

## **PENNSYLVANIA'S SURFACE WATER QUALITY MONITORING NETWORK (WQN) MANUAL**



**2019**

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**OFFICE OF WATER PROGRAMS**

**BUREAU OF CLEAN WATER**

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MONITORING NETWORK (WQN) MANUAL**

**2019**

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## **INTRODUCTION**

The Pennsylvania Water Quality Network (WQN) is a statewide, fixed station water quality sampling system operated by the Pennsylvania Department of Environmental Protection's (DEP) Bureau of Clean Water (BCW). It is designed to track both the quality of Pennsylvania's surface waters and the effectiveness of the water quality management program by accomplishing four basic objectives:

- Monitor temporal water quality trends in major surface streams throughout Pennsylvania.
- Monitor temporal water quality trends in selected reference waters.
- Monitor the trends of nutrient and sediment loads in the major tributaries entering the Chesapeake Bay.
- Monitor temporal water quality trends in selected Pennsylvania lakes.

"Major" streams, for the purposes of this document, are interstate and intrastate waters with drainage areas of roughly 200 square miles or greater. These waters receive both point and non-point source pollutants and are sampled at or near their mouths to measure overall quality before flows enter the next higher order stream or before exiting the state. In this way, trends can be established, and the effectiveness of water quality management programs can be assessed by watershed.

The monitoring of the WQN is conducted collaboratively between DEP, United States Geological Survey (USGS) Pennsylvania Water Science Centers, and Susquehanna River Basin Commission (SRBC).

WQN resources can be found on DEP's WQN webpage: [www.dep.pa.gov](http://www.dep.pa.gov), keywords: Water Quality Network.

## **STATION TYPES**

The WQN consists of 178 active stations grouped into three primary station types: standard, Chesapeake Bay nutrient loading, and reference.

The 117 standard stations are generally sampled every other month for stream discharge measurements and physical/chemical analysis, and every other year for a biological evaluation. Of these, thirty-one are sampled monthly for chemical analysis and nine are considered low alkalinity stations which are analyzed for a few additional parameters. See Appendix A for the list of parameters collected at low alkalinity stations.

The thirty-six Chesapeake Bay Nutrient Loading (Chesapeake Bay) stations are sampled monthly for stream discharge measurements and physical/chemical analysis, and once a year for biological evaluation. These stations are also part of the Chesapeake Bay Program nontidal monitoring network (CBP NTN) which requires eight additional water chemistry samples to be collected annually during storm events. More information on the CBP NTN can be found at: [CBP nontidal water quality monitoring](#).

The twenty-five reference stations are sampled monthly for stream discharge measurements and physical/chemical analysis and once a year (spring or fall) for biological evaluation. Reference stations are selected to represent minimally disturbed waters within Pennsylvania's various bioregions. Bioregions are areas with similar water quality characteristics because of like features such as topography, land use, soils, and potential natural vegetation. Although it may be argued that Pennsylvania has no unaffected waters (by atmospheric deposition), reference stations reasonably describe water quality that could be achieved in the absence of point source discharges and in the presence of minimal or typical non-point source impacts. Thus, these stations can provide, in the absence of site specific data, a benchmark for use in the water quality management permitting program as well as a measure of changing water quality in areas of the state not directly impacted by development. Of the twenty-five reference stations, eighteen are considered low alkalinity stations and therefore, are analyzed for a few additional parameters (Appendix 1).

WQN lake stations (excludes Lake Erie and Presque Isle Bay which are standard WQN stations) are selected after consideration of size, public access, intensity of use, and availability of existing data. Large lakes with heavy public use and/or historical data are favored for inclusion in this program because changing trends in the water quality of these resources have the potential for serious impacts on water uses. Approximately ninety lakes are included in this network, however, sampling occurs in groups of 15-20 lakes on a rotation. These lake groups are sampled once a year for five consecutive years before initiating a new group. The five-year data blocks are then used to assess lake water quality trends. The current group of fifteen lakes started in 2016 and will continue through 2020.

Station specific details are included in the Active, Macroinvertebrate, and Discontinued Stations tables found in Appendices 2-4. A web mapping application is also available to view each station: [WQN web application](#).

## **UPDATES TO THE WQN**

This revision of the WQN manual covers changes that occurred from October 2012 through September 2018. All information in this edition is reflective of the WQN's status as of October 1<sup>st</sup>, 2018. New parameters have been added to many of the existing Standard Analysis Codes (SACs). All SACs used for the WQN and the parameters they contain are listed in Appendix 1. The SACs assigned to each WQN station can be found in Appendices 2 and 4 (Active and Discontinued Station lists). The additional parameters collected at thirty-one of the WQN stations, for the Copper Biotic Ligand Model, concluded in late 2015; therefore, SACs 021 and 121 are no longer being used. In September 2015, the five-year rotation of the reference stations ended, and twenty-five stations were selected for the Water Year (WY) 2016-2020 rotation. Of these twenty-five, thirteen reference stations were retained to build larger datasets and twelve new stations were added. The six Potomac drainage Chesapeake Bay stations were transferred to Maryland Department of Natural Resources since most reside in Maryland. The station types for Muddy Creek and Susquehanna River at Sunbury were changed to Chesapeake Bay stations. Water quality sampling at four standard stations was increased from six to twelve samples per year. A total of twenty-six stations have been added to the WQN since the start of WY2013. These include five Chesapeake Bay, twelve reference, and ten standard stations. Station WQN0125 was discontinued and the use of multiplate macroinvertebrate sampling was ceased in 2018 at all locations. This edition of the manual contains a new table listing the macroinvertebrate sampling location for each active station.



The WQN is currently comprised of 178 active stations. The tables in this update reflect these changes.

## **WATER CHEMISTRY SAMPLING**

Water chemistry samples are collected at all active WQN stations based on the frequency assigned in the Active Stations table (Appendix 2). Reference and Chesapeake Bay stations are sampled once every month. The majority of standard stations are sampled once every other month and lakes are sampled once annually. Sampling for a station, no matter the station type, should be on a fixed schedule. This allows for the potential of a wide range of sampling conditions.

At least one Standard Analysis Code (SAC) is assigned to each WQN station depending on the station type. A SAC contains a list of analytes and is used to identify which water chemistry tests should be performed on a sample. A list of the SACs and the station type associated with it can be found in Appendix 1. Selected water chemistry tests may be added to any of the WQN stations on a case-by-case basis for a short term special study. However, use of additional analyses for extended periods of time is discouraged in favor of creating a new SAC tailored to the needs of the collector. All such changes are coordinated with the DEP Bureau of Laboratories (BOL) through the Bureau of Clean Water's Water Quality Division (WQD).

### **Chemical Sampling Methods**

Multiple agencies and numerous field staff are part of the WQN sampling effort. It is important that all involved are using the same sampling methods to ensure reliable and comparable data. Any questions regarding sampling methods should be directed to DEP WQD, (717)787-9637.

All field staff must obtain a four-digit collector identification number assigned by BOL. The Collector ID Request Form (Appendix 5) should be filled out and submitted via email to the WQD.

The WQN Sample Submission Sheet (Appendix 6) must be filled out and submitted to the BOL for each SAC. The information required on this form varies between station types. Field staff are responsible for working with the WQD to ensure the form is filled out correctly.

Surface water samples are collected as isokinetic, depth integrated, single mid-channel or equal-width samples. Samples are normally collected in High-Density Polyethylene (HDPE) or amber glass (for organic compound analysis) sample bottles. A sample volume and field preservation chart are available for reference in Appendix 7. Bottles must be labeled with the WQN number, collector ID number, sequence number, date, and time. If space allows, adding the SAC or other general test descriptions can help minimize any questions concerning the sample analyses. Depending on the station, samples may be collected from a bridge, boat, or by wading.

Detailed descriptions on how to collect surface water samples can be found in Chapter 4 of DEP's Water Quality Monitoring Protocols for Streams and Rivers (the Monitoring Book, Shull and Lookenbill 2018) and in Chapters 4 and 5 of the USGS's National Field Manual for the Collection of Water Quality Data.

### Reference Stations

These stations are assigned either SAC 013 or 015 depending on the alkalinity of the stream. Reference stations are additionally sampled for fecal coliforms and E. coli; a sterilized 125 ml bacteriological bottle pretreated with sodium thiosulfate (neutralizes the effects of residual chlorine) is used. A separate Sample Submission Sheet should be filled out for this analysis and SAC B021 is used. Reason Code 02 should be used on all reference station Sample Submission Sheets.

### Chesapeake Bay Nutrient Loading Stations

This station type is assigned either SAC 012 or 612 and all sites are within the Chesapeake Bay watershed. SAC 612 stations are in geographic areas that could be underlain by Marcellus shale; this SAC contains a few additional analytes typically associated with Marcellus drilling activities. Reason Code 01 is used on the Sample Submission Sheet for the monthly, routine sample collected at these Chesapeake Bay stations.

Storm Sampling: Since these stations are also part of the CBP NTN, in addition to the monthly routine sample, eight additional storm samples are collected throughout the sampling year. A storm event is characterized with a rising discharge (cfs) of at least twice that of the pre-storm average daily discharge. The assigned SAC, field parameters, and a suspended sediment sample is collected. These samples are tagged with Reason Code 014 on the datasheet. Ideally, one suspended sediment concentration (SSC) and one SSC with sand and fine particle analyses should be collected per quarter. If a storm event occurs on the scheduled routine sampling day, the sample is tagged as “routine, storm-impacted” and should be assigned Reason Code 015 on the datasheet. If feasible, a suspended sediment concentration (SSC) sample should be collected also. These “routine, storm-impacted” samples are counted as the routine monthly sample and not as one of the eight storm samples. All suspended sediment samples are shipped to the USGS Ohio-Kentucky-Indiana Water Science Center Sediment Laboratory in Louisville, KY.

Storm sampling for Chesapeake Bay Nutrient Loading stations is the only targeted sampling in the WQN. More detailed information on the sampling requirements for storm samples can be found in the CBP’s Non-Tidal Water Quality Monitoring document (CBP 2008).

### Lake Sampling

Lake Erie and Presque Isle Bay bimonthly samples are collected at mid-depth. For all other lakes, two samples are collected from one site during the mid-summer stratification. These sites correspond to the deepest point in each lake with one sample collected a meter below the surface and the second sample one meter from the bottom. A temperature/dissolved oxygen profile is recorded at this site through the vertical water column and an aliquot from the shallow sample is filtered for chlorophyll-a analysis. Chlorophyll-a sampling should follow the steps outlined in Chlorophyll A Sampling Method in Lakes, Ponds and Reservoirs (Lathrop 2017). It is recommended that at least one other site should be collected near the lake inlet. Lake sampling methods can be found in Evaluations of Phosphorus Discharges to Lakes, Ponds, and Impoundments (PADEP 2013).

## **BIOLOGICAL SAMPLING**

All biological sampling is conducted using the methods outlined in Chapter 3 of the Monitoring Book (Shull and Lookenbill 2018). At a minimum, benthic macroinvertebrate data are collected

at standard stations every other year between August 1<sup>st</sup> and September 30<sup>th</sup>. Standard stations that are wadeable in the non-summer months will be sampled between November 1<sup>st</sup> and April 30<sup>th</sup>. Macroinvertebrates are collected annually at Chesapeake Bay stations between November 1<sup>st</sup> and April 30<sup>th</sup>. Reference stations rotate annually between a Spring (March 1<sup>st</sup> to April 30<sup>th</sup>) or Fall (Nov. 1<sup>st</sup> to Dec. 31<sup>st</sup>) collection. Multiplate artificial substrate samplers were previously used at a few standard stations where water depth or unsuitable natural substrate prevented other sampling techniques. These samplers were discontinued at all WQN stations in 2018. The data collected will be analyzed for its usefulness.

A physical habitat assessment is conducted with every macroinvertebrate survey. The procedures in the Stream Habitat Data Collection Protocol section in Chapter 5 of the Monitoring Book (Shull and Lookenbill 2018) should be used. The majority of WQN stations will use the riffle/run habitat parameters, however, a few stations may use the multihabitat parameters if they are low gradient. Please contact the WQD if clarification is needed. Habitat field data sheets are available in Appendix C in the Monitoring Book (Shull and Lookenbill 2018).

Qualitative plankton samples are collected annually at Lake Erie stations. Quantitative invertebrate or plankton sampling and quantitative or qualitative fish sampling is optional at any station and may be conducted at the discretion of the collector. Plankton sampling methods are detailed in Quantitative Plankton Sampling Method for Lakes (PADEP 2015) and fish sampling methods are in Chapter 3 of the Monitoring Book (Shull and Lookenbill 2018).

Fish tissue is sampled periodically at the rate of approximately 100 stations per year following the methods outlined in Chapter 3 of the Monitoring Book (Shull and Lookenbill 2018). Tissue sampling locations are determined annually during the first quarter of the calendar year preceding sample analysis and rotated throughout the WQN to provide periodic complete coverage and to maintain surveillance on problem waters. Fish tissue (fillets) is analyzed for appropriate priority pollutants to assess its suitability for human consumption.

## **FLOW MEASUREMENT**

Stream discharge (flow volume) is measured or calculated each time a water chemistry sample is collected. USGS stream gaging facilities and/or extrapolation equations are utilized whenever possible. Where no USGS facilities/equations exist, stream discharge is measured using U.S. Army Corps of Engineers and private gaging facilities or calculated according to methods outlined by USGS (Turnipseed and Sauer, 2010). Lake levels for Lake Erie and Presque Isle Bay stations are measured at the U.S. Coast Guard station at the entrance to Erie Harbor.

### **Flow Measurement Methods**

The Pennsylvania WQN utilizes several types of stage gages to provide stream discharge. The two dominant types are the Wire-Weight (WW) gage and the Electric Tape (ET) gage. Both are non-recording gages that yield readings indirectly via measurement from a fixed point to the water surface. Other gages that may be used include a Staff gage, Analog-to-Digital Recorder (ADR) dial, Strip Chart, Hand Tape, Crest Stage Gage, Lock Chamber or Telemark (TMK). Descriptions on the various flow measurement methods are in Appendix 8.

The Water Resources Division of the USGS recommends that an outside gage such as a Staff gage or a WW gage be used by DEP personnel. If no outside gage is present or it is unreadable, USGS prefers a reading from the ADR dial or the ET gage, in that order. The base gages for the network stations are primarily ET gages or WW gages. If neither of these types are present, a Staff gage may function as the base gage for that site.

## **DATA AVAILABILITY AND MANAGEMENT**

All chemical data analyzed by DEP BOL are entered by BOL staff into DEP's internal Oracle database. The collector or DEP BCW staff are responsible for entering the field chemistry, station information, comments, and USGS OH-KY-IN Sediment Lab results into the Oracle database. The data are uploaded quarterly by DEP via the Water Quality Exchange (WQX) to the United States Environmental Protection Agency's (EPA) database. This data is made available to the public on the Water Quality Portal (<https://www.waterqualitydata.us>). Macroinvertebrate samples are processed, and the taxa identified and enumerated by a contractor or by BCW staff. The macroinvertebrate data are entered into the WQD's internal Streams and Lakes Integrated Management System (SLIMS) database. Analyses of trends at selected WQN stations are published in DEP's Biennial Integrated Water Quality Monitoring and Assessment Report.

## **QUALITY ASSURANCE**

A quality assurance project plan has been developed to describe the procedures used to implement the WQN in both the field and laboratory. Copies of this plan can be obtained from the Bureau of Clean Water's WQD or EPA Region III. One sample "blank" is submitted bimonthly by each field office involved in sample collection and duplicate or "split samples" are collected at the rate of one in every twenty regular WQN samples. Qualified WQD staff routinely audit WQN field staff to ensure sampling consistency between staff and to evaluate the utility of each station. Additional quality assurance for specific data collection protocols can be found throughout the Monitoring Book (Shull and Lookenbill 2018).

## **LITERATURE CITED**

- Barbour, M. T., J. Gerritsen, B. D. Snyder, and J. B. Stribling. 1999. Rapid Bioassessment Protocols for Use in streams and Wadeable Rivers: Periphyton, Benthic Macroinvertebrates and Fish, Second Edition. EPA 841-B-99-002. United States Environmental Protection Agency; Office of Water; Washington, D.C.
- Buchanan, T.J., and W.P. Somers, 1969. Discharge Measurements at Gaging Stations: U.S. Geological Survey Techniques of Water-Resources Investigations, Book 3, Chap. A8, p.65, available online at <https://pubs.usgs.gov/twri/twri3a8/>.
- CPB. 2008. Non-Tidal Water Quality Monitoring. Chesapeake Bay Program, Annapolis, MD. Chapter V – Non-Tidal Water Quality Field Procedures.
- Lathrop, B.F. 2017. Chlorophyll A Sampling Method in Lakes, Ponds and Reservoirs. Pennsylvania Department of Environmental Protection, Harrisburg, PA.

- PADEP. 2013. Evaluations of Phosphorus Discharges to Lakes, Ponds, and Impoundments. Pennsylvania Department of Environmental Protection, Harrisburg, PA.
- PADEP. 2015. Quantitative Plankton Sampling Method for Lakes (Modified Standard Method 1002a). Pennsylvania Department of Environmental Protection, Harrisburg, PA.
- Shull, D. R. and M. Lookenbill (editors). 2018. Water Quality Monitoring Protocols for Streams and Rivers. PA Department of Environmental Protection, Harrisburg, PA.
- Shull, D. R. and M. Lookenbill (editors). 2018. Water Quality Monitoring Protocols for Streams and Rivers. Chapter 4: Chemical Data Collection Protocols. PA Department of Environmental Protection, Harrisburg, PA.
- Turnipseed, D.P., and V. B. Sauer. 2010. Discharge measurements at gaging stations: U.S. Geologic Survey Techniques and Methods book 3, chap A8, p.87, available online at <https://pubs.usgs.gov/tm/tm3-a8/>.
- U.S. Geological Survey. variously dated. National Field Manual for the Collection of Water Quality Data: Techniques and Methods. Book 9, Chapter A4.1 and A5. Available online at <https://water.usgs.gov/owq/FieldManual>.

**APPENDIX 1 – STANDARD ANALYSIS CODES (SAC)**

## **WQN PARAMETER LISTS**

### **1. ALL STATIONS (standard field analyses)**

pH                                      Temperature                                      Dissolved Oxygen                                      Specific Conductance

\*\* % Dissolved Oxygen and Turbidity should also be reported, if collected, using data collection protocols in Shull and Lookenbill (2018).

### **2. STANDARD STATIONS (SAC 010)**

<b><u>Test Code</u></b>	<b><u>Test Description</u></b>	<b><u>Test Code</u></b>	<b><u>Test Description</u></b>
410	Alkalinity (Alk)	01105H	Aluminum, Total (Al)
00610A	Ammonia Nitrogen (NH3 N)	99020	Bromide (Br)
00916A	Calcium, Total (Ca)	940	Chloride (Cl)
01042H	Copper, Total (Cu)	900	Hardness, Total (Hard)
01045A	Iron, Total (Fe)	01051H	Lead, Total (Pb)
00927A	Magnesium, Total (Mg)	01055A	Manganese, Total (Mn)
01067A	Nickel, Total (Ni)	620	Nitrate Nitrogen (NO3 N)
615	Nitrite Nitrogen (NO2 N)	00600A	Nitrogen, Total (N)
403	pH, Lab (PH)	00665A	Phosphorus, Total (P)
70507A	Phosphorus Orthophosphate, Total P(O)	00937A	Potassium, Total (K)
00929A	Sodium, Total (Na)	95	Specific Conductivity (SPC)
945	Sulfate, Total (SO4)	70300U	Total Dissolved Solids @ 180C (TDS)
530	Total Suspended Solids (TSS)	01092A	Zinc, Total (Zn)

### **3. CHESAPEAKE BAY NUTRIENT LOADING STATIONS (SAC 012)**

<b><u>Test Code</u></b>	<b><u>Test Description</u></b>	<b><u>Test Code</u></b>	<b><u>Test Description</u></b>
410	Alkalinity (Alk)	01105A	Aluminum, Total (Al)
00608A	Ammonia Nitrogen, Dissolved (NH3 N)	00610A	Ammonia Nitrogen, Total (NH3 N)
99020	Bromide (Br)	00916A	Calcium, Total (Ca)
940	Chloride (Cl)	01042H	Copper, Total (Cu)
900	Hardness, Total (Hard)	01045A	Iron, Total (Fe)
01051H	Lead, Total (Pb)	00927A	Magnesium, Total (Mg)
01055A	Manganese, Total (Mn)	01067A	Nickel, Total (Ni)
00631A	Nitrate & Nitrite, Dissolved (NO3 + NO2)	00630A	Nitrate & Nitrite, Total (NO3 + NO2)
00602A	Nitrogen, Dissolved (N)	00600A	Nitrogen, Total (N)
680	Organic Carbon, Total	403	pH, Lab (PH)
00671A	Phosphorus Orthophosphate, Dissolved P(O)	70507A	Phosphorus Orthophosphate, Total P(O)
00666A	Phosphorus, Dissolved (P)	00665A	Phosphorus, Total (P)
00937A	Potassium, Total (K)	00929A	Sodium, Total (Na)
95	Specific Conductivity (SPC)	945	Sulfate, Total (SO4)
70300U	Total Dissolved Solids @ 180C (TDS)	530	Total Suspended Solids (TSS)
01092A	Zinc, Total (Zn)		

#### 4. REFERENCE STATIONS (SAC 013 & B021\*)

<u>Test Code</u>	<u>Test Description</u>	<u>Test Code</u>	<u>Test Description</u>
410	Alkalinity (Alk)	01106H	Aluminum, Dissolved (Al)
01105H	Aluminum, Total (Al)	00610A	Ammonia Nitrogen, Total (NH3 N)
01000H	Arsenic, Dissolved (Ar)	01007H	Barium, Total (Ba)
314	Biochemical Oxygen Demand (BOD)	01022K	Boron, Total (B)
99020	Bromide (Br)	01025H	Cadmium, Dissolved (Cd)
00916A	Calcium, Total (Ca)	940	Chloride (Cl)
01040H	Copper, Dissolved (Cu)	01042H	Copper, Total (Cu)
MMTECMF	E. coli*	31616	Fecal Coliform* (FC)
900	Hardness, Total (Hard)	01046A	Iron, Dissolved (Fe)
01045A	Iron, Total (Fe)	01130A	Lithium, Dissolved (Li)
01132A	Lithium, Total (Li)	01049H	Lead, Dissolved (Pb)
01051H	Lead, Total (Pb)	00927A	Magnesium, Total (Mg)
01056H	Manganese, Dissolved (Mn)	01055H	Manganese, Total (Mn)
01065H	Nickel, Dissolved (Ni)	01067H	Nickel, Total (Ni)
620	Nitrate Nitrogen (NO3 N)	615	Nitrite Nitrogen (NO2 N)
00600A	Nitrogen, Total (N)	82550	Osmotic Pressure (OP)
403	pH, Lab (PH)	00665A	Phosphorus, Total (P)
70507A	Phosphorus Orthophosphate, Total P(O)	00937A	Potassium, Total (K)
01147H	Selenium, Total (Se)	00929A	Sodium, Total (Na)
95	Specific Conductivity (SPC)	01082A	Strontium, Total (Sr)
945	Sulfate, Total (SO4)	70300U	Total Dissolved Solids @ 180C (TDS)
530	Total Suspended Solids (TSS)	01090H	Zinc, Dissolved (Zn)
01092A	Zinc, Total (Zn)		

#### 5. REFERENCE/LOW ALKALINITY STATIONS (SAC 015): Includes all SAC 013 & B021 parameters plus,

<u>Test Code</u>	<u>Test Description</u>
70508	Acidity, Total
00915A	Calcium, Dissolved (Ca)
00925A	Magnesium, Dissolved (Mg)
680	Organic Carbon, Total

#### 6. LOW ALKALINITY STATIONS (SAC 016)

<u>Test Code</u>	<u>Test Description</u>	<u>Test Code</u>	<u>Test Description</u>
70508	Acidity, Total	410	Alkalinity (Alk)
01106H	Aluminum, Dissolved (Al)	01105H	Aluminum, Total (Al)
00610A	Ammonia Nitrogen, Total (NH3 N)	314	Biochemical Oxygen Demand (BOD)
99020	Bromide (Br)	00915A	Calcium, Dissolved (Ca)
00916A	Calcium, Total (Ca)	940	Chloride (Cl)
01040H	Copper, Dissolved (Cu)	01042H	Copper, Total (Cu)
900	Hardness, Total (Hard)	01046A	Iron, Dissolved (Fe)
01045A	Iron, Total (Fe)	01130A	Lithium, Dissolved (Li)



01132A	Lithium, Total (Li)	01049H	Lead, Dissolved (Pb)
01051H	Lead, Total (Pb)	00925A	Magnesium, Dissolved (Mg)
00927A	Magnesium, Total (Mg)	01056H	Manganese, Dissolved (Mn)
01055H	Manganese, Total (Mn)	01065H	Nickel, Dissolved (Ni)
01067H	Nickel, Total (Ni)	620	Nitrate Nitrogen (NO3 N)
615	Nitrite Nitrogen (NO2 N)	00600A	Nitrogen, Total (N)
403	pH, Lab (PH)	00665A	Phosphorus, Total (P)
70507A	Phosphorus Orthophosphate, Total P(O)	00937A	Potassium, Total (K)
00929A	Sodium, Total (Na)	95	Specific Conductivity (SPC)
945	Sulfate, Total (SO4)	70300U	Total Dissolved Solids @ 180C (TDS)
530	Total Suspended Solids (TSS)	01090H	Zinc, Dissolved (Zn)
01092H	Zinc, Total (Zn)		

**7. STANDARD TDS STATIONS (SAC 610):** Includes all SAC 010 parameters plus:

<u>Test Code</u>	<u>Test Description</u>	<u>Test Code</u>	<u>Test Description</u>
01007H	Barium, Total (Ba)	01022K	Boron, Total (B)
01132A	Lithium, Total (Li)	82550	Osmotic Pressure (OP)
01147H	Selenium, Total (Se)	01082A	Strontium, Total (Sr)

**8. CHESAPEAKE BAY NUTRIENT LOADING TDS STATIONS (SAC 612):** Includes all SAC 012 parameters plus:

<u>Test Code</u>	<u>Test Description</u>	<u>Test Code</u>	<u>Test Description</u>
01007H	Barium, Total (Ba)	01022K	Boron, Total (B)
01130A	Lithium, Dissolved (Li)	01132A	Lithium, Total (Li)
82550	Osmotic Pressure (OP)	01147H	Selenium, Total (Se)
01082A	Strontium, Total (Sr)		

**9. LOW ALKALINITY TDS STATIONS (SAC 616):** Includes all SAC 016 parameters plus:

<u>Test Code</u>	<u>Test Description</u>	<u>Test Code</u>	<u>Test Description</u>
01007H	Barium, Total (Ba)	01022K	Boron, Total (B)
82550	Osmotic Pressure (OP)	01147H	Selenium, Total (Se)
01082A	Strontium, Total (Sr)		

**10. RADIOLOGICAL (Suite RAD99):** Alpha and Beta may be listed on the Sample Submission Sheet as additional parameters, for any WQN station, to supplement the selected analysis code. DEP Water Quality Division staff must be aware of these additions.

**11. LAKE STATIONS (SAC 017)**

<u>Test Code</u>	<u>Test Description</u>	<u>Test Code</u>	<u>Test Description</u>
410	Alkalinity, Total (Alk)	01105H	Aluminum, Total (Al)
00610A	Ammonia Nitrogen, Total (NH3 N)	00916A	Calcium, Total (Ca)

940	Chloride (Cl)	01042H	Copper, Total (Cu)
900	Hardness, Total (Hard)	01045A	Iron, Total (Fe)
01051H	Lead, Total (Pb)	00927A	Magnesium, Total (Mg)
01055H	Manganese, Total (Mn)	00600A	Nitrogen, Total (N)
403	pH, Lab (PH)	00665A	Phosphorus, Total (P)
945	Sulfate, Total (SO4)	70300U	Total Dissolved Solids @ 180C (TDS)
530	Total Suspended Solids (TSS)	01092H	Zinc, Total (Zn)

## 12. FISH TISSUE STATIONS

### a. SAC 059

<u>Test Code</u>	<u>Test Description</u>	<u>Test Code</u>	<u>Test Description</u>
71946	Barium, Total (Ba)	71940	Cadmium, Total (Cd)
71939	Chromium, Total (Cr)	71937	Copper, Total (Cu)
71936	Lead, Total (Pb)	71930	Mercury, Total (Hg)
71945	Selenium, Total (Se)	71947	Strontium, Total (Sr)

### b. PCBs (SAC PCBF)

<u>CAS #</u>	<u>Test Description</u>	<u>CAS #</u>	<u>Test Description</u>
11104282	Arochlor 1221	11141165	Arochlor 1232
53469219	Arochlor 1242	12672296	Arochlor 1248
11097697	Arochlor 1254	11096825	Arochlor 1260

### c. PESTICIDES (SAC PESTF)

<u>CAS #</u>	<u>Test Description</u>	<u>CAS #</u>	<u>Test Description</u>
72548	4,4-DDD	72559	4,4-DDE
50293	4,4-DDT	309002	Aldrin
319846	Alpha-BHC	5103719	Alpha-Chlordane
3734483	Chlordene	5103731	Cis-Nonachlor
60571	Dieldrin	72208	Endrin
5103742	Gamma-Chlordane	58899	Gamma-BHC (Lindane)
76448	Heptachlor	1024573	Heptachlor Epoxide
72435	Methoxychlor	2385855	Mirex
53190	O,P-DDD	3424826	O,P-DDE
789026	O,P-DDT	26880488	Oxychlordane
39765805	Trans-Nonachlor		

## **APPENDIX 2 - ACTIVE WATER CHEMISTRY STATIONS**

## DEP WATER QUALITY NETWORK (WQN) – ACTIVE STATIONS REV. 12/2018

WQN	Stream Name	Station Type	Start Date (M/Y)	Samples per Year	SAC	REG	Location	Municipality	County	Lat	Long	USGS Gage	Drain Area (Sq Mi)
001	Genesee Rvr	STN	3/90	6	610	NC	SR1010 (Commercial St Br) - Village of Genesee	Genesee Twp	Potter	41.99426	-77.87011	04221000	289
100	UNT Sixpenny	REF	11/15	12	15	SE	Upstr of Old Railroad Grade Tunnel	Union Twp	Berks	40.24077	-75.77734	Manual	0.99
101	Delaware Rvr Nr Morrisville	STN	7/62	6	10	SE	SR2026 (Trenton Avenue Br) Nr Morrisville	Morrisville Twp	Bucks	40.21970	-74.77810	01463500	6780
103	Delaware Rvr @ Port Jervis	STN	5/62	6	610	NE	US Rts 6 & 209 Br - Port Jervis	Port Jervis	Orange, NY	41.37190	-74.69700	01434000	3070
104	W Br Delaware Rvr	STN	5/62	6	616	NE	SR191 Br	Buckingham Twp	Wayne	41.95227	-75.29208	01426500	595
105	Brandywine Crk	STN	7/62	12	13	SE	RXR Br 400 Mi dwnstr of SR1 Br - Chadds Ford	Birmingham Twp	Delaware	39.86950	-75.59330	01481000	287
110	Schuylkill Rvr	STN	7/62	12	10	SE	Falls Br	Philadelphia	Philadelphia	40.00840	-75.19750	01474500	1893
111	Schuylkill Rvr	STN	7/62	12	10	SE	SR4038 Hanover St Br	Pottstown	Montgomery	40.24206	-75.65124	01472000	1147
113	Schuylkill Rvr	STN	7/62	6	16	SC	T954 (Water St) Br - Berne	Bern Twp	Berks	40.52220	-75.99800	01470500	355
115	Wissahickon Crk	STN	7/62	6	10	SE	Ridge Ave Br	Philadelphia	Philadelphia	40.01483	-75.20670	01474000	64
116	Perkiomen Crk	STN	7/62	6	10	SE	T325 (Arcola Rd) Br	L Providence Twp	Montgomery	40.15319	-75.45559	01473000	279
117	Tulpehocken Crk	STN	7/62	6	10	SC	Grings Mill Br	Bern Twp	Berks	40.36281	-75.96795	01471000	211
121	Neshaminy Crk	STN	7/62	6	10	SE	SR213 Br Nr Langhorne	Middletown Twp	Bucks	40.17421	-74.95733	01465500	210
123	Lehigh Rvr	STN	7/62	6	16	NE	SR2012 (Glendon Ave) Br - H. Moore Park	Easton	Northampton	40.66669	-75.23834	01454700	1359
126	Lehigh Rvr	STN	5/62	6	16	NE	SR115 Br	Tobyhanna Twp	Monroe	41.13040	-75.62601	01447500	91.7
130	Jordan Crk	STN	7/62	6	10	NE	Martin Luther King Jr Blvd	Allentown	Lehigh	40.60199	-75.46231	01452000	75.8
131	Aquashicola Crk	STN	7/62 - 12/87; 10/2018	12	16	NE	T372 Br @ mouth	Palmerton	Carbon	40.79333	-75.61250	1450600	
137	Brodhead Crk	STN	5/62	6	10	NE	SR2028 (LR45061) Br	Smithfield Twp	Monroe	40.99358	-75.13764	01442500	259

WQN	Stream Name	Station Type	Start Date (M/YY)	Samples per Year	SAC	REG	Location	Municipality	County	Lat	Long	USGS Gage	Drain Area (Sq Mi)
138	Brodhead Crk	STN	5/62	6	16	NE	SR191 Br - Analomink	Stroud Twp	Monroe	41.03700	-75.21000	01440400	65.9
139	Bushkill Crk	STN	5/62	6	16	NE	T523 Br Nr Shoemakers	M Smithfield Twp	Monroe	41.08835	-75.03763	01439500	117
141	Wallenpaupack Crk	STN	5/62	6	16	NE	T353 - East Sterling	Greene Twp	Pike	41.33624	-75.34006	01431600	70.7
142	Tobyhanna Crk	STN	1/64	6	16	NE	SR940 Br Nr Blakeslee	Tobyhanna Twp	Monroe	41.08470	-75.60540	01447720	118
147	Lackawaxen Rvr	STN	9/72	6	10	NE	SR590 Br	Lackawaxen Twp	Pike	41.48667	-74.99157	01432110	596
149	White Clay Crk	STN	11/72	12	13	SE	Creek Rd trail off S Bank Rd, below Confl of UNT; 1100ft dwnstr of gage	London Britain Twp	Chester	39.74472	-75.77308	01478245	59.2
150	Red Clay Crk	STN	11/72	12	13	SE	SR3013 (LR15037) Marshall's Br	Kennett Twp	Chester	39.81635	-75.69150	01479820	28.3
154	Valley Crk	STN	11/72	6	10	SE	Wilson Rd Br	Tredyffrin Twp	Chester	40.08124	-75.45661	01473169	20.8
178	Pine Crk	REF	2/88-7/98 & 10/10	12	13	SC	Dwnstr of Lobachsville Rd (SR1023) Br	Pike Twp	Berks	40.40900	-75.73490	Manual	9.76
181	Little Bushkill Crk	REF	1/88-7/98 & 10/10	12	15	NE	Dwnstr of Sugar Mountain Rd (SR 2003) Br	Lehman Twp	Pike	41.09750	-75.00395	Manual	32.9
182	Delaware Rvr	STN	3/88	6	10	SE	2000 Yds Upstr of Buoy R6M-1000' above DE border	Marcus Hook	Delaware	39.80719	-75.40667	01463500	6780
183	E Br Dyberry Crk	REF	5/88-7/98 & 10/10	12	15	NE	Upstr of Rt 4007 (Dug Rd) Br; above confl with W Br Dyberry Crk	Dyberry Twp	Wayne	41.66161	-75.28816	Manual	16.86
185	Delaware Rvr	STN	8/88	6	616	NE	SR1020 (LR63027) Br Nr Callicoon NY	Damascus Twp	Wayne	41.76450	-75.06206	01427510	1820
191	Wild Creek	REF	8/98-12/04 & 10/15	12	15	NE	1st Br Upstr of Penn Forest Res T482	Penn Forest Twp	Carbon	40.94028	-75.58472	Manual	5.33
193	Wissahickon Crk	STN	1/02	6	10	SE	SR73 Br	Whitemarsh Twp	Montgomery	40.12393	-75.22030	01473900	41
194	Delaware Rvr	STN	11/02	6	10	NE	SR1004 Br @ Belvidere, NJ	Lower Mount Bethel Twp	Northampton	40.82880	-75.08470	01446500	4535
201	Susquehanna Rvr @ Marietta	SS	7/62	20	12	SC	SR462 Br	Hempfield Twp	Lancaster	40.02810	-76.51900	01576000	25990

WQN	Stream Name	Station Type	Start Date (M/YY)	Samples per Year	SAC	REG	Location	Municipality	County	Lat	Long	USGS Gage	Drain Area (Sq Mi)
202	Susquehanna Rvr @ Hburg	SS	5/62-2/95 & 10/12	20	612	SC	Market St Br	Harrisburg	Dauphin	40.25660	-76.88465	1570500	24083
203	Susquehanna Rvr @ Sunbury	SS	7/62	20	612	NC	Veterans Memorial Br btwn Sunbury & Shamokin Dam ; ST Hwy 61	Upper Augusta	Northumberland	40.85150	-76.80709	01554000	18300
204	Pequea Crk	SS	12/66	20	612	SC	SR324 Br @ Martic Forge	Conestoga Twp	Lancaster	39.90570	-76.32831	01576787	148
206	Chickies Crk	STN	7/62	6	10	SC	SR23 Br	E Donegal Twp	Lancaster	40.06291	-76.51534	01575900	108
210	W Conewago Crk	SS	6/62	20	12	SC	SR181 Br	Newberry Twp	York	40.08140	-76.71800	01574000	510
212	Yellow Breeches	SS	6/62	20	12	SC	Bridge St Br (Old US Rt 11) - New Cumberland	Fairview Twp	York	40.22419	-76.86056	01571500	216
214	Juniata Rvr	SS	6/62	20	12	SC	SR34 Br	Newport	Perry	40.47903	-77.12813	01567000	3354
217	Little Juniata Rvr	SS	3/50	20	612	SC	SR45 Br	Spruce Creek Twp	Huntingdon	40.60906	-78.13633	01558000	220
223	Raystown Br Juniata	SS	3/50	20	612	SC	SR913 Br W of Saxon	Liberty Twp	Bedford	40.21501	-78.26487	01562000	756
224	Frankstown Br Juniata	SS	6/62	20	612	SC	abandon RXR Br 0.6 RM upstr of Clover Crk; off SR2013	Woodbury Twp	Blair	40.47186	-78.18680	01556000	291
226	Mahantango Crk	SS	7/62-11/87 & 1/12	20	12	SC	S Malta Rd (T482) Br	Upper Paxton Twp	Dauphin	40.61111	-76.91152	01555500	162.5
228	Middle Crk	STN	7/62	6	10	NC	SR11 Br (Old Rts 11&15)	Penn Twp	Snyder	40.77521	-76.86992	01555207	155
229	Penns Crk	SS	7/62	20	12	NC	SR104 Br - Village of Penns Crk	Centre Twp	Snyder	40.86700	-77.04927	01555000	301
243	Sherman Crk	SS	10/04	20	12	SC	Pisgah State Rd Crossing @ Dromgold	Carroll Twp	Perry	40.34420	-77.19435	01568000	207
249	Aughwick Crk	STN	1/72	6	10	SC	T403 Br - Aughwick Mills	Shirley Twp	Huntingdon	40.33480	-77.86000	01564512	301
252	Beaverdam Br Juniata Rvr	STN	9/72	6	610	SC	2000' upstr of mouth along SR2014 (T405)	Frankstown Twp	Blair	40.43066	-78.36441	01555858	83
256	Big Elk Crk	STN	11/72	6	10	SE	SR3006 (LR15016) Strickersville Rd Br	Franklin Twp	Chester	39.73012	-75.84789	01494990	41

WQN	Stream Name	Station Type	Start Date (M/Y/Y)	Samples per Year	SAC	REG	Location	Municipality	County	Lat	Long	USGS Gage	Drain Area (Sq Mi)
259	Muddy Crk	SS	1/88-7/98 & 10/10	20	612	SC	Upstr of SR 2024 (Paper Mill Rd) Br	Peach Bottom Twp	York	39.77302	-76.31620	01577500	132.8
263	Octoraro Crk	SS	11/05	20	12	SC	US 1 @ Richardsmere, Md	Richardsmere, MD	Cecil	39.69368	-76.12473	01578475	189.2
269	Conewago Crk - Falmouth	SS	5/11	20	12	SC	300 yds dwnstr of Hillsdale Rd Br	Conoy Twp	Lancaster	40.15111	-76.68974	01573710	47.3
271	Conodoguinet Crk	SS	10/04	20	12	SC	Sample Road Br	Silver Spring Twp	Cumberland	40.25546	-77.01854	01570000	470
272	Swatara Crk	SS	10/04	20	12	SC	Just upstr of Hanover St Br @ Swatara Crk Park	Derry Twp	Dauphin	40.28717	-76.67780	01573560	485
273	Conestoga Rvr	SS	10/04	20	12	SC	River Road Bridge (SR 3030) @ Safe Harbor	Manor Twp	Lancaster	39.93912	-76.38737	01576754	470
278	Conewago Crk - Bellaire	SS	10/11	20	12	SC	Prospect Rd Crossing Nr Lebanon/Lancaster County Border	Mount Joy Twp	Lancaster	40.19528	-76.56778	01573695	20.5
279	Bobs Crk	REF	3/06	12	13	SC	SR869 dwnstr of confl with Wallack's Br	Union Twp	Beford	40.26310	-78.59090	MANUAL	11
280	Big Spring Run	SS	10/11	20	12	SC	Along Gypsy Hill Rd about 0.4 miles from US 222	West Lampeter	Lancaster	39.99583	-76.26389	015765195	1.68
281	Paxton Crk	SS	1/12	20	12	SC	Kohn Rd crossing; 0.5 mi dwnstr of Progress Ave	Susquehanna Twp	Dauphin	40.30610	-76.85564	01571005	11.6
282	Kishacoquillas Crk	SS	1/12	20	12	SC	Bridge on Manns Narrows Rd	Derry Twp	Mifflin	40.65458	-77.58359	01565000	163
284	Pequea Crk	SS	11/12	20	12	SC	S Ronks Rd	Strasburg Twp	Lancaster	40.00917	-76.16222	01576767	70
285	Quittapahilla	SS	11/12	20	12	SC	Palmyra-Bellgrove Rd	N Annville Twp	Lebanon	40.34239	-76.56110	01573160	74.2
286	Codorus Crk	SS	11/12	20	12	SC	Codorus Furnace Rd (SR 1008)	E Manchester Twp	York	40.05226	-76.65445	01575585	276.8
301	Susquehanna Rvr - Danville	SS	7/62	20	612	NC	SR54 Br	Mahoning Twp	Montour	40.95770	-76.62120	01540500	11220
302	Susquehanna Rvr - Wilkes-Barre	SS	5/62	20	612	NE	Br East of US Rt 11 Nr Retreat State Prison	Newport Twp	Luzerne	41.18900	-76.08720	01536500	9960
305	Susquehanna Rvr - Towanda	SS	5/62	20	612	NC	James Street Br	Wysox Twp	Bradford	41.79159	-76.44291	01531500	7797
306	Susquehanna Rvr - Ny	STN	5/62	6	610	NE	SR11 Br Nr Great Bend	Great Bend Twp	Susquehanna	41.96382	-75.74190	01503000	2232

WQN	Stream Name	Station Type	Start Date (M/Y)	Samples per Year	SAC	REG	Location	Municipality	County	Lat	Long	USGS Gage	Drain Area (Sq Mi)
308	Fishing Crk	STN	5/62	6	16	NC	SR42 Br	Montour Twp	Columbia	40.99350	-76.47560	01539000	369.7
309	Nescopeck Crk	STN	5/62	6	10	NE	SR 339 Br	Nescopeck Twp	Luzerne	41.04703	-76.22105	01538600	172
313	Lackawanna Rvr	STN	5/62	6	610	NE	Bridge St Br	Old Forge	Lackawanna	41.35845	-75.74404	01536000	332
317	Tunkhannock Crk	SS	5/62	20	612	NE	SR6 Br	Tunkhannock Twp	Wyoming	41.55725	-75.89443	01534000	383
318	Towanda Crk	STN	5/62	6	610	NC	SR3006 (LR08193) Br Nr Monroeton	Monroe Twp	Bradford	41.70820	-76.48630	01532000	215
323	Susquehanna Rvr	STN	11/68	6	610	NE	SR92 Br - Falls	Exeter Twp	Wyoming	41.46199	-75.85433	01536500 & 01536000	10292
324	Tioga Rvr	STN	9/70	6	610	NC	450 ft dwnstr of T773 Br - Tioga Junction	Lawrence Twp	Tioga	41.95613	-77.11557	01518700	446
333	Sugar Crk	STN	1/88	6	610	NC	Pine Valley Rd Bridge	N Towanda Twp	Bradford	41.78131	-76.50258	01531488	184
334	Wyalusing Crk	STN	1/88	6	610	NC	SR706 Br - Merryall	Wyalusing Twp	Bradford	41.69740	-76.23060	01532950	215
341	Tioga Rvr	STN	10/10	6	610	NC	Along T754 (Brooklyn Rd)	Mansfield Boro	Tioga	41.79556	-77.07972	01516350	152.66
343	Cowanesque Rvr	STN	11/15	6	610	NC	State Highway 49 (E Main St) - Elkland, Pa	Elkland Boro	Tioga	41.98750	-77.30250	01519200	234
401	W Br Susquehanna Rvr - Lewisburg	SS	7/62	20	612	NC	SR45 Br	Lewisburg	Union	40.96690	-76.87872	01553500	6847
402	W Br Susquehanna Rvr - Williamsport	STN	3/50	6	610	NC	Maynard St Br	S Williamsport	Lycoming	41.22911	-77.01905	01551500	5682
404	W Br Susquehanna Rvr - Karthaus	SS	1/50- 11/87 & 10/04	20	612	NC	SR 879 Br @ Karthaus	Karthaus Twp	Clearfield	41.11695	-78.10914	01542500	1462
406	W Br Susquehanna Rvr - Bower	STN	6/62	6	610	NC	T418 Br - Bower	Greenwood Twp	Clearfield	40.89719	-78.67752	01541000	315
408	Loyalsock Crk	STN	5/62	6	616	NC	SR973 Br Nr Loyalsockville	Eldred Twp	Lycoming	41.32519	-76.91134	01552000	443
409	Lycoming Crk	REF	5/62	12	13	NC	T840 Br - Camp Susque (Nr Gray)	Lewis Twp	Lycoming	41.41810	-77.03350	01550000	173



WQN	Stream Name	Station Type	Start Date (M/YY)	Samples per Year	SAC	REG	Location	Municipality	County	Lat	Long	USGS Gage	Drain Area (Sq Mi)
410	Pine Crk - Waterville	SS	5/62	20	612	NC	900 ft dwnstr of gage just upstr of island; along Rt 44	Cummings Twp	Lycoming	41.27218	-77.32695	01549700	944
413	Bald Eagle Crk	STN	5/62	6	610	NC	SR1003 (LR14010) Br - Curtin	Boggs Twp	Centre	40.97492	-77.74215	01547200	265
415	Spring Crk	STN	3/50	6	610	NC	SR3001 (LR14040) Hartles Br	Benner Twp	Centre	40.89002	-77.79431	01546500	87.2
418	Sinnemahoning Crk Nr Keating	STN	3/50	6	610	NC	SR4002 (LR18001) Br - Keating	E Keating Twp	Clinton	41.26114	-77.90717	01543500	930
420	Driftwood Br Sinnemahoning	STN	3/50	6	616	NC	SR3002 (LR12004) Br - Sterling Run	Lumber Twp	Cameron	41.41351	-78.19698	01543000	272
422	Clearfield Crk	STN	3/50	6	610	NC	SR153 Br	Boggs Twp	Clearfield	40.98600	-78.40594	01541500	371
423	Beech Crk	STN	4/65	6	610	NC	SR150 Br - Beech Crk	Beech Creek Twp	Clinton	41.07486	-77.59240	01547950	152
429	Little Pine Crk	STN	9/72	6	616	NC	SR 44 Br	Cummings Twp	Lycoming	41.30971	-77.36285	01549590	180
433	Fishing Crk	STN	9/72	6	610	NC	SR2004 (LR18007) 2nd Br upstr of Cedar Run confl	Lamar Twp	Clinton	41.07536	-77.47784	01548075	137
434	Kettle Crk	STN	9/72	6	616	NC	Off SR4001 (LR18003) 3.2 Mi upstr of Pa Rt120	Noyes Twp	Clinton	41.31945	-77.87348	01545000	233
439	Bennetts Br Sinnemahoning	STN	8/76	6	610	NC	T343 Br Nr Castle Garden	Gibson Twp	Cameron	41.33397	-78.13570	01542790	367
444	Muncy Crk	STN	1/88	6	616	NC	SR2014 (Old Rt 147) Br	Muncy Creek Twp	Lycoming	41.21769	-76.78731	01553005	209
445	Bald Eagle Crk	SS	1/88	20	612	NC	SR2012 (LR18013) Br - Castanea	Castanea Twp	Clinton	41.12463	-77.43504	01548005 01548085	768
448	W Br Susquehanna Rvr - Jersey Shore	SS	10/04	20	612	NC	SR 44 Br @ Jersey Shore	Jersey Shore Boro	Lycoming	41.20245	-77.25219	01549760	5225
449	Beech Crk	STN	10/10	6	610	NC	300 yds dwnstr of Iron Gate Rd Br	Liberty Twp	Centre	41.11139	-77.70194	01547950	152.8
451	E Fork Sinnemahoning	STN	10/10	6	610	NC	Upstr of Fork Rd Br Crossing	Wharton Twp	Potter	41.54250	-77.97861	01543693	47.6
458	Hoagland Run	REF	10/10	12	15	NC	25 ft upstr of Rt 973	Lycoming Twp	Lycoming	41.32774	-77.12898	Manual	10.7
459	Kettle Crk	REF	10/10	12	15	NC	Just upstr of former Rt 318 Br @ Cross Fork	Leidy Twp	Clinton	41.47583	-77.82611	01544500	136

WQN	Stream Name	Station Type	Start Date (M/YY)	Samples per Year	SAC	REG	Location	Municipality	County	Lat	Long	USGS Gage	Drain Area (Sq Mi)
462	Chillisquaque Crk	SS	11/12	20	12	NC	Shakespeare Rd (SR1025)	E Chillisquaque Twp	Northumberland	40.97459	-76.80012	01553850	101.2
463	Rock Run	REF	10/15	12	87, MET H, SSC	NC	800 m upstr of confl with Lycoming Crk	Mcintyre Twp	Lycoming	41.50202	-76.94449	Manual	28
464	Hyner Run	REF	10/15	12	87, MET H, SSC	NC	200 m upstr of Log Rd Hollow and 100 m dwnstr E Br Hyner	Chapman Twp	Clinton	41.36047	-77.62272	Manual	24.9
465	Carbaugh Run	REF	10/15	12	87	SC	250 m upstr of confl with Clear Run Tributary	Franklin Twp	Adams	39.89740	-77.45113	Manual	5.97
466	Porcupine Crk	REF	10/15	12	15	NW	President Rd - President Township	President Twp	Venango	41.43929	-79.54554	Manual	11.6
467	Corey Crk	STN	12/15	6	610	NC	50 meters upstr of Harris Rd (T818)	Sullivan Twp	Tioga	41.79088	-77.01507	01516500	12.1
514	Sideling Hill Crk	REF	10/10	12	13	SC	Upstr of Hixon Rd Crossing	Union Twp	Fulton	39.73250	-78.34638	Manual	71.7
601	Lake Erie	STN	12/68	6	10	NW	City of Erie Water Intake (Chestnut St Plant)	Erie	Erie	42.15670	-80.15250	USCG601	n/a
624	Lake Erie East	STN	10/15	6	10	NW	Eastern Basin of Lake Erie, approx 7 km N of Sixteenmile Crk	Erie	Erie	42.29425	-79.86684	N/A	n/a
625	Lake Erie Central	STN	10/15	6	10	NW	Near PA-OH State Line in central basin of Lake Erie	Erie	Erie	42.11920	-80.51038	N/A	n/a
626	N Br Sugar Run	REF	10/15	12	15	NW	Approx. 0.5 miles upstr of SR 321, along Anf Rd	Corydon Twp	Mckean	41.90080	-78.88280	Manual	11.1
627	Buck Run	REF	10/15	12	15	NW	Approx. 100 m dwnstr of Lanigan Brook	Sergeant	Mckean	41.64030	-78.68440	Manual	7.46
628	Kitchen Crk	REF	10/15	12	15	NE	Approx. 200 m upstr of SR 118	Fairmount	Luzerne	41.30143	-76.27433	Manual	9.2
629	Stony Brook	REF	10/15	12	15	NE	Approx. 150 m upstr of SR 3001 Br (Windy Valley Rd)	Forkston	Wyoming	41.46771	-76.16127	Manual	8.67
630	E Br Hemlock Crk	REF	10/15	12	15	NE	Approx. 15 m upstr of Putman Hill Rd Culvert on SGL 70	Harmony Twp	Susquehanna	41.96200	-75.49067	Manual	5.11
632	Presque Isle Bay	STN	7/75	6	10	NW	W Front State St; NW of Public Dock; Inline W/ Harbr Channel (Mid)	Erie	Erie	42.14440	-80.08340	USCG632	n/a

WQN	Stream Name	Station Type	Start Date (M/Y)	Samples per Year	SAC	REG	Location	Municipality	County	Lat	Long	USGS Gage	Drain Area (Sq Mi)
634	Crooked Crk	REF	10/15	12	15	NE	20 m upstr of stream ford coming from SGL 159 parking area along Crooked Crk Rd (T-724)	Buckingham Twp	Wayne	41.79167	-75.27391	Manual	6.2
635	Dixie Run	STN	10/15	12	87, MET H	NC	100 m upstr of Love Hollow Rd at Tioga State Forest boundary	Morris Twp	Tioga	41.55813	-77.33044	Manual	4.2
643	Conneaut Crk	STN	1/88	6	10	NW	SR3001 (LR25001) Br on Griffy Rd	Conneaut Twp	Erie	41.91811	-80.46889	04212945	149
644	Walnut Crk	STN	11/08	6	10	NW	Manchester Rd Br	Fairview Twp	Erie	42.07330	-80.23440	04213152	37.4
701	Monongahela Rvr	STN	4/50	12	610	SW	Rankin Bridge off SR837 Nr Lock & Dam 2	Braddock	Allegheny	40.40560	-79.88099	03075070 + 03083500	7337
702	Monongahela Rvr @ Charleroi	STN	4/50	12	610	SW	SR2018 Br (Lock St) - N Charleroi	N Charleroi	Washington	40.15201	-79.90412	03075070	5340
706	Youghiogheny Rvr @ Sutersville	STN	4/50	12	610	SW	SR3045 (LR 64226) Br	Sutersville	Westmoreland	40.24119	-79.80536	03083500	1715
709	Youghiogheny Rvr @ Confluence	STN	4/50	12	610	SW	SR281 Br	Confluence Boro	Somerset	39.80757	-79.36373	03077500	436
713	South Fork Tenmile	STN	4/50-1/88 & 10/10	12	610	SW	Rt 188 (Jefferson Rd) Br	Jefferson	Greene	39.92306	-80.07278	03073000	180
714	Dunkard Crk	STN	4/50	12	610	SW	SR2012 Br (Bobtown Hill Rd) Nr Bobtown	Dunkard Twp	Greene	39.76045	-79.97288	03072000	229
725	Monongahela Rvr @ Pt Marion	STN	4/75	12	610	SW	Dwnstr of Lock & Dam 8 @ Pt Marion	Point Marion	Greene	39.72680	-79.91180	03063000	2717
726	Casselman Rvr	STN	1/88	12	616	SW	SR2008 (LR55116) Br Nr Salisbury	Elk Lick Twp	Somerset	39.73238	-79.10055	03079000	382
728	Whiteley Crk	STN	1/88-10/98 & 10/10	12	610	SW	SR 19 Br @ Kirby	Whiteley Twp	Greene	39.80222	-80.11722	Manual	8.7
732	Monongahela Rvr @ Elizabeth	STN	10/10	12	610	SW	Rt 51 Br dwnstr of Dam No.3	Elizabeth Twp	Allegheny	40.27534	-79.88840	03075070	5338
733	Mill Run	REF	3/05	12	15	SW	50 m dwnstr of Quebec Rd	Wharton Twp	Fayette	39.76360	-79.66330	Manual	9.1
734	Jones Mill Run	REF	10/10	12	15	SW	Along Laurel Hill State Rd	Jefferson Twp	Somerset	40.00333	-79.23750	Manual	4.9

WQN	Stream Name	Station Type	Start Date (M/YY)	Samples per Year	SAC	REG	Location	Municipality	County	Lat	Long	USGS Gage	Drain Area (Sq Mi)
735	UNT House Run	REF	11/13	12	15	SW	Bristoria Rd Crossing (SR3020)	Jackson Twp	Greene	39.85390	-80.32990	Manual	2.23
736	N Fork Dunkard Fork	STN	10/15	6	610	SW	Riggs Road (T356) Br	Richhill Twp	Greene	39.87857	-80.42853	Manual	21.5
737	Enlow Fork	STN	10/15	6	610	SW	300' upstr of W Finley Rd/Ackley Crk Rd (SR4007) Br	West Finley Twp	Washington	39.96917	-80.44750	Manual	38.1
738	Tenmile Crk	STN	10/15	12	610	SW	Upstr of South Fork confl; dwnstr of Center Street Br	Clarksville	Washington	39.97521	-80.04179	Manual	135
739	Monongahela River @ Masontown	STN	10/15	12	610	SW	Rt 21 Br - Masontown	Monongahela Twp	Greene	39.85326	-79.92677	03072500	4520
801	Allegheny Rvr @ Natrona	STN	3/50	12	610	SW	Hulton Highway Br	Oakmont	Allegheny	40.52710	-79.84640	03049500	11500
805	Allegheny Rvr @ W Hickory	STN	5/62	6	610	NW	SR127 Br - W Hickory	Harmony Twp	Forest	41.57002	-79.40560	03016000	3660
807	Allegheny Rvr @ Eldred	STN	5/62	6	610	NW	SR346 Br	Eldred	Mckean	41.96523	-78.38578	03010500	550
810	Conemaugh Rvr	STN	3/50	6	610	SW	SR3003 (LR64269) Br Nr Tunnelton	Conemaugh Twp	Indiana	40.45407	-79.39084	03044000	1358
819	Mahoning Crk	STN	3/50-6/95 & 10/10	6	610	SW	T 748 Br; dwnstr from Mahoning Dam	Wayne Twp	Armstrong	40.92722	-79.29194	03036000	344
820	Redbank Crk	STN	3/50	6	610	NW	T468 Br - St Charles	Porter Twp	Clarion	40.99462	-79.39305	03032500	528
821	Clarion Rvr	STN	3/50-11/87 & 10/10	6	610	NW	Rt 854 Br	Piney Twp	Clarion	41.17000	-79.47250	03030515	951
822	Clarion Rvr	STN	3/50	6	610	NW	SR36 Br - Cooksburg	Farmington Twp	Clarion	41.33162	-79.20878	03029500	807
830	Tionesta Crk	STN	5/62	6	616	NW	SR1003 (LR27015) Br - Lynch	Howe Twp	Forest	41.60184	-79.04963	03017500	233
831	Brokenstraw Crk	STN	6/62	6	610	NW	SR6 Main St Br	Youngsville	Warren	41.85195	-79.31740	03015500	321
832	Conewango Crk	STN	6/62	6	610	NW	SR1012 (Liberty St) Br - Russell	Pine Grove Twp	Warren	41.93822	-79.13289	03015000	816
843	Clarion Rvr	STN	3/73	6	610	NW	SR58 Br	Callensburg	Clarion	41.12991	-79.55423	03030852	1163
845	French Crk @ Sugarcreek	STN	2/73	6	610	NW	SR322 Br	Franklin	Venango	41.40140	-79.83080	03024000 & 03025000	1194

WQN	Stream Name	Station Type	Start Date (M/YY)	Samples per Year	SAC	REG	Location	Municipality	County	Lat	Long	USGS Gage	Drain Area (Sq Mi)
846	French Crk @ Meadville	STN	2/73	6	10	NW	SR2008 (LR20027) Br - Wilson Chutes Boat Launch	W Mead Twp	Crawford	41.58942	-80.15001	03023100	788
858	Tunungwant Crk	STN	3/73	6	610	NW	SR346 (LR42012) Br - Foster Brook	Foster Twp	Mckean	41.97699	-78.62451	03010956	138
860	Allegheny Rvr	STN	10/10	12	610	NW	Upstr of Rt 6 Br	Port Allegany Boro	Mckean	41.81800	-78.29320	03007800	251.8
861	Mahoning Crk	STN	1/88	12	610	NW	T374 Br - Sportsburg	Young Twp	Jefferson	40.92217	-79.00611	03034000	158
866	Allegheny Rvr Nr Warren	STN	1/88	12	610	NW	SR6 Br Nr Warren (Glade Br)	Mead Twp	Warren	41.82410	-79.11920	03012550	2180
867	Allegheny Rvr @ Kennerdell	STN	1/88	12	610	NW	SR3008 (LR60011) Br - Kennerdell	Clinton Twp	Venango	41.26390	-79.84120	03025500	5982
868	Oil Crk	STN	1/88	6	610	NW	SR8 Br N of Rouseville	Cornplanter Twp	Venango	41.48209	-79.69517	03020500	300
870	Clear Shade Crk	REF	8/98-12/04 & 10/10	12	15	SW	250 ft upstr of SR160 (Dark Shade Rd) Br - Cairnbrook	Ogle Twp	Somerset	40.14874	-78.81639	Manual	32
873	W Br Caldwell Crk	REF	8/98-12/04 & 10/10	12	15	NW	250 m upstr of Flat Rd (T304) Br NE of Selkirk	Southwest Twp	Warren	41.69678	-79.57235	03020449	18.1
884	Allegheny Rvr @ Kittanning	STN	12/06	12	610	SW	US 422 Br, Kittanning, Pa	East Franklin	Armstrong	40.81260	-79.52260	03036500	8973
901	Ohio Rvr Nr East Liverpool	STN	5/62	12	610	SW	Newell Br Nr East Liverpool	E Liverpool, OH	Hancock, OH	40.61931	-80.59083	03086000 & 03107500 & 03108000	22784
902	Ohio Rvr @ Sewickley	STN	3/50	12	610	SW	SR4025 Sewickley Br	Sewickley	Allegheny	40.53337	-80.18756	03086000	19500
903	Raccoon Crk	STN	4/50	6	610	SW	SR3010 (LR04068) Br	Raccoon Twp	Beaver	40.62826	-80.33715	03108000	178
905	Beaver Rvr	STN	4/50	12	610	SW	SR588 Br	Eastvale	Beaver	40.76629	-80.31695	03107500	3106
906	Beaver Rvr	STN	4/50-9/03 & 10/10	12	610	NW	Dwnstr of SR288 Br	Wampum Boro	Lawrence	40.88861	-80.33600	03105500	2235
907	Connoquenessing Crk	STN	4/50	12	610	SW	SR1005 (LR04078) Br @ Hazen	Franklin Twp	Beaver	40.81676	-80.24214	03106000	356
909	Shenango Rvr @ New Castle	STN	5/62	6	610	NW	Washington St Br @ New Castle	New Castle	Lawrence	41.00003	-80.35053	03104500	792
910	Shenango Rvr @ Sharpsville	STN	4/50	6	610	NW	SR3025 (LR43081) Br	Sharpsville	Mercer	41.26764	-80.47012	03103500	584

WQN	Stream Name	Station Type	Start Date (M/YY)	Samples per Year	SAC	REG	Location	Municipality	County	Lat	Long	USGS Gage	Drain Area (Sq Mi)
911	Shenango Rvr Nr Pymatunning Dam	STN	5/62	6	610	NW	500' Dwnstr of Sugar Run; below Pymatuning Dam	W Shenango Twp	Crawford	41.49769	-80.46028	03101500	167
913	Little Shenango Rvr	STN	5/62	6	610	NW	SR4006 (LR43135) Williamson Rd Br N of Greenville	Hempfield Twp	Mercer	41.42598	-80.37392	03102500	104
915	Mahoning Rvr	STN	11/64	12	610	NW	SR224 Br - N Edinburg	Mahoning Twp	Lawrence	41.01847	-80.44041	03099600	1099
917	Connoquenessing Crk	STN	8/72	6	610	NW	SR3007 (LR10015) Br - Renfrew	Penn Twp	Butler	40.80601	-79.96528	03105810	137
922	Slippery Rock Crk	STN	3/73	6	610	NW	SR2005 (LR37083) Br - Camp Allegheny	Perry Twp	Lawrence	40.88409	-80.23372	03106500	398

STREAM NAME: **Br** = Branch **Crk** = Creek **Rvr** = River **Nr** = near **E** = East **W** = West

STATION TYPE: **REF** = Reference **SS** = Chesapeake Bay Nurient Loading **STN** = Standard

LOCATION: **Br** = bridge **confl** = confluence **dwnstr** = downstream **LR** = local route **m** = meters **RM** = river mile **Rt** = route **RXR** = railroad **SGL** = State Game Lands  
**SR** = State route **St** = street **upstr** = upstream

## DEP WATER QUALITY NETWORK (WQN) – ACTIVE LAKE STATIONS

REV. 12/2018

WQNL #	LAKE NAME	PERIOD OF RECORD	REG	REACHCODE	MUNICIPALITY	COUNTY	LAT	LONG
107	Prompton Lake	1996-2000; 2016-2020	NE	02040103000881	Clinton Twp	Wayne	41.593589	-75.329218
114	Duck Harbor Pond	2001-2005; 2016-2020	NE	02040101001467	Lebanon Twp	Wayne	41.755018	-75.203969
112	Minsi Lake	2001-2005; 2016-2020	NE	02040105001626	Upper Mt Bethel Twp	Northampton	40.91204	-75.17046
111	Lake Nockamixon	1999-2003; 2016-2020	SE	02040105003977	Bedminster Twp	Bucks	40.470000	-75.187125
115	Lake Galena	2002-2006; 2016-2020	SE	02040201000786	New Britain Twp	Bucks	40.318033	-75.201325
207	Octoraro Lake	1997-2001; 2016-2020	SE	02050306002281	Lower Oxford Twp	Lanc/Chester	39.79744	-76.043251
203	Lake Marburg	1992-1995; 2016-2020	SC	02050306002333	Hanover Boro	York	39.805338	-76.887217
501	Long Pine Run Reservoir	1992-1995; 2016-2020	SC	02070004002287	Franklin Twp	Adams	39.937222	-77.449722
202	Laurel Lake	1992-1995; 2016-2020	SC	02050305001734	Cooke Twp	Cumberland	40.0395	-77.2706
405	Lake Chillisquaque	2001-2005; 2016-2020	NC	02050206001752	Anthony Twp	Montour	41.10479	-76.66055
308	Walker Lake	2001-2005; 2016-2020	NC	02050301001348	Adams Twp	Snyder	40.79748	-77.19545
406	Rose Valley Lake (Hall Pond)	2001-2005; 2016-2020	NC	02050206001724	Gamble Twp	Lycoming	41.38666	-76.99833
705	North Park Lake	2016-2020	SW	05010009000542	McCandless Twp	Allegheny	40.59565	-79.99768
710	Dutch Fork Lake	2016-2020	SW	05030106001788	Donegal Twp	Washington	40.145199	-80.467317
813	Lake Arthur	2016-2020	NW	05030105001146	multiple	Butler	40.9626	-80.122

**APPENDIX 3 – ACTIVE BENTHIC MACROINVERTEBRATE STATIONS**



The following table contains the locational information for the benthic macroinvertebrate sampling reach of active WQN stations. When a WQN station is created, the water chemistry sampling location is first evaluated to determine if it is suitable for macroinvertebrate sampling. Streambed substrate, availability of riffle/run habitat, accessibility, and safety are assessed. If this location is appropriate for the collection method, the water chemistry location is the best choice for the macroinvertebrate sample. However, if the water chemistry location is not suitable, the nearest stream reach, meeting the needs of the sampling method and safety of the collector, to the water chemistry location is chosen. Once decided, the macroinvertebrate sampling location is a permanent location. The same reach should be sampled every time. If the waterbody is not suitable for the sampling method, then no macroinvertebrate samples are collected. If the macroinvertebrate location becomes unsuitable for the sampling method (i.e. bridge work, stream flow), no sample is collected and the WQD should be contacted to coordinate the next steps.

**DEP WATER QUALITY NETWORK (WQN) - ACTIVE MACROINVERTEBRATE STATIONS** REV. 12/2018

WQN	Stream Name	REG	Station Type	Sampling Frequency	Method	Season	Sampling Location	Lat	Long	Start Date (M/YY)
001	Genesee Rvr	NC	STN	even year	6D-200	Nov-Apr	150 ft dwnstr of SR1010 (Commercial St)	41.99475	-77.87030	3/90
100	UNT Sixpenny	SE	REF	annual	6D-200	even Fall/odd Spring	25 ft upstr of railroad tunnel.	40.24077	-75.77729	11/15
101	Delaware Rvr Nr Morrisville	SE	STN	2/yr	6D-200	Sept & Nov	800 ft dwnstr of Calhoun St Br	40.21793	-74.77653	7/62
103	Delaware Rvr @ Port Jervis	NE	STN	even year	6D-200	Aug-Sept	0.8 miles upstr of US Rts 6 & 209 Br	41.37982	-74.70929	5/62
104	W Br Delaware Rvr	NE	STN	even year	6D-200	Nov-Apr	300 ft upstr of SR191 (Pennsylvania Ave Br)	41.95334	-75.29172	5/62
105	Brandywine Crk	SE	STN	even year	6D-200	Nov-Apr	500 ft dwnstr of SR 1 Br	39.87054	-75.59501	7/62
110	Schuylkill Rvr	SE	STN	even year	6D-200	Aug-Sept	Riffle dwnstr of Flat Rock Dan, 3.7 miles upstr from QW site	40.03905	-75.24720	7/62
111	Schuylkill Rvr	SE	STN	even year	6D-200	Aug-Sept	Riffle 400 ft dwnstr of Rt 100 Br (2000 ft upstr of Hanover St Br)	40.24175	-75.65821	7/62
113	Schuylkill Rvr	SC	STN	even year	6D-200	Aug-Sept	Riffle 1000 ft upstr of T954 (Fisher Dam Rd-Water St) Br	40.52468	-75.99563	7/62
115	Wissahickon Crk	SE	STN	even year	6D-200	Nov-Apr	400 ft dwnstr of Forbidden Dr parking area	40.02681	-75.19367	7/62
116	Perkiomen Crk	SE	STN	even year	6D-200	Nov-Apr	100 ft upstr of T325 Arcola Rd Br	40.15361	-75.45598	7/62
117	Tulpehocken Crk	SC	STN	even year	6D-200	Nov-Apr	1100 ft dwnstr of Red Br Rd at County Park	40.36953	-75.97574	7/62
121	Neshaminy Crk	SE	STN	even year	6D-200	Nov-Apr	800 ft upstr of SR213 Br	40.17611	-74.95683	7/62
123	Lehigh Rvr	NE	STN	even year	6D-200	Aug-Sept	900 ft upstr of SR2012 Glendon Hill Rd Br - Hugh Moore Park	40.66748	-75.23761	7/62
125	Lehigh Rvr	NE	STN	even year	6D-200	Aug-Sept	500 ft dwnstr of Rt 145 Br (Riverview Dr)	40.73475	-75.54075	7/62 - 8/18
126	Lehigh Rvr	NE	STN	even year	6D-200	Aug-Sept	300 ft upstr of SR115 (Buck Blvd) Br	41.13094	-75.62516	5/62

WQN	Stream Name	REG	Station Type	Sampling Frequency	Method	Season	Sampling Location	Lat	Long	Start Date (M/YY)
130	Jordan Crk	NE	STN	even year	6D-200	Nov-Apr	50 ft dwnstr of Martin Luther King Jr Blvd	40.60173	-75.46202	7/62
131	Aquashicola Crk	NE	STN	2/yr	6D-200	Spring & Fall	600 ft upstr of Red Hill Dr	40.79674	-75.60813	7/62 - 12/87, 10/2018
137	Brodhead Crk	NE	STN	even year	6D-200	Nov-Apr	25 ft upstr of SR2028 (LR45061- Logging Rd) Br	40.99359	-75.13779	5/62
138	Brodhead Crk	NE	STN	even year	6D-200	Nov-Apr	350 ft dwnstr of SR 191 Br in Township Park	41.03615	-75.20918	5/62
139	Bushkill Crk	NE	STN	even year	6D-200	Nov-Apr	300 ft dwnstr of T523 (Winona Falls Rd) Br	41.08811	-75.03690	5/62
141	Wallenpaupack Crk	NE	STN	even year	6D-200	Nov-Apr	200 ft upstr of T353 (Creamery Rd)	41.33605	-75.33924	5/62
142	Tobyhanna Crk	NE	STN	even year	6D-200	Nov-Apr	400 ft dwnstr of SR940 Br	41.08566	-75.60616	1/64
147	Lackawaxen Rvr	NE	STN	even year	6D-200	Aug-Sept	100 ft dwnstr of SR590 Br (Hamlin Hwy)	41.48673	-74.99125	9/72
149	White Clay Crk	SE	STN	even year	6D-200	Nov-Apr	Creek Rd Trail off S Bank Road; 1100 ft dwnstr USGS gage	39.74472	-75.77308	11/72
150	Red Clay Crk	SE	STN	even year	6D-200	Nov-Apr	200 ft dwnstr of SR3013 (LR15037) Marshall Br Rd	39.81617	-75.69133	11/72
154	Valley Crk	SE	STN	even year	6D-200	Nov-Apr	100 ft dwnstr of Wilson Rd Br	40.08138	-75.45621	11/72
178	Pine Crk	SC	REF	annual	6D-200	even Fall/odd Spring	100 ft dwnstr of Lobachsville Rd (SR1023) Br	41.40936	-75.73461	2/88-7/98 & 10/10
181	Little Bushkill Crk	NE	REF	annual	6D-200	even Fall/odd Spring	Dwnstr of E Sugar Mountain Br crossing	41.09764	-75.00423	1/88-7/98 & 10/10
182	Delaware Rvr	SE	STN		No Bio Sampling		No Bio Sampling - Removing Plate Sampler Locations			3/88
183	E Br Dyberry Crk	NE	REF	annual	6D-200	even Fall/odd Spring	Above confl with W Br Dyberry Crk	41.66161	-75.28832	5/88-7/98 & 10/10
185	Delaware Rvr	NE	STN	even year	6D-200	Aug-Sept	3500 ft dwnstr of SR1020 (LR63027)(Callicoon Rd) Br on both sides of island	41.75643	-75.05655	8/88
191	Wild Creek	NE	REF	annual	6D-200	even Fall/odd Spring	25 ft upstr of Hatchery Rd Br	40.94220	-75.58320	8/98-12/04 & 10/15

WQN	Stream Name	REG	Station Type	Sampling Frequency	Method	Season	Sampling Location	Lat	Long	Start Date (M/YY)
193	Wissahickon Crk	SE	STN	even year	6D-200	Nov-Apr	200 ft upstr of SR 73 Br (E Skippack Pike)	40.12399	-75.21925	1/02
194	Delaware Rvr	NE	STN	even year	6D-200	Aug-Sept	3.4 miles dwnstr of SR 1004 Br (Water St); upstr of RR Br near power plant	40.78958	-75.11581	11/02
201	Susquehanna Rvr @ Marietta	SC	SS	2/yr	6D-200	Sept & Nov	just dwnstr of Rt 30	40.03270	-76.52480	7/62
202	Susquehanna Rvr @ Hburg	SC	SS	2/yr	6D-200	Sept & Nov	150 ft upstr from Rockville train Br Nr boat ramp at Marysville STP.	40.33275	-76.91717	5/62-2/95 & 10/12
203	Susquehanna Rvr @ Sunbury	NC	SS	2/yr	6D-200	Sept & Nov	1300 ft dwnstr from Rt 61 Br	40.84764	-76.80479	7/62
204	Pequea Crk	SC	SS	annual	6D-200	Nov-Apr	Riffle upstr of Coleman Covered Br	39.89874	-76.34206	12/66
206	Chickies Crk	SC	STN	even year	6D-200	Nov-Apr	100 ft dwnstr of SR23 Br (Marietta Ave)	40.06265	-76.51567	7/62
210	W Conewago Crk	SC	SS	annual	6D-200	Nov-Apr	250 ft dwnstr of Rt 181 Br	40.08160	-76.71693	6/62
212	Yellow Breeches	SC	SS	annual	6D-200	Nov-Apr	950 ft upstr of Old US Rt. 11 (Bridge St) Br - New Cumberland	40.22208	-76.86201	6/62
214	Juniata Rvr	SC	SS	2/yr	6D-200	Sept & Nov	SR34 Br	40.47410	-77.12390	6/62
217	Little Juniata Rvr	SC	SS	annual	6D-200	Nov-Apr	200 ft upstr of SR45 (Spruce Crk Rd) Br	40.60954	-78.13663	3/50
223	Raystown Br Juniata	SC	SS	annual	6D-200	Nov-Apr	Riffle upstr of VFW ballfield	40.22042	-78.25401	3/50
224	Frankstown Br Juniata	SC	SS	annual	6D-200	Nov-Apr	2000 ft dwnstr of abandon R&R	40.47578	-78.19135	6/62
226	Mahantango Crk	SC	SS	annual	6D-200	Nov-Apr	Riffle dwnstr of S Malta Br	40.61118	-76.91190	7/62-11/87 & 1/12
228	Middle Crk	NC	STN	even year	6D-200	Nov-Apr	100 ft upstr of SR11 Br (old Rts 11&15) S Market St Br	40.77482	-76.87020	7/62
229	Penns Crk	NC	SS	annual	6D-200	Nov-Apr	Riffle dwnstr of Rt 104 Br	40.86658	-77.04846	7/62
243	Sherman Crk	SC	SS	annual	6D-200	Nov-Apr	Pisgah State Rd Crossing @ Dromgold			10/04
249	Aughwick Crk	SC	STN	even year	6D-200	Nov-Apr	2000 ft dwnstr from Rt 522 (1.6 miles upstr from SR11 Br	40.31543	-77.87112	1/72
252	Beaverdam Br Juniata Rvr	SC	STN	even year	6D-200	Nov-Apr	2000 ft upstr from mouth along SR2014 (T405)	40.43056	-78.36389	9/72
256	Big Elk Crk	SE	STN	even year	6D-200	Nov-Apr	150 ft dwnstr of SR 3006 Strickersville Rd Br	39.73038	-75.84806	11/72
259	Muddy Crk	SC	SS	annual	6D-200	Nov-Apr	Riffle 600 ft dwnstr of SR2024 (Paper Mill Rd) Br	39.77133	-76.31637	1/88-7/98 & 10/10
263	Octoraro Crk	SC	SS	annual	6D-200	Nov-Apr	Riffle upstr of New Bridge /HorseShoe Rd	39.70677	-76.11520	11/05
269	Conewago Crk - Falmouth	SC	SS	annual	6D-200	Nov-Apr	300 yds dwnstr of Hillsdale Rd Br	40.15111	-76.68974	5/11

WQN	Stream Name	REG	Station Type	Sampling Frequency	Method	Season	Sampling Location	Lat	Long	Start Date (M/YY)
271	Conodoguinet Crk	SC	SS	annual	6D-200	Nov-Apr	Rifle dwnstr of WTP	40.25306	-77.40603	10/04
272	Swatara Crk	SC	SS	annual	6D-200	Nov-Apr	Just upstr of Hanover St Br @ Swatara Crk Park	40.28717	-76.67780	10/04
273	Conestoga Rvr	SC	SS	annual	6D-200	Nov-Apr	215 m dwnstr of River Road Br	39.93712	-76.38709	10/04
278	Conewago Crk - Bellaire	SC	SS	annual	6D-200	Nov-Apr	Prospect Rd Crossing Nr Lebanon/Lancaster County Border	40.19528	-76.56778	10/11
279	Bobs Crk	SC	REF	annual	6D-200	even Fall/odd Spring	900 ft dwnstr of SR869 Br; below Wallacks Br	40.26288	-78.59000	3/06
280	Big Spring Run	SC	SS	annual	6D-200	Nov-Apr	Along Gypsy Hill Rd about 0.4 miles dwnstr of US 222	39.99583	-76.26389	10/11
281	Paxton Crk	SC	SS	annual	6D-200	Nov-Apr	Upstr of Kohn Rd	40.30584	-76.85421	1/12
282	Kishacoquillas Crk	SC	SS	annual	6D-200	Nov-Apr	Upstr and dwnstr of Main Street Br	40.65479	-77.58422	1/12
284	Pequea Crk	SC	SS	annual	6D-200	Nov-Apr	30 ft dwnstr of S Ronks Rd Br - Ronks	40.00921	-76.16234	11/12
285	Quittapahilla	SC	SS	annual	6D-200	Nov-Apr	250 ft upstr of SR4008 (Palma Bellgrove Rd) Br - Bellgrove	40.34232	-76.56106	11/12
286	Codorus Crk	SC	SS	annual	6D-200	Nov-Apr	500 ft dwnstr of SR1008 (Codorus Furnace Rd) - Saginaw	40.05214	-76.65251	11/12
301	Susquehanna Rvr - Danville	NC	SS	2/yr	6D-200	Sept & Nov	SR54 Br	40.95770	-76.62120	7/62
302	Susquehanna Rvr - Wilkes-Barre	NE	SS	2/yr	6D-200	Sept & Nov	450 m upstr of N Street Br	41.25632	-75.87668	5/62
305	Susquehanna Rvr - Towanda	NC	SS	2/yr	6D-200	Sept & Nov	Just upstream of Rt 6	41.76303	-76.43919	5/62
306	Susquehanna Rvr - Ny	NE	STN	2/yr	6D-200	Sept & Nov	approx. 2.4 miles upstr of Rt 81	41.95720	-75.70630	5/62
308	Fishing Crk	NC	STN	odd year	6D-200	Nov-Apr	1 mile upstr of SR42 Br (Mall Blvd); first riffle upstr of Railroad St Br	41.00390	-76.46131	5/62
309	Nescopeck Crk	NE	STN	odd year	6D-200	Nov-Apr	700 ft upstr of SR339 Br	41.04561	-76.22166	5/62
313	Lackawanna Rvr	NE	STN	odd year	6D-200	Nov-Apr	250 ft dwnstr from Bridge Street Br near gage	41.35907	-75.74490	5/62
317	Tunkhannock Crk	NE	SS	annual	6D-200	Nov-Apr	350 ft dwnstr from SR 6 Br near USGS gage	41.55633	-75.89350	5/62
318	Towanda Crk	NC	STN	odd year	6D-200	Nov-Apr	First riffle dwnstr of USGS gage	41.70667	-76.48460	5/62
323	Susquehanna Rvr	NE	STN	2/yr	6D-200	Sept & Nov	900 m dwnstr of Rt 92	41.45426	-75.85116	11/68
324	Tioga Rvr	NC	STN	odd year	6D-200	Nov-Apr	First riffle dwnstr from T773 Br (jct Cross Road)	41.95727	-77.11577	9/70
333	Sugar Crk	NC	STN	odd year	6D-200	Nov-Apr	340 yds upstr of Pine Valley Rd Br	41.78365	-76.50214	1/88
334	Wyalusing Crk	NC	STN	odd year	6D-200	Nov-Apr	250 ft dwnstr of SR 706 Br	41.69652	-76.23010	1/88

WQN	Stream Name	REG	Station Type	Sampling Frequency	Method	Season	Sampling Location	Lat	Long	Start Date (M/YY)
341	Tioga Rvr	NC	STN	odd year	6D-200	Nov-Apr	Along T754 (Brooklyn Rd) at USGS gage; 0.6 miles upstr of Rt 6 Br	41.79699	-77.08020	10/10
343	Cowanesque Rvr	NC	STN	odd year	6D-200	Nov-Apr	First riffle upstr of Rt 49 Br			11/15
401	W Br Susquehanna Rvr - Lewisburg	NC	SS	2/yr	6D-200	Sept & Nov	Just upstream of Rt 642 between Milton and West Milton	41.01892	-76.86078	7/62
402	W Br Susquehanna Rvr - Williamsport	NC	STN	2/yr	6D-200	Sept & Nov	Left side of the channel below dam	41.23516	-77.00448	3/50
404	W Br Susquehanna Rvr - Karthaus	NC	SS	2/yr	6D-200	Sept & Nov	400 m dwnstr of Rt 879	41.11970	-78.10510	1/50-11/87 & 10/04
406	W Br Susquehanna Rvr - Bower	NC	STN	2/yr	6D-200	Sept & Nov	300 m upstr of T418 (Camp Corbly Rd) Br	40.89596	-78.67677	6/62
408	Loyalsock Crk	NC	STN	odd year	6D-200	Nov-Apr	350 ft upstr of Rt 973	41.32618	-76.91227	5/62
409	Lycoming Crk	NC	REF	annual	6D-200	even Spring/odd Fall	60 ft below T840 Br	41.41825	-77.03366	5/62
410	Pine Crk - Waterville	NC	SS	annual	6D-200	Nov-Apr	First riffle dwnstr of Railroad Br	41.28364	-77.32072	5/62
413	Bald Eagle Crk	NC	STN	odd year	6D-200	Nov-Apr	100 ft dwnstr of SR1003 (LR14010) Curtin Rd Br - Curtin	40.97503	-77.74225	5/62
415	Spring Crk	NC	STN	odd year	limestone	Nov-Apr	100 ft upstr of SR3001 (LR14040) (Hartles Br)	40.88963	-77.79375	3/50
418	Sinnemahoning Crk Nr Keating	NC	STN	odd year	6D-200	Nov-Apr	2000 ft upstr from SR4002 (LR18001) Keating Mountain Rd Br	41.25978	-77.91439	3/50
420	Driftwood Br Sinnemahoning	NC	STN	odd year	6D-200	Nov-Apr	100 ft dwnstr of SR3002 (LR12004) Sterling Run Rd Br	41.41290	-78.19706	3/50
422	Clearfield Crk	NC	STN	odd year	6D-200	Nov-Apr	400 ft upstr of Old Erie Rd Br	40.97054	-78.40685	3/50
423	Beech Crk	NC	STN	odd year	6D-200	Nov-Apr	350 ft dwnstr from SR150 N Eagle Valley Rd Br	41.07381	-77.59169	4/65
429	Little Pine Crk	NC	STN	odd year	6D-200	Nov-Apr	3000 ft upstr from Rt 44 Br	41.31747	-77.36386	9/72
433	Fishing Crk	NC	STN	odd year	6D-200	Nov-Apr	100 ft dwnstr of SR2004 (LR18007) 2nd Br upstr from Cedar Run	41.07493	-77.47791	9/72

WQN	Stream Name	REG	Station Type	Sampling Frequency	Method	Season	Sampling Location	Lat	Long	Start Date (M/YY)
434	Kettle Crk	NC	STN	odd year	6D-200	Nov-Apr	Off SR4001 (LR18003) Kettle Creek Rd; 3.2 miles upstr from PA SR120	41.31944	-77.87385	9/72
439	Bennetts Br Sinnemahoning	NC	STN	odd year	6D-200	Nov-Apr	100 ft upstr of T343 (Karthus Mountain Rd) Br near Castle Garden	41.33355	-78.13578	8/76
444	Muncy Crk	NC	STN	odd year	6D-200	Nov-Apr	200 ft dwnstr of USGS Gage	41.20774	-76.75340	1/88
445	Bald Eagle Crk	NC	SS	annual	6D-200	Nov-Apr	Riffle between bridges	41.13241	-77.40634	1/88
448	W Br Susquehanna Rvr - Jersey Shore	NC	SS	2/yr	6D-200	Sept & Nov	Approx 300 m dwnstr of SR 44 Br	41.20400	-77.25200	10/04
449	Beech Crk	NC	STN	odd year	6D-200	Nov-Apr	900 ft dwnstr of Iron Gate Rd Br	41.11140	-77.70187	10/10
451	E Fork Sinnemahoning	NC	STN	odd year	6D-200	Nov-Apr	350 ft upstr SR3001 ( E Fork Rd) Br	41.54216	-77.97867	10/10
458	Hoagland Run	NC	REF	annual	6D-200	even Spring/odd Fall	25 ft upstr of Rt 973	41.32774	-77.12898	10/10
459	Kettle Crk	NC	REF	annual	6D-200	even Spring/odd Fall	50 ft above gaging station	41.47591	-77.82580	10/10
462	Chillisquaque Crk	NC	SS	annual	6D-200	Nov-Apr	300 ft dwnstr of SR 1025 Shakespeare Rd Br near Potts Grove	40.97444	-76.80124	11/12
463	Rock Run	NC	REF	2/yr	6D-200	Spring & Fall	0.5 miles upstr of confl with Lycoming Crk	41.50202	-76.94449	10/15
464	Hyner Run	NC	REF	2/yr	6D-200	Spring & Fall	200 m upstr of Log Rd Hollow and 100 m dwnstr E Br Hyner	41.36047	-77.62272	10/15
465	Carbaugh Run	SC	REF	3/yr	6D-200	Spring, Summer, & Fall	250 m upstr of Clear Run tributary	39.89740	-77.45113	10/15
466	Porcupine Crk	NW	REF	2/yr	6D-200	Spring & Fall	50 m upstr of President Rd Br	41.43905	-79.54576	10/15
467	Corey Crk	NC	STN	2/yr	6D-200	Sept & Nov	50 meters upstr of Harris Rd (T818)	41.79088	-77.01507	12/15
514	Sideling Hill Crk	SC	REF	annual	6D-200	even Spring/odd Fall	First riffle dwnstr of forge	39.73322	-78.34515	10/10
601	Lake Erie	NW	STN	n/a	n/a	n/a	n/a			12/68

WQN	Stream Name	REG	Station Type	Sampling Frequency	Method	Season	Sampling Location	Lat	Long	Start Date (M/YY)
624	Lake Erie East	NW	STN	n/a	n/a	n/a	n/a			10/15
625	Lake Erie Central	NW	STN	n/a	n/a	n/a	n/a			10/15
626	N Br Sugar Run	NW	REF	2/yr	6D-200	Spring & Fall	Approx. 0.5 miles upstr of SR 321, along Anf Rd	41.90080	-78.88280	10/15
627	Buck Run	NW	REF	2/yr	6D-200	Spring & Fall	50 m dwnstr of Coontown Rd Br	41.63900	-78.68400	10/15
628	Kitchen Crk	NE	REF	2/yr	6D-200	Spring & Fall	250 m upstr of SR118	41.30143	-76.27433	10/15
629	Stony Brook	NE	REF	2/yr	6D-200	Spring & Fall	40 m upstr of Windy Valley/Bellasyva Rd (SR3001)	41.46710	-76.16142	10/15
630	E Br Hemlock Crk	NE	REF	2/yr	6D-200	Spring & Fall	Approx. 15 m upstr of Putman Hill Rd culvert on SGL 70	41.96200	-75.49067	10/15
632	Presque Isle Bay	NW	STN	n/a	n/a	n/a	n/a			7/75
634	Crooked Crk	NE	REF	2/yr	6D-200	Spring & Fall	Beside SGL #159 parking lot off Crooked Crk Rd (T724)	41.79200	-75.27300	10/15
635	Dixie Run	NC	STN	2/yr	6D-200	Sept & Nov	100 m upstr of Love Hollow Rd	41.55813	-77.33044	10/15
643	Conneaut Crk	NW	STN	odd year	6D-200	Nov-Apr	300 ft upstr from SR3001 (LR25001) Br (Griffey Rd)	41.91806	-80.46689	1/88
644	Walnut Crk	NW	STN	odd year	6D-200	Nov-Apr	250 ft dwnstr of Manchester Rd Br at the USGS gage	42.07393	-80.23511	11/08
701	Monongahela Rvr	SW	STN		No Bio Sampling		No Bio Sampling - Removing Plate Sampler Locations			4/50
702	Monongahela Rvr @ Charleroi	SW	STN		No Bio Sampling		No Bio Sampling - Removing Plate Sampler Locations			4/50
706	Youghiogheny Rvr @ Sutersville	SW	STN	odd year	6D-200	Aug-Sept	400 ft dwnstr of 1st Street Br	40.24146	-79.80357	4/50
709	Youghiogheny Rvr @ Confluence	SW	STN	odd year	6D-200	Aug-Sept	350 ft dwnstr of dam	39.80288	-79.36693	4/50
713	South Fork Tenmile	SW	STN	odd year	6D-200	Nov-Apr	Riffle upstr from Rt 188 Jefferson Rd Br	39.92253	-80.07229	4/50-1/88 & 10/10
714	Dunkard Crk	SW	STN	odd year	6D-200	Nov-Apr	350 ft upstr from SR2012 (Bobtown Hill Rd) Br	39.76092	-79.97164	4/50
725	Monongahela Rvr @ Pt Marion	SW	STN		No Bio Sampling		No Bio Sampling - Removing Plate Sampler Locations			4/75
726	Casselman Rvr	SW	STN	odd year	6D-200	Nov-Apr	Casselman River Br St. Park in Grantsville (Rt 40)	39.69656	-79.14338	1/88
728	Whiteley Crk	SW	STN	odd year	6D-200	Nov-Apr	Riffle 150 ft upstr of Rt 19 Br	39.80223	-80.11778	1/88-10/98 & 10/10



WQN	Stream Name	REG	Station Type	Sampling Frequency	Method	Season	Sampling Location	Lat	Long	Start Date (M/YY)
732	Monongahela Rvr @ Elizabeth	SW	STN	odd year	6D-200	Aug-Sept	1600 ft upstr from Lock and Dam 3 on LEW at Jones St	40.26278	-79.90562	10/10
733	Mill Run	SW	REF	annual	6D-200	even Spring/odd Fall	150 ft dwnstr of Quebec Rd	39.76454	-79.66316	3/05
734	Jones Mill Run	SW	REF	2/yr	6D-200	Spring & Fall	300 ft upstr of T551 (Laurel Hill Park Rd) Br - Bakersville	40.00346	-79.23851	10/10
735	UNT House Run	SW	REF	annual	6D-200	even Spring/odd Fall	Upstr from State Hwy 3020 (Bristoria Rd)	39.85401	-80.32995	11/13
736	N Fork Dunkard Fork	SW	STN	odd year	6D-200	Nov-Apr	15 ft upstr of Riggs Rd Br	39.87857	-80.42853	10/15
737	Enlow Fork	SW	STN	odd year	6D-200	Nov-Apr	500 ft upstr of W Finley Rd Br	39.87857	-80.42853	10/15
738	Tenmile Crk	SW	STN	odd year	6D-200	Nov-Apr	Dwnstr of Center St Br; upstr of South Fork confl	39.97521	-80.04179	10/15
739	Monongahela River @ Masontown	SW	STN		No Bio Sampling		No Bio Sampling - Removing Plate Sampler Locations			10/15
801	Allegheny Rvr @ Natrona	SW	STN		No Bio Sampling		No Bio Sampling - Removing Plate Sampler Locations			3/50
805	Allegheny Rvr @ W Hickory	NW	STN	even year	6D-200	Aug-Sept	300 ft dwnstr of SR 127 Br along LEW	41.56908	-79.40444	5/62
807	Allegheny Rvr @ Eldred	NW	STN	even year	6D-200	Aug-Sept	600 ft upstr from SR 346 (Prentisvale Rd) Br	41.96330	-78.38630	5/62
810	Conemaugh Rvr	SW	STN	even year	6D-200	Nov-Apr	1000 ft dwnstr of Tunnelton Rd Br	40.45589	-79.39442	3/50
819	Mahoning Crk	SW	STN	even year	6D-200	Nov-Apr	400 ft dwnstr from T748 Br along LEW	40.92738	-79.29196	3/50-6/95 & 10/10
820	Redbank Crk	NW	STN	even year	6D-200	Nov-Apr	400 ft dwnstr from T468 (St. Charles Rd) Br - St. Charles	40.99499	-79.39450	3/50
821	Clarion Rvr	NW	STN	even year	6D-200	Nov-Apr	USGS Gage 1800 ft below dam	41.19278	-79.44056	3/50-11/87 & 10/10
822	Clarion Rvr	NW	STN	even year	6D-200	Nov-Apr	150 ft upstr from SR36 Br	41.33148	-79.20816	3/50
830	Tionesta Crk	NW	STN	even year	6D-200	Nov-Apr	500 ft dwnstr from SR1003 (LR27015) Blue Jay Rd Br	41.60059	-79.05019	5/62

WQN	Stream Name	REG	Station Type	Sampling Frequency	Method	Season	Sampling Location	Lat	Long	Start Date (M/YY)
831	Brokenstraw Crk	NW	STN	even year	6D-200	Nov-Apr	500 ft upstr from Main Street Br - Youngsville	41.85100	-79.31931	6/62
832	Conewango Crk	NW	STN	even year	6D-200	Nov-Apr	400 ft dwnstr from SR1012 (Akeley Hollow/Hungry Hollow Rd) Br - Russell	41.93761	-79.13430	6/62
843	Clarion Rvr	NW	STN	even year	6D-200	Nov-Apr	350 ft dwnstr from SR 58 (Main Street) Br - Callensburg	41.12917	-79.55509	3/73
845	French Crk @ Sugarcreek	NW	STN	even year	6D-200	Nov-Apr	300 ft dwnstr from SR322 (13th St Br)	41.40142	-79.82966	2/73
846	French Crk @ Meadville	NW	STN	even year	6D-200	Nov-Apr	just dwnstr of Wilson Chutes Rd Br (SR2008)	41.58917	-80.15028	2/73
858	Tunungwant Crk	NW	STN	even year	6D-200	Nov-Apr	200 ft dwnstr from SR346 (LR42012) Bolivar Drive Br	41.97759	-78.62459	3/73
860	Allegheny Rvr	NW	STN	even year	6D-200	Nov-Apr	E Mill St Br	41.80778	-78.28806	10/10
861	Mahoning Crk	NW	STN	even year	6D-200	Nov-Apr	600 ft dwnstr from Gresock Rd Br - Sportsburg	40.92261	-79.00831	1/88
866	Allegheny Rvr Nr Warren	NW	STN	even year	6D-200	Aug-Sept	SR6 Br Nr Warren (Glade Br)	41.82339	-79.11632	1/88
867	Allegheny Rvr @ Kennerdell	NW	STN	even year	6D-200	Aug-Sept	750 ft dwnstr from Kenerdell Rd Br on LEW	41.26293	-79.83829	1/88
868	Oil Crk	NW	STN	even year	6D-200	Nov-Apr	300 ft upstr from SR 8 (William Flinn Hwy) Br	41.48283	-79.69417	1/88
870	Clear Shade Crk	SW	REF	annual	6D-200	even Spring/odd Fall	250 ft upstr of SR160 (Dark Shade Rd) Br	40.14874	-78.81639	8/98-12/04 & 10/10
873	W Br Caldwell Crk	NW	REF	2/yr	6D-200	Spring & Fall	100 m upstr from Flat Rd (T304) Br	41.69478	-79.57114	8/98-12/04 & 10/10
884	Allegheny Rvr @ Kittanning	SW	STN		No Bio Sampling		No Bio Sampling - Removing Plate Sampler Locations			12/06
901	Ohio Rvr Nr East Liverpool	SW	STN		No Bio Sampling		No Bio Sampling - Removing Plate Sampler Locations			5/62
902	Ohio Rvr @ Sewickley	SW	STN		No Bio Sampling		No Bio Sampling - Removing Plate Sampler Locations			3/50
903	Raccoon Crk	SW	STN	odd year	6D-200	Nov-Apr	300 ft dwnstr from Moffett Run Rd Br	40.62841	-80.33818	4/50

WQN	Stream Name	REG	Station Type	Sampling Frequency	Method	Season	Sampling Location	Lat	Long	Start Date (M/YY)
905	Beaver Rvr	SW	STN		No Bio Sampling		No Bio Sampling - Removing Plate Sampler Locations			4/50
906	Beaver Rvr	NW	STN	odd year	6D-200	Aug-Sept	300 ft dwnstr from State Highway 288 (Wampum Rd) Br	40.88838	-80.33554	4/50-9/03 & 10/10
907	Connoquenessing Crk	SW	STN	odd year	6D-200	Aug-Sept	350 ft dwnstr from SR 1005 (Cella Rd) Br	40.81722	-80.24310	4/50
909	Shenango Rvr @ New Castle	NW	STN	odd year	6D-200	Aug-Sept	500 ft dwnstr from W Washington St Br	40.99825	-80.35059	5/62
910	Shenango Rvr @ Sharpsville	NW	STN	odd year	6D-200	Nov-Apr	500 ft upstr from SR388 Kelly Rd/E High St Exd Br	41.26693	-80.47108	4/50
911	Shenango Rvr Nr Pymatunning Dam	NW	STN	odd year	6D-200	Nov-Apr	small area of cobble just below the dam outflow	41.49727	-80.46125	5/62
913	Little Shenango Rvr	NW	STN	odd year	6D-200	Nov-Apr	50 ft dwnstr from SR4006 (LR43135) Williamson Rd Br	41.42603	-80.37368	5/62
915	Mahoning Rvr	NW	STN	odd year	6D-200	Nov-Apr	900 ft dwnstr from SR 224 (West State St) Br	41.01748	-80.43773	11/64
917	Connoquenessing Crk	NW	STN	odd year	6D-200	Nov-Apr	1000 ft dwnstr from Meridian Rd Br	40.80738	-79.96797	8/72
922	Slippery Rock Crk	NW	STN	odd year	6D-200	Nov-Apr	700 ft upstr from Van Gorder Mill /Camp Allegheny Rd Br	40.88484	-80.23147	3/73

## **APPENDIX 4 - DISCONTINUED STATIONS**

## DEP WATER QUALITY NETWORK (WQN) – DISCONTINUED STATIONS

REV. 12/2018

WQN	Stream Name	Station Type	Period of Record (M/YY)	SAC	REG	Year Inactivated	Location	Municipality	County	Lat	Long	USGS Gage	Drain Area (Sq Mi)
102	Delaware Rvr		7/62 - 7/87		NC	1987	Suspension Br - Riegelsville	Riegelsville	Bucks	40.59389	-75.19111	1457500	
106	W Br Brandywine Crk		7/62 - 11/87		SE	1987	Northbrook Rd Br	W Bradford Twp	Chester	39.92306	-75.68806	1480617	
107	E Br Brandywine Crk		7/62 - 12/73		SE	1973	Shaws Br (Rt 842) 0.5 miles NE of Wawaset	Wawaset	Chester	39.92528	-75.64861	1480950	
108	E Br Brandywine Crk		7/62 - 11/87		SE	1987	25 yds dwnstr of LR15141 Br	Downingtwn	Chester	40.03472	-75.70861	1480700	
109	Chester Crk		7/62 - 10/74		SE	1974	Jct of Bridgewater & Creek Rds	Chester	Delaware	39.86417	-75.39750	1477010	
112	Schuylkill Rvr		7/62 - 1/88		SE	1988	Bingamen St Br	Reading	Berks	40.32528	-75.93333	1471530	
114	Schuylkill Rvr		7/62 - 12/87		NE	1987	Palo Alto Br - Pottsville	Pottsville	Schuylkill	40.68361	-76.18667	1467500	
118	Maiden Crk		7/62 - 2/95		SC	1995	SR061 Br Nr Reading Water Works	Ontelaunee Twp	Berks	40.42444	-75.94444	1470759	
119	Little Schuylkill Rvr		7/62 - 12/87		NE	1987	Rt 443 Br - 0.3 miles W of Rt 29	Walker Twp	Schuylkill	40.75444	-75.94667	1469710	
120	W Br Schuylkill Rvr		7/62 - 12/87		NE	1987	Rt 183 Br	Cressona	Schuylkill	40.63417	-76.19194	1467950	
122	Tohickon Crk		7/62 - 11/87		SE	1987	Dwnstr Fr Stover Mill on T413	Bedminster Twp	Bucks	40.43361	-75.11694	1459500	
124	Lehigh Rvr		7/62 - 12/87		NE	1987	Hill To Hill Br on Rt 191	Bethlehem	Northampton	40.61444	-75.38472	1453000	
125	Lehigh Rvr	STN	7/62 - 8/18	10	NE	2018	Rt 145 Br - Treichlers	Walnutport	Northampton	40.75307	-75.60262	01451000	889
127	Saucon Crk		7/62 - 12/87		NE	1987	LR48010 Br	Bethlehem	Northampton	40.61972	-75.33639	1454653	
128	Monocacy Crk		7/62 - 11/87		NE	1987	Br @ mouth on West Lehigh St	Bethlehem	Northampton	40.61694	-75.38111	1452600	
129	Little Lehigh Crk		7/62 - 12/95		NE	1995	Robin Hood Br - Little Lehigh Parkway	Allentown	Lehigh	40.58222	-75.48361	1451500	
132	Pohopoco Crk		7/62 - 11/87		NE	1987	T163 Spur Br @ mouth	Parryville	Carbon	40.81583	-75.67250	1450020	
133	Nesquehoning Crk		7/62 - 11/87		NE	1987	Mouth 1.5 miles below Rt 29	Mauch Chunk Twp	Carbon	40.87528	-75.76306	1448901	
134	Black Crk		7/62 - 11/87		NE	1987	RXR Br below confl with Quakake Crk	Weatherly	Carbon	40.93111	-75.82222	1448850	
135	Bushkill Crk		7/62 - 12/87		SE	1987	Rt 611 Br	Easton	Northampton	40.69583	-75.20500	1446990	
136	Martins Crk		7/62 - 11/87		SE	1987	RXR Br @ mouth	Lower Mt Bethel	Northampton	40.77833	-75.17667	1446655	
140	Lackawaxen Rvr		5/62 - 11/87		NE	1987	Park St Br	White Mills	Wayne	41.52500	-75.20528	1430200	
143	Schuylkill Rvr		7/72 - 2/76		SE	1976	Strawberry St Br Nr Belmont Filter Plant	Philadelphia	Philadelphia	39.99500	-75.19444	1474500	
144	Cacoosing Crk		10/72 - 12/87		SE	1987	T501 Br @ mouth	Spring Twp	Berks	40.36611	-75.99472	1470982	
145	Saucon Crk		10/72 - 12/87		SE	1987	LR48001 Br	Lower Saucon Twp	Northampton	40.55778	-75.36222	1454510	
146	Monocacy Crk		10/72 - 11/87		SE	1987	Saint Anne Shrine PA Rt 191	Lower Nazareth Twp	Northampton	40.68694	-75.34056	1452400	
148	Delaware Rvr		1/76 - 11/02		NE	2002	RXR Br @ PPL Martin's Crk Power Plant	Lwr Mt Bethel Twp	Northampton	40.78917	-75.11639	1446500	

WQN	Stream Name	Station Type	Period of Record (M/YYYY)	SAC	REG	Year Inactivated	Location	Municipality	County	Lat	Long	USGS Gage	Drain Area (Sq Mi)
151	Brandywine Crk		11/72 - 8/73		SE	1973	Along dirt Rd approx .25 miles upstr Fr Pa Rt 100 Br	Pennsburg Twp	Chester	39.86917	-75.59306		
152	E Br Brandywine Crk		4/73 - 11/87		SE	1987	10 yds dwnstr Fr Jefferies Br	East Bradford Twp	Chester	39.93889	-75.63694	1480870	
153	W Br Brandywine Crk		5/73 - 8/73		SE	1973	Northbrook Rd Br	W.bradford Twp	Chester	39.92611	-75.66306		
155	French Crk		11/72 - 12/87		SE	1987	20 yds upstr Fr Br; 0.25 miles dwnstr Fr Wilson's Corner	E Vincent Twp	Chester	40.15139	-75.60167	1472157	
156	French Crk	REF	1/00-12/04		SE	2004	30 yds dwnstr of Coventry Rd Br	East Nantmeal Twp	Chester	40.17139	-75.69056		
157	E Br Chester Crk		11/72 - 11/87		SE	1987	10 yds upstr Fr Br on Cheyney Woods Rd	Thornbury Twp	Delaware	39.92917	-75.53333	1476848	
158	Ridley Crk		11/72 - 11/87		SE	1987	150 yds dwnstr Fr jct with waterville Rd & Cobblestone Rd	Chester Twp	Delaware	39.87444	-75.38222	1476510	
159	Darby Crk		4/73 - 11/87		SE	1987	15 yds dwnstr Fr Watertower @ Garret Tract	Upper Darby Twp	Delaware	39.93444	-75.30000	1475470	
160	Wissahickon Crk		4/73 - 12/87		SE	1987	85 yds dwnstr Fr Mt Pleasant Ave Br	Whitpain Twp	Montgomery	40.15806	-75.23306	1473895	
161	Perkiomen Crk		4/73 - 5/74		SE	1974	20 yds dwnstr Fr dam along Rt 29; 0.75 miles N of Rt 422	Perkiomen Twp	Montgomery	40.22944	-75.45194	1473000	
162	E Br Perkiomen Crk		4/73 - 11/87		SE	1987	20 yds dwnstr Fr Gardes Rd Br	Lower Salford Twp	Montgomery	40.25583	-75.44417	1472820	
163	Skippack Crk		4/73 - 11/87		SE	1987	20 yds dwnstr Fr old abutment to Br on Arcola Rd	L Providence Twp	Montgomery	40.15028	-75.44611	1473140	
164	Frankford Crk		11/72 - 11/87		SE	1987	120 yds upstr Fr Castor Ave Br	Philadelphia	Philadelphia	40.01667	-75.11139	1467087	
165	Pennypack Crk		11/72 - 1/88		SE	1988	70 yds upstr Fr Frankford Ave Br	Philadelphia	Philadelphia	40.04389	-75.02083	1467048	
166	Pennypack Crk		4/73 - 1/88		SE	1988	100 yds dwnstr Fr Rt 63 Br (Welsh Rd)	Lower Moreland Twp	Montgomery	40.12056	-75.07250		
167	Neshaminy Crk		1/73 - 1/88		SE	1988	50 yds dwnstr Fr Br on Alm House Rd	Doylestown Twp	Bucks	40.28667	-75.16056	1465500	
168	Neshaminy Crk		1/73 - 8/73		SE	1973	Rt 213 Br	Langhorne	Bucks	40.17389	-74.95722	1465500	
169	Little Neshaminy Crk		11/72 - 1/88		SE	1988	15 yds upstr Fr Walton Rd Br	Northampton Twp	Bucks	40.24000	-75.05417	1464985	
170	Tohickon Crk		1/73 - 8/73		SE	1973	Dwnstr Fr Stover Mill on T413	Bedminster Twp	Bucks	40.43361	-75.11694	1459500	

WQN	Stream Name	Station Type	Period of Record (M/YY)	SAC	REG	Year Inactivated	Location	Municipality	County	Lat	Long	USGS Gage	Drain Area (Sq Mi)
171	Tohickon Crk		1/73 - 11/87		SE	1987	Upstr Fr covered Br on Covered Br Rd	Haycock Twp	Bucks	40.45500	-75.27944	1459182	
172	Chester Crk		4/73 - 1/88		SE	1988	35 yds dwnstr Fr Dutton Mills Rd Br	Chester Twp	Delaware	39.86750	-75.40861	1477000	
173	Wissahickon Crk		6/86 - 6/86		SE	1986	Bells Mill Rd Br	Philadelphia	Philadelphia	40.07917	-75.22861		
174	Delaware Rvr		2/76 - 7/88		NE	1988	SR1023 Nr Lordville	Manchester Twp	Wayne	41.86750	-75.21500	1427510	
175	Tulpehocken Crk		11/75 - 12/87		SE	1987	Off T501 (Water Rd); 1.1 miles upstr Fr Plum Crk	L Heidelberg Twp	Berks	40.36833	-76.02278	1470960	
176	Delaware Rvr		7/79 - 2/96		NE	1996	SR080 (I80) Br Nr Del Water Gap	Smithfield Twp	Monroe	40.97722	-75.13583	1440200	
177	Northkill Crk	REF	1/88 - 7/98		SC	1998	T528/720 (Northkill Rd) Nr Shartlesville	Upper Bern Twp	Berks	40.53389	-76.12528		
179	E Br White Clay Crk	REF	1/88 - 7/98		SE	1998	T355 (Spencer Rd.) Nr London Grove	W Marlborough Twp	Chester	39.85833	-75.78361		
180	Lizard Crk		1/88 - 3/88		NE	1988	T334 Nr Germans	E Penn Twp	Carbon	40.76278	-75.76333		
184	Brushy Run	REF	5/88 - 9/97		NE	1997	Along private Rd; 3500' above mouth	Walker Twp	Schuylkill	40.73750	-75.99194		
186	Tinicum Crk	REF	8/98-12/04		SE	2004	Headquarters Rd; SR1012	Tinicum Twp	Bucks	40.47056	-75.13722	1458900	
187	Cooks Crk	REF	8/98-12/04		SE	2004	Rattlesnake Rd & Durham Rd; Rt212 lower intersection	Durham Twp	Bucks	40.58139	-75.20528		
188	Baldwin Run	REF	10/98 - 12/99		SE	1999	Concord Rd	Aston/Chester Twp	Delaware	39.85611	-75.40583		
189	Johnson Crk	REF	8/98 - 10/00		NE	2000	Along Crossman Rd 0.5 miles S of SR371	Mount Pleasant Twp	Wayne	41.73111	-75.38417		
190	Choke Crk	REF	8/98-12/04		NE	2004	LR35086; Thornhurst Rd Br - Luz/Lack Co line	Lehigh Twp	Lackawanna	41.16167	-75.60278		7.1
192	Adams Crk	REF	8/98 - 12/04		NE	2004	US Rt 209 Br	Delaware Twp	Pike	41.23944	-74.86722		
195	Rock Run	REF	3/05 - 9/10		SE	2010	Old SR23 Br	South Coventry Twp	Chester	40.17372	-75.69600		
196	W. Br Perkiomen Crk	REF	3/05 - 9/10		SC	2010	250 M upstr of Anthony's Mill Rd Br; along Forgedale Rd	Washington Twp	Berks	40.40516	-75.61370		
197	Blooming Grove Crk	REF	3/05 - 9/10		NE	2010	300 m upstr of T 494 Br	Lackawaxen Twp	Pike	41.43631	-75.10516		
198	Tunkhannock Crk	REF	3/05 - 9/10		NE	2010	SR 4001 Br	Tunkhannock Twp	Monroe	41.03450	-75.46000		
199	Kintz Crk	REF	3/05 - 9/10		NE	2010	20 m upstr of conf w/ Mozette Ck	Dennison Twp	Pike	41.28050	-75.24210		
205	Conestoga Crk		12/66 - 12/87		SC	1987	500 ft below Water Works	Lancaster	Lancaster	40.05000	-76.27750	1576500	
207	Codorus Crk		11/62 - 2/95		SC	1995	SR1012 (IR66021) Br Mundis Mill Rd)	Manchester Twp	York	40.01083	-76.71056	1575500	

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208	W Br Codorus Crk		6/62 - 12/87		SC	1987	T488 Br @ Martin	North Codorus Twp	York	39.88722	-76.83583	1574520	
209	S Br Codorus Crk		6/62 - 12/87		SC	1987	York Water Co Pump Station	Spring Garden Twp	York	39.92056	-76.74917	1575000	
211	Swatara Crk		7/62 - 8/04		SC	2004	SR441 Br	Middletown	Dauphin	40.19115	-76.73095	1573560	
213	Conodoguinet Crk		6/62 - 2/95		SC	1995	SR1009 Br	Silver Spring Twp	Cumberland	40.25861	-77.07778	1570000	
215	Juniata Rvr		7/62 - 11/87		SC	1987	LR31084 Br 0.3 miles upstr Fr USGS Gage	Mapleton	Huntingdon	40.39500	-77.94000	1563500	
216	Juniata Rvr		3/50 - 11/87		SC	1987	Twp Rd A-135 Br	Huntingdon	Huntingdon	40.48472	-78.01917	1559000	
218	Little Juniata Rvr		3/50 - 12/87		SC	1987	Rt 220 Br	Antis Twp	Blair	40.62750	-78.29500	1556480	
219	Bald Eagle Crk		3/50 - 11/87		SC	1987	0.2 miles upstr Fr Westvaco Paper	Snyder Twp	Blair	40.66694	-78.23389	1557550	
220	Kishacoquillas Crk		6/62 - 11/87		SC	1987	SR522 Br (Walnut St)	Lewistown	Mifflin	40.60611	-77.56528	1565000	
221	Aughwick Crk		1/50 - 4/71		SC	1971	Rt 994 Br above confl with Three Springs Crk	Cromwell Twp	Huntingdon	40.21250	-77.92556	1564500	
222	Raystown Br Juniata Rvr		3/50 - 1/73		SC	1973	Br @ Jct of Twp Rd 430/431	Juniata Twp	Huntingdon	40.42639	-78.02972	1563000	
225	Wiconisco Crk		7/62 - 11/87		SC	1987	Rt 147 Br Nr mouth	Millersburg	Dauphin	40.53722	-76.96083	1555600	
227	Mahanoy Crk		7/62 - 8/75		NC	1975	Rt 147 Br Nr mouth	Jackson Twp	Northumberland	40.72611	-76.83778	1555252	
230	Shamokin Crk		7/62 - 11/87		NC	1987	Foot Br @ USGS Gage	Shamokin Twp	Northumberland	40.81028	-76.58444	1554500	
231	Conestoga Rvr		6/62 - 8/04		SC	2004	T561 Iron Br Nr Rock Hill	Manor Twp	Lancaster	39.96139	-76.36583	1576754	
232	Susquehanna Rvr		9/70 - 12/75		SC	1975	Rt 372 Br - Holtwood	Martic Twp	Lancaster	39.81694	-76.32333	1576990	
233	Standing Stone Crk		3/50 - 6/61		SC	1961	Old Rt 22 below Water Treatment Plant (SR1010)	Huntingdon	Huntingdon	40.52361	-77.97083	1559500	
234	Dunning Crk		3/50 - 5/61		SC	1961	N of Jct LR05051 & T478 Nr Belden	Bedford Twp	Bedford	40.07167	-78.49278	1560000	
235	Brush Crk		3/50 - 5/61		SC	1961	@ Gapsville	E Providence Twp	Bedford	39.95556	-78.25417	1561000	
236	Great Trough Crk		3/50 - 6/61		SC	1961	Forest Rd Nr mouth (Rothrock State Forest)	Todd Twp	Huntingdon	40.35000	-78.13056	1562500	
237	Mill Crk		10/72 - 12/87		SC	1987	LR36009 Br (Mascot)	Leacock Twp	Lancaster	40.06278	-76.15694	1576515	
238	Quittapahila Crk		10/72 - 12/87		SC	1987	LR38003 Br	N Annville Twp	Lebanon	40.35056	-76.61444	1573205	
239	Mountain Crk		3/73 - 11/87		SC	1987	Confl with Yellow Breeches Crk	S Middleton Twp	Cumberland	40.14472	-77.17861	1571197	
240	Conodoguinet Crk		3/73 - 08/04		SC	2004	SR11 (PA Rts 11&15) Br Nr mouth	West Fairview Twp	Cumberland	40.27111	-76.91472	1570280	
241	Middle Spring Crk		3/73 - 11/87		SC	1987	T312 Br	Southampton Twp	Cumberland	40.08528	-77.54306	1569320	



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242	Middle Crk		9/72 - 11/87		NC	1987	Rt 522 & 104 Br	Middleburg	Snyder	40.78861	-77.01167	1555205	
243a	Sherman Crk	REF	3/73 - 7/98		SC	1998	SR2002 (IR50014) Br	Penn Twp	Perry	40.37861	-77.08222	1568000	
244	Little Juniata Rvr		3/73 - 11/87		SC	1987	Confl with Susquehanna Rvr	Duncannon	Perry	40.38889	-77.03222	1567350	
245	Tuscarora Crk	REF	1/72 - 7/98		SC	1998	SR075 Br	Port Royal	Juniata	40.52778	-77.38389	1566000	
246	Jacks Crk		11/72 - 11/87		SC	1987	SR022 Br	Lewistown	Mifflin	40.58528	-77.55750	1565515	
247	Kishacoquillas Crk		11/72 - 11/87		SC	1987	LR44002 Br	Derry Twp	Mifflin	40.63111	-77.56694	1565300	
248	Honey Crk		11/72 - 11/87		SC	1987	@ mouth	Reedsville	Mifflin	40.66222	-77.59444	1564995	
250	Dunning Crk		10/72 - 11/87		SC	1987	Rxr Br off T-477 Nr mouth	Bedford Twp	Bedford	40.02389	-78.47750	1560000	
251	Bobbs Crk		10/72 - 11/87		SC	1987	LR05060 Br - Reynoldsville	E St Clair Twp	Bedford	40.14722	-78.55583	1559920	
253	Kishacoquillas Crk		11/72 - 11/87		SC	1987	Rt 322 Br	Brown Twp	Mifflin	40.65472	-77.58333	1565000	
254	Deer Crk		3/73 - 11/75		SC	1975	T542 Br	Shrewsbury Twp	York	39.72306	-76.61278	1578320	
255	Ebaughs Crk		11/74 - 12/87		SC	1987	4200 ft dwnstr Fr The Stewardstown STP	Hopewell Twp	York	39.74556	-76.60556	1579850	
257	Swatara Crk		2/76 - 11/87		NE	1987	Spittler Rd Br 0.1 miles E of Rt 125	Pine Grove Twp	Schuylkill	40.57500	-76.40278	1571824	
258	Mahonoy Crk		11/75 - 11/87		NC	1987	Br on City Rd 1.8 miles NW of Herndon	Jackson Twp	Northumberland	40.72444	-76.81583	1555251	
260	Conodoguinet Crk		1/88 - 2/95		SC	1995	T427 Br dwnstr Fr Greider	L Frankford Twp	Cumberland	40.22111	-77.25861	1569500	
261	W Br Octoraro Crk	REF	1/88 - 2/95		SC	1995	SR472 Br Nr Black Rock	Colerain Twp	Lancaster	39.85972	-76.11639		
262	Mountain Crk	REF	1/88 - 7/98		SC	1998	T340 @ Pine Grove Furnace	Cooke Twp	Cumberland	40.02556	-77.31806		
265	Rambo Run	REF	8/98 - 9/03		SC	2003	T632 Crossing	E Hopewell Twp	York	39.82194	-76.53306		
266	Little Conestoga Crk	REF	8/98 - 1/00		SC	2000	Br on SR3027	Manor Twp	Lancaster	39.97111	-76.37556		

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267	Conewago Crk	REF	8/98 - 12/04		SC	2004	0.7 miles S of Rt234 on Bottom Rd; T363	Franklin Twp	Adams	39.93667	-77.36583		
268	Penns Crk	REF	9/98 - 9/03		NC	2003	SR2012 Br @ Farmers Mills	Gregg Twp	Centre	40.86556	-77.60944		
270	Letort Spring Run	REF	12/99 - 9/10		SC	2010	Bonny Brook Rd Br	South Middleton Twp	Cumberland	40.17585	-77.18588		
274	Sinking Run	REF	3/05 - 9/10		SC	2010	First Br below Sinking Valley Church on SR1013	Tyrone Twp	Blair	40.61150	-78.18750		
275	Conodoguinet Ck	REF	3/05 - 9/10		SC	2010	650 m upstr of SGL 76 Boundary	Letterkenny Twp	Franklin	40.06955	-77.75664		
276	E Licking Crk	REF	3/05 - 9/10		SC	2010	First Br above Clearview Res on SR4002	Milford Twp	Juniata	40.54760	-77.52600		
277	Elk Crk	REF	1/05 - 9/10		NC	2010	Upstr of UNT @ Spring Bank	Miles Twp	Centre	40.92449	-77.47575		
283	Spring Crk		11/12 - 5/13		SC	2013	Incinerator access Rd Nr intersection with S Cameron St	Harrisburg	Dauphin	40.24276	-76.85709	01571104	
303	Susquehanna Rvr		5/62 - 3/92		NE	1992	Coxton Rxr Br off SR 92; upstr Fr Scovell Island	Exeter Twp	Luzerne	41.35000	-75.80139	1536500	
304	Susquehanna Rvr		5/62 - 11/87		NE	1987	LR65041 Br E of Rt 6 & 309	Braintrim Twp	Wyoming	41.65000	-76.16111	1533205	
307	Catawissa Crk		5/62 - 1/88		NC	1988	Rt 42 Br	Catawissa Twp	Columbia	40.94722	-76.45583	1540348	
310	Wapwallopen Crk	REF	5/62 - 10/00		NE	2000	RXR Br dwnstr Rt 239	Conyngham Twp	Luzerne	41.07139	-76.13389	1538000	
311	Solomon Crk		5/62 - 11/87		NE	1987	Army Eng Flood Control Pumping Sta Nr Fallow St	Hanover Twp	Luzerne	41.23750	-75.94389	1537510	
312	Toby Crk		5/62 - 12/87		NE	1987	Grove St Br Nr Rt 309	Pringle Boro	Luzerne	41.28083	-75.89611	1537000	
314	Lackawanna Rvr		5/62 - 11/87		NE	1987	Ridge St Br Nr Main St	Archbald	Lackawanna	41.50417	-75.54306	1534520	
315	Lackawanna Rvr		5/62 - 11/87		NE	1987	Wooden platform above spillway N of Rt 171 Br	Clifford Twp	Susquehanna	41.69750	-75.48556	1534300	
316	Legetts Crk		5/62 - 11/87		NE	1987	Btwn Main St Br & Rxr Br	Scranton	Lackawanna	41.45417	-75.66222	1534850	
319	Tioga Rvr		5/62 - 12/87		NE	1987	T667 Br	Tioga Twp	Tioga	41.90833	-77.12972	1518000	
320	Cowanesque Rvr	STN	5/62-9/03 & 10/04-9/15	610	NC	2015	US 15 Br N of Lawrenceville, NY	Lindley Twp	Steuben	42.00140	-77.12780	01520000	298

WQN	Stream Name	Station Type	Period of Record (M/YY)	SAC	REG	Year Inactivated	Location	Municipality	County	Lat	Long	USGS Gage	Drain Area (Sq Mi)
321	Crooked Crk		5/62 - 11/87		NE	1987	LR58113 Br	Tioga Twp	Tioga	41.91056	-77.13778	1518600	
322	Susquehanna Rvr		11/68 - 12/87		NE	1987	SR309 Br	Tunkhannock	Wyoming	41.53472	-75.94861	1534060	
325	W Br Fishing Crk	REF	1/05 - 9/10		NC	2010	360 m upstr of SGL 13 boundary	Davidson Twp	Sullivan	41.30560	-76.43090		
325a	Wapwallopen Crk		11/72 - 12/87		NE	1987	LR40022 Br	Dorrance Twp	Luzerne	41.09343	-76.00456	1537980	
326	Harveys Crk		8/72 - 12/87		NE	1987	SR11 Br	West Nanticoke	Luzerne	41.22111	-76.00694	1537650	
327	Roaring Brook		9/72 - 11/87		NE	1987	Cedar Ave Br	Scranton	Lackawanna	41.40444	-75.65194	1535060	
328	Bowman Crk		10/72 - 11/87		NE	1987	LR65005 Br	Eaton Twp	Wyoming	41.51472	-75.96139	1534055	
329	S Br Tunkhannock Ck		10/72 - 11/87		NE	1987	Nr confl with Tunkhannock Crk	Tunkhannock Twp	Wyoming	41.56333	-75.87500	1533992	
330	Lackawanna Rvr		2/76 - 11/87		NE	1987	Rxr Br Nr mouth	Pittston Twp	Luzerne	41.34389	-75.78694	1536103	
331	Black Crk		2/76 - 11/87		NE	1987	Br upstr Fr confl with Nescopeck Crk	Black Creek Twp	Luzerne	41.00750	-76.16667	1538590	
332	Chemung Rvr		2/76 - 11/05		NC	2005	SR4022 Br	Athens Twp	Bradford	41.98611	-76.55472	1531000	
335	Wysox Crk	REF	1/88 - 8/98		NC	1998	SR1027 Br	Wysox	Bradford	41.80250	-76.37444		
336	Dyberry Crk	REF	2/88 - 8/88 3/01 - 12/04		NE	2004	SR4007 Br (Dug Rd) Nr Tanners Falls	Dyberry Twp	Wayne	41.65309	-75.28205		
337	Bowman Crk	REF	1/88 - 7/98		NE	1998	SR3002 1.3 miles N of Stull	Noxen Twp	Wyoming	41.41583	-76.09083		
338	Riley Crk	REF	10/98 - 12/99		NE	1999	Br on T309	Auburn Twp	Susquehanna	41.64917	-76.00750		
339	Little Fishing Crk	REF	8/98 - 12/04		NC	2004	SR4033 Br; 200 ft upstr Fr Wolfhouse Run	Pine Twp	Columbia	41.16583	-76.50361		
340	Unt Tunkanock Crk	REF	12/99 - 12/04		NE	2004	SR2046 Br - Gelatt	Gibson Twp	Susquehanna	41.80861	-75.58111		
342	Wysox Crk	REF	10/10-9/15	13	NC	2015	Mercur Hill Rd Br	Wysox Twp	Bradford	41.78670	-76.38328	Manual	99.6
405	W Br Susquehanna Rvr		12/48 - 12/87		NC	1987	Rt 453 Br	Curwensville	Clearfield	40.96139	-78.51944	1541200	

WQN	Stream Name	Station Type	Period of Record (M/YY)	SAC	REG	Year Inactivated	Location	Municipality	County	Lat	Long	USGS Gage	Drain Area (Sq Mi)
407	Muncy Crk		5/62 - 11/87		NC	1987	SR220 Br	Wolf Twp	Lycoming	41.24861	-76.71750	1552500	
411	Pine Crk	REF	5/62-11/87 & 10/10-9/15	13	NC	2015	T762 Br - Cedar Run	Brown Twp	Lycoming	41.52089	-77.44781	01548500	604
412	Bald Eagle Crk		5/62 - 11/87		NC	1987	First Br approx 1 mile dwnstr Fr Foster Sayers Dam	Liberty Twp	Centre	41.05861	-77.59556	1547500	
414	Marsh Crk		5/62 - 12/81		NC	1981	SR220 Br	Liberty Twp	Centre	41.06111	-77.61694	1547400	
416	Logan Br Spring Crk		5/62 - 12/87		NC	1987	Willowbank St Br - Bellefonte	Bellefonte	Centre	40.90750	-77.78250	1546750	
417	Kettle Crk		3/50 - 9/74		NC	1974	Rt 120 Br - Westport	Westport	Clinton	41.30056	-77.84111	1545020	
419	Frst Fork Sinnemahoning		5/62 - 1/05		NC	2005	SR120 Br Nr Sinnemahoning	Grove Twp	Cameron	41.32000	-78.08083	1544000	
421	Moshannon Crk		3/50 - 11/87		NC	1987	Rxr Br upstr Fr SR970	Oceola	Clearfield	40.84944	-78.26806	1542000	
424	Bald Eagle Crk		3/50 - 4/76		NC	1976	T325 Br	Beech Creek	Clinton	41.06528	-77.56750	1548000	
425	Chillisquaque Crk		2/70 - 1/88		NC	1988	Rt 54 Br N of Washingtonville	Washingtonville	Montour	41.06111	-76.68056	1553700	
426	Buffalo Crk		9/72 - 11/87		NC	1987	Rt 15 Br	Lewisburg	Union	40.97194	-76.89167	1553480	
427	White Deer Crk	REF	9/72 - 8/98		NC	1998	SR1011 Br - White Deer	White Deer Twp	Union	41.07556	-76.87278	1553150	
428	Loyalsock Crk	REF	10/72-8/98 & 10/10-9/15	15	NC	2015	SR 87 N of Hillsgrove	Hillsgrove Twp	Sullivan	41.45642	-76.68931	Manual	287.7
430	Pine Crk	REF	10/72 - 8/98		NC	1998	Off SR362 @ mouth of Darling Run	Shippen Twp	Tioga	41.73833	-77.43028	1548248	
431	Pine Crk		10/72 - 12/87		NC	1987	0.5 miles dwnstr Fr LR52061 Br Nr Galeton	Pike Twp	Potter	41.73861	-77.62611	1548340	
432	Chatham Run		9/72 - 8/75		NC	1975	First Br upstr Fr Rt 220 Br	Dunnstable Twp	Clinton	41.17278	-77.36694	1548095	
435	Sandy Run		9/72 - 3/74		SW	1974	Nr mouth	Adams Twp	Cambria	40.34750	-78.78333	3040510	
436	Chest Crk		10/72 - 12/87		NC	1987	Br on T324	Mahaffey	Clearfield	40.86833	-78.72056	1540823	
437	Driftwood Br Sinnemahoning		3/73 - 11/87		NC	1987	500 yds upstr Fr Br on Rt 555	Driftwood Boro	Cameron	41.33806	-78.13583	1543000	

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438	Alder Run		5/76 - 11/87		NC	1987	Br on Co Rd - 2.2 miles NW of Keplertown	Graham Twp	Clearfield	41.01389	-78.19972	1541800	
440	Anderson Crk		5/76 - 11/87		NC	1987	On Meadow St Br	Curwensville	Clearfield	40.97528	-78.53056	1541248	
441	Moshannon Crk		5/76 - 11/87		NC	1987	Rt 53 Br 3 miles W of Moshannon	Snow Shoe Twp	Centre	41.03667	-78.05778	1542310	
442	Marsh Crk		2/76 - 12/87		NC	1987	Upstr Fr confl with Pine Crk - Ansonia	Shippen Twp	Tioga	41.74639	-77.42722	1538310	
443	Young Womans Crk	REF	7/80-8/98 & 10/10-9/15	15	NC	2015	0.3 miles dwnstr of Laurelly Fork	Chapman Twp	Clinton	41.38930	-77.69090	01545600	46.2
446	Muncy Creek	REF	8/98 - 12/04		NC	2004	SR2002 Br Nr mouth of Slip Run	Davidson Twp	Sullivan	41.35694	-76.53500		
447	Spruce Run	REF	8/98 - 12/04		NC	2004	SR1001 Br 3.5 miles upstr Fr Res	West Buffalo Twp	Union	41.02389	-77.06528		
450	Fishing Crk Nr Nittany	REF	1/05 - 9/10		NC	2010	1.2 miles upstr of Lower SR 2002 Br	Porter Twp	Clinton	40.98366	-77.51662		
452	Cedar Run @ Cedar Springs	REF	1/05 - 9/10		NC	2010	125 m upstr of SR 64 Br	Lamar Twp	Clinton	41.07941	-77.48297		
453	Cedar Run @ Mine Hole Run	REF	1/05 - 9/10		NC	2010	Most southern crossing of SR 3001	Morris Twp	Tioga	41.55490	-77.45900		
454	First Fork Sinnemahoning Crk	REF	1/04 - 9/10		NC	2010	At Potter/Cameron Co Line	Wharton Twp	Potter	41.47539	-78.05051		
455	Killbuck Run	REF	3/06 - 9/10		SW	2010	0.85 strm miles upstrm of SR1021 Br	Chest Twp	Cambria	40.66470	-78.58820		
456	W Br Pine Crk	REF	10/10-9/15	15	NC	2015	Union St Br @ Galeton	Galeton Boro	Potter	41.73187	-77.65020	Manual	71.4
457	Blockhouse Crk	REF	10/10-9/15	15	NC	2015	SR 284 Nr English Center	Pine Twp	Lycoming	41.47367	-77.23083	01549500	37.8
460	Mosquito Crk	REF	10/10-9/15	15	NC	2015	Upstr of Quehanna Hwy Br @ Karthaus	Karthaus Twp	Clearfield	41.12889	-78.13444	Manual	64
461	White Deer Crk	REF	10/10-9/15	15	NC	2015	Upstr of Rt 15 Br	White Deer Twp	Union	41.07472	-76.87278	01553140	44.2
501	Conococheague Crk	SS	6/62-9/14	12	SC	2014	Along MD SR494 approx 3 miles dwnstr Fr PA/MD border	Fairview	Washington Md	39.70810	-77.83330	01614500	494
502	Conococheague Crk		9/70 - 11/73		SC	1973	Rt 16 Br W of Greencastle	Greencastle Boro	Franklin	39.79194	-77.75444	1614170	
503	Rock Crk		3/73 - 11/87		SC	1987	SR2035 Br W of Lake Heritage	Cumberland Twp	Adams	39.80472	-77.21167	1638890	

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504	E Br Antietam Crk		3/73 - 12/87		SC	1987	0.9 milea upstr Fr confl with Antietam Crk	Washington Twp	Franklin	39.72611	-77.59389	1618950	
505	Licking Crk		1/88 – 1/05		SC	2005	SR456 Br – PA/MD border	Warren Twp	Franklin	39.72306	-78.06028	1613500	
506	Little Wills Crk	REF	1/88 - 7/98		SC	1998	SR096 Br @ Bard	Harrison Twp	Bedford	39.92694	-78.66000	1600700	
507	Rock Crk		1/88 - 2/95		SC	1995	SR3002 (IR01066) Br Nr Harney	Cumberland Twp	Adams	39.73000	-77.23028	1638950	
508	Falling Spring Br	REF	8/98 - 12/99		SC	1999	Crossing of T515	Guilford Twp	Franklin	39.91611	-77.60722		
509	Licking Crk	SS	12/04-9/14	12	SC	2014	Pectonville Rd Br	Pectonville, Md	Washington	39.67596	-78.04249	01613525	193
510	Tonoloway Crk	SS	4/05-9/14	12	SC	2014	300 yds upstr of Timber Ridge Rd (SR 2005) Br	Thompson Twp	Fulton	39.72833	-78.15194	01613095	113
511	Antietam Crk	SS	3/05-9/14	12	SC	2014	Upstr of Millers Church Rd crossing @ Rocky Forge, Md	Rocky Forge, Md	Washington	39.71639	-77.60730	01619000	93
512	Sideling Hill Crk	SS	11/04-9/14	12	SC	2014	Zeigler Rd Br; 4 miles S of Bellegrove, Md	Bellegrove, Md	Washington	39.64953	-78.34414	01610155	102
513	Town Crk	SS	10/06-9/14	12	SC	2014	Pack Horse Rd crossing; Nr Oldtown, Md	Cumberland, Md	Allegheny	39.55320	-78.55500	01609000	148
602	Sixteen-Mile Crk		3/73 – 11/87		NW	1987	220 yds dwnstr of Rt 5 Brdg	North East Twp	Erie	42.23820	-79.83210	4213294	
603	Walnut Crk		3/73 - 11/87		NW	1987	40 yds upstr Fr LR25025 Br - Last Br upstr Fr mouth	Fairview Twp	Erie	42.07306	-80.23472	4213150	
604	Elk Crk		3/73 - 11/87		NW	1987	250 yds dwnstr Fr Rt 5 Br	Girard Twp	Erie	42.02056	-80.36139	4233085	
612	Lake Erie		7/75 - 8/78		NW	1978	500 yds N of Beach 5 Presque Isle (mid-depth)	Millcreek Twp	Erie	42.16528	-80.14778	4213162	
613	Lake Erie		7/75 - 8/78		NW	1978	500 yds N of Beach 5 Presque Isle (bottom)	Millcreek Twp	Erie	42.14861	-80.14778	4213163	
622	Lake Erie		7/75 - 10/15		NW	2015	Off of Hammermill Cribs Island	Erie	Erie	42.15444	-80.05830	USCG622	
623	Lake Erie		7/75 - 8/78		NW	1978	1000 yds N of Gilson Ave (bottom)	Millcreek Twp	Erie	42.15444	-80.05833	4213166	
631	Presque Isle Bay		8/81 - 8/81		NW	1981	Bay midway btw the public dock & Baymouth (surf)	Millcreek Twp	Erie	42.14444	-80.09444	4213167	
633	Presque Isle Bay		7/75 - 9/76		NW	1976	Bay midway btw the public dock & Baymouth (bottom)	Millcreek Twp	Erie	42.14444	-80.09444	4213169	

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641	Twelvemile Crk	REF	8/88 – 12/04		NW	2004	100 yds below SR 5 Br	Harborcreek Twp	Erie	42.20972	-79.91500	4213273	
642	E Br Conneaut Crk		1/88 - 8/89		NW	1989	T883 Br SGL #101	Beaver Twp	Crawford	41.84583	-80.47222		
682	Lake Erie		8/76 - 8/78		NW	1978	1.5 miles N/NE of Shades Beach (mid-depth)	Northeast Twp	Erie	42.21167	-79.95667		
692	Lake Erie		6/76 - 8/78		NW	1978	NE of Presque Isle Beach 10 beyond mixing zone (mid-depth)	Northeast Twp	Erie	42.18750	-80.05306		
693	Lake Erie		6/76 - 8/78		NW	1978	NE of Presque Isle Beach 10 beyond mixing zone (bottom)	Northeast Twp	Erie	42.18750	-80.05306		
703	Monongahela River	STN	4/50-6/88	10		1988	Gaging Station above Lock Dam 7	Greensboro	Greene	39.78750	-79.92083	03072500	4407
704	Turtle Crk		6/62 - 6/95		SW	1995	2nd RXR Br dwnstr Fr SR993	Trafford	Westmoreland	40.38556	-79.76472	3084400	
705	Abers Crk		6/62 - 11/87		SW	1987	Rt 286 Br	Plum Boro	Allegheny	40.45028	-79.71389	3084000	
707	Youghiogheny Rvr		4/50 - 1/88		SW	1988	Crawford Ave Br	Connellsville	Fayette	40.01750	-79.59389	3082500	
708	Youghiogheny Rvr		4/50 - 11/75		SW	1975	SR381 Br	Ohiopyle	Fayette	39.87083	-79.49306	3081500	
710	Casselman Rvr		4/50 - 6/95		SW	1995	SR3011 (IR 55029) Br - Markleton	Upr Turkeyfoot Twp	Somerset	39.85972	-79.22833	3079000	
711	Laurel Hill Crk		4/50 - 1/73		SW	1973	PA Rt 281 Br	Lwr Turkeyfoot Twp	Somerset	39.82139	-79.32111	3080000	
712	Redstone Crk		6/62 - 1/88		SW	1988	LR26026 Br - Waltersburg	Franklin Twp	Fayette	39.98000	-79.76444	3074500	
715	Sewickley Crk		9/63 - 6/95		SW	1995	SR3014 (IR64165) Br	Hunker	Westmoreland	40.21250	-79.61583	3083250	
716	Southfork Tenmile Crk		9/72 - 12/75		SW	1975	Br off LR30051	Clarksville	Greene	39.97250	-80.04583	3073535	
717	Tenmile Crk	STN	8/72 - 6/95	610	SW	1995	SR088 Br - Millsboro	E. Bethlehem Twp.	Washington	39.98333	-80.01056	3072845	
718	Pigeon Crk		8/72 - 11/87		SW	1987	T854 Br Nr Rt 481	Carroll Twp	Washington	40.19056	-79.93056	3075040	
719	Peters Crk		8/72 - 11/87		SW	1987	Rt 51 Br	Jefferson Boro	Allegheny	40.29083	-79.91806	3075090	
720	Turtle Crk		8/72 - 11/75		SW	1975	Rt 22 Br - Murrysville	Franklin Twp	Westmoreland	40.42694	-79.69861	3083975	

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721	Jacobs Crk		9/72 - 12/87		SW	1987	LR26131 Br	Scottdale	Westmoreland	40.09222	-79.59278	3083038	
722	Casselman Rvr		2/73 - 12/75		SW	1975	Rt 53 Br	Addison Twp	Somerset	39.79556	-79.32333	3079200	
723	Big Sandy Crk	REF	8/72-11/87 & 10/10-9/15	13	SW	2015	SR2004 (Quebec Rd) Br @ Elliottsville	Wharton Twp	Fayette	39.76944	-79.62689	03070400	16.4
724	Laurel Hill Crk	REF	10/72-11/87 & 10/10-9/15	13	SW	2015	SR 281 Br @ Ursina	Lower Turkeyfoot Twp	Somerset	39.82291	-79.32075	03080000	121
727	Cheat Rvr	STN	1/88-9/15	610	SW	2015	SR119 Br - Pt Marion	Springhill Twp	Fayette	39.74160	-79.90009	03071600	1423
729	Indian Crk	REF	1/88 - 10/98		SW	1998	SR381 Br upstr Fr Jones Mill	Donegal Twp	Westmoreland	40.08417	-79.34028		
730	Kooser Run	REF	8/98 - 9/03		SW	2003	Br in Kooser St Pk above lake	Jefferson Twp	Somerset	40.06000	-79.22806		
731	S Fork Ten Mile Crk	REF	8/98 - 9/03		SW	2003	T436 Br W of Rogersville	Center Twp	Greene	39.88250	-80.31750		
802	Allegheny Rvr		3/50 - 12/06		SW	2006	SR 128 Br	North Buffalo Twp	Armstrong	40.76111	-79.54583	3036500	
803	Allegheny Rvr	REF	2/62 – 12/87 8/98 – 12/04		SW	2004	Rt 368 Br Nr Parkers Landing	Hovey Twp	Armstrong	41.10194	-79.67944	3031500	
804	Allegheny Rvr		3/50 - 12/87		NW	1987	SR322 Br - Franklin	Franklin	Venango	41.38944	-79.81944	3025500	
806	Allegheny Rvr		6/62 - 12/87		NW	1987	Rt 62 Br below Warren	Brokenstraw Twp	Warren	41.84056	-79.25417	3015320	
808	Buffalo Crk		3/50 - 11/87		SW	1987	LR3102 @ Iron Br	S Buffalo Twp	Armstrong	40.73500	-79.67861	3048900	
809	Kiskiminetas Rvr		4/50 - 1/88		SW	1988	Rt 56 Br	Vandergrift	Westmoreland	40.60611	-79.56083	3048500	
811	Conemaugh Rvr		3/50 - 12/87		SW	1987	Rt 56 Br	Seward	Westmoreland	40.41917	-79.02639	3041500	
812	Loyalhanna Crk		4/50 - 6/95		SW	1995	SR1046 (IR64185) Br @ Dam	Loyalhanna Twp	Westmoreland	40.46472	-79.45194		
813	Loyalhanna Crk		4/50 - 11/87		SW	1987	Concrete fording point off Rt 30	Unity Twp	Westmoreland	40.28639	-79.31972	3044997	
814	Blacklick Crk		4/50 - 6/95		SW	1995	T660 Br Nr Josephine	Burrell Twp	Indiana	40.47333	-79.18361	3042000	
815	Two Lick Crk		6/62 - 11/87		SW	1987	T598 Br	Center Twp	Indiana	40.51278	-79.16944	3042500	



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816	Little Conemaugh Rvr		3/50 - 1/88		SW	1988	Rt 271 Br btw Franklin & Johnstown	Johnstown	Cambria	40.32833	-78.92083	3041025	
817	Stony Crk		3/50 - 1/88		SW	1988	Rt 53 Br	Ferndale	Cambria	40.29361	-78.91889	3040000	
818	Crooked Crk		3/50 - 6/95		SW	1995	SR066 Br	Bethel Twp	Armstrong	40.71806	-79.53667		
823	Clarion Rvr		5/62 - 1/76		NW	1976	Grant St Br	Johnsonburg	Elk	41.48611	-78.67861	3028500	
824	W Br Clarion Rvr		5/62 - 12/87		NW	1987	LR24011 Br - Wilcox	Jones Twp	Elk	41.57528	-78.69250	3028000	
825	E Br Clarion Rvr		3/50 - 12/87		NW	1987	LR24013 Br above Glen Hazel	Jones Twp	Elk	41.54444	-78.61389	3027545	
826	French Crk		6/62 - 11/87		NW	1987	LR60019 Br	Utica	Venango	41.43750	-79.95611	3024000	
827	French Crk		6/62 - 10/90		NW	1990	T700 Br	Amity Twp	Erie	41.95639	-79.87722	3021500	
828	Oil Crk		5/62 - 10/86		NW	1986	Rt 8 Br N of Rouseville	Complanter Twp	Venango	41.48167	-79.69556	3020500	
829	Tionesta Crk		5/62 - 11/87		NW	1987	LR27001 Br	Tionesta Twp	Forest	41.48500	-79.45000	3020050	
833	Clarion Rvr		3/50 - 12/87		NW	1987	PA Rt 948 Br	Ridgway	Elk	41.42083	-78.73611	3029000	
834	Clarion Rvr		3/50 - 5/61		NW	1961	Off T315 S of St Petersburg	Richland Twp	Clarion	41.14917	-79.66028	3031000	
835	Mahoning Crk		3/50 - 5/61		NW	1961	Rt 436 Br	Punxsutawney	Jefferson	40.93917	-79.00861	3034000	
836	Little Mahoning Crk		3/50 - 1/61		SW	1961	LR32101 Br	South Mahoning Twp	Indiana	40.83611	-79.11028	3034500	
837	Crooked Crk		3/50 - 4/61		SW	1961	PA Rt 210 Br - Idaho	South Bend Twp	Armstrong	40.65472	-79.34889	3038000	
838	Pine Crk		8/72 - 11/87		SW	1987	LR02136 Br - Bryant	Hampton Twp	Allegheny	40.57833	-79.96972	3049750	
839	Deer Crk		10/72 - 11/87		SW	1987	Rt 910 Br Nr LR02150	West Deer Twp	Allegheny	40.61750	-79.90222	3049645	
840	Buffalo Crk		8/72 - 11/75		NW	1975	T664 Br	Clearfield Twp	Butler	40.86528	-79.69472	3048850	
841	Cowanshannock Crk		8/72 - 11/87		SW	1987	T612 Br off Rt 85	Valley Twp	Armstrong	40.80528	-79.38389	3106005	
842	Mahoning Crk		8/72 - 11/75		SW	1975	0.1 mile E on T743 Fr Jct with T691	Pine Twp	Armstrong	40.93278	-79.44500	3036100	

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844	Elk Crk		3/73 - 11/87		NW	1987	Rt 120 Br	Ridgway	Elk	41.42528	-78.72722	3028900	
847	French Crk		2/73 - 12/87		NW	1987	First Br S of Saegertown on Rt 19	Woodcock Twp	Crawford	41.70778	-80.14583	3022505	
848	Lake Crk		2/73 - 11/75		NW	1975	T364 Br	Jackson Twp	Venango	41.55000	-79.90389	3024230	
849	Woodcock Crk		2/73 - 11/87		NW	1987	LR20141 Br	Woodcock Twp	Crawford	41.71028	-80.13944	3022600	
850	Conneauttee Crk		11/72 - 11/83		NW	1983	T319 Br SE of Edinboro	Washington Twp	Erie	41.86278	-80.12500	3021670	
851	Muddy Crk		11/72 - 11/87		NW	1987	LR20098 Br	Steuben Twp	Crawford	41.69111	-79.87333	3021600	
852	Oil Crk		2/73 - 12/87		NW	1987	PA Rt 8 Br - Oil City	Oil City	Venango	41.43389	-79.70972	3020500	
853	Tionesta Crk		2/73 - 11/75		NW	1975	250 yds dwnstr Fr Rt 36 Br	Tionesta Twp	Forest	41.48694	-79.45500	3020050	
854	Brokenstraw Crk		3/73 - 12/75		NW	1975	RXR Br off Old Rt 6 - Irvine	Brokenstraw Twp	Warren	41.83972	-79.26417	3015530	
855	Kinzua Crk		3/73 - 12/87		NW	1987	Rt 219 Br - Tally Ho	Lafayette Twp	Mckean	41.76639	-78.71861	3011800	
856	Potato Crk		3/73 - 11/87		NW	1987	T366 Br - Farmers Valley	Keating Twp	Mckean	41.84139	-78.42917	3009700	
857	Allegheny Rvr		3/73 - 11/87		NC	1987	0.5 miles dwnstr Fr LR52062 Br	Eulalia Twp	Potter	41.75778	-78.05306	3007000	
859	Little Toby Crk		2/76 - 11/87		NW	1987	RXR Br 0.1 miles upstr Fr Rt 949 Nr Portland Mills	Spring Creek Twp	Elk	41.36472	-78.82278	3029170	
862	Blue Eye Run	REF	1/88 - 7/98		NW	1998	SR027 Br Nr Garland	Pittsfield Twp	Warren	41.81861	-79.42917		
863	Cathers Run	REF	1/88 - 7/98		NW	1998	T634 Br Nr mouth	Millcreek Twp	Clarion	41.31472	-79.23083		
864	S Br Two Lick Crk	REF	1/88 - 10/98		SW	1998	SR1014 Br upstr Fr Wandin	Green Twp	Indiana	40.67472	-78.94444		
865	Mclaughlin Crk	REF	9/89 - 7/98		NW	1998	T639 Br Nr Hydettown	Oil Creek Twp	Crawford	41.68417	-79.72444		
869	French Crk	REF	12/94 - 12/04		NW	2004	SR1002 Br	Venango Twp	Crawford	41.77167	-80.10750	3022000	
871	Minister Crk	REF	8/98 - 12/04		NW	2004	SR666 Br - Minister	Howe Twp	Forest	41.62109	-79.15329		
875	Silver Crk	REF	8/98 - 3/02		NW	2002	Snake Rd Br (T638)	Parker Twp	Butler	41.03485	-79.74667		
876	Silver Crk	REF	5/02 - 12/04		NW	2004	SR1004 Br - Walley Mill	Parker Twp	Butler	41.04500	-79.77694		
877	East Hickory Crk	REF	1/05 - 9/10		NW	2010	Upstr of Forest Service Rd 119 Nr Queen, PA	Limestone Twp	Warren	41.64198	-79.33797		
878	Mill Crk	REF	1/05-9/15	15	SW	2015	Roberts Rd (T 984) Br	Ligonier Twp	Westmoreland	40.25169	-79.15547	MANUAL	11.7
879	Woodcock Crk	REF	1/05 - 9/10		NW	2010	50 m upstr of SR 2036 Br	Randolf Twp	Crawford	41.64394	-79.96688		
880	Quemahoning Crk	REF	1/05 - 9/10		SW	2010	50 m dwnstr Fr SR4015 Br	Lincoln Twp	Somerset	40.06896	-79.10914		
881	Havens Run	REF	1/05 - 9/10		NW	2010	600 m upstr of SGL 30 Rd	Norwich Twp	Mckean	41.64810	-78.36240		
882	South Fork Pine Crk	REF	3/06-9/15	13	SW	2015	T 738 Br Nr Echo, PA	Valley Twp	Armstrong	40.84730	-79.36370	MANUAL	22.2
883	Little Yellow Crk	REF	3/06-9/15	15	SW	2015	Upstr of SR2027 Br	Brush Valley Twp	Indiana	40.55650	-79.00580	MANUAL	15

WQN	Stream Name	Station Type	Period of Record (M/YY)	SAC	REG	Year Inactivated	Location	Municipality	County	Lat	Long	USGS Gage	Drain Area (Sq Mi)
904	Beaver Rvr		5/62 - 1/88		SW	1988	Old Rt 51 Br	Rochester	Beaver	40.70139	-80.29583	3107615	
908	Slippery Rock Crk		4/50 - 12/75		NW	1975	LR37083 Br	Perry Twp	Lawrence	40.88389	-80.23389	3106500	
912	Pymatuning Crk		5/62 - 8/64		NW	1964	PA Rt 846 Br	S Pymatuning Twp	Mercer	41.30944	-80.47444		
914	Chartiers Crk		4/50 - 6/95		SW	1995	LR02037 Br	Carnegie	Allegheny	40.40000	-80.09861	3085500	
916	Chartiers Crk		8/72 - 12/87		SW	1987	T748 Br	Peters Twp	Washington	40.27583	-80.14361	3085260	
918	Two Mile Run		8/72 - 1/88		SW	1988	L St Br	Vanport Boro	Beaver	40.68944	-80.32778	3107620	
919	Brush Crk		8/72 - 11/75		SW	1975	T613 Br off Rt 588	Marion Twp	Beaver	40.80389	-80.24028	3106018	
920	Glade Run		8/72 - 12/75		NW	1975	T423 Br	Forward Twp	Butler	40.75806	-79.99222	3105850	
921	Slippery Rock Crk		8/72 - 12/87		NW	1987	LR10048 Br	Worth Twp	Butler	41.03639	-80.10889	3106153	
923	N Fork Little Beaver Crk		3/73 - 12/87		NW	1987	LR37004 Br Nr Enon Valley	Little Beaver Twp	Lawrence	40.85778	-80.44083	3109390	
924	Big Run		3/73 - 11/75		NW	1975	Rt 18 Br	New Castle	Lawrence	40.98444	-80.35000	3105248	
926	Slippery Rock Crk		2/76 - 11/87		NW	1987	LR10063 Br Nr Boyers	Marion Twp	Butler	41.10944	-79.90833	3106030	
927	Shenango Rvr		1/76 - 1/88		NW	1988	Ohio St Br Nr Sharon; 1.3 miles dwnstr Fr Ltl Yankee Run	Hickory Twp	Mercer	41.19889	-80.50583	3103500	
928	Traverse Crk	REF	1/88 - 10/98		SW	1998	SR018 Br @ Raccoon Crk State Park	Hanover Twp	Beaver	40.50306	-80.42389		
929	Thorn Crk	REF	1/88 - 7/98		NW	1998	T556 Br W of Saxonburg	Jefferson Twp	Butler	40.75083	-79.82833		

**APPENDIX 5 – COLLECTOR ID REQUEST FORM**



COLLECTOR ID #

## COLLECTOR ID REQUEST FORM

This form must be completed and submitted to Bureau of Labs: Email: [RA-eplabhelp@pa.gov](mailto:RA-eplabhelp@pa.gov) or Fax: (717) 346-8590.

If User will be entering SIS Header Information or Field Analysis Data, a completed SIS Security Request Form must be attached to a ServiceNow ticket and submitted to the Service Desk; call Service Desk at (717) 787-HELP for information on this form.

SECTION A. – GENERAL INFORMATION		
Requestor's Name:	Telephone #:	Date of Request:
Requesting Bureau:	User's Supervisor Name:	Supervisor's Telephone #:
Type of Request:	<input type="checkbox"/> Add Roles Checked Below <input type="checkbox"/> Modify Existing User Roles (e.g. e-mail address change, Business Unit change, etc.) <input type="checkbox"/> Inactive User (used only when employee leaves Commonwealth service)	
SECTION B. – USER INFORMATION		
Name – Last:	First:	Middle:
OR		
Group Name (50 characters):		
Laboratory Report Destination(s) – Identify an e-mail address(es) where the final reports for this collector will be sent (e.g., lwilkinson@pa.gov). Multiple report destinations can be designated.		
Bureau – The Bureau that the collector works for (e.g. Air Quality):	Collector's Telephone #:	
Collector Report Group – Used only for the Bureaus of Air Quality and Mining Reclamation:		
Business Unit(s) Collector is Authorized to Submit Samples For – Identify business unit(s) w/ a check below.		
<input type="checkbox"/> 1 Watershed Conserv	<input type="checkbox"/> 23 Land & Water Conserv	<input type="checkbox"/> 41 Deep Mine Safety
<input type="checkbox"/> 2 Water Supply Mgmt	<input type="checkbox"/> 24 Flood Prot Proj	<input type="checkbox"/> 42 Ofc of Atty Gen
<input type="checkbox"/> 3 Land Recyc & Waste Mgmt	<input type="checkbox"/> 25 Topo Geo Survey	<input type="checkbox"/> 43 Del River Basin Comm
<input type="checkbox"/> 4 Env Cleanup	<input type="checkbox"/> 26 Labs	<input type="checkbox"/> 44 Susq River Basin Comm
<input type="checkbox"/> 5 PA Dept of Revenue	<input type="checkbox"/> 27 Emer Response	<input type="checkbox"/> 45 Bur of Investigations
<input type="checkbox"/> 6 AQ	<input type="checkbox"/> 28 PA Fish Comm	<input type="checkbox"/> 46 Dept of Corrections
<input type="checkbox"/> 7 Min & Recl	<input type="checkbox"/> 29 PA Liquor Control	<input type="checkbox"/> 47 Cambria Cnty Conserv Dist
<input type="checkbox"/> 10 OG	<input type="checkbox"/> 31 DGS	<input type="checkbox"/> 48 PA State Police
<input type="checkbox"/> 11 WQ Prot	<input type="checkbox"/> 32 PA Game Comm	<input type="checkbox"/> 49 Field Deputate
<input type="checkbox"/> 14 Rad Prot	<input type="checkbox"/> 33 Erie Cnty Health Dept	<input type="checkbox"/> 50 US EPA Reg 3
<input type="checkbox"/> 15 Aban Mine Recl	<input type="checkbox"/> 34 PA Dept of Military Affairs	<input type="checkbox"/> 51 Bur of Waterways Eng
<input type="checkbox"/> 16 Min & Recl OBA	<input type="checkbox"/> 35 PA Dept of Health	<input type="checkbox"/> 52 Water Planning Office
<input type="checkbox"/> 19 USGS	<input type="checkbox"/> 36 Dept of Agriculture	<input type="checkbox"/> 53 ACHD
<input type="checkbox"/> 21 Forestry	<input type="checkbox"/> 37 PA Dept of Transp	<input type="checkbox"/> 54 PHMC
<input type="checkbox"/> 22 State Parks	<input type="checkbox"/> 40 Contract Prog	
SECTION C. – LAB USE ONLY		
Contact Douglas Malchenson for AIMS Access (Business Unit 6)		

**APPENDIX 6 – WQN SAMPLE SUBMISSION FORM**

**COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF CLEAN WATER**

# of Unpreserved Bottles:		
Tests	# of bottles	Fixative
Metals		HNO3
Phenols		H2SO4
CN		NaOH
NA/K		HNO3
Spl. Inorg/Nutrients		H2SO4

Organic Bottles Submitted			
Bottle	Test	# of bottles	Fixative
40mL VOA amber	TOC		H2SO4
40mL VOA amber	DOC		H2SO4
1 L amber			
500 mL amber			
Other:	Bacteria		Pre-cl'd
Other:			

LAB USE ONLY
Lab Number: _____
Date Received: _____
Received By: _____
Temp. ≤ 6°C _____

<b>Collector ID</b> [ ][ ][ ][ ][ ][ ]	<b>Sequence No.</b> [ ][ ][ ][ ][ ]	<b>Date Collected (MM, DD, YY)</b> [ ][ ][ ][ ][ ][ ][ ]	<b>Time Collected (HH MM)</b> [ ][ ][ ][ ][ ]
-------------------------------------------	----------------------------------------	-------------------------------------------------------------	--------------------------------------------------

<b>Reason Code</b> [ ][ ][ ]	<b>Cost Center Code</b> [ ][ ][ ][ ]	<b>Program Code</b> 0 0 0 1	<b>STD Analysis Code</b> [ ][ ][ ][ ]
---------------------------------	-----------------------------------------	--------------------------------	------------------------------------------

<b>Matrix Code</b> [ ][ ][ ]	<b>Residual Chlorine</b> Yes No	<b>pH less than 2.0</b> Yes No	<b>Legal Seal Number:</b> _____
---------------------------------	------------------------------------	-----------------------------------	------------------------------------

Legal Seal Intact:  
 Y  N

**Additional Analysis**

_____
_____
_____

**How Shipped:**

US Cargo

Hand Delivered

Other \_\_\_\_\_

Collectors Name: (printed) \_\_\_\_\_  
Phone \_\_\_\_\_

Relinquished By: (signature) \_\_\_\_\_  
Date \_\_\_\_\_

Station Number (WQN0###)

<b>W</b>	<b>Q</b>	<b>N</b>	<b>0</b>	[ ]	[ ]	[ ]
----------	----------	----------	----------	-----	-----	-----

Station Name \_\_\_\_\_

Sampling Location \_\_\_\_\_

Stream Name \_\_\_\_\_

Latitude (DMS)

[ ][ ]	[ ][ ][ ]	[ ][ ][ ]
--------	-----------	-----------

Longitude (DMS)

[ ][ ][ ]	[ ][ ][ ]	[ ][ ][ ]
-----------	-----------	-----------

**FIELD RESULTS:**

Temp.(°c)	(00010) _____
pH (units)	(00405) _____
D.O. (mg/l)	(00300) _____
D.O. Saturation (%)	(00301) _____
Sp. Cond. (µmhos)	(00094) _____
Flow (cfs)	(00061) _____
Turbidity (NTU)	(82078) _____
Gage (ft)	(00065) _____
Secchi Disk	(00078) _____

**Comments:**

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

**APPENDIX 7 – FIELD PREPARATION AND FIXATIVE CHART**



**SAMPLE VOLUME, FIELD, PREPARATION AND FIXATIVE CHART**

<b>PARAMETER</b>	<b>SAMPLE CONTAINER and VOLUME</b>	<b>FIELD PREP/FIXATIVE</b>
Standard Inorganics (except P <sub>(t)</sub> , NH <sub>3</sub> -N, TOC) (SAC 010, 012, 013, 015, 016, 017, 610, 612, 616)	2 - 500 mL precleaned plastic bottle	iced to 4° C
Special Inorganics (P <sub>(t)</sub> , NH <sub>3</sub> -N) (SAC 010, 012, 013, 015, 016, 017, 610, 612, 616)	1 - 500 mL precleaned plastic bottle	sulfuric acid to pH<2, iced to 4° C
N <sub>(d)</sub> , dissolved NO <sub>3</sub> + NO <sub>2</sub> , dissolved P <sub>(o)</sub> (SAC 012, 612)	1 – 125 ml precleaned plastic bottle	field filtered
Total Organic Carbon (TOC) (SAC 012, 015, 612)	2 – 40mL amber VOA vials w/TFE septa	sulfuric acid to pH<2, iced to 4° C
Total Metals (except Ferrous Iron) (SAC 010, 012, 013, 015, 016, 017, 610, 612, 616)	1 - 125 or 500 mL precleaned plastic bottle	nitric acid to pH <2, iced to 4° C
Dissolved Metals (except Ferrous Iron) (SAC 013, 015, 016, 017, 616)	1 - 125 or 500 mL precleaned plastic bottle	field filtered, nitric acid to pH <2, iced to 4° C
Dissolved Nutrients (SAC 012, 612)	1 – 125 ml precleaned plastic bottle	field filtered, sulfuric acid to pH<2, iced to 4° C
Radiological (Alpha, Beta)	2 – 500 mL glass bottles	iced to 4° C
Bacteriological (Fecal Coliform) (SAC 013, 015)	1 - 125 mL plastic bottle (sterilized, blue cap)	iced to 4° C
Chlorophyll a (SAC 017)	1 - 47 mm glass fiber filter in petri dish	wrap in aluminum foil and place on dry ice, or ice to 4° C and freeze within 24 hrs
Suspended Sediment*	1 – 500 mL plastic bottle	store in cool dark place

All WQN stations require the following STANDARD FIELD ANALYSES: Temp (°C), pH, Dissolved Oxygen, Specific Conductance, and Gage Reading/Manual Flow Measurement. These results should be recorded on the Sample Submission Sheet.

\* Must be shipped to USGS lab in Louisville, KY.

## **APPENDIX 8 – STREAM FLOW MEASUREMENT METHODS**

### Wire-Weight Gages

A WW gage consists of a drum wound with a single layer of cable, a bronze weight attached to the end of the cable, a graduated disc and counter, and a check bar of known elevation. The gage is housed within a small cast aluminum lockable box and generally mounted to a rigid structure (i.e., bridge or trestle) directly above the water surface. The graduated disc is permanently connected to the counter and to the shaft of the drum. The drum reel is equipped with pawl and ratchet for holding the suspended weight at any desired elevation.

The check bar for the WW gage is set by levels as a reference elevation to gate datum. The gage is set so that when the bottom of the suspended weight is at the water surface, the gage height is indicated by the combined readings of the counter and the graduated disc.

#### Reading Instructions:

1. Unlock the case and gently open the cover. If the cover jams and will not open freely, do not force it open. The cover has probably become jammed against the crank handle. Try to move the handle into a position that will allow the cover to open. At this point, make sure the pawl is engaged or that you can hold onto the handle to prevent the weight falling to the stream bed and unspooling the cable.
2. Inspect the cable. It should be tightly wound with windings that touch each other, with no overlaps. If cable is not properly wound, check-bar and water-surface readings will be incorrect. If necessary, unwind the cable and utilizing the level-wind pulley and gloves, rewind the cable onto the reel. (This should only be necessary in extreme situations.)
3. The check-bar is found directly under the weight as it hangs in the box and has two positions, the forward position (away from you) which prevents the weight from falling to the bottom of the box while locked (and into the stream when opened), and a rear position (toward you) which allows the weight to be lowered to the stream. You should find the check-bar in the forward position. Elevations are run to the check-bar in the forward position and the gage is set to read this elevation when the weight just makes contact with the check-bar.
4. In order to determine the check-bar reading, (1) make sure the check-bar is in the forward position. (2) Lower the weight until the weight just lightly touches the check-bar. (3) Record this reading to three decimal places. This will involve estimating the last digit.
5. Raise the weight and slide the check-bar to the rear position. Lower the weight until it just lightly touches the surface of the water and record your reading to two decimal places. Average the peaks and troughs of elevation if the water surface is surging. You should repeat this process at least once. If the air temperature is below freezing, the first time the weight touches the water, a layer of ice will form on the bottom of the weight causing it to become slightly longer. Repeated contacts with the water surface continues to add layers of ice to the bottom of the weight. For this reason, water surface elevations should be made as accurately as possible on the first or second try.

6. Engage the pawl (this will prevent the weight from falling and unspooling the cable should the crank slip from your hand while rewinding) and crank the weight to its original position. Slide the check-bar to its forward notch. The crank handle should be located in the rear position, allowing the cover to close without touching the crank handle.
7. Close the cover and lock the case.

### Electric Tape Gages

The ET gage consists of a steel tape graduated in feet and hundredths, to which is fastened a cylindrical weight (usually brass), a reel in a frame for the tape, a 4½-volt battery and a voltmeter. One terminal of the battery is attached to a ground connection and the other to one terminal of the voltmeter. The other terminal of the voltmeter is connected through the frame, reel and tape, to the weight. The weight is lowered until it contacts the water surface. This contact completes the electric circuit and produces a signal on the voltmeter. With the weight held in the position of first contact, the water surface elevation reading is observed at the tape index (a black line indented just below the voltmeter and usually immediately above the shelf) provided on the reel mounting. ET gages are installed in a manner that will produce a dependable circuit, yielding a strong signal when the weight touches the water surface.

#### Reading Instructions:

The dog on the left side of the reel is disengaged by lifting the rear portion in an upward direction while holding onto the handle on the right side. This allows the weight and tape to be lowered until it contacts the water surface. This contact completes the electric circuit and produces a fluctuation on the voltmeter on the front of the tape reel frame. Once a contact with the water surface has been made, the weight is raised slightly until contact is broken, and then lowered very slowly until the water surface is again contacted. This procedure is repeated until a consistent reading at the index line is produced. This reading may be confirmed visually by shining a flashlight into the well at the spot where the weight will make contact with the surface of the water and lowering the weight very slowly until contact with the surface is visually confirmed (the voltmeter needle should also deflect at this time if working correctly). The reading of the water surface elevation is then taken by observing the reading of the steel tape at the index line on the gage. NOTE: HAZARD!! In order to make a visual observation of the weight touching the water surface in the well, it is often necessary to raise the door (located on the floor) to the well. Once the door is opened, extreme care should be exercised to ensure that nothing is dropped into the well. This type of reading is best left to experienced personnel.

#### Possible Interferences:

1. If the weight touches any grounded item (steel piping or the steel side of an oil tube or a steel pipe well) the circuit will be completed, and the voltmeter will deflect as if the water surface has been contacted. SOLUTION--Physically move the tape past any items in the well that will produce a false reading. Keep in mind that the tape should be kept as vertical as possible for accurate readings.

2. If any oil has seeped into the well onto the water surface from the oil tube, the needle will not deflect upon hitting the oil, but will deflect when weight is lowered through the oil and contacts the water surface (this will not be an accurate water elevation).

SOLUTION--

- A. Visually determine the elevation of the top of the oil surface using the method described above for visual readings and record this number.
- B. From the top of the oil very slowly lower the weight until a deflection of the voltmeter occurs. This is the top of the water surface.
- C. Subtract this reading from the one made in step 1. and multiply the answer by 0.2.
- D. Subtract this value from the top of oil reading determined in step 1. This is the actual surface elevation.

$$\begin{array}{r}
 \text{EX. } 5.28 \quad \text{surface of oil} \\
 \quad \underline{5.23} \quad \text{surface of water} \\
 \quad \quad .05 \quad \text{difference} \\
 \quad \quad \times .20 = .0100
 \end{array}$$

$$5.28 - .01 = 5.27 \text{ (actual water surface elevation)}$$

3. If the bottom of the weight is corroded, even slightly, the meter will not deflect until the water in the well encounters a portion of the weight free of corrosion, completing the circuit. This produces an erroneous reading as the circuit is not completed at the bottom of the weight, but at some point along the side.  
SOLUTION--Using a piece of emery paper rub lightly over the bottom of the weight to remove corrosion. It is also acceptable to lightly scrape the edge of a knife across the bottom of the weight. Care must be taken to avoid removing any brass from the bottom of the weight as repeated cleanings over years may change the weight length.
4. The cleaning of the weight is a delicate procedure as the weight must first be lowered a few feet, so it may be grasped through the shelf door or opening. Very often the tape may be very rusted at the point the tape enters the weight or just below that point. "Any twisting or bending will break the tape off the weight." Should this happen, lay the weight on the shelf and contact the USGS as soon as possible.
5. Ice in the well. SOLUTION--Ice must be broken loose and, in some cases, removed. This is a solution that is best left to experienced USGS technicians, and in no instance should DEP personnel enter the well.

Staff Gages

Staff gages are simply rods or boards that are securely attached to a backing or permanent foundation. These non-recording gages are graduated, and stage can be directly read. Vertical staff gages are used as reference gages within stilling wells, and both vertical and inclined staff gages may be used as outside reference gages. Lake height measurements for the WQN are obtained from staff gages.

### Digital Recorders

Digital recorders are slow speed, battery operated instruments which record information in the binary decimal code form by use of a paper-tape punch mechanism. Sixteen channel paper-tape is punched with a four-digit number at preselected time intervals of 5, 15, 30 or 60 minutes. Stage heights of zero to 99.99 feet can be recorded in increments of hundredths of a foot. A battery powers the sequencing camshaft and electro-mechanical timing devices. Pins on the punch block are forced against the paper-tape and code discs by spring action thereby recording the position of the discs at that moment. After the paper-tape is punched, it is advanced, and the punch spring is compressed for the next readout cycle. The tape can be either manually read to determine stage, or electronic translators can then convert the punch-tape records to a magnetic tape form that is utilized to compute daily mean gage height and daily stream discharge via digital computers.

### Manual Measurement

A full stream width transect is required to manually measure stream flows. Total stream flow must be calculated across this transect using the method of Buchanan and Somers (1969) described briefly below. Record the depths and velocities for each of a minimum of 20 equally spaced points along the transect, thereby constructing a stream channel profile and accompanying current velocity measurements. Sum the products of each cell area calculation multiplied by velocity to determine total flow (cfs) across the transect.

### Telemark

Some gages are equipped with telecommunication capabilities that provide for their remote reading via the internet.

PA Department of Environmental Protection  
Bureau of Clean Water  
Water Quality Division  
P.O. Box 8774  
Harrisburg, PA 17105-8774  
717.787.9637  
RA-WQAssessments@pa.gov