

Data Solicitation Report 2022

Section 303(d) of the federal Clean Water Act requires Pennsylvania to identify all its water quality limited water body segments. According to 40 CFR section 131.3, a “water quality limited segment” is any segment where it is known that water quality does not meet applicable water quality standards, and/or is not expected to meet applicable water quality standards, even after the application of technology-based effluent limitations required by sections 301(b) and 306 of the CWA. These water bodies appear on Category 5 in the Pennsylvania Department of Environmental Protection’s (DEP) Integrated Water Quality Monitoring and Assessment Report (Integrated Report). As part of this ongoing effort, DEP utilizes outside sources of data and information.

For the 2022 Integrated Report, information was posted regarding the data solicitation process on the DEP website with a link titled “Existing and Readily Available Data.” Information on the website includes data submission instructions and a form to submit along with data. The deadline was September 30, 2021; data submitted after the deadline will be considered for the 2024 Integrated Report.

For any given Integrated Report cycle, DEP reviews all existing and readily available information provided by outside groups that has been submitted through the data solicitation process. Submitted data are then categorized in one of three tiers under the data acceptance policy, which is described below. Data in Tier 3 are included in the assessment database to prepare the Integrated Report. Data in Tier 1 or 2 will need further evaluation to determine how it can be used.

Tier 1: Educational or environmental screening data that has known quality and a study plan but does not follow DEP or EPA quality assurance plans. These data will not be used for regulatory assessment purposes but can be used by DEP to highlight areas of interest for future monitoring efforts.

Tier 2: Data that has clearly defined quality assurance plans and procedures but may have not followed approved data collection protocols. These data may not be used for assessment purposes but can be used for other purposes such as trend or performance analysis.

Tier 3: Assessment level data that have approved quality assurance plans, follow appropriate study designs, and use DEP data collection protocols. Individuals seeking to provide DEP with tier 3 data must also be audited by DEP staff before submitting data.

Data from seven separate outside data sources were submitted to DEP for consideration in the 2022 Integrated Report. In addition, DEP considered the data and assessments in the 305(b) reports finalized by Ohio River Sanitation Commission (ORSANCO) and the Delaware River Basin Commission (DRBC). Where applicable, the results of the river basin commission reports were consistent with DEP’s current assessments determinations, so the reports were not discussed in more detail below.

Mountain Watershed Association (MWA)

During the 2020 Integrated Report public participation/comment period, DEP received data and information regarding assessments made in the Indian Creek Watershed, which is in the Youghiogheny River basin. DEP's Water Quality Division (WQD) determined that the data and information provided should be evaluated for the 2022 Integrated Report, because the 2020 data solicitation period was already closed.

The data submitted by MWA was not sufficient to make new assessments and has been categorized as Tier 1 data. Most of the data submitted were chemistry grab samples from the 1980s, 1990s, and a few samples from 2012-2020. Most data were collected/analyzed by DEP Bureau of Mining and Reclamation. No sampling plan or quality assurance plan was submitted or approved, although these plans may exist in the original reports cited in the References of the MWA comments. While the data submitted is not sufficient to make water quality assessments, the data along with the information provided in the comments is very helpful for prioritizing future assessments and correcting one assessment that appears to have been inadvertently deleted in the Integrated Report database.

MWA commented that a 2.2-mile segment of Indian Creek was listed as unassessed and should instead be listed as attaining for Aquatic Life use. DEP determined that the segment was originally part of an attaining assessment and was accidentally archived. This segment will be restored to an attaining Aquatic Life use for 2022 Integrated Report.

In addition, MWA submitted data and land use information for the unnamed tributaries to Indian Creek near Calvary Road, and an unnamed tributary (UNT) to Poplar Run that suggests the source and cause of the Aquatic Life use impairment are different from those listed. MWA submitted information about a treatment system that resulted in eliminating the Abandoned Mine Drainage (AMD) discharge that was the cause of an impairment to an UNT to Indian Creek along Hopewell Road. This data and information have been sent to and discussed with DEP Southwest Regional Office biologists and they are prioritizing reassessment of the Aquatic Life use in these streams.

Finally, MWA provided information and data to support an attaining Aquatic Life use assessment in UNT to Champion Creek above an AMD discharge. After reviewing the existing assessment, DEP determined that the appropriate methodology was used for the existing assessment. DEP assesses based on the National Hydrography Dataset flowline segments and does not have the ability split these segments (i.e., one impaired and one attaining) even though the AMD discharge is somewhere in the middle of the segment. Therefore, the impaired assessment determination is appropriate for the UNT to Champion Creek segment.

Bartram's Garden

In 2020, Bartram's Garden submitted water chemistry and *E. coli* data from the

Community Boathouse location on the tidal portion of the Schuylkill River to DEP for consideration in the 2022 Integrated Report. The Bartram's Garden study was conducted to assess water quality and *E. coli* to inform safety and cancellation policies for public boating programs. Data was collected from May through October 2019.

Water chemistry parameters included: discrete field measurements (using a handheld probe) of pH, conductivity, and temperature, and grab samples of nitrate and phosphate. A hyperlink was also provided with live and historical data from continuous instream monitors/sensors (Mayfly Loggers) which record depth, temperature, conductivity, turbidity, and dissolved oxygen. The continuous instream monitor/sensor reading for the associated date and time of discrete field measurements and bacteria sample was also reported along with the sample results in the data submission. Relevant information was also noted along with data such as recent rainfall measurements and high and low tides.

The water chemistry and *E. coli* data submitted have been categorized as Tier 2 data since the data submitted was accompanied by a sampling plan and quality assurance plan. The data do not meet Tier 3 data quality which is needed to directly make a water quality assessment for the Integrated Report since the collectors were not audited, the quality assurance plan was not DEP or EPA approved, and sampling did not adhere to DEP sampling methodology. DEP was not able to determine that the specific locations sampled were representative of the waterbody, as required by assessment methodology. Additionally, there was some lack of confidence in the results because the bacteria samples were incubated and analyzed on site at Bartram's Garden using 3M Petrifilm rather than the Bureau of Laboratories (BOL) as the sampling methodology requires, or a DEP accredited lab using an approved EPA method. The grab samples of phosphate and nitrate were also analyzed on site rather than BOL or an accredited/registered lab.

Bartram's Garden data was sent to the DEP Southeast Regional Office. The sampled location and accompanying data and information was considered when DEP designed the 2021 bacteria study on the tidal portion of the Schuylkill river, which led to the Recreational use assessments created by DEP for the 2022 Integrated Report.

Schuylkill Partners

In 2021, data was submitted by a collaborative partnership that includes Bartram's Gardens, Schuylkill Center for Environmental Education (SCEE), Schuylkill River Greenways National Heritage Area and Berks Nature for consideration in the Integrated Report 2022.

As part of this data submission, Bartram's Garden submitted data for time periods of July to November 2020 and April to September 2021, utilizing the same sampling location as data submitted in 2020. Data submitted includes the same parameters as 2019 data (characterized above), however bacteria samples were also sent to a DEP

accredited lab (Microbac) beginning in late 2020. Bacteria samples were simultaneously being analyzed “in-house” utilizing 3M Petrifilm at Bartram’s Garden and those results were submitted as well.

Bacteria data was also submitted for three additional locations on the Schuylkill River: at SCEE in Philadelphia, Schuylkill River Greenways near Pottstown, and along the Exeter Trail in Reading. Each location was managed by one of the other Schuylkill partners. This data was collected October-November 2020, and April to September 2021 and was analyzed by Microbac, a DEP accredited lab as well as “in-house” utilizing 3M Petrifilm. Hyperlinks for continuous instream Mayfly data loggers/sensors for each of these locations was provided as well.

This data has been categorized as Tier 2 using the same rationale as was used for the 2019 Bartram’s Garden data (see above). The same or similar sampling plans and quality assurance plans were submitted for 2020/2021 data with the addition of protocols followed by “Denkyem River Guardians” high school interns, who supported the data collection efforts at Bartram’s Garden. As mentioned above, several bacteria samples were submitted to and analyzed by a DEP accredited lab in 2021. However, it was not categorized as Tier 3 because the collectors were not audited and DEP was not able to determine that the specific locations sampled were representative of the waterbody, as required by assessment methodology. DEP methodology recommends a minimum of 5 samples in 30 days during the swimming season between May 1 and September 30. Of the samples analyzed by Microbac, there was not a set of 5 samples collected in a 30-day period.

The water quality and bacteria data will be shared with DEP Southeast Regional Office biologists to support further monitoring and assessment efforts in the Schuylkill River. The data from the Exeter Trail site will be shared with DEP Southcentral Regional Office biologists as well.

Huntingdon County Conservation District (HCCD)

HCCD submitted data from nineteen macroinvertebrate samples, along with field chemistry and habitat assessments within Standing Stone Creek, Saddler Creek, Warriors Mark Run watersheds and UNT to Shavers Creek. The data were categorized as Tier 3 and used to make Aquatic Life use assessments, where appropriate. The HCCD watershed specialist utilized DEP methodology, was audited by DEP WQD staff for field collection and sample sorting and is a certified taxonomist. WQD provided quality assurance checks of macroinvertebrate identification for several of the samples.

Data collected in the Standing Stone Creek watershed included stations in Standing Stone Creek, East Branch Standing Stone Creek, Laurel Run, and Herod Run. The data were collected in 2020 utilizing a Coldwater Heritage Partnership grant to create a Coldwater Conservation Plan for the upper Standing Stone Creek watershed. Of the eleven macroinvertebrate stations, nine resulted in an attaining Aquatic Life use

assessment. Those attaining assessments are consistent with previous Aquatic Life use assessments in the watershed. Two stations on Herod Run resulted in an impairment for Aquatic Life use. Both stations had Index of Biotic Integrity (IBI) scores below the threshold along with impaired habitat results. The source was determined to be agriculture and cause was siltation and habitat modification for lower Herod Run and UNT to Herod Run.

In March 2020, HCCD collected data at four stations in Saddler Creek to track water quality improvements associated with landowner restoration projects. Data from three of the sites resulted in an impaired Aquatic Life use determination, and one site resulted in an attaining determination; all four determinations are consistent with the previous assessment for the same segments.

HCCD collected data at three stations in Warriors Mark Run watershed to track water quality improvements associated with landowner restoration projects. Data from all three sites resulted in an impaired Aquatic Life use determination based on IBI scores. Two of the upstream sites were previously impaired in 2002; the downstream site is a new Aquatic Life use impaired assessment.

HCCD submitted data from two stations on UNT Shaver Creek. HCCD received a grant to design and implement a restoration project along UNT Shaver Creek; the two stations were intended to be baseline water quality data upstream and downstream of the restoration project. The downstream site data was used to make an impaired Aquatic Life use determination. The upstream site needs to be evaluated further to make an assessment.

Chester Water Authority Data

The Chester Water Authority submitted fecal coliform and Nitrate plus Nitrate data for the Octoraro Reservoir and Nitrate plus Nitrate data for the East and West Branches of Octoraro Creek, for the period of October to September. Coliform measurements were collected daily, and Nitrate plus Nitrate were reported 2 or 3 times per month. Sampling protocols and quality assurance plans were not submitted with the data and therefore DEP has determined that these data are in Tier 1 and cannot be used to make an assessment in the 2022 Integrated Report. The data will be shared with DEP Southcentral Region Office biologists to support future assessments.

Buffalo Creek Watershed Alliance

The Buffalo Creek Watershed Alliance submitted water chemistry data that was collected from 2007 through 2020 as part of a water quality study on Buffalo Creek. Upper portions of Buffalo Creek are impaired by atmospheric deposition and lower portions are impaired due to sediment from Agriculture. The Buffalo Creek Watershed Alliance installed an acid remediation site which began operation in September 2009; other remediation sites may be added in the future. The water quality study has been conducted to determine baseline water quality and evaluate the effects of the

remediation projects. Field data collected includes water temperature, alkalinity, pH, and dissolved oxygen. Lab data collected by volunteers and analyzed by Bucknell University includes sodium, potassium, calcium, nitrate, nitrogen (as ammonium nitrogen), sulfate, phosphorus, and total suspended solids. The data is categorized as Tier 1 under the data acceptance policy since it has a known quality (DEP at least knows the source of the data even if no quality assurance documentation was provided) and a sampling plan but does not have a quality assurance plan, field collectors were not audited, and water grab samples were not analyzed by a DEP registered or accredited lab. In addition, DEP was not able to determine that the specific locations sampled were representative of the waterbody, as required by assessment methodology. The data will be sent to DEP Northcentral Regional Office biologists to support future monitoring efforts, and to ensure that they are aware of the remediation projects.

White Clay Creek Watershed Association (WCWA)/Wild and Scenic River Program

White Clay Creek Watershed Association Wild and Scenic River program submitted data from their water quality monitoring program which intends to characterize stream conditions in the watershed and increase community engagement and awareness. The data submitted to DEP includes water chemistry grab sample data, discrete field measurements and continuous water chemistry data from 2017 through 2021, and bacteria data from 2013 through 2020. Grab sample parameters include chloride, nitrate, orthophosphate, and total suspended solids. Field measurements included temperature and conductivity. Bacteria data collected were *Enterococcus* and *E. coli*.

The data has been categorized as Tier 2 according to the data acceptance policy. There is a detailed sampling plan and a quality assurance plan. Water chemistry grab samples were analyzed by a DEP accredited lab. Bacteria data was collected utilizing DEP methodology (except that WCCA discontinued collection of blanks in 2016) and WCCA was trained by PADEP in 2014. However, the water chemistry samples, and continuous instream monitoring did not follow DEP methodology and WCCA was not field audited for these collections. The quality assurance plan has not been approved by DEP. The bacteria data was not analyzed by a DEP accredited laboratory.

This robust dataset of water chemistry and bacteria will be sent to Southeast Regional Office biologists to aid in prioritization of future water quality assessments in White Clay Creek watershed and for possible trend analysis. WCCA states that a microbial source tracking study has been undertaken with Stroud Water Research Center and is expected to be published in 2022. DEP anticipates utilizing these results to aid in source identification of recreational use impaired streams in this watershed.