NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
WATER MONITORING AND STANDARDS ELEMENT
BUREAU OF FRESHWATER AND BIOLOGICAL MONITORING
P.O. Box 420; Mail Code 35-01
TRENTON, NEW JERSEY

# Quality Assurance/Quality Control Project Plan
## 2013 Summer Ambient Surface Water Bacterial Monitoring Program

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**1.0 Project Name:** 2013 New Jersey Summer Ambient Surface Water Bacterial Monitoring Program

**2.0 Requesting Agency:** United States Environmental Protection Agency (USEPA), and New Jersey Department of Environmental Protection (NJDEP)

**3.0 Date of Project:** May – September 2013

**4.0 Project Fiscal Information:** Job Number 7W106CXX, Activity Code V38A

**5.0 Project Officer:** Coleen C. Makuszewski, Project Officer, BFBM , Dean Bryson, Supervisor, BFBM

**6.0 Special Training Needs/Certification**

All external organizations collecting samples for this project will be trained in the proper techniques. The training will entail safety measures, collection of a representative sample and temperature reading, sample labeling, completing paperwork, and sample storage. The Project Officer or designee will be responsible for any necessary training.

BFBM will conduct at least one field audit on each external organization providing assistance in sample collection for this project. This field audit will focus on: (1) are the correct locations being sampled, (2) are the correct sample collection procedure being used and (3) is the field paperwork being completed correctly with all necessary information being entered.

**7.0 Project Background**

Bacterial samples were collected from ambient freshwater rivers and streams beginning in 1993, at NJDEP-United States Geological Survey (USGS) Cooperative network ambient water quality monitoring stations. At that time, both fecal coliform and *Enterococcus* were used as indicators, and samples were collected for both. From 1993-97, the monitoring frequency was 5 times over 12 months. In 1998, the frequency changed to 5 times over 3 months. In 1999, the frequency changed again to 5 times in 30 days. Beginning in 2000, *Escherichia coli* (*E. coli*) analysis was added, and monitoring continued at the same frequency through 2005. *E. coli* was added to create a database for the selection of either *E. coli* or *Enterococcus* as the indicator of sanitary water quality prior to the USEPA withdrawing support for fecal coliform as an indicator. In 2006, the recreational use standard for all fresh waters changed from fecal coliform to *E. coli*, but sampling continued that year for Enterococcus and fecal coliform, in addition to *E. coli*. In 2007, sampling of *Enterococcus* was discontinued. For 2007 and 2008, the sampling of sites in unmonitored HUC 14's was added to the Cooperative network sites to support the informational needs of the Integrated Water Quality Monitoring and Assessment Report, in conjunction with the Bureau of Water Quality Standards and Assessment (BWQSA). In 2009, fecal coliform analysis was dropped, with just *E. coli* analysis continuing. For 2010 through 2012, sampling continued at Cooperative network and unmonitored HUC 14 sites, with most being unmonitored HUC 14 sites. The 2012 sampling was focused regionally, with all sites being in either the Upper Delaware Water Region (Northwest) or the Barnegat Bay watershed (WMA 13). This regional approach is being continued in 2013 with the Northeast Water Region being the main area of sampling.

**8.0 Project Description**

This project collects ambient bacterial water quality data for freshwater rivers and streams of New Jersey. The current primary contact recreation use standard for freshwater in New Jersey is based on *Escherichia coli* (*E. coli*) levels. *E. coli* counts shall not exceed a geometric mean of 126 per 100 ml, or a single sample maximum of 235 per 100 ml. To assess this criterion, at least 5 samples collected over a 30-day period, between the months of May and September, are needed to calculate the geometric mean.

**9.0 Project Objectives**

The objective of the ambient bacterial monitoring program is to (1) assess whether primary contact recreation standards are being met, as defined in New Jersey's Surface Water Quality Standards, N.J.A.C. 7:9B, last amended April, 2011, (2) evaluate status of bacterial concentrations, as specified in the NJDEP/USEPA Performance Partnership Agreement (PPA), (3) expand our ambient *E. coli* database, (4) supplement NJDEP's database on ambient stream water temperatures, (5) incorporate NJDEP Strategic Plan Goals 1 & 2 (Attachment A) and BFBM's transformation initiative to enhance the efficiencies of monitoring, in part, by focusing multiple sampling efforts in selected water regions.

***Goal 1 – Comprehensive Regional Environmental Management,*** will be incorporated through concentrating regional monitoring in Watershed Management Areas 3, 4, 5, and 6, at: previously monitored fecal coliform Total Maximum Daily Load (TMDL) sites, and unmonitored HUC 14 sites. ***Goal 2 –Utilize Barnegat Bay Restoration Project as a model to establish watershed based protection and enhancement of all New Jersey's surface water bodies*** will be incorporated through the monitoring focused on the Northeast Water Region.

This data will be used (1) to report water quality conditions in the biennial "Integrated Water Quality Monitoring and Assessment Report", pursuant to sections 305(b) and 303(d) of the federal Clean Water Act, specifically to assess the primary contact recreation use of these waters, (2) to evaluate the effectiveness of the bacterial TMDL process and other water management efforts such as the implementation of the storm water rules, (3) to focus watershed management initiatives in areas with violations of surface water quality criteria.

## 10.0 Monitoring Network Design

The site list was developed in consultation with NJDEP's Bureau of Water Quality Standards and Assessment (BWQSA) and includes sites in unmonitored HUC 14's, sites previously monitored for the development of fecal coliform TMDLs, and sites requiring additional data for the purpose of delisting. NJDEP's Geographic Information System (GIS) was used to locate stations near the discharge point of targeted, unmonitored HUC 14's. Exact locations will be located using GPS technology. The complete site list can be found in Attachment B.

To conform to NJSWQS, each site will be sampled five (5) times over thirty (30) days. Monitoring will occur during the primary contact season (May-September). NJSWQS has adopted *E. coli* as the public health sanitary indicator in all freshwater in New Jersey. In addition to the *E. coli* indicator, fecal coliform will be included at previously monitored TMDL development sites. Because this is an ambient monitoring program, no attempt will be made to target or avoid rainfall impacted conditions. Ambient water temperature will be determined for each sample collected.

In order to receive optimal ranges of results from all streams, the suggested dilutions for the Summer Ambient bacteriology are as follows: *E. coli* SM 9223 B (Colilert) method (1:100 dilution will be used to reach 2,419-241,000 MPN/100 ml). Fecal coliform SM 9221E method: dilutions 10/1/-1 will be used. These dilutions will allow for the quantifications of *E.coli* and fecal coliform at concentrations typically found in New Jersey streams.

## 11.0 Sampling Procedures

11.1 Sample collection will follow guidance provided in NJDEP's Field Sampling Procedures Manual, 2005. Samples will be collected directly into plastic single-use bacteriological containers. The samples will be collected as a center-of-flow grab sample by carefully wading into the stream to prevent disturbing the stream bottom upstream of the collection point. Containers will not be rinsed. Wearing protective gloves, the closure of the sample container is removed. Facing upstream, the sample container will be inverted to avoid any surface scum and submerged to a depth of 15 to 30 cm (6 to 12 inches) below the surface, or mid-depth if stream is shallow. The opening of the sample container will then be turned into the current, allowing water to enter and air to exit. If the water body is slowly moving or stagnant, an artificial current can be created by moving the container horizontally in the upstream direction. An air space will be left in the container to enable the sample to be properly mixed before analysis. Containers will be filled to the shoulder, slightly above the 100 ml line which will provide the minimum volume (101 ml) for the laboratory to analyze sample at the required dilutions. The sample container will then be tightly closed, labeled, and placed in a cooler of ice for transport to the laboratory. If a stream cannot be safely waded due to steep or slippery stream banks or fast moving or high water, collecting the sample from a bridge is allowable with use weighted sampler attached to a rope. Samples must reach the NJDOH laboratory within eight (8) hours of collection.

### 11.2 Assistance of External Organizations

To facilitate the collection of the samples and to ensure that the samples are received at the laboratory within the 8 hour holding time, NJDEP-BFBM will make use of external partners in collecting the samples. The following organizations will be providing assistance to this project during the 2013 sampling season by having their respective personnel collect the samples: Bergen County Health Department, Passaic County Health Department, Morris County Health Department, Somerset County Health Department, and the Great Swamp Watershed Association. Forty-six (46) sampling stations within Passaic, Bergen, Morris, and Somerset counties will be collected by county health departments with funding support from the County Environmental Health Act Program (CEHA). Nine (9) sites within the Great Swamp area in Morris County will be collected by volunteers of the Great Swamp Watershed Association as a partnership with NJDEP. Coleen Makuszewski of NJDEP-BFBM will be responsible for

coordination of sample collection and courier service for all participating organizations. Copies of this signed QAPP will be forwarded to each county and the Great Swamp Watershed Association. The samplers will be provided a digital metal thermometer to obtain a water temperature at each site concurrent with each sample. BFBM personnel will provide instruction to samplers on the correct sampling procedure as well as the instruction on completing paperwork and labeling sample. Samplers will only use a NJDEP supplied thermometer to take temperature measurements. If replacement is necessary inform: Coleen Makuszewki at 609-292-0427 or Coleen.Makusze@dep.state.nj.us who will replace the lost or broken thermometer as soon as possible. The sample collection time and the time of temperature reading are the same unless otherwise noted.

**11.3 NJDEP**

Any samples which cannot be collected by an external organization will be collected by NJDEP-BFBM personnel.

## 12.0 Data Quality/Quality Control Requirements

**12.1 Field Measurements**

BFBM (#11896) is certified by the Office of Quality Assurance (OQA) for measuring water temperature (N.J.A.C 7:18 "Regulations Governing the Certification of Laboratories and Environmental Measurements"). NJDEP will obtain and provide each sampler with a digital thermometer which has an accuracy of at least $\pm$ $1^0$ C. These thermometers will be calibrated against a NIST-certified thermometer prior to distribution and again at the end of each five week sampling period to ensure accuracy. Records of calibration will be maintained by BFBM.

**12.2 Additional Testing performed by a NJ Certified Laboratory**

For samples delivered to a NJ certified laboratory, testing will be done by a method for which the laboratory has certification. Quality control procedures (including required calibrations and quality control procedures required by regulation or by the method) shall be defined in the laboratory's Quality Manual (QM) or Standard Operating Procedures (SOPs). The QM and SOPs must be approved by the OQA.

## 13.0 Data Analysis

Final data tabulation will occur at the end of the sampling season and a geo-means calculated. In addition, a hard copy of the laboratory results will be sent after sampling to the corresponding counties for review. The data will also be made available to NJDEP-BWQSA in developing the biennial Integrated Water Quality Monitoring and Assessment Report.

## 14.0 Sampling Schedule

Five (5) samples collected over a 30-day period, between the months of May and September, are needed to calculate the geometric mean.

**15.0 Resource Needs:** BFBM will need one hourly staff to complete this project.

## 16.0 Quality Assurance

**16.1 Laboratory**

NJDOH's Public Health and Environmental Laboratory will use method SM 9223B (Colilert) for *E.coli* and method SM 9221E for the analysis of fecal coliform. The NJDOH laboratory (#11036) is certified by OQA for these methods for the analysis of ambient freshwater samples. The NJDOH laboratory is located at 3 Schwarzkopf Drive, Ewing, NJ.

Quality Control Procedures include the required thermometer calibrations, as state above, and quality control procedures required by regulation or by the method, which shall be defined in the NJDOH laboratory's Quality Manual for Sanitary Bacteriology (QM), July, 2012 or Standard Operating Procedures (SOPs). The QM and SOPs must be approved by the OQA.

**16.2 Sampling Containers, Preservation and Holding Times**

Sterile 120 ml single-use plastic sampling containers will be provided by NJDOH laboratory. Immediately after collection, samples will be placed in a cooler of ice and kept below 4°C. Samples will be delivered to the laboratory within the eight hour holding time. For sites where analysis for both *E. coli* and fecal coliform are being performed, two 120 ml samples will be taken.

### 16.3 Sample Custody Procedures

All persons collecting, handling, or transporting the samples to the NJDOH laboratory will complete the appropriate section at the bottom of the Bact-44 form, prior to relinquishing the samples, with name, signature, and date/time of sample transfer.

## 17.0 Data Validation

The NJDEP Project Officer and Supervisor are responsible for all initial data validation. If apparent anomalous data is suspected, the Project Officer and/or the Supervisor will review the sampling procedures with the field sampler to make sure the proper collection and preservation procedures were followed. If the data is still suspect, the NJDOH laboratory will be contacted. An internal review of the laboratory analytical procedures and/or calculations used in the analysis of the suspect sample, with special emphasis on transcription of data to assure that no transposition of figures occurred, will be conducted. If no problems are found in the analytical laboratory procedures, the data may then be compared to any historical data that might have been collected at the same site prior to the most recent sampling event to see if similar anomalies might have been found previously. The suspect data may also be compared to literature values or standard analytical treatises to verify whether or not the results are within the limits of accuracy of the test method.

If no obvious problems are found after these reviews, the complete data set will be reported with the suspect data identified as such. The BFBM will then conduct its own review of the data, as it relates to the objectives(s) and data accuracy required in this project.

## 18.0 Data Storage

Data will be stored locally in electronic format (MS Access). Water quality data will be entered into New Jersey's Water Quality Data Exchange (WQDE) and USEPA STORET Data Warehouse by June of the following year it is received from the analytical laboratory. All raw data records shall be maintained for a period of no less than five years.

The following table contains the complete data storage and availability:

| Public Web Site | Data Source(s) | Data Type | Web Address |
|---|---|---|---|
| 1. National Water Monitoring Council Water Quality Portal | • USEPA STORET Data Warehouse | • Water Temperature<br>• Microbiological | http://www.waterqualitydata.us/ |
| 2. Exchange Network Browser | • National Water Monitoring Council Water Quality Portal<br>• NJDEP Water Quality Data Exchange | • Water Temperature<br>• Microbiological<br>• Water Temperature<br>• Microbiological | http://www.enbrowser.net/enbrowser/ |
| 3. USEPA STORET Warehouse | • USEPA STORET database | • Water Temperature<br>• Microbiological | http://www.epa.gov/storet/dbtop.html |
| 4. USEPA MyEnvironment | • USEPA STORET Data Warehouse | • Water Temperature<br>• Microbiological | http://www.epa.gov/myenvironment/ |
| 5. USEPA Enviromapper for Water | • USEPA STORET Data Warehouse | • Water Temperature<br>• Microbiological | http://www.epa.gov/waters/enviromapper/ |
| 6. NJ-GeoWeb | • NJDEP Water Quality Data Exchange | • Water Temperature<br>• Microbiological | http://www.nj.gov/dep/gis/geowebsplash.htm |
| 7. NJDEP Data Miner | • NJDEP Water Quality Data Exchange | • Water Temperature<br>• Microbiological | http://datamine2.state.nj.us/DEP_OPRA/OpraMain/categories?category=Ambient+Water+Quality |

## 19.0 Performance System Audits

All NJ certified laboratories used are subject to audits and to the requirements of the OQA Laboratory Certification Program as well as internal performance evaluations. The OQA will be notified of field monitoring schedules for possible audits.

## 20.0 Data Reporting

### 20.1 Preliminary Reporting of Data

Preliminary analytical data will be reported to BFBM, from the laboratory employed for this project, in either electronic format or by verbal communication to the Project Officer, within 21 calendar days from receipt of sample. Samples which yield results considered anomalous by the Project Officer and/ or Supervisor will be validated as specified in section 17.0, Data Validation.

### 20.2 Final Reports

Final analytical data will be reported to BFBM, from the laboratory employed for this project, in the form of electronic and/ or hard copies of the lab sheets; or in a tabulated form within 40 calendar days from receipt of sample. All data shall be reported in a complete and concise fashion and shall meet the reporting requirements of NJAC 7:18. Routine quality control results must be retained on file for review by the BFBM and the OQA.

Final reports will be forwarded to the BWQSA for use in the generation of the biennial New Jersey Integrated Water Quality and Assessment Report [305(b) and 303(d)].

## 21.0 Assessment, Oversight, and Response

The Project Officer will be responsible for the oversight of all activities relating to this project. The Project Officer will assess field collection functions and make corrections when necessary to maintain the data accuracy as defined in this plan. If any changes or modifications are made to this plan regarding data collection, as it relates to the objectives(s) and data accuracy required in this project, all original signees of the QAPP will be notified.

# ATTACHMENT A

***Goal 1 - Comprehensive Regional Environmental Management***

*Alignment of planning, regulatory, enforcement, and property acquisition programs to ensure the Department successfully implements a more comprehensive environmental approach that supports our environmental mission, the State Strategic Plan, community concerns and recognizes a commitment to vibrant regions.*

- Develop a new comprehensive regional approach for addressing environmental and public health conditions and issues that are most pertinent today.
- Focus on improving the quality of life for all communities within New Jersey, prioritizing those most burdened.
- Establish a unified DEP implementation strategy that successfully achieves the intentions of the New Jersey State Strategic Plan, which includes land procurements, protecting water quality, providing high quality parks, and advancing our environmental mission.
- Ensure financial programs and incentives are aligned with the objectives of this goal.
- Ensure regulations work in concert with each other and eliminate cross program conflicts that undermine the DEP's ability to achieve the greatest net-environmental gain or the least possible negative impact.
- Ensure preservation, mitigation and compensation reflects the relative resource values.
- Pilot regional comprehensive management approaches that contribute to developing our overall goal strategy.

**The Next Generation of Environmental Management**
**"Working with Communities to Address their Greatest Environmental Concerns"**

Barnegat Bay Restoration Project Goal 2

***Goal 2 –Utilize Barnegat Bay Restoration Project as a model to establish watershed based protection and enhancement of all New Jersey's surface water bodies***
*Implement Governor's Ten Point Comprehensive Plan of Action for Barnegat Bay; expand this plan as we discover new issues and solutions so as to address water quality concerns specific to impacted surface water bodies throughout the State .*

- Clarify how key programs interact to ensure successful implementation.

- Identify and implement program specific and cross program opportunities to build upon the Governor's Ten Point Plan.

- Expand model to other watersheds/ waterbodies.

ATTACHMENT B

# Site List

| SITE ID | STREAM | LOCATION | COUNTY | PARAMETER | SAMPLER |
|---|---|---|---|---|---|
| BFBM000149 | Dorotockeys Run | On Closter Road, Harrington Park | BERGEN | E | Bergen Co. Health |
| 01378400 | Dwars Kill | On Anderson Avenue, Alpine | BERGEN | E | Bergen Co. Health |
| 01377000 | Hackensack River | On Westwood Avenue at Rivervale | BERGEN | E | Bergen Co. Health |
| BFBM000121 | Hirshfeld Brook | On River Road, New Milford Borough | BERGEN | E | Bergen Co. Health |
| BA126 | Masonicus Brook | on Railroad Ave, Mahwah | BERGEN | E&F | Bergen Co. Health |
| 01387500 | Ramapo River | At Route 202 and end of West Ramapo Avenue, Mahwah | BERGEN | E | Bergen Co. Health |
| BA128 | Ramapo River | off Rt 202 across from Crockers Mansion Rd | BERGEN | E&F | Bergen Co. Health |
| BA124 | Ramapo River | on Houpenkopf Rd, Mahwah | BERGEN | E&F | Bergen Co. Health |
| BA129 | Ramapo River | on Oakland Ave, Oakland | BERGEN | E&F | Bergen Co. Health |
| 01391500 | Saddle River | On Main Street and Outwater Lane by Lakewood Cemetary, Lodi | BERGEN | E | Bergen Co. Health |
| 01376273 | Sparkill Creek UNT | On Piermont Road, Norwood | BERGEN | E | Bergen Co. Health |
| BFBM000150 | Tenakill Brook | On Cedar Road, Closter Borough | BERGEN | E | Bergen Co. Health |
| 01378560 | Van Saun Mill Brook | On Main Street off Route 4 in North Hackensack | BERGEN | E | Bergen Co. Health |
| AN0288 | Hohokus Brook | Spring St., Fairlawn | BERGEN | E | Bergen Co. Health |
| AN0221 | Loantaka Brook | Green Village Rd. | MORRIS | E | GSWA |
| AN0216 | Primrose Brook | Lees Hill Rd | MORRIS | E | GSWA |
| BA138 | Black Brook | on Southern Blvd | MORRIS | E&F | GSWA |
| TBD | Silver Brook | James St., Harding Twp. | MORRIS | E | GSWA |
| AN0220 | Loantaka Brook | Bluestone Terrace | MORRIS | E | GSWA |
| BA139A | Black Brook | on Whitebridge Rd in Great Swamp National Park | MORRIS | E&F | GSWA |
| AN0218 | Great Brook | Blackberry Ln | MORRIS | E | GSWA |
| 01378770 | Great Brook | End of Woodland Rd ~150yds down trail, Chatham Township | MORRIS | E | GSWA |
| 01378780 | Primrose Brook | On gravel road off Jockey Hollow Road at Morristown National Park | MORRIS | E | GSWA |
| 01380100 | Beaver Brook | On Gill Avenue, Rockaway | MORRIS | E | Morris Co. Health |
| BA171 | Dam Brook (trib to Pompton R.) | On Ryerson Road | MORRIS | E&F | Morris Co. Health |
| AN0247 | Den Brook | Mt Pleasant Tnpk | MORRIS | E | Morris Co. Health |
| AN0242 | Green Pond Brook | Mt Pleasant Tnpk | MORRIS | E | Morris Co. Health |
| BFBM000091 | North Branch Whippany River | On Lake Road, Morris Township | MORRIS | E | Morris Co. Health |
| BA133A | Passaic River | on Rt 611 (Eagle Rock Ave), Hanover Neck | MORRIS | E&F | Morris Co. Health |
| BA149 | Rockaway River | off Pine Camp North near Woodstock | MORRIS | E&F | Morris Co. Health |
| BA147 | Rockaway River | on Berkshire Valley Rd, Berkshire Valley | MORRIS | E&F | Morris Co. Health |
| 01381515 | Whippany River | On Jefferson Road - East of Route I - 287, Hanover Township | MORRIS | E | Morris Co. Health |
| 01381800 | Whippany River | On New Edwards Road - Gage at end of road, Pine Brook | MORRIS | E | Morris Co. Health |
| BFBM000090 | Whippany River | On Washington Valley Road, Morris Township | MORRIS | E | Morris Co. Health |
| BFBM000089 | Whippany River Tributary | On East Main Street, Mendham Township | MORRIS | E | Morris Co. Health |
| BFBM000204 | Belcher Creek | Dockerty Hollow Rd | PASSAIC | E | Passaic Co. Health |
| AN0255C | Belcher Creek | Union Valley Rd | PASSAIC | E | Passaic Co. Health |
| AN0261 | Clinton Brook | LaRue Rd | PASSAIC | E | Passaic Co. Health |
| AN0255D | Green Brook | Union Valley Rd | PASSAIC | E | Passaic Co. Health |
| AN0262 | Kanouse Brook | Rt 23 | PASSAIC | E | Passaic Co. Health |
| BA131 | Macopin River | on Rt 23 by water treatment plant. | PASSAIC | E&F | Passaic Co. Health |
| AN0256A | Meadow Brook | Highland Ave | PASSAIC | E | Passaic Co. Health |
| AN0276 | Molly Ann Brook | Totowa Ave | PASSAIC | E | Passaic Co. Health |
| AN0260 | Mossmans Brook | Clinton Rd (abv res) | PASSAIC | E | Passaic Co. Health |
| AN0259 | Pequannock River | Rt 23 (abv res) | PASSAIC | E | Passaic Co. Health |
| AN0292 | Third River | Kingland Ave | PASSAIC | E | Passaic Co. Health |
| BA130 | Wanaque River | on footbridge in Hershfield Park, Pompton Lakes. | PASSAIC | E&F | Passaic Co. Health |
| BFBM000205 | West Brook | Westbrook Rd | PASSAIC | E | Passaic Co. Health |
| BA141A | Dead River | on Achen Rd, Bernards Twp | SOMERSET | E&F | Somerset Co. Health |
| BA142 | Dead River | on King Georges Rd (rt 551), Bernards Twp | SOMERSET | E&F | Somerset Co. Health |
| BA140A | Harrison Brook | off Rt 512 (Valley Rd) & Rt 525 (Mt airy rd) | SOMERSET | E&F | Somerset Co. Health |
| BA140B | Harrison Brook trib (Dead R) | off Rt 512 (Valley Rd) | SOMERSET | E&F | Somerset Co. Health |
| BA179 | Passaic River | On Jockey Hollow Road in Morristown Nat'l Park | SOMERSET | E&F | Somerset Co. Health |
| BA180 | Passaic River | On Lee Hill Road at oulet of Osborn Pond | SOMERSET | E&F | Somerset Co. Health |
| BA137 | Passaic River | on Rt 657 (Basking Ridge Rd), Millington | SOMERSET | E&F | Somerset Co. Health |
| 01464515 | Doctors Ck | Breza Rd. (Bridge#U-15), Allentown | MONMOUTH | E | BFBM |
| 01465950 | N Br Rancocas Ck | outlet of Hanover Lake, Range Rd., Hampton Furnace | BURLINGTON | E | BFBM |
| BFBM000054 | Baffin Bk | Mohave Rd. off Chippewa Trail, Pemberton Twp. | BURLINGTON | E | BFBM |
| 01464527 | Blacks Ck | Chesterfield-Georgetown Rd., Chesterfield | BURLINGTON | E | BFBM |
| 01396660 | Mulhockaway Ck | Rt. 635 (Charlestown Rd.), Van Syckel | HUNTERDON | E | BFBM |
| 01398000 | Neshanic River | Reaville USGS gauge | HUNTERDON | E | BFBM |
| 01398102 | S Br Raritan River | at South Branch, Branchburg | SOMERSET | E | BFBM |
| 01400000 | N Br Raritan River | Rt. 202, Bridgewater | SOMERSET | E | BFBM |
| 01458570 | Nishisakawick Ck | off Creek Rd., nr Frenchtown | HUNTERDON | E | BFBM |
| 01400640 | Millstone River | Cranbury Rd., near Grovers Mill | MIDDLESEX | E | BFBM |
| 01401595 | Rock Bk | Burnt Mill Rd., near Blawenburg | SOMERSET | E | BFBM |
| 01402000 | Millstone River | Blackwells Mills Rd., Blackwells Mills | SOMERSET | E | BFBM |
| 01482500 | Salem River | Mill St., Woodstown (outlet of Memorial Lake) | SALEM | E | BFBM |
| 01477120 | Raccoon Ck | Tomlin Station Rd., Harrison | GLOUCESTER | E | BFBM |
| 01411490 | Green Br | Jesse Bridge Rd., Brotmansville | SALEM | E | BFBM |
| 01411500 | Maurice River | Almond Ave., Norma, UGSG gauge | CUMBERLAND | E | BFBM |
| 01411466 | Indian Br | Rt. 47 nr. Malaga, Bridge#0812-153/54.17 | GLOUCESTER | E | BFBM |