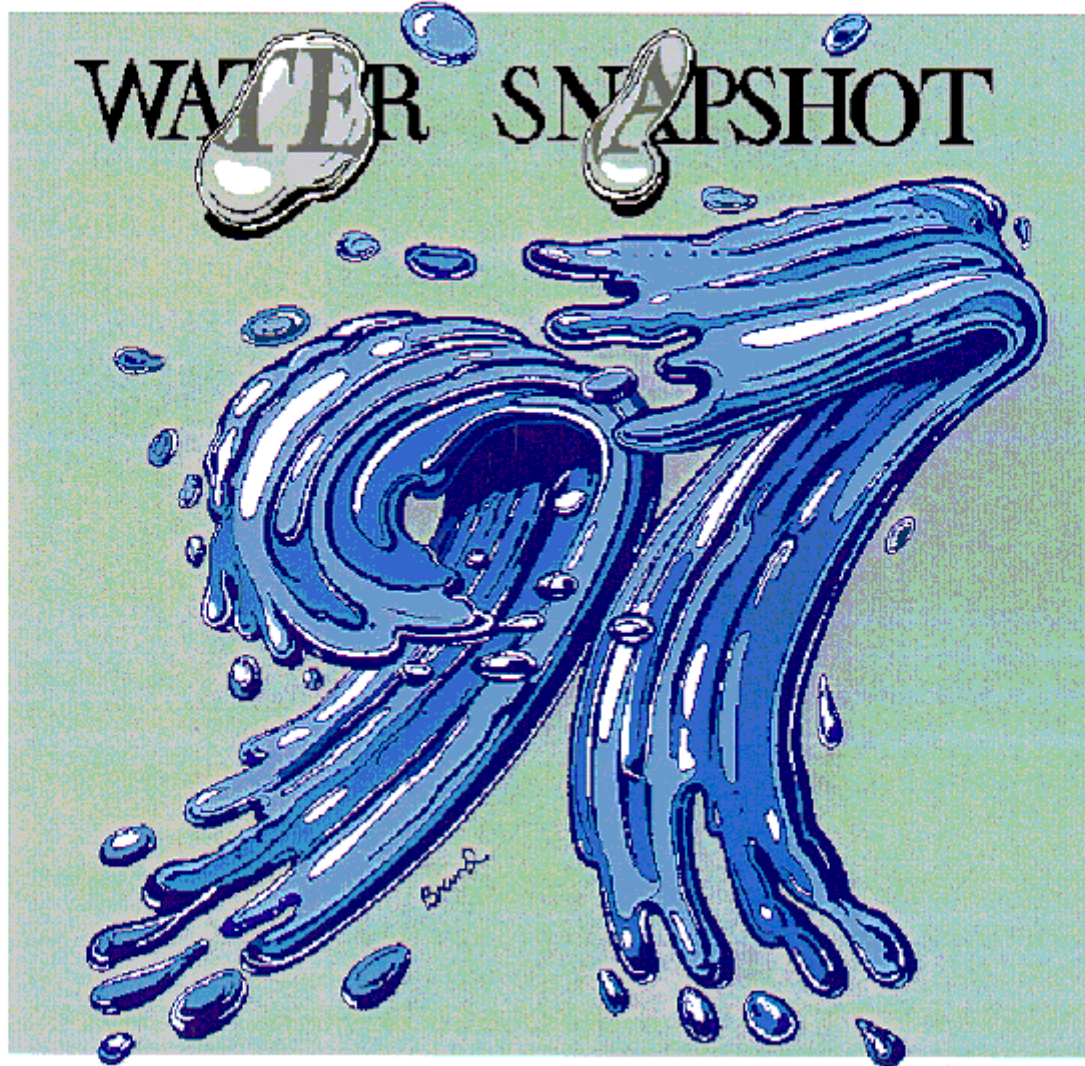


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Water Snapshot '97

An Earth Week Survey of the
Delaware River and its
Tributaries

(Cover graphic by DRBC, Tom Brand)

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Water Snapshot '97, following its predecessor, *Water Snapshot '96*, continued the Earth Day water quality monitoring event throughout the entire Delaware River Basin. For nine days in April 1997, nearly 80 organizations and more than 350 individuals monitored the waters of the Delaware River Basin. These monitors sampled a total of 358 locations on 174 waterways throughout the Delaware River watershed. Monitors collected over 2,100 pieces of information. These data give us a “snapshot” of the Delaware River watershed, which can be used to examine today’s water quality and to serve as a baseline for measuring future water quality. Furthermore, these efforts can be augmented in future Snapshots, to assess watershed quality more fully. For the parameters measured in 1997, the Delaware River Basin water quality is good.

How It Began and How It Has Continued

Water Snapshot '96 was conceived as a way of identifying and uniting the numerous water quality monitoring programs that are operating in the Delaware River Basin. Various governmental agencies and the Delaware Riverkeeper Network supported this idea. The result was *Water Snapshot '96*, the first basin-wide sampling event ever undertaken in the Delaware River Basin.



The vision of *Water Snapshot '96* was a nine-day event, running concurrently with Earth Day, enlisting hundreds of people to test the waters of the Delaware River Basin as a massive display of commitment toward clean water in the basin. Watershed associations, schools, youth organizations,

citizen monitoring groups, government agencies, water and sewer departments, industries, environmental professionals, sportsmen, and others collected water quality data. They

submitted the data to the Delaware River Basin Commission (DRBC) for analysis.

Water Snapshot '96 was a huge success. More than 70 organizations plus many individuals collected water quality information during the event. Twenty-three schools and youth organizations, 20 citizen and watershed groups, 17 governmental agencies, and three private companies joined in the Earth Week project.

Because of the great success of *Water Snapshot '96*, *Water Snapshot '97* took place from April 19 through 27, 1997, including Earth Week. The purposes for 1997 were the same as for 1996. In addition, it was hoped that new participants would be attracted to the *Snapshot* event.

To help achieve these goals, a Volunteer in Service to America (VISTA) member served as the full time coordinator. Teresa Halverson was recruited by the U.S. Environmental Protection Agency (EPA), Region III.

The coordinator used mailing lists from the environmental organizations from the four states of the Delaware River Basin (New York, New Jersey, Delaware, and Pennsylvania), the two EPA regions, and participants from *Water Snapshot '96*. An introductory flyer was then mailed out to announce the event. Later, a one-page data sheet for recording data was mailed out. Also, the coordinator made presentations at various public meetings to publicize the event.

These efforts led to an increase in the number of participants for *Water Snapshot '97*. Overall, 37 school and youth organizations, 27 citizen and watershed groups, 10 governmental agencies, and 5

private companies joined together to sample the waters of the Delaware River Watershed. The total number of people participating in the event was near 400.

The selection of water quality parameters for *Water Snapshot '96* had been a critical decision, since the program's participants would vary from highly scientific organizations to elementary school programs using simple test kits and litmus paper. A small suite of 'core' parameters consisting of air and water temperature, pH, dissolved oxygen, nitrate, and phosphate had been chosen and had proven effective.

Recognizing that most programs sampled additional parameters, *Water Snapshot '97* asked for any additional tests monitored by the participants. Because of this request, the committee included five optional parameters in *1997*. These were alkalinity, carbon dioxide, coliform, conductivity, and turbidity. The data form also asked participants what type of equipment they used. The two most common testing kits used by the various non-governmental programs were from the LaMotte Company and the Hach Company.

Since many diverse groups participate in *Water Snapshot '97*, data are democratized—i.e., all data are lumped together no matter the precision of the analytical method or expertise of the analyst.

Appendix A displays a list of the waterbodies monitored, site description, and the core monitoring data, as was done in Appendix D of the *1996* report.

Appendix B displays the names, addresses, and phone numbers of the *Water Snapshot '97* participants. Based on the individual

participants, 14 percent were from Delaware, 18 percent from New Jersey, 8 percent from New York, and 60 percent from Pennsylvania. In addition, results from the five optional monitoring parameters are listed here.

The Delaware River Basin: Environmental Setting

The Delaware River Basin is a fairly small watershed in comparison with those of other major U.S. rivers. In land area, the basin drains 12,765 square miles, which is only 0.4% of the U.S. total. However, the basin seems much larger considering the fact that almost 7% of the U.S. population depends upon the Delaware Basin as its source of water supply. Blessed by 44 inches of rainfall per year, the basin is able to support not only the 7.5 million residents within its boundaries, but another 10 million outside the basin in New York City and northern NJ. The Delaware Basin also serves to supply many industrial, agricultural, commercial, and recreational needs.

It was not long ago when the many demands placed upon Delaware River water nearly killed the river itself, for in addition to serving as a water supply for so many people and their activities, the river also served as an open sewer. At the height of World War II, many reaches of the river were devoid of life due to lack of oxygen. Since then, the river has been brought back to life. Much of the credit for restoration of the river has been given to creation of the federal Clean Water Act, the E.P.A. and the Delaware River Basin Commission. These agencies were not alone in their heroic efforts. Since the 1970's environmental movement, government agencies have been aided greatly by watchful citizen monitors. Recognizing that government alone cannot preserve the outstanding water quality of the Delaware, regular people banded together to take ownership of their local waterways, and to preserve their valuable water resources for future generations. Just as the

Delaware River Basin is composed of many smaller watersheds (also called sub-basins), the citizen monitors listed in the appendices of this document contribute to a much larger collective effort.

A Tour of the Delaware River Watershed

Along its 330-mile path to the Atlantic Ocean, the Delaware River collects water from ecologically diverse tributaries, influenced by wide-ranging natural and human-induced conditions which dictate its water quality. The major tributaries to the Delaware are the Lehigh and Schuylkill Rivers in Pennsylvania. Both of these watersheds have been subject to by-products of intensive coal mining in their headwaters. Major towns along each tributary include: Allentown, Bethlehem and Easton along the Lehigh River, and Pottsville, Reading, Pottstown, Norristown, and Philadelphia along the Schuylkill River.

The cold, clear, highly oxygenated mountain streams of the New York Catskill Mountains form the headwaters of the Delaware River Basin, draining into the East and West Branches of the Delaware River, which meet at Hancock, NY. This northern region is known to geologists as the glacier-carved Upland physiographic province. This area is home to the Upper Delaware National Scenic and Recreational River as well as the Middle Delaware Scenic and Recreational River, both of which have been included in the National Wild and Scenic Rivers System. Once the river breaks through the main ridge of the Appalachians at Delaware Water Gap, it flows through broad valleys past the rolling hills of the Piedmont. Here the streams are a bit less sloped, flow is a little slower, light penetration is greater, the substrate is less influenced by the glacial origin of the rock, and the land includes less forest and more farmland and suburban sprawl.

Past the fall line at Trenton, the river flows through the Coastal Plain of New Jersey, southeastern Pennsylvania and Delaware in the tidal Delaware Estuary. The major influence on water quality in the Lower Delaware is urbanization. The river flows past Trenton, Camden, Philadelphia, Chester and Wilmington, a highly populated urban complex with major ports and industries. Tributaries along this reach of river have felt the effects of a few hundred years of development and industrialization, and must accommodate further rapid growth in their headwaters now that our population has shifted out of the cities and into the ever-growing suburbs. Many of these tributaries are especially in need of protection by citizen monitors, and are close to most of our back yards.

Below Wilmington, the river widens into Delaware Bay, where the land is flat, the shores are marshy, and agriculture dominates the inland landscape. Some industry exists where petrochemical and power plants require cooling water, but most other human-induced effects on water quality originate from poultry and vegetable farming. Feeder streams flow slowly, meander, and are generally warmer than the mountain streams in Pennsylvania and New York. Major tributaries to the bay include the Salem, Cohansey and Maurice Rivers (a National Wild and Scenic River) in New Jersey, and the Chesapeake & Delaware Canal and the Smyrna, Leipsic, Murderkill, and Broadkill Rivers in DE. Water quality in the bay is heavily influenced by the tides, which may cause great variation in local water quality. Before feeding into the Atlantic Ocean between Cape May, New Jersey, and Cape Henlopen, Delaware, the bay encompasses an extremely rich and diverse ecosystem known for its fisheries, horseshoe crabs, and huge flocks of migratory birds.

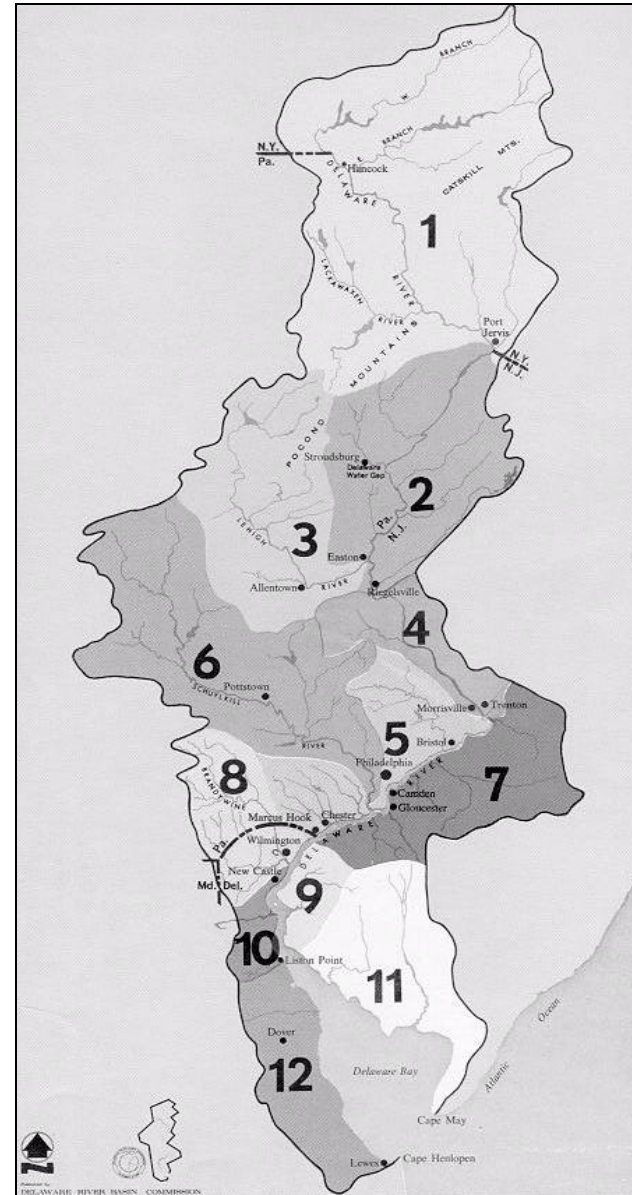


Sub-Basins of the Delaware River Watershed

For the purpose of defining the geographic extent of sampling which occurred during Snapshot '97, sample locations were assigned sub-basin numbers (see Appendix A). Though some of the DRBC sub-basin boundaries are political rather than hydrologic divisions, their utility has proved useful toward defining the extent of sampling coverage for this study. The following definitions include lists of major tributaries to the Delaware River which are located in each sub-basin. Some discussion of sampling effort is included along with the sub-basin descriptions.

Sub-Basin 1: Upper Basin (NY and PA)

Drainage in New York, Pennsylvania, and a very small part of New Jersey, including tributaries entering the Delaware River above the USGS stream flow gauge at Montague, NJ, located at Delaware River mile 246.3. The approximate drainage area totals 3,422 square miles. In New York, the major tributaries to the Delaware River include: East Branch Delaware River, West Branch Delaware River, Callicoon Creek, Tenmile River, Mongaup River, and the Neversink River. In Pennsylvania, major tributaries include: Equinunk Creek, Lackawaxen River, and Shohola Creek. Sub-basin 1 includes the National Park Service Upper Delaware Scenic and Recreational River. 36 samples were taken from locations in sub-basin 1.



Sub-Basin 2: Middle Delaware (NJ and PA)

Drainage in New Jersey and Pennsylvania between the streamflow gauge at Montague, NJ (river mile 246.3) and the gauge at Riegelsville, NJ (river mile 174.8). Excludes the Lehigh River watershed. The approximate drainage area is 1,542 square miles. In New Jersey, major tributaries include: Flat Brook, Paulins Kill, Pequest River, Pohatcong Creek, Lopatcong Creek, and the Musconetcong River. Pennsylvania tributaries include: Sawkill Creek, Raymondskill Creek, Dingmans Creek, Bush Kill, Brodhead Creek, Cherry Creek, Martins Creek, and Bushkill Creek. Sub-basin 2 includes the National Park Service Middle Delaware Scenic and Recreational River. 55 samples were taken from locations in sub-basin 2.

Sub-Basin 3: Lehigh River Watershed (PA)

The Lehigh River drainage area encompasses 1,364 square miles, entering the Delaware River at Easton, PA. Tributaries to the Lehigh include: Tobyhanna Creek, Bear Creek, Black Creek, Nesquehoning Creek, Mahoning Creek, Pohopoco Creek, Lizard Creek, Aquashicola Creek, Hokendaqua Creek, Little Lehigh Creek, Monocacy Creek, and Saucon Creek. 41 samples were collected from sites located in sub-basin 3.

Sub-Basin 4: Lower Delaware to Trenton (NJ & PA)

This is the drainage area, composed mostly of small Delaware River tributaries, located between the USGS gauge at Riegelsville, NJ (river mile 174.8), and the USGS gauge at Trenton, NJ (river mile 134.3). The approximate drainage area is 452 square miles. New Jersey tributaries include:

Hakihokake Creek, Harihokake Creek, Nishisakawick Creek, Copper Creek, Warford Creek, Locketong Creek, the Delaware and Raritan Canal water diversion point, Wickecheoke Creek, Alexauken Creek, Swan Creek, Moore Creek, Fiddler Creek, Jacobs Creek, and Gold Run. Pennsylvania tributaries include: Cooks Creek, Gallows Run, Tinicum Creek, Tohickon Creek, Hickory Creek, Paunacussing Creek, Rabbit Run, Dark Hollow Run, Pidcock Creek, Jericho Creek, Houghs Creek, Dyers Creek, and Buck Creek. 11 sites were sampled in sub-basin 4, mostly on the Delaware River.

Sub-Basin 5: Upper Estuary Tributaries (PA)

This is the drainage area in Pennsylvania between the Trenton gauge (river mile 134.3) and the Pennsylvania-Delaware state boundary near Marcus Hook, PA (river mile 78.8). This sub-basin excludes the Schuylkill River watershed above Fairmount Dam in Philadelphia, PA. The confluence of the Schuylkill into the Delaware (river mile 92.5) divides sub-basin 5 into minor basins 5A (upstream of the Schuylkill) and 5B (downstream of the Schuylkill). The approximate combined drainage area of sub-basin 5 is 678 square miles. Tributaries to the Delaware River located in sub-basin 5A include: Mill Creek, Neshaminy Creek, Poquessing Creek, Pennypack Creek, and Frankford Creek. Sub-basin 5B tributaries to the Delaware River include: Darby Creek, Crum Creek, Ridley Creek, Chester Creek, and Marcus Hook Creek. 32 sites were sampled in sub-basin 5A, and 27 sites were sampled in sub-basin 5B.

Sub-Basin 6: Schuylkill River Watershed (PA)

This is the Schuylkill River watershed above Fairmount Dam in Philadelphia, PA. The Schuylkill River empties into the Delaware River at river mile 92.5. Fairmount Dam is located at Schuylkill river mile 8.5. Below Fairmount Dam, the Schuylkill River is tidal and different in character from the upstream drainage area. The approximate drainage area is 1,893 square miles. Major tributaries to the Schuylkill River include: West Branch Schuylkill River, Little Schuylkill River, Maiden Creek, Tulpehocken Creek, Manatawny Creek, French Creek, Pickering Creek, Perkiomen Creek (including Unami Creek, Swamp Creek, East Branch Perkiomen Creek, and Skippack Creek), and Wissahickon Creek. In 1996, the Schuylkill River was under-represented in sampling effort (the main stem was sampled just once). In 1997, the Schuylkill River watershed was sampled 88 times on 49 tributaries, and the main stem was sampled 13 times. This makes the Schuylkill watershed the most highly represented among all of the Delaware River watersheds for Snapshot '97.

Sub-Basin 7: Upper Estuary Tributaries (NJ)

In New Jersey, this is the drainage area located between the USGS gauge at Trenton (river mile 134.3) and the point opposite the Pennsylvania-Delaware state boundary (river mile 78.8) at Nortonville, NJ, which is just seaward of the mouth of Raccoon Creek in New Jersey. Sub-basin 7 is divided into sub-basins 7A and 7B at a point just seaward of the mouth of Woodbury Creek in New Jersey (river mile 91.6). The approximate combined drainage area of sub-basin 7 is 1,019 square miles. Tributaries to the Delaware River in sub-basin 7A include: Crosswicks Creek, Blacks Creek, Crafts Creek,

Assiscunk Creek, Rancocas Creek, Swede Run, Pompeston Creek, Pennsauken Creek, Pohack Creek, Baldwin Run, Cooper River, Newton Creek, Big Timber Creek, and Woodbury Creek. Sub-basin 7B tributaries include: Little Mantua Creek, Mantua Creek, Clonmell Creek, Nehonsey Brook, Repaupo Creek, and Raccoon Creek. 19 sites were sampled in sub-basin 7, though most of the largest tributaries were missed, including the Rancocas and Mantua watersheds.

Sub-Basin 8: Brandywine-White Clay-Christina (PA, DE)

This is the drainage area in Pennsylvania and Delaware between the PA-DE state boundary at Marcus Hook, PA (river mile 78.8) and a point just seaward of the mouth of the Christina River in Delaware (river mile 70.7). The approximate drainage area is 591 square miles. Tributaries include: Naaman Creek, Christina River, White Clay Creek, Red Clay Creek, West Branch Brandywine Creek, East Branch Brandywine Creek, and the Brandywine Creek. 23 sites were sampled in sub-basin 8.

Sub-Basin 9: Lower Estuary Tributaries (NJ)

In New Jersey, this is the drainage area between Delaware River mile 78.8 at Nortonville, NJ, and the mouth of the Delaware River (head of Delaware Bay) at Hope Creek Monument (opposite Liston Point, DE) at river mile 48.2. The approximate drainage area of sub-basin 9 is 257 square miles. Tributaries include: Oldmans Creek, Salem River, and Alloways Creek. 8 sites were sampled in sub-basin 9.

Sub-Basin 10: Lower Estuary Tributaries (DE)

In Delaware, this is the drainage area from a point just seaward of the mouth of the Christina River (river mile 70.7) to the mouth of the Delaware River (head of Delaware Bay) at Liston Point (river mile 48.2). This sub-basin is broken into minor sub-basins 10A and 10B at the Chesapeake & Delaware Canal (river mile 58.9). The approximate combined drainage area of sub-basin 10 is 166 square miles. Tributaries to the Delaware Estuary in sub-basin 10 include: Red Lion Creek, Dragon Creek, C & D Canal, Augustine Creek, Appoquinimink River, Hangmans Run, and Blackbird Creek. 3 samples were taken from sites located in sub-basin 10.

Sub-Basin 11: Delaware Bay Tributaries (NJ)

In NJ, this sub-basin includes the drainage area from the Hope Creek Monument (head of Delaware Bay) at river mile 48.2 to the mouth of Delaware Bay at Cape May, NJ (river mile 0). Sub-basin 11 is divided into minor basins 11A and 11B, just below the confluence of the Maurice River (river mile 21.02). The combined drainage area of sub-basin 11 is 769 square miles. Tributaries to Delaware Bay located in sub-basin 11 include: Stowe Creek, Cohansey River, Cedar Creek, Nantuxent Creek, Oranoaken Creek, Dividing Creek, Maurice River, West Creek, Dennis Creek, Fishing Creek and the Cape May Canal. The Maurice River is included in the National Wild and Scenic Rivers system, serving the towns of Vineland and Millville, NJ, yet was never sampled during Snapshot '97. The Cohansey River watershed, which contains the town of Bridgeton, NJ, was sampled just once. No lower Delaware Bay tributaries in sub-basin 11B were sampled.

Sub-Basin 12: Delaware Bay Tributaries (DE)

In Delaware, this sub-basin includes the drainage area between the head of Delaware Bay at Liston Point (river mile 48.2) and the mouth of Delaware Bay at Cape Henlopen (river mile 0). Sub-basin 12 is divided into minor basins 12A and 12B at a point just seaward of the St. Jones River (river mile 23.7). The combined drainage area of sub-basin 12 is 612 square miles. Tributaries to Delaware Bay in sub-basin 12 include: Smyrna River, Leipsic River, Mahon River, Little River, St. Jones River, Murderkill River, Mispillion River, Broadkill Creek, and Roosevelt Inlet (entrance to the Lewes & Rehoboth Canal). 14 samples were taken from sites located in sub-basin 12.

Snapshot '97 Sampling Effort, a Look at the States

State Distribution of Waterways Sampled, with a Comparison to Snapshot '96. This table shows that the majority of streams sampled for Snapshot '97 were located in Pennsylvania. A particular area of improvement from 1996 to 1997 was the effort applied to coverage of the Schuylkill River Basin. This table also shows that New Jersey sampling was not as extensive as in 1996, and should be better represented during future events. In particular, tributaries to the Delaware Estuary and Delaware Bay need to be sampled more (see sub-basin descriptions and sampling summaries).

| | % of 1996 Waterways Sampled | % of 1997 Waterways Sampled | No. of 1997 Waterways Sampled | % of DRB Land Area |
|-----------|--|--|--|---------------------------------------|
| PA | 51 | 67 | 116 | 47 |
| NJ | 28 | 13 | 23 | 22 |
| NY | 13 | 10 | 16 | 17 |
| DE | 7 | 9 | 17 | 7 |

Water Quality Findings

Water Snapshot '96 indicated that, overall, the Delaware River Basin water quality was in good condition. The Delaware River, the main stem of the Basin, was also in good condition. Many people and organizations cared enough about the Basin's waters to take the time and effort to monitor its waters, ranging from small streams to large rivers. This snapshot effort suggested that there was an important constituency who would be available to help protect the Delaware Basin.

Water Snapshot '97 verified the results of 1996. Once again, numerous people and organizations are looking after the Basin's waters. The condition of these waterways is good. The need for increased monitoring of the Schuylkill River, suggested in the 1996 report, was amply taken care of in 1997.

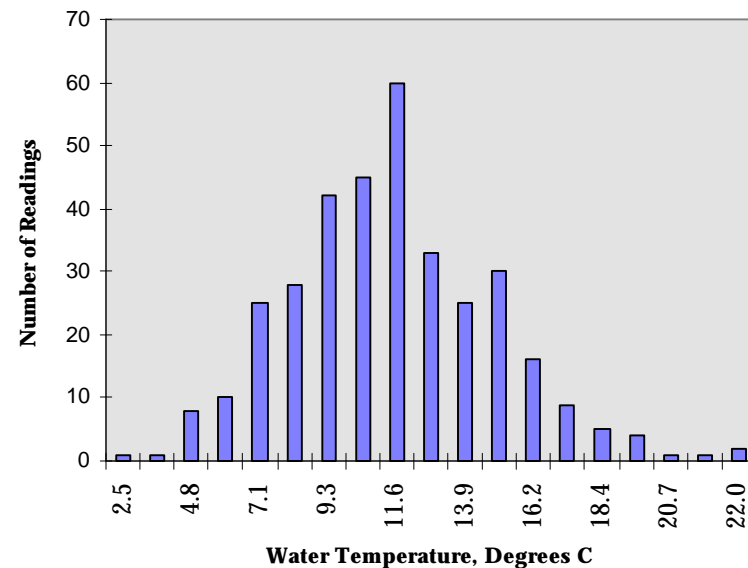
The local-scale, site-by-site picture, which is still the heart of *Snapshot*, is seen in Appendix A. Participants, listed in Appendix B, monitored more than 350 sites within the Basin during the nine-day period.

Water Temperature

Water Temperature is an important environmental factor for fish and other aquatic life, with many species needing specific temperature ranges to thrive. Temperature affects the concentrations of dissolved oxygen in water, with higher concentrations occurring with colder temperatures. The average water temperature of all sampling sites in the basin was 10.9°C (51.6°F). This average is about 2.7°C (4.9°F) lower than the Basin-wide water temperature of *Water Snapshot '96*.

Distribution of Water Temperatures in the Delaware River Basin Watershed. The range of temperatures from 1997 is similar to the range found in *Snapshot '96*. The values reflect nine days of monitoring in the Springtime, in locations ranging from the mountains to the coastal plain.

Distribution of Water Temperatures in the Delaware River Watershed



Dissolved Oxygen

The amount of oxygen that can be dissolved into water is dependent on temperature. For any temperature, the maximum dissolved oxygen (DO) concentration that can be achieved is called the saturation value. If the water temperature rises, the saturation value falls; if the temperature falls, the saturation value rises, allowing greater concentrations of DO.

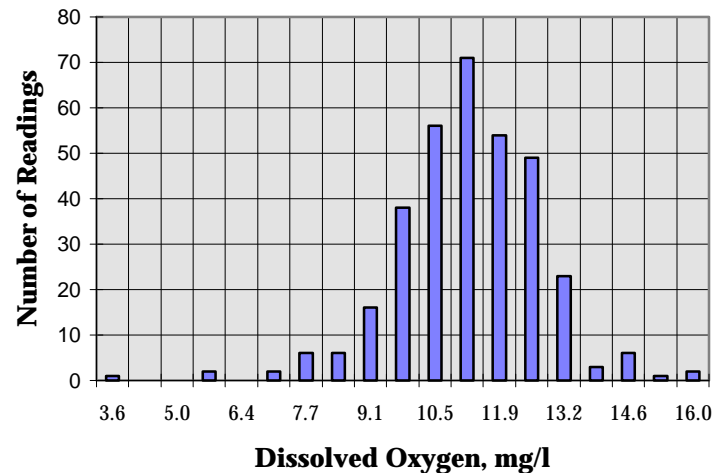
In natural streams, saturation values generally will be above 90 percent, but less than 100 percent, because of naturally occurring organic material in the water. The exception occurs when aquatic plant photosynthetic activity during daylight raises dissolved oxygen concentrations temporarily above 100 percent saturation. On the deficit side, pollution by discharges of oxygen-demanding materials like improperly treated sewage can drastically lower dissolved oxygen concentrations.

In general, DO levels above 6 milligrams per liter of water, or 6 mg/l, (equivalent 6 parts per million) provide full support of fish and other aquatic life. Levels of 4 or 5 mg/l are often acceptable, but levels lower than that lead to reductions in populations. The exact requirement for DO varies by species, with some being very tolerant and others being intolerant—and, thus, more susceptible—to the effects of water pollution.

Water Snapshot '96's DO concentration levels were a bit lower than *Snapshot '97*. *Snapshot '96's* average water temperature was 13.6°C. This temperature would have 100 percent saturation value at 10.3 mg/l dissolved oxygen. The 1996 mean dissolved oxygen concentration was 9.9 mg/l; the hypothetical percent saturation for the basin as a whole would be 96 percent.

Distribution of Dissolved Oxygen Concentrations for the Delaware River Basin Watershed. *Water Snapshot '97* collected 336 samples of dissolved oxygen concentrations. The mean DO concentration was 10.8 mg/l. This value represents a hypothetical saturation value of 100.9 percent, given the basin's mean water temperature of 10.9 °C. The high DO value makes sense because the colder water is able to hold more oxygen. Low saturation values were found at sites on Cobbs Creek and Poquessing Creek in Philadelphia, and on the Delaware River at Pea Patch Island and Ship John Light, indicating potential problem spots.

Distribution of Dissolved Oxygen Concentrations for the Delaware River Watershed



pH

pH is a measure of the acid/alkaline relationship in a stream. pH values range on a scale of zero to 14, with 7 being neutral. Since pH is logarithmic, a one-notch change in pH (e.g., from 6 to 7) represents a 10-fold increase.

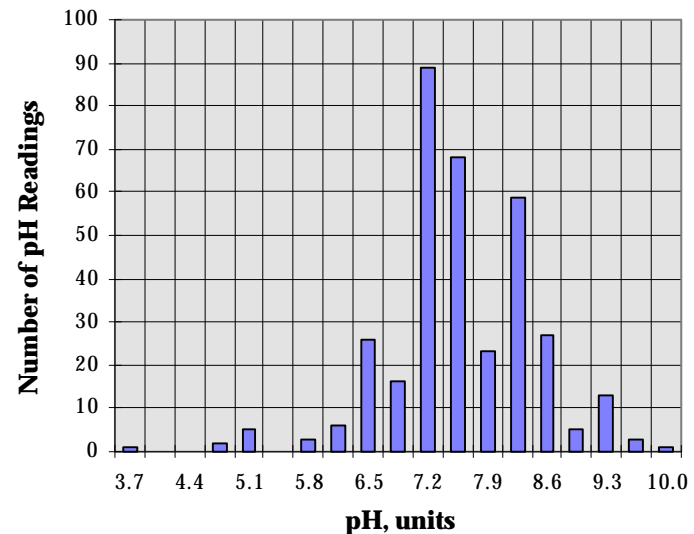
A pH of about 6 to 9 is generally favored by aquatic life, especially fish. Algae and rooted plants in a stream modify pH levels through the photosynthesis and respiration processes. If plants are active, wide swings in pH levels can be observed over a 24-hour period, with low values experienced at night and high values experienced at midday. Plant use and release of carbon dioxide cause these swings in the water column. In-stream pH levels can also be impacted by acid and alkaline chemicals from industry, mining, and other man-made sources, as well as by natural sources such as limestone deposits (bedrock) and tannic acid (produced by certain vegetation).

Values of pH below 6 should be viewed with concern, unless a natural condition exists that can explain them. On the Pocono Plateau, in the Tobyhanna & Tunkhannock Creek watersheds, the water is acidic and appears tea-colored. The area is dominated by thick stands of pine, and the ground is boggy wetlands. The reason for low pH values in these streams is the tannic acid from the pine trees.

Distribution of pH values for the Delaware River Basin

Watershed. The average pH for *Water Snapshot '97* was 7.4. Most of the monitoring sites fell within the desired pH range. Of 347 pH samples, 11 were below 6 (9 of these in the tannic acid-rich Tobyhanna & Tunkhannock Creek area) and nine were above 9. Of these, most had DO values in the super-saturation range, indicating aquatic plant activity.

Distribution of pH Values for the Delaware River Watershed



Nitrate and Phosphate

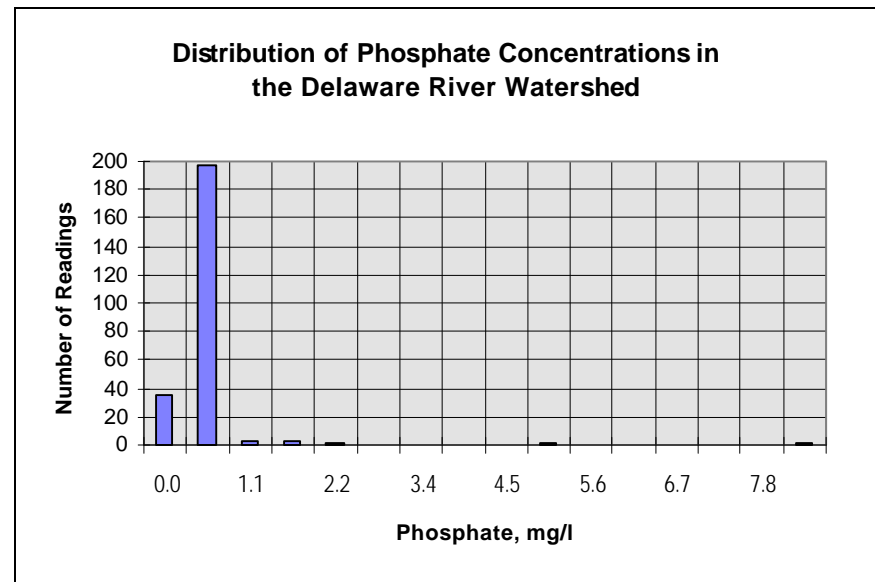
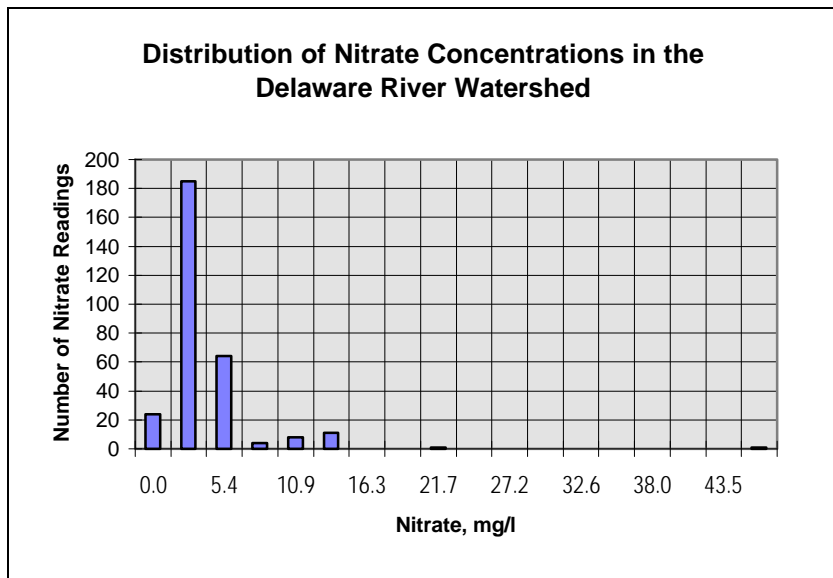
Nitrate and phosphate are necessary for aquatic plant growth, which supports the rest of the aquatic food chain. Both of these nutrients are derived from a variety of natural and artificial sources, including decomposition of plant and animal materials, man-made fertilizers, and sewage. While excessive nutrients might cause undesirable plant growth with their deleterious impacts on water quality, an appropriate level of nutrients is one of the driving forces of the aquatic ecosystem.

Determining the optimum levels of nitrates and phosphates in water is extremely complex. A concentration of nitrate or phosphate that causes problems in one stream might not cause similar problems in another. Nitrate and phosphate levels are also complex because they are constantly being taken up and released by aquatic life, being exchanged with stream bed sediments, and undergoing various other transformations.

Natural nitrate concentrations rarely exceed 10 mg/l. Most are less than 1 mg/l, especially during periods of high plant production. Concentrations greater than 20 mg/l may pose a health hazard to babies and other small mammals, causing a problem where the blood's hemoglobin cannot transport oxygen.

Man-made sources of phosphate include fertilizers, domestic sewage, and detergents. In natural unpolluted water, phosphate levels are generally very low, and its presence usually determines plant growth. Phosphorus, which combines with oxygen to form phosphate, is most often the limiting factor for plant production in streams.

Distribution of Nitrate and Phosphate Concentrations in the Delaware River Watershed. To determine whether levels are excessive or not, check concentrations at nearby streams in Appendix A, or check value against these frequency histograms.



DELAWARE RIVER FINDINGS

Small headwater streams flow out of springs, down mountainsides, and through fields and wetlands to join with other headwater streams. These larger streams flow into other larger streams until ultimately a tributary flows into the Delaware River somewhere along its route to the Atlantic Ocean. The Delaware thus integrates the water quality, flow, land uses, and other attributes of hundreds of watersheds that drain the Delaware River Basin. The Delaware River and its water quality are the sum of these parts.

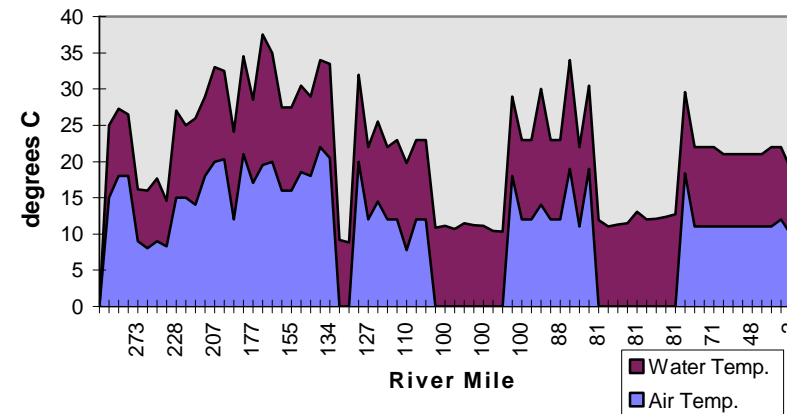
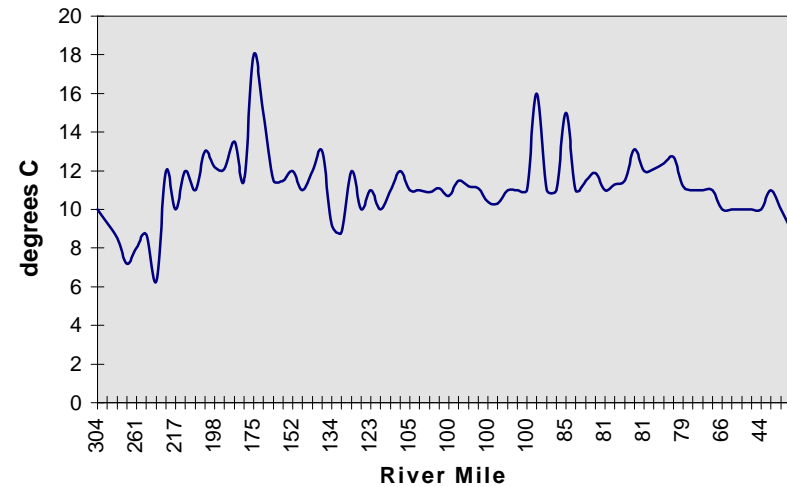
During Water Snapshot '97, the Delaware River/Bay was sampled 74 times at 50 different locations. By comparison, the river was sampled only 48 times during Water Snapshot '96. Sampling the river were various federal, state, and local agencies; industries; youth organizations; citizens; and others. DRBC celebrated Secretary's Day by having its secretaries spend a day in the field collecting data at various river sites.

The following data profiles compile the river data collected during *Water Snapshot '97*. Trends and other information that can be identified in the profiles are discussed.

Water Temperature

In general, an increasing trend in water temperature is observed in the non-tidal river from Hancock, New York (mile 331) to Trenton, New Jersey (mile 133) with relatively constant water temperatures in the tidal Delaware Estuary and Bay (miles 133 to 0). The influence of some large tributaries and thermal discharges are probably seen in the spikes. The profile is generally similar to 1996, but lower. When air and water temperatures are shown together, the influence of each on the other is readily apparent. It should not be assumed that air temperature is influencing water temperature, since a large river like the Delaware influences the climate nearby.

Delaware River Water Temperature (Celsius)

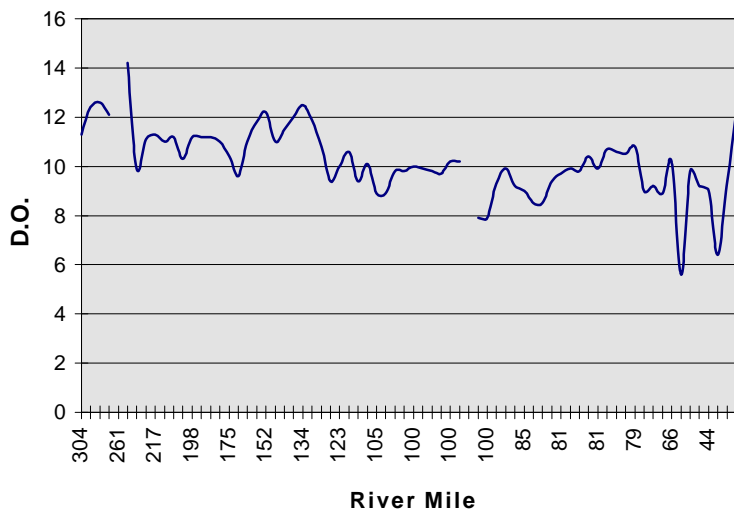


Dissolved Oxygen

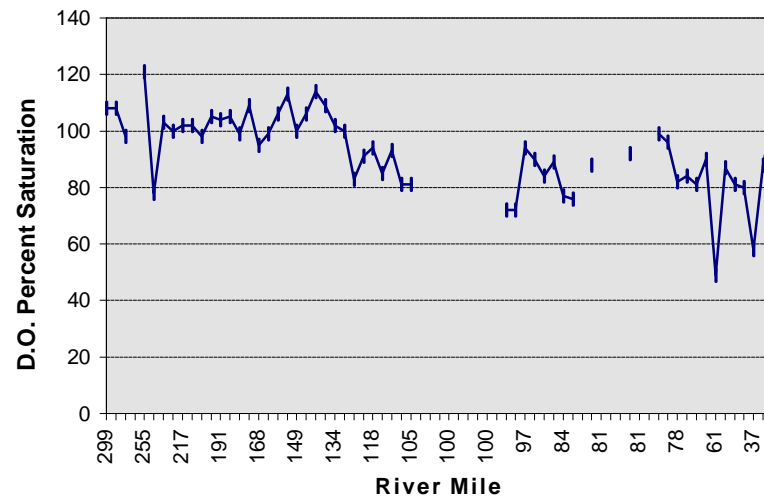
Dissolved oxygen generally declines from the upper-most reaches of the river to the lower reaches of the Delaware Estuary. This is due to water temperature differences as described previously, and also because the downstream reaches of the river are more urbanized and subject to more wastewater treatment plant discharges. During Water Snapshot'97, however, dissolved oxygen levels throughout the Delaware were more than adequate to support the migration and spawning of important migratory fish like the American Shad. However, the low values (for April) observed at River Miles 61 (Pea Patch Island) and 37 (Ship John Light) suggest a possible problem that requires investigation.

While dissolved oxygen data provides useful information, additional information is derivable by combining D.O. data with water temperature data and calculating percent D.O. saturation. As shown below, various locations in the upper Delaware reaches indicate possibly excessive algal photosynthesis (saturation above 100) while some locations downstream of Trenton, New Jersey, (mile 134) particularly around Philadelphia and Camden, show impacts from the large amount of oxygen-demanding wastewater being discharged into the Delaware Estuary (saturation values below 95 or so).

Delaware River Dissolved Oxygen

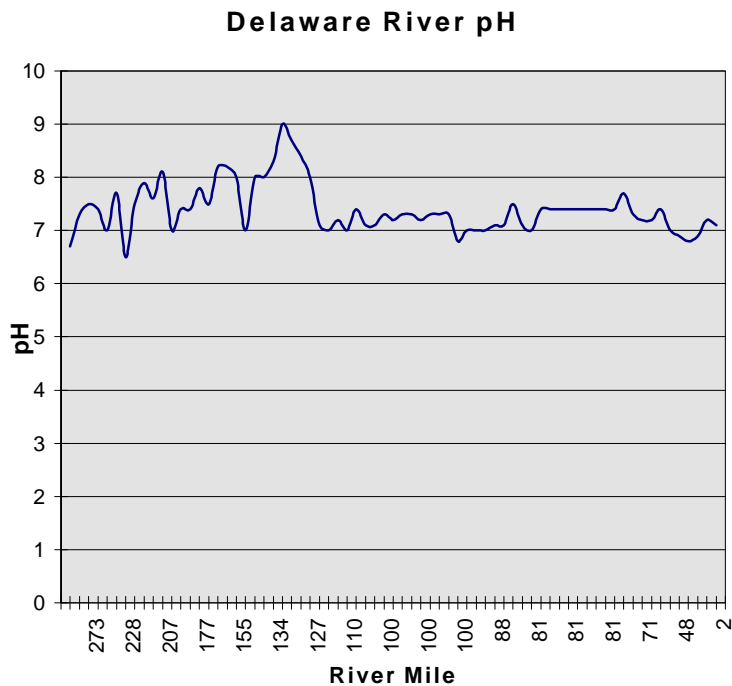


**Delaware River Dissolved Oxygen
(Percent Saturation)**



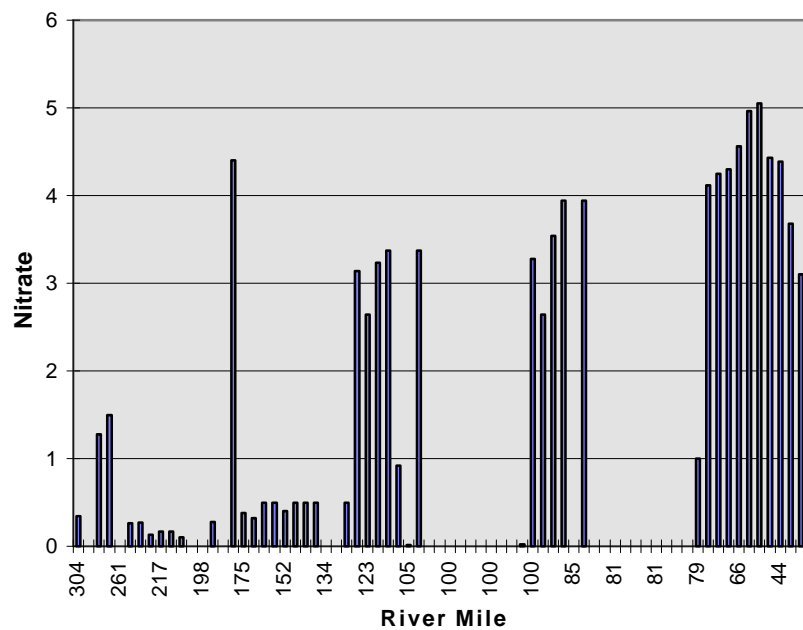
pH

Values for pH were generally higher and more variable in the non-tidal river than in the Delaware Estuary and Bay. The pattern of pH observed during Water Snapshot '97 suggests that biological reactions (notably photosynthesis) were actively occurring in the non-tidal reach of the river, but less noticeable in tidal waters. Tidal waters (Delaware Estuary and Bay) are generally more turbid and thus provide light-limited conditions. Photosynthesis by algae and other aquatic plants is dependent on sunlight. Low pH conditions observed during Water Snapshot '96 at Bordentown, NJ were not observed in 1997.



Nitrate shows a general increase from upstream to downstream until the upper Delaware Bay is reached. In past decades, the Delaware Estuary was dominated by ammonia forms of nitrogen, but the upgrading of wastewater treatment plants has resulted in a system dominated by nitrate, a good trend. The regions of higher nitrate concentrations are due to nitrate loads coming into the system from urban areas and large tributaries including the Lehigh River at mile 184 and very large treatment plants after mile 104. Decreases in nitrate in the upper section of Delaware Bay (after mile 55) are due to dilution by sea water.

Delaware River Nitrate (mg/l)



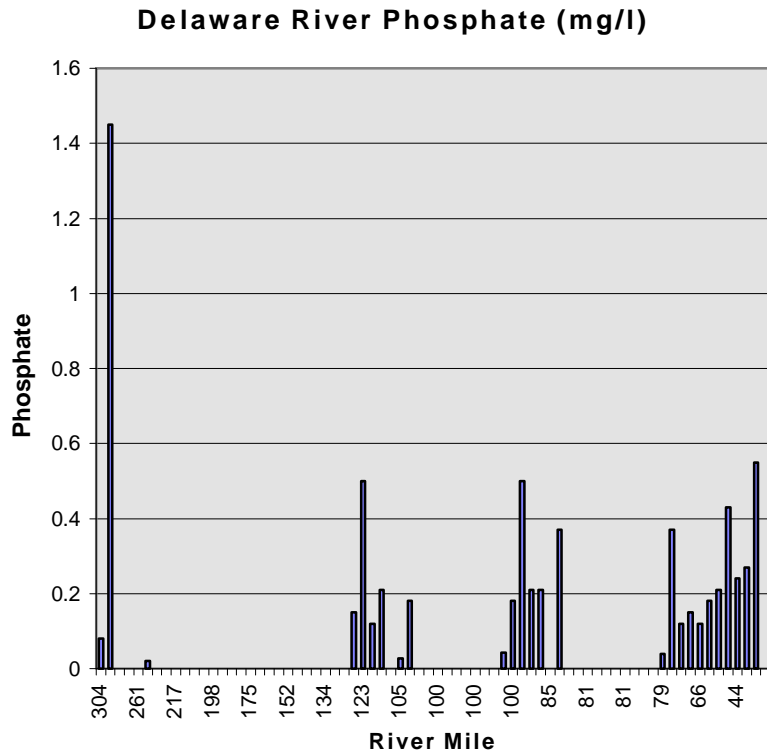
Nitrate

Phosphate

Phosphate's pattern in the Delaware River system is somewhat similar to nitrate's. Human sources of phosphate appear to dominate. This trend is quite pronounced in the Delaware Estuary (downstream of mile 133). Particularly interesting in 1997 was the high spike shown at mile 299 (the Damascus, Pa - Cochection, NY bridge). The source of this high phosphate value, whether from a reservoir release, agricultural runoff, sampling error etc., is unknown.

Summary

Between April 19 and 27, 1997 a huge flash bulb went off over the Delaware River Basin as 79 organizations and hundreds of people took the second "snapshot" of Basin water quality. Climbing down stream banks, hanging from bridges, and wading in still-cold water, these folks collected an estimated 2100 pieces of data at 350 locations on 172 streams. The picture of water quality and, more importantly, the interest of the participants, is a good one. As Water Snapshot '97 is pasted into the Delaware River Basin album, planning for 1998 is well underway. See you out there!



Appendix A

Water Snapshot '97 Stream Data

| Water Snapshot '97 Stream Data | | | | | | | | | | |
|--------------------------------|--------------------------------|--|--|----------|--------------------|----------------------|-----|-------------------------|----------------|------------------|
| DRB Sub-Basin | Stream Name | Organization | Site Description | Date | Air Temp (Celsius) | Water Temp (Celsius) | pH | Dissolved Oxygen (mg/l) | Nitrate (mg/l) | Phosphate (mg/l) |
| 01NY | Beaver Brook | NPS - Upper Delaware Scenic & Recreational River | .2 mile up from mouth, river mile 275.5, Sullivan County, NY | 04/22/97 | 12.0 | 6.9 | 6.9 | 12.0 | 0.00 | 0.00 |
| 01NY | Binnekill stream | Margaretville Central School | 42 8'45" N 74 36'00"W | 04/23/97 | 15.0 | 10.0 | 7.0 | | 0.88 | 0.20 |
| 01NY | Biscuit Brook | Frost Valley Environmental Education Center | @ Frost Valley YMCA, near town of Denning, NY | 04/26/97 | 16.0 | 5.0 | 6.0 | 12.0 | 0.00 | 0.00 |
| 01NY | Bushkill stream | Margaretville Central School | Fleischmanns, NY | 04/21/97 | 2.0 | 5.0 | 7.0 | 11.2 | 0.88 | 0.20 |
| 01NY | Bushkill stream | Margaretville Central School | 42 7'30"N 74 32'30"W, | 04/21/97 | 11.0 | 4.0 | 6.5 | 9.3 | 0.88 | 0.20 |
| 01NY | Callicoon Creek | Delaware Riverkeeper Network - Uplands Office | at Hortonville, 20 yds above the Callicoon Creek & north branch Callicoon Creek confluence | 04/20/97 | 13.5 | 8.0 | 7.0 | 12.0 | 1.76 | 0.20 |
| 01NY | Callicoon Creek - North Branch | Delaware Riverkeeper Network - Uplands Office | at DEC Fishing access about 1 mile upstream from Hortonville | 04/20/97 | 10.5 | 5.5 | 6.8 | 12.2 | 2.20 | 0.20 |
| 01NY | Delaware River - East Branch | Margaretville Central School | 42 8'47"N 74 39'20" | 04/23/97 | 12.0 | 7.0 | 6.5 | 11.0 | 0.88 | 0.20 |
| 01NY | Delaware River - East Branch | Margaretville Central School | Margaretville, NY | 04/23/97 | 22.0 | 6.0 | 6.5 | 10.0 | 0.88 | 0.20 |
| 01NY | Delaware River - West Branch | Pennsylvania DEP | Bridge on West Branch, Hancock, NY | 04/21/97 | 10.0 | 5.5 | 6.9 | 12.6 | 0.52 | 0.01 |
| 01NY | Delaware River mile 255 | New York State DEC | Port Jervis, at Route 6/209 Bridge | 04/22/97 | 9.0 | 8.7 | 7.7 | 14.2 | 0.26 | 0.02 |
| 01NY | Delaware River mile 261 | Audubon Society of NYS | At Mongaup River, Orange/Sullivan County, Deerpark/Lumberland, NY | 03/07/97 | 8.0 | 8.0 | 7.0 | | | |
| 01NY | Delaware River mile 273 | NPS - Upper Delaware Scenic & Recreational River | Barryville Bridge, river mile 273.5, Sullivan County, NY | 04/22/97 | 9.0 | 7.2 | 7.4 | 12.1 | 1.50 | 0.01 |
| 01NY | Delaware River mile 284 | NPS - Upper Delaware Scenic & Recreational River | Ten Mile River Access, river mile 284, Narrowsburg, NY | 04/22/97 | 18.0 | 8.5 | 7.5 | 12.6 | 1.28 | 0.01 |
| 01NY | Delaware River mile 304 | Pennsylvania DEP | Callicoon, NY Bridge | 04/22/97 | 15.0 | 10.0 | 6.7 | 11.3 | 0.34 | 0.08 |

| Water Snapshot '97 Stream Data | | | | | Air | Water | | Dissolved | | |
|--------------------------------|-----------------------------|--|---|----------|-----------|-----------|-----|-----------|---------|-----------|
| DRB | | | | | Temp | Temp | | Oxygen | Nitrate | Phosphate |
| Sub-Basin | Stream Name | Organization | Site Description | Date | (Celsius) | (Celsius) | pH | (mg/l) | (mg/l) | (mg/l) |
| 01NY | Dry Brook stream | Margaretville Central School | Arkville, Delaware Co., NY | 04/22/97 | 13.0 | 4.0 | 6.5 | 8.8 | 0.88 | 0.20 |
| 01NY | Dry Brook stream | Margaretville Central School | Arkville, NY | 04/24/97 | 4.0 | 4.0 | 6.5 | 10.0 | 0.88 | 0.20 |
| 01NY | Dry Brook stream | Margaretville Central School | Arkville, NY | 04/27/97 | 14.0 | 8.0 | 7.0 | 11.3 | 0.88 | 0.20 |
| 01NY | Mill Brook | Audubon Society of NYS | Town of Lumberland, Sullivan Co. NY | 05/01/97 | 12.8 | 10.0 | 7.0 | | | |
| 01NY | Millbrook stream | Margaretville Central School | 42 4'00"N 74 37'00" W | 04/24/97 | 10.0 | 7.0 | 6.5 | 11.0 | 0.88 | 0.20 |
| 01NY | Mongaup River | Delaware Riverkeeper Network - Uplands Office | Mongaup River & Rt. 17B, Mongaup, NY | 04/24/97 | 7.0 | 10.0 | 6.8 | 11.0 | 0.80 | 0.20 |
| 01NY | Neversink River | Delaware Riverkeeper Network - Uplands Office | Fallsburg, NY, Rt. 52 junction Rt 42 | 04/24/97 | 7.0 | 10.0 | 6.8 | 12.0 | 0.80 | 0.20 |
| 01NY | Neversink River East Branch | Woodruff English Environmental Education Center | East Branch, 6 mi. upstream from Claryville, NY | 04/30/97 | 20.0 | 9.0 | 5.5 | 9.0 | 0.00 | 0.00 |
| 01NY | Parcourse Stream | Sullivan County Boces | near Ferndale-Loomis Road, Liberty, NY, Sullivan County | 05/16/97 | 10.0 | 12.0 | 6.9 | 9.4 | | |
| 01NY | Ten Mile River | Delaware Riverkeeper Network - Uplands Office | a little upstream from where it empties into the Delaware River | 04/21/97 | 14.5 | 8.0 | 7.0 | 10.8 | 0.20 | 0.20 |
| 01NY | Ten Mile River | NPS - Upper Delaware Scenic & Recreational River | .2 mile upstream from mouth, river mile 284.2, Narrowsburg, NY | 04/22/97 | 18.0 | 8.2 | 7.0 | 12.0 | 0.13 | 0.01 |
| 01PA | Calkins Creek | NPS - Upper Delaware Scenic & Recreational River | .3 mile upstream from mile, River mile 295.6 | 04/22/97 | 18.0 | 10.0 | 7.6 | 11.4 | 1.01 | 0.01 |
| 01PA | Delaware River mile 255 | Pennsylvania DEP | 41 22'12.5 N, 74 41'53.5 W, at Route 6 & 209 Bridge WQN 153 | 04/21/97 | 8.3 | 6.3 | 6.5 | 9.9 | 0.27 | 0.02 |
| 01PA | Delaware River mile 299 | NPS - Upper Delaware Scenic & Recreational River | Damascus/Cochecton Bridge, River 298.6, Wayne County | 04/22/97 | 18.0 | 9.3 | 7.3 | 12.4 | | 1.45 |
| 01PA | Dyberry Creek - East Branch | Pennsylvania DEP | right before it joins the West Branch, 5 miles north of Honesdale | 04/22/97 | 12.0 | 6.0 | 6.8 | 12.4 | 0.45 | 0.02 |
| 01PA | Lackawaxen River | Delaware Riverkeeper Network - Uplands Office | near where it empties into the Delaware River | 04/21/97 | 15.0 | 7.5 | 7.5 | 11.7 | 0.20 | 0.20 |

| Water Snapshot '97 Stream Data | | | | | | | | | | |
|--------------------------------|-------------------------------|--|--|----------|--------------------|----------------------|-------------------------|----------------|------------------|-----|
| DRB Sub-Basin | Stream Name | Organization | Site Description | Date | Air Temp (Celsius) | Water Temp (Celsius) | Dissolved Oxygen (mg/l) | Nitrate (mg/l) | Phosphate (mg/l) | pH |
| 01PA | Lackawaxen River | NPS - Upper Delaware Scenic & Recreational River | .2 mile up from mouth, river mile 277.7, Lackawaxen, PA | 04/22/97 | 17.0 | 8.8 | 12.4 | 0.18 | 0.01 | 8.2 |
| 01PA | Lackawaxen River | Delaware Riverkeeper Network - Uplands Office | Kimbles, PA, approx. 5 miles from Hawley, PA | 04/26/97 | 13.5 | 8.0 | 10.1 | 0.20 | 0.20 | 9.5 |
| 01PA | Lackawaxen River - WQN 147 | Pennsylvania DEP | 41 28'30.0 N, 75 02'09.6 W, at Route 590 Bridge | 04/21/97 | 5.5 | 6.1 | 10.3 | 0.14 | 0.01 | 6.5 |
| 01PA | Masthope Creek | NPS - Upper Delaware Scenic & Recreational River | .1 mile upstream from mouth, river mile 282.5, Lackawaxen, PA | 04/22/97 | 16.0 | 8.0 | 11.6 | 0.00 | 0.00 | 7.1 |
| 01PA | Wallenpaupack Creek - WQN 141 | Pennsylvania DEP | 41 20'09.7 N, 75 20'26.1 W, at T353 Bridge | 04/21/97 | 2.2 | 4.5 | 11.0 | 0.25 | 0.01 | 6.4 |
| 02NJ | Big Flatbrook Creek | National Park Service - Delaware Water Gap NRA | DEWA Boundary, 100 meters upstream of confluence of Little Flatbrook and Flatbrook Creeks, near village of Peters Valley, NJ | 04/24/97 | 14.0 | 10.0 | 11.0 | 0.01 | 0.01 | 7.7 |
| 02NJ | Delaware River mile 198 | Delaware River Basin Commission | Belvidere Bridge | 04/24/97 | 20.3 | 12.2 | 11.2 | 0.10 | 0.20 | 7.4 |
| 02NJ | Flatbrook Creek | Walpack Valley Environmental Education Center | Walpack, Sussex County, NJ | 04/21/97 | 14.0 | 7.0 | 12.0 | 0.00 | 0.00 | 7.3 |
| 02NJ | Flatbrook Creek | Delaware Riverkeeper Network - NJ School of Conservation | Near Layton, Sussex Co, NJ | 04/27/97 | 21.0 | 12.0 | 10.0 | 0.88 | 0.20 | 8.0 |
| 02NJ | Little Flatbrook Creek | National Park Service - Delaware Water Gap NRA | at DEWA Boundary, 100 meters upstream of confluence with Flatbrook Creek, near village of Peters Valley, NJ | 04/24/97 | 13.0 | 10.0 | 11.4 | 0.20 | 0.01 | 8.1 |
| 02NJ | Musconetcong River | Musconetcong Watershed Association | Hughesville Bridge, WarrenGlen - Finesville, NJ | 03/01/97 | 4.4 | 9.0 | 12.0 | 0.88 | | 7.5 |

| Water Snapshot '97 Stream Data | | | | | | | | | | |
|--------------------------------|--------------------------|--|--|----------|--------------------|----------------------|-----|-------------------------|----------------|------------------|
| DRB Sub-Basin | Stream Name | Organization | Site Description | Date | Air Temp (Celsius) | Water Temp (Celsius) | pH | Dissolved Oxygen (mg/l) | Nitrate (mg/l) | Phosphate (mg/l) |
| 02NJ | Musconetcong River | Musconetcong Watershed Association | Hughesville Bridge, WarrenGlen - Finesville, NJ | 04/05/97 | 14.0 | 14.0 | 7.5 | 12.1 | 0.88 | |
| 02NJ | Musconetcong River | Musconetcong Watershed Association | Stephensburg Bridge, Stephensburg Road | 04/19/97 | 9.0 | 7.5 | 8.0 | 11.0 | 0.86 | 0.20 |
| 02NJ | Musconetcong River | Musconetcong Watershed Association | Bloomsbury Water Co., Bloomsbury, NJ | 04/26/97 | 22.0 | 13.5 | 8.0 | 11.4 | 0.00 | |
| 02NJ | Musconetcong River | Bethlehem Twp Environmental Commission | Bethlehem Twnshp, Person Road, south Rt. 642 | 04/27/97 | 17.5 | 14.5 | 8.0 | 10.7 | 4.43 | |
| 02NJ | Musconetcong River | Musconetcong Watershed Association | Asbury @ bridge in Asbury on Rte. 643 | 04/27/97 | 17.5 | 14.5 | 8.0 | 10.7 | 4.43 | |
| 02NJ | Musconetcong River | Musconetcong Watershed Association | Hughesville Bridge, WarrenGlen - Finesville, NJ | 05/02/97 | 15.6 | 16.0 | 7.5 | 12.1 | 0.44 | |
| 02NJ | Norton Brook | Bethlehem Twp Environmental Commission | Bridgecut Hacket Road, Bethlehem Twnshp | 04/26/97 | 27.0 | 16.0 | 7.0 | 10.0 | 0.00 | |
| 02NJ | Turkey Hill Creek | Bethlehem Twp Environmental Commission | 1/4 mile down farm lane off RT 173, Bethlehem Twp., approx. 1 mile outside Boro of Bloomsburg | 04/27/97 | 21.0 | 18.0 | 8.5 | 9.9 | 1.00 | |
| 02NJ | Van Campens Brook | National Park Service - Delaware Water Gap NRA | at Old Mine Road, at Depew Recreation site, DWGNRA, Warren County NJ | 04/24/97 | 15.0 | 10.0 | 7.8 | 11.8 | 0.01 | 0.01 |
| 02NJ | West Portal Brook | Bethlehem Township Middle School | Tributary of Musconetcong River WQN 137, Smithfield Twp | 04/28/97 | 18.0 | 12.0 | 7.5 | 10.7 | 0.01 | |
| 02PA | Brodhead Creek | Pennsylvania DEP | near Delaware Water Gap, approx. 1/4 mile downstream of confluence of Brodhead Creek & Marshalls Creek | 04/22/97 | 5.6 | 8.2 | 7.8 | 11.8 | 0.32 | 0.02 |
| 02PA | Brodhead Creek | National Park Service - Delaware Water Gap NRA | 41 02'09.1 N, 75 12'35.1 W, at Route 191 Bridge | 04/22/97 | 14.5 | 10.0 | 8.0 | 12.2 | 0.16 | 0.02 |
| 02PA | Brodhead Creek - WQN 138 | Pennsylvania DEP | | 04/23/97 | 11.1 | 8.2 | 6.3 | 10.4 | 0.14 | 0.01 |

| Water Snapshot '97 Stream Data | | | | | | | | | | |
|--------------------------------|------------------------------|--|--|----------|--------------------|----------------------|-----|-------------------------|----------------|------------------|
| DRB Sub-Basin | Stream Name | Organization | Site Description | Date | Air Temp (Celsius) | Water Temp (Celsius) | pH | Dissolved Oxygen (mg/l) | Nitrate (mg/l) | Phosphate (mg/l) |
| 02PA | Bushkill Creek | Wilson High School | Penn Pump Park, Palmer, PA near raw sewage pipe from a home | 04/22/97 | 16.0 | 9.0 | 8.0 | 12.0 | 4.40 | 0.20 |
| 02PA | Bushkill Creek | Shafer Elementary School Earth Doers Club | Clearfield Road/ Hahn Road Bridge | 04/27/97 | 10.0 | | 7.0 | | 0.00 | |
| 02PA | Bushkill Creek | Shafer Elementary School Earth Doers Club | Heyer Mill Road & Meyer Road | 04/30/97 | 16.0 | 13.0 | 8.0 | 11.6 | | |
| 02PA | Bushkill Creek | Shafer Elementary School Earth Doers Club | Bok Road, 15 yds south of road, 1.5 blocks south of Cherry Hill Road | 04/30/97 | 21.5 | 18.5 | 7.5 | 9.0 | 0.00 | |
| 02PA | Bushkill Creek | Shafer Elementary School Earth Doers Club | Van Buren Road, corn field-west & road-east | 04/30/97 | 23.0 | 11.5 | 8.0 | 10.8 | 0.00 | |
| 02PA | Bushkill Creek | Jacobsburg Environmental Education Center | E Douglasville Rd 40 46.832 N 75 18.581 W (GPS) | 05/15/97 | 23.0 | 18.0 | 7.0 | 9.8 | 13.20 | 0.20 |
| 02PA | Bushkill Creek | Jacobsburg Environmental Education Center | Henry Rd 40 46.583 N 75 17.222 W (GPS) | 05/16/97 | 14.0 | 15.0 | 7.0 | 10.4 | 13.20 | 0.20 |
| 02PA | Bushkill Creek | National Park Service - Delaware Water Gap NRA | at DEWA Boundary, USGS stream gauge, Pike County, PA | 04/24/97 | 14.0 | 11.0 | 7.6 | 11.6 | 0.01 | 0.01 |
| 02PA | Bushkill Creek - WQN 139 | Pennsylvania DEP | 41 05'16.8 N, 75 02'19.1 W, at T523 Bridge | 04/23/97 | 7.7 | 7.5 | 6.1 | 9.6 | 0.04 | 0.01 |
| 02PA | Bushkill Creek Trib (Tatamy) | Shafer Elementary School Earth Doers Club | Yost & S. Penn Dixie Road, Dam - Pool Water | 04/30/97 | 21.0 | 16.0 | 8.0 | 11.3 | 11.30 | |
| 02PA | Bushkill Creek Trib (Tatamy) | Shafer Elementary School Earth Doers Club | Uhelar Road, 100 yds from road | 04/30/97 | 23.5 | 17.0 | 9.0 | 12.2 | 12.20 | |
| 02PA | Cherry Creek | National Park Service - Delaware Water Gap NRA | in Delaware Water Gap, approx. 150 meters upstream of Rt. 80 | 04/22/97 | 17.0 | 11.0 | 8.2 | 11.9 | 0.50 | 0.05 |
| 02PA | Delaware River mile 184 | Delaware River Basin Commission | Phillipsburg/Easton | 04/24/97 | 21.0 | 13.5 | 7.8 | 11.2 | 0.10 | 0.20 |
| 02PA | Delaware River mile 191 | Pennsylvania DEP | WQN 148, Lower Mt. Bethel Twp @ Martins Creek | 04/22/97 | 12.0 | 12.1 | 7.4 | 11.2 | 0.28 | 0.02 |

| Water Snapshot '97 Stream Data | | | | | | Air | Water | | Dissolved | | |
|--------------------------------|---------------------------------|--|---|----------|-----------|-----------|-------|--------|-----------|---------|-----------|
| DRB | | | | | | Temp | Temp | | Oxygen | Nitrate | Phosphate |
| Sub-Basin | Stream Name | Organization | Site Description | Date | (Celsius) | (Celsius) | pH | (mg/l) | (mg/l) | (mg/l) | |
| 02PA | Delaware River mile 191 | Pennsylvania Power & Light Co | Martins Creek SES, 3 & 4 Intake | 04/25/97 | 13.8 | 10.0 | 7.3 | 7.8 | | 0.20 | |
| 02PA | Delaware River mile 207 | Delaware River Basin Commission | Portland/Columbia PA/NJ | 04/24/97 | 20.0 | 13.0 | 7.0 | 10.3 | 0.10 | 0.20 | |
| 02PA | Delaware River mile 212 | National Park Service - Delaware Water Gap NRA | Kittatiny Point Visitors Center, approx. 3/4 mile downstream of I-80 bridge over Delaware River | 04/22/97 | 18.0 | 11.0 | 8.1 | 11.2 | 0.10 | 0.01 | |
| 02PA | Delaware River mile 217 | National Park Service - Delaware Water Gap NRA | Smithfield Access, approx. 3 mile upstream of village of Shawnee - on-Delaware | 04/22/97 | 15.0 | 10.0 | 7.9 | 11.3 | 0.17 | 0.01 | |
| 02PA | Delaware River mile 217 | National Park Service - Delaware Water Gap NRA | Smithfield Access Area, approx. 3 miles upstream of village of Shawnee - on - Delaware | 04/24/97 | 14.0 | 12.0 | 7.6 | 11.0 | 0.17 | 0.01 | |
| 02PA | Delaware River mile 228 | National Park Service - Delaware Water Gap NRA | Bushkill Access Area, approx. 1 mile north on Rt. 209 from Bushkill, PA | 04/24/97 | 15.0 | 12.0 | 7.5 | 11.1 | 0.13 | 0.01 | |
| 02PA | Little Bushkill Creek | Pen Argyl High School | 1 mile south of Knitters Hill Road | 04/14/97 | 9.0 | 8.0 | 9.1 | 8.5 | 3.00 | 0.00 | |
| 02PA | Little Bushkill Creek | National Park Service - Delaware Water Gap NRA | at DEWA Boundary, approx. 1/2 mile upstream of confluence with Bushkill Creek | 04/24/97 | 15.0 | 12.0 | 7.0 | 10.8 | 0.01 | 0.01 | |
| 02PA | Little Bushkill Creek - WQN 181 | Pennsylvania DEP | 41 08'03.7 N, 75 00'34.6 W, at T305 Bridge | 04/22/97 | 11.6 | 9.1 | 6.1 | 10.1 | 0.04 | 0.02 | |
| 02PA | McMichaels Creek | Pohoqualine Fish | 40 58'0" N, 75 24' 0" W | 04/25/97 | 8.0 | 7.0 | 6.6 | | 0.12 | 0.02 | |
| 02PA | McMichaels Creek | Pohoqualine Fish | 40 59'30" N, 75 24' 0" W | 04/25/97 | 8.0 | 8.0 | 6.6 | | 0.08 | 0.02 | |
| 02PA | McMichaels Creek | Pohoqualine Fish | 40 57'0" N, 75 24' 0" W | 04/25/97 | 10.0 | 7.0 | 6.8 | | 0.15 | 0.02 | |
| 02PA | McMichaels Creek | Pohoqualine Fish | 40 55'30" N, 75 21'30" W | 04/25/97 | 10.0 | 8.0 | 7.0 | | 0.21 | 0.02 | |

| Water Snapshot '97 Stream Data | | | | | Air | Water | | Dissolved | | |
|--------------------------------|---------------------|---|---|----------|-----------|-----------|-----|-----------|---------|-----------|
| DRB | | | | | Temp | Temp | | Oxygen | Nitrate | Phosphate |
| Sub-Basin | Stream Name | Organization | Site Description | Date | (Celsius) | (Celsius) | pH | (mg/l) | (mg/l) | (mg/l) |
| 02PA | McMichaels Creek | Pohoqualine Fish | 40 55'30" N, 75 22' 0" W | 04/25/97 | 10.0 | 8.0 | 7.0 | | 0.22 | 0.02 |
| 02PA | Pocono Summit Creek | Tobyhanna Creek / Tunkhannock Creek Watershed Association | Below Hemlock Lane | 04/26/97 | 11.7 | 13.0 | 7.6 | 10.2 | 0.05 | 0.03 |
| 02PA | Pocono Summit Creek | Tobyhanna Creek / Tunkhannock Creek Watershed Association | Between Rt. 380 & Stillwater Lake | 04/26/97 | 13.3 | 11.1 | 7.2 | 10.1 | 0.24 | 0.03 |
| 02PA | Shawnee Creek | National Park Service - Delaware Water Gap NRA | upstream from Shawnee STP outfall, in village of Shawnee - Delaware | 04/22/97 | 13.0 | 11.0 | 8.2 | 11.4 | 0.01 | 0.01 |
| 02PA | Sober's Run | Jacobsburg Environmental Education Center | Belfast Rd 40 47.890 N 75 18.551 W (GPS) | 05/15/97 | 19.0 | 15.0 | 6.5 | 10.6 | 8.80 | 0.20 |
| 02PA | Tom's Creek | Scotch Plain Field HS | Scotch Plain Field High School, picnic area | 05/01/97 | | 9.0 | 7.0 | 12.4 | | 0.33 |
| 02PA? | Schoeneck Creek | Shafer Elementary School Earth Doers Club | behind Nazareth High School | 04/24/97 | 12.8 | | 8.0 | 11.5 | 1.00 | |
| 02PA? | Schoeneck Creek | Shafer Elementary School Earth Doers Club | Nazareth High School | 04/28/97 | 16.0 | 12.0 | 8.0 | | 0.00 | |
| 02PA? | Schoeneck Creek | Nazareth Area HS | behind Nazareth High School | 05/15/97 | 11.0 | 7.0 | 7.5 | 11.0 | 4.40 | 0.20 |
| 03PA | Beaver Creek | Tobyhanna Creek / Tunkhannock Creek Watershed Association | Above confluence with Upper Tunkhannock Creek | 04/20/97 | 3.3 | 5.6 | 6.9 | 12.5 | 0.20 | 0.03 |
| 03PA | Beaver Creek | Tobyhanna Creek / Tunkhannock Creek Watershed Association | Below Tamaque Lake in Pinecrest | 04/27/97 | 13.3 | 11.1 | 5.0 | 11.0 | 0.05 | 0.03 |
| 03PA | Big Elk | Pennsylvania DEP | WQN 256, Kemblesville | 04/21/97 | | 10.3 | 8.2 | 13.0 | 0.02 | 0.02 |
| 03PA | Dotters Run | Tobyhanna Creek / Tunkhannock Creek Watershed Association | 300 ft upstream of Stillwater Lake | 04/26/97 | 13.3 | 10.0 | 6.4 | 10.1 | 0.11 | 0.03 |
| 03PA | Frame Cabin Run | Tobyhanna Creek / Tunkhannock Creek Watershed Association | 200 ft. above confluence with Tobyhanna Creek | 04/27/97 | 17.8 | 8.1 | 6.7 | 10.7 | 0.11 | 0.03 |
| 03PA | Hawkey Run | Tobyhanna Creek / Tunkhannock Creek Watershed Association | Between Rt. 380 & Stillwater Lake | 04/26/97 | 10.0 | 11.7 | 7.0 | 10.2 | 0.43 | 0.03 |

| Water Snapshot '97 Stream Data | | | | | Air | Water | | Dissolved | | |
|--------------------------------|------------------------|---|---|----------|-----------|-----------|-----|-----------|---------|-----------|
| DRB | | | | | Temp | Temp | | Oxygen | Nitrate | Phosphate |
| Sub-Basin | Stream Name | Organization | Site Description | Date | (Celsius) | (Celsius) | pH | (mg/l) | (mg/l) | (mg/l) |
| 03PA | Jordan Creek | Pennsylvania DEP | at the Martin Luther King Bridge, WQN 130, Allentown | 04/21/97 | | 10.1 | 8.7 | 13.8 | | |
| 03PA | Keipers Run | Tobyhanna Creek / Tunkhannock Creek Watershed Association | Below Rt. 903 | 04/19/97 | | 3.2 | | 11.6 | 0.20 | 0.03 |
| 03PA | Kistler Run | Tobyhanna Creek / Tunkhannock Creek Watershed Association | Above Rt. 423 | 04/20/97 | 13.3 | 9.0 | 4.9 | 10.8 | 0.05 | 0.03 |
| 03PA | Lehigh River | Pennsylvania DEP | at Rte. 145 Bridge, WQN 125, Treichler's south of Bethlehem, PA, Freemansburg Bridge, Sand Island Self Storage | 04/21/97 | | 7.5 | 7.4 | 12.6 | | |
| 03PA | Lehigh River | Life Member Telephone Pioneers - Lehigh Valley Chapter | WQN 123, Easton, Northampton Co | 04/22/97 | 13.0 | 9.0 | 7.5 | 10.6 | 0.88 | 0.50 |
| 03PA | Lehigh River | Pennsylvania DEP | Glendon Canal Park, 50 yds downstream from iron bridge that crosses River in Park | 04/22/97 | 16.0 | 12.9 | 7.7 | 11.4 | 1.78 | 0.07 |
| 03PA | Lehigh River | Delaware Riverkeeper Network | 400 yards south of water treatment plant, 0.5 mile south of Hamilton Street Bridge, confluence of Lehigh & Little Lehigh Rivers | 04/22/97 | 17.0 | 11.5 | 7.5 | 10.6 | 13.20 | 0.20 |
| 03PA | Lehigh River | Life Member Telephone Pioneers - Lehigh Valley Chapter | Easton, PA | 04/24/97 | 9.5 | 9.0 | 7.0 | 10.2 | 0.44 | 0.10 |
| 03PA | Lehigh River | DRBC Secretaries | 41 07'48.5 N, 75 37'34.1 W, at Route 115 Bridge | 04/24/97 | 21.0 | 13.5 | 8.1 | 10.6 | 3.54 | 0.20 |
| 03PA | Lehigh River - WQN 126 | Pennsylvania DEP | Macungie, PA; near 2060 Seem Road | 04/22/97 | 3.3 | 5.0 | 6.4 | 9.7 | 0.10 | 0.01 |
| 03PA | Little Lehigh River | Life Member Telephone Pioneers - Lehigh Valley Chapter | Sand Island, Bethlehem, PA, 100 yds upstream from confluence of Lehigh River | 04/25/97 | 16.5 | 14.0 | 8.0 | 12.5 | 0.88 | 0.00 |
| 03PA | Monocacy Creek | Delaware Riverkeeper Network | | 04/22/97 | 17.0 | 11.5 | 8.0 | 11.6 | 2.20 | 0.20 |

| Water Snapshot '97 Stream Data | | | | | Air | Water | | Dissolved | | |
|--------------------------------|---------------------------|---|--|----------|-----------|-----------|-----|-----------|---------|-----------|
| DRB | | | | | Temp | Temp | | Oxygen | Nitrate | Phosphate |
| Sub-Basin | Stream Name | Organization | Site Description | Date | (Celsius) | (Celsius) | pH | (mg/l) | (mg/l) | (mg/l) |
| 03PA | Monocacy Creek | Schuylkill River Greenway Association | Monocacy Station, 40 16'01" N 75 46'22" W | 04/24/97 | 14.0 | 16.5 | 8.5 | 13.0 | 1.77 | 0.00 |
| 03PA | Mud Pond Run | Tobyhanna Creek / Tunkhannock Creek Watershed Association | 200 ft downstream from Kohenbeaker Road | 04/21/97 | 12.2 | 5.5 | 4.6 | 11.3 | 0.05 | 0.03 |
| 03PA | Nancy Creek | Delaware Riverkeeper Network | Freemansburg, PA, site between Canal & River | 04/25/97 | 18.0 | 13.5 | 8.0 | 9.2 | 2.20 | 0.20 |
| 03PA | Polk Valley Run | Saucon Valley HS | at Herman's Farm on Polk Valley Road, 1/4 mile directly south of Saucon Valley High School | 04/22/97 | 12.0 | 8.0 | 7.2 | 14.0 | 0.00 | 0.00 |
| 03PA | Saucon Creek | Saucon Valley HS | 20 yds north of bridge on Water St across from grist mill, Hellertown, PA | 04/30/97 | 17.0 | 14.0 | 8.2 | 10.2 | 1.00 | 0.00 |
| 03PA | Silver Creek | Saucon Valley HS | 20 yds upstream from confluence with Saucon Creek, Hellertown, PA | 04/23/97 | 20.0 | 12.0 | 8.0 | 12.4 | 2.66 | 0.00 |
| 03PA | Tobyhanna Creek | Tobyhanna Creek / Tunkhannock Creek Watershed Association | 1500 ft S. of pipeline | 04/19/97 | 8.0 | 7.0 | 6.5 | 11.3 | 0.19 | 0.03 |
| 03PA | Tobyhanna Creek | Tobyhanna Creek / Tunkhannock Creek Watershed Association | 300 ft. N. of Route 115 | 04/19/97 | 8.0 | 7.0 | | 11.3 | 0.18 | 0.03 |
| 03PA | Tobyhanna Creek | Tobyhanna Creek / Tunkhannock Creek Watershed Association | Above Pocono Lake | 04/20/97 | 10.0 | 9.3 | 6.6 | 10.7 | 0.14 | 0.03 |
| 03PA | Tobyhanna Creek | Tobyhanna Creek / Tunkhannock Creek Watershed Association | PP & L Bridge | 04/20/97 | 10.6 | 9.7 | 6.8 | 10.9 | 0.17 | 0.03 |
| 03PA | Tobyhanna Creek | Tobyhanna Creek / Tunkhannock Creek Watershed Association | upstream of Rt. 423 @ Warnertown | 04/20/97 | 13.0 | 8.3 | 7.1 | 11.2 | 0.21 | 0.03 |
| 03PA | Tobyhanna Creek - WQN 142 | Pennsylvania DEP | 41 05'04.4 N, 75 36'20.7 W, at Route 940 Bridge | 04/22/97 | 6.6 | 6.9 | 6.1 | 9.6 | 0.17 | 0.01 |

| Water Snapshot '97 Stream Data | | | | | | | | | | |
|--------------------------------|---|---|--------------------------------------|----------|--------------------|----------------------|-----|-------------------------|----------------|------------------|
| DRB Sub-Basin | Stream Name | Organization | Site Description | Date | Air Temp (Celsius) | Water Temp (Celsius) | pH | Dissolved Oxygen (mg/l) | Nitrate (mg/l) | Phosphate (mg/l) |
| 03PA | Tobyhanna Creek Tributary | Tobyhanna Creek / Tunkhannock Creek Watershed Association | Above Judges Pond from Trout Pond | 04/26/97 | 8.3 | 8.3 | 5.8 | 10.7 | 0.06 | 0.03 |
| 03PA | Tunkhannock Creek | Tobyhanna Creek / Tunkhannock Creek Watershed Association | Long Pond Road near Emerald Lake | 04/18/97 | -1.1 | 4.4 | 3.7 | 11.3 | 0.05 | 0.03 |
| 03PA | Tunkhannock Creek | Tobyhanna Creek / Tunkhannock Creek Watershed Association | Long Pond Road near race track | 04/18/97 | -1.1 | 4.4 | 4.6 | 12.5 | 0.17 | 0.03 |
| 03PA | Tunkhannock Creek | Tobyhanna Creek / Tunkhannock Creek Watershed Association | Above Rt. 115 | 04/19/97 | | 2.5 | | 10.9 | 0.22 | 0.03 |
| 03PA | Tunkhannock Creek | Tobyhanna Creek / Tunkhannock Creek Watershed Association | 50 ft downstream from Hysie Gap Road | 04/21/97 | 6.1 | 5.0 | 4.9 | 12.6 | 0.16 | 0.03 |
| 03PA | Unnamed Creek (Hemlock Pond) | Tobyhanna Creek / Tunkhannock Creek Watershed Association | Above Lakeview Drive, Lake Naomi | 04/26/97 | 10.6 | 10.6 | 6.3 | 10.8 | 0.39 | 0.03 |
| 03PA | Upper Tunkhannock Creek | Tobyhanna Creek / Tunkhannock Creek Watershed Association | Above confluence with Beaver Creek | 04/20/97 | 3.3 | 7.2 | 6.9 | 12.5 | 0.19 | 0.03 |
| 03PA | Upper Tunkhannock Creek | Tobyhanna Creek / Tunkhannock Creek Watershed Association | Below Miller Drive in Lake Naomi | 04/20/97 | 8.9 | 8.5 | 6.7 | 11.0 | 0.17 | 0.03 |
| 03PA | Upper Tunkhannock Creek Unnamed Tributary | Tobyhanna Creek / Tunkhannock Creek Watershed Association | Below Tanglewood Drive, Lake Naomi | 04/26/97 | 8.9 | 6.4 | 4.8 | 11.3 | 0.05 | 0.03 |
| 03PA | Wagner's Run | Tobyhanna Creek / Tunkhannock Creek Watershed Association | Below North Shore Road | 04/22/97 | 14.0 | 7.0 | 5.0 | 12.1 | 0.09 | 0.03 |
| 03PA | Wolf Spring Run | Tobyhanna Creek / Tunkhannock Creek Watershed Association | Below South Shore Road | 04/22/97 | 12.0 | 6.0 | 6.3 | 12.3 | 0.13 | 0.03 |
| 04NJ | Delaware River mile 142 | Delaware River Basin Commission | Washingtons Crossing, NJ | 04/23/97 | 22.0 | 12.0 | 8.3 | 11.5 | 0.50 | 0.20 |
| 04NJ | Delaware River mile 149 | Delaware River Basin Commission | Lambertville Bridge | 04/23/97 | 18.0 | 11.0 | 8.0 | 11.0 | 0.50 | 0.20 |
| 04NJ | Delaware River mile 152 | Delaware River Basin Commission | Stockton Bridge | 04/23/97 | 18.5 | 12.0 | 8.0 | 12.2 | 0.40 | 0.20 |

| Water Snapshot '97 Stream Data | | | | | Air | Water | | Dissolved | | |
|--------------------------------|-------------------------|-----------------------------------|--|----------|-----------|-----------|-----|-----------|---------|-----------|
| DRB | | | | | Temp | Temp | | Oxygen | Nitrate | Phosphate |
| Sub-Basin | Stream Name | Organization | Site Description | Date | (Celsius) | (Celsius) | pH | (mg/l) | (mg/l) | (mg/l) |
| 04NJ | Delaware River mile 155 | Delaware River Basin Commission | Bulls Island Bridge | 04/23/97 | 16.0 | 11.5 | 7.0 | 11.8 | 0.50 | 0.20 |
| 04NJ | Delaware River mile 164 | Delaware River Basin Commission | Frenchtown Bridge | 04/23/97 | 16.0 | 11.5 | 8.0 | 11.0 | 0.50 | 0.20 |
| 04NJ | Delaware River mile 168 | Delaware River Basin Commission | Milford PA/NJ | 04/24/97 | 20.0 | 15.0 | 8.2 | 9.6 | 0.32 | 0.20 |
| 04NJ | Delaware River mile 175 | Delaware River Basin Commission | Riegelsville Bridge | 04/24/97 | 19.5 | 18.0 | 8.2 | 10.4 | 0.38 | 0.20 |
| 04PA | Cooks Creek | Cooks Creek Watershed Association | bridge over creek north of former Pleasant Valley Mill off Rt. 212 | 04/27/97 | 18.0 | 14.5 | 8.0 | 11.6 | 5.28 | 0.20 |
| 04PA | Cook's Creek | Cooks Creek Watershed Association | 30' upstream from Durham bridge, Bucks Co., PA | 04/26/97 | 14.0 | 10.0 | 8.0 | 12.3 | 8.80 | 0.20 |
| 04PA | Delaware River mile 177 | Delaware Riverkeeper Network | Ground Hog Lock, Raubsville, PA | 04/22/97 | 17.0 | 11.5 | 7.5 | 11.0 | 4.40 | 0.20 |
| 04PA | Fry's Run | Delaware Riverkeeper Network | 50 yds upstream from confluence of Delaware River, Raubsville, PA | 04/25/97 | 18.0 | 13.0 | 8.0 | 10.4 | 13.20 | 0.50 |
| 05APA | Cobbs Creek | Turner Middle School | near Turner Middle School | 04/22/97 | 24.0 | 13.0 | 6.5 | 3.6 | 1.00 | |
| 05APA | Cobbs Creek | Turner Middle School | near bridge at old stables | 04/22/97 | 25.5 | 14.0 | 8.5 | 6.5 | 1.00 | 0.20 |
| 05APA | Delaware River mile 093 | Delaware River Basin Commission | Storet Station -- 892065 River Mile 93.18 Navy Yard | 04/22/97 | 12.0 | 11.0 | 7.1 | 9.9 | 3.54 | 0.21 |
| 05APA | Delaware River mile 100 | Delaware River Basin Commission | Storet Station -- 892071 River Mile 100.15 Ben Franklin Bridge | 04/19/97 | | 10.3 | 7.3 | 10.2 | | |
| 05APA | Delaware River mile 100 | Delaware River Basin Commission | Storet Station -- 892071 River Mile 100.15 Ben Franklin Bridge | 04/20/97 | | 10.4 | 7.3 | 10.2 | | |
| 05APA | Delaware River mile 100 | Delaware River Basin Commission | Storet Station -- 892071 River Mile 100.15 Ben Franklin Bridge | 04/21/97 | | 10.7 | 7.3 | 10.0 | | |

| Water Snapshot '97 Stream Data | | | | | | | | | | |
|--------------------------------|-------------------------|---------------------------------|--|----------|--------------------|----------------------|-----|-------------------------|----------------|------------------|
| DRB Sub-Basin | Stream Name | Organization | Site Description | Date | Air Temp (Celsius) | Water Temp (Celsius) | pH | Dissolved Oxygen (mg/l) | Nitrate (mg/l) | Phosphate (mg/l) |
| 05APA | Delaware River mile 100 | Delaware River Basin Commission | Storet Station -- 892071 River Mile 100.15 Ben Franklin Bridge | 04/22/97 | 12.0 | 11.0 | 7.0 | 7.9 | 0.02 | 0.04 |
| 05APA | Delaware River mile 100 | Delaware River Basin Commission | Storet Station -- 892071 River Mile 100.15 Ben Franklin Bridge | 04/22/97 | 12.0 | 11.0 | 7.0 | 7.9 | 3.28 | 0.18 |
| 05APA | Delaware River mile 100 | Delaware River Basin Commission | Storet Station -- 892071 River Mile 100.15 Ben Franklin Bridge | 04/22/97 | | 10.9 | 7.3 | 9.8 | | |
| 05APA | Delaware River mile 100 | Delaware River Basin Commission | Storet Station -- 892071 River Mile 100.15 Ben Franklin Bridge | 04/23/97 | | 11.1 | 7.3 | 9.7 | | |
| 05APA | Delaware River mile 100 | Delaware River Basin Commission | Storet Station -- 892071 River Mile 100.15 Ben Franklin Bridge | 04/24/97 | | 11.1 | 7.2 | 9.8 | | |
| 05APA | Delaware River mile 100 | Delaware River Basin Commission | Storet Station -- 892071 River Mile 100.15 Ben Franklin Bridge | 04/25/97 | | 11.2 | 7.2 | 9.8 | | |
| 05APA | Delaware River mile 100 | Delaware River Basin Commission | Storet Station -- 892071 River Mile 100.15 Ben Franklin Bridge | 04/26/97 | | 11.5 | 7.3 | 9.9 | | |
| 05APA | Delaware River mile 105 | Delaware River Basin Commission | Storet Station -- 892070 River mile 104.67 Betsy Ross Bridge | 04/22/97 | 12.0 | 11.0 | 7.1 | 8.9 | 3.37 | 0.18 |
| 05APA | Delaware River mile 105 | Delaware River Basin Commission | Storet Station -- 892070 River mile 104.67 Betsy Ross Bridge | 04/22/97 | 12.0 | 11.0 | 7.1 | 8.9 | 0.02 | 0.03 |
| 05APA | Delaware River mile 110 | Philadelphia Water Department | Baxter Raw Water Pumping Station, State Road & Linden Avenue | 04/23/97 | 7.8 | 12.0 | 7.4 | 10.1 | 0.92 | |

| Water Snapshot '97 Stream Data | | | | | | | | | | |
|--------------------------------|--------------------------------|-----------------------------------|--|----------|--------------------|----------------------|-----|-------------------------|----------------|------------------|
| DRB Sub-Basin | Stream Name | Organization | Site Description | Date | Air Temp (Celsius) | Water Temp (Celsius) | pH | Dissolved Oxygen (mg/l) | Nitrate (mg/l) | Phosphate (mg/l) |
| 05APA | Delaware River mile 111 | Delaware River Basin Commission | Storet Station -- 892077 River Mile 110.7 Torresdale | 04/22/97 | 12.0 | 11.0 | 7.0 | 9.4 | 3.37 | 0.21 |
| 05APA | Delaware River mile 118 | Delaware River Basin Commission | Storet Station -- 892080 River Mile 117.80 Burlington Bristol Bridge | 04/22/97 | 12.0 | 10.0 | 7.2 | 10.6 | 3.23 | 0.12 |
| 05APA | Delaware River mile 123 | Delaware Riverkeeper Network | Behind Tullytown, PA, Borough Hall | 04/25/97 | 14.5 | 11.0 | 7.0 | 10.0 | 2.64 | 0.50 |
| 05APA | Frankford Creek | Frankford HS | at Ferko Recreation Center | 04/22/97 | 14.6 | 10.8 | 8.8 | 9.6 | 0.88 | 0.20 |
| 05APA | Little Neshaminy Creek | Philadelphia Suburban Water Co. | at Sackett's Ford Road, Bucks Co., PA | 04/21/97 | 15.0 | 10.0 | 8.1 | 11.0 | 3.30 | 0.20 |
| 05APA | Mill Creek Tributary | Philadelphia Suburban Water Co. | at Stump Bridge Road, Bucks Co., PA | 04/21/97 | 14.0 | 10.0 | 7.4 | 11.0 | 2.00 | 0.14 |
| 05APA | Neshaminy Creek | Philadelphia Suburban Water Co. | at Rushland Road, Bucks Co., PA | 04/21/97 | 15.0 | 11.0 | 9.3 | 11.0 | 1.80 | 0.15 |
| 05APA | Neshaminy Creek - North Branch | North Penn Water Authority | Callowhill Road, New Britain Twp., PA | 04/24/97 | 11.1 | 11.0 | 8.0 | 15.2 | 0.61 | 0.07 |
| 05APA | Neshaminy Creek - North Branch | North Penn Water Authority | Forest Park Treatment Plant, Park Ave., Chalfont, PA | 04/24/97 | 11.1 | 12.0 | 8.4 | 11.2 | 0.65 | 0.05 |
| 05APA | Neshaminy Creek - North Branch | North Penn Water Authority | Valley Park Road, Plumstead Twp., PA | 04/24/97 | 11.1 | 11.0 | 8.2 | 13.5 | 0.21 | 0.04 |
| 05APA | Pennypack Creek | Philadelphia Water Department | Ashburner Street & Frankford Avenue | 04/23/97 | 7.8 | | 8.0 | 12.9 | 2.64 | |
| 05APA | Pine Run Creek | North Penn Water Authority | Keely Road, New Britain Boro, PA | 04/24/97 | 11.1 | 12.0 | 7.6 | 12.2 | 1.19 | 0.70 |
| 05APA | Poquessing Creek | Stephen Decatur Elementary School | Hagys Mill Road | 04/25/97 | | 15.6 | 7.0 | | | |
| 05APA | Poquessing Creek | Friends of Poquessing Watershed | at Frankford Avenue & Red Lion Road | 04/26/97 | 15.0 | 15.5 | 8.0 | 11.3 | 4.40 | 0.20 |
| 05APA | Poquessing Creek | Stephen Decatur Elementary School | Academy & Torrey Roads | 05/05/97 | 23.3 | 15.6 | 7.5 | 5.0 | | |
| 05APA | Tacony Creek | Friends of Tacony Creek Park | Tabor Road, Philadelphia, PA | 05/08/97 | 10.8 | 10.2 | 6.8 | | 5.00 | |

| Water Snapshot '97 Stream Data | | | | | Air | Water | | Dissolved | | |
|--------------------------------|-------------------------|--|--|----------|-----------|-----------|-----|-----------|---------|-----------|
| DRB | | | | | Temp | Temp | | Oxygen | Nitrate | Phosphate |
| Sub-Basin | Stream Name | Organization | Site Description | Date | (Celsius) | (Celsius) | pH | (mg/l) | (mg/l) | (mg/l) |
| 05BPA | Chester Creek | Chester Ridley Crum Volunteer Monitoring Program | Thornbury Twp., site 100 ft downstream of Glen Mills Road Bridge, corner of Creek & Sweetwater Roads | 04/19/97 | 7.0 | 4.0 | 8.5 | 11.6 | 3.52 | 0.00 |
| 05BPA | Crum Creek | Crum Ridley Chester Volunteer Monitoring Program | 200 meters north of Yale Avenue dam | 04/19/97 | 10.3 | 9.0 | 7.1 | 9.0 | 0.88 | 0.20 |
| 05BPA | Crum Creek | Philadelphia Suburban Water Co. | at Whitehorse Road, Berwyn, PA | 04/21/97 | 8.0 | 7.0 | 7.4 | 11.0 | 2.60 | 0.14 |
| 05BPA | Crum Creek | Swarthmore Rutledge School | 20 meters downstream form SEPTA railroad trestle | 04/25/97 | 16.8 | 11.0 | 7.0 | 10.4 | 0.88 | 0.20 |
| 05BPA | Darby Creek | Radnor Middle School Watershed Program | Indian Rock Park, Drexel Hill | 04/23/97 | 12.7 | 11.4 | 7.5 | 11.0 | 0.50 | 0.20 |
| 05BPA | Darby Creek | Cardinal O'Hara HS | at Rolling Green Park | 04/26/97 | 18.0 | 12.0 | 7.0 | 10.7 | 0.20 | 0.20 |
| 05BPA | Delaware River mile 079 | Pennsylvania DEP | Marcus Hook, at state line, WQN 182 | 04/21/97 | 18.4 | 11.2 | 7.7 | 10.8 | 4.26 | 0.04 |
| 05BPA | Delaware River mile 079 | Delaware River Basin Commission | Storet Station -- 332049 River Mile 78.24 Marcus Hook | 04/22/97 | 11.0 | 11.0 | 7.3 | 9.0 | 4.12 | 0.37 |
| 05BPA | Delaware River mile 081 | Delaware River Basin Commission | Chester, PA | 04/19/97 | | 11.0 | 7.4 | 9.7 | | |
| 05BPA | Delaware River mile 081 | Delaware River Basin Commission | Chester, PA | 04/20/97 | | 11.3 | 7.4 | 9.9 | | |
| 05BPA | Delaware River mile 081 | Delaware River Basin Commission | Chester, PA | 04/21/97 | | 11.5 | 7.4 | 9.8 | | |
| 05BPA | Delaware River mile 081 | Delaware River Basin Commission | Chester, PA | 04/22/97 | | 11.9 | 7.4 | 9.4 | | |
| 05BPA | Delaware River mile 081 | Delaware River Basin Commission | Chester, PA | 04/23/97 | | 12.0 | 7.4 | 9.9 | | |
| 05BPA | Delaware River mile 081 | Delaware River Basin Commission | Chester, PA | 04/24/97 | | 12.1 | 7.4 | 10.7 | | |
| 05BPA | Delaware River mile 081 | Delaware River Basin Commission | Chester, PA | 04/25/97 | | 12.4 | 7.4 | 10.6 | | |
| 05BPA | Delaware River mile 081 | Delaware River Basin Commission | Chester, PA | 04/26/97 | | 12.7 | 7.4 | 10.5 | | |
| 05BPA | Delaware River mile 081 | Delaware River Basin Commission | Chester, PA | 04/27/97 | | 13.1 | 7.4 | 10.4 | | |

| Water Snapshot '97 Stream Data | | | | | | | | | | |
|--------------------------------|---------------------------------------|--|---|----------|--------------------|----------------------|-----|-------------------------|----------------|------------------|
| DRB Sub-Basin | Stream Name | Organization | Site Description | Date | Air Temp (Celsius) | Water Temp (Celsius) | pH | Dissolved Oxygen (mg/l) | Nitrate (mg/l) | Phosphate (mg/l) |
| 05BPA | Delaware River mile 084 | Delaware River Basin Commission | Storet Station -- 892065 River Mile 84 Eddystone | 04/22/97 | 11.0 | 11.0 | 7.1 | 8.5 | 3.94 | 0.37 |
| 05BPA | Delaware River mile 085 | Bernardine Center | Essington | 04/30/97 | 19.0 | 15.0 | 7.5 | 9.0 | | |
| 05BPA | Ridley Creek | Philadelphia Suburban Water Co. | Media Station Road | 04/21/97 | 9.0 | 11.2 | 7.4 | 10.6 | 7.10 | 1.19 |
| 05BPA | Ridley Creek | Philadelphia Suburban Water Co. | 39 56'55" N 75 25'18.5" W at Chapel Hill Rd | 04/21/97 | 9.0 | 8.6 | 7.6 | 12.6 | 2.10 | 0.58 |
| 05BPA | Ridley Creek | Philadelphia Suburban Water Co. | 39 55'36" N 75 24'35.2" W Middletown Twp, Delaware Co, at Rosetree Rd | 04/21/97 | 9.0 | 9.1 | 8.0 | 14.2 | 2.00 | 0.12 |
| 05BPA | Ridley Creek | Philadelphia Suburban Water Co. | 100 ft altitude below water plant | 04/21/97 | 11.0 | 9.4 | 7.8 | 11.9 | 2.00 | 0.15 |
| 05BPA | Ridley Creek | Pennsylvania DCNR - Ridley Creek SP | at Handicapped Fishing Pier along Sycamore Mills Road | 04/29/97 | 19.0 | 14.0 | 8.0 | 12.0 | 0.89 | |
| 05BPA | Ridley Creek Trib - DEP Stream #00690 | Philadelphia Suburban Water Co. | Tributary to Ridley Creek, 40 01'30" N 75 32'13" W | 04/21/97 | 10.0 | 9.9 | 7.3 | 12.8 | 5.30 | 0.12 |
| 05BPA | Whetstone Run | Cardinal O'Hara HS | at Reed Road (from bridge), PA | 04/28/97 | 20.0 | 14.0 | 7.0 | 10.0 | 0.20 | 0.20 |
| 05BPA | Whiskey Run | Crum Ridley Chester Volunteer Monitoring Program | Spring-fed start, tributary to Crum Creek | 04/26/97 | 16.0 | 13.0 | 5.7 | 7.4 | 0.44 | 0.20 |
| 06PA | Allegheny Creek | Schuylkill River Greenway Association | Gibraltar, 40 17'02" N 75 52'25" W | 04/23/97 | 12.0 | 16.0 | 7.0 | 9.8 | 0.44 | 0.00 |
| 06PA | Angelica Creek | Schuylkill River Greenway Association | Angelica Park, 40 18'34" N 75 55'50" W | 04/26/97 | 16.0 | 22.0 | 7.0 | 10.5 | 0.89 | 0.10 |
| 06PA | Antietam Creek | Schuylkill River Greenway Association | Exeter Twp. Park, 40 18'34" N 75 50'50" W | 04/25/97 | 15.0 | 16.5 | 8.0 | 10.6 | 0.89 | 0.10 |
| 06PA | Bear Creek | Academy of Natural Sciences - Stroud Water Research Center | Lower Schuylkill Haven, Schuylkill Co. | 04/26/97 | 17.5 | 11.0 | 7.0 | 11.6 | 0.62 | 0.02 |
| 06PA | Bieber Creek | Berks County Conservancy | Forgedale Road, below Sheep Hill | 04/07/97 | 9.4 | 7.8 | 7.0 | 10.5 | 8.80 | |

| Water Snapshot '97 Stream Data | | | | | Air | Water | | Dissolved | | |
|--------------------------------|-------------------------------|---|---|----------|-----------|-----------|-----|-----------|---------|-----------|
| DRB | | | | | Temp | Temp | | Oxygen | Nitrate | Phosphate |
| Sub-Basin | Stream Name | Organization | Site Description | Date | (Celsius) | (Celsius) | pH | (mg/l) | (mg/l) | (mg/l) |
| 06PA | Birch Run Creek | Stream Watch - Owen J Roberts Middle School | tributary of French Creek, Owen J. Roberts Middle School | 04/25/97 | 18.0 | 12.5 | 7.0 | 10.0 | 0.00 | 1.00 |
| 06PA | Brushy Run | Pennsylvania DEP | WQN 184, ICI Explosives property near South Tamaqua | 04/24/97 | 11.7 | 8.1 | 6.9 | 11.4 | 0.12 | 0.02 |
| 06PA | Deep Creek | Philadelphia Suburban Water Co. | Green Lane, Montgomery Co., PA | 04/21/97 | 11.0 | 8.0 | 7.7 | 11.0 | 0.50 | 0.24 |
| 06PA | FDR Park Lagoon | USEPA | Tidal lagoon, south side bank | 04/24/97 | 15.5 | 15.5 | 9.2 | 15.6 | 0.88 | 0.20 |
| 06PA | FDR Park Pond at Tennis Court | Friends of FDR park | Broad & Pattison Avenue, Philadelphia | 04/26/97 | | 16.0 | 9.0 | 14.4 | 0.02 | 0.02 |
| 06PA | Furnace Creek | Berks County Conservancy | Stitzer Hill Road | 04/07/97 | 10.0 | 8.3 | 7.6 | 11.0 | 8.80 | |
| 06PA | Furnace Run | Berks County Conservancy | Manatawny Road | 04/15/97 | 10.6 | | 8.1 | 11.5 | 4.40 | |
| 06PA | Goose Run | Berks County Conservancy | West Pottsgrove Park, Manatawny Street | 05/05/97 | 8.3 | 8.3 | 7.3 | 7.5 | 4.40 | |
| 06PA | Gulley Run | Lower Merion Conservancy | Gulley Run Park, corner of Conshohocken State & Manayunk Road | 04/26/97 | 23.9 | 16.7 | 7.3 | 9.0 | | |
| 06PA | Hartenstine Creek | Berks County Conservancy | Rupert Road at first bridge over Hartenstine | 05/05/97 | 9.4 | 8.3 | 8.3 | 12.3 | 0.00 | |
| 06PA | Hay Creek | Schuylkill River Greenway Association | Birdsboro, 40 15'28" N 75 48'39" W | 04/21/97 | 12.5 | 16.0 | 7.0 | 9.6 | 0.00 | 0.00 |
| 06PA | Hillcrest Pond | Erdenheim Elementary School | feeds into Wissahickon Creek | 04/22/97 | 16.0 | 14.0 | 7.5 | 12.2 | 1.00 | 0.20 |
| 06PA | Indian Creek | Lower Merion Conservancy | at L.M. Park, near Haverford & Remington Roads | 04/23/97 | 16.0 | 11.0 | 8.0 | 10.0 | | |
| 06PA | Indian Creek | Lower Merion Conservancy | East site, Conservancy #11, Shortridge Park, Shortridge Drive | 04/26/97 | 16.0 | 16.0 | 7.7 | 11.0 | | |
| 06PA | Ironstone Creek | Berks County Conservancy | Pine Forge Road | 04/25/97 | 11.1 | 8.9 | 9.5 | 11.5 | 8.80 | |
| 06PA | Ironstone Creek | Berks County Conservancy | Funk Road, I Route 73 | 04/25/97 | | | | | 4.40 | |
| 06PA | Little Manatawny | Berks County Conservancy | at Bertolet Mill Road | 04/07/97 | 10.0 | 8.9 | 9.0 | 11.5 | 8.80 | |
| 06PA | Little Manatawny Creek | Berks County Conservancy | Snyder Rd, @ Furnace Creek confluence | 04/15/97 | 11.7 | 8.3 | 9.0 | 13.0 | 4.40 | |

| Water Snapshot '97 Stream Data | | | | | | | | | | |
|--------------------------------|-----------------------------------|---------------------------------------|--|----------|--------------------|----------------------|-------------------------|----------------|------------------|------|
| DRB Sub-Basin | Stream Name | Organization | Site Description | Date | Air Temp (Celsius) | Water Temp (Celsius) | Dissolved Oxygen (mg/l) | Nitrate (mg/l) | Phosphate (mg/l) | |
| 06PA | Little Schuylkill River | Schuylkill River Greenway Association | Port Clinton, 40 35'20" N 76 01'40" W | 04/22/97 | 10.5 | 14.0 | 6.5 | 10.0 | 0.44 | 0.00 |
| 06PA | Locust Creek | Pennsylvania DCNR - Tuscarora SP | before it enters Locust Lake, Ryan Township, Schuylkill Co. | 04/21/97 | 18.9 | | 7.0 | 11.0 | 0.89 | 0.20 |
| 06PA | Locust Creek | Pennsylvania DCNR - Tuscarora SP | as enters Tuscarora Lake in Tuscarora SP | 04/21/97 | 19.4 | | 7.0 | 10.0 | 0.89 | 0.20 |
| 06PA | Locust Creek | Pennsylvania DCNR - Tuscarora SP | as exits Tuscarora Lake, close to where it enters the Little Schuylkill River in Tamaqua | 04/21/97 | 19.4 | | 7.2 | 10.0 | 0.89 | 0.20 |
| 06PA | Locust Creek | Pennsylvania DCNR - Tuscarora SP | as it exits Locust Lake | 04/21/97 | 18.9 | | 7.2 | 10.0 | 0.89 | 0.20 |
| 06PA | Maiden Creek - Lower | Schuylkill River Greenway Association | Below Lake Ontelaunee, 40 26'40" N 75 55'46" W | 04/27/97 | 15.5 | 13.0 | 7.5 | 10.1 | 1.33 | 0.00 |
| 06PA | Maiden Creek - Upper | Schuylkill River Greenway Association | Moselem, 40 30'02" N 75 53'15" W | 04/27/97 | 18.0 | 12.5 | 7.0 | 9.7 | 1.33 | 0.00 |
| 06PA | Manatawny Creek | Berks County Conservancy | Haas Rd, @ Bieber & Pine Cr confluence | 04/08/97 | 10.6 | 5.3 | 8.0 | 12.5 | 19.80 | |
| 06PA | Manatawny Creek | Berks County Conservancy | below STP, Spangsville Road | 04/14/97 | 6.1 | 3.9 | 7.7 | 12.5 | 4.40 | |
| 06PA | Manatawny Creek | Berks County Conservancy | Fisher Mill Road | 04/22/97 | 10.6 | | 8.5 | 12.5 | 11.00 | |
| 06PA | Manatawny Creek | Berks County Conservancy | Spotts Mill Road | 04/22/97 | 11.7 | 6.7 | 9.0 | 12.5 | 6.60 | |
| 06PA | Manatawny Creek | Berks County Conservancy | Levengood Road | 04/25/97 | 11.1 | 8.3 | 8.7 | 13.0 | 8.80 | |
| 06PA | Manatawny Creek | Berks County Conservancy | West Pottsgrove Park, Manatawny Street | 05/05/97 | 8.3 | 7.2 | 8.5 | 10.5 | 6.60 | |
| 06PA | Manatawny Creek | Berks County Conservancy | at confluence, Riverfront Park | 05/05/97 | 8.9 | 6.9 | 8.3 | 10.8 | 8.80 | |
| 06PA | Manatawny Creek - Lower | Schuylkill River Greenway Association | West Pottsgrove Twp. Park, 40 16'02" N 75 40'05" W | 04/27/97 | 14.0 | 23.0 | 7.5 | 10.0 | 0.89 | 0.00 |
| 06PA | Manatawny Creek - Upper | Schuylkill River Greenway Association | Earlville, 40 18'47"N 75 44'13" W | 04/24/97 | 13.0 | 16.5 | 8.5 | 12.6 | 0.89 | 0.00 |
| 06PA | Manatawny Creek Unnamed Tributary | Berks County Conservancy | Covered Bridge Road | 04/22/97 | | | 8.5 | | 46.20 | |

| Water Snapshot '97 Stream Data | | | | | | | | | | |
|--------------------------------|-------------------------------|---------------------------------------|---|----------|--------------------|----------------------|-----|-------------------------|----------------|------------------|
| DRB Sub-Basin | Stream Name | Organization | Site Description | Date | Air Temp (Celsius) | Water Temp (Celsius) | pH | Dissolved Oxygen (mg/l) | Nitrate (mg/l) | Phosphate (mg/l) |
| 06PA | Mill Creek | Lower Merion Conservancy | Harriton Road (below Harriton House), near Gladwyne | 04/17/97 | 14.4 | 11.1 | 7.5 | 13.0 | | |
| 06PA | Mill Creek | Schuylkill River Greenway Association | Mill Creek, 40 42'13" N 76 10'35" W | 04/19/97 | 7.0 | 6.0 | 6.0 | 10.0 | 0.44 | 0.00 |
| 06PA | Mill Creek | Lower Merion Conservancy | Black Rock & Dove Lake Roads, Gladwyne | 04/20/97 | 10.6 | 8.3 | 7.4 | 13.0 | | |
| 06PA | Mill Creek | Lower Merion Conservancy | Mill Creek & Youngsford Roads, Gladwyne, PA | 04/20/97 | 12.8 | 12.2 | 8.0 | 12.0 | | |
| 06PA | Mill Creek | Lower Merion Conservancy | West Mill Creek Park, Penn Valley | 04/24/97 | 10.0 | 13.0 | 7.5 | 10.0 | | |
| 06PA | Mill Creek | Lower Merion Conservancy | Mill Creek & Old Gulph Roads, Ardmore | 04/25/97 | 8.9 | 9.4 | 7.3 | 11.0 | | |
| 06PA | Mill Creek | Lower Merion Conservancy | Rose Glen & Mill Creek Roads, Gladwyne | 04/23/97 | 16.1 | 12.2 | 8.0 | 11.0 | | |
| 06PA | Oysterville Creek | Berks County Conservancy | Toll House Road | 04/25/97 | 9.4 | 6.4 | 8.0 | 11.5 | 4.40 | |
| 06PA | Oysterville Creek - tributary | Berks County Conservancy | Hill Church Road | 04/08/97 | 10.6 | 6.1 | 7.2 | 11.0 | 4.40 | |
| 06PA | Perkiomen Creek | Delaware Riverkeeper Network | Old Mill Site by Route 29, Perkiomenville, PA | 04/20/97 | 12.0 | 9.0 | 8.0 | 11.3 | 11.68 | 0.20 |
| 06PA | Perkiomen Creek | Philadelphia Suburban Water Co. | Level Road, Arcola, Montgomery Co., PA | 04/21/97 | 8.0 | 9.0 | 7.8 | | 1.60 | 0.09 |
| 06PA | Perkiomen Creek | Pennsylvania DEP | WQN 116, Arcola Road Bridge | 04/23/97 | | 12.8 | 9.1 | 12.1 | 5.09 | 0.03 |
| 06PA | Perkiomen Creek West Branch | Delaware Riverkeeper Network | 300 yards of new Route 100 | 04/21/97 | 13.5 | 10.2 | 8.5 | 13.2 | 4.40 | 0.00 |
| 06PA | Perkiomen Creek West Branch | Delaware Riverkeeper Network | Old Route 100 Bridge crossing | 04/21/97 | 14.0 | 10.0 | 7.5 | 12.3 | 4.40 | 0.00 |
| 06PA | Perkiomen Creek West Branch | Delaware Riverkeeper Network | Himmelwright Road Bridge | 04/21/97 | 15.5 | 11.2 | 8.5 | 13.8 | 4.40 | 0.00 |
| 06PA | Pickering Creek | Philadelphia Suburban Water Co. | Phoenixville YMCA, Phoenixville, PA | 04/21/97 | 9.0 | 8.0 | 7.9 | 11.0 | 1.90 | 0.20 |
| 06PA | Pickering Creek | Schuylkill River Greenway Association | Charlestown, 40 05'55" N 75 33'19" W | 04/26/97 | 11.5 | 17.5 | 7.5 | 10.0 | 0.89 | 0.00 |
| 06PA | Pine Creek | Berks County Conservancy | Long Lane | 04/07/97 | 11.1 | 8.9 | 7.8 | 10.0 | 4.40 | |
| 06PA | Pine Creek | Schuylkill River Greenway Association | Deer Lake, 40 37'07" N 76 03'35" W | 04/22/97 | 11.0 | 14.0 | 8.0 | 10.5 | 0.89 | 0.00 |
| 06PA | Pine Creek West Branch | Berks County Conservancy | Long Lane | 04/07/97 | 10.6 | 8.3 | 7.0 | 9.8 | 4.40 | |

| Water Snapshot '97 Stream Data | | | | | | | | | | |
|--------------------------------|---------------------------------------|---|--|----------|--------------------|----------------------|-------------------------|----------------|------------------|------|
| DRB Sub-Basin | Stream Name | Organization | Site Description | Date | Air Temp (Celsius) | Water Temp (Celsius) | Dissolved Oxygen (mg/l) | Nitrate (mg/l) | Phosphate (mg/l) | |
| 06PA | Sanatoga Creek | Berks County Conservancy | Snell Road, Sanatoga Road before bridge | 05/05/97 | 10.0 | 8.9 | 8.4 | 10.5 | 0.00 | |
| 06PA | Sanatoga Creek | Berks County Conservancy | Sanatoga Station Road @ confluence | 05/05/97 | 12.8 | 10.0 | 8.5 | 9.8 | 0.00 | |
| 06PA | Saw Mill Run | Riverbend Environmental Education Center | Gladwyne, PA, near Conshohocken | 04/23/97 | 13.0 | 12.0 | 7.0 | 11.0 | | |
| 06PA | Schuylkill River | Schuylkill River Greenway Association | South of Pottsville, 40 39'04" N 76 11'19" W | 04/19/97 | 8.0 | 8.0 | 6.5 | 9.8 | 0.44 | 0.00 |
| 06PA | Schuylkill River | Southwest Environmental Coalition | Bartram's Garden, next to apple press | 04/21/97 | | | 8.2 | | 1.76 | |
| 06PA | Schuylkill River | Pennsylvania DEP | Falls Bridge, Calumet Street, RM 12.2 | 04/21/97 | | 8.0 | 8.6 | 12.0 | 2.55 | 0.08 |
| 06PA | Schuylkill River | Schuylkill River Greenway Association | Port Carbon, 40 41'48" N 76 09'13" W | 04/22/97 | 11.0 | 17.0 | 6.0 | 9.8 | 0.00 | 0.00 |
| 06PA | Schuylkill River | Philadelphia Water Department | at Queen Lane Raw Water Pumping Station, Schoolhouse Lane & Ridge Avenue | 04/23/97 | 7.8 | 14.0 | 8.5 | 10.5 | 2.90 | |
| 06PA | Schuylkill River | Schuylkill River Greenway Association | Seyfert, 40 17'21" N 75 52'31" W | 04/23/97 | 10.0 | 15.0 | 8.0 | 12.6 | 1.77 | 0.10 |
| 06PA | Schuylkill River | Lower Merion Conservancy | Flat Rock Dam, Gladwyne | 04/23/97 | 17.8 | 14.4 | 8.5 | 8.0 | | |
| 06PA | Schuylkill River | Pennsylvania DEP | WQN 111, Pottstown, PA, Hanover Street Bridge | 04/23/97 | | 12.0 | 8.6 | 12.8 | 11.82 | 0.06 |
| 06PA | Schuylkill River | Bartram High School Communications Students | Historic Bartram's Garden, Philadelphia | 04/24/97 | 18.0 | 14.0 | 8.5 | 10.0 | 1.00 | 0.50 |
| 06PA | Schuylkill River | Schuylkill River Greenway Association | Mohrsville, 40 28'20" N 75 58'15" W | 04/25/97 | 14.0 | 14.0 | 6.5 | 10.4 | 0.89 | 0.00 |
| 06PA | Schuylkill River | Roosevelt Alternative School | at Pawlings Rd Bridge, Valley Forge National Park near Audobon, PA | 04/26/97 | 22.0 | 17.0 | 8.0 | 12.8 | 1.33 | 0.10 |
| 06PA | Schuylkill River Tributary Spring Run | Schuylkill Center for Environmental Education | Tributary at the Schuylkill River | 04/26/97 | 21.0 | 15.0 | 7.0 | 13.0 | 0.00 | 0.00 |
| 06PA | Schuylkill River West Branch | Schuylkill River Greenway Association | Cressona, 40 38'32" N 76 11'45" W | 04/19/97 | 7.5 | 7.0 | 7.0 | 10.0 | 0.00 | 0.00 |
| 06PA | Sprogels Run | Berks County Conservancy | at Brookside Restaurant, Charlotte Street | 05/05/97 | 13.3 | 8.3 | 8.5 | 11.0 | 0.00 | |

| Water Snapshot '97 Stream Data | | | | | Air | Water | | Dissolved | | |
|--------------------------------|-------------------------|---|--|----------|-----------|-----------|-----|-----------|---------|-----------|
| DRB | | | | | Temp | Temp | | Oxygen | Nitrate | Phosphate |
| Sub-Basin | Stream Name | Organization | Site Description | Date | (Celsius) | (Celsius) | pH | (mg/l) | (mg/l) | (mg/l) |
| 06PA | Sprogels Run | Berks County Conservancy | Sunnybrook Road at bridge upstream from park | 05/05/97 | 13.3 | 10.3 | 8.5 | | 0.00 | |
| 06PA | Sprogels Run | Berks County Conservancy | Porter Road at office building parking lot | 05/05/97 | 13.3 | 10.0 | 8.8 | 10.5 | 4.40 | |
| 06PA | Swamp Creek | Philadelphia Suburban Water Co. | Rte. 29, Lower Frederick Twp., Montgomery Co. PA | 04/21/97 | 9.0 | 8.0 | 8.6 | | 2.50 | 0.12 |
| 06PA | Trout Run | Berks County Conservancy | at Everhardt's Garage, Manatawny Road | 04/22/97 | 12.2 | 7.7 | 7.3 | 11.0 | 0.00 | |
| 06PA | Tulpehocken Creek | Schuylkill River Greenway Association | at Gaging Station, Reading, 40 22'07" N 75 58'45" W | 04/27/97 | 11.5 | 14.0 | 7.0 | 16.0 | 2.50 | 1.50 |
| 06PA | Unami Creek | Philadelphia Suburban Water Co. | Rte 63, Montgomery Co., PA | 04/21/97 | 12.0 | 10.0 | 8.1 | 11.0 | 1.50 | 0.17 |
| 06PA | Valley Creek | Pennsylvania DEP | at Wilson Road Bridge, Valley Forge National Park, Tredyffrin Twp, WQN 154 | 04/21/97 | | 9.3 | 8.4 | 11.8 | 2.21 | 0.02 |
| 06PA | Valley Stream | Lower Merion Conservancy | Merion Botanical Park | 04/19/97 | 12.0 | 11.0 | 6.5 | | | |
| 06PA | Wind Dance Pond Stream | Schuylkill Center for Environmental Education | Tributary to Schuylkill, begins as spring near Hagy's Mill road | 04/26/97 | 20.0 | 13.0 | 7.0 | 11.0 | 0.00 | 0.00 |
| 06PA | Wissahickon Creek | Pennsylvania DEP | Ridge Avenue Bridge, RM 0.2 | 04/21/97 | | 7.5 | 8.3 | 13.0 | 3.82 | 0.28 |
| 06PA | Wyomissing Creek | Schuylkill River Greenway Association | West Reading, 40 19'38" N 75 56'44" W | 04/27/97 | 20.0 | 14.0 | 7.0 | 10.0 | 1.33 | 0.00 |
| 07ANJ | Blacks Creek | Burlington Regional HS | Fieldsboro, NJ Tidal portion (outgoing) | 04/21/97 | 16.0 | 9.0 | 7.0 | 10.0 | 4.00 | 1.80 |
| 07ANJ | Crosswicks Creek | Bordentown Regional HS | Stanton Ave., Bordentown, NJ | 04/23/97 | 16.0 | 12.0 | 7.0 | 9.0 | 2.20 | 0.05 |
| 07ANJ | Delaware River mile 097 | Delaware Riverkeeper Network | cement pier, Haddon Township, Camden County | 04/25/97 | 14.0 | 16.0 | 7.0 | 9.3 | 2.64 | 0.50 |
| 07ANJ | Delaware River mile 100 | Mafoo Worldwide Corporation | end of MAFCO pier at Camden, NJ | 04/25/97 | 18.0 | 11.0 | 6.8 | | | |
| 07ANJ | Delaware River mile 127 | Delaware River Basin Commission | Storet Station -- 332061 River Mile 127.48 Fieldsboro | 04/22/97 | 12.0 | 10.0 | 7.1 | 9.4 | 3.14 | 0.15 |

| Water Snapshot '97 Stream Data | | | | | Air | Water | | Dissolved | | |
|--------------------------------|---------------------------------------|-------------------------------------|--|----------|-----------|-----------|------|-----------|---------|-----------|
| DRB | | | | | Temp | Temp | | Oxygen | Nitrate | Phosphate |
| Sub-Basin | Stream Name | Organization | Site Description | Date | (Celsius) | (Celsius) | pH | (mg/l) | (mg/l) | (mg/l) |
| 07ANJ | Delaware River mile 128 | Delaware River Basin Commission | Bordentown Access | 04/23/97 | 20.0 | 12.0 | 8.0 | 10.8 | 0.50 | 0.20 |
| 07ANJ | Delaware River mile 134 | Delaware River Basin Commission | Trenton NJ | 04/19/97 | | 8.8 | 8.4 | 11.9 | | |
| 07ANJ | Delaware River mile 134 | Delaware River Basin Commission | Trenton NJ | 04/20/97 | | 9.2 | 8.7 | 12.5 | | |
| 07ANJ | Delaware River mile 134 | Delaware River Basin Commission | Calhoun Street Bridge | 04/23/97 | 20.5 | 13.0 | 9.0 | 12.0 | 0.50 | 0.20 |
| 07ANJ | Pennsauken Creek North Branch | Delaware Riverkeeper Network | Lenola Road Bridge, Moorestown, NJ | 04/26/97 | 15.0 | 16.0 | 6.5 | 9.2 | 2.20 | 0.40 |
| 07ANJ | South Newton Creek at Audubon Lake | New Jersey Community Water Watch | Kings Hwy & Haverford (Haddon Heights) | 04/01/97 | 13.0 | 13.0 | 6.5 | 8.8 | 4.40 | 0.20 |
| 07ANJ | South Newton Creek at Audubon Lake | New Jersey Community Water Watch | Valley Road, Mt. Ephraim | 04/01/97 | 19.0 | 9.5 | 7.0 | 8.3 | 4.40 | 0.30 |
| 07ANJ | South Newton Creek at Audubon Lake | New Jersey Community Water Watch | Valley Road, Mt. Ephraim | 05/01/97 | 23.0 | 19.0 | 10.0 | 11.1 | 0.88 | 0.20 |
| 07ANJ | South Newton Creek at Audubon Lake | New Jersey Community Water Watch | Kings Hwy & Haverford (Haddon Heights) | 05/01/97 | 25.0 | 18.5 | 6.5 | 9.5 | 4.40 | 0.20 |
| 07ANJ | South Newton Creek below Audubon Lake | New Jersey Community Water Watch | Black Horse Pike/ RT 168 & N. Merchant Street | 04/01/97 | 15.0 | 13.0 | 8.0 | 10.0 | 4.40 | 0.30 |
| 07ANJ | South Newton Creek below Audubon Lake | New Jersey Community Water Watch | Black Horse Pike/ RT 168 & N. Merchant Street | 05/01/97 | 27.0 | 21.0 | 9.5 | 9.5 | 0.88 | 0.20 |
| 07ANJ | Swede Run | Delaware Riverkeeper Network | off Garwood Road, Moorestown, NJ | 04/15/97 | 14.5 | 16.0 | 7.0 | 11.2 | 2.64 | 0.00 |
| 07BNJ | Delaware River mile 088 | Delaware River Basin Commission | Storet Station -- 332052 River Mile 87.90 Paulsboro | 04/22/97 | 12.0 | 11.0 | 7.1 | 9.2 | 3.94 | 0.21 |
| 07BNJ | Raccoon Creek | Raccoon Creek Watershed Association | Russell Mill Road Bridge, upstream side, Swedeboro, NJ | 04/20/97 | 18.0 | 11.0 | 7.0 | 10.5 | 4.40 | 0.20 |
| 08DE | Alapocas Woods Creek | Delaware Nature Society | Alapocas Road & Ball fields, Wilmington, DE | 04/22/97 | 14.0 | 12.5 | 7.0 | 9.5 | | |
| 08DE | Alapocas Woods Creek | DuPont Merck Pharmaceutical Co. | Alapocas Road & Ball fields, Wilmington, DE | 04/24/97 | | 11.0 | 7.0 | 10.0 | 0.89 | 0.20 |

| Water Snapshot '97 Stream Data | | | | | | | | | | |
|--------------------------------|-------------------|--|---|----------|--------------------|----------------------|-----|-------------------------|----------------|------------------|
| DRB Sub-Basin | Stream Name | Organization | Site Description | Date | Air Temp (Celsius) | Water Temp (Celsius) | pH | Dissolved Oxygen (mg/l) | Nitrate (mg/l) | Phosphate (mg/l) |
| 08DE | Beaver Run | Delaware Nature Society | 50 yds downstream Creek Rd, trib Brandywine 75 34' 36" N, 39 50' 5" W | 04/27/97 | 21.5 | 13.6 | 7.5 | 11.5 | 3.00 | |
| 08DE | Canby Park Stream | Christina School District - Bayard Elementary School | At bridge near corner of Oak & Scott Sts. , Wilmington, DE | 04/23/97 | 10.0 | 5.0 | 7.2 | | | |
| 08DE | Christina River | Delaware Nature Society | At Churchman's Road | 04/25/97 | 18.5 | 13.0 | 7.5 | 13.1 | 13.28 | |
| 08DE | Christina River | Delaware Nature Society | At James St. bridge, Newport, DE | 04/25/97 | 19.5 | 13.0 | 7.5 | 12.6 | 13.28 | |
| 08DE | Christina River | Delaware Nature Society | Watershed #13, site #3, Newark, DE | 05/10/97 | 13.5 | 11.5 | 7.0 | 11.2 | 1.50 | |
| 08DE | Christina River | Delaware Nature Society | Watershed #13, site #4, Newark, DE | 05/10/97 | 15.0 | 12.5 | 7.5 | 10.8 | 2.00 | |
| 08DE | Christina River | Lynch, Sheila | above Barksdale Road Bridge (upstream) | 06/09/97 | 20.5 | 16.0 | 7.5 | 8.0 | | |
| 08DE | Hoopes Reservoir | Delaware Nature Society | Wilmington, DE | 04/22/97 | 11.0 | 13.0 | 7.0 | 10.5 | 0.25 | |
| 08DE | Middle Run | Fantastics 4-H Club | White Clay Cr trib, New Castle Co., DE | 04/27/97 | 17.4 | 15.0 | 7.5 | | | |
| 08DE | Mill Creek | Artesian Water Co. | Tributary of Christina River, Mill Creek Road, S. of Evanson, N. of Nathalie | 04/25/97 | 17.4 | 14.7 | 9.0 | 13.0 | | |
| 08DE | Mill Creek | Delaware Nature Society | Hockessin, DE | 04/26/97 | 12.0 | 10.0 | 7.5 | 12.4 | 2.00 | 8.40 |
| 08DE | Pike Creek | Independence School, The | At Independence School | 04/25/97 | 19.0 | 12.0 | 8.0 | 11.8 | 3.00 | 0.00 |
| 08DE | Pike Creek | Independence School, The | Trib Pike Cr between Northstar & Meadowdale | 04/25/97 | 20.0 | 15.5 | 8.0 | 12.0 | 8.00 | 0.00 |
| 08DE | Pike Creek | Delaware Nature Society | Wilmington, DE | 04/26/97 | 13.0 | 10.5 | 7.3 | 11.3 | 3.00 | 4.90 |
| 08DE | Red Clay Creek | Delaware Nature Society | Hercules, Wilmington, DE | 04/22/97 | 11.0 | 13.0 | 8.0 | 11.3 | 3.00 | |
| 08DE | Red Clay Creek | Delaware Nature Society | Yorklyn, DE | 05/10/97 | 15.0 | 13.0 | 8.0 | 12.1 | 5.00 | |
| 08DE | Red Clay Creek | Delaware Nature Society | at Burrow Run, along Old Kennett Pike near Ashland School Road in extreme northern Delaware | 05/24/97 | 27.0 | 18.0 | 7.5 | 10.0 | 1.00 | |

| Water Snapshot '97 Stream Data | | | | | | | | | | |
|--------------------------------|-------------------------------|-----------------------------------|--|----------|--------------------|----------------------|-----|-------------------------|----------------|------------------|
| DRB Sub-Basin | Stream Name | Organization | Site Description | Date | Air Temp (Celsius) | Water Temp (Celsius) | pH | Dissolved Oxygen (mg/l) | Nitrate (mg/l) | Phosphate (mg/l) |
| 08DE | Rocky Run | Delaware Nature Society | Creek Rd Bridge, trib Brandywine 75 34' 36" N, 39 50' 5" W | 04/27/97 | 19.5 | 13.9 | 7.3 | 11.3 | 1.00 | |
| 08PA | Brandywine Creek | Pennsylvania DEP | WQN 105, Chadds Ford | 04/21/97 | | 10.6 | 7.8 | 12.0 | 0.03 | 0.03 |
| 08PA | Red Clay Creek | Pennsylvania DEP | WQN 150, Kennett Twp | 04/21/97 | | 10.4 | 9.2 | 14.4 | 4.28 | 0.06 |
| 08PA | White Clay Creek | Pennsylvania DEP | WQN 149, Chester County | 04/21/97 | | 10.1 | 9.0 | 14.5 | 3.86 | 0.02 |
| 09NJ | Alloway Creek | Salem County Watershed Task Force | At Route 49 bridge, Quinton, NJ | 04/26/97 | 19.0 | 15.0 | 7.0 | 9.5 | 2.64 | 0.20 |
| 09NJ | Alloway Creek at Alloway Lake | Alloway Lake Association | Alloway-Woodstown Road - County Bridge #1097 | 05/03/97 | 18.0 | 14.0 | 6.5 | 7.2 | 4.40 | 0.20 |
| 09NJ | Alloway Creek at Alloway Lake | Alloway Lake Association | at the Dam, Canal Street side | 05/03/97 | 18.0 | 16.5 | 7.5 | 9.4 | 3.52 | 0.20 |
| 09NJ | Alloway Creek at Alloway Lake | Alloway Lake Association | Commissioners Pike/ Rte 581, County Bridge 1065 | 05/03/97 | 19.0 | 17.0 | 6.5 | 7.5 | 2.20 | 0.20 |
| 09NJ | Delaware River mile 071 | Delaware River Basin Commission | Storet Station -- 091011 River Mile 70.96 Cherry Island | 04/22/97 | 11.0 | 11.0 | 7.2 | 8.9 | 4.30 | 0.15 |
| 09NJ | Delaware River mile 075 | Delaware River Basin Commission | Storet Station -- 332046 River Mile 74.88 Oldmans Point | 04/22/97 | 11.0 | 11.0 | 7.2 | 9.2 | 4.25 | 0.12 |
| 09NJ | Delaware River mile 082 | Bernardine Center Woodstown HS | Commodore Barry Bridge | 04/25/97 | 19.0 | 11.5 | 7.0 | 8.5 | | |
| 09NJ | Salem River | Environmental Club | At Memorial Lake dam, Woodstown, NJ | 04/27/97 | 20.0 | 19.3 | 8.0 | 11.0 | 4.40 | 0.20 |
| 10ADE | Delaware River mile 061 | Delaware River Basin Commission | Storet Station -- 091005 River Mile 60.55 Pea Patch Island | 04/22/97 | 11.0 | 10.0 | 7.0 | 5.6 | 4.96 | 0.18 |
| 10ADE | Delaware River mile 066 | Delaware River Basin Commission | Storet Station -- 091008 River Mile 65.96 New Castle | 04/22/97 | 11.0 | 10.0 | 7.4 | 10.2 | 4.56 | 0.12 |
| 10BDE | Delaware River mile 055 | Delaware River Basin Commission | Storet Station -- 091002 River Mile 54.94 Reedy Island | 04/22/97 | 11.0 | 10.0 | 6.9 | 9.8 | 5.05 | 0.21 |
| 11ANJ | Cohansey River | Cohansey Area River Preservation | at "River Bend" dock, Fairton, NJ | 04/20/97 | 10.6 | 11.5 | 7.0 | 9.4 | 0.04 | 0.01 |

| Water Snapshot '97 Stream Data | | | | | | | | | | |
|--------------------------------|----------------------------|--|--|----------|--------------------|----------------------|-----|-------------------------|----------------|------------------|
| DRB Sub-Basin | Stream Name | Organization | Site Description | Date | Air Temp (Celsius) | Water Temp (Celsius) | pH | Dissolved Oxygen (mg/l) | Nitrate (mg/l) | Phosphate (mg/l) |
| 12ADE | Delaware River mile 037 | Delaware River Basin Commission | Storet Station -- 091020 River Mile 36.6 Ship John Light | 04/22/97 | 11.0 | 11.0 | 7.2 | 6.4 | 3.68 | 0.27 |
| 12ADE | Delaware River mile 044 | Delaware River Basin Commission | Storet Station -- 091017 mid channel river mile 43.50 Smyrna River mouth | 04/22/97 | 11.0 | 10.0 | 6.9 | 9.0 | 4.39 | 0.24 |
| 12ADE | Delaware River mile 048 | Delaware River Basin Commission | Storet Station -- 091015 River Mile 48.06 Liston Point | 04/22/97 | 11.0 | 10.0 | 6.8 | 9.2 | 4.43 | 0.43 |
| 12ADE | Issacs Branch | Belisle, Connie | Foot bridge behind Simpson School, Camden, DE | 04/20/97 | 12.0 | 10.5 | 7.3 | 11.6 | | |
| 12ADE | Mill Pond stream | Delaware Nature Society - Abbotts Mill Nature Center | near Milford, DE | 05/30/97 | 29.0 | 20.0 | 6.7 | 7.5 | | |
| 12BDE | Delaware River mile 002 | Delaware DNREC | Site J10.3 Lewes, DE | 04/15/97 | 10.0 | 9.0 | | 12.2 | | |
| 12BDE | Delaware River mile 031 | Delaware River Basin Commission | Storet Station -- 091023 River Mile 30.82 Mahon River mouth | 04/22/97 | 12.0 | 10.0 | 7.1 | 9.4 | 3.10 | 0.55 |
| 12BDE | Lewes/Rehoboth Canal | Delaware DNREC | behind Rehoboth, DE | 04/15/97 | 12.0 | 11.2 | | 10.2 | | |
| 12BDE | Lewes/Rehoboth Canal | Delaware Inland Bays Citizen Monitoring Program | Lewes, DE, Sussex Co. | 04/28/97 | 14.0 | 15.0 | 7.2 | 7.2 | | |
| 12BDE | Lewes/Rehoboth Canal G3 | Delaware DNREC | Lewes, DE | 04/15/97 | 11.0 | 6.2 | | 11.2 | | |
| 12BDE | Lewes/Rehoboth Canal GH8.5 | Delaware DNREC | Breakwater, Lewes, DE | 04/15/97 | 9.0 | 10.0 | | 11.6 | | |
| OOB | Indian River GH5.5 | Delaware DNREC | Pastere Point Cove | 04/15/97 | 11.0 | 10.0 | | 11.6 | | |
| OOB | Indian River ST 7.3 | Delaware DNREC | Oak Orchard, DE | 04/15/97 | 10.0 | 9.2 | | 10.2 | | |
| OOB | Rehoboth Bay - EF 15 | Delaware DNREC | in Rehoboth Bay | 04/15/97 | 14.2 | 11.0 | | 10.2 | | |
| | | | | Average | 13.8 | 10.9 | 7.4 | 10.8 | 2.4 | 0.2 |
| | | | | Median | 13.3 | 11.0 | 7.4 | 11.0 | 0.9 | 0.1 |

Additional Tests Conducted for Snapshot '97

| Additional Tests Conducted for Snapshot '97 | | | | | | |
|---|----------|------------|-----------------------|-----------------------|--------------|--------------------|
| Participant | Date | Alkalinity | Carbon Dioxide (mg/l) | Coliform (per 100 ml) | Conductivity | Turbidity |
| Alloway Lake Association | 05/03/97 | 20 | | | | 10 J.T.U. @ 25 mL |
| Alloway Lake Association | 05/03/97 | 32 | | | | 10 J.T.U. @ 25 mL |
| Alloway Lake Association | 05/03/97 | 40 | | | | 10 J.T.U. @ 25 mL |
| Audubon Lake (NJ Community Water Watch) | 04/01/97 | 52 | | | | < 5 J.T.U. @ 25 mL |
| Audubon Lake (NJ Community Water Watch) | 04/01/97 | 60 | | | | < 5 J.T.U. @ 25 mL |
| Audubon Lake (NJ Community Water Watch) | 04/01/97 | 50 | | | | > 5 J.T.U. @ 25 mL |
| Audubon Lake (NJ Community Water Watch) | 05/01/97 | 52 | | | | < 5 J.T.U. @ 25 mL |
| Audubon Lake (NJ Community Water Watch) | 05/01/97 | 58 | | | | 20 J.T.U. @ 25 mL |
| Audubon Lake (NJ Community Water Watch) | 05/01/97 | 60 | | | | 30 J.T.U. @ 25 mL |
| Berks Co. Conservancy--Manatawny Sites- Bieber & Pine confluence | 04/08/97 | 132 | | | | 5 JTU @ 25 mL |
| Berks Co. Conservancy--Manatawny Sites-Bieber Creek | 04/07/97 | 44 | | | | 5 JTU @ 25 mL |
| Berks Co. Conservancy--Manatawny Sites-confluence | 05/05/97 | 87 | | | | 5 JTU @25 mL |
| Berks Co. Conservancy--Manatawny Sites-Furnace Run | 04/15/97 | 68 | | | | 0 JTU @ 25 mL |
| Berks Co. Conservancy--Manatawny Sites-Goose Run | 05/05/97 | 80 | | | | 10 JTU @ 25 mL |
| Berks Co. Conservancy--Manatawny Sites-Ironstone Creek | 04/25/97 | 84 | | | | 5 JTU @ 25 mL |
| Berks Co. Conservancy--Manatawny Sites-Manatawny | 04/22/97 | 80 | | | | 5 JTU @ 25 mL |
| Berks Co. Conservancy--Manatawny Sites-Manatawny | 04/22/97 | 85 | | | | 5 JTU @ 25 mL |
| Berks Co. Conservancy--Manatawny Sites-Manatawny | 04/25/97 | 88 | | | | 5 JTU @ 25 mL |
| Berks Co. Conservancy--Manatawny Sites-Manatawny | 05/05/97 | 85 | | | | 5 JTU @ 25 mL |
| Berks Co. Conservancy--Manatawny Sites-Manatawny below STP | 04/14/97 | 72 | | | | 5 JTU @ 25 mL |
| Berks Co. Conservancy--Manatawny Sites-Oysterville Creek | 04/25/97 | 60 | | | | 5 JTU @ 25 mL |
| Berks Co. Conservancy--Manatawny Sites-Pine Creek | 04/07/97 | 44 | | | | 5 JTU @ 25 mL |
| Berks Co. Conservancy--Manatawny Sites-Pine Creek West Branch | 04/07/97 | 44 | | | | 5 JTU @ 25 mL |
| Berks Co. Conservancy--Manatawny Sites-Trib. of Oysterville Creek | 04/08/97 | 40 | | | | 5 JTU. @ 25 mL |
| Berks Co. Conservancy--Manatawny Sites-Trout Run | 04/22/97 | 44 | | | | 5 JTU @ 25 mL |
| Berks Co. Conservancy--Sanatoga Creek/Hartenstine Creek-@confluence | 05/05/97 | 88 | | | | 5 JTU @ 25 mL |
| Berks Co. Conservancy--Sanatoga Creek/Hartenstine Creek-Hartenstine @ first bridge | 05/05/97 | 72 | | | | 5 JTU @ 25 mL |
| Berks Co. Conservancy--Sanatoga Creek/Hartenstine Creek-Sanatoga Rd before bridge | 05/05/97 | 80 | | | | 5 JTU @ 25 mL |
| Berks Co. Conservancy--Sprogels Run @ bridge upstream from park | 05/05/97 | | | | | 10 JTU @ 25 mL |
| Berks Co. Conservancy--Sprogels Run @ office building parking lot | 05/05/97 | 104 | | | | 15 JTU @ 25 mL |
| Berks Co. Conservancy--Sprogels Run @ Brookside Restaurant | 05/05/97 | 84 | | | | 5 JTU @ 25 mL |
| Berks Co. Conservancy --Manatawny Sites-Furnace & Little Manatawny Creek confluence | 04/15/97 | 80 | | | | 5 JTU @ 25 mL |
| Berks Co. Conservancy --Manatawny Sites-Furnace Creek | 04/07/97 | 44 | | | | 5 JTU @ 25 mL |
| Berks Co. Conservancy --Manatawny Sites-Little Manatawny | 04/07/97 | 64 | | | | 5 JTU @ 25 mL |
| Delaware Nature Society--Beaver Run | 04/27/97 | 48 | | | 221 s/cm | |
| Delaware Nature Society--Christina River, watershed #13, site #3 | 05/10/97 | 37 | | | 145.2 s/cm | |
| Delaware Nature Society--Christina River, watershed #13, site #4 | 05/10/97 | 45 | | | 242 s/cm | |
| Delaware Nature Society--Hercules stream? | 04/22/97 | 64 | | | 290 s/cm | |

| Additional Tests Conducted for Snapshot '97 | | | | | | |
|--|----------|------------|-----------------------|-----------------------|--------------|-----------|
| Participant | Date | Alkalinity | Carbon Dioxide (mg/l) | Coliform (per 100 ml) | Conductivity | Turbidity |
| Delaware Nature Society--Hooper stream? | 04/22/97 | 54 | | | 168.2 s/cm | |
| DRBC/NPS SRMP--Belvidere Bridge | 04/24/97 | | | | 106 s/cm | |
| DRBC/NPS SRMP--Bordentown Access | 04/23/97 | | | | 184 s/cm | |
| DRBC/NPS SRMP--Bulls Island Bridge | 04/23/97 | | | | 180 s/cm | |
| DRBC/NPS SRMP--Calhoun Street Bridge | 04/23/97 | | | | 176 s/cm | |
| DRBC/NPS SRMP--Frenchtown Bridge | 04/23/97 | | | | 182 s/cm | |
| DRBC/NPS SRMP--Lambertville Bridge | 04/23/97 | | | | 176 s/cm | |
| DRBC/NPS SRMP--Lehigh River @ Easton | 04/24/97 | | | | 259 s/cm | |
| DRBC/NPS SRMP--Milford | 04/24/97 | | | | 195 s/cm | |
| DRBC/NPS SRMP--Phillipsburg/Easton | 04/24/97 | | | | 142 s/cm | |
| DRBC/NPS SRMP--Portland/Columbia | 04/24/97 | | | | 91 s/cm | |
| DRBC/NPS SRMP--Riegelsville Bridge | 04/24/97 | | | | 332 s/cm | |
| DRBC/NPS SRMP--Stockton Bridge | 04/23/97 | | | | 172 s/cm | |
| DRBC/NPS SRMP--Washington Crossing, NJ | 04/23/97 | | | | 175 s/cm | |
| Lower Merion Conservancy--Mill Creek | 04/20/97 | 85 | 10 | | | |
| Lower Merion Conservancy -- Gulley Run | 04/26/97 | 84 | 5 | | | |
| Lower Merion Conservancy -- Mill Creek | 04/23/97 | 68 | 5 | | | |
| Lower Merion Conservancy --Indian Creek | 04/23/97 | 51 | 10 | | | |
| Lower Merion Conservancy --Indian Creek East | 04/26/97 | 85 | 10 | | | |
| Lower Merion Conservancy --Mill Creek | 04/17/97 | 68 | 15 | | | |
| Lower Merion Conservancy --Mill Creek | 04/20/97 | 68 | 10 | | | |
| Lower Merion Conservancy --Mill Creek | 04/25/97 | 51 | 5 | | | |
| Lower Merion Conservancy --Saw Mill Run | 04/23/97 | 68 | 5 | | | |
| Lower Merion Conservancy --Schuylkill River | 04/23/97 | 85 | 5 | | | |
| National Park Service--Brodhead Creek | 04/22/97 | | | 50 | 59 mhos/cm | 7 NTU |
| National Park Service--Smithfield Access on Delaware River | 04/22/97 | | | 100 | 39 mhos/cm | 8 NTU |
| National Park Service -- Delaware River @ Bushkill Access Area | 04/24/97 | | | 100 | 42 mhos/cm | 6 NTU |
| National Park Service -- Little Bushkill Creek @ DEWA Boundary | 04/24/97 | | | 100 | 21 mhos/cm | 12 NTU |
| National Park Service -- Van Campens Bk @ Old Mine Rd Bridge | 04/24/97 | | | 100 | 27 mhos/cm | 5 NTU |
| National Park Service --Big Flatbrook Creek @ DEWA Boundary | 04/24/97 | | | 50 | 36 mhos/cm | 5 NTU |
| National Park Service --Bushkill Creek @ DEWA Boundary | 04/24/97 | | | 100 | 21 mhos/cm | 8 NTU |
| National Park Service --Cherry Creek | 04/22/97 | | | 25 | 105 mhos/cm | 7 NTU |
| National Park Service --Delaware River @Smithfield Access Area | 04/24/97 | | | 100 | 46 mhos/cm | 7 NTU |
| National Park Service --Little Flatbrook Creek @ DEWA Boundary | 04/24/97 | | | 50 | 149 mhos/cm | 8 NTU |
| National Park Service --Rittatiny Point on Delaware River | 04/22/97 | | | 100 | 41 mhos/cm | 7 NTU |
| National Park Service --Shawnee Creek | 04/22/97 | | | 25 | 117 mhos/cm | 6 NTU |
| PA Department of Environmental Protection--Schuylkill River @Falls Bridge | 04/21/97 | 74 | | | 373 s/cm | |
| PA Department of Environmental Protection--Valley Creek @Wilson Rd. Bridge | 04/21/97 | 210 | | | | 1 NTU |

| Additional Tests Conducted for Snapshot '97 | | | | | | |
|--|----------|------------|----------------|--------------|--------------|---------------------|
| | | | Carbon | Coliform | | |
| Participant | Date | Alkalinity | Dioxide (mg/l) | (per 100 ml) | Conductivity | Turbidity |
| PA Department of Environmental Protection--Wissahickon Creek @Ridge Av. Bridge | 04/21/97 | 112 | | | 514 s/cm | |
| Pen Argyl Area High School Advanced Science class | 04/25/97 | 58 | | 200 | | 1 |
| Pennsylvania Power and Light Co.--Martins Creek SES 3 & 4 Intake | 04/25/97 | | | | | 1.4 NTU |
| Philadelphia Suburban Water Co. --Ridley Creek | 04/21/97 | | | 13 | | |
| Philadelphia Suburban Water Co.--Neshaminy Creek | 04/21/97 | | | 25 | | |
| Philadelphia Suburban Water Co. -- Perkiomen Creek | 04/21/97 | | | 30 | 370 s/cm | |
| Philadelphia Suburban Water Co. --Crum Creek | 04/21/97 | | | 71 | | |
| Philadelphia Suburban Water Co. --Deep Creek | 04/21/97 | | | 35 | 270 s/cm | |
| Philadelphia Suburban Water Co. --DEP stream #00690 | 04/21/97 | | | 55 | | |
| Philadelphia Suburban Water Co. --Mill Creek Tributary | 04/21/97 | | | 182 | | |
| Philadelphia Suburban Water Co. --Pickering | 04/21/97 | | | 83 | | |
| Philadelphia Suburban Water Co. --Ridley Creek | 04/21/97 | | | 18 | | |
| Philadelphia Suburban Water Co. --Ridley Creek | 04/21/97 | | | 32 | | |
| Philadelphia Suburban Water Co. --Swamp Creek | 04/21/97 | | | 15 | 420 s/cm | |
| Philadelphia Suburban Water Co. --Unami Creek | 04/21/97 | | | 43 | 230 s/cm | |
| Philadelphia Suburban Water Co. --Ridley Creek | 04/21/97 | | | 15 | | |
| Philadelphia Suburban Water Company --Little Neshaminy Creek | 04/21/97 | | | 127 | | |
| Philadelphia Water Department--Delaware River @State Rd. & Linden Av. | 04/23/97 | 35 | | 200 | 199 mhos/cm | 4.42 J.T.U. @ 25 mL |
| Philadelphia Water Department --Pennypack Creek @Ashburner St. & Frankford Av. | 04/23/97 | 66 | | 700 | 411 mhos/cm | 2.17 J.T.U. @ 25 mL |
| Philadelphia Water Department --Schuylkill River @Schoolhouse Ln. & Ridge Av. | 04/23/97 | 75 | | 1200 | 417 mhos/cm | 3.94 J.T.U. @ 25 mL |
| Schuylkill River Greenway Assoc. -- Allegheny Creek @Gibraltar | 04/23/97 | 28 | 35 | | | |
| Schuylkill River Greenway Assoc. -- Antietam Creek @Exeter Twp. Park | 04/25/97 | 88 | 0 | | | |
| Schuylkill River Greenway Assoc. -- Little Schuylkill River @ Port Clinton | 04/22/97 | 25 | 5 | | | |
| Schuylkill River Greenway Assoc. -- Manatawny Creek Lower @West Pottsgrove Twp. Park | 04/27/97 | 92 | 6 | | | |
| Schuylkill River Greenway Assoc. -- Wyomissing Creek | 04/27/97 | 142 | 6 | | | |
| Schuylkill River Greenway Assoc. --Angelica Creek @ Angelica Park | 04/26/97 | 64 | 3 | | | |
| Schuylkill River Greenway Assoc. --Hay Creek @Birdsboro | 04/21/97 | 25 | 5.5 | | | |
| Schuylkill River Greenway Assoc. --Maiden Creek Lower @ below Lake Ontelaunee | 04/27/97 | 83 | 4 | | | |
| Schuylkill River Greenway Assoc. --Maiden Creek Upper @Moselem | 04/27/97 | 52 | 4 | | | |
| Schuylkill River Greenway Assoc. --Manatawny Creek Upper @Earlville | 04/24/97 | 86 | 0 | | | |
| Schuylkill River Greenway Assoc. --Monocacy Creek @Monocacy Station | 04/24/97 | 154 | 0 | | | |
| Schuylkill River Greenway Assoc. --Pickering Creek @Charlestown | 04/26/97 | 53 | 8 | | | |
| Schuylkill River Greenway Assoc. --Pine Creek @Deer Lake | 04/22/97 | 24 | 4 | | | |
| Schuylkill River Greenway Assoc. --Schuylkill River @Mohrsville | 04/25/97 | 28 | 4 | | | |
| Schuylkill River Greenway Assoc. --Schuylkill River @Seyfert | 04/23/97 | 76 | 0 | | | |
| Schuylkill River Greenway Association--Mill Creek | 04/19/97 | 6 | 12 | | | |
| Schuylkill River Greenway Association--Schuylkill River @Port Carbon | 04/22/97 | 24 | 8.5 | | | |
| Schuylkill River Greenway Association--Schuylkill River @south of Pottsville | 04/19/97 | 68 | 5 | | | |

| Additional Tests Conducted for Snapshot '97 | | | | | | |
|--|-------------|-------------------|-----------------------|---------------------|---------------------|------------------|
| | | | Carbon | Coliform | | |
| Participant | Date | Alkalinity | Dioxide (mg/l) | (per 100 ml) | Conductivity | Turbidity |
| Schuylkill River Greenway Association--Schuylkill River West Branch @Cressona | 04/19/97 | 37 | 5 | | | |
| Scotch Plain Field High School--Tom's Creek Picnic Area | 05/01/97 | 8 | | 0.75 | | |
| Stephen Decatur Elementary School grade 4 Rms A-7 & A-10--Poquessing Creek | 05/05/97 | | 48 | | | |
| The Schuylkill Center for Environmental Education--Wind Dance Pond Stream | 04/26/97 | | 4 | | | |
| The Schuylkill Center for Environmental Education -- tributary of Schuylkill River | 04/26/97 | | 5 | | | |
| Wilson Area High School--Bushkill Stream @Penn Pump Park- Palmer | 04/22/97 | 0 | 4 | | | 1 (Scale 1 to 5) |

Appendix B

Participants in Water Snapshot '97

| Organization | Name | Address | City | ST | ZIP | Phone Number |
|---|---|--|---------------------|----|------------|---|
| | Connie Belisle | 110 Broad Street | Wilmington | DE | 19934 | 302.697.9024 (home) 302.678.9800 x 444 (work) |
| Academy of Natural Sciences Stroud Water Research Center | Kristen Travers Jim McGonigle | | | PA | | Kristen--610.268.2155 x 239 Jim --215.299.1557 |
| Alloway Lake Association | Ralph H. Rickenbach | 211 Wilson Avenue | West Colls. Heights | NJ | 08059-1954 | 609.742.8187 |
| Artesian Water Company, Inc. | Barry Price | PO Box 15004 | Wilmington | DE | 19850 | 302.453.6953 |
| Artesian Water Company, Inc. | Doug Rambo | PO Box 15004 | Wilmington | DE | 19850 | 302.453.6953 |
| Bartram High School Communications Students | Walter Shelley, Kareem Smith, & Micheal Bas | 54th Street and Lindbergh Boulevard | Philadelphia | PA | 19143 | 215.492.6452 |
| Bayard Elementary School | Mrs. Carlin's class | 200 South DuPont Street | Wilmington | DE | 19805 | |
| Bethlehem Township Environmental Commission | Suzanne Wilder | 424 Charlestown Road | Hampton | NJ | 08827 | 908.537.7631 |
| Bethlehem Township Environmental Commission | Joyce Koch | 55 Staats Road | Bloomsbury | NJ | 08804 | 908.479.9943 |
| Bethlehem Township Middle School | Jayne McKenna's 7th grade class | 405 Mine Road | Asbury | NJ | 08802-1107 | |
| Bordentown Regional High School | Senior Biology Class (Mr. Fisher--teacher) | 50 Dunn's Mill Road | Bordentown | NJ | 08505 | 609.298.0025 |
| BRHS | Mr. Mike Swish | | Fieldsboro | NJ | 08505 | 609.298.2515 |
| Cardinal O'Hara High School | Kay Lansing | 1701 South Sproul Road | Springfield | PA | 19064-1199 | 610.544.3800 |

| Organization | Name | Address | City | ST | ZIP | Phone Number |
|--|--------------------------|---|-------------|----|------------|--------------|
| Chester/Ridley/Crum Volunteer Monitoring Program | Larry Barrett | 47 Skyline Drive | Glen Mills | PA | 19342 | 610.459.3231 |
| Cohansey Area River Preservation | Cindy & Ernie Zirkle | | Fairton | NJ | 08320 | 609.455.6611 |
| Cook's Creek Watershed Association | Lois Oleksa | PO Box 34 | Durham | PA | 18039 | |
| Crum/Ridley/Chester Volunteer Monitoring Program | Cal Alston & Bob Bruce | 68 South Britton Road | Springfield | PA | 19064 | 610.543.7014 |
| Crum/Ridley/Chester Volunteer Monitoring Program | Peter, Ben & Ethan Weber | | Swarthmore | PA | 19081 | 610.872.8454 |
| Delaware Inland Bays Citizens Monitoring Program | June Connor | University of Delaware Sea Grant College Program | Lewes | DE | 19958-1298 | 302.645.4252 |
| Delaware Nature Society-- Stream Watch-Technical Monitoring | Carol & George Fox | 1002 Wilson Road | Wilmington | DE | 19803-3423 | 302.478.6024 |
| Delaware Riverkeeper Network | Timshel Purdum | 1 Wapalanne Road | Branchville | NJ | 07823 | 201.948.2374 |
| Delaware Riverkeeper Network | Fred Gusz | 1217 Pine Grove Road | Morrisville | PA | 19067 | 215.295.5903 |
| Delaware Riverkeeper Network/ NJ School of Conservation | Andrea Young | | | NJ | | |

| Organization | Name | Address | City | ST | ZIP | Phone Number |
|------------------------------|---|------------------------------|-----------------|----|------------|--------------|
| Delaware Riverkeeper Network | Anna Kettell | | Perkiomenville | PA | 18074 | 215.723.2870 |
| Delaware Riverkeeper Network | Kay Smith | 15 Stokes | Moorestown | NJ | 08057 | 609.235.2986 |
| Delaware Riverkeeper Network | Roxane Shinn | 10 White Oak Court | Cherry Hill | NJ | 08034-3046 | 609.854.5108 |
| Delaware Riverkeeper Network | Arthur Firman | 338 Newbold Avenue | Moorestown | NJ | 08057 | 215.369.1188 |
| Delaware Nature Society | Liana Bauerle, John & Erin McElroy, Arianna & Jackie Langford | PO Box 700 | Hockessin | DE | 19707 | 302.695.4142 |
| Delaware Nature Society | Gloria & William Cooke | 1100 Flint Hill Road Arundel | Wilmington | DE | 19808 | 302.999.1074 |
| Delaware Nature Society | Ginger Stein | PO Box 700 | Hockessin | DE | 19707 | 302.239.2334 |
| Delaware Nature Society | Gary Grulich | PO Box 700 | Hockessin | DE | 19707 | 302.239.2334 |
| Delaware Nature Society | Crawford & Annamarie Mackeand | | Yorklyn | DE | 19707 | |
| Delaware Riverkeeper | Bill Hartnett | 1026 Main Street | Bethlehem | PA | 18018-6637 | 215.369.1188 |
| Delaware Nature Society | Deborah & Donald Hemmer | | | DE | 19808 | 302.368.9770 |
| Delaware Riverkeeper Network | Eugene Marks | 1012 Sofa Road | East Greenville | PA | 18041-2333 | 610.845.7142 |

| Organization | Name | Address | City | ST | ZIP | Phone Number |
|---|------------------------------|-------------------------------|--------------|----|------------|--------------|
| Delaware Nature Society | Kalpana Kumar & Tammy Tribit | PO Box 7000 | Hockessin | DE | 19707 | |
| Department of Conservation and Natural Resources--Ridley Creek State Park | Joe Minnichbach | Sycamore Mills Road | Media | PA | 19063 | 610.892.3900 |
| Delaware River Basin Comm./National Park Service Scenic Rivers Monitoring Program | DRBC Secretaries | PO Box 7360 | West Trenton | NJ | 08628 | 609.883.9500 |
| Fantastics 4-H Club—Newcastle Co. DE | Ed O'Donnell | 103 Saint Regis Drive | Newark | DE | 19711 | 302.737.9091 |
| Frankford High School | Mrs. Phyllis Green | Oxford & Wakeling | Philadelphia | PA | 19124 | 215.537.2519 |
| Frankford High School | Mrs. Phyllis Green | Frankford section | Philadelphia | PA | | |
| Friends of Tacony Creek Park | Fred Maurer | 645 Brill Street | Philadelphia | PA | 19120 | 215.324.8942 |
| Frost Valley Environmental Education Center | David Scherf | 2000 Frost Valley Road | Claryville | NY | 12725-9600 | 914.985.2291 |
| Jacobsburg Environmental Education Center | E. V. House | 130 East High Street | Nazareth | PA | 18064 | 610.759.1562 |
| Life Member Telephone Pioneers - Lehigh Valley Chapter | Carroll R. Williams | 1499 White Oak Road | Allentown | PA | 18104-2151 | 610.395.9225 |
| Lower Merion Conservancy | W. J. Frezel | | Gladwyne | PA | | 610.520.9895 |
| Mafco Worldwide Corporation | John Kropiewnicki | 3rd Street & Jefferson Avenue | Camden | NJ | 08104 | 609.964.8840 |

| Organization | Name | Address | City | ST | ZIP | Phone Number |
|--|---|--------------------------|---------------------|----|------------|------------------------------|
| Margaretville Central School | Mike Porter | | Margaretville | NY | 12455 | 914.586.2647 |
| Musconetcong Watershed Association | Roger & Sally Kissling | 17 Staats Road | Bloomsbury | NJ | 08804-3301 | 908.479.6840 |
| Musconetcong Watershed Association | Micheal Franz | 15 Musconetcong Road | Phillipsburg | NJ | 08865 | 908.850.6335 |
| Musconetcong Watershed Association | Jim Abbondante | 301 Route 627 | Phillipsburg | NJ | 08865 | 908.995.9644 |
| MWA | Roberta Morganstern | 510 River Road | Asbury | NJ | 08802 | 908.537.4294 |
| New York State Department of Environmental Conservation-- Bureau of Watershed Assessment & Research | Raymond L. Gabriel, Jr. | 50 Wolf Road Room 392 | Albany | NY | 12233-3502 | 518.457.4334 |
| New Jersey PIRG | Dennis Sweeney & Beth Thomas | 119 Somerset Street | New Brunswick | NJ | 08901 | |
| New Jersey Community Water Watch | Ralph H. Rickenback | 211 Wilson Avenue | West Colls. Heights | NJ | 08059-1954 | 609.742.8187 |
| New York Audobon Society with Eldred Central School | Lori McKean & 10th grade biology students | Route 55, PO Box 111 | Eldred | NY | 12732 | 914.557.8025 |
| New York Audobon Society with Boy Scout Troop #102 | Lori McKean & Boy Scout Troop #102 | Route 55, PO Box 111 | Eldred | NY | 12732 | 914.557.8025 |
| North Penn Water Authority | Bruce Sandstrom and Sean Greene | 144 B Park Avenue | Chalfont | PA | 18914 | 215.822.1759 |
| Owen J. Robert Middle School | Dave Jarvie | 881 Ridge Road | Pottstown | PA | 19465-9314 | 610.469.6261 or 610.469.0983 |

| Organization | Name | Address | City | ST | ZIP | Phone Number |
|---------------------------------------|--|----------------------------|---------------|----|------------|---|
| Pen Argyl High School | Advanced Science Class --Mr. Charles J. Kopcho | 501 West Laurel Avenue | Pen Argyl | PA | 18072 | 610.863.1293 |
| Pennsylvania Power and Light Company | James A. Klass | PO Box 257 | Martins Creek | PA | 18063 | 215.498.6200 |
| Philadelphia Suburban Water Company | Craig Marleton | 732 West Lancaster Avenue | Bryn Mawr | PA | 19010-3489 | 610.525.1400 x 2103 |
| Philadelphia Suburban Water Company | Bob Kahley | 732 West Lancaster Avenue | Bryn Mawr | PA | 19010-3489 | 610.645.1132 |
| Philadelphia Suburban Water Company | Robert C. Feuer | 732 West Lancaster Avenue | Bryn Mawr | PA | 19010-3489 | 610.525.1400 x 2035 |
| Philadelphia Suburban Water Company | Preston Luitweiler | 762 West Lancaster Avenue | Bryn Mawr | PA | 19010-3489 | 610.645.1132 |
| Pocono Environmental Education Center | Daniel Siess & Scotch Plain Field High School | | | PA | | 717.828.2319 717.828.9695 (fax) |
| Pohoqualine Fish | Jim Hartzler | R.D. 2, Box 2562 | Saylorsburg | PA | 18353 | 717.992.6802 |
| Raccoon Creek Watershed Association | Jo Ann A. Laughlin | Kings Highway PO Box 37 | Swedesboro | NJ | 08085-0037 | 609.467.4418 |
| Roosevelt Alternative School | John R. Schirk | PO Box 124 | Spring Mount | PA | 19478 | John--610.287.6365 School-- 610.275.9720 |
| Salem County Watershed Task Force | Francis Ponti | 439 Watsons Mill Road | | | | |
| Sayre School | | | Philadelphia | PA | 19143 | |

| Organization | Name | Address | City | ST | ZIP | Phone Number |
|---|--|--------------------------|--------------|----|------------|---|
| Schuylkill River Greenway Association | Joseph G. Shidisky | 1400 Hill Road | Reading | PA | 19602-1499 | 610.373.4178 (work) or 610.375.2374 (home) |
| Shafer Earth-Doers -- Nazareth School District | Susan Krell, Leader | 49 South Liberty Street | Nazareth | PA | 18064 | 610.759.5228 |
| Stephen Decatur School | Grade 4 Rms. A-7 & A-10 | Academy and Torrey Roads | Philadelphia | PA | 19154 | 215.281.2606 |
| Swarthmore Rutledge School & US EPA | Mrs. Ann Robinson & Mrs. Robin Saunders 1st grade class | College Avenue | Swarthmore | PA | 19081 | 610.544.5700 |
| SWEC—Southwest Environmental Coalition | Andrea Hall | 1251 South 50th Street | Philadelphia | PA | 19143 | 215.471. |
| The Independence School | Renece Gracon | 1300 Paper Mill Road | Newark | DE | 19711 | 302.239.0330 |
| The Independence School | Marion Laughlin | 1300 Paper Mill Road | Newark | DE | 19711 | 302.239.0330 |
| The Schuylkill Center for Environmental Education | Katie Sheppard | 8480 Hagys Mill Road | Philadelphia | PA | 19128-1998 | 215.482.7300 |
| Turner Middle School | | | Philadelphia | PA | 19143 | |
| US EPA/ Erdenheim Elementary School | Janet Viniski | 841 Chestnut Building | Philadelphia | PA | 19107 | 215.566.2999 |
| US Environmental Protection Agency | Peter Weber & Mary Moses | 841 Chestnut Building | Philadelphia | PA | 19107 | 215.566.5749 |
| Wilson High School | Honors Biology Class -- R. Durnin | 424 Warrior Lane | Easton | PA | 18042 | 610.258.2732 |

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|---|---|---|-------------|----|------------|--------------|
| Woodruff English Environmental Education Center | David Scherf with an Elderhostel Class | 2000 Frost Valley Road | Claryville | NY | 12725-9600 | 914.985.2291 |
| Nazareth Area High School | Environmental Science Class, Kathie Romano | East Center Street | Nazareth | PA | 18064 | 610.759.1730 |
| Cooks Creek Watershed Association | Anke M. Ellis | 1966 Pleasant View Road | Coopersburg | PA | 18036-9054 | 610.346.7263 |
| PA Department of State Parks | Erin Raser-Shellhamer, Environmental Education Specialist | Tuscarora State Park Complex RR #1 Box 1051 | Barnesville | PA | 18214-9715 | 717.467.2404 |
| Saucon Valley High School | Lance Leonhardt's class | | Hellertown | PA | | 610.838.7001 |
| Lower Merion Conservancy | Janet Bortnick | 9 South Bryn Mawr Avenue | Bryn Mawr | PA | 19010 | 610.520.9895 |
| Riverbend Environmental Education Center | Kevin Peter, Kathleen Geist, Lisa Aitken, Graham Vigiotta, Jeanne Braha | | Gladwyne | PA | 19035 | 610.527.5234 |
| Bala Cynwyd Middle School | Mary Beth Hegeman & Debbye Wolfe's Team 6-5 students | 510 Bryn Mawr Avenue | Bala Cynwyd | PA | 19004 | 610.520.9895 |
| Lower Merion Conservancy | Barbara Brown | 9 South Bryn Mawr Avenue | Bryn Mawr | PA | 19010 | 610.520.9895 |
| Lower Merion Conservancy | Enid & David Caplan | 9 South Bryn Mawr Avenue | Bryn Mawr | PA | 19010 | 610.520.9895 |
| Lowser Merion Conservancy | Heidi Fenstermacher | 9 South Bryn Mawr Avenue | Bryn Mawr | PA | 19010 | 610.520.9895 |
| Lower Merion Conservancy | David Cooperman | 9 South Bryn Mawr Avenue | Bryn Mawr | PA | 19010 | 610.520.9895 |

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| Lower Merion Conservancy | Norah Goldfine | 9 South Bryn Mawr Avenue | Bryn Mawr | PA | 19010 | 610.520.9895 |
| Lower Merion Conservancy | Leah & Alistar Erickson | 9 South Bryn Mawr Avenue | Bryn Mawr | PA | 19010 | 610.520.9895 |
| Pennsylvania Department of Environmental Protection | Mike Boyer | Lee Park, Suite 6010 555 North Lane | Conshohocken | PA | 19428 | 610.832.6131 |
| Pennsylvania Department of Environmental Protection | Jay Maneval | Lee Park, Suite 6010 555 North Lane | Conshohocken | PA | 19428 | 610.832.6130 |
| Delaware Riverkeeper Network, Uplands Office | Moira Garthwaite | 116 Bridge Street | Narrowsburg | NY | 12764 | 914.252.7546 |
| Delaware Riverkeeper Network, Uplands Office | John Tryglio | 116 Bridge Street | Narrowsburg | NY | 12764 | 914.557.6505 |
| Delaware Riverkeeper Network, Uplands Office | Ken Armstrong | 371 Brickman Road | Hurleyville | NY | 12747 | 914.252.7546 |
| Delaware Riverkeeper Network, Uplands Office | Steve Fleckenstein | 116 Bridge Street | Narrowsburg | NY | 12764 | 914.252.7546 |
| Sullivan County Boces | Gary Cormier, Instructor | 85 Ferndale-Loomis Road | Liberty | NY | 12754 | 914.292.7900 |
| Delaware Nature Society | Walt & Marion Partenheimer | 16 Clermont Road | Wilmington | DE | 19803-3945 | 302.239.2334 |
| Abbotts Mill Nature Center | Susan Haynes | PO Box 700 | Hockessin | DE | 19707 | 302.422.0847 |
| Upper Delaware Scenic & Recreational River | Don Hamilton & Bill Weber | RR 2 Box 2428 | Beach Lake | PA | 18405 | 717.729.7842 |

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|---|---|---|--------------|----|------------|--------------|
| Philadelphia Water Department Bureau of Laboratory Services | Patrick C. Frazer | 1500 East Hunting Park Avenue | Philadelphia | PA | 19124-4941 | 215.685.1456 |
| National Park Service Delaware Water Gap | Al Ambler | Delaware Water Gap National Recreation Area | Bushkill | PA | 18324 | 717.296.6952 |
| Berks County Conservancy | Tami Jo Lutz | 960 Old Mill Road | Wyomissing | PA | 19610 | 610.372.4992 |
| Pennsylvania Department of Environmental Protection | Stephen Piller | Lee Park, Suite 6010 555 North Lane | Conshohocken | PA | 19428 | 610.832.6131 |
| Bethlehem Township Girl Scout Troop 313 | Robin Sielski, Troop Leader | 310 Tunnel Road | Asbury | NJ | 08802 | 908.479.6548 |
| Walpack Valley Environmental Education Center, Eatontown Board of Education | Charles Bickart & Wayne Grove | Box 134 | Walpack | NJ | 07881 | 201.948.5749 |
| Bernardine Center | Sister Rose MacDermott, Jim Walker, V. Granger, Olga Kleche, & Terry Moller | 2625 West 9th Street | Chester | PA | 19103 | 610.497.3641 |
| Pennsylvania Department of Environmental Protection | David Burke | Lee Park, Suite 6010 555 North Lane | Conshohocken | PA | 19428 | 610.832.6106 |
| Friends of Poquessing Watershed | Donna Remick | | Philadelphia | PA | 19154 | 215.638.3108 |
| Pennsylvania Department of Environmental Protection | JoAnn Dolchak | Lee Park, Suite 6010 555 North Lane | Conshohocken | PA | 19428 | 610.832.6108 |

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|---|--------------------------------|-------------------------|--------------|----|------------|-----------------------|
| Pennsylvania Department of Environmental Protection | Mark Miller | | | PA | | 610.861.2070 |
| Pennsylvania Department of Environmental Protection | Leonard Nawrocki | 2 Public Square | Wilkes Barre | PA | 18711 | 717.826.2553 |
| Pennsylvania Department of Environmental Resources | Eric Garner | | | PA | | 610.861.2070 |
| Pennsylvania Department of Environmental Protection | Tom Sherk | 2 Public Square | Wilkes Barre | PA | 18711 | 717.826.2320 |
| Pennsylvania Department of Environmental Protection | Bob Bisignani | 2 Public Square | Wilkes Barre | PA | 18711 | 717.826.2553 |
| | Sheila Lynch | 953 Alexandria Drive | Newark | DE | 19711-7711 | 302.456.0346 |
| Friends of FDR Park | Maria Mirarchi | 2717 South Aider Street | Philadelphia | PA | 19148 | |
| Radnor Middle School | Ed Silcox | 131 South Wayne Avenue | Wayne | PA | 19087 | 610.688.8100 ext. 271 |
| Tobyhanna Creek/Tunkhannock Creek Watershed Association | Don Duthaler | PO Box 796 | Pocono Lake | PA | 18347 | 717.643.2001 |
| Tobyhanna Creek/Tunkhannock Creek Watershed Association | Mark Sincavage & Don Vangrelli | PO Box 796 | Pocono Lake | PA | 18347 | 717.643.2001 |
| Tobyhanna Creek/Tunkhannock Creek Watershed Association | John & Fran Whipple | PO Box 796 | Pocono Lake | PA | 18347 | 717.643.2001 |

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|---|---------------------------|------------|-------------|----|-------|--------------|
| Tobyhanna Creek/Tunkhannock Creek Watershed Association | Carol Ellis | PO Box 796 | Pocono Lake | PA | 18347 | 717.643.2001 |
| Tobyhanna Creek/Tunkhannock Creek Watershed Association | Georgia & Keen Cornell | PO Box 796 | Pocono Lake | PA | 18347 | 717.643.2001 |
| Tobyhanna Creek/Tunkhannock Creek Watershed Association | Robert & Dolores Kohnicen | PO Box 796 | Pocono Lake | PA | 18347 | 717.643.2001 |
| Tobyhanna Creek/Tunkhannock Creek Watershed Association | J. Eiman | PO Box 796 | Pocono Lake | PA | 18347 | 717.643.2001 |
| Tobyhanna Creek/Tunkhannock Creek Watershed Association | PW Snyder | PO Box 796 | Pocono Lake | PA | 18347 | 717.643.2001 |
| Tobyhanna Creek/Tunkhannock Creek Watershed Association | Bill Bixby & Tess O'Brien | PO Box 796 | Pocono Lake | PA | 18347 | 717.643.2001 |