



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

January 9, 2018

Mr. Lee McDonnell, Director
Bureau of Clean Water
Pennsylvania Department of Environmental Protection
Rachel Carson State Office Building
400 Market Street
Harrisburg, PA 17101

Dear Mr. McDonnell:

The U.S. Environmental Protection Agency (EPA) has conducted a review of the Pennsylvania Department of Environmental Protection's (PADEP) 2016 Section 303(d) list and supporting documentation and information. Based on our review, EPA has determined that Pennsylvania's list of water quality-limited segments still requiring Total Maximum Daily Loads (TMDLs) meets the requirements of Section 303(d) of the Clean Water Act and EPA's implementing regulations. Therefore, with this letter (including the rationale set forth in the enclosure to this letter) EPA approves Pennsylvania's 2016 Section 303(d) list as submitted electronically to EPA on July 25, 2017. The statutory and regulatory requirements, as well as an analysis of Pennsylvania's 2016 Section 303(d) submittal, are described in the enclosure.

EPA looks forward to working with PADEP staff on future assessment reports along with implementation of EPA's Vision for the Clean Water Act 303(d) Program. If you or your staff has any questions, please feel free to contact Ms. Evelyn MacKnight at 215-814-5717 or macknight.evelyn@epa.gov.

Sincerely,

/s/ Dominique Lueckenhoff for

Catharine McManus, Acting Director
Water Protection Division

Enclosure

**RATIONALE FOR EPA APPROVAL OF
PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
2016 SECTION 303(d) LIST**

I. Purpose

The purpose of this document is to describe the rationale for the U.S. Environmental Protection Agency's (EPA) approval of Pennsylvania Department of Environmental Protection's (PADEP) 2016 Section 303(d) list. EPA has conducted a complete review of Pennsylvania's 2016 Section 303(d) list and supporting documentation and information. Based on this review, EPA has determined that the Commonwealth's list of water quality limited segments (WQLSs) still requiring Total Daily Maximum Loads (TMDLs) meets the requirements of Section 303(d) of the Clean Water Act (CWA or the Act) and EPA's implementing regulations. Therefore, by this letter, EPA hereby approves Pennsylvania's Section 303(d) list, as submitted electronically on July 25, 2017, which is comprised of Category 5 of Pennsylvania's Integrated Water Quality Monitoring and Assessment Report (Integrated Report).

II. Statutory And Regulatory Background

A. Identification of WQLSs for Inclusion on Section 303(d) List

Section 303(d)(1) of the CWA directs states to identify those waters within their jurisdiction for which effluent limitations required by Section 301(b)(1)(A) and (B) are not stringent enough to implement any applicable water quality standard, and to establish a priority ranking for such waters taking into account the severity of the pollution and the uses to be made of such waters (Section 303(d) list). The Section 303(d) listing requirement applies to waters impaired by point and/or nonpoint sources, pursuant to EPA's long standing interpretation of Section 303(d).

EPA regulations provide that states do not need to identify waters on the Section 303(d) list where the following controls are adequate to implement applicable standards: (1) technology based effluent limitations required by the Act; (2) more stringent effluent limitations required by state or local authority; and (3) other pollution control requirements required by state, local, or Federal authority. See 40 CFR §130.7(b)(1).

Pennsylvania developed an Integrated Report (IR), combining the former CWA Section 303(d) list and 305(b) report, which identifies the assessment status of all of Pennsylvania's waters. The Integrated Report separates the waters of Pennsylvania into five distinct categories. All stream segments or assessment units fall into one or more of the following categories:

- Category 1 – Waters attaining all designated uses.
- Category 2 – Waters where some, but not all, designated uses are met. Attainment status of the remaining designated uses is unknown because

- data are insufficient to categorize the water.
- Category 3 – Waters for which there are insufficient or no data and/or information to determine if designated uses are met.
 - Category 4 – Waters impaired for one or more designated use, but not needing a TMDL. These waters are placed in one or more of the following three subcategories:
 - Category 4a – TMDL has been completed.
 - Category 4b – Expected to meet all designated uses within a reasonable timeframe.
 - Category 4c – Not impaired by a pollutant.
 - Category 5 – Waters impaired for one or more designated uses by any pollutant. Category 5 constitutes the Section 303(d) list.

B. Consideration of Existing and Readily Available Water Quality Related Data and Information

In developing Section 303(d) lists, states are required to assemble and evaluate all existing and readily available water quality related data and information including, at a minimum, consideration of existing and readily available data and information about the following categories of waters: (1) waters identified as partially meeting or not meeting designated uses, or as threatened, in the state’s most recent Section 305(b) report; (2) waters for which dilution calculations or predictive modeling indicate non-attainment of applicable standards; (3) waters for which water quality problems have been reported by governmental agencies, members of the public, or academic institutions; and (4) waters identified as impaired or threatened in any Section 319 nonpoint assessment submitted to EPA. See 40 CFR §130.7(b)(5). In addition to these minimum categories, states are required to consider any other data and information that is existing and readily available. EPA’s 1991 Guidance for Water Quality Based Decisions describes categories of water quality related data and information that may be existing and readily available. See *Guidance for Water Quality Based Decisions: The TMDL Process, EPA Office of Water, 1991, Appendix C (EPA’s 1991 Guidance)*. While states are required to evaluate all existing and readily available water quality related data and information, states may decide to rely or not rely on particular data or information in determining whether to list particular waters.

In addition to requiring states to assemble and evaluate all existing and readily available water quality related data and information, EPA regulations at 40 CFR §130.7(b)(6) require states to include, as part of their submissions to EPA, documentation to support decisions to rely or not rely on particular data and information, and decisions to list or not list waters. Such documentation needs to include, at a minimum, the following information: (1) a description of the methodology used to develop the list; (2) a description of the data and information used to identify waters; and (3) any other reasonable information requested by the Region. As described in more detail below, Pennsylvania’s 2016 Integrated Report submission (including the Section 303(d) list as Category 5) identified (1) the Commonwealth’s assessment methodologies; (2) included documentation to support decisions to list or not list waters in certain categories;

(3) description of data that PADEP considered; (4) comments received on the draft list; (5) PADEP's response to those comments; (6) Integrated Report narrative; and (7) report appendices.

C. Priority Ranking

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

III. Analysis of Pennsylvania's Submission

A. Identification of Waters and Consideration of Existing and Readily Available Water Quality Related Data and Information

EPA has reviewed Pennsylvania's submission, and has concluded that the Commonwealth developed its Section 303(d) list in compliance with Section 303(d) of the Act and 40 CFR §130.7. EPA's review is based on its analysis of whether the state reasonably considered existing and readily available water quality related data and information and reasonably identified waters required to be listed. EPA also considered the additional information and documents regarding Pennsylvania's submission from other organizations and individuals including the Lower Susquehanna Riverkeeper.

B. Description of the methodology used to develop the list (CFR §130.7(b)(6)(I))

PADEP based the 2016 Section 303(d) list on a variety of data and information sources. The rivers and streams water quality assessments reflect a combination of information from intensive surveys, Statewide Surface Water Assessment Program (SSWAP) surveys, Instream Comprehensive Evaluations (ICE) and data solicited from outside sources. Fish consumption and recreational use specific data also take into account information from the Pennsylvania interagency fish tissue sampling program and bacteriological indicator data collected by government agencies and citizen/volunteer groups, respectively. Pennsylvania also solicited, by mail in 2015, relevant water quality data and information from roughly five hundred individuals associated with government agencies, academic institutions, advisory groups, citizen monitoring groups, watershed associations, public interest groups, and sportsmen groups. Pennsylvania considered all

data and information regarding CFR §130.7(b)(5) Categories, which is the minimum required by Federal regulations.

Detailed assessment methodologies were made available to the public prior to issuance of the 2016 Integrated Report. In 2015, PADEP held a public comment period on changes made to their 2016 assessment methodologies. PADEP compiled responses to comments received in a response document which was posted to PADEP's website.

C. Description of the data and information used to identify waters, including a description of the data and information used as required by CFR §130.7(b)(5)

Beginning in 2015, PADEP sent EPA documentation of data and information used to support Pennsylvania's decisions to not include certain waters on the draft 2016 Section 303(d) list. The availability of Pennsylvania's proposed Section 303(d) list of impaired waters was announced in the July 30, 2016 issue of the *Pennsylvania Bulletin*. A 45-day public comment period was provided.

EPA submitted general and specific comments to PADEP in a letter dated September 12, 2016. Pennsylvania adequately responded to each of EPA's comments in a Comment Response Document and in some instances modified the 2016 IR.

On July 25, 2017, PADEP notified EPA of the availability of the final 2016 Integrated Report and invited EPA to consider that Report as its 2016 submission. Due to the size and volume of the entire report (which includes the narrative report, assessment methodology, and Integrated Report category lists), it was obtained by EPA directly from PADEP's website. EPA considered the following as Pennsylvania's final 2016 Integrated Report package for its review: the Integrated Report; appendices detailing the data solicitation and public notice processes; listing of delisted waters; the comment response document; documentation supporting the inclusion of waters in Category 4B and the removal of waters from Category 5; and an amended version of Category 5.

EPA has reviewed Pennsylvania's description of the data and information considered in the listing process, biological and chemical data collected by the Commonwealth and interstate basin commissions, and its methodology for identifying waters. EPA concludes that the Commonwealth properly assembled and evaluated all existing and readily available data and information, including data and information relating to the categories of waters specified in 40 CFR §130.7(b)(5).

In addition, Pennsylvania provided its rationale for not relying on particular existing and readily available water quality related data and information as a basis for identifying waters as part of the Section 303(d) list (Category 5 of the IR). While soliciting water quality data and information from outside sources, Pennsylvania sent out an information sheet explaining the determination process for placing a waterbody on the Section 303(d) list, the criteria required for data and/or information submitted to PADEP from outside sources, and logistical details regarding such data submittals. As part of the process the state uses in its evaluation of outside data and information, Pennsylvania screens all

outside sources of data received for minimal quality assurance requirements, including the specific location of the reported impairment; identification of the particular water quality standards violation(s); data to substantiate the conclusion of impairment; identification of the source(s) and cause(s) of impairment; and the presence of a quality assurance/quality control plan. EPA finds Pennsylvania's screening protocol and criteria described in its 2016 Section 303(d) list narrative report to be a reasonable rationale in determining the usage of outside data, as waters listed as impaired on the 303(d) list should be based on scientifically valid data.

Consistent with Section 303(d) of the CWA, EPA's approval applies only to Pennsylvania's Section 303(d) list (Category 5) as published on July 25, 2016. EPA considered Categories 1, 2, 3, 4A, 4B and 4C to the extent they impact the Section 303(d) list during our approval. As part of this decision, EPA approves the specific water pollutant combination removals from Category 5 and listing changes identified in Appendix E, F and G of the Integrated Report.

EPA views the 2016 Integrated Report as a snapshot of the Commonwealth's water quality in time, with the attainment status of waters continually changing with each round of reassessment. The 2018 Integrated Report therefore should build upon, by updating and possibly correcting, the approved information presented in the 2016 report. EPA will continue to work with PADEP to update EPA's national tracking system (ATTAINS) to reflect Pennsylvania's new report.

D. Susquehanna River Assessment

During the 2012 IR cycle, PADEP changed the assessment status of the Susquehanna River from Category 2 (unimpaired) to Category 3 (unassessed due to insufficient information) in response to public comments and concern related to the health of smallmouth bass. Since 2012, the aquatic life use of the Susquehanna River from Sunbury to Holtwood Dam has not been fully assessed as to aquatic life use. PADEP compiled and evaluated all available water quality related information for the Susquehanna River and determined the data were insufficient to determine attainment or impairment for the aquatic life use. In the 2016 IR, the aquatic life use of the Susquehanna River from Sunbury to Holtwood Dam has been listed in Category 3. PADEP has been and plans to continue to address the lack of an assessment through two approaches: 1) development of large river assessment aquatic life use methodology and 2) continuing to seek links between water quality and observed conditions impacting smallmouth bass populations. EPA continues to find PADEP's interpretation of its water quality standards and 303(d) listing assessment methodology as reasonable in this case, and therefore supports PADEP's decision as detailed below.

PADEP has continued its effort to monitor and assess water quality of the Susquehanna River. PADEP started a large-scale water quality monitoring effort in 2012 to investigate the causes of smallmouth bass health issues on the Susquehanna River. The Susquehanna Study collected numerous types of water quality data including: macroinvertebrate data, periphyton data, continuous water quality monitoring data, fish community data from

multiple sites, nutrient data, passive samplers and herbicide/pesticide data. The Susquehanna River study has continued through the 2016 IR cycle and has expanded into major tributaries. In 2015, PADEP and PFBC finalized an analysis of potential stressors impacting the health of smallmouth bass in the Susquehanna River. EPA's Causal Analysis/Diagnosis Decision Information System Analysis (CADDIS) was used as a process to conduct a causal assessment of factors potentially impacting smallmouth bass health. Fisheries biologists from across the region participated in three workshops to evaluate available data to determine potential causes of smallmouth bass mortality. A final report detailing the results of the CADDIS process was released in December 2015. The report identified parasites and pathogens in combination with other stressors as the most likely cause of the smallmouth bass population decline. The stressors identified as the most likely were endocrine disrupting compounds and pesticides (primarily herbicides), specifically in the triazine group (e.g., atrazine). PADEP notes in the 2016 IR narrative that the CADDIS process was not designed or intended to be used solely as a decision/method to assess attainment with any applicable designated uses or criteria. While this process provided important water quality use information that PADEP considered in its attainment decision on the Susquehanna, PADEP reasonably considered other data and applied its existing 303(d) listing methodologies in reaching its conclusion to keep this water on Category 3.

Among other information PADEP considered, PADEP notes in their IR, that all other water quality data and information collected from the Susquehanna River show that the waters are meeting numeric water quality criteria associated with the aquatic life use. In addition, approximately 68 miles of the Susquehanna River were also assessed for recreational use by evaluating fecal coliform bacteria levels that resulted in PADEP's decision to list some segments as recreationally impaired. PADEP also considered smallmouth bass population data collected since 2013 that show significant increases. PAFBC data also shows a continued decrease in smallmouth bass disease prevalence in the middle Susquehanna River. These data are summarized in Figures 6, 7 and 8 in the narrative portion of PADEP's 2016 IR. Based on the recent smallmouth bass survey data, a rebound in smallmouth bass health conditions may have occurred in the Susquehanna River. PADEP found that overall, the available data and information on the Susquehanna River were insufficient to adequately assess attainment of Pennsylvania's narrative water quality standard.

EPA finds that PADEP's rationale and consideration of recent data support the continued Category 3 listing of Susquehanna River aquatic life use. In addition, PADEP has committed to continue Susquehanna River water quality monitoring efforts to ensure smallmouth bass populations and health conditions continue to improve or are maintained. PADEP also intends to continue analyzing available Susquehanna River water quality data for reporting in future IRs. Based on the recent data showing an improvement in smallmouth bass health conditions, other water quality data and PADEP's continued commitment to monitor Susquehanna River water quality, EPA supports PADEP's Category 3 listing of the Susquehanna River.

E. Public Participation

Pennsylvania announced the availability of its draft 2016 Integrated Report and the Section 303(d) list of impaired waters in the July 30, 2016, issue of the *Pennsylvania Bulletin*. At that time, the Commonwealth accepted public comments on the proposed list until September 12, 2016. Comments were submitted from EPA in a letter dated September 12, 2016. To address comments received, a number of changes were made to the list and a Comment Response Document was developed as an appendix of Pennsylvania's Integrated Report.

F. Previously Listed Waterbodies Not Included on the 2016 Section 303(d) List

Pennsylvania has also demonstrated, to EPA's satisfaction, good cause for not including certain waters on its list. As provided in 40 CFR §130.7(b)(6)(iv), EPA requested that Pennsylvania demonstrate good cause for not including such waters. For the 2016 Section 303(d) list, Pennsylvania submitted specific sets of data demonstrating that certain previously listed waters either recovered to the point that the applicable water quality standards have been attained, or were initially listed in error and/or are currently not impaired. There may also be reassessments revealing that a WQLS is still impaired, but that the causes of impairment have changed; these waters therefore remain on the list, but are identified as impaired by different pollutant(s).

For each segment proposed for removal from the 2016 Section 303(d) list (Category 5), Pennsylvania provided EPA with sufficient documentation and justification. Such data included benthic macroinvertebrate data, chemical data, habitat surveys, and narrative statements from PADEP biologists, compliance data, and other forms of documentation. EPA reviewed this data and approves the set of waters or pollutant-water combinations delisted from the 2016 Section 303(d) list, which are listed in Appendices E, F and G of the 2016 Integrated Report. Delisted waters are characterized as either (1) removals from the 2016 Section 303(d) list due to attainment of WQS for the previously listed pollutant(s), listing in error, or removal of a pollutant source; or (2) remaining on the 2016 Section 303(d) list but impaired due to a different pollutant.

Removal of water pollutant combinations from the 2016 Section 303(d) list (Category 5) also included those segments where EPA approved TMDL(s) have been developed. These segments were moved to Category 4A. Implementation of the TMDL is not required prior to removal to Category 4A. Where a water was previously listed for more than one pollutant, only those pollutants addressed in an approved TMDL were moved to Category 4A.

G. Segments Excluded from the Section 303(d) List Pursuant to 40 CFR §130.7(b)(1) Because They Are Expected to Meet Water Quality Standards

Pennsylvania's decision not to include waters on its 2016 Section 303(d) list due to other required pollution controls is consistent with EPA regulations at 40 CFR §130.7(b)(1). These waters were identified in Category 4B of the Integrated Report. Under

40 CFR §130.7(b)(1), states are not required to list WQLSs still requiring TMDLs (i.e., the Section 303(d) list or Part 5 of the IR) where effluent limitations required by the CWA, more stringent effluent limitations required by state or local authority, or other pollution control requirements required by state, local, or federal authority, are stringent enough to implement applicable water quality standard. The regulation does not specify the timeframe in which these various requirements must implement applicable water quality standard to support a state's decision not to list particular waters. Consistent with EPA guidance on this issue, EPA expects that required controls will result in attainment in a reasonable time, based on the nature of the pollutant and actions that need to be taken to achieve attainment.

Monitoring should be scheduled for these waters to verify that the water quality standard is attained as expected in a reasonable timeframe. Where standards will not be attained through implementation of the requirements listed in 40 CFR §130.7(b)(1) in a reasonable time, it is appropriate for the water to be placed on the Section 303(d) list to ensure that implementation of the required controls, and progress towards compliance with applicable standards, is tracked. If it is determined that the water is, in fact, meeting applicable standards when the next Section 303(d) list is developed, it would be appropriate for the state to remove the water from the list at that time.

H. Segments Identified by the State as Impaired by Nonpoint Sources

Pennsylvania properly listed waters with nonpoint sources causing or expected to cause impairment, consistent with Section 303(d) and EPA guidance. Section 303(d) lists are to include all WQLSs still needing TMDLs, regardless of whether the source of impairment is a point and/or nonpoint source. EPA's long standing interpretation is that Section 303(d) applies to waters impacted by point and/or nonpoint sources. In *Pronsolino v. Marcus*, the District Court for the Northern District of California held that Section 303(d) of the CWA authorizes EPA to identify and establish TMDLs for waters impaired by nonpoint sources (*Pronsolino et al. v. Marcus et al.*, 91 F.Supp.2d 1337, 1347 (N.D.Ca. 2000)). See also, EPA's 1991 *Guidance and National Clarifying Guidance for 1998 Section 303(d) Lists*, Aug. 27, 1997.

I. Priority Ranking and Targeting

EPA reviewed Pennsylvania's priority ranking of listed waters for TMDL development, and concluded that the Commonwealth properly took into account the severity of pollution and the uses to be made of such waters. PADEP utilizes various mechanisms to schedule the development of TMDLs, as EPA guidance allows for states to use additional criteria to prioritize its Section 303(d) list (see EPA, April 1991).

EPA has reviewed Pennsylvania's identification of WQLS targeted for TMDL development in the next two years, and concludes that the targeted waters are appropriate for TMDL development in this timeframe. EPA agrees that, as to the WQLS included on the 2016 Section 303(d) list, PADEP satisfied the requirement to submit priority ranking.

J. Coordination with the U.S. Fish and Wildlife Service

EPA notified the Pennsylvania Field Office of the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS), by letter dated August 8, 2016, of the availability of Pennsylvania's 2016 Integrated Report. EPA provided notification as an informal coordination regarding potential impacts the proposed listings may have on threatened and endangered species. No comments were received from either USFWS or NMFS.