.3) used to develop the Draft and Final TMDL. *See* AR0001531. While the model itself (i.e., the software and supporting information necessary to run the model) was available to the public during the public comment period, it was of little value because the public did not have access to the EPA documentation verifying and describing how the current model was developed, calibrated and applied. *See* AR0001531-32.

Here, EPA provided the car for the test drive but with outdated and incomplete information describing what was under the hood.

EPA admits that it did not provide the public with Phase 5.3 model documentation during the public comment period. AR0001270. EPA claims that it could not complete that documentation until final decisions were made on the Bay TMDL itself. *Id.* Essentially, EPA determined its final course of action and then supported that decision with technical materials after the fact, which turns the public participation process on its head. *See Nova Scotia*, 568 F.2d at 252; *see also* Ex. 3 at 37 ("The record should contain not only model development, evaluation, and application[,] but also the Agency's responses to comments on the model raised during peer review and the public process.").

The Chesapeake Bay Program's Scientific and Technical Advisory Committee ("STAC") warned EPA that its watershed model documentation needed to be completed before the scientific and user community could adequately review the watershed model. AR0015018-19. STAC is the independent scientific peer review committee used by EPA to review the TMDL models. STAC complained that many of the watershed model documents EPA provided to it for review "were in draft form, with key components missing or incomplete." AR0015012. As a result, STAC could not answer some of the core questions posed by EPA, including whether "the model structure, dynamics, and calibration [is] sufficient

for management purposes at the regional scale . . . ." AR0015014. STAC identified complete model documentation as an "immediate need" to improve the use of the watershed model for TMDL development purposes. AR0015018-19. In response, EPA agreed that "documentation and information on model calibration and validation needs to be readily available [and] transparent" and committed to improving model documentation. AR0014970. Despite that commitment, it is clear that EPA ignored STAC's criticism when issuing the Draft TMDL.

An example is Section 10 of the watershed model documentation, which deals with nonpoint source nutrient simulation. Section 10.5 addresses regional nutrient transport factors. The September 11, 2008 version of section 10.5, which was the only version available during the public comment period, does not include the estimated regional transport factors for nitrogen and phosphorus but indicated they were to be included later – apparently by "Gary," who was still working on the figures. *See* U.S. Environmental Protection Agency, Chesapeake Bay Phase 5 Community Watershed Model, § 10.5 (Sept. 11, 2008 version) (attached as Ex. 5). The values were not even included in the Revised December 30, 2010 version that was released together with the Final TMDL. *See* U.S. Environmental Protection Agency, Chesapeake Bay Phase 5.3 Community Watershed Model, § 10.5 (Dec. 30, 2010 version) (attached as Ex. 6). Oddly, the sentence indicating that the regional nutrient transport factors were to be included was dropped from the

December 2010 version. But that sentence reappears in an "Errata Revision June 1, 2011" that EPA placed in the administrative record of this case, together with the actual transport factors. AR0014711-13.

EPA's failure to include this key information in the version made available during the public comment period violates the APA. *Hanover Potato Prods.*, 989 F.2d at 130 n.9 (the public record must be "complete"). EPA's disclosure of new technical information (which it placed in the administrative record under the guise of "errata") belies its claims that the entire Chesapeake Bay TMDL process was open and transparent. *See, e.g.,* AR0003475.

EPA also failed to disclose the edge-of-stream nutrient targets for conservation cropland in the 2008 and 2010 versions of the watershed model. *See* Ex. 5 at § 10.2.11 (listing the median target value as "XX lbs/ac-yr"); Ex. 6 at § 10.2.11 (same). Edge of stream nutrient target information is very important in calibrating watershed models. *See* AR0014678. When these values change, the calibration and modeling results can change as well. EPA failed to provide this information to the public to review during the public comment period, but snuck it in to the administrative record for this Court to review, labeled as "errata." *See* AR0014689 (listing the median target value as "39.6 lb/ac-yr").

EPA's gamesmanship with the public record on these critical and highly technical issues violates the APA. EPA failed to provide the public with an

opportunity to review the *complete* scientific record. *See Nova Scotia*, 568 F.2d at 252.

3. Key Documentation For The Water Quality And Sediment Transport Model Was Not Provided To The Public For Review

EPA failed to provide *any* documentation for the revised water quality and sediment transport model during the public comment period. *See, e.g.,* AR0001355-57. In fact, EPA expressly acknowledged in the Draft TMDL that the documentation for "The Chesapeake Bay Water Quality and Sediment Transport Model" was "[i]n preparation." AR0024131. The "full" and "complete" documentation was made available to the public well *after* the close of the public comment period and just days before the Final TMDL was issued. AR0001357. EPA tries to brush aside this defect in its rulemaking by claiming that the *outdated* 2004 documentation for an earlier version of the water quality model was in the public record and is sufficiently "relevant" to the current 2010 version of the model to allow adequate public review. *Id.*

The 2010 version of the model was dramatically changed between 2004 and 2010 to include "sediment transport." *Compare* AR0015530-903 *with* AR0016176-403. Sediment is one of three pollutants for which allocations have been set in the Final TMDL, and the water quality and sediment transport model is used to determine whether those allocations will ensure compliance with state water quality standards. *See* AR0000189. The public should have been allowed to

review the complete, current, *and correct* scientific documentation for the current model in order to meaningfully comment on it. *See Nova Scotia*, 568 F.2d at 252. In fact, the 2010 model appears to have been revised significantly to deal with "several weaknesses" identified by STAC in the 2004 version. AR0016180. The public should be allowed a meaningful opportunity to determine whether EPA appropriately addressed those weaknesses in the final model before EPA used it to establish multi-billion dollar burdens on the regulated community. EPA's failure violates the APA.

B. The Final TMDL Is Arbitrary And Capricious

Reliance on flawed models that produce inaccurate results is arbitrary and capricious under the APA. *See Columbia Falls Aluminum Co. v. EPA*, 139 F.3d 914, 923 (D.C. Cir. 1998) (a model that bears "no rational relationship to the reality it purports to represent" is arbitrary and capricious). To avoid arbitrary decision-making when using a model, an agency must be able to draw a rational connection between the facts used, the modeling assumptions, the modeling results, and conclusions drawn from those results. *See Sierra Club*, 657 F.2d at 332-33.

The Final TMDL is arbitrary and capricious because EPA used the Bay models to support TMDL allocations beyond their predictive capabilities. Those models are also based on inaccurate assumptions regarding land use, pollutant

controls, and pollutant fate and transport. Thus the modeled sources of pollutants and their loadings are in error. These errors are the faulty foundation of EPA's allocations in the Final TMDL, so those allocations should be vacated even if EPA had statutory authority to impose them (which it does not).

1. The Models Were Used To Support Management Decisions That Were Beyond The Models' Predictive Capabilities

The Final TMDL established waste load and load allocations for 92 individual Bay segments. AR0000295. The allocations for those segments were further subdivided to hundreds of sources throughout the entire watershed, including individual point sources. AR0000616-19. EPA developed this allocation scheme predominantly through modeling by: (1) estimating the total current pollutant concentrations in the Bay; (2) simulating where those pollutants are coming from, when and in what amounts; (3) projecting the pollutant loadings and concentrations in the Bay that would satisfy current water quality standards; and (4) allocating those loads to sources and segments based on management assumptions made by EPA in forced coordination with the states. *See, e.g.*, AR0000169-172. This entire framework is based on the premise that the Bay models are accurate and capable of supporting EPA's allocations. In fact they are not (as several commenters pointed out during the public comment period), particularly for allocations established below a sub-watershed scale. *See, e.g.*, AR0001406; AR0001416; AR0001489-90.

EPA asked STAC to peer review the watershed model in late 2007 to determine whether the model structure, calibration efforts, and underlying data were sufficient to support management decisions at the local watershed scale in support of sediment and nutrient TMDLs. AR0015016-17. STAC's response to both questions was "no."

STAC explained that the watershed model and underlying data (including inputs from Scenario Builder) was "not appropriate for development and implementation of TMDLs at the local watershed scale." AR0015016; *see also* AR0015017. That is because the model "is mainly geared" toward the Bay and its major tributaries. AR0015013. The models cannot tell, for example, whether sediment in a small tributary in Lancaster County, Pennsylvania comes from a farm or from the streambed itself. *See id.* (explaining that "smaller streams and the channel processes, and their effects are implicitly lumped or included in terrestrial processes"); *see also* AR0015015. This makes the identification of pollutant loading from local sources inherently unreliable, which is why STAC concluded that the model was appropriate for TMDL development only at a regional scale. AR0015016-17.

EPA acknowledged STAC's assessment regarding the limitations of the watershed model. *See* Chesapeake Bay Program Office, Modeling Subcommittee: 2nd STAC Review of Phase 5 WSM, at 5 (Apr. 29, 2008) (attached as Ex. 7). EPA,

however, completely disregarded it and assigned allocations to hundreds of individual point sources and watershed segments beyond the predictive capabilities of its models.[12] *See* AR0000616-19. In fact, EPA twisted STAC's support for accurate application of the models at the broader regional scale as supporting allocation decisions at the local scale. In EPA's view, because the models could be used reliably to predict regional scale allocations, the watershed model could be used reliably to support management decisions at *any* level. *See* Chesapeake Bay Program Office, Water Quality Steering Committee: Summary of Decisions, Actions, and Issues, at 4 (Mar. 17, 2008) (attached as Ex. 8). That is akin to saying that a model designed to predict the number of cars on a highway during rush hour can also reliably tell you which parking lots they came from, and when. STAC expressly told EPA that the model was an inappropriate predictor at sub-regional scales (in other words, it was not designed to predict parking lot activity). *See* AR0015017.

EPA must be able to draw a rational connection between the modeling results and the allocations it established to avoid arbitrary rulemaking. *See Sierra Club*, 657 F.2d at 332-33. Here, EPA stretched the models' capabilities too far, which violates the APA. *See Chem. Mfrs. Ass'n v. EPA*, 28 F.3d 1259, 1265 (D.C.

[12] According to STAC, EPA frequently ignored STAC recommendations and often sought review late in the modeling process, searching for a "rubber stamp" of Agency work product. AR0014955; *see also* AR0014941.

Cir. 1994) (models must bear some rational relationship to the reality they purport to represent).

2. EPA Fed Its Models Flawed Data

To calculate its loading allocations, EPA fed thousands of assumptions into its models, each capable of changing EPA's allocations. The models project pollutant loading based on land use, acreage, hydrology, management assumptions and a variety of other factors. *See, e.g.*, AR0000183-89. Central to that analysis is the amount of land that is associated with a particular use, such as urban development, forestry, and agriculture. The models estimate loading from these and other sectors on a per unit basis – that is, pounds per acre per year (lb/ac-yr). *See, e.g.*, AR0014632-33. Thus, errors in estimated land area or use will change the loading estimates from those lands.

The U.S. Department of Agriculture Natural Resource Conservation Service ("NRCS") released a draft report in October 2010 analyzing the amount of cultivated cropland in the Chesapeake Bay Watershed. *See* AR0032818. The NRCS data, which was shared with EPA a month earlier and before the public comment period for the Draft TMDL, highlights fundamental flaws in the assumptions underlying EPA's models. *See* U.S. Environmental Protection Agency, Correspondence: E-Mail from Gary Shenk Regarding Modeling Meeting

on CEAP and Chesapeake Bay Watershed Model Comparative Analysis (Sept. 15, 2010) (attached as Ex. 9); *see also* AR0029775.

For example, NRCS determined that approximately 88% of the 4.38 million acres of cultivated cropland in the Bay watershed – which represents approximately 10% of the total land area in the watershed (*see* Ex. 9; *see also* AR0029775) – employ conservation tillage practices, 5% use a both conservation and conventional tillage, and only 7% use just conventional tillage. AR0032860-62; *see also* LimnoTech, Comparison of Draft Load Estimate Cultivated Cropland in the Chesapeake Bay Watershed, at 5 (Dec. 8, 2010) (attached as Ex. 10). According to EPA, conservation tillage keeps at least 35% of the land surface covered at the time of planting, reducing runoff. AR0014689 (conventional tillage is "often much less" than 35%). Despite NRCS's findings, EPA's models assume that 50% (instead of 7%) of all cultivated crops used conventional tillage, with the other half planted using conservation tillage. AR0014637; Ex. 10 at 5, 7. As the following example shows, this seemingly insignificant change in a single assumption results in a significant difference in modeled pollutant loading from these land areas.

EPA estimates that nitrogen loading from conventional tilled acres receiving manure as fertilizer is 44.8 lb/ac-yr. AR0014689. That drops to 39.6 lb/ac-yr for

conservation tilled lands. *Id.*[13] A 5.2 lb/ac-yr difference may seem insignificant in isolation, but applied to 3,964,789 acres (NRCS's estimate of cultivated cropland used in EPA's models – *see* Ex. 9 *see also* AR0029775), the difference is large:

Agency Tillage Estimate	Tillage Method	Land Area		Nitrogen Loading	
		Percent	Acres Per Method	Nitrogen Factor (lbs/ac-yr)	Nitrogen Total (lbs/yr)
NRCS	Conventional	7%	277,535	44.8	12,433,578
	Conservation	88%	3,489,014	39.6	138,164,967
	Blend	5%	198,239	42.2*	8,365,705
	Total	100%	3,964,789	N/A	158,964,250
EPA	Conventional	50%	1,982,895	44.8	88,833,674
	Conservation	50%	1,982,895	39.6	78,522,622
	Total	100%	3,964,789	N/A	167,314,096
				Difference:	8,349,846

* Average of conventional and conservation value.

Just this one factor – tillage method for cultivated cropland – changes the loading estimate from this critical land area by over 8 million pounds per year. This demonstrates that the watershed model is highly sensitive to assumptions about land use and calls into question the accuracy of any predictive application of

[13] It should be noted that these figures are yet another example of EPA changing key modeling parameters in the form of an "errata" after issuance of the Draft and Final TMDL, as discussed above in Section II.A.2. The values reported in the text come from the June 2011 version of the watershed model documentation. The September 2008 and December 2010 versions reported 23 lb/ac-yr for conventional tillage (almost half that reported in the "errata" version) and "XX lb/ac-yr" for conservation tillage. *See* Ex. 5 at §§ 10.2.10 and .11; Ex. 6 at §§ 10.2.10 and .11.

that model. *See, e.g.*, Ex. 10 at 5 ("These differences in assumptions about total acres, land use, and conservation tillage versus conventional are significant when predicting different loading estimates."). This error is only one of many that, in the aggregate, undermine the validity of EPA's allocation scheme. *See, e.g,* AR0001491-92. For example, EPA acknowledges that its models predict that agriculture accounts for 65% of sediment loading in the Bay watershed from terrestrial sources, whereas EPA asserts that NRCS's data indicates that number is closer to 41% – a shocking difference involving millions of pounds of sediment loading that EPA marginalizes without rational explanation. *See* AR0001495.

EPA's failure to reconcile these critical differences from the NRCS estimates violates the APA. *See U.S. Steel Corp. v. Astrue*, 495 F.3d 1272, 1279 (11th Cir. 2007) (an agency's action is improper if it fails to consider important relevant factors); *U.S. Air Tours Ass'n v. FAA*, 298 F.3d 997, 1018-19 (D.C. Cir. 2002) (a rule may be overturned if the action agency ignores contradictory data from another agency); *Am. Iron and Steel Inst. v. EPA*, 115 F.3d 979, 1008 (D.C. Cir. 1997) (it may be an abuse of discretion if EPA relies on models, data or assumptions it knows are false); *Am. Mining Cong. v. EPA*, 907 F.2d 1179, 1191 (D.C. Cir. 1990)) (failure to provide reasoned responses to significant public comments violates APA).

In addition to relying on inaccurate data on land use, EPA also utilized improper assumptions on the pollutants reaching the Bay. For example, Scenario Builder relies on inaccurate assumptions regarding agricultural runoff. It assumes that 15 to 21% of all manure at animal feeding operations is left on impervious surfaces and managed so improperly that it runs off directly into Bay tributaries. *See* AR0000138; AR0014839. In other words, the Bay models treat thousands of tons of animal manure at animal feeding operations as if it was flowing directly into the water, an implausible assumption for which EPA provides no technical support. *See* AR0001539-41.

This error is compounded by the underlying, unrealistic assumption that all animal feeding operations are covered entirely with impervious surfaces. *See* AR0000138. The models assume that there are no crops, vegetation or other pervious surfaces to allow rainwater to percolate, sediment to be trapped, and nutrients to be taken up by plants. *See* AR0014906. In reality, only a small percentage of the surface area at animal feeding operations is impervious. *See* AR0001545.[14]

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[14] This is not the only impervious surface area mistake EPA has made. As at least two commenters pointed out, EPA's overall impervious surface estimates for the Bay watershed were nearly half the estimates recently published by the U.S. Geological Survey. *See* AR0000959; AR0001729-30. EPA has acknowledged this mistake in the current model, but rather than fix it, EPA indicated that it would

These agricultural modeling errors individually and cumulatively undermine the validity of EPA's models, the accuracy of their predictions, and the legitimacy of the allocations based on them.[15] They provide stark evidence of arbitrary and capricious rulemaking in violation of the APA. EPA failed to consider relevant information that was presented to it (*Astrue*, 495 F.3d at 1279), relied on data it knew was false (*Am. Iron and Steel*, 115 F.3d at 1008), employed models that were not rationally connected to the reality they were designed to represent (*Chem. Mfrs. Ass'n*, 28 F.3d at 1265), and then failed to provide reasoned responses to significant public comments pointing out all of these deficiencies (*Am. Mining Cong. v. EPA*, 907 F.2d 1179, 1191 (D.C. Cir. 1990)). The Final TMDL should be set aside.

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include better data in the "new version of the Watershed Model, Phase 5.3.2" which will be coming out soon." AR0000961.

[15] One way to avoid modeling errors like those discussed above is to subject the models and underlying documentation to peer review. Several commenters pointed out that Scenario Builder was not independently peer reviewed as required by EPA's *Peer Review Handbook* and *Policy*. *See, e.g.*, AR0001362-63; AR0001537-38. In response, EPA admitted that Scenario Builder was not subject to an independent peer review process (*see* AR0001362-63; AR0001547), but failed to provide rational explanations for why it ignored established policy and guidance on such a critical model. *See* AR0015182 ("The principle underlying the Peer Review Policy is that all influential scientific and technical work products used in decision making will be peer reviewed.") (emphasis in original). That failure violates the APA. *See Good Samaritan Hosp. v. Shalala*, 508 U.S. 402, 417 (1993) (requiring agency to provide adequate explanation for departures from established guidance and policies).

CONCLUSION

By all accounts, it would cost the states and affected private parties many billions of dollars to implement this unlawful TMDL. *See, e.g.*, AR0025527 ("estimated costs to Maryland from 2011 through 2017 could be as high as $10 billion."); AR0001042 (referencing New York cost estimate between $3 billion and $6 billion); AR0026674 (estimated cost of $7 billion for Virginia); *see also* AR21784 (estimating, in 2004, that costs of restoring water quality in the Chesapeake Bay would be "$28 billion in total upfront capital costs" and "$2.7 billion in total annual costs").

Because the Final TMDL exceeds EPA's statutory authority and is arbitrary and capricious, this Court should grant Plaintiffs' motion and vacate the Final TMDL in its entirety.

Respectfully submitted,

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CERTIFICATE OF COMPLIANCE

Pursuant to Local Rule 7.8(b)(2), the undersigned hereby certifies that the foregoing Memorandum in Support of Plaintiffs' Joint Motion for Summary Judgment complies with the word count limit and does not exceed the allotted 14,000 words. This certification is reliant on the word count feature of the word-processing software used to prepare this brief.

Plaintiffs' Memorandum in Support of Plaintiffs' Joint Motion for Summary Judgment contains 13,997 words.

Dated: January 27, 2012

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CERTIFICATE OF SERVICE

I hereby certify that on January 27, 2012 a true and correct copy of the foregoing document was electronically filed and served on the following in accordance with the Rules of the United States District Court for the Middle District of Pennsylvania:

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