WRD Resource Room

NERI
BLUE
GARI

Water Quality Monitoring Program
1994 - 1997
New River Gorge National River
Bluestone National Scenic River
Gauley River National Recreation Area

Lisa Wilson
Jesse M. Purvis

United States Department of the Interior
National Park Service
Glen Jean, West Virginia

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Cover: Digital image of Meadow River (site G05) by Kathy Oney

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EXECUTIVE SUMMARY

New River Gorge National River and Gauley River National Recreation Area contain some of the most popular and demanding whitewater recreation in the eastern United States. New River Gorge National River supports the most significant and highest quality warm water fishery in West Virginia. Bluestone National Scenic River remains one of the last vestiges of relatively undisturbed reaches of riverine habitat in the central Appalachians, and provides outstanding opportunities for solitude. Taken together, these three parks represent some of the most significant water resources in the National Park System.

Situated in the Kanawha-New River basin of the Ohio River drainage, areas in and around the three parks have experienced extensive resource extraction activities. Mining of low-sulfur coal deposits and timbering removed vegetation and led to increased erosion and sedimentation. Development of automobile and rail transportation networks, and communities to handle the influx of people inflicted further impacts upon the land and streams draining the land.

As coal and timber were depleted, many people lost their jobs and moved away. Decreased resource extraction allowed re-establishment of natural communities and ecosystems. Lush mixed mesophytic forests now cover most of the three parks. Commercial whitewater rafting, rock climbing, angling, and other outdoor activities now draw hundreds of thousands of visitors to the New River area.

Like other parts of Appalachia, the New River area has historically been an impoverished area. This is reflected in less than adequate infrastructure, including adequate wastewater treatment.

The National Park Service regularly monitors fecal coliform bacteria, an indicator of human domestic waste pollution, in and around the three parks to assess the potential health risk of people engaged in water-based recreational activities. The metals aluminum, iron, and manganese, indicative of acid mine drainage, are also monitored. This report presents water quality data collected from 1994 through 1997. Data collected includes metals, fecal coliform bacteria, and basic field parameters (temperature, dissolved oxygen, conductivity, turbidity and pH). The fecal coliform data is analyzed and discussed.

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INTRODUCTION

This report presents water quality data collected by the National Park Service (NPS) at the three NPS units (parks) in southern West Virginia between 1994 and 1997. The three parks are New River Gorge National River (NERI), Gauley River National Recreation Area (GARI), and Bluestone National Scenic River (BLUE). This effort continues a water quality monitoring program began in 1980.

Samples were collected at 28 sites, 18 associated with NERI, and five each associated with GARI and BLUE. Samples were analyzed for basic field parameters (temperature, conductivity, turbidity, dissolved oxygen, pH, alkalinity, and hardness), fecal coliform (FC) bacteria, and three metals commonly associated with acid mine drainage (aluminum, manganese and iron). Interpretation of FC data (Appendix 5) considers stream discharge, sample turbidity, and recent precipitation. Graphic depiction of trends between FC levels and one or more of the above noted variables are provided for all sampling sites for each year (Figs. 4 - 33). Interpretation of the metals data (Appendix 6) is not provided in this report.

Results, discussion, and conclusions presented in this report provide a general overview of water quality conditions and trends at each station over the monitoring period. These data, when combined with data from previous years, provide a broad basis for evaluating status and trends of water quality in the three parks. This information permits NPS decision-makers to more accurately assess activities that may impact, or be impacted by, water resources.

PARK ESTABLISHMENT

New River Gorge National River was established by Public Law (PL) 95-625 on November 10, 1978. The park was created to conserve and interpret outstanding natural values and objects, and to preserve an important segment of the New River as a free-flowing stream for the benefit and enjoyment of present and future generations.

Gauley River National Recreation Area was established on October 26, 1988 by PL 100-534. The park was created to protect and preserve scenic, recreational, geological, and fish and wildlife resources of the Gauley River and its tributary, the Meadow River.

The legislation that established GARI also made boundary adjustments to NERI, and amended the Wild and Scenic Rivers Act (16 USC 1274(a)), to designate Bluestone National Scenic River. This designation was made to protect and enhance the natural, scenic, cultural and recreational values of a free-flowing segment of the Bluestone River for the benefit and enjoyment of present and future generations.

MONITORING HISTORY

In 1980 NPS initiated a monitoring program to provide baseline water quality data. The data would be used to evaluate existing water quality, analyze trends in water quality parameters, and provide information useful in evaluating the impacts of various activities on water quality in the three parks. Lacking adequate facilities to implement and conduct such a survey, NPS entered into a cooperative agreement with the West Virginia Division of Natural Resources (WVDNR) to provide the necessary information. Parameters to be measured under this agreement were those commonly associated with commercial and domestic pollution. Data collected from 1980 to 1984 frequently had high levels of fecal coliform bacteria. This led to the determination that sewage and/or animal wastes were a major cause of water pollution. The long history of coal mining in the area led to concerns about the potential for acid mine drainage negatively impacting water quality.

In 1985 NERI staff monitored fecal coliform bacteria using Millipore Corporation's Colicount samplers. This method was quick and inexpensive, but not US Environmental Protection Agency (EPA) approved. An unpublished NPS report covering this effort recommended that future bacterial monitoring use an EPA approved method. In 1986 NERI contracted with the US Department of Agriculture (USDA) Appalachian Soil and Water Research Station in Beckley, West Virginia to analyze fecal coliform bacteria in their laboratory using the EPA-approved membrane filter (MF) technique (American Public Health Association 1992). This effort produced mixed results. During 1987 another cooperative agreement was made with WVDNR to monitor fecal coliform bacteria. Evaluation of the results (WVDNR 1989) led to the decision that a less intensive, more extensive, monitoring effort would be more tenable for NERI. In 1989 NPS instructed WVDNR to reduce the number of samples collected per site per month from 5 to 1, while adding four new tributaries to the sampling regime.

In 1990, with assistance from the USDA lab, NPS resumed responsibility for bacterial monitoring. In 1991 a newly equipped Water Resources Laboratory was completed, and NERI staff assumed full responsibility for fecal coliform monitoring. Also in 1991, monitoring efforts were extended to GARI and BLUE. Since 1991, NERI personnel have continued water quality monitoring program for all three parks. The primary focus of this effort remains fecal coliform bacteria and metals. Annual reports summarizing the monitoring program were prepared from 1991 to 1993. This report presents water quality data for 1994 through 1997.

METHODS

STUDY AREA

New River (Fig. 1) originates in the Blue Ridge Mountains near Blowing Rock, North Carolina. The river flows mostly northward 250 miles, through Virginia and West Virginia, to its confluence with Gauley River at Gauley Bridge, West Virginia. Confluence of the New and Gauley Rivers forms the Kanawha River. The Kanawha River then flows northwest to its mouth on the Ohio River, a tributary of the Mississippi River, at Point Pleasant, West Virginia.

New River follows the course of the ancestral Teays River. Teays River developed as the southern Appalachians rose out of an ancient ocean. This Appalachian uplift, and the erosion that resulted from this uplift, created the drainage network which channeled water out of the rising mountains. Among the rivers that developed during this process was the Teays. Differential erosion through layers of shale, limestone and sandstone by this ancient river created areas of slow meanders, and other areas of extensive rapids constricted in a spectacular gorge (NPS 1994). Teays River eventually emptied into the Mississippi River in what is now Illinois. Following Pleistocene glaciation the former Teays River assumed roughly the present course of the Kanawha and New Rivers.

The 53 miles of New River within NERI begins just below Bluestone Dam, near Hinton, West Virginia and extends downstream to just north of the US Highway 19 bridge near Fayetteville. Within NERI, 77 tributaries contribute to the discharge of New River (WVDNR 1983). The most prominent feature of New River basin is New River Gorge. The gorge begins at Sandstone Falls below Hinton, and extends downstream to near the river's confluence with Gauley River. In many places the gorge walls rise 1,000 feet above the river. The river channel prior to entering the gorge is about 1,000 feet wide and relatively shallow, with a gentle gradient. In the gorge the channel becomes narrower (200-500 ft), deeper, and steeper. These factors contribute to the world class whitewater rafting which draws a quarter million visitors to New River Gorge each year.

New River water quality is generally considered to be good, and suitable for water contact recreation such as swimming, boating, and fishing. However, several tributaries are impacted by sewage, industrial contaminants and acid mine drainage. Unlike other Appalachian areas, coal in the vicinity of NERI is generally low in sulfur, and does not lead to much acid mine drainage. Further, some of the extensive limestone areas traversed by New River and its tributaries help reduce potential acid mine drainage problems, and contribute to a well-buffered, biologically productive ecosystem that supports an excellent warmwater fishery (WVDNR 1989).

Bluestone River (Fig. 2) originates on East River Mountain in Virginia. It flows northeasterly for 77 miles to its confluence with New River in Bluestone Lake near Hinton. The lower 60 miles of Bluestone River are in West Virginia. The western side of the main channel valley has broad, gentle sloping ridges, while nearly continuous ridges parallel the east side. Therefore, most Bluestone tributaries enter from the west side (WVDNR 1983).

BLUE includes 10.5 miles of Bluestone River. BLUE is located between two state parks (SP), Pipestem SP on the upstream end, and Bluestone SP on the downstream end. Also, BLUE is included within the boundary of WVDNR-managed Bluestone Wildlife Management Area. Opportunities for boating in BLUE are usually limited to high water periods (WVDNR 1983).

Water quality of the lower Bluestone River is generally satisfactory for water contact recreation. Upper reaches of the watershed, outside BLUE boundary, often exhibited domestic and municipal pollution in developed areas of the floodplain. Agricultural and industrial activities within the drainage contribute bacterial contaminants, mine drainage and sediment. Minimal impacts observed on lower Bluestone River may be due to discharge volume and travel time. The former factor acts to dilute pollution, and the latter may permit contaminants to settle out of the water column or become assimilated to acceptable levels. A high quality warmwater fishery exists in Bluestone River.

The 107-mile long Gauley River (Fig. 3) begins in Pocahontas County, West Virginia. The Gauley flows southwest, turning more westerly following inflow of Meadow River near Carnifax Ferry. The Gauley then continues west to its confluence with New River.

Within GARI are 25 miles of Gauley River and the lower 5.5 miles of Meadow River. The Gauley River portion of GARI extends downstream from just below Summersville Dam to near the community of Swiss. Gauley River is noted for outstanding whitewater, and is one of the most technically demanding and commercially popular whitewater rivers in the nation. Meadow River within GARI flows through a scenic gorge with an average gradient of 71 feet per mile. It is navigable by only the most skilled kayakers.

Gauley River water quality is generally considered to be good, and suitable for water contact recreation. Mining activities and sewage contamination have impacted Peters Creek, a tributary to Gauley River within GARI. Meadow River also has water quality suitable for water contact recreation, and probably has the best water quality of the four rivers administered by NPS in southern West Virginia. This is due to a steep, rugged watershed with limited access and development (NPS 1994). Gauley and Meadow Rivers both provide excellent angling opportunities. A quality warmwater fishery exists in the lower reaches of Gauley River. Coldwater releases support a fishery for stocked trout in the tailwaters below Summersville Dam (NPS 1993).

SAMPLING SITES

The 18 NERI sampling sites included seven mainstem sites and 11 tributary sites. The five BLUE sites, and the five GARI sites, each included three mainstem and two tributary sites. All NERI and BLUE sites remained the same throughout the study period. Two GARI stations were relocated in 1996 due to access problems (see Results and

Figure 1. New River Gorge National River Water Quality Sample Sites

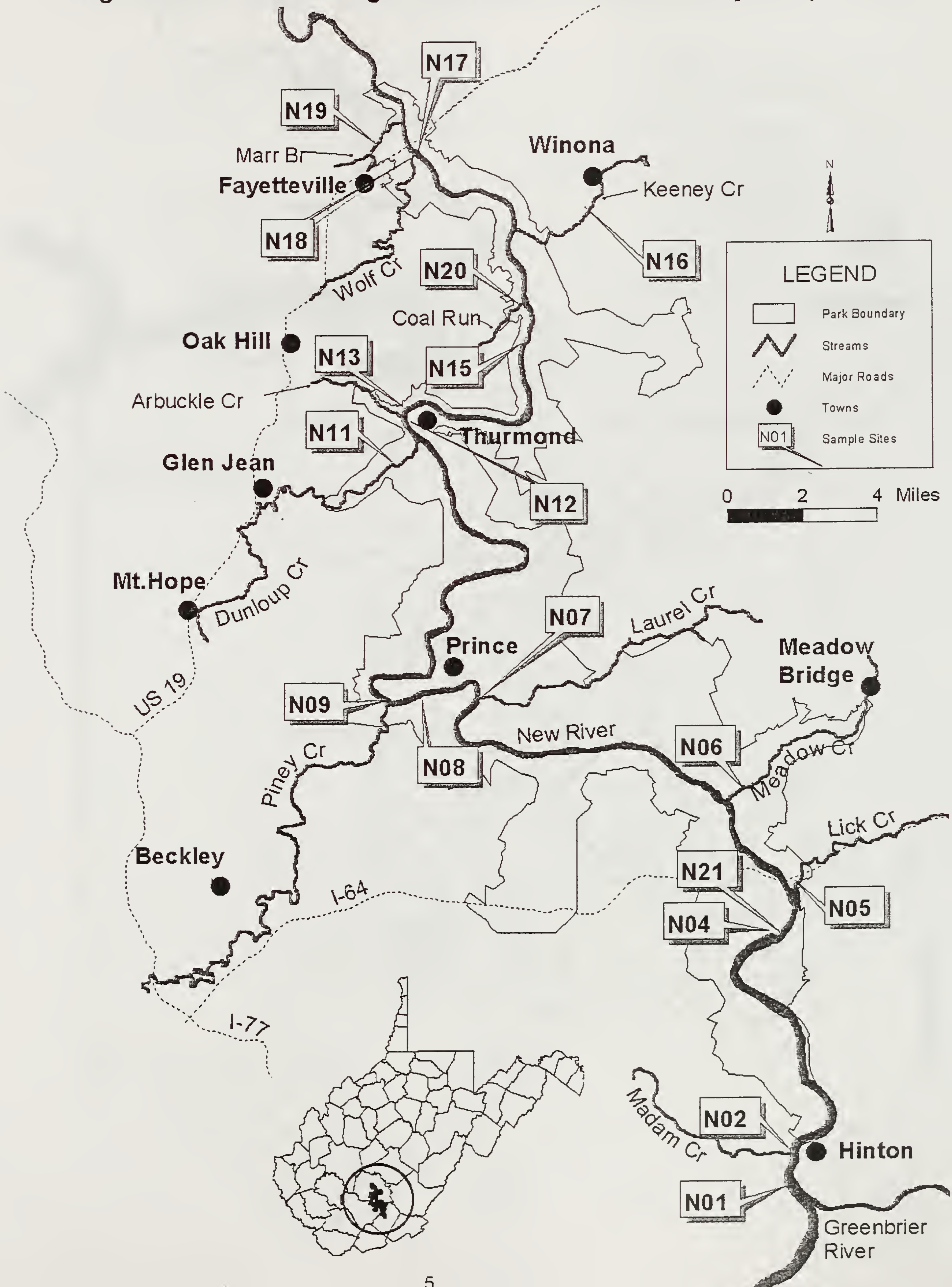


Figure 2. Bluestone National Scenic River Water Quality Sample Sites

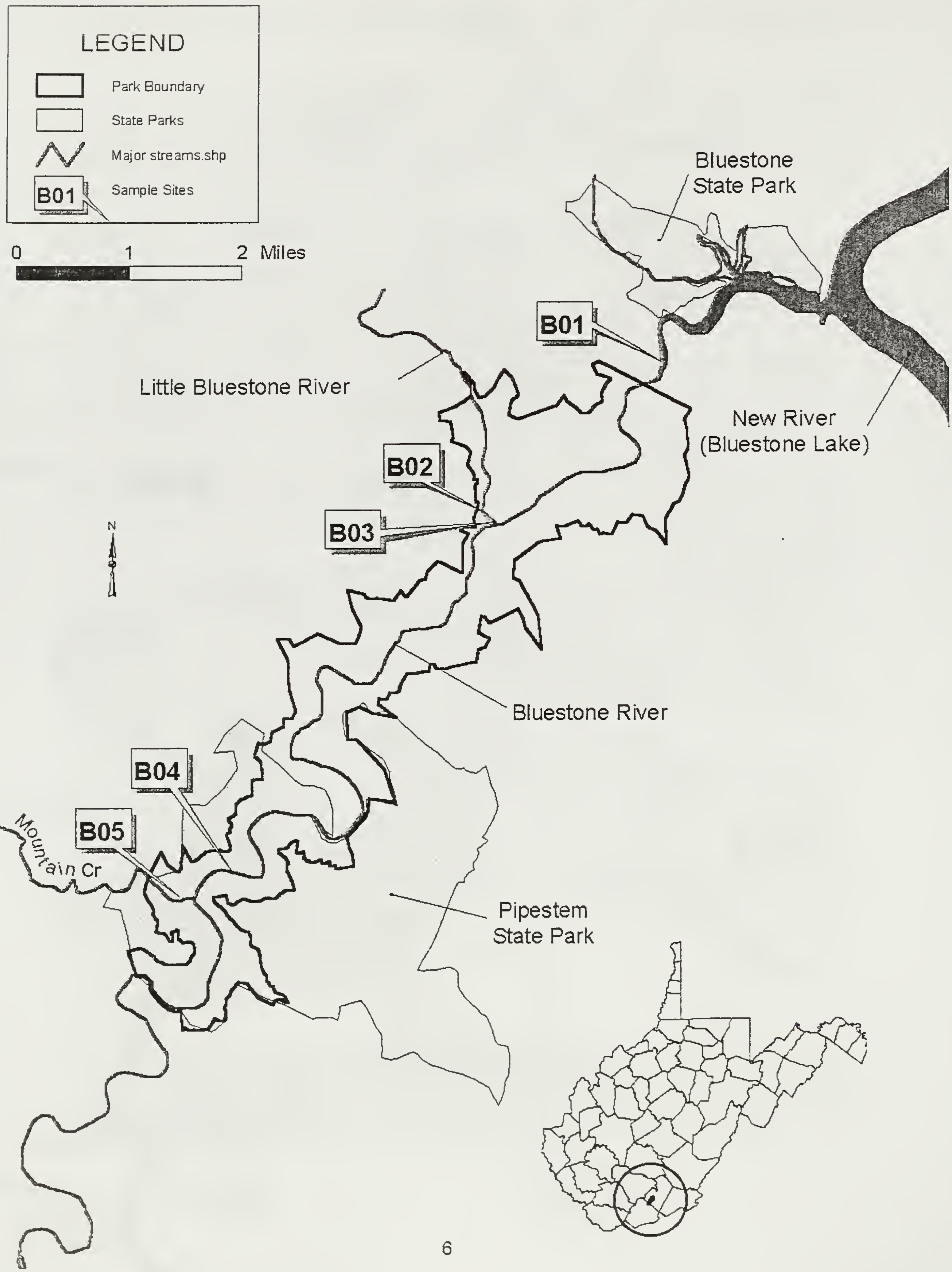
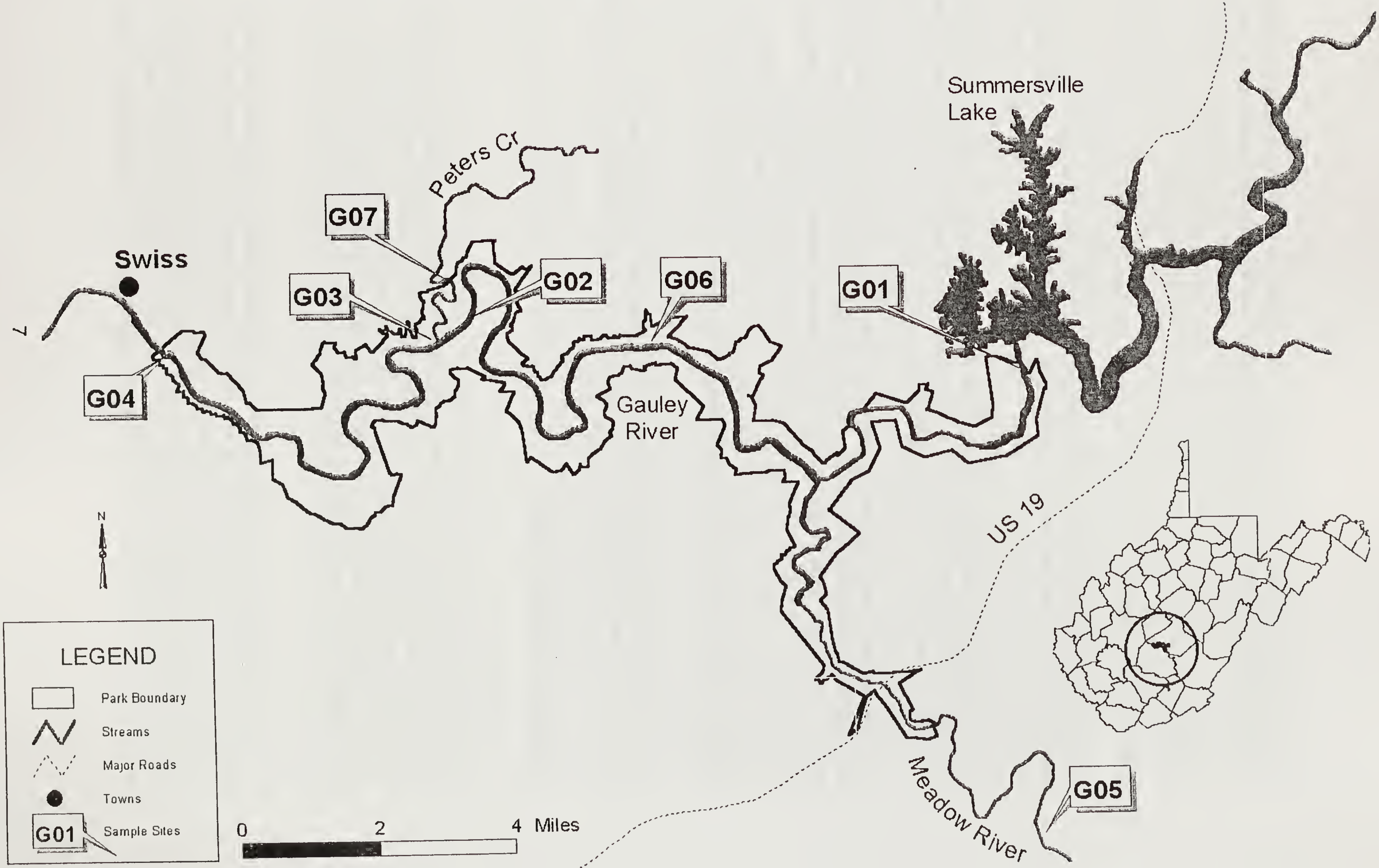


Figure 3. Gauley River National Recreation Area Water Quality Sample Sites



Discussion). Three NERI sites (N01; New River at Hinton Visitor Center, N02; Madam Creek in Hinton, and N16; Keeney Creek in Winona) are located just upstream of park boundaries. Site B01 (Bluestone River at Bluestone State Park) is located downstream of the BLUE boundary and G05 (Meadow River) is located upstream of the GARI boundary.

SAMPLING SCHEDULE

NERI sampling sites were divided into two districts, north and south. Within each district, sites were further divided into two runs, long and short. Thus four runs were required to sample all NERI sites. Sites for GARI and BLUE were each considered their own district (run). Sampling was scheduled on a rotational basis so that each site was sampled every other week (at least twice a month). For example, on one week the north district of NERI and the GARI sites are sampled and the following week the south district of NERI and the BLUE sites will be sampled.

In most years bacterial sampling occurred from April to September for NERI and BLUE, and continued into October for GARI. This schedule coincided with the period of greatest human recreation on the rivers, and thus greatest potential for pathogen exposure for river users. To evaluate annual water quality patterns, NERI sampling was continuous from April 1994 through September 1995. Sampling was suspended for two-weeks in August 1995 so staff could participate in a long-term monitoring program for the New River. During 1996 and 1997, sample collection occurred only from May through July.

Water samples for metals analyses were collected quarterly, coinciding with the seasons. All seasons were collected in 1994. Fall samples were not collected in 1995, and fall and winter samples were not collected in 1996 and 1997.

SAMPLING PARAMETERS

General

Parameters recorded at each collection site included date, time, precipitation within the previous 48 hours, weather, cloud cover, water clarity, stage level, air and water and temperatures, pH, dissolved oxygen, and conductivity. Weather, cloud cover, water clarity and stage (discharge) level were subjective appraisals of the sample collector based on knowledge of long term conditions at each site. Appendix 2 contains codes used for these observations.

For some sites, stage level was also based on gage measurements. Stages for mainstem New River sites in NERI south district, and for Bluestone River, were provided by a recorded phone message at Bluestone Dam. A remote beeper gage maintained by the United States Geological Survey (USGS) provided stage level data for site N12 (New River at Thurmond). Stage levels for site N17 (New River at Fayette Station) were determined from the Thurmond reading (Fayette Station stage = Thurmond stage X 1.33 -

4.66). Gauley and Meadow River stage levels were provided by a recorded phone message at Summersville Dam. Phone numbers used to access gage data are provided in Appendix 3.

Precipitation in the 48 hours prior to 0800 on the sampling date was determined from the closest rain gage. For NERI north district sites this gage is located at NPS headquarters in Glen Jean. For NERI south district and BLUE sites during 1994 and 1995 this was the National Weather Service (NWS) office in Beckley. Following closure of this office, precipitation data for 1996 and 1997 was obtained from the NWS Charleston office, and from the U.S. Army Corps of Engineers (COE) at Bluestone Dam. Data for GARI sites was obtained from COE at Summersville Dam.

Dissolved oxygen (DO) was determined with a YSI model 51B dissolved oxygen meter. Water temperature and conductivity were determined with a YSI model 33 S-C-T meter. Specific conductance was temperature corrected (American Public Health Association 1992). Air temperature was measured with an alcohol thermometer. A Fisher Accumet portable temperature compensating pH meter provided pH data. Turbidity was measured by a Hach model 16800 Portalab Turbidmeter. All meters were calibrated according to their respective operating manuals on each day of sample collection.

Fecal Coliform Bacteria

Fecal coliform bacteria are found in the lower digestive tract of warm-blooded animals (mammals and birds). They have long been used as the standard indicator for evaluating sanitary quality of surface waters. While not necessarily pathogenic themselves, these bacteria are often associated with pathogenic organisms. Fecal coliform bacteria can be influenced by temperature, environmental conditions and water type (Pipes 1982).

Sampling and analysis for fecal coliform bacteria occurred by standard methods (American Public Health Association (APHA) 1992). All procedures followed sterile techniques.

Samples were collected below the surface in pre-washed and sterilized 250 ml and 500 ml Nalgene screw-cap bottles. A small amount of air space was left in the bottles. Sodium thiosulfate was added to sample bottles before sterilization to remove chlorine from sample water. Most samples were collected from shore. Site N08 (New River at Prince) was sampled by lowering a stainless steel bucket from the West Virginia Route 41 bridge. The bucket was rinsed with river water before actual sample collection. After sample collection, bottles were placed on ice for transport to the laboratory.

Samples were analyzed for fecal coliform bacteria using the membrane filter (MF) technique within six hours of sample collection. Following laboratory determination of turbidity, all or part of the sample was filtered. Volume filtered depended upon expected bacterial densities for each sample. Ideally the volume chosen would provide between 20 and 60 fecal coliform colonies on the filter. To help assure that the ideal range of colonies was counted, two different volumes were filtered for each sample. Volumes less than 20 ml had approximately 10 ml of sterile dilution water added to allow uniform dispersion of bacteria over the filter surface.

Samples were filtered under partial vacuum through sterile 47mm Millipore nitrocellulose, white grid membrane filters with a 0.45 micrometer pore size. After filtration, filters were placed into culture dishes containing absorbent pads saturated with one ampule of commercially prepared m-FC broth. Beginning with the autumn 1994 sampling period, the increased turbidity common during winter and early spring prompted a switch to the use of m-FC media containing rosalic acid. This media provided increased specificity to fecal coliform bacteria, and was used with good results through the rest of this study.

Sample blanks were used to check the effectiveness of sterilization. Blanks consisted of filtered sterile dilution water. Two blanks were prepared before ("pres") and two after ("posts"), a day's set of samples were processed. Once all filtrations were completed, culture dishes containing filtered samples were inverted and placed into plastic pouches and heat-sealed. The sealed pouches were place in a water bath incubator for 22 to 24 hours at 44.5 (+ or - 0.2) degrees C.

Following incubation, fecal coliform colonies were counted under 15X magnification. Fecal coliform counts were converted to densities according to (EPA 1978, APHA 1992). When fecal coliform colonies were indistinct, or when counts exceeded 200, results were reported as "too numerous to count" (TNTC), and the procedures provided by EPA (1978) were used to estimate fecal coliform bacteria density.

The State of West Virginia established maximum allowable water quality standards for fecal coliform bacteria in waters suitable primary contact recreation (WVWRB 1994). This standard is that waters not exceed a density of 200 FC/100 ml. This density is based on the geometric mean of at least five samples per month. Alternately, waters should not exceed 400 FC/100ml in more than 10% of samples taken during a month.

Due to fiscal and logistic constraints only two to three samples were collected per site per month. Therefore results reported here can only be considered indicative of streams that **may** exceed the standard.

Metals

Aluminum, manganese, and iron are often associated with acid mine drainage. Significant concentrations of these metals are associated with some coal seams within NERI (WVDNR 1989). These analyses provide insight into seasonal variations occurring at each site. Since the limited sampling allows limited data interpretation, no discussion of the results (Appendix 6) is provided.

The 250 and 500 ml Nalgene sample collection bottles were acid washed prior to sample collection. Bottles were triple rinsed with sample water prior to filling on site. Samples were collected below the water surface in flow, to obtain a well-mixed sample. Bottles were filled completely leaving no headspace. Samples were placed on ice and returned to the laboratory for analyses.

Alkalinity (as CaCO3) was determined by titration (Hach 1988) for each sample. Sample volumes and sulfuric acid titration cartridge concentrations were selected according to the expected alkalinity range. All samples had a phenolphthalein alkalinity of zero and were titrated to an endpoint corresponding to the expected range. The Standard Additions Method (Hach 1988) was used to check the accuracy of this procedure.

Since all metals analyses could not be performed within 1-2 hours of sample collection, samples were preserved following alkalinity titrations. Preservation was with nitric acid (HNO3) to a pH < 2.0. All samples were analyzed within the six month holding time allotted for preserved samples (Hach, 1992). Prior to analysis, preserved sample pH was adjusted to the range recommended by the specific analytical method being used.

Total iron for 1994 was analyzed using the Digesdahl digestion procedure and 1, 10-phenanthroline method (Hach 1992). Since this method is not EPA approved, samples since 1995 have been analyzed by the EPA approved FerroVer method (Hach 1991). An accuracy check was conducted each day of testing.

Aluminum was analyzed by the eriochrome cyanine R method (Hach 1991). As an accuracy check an aluminum standard was prepared and analyzed each day of analysis.

Manganese was determined by the 1-(2-pyridylazo)-2-naphthol (PAN) method (Hach 1991). As an accuracy check, a manganese standard solution was prepared and analyzed each day of analysis.

RESULTS AND DISCUSSION

This section analyzes data on fecal coliform bacteria density collected from 1994 to 1997 (Appendix 5). To save space, data interpretation focuses primarily on values that exceeded the WVWRB standard for primary contact recreation waters (200 fecal coliform bacteria per 100 milliliters of sample water). Unless noted, references in this section to a "standard" refer to this standard.

This standard is based on the geometric mean of 5 samples per month for each site. Since we usually collected no more than two samples per site per month, the standard cannot be legally applied (e.g. for purposes of determining violations) to these results. Results that exceed the standard can only be considered indicative of waters that **may** violate the state standard.

Values for other factors frequently associated with high fecal coliform densities are also noted. These include stream discharge, precipitation in the previous 48 hours, and turbidity. High discharges, particularly during the rising limb of a hydrograph, are believed to wash bacteria into streams. Increased discharge also may impart hydraulic strain on sewage treatment plants (STP) operated by cities and public service districts (PSD). This is especially true if STPs are at or near capacity. Leaking STP collection systems are usually considered to have infiltration and inflow (I&I) problems. These problems exacerbate hydraulic overloads of STPs. Increased discharge, particularly in smaller streams, is usually related to recent storm events. Turbidity, a measure of the amount of particles suspended in water, may serve as a rough estimator of certain types of pollution, including bacterial. We use turbidity, along with our monitoring history, to determine the proportion of a sample to analyze.

Site locations using the boating terms “river/stream right or left" refer to the view of a person facing downstream.

NEW RIVER GORGE NATIONAL RIVER

Water quality of New River is considered good. Some tributaries are impacted by raw sewage, organic contaminants, and mine drainage. New River is considered biologically productive, and supports a high-quality warmwater fishery. New River experiences seasonal flows, as Bluestone Dam is operated on a "run of the river" basis with minimal water retention time (NPS 1996). Higher flows generally occur during late winter and early spring. Flows usually decline through the summer. This pattern is similar to what would be expected for an unimpounded, free-flowing stream.

N01, New River at Hinton (NPS) Visitor Center (Figures 4A to 4F)

This site is located one mile below Bluestone Dam on river left behind the NPS Visitor Center. Greenbrier River enters New River on river right less than one-half mile upstream of this site. Although the Greenbrier is the largest tributary to New River in West Virginia, it has little impact on this site. This is because the confluence occurs on the opposite side of the river, and little mixing occurs upstream of the sampling station. Therefore this site is representative of water being discharged from Bluestone Dam. Discharge for this site is from the New River at Hinton gage.

In 1994 and 1995 this site exceeded the standard on three of 33 sample dates. The standard was exceeded once during 1994. On August 17 bacterial density was 310 FC/100ml. Discharge was 22,400 cfs, turbidity was 25.0 NTU, and precipitation in the previous 48-hour was 1.86 inches.

The standard was exceeded twice in 1995. A density of 375 FC/100ml occurred on May 16. Discharge was 26,900 cfs, turbidity was 17.0 NTU and 48-hour precipitation was 1.04 inches. A density of 260 FC/100ml occurred on June 13. Discharge was 19,500 cfs, turbidity was 20.0 NTU, and 48-hour precipitation was 1.02 inches.

None of six samples collected in 1996 exceeded 200 FC/100ml. The highest value (124 FC/100ml) occurred on 6/12/96. Discharge was 15,300 cfs, turbidity was 10.5 NTU, and 48-hour precipitation was 0.46 inches.

One of seven 1997 samples exceeded the standard. On July 1 bacteria density was 842 FC/100ml. Discharge was 4,150 cfs, turbidity was 4.0 NTU (visibly milky), and 48-hour precipitation was 0.59 inches. A density of 100 FC/100ml occurred on June 2. Discharge was 11,480 cfs, turbidity was 5.1 NTU (milky), and 48-hour precipitation was 0.20 inches.

The generally good water quality noted at this site continues trends noted over several years. In most years one or less dates produced bacteria densities in excess of 200 FC/100ml. Highest bacterial densities occurred during high discharge following precipitation events (Fig. 4). This trend is consistent with data collected since 1987. Waterfowl frequent this site and areas upstream, and may be additional sources of bacteria. All other parameters monitored at this site were within normal ranges.

N02, Madam Creek (Figures 5A to 5C)

This site is near the creek mouth, downstream of the Rt. 26 bridge near Hinton. It is upstream of the park boundary. No gage is installed at the site, so discharge was estimated visually. This site has a long history of consistently high fecal coliform bacteria densities.

During 1994 all 16 samples exceeded the standard. Lowest density (1,000 FC/100ml) occurred on three occasions. Coliform levels exceeded 10,000/100ml on four dates. Highest density (21,400 FC/100ml) was on June 21. Discharge was normal, turbidity was 3.7 NTU (milky), and 48-hour precipitation was 0.07 inches. Water temperature on June 21 was 32C (89.6F). This violated the state standard the water temperature (87F) in warmwater streams (WVWRB 1994).

Fifteen of 17 samples collected in 1995 exceeded the standard. Nine samples had densities below 1,000 FC/100ml. Highest density (10,800 FC/100ml) occurred February 22. Discharge was high, turbidity was 5.7 NTU (milky), and 48-hour precipitation of 0.09 inches. Other measured parameters were within their normal ranges. Of the two dates the standard was not exceeded, the first (June 27 1995) was due to a lack of data because of equipment failure. On the other date (July 25 1995) density was 100 FC/100ml. Cause of this low value is unknown, but may be due to a bacterial die off or flushing of bacteria from the stream following the 0.50 inches of precipitation received prior to sample collection.

In 1995 DO was below the state warmwater stream standard of 5.0 mg/l (WVWRB 1994) on two dates. On August 31 DO was 3.2 mg/l, and on September 12 it was 3.0 mg/l. Little to practically no discharge was noted on both occasions, and there had been no measurable 48-hour precipitation. On these dates the water stood in pools that were scummy and turbid. No aeration was occurring due to lack of flow. Conductivity was considerably elevated during low discharge periods, although WVWRB has no limiting criteria for conductivity levels in warmwater streams.

All 1996 and 1997 samples exceeded the standard. A serious health risk is associated with this stream. It has consistently elevated levels of FC bacteria year round. Bacteria densities are usually measured in the thousands and tens of thousands.

All six 1996 samples exceeded the standard. Highest density (9,160 FC/100ml) was June 26. Discharge was low, turbidity was 2.4 NTU (clear), and 48-hour precipitation was 0.50 inches. Lowest density (370 FC/100ml) was on May 13. Discharge was high and milky (9.0 NTU), with 48-hour precipitation of 0.58 inches. During 1996 highest bacteria densities occurred when discharge was low, while the lowest density occurred during high discharge. This suggests that high flows may dilute or flush bacteria from the stream.

All seven 1997 samples exceeded the standard. Three samples exceeded 5,000 FC/100ml. Highest density was 9,020 FC/100ml on July 28. Discharge was low and the water appeared clear, although turbidity measured 5.9 NTU. A brown slime covered the streambed and flaked-off into the sample. This may explain the higher than normal turbidity reading. There were 0.42 inches of precipitation in the previous 48 hours. A density of 9,000 FC/100ml occurred July 1. Discharge was high, extremely turbid (72.0 NTU), and 48-hour precipitation was 0.59 inches. The July 14 sample had fecal coliform colonies so numerous, that both subsamples were recorded as TNTC. According to methods described in EPA (1978), this provided an estimated density of at least 300 FC/100ml. Lowest density was 220 FC/100ml on May 21. Discharge was normal, turbidity was 4.8 NTU (milky), and 48-hour precipitation was 0.52 inches. All other parameters were within their normal ranges.

Previous monitoring provided similar results. High fecal densities in Madam Creek have been linked to domestic sources such as failing and/or direct sewage disposal systems draining into the creek. Another possible source is livestock (NPS 1990). Despite fluctuations in precipitation, discharge and turbidity, the WVWRB standard consistently was exceeded. Moderation of fecal coliform density following precipitation events may be due to their being flushed from the stream (Fig. 5).

N04, New River at Sandstone Falls Parking Lot (Figures 6A to 6C)

This site, monitored since 1990, is about seven miles downstream from N02 (Madam Creek) on river left off River Road (Rt. 26). Discharge for the site is from the New River at Hinton gage. This area is frequented by swimmers and anglers.

Water quality generally has been good at this site. The state standard was not exceeded during 1990, 1991, and 1993 monitoring. The standard was exceeded seven times in 1987, four times in 1988, three times in 1989, and once in 1992 (NPS 1993). Bacteria densities at this site tend to increase during periods of high flow and heavy precipitation. This was supported by data collected from 1994 to 1997 (Fig. 6). It was suggested (WVDNR 1989, NPS 1993) that upstream residences with inadequate septic systems may contribute bacterial contaminants during high flow from storm water runoff. Greenbrier River and Madam Creek also are likely sources for bacterial contaminants at this site. Bacterial pulses may be partially attributed to non-migratory Canada geese common upstream of the sampling area.

During 1994 the site was sampled 16 times. One exceeded the standard. On August 17 a bacterial density of 2,060 FC/100ml occurred. Discharge was approximately 22,400 cfs, turbidity was 88.0 NTU, and 48-hour precipitation was 1.86 inches. The next highest reading was 182 FC/100ml on August 31. Other samples were below 100 FC/100ml.

One of 17 1995 samples exceeding the standard. On May 16 bacteria density was 310FC/100ml. Discharge was 26,900 cfs, turbidity was 19.0 NTU, and 48-hour precipitation was 1.04 inches. All other samples were well below the standard. Other parameters monitored were within their normal ranges for 1994 and 1995.

Two of the six 1996 samples exceeded the standard. On both occasions discharge and turbidity were high, and measurable precipitation occurred within 48 hours prior to sampling. The highest density was 326 FC/100ml on June 12. Discharge was 15,300 cfs, turbidity was 15.5 NTU, and 48-hour precipitation was 0.46 inches. The second highest density (260 FC/100ml) was May 29. Discharge was 24,200 cfs, turbidity was 24.5 NTU, and 48-hour precipitation was 0.53 inches. No other sample exceeded 50 FC/100ml. All other parameters were within normal ranges.

In 1997 two of the seven samples exceeded the standard. The highest density (490 FC/100ml) was on July 1. Discharge was 4,150 cfs, turbidity was 12.0 NTU, and 48-hour precipitation was 0.59 inches. A density of 202 FC/100ml occurred on June 2. Discharge was high (11,480 cfs), turbidity was 8.3 NTU, and 48-hour precipitation was 0.20 inches. No other sample exceeded 50 FC/100ml.

N21, New River at Sandstone Falls Boardwalk (Figures 7A to 7C)

This site is about 7 miles downstream from Hinton. It is located on river left below the falls at the end of the Sandstone Falls boardwalk. Discharge for this site is from the New River at Hinton gage. The site was added to the monitoring program in 1993 to provide a different perspective on area water quality. A good deal of horizontal and vertical mixing occurs as water flows over the falls, thus reflecting the general water quality and not just what is flowing down one side of the river. This site offers a spectacular view of the falls and is frequented by sightseers, anglers, and campers.

Three of 16 1994 samples exceeded the standard. All occurred in late summer. Highest density (1,100 FC/100ml) was on August 17. Discharge was 22,400 cfs, turbidity was 136.0 NTU, and 48-hour precipitation was 1.86 inches. The other two occurrences did not greatly exceed the standard, and happened during periods of little to no precipitation, and normal discharge and turbidity.

In 1995 two of 17 samples slightly exceeded the standard. The first (216 FC/100ml) occurred in January. Discharge was 8,606 cfs, turbidity was 7.5 NTU and 48-hour precipitation was zero. The other occurrence (245 FC/100ml) was May 16. Discharge was 26,900 cfs, turbidity was 19.0 NTU, and 48-hour precipitation was 1.04 inches.

None of six 1996 samples exceeded the standard. Highest density was 190 FC/100ml. Discharge was 24,200 cfs, turbidity was 11.5 NTU, and 48-hour precipitation was 0.53 inches. No other samples exceeded 60 FC/100ml. Other parameters were within their normal ranges.

None of seven 1997 samples exceeded the standard. Highest density (98 FC/100ml) occurred June 02. Discharge was 11,480 cfs, turbidity was 7.1 NTU, and 48-hour precipitation was 0.20 inches.

There was no definitive relationship between fecal coliform levels and other parameters monitored at this site (Fig. 7). On some dates bacterial densities appeared to correlate with precipitation. On other dates the opposite effect seemed to occur. Sources of bacterial contamination for this site are the same as for N04 (e.g. geese, untreated waste from residences along River Road, and possible influence from Madam Creek and Greenbrier River. Other parameters recorded at this site were within normal ranges.

N05, Lick Creek (Figures 8A to 8C)

This site is located in Summers County off Rt. 20, just north of Sandstone, WV. The site has been monitored by NPS since 1990. Discharge is determined from a USGS staff gage. Two samples exceeded the standard in 1990, and one in 1991. These samples occurred during measurable precipitation events. The standard was not exceeded in 1992 or 1993 (Schmidt and Hebner 1991, Hebner 1991b, Sullivan 1993a, b).

In 1994 three of 16 samples exceeded the standard. Bacterial density increased with the amount of 48-hour precipitation. The highest density was 9,475 FC/100ml on August 17. Discharge exceeded staff gage levels, and was estimated at more than 630 cfs. The stream was extremely turbid (390.0 NTU), and 48-hour precipitation was 1.86 inches. A density of 1,000 FC/100ml occurred on August 3. Discharge was 53.6 cfs, turbidity was 25.0 NTU, and 48-hour precipitation was 0.36 inches. On June 21 bacteria density was 270 FC/100ml. Discharge and turbidity were "normal" following a 48-hour precipitation of 0.07 inches.

In 1995 three of 17 samples exceeded the standard. In contrast to previous years, increased bacteria levels did not correspond with 48-hour precipitation. However, each exceedance occurred following a storm event. The highest density (1,705 FC/100ml) was on March 21. Turbidity was 23.0 NTU following a 48-hour precipitation of 0.44 inches. No discharge was recorded, just visually observed as "high". A density of 440 FC/100ml occurred on May 16. Discharge was 258 cfs, turbidity was 20.0 NTU, and 48-hour precipitation was 1.04 inches. A density of 400 FC/100ml occurred on June 13 following 48-hour precipitation of 1.02 inches. Turbidity was 19.0 NTU and discharge was 136 cfs.

None of six 1996 samples exceeded the standard. The highest density (186 FC/100ml) occurred on May 29. Discharge (260.9 cfs) was the highest observed this year. Turbidity was 15.5 NTU and 48-hour precipitation was 0.53 inches.

During 1997 one of seven samples exceeded the standard. Density on July 1 was 360 FC/100ml. Discharge was 10 cfs, turbidity was 14.0 NTU (milky), 48-hour precipitation was 0.59 inches.

There appears to be some relationship between fecal coliform levels in Lick Creek and precipitation amounts (Fig. 8). Lick Creek drains 39.1 square miles of mostly rural land used for agricultural. Runoff from farms and pasturelands may be a source of bacteria. Residences along the creek with inadequate or nonexistent septic systems may also have some impact. Other parameters monitored at this site, except conductivity, were within their normal ranges. Conductivity was elevated during periods of low flow and little precipitation. This is to be expected from a stream that drains agricultural areas and an interstate highway (NPS 1984).

N06, Meadow Creek (Figures 9A to 9C)

This site is located at the mouth of Meadow Creek (Summers County) just above its confluence with New River. Discharge was determined from USGS staff gages. The stream drains 28.8 fairly rural square miles, with Meadow Bridge being the most populated area in the drainage. Earlier reports correlated elevated coliform levels and heavy precipitation producing surface runoff. Meadow Bridge STP discharges into the stream and occasionally contributed partially treated wastewater to the stream (WVDNR 1989). It is unknown if this condition still exists, or has been reduced by recent facility upgrades. Agricultural activities within the drainage may contribute to elevated coliform levels during storm events. Coal mining has occurred in the drainage. The WVDNR stocks the stream with trout monthly from February to May.

Two of 16 samples collected in 1994 exceeded the standard. On June 21 density was 256 FC/100ml. Discharge was low to normal (7.7 cfs), following 48-hour precipitation of 0.07 inches. Turbidity was slightly elevated (9.5 NTU). On August 3 density was 200 FC/100ml. Discharge was 56 cfs, turbidity was 55 NTU, and 48-hour precipitation was 0.36 inches. The highest density (est. 6,000 FC/100ml) occurred August 17. Discharge exceeded 394 cfs, turbidity was 315 NTU, and 48-hour precipitation was 1.86 inches.

Five of 17 1995 samples exceeded 200FC/100ml. Four of these dates had elevated precipitation amounts. Highest bacterial density was estimated at 2,320 FC/100ml for July 25. Discharge was 49.6cfs, turbidity was 8.2 NTU, and 48-hour precipitation was 0.50 inches. A bacterial density of 960 FC/100ml occurred on May 16. Discharge was 255 cfs, turbidity was 18.0 NTU, and 48-hour precipitation was 1.04 inches.

Two of six 1996 samples exceeded the standard. Highest density was 650 FC/100ml on May 29. Discharge was 279 cfs, turbidity was 27.0 NTU, and 48-hour precipitation was 0.53 inches. A density of 266 FC/100ml occurred during low discharge on July 8. The staff gage was broken, so no discharge was measured. Stream water appeared clear, and turbidity was 2.8 NTU. The 48-hour precipitation was 0.02 inches.

One of seven 1997 samples exceeded the standard. Bacterial density was 2,004 FC/100ml on July 1. Discharge was 71.47 cfs, turbidity was 30.0 NTU, and 48-hour precipitation was 0.59 inches. Other samples collected this year had similar discharge and turbidity, but coliform densities were not elevated.

Although there were exceptions, bacteria levels generally were elevated during or after precipitation events producing runoff (Fig. 9). Turbidity levels also increased with precipitation and flow, suggesting bacterial contaminants are flushed into the stream via storm water runoff. Also, during precipitation events with runoff, Meadow Bridge STP may experience hydraulic overloads resulting in untreated waste being discharged into the stream. While there are several possible sources for these contaminants, the stream does not appear to be impacted on a daily basis. Other parameters noted did not yield noteworthy trends during the monitoring period.

N07, Laurel Creek at Quinnimont (Figures 10A to 10C)

Sample collections are made at the mouth of the stream, near a USGS staff gage from which discharge measurements are determined. The WVWRB coliform standard was never exceeded in samples collected between 1990 and 1993.

One of 16 1994 samples exceeded the standard. On August 18 bacteria density was 264 FC/100ml. Discharge was off the scale of flow curves provided by USGS, and was estimated at greater than 200 cfs. Stream water was brown, and turbidity was 18.5 NTU. This followed 48-hour precipitation of 0.86 inches.

One of 17 1995 samples exceeded the standard. Bacteria density on June 28 was 470 FC/100ml. Discharge was 68.7 cfs, turbidity was 14.0 NTU, and 48-hour precipitation was 2.14 inches.

Three of six 1996 samples exceeded the standard. Discharge measurements were not available as the staff gage remained broken through much of the monitoring period due to damage from high water. The highest density (290 FC/100ml) occurred May 16. Discharge was high and swift. Turbidity was 69.0 NTU, and 48-hour precipitation was 1.82 inches. On June 25 density was 200 FC/100ml. Discharge was normal, turbidity was 108.0 NTU, and 48-hour precipitation was 0.82 inches. On July 9 density was 250 FC/100ml. Discharge was normal, turbidity was 18.0 NTU, and 48-hour precipitation was 0.38 inches.

None of seven 1997 samples exceeded the standard. The highest density (109 FC/100ml) occurred July 29. Discharge was 10.3 cfs, turbidity was 11.1 NTU, and 48-hour precipitation was 2.07 inches. No other samples exceeded 60 FC/100ml.

This stream showed an inconsistent correlation between precipitation and fecal coliform levels (Fig. 10). Turbidity also appeared well correlated with 48-hour precipitation.

N08, New River at Prince (Figures 11A to 11F)

Samples were collected from the Route 41 bridge (mid-point) by bucket. Discharge for this site is from the Thurmond gage. This site has been monitored by NPS since 1990. Between 1990 and 1993 this site rarely exceeded the state standard. When the standard was exceeded, it was by a small amount. On such dates the river was obviously impacted by storm runoff, evidenced from elevated discharge, precipitation, and turbidity. This trend continued between 1994 and 1997.

Two of 16 1994 samples exceeded the standard. Highest density (216 FC/100ml) occurred May 11. Discharge was 12,760 cfs, turbidity was 15.0 NTU, and 48-hour precipitation was a trace. On August 18 bacteria density was 212 FC/100ml. Discharge was 26,776 cfs, turbidity was 34.0 NTU, and 48-hour precipitation was 0.86 inches. All other samples had coliform densities below 45 FC/100ml.

During 1995 the standard was exceeded on two of 17 sample dates. The highest value occurred on May 17 with a density of 480 FC/100ml. Discharge was 20,490 cfs, turbidity was 25.0 NTU, and 48-hour precipitation was 0.03 inches. Apparently storms several days prior to sampling, or further up river, had elevated discharge and turbidity. On June 14 density was 217 FC/100ml. Discharge was 20,722 cfs, turbidity was 26.0 NTU, and 48-hour precipitation was 0.23 inches.

Two of six 1996 samples exceeded the standard. The highest density (1,200 FC/100ml) occurred on May 16. Discharge was 33,060 cfs, turbidity was 116.0 NTU, and 48-hour precipitation was 1.82 inches. On June 11 bacteria density was 450 FC/100ml. Discharge was 29,524 cfs, turbidity was 41.2 NTU, and 48-hour precipitation was 0.30 inches. Other samples collected during periods of elevated discharge and turbidity in 1996 did not exceed 200 FC/100ml.

Two of seven 1997 samples exceeded the standard. The highest density (820 FC/100ml) occurred on June 4. Discharge was 25,300 cfs, turbidity was 138.0 NTU and 48-hour precipitation was 0.02 inches. On July 1 bacteria density was 482 FC/100ml. Discharge (4,340 cfs) and turbidity (4.8 NTU) were moderate, and 48-hour precipitation was 0.65 inches. No other 1997 samples had bacteria densities greater than 25FC/100ml, even when discharge and turbidity were above normal.

This site displayed a correlation of high bacteria densities with elevated discharge and turbidity (Fig. 11). All other parameters measured were within normal ranges.

N09, Piney Creek at McCreery (Figures 12A to 12D)

Piney Creek is sampled near its mouth. Discharge is determined from a USGS staff gage. Piney Creek enters New River on river left downstream of an NPS public access.

Piney Creek is the largest tributary to New River within NERI, with a watershed of 135.9 square miles (WVDNR 1983). The communities of Beckley, Mabscott, Sophia, Raleigh, MacArthur, Crab Orchard, Beaver, Daniels and Shady Spring are located within the watershed. Previous studies revealed Piney Creek consistently carried bacteria loads in the tens and hundreds of thousands per 100ml. This was, and continues to be, a concern due to the human contact potential at this heavily used access. Beckley and North Beckley STPs were attributed as sources of bacterial contamination in Piney Creek (WVDNR 1989, NPS 1992).

The WVDEP Environmental Enforcement Branch surveyed fecal coliform survey in Piney Creek watershed during 1994. They documented numerous problems, and provided the information necessary to take actions aimed at improving compliance of permitted sewage treatment facilities. The report listed eighteen facilities with National

Pollutant Discharge Elimination System (NPDES) permits for discharges to Piney Creek or its tributaries. Corrections and resolutions to many of these problems are in progress. Fifteen areas of significant actions have taken place within the past three years. Some examples include Sophia and North Beckley Public Service District constructing a new sewage plants, and Beckley doubling the capacity of its waste treatment facility.

During 1994 six of 16 samples exceeded the standard. The highest density was 9,900 FC/100ml on September 1. Discharge was 113.6 cfs, turbidity was 48.0 NTU, and 481-hour precipitation was 0.80 inches. This discharge is above normal for Piney Creek. Judging from earlier data, summer flows are normally average about 40 cfs. The next highest density was 4,460 FC/100ml on August 18. Discharge was high, but the staff gage could not be reached to obtain a reading. Turbidity was 36.0 NTU and 48-hour precipitation was 0.86 inches. The other four values exceeding the standard were between 200 and 320 FC/100ml. Turbidity and precipitation levels were less on these dates, while discharge varied.

In 1995 five of 17 samples exceeded the standard. The highest density was 2,800 FC/100ml on May 2. Discharge was 336 cfs, turbidity was 62.0 NTU, and the 48-hour precipitation was 0.89 inches. The second highest density was 1,833 FC/100ml on January 10. Discharge was 178 cfs, turbidity was 9.2 NTU, and 48-hour precipitation was 0.00 inches. The third highest density was 1,560 FC/100ml on July 26. Discharge was 43.6 cfs, turbidity was 13.0 NTU and 48-hour precipitation was 0.57 inches. The other values exceeding the standard were between 200 and 300 FC/100ml. Discharge was elevated on both dates, but precipitation and turbidity were low to moderate.

During 1996 five of six samples collected exceeded the standard. The highest density was 22,200 FC/100ml on June 25. Discharge was 88.8 cfs, turbidity was 30.0 NTU and 48-hour precipitation was 0.82 inches. The second highest density was 9,050 FC/100ml on May 16. Discharge was so high that the staff gage could not be accessed, turbidity was 264.0 NTU, and 48-hour precipitation was 1.82 inches. Other dates exceeding the state standard were May 28 (1,910 FC/100ml), June 11 (8,500 FC/100ml) and July 9 (1,400 FC/100ml). Turbidity was elevated on each date, while discharge and precipitation ranged from normal to high. There are numerous potential fecal coliform sources in the Piney Creek watershed. The WV DEP Inspector of Raleigh County did note that precipitation events overloaded the collection system for Little Whitestick Lift Station. This resulted in untreated waste being bypassed into Piney Creek. As of 1999, bypasses still occur during storm events, although recent upgrades allow discharges to be treated (gridding, screening and chlorinating) prior to release into the stream.

In 1997 two of seven samples exceeded the standard. The first occurred on July 1. Discharge was so high that the staff gage could not be accessed. Turbidity was 81.0 NTU and 48-hour precipitation was 0.65 inches. Bacterial density was recorded as TNTC. According to methods described in EPA (1978) bacteria density was > 120 FC/100ml. Given the prevailing conditions and sampling history of Piney Creek, it is probable that the actual density greatly exceeded 120. On July 29 density was 4,575 FC/100ml.

Discharge was 210.5 cfs, turbidity was 41.0 NTU, and 48-hour precipitation was 2.07 inches. The distinct smell of improperly treated domestic sewage was noted for this date.

For 1994-1997 no specific relationship or trends were evident between FC levels and discharge, precipitation or turbidity. There were occasions when one or more of these parameters was elevated, but FC levels were not. This could be attributed to dilution of the contaminants or natural bacterial die-off (Fig. 12B). There were dates when FC density increased following precipitation, but there were also dates when similar precipitation preceded coliform densities below 200 FC/100ml. Turbidity generally was elevated on dates having highest coliform density (Figs. 12A, C and D). Most other parameters monitored during this period were within their normal ranges. Conductivity tended to be elevated during low flows.

N11, Dunloup Creek (Figures13A to 13C)

This site has been monitored by NPS since 1990. The site is located off Rt. 25 near the Thurmond-Minden Trailhead parking area. Discharge measurements were determined from a USGS weighted-cable gage. Anglers frequently use this stream, which is stocked with trout monthly from February to May by WVDNR. Several pull-offs along Rt. 25 are used by hikers, cyclists, and other visitors. Boaters formerly accessed New River at the mouth of Dunloup Creek, but a new access up river has reduced this use.

Dunloup Creek has a long, consistent history of contamination from fecal coliform bacteria (WVDNR 1989). The town of Mt. Hope and several communities (Kilsythe, Oswald, Glen Jean, Harvey, and Red Star) are within the 48.5 square mile watershed. Mt. Hope STP and White Oak PSD were attributed as sources of most bacterial contamination, along with failing or inadequate residential septic systems along and near the creek. Collection systems for the two plants have infiltration and inflow (I&I) problems. During storm these cause hydraulic overflows and by-passing of partially treated waste into the stream (WVDNR 1989). Data collected by NPS since 1990 showed routine contamination, especially during and following storm events.

West Virginia's most recent priority list of water quality limited streams (WVDEP 1994) ranked Dunloup Creek #7 out of 49 streams. Pollutants of concern included metals, pH, fecal coliform and nutrients. Sources for these pollutants were listed as mine drainage, urban runoff and domestic sewage.

Nine of 16 1994 samples exceeded the standard. Highest density (880 FC/100ml) occurred on July 29. Discharge was 35 cfs, turbidity was 7.5 NTU, and 48-hour precipitation was 1.14 inches. A density of 525 FC/100ml occurred on May 19. Discharge was 78.2 cfs, turbidity was 3.7 NTU, and 48-hour precipitation was negligible (zero). The seven other samples that exceeded the state standard occurred when discharge and turbidity were "normal." Precipitation ranged from minimal to none for the 48 hours prior to sampling. The 1994 season was drier than usual, with little or no precipitation falling during the summer.

In 1995 seven of 17 samples exceeded the standard. The highest density (1,160FC /100ml) occurred on February 15. Discharge was 60.4 cfs, turbidity was 5.8 NTU, and 48-hour precipitation was 0.38 inches. A density of 680FC/100ml occurred on January 17. Discharge was 68.8 cfs, turbidity was 6.9 NTU, and 48-hour precipitation was 0.97 inches. Discharge, turbidity and 48-hour precipitation were not correlated with FC levels.

Four of seven samples collected in 1996 exceeded the standard. Highest density was 510 FC/100ml on May 8. Discharge was 137 cfs, turbidity was 12.0 NTU, and 48-hour precipitation was 0.46 inches. A density of 420 FC/100ml occurred on July 15. Discharge was 57.4 cfs, turbidity was 26.0 NTU, and 48-hour precipitation was 0.19 inches. On the other dates exceeding the standard, 48-hour precipitation was less than 0.02 inches.

On July 1, pH (9.3) exceeded the WVWRB standard (6.0 – 9.0) for trout and warm water streams. Cause for this single high value is unknown.

In 1997 three of seven samples exceeded the standard. Highest density (626 FC/100ml) occurred on April 28. Discharge was 104.97 cfs, turbidity was 7.6 NTU, and 48-hour precipitation was 0.40 inches. A density of 275 FC/100ml occurred on May 13. Discharge was 77.38 cfs, turbidity was 6.0 NTU, and 48-hour precipitation was 0.08 inches. A density of 212 FC/100ml occurred on June 24. Discharge was 31.6 cfs, turbidity was 4.4 NTU, and 48-hour precipitation was zero.

Dunloup Creek showed a tendency for coliform density to increase with increased 48-hour precipitation (Fig. 13). However, some high values occurred following periods of little or no measurable precipitation. Even though the state standard was exceeded almost routinely, coliform densities were not as high as in previous years.

Other parameters monitored (except for the high pH in 1996) were generally within their normal ranges. Conductivity levels were consistently high. Treatment plants tend to discharge ions, and runoff from roadways, railroads and disturbed areas of land may also elevate conductivity (NPS 1984). The WVWRB does not have a conductivity standard for warm water streams.

N12, New River at Thurmond (Figures 14A to 14F)

This site, monitored by NPS since 1990, is located on river right, downstream from the town of Thurmond. Discharge was obtained from the USGS remote beeper gage, New River at Thurmond. Water quality at this site is generally good. Dunloup Creek enters New River just upstream of this site on river left. Piney Creek enters New River just a few miles upstream from this site.

One of 16 1994 samples exceeded the standard. Density was 236 FC/100ml on July 29. Discharge was 13,050 cfs, turbidity was 17.0 NTU, and 48-hour precipitation was 1.14 inches. Density was 144 FC/100ml on May 3. Discharge was 14,700 cfs, turbidity, was 15.5 NTU, and 48-hour precipitation was 0.24 inches. Densities were below 70 FC/100ml on the other dates.

In 1995 one of 17 samples exceeded the standard. Density was 844 FC/100ml on January 17. Discharge was 74,800 cfs, turbidity was 60.0 NTU, and 48-hour precipitation was 0.97 inches. No other sample exceeded 75 FC/100ml, even when discharge and turbidity were elevated.

Two of seven samples collected in 1996 exceeded the standard. On May 8 density was 288 FC/100ml. Discharge was 20,600 cfs, turbidity was 20.5 NTU, and 48-hour precipitation was 0.46 inches. Density was 480 FC/100ml on July 29. Discharge was 4,585 cfs, turbidity was 19.5 NTU and 48-hour precipitation was 0.14 inches.

One of seven samples collected in 1997 exceeded the standard. Density was 332 FC/100ml on April 28. Discharge was 13,755 cfs, turbidity was 12.5 NTU, and 48-hour precipitation was 0.40 inches. No other samples exceeded 50 FC/100ml.

High coliform densities at this site appear to be correlated with high discharges and precipitation events (Fig. 14). Other parameters were within their normal ranges.

N13, Arbuckle Creek (Figures 15A to 15C)

This site is located near the mouth of Arbuckle Creek off the heavily used Thurmond-Minden Trail. Discharge was determined from a USGS staff gage upstream of the sampling site. Arbuckle Creek enters New River on river left downstream of Thurmond. The 8.7 square mile drainage includes the communities of Oak Hill, Lochgelly and Minden.

Arbuckle Creek has been severely polluted by sewage originating from two wastewater treatment plants, Oak Hill STP and Arbuckle PSD at Minden (WVDNR 1989). Both plants frequently were overloaded, and their collection systems suffered from I&I problems. Lift stations along the collection system reportedly even overflowed during relatively dry periods. Precipitation events with runoff often resulted in discharge of partially treated waste into the creek. Subsequent monitoring suggests these problems continue (Schmidt and Hebner 1991, Hebner 1991b, Sullivan 1993a, b), particularly during or following periods of elevated precipitation and discharge. Elevated FC levels indicated a continual source of bacterial contaminants.

Another concern for Arbuckle Creek is the presence of an EPA Superfund site in Minden. Efforts to remove PCB-contaminated soil from the site occurred in 1987, 1990 and 1991. It is unknown if contaminants from the site ended up in Arbuckle Creek.

Twelve of 16 times samples from 1994 exceeded the standard. Sample collectors often noted a septic odor emanating from the creek. Highest density was 3,920 FC/100ml on June 15. Discharge was 6 cfs, turbidity was 6.2 NTU, and 48-hour precipitation was zero. On July 29 density was 1,075 FC/100ml. Discharge was 8.4 cfs, turbidity was 13.0 NTU and 48-hour precipitation was 1.14 inches. Three other samples exceeded 700 FC/100ml. Five samples were between 200 and 325 FC/100ml. No relationship was established among FC density, precipitation, discharge or turbidity.

Eight of 17 samples collected in 1995 exceeded the standard. Bacterial density was 7,060 FC/100ml on January 4 and 4,460 FC/100ml on January 17. Highest density was 74,200 FC/100ml on February 15. On this date discharge was 37.6 cfs, turbidity was 96.0 NTU (water noted as gray/brown, had bad odor), and 48-hour precipitation was 0.38 inches. Oak Hill STP confirmed a bypass had occurred. Density was 7,600 FC/100ml on February 28. Discharge was 32.0 cfs, turbidity was 22.0 NTU and 48-hour precipitation was 0.62 inches. Again Oak Hill STP confirmed that they had bypassed wastewater into the creek. Other samples exceeding the standard this year were less than 600 FC/100ml.

Six of seven samples collected in 1996 exceeded the standard. Highest density was 8,440 FC/100ml on May 8. Discharge was 51.6 cfs, turbidity was 43.0 NTU and 48-hour precipitation was 0.46 inches. A foul odor emanated from the creek. A density of 3,690 FC/100ml occurred on July 29. Discharge was 5.6 cfs, turbidity was 18.0 NTU and 48-hour precipitation was 0.14 inches. On July 15 density was 2,450 FC/100ml. Discharge was 10.88 cfs, turbidity was 46.0 NTU, and 48-hour precipitation was 0.19 inches. The other three samples exceeding the standard had densities up to 700 FC/100ml. The WVWRB standard for pH (6.0 – 9.0) was exceeded (9.4) on July 1.

Five of seven samples from 1997 exceeded the standard. A density of 2,650 FC/100ml occurred on July 23. Discharge was 3.9 cfs, turbidity was 26.0 NTU and 48-hour precipitation was 0.05 inches. A density of 1,440 FC/100ml occurred on June 10. Discharge was 5.8 cfs, turbidity was 6.7 NTU and 48-hour precipitation was 0.09 inches. Other values were no greater than 450 FC/100ml.

Fecal coliform levels in Arbuckle Creek were not perfectly correlated with discharge, turbidity or precipitation (Fig. 15). All other parameters, except pH, were within their accepted ranges. Conductivity levels in Arbuckle Creek were elevated, especially during periods of low flow. Similar to Dunloup Creek, Arbuckle Creek has two waste treatment facilities discharging into the creek. Arbuckle Creek's close proximity to roadways, railroads and its history of mining activities in the upper reaches of the drainage, could account for elevated conductivity levels (NPS 1984).

N15, Coal Run (Figures 16A to 16C)

This site is located off the Cunard to Kaymoor Trail near the mouth of Coal Run. Coal Run enters New River downstream of the Cunard access on river left. The communities of Gatewood, Brooklyn and Cunard are within the Coal Run drainage. Discharge was estimated visually.

Early water quality monitoring (WVDNR 1989) indicated Coal Run had little fecal coliform contamination. Contamination has increased since 1990. The standard was exceeded one time between 1990 and 1991 (Schmidt and Hebner 1991, Hebner 1991b), six times in 1992 (Sullivan 1993a), and six times in 1993 (Sullivan 1993b). No explanation was given for this increase. Sullivan (1993b) indicated bacteria levels corresponded to changes in precipitation.

In 1994 Coal Run was sampled 16 times, with six samples exceeding the standard. The highest density was 1,200 FC/100ml on May 4. Discharge was high, turbidity was 7.3 NTU (milky) and 48-hour precipitation was 0.67 inches. A density of 358 FC/100ml occurred on June 16. Discharge was normal, turbidity was 17.0 NTU and 48-hour precipitation was 0.04 inches. Four samples were between 200 and 300 FC/100ml.

Seven of 18 samples from 1995 exceeded the standard. Highest density was 1,055 FC/100ml on July 18. Discharge was low, turbidity was 15.0 NTU, and 48-hour precipitation was 0.02 inches. A density of 570 FC/100ml occurred on May 10. Discharge was normal, turbidity was 23.0 NTU, and 48-hour precipitation was 0.43 inches. Five samples were between 200 and 400 FC/100ml.

Coal Run was sampled seven times in 1996. Four samples exceeded the standard. The greatest density exceeded 1,200 FC/100ml on July 2. Although discharge was normal and 48-hour precipitation was zero, the sample was collected while thunderstorms occurred in the area. Coal Run was yellow with the sediment load it was carrying. Turbidity was so great that the sample had to be cut to 1/8th of its original size to obtain a turbidity reading. Resulting turbidity was 504.0 NTU. Logging activities occurring in the watershed may have contributed to the extreme turbidity and the water's yellow color. A density of 600 FC/100ml occurred on July 16. Discharge was normal, turbidity was 17.0 NTU (milky), and 48-hour precipitation was1.52 inches. Other samples exceeding the standard had bacteria densities no greater than 400 FC/100ml.

Four of seven samples from 1997 exceeded the standard. A density of 1,240 FC/100ml occurred on July 10. Discharge was low, turbidity was 23.0 NTU (murky), and 48-hour precipitation was 0.29 inches. A density of 510 FC/100ml occurred June 9. Discharge was normal, turbidity was 12.0 NTU, and 48-hour precipitation was 0.08 inches. Two dates had densities between 200 and 500 FC/100ml.

Turbidity was elevated on each date the standard was exceeded, but coliform densities were not perfectly correlated with turbidity (Fig. 16). Elevated turbidity may be due to logging and other activities within the drainage. Mining has occurred in the upper watershed. However, the well-buffered stream does not exhibit impacts from acid mine drainage (Wood 1990).

N16, Keeney Creek at Winona (Figures 17A to 17C)

This station is located 1/2 mile downstream from the community of Winona. The NPS has monitored this creek since 1990. A staff gage is not on site, so visual observations were made for discharge.

All 16 of the 1994 samples exceeded the state standard. Highest density (9,800 FC/100ml) occurred on July 13. Discharge was low, turbidity was 1.9 NTU and 48-hour precipitation was a trace. Lowest density (600 FC/100ml) occurred on December 6. Discharge was normal, turbidity was 1.8 NTU and 48-hour precipitation was 0.73 inches.

All 18 of the 1995 samples exceeded the state standard. Highest density (13,800 FC/100ml) occurred on March 27. Discharge was normal, turbidity was 1.5 NTU and 48-hour precipitation was zero. Lowest density (250 FC/100ml) was on April 27. Discharge was normal, turbidity was 2.3 NTU and 48-hour precipitation was zero. On August 22 and September 8 dissolved oxygen (DO) levels were below the State of West Virginia standard (5.0 mg/l) for trout, recreational and warmwater streams. Discharge was very low and little aeration was occurring. The 48-hour precipitation was zero for both dates. It is unknown if the low DO resulted from organic loading or lack of aeration.

All seven samples collected in 1996 exceeded the state standard. Highest density was 4,140 FC/100ml on June 18. Discharge was low, turbidity was 1.6 NTU and 48-hour precipitation was zero. Lowest density was 500 FC/100ml on July 16. Discharge was normal, turbidity was 4.9 NTU and 48-hour precipitation was 1.52 inches.

Six of seven 1997 samples exceeded the standard. Highest density was 4,700 FC/100ml on June 23. Discharge was low, turbidity was 2.1 NTU and 48-hour precipitation was zero. Lowest density was 140FC/100ml on July 22. Discharge was low, turbidity was 2.2 NTU and 48-hour precipitation was 0.04 inches.

Keeney Creek has a long history of bacterial contamination indicative of substantial sewage or animal waste loads (Wood 1990). The communities of Winona, Lookout and Divide are possible sources of this contamination. Failing residential septic systems or direct lines carry waste to the stream. General apathy towards the stream is indicated by the amount of solid waste, mostly household trash, regularly noted. This stream should be considered a definite health risk to those coming into contact with its waters.

Figure 17 shows the relationship between fecal coliform densities and precipitation. Coliform densities moderated following precipitation events.

N17, New River at Fayette Station (Figures 18A to 18F)

This site is located on river left, upstream of the mouth of Wolf Creek. Anglers, boaters, swimmers, and picnickers frequently use this site. Discharge was determined from the Thurmond gage using the calculation shown in "Materials and Methods". A gage correlation chart based on this equation is provided in Appendix 4.

This site was sampled 16 times in 1994. No samples exceeded the state standard. Highest density was 160 FC/100ml on May 4. Discharge was 12,000 cfs, turbidity was 9.5 NTU and 48-hour precipitation was 0.67 inches.

In 1995 one sample out of 18 exceeded the standard. Bacterial density was 944FC/100ml on January 18. Discharge was 66,700 cfs, turbidity was 46.0 NTU and 48-hour precipitation was 0.97 inches.

Two of seven 1996 samples exceeded the standard. On May 7 bacteria density was 230 FC/100ml. Discharge was 21,000 cfs, turbidity was 23.0 NTU and 48-hour precipitation was 1.62 inches. The highest density (470FC/100ml) occurred on July 30. Discharge was 3,648 cfs, turbidity was 14.0 NTU and 48-hour precipitation was 0.19 inches.

One of seven samples collected in 1997 exceeded the standard. On May 28 bacteria density was 233 FC/100ml. Discharge was 8,405 cfs, turbidity was 6.4 NTU and 48-hour precipitation was 0.30 inches.

Water quality at this site is considered good. Few samples have exceeded the state standard. Storm water runoff and high discharges appear to flush bacterial contaminants into the river (Fig. 18). Other parameters were within acceptable ranges.

N18, Wolf Creek (Figures 19A to 19C)

Wolf Creek enters New River above Fayette Station Rapid on river left. Sampling occurred at the mouth near the Fayette Station river access parking area. Discharge was determined from a USGS staff gage upstream of the sampling point.

Rafters, anglers, and swimmers access the river near the confluence. Upstream the creek has a scenic waterfall and intersects the Kaymoor and Fayetteville Trails. Wolf Creek originates in the communities of Lochgelly and Summerlee, and drains about 17.41 square miles (WVDNR 1983). The stream crosses Rt. 19 before winding through a rural area outside Fayetteville and into New River Gorge.

Three of the 16 samples collected in 1994 exceeded the standard. The highest density was 2,000 FC/100ml on July 26. Discharge was 105 cfs, turbidity was 220.0 NTU and 48-hour precipitation was 0.17 inches. A density of 860 FC/100ml occurred on May 4. Discharge was 68 cfs, turbidity was 12.0 NTU and 48-hour precipitation was 0.67 inches. A density of 250 FC/100ml occurred on May 17. Discharge was 13.8 cfs, turbidity was 1.9 NTU and 48-hour precipitation was 0.77 inches.

In 1995 five of 18 samples exceeded the standard. Highest density was 764 FC/100ml on July 18. Discharge was 4.45 cfs, turbidity was11.0 NTU and 48-hour precipitation was 0.12 inches. Four values were between 200 and 500 FC/100ml.

Two of seven 1996 samples exceeded the standard. On May 7 density was 223 FC/100ml. Discharge was 114.5 cfs, turbidity was 13.0 NTU and 48-hour precipitation was 1.62 inches. A density of 2,100 FC/100ml occurred on July 2. Discharge was 10.52 cfs, turbidity was 248.0 NTU and 48-hour precipitation was zero.

Zero of seven samples from 1997 exceeded the standard. Highest density was 138 FC/100ml on May 28.

Highest fecal coliform densities for this site occurred in conjunction with precipitation events (Fig. 19). An earlier study had similar results (WVDNR 1989). This report cited pastureland and an overloaded lift station on House Branch and as sources of bacterial contamination.

An abandoned coal gob pile near the headwaters contributes acid drainage to Wolf Creek. Negative impacts on pH have not been noted at the mouth. The amount of acid drainage into Wolf Creek is unknown, and it may be neutralized before reaching the mouth. Other parameters were within acceptable ranges.

N19, Marr Branch (Figures 20A to 20C)

This site is located off Rt. 82 (Fayette Station Road) below the Rivers Inc. complex. Discharge was obtained from a USGS staff gage. Marr Branch makes a steep descent into the gorge having several scenic waterfalls as it makes its way to New River. Marr Branch enters New River on river left below Fayette Station.

Thirteen of 16 samples from 1994 exceeded the standard. On seven dates DO was below 5.0 mg/l. Highest density was 91,000 FC/100ml on July 26. Discharge was 30 cfs, turbidity was 130.0 NTU, 48-hour precipitation was 0.17 inches, and DO was 7.8 mg/l. A density of 60,000 FC/100ml occurred on July 13. Discharge was not noted, turbidity was 39.0 NTU, conductivity was 800umhos/cm, 48-hour precipitation was "trace", DO was 0.1 mg/l, and the stream was noted as being black and having an incredible stench. The new Fayetteville STP became operational in December 1994.

Fourteen of 18 samples collected in 1995 exceeded the standard. Highest density was 5,700 FC/100ml on July 5. Discharge was not recorded, turbidity was 6.0 NTU, and 48-hour precipitation was 0.40 inches. The continued occurrence of fecal coliform densities in excess of state standards was attributed to I&I problems in the collection system, and the slow pace of connecting businesses and residences to the collection system (personal communications, Fayetteville STP plant operator and WVDEP Inspector). All DO measurements for the year were above the WVWRB standard.

Six of seven samples collected in 1996 exceeded the standard. Highest density was 2,040 FC/100ml on July 2. Discharge was 1.9cfs, turbidity was 93.0NTU and 48-hour precipitation was zero. Heavy rain showers and thunderstorms occurred during sample collection. All DO measurements were within acceptable limits.

In 1997 three of seven samples exceeded the standard. Highest density was estimated to surpass 2,490 FC/100ml on June 23. Discharge was 0.87 cfs, turbidity was 4.9 NTU and 48-hour precipitation was 0.00 inches. A density of 1,990 FC/100ml occurred on July 10. Discharge was 1.6 cfs, turbidity was 17.0 NTU and 48-hour precipitation was 0.29 inches. All DO measurements were within acceptable limits.

Marr Branch historically has been impacted by sewage. One report found Marr Branch to carry bacterial loads consistent with that of a STP influent (WVDNR 1989). The study noted that even during times of drought sewage passed through the plant nearly untreated, and that I&I problems created during storms actually diluted fecal coliform densities of the effluent. Also the organic load in the stream negatively impacted dissolved oxygen levels. Other reports noted DO levels well below the WVWRB standard of 5.0 mg/l (Sullivan 1993a,b). On many dates the stream had an awful stench and was black in appearance. DO levels have been within acceptable limits since December 1994.

The new Fayetteville STP reduced, but did not eliminate, bacterial contamination of Marr Branch. As the collection system continues to have I&I problems, health concerns remain for people coming into contact with Marr Branch. Figure 20 shows relationships between fecal coliform densities and precipitation.

N20, New River at Cunard (Figures 21A to 21C)

This site is located on river left downstream of the river access at Cunard. Rafters and fishermen use this access. Discharge was based on the Fayette Station value.

Two of 16 samples from 1994 exceeded the standard. A density of 353 FC/100ml occurred December 6. Discharge was 2,955 cfs, turbidity was 1.7 NTU, and 48-hour precipitation was 0.73 inches. A density of 336 FC/100ml occurred May 4. Discharge was 12,000 cfs, turbidity was 8.8 NTU and 48-hour precipitation was 0.67 inches.

One of 18 samples from 1995 exceeded the standard. On January 18 density was 802 FC/100ml. Discharge was high (est. 66,700 cfs), turbidity was 48.0 NTU and 48-hour precipitation was 0.97 inches.

One of seven samples from 1996 exceeded the standard. Density was 320FC /100ml on May 7. Discharge was 21,000 cfs, turbidity was 19.0 NTU and 48-hour precipitation was 1.62 inches.

None of seven samples collected in 1997 exceeded the standard. Highest density was 165 FC/100ml on May 28. Discharge was 8,405 cfs, turbidity was 8.0 NTU and 48-hour precipitation was 0.30 inches.

Water quality at this site is comparable to other New River mainstem sites and does not appear to be severely impacted by fecal coliform bacteria. Figure 21 shows relationships between bacteria and precipitation. Other parameters were within normal ranges.

BLUESTONE NATIONAL SCENIC RIVER

Bluestone River is unimpounded with natural seasonal flows. High flows generally occur late winter to early spring as a result of snowmelt and precipitation. High fecal coliform levels have been linked to high seasonal high flows (Sullivan 1992, 1993b). These reports found overall water quality within BLUE to be satisfactory. Upstream of BLUE, domestic and municipal sources in the developed areas of the wider floodplain contribute to pollution (WVDNR 1978 and 1983). This river section sustains a high quality warmwater fishery (NPS 1994).

B01, Bluestone River near Bluestone State Park (Figures 22 A to 22D)

This site is located four tenths of a mile upstream of Bluestone SP. Samples were collected from a riffle on river left. Discharge from the Bluestone River at Pipestem gage is provided as a reference to discharge at the time of sample collection.

This site is only accessible by foot. Bluestone Turnpike Trail follows the river upstream of the sampling site. The proximity of Bluestone SP, Bluestone Lake and Bluestone Wildlife Management Area attracts many visitors to this section of the river.

Two of 10 samples from 1994 exceeded the standard. On May 10 density was 317 FC/100ml. Discharge was 1,030 cfs, turbidity was 14.5 NTU and 48-hour precipitation was 0.44 inches. Highest FC density was 900 FC/100ml on June 8. Discharge was 136 cfs, turbidity was 17.5 NTU and 48-hour precipitation was 0.31 inches.

Four of 10 1995 samples exceeded the standard. On May 3 density was 960 FC/100ml. Discharge was 1,320 cfs, the turbidity was 26.0 NTU, and 48-hour precipitation was 1.09 inches. Highest density was 3,400 FC/100ml on May 15. Discharge was 2,130 cfs, the turbidity was 61.0 NTU and 48-hour precipitation was 1.04 inches. Density was 307 FC/100ml on June 12. Discharge was 3,700 cfs, turbidity was 6.0 NTU and 48-hour precipitation was 0.10 inches. Density was 850 FC/100ml on June 26. Discharge was 444 cfs, turbidity was 65.0 NTU and 48-hour precipitation was 0.07 inches.

None of six samples from 1996 exceeded the standard. Highest density was 170 FC/100ml on May 30. Discharge was 723 cfs, turbidity was 9.7 NTU and 48-hour precipitation was 0.38 inches.

None of seven samples from 1997 exceeded the standard. Highest density was 133 FC/100ml on June 30. Discharge was 184 cfs, turbidity was 5.5 NTU and 48-hour precipitation was 0.00 inches.

Prior reports (Sullivan 1992 and 1993) linked elevated fecal coliform density with precipitation events and discharge. During this four-year study bacteria density was not perfectly correlated with precipitation (Fig. 22) or discharge. Most high coliform densities occurred in spring when increased precipitation and discharge are typical.

B02, Little Bluestone River (Figures 23A to 23D)

Little Bluestone River is the third largest tributary of Bluestone River, and the largest tributary within BLUE. Headwaters of Little Bluestone are east of Flat Top in western Summers County. The Little Bluestone drains 34.9 square miles, including the communities of Streeter, Jumping Branch, Nimitz and White Oak. The Little Bluestone flows southeast approximately nine miles from the headwaters, and enters Bluestone River at Lilly. The sampling site is near the mouth on river right. No gage is present, so discharge was categorized by visual observation.

Three of 10 samples from 1994 exceeded the standard. Highest density was 725 FC/100ml on June 8. Discharge was normal, turbidity was 17.5 NTU and 48-hour precipitation was 0.31 inches. Density was 235 FC/100ml on August 2. Discharge was normal, turbidity was 10.2 NTU and 48-hour precipitation was zero. Density was 705 FC/100ml on August 16. Discharge was normal, turbidity was 4.5 NTU and 48-hour precipitation was 0.34 inches.

Four of 10 samples from 1995 exceeded the standard. On May 3 density was 290 FC/100ml. Discharge was high, turbidity was 14.0 NTU and 48-hour precipitation was 1.09 inches. Density was 410 FC/100ml on May 15. Discharge was high, turbidity was 15.0 NTU and 48-hour precipitation was 1.04 inches. Highest density was 770 FC/100ml on June 12. Discharge was high, turbidity was 22.0 NTU and 48-hour precipitation was 0.10 inches. Density was 248 FC/100ml on July 24. Discharge was low, turbidity was 4.1 NTU and 48-hour precipitation was zero. Dissolved oxygen (4.9 mg/l) was below the state standard on August 28. There was almost no discharge at that time.

None of six 1996 samples exceeded the standard. Highest density was 156 FC/100ml on May 30. Discharge was high, turbidity was 8.9 NTU and 48-hour precipitation was 0.38 inches.

None of seven 1997 samples exceeded the standard. Density was 114 FC/100ml on June 5. Discharge was normal, turbidity was 11.0 NTU and 48-hour precipitation was 0.05 inches.

Earlier studies (WVDNR 1978, WVDEP 1994) concluded that Little Bluestone had few water quality problems. It was noted (WVDEP 1994) that "Save Our Streams" (SOS) benthic monitoring gave Little Bluestone River a high water quality rating. More recent monitoring (Hebner 1991a, Sullivan 1992, 1993b) indicated fecal coliform bacteria levels would, on occasion, exceed the WVWRB standard following precipitation events. These reports suggested bacteria originated from agricultural, domestic and natural sources.

Water quality of the Little Bluestone is generally good. Infrequent high fecal coliform densities did not allow trends to be established between FC levels and other parameters, including precipitation (Fig. 23). Aside from the low DO measurement in 1995, all other parameters were within acceptable ranges for each year.

B03, Bluestone River at Confluence (Figures 24A to 24D)

This site is located several hundred yards upstream from the confluence of the Bluestone and Little Bluestone Rivers. This section of the Bluestone flows through a mostly rural area with no domestic dwellings present. Anglers and hikers frequent the area. From 1991 through 1995 samples were collected from a ledge in a deep pool of slow moving water on river left. In 1996 the sampling location was moved downstream to a wadeable riffle on river left. Discharge from the Pipestem gage provided a reference to discharge at this site.

None of 10 samples from 1994 exceeded the standard. Highest density was 175 FC/100ml on May 10. Discharge was 1,030 cfs, turbidity was 13.0 NTU and 48-hour precipitation was 0.44 inches.

Five of 10 samples from 1995 exceeded the standard. On May 3 density was 520 FC/100ml. Discharge was 1,320 cfs, turbidity was 23.0 NTU and 48-hour precipitation was 1.09 inches. On May 15 density was 3,580 FC/100ml. Discharge was 2,130 cfs, turbidity was 84.0 NTU and 48-hour precipitation was 1.04 inches. The other samples exceeding the standard (200 FC/100ml on June 12, 606 FC/100ml on June 26, and 440 FC/100ml on July 24) occurred during varied precipitation, discharge and turbidity. The WVWRB standard for DO was not met on two dates. On July 24 DO was 2.5 mg/l, and it was 4.4 mg/l on August 28. These values occurred during a period of low discharge (53 cfs and 34 cfs, respectively).

One of six samples from 1996 exceeded the standard. On May 30 density was 312 FC100ml. Discharge was 723 cfs, turbidity was 9.5 NTU and 48-hour precipitation was 0.38 inches.

During 1997 none of seven samples exceeded the standard. Highest density was 110 FC/100ml on July 30. Discharge was 348 cfs, turbidity was 7.7NTU and 48-hour precipitation was 0.23 inches.

Generally, water quality at this site can be considered good. Monitoring does not indicate a continual source of bacterial contaminants. Earlier reports (Hebner 1991a, Sullivan 1992, 1993b) documented only one fecal coliform value exceeding the state standard. These reports suggested discharge and seasonal precipitation triggered bacterial pulses at the site. This suggestion is supported by data from 1994 through 1997 (Fig 24).

B04, Bluestone River at Pipestem State Park (Figures 25A to 25D)

This site is located on river left, upstream of Mountain Creek Lodge at Pipestem SP. This section of river flows through a narrow forested gorge. Vehicle access to the site is limited. Visitors access this area by a tramway at Pipestem SP, and hiking. Discharge for this site was obtained from the USGS Bluestone River at Pipestem gage.

One of 10 samples from 1994 exceeded the standard. On June 8 density was 252 FC/100ml. Discharge was 136 cfs, turbidity was 6.2 NTU and 48-hour precipitation was 0.31 inches.

Two of eight samples from 1995 exceeded the standard. On May 3 density was 808 FC/100ml. Discharge was 1,320 cfs, turbidity was 22.0 NTU and 48-hour precipitation was 1.09 inches. On May 15 density was 4,352 FC/100ml. Discharge was 2,130 cfs, turbidity was 89.0 NTU and 48-hour precipitation was 1.04 inches.

One of six samples from 1996 exceeded the standard. On May 30 density was 242 FC/100ml. Discharge was 723 cfs, turbidity was 7.8 NTU and 48-hour precipitation was 0.38 inches.

None of five samples from 1997 exceeded the standard. Highest density was 92 FC/100ml on July 30. Discharge was 348 cfs, turbidity was 11.0 NTU and 48-hour precipitation was 0.23 inches.

Water quality at this site can be considered good. Few samples exceeded the WVWRB standard between 1994 and 1997. Earlier monitoring did not yield any values exceeding the standard (Hebner1991a, Sullivan 1992, 1993b). These reports suggested a correlation between FC levels and increased discharge. This data supports that contention (Fig. 25).

B05, Mountain Creek (Figures 26A to 26D)

This site is located within Pipestem State Park about 2.5 miles southeast of Dunns. It is near the mouth of Mountain Creek on stream left. No gage is available, so discharge was categorized by visual observation. The stream rises south of Flat Top and Jumping Branch, and drains about 22.1 square miles of agricultural land. Previous information (Sullivan 1992, 1993b) indicates this stream to generally have good water quality.

One of 10 1994 samples exceeded the standard. On June 8 density was 1,310 FC/100ml. Discharge was normal, turbidity was 9.0 NTU and 48-hour precipitation was 0.31 inches.

Two of nine 1995 samples exceeded the standard. On June 12 density was 928 FC/100ml. Discharge was high, turbidity was 22.0 NTU and 48-hour precipitation was 0.10 inches. On August 28 density was 540 FC/100ml. Discharge was low, turbidity was 3.5 NTU and 48-hour precipitation was 0.06 inches. On this date DO (3.9 mg/l) was also below the WVWRB standard (5.0 mg/l).

None of six 1996 samples exceeded the standard. Highest density was 65 FC/100ml on May 30. Discharge was normal, turbidity was 6.5 NTU and 48-hour precipitation was 0.38 inches.

None of seven 1997 samples exceeded the standard. Highest density was 132 FC/100ml on July 15. Discharge was low, turbidity was 2.6 NTU and 48-hour precipitation was zero.

Water quality of Mountain Creek appears to be good. Only three values exceeded the standard during the four-years of sampling. The infrequent occurrence of these high values does not allow us to identify a trigger for these pulses. The infrequent high values suggest FC bacteria do not originate from a continual source. Bacteria density was somewhat correlated with precipitation (Fig. 26).

GAULEY RIVER NATIONAL RECREATIONAL AREA

Summersville Dam regulates the flow of Gauley River within GARI. The U. S. Army Corps of Engineers (COE) operates the dam and maintains Summersville Lake for recreational activities. Under the Water Resources Development Act of 1986, COE is required to discharge water from Summersville Dam for recreational activities in Gauley River below Summersville Dam (NPS 1993). This is accomplished during a six-week period of autumn. This drawdown creates the famous "Gauley Season" well known and anticipated among whitewater enthusiasts.

Studies conducted by WVDNR (1984) and NPS (Hebner 1991a, Sullivan 1992, 1993b) reported overall water quality of Gauley and Meadow Rivers to be good. However, inadequate disposal of human and/or animal waste was identified as a major problem in the basin (WVDNR 1984). Further, land surface disturbing activities (timbering, mining, gas exploration, agricultural activities) have increased erosion and sedimentation. Serious impacts from acid mine drainage were not documented in these studies.

G01, Summersville Dam (Figures 27A to 27D)

This site is located below the dam. Samples were collected from a flat bedrock ledge on river right. Water discharged from the bottom of Summersville Lake enters Gauley River just above this site. Discharge data is obtained from a gage at Summersville Dam.

None of 14 samples collected in 1994 exceeded the standard. Highest density was 164 FC/100ml. Discharge was 1,360 cfs, turbidity was 17.0 NTU and 48-hour precipitation was 0.52 inches.

None of 11 samples from 1995 exceeded the standard. Highest density was 154 FC/100ml on May 22. Discharge was 3,790 cfs, turbidity was 8.2 NTU and 48-hour precipitation was 0.05 inches.

Two of even samples collected in 1996 exceeded the standard. A density of 228 FC/100ml occurred on May 22. Discharge was 2,320 cfs, turbidity was 17.0 NTU and 48-hour precipitation was 0.87 inches. A density of 2,900 FC/100ml occurred on July 31. Discharge was 1,700 cfs, turbidity was 228.0 NTU and 48-hour precipitation was 0.30 inches. Heavy runoff-producing rain showers occurred during sample collection.

None of seven samples collected in 1997 exceeded the standard. Highest density was 7 FC/100ml on May 27. Discharge was 2,780 cfs, turbidity was 2.9 NTU and 48-hour precipitation was 1.42 inches.

Water quality monitoring between 1991 to 1993 documented good water quality for this site (Hebner 1991a, Sullivan 1992, 1993b). No samples exceeded the standard, and most sample densities were below 10 FC/100ml. These reports noted that the reservoir served as a catch basin for sediments and other materials originating upstream. Retention time for water behind the dam was sufficient to allow die-off of fecal coliform bacteria.

Water quality remained good through the monitoring period. The two 1996 samples that exceeded the standard may have been due to stormwater runoff, and were not typical of water released from Summersville Dam. All other parameters were within acceptable ranges. Figure 27 shows relationships between fecal coliform bacteria and discharge.

G02, Mid-Gauley (Figures 28A to 28B)

This site is on river right approximately 100 meters upstream from the mouth of Peters Creek. Discharge data is not available for this site. Visual observations of discharge were recorded at sample collection. Samples were collected in 1994 and 1995. In 1996 this site was dropped due to private land access issues and employee safety concerns. It was replaced by a site upriver (G06). Each site is presented separately.

None of 14 samples from 1994 exceeded the standard. Highest density (74 FC/100ml) occurred on August 23. Discharge was normal, turbidity was 12.0 NTU and 48-hour precipitation was 0.52 inches.

One of 11 1995 samples exceeded the standard. On July 5 density was 297 FC/100ml. Discharge was normal, turbidity was 3.4 NTU and 48-hour precipitation was 0.02 inches.

Water quality at this site can be considered good. Fecal coliform levels consistently remained below standard despite varied precipitation, discharge and turbidity. No correlation was established among FC and monitored parameters, including precipitation (Fig. 28). All other parameters were within acceptable ranges.

G06, Gauley River at Mason Branch (Figures 29A to 29B)

In 1996 this site replaced Mid-Gauley (G02). The site is located on river right upstream of the river access at Mason Branch, just above Driftwood Beach. No gage is near this site, so discharge was categorized by visual observations.

One of seven1996 samples exceeded the standard. On May 6 density was 250 FC/100ml. Discharge was high, turbidity was 16.0 NTU and 48-hour precipitation was 1.34 inches.

None of seven 1997 samples exceeded the standard. Highest density was 104 FC/100ml on April 30. Discharge was normal, turbidity was 8.9 NTU and 48-hour precipitation was 0.05 inches.

Water quality at this site can be considered good based upon monitoring in 1996 and 1997. However, two years of sampling are insufficient to establish definitive trends in water quality at this site. Fecal coliform levels appeared to increase with increased precipitation (Fig. 29) and turbidity. All other parameters were within acceptable ranges.

G03, Peters Creek (Figures 30A to 30B)

Peters Creek is the second largest tributary to Gauley River within GARI. It rises north of Summersville, flows westward to Lockwood, and turns south towards Gauley River. Peters Creek drains approximately 51.9 square miles of rural land, including the communities of Summersville, Lockwood, Gilboa and Zela. Sixteen named tributaries enter Peters Creek along its 17.5 miles. Laurel and Buck Garden Creeks are the main tributaries. Roads within the watershed include WV Routes 39, 129 and US Route 19. Conrail and Chessie rail systems, operated primarily for coal transportation (WVDNR 1984) are located within the watershed. Mining, timbering and natural gas production occur in the watershed. A coal prep-plant is located along the stream near Lockwood.

This site is located at the mouth of Peters Creek just above its confluence with the Gauley River. No gage is located at this site, so discharge was categorized by visual observation. In 1996 this site was replace by G07 because of private land access issues and employee safety concerns. Information for each site is provided separately.

Four of 14 samples from 1994 exceeded the standard. On May 5 density was 370 FC/100ml. Discharge was high, turbidity was 4.9 NTU and 48-hour precipitation was 0.72 inches. On May 16 density was 1,030 FC/100ml. Discharge was high, turbidity was 18.0 NTU and 48-hour precipitation was 0.13 inches. Highest density was 1,250 FC/100ml on July 28. Discharge was high, turbidity was 36.0 NTU and 48-hour precipitation was 1.23 inches. On August 23 density was 240 FC/100ml. Discharge was normal, turbidity was 4.0 NTU and 48-hour precipitation was 0.52 inches.

In 1995 eleven samples were collected, and two exceeded the standard. On May 22 density was 253 FC/100ml. Discharge was high, turbidity was 6.5 NTU and 48-hour precipitation was 0.05 inches. On July 5 density was 275 FC/100ml. Discharge was normal, turbidity was 6.5 NTU and 48-hour precipitation was 0.02 inches.

Earlier reports (Hebner 1991a, Sullivan 1992, 1993b) found Peters Creek water quality to be greatly affected by mining, timbering and gas well operations. Sedimentation from surface disturbing activities elevated turbidity in the stream. Elevated fecal coliform levels were prevalent. Domestic dwellings and pastureland within the watershed were cited as sources of fecal coliform bacteria in Peters Creek (WVDNR 1984).

Fecal coliform levels and the turbidity limit the water quality of Peters Creek. Precipitation events appear to trigger increases in turbidity and FC levels, although a direct relationship was not established. Figure 30 illustrates the relationship between turbidity and fecal coliform bacteria density. Conductivity levels on Peters Creek were high on most collection dates. All other parameters were within acceptable ranges.

G07, Peters Creek at Ford (Figures 31A to 31B)

This site is located at the second ford on Peters Creek downstream from Rt. 39. Samples were collected from a rock ledge on stream left just above the ford. This station replaced the original Peters Creek site and is further upstream. As a gage is not present at the site, discharge was categorized by visual observation.

Four of seven samples collected in 1996 exceeded the standard. On May 6 density was 830 FC/100ml. Discharge was high, turbidity was 74.0 NTU and 48-hour precipitation was 1.34 inches. On May 22 density was 1,180 FC/100ml. Discharge was low, turbidity was 25.0 NTU and 48-hour precipitation was 0.87 inches. On July 31 density was 9,000 FC/100ml. Discharge was high, turbidity was 594.0 NTU and 48-hour precipitation was 0.30 inches. Heavy rain showers producing turbid runoff occurred during sampling. The other value to exceed the standard was a density of 340 FC/100ml.

In 1997 two of seven samples exceeded the standard. On April 30 density was 200 FC/100ml. Discharge was normal, turbidity was 8.5 NTU and 48-hour precipitation was 0.05 inches. A density of 1,140 FC/100ml occurred on May 27. Discharge was high, turbidity was 35.0 NTU and 48-hour precipitation was 1.42 inches.

Fecal coliform bacteria and turbidity limit water quality at this site. Pastureland, domiciles, and a coal preparation plant are located a mile or so upstream of the site. High bacteria densities usually occurred during high, turbid discharges (Fig. 31). Conductivity was high on most sample dates. All other parameters were within acceptable ranges.

G04, Gauley River at South Side Swiss (Figures 32A to 32D)

This station is upstream of the community of Swiss on river right. A level flood plain occurs on both sides of the river. A river access on river right is downstream of the site. Samples were collected from a beach-like area just above the confluence of Laurel Creek. No gage is present at this site, so discharge was categorized visually.

None of 14 1994 samples exceeded the standard. Highest density was 130 FC/100ml on August 23. Discharge was normal, turbidity was 12.0 NTU and 48-hour precipitation was 0.52 inches.

None of 11 1995 samples exceeded the standard. Highest density was 68 FC/100ml on May 22. Discharge was high, turbidity was 7.0 NTU and 48-hour precipitation was 0.05 inches.

Two of six samples collected in 1996 exceeded the standard. On May 22 density was 248 FC/100ml. Discharge was high, turbidity was 19.0 NTU and 48-hour precipitation was 0.87 inches. On July 31 density was 270 FC/100ml. Discharge was high, turbidity was 60.0 NTU and 48-hour precipitation was 0.30 inches.

One of seven samples from 1997 exceeded the standard. On April 30 density was 860 FC/100ml. Discharge was normal, turbidity was 14.0 NTU and 48-hour precipitation was 0.05 inches. Other Gauley River mainstem sites did not exceed the standard on this date. This high density could be attributed to Laurel Creek, which created a turbid eddy at the site on this date. No samples were collected from Laurel Creek on this date.

Water quality at this site is considered good. The standard was exceeded only three times in four years. Precipitation appears related to increase fecal coliform densities (Fig. 32).

G05, Meadow River (Figures 33A to 33D)

Meadow River is the largest tributary to Gauley River within GARI. The lower six miles of this unimpounded river are within GARI. Meadow River flows north-northwesterly approximately 50 miles from its origin in eastern Summers County towards its confluence with Gauley River at Carnifax Ferry. The approximately 360 square mile watershed includes the communities of Rainelle, Rupert, Quinwood, Charmco, Nallen, Mt. Lookout, Smoot and Crawley. Major industries within the watershed are coal mining, timbering and agriculture (WVDNR 1984). Above GARI Meadow River is a slow, meandering stream. Wetlands are common along this stretch of the river. However as the river makes its way to its mouth, the river gradient increases, averaging 71 feet per mile, producing waters considered navigable by only a few of the country's best kayakers. Excellent fish habitat exists in the lower portion of the river, with smallmouth bass and rock bass being the primary sport fish present (NPS, 1993 Draft GARI GMP).

This site is located off of Rt. 41 upstream of Stickler Run and Anglins Creek. Samples were collected from a large boulder on river right. Wilderness PSD is downstream of the site. Discharge data was obtained from the USGS Meadow River gage.

One of 14 samples from 1994 exceeded the standard. On July 28 density was 312 FC/100ml. The gage was out of operation, so discharge was visually estimated as "high". Turbidity was 8.1 NTU and 48-hour precipitation was 1.23 inches.

None of 11 1995 samples exceeded the standard. Highest density was 192 FC/100ml on June 5. Discharge was 560 cfs, turbidity was 14.0 NTU and 48-hour precipitation was 0.57 inches.

In 1996 two of seven samples exceeded the standard. Highest density was 665 FC/100ml on May 6. Discharge was 3,170 cfs, turbidity was 23.0 NTU and 48-hour precipitation was 1.34 inches. On July 17 density was 228 FC/100ml. Discharge was estimated as "normal" as the gage was not operational. Turbidity was 0.9 NTU and 48-hour precipitation was 0.37 inches.

None of seven 1997 samples exceeded the standard. Highest density was 195 FC/100ml on April 30. Discharge was 1,274 cfs, turbidity was 13.0 NTU and 48-hour precipitation was 0.05 inches.

Water quality at this site can be considered good. The WVWRB standard was exceeded only three times during four-years. Bacteria levels generally increased during precipitation events (Fig. 33). All other parameters were within acceptable ranges.

GENERAL DISCUSSION

New River Gorge National River

Water quality of New River from 1994 to 1997, in terms of fecal coliform bacteria, was relatively good. Most sample sites experienced high bacteria densities during high discharges. These events typically occurred during spring runoff and following prolonged or intense precipitation. Increase turbidity during these events indicates that sediment and contaminants were being washed or flushed into the river. Although a sizable number of samples exceeded the WVWRB standard, the amount by which the standard was exceeded usually was not very great. During these high, turbid discharges there is some health concern for individuals coming into contact with these waters.

At times only certain sections of the river were impacted. This was probably due to localized storms that did not impact the entire watershed. For example, two sites very close together (N04, N21) had densities exceeding 1,000 FC/100ml on August 17, 1994. Stream discharge on this date was 22,400 cfs. Two other river stations sampled on this day and the next had densities only slightly exceeding the standard.

Some New River sites may present health risks at the confluence of impacted tributaries. Marr Branch, Coal Run, and Madam, Piney, Dunloup, Keeney, Arbuckle, and Wolf Creeks consistently exceed the state standard for fecal coliform bacteria. These streams are impacted by bacterial contaminants originating from overloaded STPs, inadequate residential sewage systems, and direct waste lines to the streams. Fortunately the size and discharge of New River usually dilutes this contamination to acceptable levels.

As noted above, several New River tributaries have been heavily impacted by fecal coliform bacteria. These bacteria originate from municipal wastewater collection and treatment systems in six of these tributaries (Marr Branch, Piney, Meadow, Dunloup, Arbuckle, and Wolf Creeks). Many facilities discharging into these streams become overloaded during storm events. This is primarily due to the facilities being fed by combined storm and sanitary sewers. When facility capacity is exceeded by incoming discharges, inadequately treated sewage is discharged into the receiving stream, and in some instances may be bypassed by the affected facility. Improvements or upgrades have been made to some of these facilities, and other work is in progress. However storm water runoff continues to be the nemesis for all of these facilities. Two tributaries (Keeney and Madam Creeks) have direct waste lines discharging into the streams, as well as faulty residential sewage systems.

Before 1994 Marr Branch was severely impacted by untreated sewage coming from the old Fayetteville STP. Following startup of the new STP in late 1994, many parameters showed marked improvement. The stream no longer ran black, dissolved oxygen increased, and conductivity decreased. Although fecal coliform density was lower, many samples continued to exceed the WVWRB standard. Contact with the STP operator revealed that the new plant had I&I problems with its collection system due to the presence of a combined storm and sanitary sewer. This overloads the new STP during storm events, allowing partially treated wastewater to be bypassed into Marr Branch.

This situation has not been corrected. During 1994 (old STP), 13 of 16 samples exceeded 200 FC/100ml. In 1995 (new STP) 14 of 18 samples exceeded 200 FC/100ml. In 1996 six of seven samples exceeded 200 FC/100ml and in 1997 three of seven samples exceeded 200 FC/100ml. It should be note that 1997 was a much drier than normal year. Marr Branch remains a health risk for persons coming into contact with its waters.

A lift station on House Branch, tributary to Wolf Creek, pumps untreated waste to the Fayetteville STP for treatment. Prior reports noted this lift station became overloaded during storm events and discharged untreated waste into House Branch. Wolf Creek samples exceeded 200 FC/100ml 3 of 16 times in 1994, 5 of 18 times in 1995, 2 of 7 times in 1996, and 0 of 7 times in 1997. While high bacteria density in Wolf Creek was not as common as in Marr Branch, the potential remains for densities in the thousands. This factor, and its close proximity to areas frequented by outdoor recreational users, makes Wolf Creek a potential health risk to persons coming into contact with its waters.

Fecal coliform bacteria in Dunloup Creek originate from individual residences in the upper watershed, and from two wastewater treatment plants lower in the watershed. Both the Mt. Hope and White Oak systems suffer from I&I problems, and become overloaded during storm events. The stream is easily accessed at many points, particularly along State Route 25 between Glen Jean and Thurmond. Several commercial rafting companies put into New River just upstream from the mouth of Dunloup Creek. Dunloup Creek is stocked with trout by WVDNR. Of 47 samples collected from Dunloup Creek between 1994 and 1997, 23 exceeded the WVWRB standard for fecal coliform bacteria. This indicates a continual source of bacteria entering the stream. Consequently, Dunloup Creek remains a health risk to individuals coming into contact with its waters.

Arbuckle Creek is similar to Dunloup Creek in having two STPs in its watershed. Both facilities have I&I problems and are frequently overloaded. These inadequacies are reflected by Arbuckle Creek consistently exceeding the WVWRB fecal coliform standard (31 of 47 samples collected between 1994 and1997). These high values occurred regardless of discharge or precipitation levels. On many dates bacteria density was in the thousands, indicating the severity of impacts to Arbuckle Creek. Two hiking trails intersect the stream, increasing potential for human contact with its waters. This stream remains a health risk for individuals coming into contact with its waters.

Piney Creek, is the largest, and most impacted, tributary to New River within NERI. Numerous wastewater treatment facilities are located within the watershed, and each is a potential contributor of untreated or partially treated waste. Also, there are many residential areas with faulty or failing septic systems discharging into the stream. Data collected between 1994 and 1997 showed a moderation in the frequency of fecal coliform values exceeding the WVWRB standard, and a lessening of the amount by which those values exceeded the standard. However, in 1996 all values exceeding the standard had densities in the thousands. Although no actual connection was established, it is thought these values might be the result of flood control construction along Cranberry Creek. The increase fecal coliform densities in 1996 show the potential for Piney Creek to be contaminated by these bacteria. With the mouth of Piney Creek near a heavily used river access, and the continued occurrence of high fecal coliform bacteria densities, Piney Creek remains a health concern to those coming into contact with its waters.

Of the six NERI tributaries with municipal discharges, Meadow Creek appears to be least impacted by these discharges. Except for 1995, the number of values exceeding the WVWRB standard for fecal coliform bacteria was less than in other NERI tributaries with municipal discharges. Between 1994 through 1997 fecal coliform density in Meadow Creek increased during or following precipitation events having runoff. Early NPS reports indicated Meadow Bridge STP suffered from I&I problems and operational deficiencies resulting in the discharge of partially treated waste to Meadow Creek during storm events. Also, Meadow Creek drains a fairly rural, agricultural area. Runoff from livestock pastures can contribute to bacterial loading of the stream. Meadow Creek does not seem to be continuously impacted by fecal coliform bacteria. However, bacterial pulses can occur in conjunction with precipitation events. This results in conditions not favorable for human contact.

Madam and Keeney Creeks do not have STPs or other commercial wastewater treatment facilities within their watersheds, yet they consistently have the highest fecal coliform levels of all NERI monitoring sites. Ironically, the lack of municipal wastewater treatment systems for these areas is the reason bacterial pollutants are found in each creek on a continual basis. Residences found along each of these areas are not connected to a municipal wastewater treatment system. Even though residential septic systems may be present, many are not maintained, or are faulty and failing. In some cases, as has been observed at Madam Creek, direct lines originating from residences carry raw sewage to the creek. Therefore, the primary sources for bacterial contamination of each creek, are residential areas located within each creek's watershed.

Madam Creek consistently had FC counts that exceeded the state standard during each period of monitoring. Only two of 46 samples collected from Madam Creek between 1994 and 1997 did not exceed the WVWRB standard for fecal coliform bacteria. This clearly demonstrates a continual source of fecal coliform bacteria entering the creek. Only one of 48 samples collected from Keeney Creek over the same period did not exceed the state standard. Again, is representative of a continual source of bacterial contaminants entering the stream. Madam and Keeney Creeks should be considered definite health hazards for any individual coming into contact with their waters

Water quality in Coal Run has declined since 1991. Increasing numbers of samples with fecal coliform density exceeding the WVWRB standard, along with elevated turbidity and conductivity, all indicate continual disturbances within the watershed. Logging and mining activities can account for increased turbidity and conductivity. Increased bacteria levels are probably due to a lack of residential sewage treatment for the communities of Brooklyn and Cunard. The intersection of Coal Run with the Cunard to Kaymoor trail increases the potential for human contact with the stream. Since Coal Run often has fecal coliform levels exceeding the state standard, its waters are not favorable for bodily contact.

Between 1994 and 1997 Laurel and Lick Creeks had few fecal coliform densities exceed the WVWRB standard. Values that exceeded the standard did so by only a small amount. In each stream fecal coliform levels rose following storm events with runoff. This indicates contaminants being washed into the streams. Watersheds of both streams are sparsely populated and the infrequent high values do not fit the pattern of continual domestic pollution. High coliform densities in these streams are probably due to livestock pastures and natural (wildlife) sources within their watersheds. High bacteria densities subsided quickly in these streams. In general, water quality for each stream can be considered fair, except during high, turbid discharges when it may be questionable.

Bluestone National Scenic River

Water quality of Bluestone River within BLUE is good in reference to fecal coliform bacteria. Early NPS reports suggested a connection between seasonal discharge regimes of the river and bacteria levels. Higher spring discharges generally had higher levels of FC bacterial. These would diminish with decreasing summer discharges as the season progressed. Substantial precipitation events also were considered a factor leading to high FC levels. This pattern also applied to the tributaries. Human health risks were most likely to exist during these high discharges, but the risks were thought to be minimal.

Between 1994 and 1997 water quality for each site generally fit the seasonal pattern as described above. Bluestone River exhibited higher FC levels early in the year during higher spring discharges, and also following appreciable precipitation events. Few mainstem values exceeded the state standard during normal discharges. Yearly differences in the number of samples exceeding the WVWRB standard can be attributed to variations in discharge and precipitation. Higher precipitation and discharge levels were noted more often during 1995 than in 1994, 1996 and 1997. The occasional high fecal coliform densities recorded at Bluestone River sites do not fit the pattern of a continual source of contaminants entering the river. Rather seasonal factors seem to influence the occurrence of elevated bacteria densities at these sites.

Little Bluestone River and Mountain Creek are very much like Bluestone River in terms of water quality. Prior reports linked elevated fecal coliform densities in these streams to high discharges and precipitation. Both streams rarely exceeded the standard during normal discharge and precipitation. Elevated bacteria density resulted from storm events producing high, turbid discharges. Similar to Bluestone River sites, these streams had more samples exceed the state standard during 1995 than in other years. Water quality of these streams does not appear to be impacted on a continual basis.

All BLUE sites can be considered to have fair water quality in terms of fecal coliform bacteria. No site produced bacteria levels indicative of a continual source of contamination. No single source had been determined for FC bacteria in these waters. It is thought that most bacteria entering the stream originate from agricultural and natural sources such as pastureland and wildlife. However, in more developed areas of the watershed, domestic and commercial sources are the likely contributors of bacterial contaminants. Because fecal coliform bacteria densities exceeding the WVWRB standard occurred infrequently, health risks to river users are considered minimal. This risk may rise increase during high, turbid discharges following storm events.

Gauley River National Recreation Area

Water quality of Gauley River can be considered good. Very few fecal coliform samples exceeded the WVWRB standard. The few high values usually barely exceeding the state standard. Fecal coliform levels rose, but usually remained within acceptable limits, during high discharges and following storm events with runoff. This hydrologic influence does not indicate a pattern of continual contamination. At two sites, high values were attributed to nearby inputs. High values at South Side Swiss may be due to inflow from Laurel Creek. The Summersville Dam site is below a storm water drainage ditch thought to have contributed runoff on the dates of two high values in 1996.

Water quality of Meadow River is comparable to that of Gauley River and can be considered good. Meadow River had only a few fecal coliform densities exceeding the WVWRB standard. Like Gauley River sites, those few high values usually exceeded the state standard by only a small amount. These high values occurred when discharge, turbidity or precipitation were higher than normal. Bacterial contaminants found in Meadow River probably originate from natural and agricultural sources in upper reaches of the watershed. Due to topography of the lower Meadow River watershed, access and development has been limited. Therefore fewer impacts to water quality occur.

Water quality in Peters Creek should be considered limited in terms of bacterial content. This especially true when compared to the other GARI sites. More values exceeding the WVWRB standard came from this stream than at any other GARI site. Elevated fecal coliform levels occurred during at various levels of discharge and precipitation. Highest bacteria densities occurred during high, turbid discharges and following substantial precipitation events. These bacteria most likely originate from domestic sources in upper reaches of the watershed. On most sampling dates the stream had a slight haze, or milky appearance. Conductivity levels were consistently elevated. Increased turbidity and conductivity probably reflect land-disturbing activities (i.e., mining, timbering, gas well development) occurring within the watershed. Peters Creek can be considered a health risk to recreational users coming into contact with its waters.

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EXPLANATION OF FIGURES 4 THROUGH 33

The figures (4-33) that follow represent the fecal coliform bacteria data for the years of 1994, 1995, 1996 and 1997 from the NERI, BLUE and GARI Water Quality Monitoring Program. Sampling for NERI continued uninterrupted from April 1994 through September 1995. Data for this period is presented accordingly.

It should be noted that each chart should be looked at individually. There are several charts for each station due to the number of years of monitoring included in this report. Also for some stations, several charts may be presented for that particular station comparing fecal coliform levels to different parameters. The scale of the vertical "Y" axis changes from chart to chart, so the figures cannot be compared directly. In addition please note that the stream/river level units are in cubic feet per second (CFS), rainfall is the amount of precipitation in inches that fell within a 48 hour time period prior to the sampling date, and turbidity measurements are Nephelometric turbidity units (NTU).

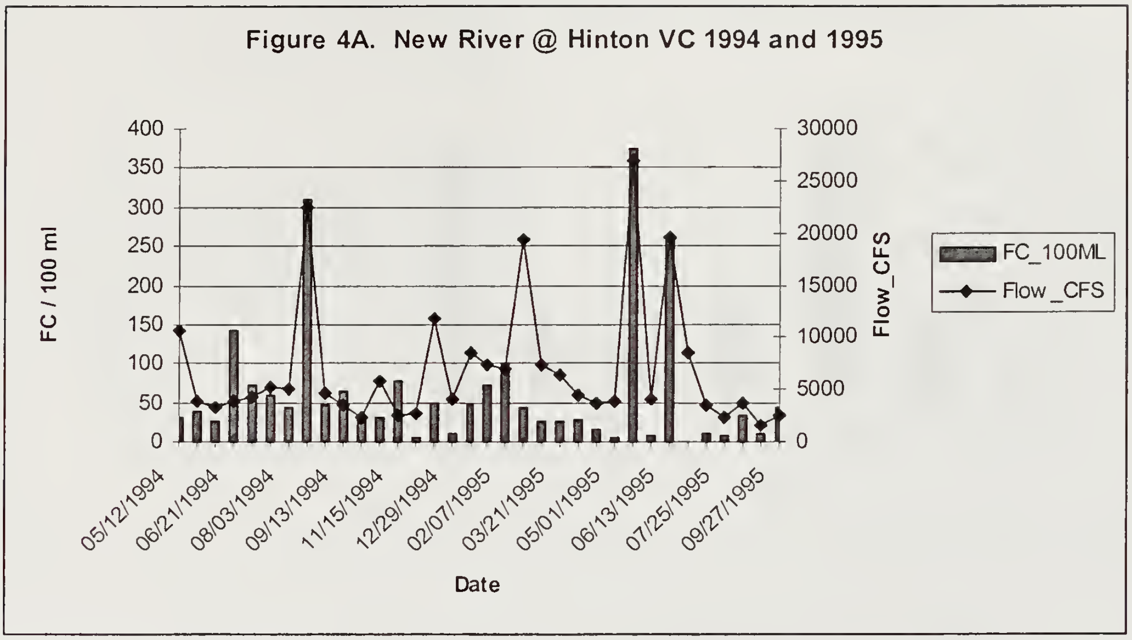


Figure 4A. New River @ Hinton VC 1994 and 1995
FC / 100 ml
400
350
300
250
200
150
100
50
0
30000
25000
20000
15000
10000
5000
0
Flow_CFS
FC_100ML
Flow_CFS
05/12/1994
06/21/1994
08/03/1994
09/13/1994
11/15/1994
12/29/1994
02/07/1995
03/21/1995
05/01/1995
06/13/1995
07/25/1995
09/27/1995
Date

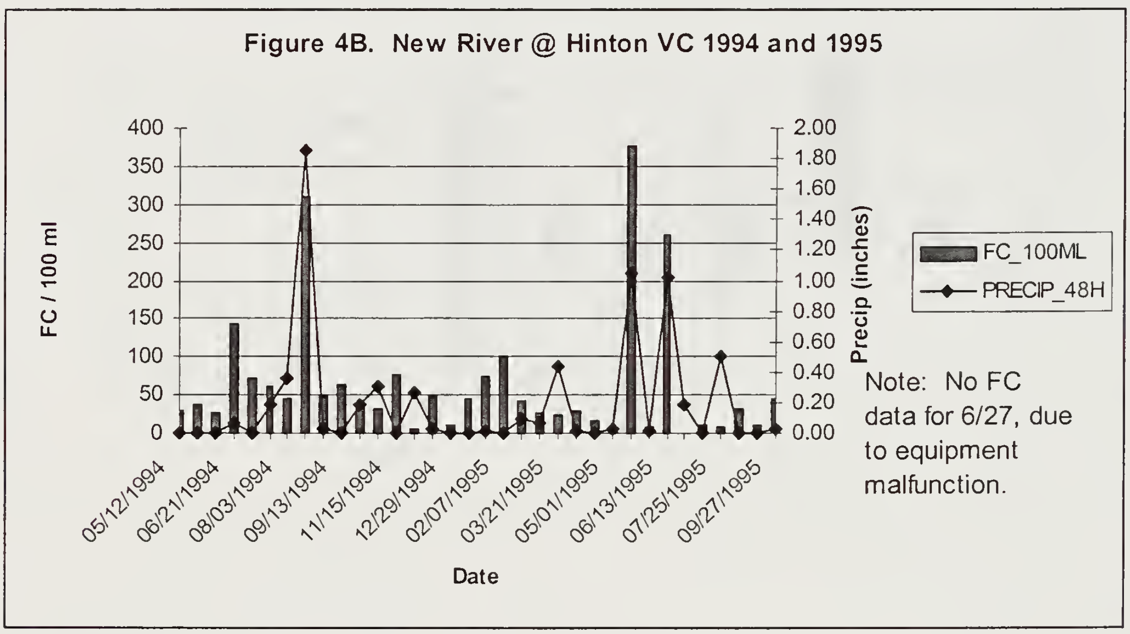


Figure 4B. New River @ Hinton VC 1994 and 1995
FC / 100 ml
400
350
300
250
200
150
100
50
0
2.00
1.80
1.60
1.40
1.20
1.00
0.80
0.60
0.40
0.20
0.00
Precip (inches)
FC_100ML
PRECIP_48H
Note: No FC data for 6/27, due to equipment malfunction.
05/12/1994
06/21/1994
08/03/1994
09/13/1994
11/15/1994
12/29/1994
02/07/1995
03/21/1995
05/01/1995
06/13/1995
07/25/1995
09/27/1995
Date

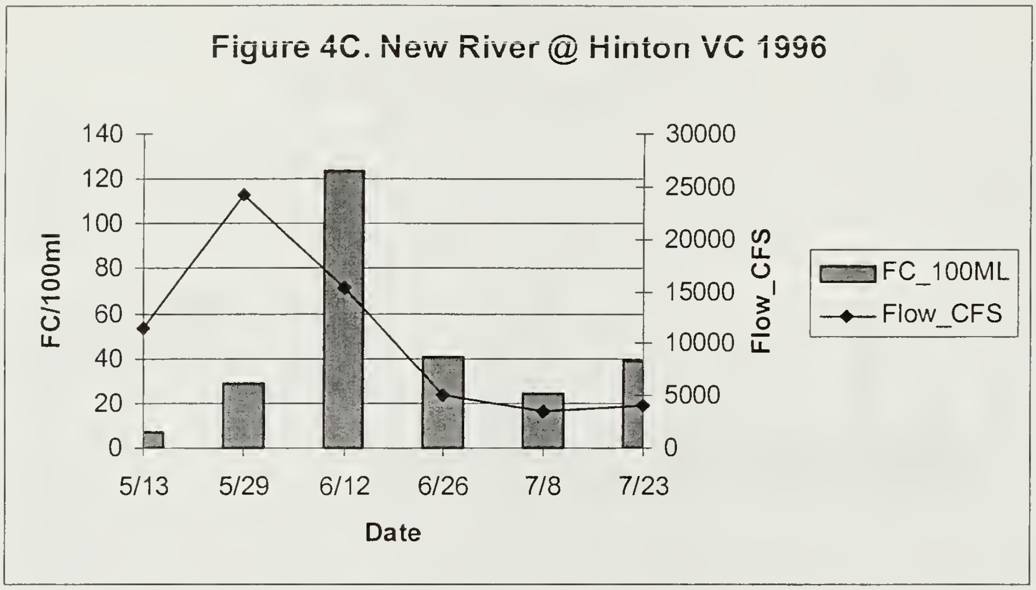


Figure 4C. New River @ Hinton VC 1996
FC/100ml
Flow_CFS
Date
140
120
100
80
60
40
20
0
30000
25000
20000
15000
10000
5000
0
5/13
5/29
6/12
6/26
7/8
7/23
FC_100ML
Flow_CFS

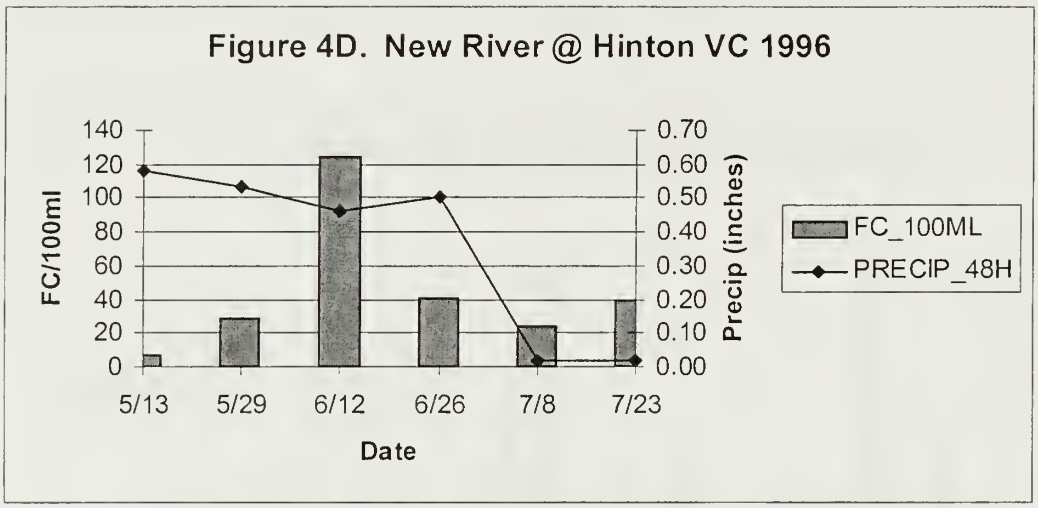


Figure 4D. New River @ Hinton VC 1996
FC/100ml
Precip (inches)
Date
140
120
100
80
60
40
20
0
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
5/13
5/29
6/12
6/26
7/8
7/23
FC_100ML
PRECIP_48H

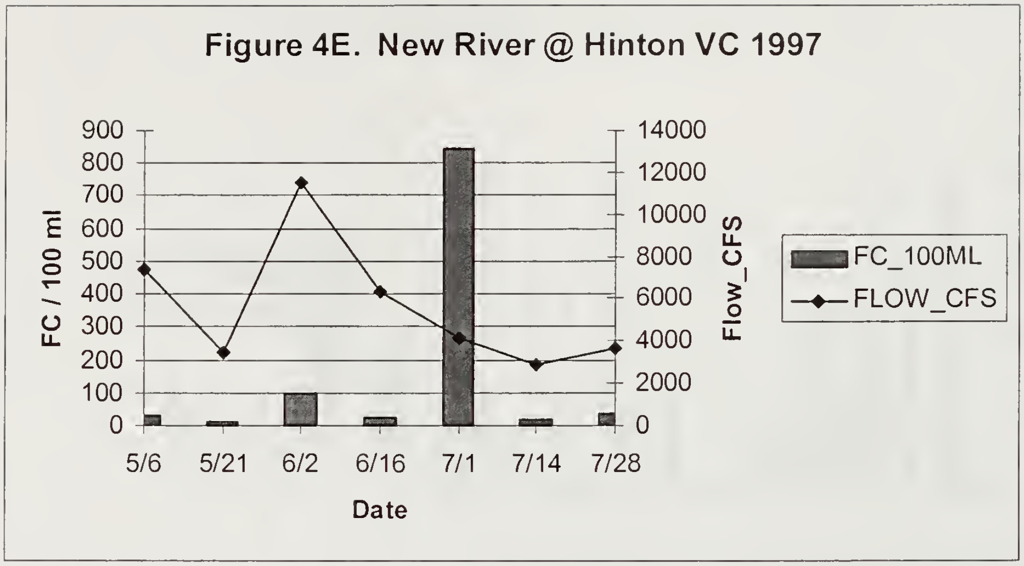


Figure 4E. New River @ Hinton VC 1997
900
800
700
600
500
400
300
200
100
0
FC / 100 ml
14000
12000
10000
8000
6000
4000
2000
0
Flow_CFS
5/6
5/21
6/2
6/16
7/1
7/14
7/28
Date
FC_100ML
FLOW_CFS

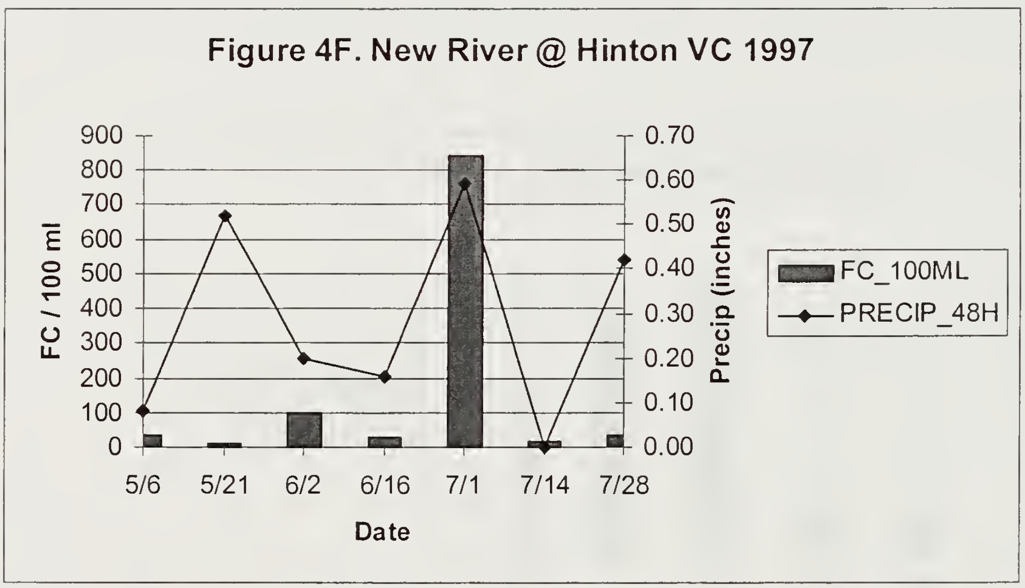


Figure 4F. New River @ Hinton VC 1997
900
800
700
600
500
400
300
200
100
0
FC / 100 ml
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
Precip (inches)
5/6
5/21
6/2
6/16
7/1
7/14
7/28
Date
FC_100ML
PRECIP_48H

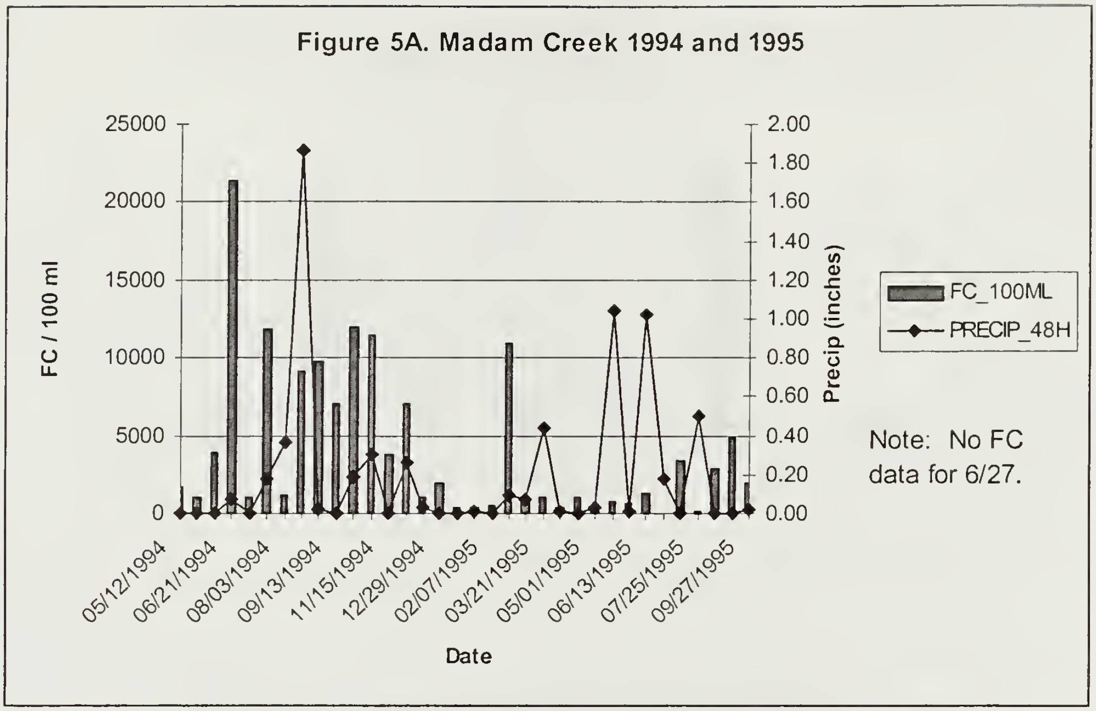


Figure 5A. Madam Creek 1994 and 1995
FC / 100 ml
Precip (inches)
FC_100ML
PRECIP_48H
Note: No FC data for 6/27.
Date
25000
20000
15000
10000
5000
0
2.00
1.80
1.60
1.40
1.20
1.00
0.80
0.60
0.40
0.20
0.00
05/12/1994
06/21/1994
08/03/1994
09/13/1994
11/15/1994
12/29/1994
02/07/1995
03/21/1995
05/01/1995
06/13/1995
07/25/1995
09/27/1995

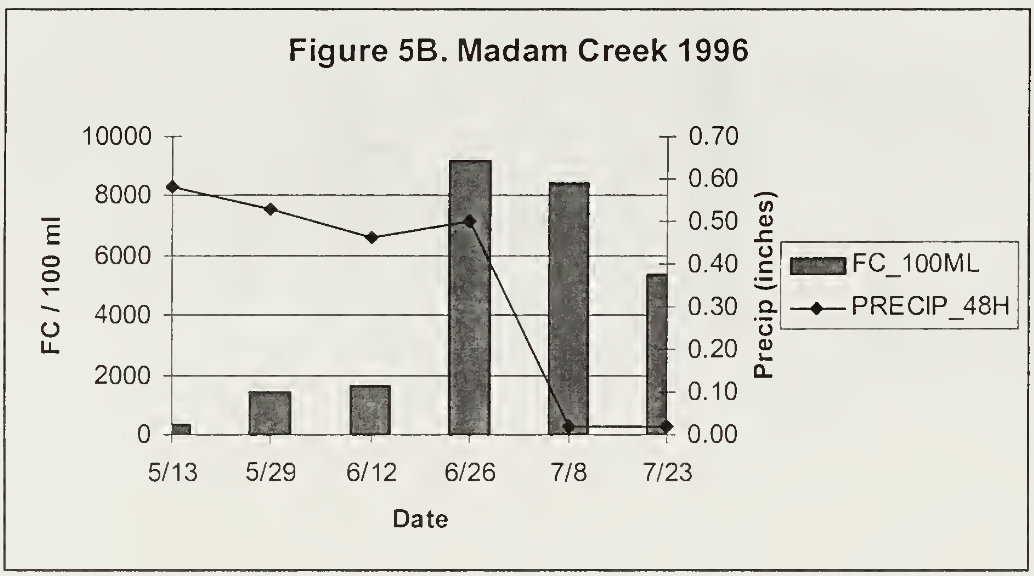


Figure 5B. Madam Creek 1996
FC / 100 ml
Precip (inches)
FC_100ML
PRECIP_48H
Date
10000
8000
6000
4000
2000
0
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
5/13
5/29
6/12
6/26
7/8
7/23

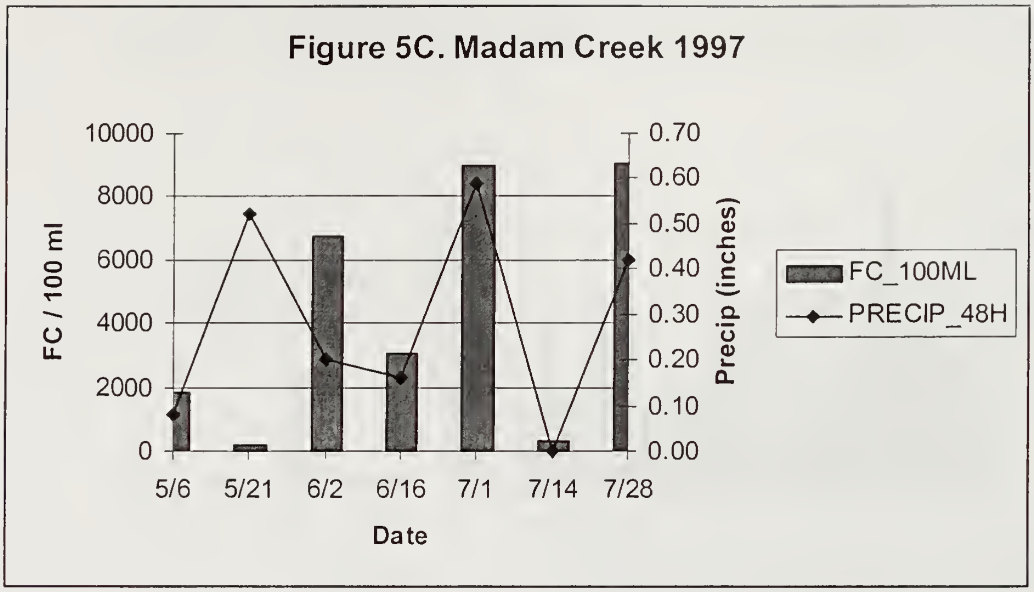


Figure 5C. Madam Creek 1997
10000
8000
6000
4000
2000
0
FC / 100 ml
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
Precip (inches)
5/6
5/21
6/2
6/16
7/1
7/14
7/28
Date
FC_100ML
PRECIP_48H

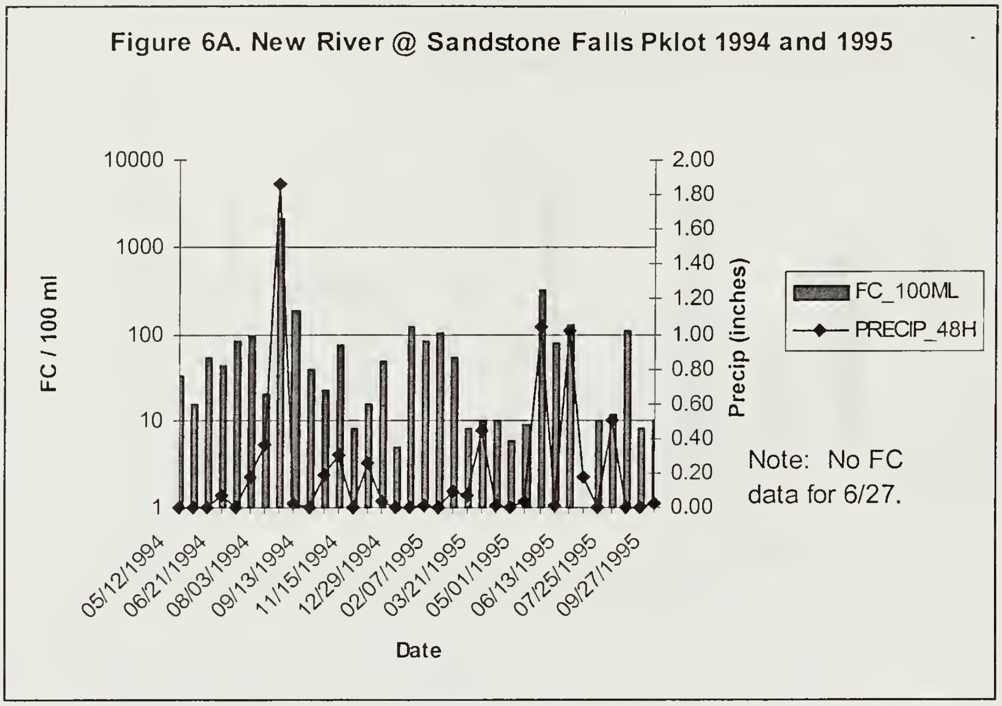


Figure 6A. New River @ Sandstone Falls Pklot 1994 and 1995
10000
1000
100
10
1
FC / 100 ml
2.00
1.80
1.60
1.40
1.20
1.00
0.80
0.60
0.40
0.20
0.00
Precip (inches)
FC_100ML
PRECIP_48H
Note: No FC data for 6/27.
05/12/1994
06/21/1994
08/03/1994
09/13/1994
11/15/1994
12/29/1994
02/07/1995
03/21/1995
05/01/1995
06/13/1995
07/25/1995
09/27/1995
Date

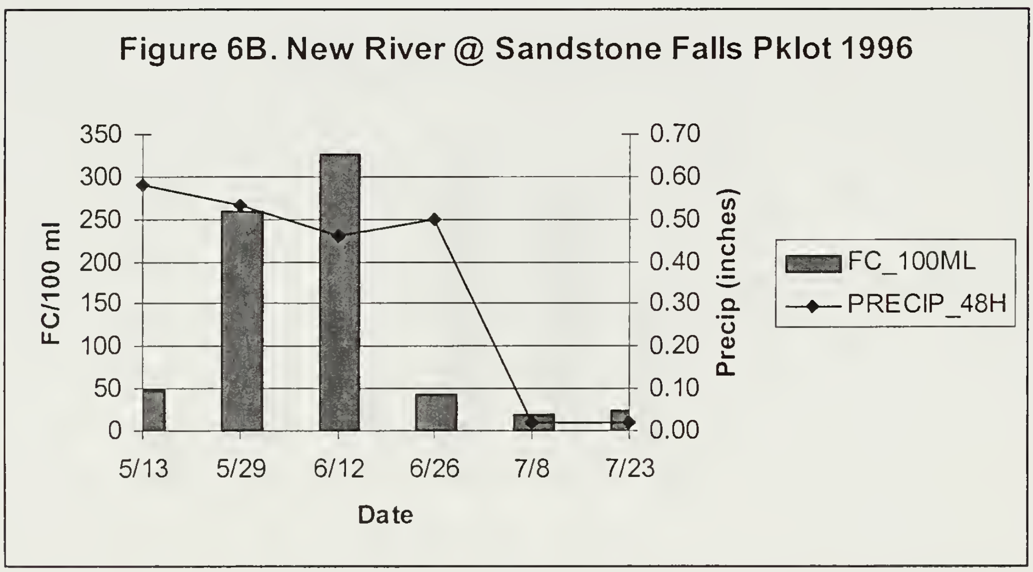


Figure 6B. New River @ Sandstone Falls Pklot 1996
350
300
250
200
150
100
50
0
FC/100 ml
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
Precip (inches)
FC_100ML
PRECIP_48H
5/13
5/29
6/12
6/26
7/8
7/23
Date

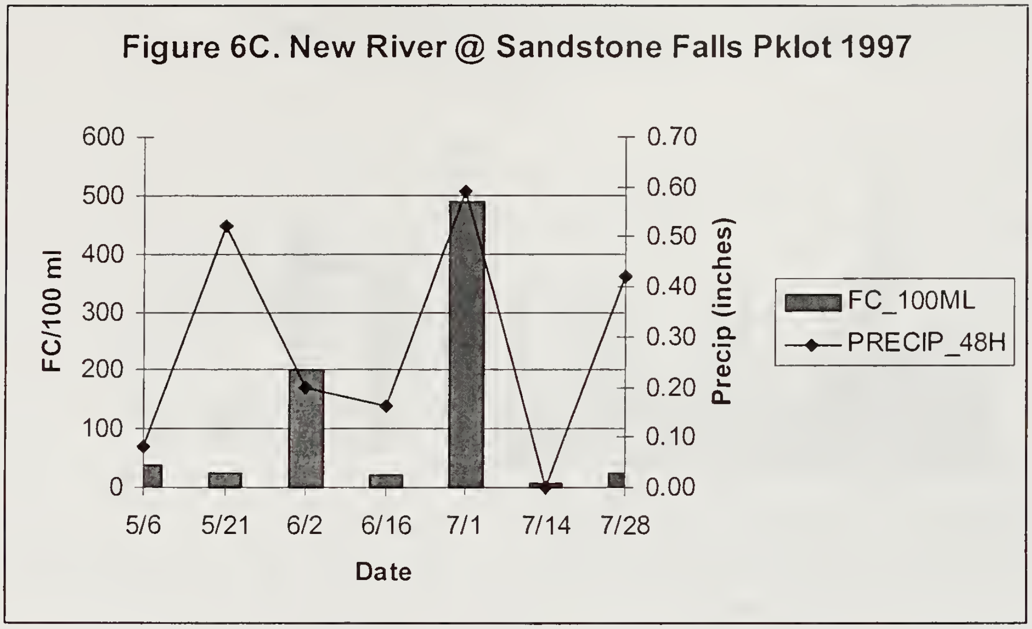


Figure 6C. New River @ Sandstone Falls Pklot 1997
600
500
400
300
200
100
0
FC/100 ml
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
Precip (inches)
5/6
5/21
6/2
6/16
7/1
7/14
7/28
Date
FC_100ML
PRECIP_48H

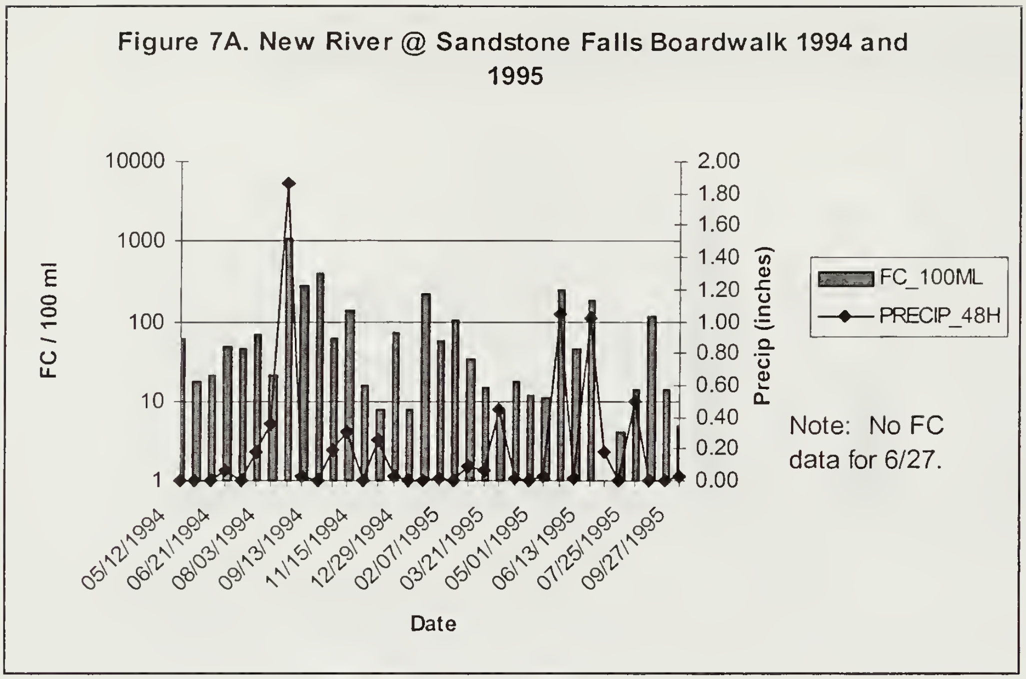


Figure 7A. New River @ Sandstone Falls Boardwalk 1994 and 1995
FC / 100 ml
Precip (inches)
10000
1000
100
10
1
2.00
1.80
1.60
1.40
1.20
1.00
0.80
0.60
0.40
0.20
0.00
05/12/1994
06/21/1994
08/03/1994
09/13/1994
11/15/1994
12/29/1994
02/07/1995
03/21/1995
05/01/1995
06/13/1995
07/25/1995
09/27/1995
Date
FC_100ML
PRECIP_48H
Note: No FC data for 6/27.

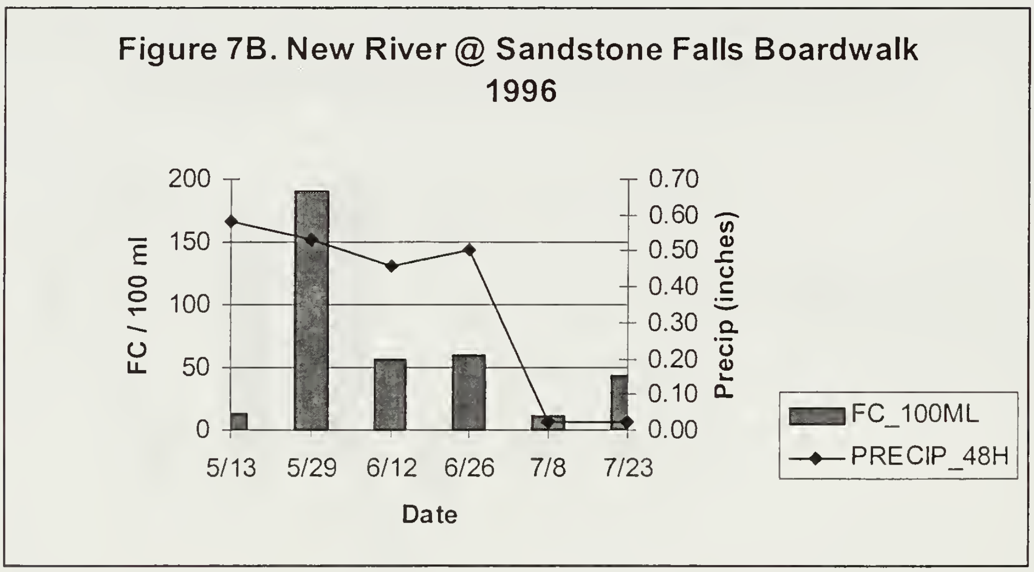


Figure 7B. New River @ Sandstone Falls Boardwalk 1996
FC / 100 ml
Precip (inches)
200
150
100
50
0
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
5/13
5/29
6/12
6/26
7/8
7/23
Date
FC_100ML
PRECIP_48H

Figure 7C. New River @ Sandstone Falls Boardwalk
1997

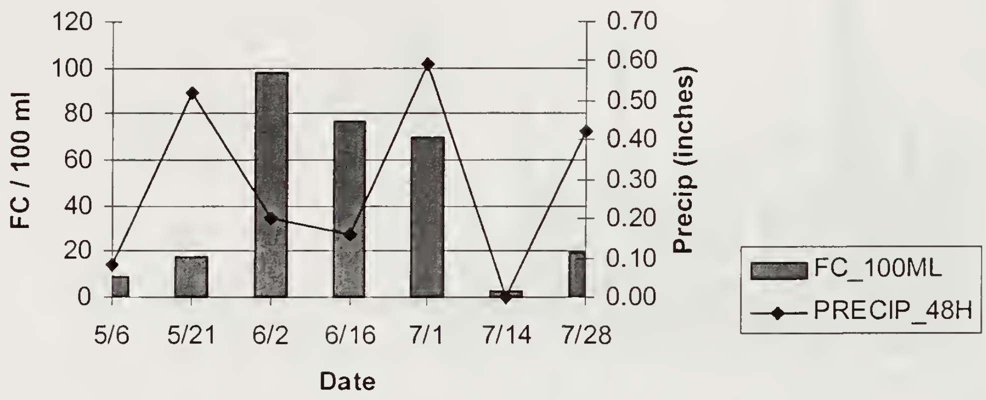


Figure 8A. Lick Creek 1994 and 1995

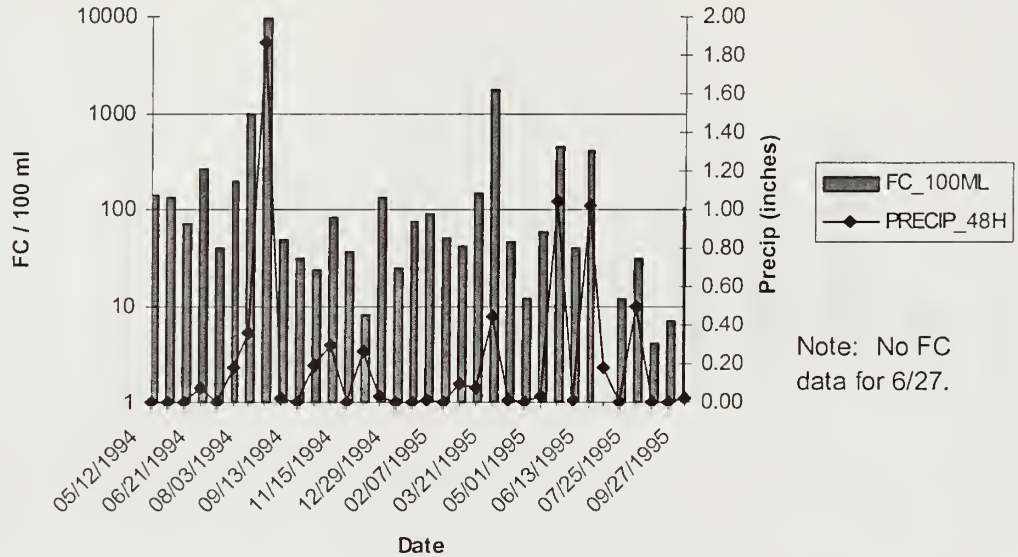
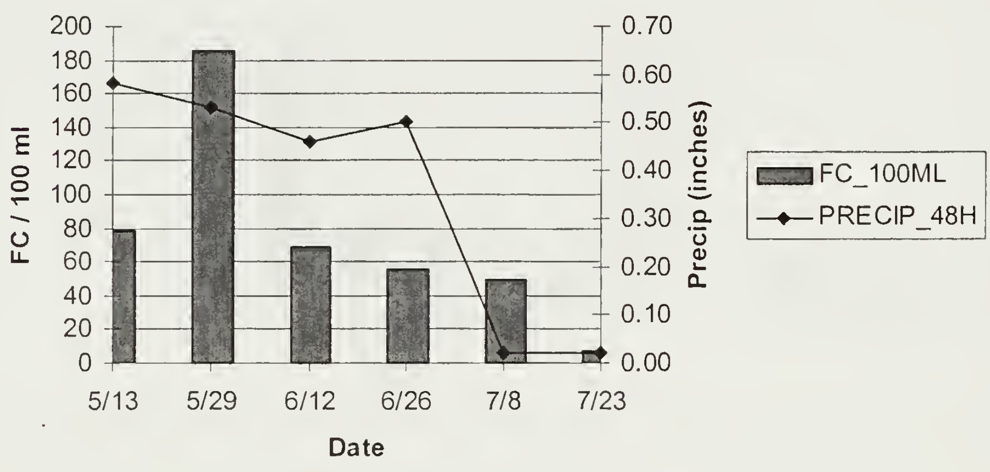


Figure 8B. Lick Creek 1996



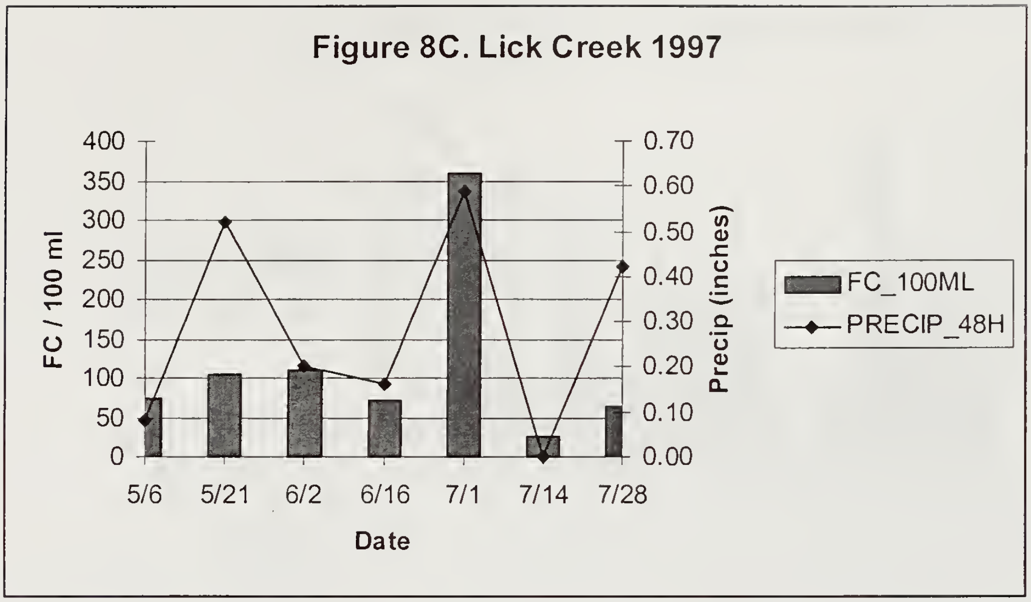
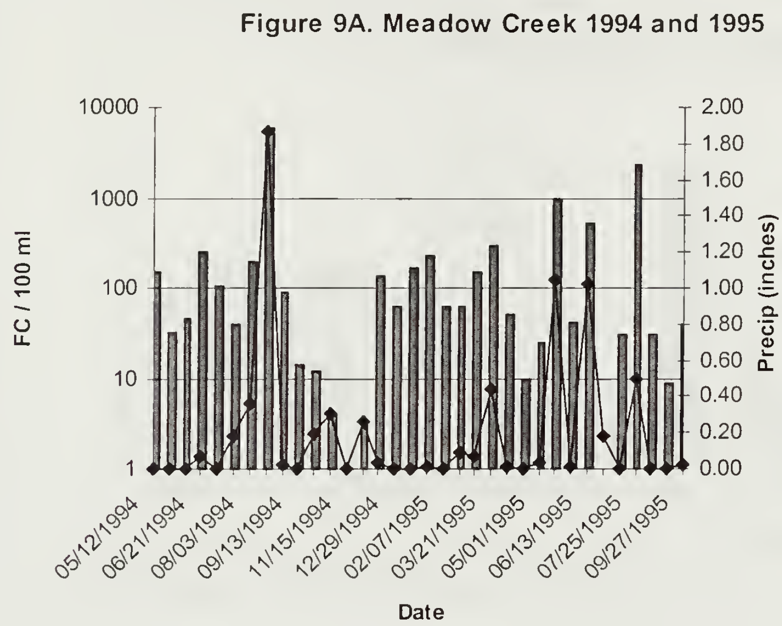
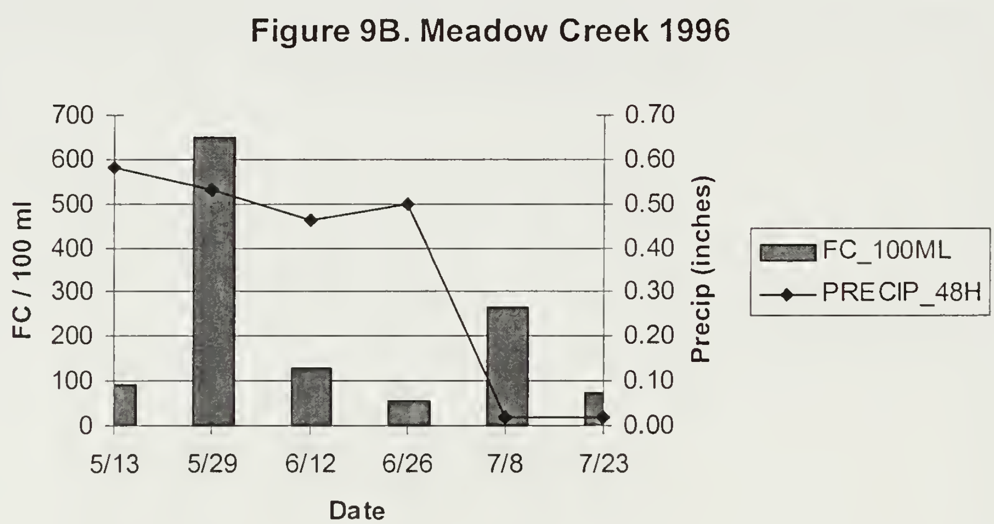


Figure 8C. Lick Creek 1997
FC / 100 ml
400
350
300
250
200
150
100
50
0
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
Precip (inches)
5/6
5/21
6/2
6/16
7/1
7/14
7/28
Date
FC_100ML
PRECIP_48H



Note: Zero FC for 11/15 and no FC data for 6/27, due to equipment malfunction.



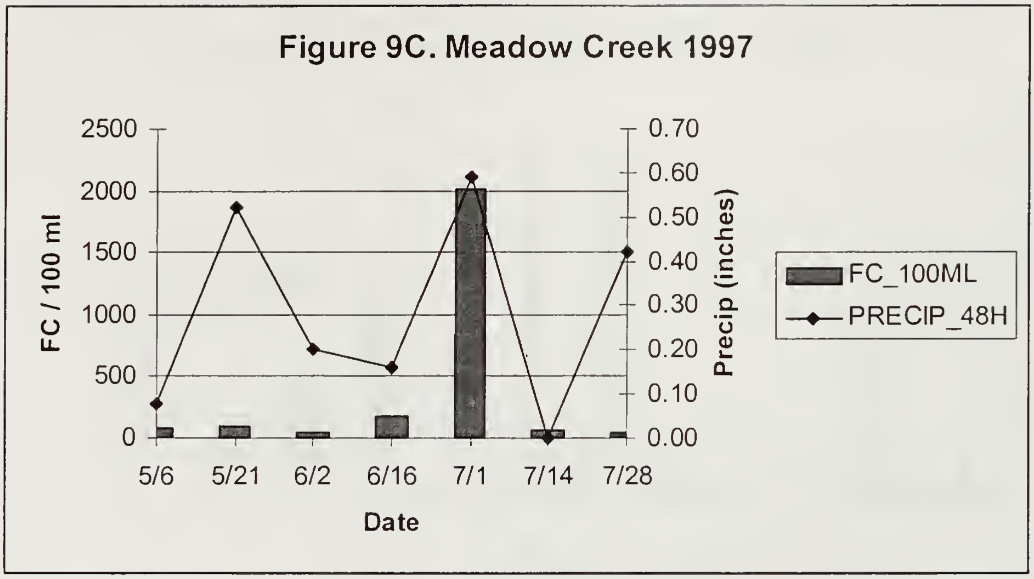


Figure 9C. Meadow Creek 1997
2500
2000
1500
1000
500
0
FC / 100 ml
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
Precip (inches)
5/6
5/21
6/2
6/16
7/1
7/14
7/28
Date
FC_100ML
PRECIP_48H

Figure 10A. Laurel Creek @ Quinnimont 1994 and 1995

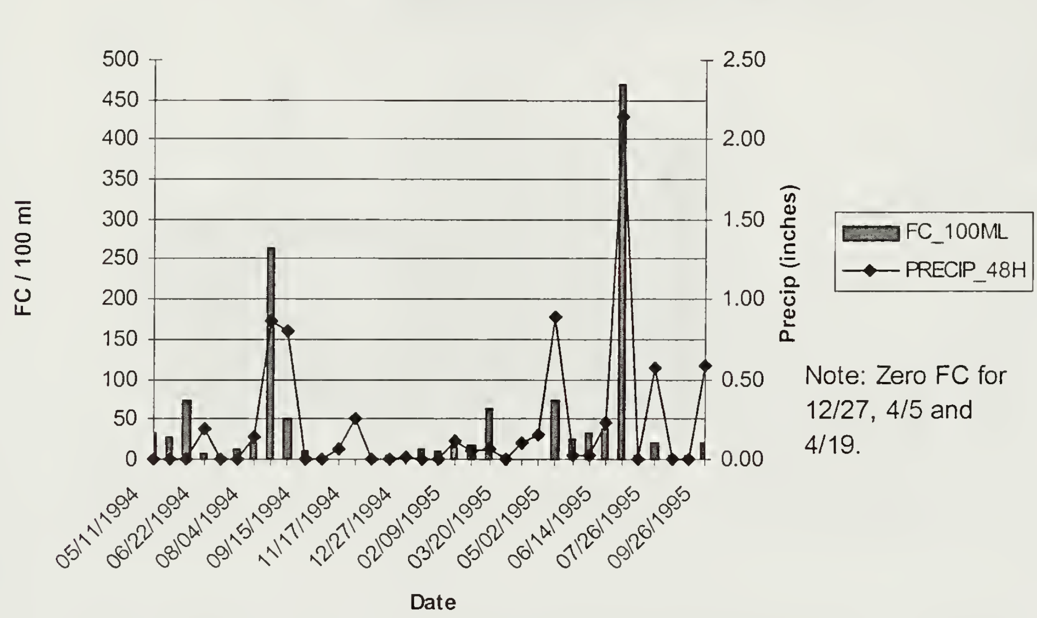
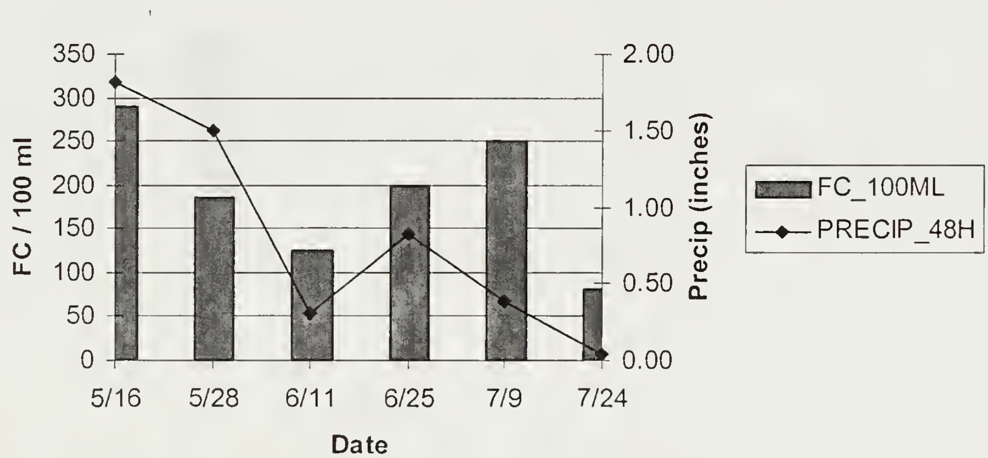


Figure 10B. Laurel Creek @ Quinnimont 1996



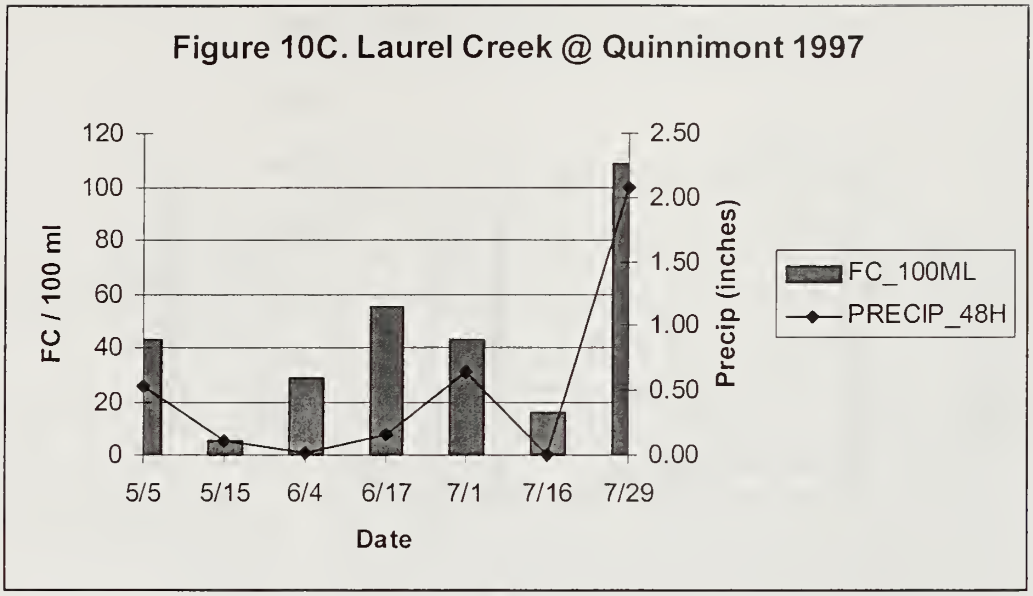
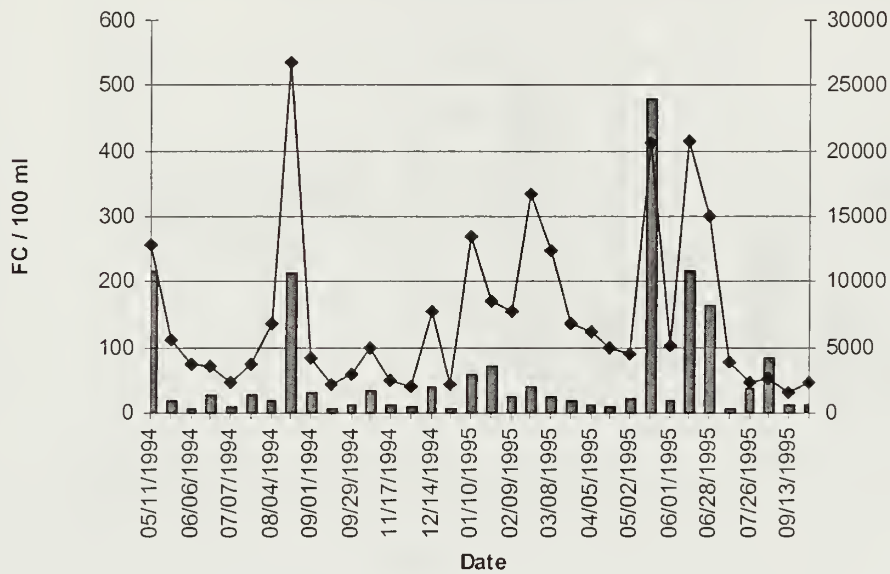


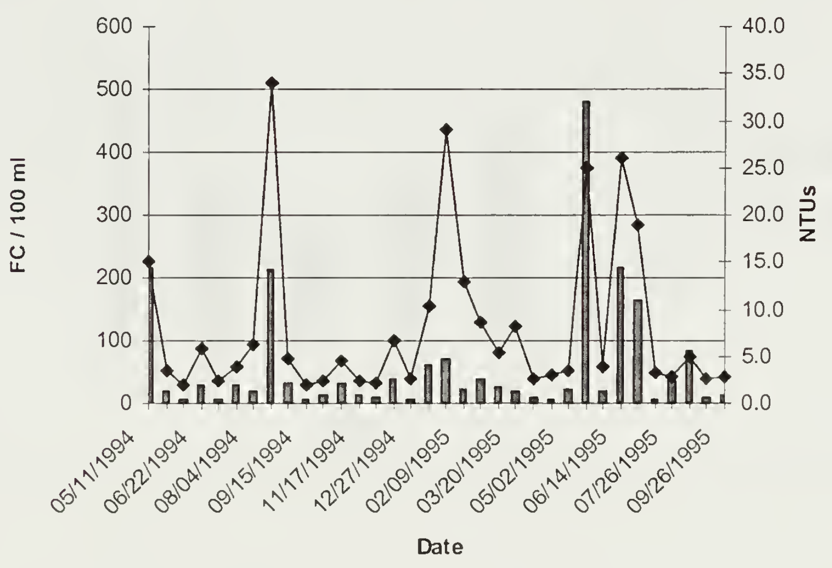
Figure 10C. Laurel Creek @ Quinnimont 1997
FC / 100 ml
Precip (inches)
Date
FC_100ML
PRECIP_48H
120
100
80
60
40
20
0
2.50
2.00
1.50
1.00
0.50
0.00
5/5
5/15
6/4
6/17
7/1
7/16
7/29

Figure 11A. New River @ Prince 1994 and 1995



Note: The CFS data is from the Thurmond gage and is only an approximation of the actual flow(CFS) at Prince.

Figure 11B. New River @ Prince 1994 and 1995



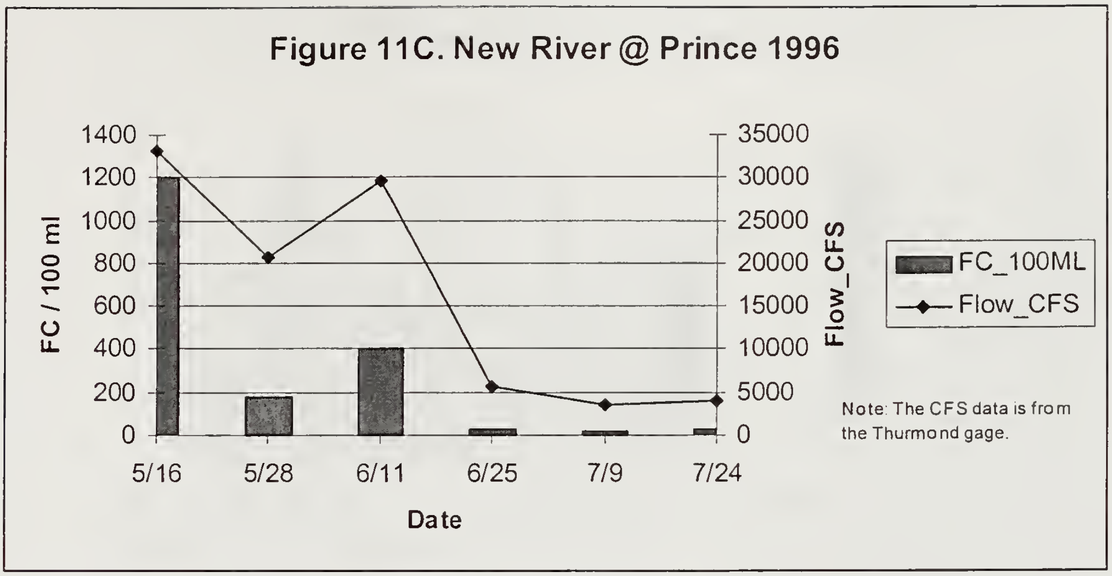


Figure 11C. New River @ Prince 1996
FC / 100 ml
1400
1200
1000
800
600
400
200
0
35000
30000
25000
20000
15000
10000
5000
0
Flow_CFS
5/16
5/28
6/11
6/25
7/9
7/24
Date
FC_100ML
Flow_CFS
Note: The CFS data is from the Thurmond gage.

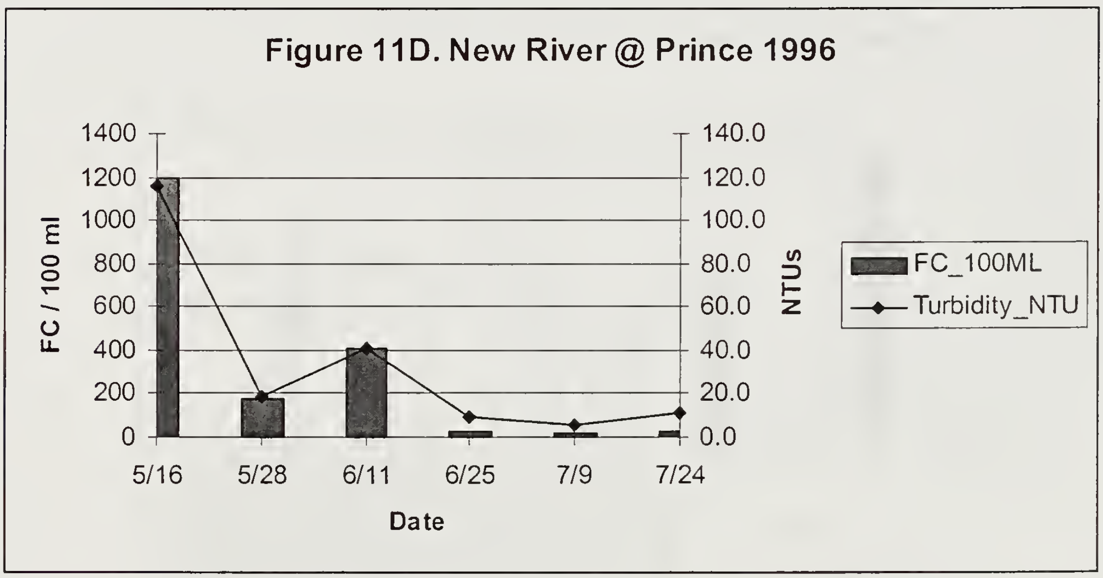


Figure 11D. New River @ Prince 1996
FC / 100 ml
1400
1200
1000
800
600
400
200
0
140.0
120.0
100.0
80.0
60.0
40.0
20.0
0.0
NTUs
5/16
5/28
6/11
6/25
7/9
7/24
Date
FC_100ML
Turbidity_NTU

Figure 11E. New River @ Prince 1997

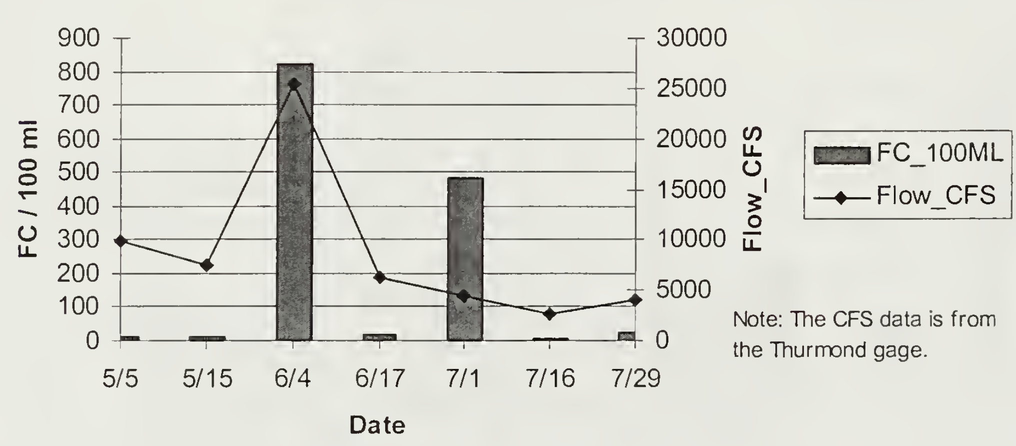
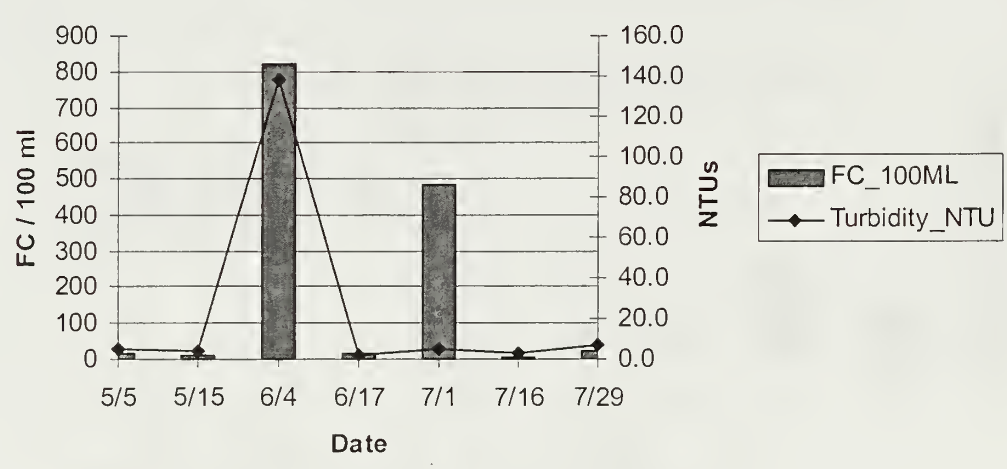


Figure 11F. New River @ Prince 1997



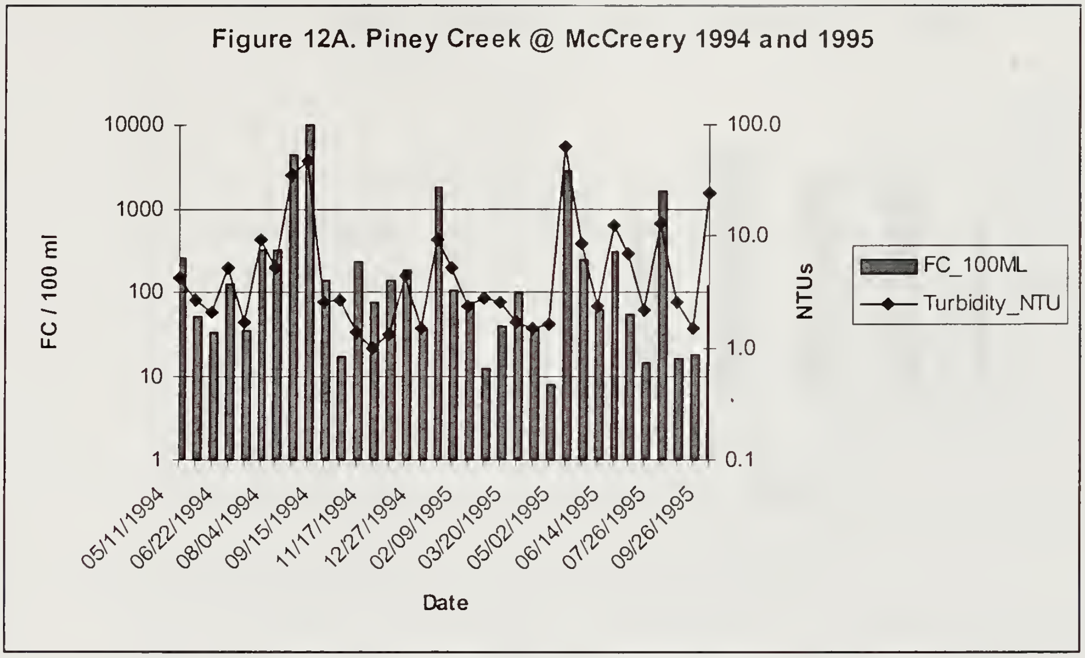


Figure 12A. Piney Creek @ McCreery 1994 and 1995
FC / 100 ml
NTUs
FC_100ML
Turbidity_NTU
Date

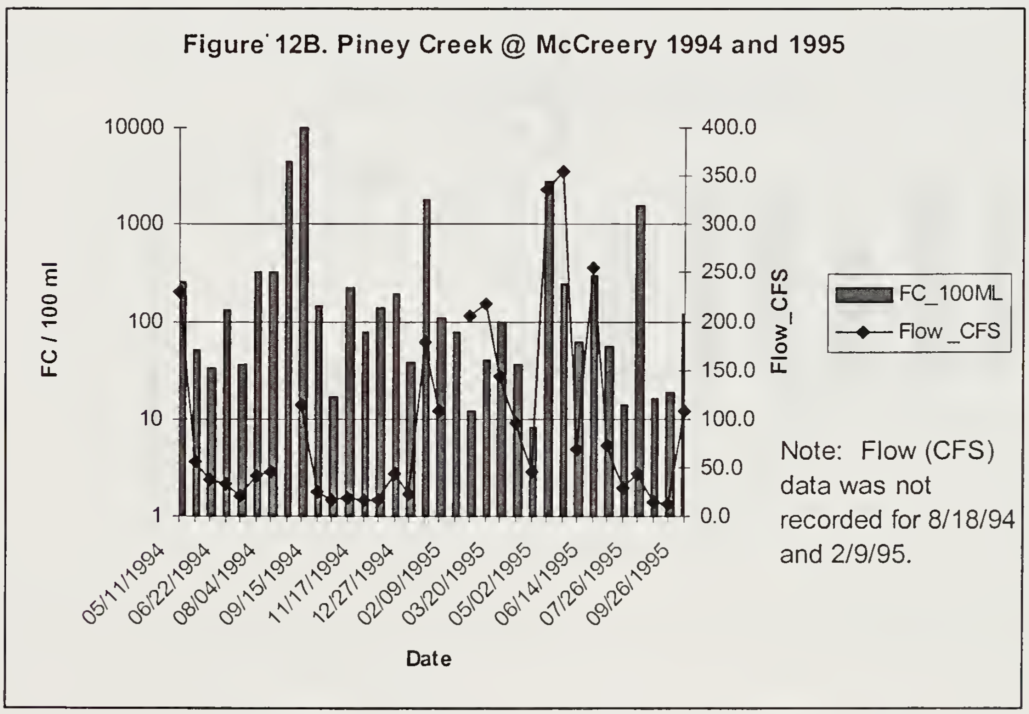


Figure 12B. Piney Creek @ McCreery 1994 and 1995
FC / 100 ml
Flow_CFS
FC_100ML
Flow_CFS
Date
Note: Flow (CFS) data was not recorded for 8/18/94 and 2/9/95.

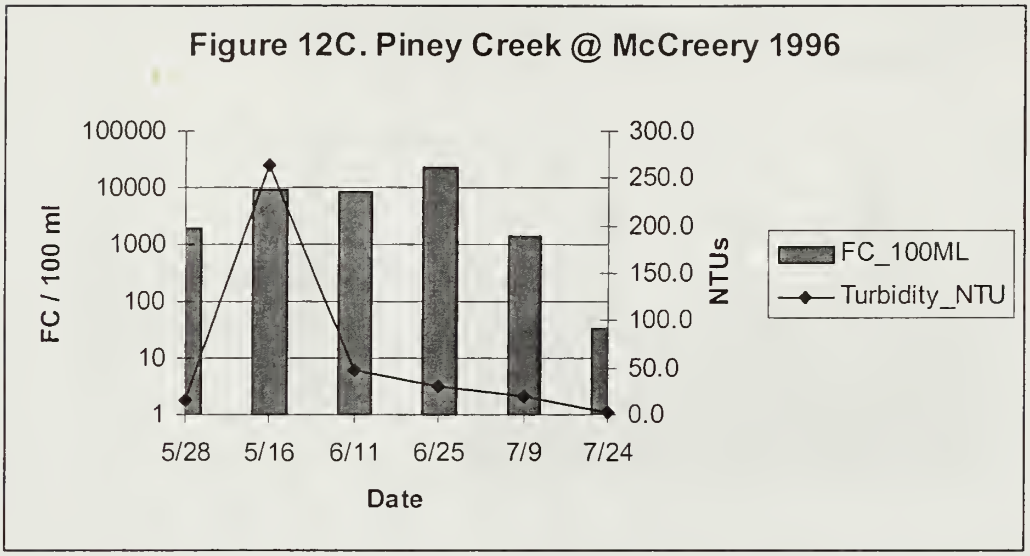


Figure 12C. Piney Creek @ McCreery 1996
FC / 100 ml
100000
10000
1000
100
10
1
300.0
250.0
200.0
150.0
100.0
50.0
0.0
NTUs
5/28
5/16
6/11
6/25
7/9
7/24
Date
FC_100ML
Turbidity_NTU

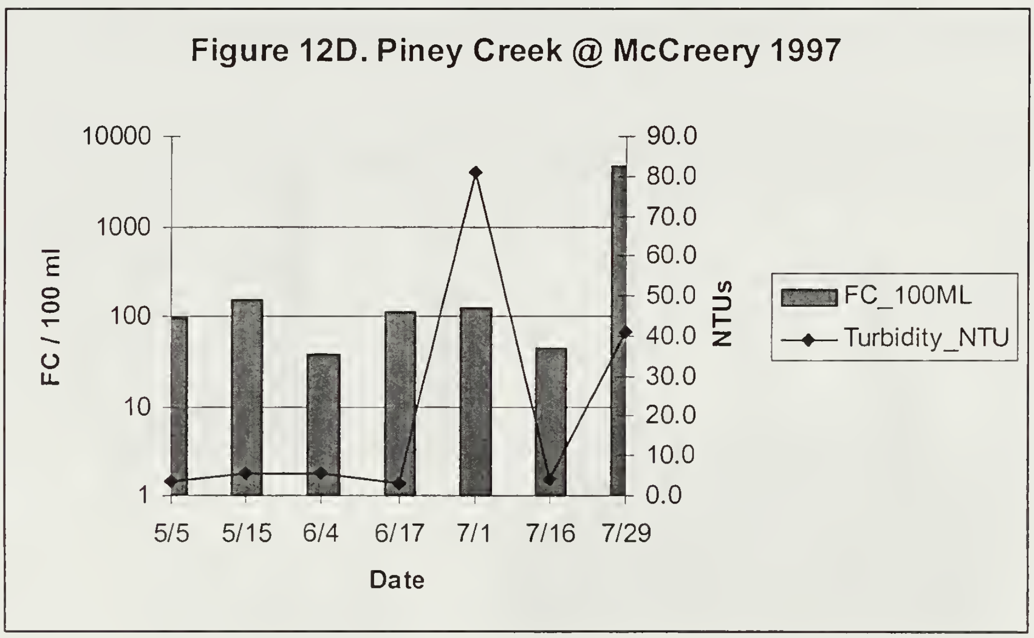


Figure 12D. Piney Creek @ McCreery 1997
FC / 100 ml
10000
1000
100
10
1
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
NTUs
5/5
5/15
6/4
6/17
7/1
7/16
7/29
Date
FC_100ML
Turbidity_NTU

Figure 13A. Dunloup Creek 1994 and 1995

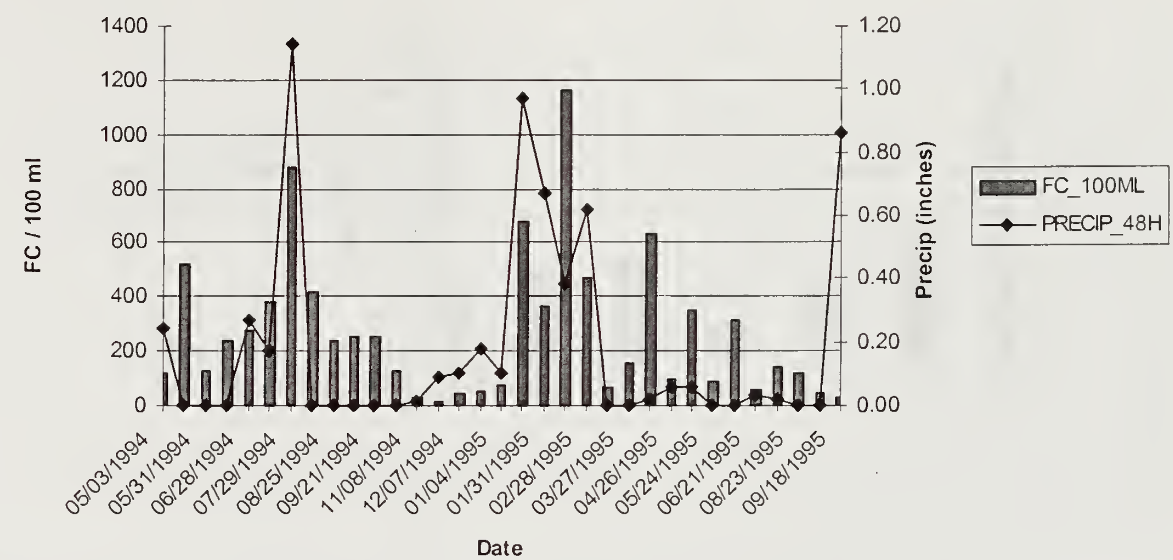
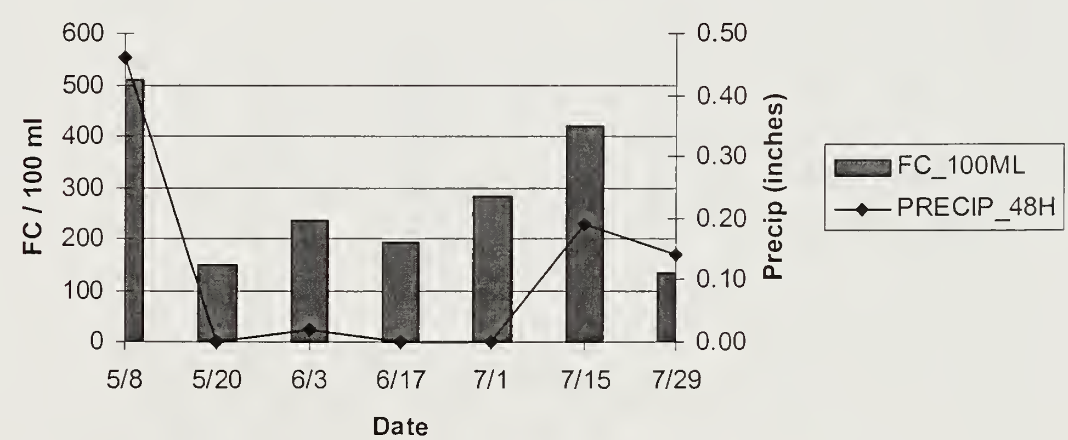


Figure 13B. Dunloup Creek 1996



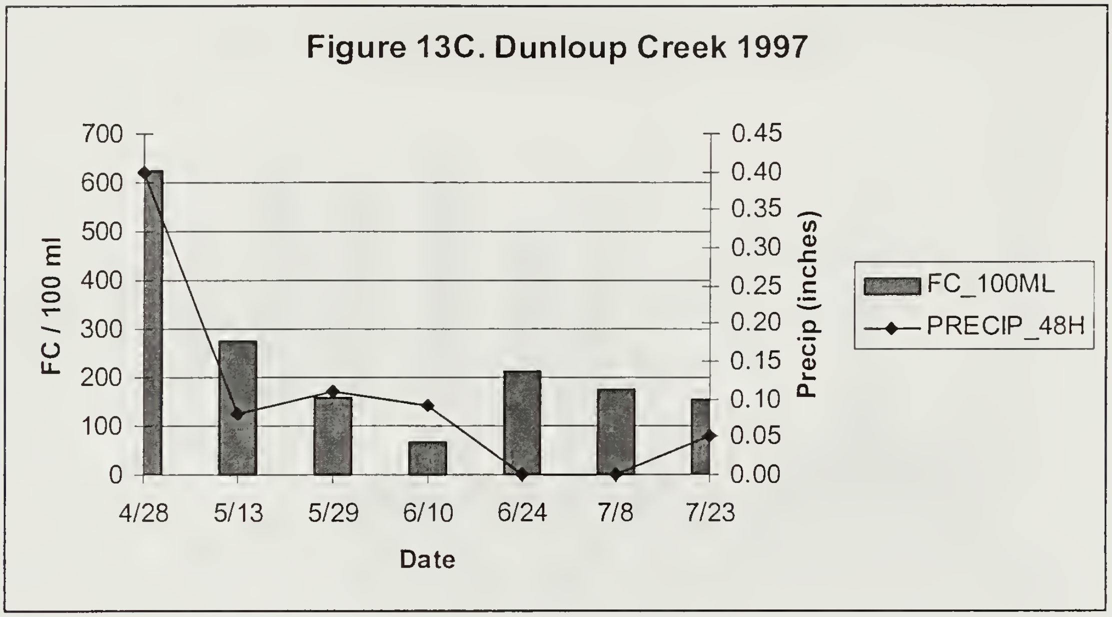


Figure 13C. Dunloup Creek 1997
700
600
500
400
300
200
100
0
FC / 100 ml
0.45
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.00
Precip (inches)
4/28
5/13
5/29
6/10
6/24
7/8
7/23
Date
FC_100ML
PRECIP_48H

Figure 14A. New River @ Thurmond 1994 and 1995

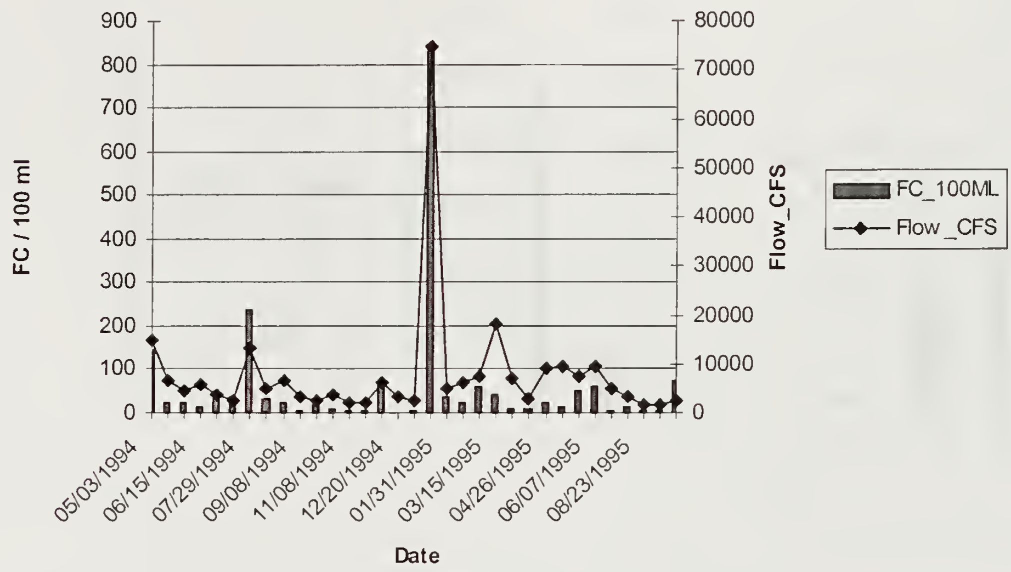
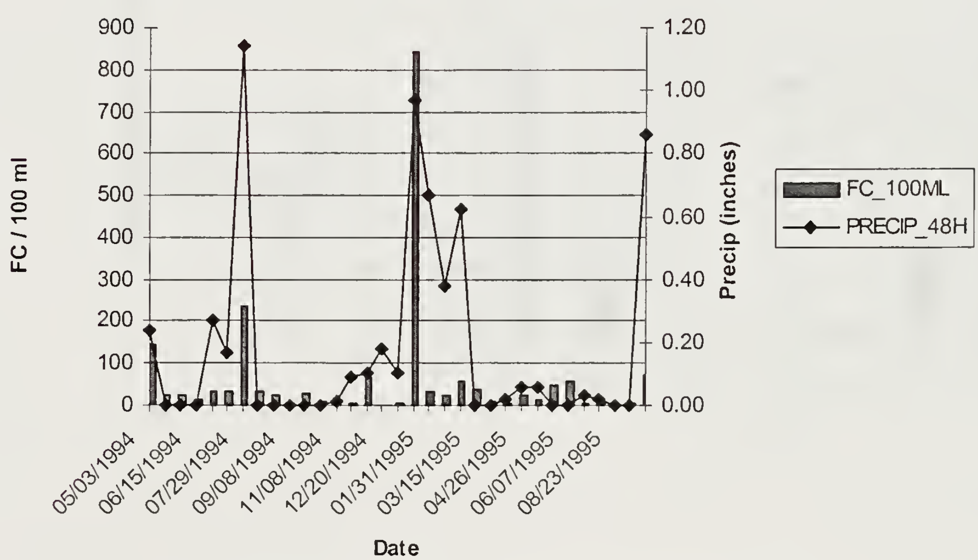


Figure 14B. New River @ Thurmond 1994 and 1995



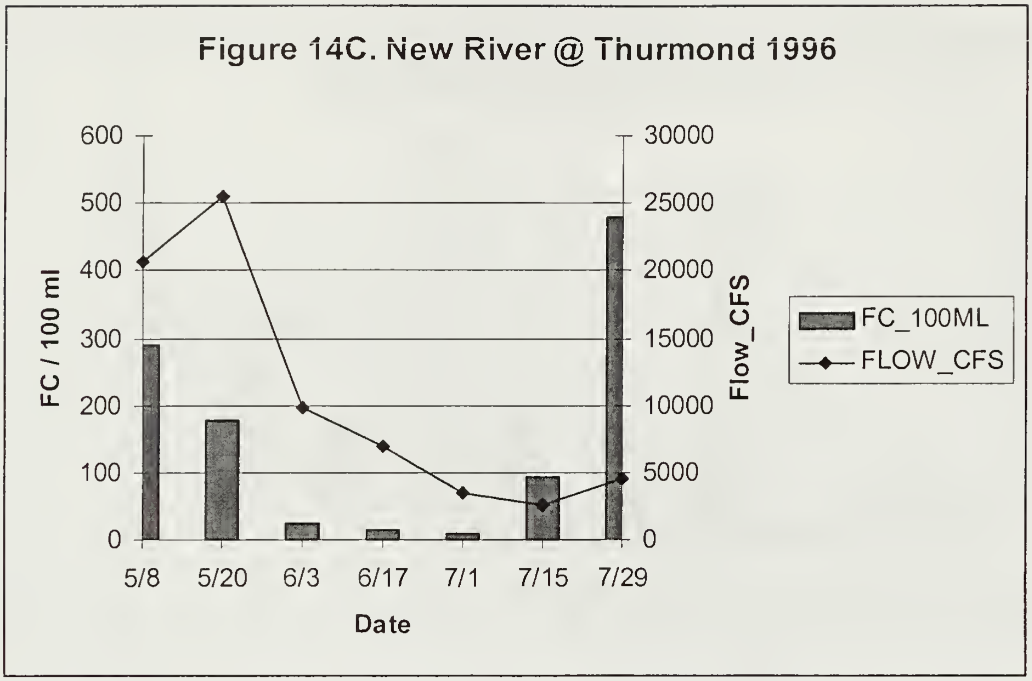


Figure 14C. New River @ Thurmond 1996
600
500
400
300
200
100
0
FC / 100 ml
30000
25000
20000
15000
10000
5000
0
Flow_CFS
5/8
5/20
6/3
6/17
7/1
7/15
7/29
Date
FC_100ML
FLOW_CFS

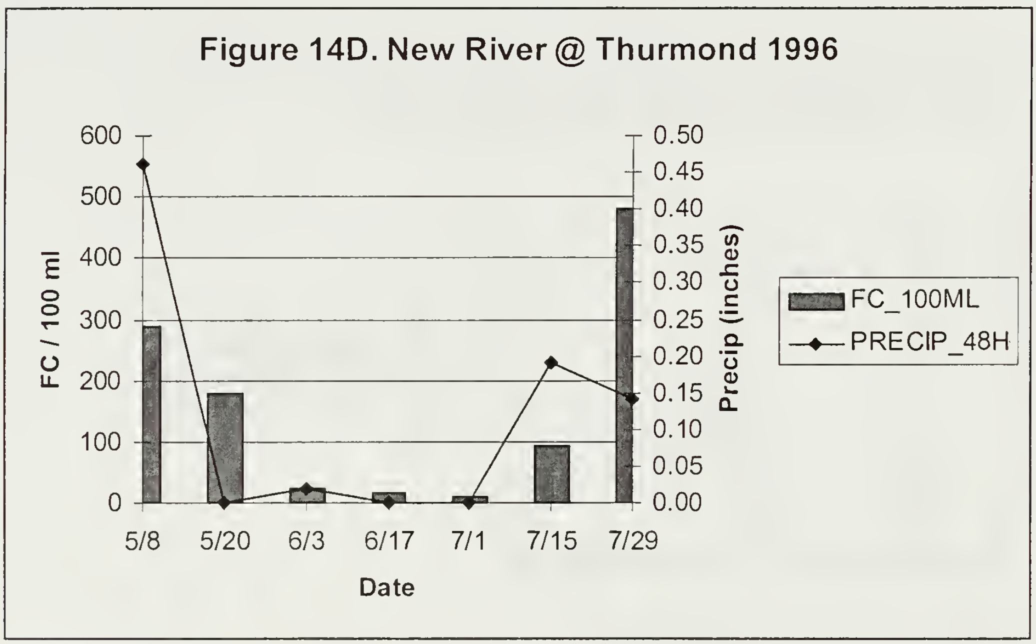


Figure 14D. New River @ Thurmond 1996
600
500
400
300
200
100
0
FC / 100 ml
0.50
0.45
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.00
Precip (inches)
5/8
5/20
6/3
6/17
7/1
7/15
7/29
Date
FC_100ML
PRECIP_48H

Figure 14E. New River @ Thurmond 1997

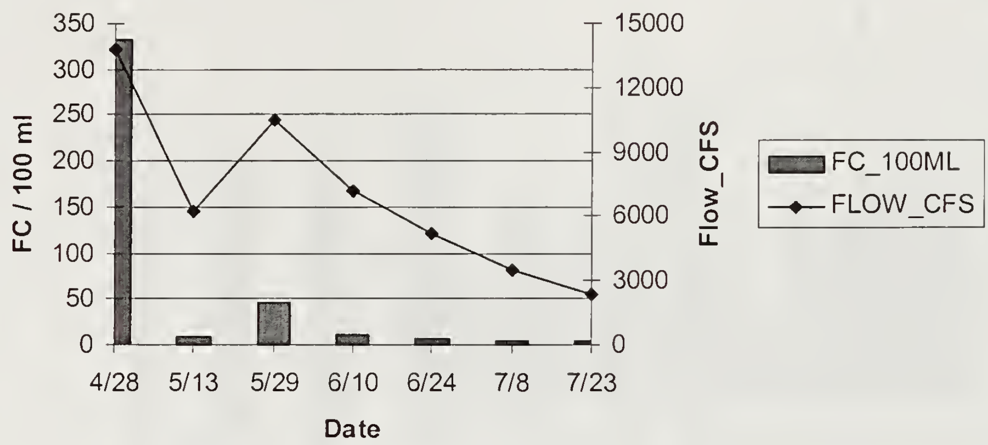


Figure 14F. New River @ Thurmond 1997

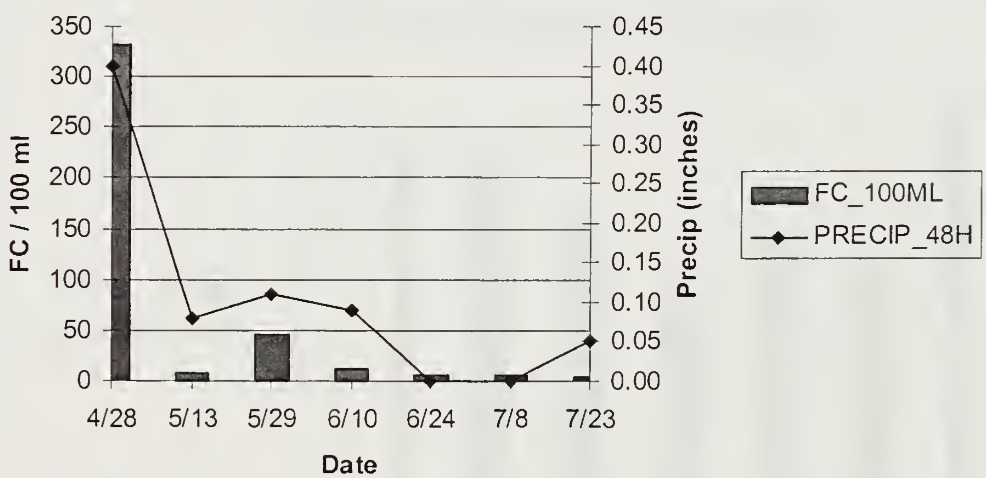


Figure 15A. Arbuckle Creek 1994 and 1995

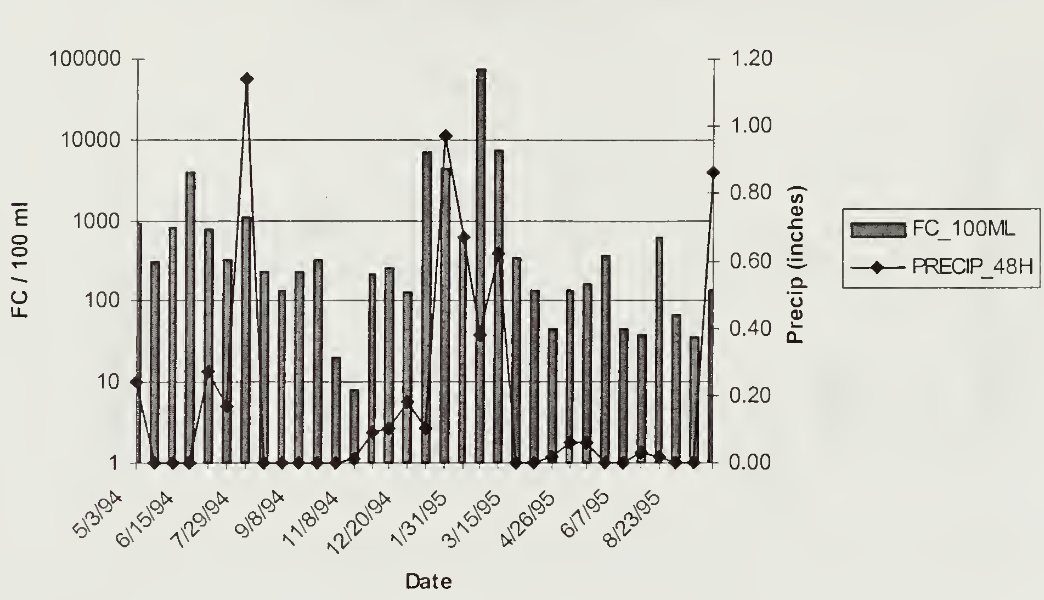
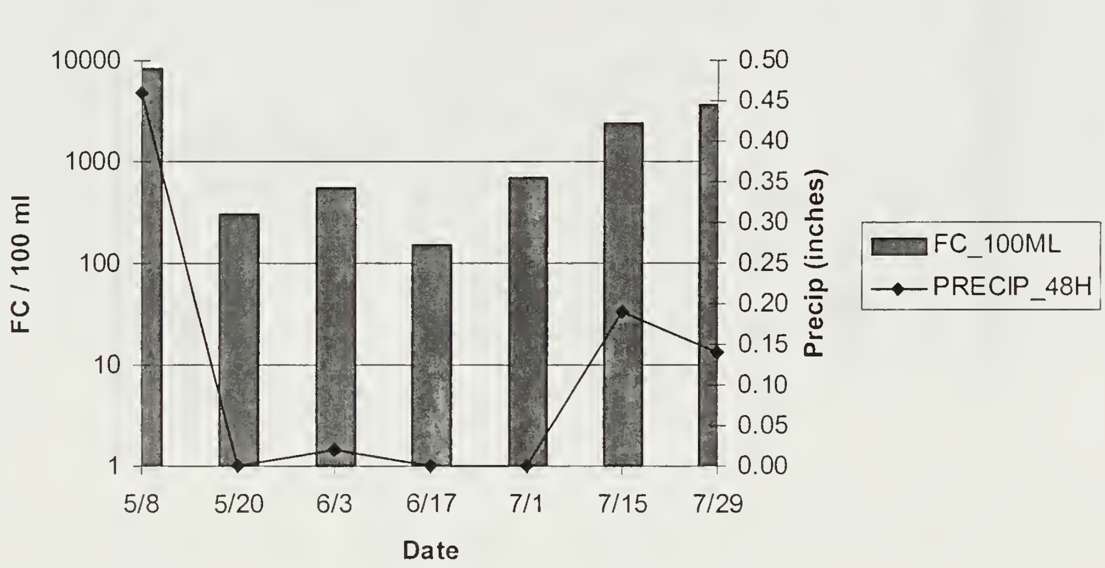


Figure 15B. Arbuckle Creek 1996



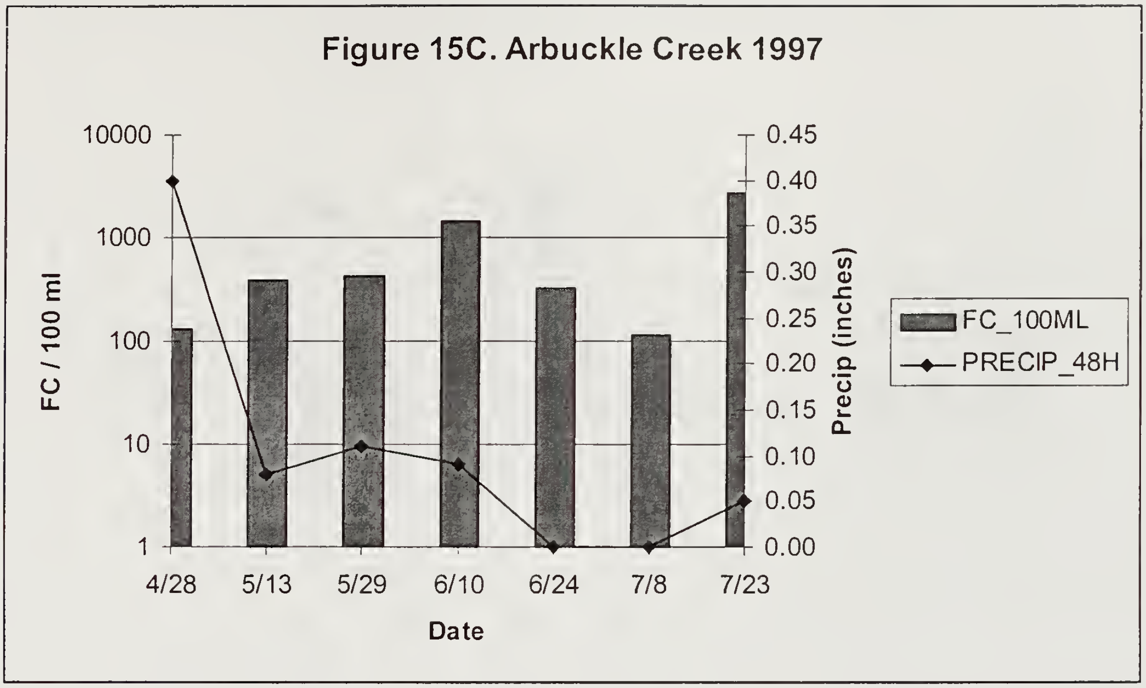
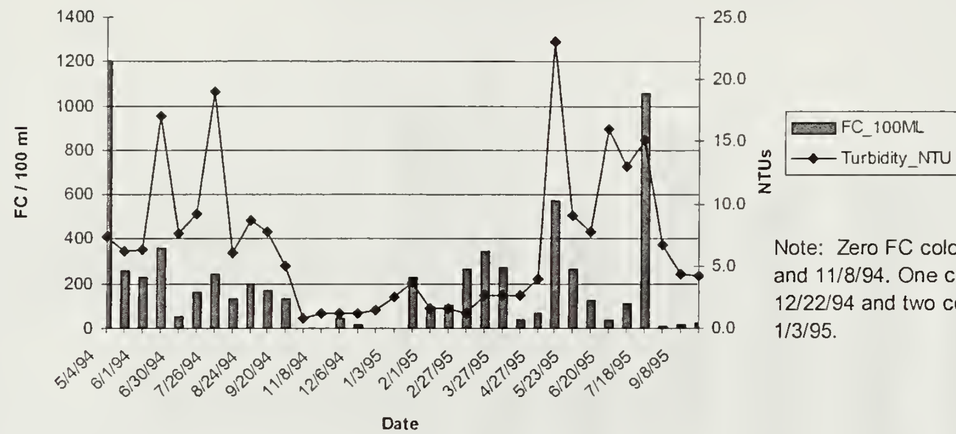


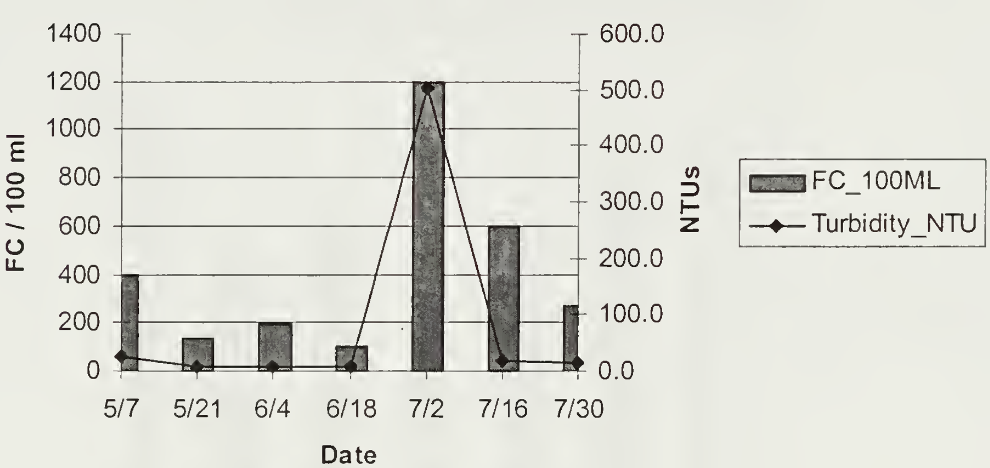
Figure 15C. Arbuckle Creek 1997
10000
1000
100
10
1
FC / 100 ml
0.45
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.00
Precip (inches)
4/28
5/13
5/29
6/10
6/24
7/8
7/23
Date
FC_100ML
PRECIP_48H

Figure 16A. Coal Run 1994 and 1995



Note: Zero FC colonies for 10/26 and 11/8/94. One colony for 12/22/94 and two colonies for 1/3/95.

Figure 16B. Coal Run 1996



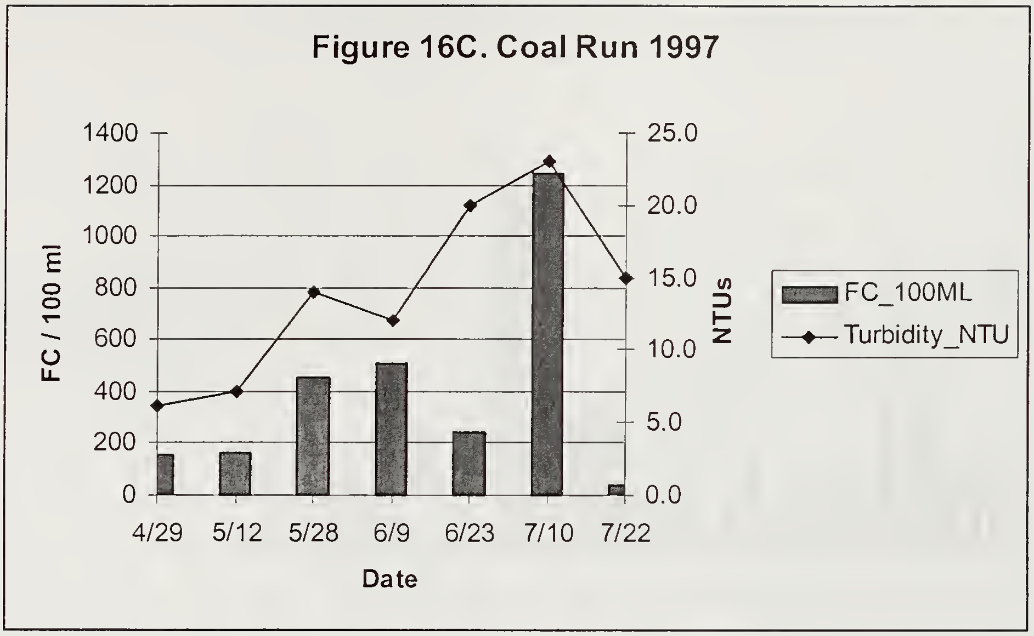


Figure 16C. Coal Run 1997
FC / 100 ml
1400
1200
1000
800
600
400
200
0
25.0
20.0
15.0
10.0
5.0
0.0
NTUs
4/29
5/12
5/28
6/9
6/23
7/10
7/22
Date
FC_100ML
Turbidity_NTU

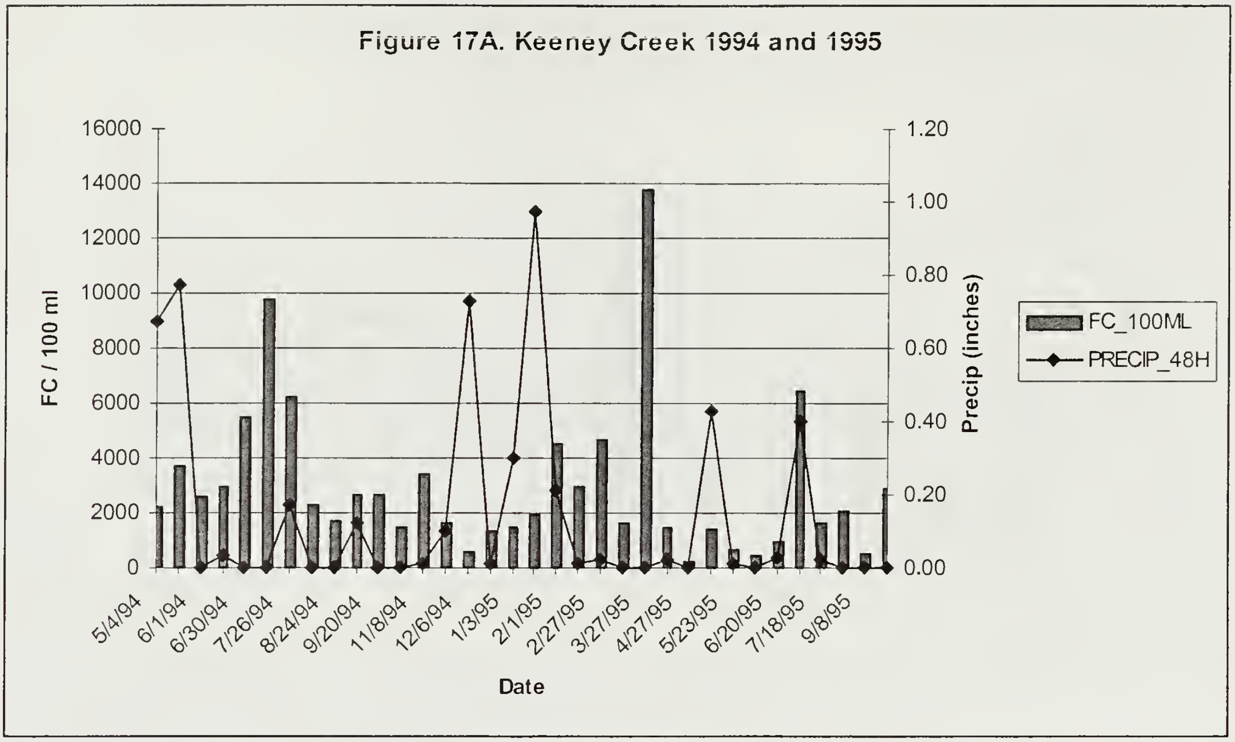


Figure 17A. Keeney Creek 1994 and 1995
FC / 100 ml
Precip (inches)
Date
FC_100ML
PRECIP_48H
16000
14000
12000
10000
8000
6000
4000
2000
0
1.20
1.00
0.80
0.60
0.40
0.20
0.00
5/4/94
6/1/94
6/30/94
7/26/94
8/24/94
9/20/94
11/8/94
12/6/94
1/3/95
2/1/95
2/27/95
3/27/95
4/27/95
5/23/95
6/20/95
7/18/95
9/8/95

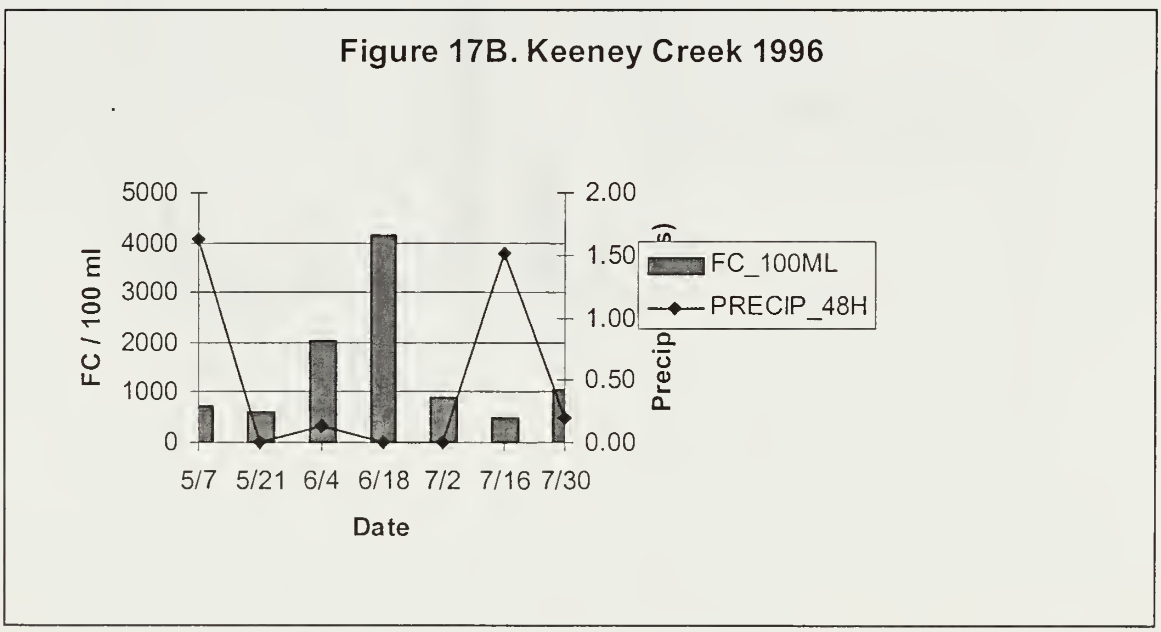


Figure 17B. Keeney Creek 1996
FC / 100 ml
Date
FC_100ML
PRECIP_48H
5000
4000
3000
2000
1000
0
2.00
1.50
1.00
0.50
0.00
5/7
5/21
6/4
6/18
7/2
7/16
7/30

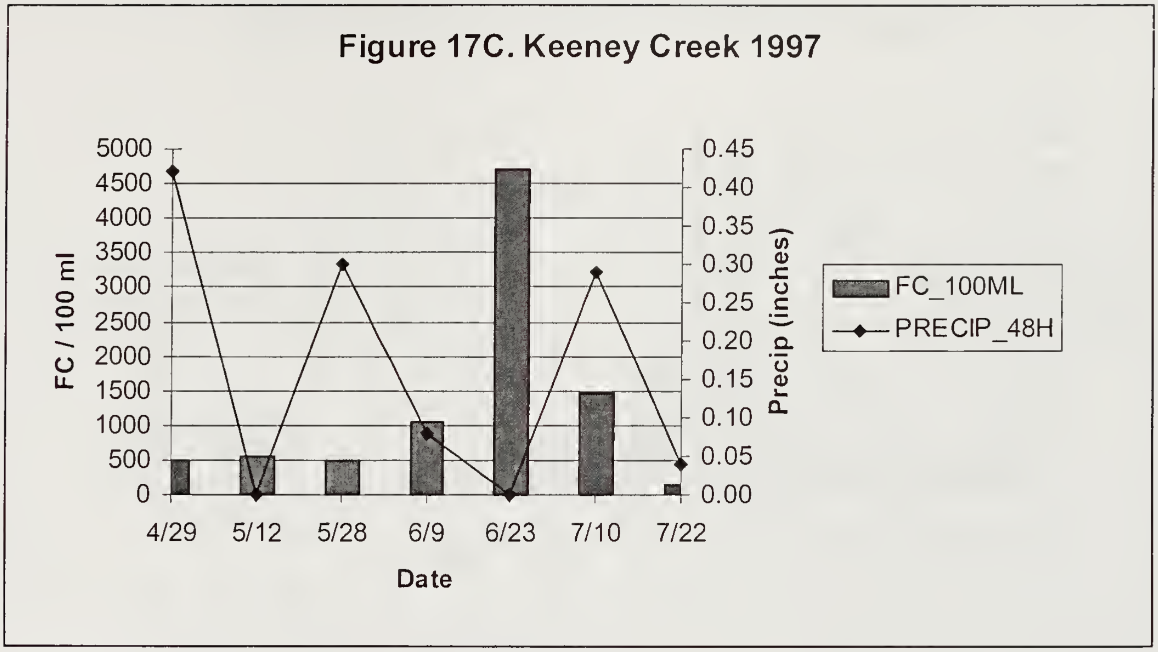


Figure 17C. Keeney Creek 1997
FC / 100 ml
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
0.45
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.00
Precip (inches)
FC_100ML
PRECIP_48H
4/29
5/12
5/28
6/9
6/23
7/10
7/22
Date

Figure 18A. New River @ Fayette Station 1994 and 1995

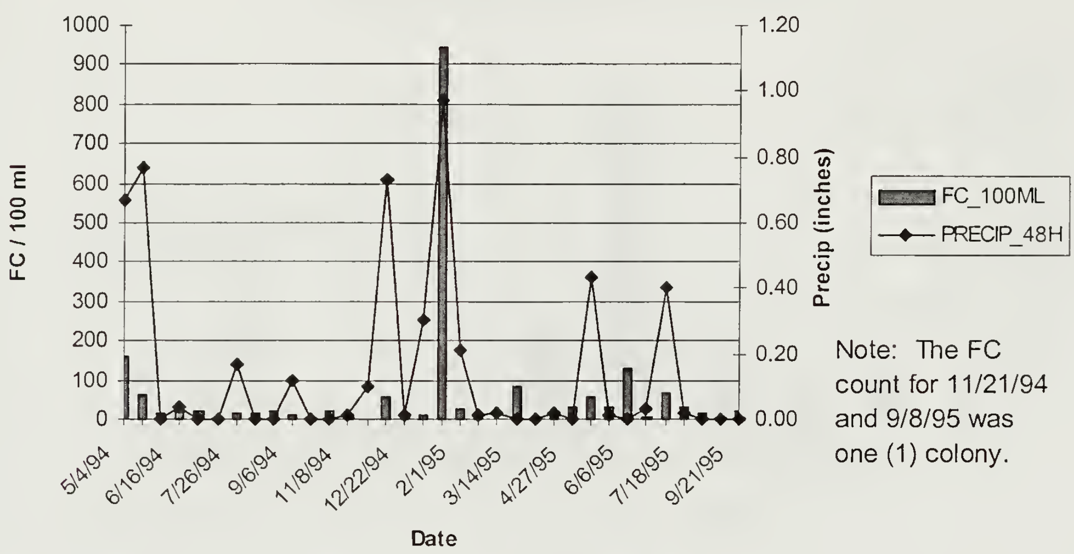


Figure 18B. New River @ Fayette Station 1994 and 1995

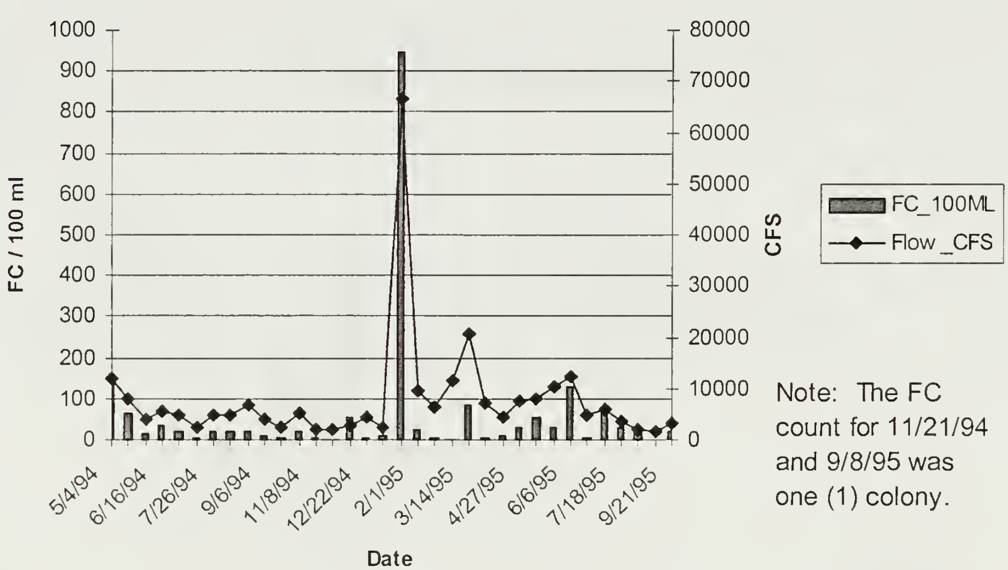


Figure 18C. New River @ Fayette Station 1996

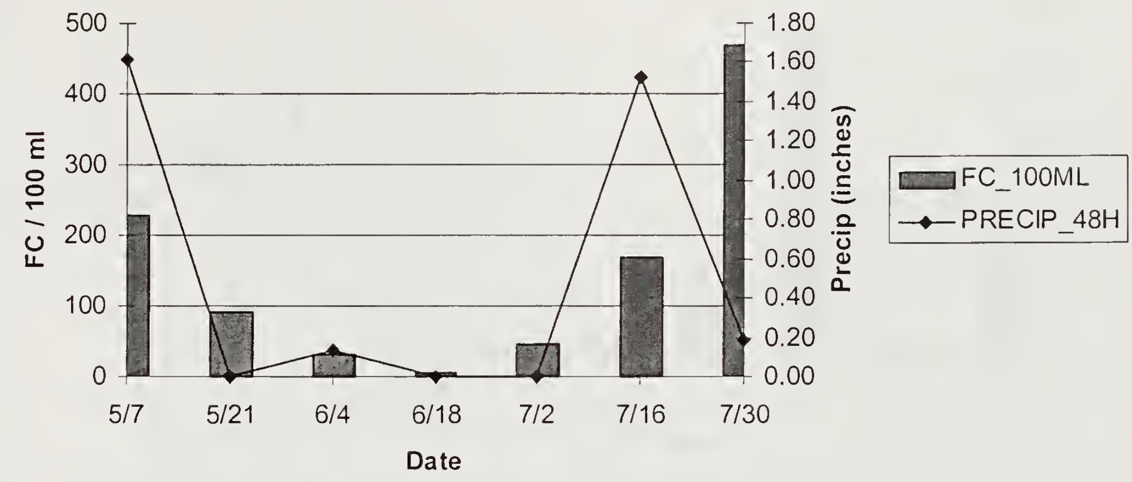


Figure 18D. New River @ Fayette Station 1996

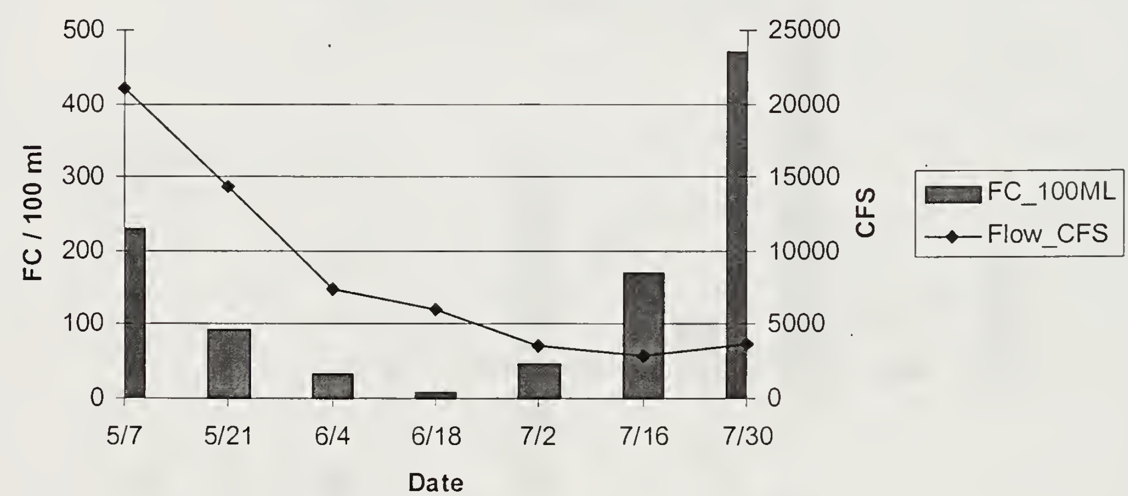


Figure 18E. New River @ Fayette Station 1997

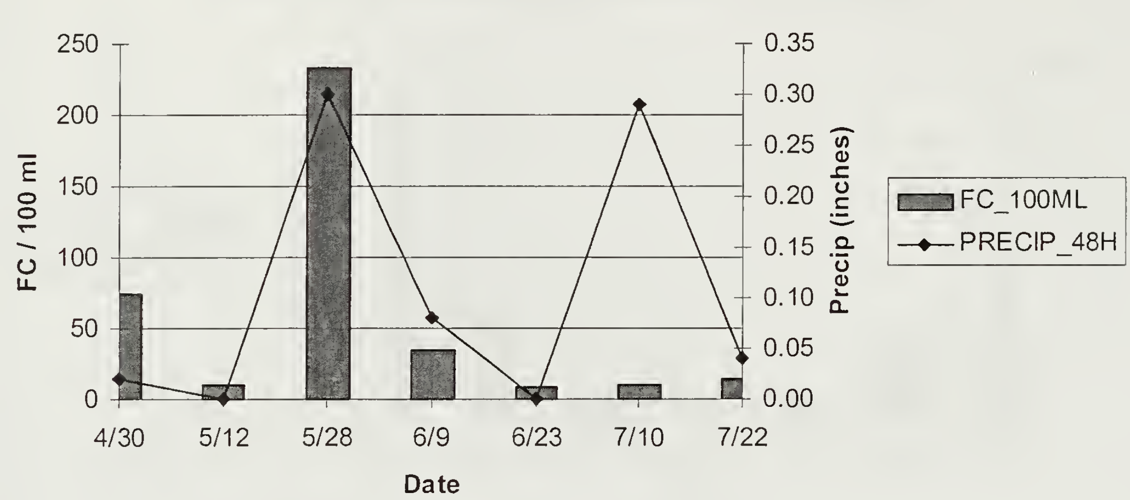
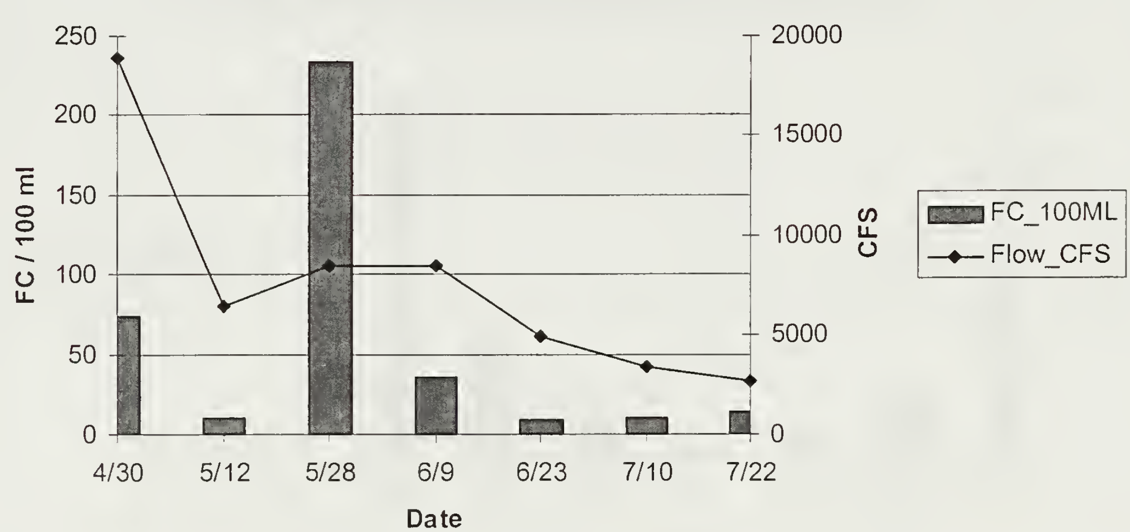


Figure 18F. New River @ Fayette Station 1997



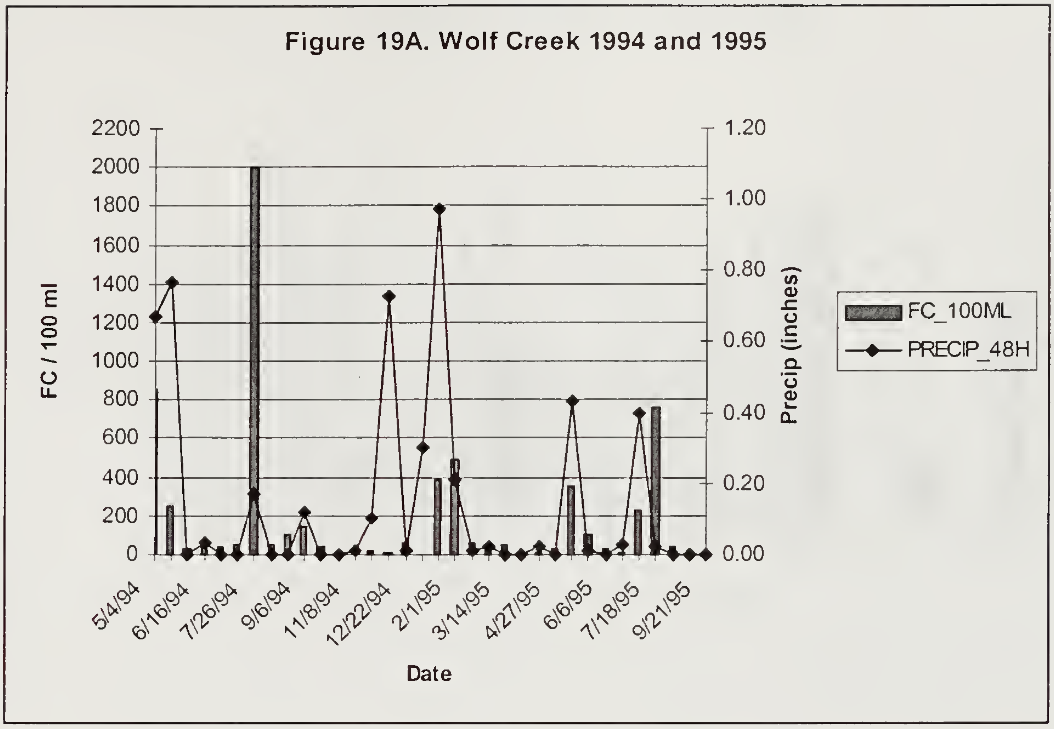


Figure 19A. Wolf Creek 1994 and 1995
FC / 100 ml
Precip (inches)
Date
FC_100ML
PRECIP_48H
2200
2000
1800
1600
1400
1200
1000
800
600
400
200
0
1.20
1.00
0.80
0.60
0.40
0.20
0.00
5/4/94
6/16/94
7/26/94
9/6/94
11/8/94
12/22/94
2/1/95
3/14/95
4/27/95
6/6/95
7/18/95
9/21/95

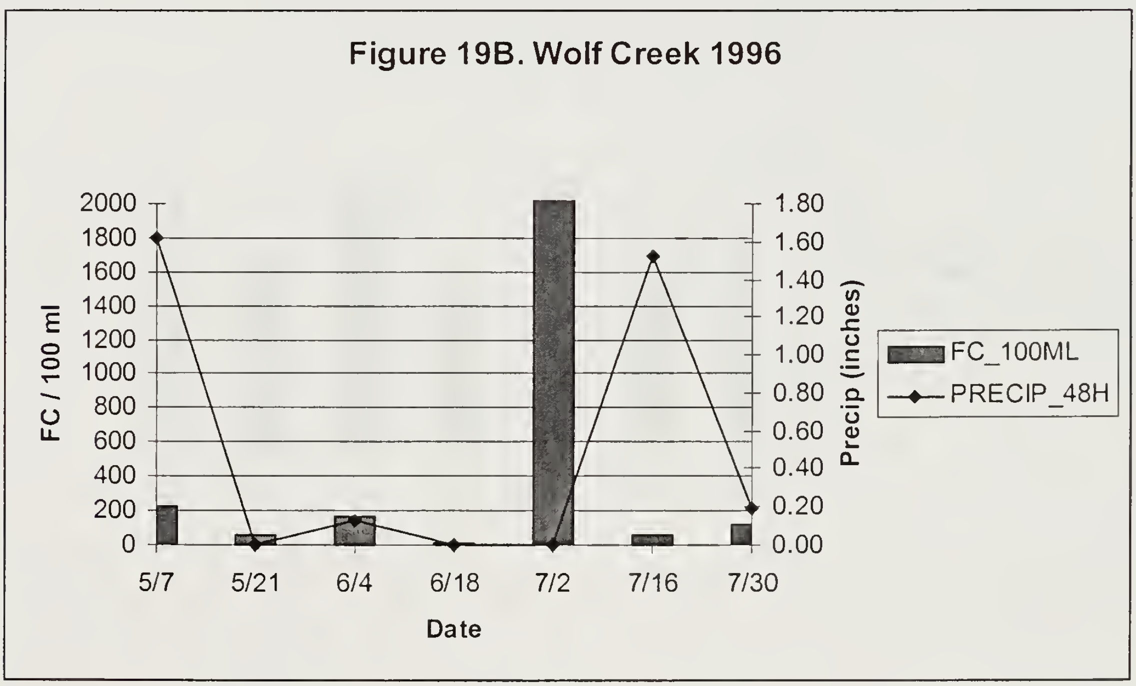


Figure 19B. Wolf Creek 1996
FC / 100 ml
Precip (inches)
Date
FC_100ML
PRECIP_48H
2000
1800
1600
1400
1200
1000
800
600
400
200
0
1.80
1.60
1.40
1.20
1.00
0.80
0.60
0.40
0.20
0.00
5/7
5/21
6/4
6/18
7/2
7/16
7/30

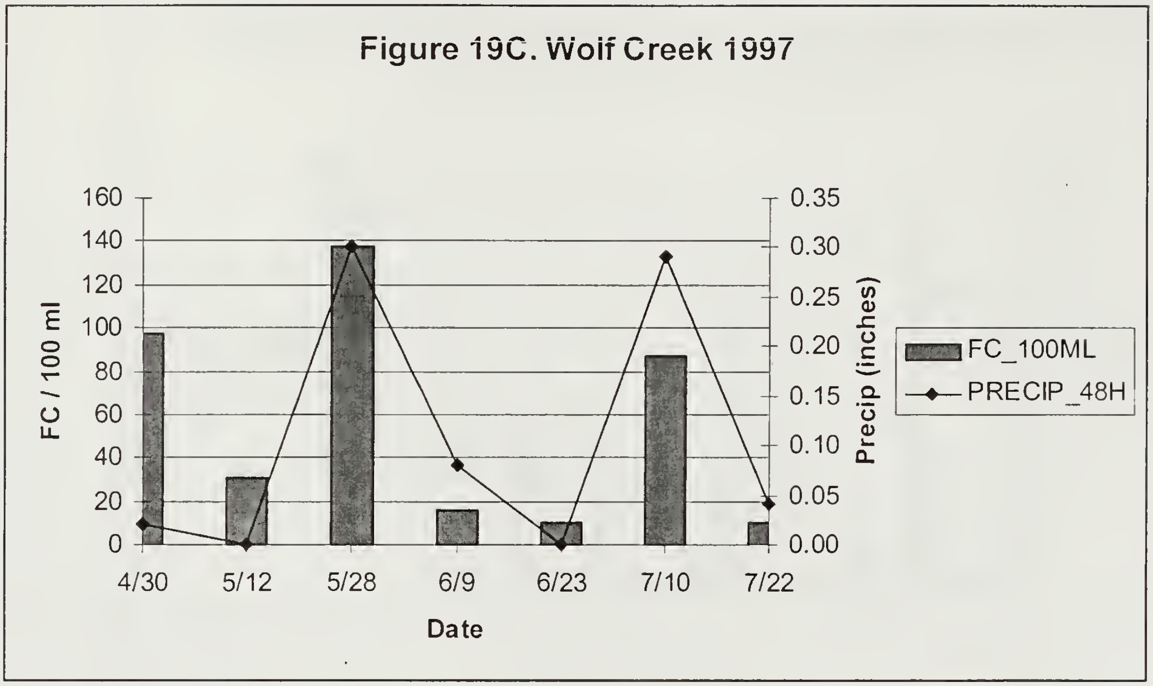


Figure 19C. Wolf Creek 1997
FC / 100 ml
160
140
120
100
80
60
40
20
0
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.00
Precip (inches)
4/30
5/12
5/28
6/9
6/23
7/10
7/22
Date
FC_100ML
PRECIP_48H

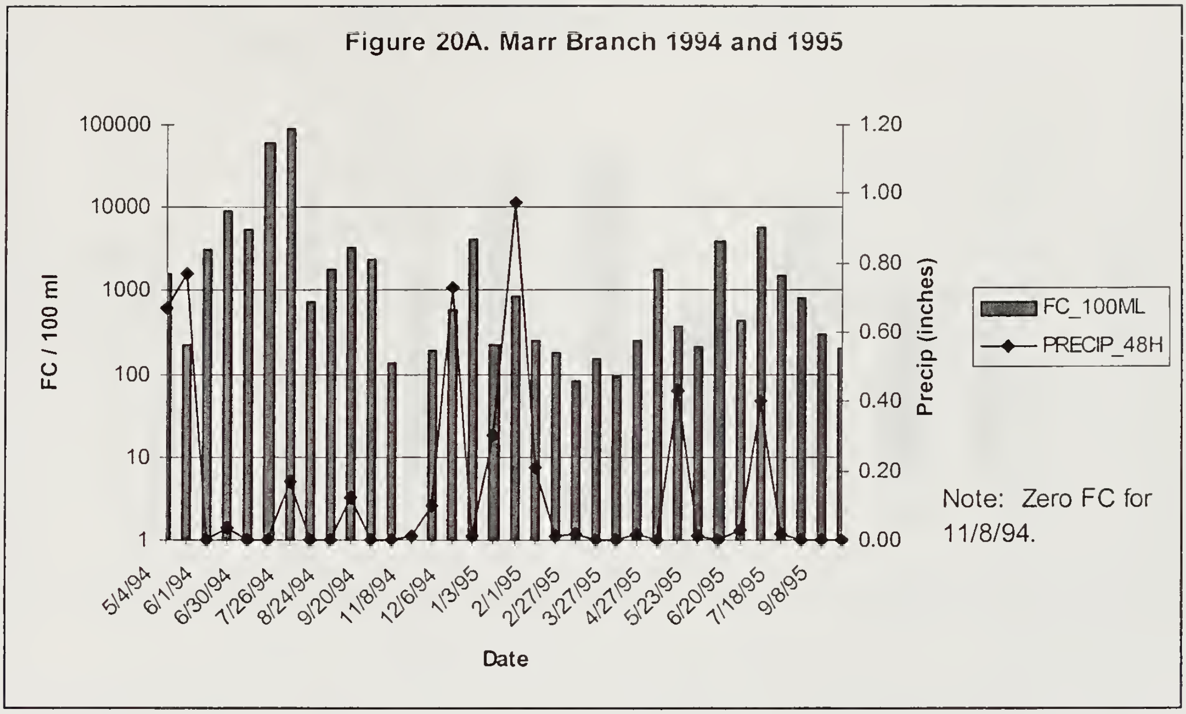


Figure 20A. Marr Branch 1994 and 1995
100000
10000
1000
100
10
1
FC / 100 ml
1.20
1.00
0.80
0.60
0.40
0.20
0.00
Precip (inches)
FC_100ML
PRECIP_48H
Note: Zero FC for 11/8/94.
5/4/94
6/1/94
6/30/94
7/26/94
8/24/94
9/20/94
11/8/94
12/6/94
1/3/95
2/1/95
2/27/95
3/27/95
4/27/95
5/23/95
6/20/95
7/18/95
9/8/95
Date

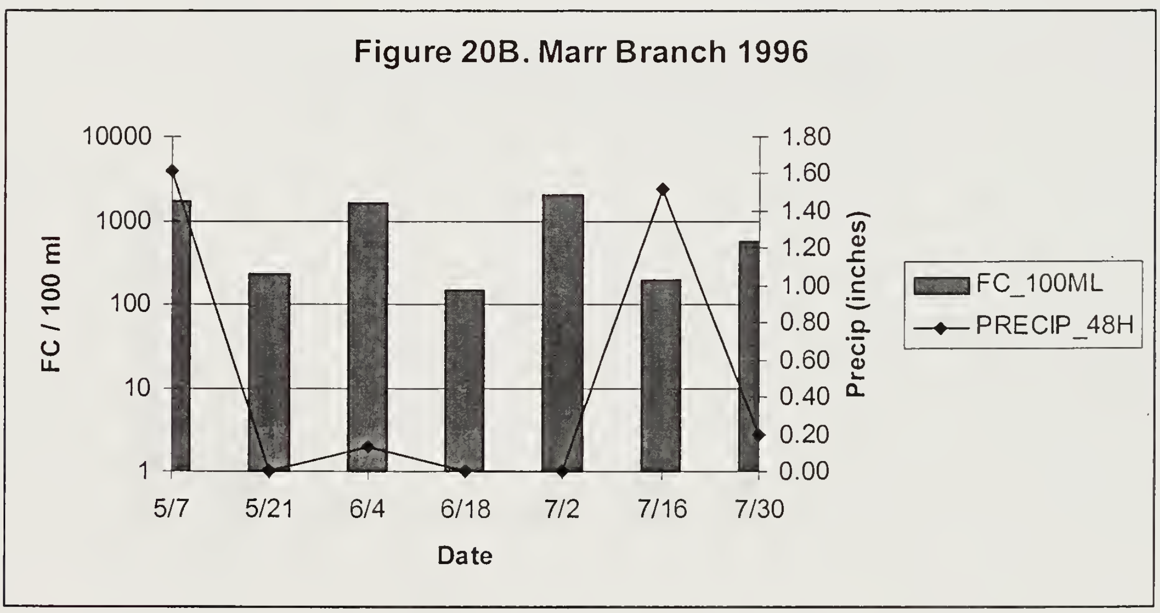


Figure 20B. Marr Branch 1996
10000
1000
100
10
1
FC / 100 ml
1.80
1.60
1.40
1.20
1.00
0.80
0.60
0.40
0.20
0.00
Precip (inches)
FC_100ML
PRECIP_48H
5/7
5/21
6/4
6/18
7/2
7/16
7/30
Date

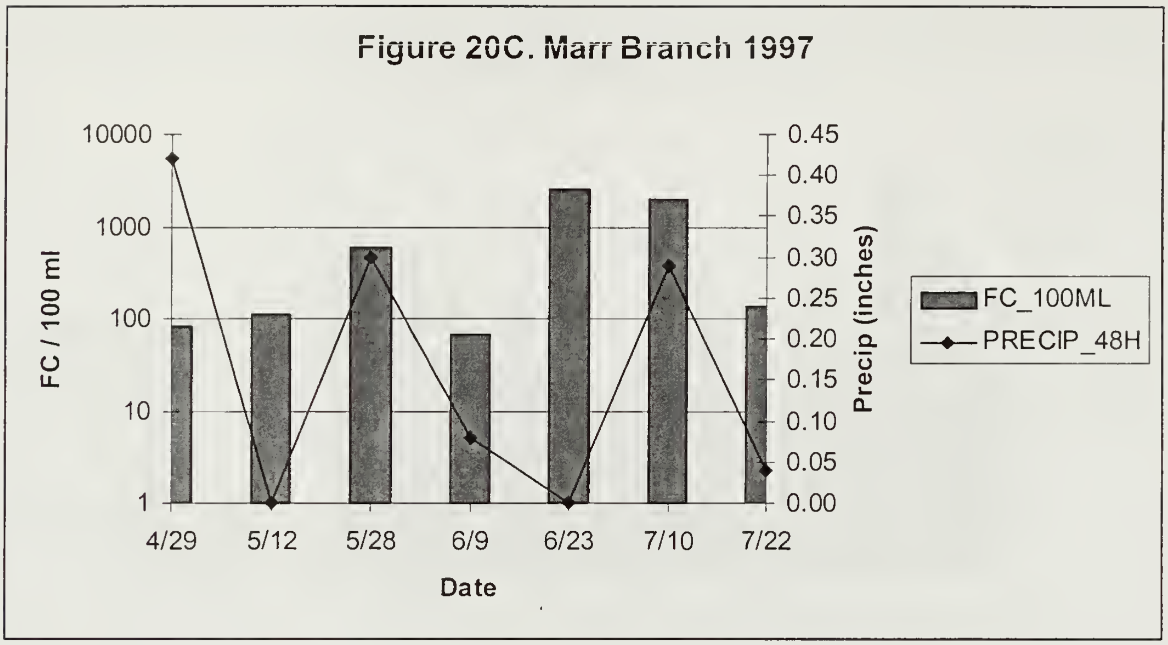


Figure 20C. Marr Branch 1997
10000
1000
100
10
1
FC / 100 ml
0.45
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.00
Precip (inches)
4/29
5/12
5/28
6/9
6/23
7/10
7/22
Date
FC_100ML
PRECIP_48H

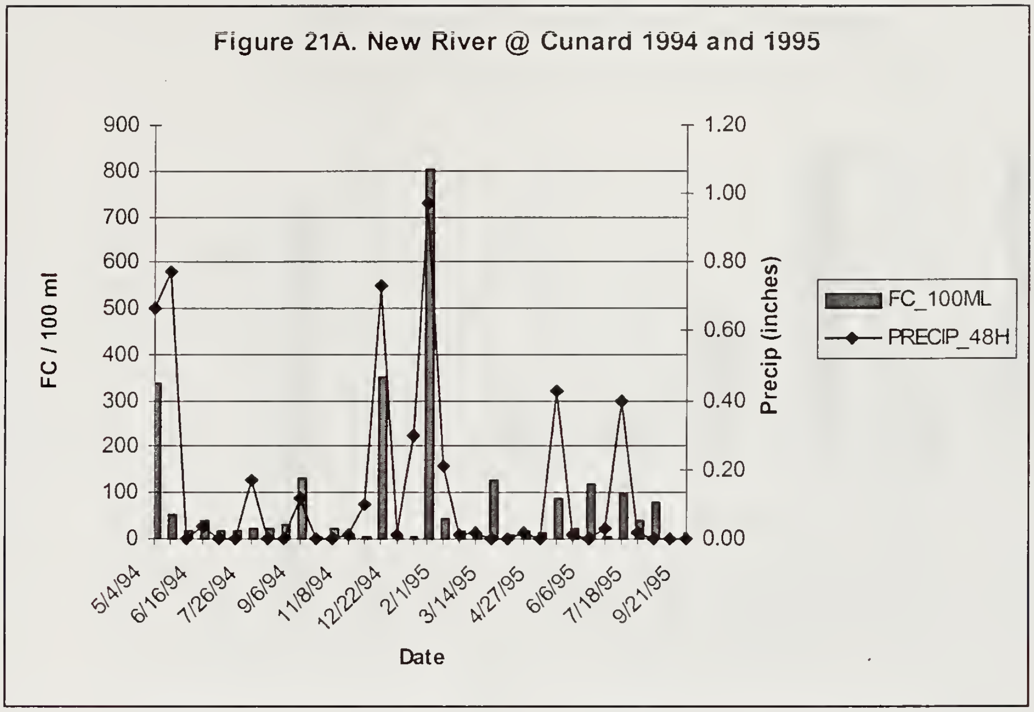


Figure 21A. New River @ Cunard 1994 and 1995
FC / 100 ml
Precip (inches)
FC_100ML
PRECIP_48H
Date
5/4/94
6/16/94
7/26/94
9/6/94
11/8/94
12/22/94
2/1/95
3/14/95
4/27/95
6/6/95
7/18/95
9/21/95

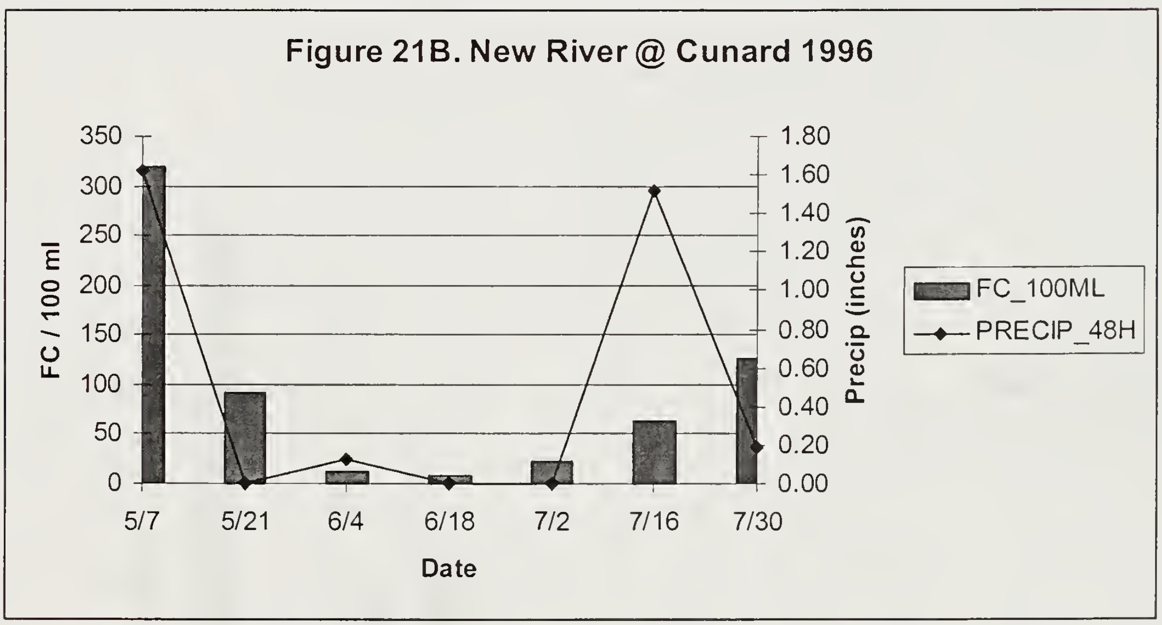


Figure 21B. New River @ Cunard 1996
FC / 100 ml
Precip (inches)
FC_100ML
PRECIP_48H
Date
5/7
5/21
6/4
6/18
7/2
7/16
7/30

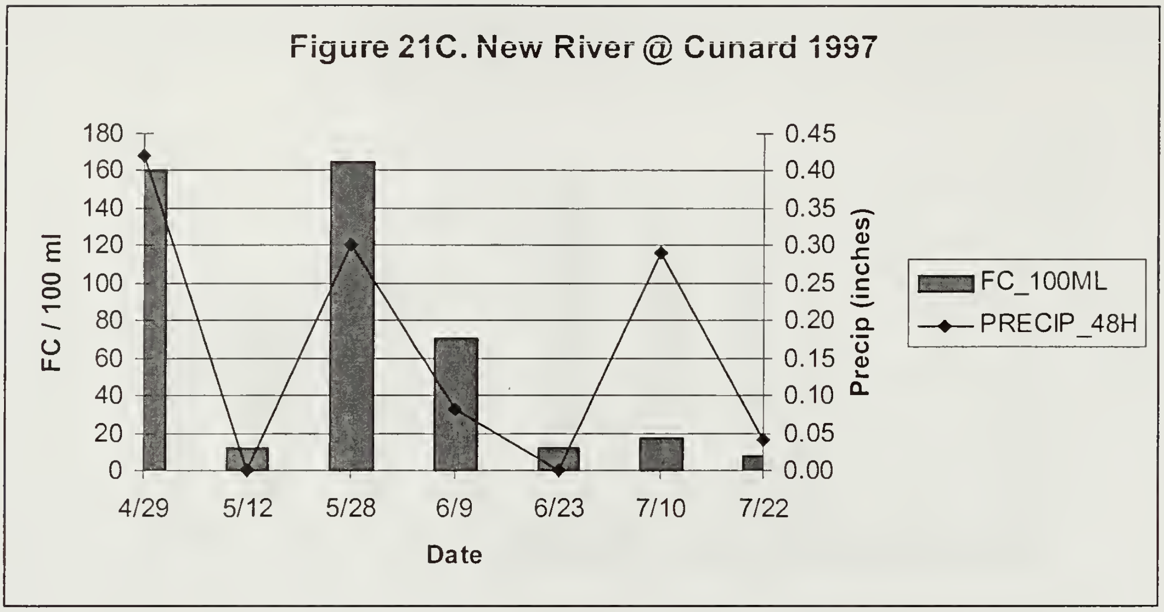


Figure 21C. New River @ Cunard 1997
FC / 100 ml
180
160
140
120
100
80
60
40
20
0
0.45
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.00
Precip (inches)
4/29
5/12
5/28
6/9
6/23
7/10
7/22
Date
FC_100ML
PRECIP_48H

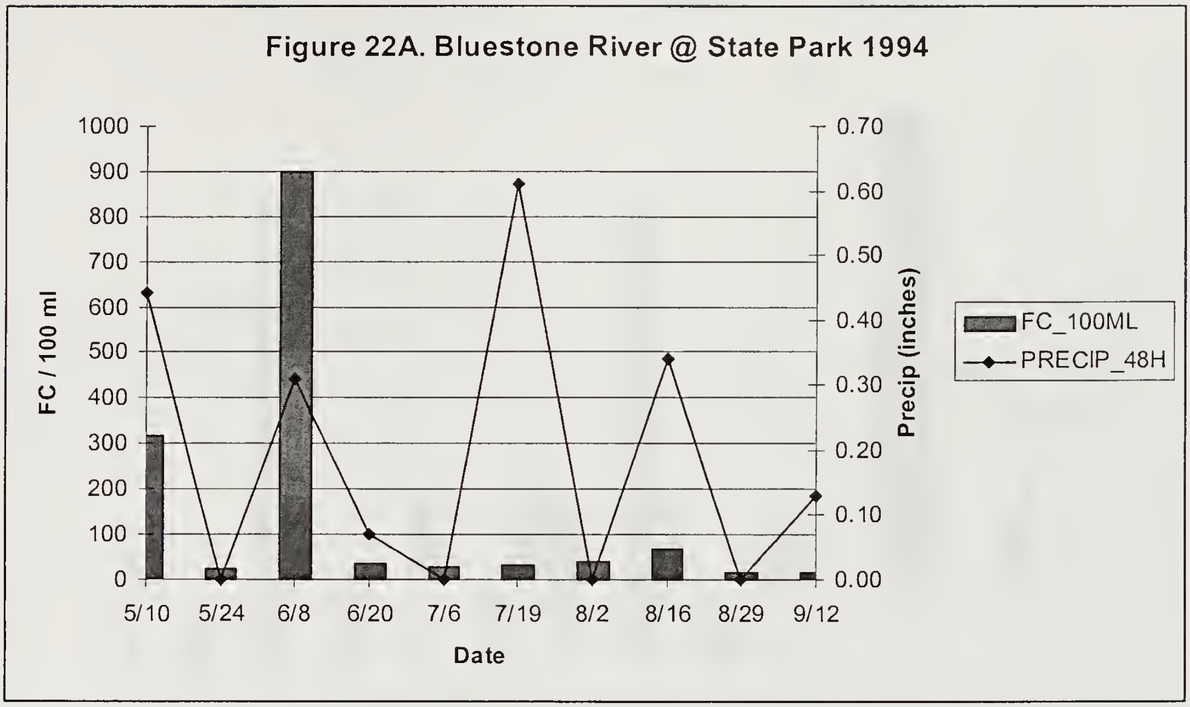


Figure 22A. Bluestone River @ State Park 1994
1000
900
800
700
600
500
400
300
200
100
0
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
FC / 100 ml
Precip (inches)
5/10
5/24
6/8
6/20
7/6
7/19
8/2
8/16
8/29
9/12
Date
FC_100ML
PRECIP_48H

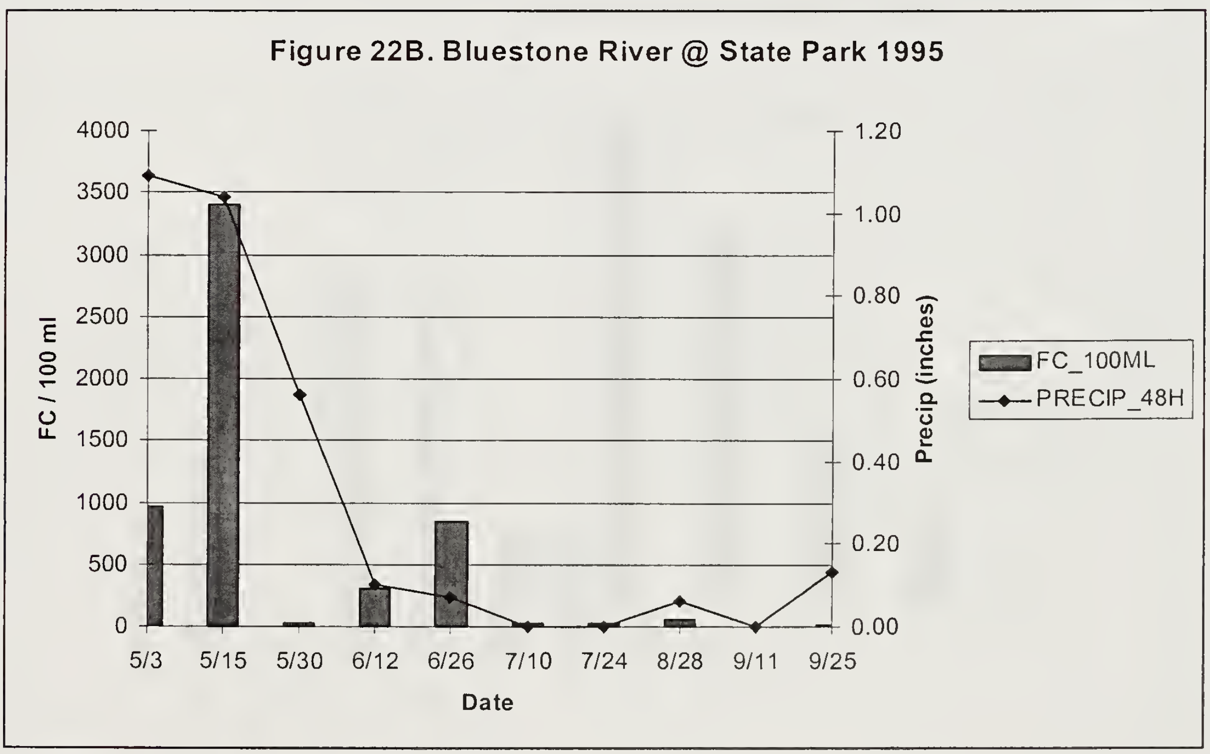


Figure 22B. Bluestone River @ State Park 1995
4000
3500
3000
2500
2000
1500
1000
500
0
1.20
1.00
0.80
0.60
0.40
0.20
0.00
FC / 100 ml
Precip (inches)
5/3
5/15
5/30
6/12
6/26
7/10
7/24
8/28
9/11
9/25
Date
FC_100ML
PRECIP_48H

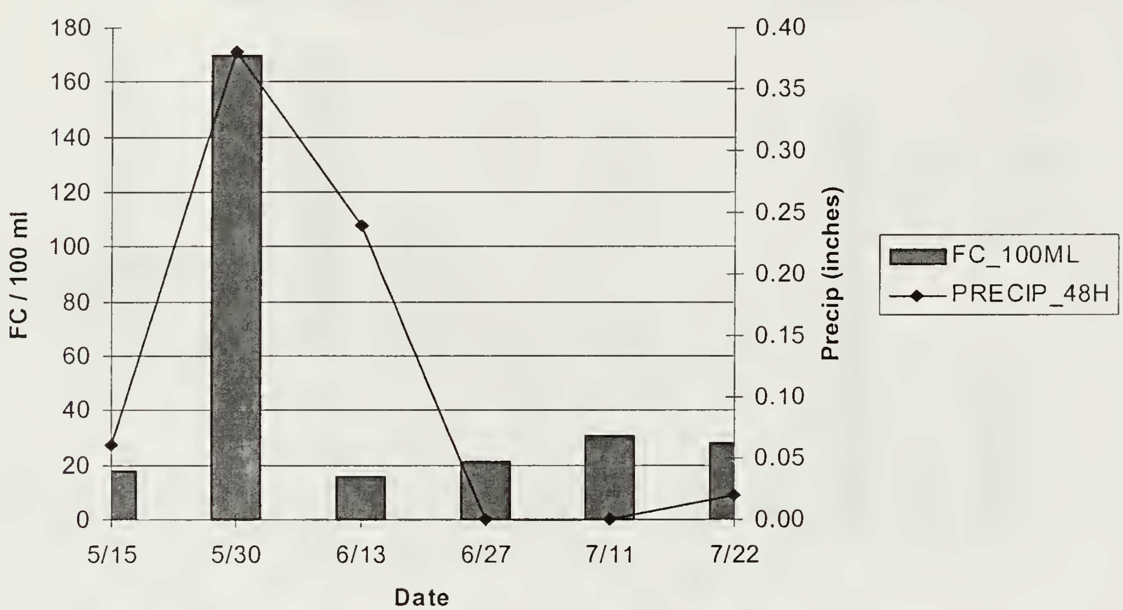


Figure 22C. Bluestone River @ State Park 1996

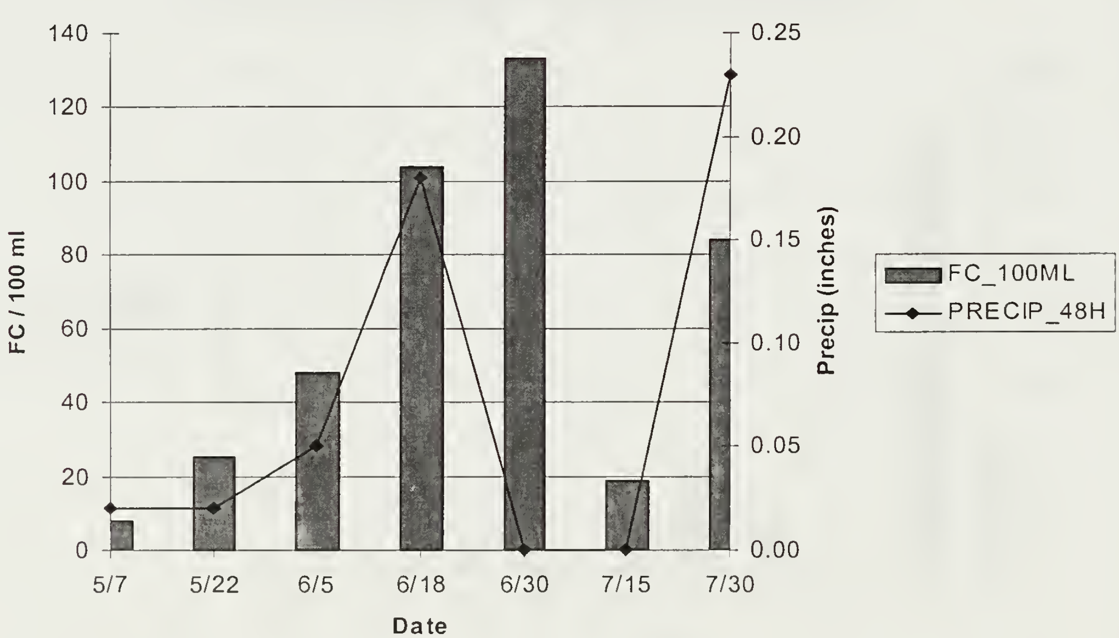


Figure 22D. Bluestone River @ State Park 1997

Figure 23A. Little Bluestone River 1994

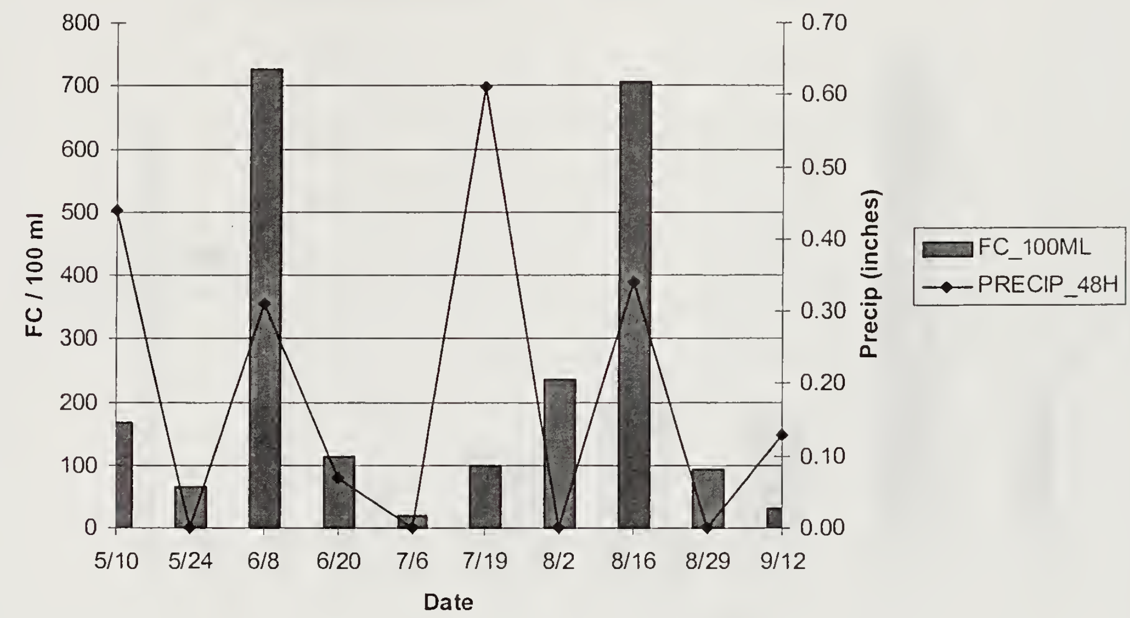
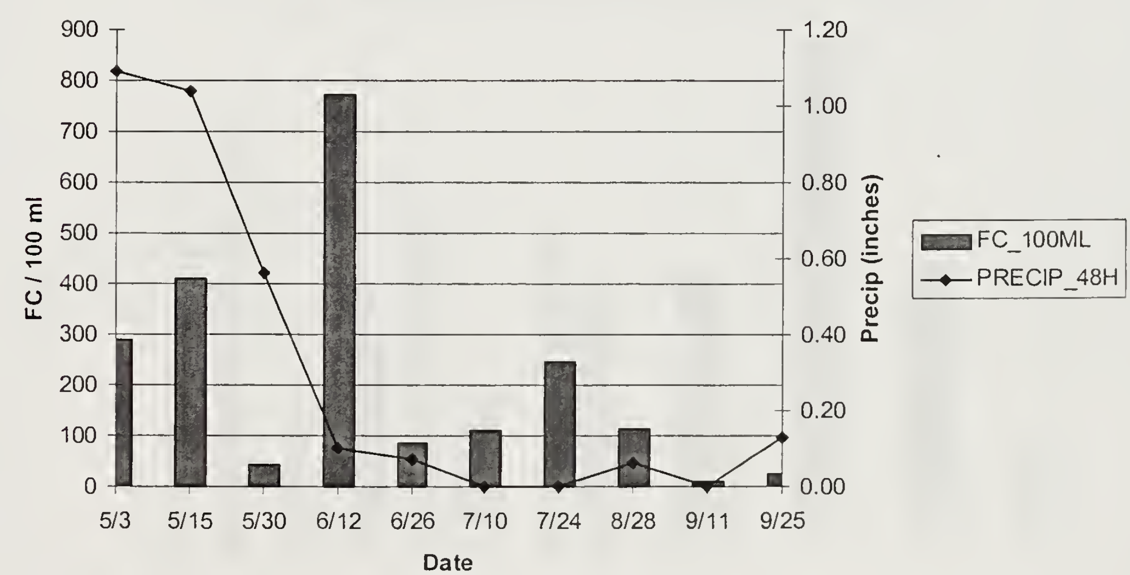


Figure 23B. Little Bluestone River 1995



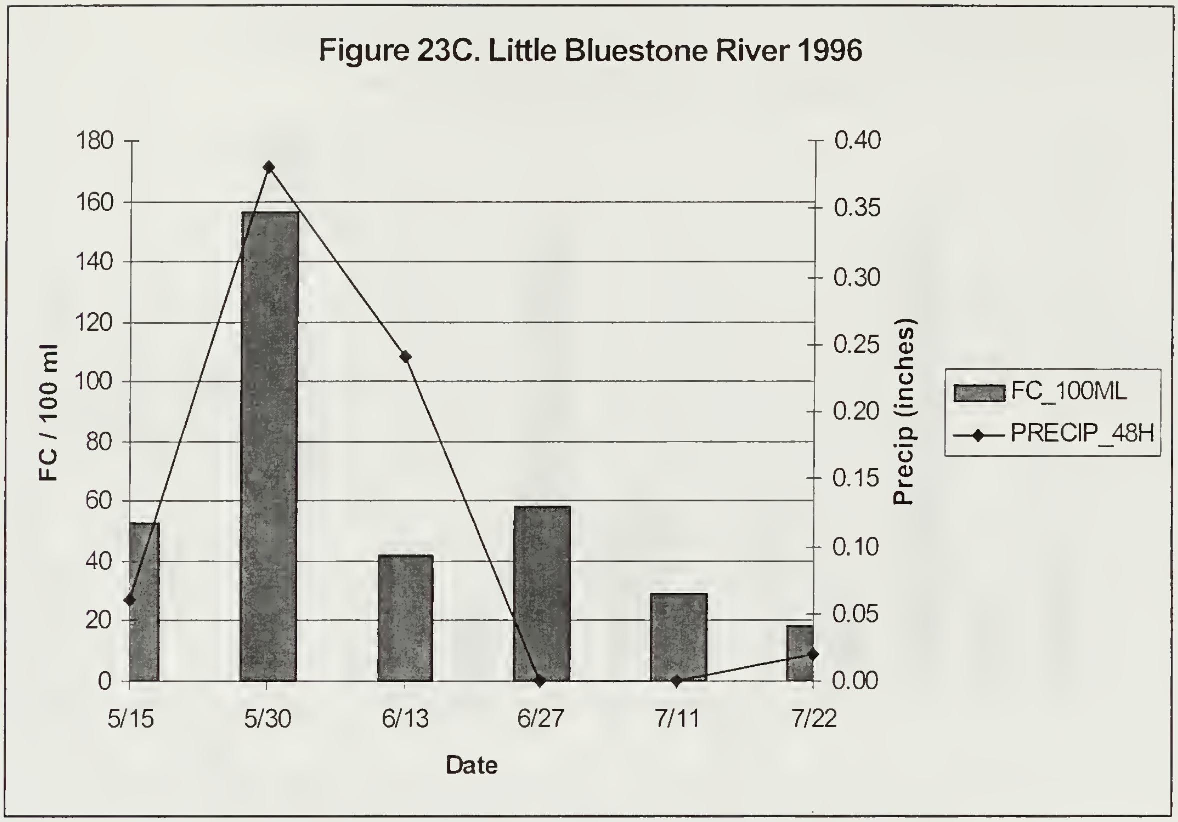


Figure 23C. Little Bluestone River 1996
180
160
140
120
100
80
60
40
20
0
FC / 100 ml
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.00
Precip (inches)
5/15
5/30
6/13
6/27
7/11
7/22
Date
FC_100ML
PRECIP_48H

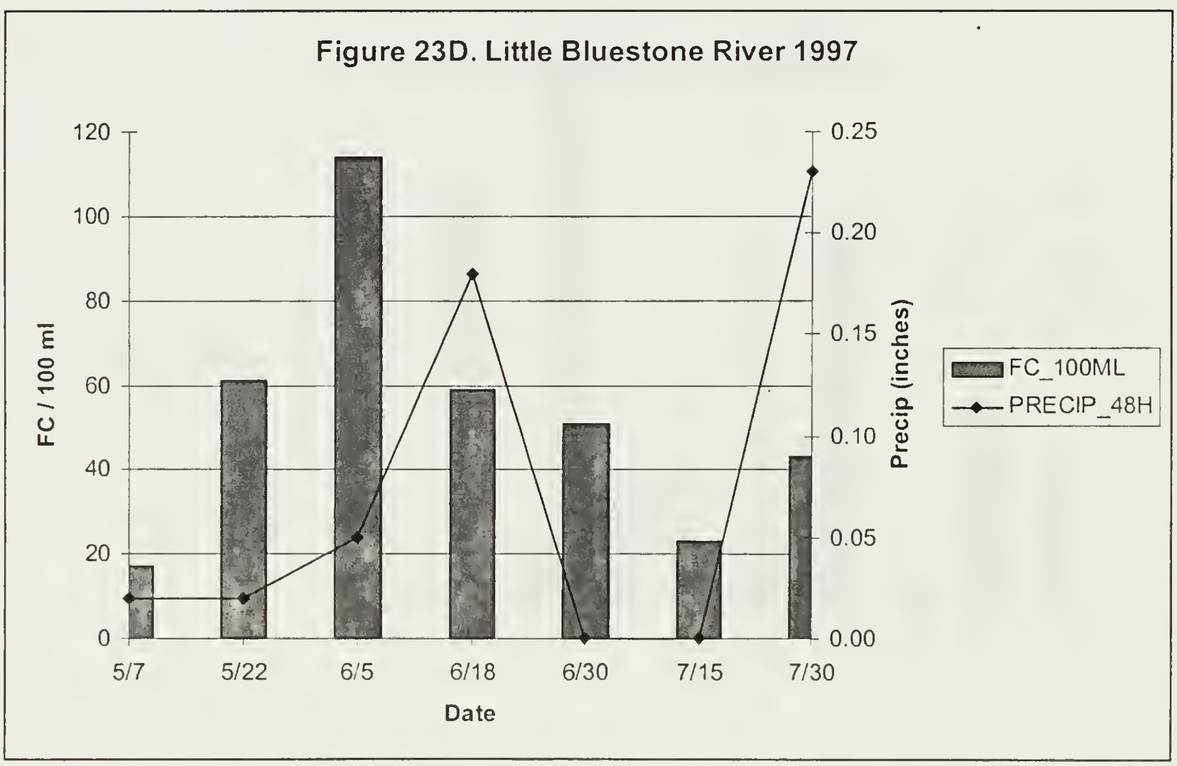


Figure 23D. Little Bluestone River 1997
120
100
80
60
40
20
0
FC / 100 ml
0.25
0.20
0.15
0.10
0.05
0.00
Precip (inches)
5/7
5/22
6/5
6/18
6/30
7/15
7/30
Date
FC_100ML
PRECIP_48H

Figure 24A. Bluestone River @ Confluence 1994

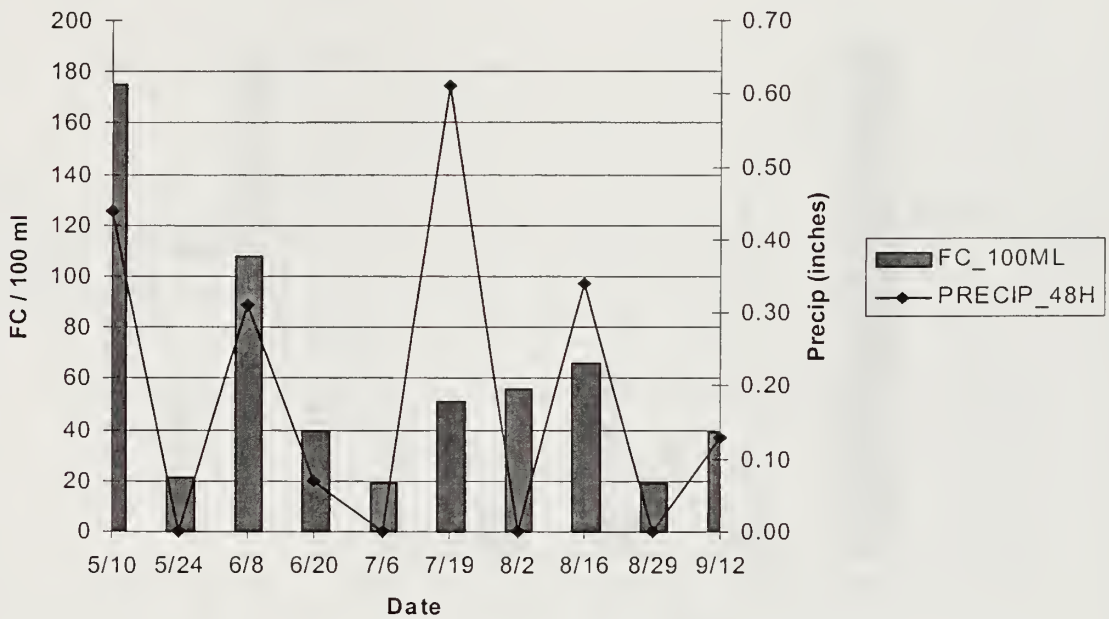


Figure 24B. Bluestone River @ Confluence 1995

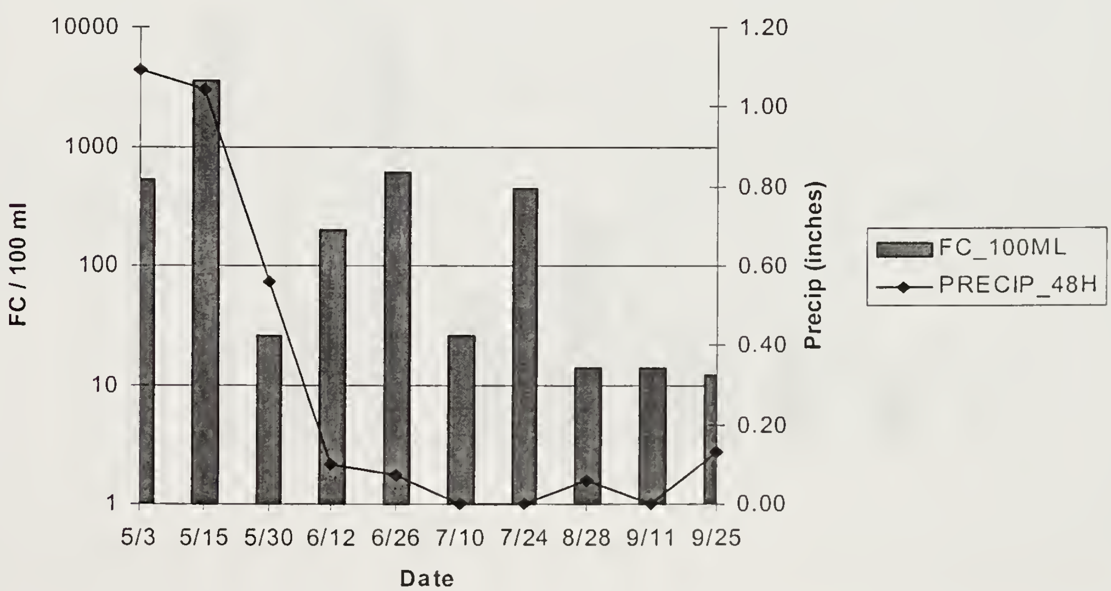


Figure 24C. Bluestone River @ Confluence 1996

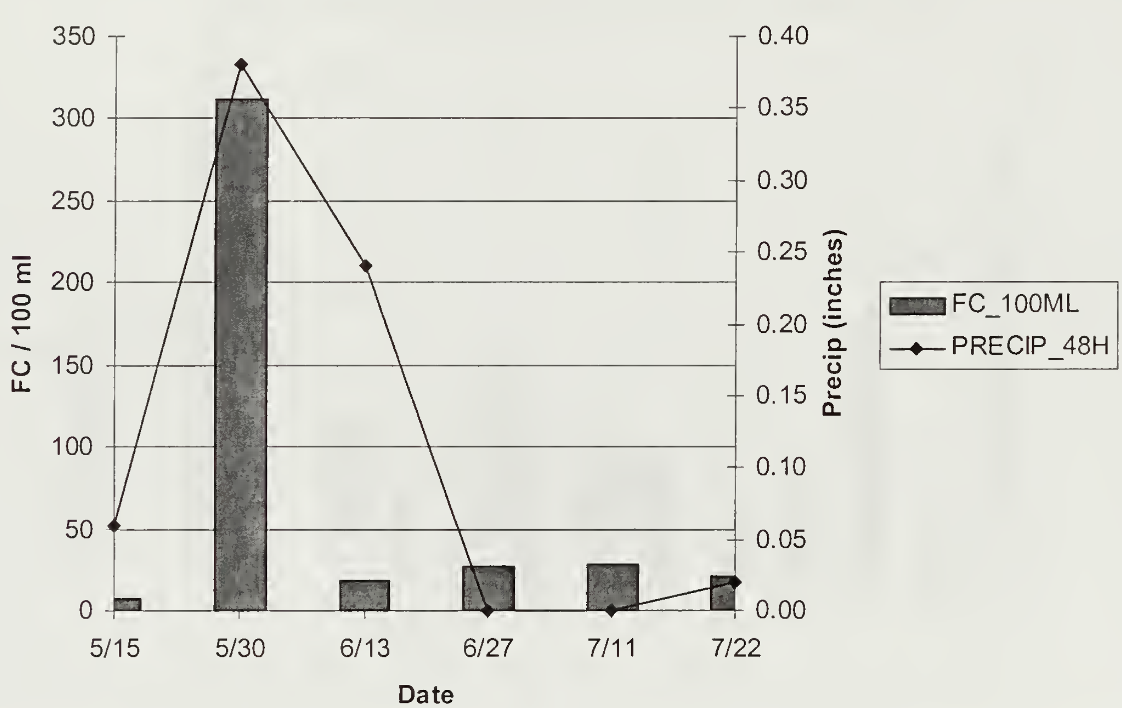
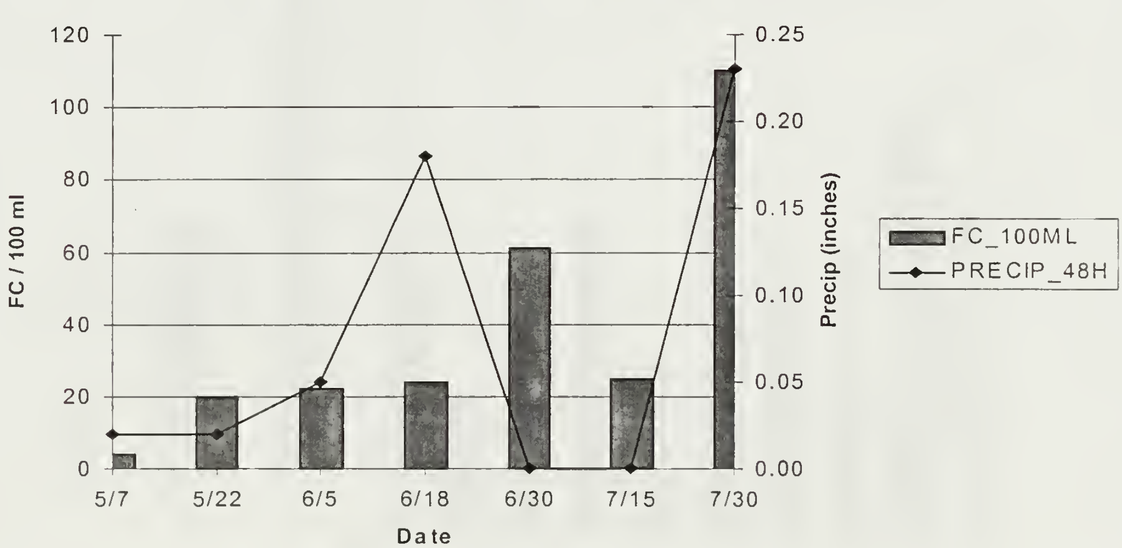


Figure 24D. Bluestone River @ Confluence 1997



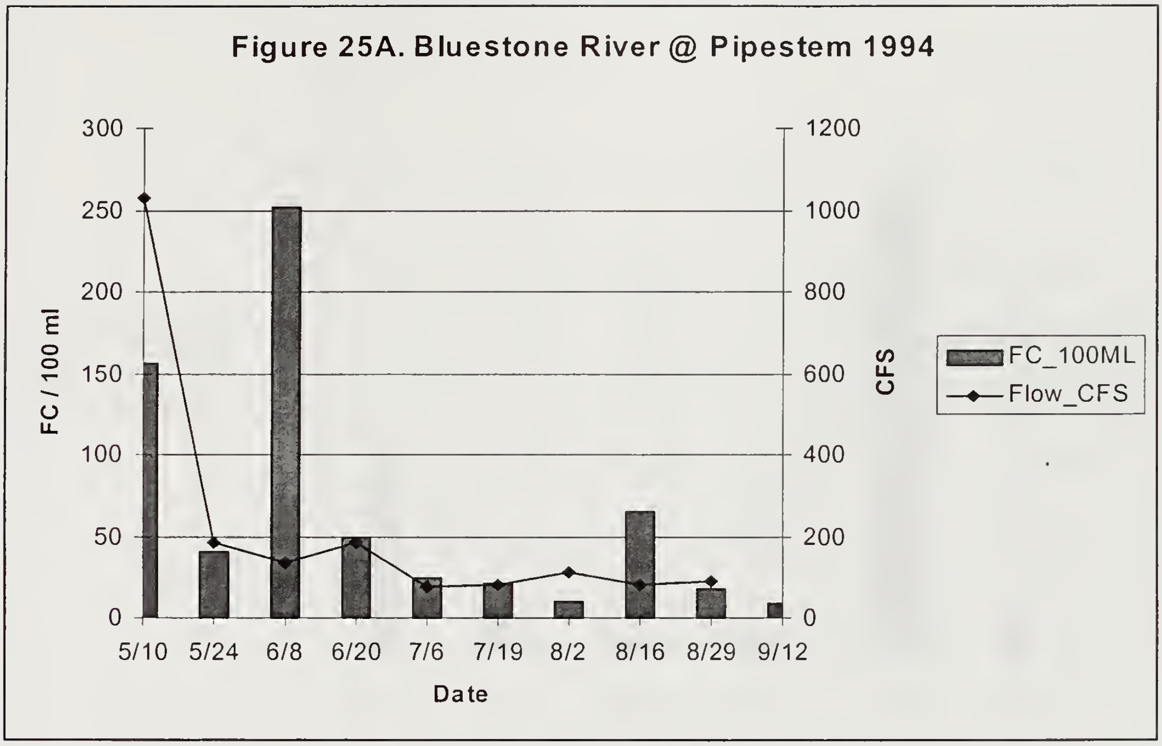


Figure 25A. Bluestone River @ Pipestem 1994
300
250
200
150
100
50
0
1200
1000
800
600
400
200
0
FC / 100 ml
CFS
FC_100ML
Flow_CFS
5/10
5/24
6/8
6/20
7/6
7/19
8/2
8/16
8/29
9/12
Date

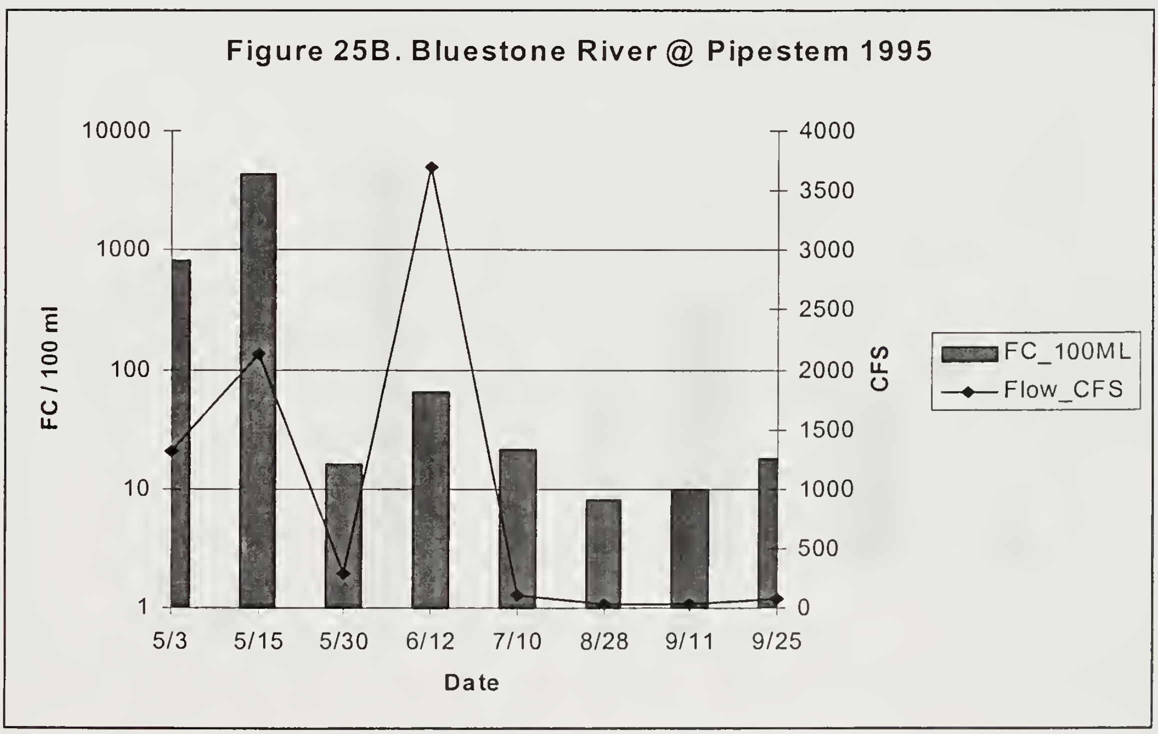


Figure 25B. Bluestone River @ Pipestem 1995
10000
1000
100
10
1
4000
3500
3000
2500
2000
1500
1000
500
0
FC / 100 ml
CFS
FC_100ML
Flow_CFS
5/3
5/15
5/30
6/12
7/10
8/28
9/11
9/25
Date

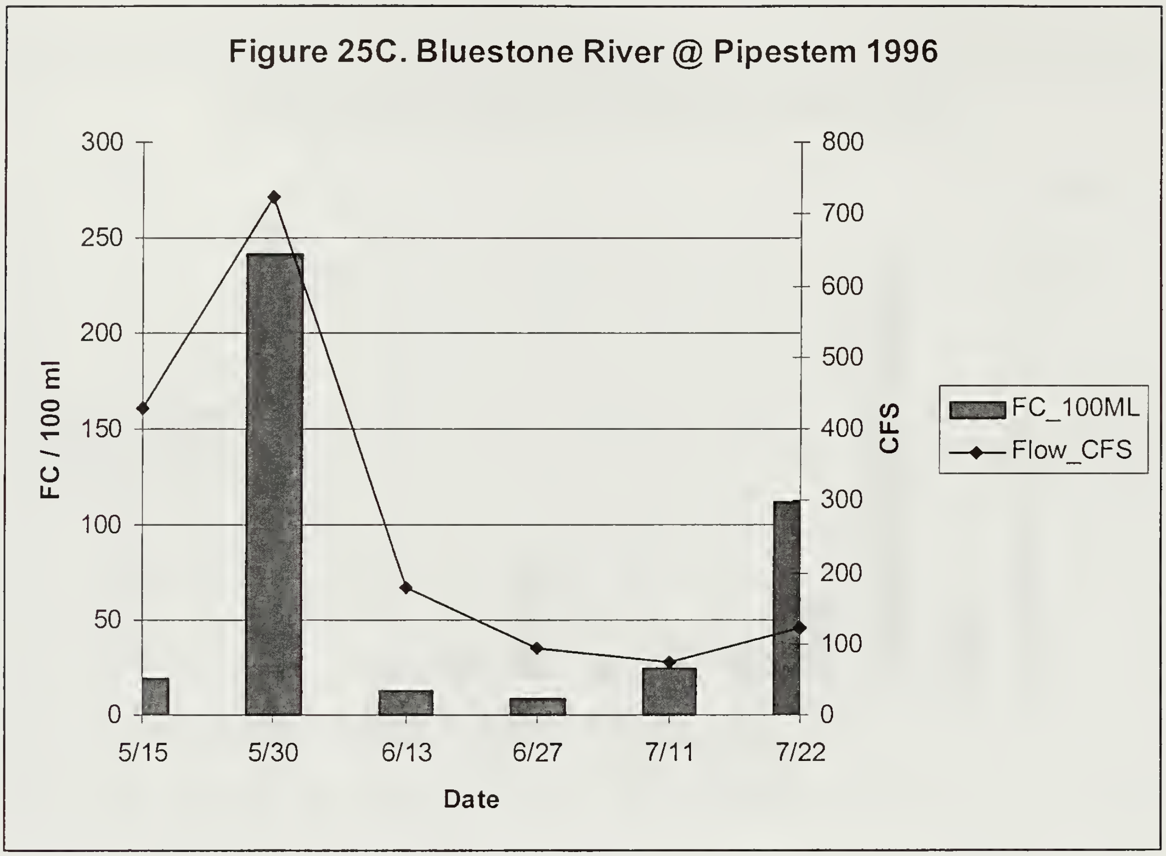


Figure 25C. Bluestone River @ Pipestem 1996
FC / 100 ml
CFS
300
250
200
150
100
50
0
800
700
600
500
400
300
200
100
0
5/15
5/30
6/13
6/27
7/11
7/22
Date
FC_100ML
Flow_CFS

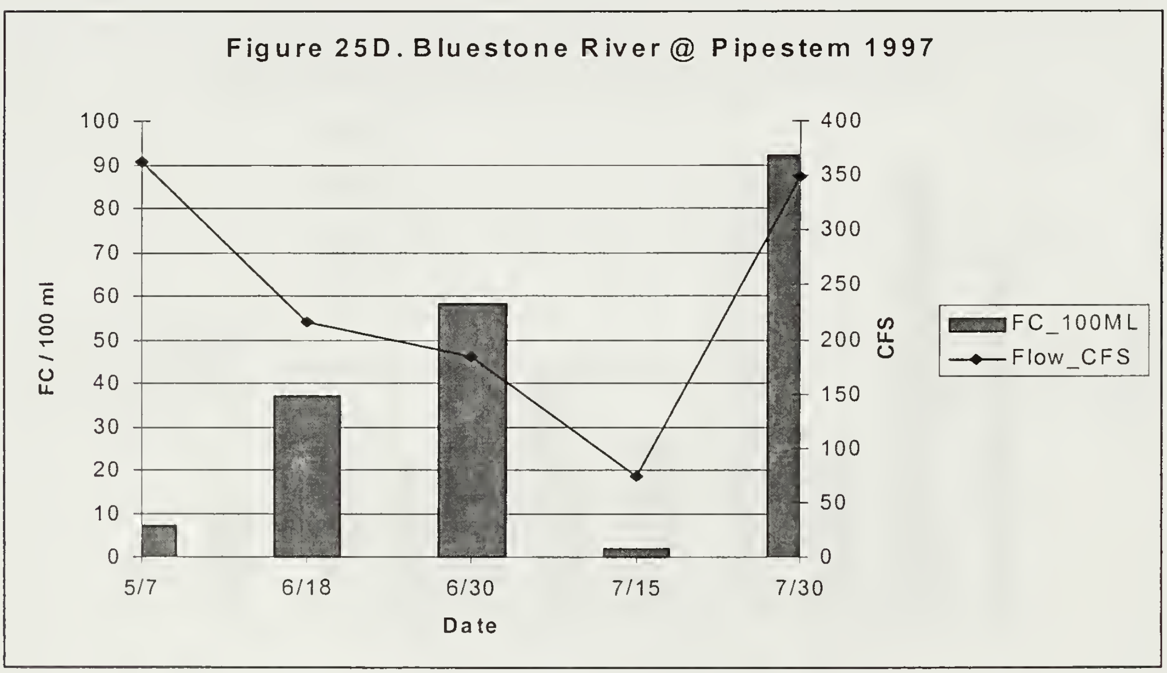


Figure 25D. Bluestone River @ Pipestem 1997
FC / 100 ml
CFS
100
90
80
70
60
50
40
30
20
10
0
400
350
300
250
200
150
100
50
0
5/7
6/18
6/30
7/15
7/30
Date
FC_100ML
Flow_CFS

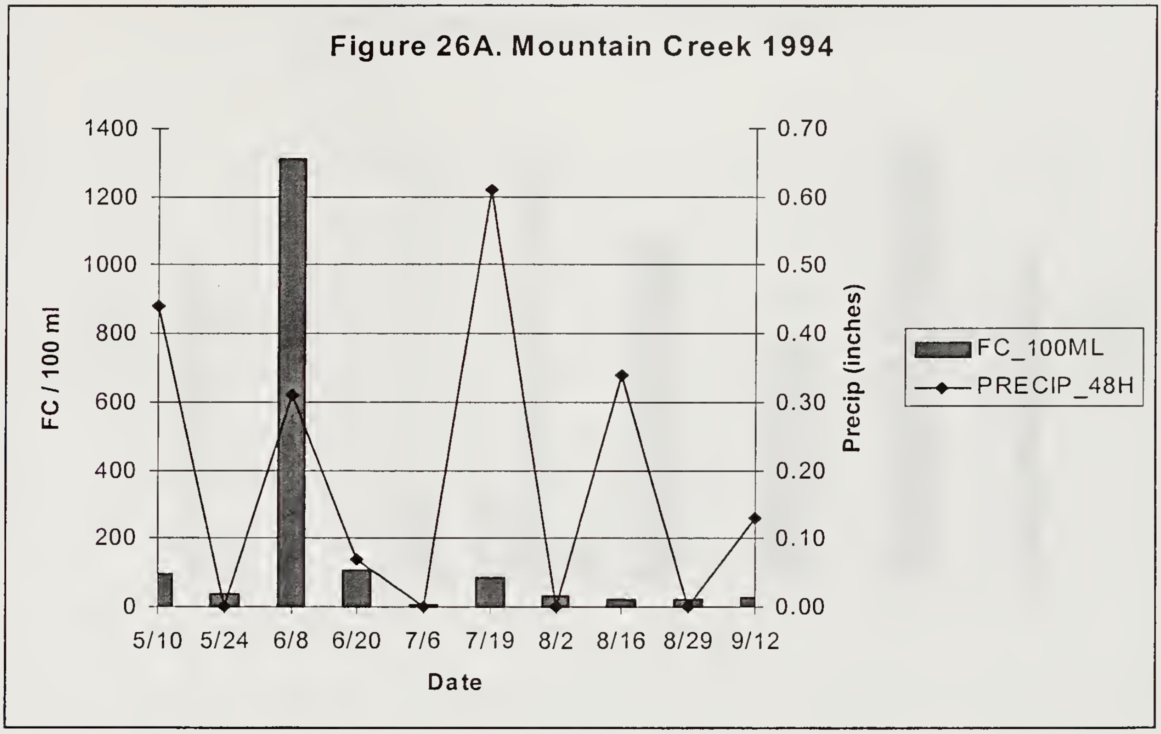


Figure 26A. Mountain Creek 1994
1400
1200
1000
800
600
400
200
0
FC / 100 ml
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
Precip (inches)
5/10 5/24 6/8 6/20 7/6 7/19 8/2 8/16 8/29 9/12
Date
FC_100ML
PRECIP_48H

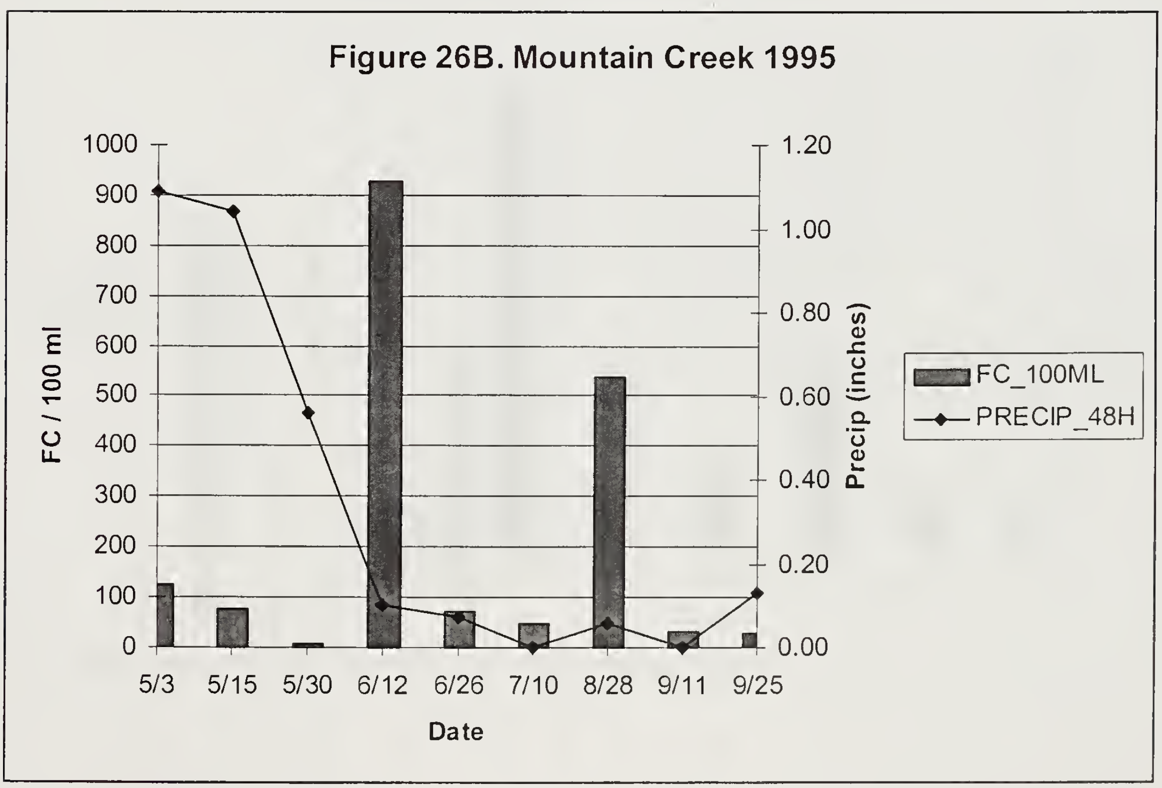


Figure 26B. Mountain Creek 1995
1000
900
800
700
600
500
400
300
200
100
0
FC / 100 ml
1.20
1.00
0.80
0.60
0.40
0.20
0.00
Precip (inches)
5/3 5/15 5/30 6/12 6/26 7/10 8/28 9/11 9/25
Date
FC_100ML
PRECIP_48H

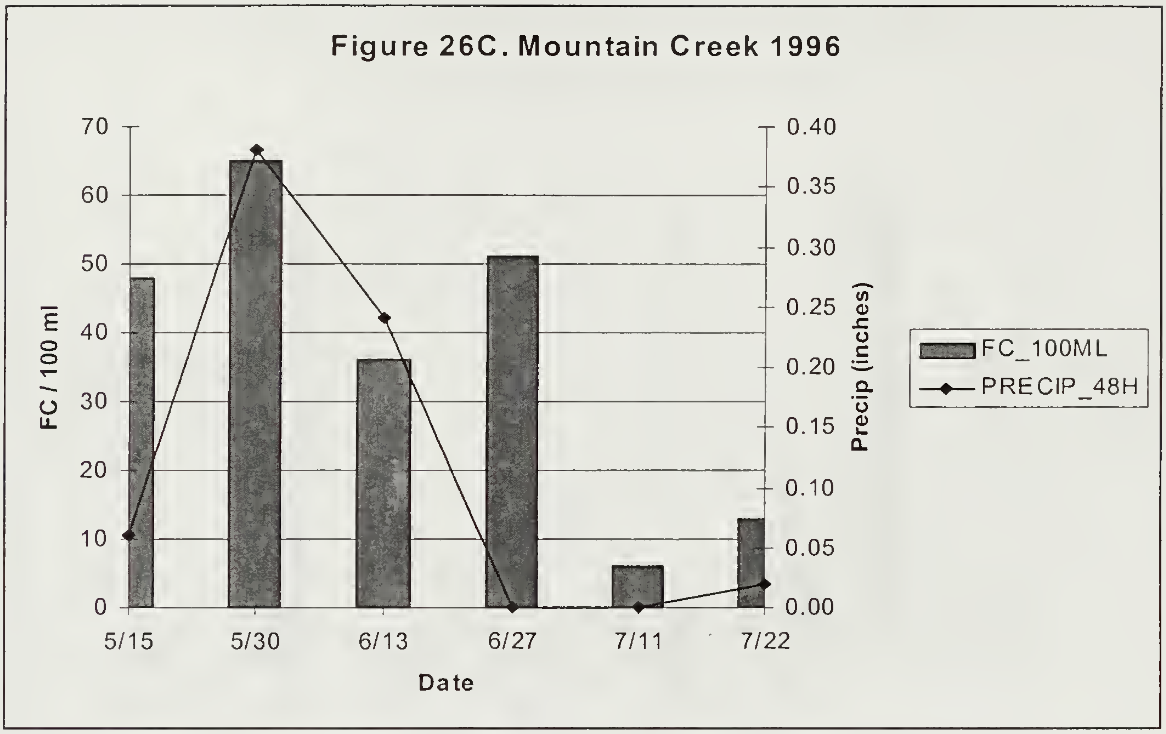


Figure 26C. Mountain Creek 1996
FC / 100 ml
Precip (inches)
70
60
50
40
30
20
10
0
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.00
5/15
5/30
6/13
6/27
7/11
7/22
Date
FC_100ML
PRECIP_48H

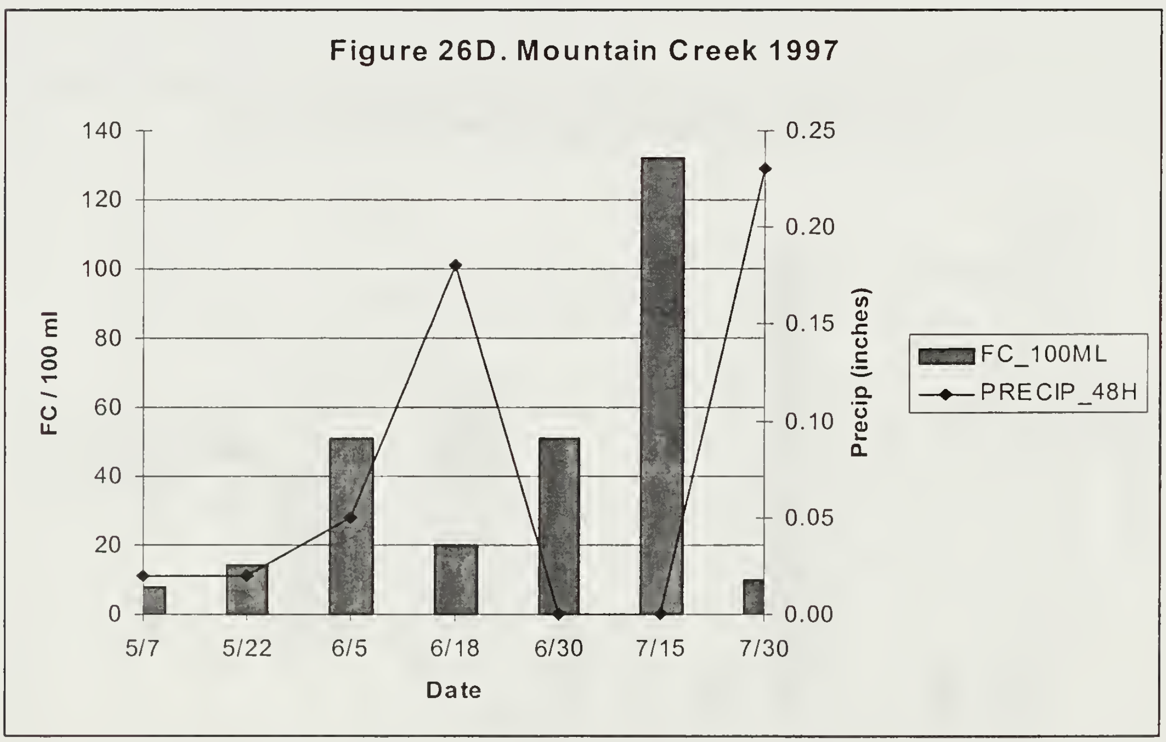


Figure 26D. Mountain Creek 1997
FC / 100 ml
Precip (inches)
140
120
100
80
60
40
20
0
0.25
0.20
0.15
0.10
0.05
0.00
5/7
5/22
6/5
6/18
6/30
7/15
7/30
Date
FC_100ML
PRECIP_48H

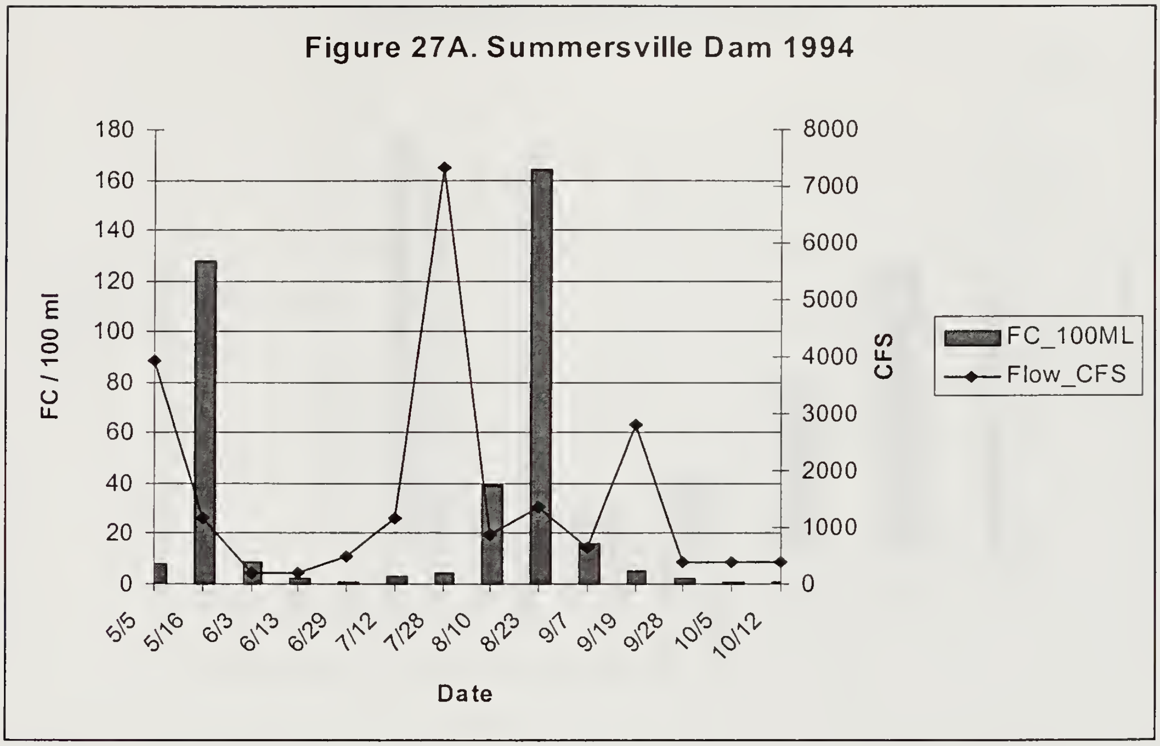


Figure 27A. Summersville Dam 1994
180
160
140
120
100
80
60
40
20
0
FC / 100 ml
8000
7000
6000
5000
4000
3000
2000
1000
0
CFS
FC_100ML
Flow_CFS
5/5
5/16
6/3
6/13
6/29
7/12
7/28
8/10
8/23
9/7
9/19
9/28
10/5
10/12
Date

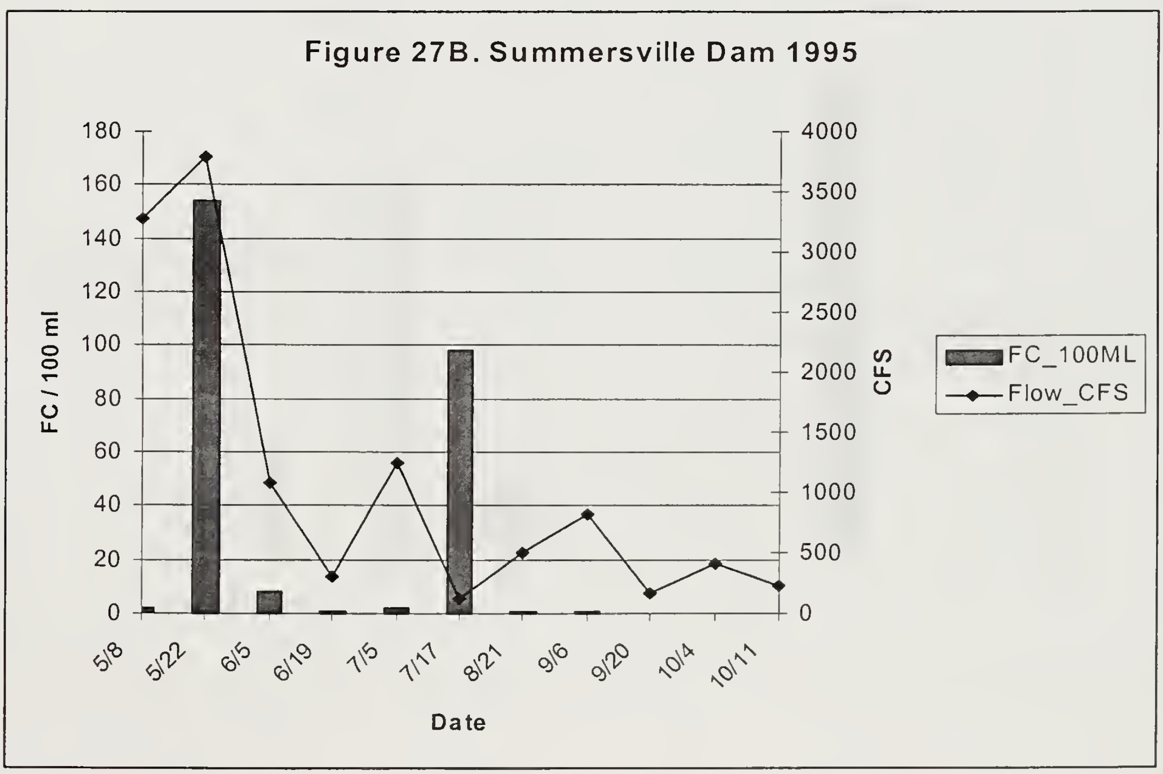


Figure 27B. Summersville Dam 1995
180
160
140
120
100
80
60
40
20
0
FC / 100 ml
4000
3500
3000
2500
2000
1500
1000
500
0
CFS
FC_100ML
Flow_CFS
5/8
5/22
6/5
6/19
7/5
7/17
8/21
9/6
9/20
10/4
10/11
Date

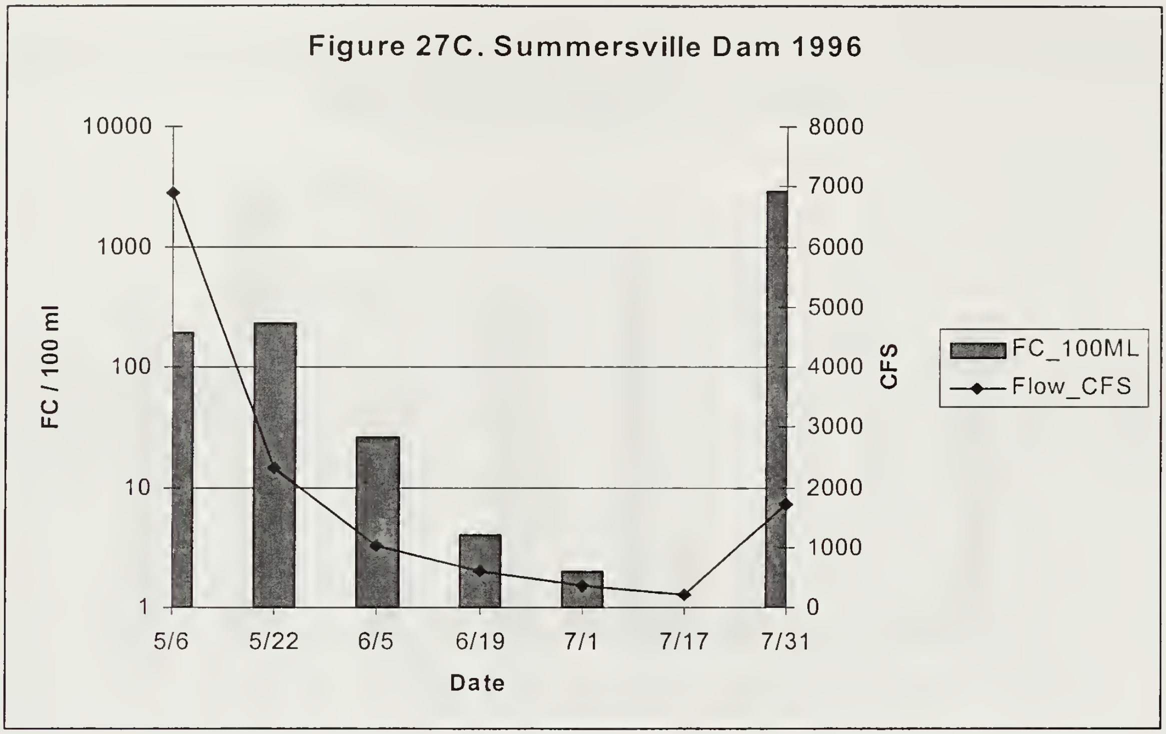


Figure 27C. Summersville Dam 1996
10000
1000
100
10
1
FC / 100 ml
8000
7000
6000
5000
4000
3000
2000
1000
0
CFS
5/6
5/22
6/5
6/19
7/1
7/17
7/31
Date
FC_100ML
Flow_CFS

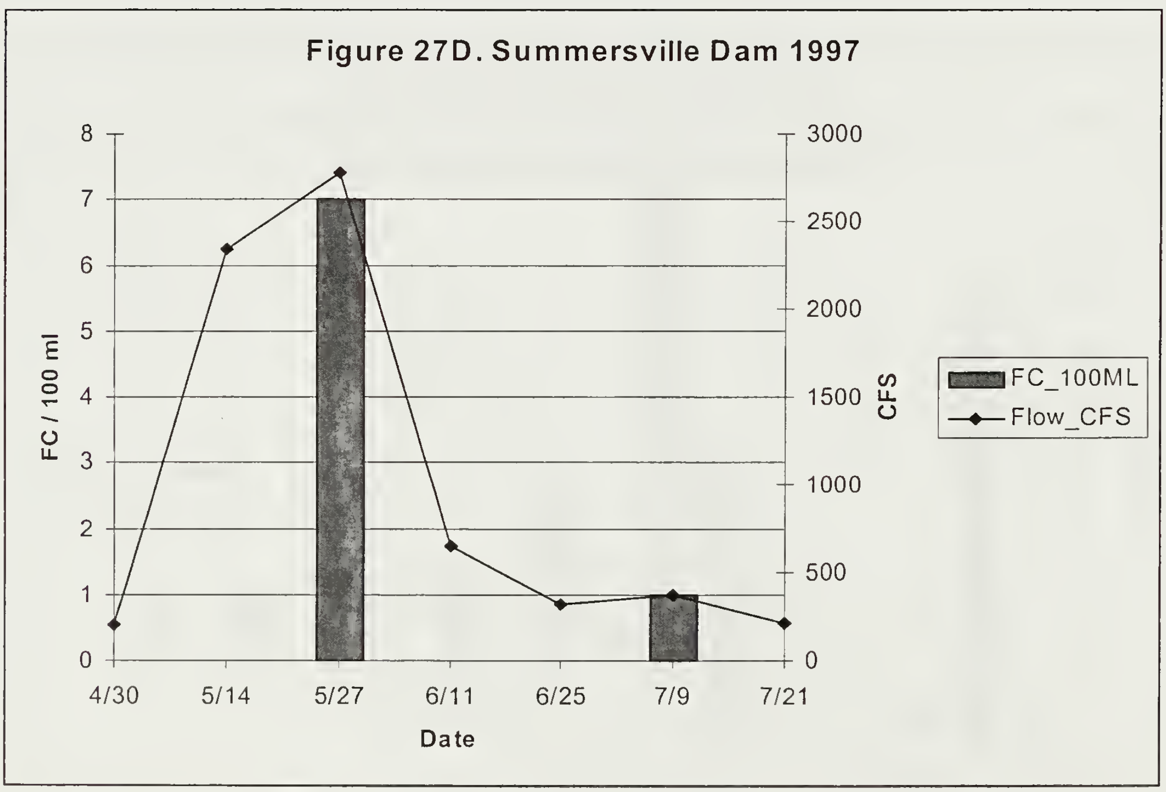


Figure 27D. Summersville Dam 1997
8
7
6
5
4
3
2
1
0
FC / 100 ml
3000
2500
2000
1500
1000
500
0
CFS
4/30
5/14
5/27
6/11
6/25
7/9
7/21
Date
FC_100ML
Flow_CFS

Figure 28A. Mid-Gauley 1994

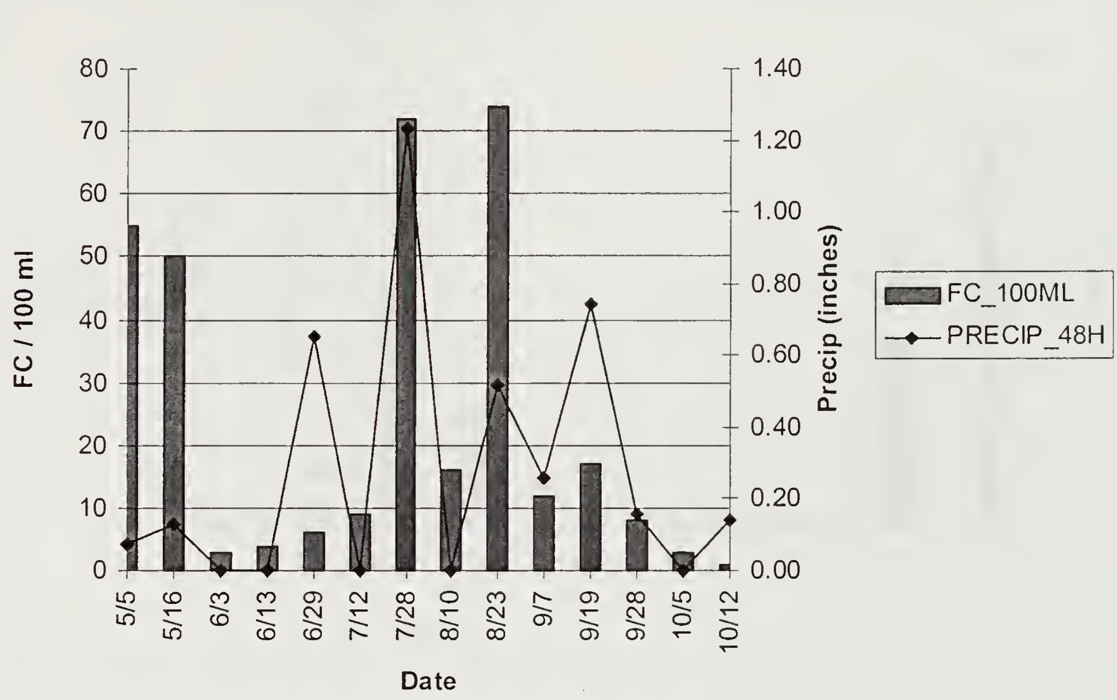


Figure 28B. Mid-Gauley 1995

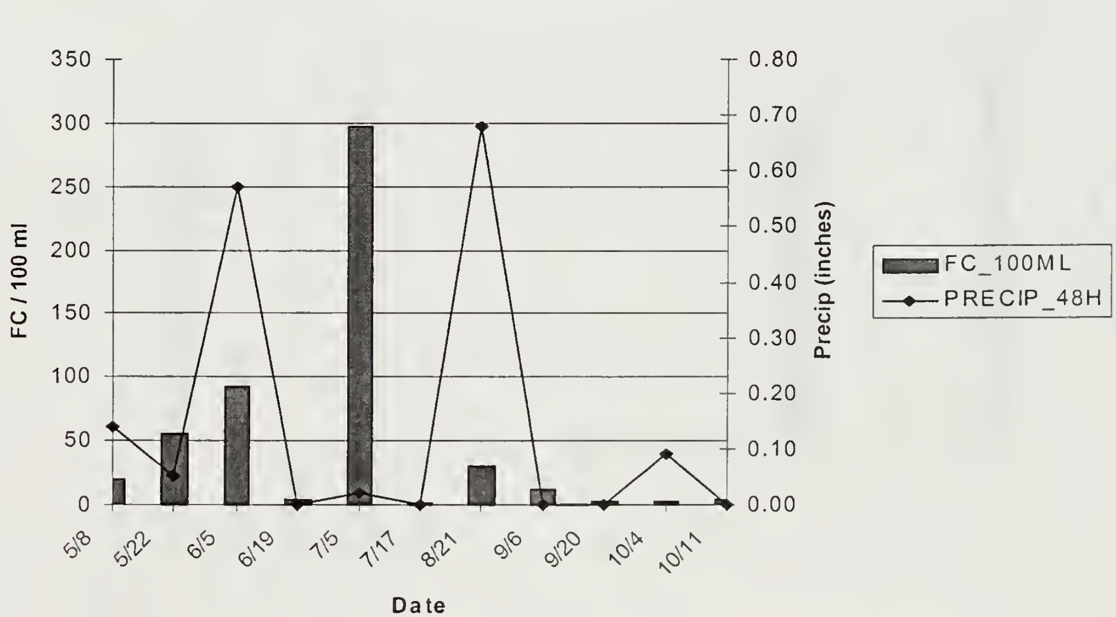


Figure 29A. Gauley River @ Mason Branch 1996

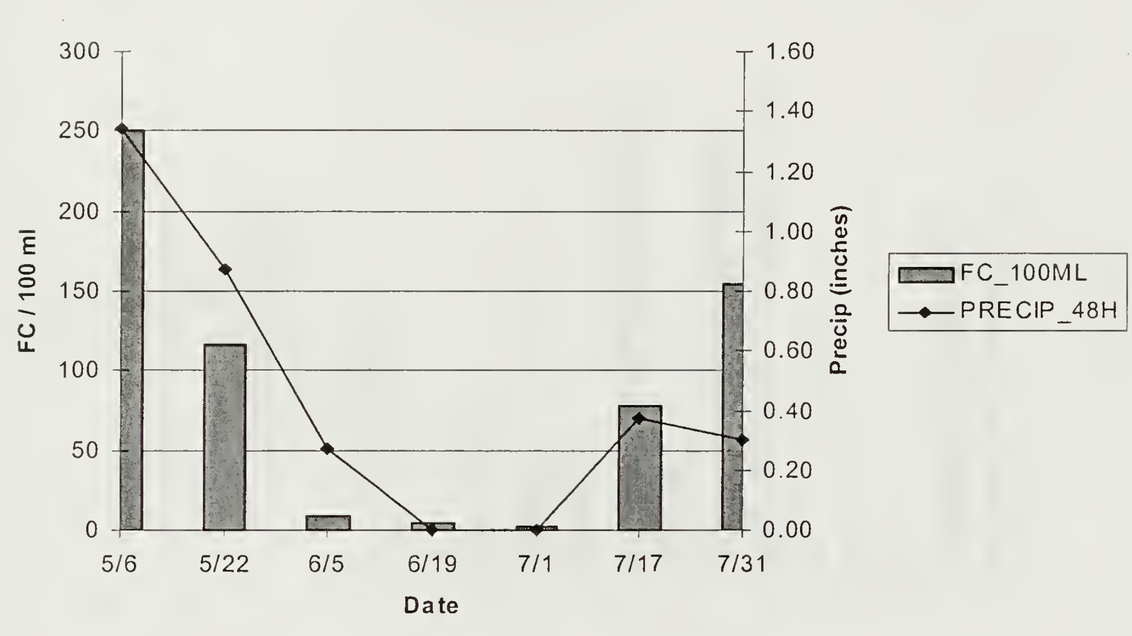
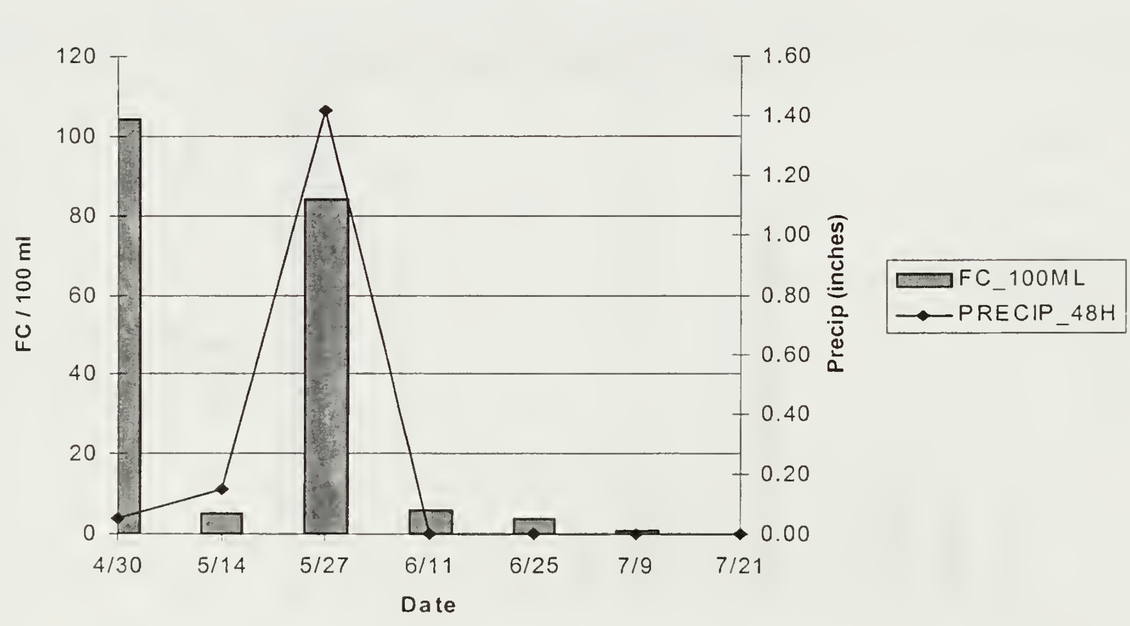


Figure 29B. Gauley River @ Mason Branch 1997



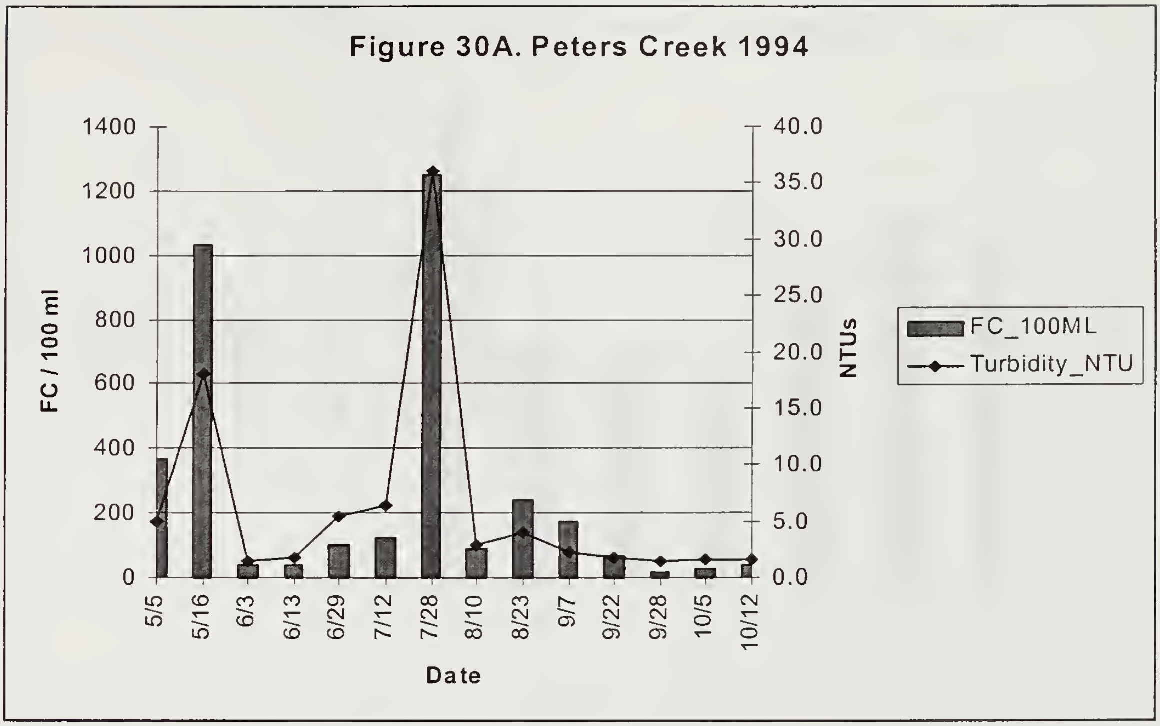


Figure 30A. Peters Creek 1994
FC / 100 ml
NTUs
Date
FC_100ML
Turbidity_NTU
1400
1200
1000
800
600
400
200
0
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
5/5
5/16
6/3
6/13
6/29
7/12
7/28
8/10
8/23
9/7
9/22
9/28
10/5
10/12

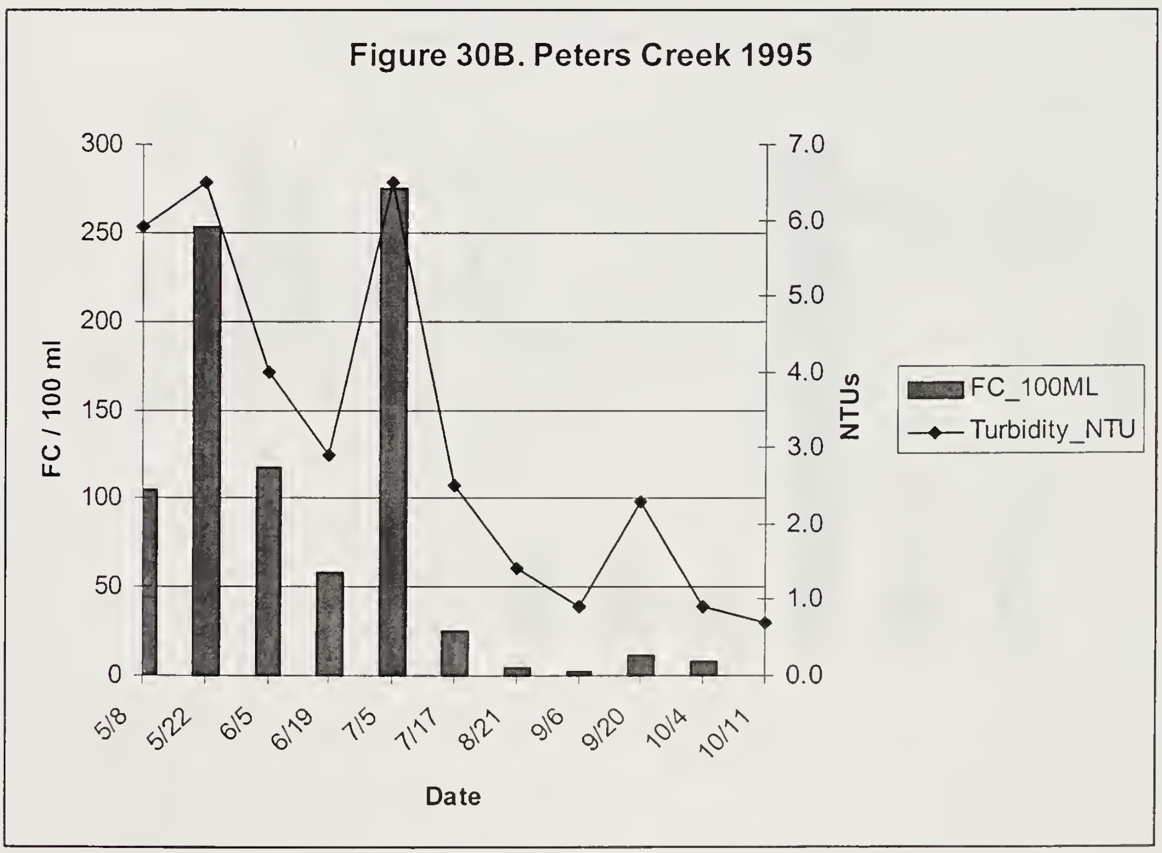


Figure 30B. Peters Creek 1995
FC / 100 ml
NTUs
Date
FC_100ML
Turbidity_NTU
300
250
200
150
100
50
0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
5/8
5/22
6/5
6/19
7/5
7/17
8/21
9/6
9/20
10/4
10/11

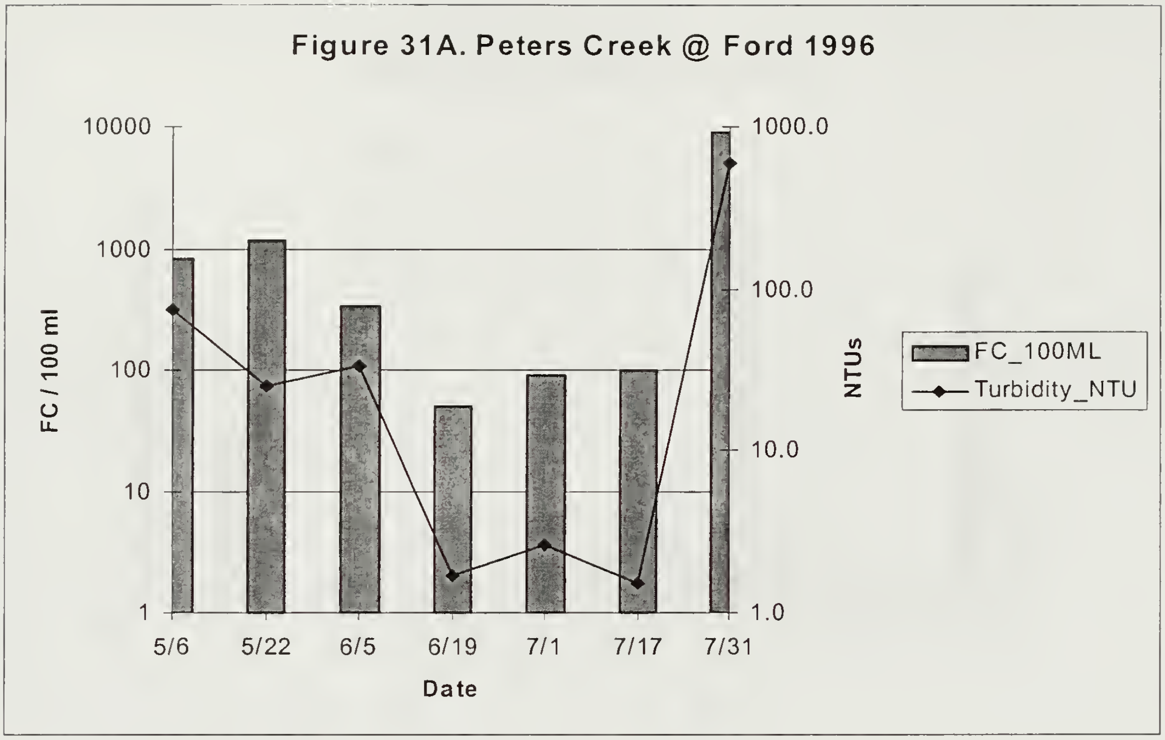


Figure 31A. Peters Creek @ Ford 1996
10000
1000
100
10
1
FC / 100 ml
1000.0
100.0
10.0
1.0
NTUs
5/6
5/22
6/5
6/19
7/1
7/17
7/31
Date
FC_100ML
Turbidity_NTU

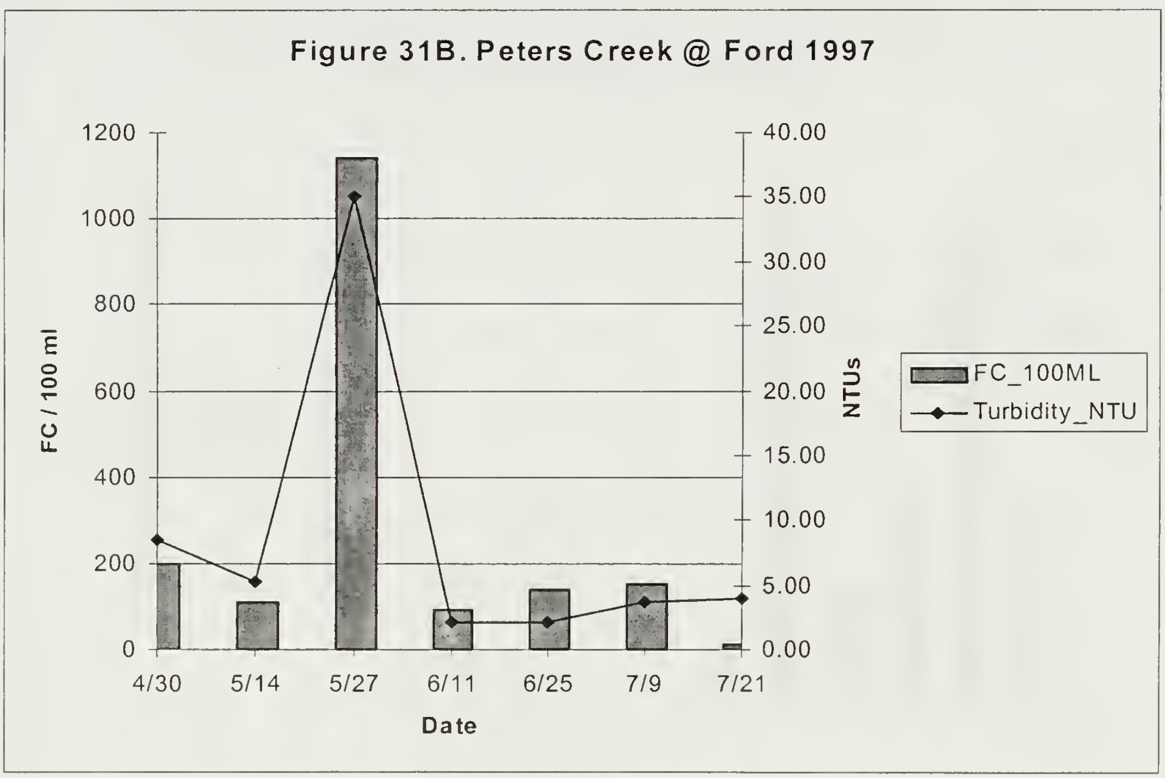


Figure 31B. Peters Creek @ Ford 1997
1200
1000
800
600
400
200
0
FC / 100 ml
40.00
35.00
30.00
25.00
20.00
15.00
10.00
5.00
0.00
NTUs
4/30
5/14
5/27
6/11
6/25
7/9
7/21
Date
FC_100ML
Turbidity_NTU

Figure 32A. Gauley River @ South Side Swiss 1994

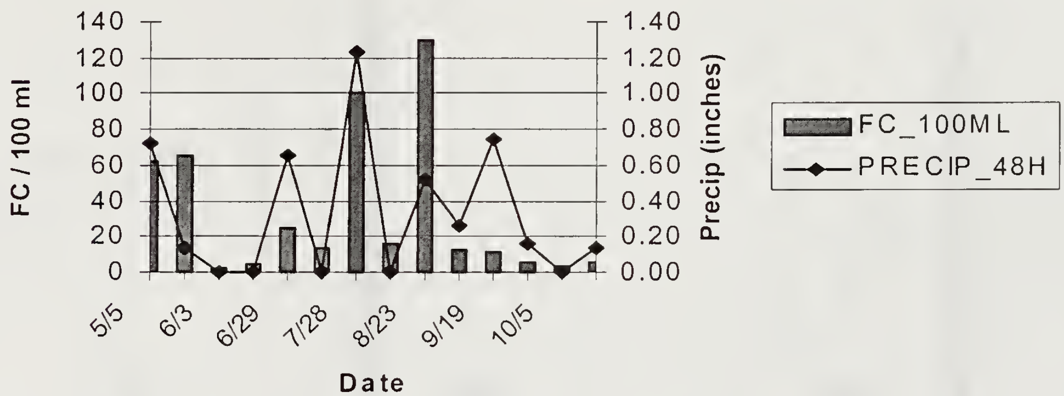
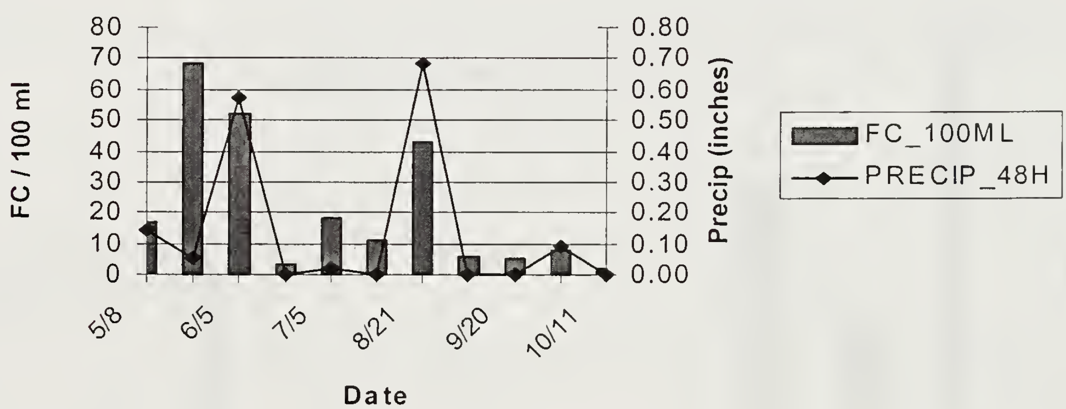


Figure 32B. Gauley River @ South Side Swiss 1995



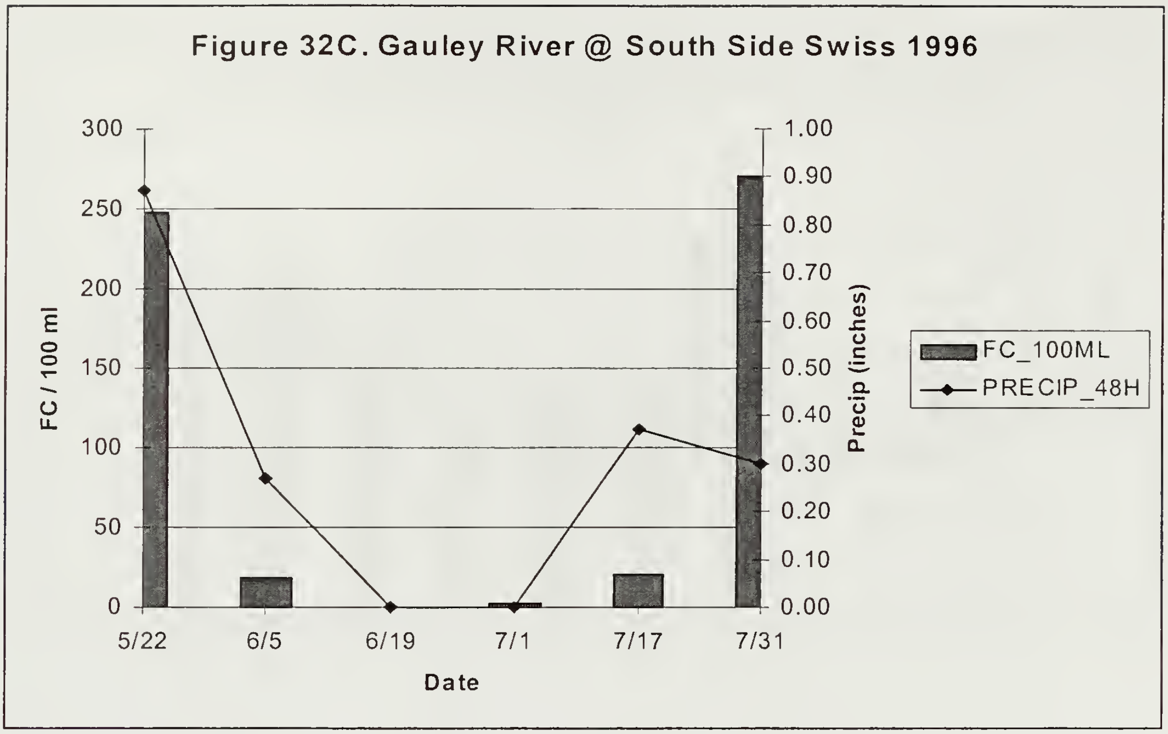


Figure 32C. Gauley River @ South Side Swiss 1996
300
250
200
150
100
50
0
1.00
0.90
0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
FC / 100 ml
Precip (inches)
5/22
6/5
6/19
7/1
7/17
7/31
Date
FC_100ML
PRECIP_48H

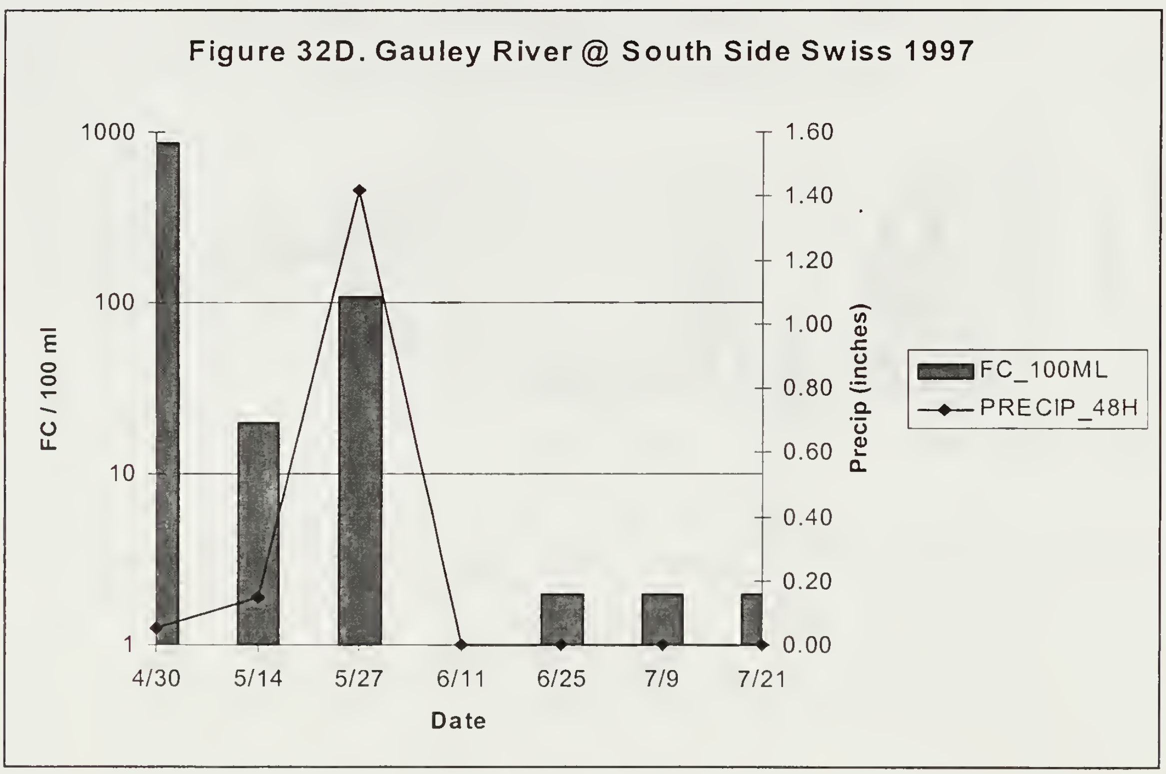


Figure 32D. Gauley River @ South Side Swiss 1997
1000
100
10
1
1.60
1.40
1.20
1.00
0.80
0.60
0.40
0.20
0.00
FC / 100 ml
Precip (inches)
4/30
5/14
5/27
6/11
6/25
7/9
7/21
Date
FC_100ML
PRECIP_48H

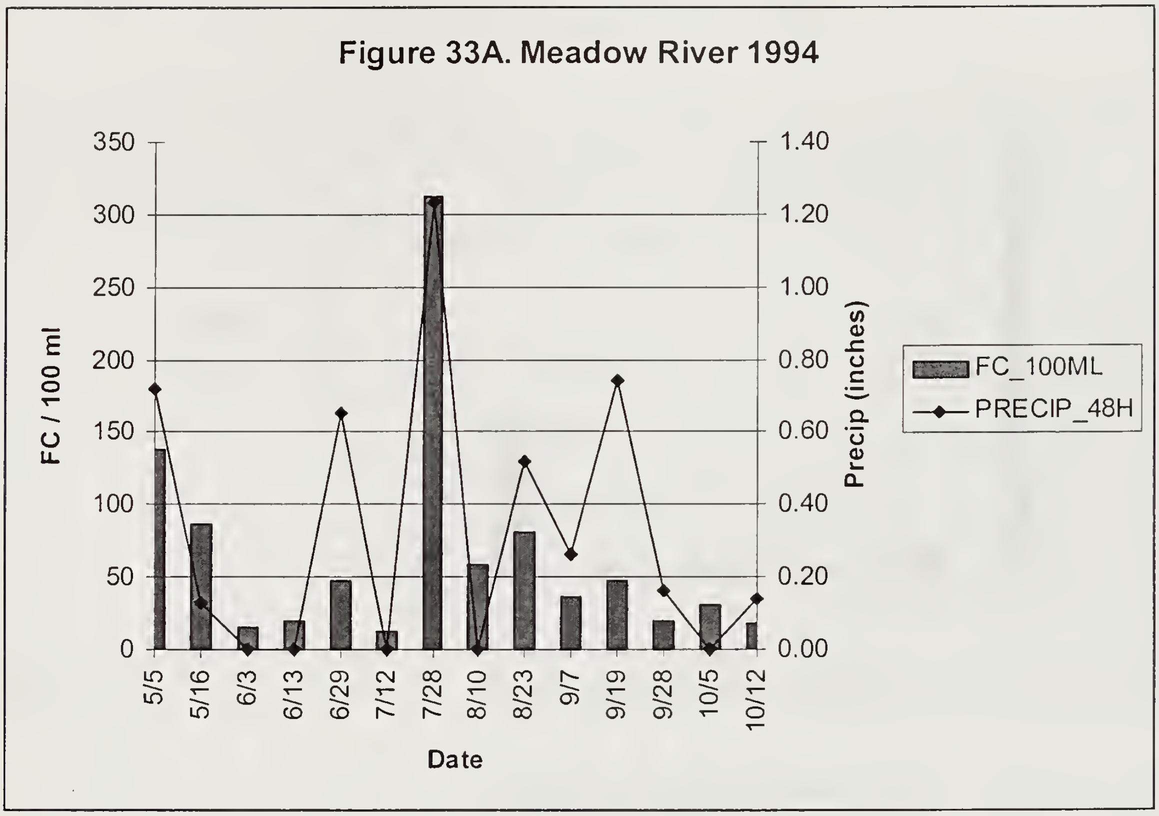


Figure 33A. Meadow River 1994
350
300
250
200
150
100
50
0
1.40
1.20
1.00
0.80
0.60
0.40
0.20
0.00
FC / 100 ml
Precip (inches)
FC_100ML
PRECIP_48H
5/5
5/16
6/3
6/13
6/29
7/12
7/28
8/10
8/23
9/7
9/19
9/28
10/5
10/12
Date

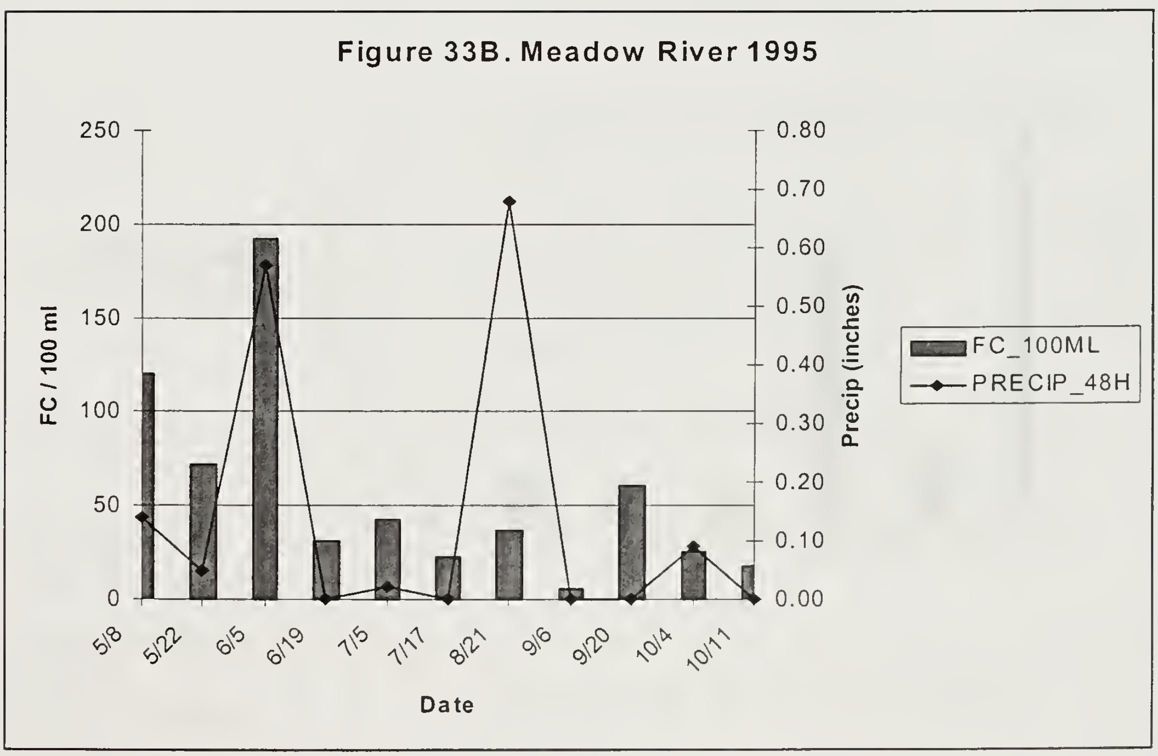


Figure 33B. Meadow River 1995
250
200
150
100
50
0
0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
FC / 100 ml
Precip (inches)
FC_100ML
PRECIP_48H
5/8
5/22
6/5
6/19
7/5
7/17
8/21
9/6
9/20
10/4
10/11
Date

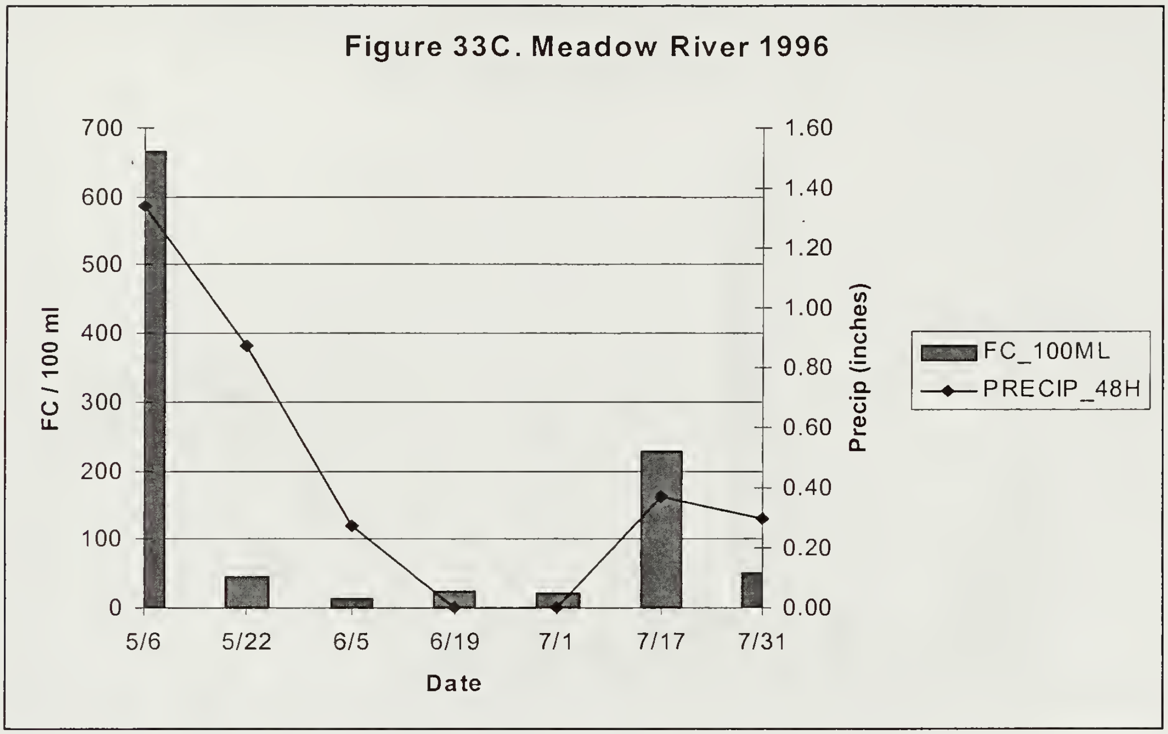


Figure 33C. Meadow River 1996
700
600
500
400
300
200
100
0
FC / 100 ml
1.60
1.40
1.20
1.00
0.80
0.60
0.40
0.20
0.00
Precip (inches)
5/6
5/22
6/5
6/19
7/1
7/17
7/31
Date
FC_100ML
PRECIP_48H

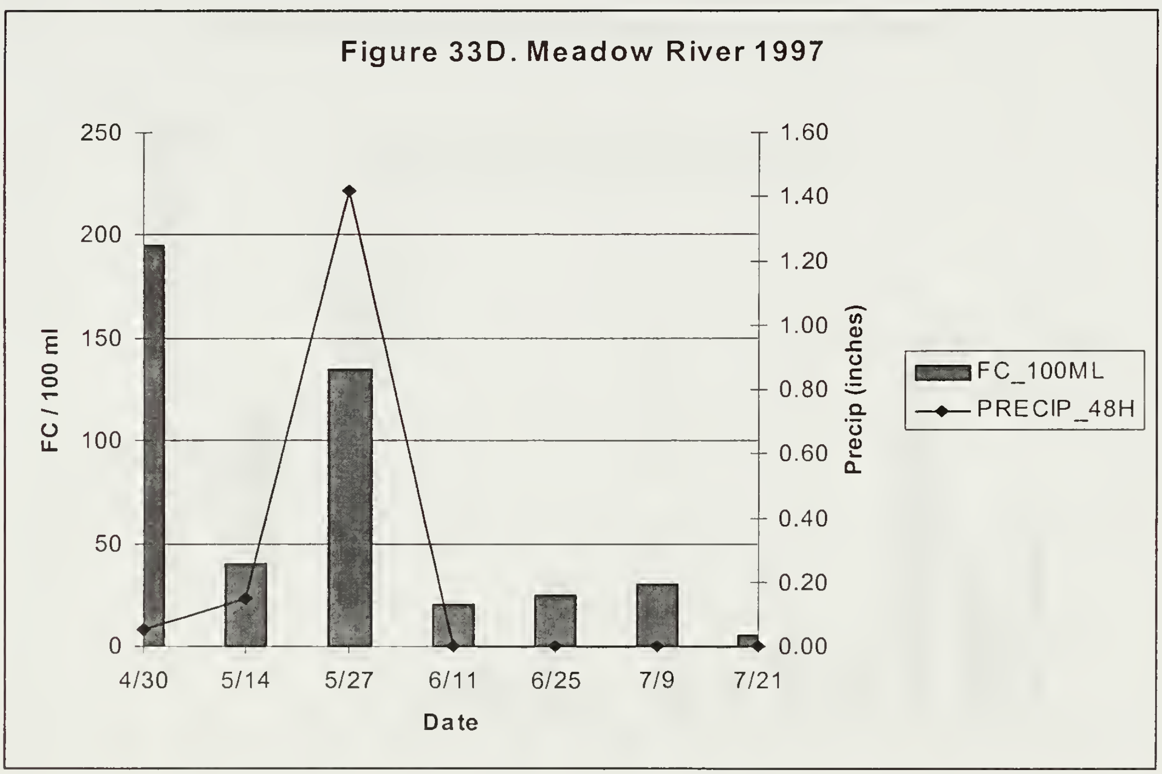


Figure 33D. Meadow River 1997
250
200
150
100
50
0
FC / 100 ml
1.60
1.40
1.20
1.00
0.80
0.60
0.40
0.20
0.00
Precip (inches)
4/30
5/14
5/27
6/11
6/25
7/9
7/21
Date
FC_100ML
PRECIP_48H

EXPLANATION OF APPENDICES 1 THROUGH 6

This section contains the appendices referred to in the preceding text of this report. The information provided in each appendix is generally self-explanatory, however in several of the appendices the reader may encounter abbreviated words, codes and acronyms which require further explanation. The following list provides explanation for the abbreviations, codes and acronyms found in the appendices.

SITE_NO	Site Number
SITE_NAME	Site Name
DATE	Date of Sample Collection
TIME	Time of Sample Collection
WATER_TEMP H2O_T H2O_TEMP	Water Temperature in Celsius
AIR_TEMP AIR_T	Ambient Air Temperature in Celsius
pH	pH of Water at Sample Collection
STREAM_LVL H2O_LVL STAGE_LVL	Stream level/stage level in Cubic Feet per Second (CFS)
H2O_CND H2O_CONDITION	Visual Observations of Water Condition in Regards to Stream Level, Flow and Clarity
NTU	Nephelometric Turbidity Units
DISS_OXYGN DO	Dissolved Oxygen in mg/l
WEATHER WETHER	Weather Conditions (see Appendix-2)
CNDUCTIVTY CNDUC CONDUCT_FIELD	Conductivity in micromhos per centimeter (umhos/cm)

EXPLANATION OF APPENDICES 1 THROUGH 6, CONTINUED

SP_CONDUCT@25C	Specific Conductance at 25 C in micromhos per Centimeter (umhos/cm)
PRECIP PRECIP_48HR PCP_48H	Precipitation in inches recorded in the 48 hour period preceding sample collection
FC_100ML	Fecal coliform colonies per 100 ml of sample
ALKALINITY ALK_MG/L	Alkalinity concentration of water sample reported in mg/l
TOTAL_IRON IRON_MG/L	Total iron concentration of water sample reported in mg/l
MANGANESE MN_MG/L	Manganese concentration of water sample reported in mg/l
ND	None Detected
999.99 -999.99 (series of neg. nines) #########	No Data Recorded for this Parameter

APPENDIX 1. SAMPLE DATA COLLECTION FORM

Sample Site	Date	Sample Time	H20 Temp	Air Temp	pH	Stage Level	H20 CND Trbidty	DO	Weather	Conductivity	Dilution		Fecals /100ml	Comments
16. KEENEY CREEK	6/1/94	11:01	14°C	19°C	8.0	L, M	CLR 2.2 NTU	9.4	OVC	118	.8 20	1.6 44	1500 2,625	MUCH Trash in and around Creek
19. MARR BRANCH	6/1/94	11:30	16°C	21°C	7.5	N, SL Broke	MK 9.4 NTU	3.1	OVC	452	1.0 33	2.0 56	3100 3050	numerous Tiny colonies not included in count.
18. WOLF CREEK	6/1/94	11:48	15°C	20°C	8.9	N, M Locked Broke	CLR 2.1 NTU	10.3	OVC	499	10 3	15 3	est. 30	
17. NEW RIVER @ FAY.STA.	6/1/94	12:00	22°C	24°C	8.4	N, M 4,000	CLR 2.4 NTU	8.7	OVC	154	50 8	100 16	est. 16	
15. COAL RUNN	6/1/94	10:05	14°C	15°C	8.1	N, SW	MI- 6.3 NTU	10.3	OVC	320	10 26	15 30	230	Smells Funny - L. Other-?
14. NEW RIVER @ CUNARD	6/1/94	9:50	22°C	17°C	8.2	N, M 4,000cfs	CLR 2.8 NTU	7.7	OVC	152	50 10	100 17	est 17	
11. DUNLOUP CREEK	5/31/94	12:12	15°C	24°C	8.4	N, SW 4.87	CLR 4.2 NTU	10.7	CLR	418	5 3	10 13	est. 130	CFS = 47.2
13. ARBUCKLE CREEK	5/31/94	11:38	15°C	20°C	8.4	N, SW Broke	CLR 5.0 NTU	10.4	CLR	360	5 42	10 74	840	
12. NEW RIVER @ THURMOND	5/31/94	11:05	21°C	21°C	8.0	N?, SL 4650cfs	clr 2.1 NTU	8.7	CLR	149	100 12	150 36	24	
Stage Level IN CFS	DAY 1 5/31/94 4650cfs	DAY 2 6/1/94 4,000cfs												
Precip. W/IN 48 Hours	5/31/94 Ø.Ø	6/1/94 Trace												

Thurmond Guage 465-0493
Beckley Weather Service 255-5800
Other Observations and Comments:
5.07 ft = 4650cfs

5/31 Time In: 15:30
Time Out: 13:30

6/1 Time In: 16:25
Time Out: 17:10

Rain guage for N.D. located at Park H.Q.

5/31 CONTROL BEFORE: Ø Ø 5/31 AFTER: Ø Ø
CONTROL BEFORE: OK OK AFTER: OK OK

APPENDIX 2.

WEATHER CODES

1. Cloud Cover

CLR	Clear: less than 1% sky cover
SCT	Scattered: 1% to 50% sky cover
BKN	Broken: 60% to 90% sky cover
OVC	Overcast: More than 90% sky cover
(-)	Thin (When prefixed to the above symbols)
-X	Partial obscuration: 1% to less than 10% sky hidden by precipitation or obstruction to vision
X	Obscuration: 10% sky hidden by precipitation or obstruction to vision

2. Physical Weather

A. Weather and Obstruction to Vision Symbols

A	Hail
BS	Blowing Snow
D	Dust
F	Fog
GF	Ground Fog
H	Haze
K	Smoke
L	Drizzle
R	Rain
RW	Rain Showers
S	Snow
SW	Snow Showers
T	Thunderstorms
T+	Severe Thunderstorms
ZL	Freezing Drizzle
ZR	Freezing Rain

B. Precipitation Intensities

(-)	Light
(no sign)	Moderate
(+)	Heavy

3. Stream Conditions

First letter (volume):	Second letter(s) (velocity):	Third letter(s) (opacity):
L = low	SL = slow	C = clear
N = normal	M = moderate	MI = milky
H = high	SW = swift	MR = murky
		TR = turbid

RIVER LEVEL INFORMATION

Phone Number	River/Gauge	Time Updated
Army Corps of Engineers		
Recorded River Level Information		
304-529-5127	Bluestone, Greenbrier, New Gauley, Meadow, Cranberry, Elk	10 AM
304-466-0156	Bluestone, Greenbrier, New	9 AM
304-872-5809	Gauley, Meadow	9 AM
Website – http://155.80.20.63/wc/whitewater.html		
United States Geologic Survey		
Automated Voice Messages		
304-466-3710	Hinton Gauge	Continuous
304-465-0493	Thurmond Gauge	Continuous
Website – http://www-wv.er.usgs.gov/rt.html		
National Park Service		
304-574-2115	Canyon Rim Visitor Center	
304-763-3715	Grandview Visitor Center	
304-466-0417	Hinton Visitor Center	
304-465-8550	Thurmond Visitor Center	
Website – http://www.nps.gov/neri/w-water.htm		

NOTE: The automated Hinton Gauge (304-465-1722) will be disconnected beginning October 1, 1998. Please use one of the above sources for this information.

New River Gorge National River
104 Main Street
Glen Jean, WV 25846
304-465-0508

APPENDIX 4.

NEW RIVER GAUGE CORRELATION

FAYETTE STATION	THURMOND	HINTON	FLOW(cfs)
-3	1.25	1.35	732
-2	2.00	1.55	1240
-1	2.75	1.78	1875
0	3.50	2.00	2580
1	4.26	2.24	3472
2	5.01	2.50	4516
3	5.76	2.77	5820
4	6.51	3.10	7425
5	7.26	3.42	9300
6	8.02	3.74	11460
7	8.77	4.05	13710
8	9.52	4.33	15960
9	10.27	4.65	18880
10	11.02	4.99	21900
11	11.77	5.41	25650
12	12.53	5.88	29980

Gauge Conversions

Fayette Station = Thurmond x 1.33 - 4.66 (Bassage)

Fayette Station = Hinton x 3 - 6 (Davidson & Burrell)

Raw Data for 1994 Fecal Coliform Bacteria
New River Gorge National River

Appendix 5.
1994-NERI

SITE_NO	SITE_NAME	DATE	TIME	WATER_TEMP	AIR_TEMP	PH	STREAM_LVL	H20CND_NTU	DISS_OXYGN	WEATHER	CNDUCTIVTY	FC_100ML	PRECIP_48H	COMMENTS
N01	NEW RIVER @ HINTON VC	05/12/1994	1245	17.0	20.0	8.4	10550	H,M,MI 8.7NTU	-99.00	SCT	118	30	T	DO METER BEING REPAIRED 5/4 TO 5/12
N01	NEW RIVER @ HINTON VC	05/23/1994	1350	19 0	26.0	8 9	3860	N,SL,C 3.7NTU	10.10	CLR	140	38	0 00"	
N01	NEW RIVER @ HINTON VC	06/07/1994	1220	24.0	25.0	8.2	3370	N,SL,C 2.7NTU	8.40	BKN	156	27	T	
N01	NEW RIVER @ HINTON VC	06/21/1994	1256	29 0	30.0	8.2	3830	N,SL,MI 3.9NTU	7.30	-OVC	165	142	0 07"	
N01	NEW RIVER @ HINTON VC	07/05/1994	1230	28 0	28 0	8.4	4310	N,M,C 3.7NTU	7.60	SCT	165	72	0 00"	WATERY, RUNNY COLONIES
N01	NEW RIVER @ HINTON VC	07/21/1994	1240	28 0	24.0	7 6	5250	N,SL,MI 2.6NTU	7.40	BKN	180	60	0 18"	
N01	NEW RIVER @ HINTON VC	08/03/1994	1251	26 0	26.0	7.9	5050	N,SL,MI 4.0NTU	8.70	OVC	149	44	0.36"	
N01	NEW RIVER @ HINTON VC	08/17/1994	1235	25.0	19.0	7.4	22400	H,M,MR 25.0NTU	8.10	-R	169	310	1.86"	
N01	NEW RIVER @ HINTON VC	08/31/1994	1340	24 0	22 0	7.8	4690	N,SL,MI 4 2NTU	8 20	OVC	135	47	0 02"	
N01	NEW RIVER @ HINTON VC	09/13/1994	1310	23.0	22.0	7.9	3475	N,SL,MI 3.0NTU	11 20	CLR	130	64	0 00"	
N01	NEW RIVER @ HINTON VC	09/26/1994	1310	23 0	21.0	7.5	2240	N,SL,MI 2 5NTU	8 40	BKN	145	34	0 19"	
N01	NEW RIVER @ HINTON VC	11/02/1994	1250	14 0	12.0	7.9	5800	N,SL,MI 5.6NTU	8 80	SCT	118	32	0.30	
N01	NEW RIVER @ HINTON VC	11/15/1994	1350	14 0	17.0	8.5	2430	L,SL,MI 3 7NTU	11.30	SCT	127	78	0.00	
N01	NEW RIVER @ HINTON VC	11/29/1994	1312	9 0	8.0	8 3	2770	N,SL,MI 4.1NTU	12.60	OVC	120	4	0.26	
N01	NEW RIVER @ HINTON VC	12/13/1994	1300	8 2	2.0	7.7	11888	H,M,MI 6 0NTU	12 80	CLR	100	48	0 03	
N01	NEW RIVER @ HINTON VC	12/29/1994	1255	6 4	7.0	8.5	4119	N,SL,MI 4.8NTU	13.50	BKN	90	11	0 00	
N02	MADAM CREEK	05/12/1994	1220	14.0	22.0	8.0	NORM	N,M,C 4.8NTU	-99.99	SCT	65	1680	T	
N02	MADAM CREEK	05/23/1994	1335	19 0	28.0	8.5	NORM	N,M,C 3.2NTU	9.00	CLR	98	1000	0 00"	
N02	MADAM CREEK	06/07/1994	1158	22 0	26.0	8.3	NORM	N,SL,C 3 2NTU	8.30	BKN	151	3900	T	
N02	MADAM CREEK	06/21/1994	1240	32 0	25 0	8.3	NORM	N,SL,C 3.7NTU	7.80	-OVC	200	21400	0.07"	
N02	MADAM CREEK	07/05/1994	1210	29 0	29 0	7.9	LOW	L,SL,C 3 6NTU	6.20	SCT	295	1000	0.00"	
N02	MADAM CREEK	07/21/1994	1212	24.0	27.0	7.6	NORM	N,M,TR 59.0NTU	8.20	BKN	209	11800	0 18"	
N02	MADAM CREEK	08/03/1994	1235	21.0	28.0	8.1	NORM	N,M,MI 8.5NTU	8.70	OVC	115	1200	0 36"	
N02	MADAM CREEK	08/17/1994	1059	19 0	17.0	7.1	HIGH	H,SW,TR 680 0NTU	9.10	R	51	9100	1 86"	
N02	MADAM CREEK	08/31/1994	1145	19 0	24.0	8.0	NORM	N,SL,C 2.0NTU	9.20	OVC -R	130	9800	0.02"	
N02	MADAM CREEK	09/13/1994	1245	17 0	26.0	8.4	NORM	N,SL,C 1.3NTU	13.00	CLR	150	7000	0.00"	
N02	MADAM CREEK	09/26/1994	1135	17 0	24.0	7.9	NORM	N,SL,C 2.4NTU	9.40	BKN	182	12000	0.19"	
N02	MADAM CREEK	11/02/1994	1105	10 0	12.0	8.2	NORM	N,SL,C 1.2NTU	7.60	SCT	152	11500	0.30	
N02	MADAM CREEK	11/15/1994	1325	9 0	18.0	8.7	LOW	L,SL,C 0.62NTU	12.40	SCT	149	3750	0.00	
N02	MADAM CREEK	11/29/1994	1130	4.0	9.0	8.5	NORM	N,SL,C 1.1NTU	14.80	SCT	112	7000	0.26	
N02	MADAM CREEK	12/13/1994	1107	1.9	1.0	7.7	HIGH	H,M,MI 5.7NTU	-99.99	CLR	55	1000	0.03	DO READING WAS OFF SCALE, >15.0
N02	MADAM CREEK	12/29/1994	1114	2 8	8.0	8.1	NORM	N,M,C 1 5NTU	13.40	SCT	72	2000	0 00	DEER CARCASS IN CREEK
N04	NEW R @ SNDSTN FALLS PKLOT	05/12/1994	1125	16.5	19.0	8.3	HIGH	H,SL,MI 6.2NTU	-99.99	SCT	115	33	T	SITE AT SWIM/PICNIC AREA
N04	NEW R @ SNDSTN FALLS PKLOT	05/23/1994	1235	19 0	22.0	9.0	NORM	N,SL,C 3.4NTU	10 20	CLR	138	16	0.00"	SITE AT SWIM PICNIC AREA
N04	NEW R @ SNDSTN FALLS PKLOT	06/07/1994	1105	24 0	25.0	8.1	NORM	N,SL,C 3.2NTU	8.50	-OVC	154	54	T	
N04	NEW R @ SNDSTN FALLS PKLOT	06/21/1994	1116	27.0	25.0	7.9	NORM	N,SL,MI 4.9NTU	7.30	CLR	152	44	0.07"	
N04	NEW R @ SNDSTN FALLS PKLOT	07/05/1994	1055	27.0	27.0	8 1	4310	N,SL,C 4 0NTU	7.60	SCT	160	82	0 00"	
N04	NEW R @ SNDSTN FALLS PKLOT	07/21/1994	1112	27.0	24.0	7.7	NORM	N,M,MI 3.5NTU	7.00	OVC,-R	170	92	0.18"	
N04	NEW R @ SNDSTN FALLS PKLOT	08/03/1994	1146	26.0	25.0	8.0	5050	N,SL,MI 3.7NTU	8.40	BKN	141	20	0.36"	
N04	NEW R @ SNDSTN FALLS PKLOT	08/17/1994	1121	21.0	18.0	7.1	22400	H,SL,TR 88 0NTU	8.60	R	102	2060	1.86"	
N04	NEW R. @ SNDSTN FALLS PKLOT	08/31/1994	1245	24 0	23.0	7.9	4690	N,SL,MI 4 5NTU	8.40	OVC	128	182	0.02"	
N04	NEW R. @ SNDSTN FALLS PKLOT	09/13/1994	1135	22.0	27.0	8 4	3475	N,M,C 2.3NTU	11.60	CLR	120	38	0.00"	
N04	NEW R @ SNDSTN FALLS PKLOT	09/26/1994	1205	22 0	26.0	8.5	2240	N,SL,MI 1.5NTU	9.20	BKN	148	23	0.19"	
N04	NEW R @ SNDSTN FALLS PKLOT	11/02/1994	1140	14 0	16.0	8.8	5800	N,M,MI 4.4NTU	8.00	SCT	115	76	0.30	ALGAE ON FILTER INTERFERED WITH COLONY
N04	NEW R @ SNDSTN FALLS PKLOT	11/15/1994	1225	14.0	17.0	9.3	2430	L,SL,MI 2.8NTU	11.70	SCT	123	8	0.00	
N04	NEW R. @ SNDSTN FALLS PKLOT	11/29/1994	1210	9 0	10.0	8.9	2770	N,M,MI 2.6NTU	13 20	OVC	120	16	0.26	
N04	NEW R. @ SNDSTN FALLS PKLOT	12/13/1994	1155	8 8	6 0	7.7	11888	H,M,MR 8.1NTU	12.20	CLR	100	48	0.03	
N04	NEW R @ SNDSTN FALLS PKLOT	12/29/1994	1155	7.0	13.0	8.7	4119	N,M,MI 2.4NTU	12.40	SCT	90	5	0.00	
N05	LICK CREEK	05/12/1994	1045	13 0	18.0	7.9	53.6	N,M,C 6.0NTU	-99.99	BKN	82	140	T	
N05	LICK CREEK	05/23/1994	1127	15.0	22.0	8.3	11.1	N,M,C 2.8NTU	10.40	CLR	120	133	0.00"	
N05	LICK CREEK	06/07/1994	1010	21.0	24.0	8.2	2.5	N,SL,C 2.1NTU	10.10	-OVC	223	70	T	
N05	LICK CREEK	06/21/1994	1022	24.0	25.0	8.2	2.0	N,SL,C 3.5NTU	8.30	CLR	290	270	0.07"	
N05	LICK CREEK	07/05/1994	0950	22.0	26.0	8.1	0.6	N,SL,C 2.9NTU	8.40	SCT	285	40	0.00"	
N05	LICK CREEK	07/21/1994	1015	23.0	23.0	7 9	2.7	N,M,MI 6.1NTU	8.40	OVC	280	200	0.18"	FC VALUE IS GREATER THAN 200
N05	LICK CREEK	08/03/1994	1048	20.0	24.0	7 6	53 6	H,M,TR 25.0NTU	9.00	OVC	108	1000	0.36"	
N05	LICK CREEK	08/17/1994	1023	19 0	17.0	7.2	>630	H,SW,R 390.0NTU	10.10	R	91	9475	1.86"	NR=NO RESULT. FECALS WERE UNDERDEVEL

Raw Data for 1994 Fecal Coliform Bacteria
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Appendix 5.
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SITE_NO	SITE_NAME	DATE	TIME	WATER_TEMP	AIR_TEMP	PH	STREAM_LVL	H20CND_NTU	DISS_OXYGN	WEATHER	CNDUCTIVTY	FC_100ML	PRECIP_48H	COMMENTS
105	LICK CREEK	08/31/1994	1105	19 0	23.0	8 0	5.8	N,SL,C 1.5NTU	9.00	OVC	210	48	0 02"	
105	LICK CREEK	09/13/1994	1045	16.0	14 0	8 1	2.7	N,SL,C 1.1NTU	13.00	OVC -F	240	32	0.00"	
105	LICK CREEK	09/26/1994	1100	17.0	23.0	7.8	1 5	N,SL,C 1.0NTU	9 00	BKN	285	23	0.19"	
105	LICK CREEK	11/02/1994	1030	9.0	11.0	8 5	3.7	L,SL,C 1.4NTU	9.20	SCT	230	82	0.30	GAGE IS BENT
105	LICK CREEK	11/15/1994	1135	9 0	15.0	8.3	2.7	L,SL,C 0.97NTU	11.20	SCT	228	36	0.00	GAGE IS BENT
105	LICK CREEK	11/29/1994	1050	4 5	12 0	8 0	4.4	N,M,C 1.0NTU	13 00	SCT	130	8	0.26	
105	LICK CREEK	12/13/1994	1023	2 1	3.0	7 9	22.5	N,M,MI 2 6NTU	14.40	CLR	80	136	0.03	
105	LICK CREEK	12/29/1994	1033	3 0	4 0	8 1	6.2	N,M,C 0.7NTU	13.20	SCT	108	25	0.00	
106	MEADOW CREEK	05/12/1994	1009	12.0	16 0	7.3	68	H,SW,C 5.4NTU	-99 99	BKN	56	155	T	
106	MEADOW CREEK	05/23/1994	1053	12 0	17.0	7.6	24 9	N,M,C 3 2NTU	10.30	CLR	80	32	0.00"	
106	MEADOW CREEK	06/07/1994	0950	18 0	21.0	8 0	5.0	N,M,C 2.0NTU	9.80	-OVC	183	45	T	
106	MEADOW CREEK	06/21/1994	1000	21 0	23 0	7.7	7.7	N,M,MI 9.5NTU	8 70	CLR	151	256	0.07"	
106	MEADOW CREEK	07/05/1994	0930	21.0	23.0	8 1	2.0	N,M,C 1.9NTU	8 80	SCT	195	104	0 00"	
106	MEADOW CREEK	07/21/1994	0930	21 0	22 0	7 5	3 4	N,M,MI 3.6NTU	8 60	OVC,-L	151	40	0.18"	
06	MEADOW CREEK	08/03/1994	1007	19 0	21.0	7.5	56	H,M,TR 55.0NTU	8.90	OVC	84	200	0.36"	FC VALUE IS GREATER THAN 200 15ML OBSUR
06	MEADOW CREEK	08/17/1994	1000	18 0	16.0	7.3	>394	H,SW,TR 315.0NTU	9 30	R CATS &	53	6000	1.86"	
06	MEADOW CREEK	08/31/1994	1015	18 0	20.0	7.4	68	N,M,MI 3.9NTU	10.20	OVC	122	91	0.02"	
06	MEADOW CREEK	09/13/1994	0955	14 0	15.0	7.6	56 0	N,M,C 1.3NTU	13 20	OVC +F	130	14	0.00"	
06	MEADOW CREEK	09/26/1994	1010	16 0	17.0	7.5	46.2	N,M,C 0.8NTU	9 80	BKN	168	12	0 19"	
06	MEADOW CREEK	11/02/1994	920	9.0	9 0	7.9	44 8	L,M,C 0.7NTU	11.20	SCT	134	4	0.30	
06	MEADOW CREEK	11/15/1994	1035	8 0	10 0	8 0	36.8	L,M,C 1.4NTU	11.30	SCT	120	0	0.00	
06	MEADOW CREEK	11/29/1994	1010	4 0	3.0	8 3	49 60	N,M,C 0 6NTU	13.20	SCT	110	3	0 26	
06	MEADOW CREEK	12/13/1994	1005	3.0	-6.0	7.6	84	H,M,MI 4.1NTU	14 00	CLR	50	135	0.03	
06	MEADOW CREEK	12/29/1994	1013	2 5	4 0	7.9	57	N,M,C 1.3NTU	13.30	OVC	69	63	0.00	
07	LAUREL CREEK @ QUINNIMONT	05/11/1994	1047	10 0	15 0	7.3	HIGH	H,SW,C 3.7NTU	-99 99	CLR	51	33	T	COULD NOT GET TO GAUGE
07	LAUREL CREEK @ QUINNIMONT	05/25/1994	1242	17.0	25.0	8 2	9.8	N,M,C 1.2NTU	9.30	SCT	92	28	0 00"	
07	LAUREL CREEK @ QUINNIMONT	06/06/1994	1315	17.5	25 0	8 3	3.6	N,M,C 1.2NTU	9.60	OVC	120	73	0 00"	
07	LAUREL CREEK @ QUINNIMONT	06/22/1994	1352	22.0	29 0	8 3	2.6	N,M,C 1,3NTU	8 80	OVC,H	145	8	0 19"	
07	LAUREL CREEK @ QUINNIMONT	07/07/1994	1151	23.0	28.0	8 2	1 0	L,SL,C 1.8NTU	8 80	SCT	170	6	0.00"	
07	LAUREL CREEK @ QUINNIMONT	07/20/1994	1353	24 0	31.0	8.2	1.8	N,SL,C .9NTU	8.30	SCT	148	12	T	
07	LAUREL CREEK @ QUINNIMONT	08/04/1994	1110	19 0	22 0	7 9	1.8	N,M,C .7NTU	9.40	SCT	140	21	0.14"	
07	LAUREL CREEK @ QUINNIMONT	08/18/1994	1140	16 0	21.0	7.3	>200	H,SW,TR 18 5NTU	9 40	SCT	55	264	0 86"	
07	LAUREL CREEK @ QUINNIMONT	09/01/1994	1308	18.5	22.0	7.9	24.1	H,M,C 2 4NTU	9.30	OVC	82	51	0 80"	
07	LAUREL CREEK @ QUINNIMONT	09/15/1994	1312	18.0	28.0	8 2	5.1	N,SL,C 0.8NTU	9.30	CLR	121	10	0 00"	
07	LAUREL CREEK @ QUINNIMONT	09/29/1994	1300	14 0	17.0	8.4	3.1	N,SL,C 0.9NTU	9 90	SCT	130	3	0.00"	
07	LAUREL CREEK @ QUINNIMONT	11/03/1994	1245	10.0	17.0	8 0	10.13	L,SL,C 0.5NTU	11.40	SCT	110	1	0.06	
7	LAUREL CREEK @ QUINNIMONT	11/17/1994	1035	9.5	10.0	8 1	8 9	L,M,C 0.7NTU	-99 99	BKN	115	1	0.25	
7	LAUREL CREEK @ QUINNIMONT	11/30/1994	1215	4 0	11 0	8.0	11.63	L,SL,C 1.3NTU	13 40	CLR	82	1	0.00	
7	LAUREL CREEK @ QUINNIMONT	12/14/1994	1343	5.3	7.0	7.6	84.10	H,M,C 1.0NTU	12 40	OVC	40	6	0.00	
7	LAUREL CREEK @ QUINNIMONT	12/27/1994	1105	2.3	0.0	7.8	25	N,M,C 1.1NTU	-99 99	CLR	50	0	0.01	FECALS/100 ML < 1
8	NEW RIVER @ PRINCE	05/11/1994	1036	13.5	17.0	7.8	12760	H,SW,MR 15 0NTU	-99 99	CLR	85	216	T	
8	NEW RIVER @ PRINCE	05/25/1994	1220	22 0	25.0	8.4	5600	N,M,C 3.4NTU	8.50	SCT	145	20	0.00"	
8	NEW RIVER @ PRINCE	06/06/1994	1255	24 0	27.0	8 3	3700	N,M,C 2 0NTU	8.20	OVC	150	5	0 00"	
8	NEW RIVER @ PRINCE	06/22/1994	1339	28.0	30.0	8.2	3490	N,M,MI 5.7NTU	7 80	OVC,H	168	28	0.19"	
8	NEW RIVER @ PRINCE	07/07/1994	1130	30.0	34.0	8 1	2380	N,M,C 2.4NTU	7 20	SCT	170	8	0 00"	
3	NEW RIVER @ PRINCE	07/20/1994	1331	28 0	32.0	8.1	3723	N,M,MI 3.9NTU	7.60	SCT	177	28	T	
3	NEW RIVER @ PRINCE	08/04/1994	1130	25.0	26.0	7.7	6800	N,M,MI 6 2NTU	9.20	SCT	140	20	0.14"	
3	NEW RIVER @ PRINCE	08/18/1994	1120	24.0	26.0	7.9	26776	H,SW,TR 34 0NTU	8.00	SCT	165	212	0 86"	
3	NEW RIVER @ PRINCE	09/01/1994	1249	24 0	22.0	7.7	4150	N,M,MI 4.7NTU	8 20	OVC	139	31	0 80"	
3	NEW RIVER @ PRINCE	09/15/1994	1258	23.0	26 0	8 5	2100	N,M,C 1.9NTU	8.30	CLR	185	7	0.00"	
3	NEW RIVER @ PRINCE	09/29/1994	1246	19.5	17.0	8 2	2900	N,SW,C 2.4NTU	9.60	CLR	140	13	0 00"	
3	NEW RIVER @ PRINCE	11/03/1994	1220	14 0	27.0	8.1	4972	N,M,MR 4.5NTU	9.20	SCT	120	33	0 06	
3	NEW RIVER @ PRINCE	11/17/1994	1000	12.0	10.0	8 0	2400	L,SW,C 2.3NTU	-99 99	BKN	125	12	0 25	
3	NEW RIVER @ PRINCE	11/30/1994	1155	9.0	12 0	8.5	1938	L,M,MI 2 2NTU	11.00	CLR	120	9	0 00	
3	NEW RIVER @ PRINCE	12/14/1994	1325	6 9	8.0	8.0	7725	N,M,MR 6.7NTU	12 00	OVC	92	40	0 00	
3	NEW RIVER @ PRINCE	12/27/1994	1045	4.8	4 0	8 3	2129	N,M,MI 2 6NTU	11.80	CLR	85	6	0.01	

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Appendix 5.
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SITE_NO	SITE_NAME	DATE	TIME	WATER_TEMP	AIR_TEMP	PH	STREAM_LVL	H20CND_NTU	DISS_OXYGN	WEATHER	CNDUCTIVTY	FC_100ML	PRECIP_48H	COMMENTS
N09	PINEY CREEK @ McCREERY	05/11/1994	1002	11.0	16.0	7.4	230	H,SW,C 4.2NTU	-99.99	CLR	109	251	T	
N09	PINEY CREEK @ McCREERY	05/25/1994	1145	18.0	25.0	8.4	55	N,M,C 2.7NTU	9.40	SCT	228	50	0.00"	
N09	PINEY CREEK @ McCREERY	06/06/1994	1238	18.5	24.0	8.5	38	N,M,C 2.1NTU	9.80	OVC	272	33	0.00"	
N09	PINEY CREEK @ McCREERY	06/22/1994	1325	23.0	26.0	8.2	33.8	N,M,MI 5.2NTU	8.60	OVC,H	338	127	0.19"	
N09	PINEY CREEK @ McCREERY	07/07/1994	1105	23.0	29.0	8.1	21	N,M,C 1.7NTU	8.60	CLR	380	35	0.00"	
N09	PINEY CREEK @ McCREERY	07/20/1994	1305	23.0	28.0	8.0	42	N,M,MR 9.2NTU	8.40	SCT	302	320	T	
N09	PINEY CREEK @ McCREERY	08/04/1994	1020	19.0	23.0	7.3	45	N,M,MI 5.2NTU	9.20	SCT	240	318	0.14"	
N09	PINEY CREEK @ McCREERY	08/18/1994	1055	19.0	20.0	7.6	HIGH	H,SW,TR 36.0NTU	8.80	SCT	170	4460	0.86"	
N09	PINEY CREEK @ McCREERY	09/01/1994	1238	20.0	20.0	7.3	113.6	H,M,TR 48.0NTU	8.80	OVC	230	9900	0.80"	
N09	PINEY CREEK @ McCREERY	09/15/1994	1244	18.0	24.0	8.1	24.5	N,M,C 2.6NTU	9.50	CLR	290	140	0.00"	
N09	PINEY CREEK @ McCREERY	09/29/1994	1227	15.0	19.0	8.5	17.4	N,M,C 2.7NTU	10.00	CLR	340	17	0.00"	
N09	PINEY CREEK @ McCREERY	11/03/1994	1200	9.0	17.0	8.5	19.2	N,M,C 1.4NTU	12.20	SCT	270	225	0.06	
N09	PINEY CREEK @ McCREERY	11/17/1994	910	9.0	10.0	8.2	17.4	L,M,C 0.98NTU	10.90	BKN	298	77	0.25	
N09	PINEY CREEK @ McCREERY	11/30/1994	1135	4.0	8.0	8.8	17.4	N,M,C 1.3NTU	14.80	CLR	240	138	0.00	
N09	PINEY CREEK @ McCREERY	12/14/1994	1300	5.2	11.0	8.0	43.6	N,M,MI 4.5NTU	13.00	OVC,-R	168	188	0.00	
N09	PINEY CREEK @ McCREERY	12/27/1994	1017	1.5	-1.0	7.8	23	N,M,C 1.5NTU	-99.99	CLR	180	37	0.01	DO READING WAS > 15.0
N11	DUNLOUP CREEK	05/03/1994	1425	12.0	12.0	8.3	75.0	N,SW,MI 2.5NTU	-99.99	OVC,-R	330	120	0.24"	
N11	DUNLOUP CREEK	05/19/1994	1052	11.0	10.0	8.3	73.2	H,SW,C 3.7NTU	99.99	OVC	305	525	0.00"	DO PROBE NEEDS NEW MEMBRANE
N11	DUNLOUP CREEK	05/31/1994	1212	15.0	24.0	8.4	47.2	N,SW,C 4.2NTU	10.70	CLR	418	130	0.00"	
N11	DUNLOUP CREEK	06/15/1994	1345	21.0	26.0	8.5	45	N,SW,C 3.2NTU	8.70	SCT	510	240	0.00"	
N11	DUNLOUP CREEK	06/28/1994	1345	19.0	23.0	8.5	37	N,M,C 3.4NTU	9.00	BKN	505	273	0.27"	
N11	DUNLOUP CREEK	07/14/1994	1240	19.0	21.0	8.3	25.6	N,M,C 2.8NTU	9.20	OVC,-L	520	380	0.17"	
N11	DUNLOUP CREEK	07/29/1994	1352	19.5	22.0	6.0	35	N,M,MI 7.5NTU	8.60	OVC	425	880	1.14"	
N11	DUNLOUP CREEK	08/11/1994	1209	19.0	19.0	8.0	23.5	N,M,MI 3.4NTU	9.20	-H	480	420	0.00"	
N11	DUNLOUP CREEK	08/25/1994	1115	17.0	21.0	8.1	27.0	N,M,MI 3.2NTU	9.60	OVC	460	235	0.00"	
N11	DUNLOUP CREEK	09/08/1994	1311	15.0	18.0	8.5	24.3	N,M,C 2.4NTU	10.30	BKN	483	253	T	
N11	DUNLOUP CREEK	09/21/1994	1235	15.0	17.0	8.5	13.5	N,M,C 1.8NTU	10.80	SCT	510	250	T	
N11	DUNLOUP CREEK	10/27/1994	1300	8.0	9.0	8.9	13	L,M,C 1.3NTU	13.20	SCT	428	130	0.00	SAMPLED BELOW BRIDGE
N11	DUNLOUP CREEK	11/08/1994	1250	10.0	11.0	8.8	13	N,M,MI 1.2 NTU	11.60	SCT	460	32	0.01	
N11	DUNLOUP CREEK	11/22/1994	0945	10.0	10.0	8.6	13	L,M,C 0.8 NTU	11.60	CLR	452	16	0.09	
N11	DUNLOUP CREEK	12/07/1994	1140	9.0	11.0	8.5	33.5	N,M,MI 1.9 NTU	11.30	OVC	395	44	0.10	
N11	DUNLOUP CREEK	12/20/1994	1020	3.0	-3.0	9.3	21.6	N,M,C 1.5 NTU	14.50	CLR	342	49	0.18	
N12	NEW RIVER @ THURMOND	05/03/1994	1534	17.0	12.0	8.0	14700	H,SL,TR 15.5NTU	-99.99	OVC,-R	108	144	0.24"	
N12	NEW RIVER @ THURMOND	05/19/1994	1000	16.0	9.0	8.0	6900	H,SL,C 4.2NTU	99.99	OVC	121	24	0.00"	DO PROBE NEEDS NEW MEMBRANE
N12	NEW RIVER @ THURMOND	05/31/1994	1105	21.0	21.0	8.0	4550	N,SL,C 2.1NTU	8.70	CLR	149	24	0.00"	
N12	NEW RIVER @ THURMOND	06/15/1994	1411	26.0	29.0	8.1	5700	N,SL,MI 9.0NTU	8.20	SCT	151	16	0.00"	
N12	NEW RIVER @ THURMOND	06/28/1994	1405	26.0	26.0	7.9	3800	N,SL,C 3.9NTU	8.10	BKN	170	35	0.27"	
N12	NEW RIVER @ THURMOND	07/14/1994	1310	27.0	24.0	7.9	2590	N,M,C 2.1NTU	7.80	OVC,-L	170	36	0.17"	
N12	NEW RIVER @ THURMOND	07/29/1994	1327	25.0	23.0	6.7	13050	H,M,TR 17.0NTU	7.60	OVC	160	236	1.14"	
N12	NEW RIVER @ THURMOND	08/11/1994	1232	26.0	28.0	7.5	4816	N,SL,MI 2.5NTU	7.60	SCT	142	33	0.00"	
N12	NEW RIVER @ THURMOND	08/25/1994	1150	23.0	23.0	7.3	6542	N,M,MR 8.1NTU	8.10	OVC	115	25	0.00"	
N12	NEW RIVER @ THURMOND	09/08/1994	1406	23.0	25.0	8.2	3475	N,SL,C 2.7NTU	9.20	BKN	140	5	T	
N12	NEW RIVER @ THURMOND	09/21/1994	1300	22.0	23.0	8.3	2329	N,SL,C 2.0NTU	9.60	SCT	135	31	T	
N12	NEW RIVER @ THURMOND	10/27/1994	1400	14.0	12.0	8.1	3543	N,SL,C 1.7NTU	9.60	SCT	112	8	0.00	
N12	NEW RIVER @ THURMOND	11/08/1994	1410	14.0	20.0	8.4	2143	L,SL,C 1.5 NTU	10.20	SCT	115	3	0.01	
N12	NEW RIVER @ THURMOND	11/22/1994	1100	11.5	11.0	8.4	1931	L,SL,C 1.2 NTU	11.20	CLR	130	6	0.09	
N12	NEW RIVER @ THURMOND	12/07/1994	1309	9.0	10.0	8.0	6334	H,SL,MR 7.5 NTU	11.50	OVC	120	65	0.10	
N12	NEW RIVER @ THURMOND	12/20/1994	1328	7.0	6.0	8.3	3100	N,SL,C 3.3 NTU	13.10	CLR	82	2	0.18	
N13	ARBUCKLE CREEK	05/03/1994	1500	12.0	12.0	8.2	20	N,M,MI 4.4NTU	-99.99	OVC,-R	285	920	0.24"	
N13	ARBUCKLE CREEK	05/19/1994	1027	10.0	9.0	8.3	NORM	N,SW,C 6.3NTU	99.99	OVC	265	300	0.00"	DO PROBE NEEDS NEW MEMBRANE
N13	ARBUCKLE CREEK	05/31/1994	1138	15.0	20.0	8.4	NORM	N,SW,C 5.0NTU	10.40	CLR	360	840	0.00"	
N13	ARBUCKLE CREEK	06/15/1994	1442	19.0	27.0	8.3	6.0	N,M,C 6.2NTU	8.80	BKN	450	3920	0.00"	
N13	ARBUCKLE CREEK	06/28/1994	1440	19.0	23.0	8.3	5.1	N,M,MI 5.5NTU	8.90	BKN	447	781	0.27"	
N13	ARBUCKLE CREEK	07/14/1994	1400	20.0	22.0	7.5	4.8	N,M,MI 5.9NTU	8.70	OVC	490	320	0.17"	
N13	ARBUCKLE CREEK	07/29/1994	1125	19.0	21.0	7.5	8.4	N,M,MI 13.0NTU	9.40	OVC	389	1075	1.14"	
N13	ARBUCKLE CREEK	08/11/1994	1313	20.0	25.0	7.7	3.6	N,M,MI 5.7NTU	7.00	SCT	475	229	0.00"	

Raw Data for 1994 Fecal Coliform Bacteria
New River Gorge National River

Appendix 5.
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ITE_NO	SITE_NAME	DATE	TIME	WATER_TEMP	AIR_TEMP	PH	STREAM_LVL	H20CND_NTU	DISS_OXYGN	WEATHER	CNDUCTIVTY	FC_100ML	PRECIP_48H	COMMENTS
13	ARBUCKLE CREEK	08/25/1994	1230	17.0	21.0	8.1	4.8	N,M,MI 4.9NTU	8.80	OVC	410	140	0.00"	
13	ARBUCKLE CREEK	09/08/1994	1336	16.0	17.0	8.4	2.8	N,SW,C 6.2NTU	10.40	OVC	431	230	T	
13	ARBUCKLE CREEK	09/21/1994	1340	15.0	18.0	8.4	3.0	N,M,C 2.7NTU	10.40	SCT	462	320	T	
13	ARBUCKLE CREEK	10/27/1994	1330	9.0	11.0	8.5	3.0	L,M,C 1.2NTU	12.00	SCT	422	20	0.00	
13	ARBUCKLE CREEK	11/08/1994	1330	10.0	16.0	8.6	6	N,M,C 0.8 NTU	10.60	SCT	470	8	0.01	GAGE BOTTOM BENT UPWARD
13	ARBUCKLE CREEK	11/22/1994	1015	9.5	10.0	8.4	6	L,M,C 1.1 NTU	11.80	CLR	440	216	0.09	GAGE BENT UPWARD ON THE BOTTOM
13	ARBUCKLE CREEK	12/07/1994	1220	9.0	10.0	8.5	4.2	N,M,MI 1.9 NTU	11.80	OVC	409	260	0.10	
13	ARBUCKLE CREEK	12/20/1994	1120	3.0	0.0	8.4	NORM	N,M,C 2.5 NTU	14.80	CLR	269	127	0.18	
15	COAL RUN	05/04/1994	1350	11.0	10.0	7.9	HIGH	H,SW,C 7.3NTU	-99.99	OVC	205	1200	0.67"	NO GAGE READING
15	COAL RUN	05/17/1994	1351	11.0	11.0	8.2	NORM	N,M,C 6.1NTU	11.00	OVC	239	260	0.77"	
15	COAL RUN	06/01/1994	1005	14.0	15.0	8.1	NORM	N,SW,MI 6.3NTU	10.30	OVC	320	230	T	
15	COAL RUN	06/16/1994	0949	18.0	19.0	8.0	NORM	N,SW,MR 17.0NTU	9.50	SCT,H	349	358	0.035"	SMELLS FUNNY LIKE ETHER
5	COAL RUN	06/30/1994	0955	18.0	19.0	8.0	NORM	N,M,C 7.6NTU	9.40	BKN	385	50	0.00"	
5	COAL RUN	07/13/1994	1305	19.0	21.0	7.7	NORM	N,M,MI 9.2NTU	8.90	OVC	409	160	T	
5	COAL RUN	07/26/1994	1220	19.0	19.0	6.9	NORM	N,M,MR 19.0NTU	8.70	OVC	381	240	0.17"	
5	COAL RUN	08/11/1994	0859	18.0	19.0	7.9	NORM	N,M,MI 6.0NTU	9.40	OVC	365	130	0.00"	
5	COAL RUN	08/24/1994	1229	17.0	19.0	8.0	NORM	N,M,MI 8.7NTU	8.80	BKN	343	200	T	
5	COAL RUN	09/06/1994	1045	17.0	16.0	7.6	NORM	N,M,MI 7.7NTU	9.20	OVC	340	172	0.12"	
5	COAL RUN	09/20/1994	1305	15.0	15.0	7.8	LOW	L,SL,MI 5.0NTU	9.80	BKN	348	135	T	
5	COAL RUN	10/26/1994	1325	10.0	9.0	8.2	NORM	N,SL,C 0.84NTU	11.30	OVC	331	0	0.00	
5	COAL RUN	11/08/1994	0910	9.0	6.0	7.9	NORM	N,M,C 1.2 NTU	10.80	SCT	330	0	0.01	
5	COAL RUN	11/21/1994	1010	10.0	13.0	8.0	NORM	N,M,C 1.2 NTU	10.20	OVC	320	47	0.10	
5	COAL RUN	12/06/1994	1040	9.0	10.0	7.9	NORM	N,SL,C 1.2 NTU	11.00	OVC,F	290	18	0.73	
6	KEENEY CREEK	12/22/1994	1016	3.5	2.0	8.1	LOW	L,SL,C 1.4 NTU	14.90	OVC	240	1	0.01	
6	KEENEY CREEK	05/04/1994	1140	10.5	14.0	7.3	NORM	N,M,C 3.1NTU	-99.99	OVC,-R	65	2250	0.67"	
5	KEENEY CREEK	05/17/1994	1140	11.0	12.0	7.3	NORM	N,M,C 3.2NTU	10.20	OVC	72	3700	0.77"	
	KEENEY CREEK	06/01/1994	1101	14.0	19.0	8.0	LOW	L,M,C 2.2NTU	9.40	OVC	118	2625	T	TRASH IN AND AROUND CREEK
	KEENEY CREEK	06/16/1994	1040	18.0	18.0	7.9	NORM	N,M,C 2.5NTU	8.50	CLR,H	165	3000	0.035"	
	KEENEY CREEK	06/30/1994	1050	18.0	21.0	7.3	NORM	N,M,C 2.1NTU	8.80	OVC	170	5500	0.00"	
	KEENEY CREEK	07/13/1994	1003	19.0	20.0	7.3	LOW	L,SL,C 1.9NTU	8.10	OVC,-R	199	9800	T	
	KEENEY CREEK	07/26/1994	0950	19.0	21.0	7.2	LOW	L,SL,MR 32.0NTU	7.50	-R	185	6200	0.17"	
	KEENEY CREEK	08/11/1994	0949	18.0	22.0	7.5	LOW	L,SL,C 2.0NTU	9.20	OVC	182	2300	0.00"	
	KEENEY CREEK	08/24/1994	1030	17.0	20.0	7.6	NORM	N,SL,C 2.7NTU	10.00	CLR	141	1700	T	
	KEENEY CREEK	09/06/1994	1145	16.0	18.0	7.3	NORM	N,M,C 3.2NTU	9.20	OVC	120	2700	0.12"	
	KEENEY CREEK	09/20/1994	1045	14.0	15.0	7.2	LOW	L,SL,C 1.0NTU	9.30	CLR	144	2700	T	
	KEENEY CREEK	10/26/1994	1058	9.0	9.0	7.7	LOW	L,SL,C 0.3NTU	10.30	OVC	148	1450	0.00	
	KEENEY CREEK	11/08/1994	1000	9.0	16.0	7.5	LOW	L,SL,C 1.1 NTU	9.60	SCT	152	3400	0.01	INCREASE IN ALGAE
	KEENEY CREEK	11/21/1994	1105	11.0	17.0	7.6	LOW	L,SL,C 1.3 NTU	9.60	OVC	150	1620	0.10	LOTS OF LONG ALGAE
	KEENEY CREEK	12/06/1994	1130	10.0	14.0	7.5	NORM	N,M,C 1.8 NTU	10.00	OVC	135	600	0.73	
	KEENEY CREEK	12/22/1994	1059	4.0	8.0	7.8	NORM	N,M,C 1.6 NTU	13.40	OVC	115	1340	0.01	
	NEW RIVER @ FAYETTE STATION	05/04/1994	1246	16.0	11.0	8.0	12000	H,M,MR 9.5NTU	-99.99	OVC	104	160	0.67"	
	NEW RIVER @ FAYETTE STATION	05/17/1994	1240	17.0	10.0	8.1	8000	N,M,MI 5.6NTU	10.20	OVC	116	63	0.77"	
	NEW RIVER @ FAYETTE STATION	06/01/1994	1200	22.0	24.0	8.4	4000	N,M,C 2.4NTU	8.70	OVC	154	16	T	
	NEW RIVER @ FAYETTE STATION	06/16/1994	1140	22.0	27.0	7.9	5700	H,M,MR 8.7NTU	8.00	SCT,H	210	34	0.035"	
	NEW RIVER @ FAYETTE STATION	06/30/1994	1218	26.0	24.0	8.1	4800	N,M,MI 4.4NTU	8.20	BKN	180	22	0.00"	
	NEW RIVER @ FAYETTE STATION	07/13/1994	1109	27.0	20.0	8.1	2223	N,SL,C 1.6NTU	7.80	OVC,R	174	5	T	
	NEW RIVER @ FAYETTE STATION	07/26/1994	1105	26.0	21.0	7.3	4620	N,SL,MI 6.5NTU	7.60	-R	155	18	0.17"	
	NEW RIVER @ FAYETTE STATION	08/11/1994	1110	25.0	24.0	7.8	4816	N,M,MI 2.8NTU	8.80	-H	142	18	0.00"	
	NEW RIVER @ FAYETTE STATION	08/24/1994	1141	23.0	22.0	8.0	6719	N,M,MR 10.5NTU	8.40	SCT	107	22	T	
	NEW RIVER @ FAYETTE STATION	09/06/1994	1320	22.0	19.0	7.7	3817	N,M,MI 2.4NTU	8.60	OVC	130	12	0.12"	
	NEW RIVER @ FAYETTE STATION	09/20/1994	1210	22.0	17.0	8.2	2477	N,SL,C 1.3NTU	8.60	CLR	140	6	T	
	NEW RIVER @ FAYETTE STATION	10/26/1994	1221	14.0	9.0	8.2	5051	N,M,C 2.7NTU	10.50	OVC	131	20	0.00	
	NEW RIVER @ FAYETTE STATION	11/08/1994	1120	14.0	17.0	8.2	2143	L,SL,MI 1.3 NTU	9.80	SCT	125	3	0.01	
	NEW RIVER @ FAYETTE STATION	11/21/1994	1225	14.0	18.0	8.3	1903	L,SL,C 1.1 NTU	9.80	BKN	140	1	0.10	
	NEW RIVER @ FAYETTE STATION	12/06/1994	1255	10.0	12.0	8.1	2955	N,SL,MI 2.1 NTU	11.60	OVC	142	56	0.73	
	NEW RIVER @ FAYETTE STATION	12/22/1994	1143	5.0	5.0	7.6	4400	N,SL,C 2.6 NTU	13.70	OVC	89	3	0.01	

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SITE_NO	SITE_NAME	DATE	TIME	WATER_TEMP	AIR_TEMP	PH	STREAM_LVL	H20CND_NTU	DISS_OXYGN	WEATHER	CNDUCTIVTY	FC_100ML	PRECIP_48H	COMMENTS
N18	WOLF CREEK	05/04/1994	1232	11.0	12.0	7.5	68	H,SW,MI 12 0NTU	-99 99	OVC	202	860	0 67"	STINKS
N18	WOLF CREEK	05/17/1994	1218	12 0	10 0	8 2	13.8	N,M,C 1 9NTU	10.60	OVC	279	250	0 77"	
N18	WOLF CREEK	06/01/1994	1148	15 0	20 0	8 9	NORM	N,M,C 2 1NTU	10 30	OVC	499	30	T	
N18	WOLF CREEK	06/16/1994	1119	17.0	22 0	8 6	3 4	N,M,C 3.3NTU	9.90	CLR,H	520	56	0 035"	
N18	WOLF CREEK	06/30/1994	1200	17 0	22 0	8 5	3 6	N,M,C 5 0NTU	10.00	BKN	550	39	0 00"	
N18	WOLF CREEK	07/13/1994	1046	17 0	19 0	8 4	2 6	N,SL,MI 3 0NTU	8.70	OVC,-R	550	52	T	
N18	WOLF CREEK	07/26/1994	1045	18 0	20 0	7 4	105	H,SW,TR 220 0NTU	9.50	R	393	2000	0 17"	FC VALUE IS GREATER THAN 2000
N18	WOLF CREEK	08/11/1994	1051	18 0	24 0	8 2	2 3	N,M,MI 2 5NTU	9 60	OVC	520	57	0 00"	
N18	WOLF CREEK	08/24/1994	1121	17 0	20 0	8.3	4 7	N,M,MI 4 6NTU	9 30	CLR	365	103	T	
N18	WOLF CREEK	09/06/1994	1300	16 0	17 0	8 0	4 2	N,M,C 3.2NTU	10 00	OVC	420	150	0.12"	
N18	WOLF CREEK	09/20/1994	1150	15 0	16 0	8 2	2 3	N,SL,C 1 7NTU	9 90	CLR	495	38	T	
N18	WOLF CREEK	10/26/1994	1208	11 0	9 0	8 7	2 02	L,M,C 0.47NTU	11.90	OVC	484	4	0 00	
N18	WOLF CREEK	11/08/1994	1107	10 0	17 0	8 8	1 35	L,SL,C 0.3 NTU	11.60	SCT	490	3	0 01	
N18	WOLF CREEK	11/21/1994	1215	13 0	19 0	8 8	1 35	L,M,C 0 8 NTU	11 00	BKN	498	17	0 10	
N18	WOLF CREEK	12/06/1994	1245	10 0	14 0	8 6	1 35	N,M,C 1.0 NTU	11.00	OVC	485	12	0 73	
N18	WOLF CREEK	12/22/1994	1136	5 5	8 0	8 7	1.9	N,M,C 1 4 NTU	13.80	OVC	381	66	0 01	
N19	MARR BRANCH	05/04/1994	1209	11 0	11 0	7 1	11 0	H,M,TR 90.0NTU	-99 99	OVC	75	1600	0 67"	STINKS
N19	MARR BRANCH	05/17/1994	1310	12 0	9 0	7.5	NORM	N,SL,MI 6 9NTU	8.60	OVC	130	231	0 77"	
N19	MARR BRANCH	06/01/1994	1130	16 0	21.0	7 5	NORM	N,SL,MR 9 4NTU	3 10	OVC	452	3050	T	NUMEROUS TINY COLONIES NOT INCLUDED IN
N19	MARR BRANCH	06/16/1994	1205	20 0	26 0	7 4	0.5	N,SL,TR 7.9NTU	2.30	SCT,H	405	8800	0 035"	
N19	MARR BRANCH	06/30/1994	1125	19 0	18 0	7 4	0.6	N,SL,TR 31 0NTU	3 20	OVC	390	5550	0 00"	
N19	MARR BRANCH	07/13/1994	1128	19 0	21 0	7 4	NORM	N SL,TR 39 0NTU	0.10	OVC	800	60000	T	FC VALUE IS GREATER THAN 60000
N19	MARR BRANCH	07/26/1994	1138	19 0	20 0	6 5	>30	H,M,TR 130 0NTU	7.80	-R	100	91000	0.17"	
N19	MARR BRANCH	08/11/1994	1018	19 0	20 0	7.5	0.58	L,SL,MR 8.3NTU	4 20	OVC	500	750	0 00"	
N19	MARR BRANCH	08/24/1994	1100	17 0	20 0	7 3	0.91	L,SL,MI 7.5NTU	6 80	CLR	239	1800	T	
N19	MARR BRANCH	09/06/1994	1225	17 0	17.0	7.2	1.95	N,M,C 7 4NTU	7.40	OVC	200	3300	0.12"	
N19	MARR BRANCH	09/20/1994	1120	15 0	15 0	7 2	0 58	L,SL,MI 8.1NTU	6 30	CLR	452	2400	T	
N19	MARR BRANCH	10/26/1994	1132	10 0	9 0	7 7	75	L,SL,MI 5 0NTU	5 00	OVC	475	133	0 00	
N19	MARR BRANCH	11/08/1994	1040	10 0	13 0	7 8	.50	L,SL,TR 8 1 NTU	3 20	SCT	520	0	0 01	BAD SMELL/WATER DARK GRAY
N19	MARR BRANCH	11/21/1994	1140	12 0	17 0	7 8	1 2	N,SL,TR 8 8 NTU	3.60	OVC	550	190	0 10	WATER DARK GRAY COLOR/ SMELLS BAD
N19	MARR BRANCH	12/06/1994	1210	11 0	12 0	7 5	1 7	N,SL,MI 4 1 NTU	6 80	OVC	260	570	0.73	
N19	MARR BRANCH	12/22/1994	1121	4.0	5 0	7 8	.99	N,SL,MI 6 8 NTU	10.10	OVC	267	4080	0 01	
N20	NEW RIVER @ CUNARD	05/04/1994	1412	16 0	11 0	8 1	HIGH	H,M,MR 8 8NTU	-99 99	OVC	104	336	0 67"	
N20	NEW RIVER @ CUNARD	05/17/1994	1410	17 0	11 0	8.4	NORM	N,M,MI 4 9NTU	9 20	OVC	120	52	0 77"	
N20	NEW RIVER @ CUNARD	06/01/1994	0950	22 0	17 0	8 2	NORM	N,M,C 2 8NTU	7 70	OVC	152	17	T	
N20	NEW RIVER @ CUNARD	06/16/1994	0936	25 0	23 0	7 8	5700	H,M,MR 10 0NTU	7.60	SCT,H	151	38	0 035"	
N20	NEW RIVER @ CUNARD	06/30/1994	0932	26 0	25 0	7 9	4800	N,M,MI 5 2NTU	7 40	BKN	175	19	0 00"	
N20	NEW RIVER @ CUNARD	07/13/1994	1322	27 0	22 0	8 0	2223	N SL,C 1 6NTU	7.80	OVC	161	16	T	
N20	NEW RIVER @ CUNARD	07/26/1994	1241	26 0	22 0	7 2	4620	N,SL,MI 5 5NTU	7.20	BKN	152	23	0 17"	
N20	NEW RIVER @ CUNARD	08/11/1994	0843	25 0	20.0	7 8	4816	N,SL,MI 4 0NTU	7 50	OVC	140	21	0 00"	
N20	NEW RIVER @ CUNARD	08/24/1994	1247	23 0	25 0	8 0	6719	N.M,MR 10 2NTU	8 90	BKN	106	32	T	
N20	NEW RIVER @ CUNARD	09/06/1994	1030	22 0	18 0	7.1	3817	N,SL,MI 2 6NTU	8 40	OVC	131	131	0 12"	
N20	NEW RIVER @ CUNARD	09/20/1994	1325	22.0	21.0	8 2	2477	N,SL,C 1.3NTU	8.50	SCT	140	3	T	
N20	NEW RIVER @ CUNARD	10/26/1994	1340	14 0	9 0	8.3	5051	N,M,C 2 5NTU	10.20	OVC	130	20	0 00	
N20	NEW RIVER @ CUNARD	11/08/1994	0850	13 0	7.0	7 8	2143	N,SL,MI 1 0 NTU	9 80	SCT	120	5	0 01	
N20	NEW RIVER @ CUNARD	11/21/1994	0950	13 0	14 0	8.2	1903	L,SL,C 1 4 NTU	9 20	OVC	135	5	0 10	
N20	NEW RIVER @ CUNARD	12/06/1994	1020	10 0	11.0	8 1	2955	N,SL,MI 1.7 NTU	10 80	OVC,F	132	353	0 73	
N20	NEW RIVER @ CUNARD	12/22/1994	0954	6 0	1.0	7 9	4400	N,M,C 2.7 NTU	12.80	OVC	89	4	0 01	
N21	NEW R @ SNDSTN FALLS BDWLK	05/12/1994	1145	16.5	20 0	8 4	HIGH	H,M,MI 6 1NTU	-99.99	SCT	112	59	T	SITE AT END OF BOARDWALK
N21	NEW R @ SNDSTN FALLS BDWLK	05/23/1994	1258	19 0	25.0	9 1	NORM	N,M,C 3.0NTU	9 70	CLR	136	18	0 00"	SITE AT END OF BOARDWALK
N21	NEW R @ SNDSTN FALLS BDWLK	06/07/1994	1122	24 0	25 0	8 0	NORM	N,M,C 2.3NTU	8.30	-OVC	150	21	T	
N21	NEW R @ SNDSTN FALLS BDWLK	06/21/1994	1137	27.0	25 0	8 0	NORM	N,M,MI 4 8NTU	7.30	CLR	152	47	0 07"	100ML COLONIES WATERY
N21	NEW R @ SNDSTN FALLS BDWLK	07/05/1994	1115	27 0	27 0	8 2	4310	N.SW,C 2 6NTU	7 60	SCT	158	45	0 00"	
N21	NEW R @ SNDSTN FALLS BDWLK	07/21/1994	1130	27 0	24 0	7 6	NORM	N,SW,MI 3 8NTU	7 80	OVC	170	69	0 18"	
N21	NEW R @ SNDSTN FALLS BDWLK	08/03/1994	1200	26 0	28 0	8 1	5050	N,M,MI 3 8NTU	8 80	BKN	140	21	0 36"	
N21	NEW R @ SNDSTN FALLS BDWLK	08/17/1994	1158	23 0	18 0	7.6	22400	H,M,TR 136 0NTU	8.30	-R	123	1100	1.86"	

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ITE_NO	SITE_NAME	DATE	TIME	WATER_TEMP	AIR_TEMP	PH	STREAM_LVL	H20CND_NTU	DISS_OXYGN	WEATHER	CNDUCTIVTY	FC_100ML	PRECIP_48H	COMMENTS
21	NEW R @ SNDSTN FALLS BDWLK	08/31/1994	1230	24 0	23 0	7.9	4690	N,SW,MI 3 8NTU	8 40	OVC -R	130	282	0 02"	
21	NEW R @ SNDSTN FALLS BDWLK	09/13/1994	1155	21 0	22.0	8 6	3475	N,SW,C 2.7NTU	12.20	CLR	120	398	0 00"	
21	NEW R @ SNDSTN FALLS BDWLK	09/26/1994	1225	22 0	21.0	8 5	2240	N,SW,MI 1 7NTU	8 80	BKN	145	60	0.19"	
21	NEW R @ SNDSTN FALLS BDWLK	11/02/1994	1205	14 0	13 0	8 6	5800	N,SW,MI 5.1NTU	9 80	SCT	115	138	0 30	
21	NEW R @ SNDSTN FALLS BDWLK	11/15/1994	1245	13 0	17 0	9 1	2430	L,M,MI 4.0NTU	11 80	SCT	124	16	0 00	
21	NEW R @ SNDSTN FALLS BDWLK	11/29/1994	1230	8.0	6 0	8 6	2770	N,SW,MI 2 6NTU	12 80	OVC	118	8	0 26	
21	NEW R @ SNDSTN FALLS BDWLK	12/13/1994	1217	8 1	4 0	7.7	11888	H,SW,MR 17 0NTU	12 40	CLR	100	73	0 03	
21	NEW R @ SNDSTN FALLS BDWLK	12/29/1994	1213	6 4	7 0	8 9	4119	N,SW,MI 3 3NTU	12 60	BKN	88	8	0.00	

Appendix 5.
1994-BLUE

SITE_NO	SITE_NAME	DATE	TIME	WATER_TEMP	AIR_TEMP	PH	STREAM_LVL	H20CND_NTU	DISS_OXYGN	WEATHER	CNDUCTIVTY	Specific Condu	FC_100ML	PRECIP_48H	COMMENTS
B01	BLUESTONE RIVER @ ST. PARK	05/10/1994	1012	12.5	15.0	7.6	HIGH	H,SW,MR 14.5NT	-99.99	BKN	96	126	317	0.44"	
B01	BLUESTONE RIVER @ ST. PARK	05/24/1994	1053	19.0	22.0	8.5	NORM	N,SW,C 2.3NTU	9.00	CLR	208	235	23	0.00"	COLONIES LOOKED SMEARED
B01	BLUESTONE RIVER @ ST. PARK	06/08/1994	1059	21.0	20.0	7.4	NORM	N,SW,MR 17.5NT	8.90	-R	212	229	900	0.31"	
B01	BLUESTONE RIVER @ ST. PARK	06/20/1994	1022	24.0	25.0	8.0	NORM	N,SW,C 4.3NTU	7.90	CLR	225	229	38	0.07"	30ML COLONIES BIG AND WATERY
B01	BLUESTONE RIVER @ ST. PARK	07/06/1994	955	26.0	25.0	8.6	NORM	N,M,C 2.6NTU	7.50	CLR	300	294	30	0.00"	
B01	BLUESTONE RIVER @ ST. PARK	07/19/1994	1015	25.0	26.0	8.2	NORM	N,M,C 3.8NTU	7.80	SCT	310	310	31	0.61"	
B01	BLUESTONE RIVER @ ST. PARK	08/02/1994	1006	22.0	20.0	8.2	NORM	N,M,MI 7.4NTU	8.50	OVC	209	222	42	0.00"	
B01	BLUESTONE RIVER @ ST. PARK	08/16/1994	1040	23.0	18.0	9.1	NORM	N,M,C 4.1NTU	8.60	R	238	247	67	0.34"	
B01	BLUESTONE RIVER @ ST. PARK	08/29/1994	1005	23.0	21.0	8.6	NORM	N,M,C 2.4NTU	8.20	OVC	250	260	16	T	
B01	BLUESTONE RIVER @ ST. PARK	09/12/1994	0940	20.0	12.0	8.8	NORM	N,M,C 1.8NTU	8.40	OVC	250	276	17	0.13"	
B02	LITTLE BLUESTONE RIVER	05/10/1994	1125	12.0	16.0	7.4	NORM	N,M,MI 5.4NTU	-99.99	OVC,-R	40	53	168	0.44"	
B02	LITTLE BLUESTONE RIVER	05/24/1994	1200	16.0	24.0	8.0	NORM	N,SL,C 2.1NTU	9.10	CLR	62	75	66	0.00"	
B02	LITTLE BLUESTONE RIVER	06/08/1994	1209	17.0	20.0	7.1	NORM	N,M,MR 17.5NTU	9.20	OVC	41	48	725	0.31"	SMALL AIR BUBBLES UNDER DO MEMBR
B02	LITTLE BLUESTONE RIVER	06/20/1994	1132	22.0	25.0	7.4	NORM	N,SL,C 1.5NTU	8.20	CLR	73	77	114	0.07"	
B02	LITTLE BLUESTONE RIVER	07/06/1994	1118	21.0	25.0	7.8	NORM	N,SL,C 2.4NTU	8.00	CLR	82	89	21	0.00"	
B02	LITTLE BLUESTONE RIVER	07/19/1994	1125	22.0	25.0	7.4	NORM	N,M,MI 7.7NTU	8.40	CLR,-H	89	94	100	0.61"	
B02	LITTLE BLUESTONE RIVER	08/02/1994	1112	19.0	23.0	7.7	NORM	N,SL,MR 10.2NTU	9.70	OVC	62	70	235	0.00"	
B02	LITTLE BLUESTONE RIVER	08/16/1994	1150	19.0	17.0	7.8	NORM	N,SL,MI 4.5NTU	8.90	-R	79	89	705	0.34"	
B02	LITTLE BLUESTONE RIVER	08/29/1994	1120	20.0	22.0	7.5	NORM	N,L,C 1.6NTU	9.20	OVC	82	91	95	T	
B02	LITTLE BLUESTONE RIVER	09/12/1994	1051	16.0	13.0	8.1	LOW	L,M,C 1.5NTU	9.10	OVC	95	115	30	0.13"	
B03	BLUESTONE RIVER @ CONFLUENCE	05/10/1994	1140	12.5	16.0	7.8	HIGH	H,SL,MR 13.0NTU	-99.99	OVC	101	132	175	0.44"	
B03	BLUESTONE RIVER @ CONFLUENCE	05/24/1994	1221	19.0	25.0	8.4	NORM	N,SL,C 2.5NTU	9.40	SCT	215	243	21	0.00"	
B03	BLUESTONE RIVER @ CONFLUENCE	06/08/1994	1222	22.0	19.0	7.2	NORM	N,SL,MI 3.3NTU	7.80	OVC	258	274	108	0.31"	
B03	BLUESTONE RIVER @ CONFLUENCE	06/20/1994	1200	24.0	26.0	7.8	NORM	N,SL,MI 6.0NTU	7.50	CLR	232	236	40	0.07"	
B03	BLUESTONE RIVER @ CONFLUENCE	07/06/1994	1135	26.0	26.0	8.4	NORM	N,SL,MI 3.9NTU	6.30	CLR	303	297	19	0.00"	
B03	BLUESTONE RIVER @ CONFLUENCE	07/19/1994	1140	26.0	27.0	8.1	NORM	N,SL,MI 4.9NTU	6.30	CLR,-H	312	306	51	0.61"	
B03	BLUESTONE RIVER @ CONFLUENCE	08/02/1994	1127	23.0	23.0	7.8	NORM	N,SL,MI 6.3NTU	7.80	OVC	237	246	56	0.00"	
B03	BLUESTONE RIVER @ CONFLUENCE	08/16/1994	1210	22.0	17.0	8.2	NORM	N,SL,MI 7.1NTU	8.00	R	265	281	66	0.34"	
B03	BLUESTONE RIVER @ CONFLUENCE	08/29/1994	1144	23.0	23.0	8.0	LOW	L,S,MI 3.3NTU	6.40	OVC	260	270	19	T	
B03	BLUESTONE RIVER @ CONFLUENCE	09/12/1994	1110	19.0	16.0	8.4	NORM	N,SL,MI 5.0NTU	8.00	OVC	249	281	39	0.13"	
B04	BLUESTONE RIVER @ PIPESTEM	05/10/1994	1315	13.0	16.0	7.8	1030	H,M,MI 12.0NTU	-99.99	SCT	101	131	156	0.44"	100ML COLONIES VERY SMEAREO
B04	BLUESTONE RIVER @ PIPESTEM	05/24/1994	1317	21.0	26.0	8.8	184	N,M,C 2.6NTU	-99.99	SCT	221	239	40	0.00"	NO DO READING
B04	BLUESTONE RIVER @ PIPESTEM	06/08/1994	1400	22.0	21.0	7.4	136	N,M,MI 6.2NTU	9.60	BKN	265	281	252	0.31"	
B04	BLUESTONE RIVER @ PIPESTEM	06/20/1994	1315	26.0	29.0	8.4	186	N,M,MI 4.1NTU	8.50	CLR	236	232	49	0.07"	
B04	BLUESTONE RIVER @ PIPESTEM	07/06/1994	1252	27.0	29.0	8.9	76	N,SL,C 2.6NTU	9.80	SCT	330	318	25	0.00"	
B04	BLUESTONE RIVER @ PIPESTEM	07/19/1994	1305	28.0	30.0	8.8	82	N,SL,C 2.2NTU	10.20	SCT	310	293	21	0.61"	
B04	BLUESTONE RIVER @ PIPESTEM	08/02/1994	1300	24.0	25.0	8.5	111	N,M,MI 5.9NTU	8.70	BKN	248	253	10	0.00"	
B04	BLUESTONE RIVER @ PIPESTEM	08/16/1994	1330	22.0	17.0	8.0	79	N,SL,MI 2.6NTU	9.10	R	275	292	65	0.34"	
B04	BLUESTONE RIVER @ PIPESTEM	08/29/1994	1251	22.0	23.0	8.0	NORM	N,SL,MI 1.6NTU	8.20	OVC	280	297	18	T	
B04	BLUESTONE RIVER @ PIPESTEM	09/12/1994	1237	20.0	20.0	8.9	NORM	N,SL,MI 1.2NTU	11.30	OVC	270	298	9	0.13"	
B05	MOUNTAIN CREEK	05/10/1994	1250	12.0	16.0	7.4	HIGH	H,SW,MI 3.5NTU	-99.99	BKN	64	85	98	0.44"	SMELLS LIKE A VIOLATION
B05	MOUNTAIN CREEK	05/24/1994	1307	17.5	25.0	7.9	NORM	N,M,C 1.6NTU	-99.99	SCT	112	131	37	0.00"	AIR BUBBLES INCREASING - NO DO REA
B05	MOUNTAIN CREEK	06/08/1994	1340	17.0	20.0	6.7	NORM	N,SW,MI 9.0NTU	9.20	OVC	99	117	1310	0.31"	
B05	MOUNTAIN CREEK	06/20/1994	1329	22.0	28.0	7.8	NORM	N,M,C 2.3NTU	8.10	CLR	160	170	108	0.07"	
B05	MOUNTAIN CREEK	07/06/1994	1235	22.0	29.0	7.9	NORM	N,M,C 2.4NTU	8.40	SCT	234	248	6	0.00"	
B05	MOUNTAIN CREEK	07/19/1994	1321	23.0	27.0	7.8	NORM	N,M,C 2.5NTU	8.10	SCT	240	249	86	0.61"	
B05	MOUNTAIN CREEK	08/02/1994	1235	20.0	24.0	7.6	NORM	N,M,C 2.9NTU	8.90	BKN	165	182	33	0.00"	
B05	MOUNTAIN CREEK	08/16/1994	1315	19.0	17.0	7.2	NORM	N,SL,C 2.5NTU	9.20	-R	171	193	22	0.34"	
B05	MOUNTAIN CREEK	08/29/1994	1313	20.0	21.0	7.3	NORM	N,M,C 1.2NTU	9.00	OVC	93	103	23	T	
B05	MOUNTAIN CREEK	09/12/1994	1212	15.0	19.0	7.9	NORM	N,M,C 0.5NTU	9.40	SCT	200	247	29	0.13"	

Appendix 5.
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SITE_NO	SITE_NAME	DATE	TIME	WATER_TEMP	AIR_TEMP	PH	STREAM_LVL	H20CND_NTU	DISS_OXYG	WEATHER	CNDUCTIVTY	Specific Condu	FC_100ML	PRECIP_48H	COMMENTS
1	SUMMERSVILLE DAM	05/05/1994	1100	9.0	9.0	6.8	3930	H,SW,MI 7.4NTU	-99.99	OVC	42	60	8	0.72"	
1	SUMMERSVILLE DAM	05/16/1994	1108	12.0	19.0	8.9	1150	H,M,MI 23.0NTU	-99.99	BKN	38	50	128	0.13"	
1	SUMMERSVILLE DAM	06/03/1994	1200	13.0	21.0	7.9	182	L,M,MI 5.1NTU	10.40	CLR	41	53	9	0.00"	
1	SUMMERSVILLE DAM	06/13/1994	1118	12.5	23.0	7.8	191	N,SW,C 3.3NTU	10.90	CLR,H	40	52	2	0.00"	
1	SUMMERSVILLE DAM	06/29/1994	1121	13.0	28.0	7.4	468	N,M,C 2.3NTU	11.00	BKN	42	54	1	0.65"	
1	SUMMERSVILLE DAM	07/12/1994	1046	13.0	27.0	7.3	1150	H,M,C 2.1NTU	9.90	CLR,-H	45	58	3	0.00"	
1	SUMMERSVILLE DAM	07/28/1994	1040	14.0	18.0	6.8	7310	H,SW,MI 2.6NTU	11.00	OVC	75	95	4	1.23"	
1	SUMMERSVILLE DAM	08/10/1994	1037	19.0	20.0	7.2	880	N,M,MI 9.0NTU	9.60	OVC	39	44	39	0.00"	
1	SUMMERSVILLE DAM	08/23/1994	1105	19.0	21.0	7.3	1360	N,M,MR 17.0NTU	9.10	SCT	46	52	164	0.52"	
1	SUMMERSVILLE DAM	09/07/1994	1055	20.0	18.0	7.0	641	N,M,MI 5.6NTU	9.10	BKN	56	62	16	0.26"	
1	SUMMERSVILLE DAM	09/19/1994	0939	20.0	15.0	8.0	2800	H,SW,MI 2.3NTU	9.50	SCT	60	66	5	0.74"	
1	SUMMERSVILLE DAM	09/28/1994	0913	19.0	15.0	7.2	401	N,SW,MI 1.9NTU	9.20	OVC	65	73	2	0.16"	
1	SUMMERSVILLE DAM	10/05/1994	0933	19.0	11.0	7.4	394	L,SW,C 1.8NTU	9.20	BKN	70	79	1	0.00"	
1	SUMMERSVILLE DAM	10/12/1994	0935	19.0	11.0	7.2	391	L,SW,C 1.5NTU	9.20	SCT	65	73	1	0.14"	
2	MID GAULEY	05/05/1994	1256	10.5	12.0	6.9	HIGH	H,M,MI 8.6NTU	-99.99	OVC	41	57	55	0.72"	
2	MID GAULEY	05/16/1994	1208	14.0	19.0	6.9	HIGH	H,SL,MR 17.0NTU	-99.99	BKN	45	57	50	0.13"	
2	MID GAULEY	06/03/1994	1330	20.0	24.0	7.9	NORM	N,M,C 2.9NTU	9.20	CLR	72	80	3	0.00"	
2	MID GAULEY	06/13/1994	1229	20.5	29.0	8.2	NORM	N,SL,C 2.1NTU	9.30	CLR,H	82	90	4	0.00"	
2	MID GAULEY	06/29/1994	1249	19.0	28.0	7.7	NORM	N,SL,C 2.4NTU	9.60	BKN	61	69	6	0.65"	
2	MID GAULEY	07/12/1994	1218	16.0	23.0	7.4	NORM	N,SL,C 2.1NTU	10.10	SCT	50	60	9	0.00"	
2	MID GAULEY	07/28/1994	1141	14.5	19.0	6.9	HIGH	H,M,MI 6.5NTU	10.40	OVC	51	64	72	1.23"	
2	MID GAULEY	08/10/1994	1206	21.0	23.0	7.7	NORM	N,M,MI 7.2NTU	9.60	BKN	56	61	16	0.00"	
2	MID GAULEY	08/23/1994	1217	21.0	26.0	7.4	NORM	N,SL,MI 12.0NTU	8.70	SCT	53	57	74	0.52"	
2	MID GAULEY	09/07/1994	1225	20.0	20.0	7.1	NORM	N,M,C 3.3NTU	9.40	BKN	63	70	12	0.26"	
2	MID GAULEY	09/19/1994	1040	19.0	21.0	7.8	NORM	H,SL,MI 2.5NTU	9.00	CLR	60	68	17	0.74"	
2	MID GAULEY	09/28/1994	1034	18.0	16.0	7.4	LOW	L,SL,MI 1.4NTU	9.20	OVC	70	81	8	0.16"	
2	MID GAULEY	10/05/1994	1030	17.0	12.0	7.5	LOW	L,SL,C 1.0NTU	9.80	BKN	60	71	3	0.00"	
2	MID GAULEY	10/12/1994	1035	16.0	16.0	7.1	LOW	L,SL,C 1.1NTU	9.80	SCT	70	84	1	0.14"	
	PETERS CREEK	05/05/1994	1241	11.5	13.0	7.5	HIGH	H,M,MI 4.9NTU	-99.99	OVC	142	191	370	0.72"	
	PETERS CREEK	05/16/1994	1211	16.5	21.0	7.8	HIGH	H,M,TR 18.0NTU	-99.99	BKN	258	308	1030	0.13"	
	PETERS CREEK	06/03/1994	1310	18.0	24.0	8.2	NORM	N,M,C 1.4NTU	10.20	CLR	420	484	40	0.00"	
	PETERS CREEK	06/13/1994	1209	21.5	25.0	8.2	NORM	N,M,C 1.8NTU	8.60	CLR,H	520	557	39	0.00"	
	PETERS CREEK	06/29/1994	1232	23.0	28.0	8.1	NORM	N,SL,MI 5.4NTU	8.50	BKN,-R	370	385	102	0.65"	
	PETERS CREEK	07/12/1994	1201	22.0	24.0	8.1	NORM	N,SL,MI 6.4NTU	8.40	SCT	388	411	120	0.00"	
	PETERS CREEK	07/28/1994	1133	18.0	20.0	7.1	HIGH	H,M,TR 36.0NTU	9.20	OVC	171	197	1250	1.23"	
	PETERS CREEK	08/10/1994	1150	22.0	22.0	8.0	NORM	N,SL,C 2.9NTU	9.30	BKN	321	340	88	0.00"	
	PETERS CREEK	08/23/1994	1201	19.0	24.0	8.0	NORM	N,M,MI 4.0NTU	9.10	SCT	292	330	240	0.52"	
	PETERS CREEK	09/07/1994	1202	18.0	19.0	7.7	NORM	N,M,C 2.3NTU	9.00	BKN	309	356	174	0.26"	
	PETERS CREEK	09/22/1994	1331	17.0	22.0	7.9	NORM	N,SL,C 1.7NTU	9.80	OVC	432	509	67	-9999	
	PETERS CREEK	09/28/1994	1048	16.0	15.0	7.9	LOW	L,M,MI 1.4NTU	9.90	OVC	490	591	18	0.16"	
	PETERS CREEK	10/05/1994	1049	13.0	14.0	8.3	LOW	L,SL,MI 1.6NTU	10.40	BKN	432	560	30	0.00"	
	PETERS CREEK	10/12/1994	1052	11.0	13.0	8.4	LOW	L,SL,C 1.6NTU	11.20	SCT	380	518	39	0.14"	
	SOUTH SIDE SWISS	05/05/1994	1350	10.5	13.0	7.1	HIGH	H,SL,MI 8.2NTU	-99.99	OVC	45	62	62	0.72"	
	SOUTH SIDE SWISS	05/16/1994	1246	15.0	21.0	7.3	HIGH	H,SL,MR 16.0NTU	-99.99	BKN	55	68	66	0.13"	
	SOUTH SIDE SWISS	06/03/1994	1415	21.0	24.0	7.7	NORM	N,SL,C 2.5NTU	8.80	CLR	88	95	2	0.00"	
	SOUTH SIDE SWISS	06/13/1994	1306	22.5	31.0	7.8	NORM	N,SL,C 2.2NTU	8.60	BKN,H	100	105	4	0.00"	
	SOUTH SIDE SWISS	06/29/1994	1340	21.0	29.0	7.4	NORM	N,SL,MI 3.6NTU	8.90	SCT	79	85	25	0.65"	
	SOUTH SIDE SWISS	07/12/1994	1303	17.0	25.0	7.5	NORM	N,SL,MI 2.7NTU	9.50	SCT	52	61	13	0.00"	
	SOUTH SIDE SWISS	07/28/1994	1300	15.0	23.0	6.9	HIGH	H,M,MI 7.6NTU	10.00	BKN	58	72	100	1.23"	HIGH WATER, SANDBAR COVERED.
	SOUTH SIDE SWISS	08/10/1994	1300	22.0	23.0	7.5	NORM	N,SL,MI 6.9NTU	9.20	BKN	51	54	16	0.00"	
	SOUTH SIDE SWISS	08/23/1994	1308	20.0	28.0	7.4	NORM	N,SL,MI 12.0NTU	9.00	SCT	62	69	130	0.52"	
	SOUTH SIDE SWISS	09/07/1994	1315	20.0	21.0	7.5	NORM	N,SL,MI 3.3NTU	9.00	BKN	71	78	12	0.26"	
	SOUTH SIDE SWISS	09/19/1994	1146	20.0	22.0	7.6	NORM	N,SL,MI 1.9NTU	9.00	CLR	68	75	11	0.74"	
	SOUTH SIDE SWISS	09/28/1994	1237	19.0	17.0	7.6	NORM	N,SL,MI 1.3NTU	9.20	OVC	70	79	6	0.16"	
	SOUTH SIDE SWISS	10/05/1994	1222	18.0	16.0	7.4	LOW	L,SL,C 1.2NTU	9.20	BKN	70	81	3	0.00"	

Appendix 5.
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SITE_NO	SITE_NAME	DATE	TIME	WATER_TEMP	AIR_TEMP	PH	STREAM_LVL	H20CND_NTU	DISS_OXYG	WEATHER	CNDUCTIVTY	Specific Condu	FC_100ML	PRECIP_48H	COMMENTS
G04	SOUTH SIDE SWISS	10/12/1994	1219	17.0	21.0	6.7	LOW	L,SL,C 1.4NTU	9.40	SCT	70	83	6	0.14"	
G05	MEADOW RIVER	05/05/1994	1100	11.0	9.0	7.0	1283	H,M,MR 11.5NTU	-99.99	OVC	60	82	138	0.72"	
G05	MEADOW RIVER	05/16/1994	1043	14.5	19.0	7.3	656	H,M,MR 6.2NTU	-99.99	BKN	52	65	86	0.13"	
G05	MEADOW RIVER	06/03/1994	1125	18.0	18.0	8.0	NORM	N,M,C 1.3NTU	9.20	CLR	128	148	15	0.00"	USGS GAUGE OUT OF ORDER
G05	MEADOW RIVER	06/13/1994	1049	22.0	27.0	7.8	86	N,SL,C 1.4NTU	8.00	CLR,H	150	159	19	0.00"	
G05	MEADOW RIVER	06/29/1994	1048	24.0	27.0	7.3	NORM	N,SL,C 2.6NTU	8.00	BKN	118	120	48	0.65"	GAUGE OUT
G05	MEADOW RIVER	07/12/1994	1006	24.0	24.0	7.1	NORM	N,SL,C 1.3NTU	7.50	SCT	148	151	12	0.00"	GAUGE OUT
G05	MEADOW RIVER	07/28/1994	1010	19.0	19.0	6.8	HIGH	H,SL,MR 8.1NTU	8.70	OVC	120	135	312	1.23"	
G05	MEADOW RIVER	08/10/1994	1000	20.0	20.0	7.2	HIGH	H,SL,MI 8.6NTU	8.60	OVC	88	97	58	0.00"	
G05	MEADOW RIVER	08/23/1994	1030	18.0	20.0	7.4	276	N,M,MI 8.9NTU	9.40	SCT	72	83	81	0.52"	
G05	MEADOW RIVER	09/07/1994	1015	17.0	18.0	6.8	300	N,M,C 2.6NTU	8.90	BKN	103	121	36	0.26"	
G05	MEADOW RIVER	09/19/1994	0859	18.0	12.0	8.2	95	N,M,MI 0.6NTU	8.60	OVC	120	138	47	0.74"	
G05	MEADOW RIVER	09/28/1994	0843	17.0	14.0	7.0	41.2	L,SL,MI 1.0NTU	8.60	OVC	135	159	20	0.16"	
G05	MEADOW RIVER	10/05/1994	0858	14.0	11.0	7.6	29	L,SL,C 1.0NTU	9.00	SCT	148	187	30	0.00"	
G05	MEADOW RIVER	10/12/1994	0904	12.0	12.0	7.5	23.4	L,SL,C 0.8NTU	9.40	SCT	158	210	18	0.14"	

Appendix 5.
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SITE_NO	SITE_NAME	OATE	TIME	H2O_T	AIR_T	PH	H2O_LVL	H2O_CND	NTU	OO	WETHR	CNDUC	FC_100ML	PCP_48H	COMMENTS
N01	NEW RIVER @ HINTON VC	01/11/1995	13:25	4.5	7.0	8.2	8606	H,SL,MR	7.20	12.7	SCT	144.0	46	0.00	
N01	NEW RIVER @ HINTON VC	01/26/1995	14:20	5.0	1.0	7.9	7425	H,SL,TR	38.00	13.8	CLR	111.0	73	0.01	
N01	NEW RIVER @ HINTON VC	02/07/1995	13:55	1.4	-4.0	8.1	6944	H,SL,MR	16.00	14.6	OVC	143.0	100	0.00	
N01	NEW RIVER @ HINTON VC	02/22/1995	12:55	5.0	5.0	7.9	19333	H,M,MR	9.50	13.2	CLR	129.0	43	0.09	MOLD GROWTH ON THE 50 ML FILTER
N01	NEW RIVER @ HINTON VC	03/06/1995	12:55	6.5	16.0	7.8	7425	H,SL,MI	8.30	13.0	SCT	142.0	26	0.07	
N01	NEW RIVER @ HINTON VC	03/21/1995	13:05	10.5	13.0	7.1	6446	H,SL,MI	10.00	12.2	SCT	138.0	25	0.44	
N01	NEW RIVER @ HINTON VC	04/04/1995	13:00	12.0	14.0	8.3	4516	N,SL,MI	4.90	11.4	SCT	146.0	28	0.01	
N01	NEW RIVER @ HINTON VC	04/17/1995	12:25	14.0	16.0	8.1	3700	N,SL,C	3.20	10.6	OVC	152.0	16	0.00	
N01	NEW RIVER @ HINTON VC	05/01/1995	1245	16.5	16.0	8.6	3900	N,SL,C	3.00	10.8	OVC	153.0	6	0.03	
N01	NEW RIVER @ HINTON VC	05/16/1995	12:38	18.0	21.0	7.7	26900	H,M,TR	17.00	9.7	- H,OVC	138.0	375	1.04	SAMPLED FROM STEPS
N01	NEW RIVER @ HINTON VC	05/31/1995	13:08	22.0	21.0	7.8	4100	N,M,C	4.20	8.6	SCT	156.0	8	0.01	
N01	NEW RIVER @ HINTON VC	06/13/1995	13:20	22.0	20.0	7.7	19500	H,M,MR	20.00	8.6	SCT	140.0	260	1.02	FECAL COLONIES SMEARED
N01	NEW RIVER @ HINTON VC	06/27/1995	13:30	23.5	26.0	7.8	8475	H,M,MR	11.00	8.6	SCT	138.0	-999999999	0.18	FECALS KILLED DUE TO HIGH INCUBATOR TEMPERATURE @ 48.2 C
N01	NEW RIVER @ HINTON VC	07/11/1995	13:22	26.0	27.0	8.1	3400	L,SL,MI	6.60	8.6	SCT	147.0	10	0.00	
N01	NEW RIVER @ HINTON VC	07/25/1995	13:20	28.0	28.0	8.9	2360	L,SL,MI	5.40	-9.9	SCT	166.0	8	0.50	CORNING DO METER LOSTT CALIBRATION
N01	NEW RIVER @ HINTON VC	08/31/1995	12:40	28.0	31.0	8.2	3600	L,M,MI	4.50	7.4	SCT,+H	211.0	33	0.00	
N01	NEW RIVER @ HINTON VC	09/12/1995	12:28	24.0	25.0	8.0	1640	L,SL,C	3.10	7.8	OVC	180.0	10	0.00	
N01	NEW RIVER @ HINTON VC	09/27/1995	10:51	19.0	13.0	7.8	2530	N,M,MI	7.00	8.3	OVC,+F	169.0	45	0.02	
N02	MADAM CREEK	01/11/1995	11:45	4.5	11.0	7.7	HIGH	H,M,MI	8.50	11.6	BKN	82.0	400	0.00	
N02	MADAM CREEK	01/26/1995	12:20	1.0	2.0	7.2	HIGH	H,M,MI	5.10	-9.9	CLR	70.0	425	0.01	DO METER READING OFF SCALE.
N02	MADAM CREEK	02/07/1995	13:25	0.2	-4.0	8.0	NORM	N,M,C	7.80	-9.9	OVC,-S	74.0	470	0.00	DO METER OFF SCALE
N02	MADAM CREEK	02/22/1995	11:08	3.0	5.0	7.2	HIGH	H,M,MI	5.70	14.0	SCT	60.0	10880	0.09	
N02	MADAM CREEK	03/06/1995	11:10	6.5	14.0	7.8	HIGH	H,M,MR	17.00	12.9	SCT	74.0	600	0.07	
N02	MADAM CREEK	03/21/1995	11:20	9.0	15.0	6.7	HIGH	H,M,MR	23.00	12.3	OVC	86.0	1000	0.44	
N02	MADAM CREEK	04/04/1995	11:00	10.0	13.0	7.8	NORM	N,M,MI	3.30	11.7	OVC	91.0	405	0.01	
N02	MADAM CREEK	04/17/1995	10:35	12.0	16.0	8.3	LOW	L,SL,C	2.40	10.8	OVC	122.0	980	0.00	
N02	MADAM CREEK	05/01/1995	1045	13.0	15.0	8.2	LOW	L,SL,MI	3.40	11.1	BKN	91.0	120	0.03	
N02	MAOAM CREEK	05/16/1995	10:47	13.0	22.0	7.7	HIGH	H,M,MR	11.00	10.4	SCT	75.0	840	1.04	
N02	MADAM CREEK	05/31/1995	11:23	17.0	23.0	8.3	LOW	L,SL,MI	4.10	9.2	SCT	120.0	706	0.01	MINNOWS IN THE CREEK
N02	MADAM CREEK	06/13/1995	11:25	16.0	20.0	8.2	HIGH	H,M,MR	13.00	9.8	SCT	115.0	1250	1.02	
N02	MADAM CREEK	06/27/1995	11:20	21.0	25.0	8.1	LOW	L,M,MI	5.80	8.6	BKN,+H	154.0	-999999999	0.18	FECALS KILLEO DUE TO HIGH INCUBATOR TEMPERATURE @ 48.2 C
N02	MADAM CREEK	07/11/1995	11:30	23.0	27.0	8.4	LOW	L,SL,MI	4.00	9.1	SCT	187.0	3350	0.00	
N02	MADAM CREEK	07/25/1995	11:20	28.0	27.0	8.0	LOW	L,SL,C	2.30	-9.9	SCT	257.0	100	0.50	CORNING DO METER LOST CALIBRATION
N02	MADAM CREEK	08/31/1995	10:40	25.0	28.0	7.5	LOW	L,SL,MI	6.00	3.2	CLR,+H	380.0	2800	0.00	
N02	MADAM CREEK	09/12/1995	10:33	20.0	24.0	7.6	LOW	L,SL,MR	13.00	3.0	OVC	497.0	4800	0.00	ALMOST NO FLOW, WATER IN POOLS
N02	MAOAM CREEK	09/27/1995	12:45	16.5	21.0	8.2	NORM	N,M,MI	5.30	8.9	SCT	180.0	2000	0.02	
N04	NEW R @ SNDSTN FALLS PKLOT	01/11/1995	12:20	4.5	13.0	7.8	8606	H,M,MR	10.20	12.0	SCT	144.0	124	0.00	
N04	NEW R @ SNDSTN FALLS PKLOT	01/26/1995	13:00	5.5	6.0	7.1	7425	H,M,TR	38.00	14.2	CLR	98.0	83	0.01	
N04	NEW R. @ SNDSTN FALLS PKLOT	02/07/1995	12:50	1.6	-7.0	7.6	6944	H,SL,MR	17.00	14.2	OVC	140.0	104	0.00	
N04	NEW R. @ SNDSTN FALLS PKLOT	02/22/1995	12:00	6.0	8.0	7.7	19333	H,SW,MR	8.90	12.6	CLR	117.0	54	0.09	MOLD ON THE 100 ML FILTER
N04	NEW R @ SNDSTN FALLS PKLOT	03/06/1995	11:56	9.0	15.0	8.2	7425	H,M,MI	6.10	12.4	SCT	129.0	8	0.07	DEBRIS AND TRASH PRESENT, SAMPLEO DOWNSTREAM OF SITE.
N04	NEW R @ SNDSTN FALLS PKLOT	03/21/1995	12:05	12.0	14.0	6.7	6446	H,M,MR	7.50	11.2	BKN	126.0	10	0.44	
N04	NEW R @ SNDSTN FALLS PKLOT	04/04/1995	11:40	13.0	18.0	8.3	4516	N,M,M	3.70	10.6	SCT	136.0	10	0.01	
N04	NEW R @ SNDSTN FALLS PKLOT	04/17/1995	11:15	15.0	19.0	8.3	3700	N,SL,C	2.30	10.8	OVC	148.0	6	0.00	
N04	NEW R @ SNDSTN FALLS PKLOT	05/01/1995	1130	16.0	17.0	8.3	3900	N,SL,MI	2.00	10.3	BKN, -H	146.0	9	0.03	
N04	NEW R @ SNDSTN FALLS PKLOT	05/16/1995	11:30	18.0	25.0	7.7	26900	H,SW,TR	19.00	9.2	- H,OVC	127.0	310	1.04	
N04	NEW R. @ SNDSTN FALLS PKLOT	05/31/1995	12:05	22.0	25.0	8.4	4100	N,M,C	2.90	8.8	SCT	143.0	80	0.01	
N04	NEW R. @ SNDSTN FALLS PKLOT	06/13/1995	12:10	22.0	20.0	7.9	19500	H,M,MR	14.00	8.2	SCT	138.0	126	1.02	
N04	NEW R. @ SNDSTN FALLS PKLOT	06/27/1995	12:01	23.5	28.0	7.8	8475	N,SL,MR	11.00	7.4	SCT	141.0	-999999999	0.18	FECALS KILLED OUE TO HIGH INCUBATOR TEMPERATURE @ 48 2 C
N04	NEW R @ SNDSTN FALLS PKLOT	07/11/1995	12:43	26.5	30.0	8.8	3400	L,SL,C	4.50	8.8	SCT	144.0	10	0.00	
N04	NEW R @ SNDSTN FALLS PKLOT	07/25/1995	12:00	30.0	31.0	8.9	2360	L,M,C-MI	3.50	-9.9	SCT	160.0	12	0.50	CORNING DO METER LOST CALIBRATION
N04	NEW R @ SNDSTN FALLS PKLOT	08/31/1995	11:25	28.0	30.0	8.1	3600	L,SL,MI	5.00	6.8	SCT, +H	205.0	110	0.00	
N04	NEW R. @ SNDSTN FALLS PKLOT	09/12/1995	11:23	24.0	22.0	8.4	1640	L,SL,C	2.10	7.5	OVC	168.0	8	0.00	
N04	NEW R @ SNDSTN FALLS PKLOT	09/27/1995	13:15	21.0	23.0	8.6	2530	N,SL,C	2.50	9.0	SCT	162.0	10	0.02	
N05	LICK CREEK	01/11/1995	10.45	4.0	6.0	7.6	HIGH	H,M,MI	6.50	11.7	OVC	133.0	75	0.00	GAGE IS GONE
N05	LICK CREEK	01/26/1995	11.37	1.0	2.0	8.0	HIGH	H,M,C	4.40	-9.9	CLR	125.0	92	0.01	GAGE IS GONE

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SITE_NO	SITE_NAME	DATE	TIME	H2O_T	AIR_T	PH	H2O_LVL	H2O_CND	NTU	DO	WETHR	CNDUC	FC_100ML	PCP_48H	COMMENTS
N05	LICK CREEK	02/07/1995	11.25	0.2	-8.0	7.4	NORM	N,M,C	5.30	-9.9	SCT,-S	149.0	50	0.00	DO METER OFF SCALE/ NO GAGE READING, ICE ON GAGE
N05	LICK CREEK	02/22/1995	10.30	2.0	4.0	7.1	HIGH	H,M,MI	6.10	14.6	SCT	92.0	42	0.09	GAP BETWEEN THE GAGES, SMALL GAGE COVERED BY WATER
N05	LICK CREEK	03/06/1995	10.30	6.0	16.0	7.6	HIGH	H,M,MI	7.50	13.2	SCT	133.0	148	0.07	
N05	LICK CREEK	03/21/1995	10.48	10.0	12.0	6.6	HIGH	H,M,MR	23.00	11.8	OVC	154.0	1705	0.44	GAGE IS MISSING
N05	LICK CREEK	04/04/1995	10.20	10.0	14.0	8.3	16.58	N,M,C	1.70	11.6	OVC	151.0	47	0.01	
N05	LICK CREEK	04/17/1995	9.45	14.0	18.0	8.1	11.50	L,SL,C	1.50	10.1	OVC	187.0	12	0.00	
N05	LICK CREEK	05/01/1995	1008	12.0	14.0	8.1	28	N,M,C	2.80	10.9	SCT	130.0	60	0.03	
N05	LICK CREEK	05/16/1995	10.12	13.5	16.0	7.6	258.3	H,SW,TR	20.00	10.6	SCT	92.0	440	1.04	
N05	LICK CREEK	05/31/1995	10.40	16.0	24.0	8.3	8.8	L,SL,C	2.00	9.8	OVC	181.0	40	0.01	GAUGE CRACKED AT 2.40
N05	LICK CREEK	06/13/1995	10.50	15.0	17.0	7.8	136	H,M,MR	19.00	10.2	SCT	111.0	400	1.02	WATER LEVEL BETWEEN THE TWO GAGES, ESTIMATE 3.32
N05	LICK CREEK	06/27/1995	10.40	21.0	25.0	8.1	9.1	L,M,C	3.30	8.2	BKN,+H	200.0	-999999999	0.18	FECALS KILLED DUE TO HIGH INCUBATOR TEMPERATURE @ 48.2 C
N05	LICK CREEK	07/11/1995	11.00	22.0	32.0	8.2	2.5	L,SL,C	2.70	8.8	CLR	265.0	12	0.00	
N05	LICK CREEK	07/25/1995	10.30	24.0	26.0	8.1	.32	L,SL,C	2.10	-9.9	SCT	372.0	31	0.50	CORNING DO METER LOST CALIBRATION
N05	LICK CREEK	08/31/1995	10.08	22.0	26.0	8.0	LOW	L,SL,C	1.60	7.2	CLR	530.0	4	0.00	GAGE READING BELOW THE CONVERSION POINT OF THE USGS RATING TABLE
N05	LICK CREEK	09/12/1995	9.56	19.0	22.0	7.9	LOW	L,C	1.50	6.8	OVC	570.0	7	0.00	VERY LOW FLOW, GAGE READING BELOW USGS CFS CONVERSION TABLE
N05	LICK CREEK	09/27/1995	10.20	15.0	13.0	8.3	4.8	N,M,C	1.30	9.4	OVC	471.0	103	0.02	
N06	MEADOW CREEK	01/11/1995	10.15	4.0	3.0	7.5	100.4	H,M,MI	5.80	11.7	OVC	70.0	170	0.00	SAMPLED ON OTHER SIDE OF BRIDGE
N06	MEADOW CREEK	01/26/1995	11.05	1.0	-3.0	7.1	95.6	H,M,C	4.20	-9.9	CLR	77.0	228	0.01	DO METER READING OFF SCALE.
N06	MEADOW CREEK	02/07/1995	11.00	0.1	-8.0	7.7	127	N,M,C	3.30	-9.9	SCT,-S	78.0	62	0.00	D0 METER OFF SCALE
N06	MEADOW CREEK	02/22/1995	10.05	3.0	0.0	7.2	128	H,M,MI	6.50	14.4	SCT	55.0	62	0.09	
N06	MEADOW CREEK	03/06/1995	10.10	6.0	9.0	7.5	110	H,M,MI	6.90	12.8	-R,OVC	78.0	148	0.07	
N06	MEADOW CREEK	03/21/1995	10.25	9.0	9.0	6.7	110	H,M,MR	18.00	12.0	OVC	89.0	300	0.44	
N06	MEADOW CREEK	04/04/1995	9.55	8.0	11.0	7.9	68	N,M,MI	2.00	11.6	-R,OVC	106.0	52	0.01	BROWN SLIME ON STREAM BED
N06	MEADOW CREEK	04/17/1995	9.20	12.0	14.0	7.8	58	N,M,MI	2.00	10.4	BKN	122.0	10	0.00	
N06	MEADOW CREEK	05/01/1995	938	11.0	12.0	7.8	76	N,M,C	2.90	11.0	SCT	89.0	25	0.03	
N06	MEADOW CREEK	05/16/1995	9.50	13.0	18.0	7.4	255	H,SW,TR	18.00	10.6	SCT	54.0	960	1.04	
N06	MEADOW CREEK	05/31/1995	10.14	15.0	18.0	7.8	66.0	N,M,MI	4.70	10.0	OVC	121.0	42	0.01	
N06	MEADOW CREEK	06/13/1995	10.20	14.0	16.0	6.9	125	H,SW,MR	22.00	10.0	SCT	66.0	520	1.02	
N06	MEADOW CREEK	06/27/1995	10.00	19.0	21.0	7.8	86	L,M,MI	7.10	8.9	BKN,+H	139.0	-999999999	0.18	FECALS KILLED DUE TO HIGH INCUBATOR TEMPERATURE @ 48.2 C
N06	MEADOW CREEK	07/11/1995	10.30	18.5	22.0	8.0	48	L,M,MI	8.50	9.0	CLR	143.0	30	0.00	
N06	MEADOW CREEK	07/25/1995	10.05	18.5	23.0	7.8	49.6	L,M,MI	8.20	-9.9	SCT	219.0	2320	0.50	CORNING DO METER LOST CALIBRATION
N06	MEADOW CREEK	08/31/1995	9.40	21.0	23.0	8.0	19.6	L,M,C	3.60	7.4	CLR	267.0	30	0.00	
N06	MEADOW CREEK	09/12/1995	9.30	18.0	21.0	8.1	17.96	L,SL,C	3.00	8.2	OVC	283.0	9	0.00	
N06	MEADOW CREEK	09/27/1995	9.55	12.7	12.0	8.1	48	N,M,C	2.10	10.0	OVC,-F	205.0	39	0.02	
N07	LAUREL CREEK @ QUINNIMONT	01/10/1995	10.40	4.0	0.0	7.6	147.2	H,M,C	3.30	10.1	OVC	58.0	13	0.00	SAMPLED BELOW BRIDGE
N07	LAUREL CREEK @ QUINNIMONT	01/27/1995	12.30	1.0	-1.0	7.7	90	N,M,C	2.60	14.5	OVC	88.0	9	0.00	
N07	LAUREL CREEK @ QUINNIMONT	02/09/1995	14.10	0.0	0.0	7.7	176.4	N,M,C	1.40	-9.9	CLR	91.0	14	0.12	DO METER READING OFF SCALE
N07	LAUREL CREEK @ QUINNIMONT	02/23/1995	13.48	7.0	19.0	7.5	190.2	H,M,MI	4.00	12.0	OVC	64.0	17	0.05	
N07	LAUREL CREEK @ QUINNIMONT	03/08/1995	11.05	8.0	4.0	-9.9	190.2	H,M,MI	2.80	12.0	ZR,SW	70.0	63	0.06	pH METER SATURATED AND NOT WORKING
N07	LAUREL CREEK @ QUINNIMONT	03/20/1995	11.05	8.0	18.0	8.1	98	N,M,C	1.60	11.8	SCT	89.0	6	0.00	
N07	LAUREL CREEK @ QUINNIMONT	04/05/1995	10.30	5.0	1.0	7.8	43.73	N,M,C	0.60	13.8	CLR	97.0	0	0.10	
N07	LAUREL CREEK @ QUINNIMONT	04/19/1995	11.17	15.0	26.0	8.0	33.22	N,M,C	0.50	9.8	SCT	105.0	0	0.15	
N07	LAUREL CREEK @ QUINNIMONT	05/02/1995	1230	10.5	10.0	7.6	176	H,SW,MI	6.30	11.2	OVC, L	62.0	74	0.89	
N07	LAUREL CREEK @ QUINNIMONT	05/17/1995	10.45	13.0	17.0	7.4	HIGH	H,SW,MI	5.70	10.4	OVC,-R	67.0	25	0.03	CFS OFF SCALE ON USGS DATA SHEET, > 200
N07	LAUREL CREEK @ QUINNIMONT	06/01/1995	10.20	15.0	17.0	7.9	33.22	N,M,C	2.10	10.2	OVC, R	123.0	32	0.03	
N07	LAUREL CREEK @ QUINNIMONT	06/14/1995	11.38	14.0	21.0	7.0	181	H,M,M	7.00	10.6	H, OVC	61.0	37	0.23	
N07	LAUREL CREEK @ QUINNIMONT	06/28/1995	15.15	19.5	-999.9	7.5	68.7	N,M,MR	14.00	8.2	OVC, T	109.0	470	2.14	
N07	LAUREL CREEK @ QUINNIMONT	07/12/1995	15.10	22.5	28.0	8.2	11.6	L,M,C	1.50	8.2	SCT	139.0	4	0.00	
N07	LAUREL CREEK @ QUINNIMONT	07/26/1995	15.17	25.0	29.0	8.3	14.82	L,M,C	2.20	7.3	SCT	145.0	20	0.57	
N07	LAUREL CREEK @ QUINNIMONT	08/30/1995	10.55	20.5	26.0	8.3	4.7	L,SL,C	1.30	8.4	CLR,-H	199.0	4	0.00	LOTS OF ALGAE IN THE POOL AT THE GAGE SITE
N07	LAUREL CREEK @ QUINNIMONT	09/13/1995	11.25	18.0	21.0	8.4	3.9	L,M,C	0.90	8.1	OVC	210.0	4	0.00	VERY LOW, SMELLS BAD, LOTS OF ALGAE AT GAGE POOL
N07	LAUREL CREEK @ QUINNIMONT	09/26/1995	12.20	15.0	17.0	7.9	9.8	L,M,C	1.10	9.7	OVC	173.0	21	0.58	
N08	NEW RIVER @ PRINCE	01/10/1995	10.20	3.0	4.0	7.5	13410	H,M,MR	10.40	9.9	OVC	134.0	60	0.00	
N08	NEW RIVER @ PRINCE	01/27/1995	12.10	3.0	-3.0	7.5	8475	N,M,TR	29.00	13.6	OVC	103.0	70	0.00	
N08	NEW RIVER @ PRINCE	02/09/1995	13.45	0.1	0.0	7.5	7749	H,M,MR	13.00	14.8	CLR	148.0	24	0.12	
N08	NEW RIVER @ PRINCE	02/23/1995	13.33	6.0	22.0	7.5	16661	H,M,MR	8.60	13.0	BKN	113.0	40	0.05	MOLD ON THE 100ML FILTER

Appendix 5.
1995-NERI

SITE_NO	SITE_NAME	DATE	TIME	H2O_T	AIR_T	PH	H2O_LVL	H2O_CND	NTU	DO	WETHR	CNDUC	FC_100ML	PCP_48H	COMMENTS
N08	NEW RIVER @ PRINCE	03/08/1995	10.40	8.0	4.0	7.4	12428	H,SL,MI	5.30	11.4	ZR,SW	133.0	25	0.06	
N08	NEW RIVER @ PRINCE	03/20/1995	10.45	11.0	17.0	8.0	6829	H,M,MI	8.10	10.8	BKN	129.0	18	0.00	
N08	NEW RIVER @ PRINCE	04/05/1995	10.05	10.0	1.0	8.0	6237	N,M,C	2.60	11.0	CLR	133.0	11	0.10	
N08	NEW RIVER @ PRINCE	04/19/1995	11.00	17.5	26.0	8.2	4933	N,M,MI	3.10	9.1	SCT	142.0	8	0.15	
N08	NEW RIVER @ PRINCE	05/02/1995	1210	14.5	11.0	7.9	4432	N,M,MI	3.50	9.6	OVC,L	125.0	21	0.89	
N08	NEW RIVER @ PRINCE	05/17/1995	10.28	17.0	19.0	7.7	20490	H,M,TR	25.00	9.4	OVC	108.0	480	0.03	
N08	NEW RIVER @ PRINCE	06/01/1995	10.00	20.0	18.0	7.8	5177	N,M,C	3.90	9.5	OVC, R	155.0	20	0.03	
N08	NEW RIVER @ PRINCE	06/14/1995	11.12	21.0	23.0	6.8	20722	H,M,MR	26.00	8.9	SCT	135.0	217	0.23	
N08	NEW RIVER @ PRINCE	06/28/1995	14.35	24.0	25.0	7.7	15060	H,M,TR	19.00	8.2	OVC,+H	122.0	165	2.14	
N08	NEW RIVER @ PRINCE	07/12/1995	14.50	27.0	32.0	8.2	3903	L,M,MI	3.30	7.8	SCT	149.0	5	0.00	
N08	NEW RIVER @ PRINCE	07/26/1995	15.00	28.5	30.0	8.5	2383	L,M,C	2.90	7.3	SCT	162.0	36	0.57	
N08	NEW RIVER @ PRINCE	08/30/1995	10.30	26.0	27.0	8.0	2615	L,M,C	5.00	7.2	CLR,+H	177.0	84	0.00	
N08	NEW RIVER @ PRINCE	09/13/1995	11.05	21.5	22.0	8.3	1511	L,M,C	2.60	8.2	OVC	181.0	11	0.00	VERY LOW, HARD TO FILL BUCKET
N08	NEW RIVER @ PRINCE	09/26/1995	12.02	19.5	20.0	7.9	2335	N,M,MI	2.80	8.5	SCT	173.0	13	0.58	
N09	PINEY CREEK @ McCREERY	01/10/1995	9.50	3.0	2.0	7.7	178	H,SW,MI	9.20	11.9	OVC	172.0	1833	0.00	
N09	PINEY CREEK @ McCREERY	01/27/1995	11.25	1.0	-4.0	7.5	108	N,M,MI	5.30	14.2	OVC	235.0	105	0.00	SEWAGE SMELL
N09	PINEY CREEK @ McCREERY	02/09/1995	13.20	0.3	0.0	8.0	NORM	N,M,C	2.40	14.7	CLR	264.0	77	0.12	GAGE COVERED BY ICE
N09	PINEY CREEK @ McCREERY	02/23/1995	13.12	6.0	19.0	7.2	206	H,SW,MI	2.80	12.8	BKN	203.0	12	0.05	
N09	PINEY CREEK @ McCREERY	03/08/1995	10.20	8.0	4.0	7.4	218	H,M,MI	2.60	11.6	ZR,SW	239.0	39	0.06	
N09	PINEY CREEK @ McCREERY	03/20/1995	9.10	8.5	9.0	8.4	142.4	H,M,MI	1.70	11.8	OVC	221.0	100	0.00	FISHY ODOR AT CREEK, BROWN SLIME ON ROCKS
N09	PINEY CREEK @ McCREERY	04/05/1995	9.35	6.0	-3.0	8.1	96	N,M,C	1.50	11.8	CLR	274.0	35	0.10	STREAM BED HAD A DARK APPEARANCE
N09	PINEY CREEK @ McCREERY	04/19/1995	10.40	15.0	26.0	8.6	45	L,SL,C	1.60	10.5	SCT	315.0	8	0.15	
N09	PINEY CREEK @ McCREERY	05/02/1995	1150	11.0	9.0	7.8	336	H,SW,TR	62.00	10.8	OVC,-R	232.0	2800	0.89	STP SMELL, BIG AND BROWN
N09	PINEY CREEK @ McCREERY	05/17/1995	10.02	14.0	17.0	7.4	354	H,SW,MI	8.60	10.2	OVC	154.0	237	0.03	SEWAGE ODOR
N09	PINEY CREEK @ McCREERY	06/01/1995	9.30	16.5	17.0	7.7	69.0	N,M,C	2.40	9.4	0VC, R	286.0	60	0.03	SMELLED BAD, LOOKED GOOD
N09	PINEY CREEK @ McCREERY	06/14/1995	10.45	14.0	22.0	6.9	255	H,SW,MR	12.50	10.7	SCT	154.0	297	0.23	
N09	PINEY CREEK @ McCREERY	06/28/1995	14.15	22.0	25.3	8.8	73	N,M,MI	7.00	8.0	BKN, +	279.0	54	2.14	
N09	PINEY CREEK @ McCREERY	07/12/1995	13.35	22.5	27.0	8.4	30	L,M,C	2.20	8.2	CLR	333.0	14	0.00	
N09	PINEY CREEK @ McCREERY	07/26/1995	13.57	24.0	27.0	8.2	43.6	N,M,MR	13.00	6.9	SCT	352.0	1560	0.57	
N09	PINEY CREEK @ McCREERY	08/30/1995	10.05	21.0	24.0	8.1	14.1	L,M,C	2.60	8.2	CLR,-H	441.0	16	0.00	
N09	PINEY CREEK @ McCREERY	09/13/1995	10.40	18.0	20.0	8.3	12.50	L,M,C	1.50	9.0	OVC,-R	487.0	18	0.00	STREAM BED HAS DARK APPEARANCE
N09	PINEY CREEK @ McCREERY	09/26/1995	11:36	15.0	16.0	8.0	108	H,SW,MR	24.00	9.6	OVC,-L	407.0	120	0.58	
N11	DUNLOUP CREEK	01/04/1995	13.25	2.0	-6.0	8.5	23.2	N,M,C	1.70	13.4	CLR	595.0	76	0.10	
N11	DUNLOUP CREEK	01/17/1995	13.13	7.0	10.0	8.0	68.8	H,SW,MI	6.90	13.4	CLR	231.0	680	0.97	
N11	DUNLOUP CREEK	01/31/1995	13.13	3.0	1.0	8.2	66	H,SW,C	2.40	14.5	SCT	369.0	367	0.67	
N11	DUNLOUP CREEK	02/15/1995	13.10	4.0	1.0	7.9	60.4	H,SW,MI	5.80	13.8	R	436.0	1160	0.38	
N11	DUNLOUP CREEK	02/28/1995	15.00	9.0	11.0	8.0	NORM	N,M,MR	14.00	11.6	OVC	389.0	470	0.62	
N11	DUNLOUP CREEK	03/15/1995	10.30	8.0	12.0	7.8	109.2	H,SW,MI	3.30	12.0	CLR	307.0	70	0.00	
N11	DUNLOUP CREEK	03/27/1995	8.55	10.0	12.0	8.2	65.3	N,M,MI	1.90	11.2	OVC	433.0	156	0.00	LOTS OF BROWN SEWAGE FUNGUS ON THE ROCKS
N11	DUNLOUP CREEK	04/10/1995	9.32	13.0	13.0	8.4	42.4	N,M,MI	2.30	10.6	-R,OVC	528.0	633	0.02	
N11	DUNLOUP CREEK	04/26/1995	9.52	8.0	7.0	8.2	64.6	N,SW,C	2.20	12.6	CLR	382.0	95	0.06	
N11	DUNLOUP CREEK	05/09/1995	9.45	13.0	17.0	8.1	93.6	N,SW,MI	5.70	10.6	BKN	338.0	350	0.06	
N11	DUNLOUP CREEK	05/24/1995	14.50	19.0	23.0	8.2	100.5	H,SW,MI	6.60	9.8	SCT	372.0	86	0.00	
N11	DUNLOUP CREEK	06/07/1995	9.07	16.5	20.0	8.3	56.20	N,M,C	3.60	8.8	OVC	537.0	315	0.00	
N11	DUNLOUP CREEK	06/21/1995	13.50	20.3	24.0	8.5	51	N,M,MI	5.00	7.4	CLR	522.0	60	0.03	USED CORNING DO METER
N11	DUNLOUP CREEK	07/19/1995	9.50	17.5	-999.9	8.5	34	N,M,C-MI	2.60	9.3	OVC,+H	583.0	140	0.02	THERMOMETER BROKE
N11	DUNLOUP CREEK	08/23/1995	12.50	19.5	28.0	8.6	21	L,M,MI	1.80	5.8	SCT	659.0	120	0.00	
N11	DUNLOUP CREEK	09/07/1995	8.38	15.5	15.0	8.6	15.9	L,M,C	1.20	9.1	C,-H	671.0	44	0.00	
N11	DUNLOUP CREEK	09/18/1995	13.10	16.0	18.0	8.7	21.60	N,M,C	1.50	9.2	OVC,L	600.0	28	0.86	BROWN COLONIES ON THE 60 ML FILTER
N12	NEW RIVER @ THURMOND	01/04/1995	14.30	2.5	-5.0	-9.9	2429	N,SL	2.40	14.0	CLR	141.0	5	0.10	pH METER NOT WORKING
N12	NEW RIVER @ THURMOND	01/17/1995	14.23	7.5	10.0	7.8	74800	H,SW,TR	60.00	12.6	CLR	82.0	844	0.97	
N12	NEW RIVER @ THURMOND	01/31/1995	14.30	5.3	4.0	7.4	4842	H,SL,TR	19.00	13.6	SCT	131.0	36	0.67	
N12	NEW RIVER @ THURMOND	02/15/1995	14.30	2.5	4.0	7.3	6355	H,SL,MR	11.00	14.4	OVC	143.0	24	0.38	
N12	NEW RIVER @ THURMOND	02/28/1995	14.35	7.0	10.0	8.1	7602	H,SL,MI	6.00	12.3	OVC,-R	120.0	60	0.62	
N12	NEW RIVER @ THURMOND	03/15/1995	11.50	10.0	21.0	7.6	18179	H,M,MR	7.50	11.6	CLR	115.0	40	0.00	
N12	NEW RIVER @ THURMOND	03/27/1995	10.05	12.0	12.0	7.5	7168	N SL,MI	4.10	11.3	OVC	122.0	8	0.00	

Raw Data for 1995 Fecal Coliform Bacteria
New River Gorge National River

Appendix 5.
1995-NERI

SITE_NO	SITE_NAME	DATE	TIME	H2O_T	AIR_T	PH	H2O_LVL	H2O_CND	NTU	DO	WETHR	CNDUC	FC_100ML	PCP_48H	COMMENTS
N12	NEW RIVER @ THURMOND	04/10/1995	10.00	15.0	13.0	7.8	3026	L,SL,C	2.00	9.2	-R,OVC	151.0	7	0.02	
N12	NEW RIVER @ THURMOND	04/26/1995	11.24	13.8	15.0	8.1	8875	N,M,MR	6.80	10.2	CLR	131.0	22	0.06	
N12	NEW RIVER @ THURMOND	05/09/1995	10.15	15.5	19.0	7.9	9300	H,M,MI	6.00	9.7	OVC	116.0	16	0.06	
N12	NEW RIVER @ THURMOND	05/24/1995	13.22	20.0	27.0	7.4	7425	H,SL,MR	10.00	8.6	SCT	122.0	49	0.00	
N12	NEW RIVER @ THURMOND	06/07/1995	9.45	20.5	20.0	7.7	9321	H,M,MR	11.00	8.5	OVC	128.0	60	0.00	
N12	NEW RIVER @ THURMOND	06/21/1995	14.27	25.5	28.0	8.4	5003	N,M,MI	3.60	7.8	CLR	152.0	6	0.03	USED CORNING DO METER
N12	NEW RIVER @ THURMOND	07/19/1995	11.30	27.0	-999.9	8.4	3133	L,M,MI	3.40	-9.9	SCT	171.0	15	0.02	DO METER AND THERMOMETER BROKEN
N12	NEW RIVER @ THURMOND	08/23/1995	11.55	27.0	29.0	8.3	1650	L,SL,C	2.30	6.6	SCT	180.0	5	0.00	
N12	NEW RIVER @ THURMOND	09/07/1995	10.10	23.5	20.0	8.4	1536	L,SL,C	2.40	7.8	C,-H	183.0	6	0.00	
N12	NEW RIVER @ THURMOND	09/18/1995	14.38	20.0	17.0	8.2	2335	N,SL,C	3.10	8.2	OVC,L	190.0	72	0.86	BROWN COLONIES ON THE FILTERS
N13	ARBUCKLE CREEK	01/04/1995	14.00	1.0	-6.0	8.1	3.0	N,M,MI	10.30	14.2	CLR	640.0	7060	0.10	
N13	ARBUCKLE CREEK	01/17/1995	13.45	7.0	7.0	8.0	HIGH	H,M,MR	6.60	12.2	CLR	276.0	4460	0.97	SAMPLE TAKEN DURING STP BYPASS. NO GAGE READING TAKEN
N13	ARBUCKLE CREEK	01/31/1995	14.50	3.4	2.0	7.9	17	N,SL,MI	7.10	14.2	CLR	432.0	600	0.67	BAD ODOR, WATER GRAY
N13	ARBUCKLE CREEK	02/15/1995	13.56	2.0	3.0	7.5	37.6	H,SW,TR	96.00	14.4	R	462.0	74200	0.38	SMELLS BAD, GRAY-BROWN COLOR, LEAVES ON GAGE
N13	ARBUCKLE CREEK	02/28/1995	14.00	9.0	11.0	8.3	32.0	N,M,MR	22.00	11.4	OVC,-R	376.0	7600	0.62	OAK HILL STP BYPASS BEGAN AT 9.30
N13	ARBUCKLE CREEK	03/15/1995	11.12	9.0	17.0	8.1	26.0	H,M,MI	2.40	12.2	CLR	273.0	340	0.00	
N13	ARBUCKLE CREEK	03/27/1995	9.30	9.0	11.0	8.5	17	N,M,MI	2.00	12.3	OVC	388.0	135	0.00	STREAM BED HAD A DARK APPEARANCE
N13	ARBUCKLE CREEK	04/10/1995	11.35	13.0	17.0	8.9	14	N,M,C	1.90	12.2	BKN	466.0	45	0.02	
N13	ARBUCKLE CREEK	04/26/1995	10.38	8.7	16.0	8.5	14	N,M,C	5.80	12.2	CLR	374.0	138	0.06	
N13	ARBUCKLE CREEK	05/09/1995	11:00	12.5	15.0	8.2	23.0	N,M,MI	6.50	10.5	BKN	308.0	165	0.06	COULD SMELL CREEK FROM BRIDGE
N13	ARBUCKLE CREEK	05/24/1995	14.10	17.0	20.0	8.2	20.0	H,SW,MI	15.00	9.5	SCT	301.0	366	0.00	
N13	ARBUCKLE CREEK	06/07/1995	10.42	16.3	22.0	8.0	9.2	N,M,MI	6.60	9.1	BKN	454.0	46	0.00	
N13	ARBUCKLE CREEK	06/21/1995	15.50	20.0	26.0	8.0	9.2	L,M,MI	14.00	7.0	CLR	406.0	38	0.03	USED CORNING DO METER
N13	ARBUCKLE CREEK	07/19/1995	10.30	19.0	-999.9	8.3	3	L,M,MI	5.50	-9.9	SCT	513.0	600	0.02	DO METER NOT WORKING & THERMOMETER BROKEN
N13	ARBUCKLE CREEK	08/23/1995	11.00	18.5	25.0	8.4	1.6	L,M,C	2.50	7.7	CLR	593.0	70	0.00	
N13	ARBUCKLE CREEK	09/07/1995	9.16	16.0	18.0	8.5	1 CFS	L,M,C	1.80	8.8	C,-H	609.0	36	0.00	
N13	ARBUCKLE CREEK	09/18/1995	13.48	16.5	18.0	8.5	2.2	N,M,MI	2.90	9.1	OVC	539.0	133	0.86	BROWN COLONIES ON THE FILTERS
N15	COAL RUN	01/03/1995	12.35	2.0	-4.0	7.8	LOW	L,M,C	2.50	14.2	OVC	408.0	2	0.30	
N15	COAL RUN	01/18/1995	10.12	5.0	4.0	7.5	NORM	N,M,C	3.70	13.8	SCT	255.0	224	0.97	
N15	COAL RUN	02/01/1995	10.55	3.0	5.0	7.7	NORM	N,M,C	1.60	14.6	SCT	261.0	93	0.21	
N15	COAL RUN	02/14/1995	12.15	0.3	1.0	6.9	-999	C*	1.60	-9.9	SCT	362.0	102	0.01	STREAM COVERED BY ICE, COULD NOT JUDGE FLOW/ DO METER OFF SCALE
N15	COAL RUN	02/27/1995	10.10	6.0	10.0	7.7	HIGH	H,M,C	1.20	13.0	OVC	316.0	264	0.02	
N15	COAL RUN	03/14/1995	10.05	7.2	12.0	7.7	HIGH	H,M,C	2.60	12.0	CLR	227.0	346	0.00	ORANGE BACTERIA ON FILTERS
N15	COAL RUN	03/27/1995	11.25	9.0	15.0	7.9	NORM	N,M,C	2.60	11.5	OVC	316.0	272	0.00	
N15	COAL RUN	04/12/1995	9.45	13.0	16.0	8.1	NORM	N,M,C	2.60	10.2	OVC	389.0	40	0.02	
N15	COAL RUN	04/27/1995	12.07	11.0	20.0	8.1	NORM	N,M,C	3.90	11.0	SCT	302.0	68	0.00	
N15	COAL RUN	05/10/1995	13.45	15.0	20.0	8.2	NORM	N,SW,MI	23.00	9.8	SCT	308.0	570	0.43	NUMEROUS BROWN COLONIES ON FILTER. 88 ON 10 ML; 124 ON 15 ML
N15	COAL RUN	05/23/1995	15.93	16.0	18.0	8.2	HIGH	H,SW,MI	9.00	10.2	SCT	290.0	265	0.01	
N15	COAL RUN	06/06/1995	11.58	16.0	18.0	7.9	NORM	N,M,MI	7.70	9.3	SCT	398.0	125	0.00	
N15	COAL RUN	06/20/1995	12.22	17.0	25.0	8.2	NORM	N,M,MR	16.00	-9.9	BKN,-H	410.0	36	0.03	NO DO READING, DO PROBE STUCK IN ROCKS AT CUNARD SITE
N15	COAL RUN	07/05/1995	12.20	18.0	22.0	6.7	LOW	L,M,MI	13.00	8.2	OVC	427.0	113	0.40	
N15	COAL RUN	07/18/1995	12.05	19.0	21.0	8.1	LOW	L,M,MI	15.00	8.8	SCT	457.0	1055	0.02	
N15	COAL RUN	08/22/1995	12.25	21.0	28.0	8.0	LOW	L,M,MI	6.70	7.7	SCT	511.0	10	0.00	
N15	COAL RUN	09/08/1995	12.25	17.0	22.0	8.1	LOW	L,M,MI	4.30	8.5	BKN	542.0	17	0.00	
N15	COAL RUN	09/21/1995	13.05	16.5	19.0	8.1	LOW	L,M,MI	4.20	8.0	OVC,+R	522.0	20	0.00	
N16	KEENEY CREEK	01/03/1995	10.12	1.0	-7.0	7.6	LOW	L,M,C	3.00	14.5	OVC	178.0	1467	0.30	
N16	KEENEY CREEK	01/18/1995	11.05	7.0	11.0	7.6	HIGH	H,M,C	3.20	12.6	SCT	79.0	1920	0.97	
N16	KEENEY CREEK	02/01/1995	11:55	4.0	7.0	7.4	NORM	N,M,C	1.10	13.4	OVC	146.0	4500	0.21	
N16	KEENEY CREEK	02/14/1995	13.40	1.9	3.0	7.1	NORM	N,M,C	4.80	14.8	BKN	146.0	3000	0.01	
N16	KEENEY CREEK	02/27/1995	11:02	6.5	14.0	7.2	NORM	N,M,C	1.60	12.5	OVC	123.0	4650	0.02	
N16	KEENEY CREEK	03/14/1995	11.45	8.0	21.0	7.5	HIGH	H,SW,C	2.70	11.6	CLR	96.0	1600	0.00	LOTS OF TRASH IN CREEK
N16	KEENEY CREEK	03/27/1995	12.15	9.0	13.0	7.5	NORM	N,M,C	1.50	11.2	-R,OVC	118.0	13800	0.00	
N16	KEENEY CREEK	04/12/1995	10.45	13.0	12.0	7.6	NORM	N,M,C	1.40	10.0	-R,OVC	142.0	1500	0.02	
N16	KEENEY CREEK	04/27/1995	9.02	8.5	10.0	7.5	NORM	N,M,C	2.30	11.2	CLR	116.0	250	0.00	PETROLEUM SMELL NEAR BRIDGE
N16	KEENEY CREEK	05/10/1995	1017	12.0	21.0	7.2	NORM	N,M,C	3.00	10.2	CLR	109.0	1400	0.43	
N16	KEENEY CREEK	05/23/1995	14.06	16.5	24.0	7.4	HIGH	H,M,C	3.80	9.6	BKN	107.0	645	0.01	

Raw Data for 1995 Fecal Coliform Bacteria
New River Gorge National River

Appendix 5.
1995-NERI

SITE_NO	SITE_NAME	DATE	TIME	H2O_T	AIR_T	PH	H2O_LVL	H2O_CND	NTU	DO	WETHR	CNDUC	FC_100ML	PCP_48H	COMMENTS
N16	KEENEY CREEK	06/06/1995	9:12	15.0	17.0	7.2	LOW	L,M,C	2.00	9.2	SCT	148.0	420	0.00	LOTS OF TRASH IN CREEK
N16	KEENEY CREEK	06/20/1995	9:30	16.0	19.0	7.3	NORM	N,M,C	3.70	9.2	OVC,+H	140.0	960	0.03	LOTS OF TRASH IN CREEK
N16	KEENEY CREEK	07/05/1995	9:45	18.0	20.0	6.7	NORM	N,M,C	4.00	7.5	BKN	255.0	6480	0.40	
N16	KEENEY CREEK	07/18/1995	9:00	19.0	20.0	7.3	LOW	L,M,C	2.70	8.4	OVC,+F	169.0	1600	0.02	
N16	KEENEY CREEK	08/22/1995	9:40	20.0	23.0	7.2	LOW	L,SL,C	1.20	4.8	BKN	243.0	2050	0.00	VERY LOW FLOW, HARD TO FILL BOTTLE
N16	KEENEY CREEK	09/08/1995	9:40	17.0	19.0	7.3	LOW	L,SL,C	0.60	2.8	SCT	285.0	500	0.00	NOT ENOUGH FLOW TO IMMERSE THE DO PROBE AND STIR.
N16	KEENEY CREEK	09/21/1995	9:36	16.0	20.0	7.5	LOW	L,SL,C	0.70	6.1	BKN	268.0	2900	0.00	
N17	NEW RIVER @ FAYETTE STATION	01/03/1995	11:25	3.6	-5.0	8.0	2185	N,SL,C	2.00	13.9	OVC	162.0	8	0.30	
N17	NEW RIVER @ FAYETTE STATION	01/18/1995	12:17	7.7	9.0	7.3	66700	H,SW,TR	46.00	13.2	SCT	89.0	944	0.97	50 ML SAMPLE TOO TURBID FOR FECAL DEVELOPMENT
N17	NEW RIVER @ FAYETTE STATION	02/01/1995	13:10	4.0	6.0	7.6	9689	H,SL,TR	17.00	14.4	OVC	120.0	27	0.21	
N17	NEW RIVER @ FAYETTE STATION	02/14/1995	14:48	0.8	1.0	7.6	6141	N,M,MR	7.00	-9.9	SCT	148.0	6	0.01	DO METER OFF SCALE
N17	NEW RIVER @ FAYETTE STATION	02/27/1995	12:18	6.5	11.0	7.7	11317	H,SW,MI	5.20	13.2	OVC	111.0	2	0.02	
N17	NEW RIVER @ FAYETTE STATION	03/14/1995	13:00	8.5	21.0	7.8	20541	H,SW,MR	9.20	12.0	CLR	119.0	83	0.00	
N17	NEW RIVER @ FAYETTE STATION	03/27/1995	13:20	10.0	13.0	7.7	7168	N,M,MI	4.10	11.6	-R,OVC	129.0	5	0.00	
N17	NEW RIVER @ FAYETTE STATION	04/12/1995	12:20	15.0	13.0	7.7	4380	N,M,C	2.40	9.6	RW	154.0	10	0.02	
N17	NEW RIVER @ FAYETTE STATION	04/27/1995	10:27	14.0	19.0	7.9	7519	H,MR	4.90	10.6	CLR	130.0	31	0.00	
N17	NEW RIVER @ FAYETTE STATION	05/10/1995	12:23	16.5	23.0	7.9	7900	H,M,MI	6.70	10.2	SCT	119.0	56	0.43	
N17	NEW RIVER @ FAYETTE STATION	05/23/1995	12:16	18.0	25.0	7.9	10200	H,M,MR	8.90	8.8	OVC	118.0	31	0.01	
N17	NEW RIVER @ FAYETTE STATION	06/06/1995	10:38	20.0	21.0	7.8	12420	H,SW,TR	18.00	8.9	SCT	124.0	130	0.00	RIVER HIGH & BROWN
N17	NEW RIVER @ FAYETTE STATION	06/20/1995	10:47	24.0	22.0	8.0	4776	L,M,C	3.20	7.9	OVC,+H	146.0	4	0.03	
N17	NEW RIVER @ FAYETTE STATION	07/05/1995	-9999	24.0	24.0	6.9	5785	N,M,TR	14.00	7.4	OVC	-999.9	66	0.40	
N17	NEW RIVER @ FAYETTE STATION	07/18/1995	10:40	28.0	25.0	8.2	3400	L,M,MI	4.00	7.6	SCT	166.0	30	0.02	
N17	NEW RIVER @ FAYETTE STATION	08/22/1995	11:05	28.0	27.0	8.1	1793	L,M,C	2.90	7.4	SCT	187.0	17	0.00	
N17	NEW RIVER @ FAYETTE STATION	09/08/1995	11:08	24.0	24.0	8.5	1536	L,M,C	2.20	8.1	BKN	193.0	1	0.00	
N17	NEW RIVER @ FAYETTE STATION	09/21/1995	12:00	21.5	20.0	8.2	3366	L,SL,MR	5.30	7.5	OVC,L	201.0	21	0.00	
N18	WOLF CREEK	01/03/1995	11:10	3.5	-5.0	8.3	1.97	L,M,C	3.60	14.3	OVC	625.0	2	0.30	
N18	WOLF CREEK	01/18/1995	12:08	6.8	9.0	7.5	31.0	H,M,MI	5.80	13.0	CLR	150.0	384	0.97	SAMPLED UPSTREAM DUE TO RIVER LEVEL/BACKWASH IN STREAM
N18	WOLF CREEK	02/01/1995	12:56	3.0	5.0	7.7	24.64	N,M,C	3.40	14.6	OVC	197.0	487	0.21	
N18	WOLF CREEK	02/14/1995	14:35	1.3	4.0	7.5	NORM	N,M,C	1.80	-9.9	SCT	255.0	60	0.01	GAGE COVERED BY ICE AND SNOW, DO METER OFF SCALE
N18	WOLF CREEK	02/27/1995	12:00	6.0	11.0	8.0	11.75	N,M,C	1.40	13.2	OVC	219.0	50	0.02	
N18	WOLF CREEK	03/14/1995	12:45	8.0	21.0	7.8	84.85	H,SW,MI	3.40	12.1	CLR	118.0	56	0.00	
N18	WOLF CREEK	03/27/1995	13:10	9.0	13.0	8.0	10.53	N,M,C	1.50	12.4	-R,OVC	251.0	2	0.00	BROWN SLIME ON ROCKS
N18	WOLF CREEK	04/12/1995	12:00	12.0	11.0	8.3	4.73	N,M,C	1.70	10.6	RW	428.0	6	0.02	
N18	WOLF CREEK	04/27/1995	10:11	10.0	15.0	8.1	19.12	C	2.20	11.2	CLR	208.0	32	0.00	
N18	WOLF CREEK	05/10/1995	12:12	14.5	23.0	7.9	43.8	H,M,MI	5.10	10.4	SCT	152.0	352	0.43	
N18	WOLF CREEK	05/23/1995	12:34	14.5	21.0	8.0	26.4	N,SW,C	4.80	10.1	OVC	165.0	105	0.01	
N18	WOLF CREEK	06/06/1995	10:20	16.0	20.0	7.7	4.45	N,M,MI	4.20	9.4	SCT	449.0	30	0.00	
N18	WOLF CREEK	06/20/1995	10:35	16.8	21.0	8.1	5.6	N,M,MI	6.40	9.5	OVC,+H	381.0	6	0.03	
N18	WOLF CREEK	07/05/1995	-9999	19.0	22.0	6.6	NORM	N,SW,MI	8.50	7.6	BKN	-999.9	233	0.40	NO GAGE READING RECORDED
N18	WOLF CREEK	07/18/1995	10:20	18.5	24.0	8.3	4.45	N,M,MI	11.00	8.8	SCT	390.0	764	0.02	
N18	WOLF CREEK	08/22/1995	10:50	20.0	26.0	8.4	1.8	L,M,C-MI	2.30	8.2	SCT	564.0	38	0.00	
N18	WOLF CREEK	09/08/1995	10:50	17.0	21.0	8.7	1.49	L,M,C	1.50	9.4	SCT	592.0	3	0.00	
N18	WOLF CREEK	09/21/1995	11:20	16.5	21.0	8.5	1.37	L,M,C	1.40	7.6	OVC	632.0	12	0.00	
N19	MARR BRANCH	01/03/1995	11:50	1.0	-4.0	7.7	1.1	L,SL,C	3.40	12.8	OVC	219.0	220	0.30	
N19	MARR BRANCH	01/18/1995	11:35	6.0	10.0	7.4	5.8	H,SL,MI	5.50	12.6	SCT	109.0	880	0.97	
N19	MARR BRANCH	02/01/1995	12:30	4.0	1.0	7.5	5.5	N,M,MI	3.30	12.8	OVC	141.0	250	0.21	
N19	MARR BRANCH	02/14/1995	14:00	2.5	2.0	7.1	2.3	N,SL,MI	2.00	14.9	SCT	192.0	180	0.01	GAGE READING APPROXIMATE, ICE ON GAGE
N19	MARR BRANCH	02/27/1995	11:40	6.5	14.0	7.4	4.6	N,SL,MI	3.00	13.2	OVC	154.0	85	0.02	
N19	MARR BRANCH	03/14/1995	12:20	8.0	20.0	7.7	10.02	H,M,MI	5.40	11.7	CLR	100.0	156	0.00	
N19	MARR BRANCH	03/27/1995	12:45	9.0	15.0	7.6	3.4	N,SL,MI	2.90	11.6	OVC	179.0	93	0.00	BROWN SLIME ON ROCKS
N19	MARR BRANCH	04/12/1995	11:25	13.0	10.0	7.3	1.6	L,SL,MI	3.50	9.0	-R,OVC	223.0	250	0.02	
N19	MARR BRANCH	04/27/1995	9:37	16.0	9.0	7.3	4.4	N,M,MR	5.10	11.2	CLR	106.0	1800	0.00	
N19	MARR BRANCH	05/10/1995	1142	14.0	24.0	7.3	5	N,M,MI	6.40	10.0	CLR	124.0	380	0.43	
N19	MARR BRANCH	05/23/1995	13:24	14.5	25.0	7.4	NORM	N,M,MI	5.00	9.6	BKN	159.0	210	0.01	
N19	MARR BRANCH	06/06/1995	9:48	16.0	17.0	7.3	.80	L,SL,MI	3.30	8.2	SCT	259.0	3890	0.00	
N19	MARR BRANCH	06/20/1995	10:07	17.8	20.0	7.2	.80	L,M,C	4.30	7.2	OVC,+H	258.0	440	0.03	

Raw Data for 1995 Fecal Coliform Bacteria
New River Gorge National River

Appendix 5.
1995-NERI

SITE_NO	SITE_NAME	DATE	TIME	H2O_T	AIR_T	PH	H2O_LVL	H2O_CND	NTU	DO	WETHR	CNDUC	FC_100ML	PCP_48H	COMMENTS
N19	MARR BRANCH	07/05/1995	-9999	18.0	22.0	6.5	NORM	N,M,MI	6.00	6.4	BKN	255.0	5700	0.40	GAGE IS GONE
N19	MARR BRANCH	07/18/1995	9.40	20.0	20.0	7.4	LOW	L,M,MI	4.70	7.1	OVC	287.0	1500	0.02	GAGE IS MISSING
N19	MARR BRANCH	08/22/1995	10.20	21.0	22.0	7.8	.36	L,SL,MI	3.70	6.2	SCT	595.0	800	0.00	VERY LOW FLOW, FLAKY SUBSTANCE ON WATER SURFACE
N19	MARR BRANCH	09/08/1995	10.20	18.0	21.0	8.1	.34	L,SL,C	2.50	6.8	SCT	638.0	300	0.00	
N19	MARR BRANCH	09/21/1995	10.50	18.0	20.0	8.0	0.36	L,SL,C	1.70	7.2	OVC	634.0	200	0.00	
N20	NEW RIVER @ CUNARD	01/03/1995	13.00	4.0	-4.0	7.9	2185	N,SL,C	2.30	13.8	OVC	158.0	4	0.30	
N20	NEW RIVER @ CUNARD	01/18/1995	9.55	7.0	7.0	7.7	66700	H,M,TR	47.00	13.2	OVC,-F	94.0	802	0.97	
N20	NEW RIVER @ CUNARD	02/01/1995	10.35	5.0	6.0	7.7	9689	N,SL,TR	17.00	13.2	SCT	116.0	43	0.21	
N20	NEW RIVER @ CUNARD	02/14/1995	11.55	0.4	1.0	7.1	6141	H,SL,MR	11.00	-9.9	SCT	141.0	18	0.01	DO METER OFF SCALE
N20	NEW RIVER @ CUNARD	02/27/1995	9.48	6.5	7.0	7.3	11317	H,M,MI	5.50	12.4	OVC	116.0	12	0.02	
N20	NEW RIVER @ CUNARD	03/14/1995	10.30	8.0	15.0	7.7	20541	H,M,MR	8.40	11.6	CLR	121.0	126	0.00	
N20	NEW RIVER @ CUNARD	03/27/1995	11.07	10.0	14.0	7.7	7168	N,M,MI	4.20	11.8	OVC	129.0	8	0.00	
N20	NEW RIVER @ CUNARD	04/12/1995	9.25	16.0	18.0	8.1	4380	N,SL,C	2.40	9.3	BKN	145.0	16	0.02	
N20	NEW RIVER @ CUNARD	04/27/1995	11.45	14.2	21.0	7.9	7519	H,MI	7.10	10.0	SCT	132.0	12	0.00	
N20	NEW RIVER @ CUNARD	05/10/1995	13.20	17.0	29.0	8.0	7900	H,M,MI	4.90	9.6	SCT	120.0	87	0.43	
N20	NEW RIVER @ CUNARD	05/23/1995	15.00	20.0	25.0	7.9	10200	H,M,MI	8.00	8.8	SCT	122.0	23	0.01	
N20	NEW RIVER @ CUNARD	06/06/1995	11.38	20.5	23.0	7.8	12420	H,M,TR	16.00	8.7	SCT	126.0	118	0.00	
N20	NEW RIVER @ CUNARD	06/20/1995	11.50	25.0	36.0	7.9	4776	L,SL,MI	3.60	7.3	BKN, H	195.0	5	0.03	DO PROBE STUCK IN ROCKS UNDER WATER, LEFT TIED TO GAGE STAFF
N20	NEW RIVER @ CUNARD	07/05/1995	12.45	24.0	24.0	7.1	5785	N,M,TR	13.00	7.4	OVC	146.0	96	0.40	
N20	NEW RIVER @ CUNARD	07/18/1995	11.45	28.0	31.0	8.3	3400	L,SL,MI	4.00	7.3	SCT	166.0	41	0.02	
N20	NEW RIVER @ CUNARD	08/22/1995	12:05	28.5	35.0	8.2	1739	L,SL,C	3.20	7.2	SCT	188.0	79	0.00	
N20	NEW RIVER @ CUNARD	09/08/1995	12.05	25.0	28.0	8.5	1536	L,M,C	2.20	7.8	BKN	185.0	2	0.00	
N20	NEW RIVER @ CUNARD	09/21/1995	12.45	21.5	20.0	8.2	3366	L,SL,MI	4.40	7.2	OVC,+L	199.0	15	0.00	
N21	NEW R @ SNDSTN FALLS BDWLK	01/11/1995	12.45	4.5	6.0	8.1	8606	H,SW,MR	7.50	12.2	SCT	134.0	216	0.00	
N21	NEW R @ SNDSTN FALLS BDWLK	01/26/1995	13.30	5.5	8.0	7.7	7425	H,SW,TR	38.00	14.4	CLR	98.0	57	0.01	
N21	NEW R @ SNDSTN FALLS BDWLK	02/07/1995	12.25	1.4	-7.0	7.6	6944	H,M,MR	18.00	14.9	SCT	141.0	102	0.00	
N21	NEW R @ SNDSTN FALLS BDWLK	02/22/1995	12.10	6.0	7.0	7.7	19333	H,SW,MR	9.80	12.6	CLR	122.0	34	0.09	MOLD OM THE 100 ML FILTER
N21	NEW R @ SNDSTN FALLS BDWLK	03/06/1995	12.10	8.0	12.0	8.3	7425	H,SW,MI	5.50	12.8	SCT	126.0	15	0.07	
N21	NEW R @ SNDSTN FALLS BDWLK	03/21/1995	12.25	12.0	12.0	7.0	6446	H,SW,MI	7.00	11.8	SCT	126.0	8	0.44	
N21	NEW R @ SNDSTN FALLS BDWLK	04/04/1995	11:58	13.0	14.0	8.3	4516	N,M,C	2.70	11.0	SCT	136.0	18	0.01	
N21	NEW R @ SNDSTN FALLS BDWLK	04/17/1995	11:35	15.0	18.0	8.2	3700	N,SW,C	2.50	10.0	OVC	148.0	12	0.00	
N21	NEW R @ SNDSTN FALLS BDWLK	05/01/1995	1148	16.0	17.0	8.5	3900	N,SW,C	3.40	10.6	BKN, -H	139.0	11	0.03	
N21	NEW R @ SNDSTN FALLS BDWLK	05/16/1995	11:45	18.0	23.0	7.8	26900	H,SW,TR	19.00	9.4	- H,OVC	129.0	245	1.04	FILTER HAD BROWN COLONIES PRESENT
N21	NEW R. @ SNDSTN FALLS BDWLK	05/31/1995	12.20	22.0	22.0	8.4	4100	N,M,C	2.90	8.8	SCT	148.0	45	0.01	
N21	NEW R @ SNDSTN FALLS BDWLK	06/13/1995	12.30	22.0	17.0	7.9	19500	H,SW,MR	13.00	8.4	SCT	138.0	184	1.02	
N21	NEW R @ SNDSTN FALLS BDWLK	06/27/1995	12.30	23.8	26.5	8.2	8475	H,SW,MR	13.00	8.3	SCT	143.0	-999999999	0.18	FECALS KILLED DUE TO HIGH INCUBATOR TEMPERATURE @ 48.2 C
N21	NEW R @ SNDSTN FALLS BDWLK	07/11/1995	12:25	25.5	27.0	8.5	3400	L,M,C	4.30	8.2	SCT	141.0	4	0.00	
N21	NEW R @ SNDSTN FALLS BDWLK	07/25/1995	12:20	29.0	30.0	9.2	2360	L,M,C-MI	3.20	-9.9	SCT	160.0	14	0.50	CORNING DO METER LOST CALIBRATION
N21	NEW R @ SNDSTN FALLS BDWLK	08/31/1995	11.50	27.0	31.0	8.2	3600	L,M,MI	4.40	-9.9	SCT,+H	204.0	118	0.00	NO DO READING RECORDED
N21	NEW R @ SNDSTN FALLS BDWLK	09/12/1995	11:40	23.0	24.0	8.4	1640	L,SW,MI	2.35	8.4	OVC	175.0	14	0.00	
N21	NEW R @ SNDSTN FALLS BDWLK	09/27/1995	13.45	21.5	23.0	8.5	2530	N,SW,MI	3.30	8.2	SCT	161.0	5	0.02	

Appendix 5.
1995-BLUE

E_NO	SITE_NAME	DATE	TIME	H2O_T	AIR_T	PH	H2O_LVL	H2O_CND	NTU	DO	WETHR	CNDUC	FC_100ML	PCP_48H	COMMENTS
	BLUESTONE RIVER @ ST. PARK	05/03/1995	10.14	10.5	11.0	7.7	HIGH	H,SW,MR	26.00	10.6	BKN	127.0	960	1.09	
	BLUESTONE RIVER @ ST. PARK	05/15/1995	9.42	15.0	21.0	7.7	HIGH	H,SW,TR	61.00	8.3	SCT	152.0	3400	1.04	
	BLUESTONE RIVER @ ST PARK	05/30/1995	10.19	18.5	18.0	8.2	NORM	N,M,C	2.90	9.2	SCT	234.0	25	0.56	
	BLUESTONE RIVER @ ST PARK	06/12/1995	10.17	20.0	16.0	7.6	HIGH	H,SW,MI	6.00	7.8	R,OVC	221.0	307	0.10	
	BLUESTONE RIVER @ ST PARK	06/26/1995	9.53	21.0	20.0	7.7	HIGH	H,SW,TR	65.00	7.8	OVC	216.0	850	0.07	
	BLUESTONE RIVER @ ST. PARK	07/10/1995	10.31	23.0	24.0	8.8	LOW	L,M,C	4.80	9.0	CLR	252.0	26	0.00	
	BLUESTONE RIVER @ ST PARK	07/24/1995	10.40	25.0	26.0	8.5	LOW	L,M,C	2.10	7.5	OVC	335.0	27	0.00	
	BLUESTONE RIVER @ ST PARK	08/28/1995	9.54	22.4	24.0	8.4	LOW	L,SL,C	1.70	5.4	SCT	347.0	53	0.06	
	BLUESTONE RIVER @ ST PARK	09/11/1995	9.44	19.5	19.0	8.2	LOW	L,SL,C	1.10	7.4	OVC	390.0	5	0.00	
	BLUESTONE RIVER @ ST PARK	09/25/1995	9.58	14.0	15.0	8.5	LOW	L,SL,C	1.10	10.2	OVC	380.0	21	0.13	
	LITTLE BLUESTONE RIVER	05/03/1995	11.11	10.0	12.5	7.5	HIGH	H,SW,MR	14.00	11.2	BKN	46.0	290	1.09	
	LITTLE BLUESTONE RIVER	05/15/1995	10.51	15.0	20.0	7.3	HIGH	H,SW,MI	15.00	9.9	SCT	49.0	410	1.04	
	LITTLE BLUESTONE RIVER	05/30/1995	11:22	16.0	18.0	7.8	LOW	L,M,C	4.50	9.4	SCT	72.0	44	0.56	
	LITTLE BLUESTONE RIVER	06/12/1995	11.25	17.0	16.0	7.4	HIGH	H,SW,MI	22.00	9.4	R,OVC	83.0	770	0.10	
	LITTLE BLUESTONE RIVER	06/26/1995	10.58	19.0	20.0	7.3	NORM	N,M,MI	5.00	9.0	OVC, R	79.0	86	0.07	
	LITTLE BLUESTONE RIVER	07/10/1995	11.36	17.0	24.0	7.8	LOW	L,M,C	3.30	9.2	CLR	92.0	112	0.00	
	LITTLE BLUESTONE RIVER	07/24/1995	11.50	22.0	24.0	7.3	LOW	L,M,C	4.10	8.4	OVC,R	154.0	248	0.00	
	LITTLE BLUESTONE RIVER	08/28/1995	10.56	21.4	22.0	7.3	LOW	L,SL,C	3.00	4.9	SCT	172.0	116	0.06	ALMOST NO FLOW
	LITTLE BLUESTONE RIVER	09/11/1995	10.45	18.0	21.0	7.3	LOW	L,SL,C	2.60	6.8	OVC	183.0	12	0.00	
	LITTLE BLUESTONE RIVER	09/25/1995	11.00	13.0	15.0	7.7	LOW	L,SL,C	1.50	11.6	OVC	131.0	26	0.13	
	BLUESTONE RIVER @ CONFLUENCE	05/03/1995	11.27	10.5	15.0	7.8	HIGH	H,M,MR	23.00	11.0	BKN	138.0	520	1.09	
	BLUESTONE RIVER @ CONFLUENCE	05/15/1995	11:11	16.0	23.0	7.8	HIGH	H,M,TR	84.00	8.4	SCT	133.0	3580	1.04	
	BLUESTONE RIVER @ CONFLUENCE	05/30/1995	11.45	20.0	26.0	8.3	LOW	L,SL,MI	4.20	9.4	SCT	243.0	26	0.56	
	BLUESTONE RIVER @ CONFLUENCE	06/12/1995	11.50	21.0	16.0	7.6	HIGH	H,SL,TR	20.00	8.0	OVC	216.0	200	0.10	
	BLUESTONE RIVER @ CONFLUENCE	06/26/1995	11.18	20.0	21.0	7.6	NORM	N,SL,TR	48.00	7.9	OVC	232.0	606	0.07	
	BLUESTONE RIVER @ CONFLUENCE	07/10/1995	11.58	22.0	30.0	8.3	LOW	L,SL,MI	6.00	9.2	CLR	274.0	26	0.00	
	BLUESTONE RIVER @ CONFLUENCE	07/24/1995	12:17	25.0	24.0	7.7	LOW	L,SL,MI	10.20	2.5	OVC,R	210.0	440	0.00	UNABLE TO SAMPLE SITES B04 &B05 DUE TO NEW LOCK ON ACCESS GATE DO IN
	BLUESTONE RIVER @ CONFLUENCE	08/28/1995	11:18	23.2	26.0	8.1	LOW	L,SL,MI	2.70	4.4	SCT	352.0	14	0.06	
	BLUESTONE RIVER @ CONFLUENCE	09/11/1995	11.03	20.0	20.0	8.2	LOW	L,SL,MI	2.40	7.0	OVC	389.0	14	0.00	
	BLUESTONE RIVER @ CONFLUENCE	09/25/1995	11.20	13.0	14.0	8.3	LOW	L,SL,C	1.40	9.8	OVC	401.0	12	0.13	
	BLUESTONE RIVER @ PIPESTEM	05/03/1995	12.40	11.0	15.0	8.0	1320	H,M,TR	22.00	11.3	BKN	146.0	808	1.09	
	BLUESTONE RIVER @ PIPESTEM	05/15/1995	12.41	16.0	28.0	7.9	2130	H,M,TR	89.00	8.5	SCT	156.0	4325	1.04	
	BLUESTONE RIVER @ PIPESTEM	05/30/1995	13.09	20.0	21.0	8.7	282	SL,MI	3.70	9.0	SCT	249.0	16	0.56	
	BLUESTONE RIVER @ PIPESTEM	06/12/1995	13.25	20.0	16.0	8.0	3700	H,SL,MI	9.00	8.3	R, OVC	243.0	64	0.10	
	BLUESTONE RIVER @ PIPESTEM	06/26/1995	-9999	-999.9	-999.9	-9.9	444	-9999999	-999.99	-9.9	-999999	-999.9	-999999999	0.07	UNABLE TO COLLECT SAMPLE DUE TO A TREE BLOCKING ROAD.
	BLUESTONE RIVER @ PIPESTEM	07/10/1995	13.32	23.0	26.0	8.8	111	L,SL,C	3.90	9.2	SCT	262.0	21	0.00	
	BLUESTONE RIVER @ PIPESTEM	08/28/1995	12.48	24.4	27.0	8.9	34	L,SL,C	1.20	6.2	SCT	364.0	8	0.06	
	BLUESTONE RIVER @ PIPESTEM	09/11/1995	12.25	19.0	25.0	8.6	23	L,SL,C	1.10	10.4	OVC	384.0	10	0.00	
	BLUESTONE RIVER @ PIPESTEM	09/25/1995	12.30	15.0	19.0	8.7	73	L,SL,C	2.00	-9.9	OVC	344.0	18	0.13	DO METER LOST CALIBRATION
	MOUNTAIN CREEK	05/03/1995	12.23	10.1	13.0	7.4	HIGH	H,SW MR	11.00	11.4	BKN	85.0	126	1.09	
	MOUNTAIN CREEK	05/15/1995	12.21	15.0	23.0	7.5	HIGH	H,SW MI	11.00	9.3	SCT	77.0	78	1.04	
	MOUNTAIN CREEK	05/30/1995	12:48	17.0	19.0	7.7	LOW	L,SW,MI	2.80	9.0	SCT	153.0	10	0.56	
	MOUNTAIN CREEK	06/12/1995	13.01	16.0	15.0	7.4	HIGH	H,SW TR	22.00	9.6	OVC	145.0	928	0.10	
	MOUNTAIN CREEK	06/26/1995	12.28	18.0	21.0	7.4	NORM	N,M,MI	6.00	9.2	OVC	127.0	72	0.07	
	MOUNTAIN CREEK	07/10/1995	13.13	18.0	24.0	7.8	LOW	L,M,MI	3.70	9.0	SCT	144.0	49	0.00	
	MOUNTAIN CREEK	08/28/1995	12.24	20.0	26.0	7.3	LOW	L,SL,C	3.50	3.9	SCT	315.0	540	0.06	HAD TO WALK UPSTREAM TO FIND WATER TO SAMPLE, NO SURFACE FLOW TO B
	MOUNTAIN CREEK	09/11/1995	12.04	16.0	20.0	7.1	LOW	L,SL,C	1.50	5.2	OVC	350.0	31	0.00	HAD TO WALK UPSTREAM TO FIND WATER TO SAMPLE, NO SURFACE FLOW TO B
	MOUNTAIN CREEK	09/25/1995	12.22	14.0	16.0	7.7	LOW	L,SL,C	1.00	-9.9	OVC	402.0	30	0.13	DO METER LOST CALIBRATION

Raw Data for 1995 Fecal Coliform Bacteria
Gauley River National Recreation Area

Appendix 5.
1995-GARI

SITE_NO	SITE_NAME	DATE	TIME	H2O_T	AIR_T	PH	H2O_LVL	H2O_CND	NTU	DO	WETHR	CNDUC	FC_100ML	PCP_48H	COMMENTS
G01	SUMMERSVILLE DAM	05/08/1995	10.25	9.5	14.0	7.1	3270	H,SW,MI	3.70	12.4	CLR	68.0	2	0.14	
G01	SUMMERSVILLE DAM	05/22/1995	9.52	13.3	14.0	7.0	3790	H,SW,MI	8.20	11.0	SCT	51.0	154	0.05	
G01	SUMMERSVILLE DAM	06/05/1995	9.51	14.0	19.0	6.9	1070	N,SW,MI	6.00	10.8	OVC, H	51.0	8	0.57	
G01	SUMMERSVILLE DAM	06/19/1995	10.17	15.0	22.0	7.5	307	N,M,C	2.90	10.2	SCT	49.0	1	0.00	
G01	SUMMERSVILLE DAM	07/05/1995	10.14	15.0	22.0	6.9	1250	N,M,C	2.80	10.4	OVC	52.0	2	0.02	
G01	SUMMERSVILLE DAM	07/17/1995	10.10	15.0	21.0	7.0	128	L,M,C	2.40	9.8	OVC,+H	60.0	98	0.00	
G01	SUMMERSVILLE DAM	08/21/1995	10.04	16.0	21.2	6.8	496	N,M,C	1.20	10.4	CLR	60.0	1	0.68	
G01	SUMMERSVILLE DAM	09/06/1995	10.04	16.0	19.0	7.3	820	N,SW,C	1.80	9.4	CLR	66.0	1	0.00	
G01	SUMMERSVILLE DAM	09/20/1995	9.38	17.0	20.0	7.3	161	L,M,C	3.40	10.0	OVC	80.0	0	0.00	
G01	SUMMERSVILLE DAM	10/04/1995	10.14	19.0	20.0	7.2	412	L,M,C	3.20	7.6	OVC	73.0	0	0.09	
G01	SUMMERSVILLE DAM	10/11/1995	9.57	19.5	15.0	7.5	220	L,M,C	2.20	8.6	CLR	117.0	0	0.00	
G02	MID GAULEY	05/08/1995	12.01	11.5	23.0	7.4	HIGH	H,M,MI	5.30	11.5	SCT	61.0	20	0.14	
G02	MID GAULEY	05/22/1995	11.23	13.7	15.0	7.3	HIGH	H,M,MI	7.10	10.2	SCT	57.0	56	0.05	
G02	MID GAULEY	06/05/1995	11.25	17.0	21.0	6.9	NORM	N,SL,MI	10.00	9.6	OVC	61.0	93	0.57	
G02	MID GAULEY	06/19/1995	11.57	21.0	26.0	7.4	NORM	N,M,C	2.80	9.3	SCT	65.0	4	0.00	
G02	MID GAULEY	07/05/1995	11.54	18.0	24.0	7.2	NORM	N,SL,MI	3.40	9.6	BKN	58.0	297	0.02	
G02	MID GAULEY	07/17/1995	11.40	26.0	28.0	7.4	LOW	L,SL,C	1.10	7.8	BKN,+H	95.0	1	0.00	
G02	MID GAULEY	08/21/1995	11.36	22.0	27.0	7.3	LOW	L,SL,C	1.50	7.2	CLR	85.0	31	0.68	
G02	MID GAULEY	09/06/1995	11.30	19.0	23.0	7.2	LOW	L,SL,C	1.30	8.2	CLR	68.0	12	0.00	
G02	MID GAULEY	09/20/1995	11.15	20.0	19.0	7.6	LOW	L,SL,C	1.70	8.8	OVC	87.0	2	0.00	
G02	MID GAULEY	10/04/1995	11.34	20.0	20.0	7.5	LOW	L,SL,C	1.50	7.6	OVC	91.0	3	0.09	
G02	MID GAULEY	10/11/1995	11.36	19.0	19.0	7.7	LOW	L,SL,C	1.20	8.6	CLR	124.0	4	0.00	
G03	PETERS CREEK	05/08/1995	11.37	12.5	19.0	7.9	HIGH	H,M,MI	5.90	11.8	SCT	181.0	105	0.14	
G03	PETERS CREEK	05/22/1995	11.07	13.7	18.0	7.9	HIGH	H,SW,MI	6.50	10.6	CLR	227.0	253	0.05	
G03	PETERS CREEK	06/05/1995	11.00	19.0	21.0	7.7	NORM	N,M,MI	4.00	9.8	OVC	318.0	117	0.57	
G03	PETERS CREEK	06/19/1995	11.30	19.0	25.0	8.3	NORM	N,M,MI	2.90	9.2	SCT	333.0	58	0.00	
G03	PETERS CREEK	07/05/1995	11.35	20.0	24.0	7.7	NORM	N,M,MI	6.50	8.9	OVC	280.0	275	0.02	
G03	PETERS CREEK	07/17/1995	11.15	25.0	25.0	8.3	LOW	L,M,MI	2.50	8.0	BKN,+H	457.0	25	0.00	
G03	PETERS CREEK	08/21/1995	11.15	24.0	27.0	8.1	LOW	L,M,C	1.40	6.7	CLR	510.0	5	0.68	
G03	PETERS CREEK	09/06/1995	11.12	19.0	19.0	8.3	LOW	L,SL,C	0.90	8.0	CLR	576.0	2	0.00	
G03	PETERS CREEK	09/20/1995	10.57	17.0	20.0	8.2	LOW	L,SL,C	2.30	10.4	OVC	460.0	11	0.00	
G03	PETERS CREEK	10/04/1995	11.17	18.0	20.0	8.3	LOW	L,SL,C	0.90	8.0	OVC	493.0	8	0.09	
G03	PETERS CREEK	10/11/1995	11.16	15.5	16.0	8.3	LOW	L,SL,C	0.70	9.2	CLR	506.0	0	0.00	
G04	SOUTH SIDE SWISS	05/08/1995	13.29	11.5	22.0	7.4	HIGH	H,SL,MI	6.00	11.6	BKN	65.0	17	0.14	
G04	SOUTH SIDE SWISS	05/22/1995	12.14	14.0	23.0	7.5	HIGH	H,M,MI	7.00	10.3	SCT	63.0	68	0.05	
G04	SOUTH SIDE SWISS	06/05/1995	12.14	18.0	25.0	7.1	NORM	N,SL,MI	8.00	9.4	OVC	74.0	52	0.57	
G04	SOUTH SIDE SWISS	06/19/1995	12.52	21.0	24.0	7.6	NORM	N,SL,C	2.60	9.0	OVC	74.0	3	0.00	
G04	SOUTH SIDE SWISS	07/05/1995	12.48	20.0	27.0	7.5	NORM	N,SL,MI	4.10	9.3	BKN	66.0	18	0.02	
G04	SOUTH SIDE SWISS	07/17/1995	12.24	27.0	29.0	7.7	LOW	L,SL,C	1.20	7.4	SCT	128.0	11	0.00	
G04	SOUTH SIDE SWISS	08/21/1995	12.40	25.2	31.0	7.3	LOW	L,SL,C	1.80	6.8	SCT	82.0	43	0.68	
G04	SOUTH SIDE SWISS	09/06/1995	12.16	19.0	33.0	7.5	LOW	L,SL,C	1.40	8.0	CLR	73.0	6	0.00	
G04	SOUTH SIDE SWISS	09/20/1995	12.11	19.0	20.0	7.2	LOW	L,SL,C	1.80	9.2	OVC	90.0	5	0.00	
G04	SOUTH SIDE SWISS	10/04/1995	12.20	20.5	22.0	7.4	LOW	L,SL,C	1.50	7.2	OVC	90.0	8	0.09	
G04	SOUTH SIDE SWISS	10/11/1995	12.27	19.5	20.0	7.6	LOW	L,SL,C	1.10	8.2	CLR	115.0	2	0.00	
G05	MEADOW RIVER	05/08/1995	9.53	12.0	17.0	7.3	1650	H,M,MR	9.70	10.7	CLR	60.0	120	0.14	
G05	MEADOW RIVER	05/22/1995	9.17	13.0	13.0	7.4	1355	H,M,MI	8.90	10.0	SCT	66.0	72	0.05	
G05	MEADOW RIVER	06/05/1995	9.18	19.0	23.0	6.9	560	N,M,TR	14.00	8.7	OVC, H	81.0	192	0.57	
G05	MEADOW RIVER	06/19/1995	9.44	20.0	22.0	7.4	NORM	N,SL,C	2.70	8.6	SCT	96.0	31	0.00	GAGE IS OUT
G05	MEADOW RIVER	07/05/1995	9.48	20.0	25.0	6.9	396	N,SL,MI	7.70	8.4	BKN	80.0	43	0.02	

Raw Data for 1995 Fecal Coliform Bacteria
Gauley River National Recreation Area

Appendix 5.
1995-GARI

TL_NO	SITE_NAME	DATE	TIME	H2O_T	AIR_T	PH	H2O_LVL	H2O_CND	NTU	DO	WETHR	CNDUC	FC_100ML	PCP_48H	COMMENTS
05	MEADOW RIVER	07/17/1995	9.27	26.0	23.5	7.3	58	L,SL,C	1.70	6.8	OVC,+H	142.0	23	0.00	
05	MEADOW RIVER	08/21/1995	9 33	24.0	26.0	7.5	86	L,SL,C	2.10	5.2	CLR	133 0	37	0.68	
05	MEADOW RIVER	09/06/1995	9:30	19 0	16.0	7.3	20	L,SL,C	1.10	7.1	CLR	194.0	6	0.00	
05	MEADOW RIVER	09/20/1995	9.06	17.0	19 0	7.7	58	L,SL,C	1.30	9.1	OVC	212.0	61	0.00	
05	MEADOW RIVER	10/04/1995	9.42	18.0	18.0	7.5	15	L,SL,C	1.50	7.6	OVC	213 0	26	0.09	
05	MEADOW RIVER	10/11/1995	9.19	15.0	11.0	7.4	50	L,SL,C	1.20	8.7	CLR	163.0	18	0.00	

Raw Data for 1996 Fecal Coliform Bacteria
New River Gorge National River

Appendix 5.
1996-NERI

SITE_NO	SITE_NAME	DATE	TIME	H2O_T	AIR_T	PH	H2O_LVL	H2O_CND	NTU	DO	WETHR	CNDUC	FC_100ML	PCP_48H	COMMENTS
N01	NEW RIVER @ HINTON VC	05/13/1996	13:20	18.0	14.8	7.8	11420	H,M,MI	6.4	8.8	SCT	129	7	0.58	
N01	NEW RIVER @ HINTON VC	05/29/1996	13:35	20.9	22.0	7.4	24200	H,M,MI	8.9	8.3	BKN	141	29	0.53	
N01	NEW RIVER @ HINTON VC	06/12/1996	13:20	22.0	23.0	7.6	15300	H,M,MR	10.5	8.4	BKN	125	124	0.46	
N01	NEW RIVER @ HINTON VC	06/26/1996	13:12	27.0	23.0	8.2	5050	N,M,C	5.4	9.0	SCT	149	41	0.50	
N01	NEW RIVER @ HINTON VC	07/08/1996	13:50	27.0	28.0	8.6	3500	N,SL,C	4.1	7.6	BKN	160	24	0.02	
N01	NEW RIVER @ HINTON VC	07/23/1996	13:32	26.5	28.0	7.7	4150	N,SL,C	3.4	7.6	OVC	156	39	0.02	
N02	MADAM CREEK	05/13/1996	11:20	10.5	17.0	8.3	HIGH	H,M,MI	9.0	10.9	SCT	70	370	0.58	
N02	MADAM CREEK	05/29/1996	11:03	16.8	26.0	7.8	HIGH	H,M,TR	29.0	9.2	SCT	83	1440	0.53	
N02	MADAM CREEK	06/12/1996	10:55	18.0	25.0	8.0	NORM	N,M,MI	5.5	9.1	BKN	115	1630	0.46	
N02	MADAM CREEK	06/26/1996	11:00	21.8	24.9	8.8	LOW	L,M,C	2.4	8.4	CLR	161	9160	0.50	
N02	MADAM CREEK	07/08/1996	12:00	23.0	28.0	8.5	LOW	L,SL,MI	6.5	7.9	OVC	228	8450	0.02	
N02	MADAM CREEK	07/23/1996	11:34	21.5	21.8	7.4	LOW	L,SL,C	3.6	5.6	OVC	238	5400	0.02	
N04	NEW R @ SNDSTN FALLS PKLOT	05/13/1996	12:05	18.2	12.5	8.2	HIGH	H,M,MI	4.8	8.6	SCT	119	49	0.58	
N04	NEW R @ SNDSTN FALLS PKLOT	05/29/1996	11:45	20.0	24.0	7.5	HIGH	H,M,TR	24.5	8.0	SCT	127	260	0.53	
N04	NEW R @ SNDSTN FALLS PKLOT	06/12/1996	11:55	21.8	22.0	7.5	HIGH	H,M,MR	15.5	7.9	R, BKN	126	326	0.46	
N04	NEW R @ SNDSTN FALLS PKLOT	06/26/1996	11:50	26.5	25.0	9.0	NORM	N,M,C	3.0	8.0	SCT	145	44	0.50	
N04	NEW R @ SNDSTN FALLS PKLOT	07/08/1996	12:45	27.0	31.0	9.0	NORM	N,SL,C	2.4	8.1	OVC	166	19	0.02	
N04	NEW R @ SNDSTN FALLS PKLOT	07/23/1996	12:15	25.5	26.0	7.6	NORM	N,SL,MI	5.7	7.7	OVC	135	24	0.02	
N05	LICK CREEK	05/13/1996	10:43	9.8	17.0	7.6	138	H,M,MI	7.0	11.1	SCT	98	78	0.58	
N05	LICK CREEK	05/29/1996	10:26	15.1	22.0	7.8	260.9	H,SW,TR	15.5	9.4	SCT	92	186	0.53	GAGE BENT
N05	LICK CREEK	06/12/1996	10:16	19.0	27.0	8.0	NORM	N,M,MI	3.5	8.4	BKN	147	69	0.46	HIGH WATER GAGE BENT, LOW WATER GAGE GONE
N05	LICK CREEK	06/26/1996	10:12	21.0	22.0	8.3	NORM	N,M,C	1.5	8.2	CLR	232	56	0.50	GAGE BROKEN LOOSE
N05	LICK CREEK	07/08/1996	11:27	23.5	30.0	8.1	LOW	L,SL,C	1.3	8.3	OVC	288	49	0.02	GAGE GONE
N05	LICK CREEK	07/23/1996	10:45	22.0	24.0	7.8	12.04	L,SL,C	1.7	8.0	OVC	310	7	0.02	
N06	MEADOW CREEK	05/13/1996	10:18	9.0	12.0	7.5	81.4	H,M,MI	5.7	10.6	SCT	60	91	0.58	
N06	MEADOW CREEK	05/29/1996	10:00	15.0	19.0	7.5	279	H,SW,TR	27.0	10.0	SCT	60	650	0.53	
N06	MEADOW CREEK	06/12/1996	9:47	16.2	21.0	7.3	44	N,M,MI	8.5	9.1	BKN	78	126	0.46	
N06	MEADOW CREEK	06/26/1996	09:45	17.8	21.5	8.1	0.37	L,M,C	4.6	8.8	CLR	129	56	0.50	LOWER GAGE LOOSE
N06	MEADOW CREEK	07/08/1996	11:00	20.0	26.0	7.8	LOW	L,M,C	2.8	8.7	SCT, H	147	266	0.02	GAGE LOOSE
N06	MEADOW CREEK	07/23/1996	10:15	18.5	22.0	7.6	0.30	L,M,MI	5.5	8.8	OVC,-L	120	72	0.02	
N07	LAUREL CREEK @ QUINNIMONT	05/16/1996	15:37	12.0	17.0	7.8	547	H,SW,TR	69.0	10.7	OVC	40	290	1.82	GAGE BROKEN
N07	LAUREL CREEK @ QUINNIMONT	05/28/1996	11:38	14.0	17.0	7.0	HIGH	H,SW,MR	22.0	9.6	OVC	50	185	1.50	GAGE BROKEN
N07	LAUREL CREEK @ QUINNIMONT	06/11/1996	10:00	17.0	21.0	7.5	HIGH	H,M,MI	7.9	9.7	SCT	79	125	0.30	GAGE BROKE
N07	LAUREL CREEK @ QUINNIMONT	06/25/1996	10:35	19.0	22.0	8.2	NORM	N,M,TR	108.0	9.6	OVC	146	200	0.82	GAGE BROKEN
N07	LAUREL CREEK @ QUINNIMONT	07/09/1996	13:47	19.5	26.0	7.5	NORM	N,M,MI	18.0	8.8	SCT	80	250	0.38	GAGE BROKEN
N07	LAUREL CREEK @ QUINNIMONT	07/24/1996	12:10	18.5	27.0	7.8	50.09	N,M,MI	11.0	9.0	SCT	100	82	0.04	
N08	NEW RIVER @ PRINCE	05/16/1996	15:05	14.0	18.0	7.4	33060	H,SW,TR	116.0	8.6	OVC	99	1200	1.82	
N08	NEW RIVER @ PRINCE	05/28/1996	11:15	19.8	21.0	7.4	20772	H,SW,MR	19.0	8.4	OVC	144	180	1.50	
N08	NEW RIVER @ PRINCE	06/11/1996	9:45	21.5	23.0	7.5	29524	H,M,TR	41.2	8.3	SCT	121	405	0.30	BIG-N-BROWN
N08	NEW RIVER @ PRINCE	06/25/1996	10:10	26.0	24.9	8.0	5700	H,M,MR	9.0	7.9	OVC	145	32	0.82	
N08	NEW RIVER @ PRINCE	07/09/1996	13:26	26.5	29.2	8.1	3555	N,M,C	5.4	7.6	SCT	163	15	0.38	
N08	NEW RIVER @ PRINCE	07/24/1996	11:45	26.0	29.8	7.6	4028	N,M,MR	11.5	7.6	SCT	134	27	0.04	
N09	PINEY CREEK @ McCREERY	05/16/1996	13:56	13.5	15.0	6.7	HIGH	H,SW,TR	264.0	10.6	OVC, -L	90	9050	1.82	VERY HIGH, SWIFT, SAMPLED IN POOL--COULD NOT GET TO GAGE
N09	PINEY CREEK @ McCREERY	05/28/1996	10:44	16.0	17.0	7.3	HIGH	H,SW,MR	14.0	9.4	OVC, -L	145	1910	1.50	CREEK HIGH, NO GAGE READING
N09	PINEY CREEK @ McCREERY	06/11/1996	9:25	17.1	21.0	7.5	155.5	H,M,TR	48.0	8.7	CLR	214	8500	0.30	DIRTY BROWN, LOOKS LIKE A BYPASS
N09	PINEY CREEK @ McCREERY	06/25/1996	09:35	21.2	22.0	7.9	88.8	H,M,TR	30.0	8.2	RW, OV	283	22200	0.82	WATER GRAY/BROWN COLOR, BYPASS??
N09	PINEY CREEK @ McCREERY	07/09/1996	13:04	22.0	28.0	8.0	31	N,M,MR	20.0	8.3	SCT	341	1400	0.38	WATER GRAY/BROWN COLOR, 10ML COLONIES NOT BLUE
N09	PINEY CREEK @ McCREERY	07/24/1996	11:17	20.0	23.0	7.9	21	L,M,C	2.9	8.8	SCT	348	34	0.04	HIGH WATER GAGE INSTALLED
N11	DUNLOUP CREEK	05/08/1996	10:10	13.2	15.1	7.5	137	H,SW,MI	12.0	10.8	OVC	271	510	0.46	
N11	DUNLOUP CREEK	05/20/1996	13:49	17.2	20.5	7.8	109.2	H,SW,MI	6.4	9.1	CLR	344	150	0.00	WATER LIGHT GRAY COLOR
N11	DUNLOUP CREEK	06/03/1996	09:40	14.0	17.0	8.2	102.3	N,SW,MI	3.7	9.8	OVC, -R	404	235	0.02	
N11	DUNLOUP CREEK	06/17/1996	09:22	17.5	20.0	8.2	54.6	N,M,MI	4.5	9.0	SCT	517	191	0.00	
N11	DUNLOUP CREEK	07/01/1996	11:00	19.5	26.0	9.3	38.8	N,M,MI	3.1	7.6	SCT	558	282	0.00	LOTS OF GREEN ALGAE IN WATER
N11	DUNLOUP CREEK	07/15/1996	13:15	19.2	21.0	8.4	57.4	N,M,MR	26.0	8.9	RW	449	420	0.19	
N11	DUNLOUP CREEK	07/29/1996	13:10	18.5	25.0	8.5	37	L,M,C	2.9	9.2	SCT	559	135	0.14	
N12	NEW RIVER @ THURMOND	05/08/1996	11:30	17.0	16.0	6.8	20600	H,SW,TR	20.5	9.7	R, OVC	120	288	0.46	BIG & BROWN

Raw Data for 1996 Fecal Coliform Bacteria
New River Gorge National River

Appendix 5.
1996-NERI

E_NO	SITE_NAME	DATE	TIME	H2O_T	AIR_T	PH	H2O_LVL	H2O_CND	NTU	DO	WETHR	CNDUC	FC_100ML	PCP_48H	COMMENTS
2	NEW RIVER @ THURMOND	05/20/1996	15.18	19.0	27.0	7.2	25426	H,SW,MR	27.0	7.5	CLR	119	179	0.00	RIVER BROWN, BIG WAVES
2	NEW RIVER @ THURMOND	06/03/1996	11.44	19.8	19.8	8.1	9796	H,M,MR	4.9	8.4	OVC, -R	135	23	0.02	CONDUCTIVITY FROM HYDROLAB
2	NEW RIVER @ THURMOND	06/17/1996	11.25	25.0	27.0	7.7	6889	N,M,MI	3.9	8.1	SCT	138	15	0.00	
2	NEW RIVER @ THURMOND	07/01/1996	10:30	27.6	26.5	8.8	3520	N,SL,C	2.7	6.9	SCT	154	9	0.00	
2	NEW RIVER @ THURMOND	07/15/1996	14.40	26.5	22.0	8.1	2523	N,SL,C	4.8	6.8	OVC	173	92	0.19	
2	NEW RIVER @ THURMOND	07/29/1996	13.40	24.5	27.5	7.4	4585	N,M,MR	19.5	8.6	SCT	151	480	0.14	
3	ARBUCKLE CREEK	05/08/1996	10:50	13.5	14.8	6.7	51.6	H,SW,MR	43.0	10.5	OVC	249	8440	0.46	CREEK STINKS
3	ARBUCKLE CREEK	05/20/1996	14:45	17.2	22.0	7.7	48	N,M,MI	9.4	7.8	CLR	284	300	0.00	WATER GRAY/BROWN COLOR
3	ARBUCKLE CREEK	06/03/1996	10.18	14.0	16.0	8.3	17.8	N,M,MI	4.2	10.0	OVC	344	550	0.02	
3	ARBUCKLE CREEK	06/17/1996	10.45	17.5	21.0	7.7	6.3	N,M,MI	6.7	9.3	SCT	429	152	0.00	
3	ARBUCKLE CREEK	07/01/1996	09.40	18.0	21.0	9.4	6.6	L,M,MI	4.2	9.1	SCT	405	700	0.00	
3	ARBUCKLE CREEK	07/15/1996	14.00	18.5	21.0	8.6	10.88	N,M,TR	46.0	8.6	RW	400	2450	0.19	
3	ARBUCKLE CREEK	07/29/1996	14.30	19.2	23.5	8.1	5.6	L,M,MI	18.0	10.3	SCT	426	3690	0.14	
5	COAL RUN	05/07/1996	12.10	13.0	14.0	7.5	HIGH	H,SW,MI	26.0	11.5	OVC, -R	224	396	1.62	
5	COAL RUN	05/21/1996	13.40	16.0	19.0	8.0	NORM	N,M,MI	8.4	9.4	SCT	304	135	0.00	
5	COAL RUN	06/04/1996	13.15	15.0	18.0	8.2	NORM	N,M,MI	8.2	9.9	SCT	300	195	0.13	40ML FILTER COLONIES SMEARED/UNCOUNTABLE
5	COAL RUN	06/18/1996	12.45	18.0	23.0	8.2	NORM	N,M,MI	7.4	8.6	SCT	369	97	0.00	
5	COAL RUN	07/02/1996	13.20	18.0	20.0	6.7	NORM	N,SW,TR	504.0	8.6	OVC	346	1200	0.00	WATER YELLOW/TAN COLOR, T STORMS IN AREA
5	COAL RUN	07/16/1996	13.24	18.5	22.0	7.4	NORM	N,M,MI	17.0	6.9	SCT	376	600	1.52	
5	COAL RUN	07/30/1996	12.58	18.8	23.5	7.7	NORM	N,M,MI	13.9	8.1	SCT	397	270	0.19	
6	KEENEY CREEK	05/07/1996	09.20	10.5	12.0	6.8	HIGH	H,M,MI	4.4	11.2	OVC, -L	83	730	1.62	
6	KEENEY CREEK	05/21/1996	10.03	14.0	24.0	6.9	NORM	N,M,C	3.2	9.5	SCT	104	630	0.00	MINNOW BUCKET IN CREEK, LOTS OF TRASH
6	KEENEY CREEK	06/04/1996	10.12	13.2	17.5	7.6	NORM	N,M,MI	6.0	9.8	CLR	121	2040	0.13	
6	KEENEY CREEK	06/18/1996	10.00	17.2	24.9	7.7	LOW	L,M,C	1.6	8.9	H	150	4140	0.00	AMMONIA ODOR
6	KEENEY CREEK	07/02/1996	09.15	19.0	21.0	7.3	LOW	L,M,C	2.4	7.8	OVC	169	875	0.00	THUNDER, DARK CLOUDS
6	KEENEY CREEK	07/16/1996	10.35	17.8	22.0	7.1	NORM	N,M,C	4.9	6.8	SCT	171	500	1.52	
6	KEENEY CREEK	07/30/1996	10.12	16.5	22.0	6.7	NORM	N,M,MI	6.0	9.1	SCT	125	1050	0.19	
7	NEW RIVER @ FAYETTE STATION	05/07/1996	10.48	18.0	13.0	7.3	21100	H,SW,TR	23.0	9.8	OVC, R	121	230	1.62	MOLD ON BOTH FILTERS, RIVER BROWN
7	NEW RIVER @ FAYETTE STATION	05/21/1996	11:38	20.0	28.0	7.6	14407	H,SW,MR	16.0	8.9	SCT	121	92	0.00	RIVER HIGH SAMPLED POOL AREA
7	NEW RIVER @ FAYETTE STATION	06/04/1996	11.40	20.5	22.0	7.7	7408	N,M,MI	3.8	8.9	SCT	142	32	0.13	
7	NEW RIVER @ FAYETTE STATION	06/18/1996	11:20	26.0	27.0	8.2	6012	N,M,MI	3.1	7.4	H	146	7	0.00	
7	NEW RIVER @ FAYETTE STATION	07/02/1996	12.00	28.0	22.0	7.7	3592	N,M,MI	4.7	7.4	OVC, -R	172	46	0.00	
7	NEW RIVER @ FAYETTE STATION	07/16/1996	11.57	25.8	27.2	7.9	2883	N,M,MI	8.8	6.2	SCT	167	170	1.52	
7	NEW RIVER @ FAYETTE STATION	07/30/1996	11.36	24.0	26.2	7.5	3648	N,M,MR	14.0	8.4	BKN	155	470	0.19	
[illegible]	WOLF CREEK	05/07/1996	10:20	13.5	13.5	7.4	114.5	H,SW,MI	13.0	11.2	OVC, R	125	223	1.62	
[illegible]	WOLF CREEK	05/21/1996	11.18	17.0	23.0	7.9	21.22	N,M,MI	4.6	9.2	SCT	192	55	0.00	
[illegible]	WOLF CREEK	06/04/1996	11.22	15.9	21.0	8.2	22.3	H,M,MR	29.0	10.0	SCT	227	170	0.13	
[illegible]	WOLF CREEK	06/18/1996	11.05	17.5	24.0	8.6	6.33	N,M,MI	3.3	9.2	H	443	6	0.00	
[illegible]	WOLF CREEK	07/02/1996	11.40	18.5	21.0	8.1	10.52	N,M,TR	248.0	8.9	T, RW	422	2100	0.00	
[illegible]	WOLF CREEK	07/16/1996	11.40	17.8	25.0	8.1	3.86	N,M,MI	6.1	7.2	SCT	562	65	1.52	
[illegible]	WOLF CREEK	07/30/1996	11.19	17.5	26.0	8.1	5.48	N,M,MI	11.0	9.5	SCT	522	113	0.19	TURBID RUNOFF FROM ROAD CONSTUCTION ON RT. 82
[illegible]	MARR BRANCH	05/07/1996	10.00	12.5	11.0	6.8	17.34	H,M,MI	15.0	10.5	OVC, R	105	1653	1.62	
[illegible]	MARR BRANCH	05/21/1996	10.47	16.5	24.0	7.0	3.8	N,SL MI	4.2	9.1	SCT	132	226	0.00	LOTS OF SNAILS , WATER HAZY
[illegible]	MARR BRANCH	06/04/1996	10.50	15.0	18.5	7.6	3.5	N,SL MR	40.0	8.9	CLR	137	1640	0.13	WATER COFFEE W/ CREAM COLOR
[illegible]	MARR BRANCH	06/18/1996	10.40	19.5	23.0	7.7	0.90	L,SL,C	3.5	7.7	H	296	150	0.00	
[illegible]	MARR BRANCH	07/02/1996	10.50	20.0	20.0	7.6	1.9	N,SL TR	93.0	7.3	RW+, T	289	2040	0.00	STREAM LEVEL ROSE FROM .40 TO .88 W/IN 45 MIN. STILL RISING
[illegible]	MARR BRANCH	07/16/1996	11.10	19.5	21.8	7.5	0.64	L,SL,MI	8.3	6.2	SCT	278	200	1.52	
[illegible]	MARR BRANCH	07/30/1996	10.48	20.0	22.0	7.5	1.3	L,SL,MI	7.0	8.0	SCT	309	560	0.19	
[illegible]	NEW RIVER @ CUNARD	05/07/1996	11.50	17.5	19.0	7.3	HIGH	H,M,TR	19.0	9.7	OVC, -R	120	320	1.62	100ML FILTER, FECALS WERE SMEARED, NOT COUNTABLE
[illegible]	NEW RIVER @ CUNARD	05/21/1996	13.18	20.5	27.0	7.7	HIGH	H,SW,MR	16.0	8.3	SCT	122	92	0.00	
[illegible]	NEW RIVER @ CUNARD	06/04/1996	12.55	21.0	26.5	8.1	HIGH	H,M,MI	4.5	8.2	SCT	142	12	0.13	
[illegible]	NEW RIVER @ CUNARD	06/18/1996	12.20	26.2	30.0	8.2	NORM	N,M,MI	3.0	7.4	H, SCT	147	8	0.00	
[illegible]	NEW RIVER @ CUNARD	07/02/1996	13.12	28.0	23.0	7.5	NORM	N,SL MI	4.2	7.2	OVC, GF	217	22	0.00	METERS VERY WET
[illegible]	NEW RIVER @ CUNARD	07/16/1996	13.03	26.5	29.0	8.0	NORM	N,SL MI	7.0	6.1	SCT	165	64	1.52	
[illegible]	NEW RIVER @ CUNARD	07/30/1996	12.35	24.9	27.0	7.6	NORM	N,M,MI	7.5	7.6	SCT	158	127	0.19	
[illegible]	NEW R @ SNDSTN FALLS BDWLK	05/13/1996	12.30	18.0	13.0	8.2	HIGH	H,SW,MI	4.5	8.6	SCT	121	13	0.58	

Raw Data for 1996 Fecal Coliform Bacteria
New River Gorge National River

Appendix 5.
1996-NERI

_NO	SITE_NAME	DATE	TIME	H2O_T	AIR_T	PH	H2O_LVL	H2O_CND	NTU	DO	WETHR	CNDUC	FC_100ML	PCP_48H	COMMENTS
	NEW R @ SNDSTN FALLS BDWLK	05/29/1996	12 06	19.8	21 0	7 6	HIGH	H,SW,TR	11.5	8.2	SCT	134	190	0 53	
	NEW R @ SNDSTN FALLS BDWLK	06/12/1996	12.10	22 0	20 0	7 6	HIGH	H,SW,MR	10.5	8 4	BKN	122	56	0 46	
	NEW R @ SNDSTN FALLS BDWLK	06/26/1996	12 08	26 5	24 0	8.9	NORM	N,M,C	4 0	8.8	SCT	145	60	0.50	
	NEW R @ SNDSTN FALLS BDWLK	07/08/1996	13 00	27.0	29 0	8 9	NORM	N,M,C	3 2	7.4	OVC	162	11	0 02	
	NEW R @ SNDSTN FALLS BDWLK	07/23/1996	12.38	25.0	24 2	7.8	NORM	N,M,MR	9.3	7.9	OVC	130	43	0.02	

Raw Data for 1996 Fecal Coliform Bacteria
Bluestone National Scenic River

Appendix 5.
1996-BLUE

ITE_N	SITE_NAME	DATE	TIME	H2O_T	AIR_T	PH	H2O_LVL	H2O_CND	NTU	DO	WETHR	CNDUC	FC_100ML	PCP_48H	COMMENTS
01	BLUESTONE RIVER @ ST. PARK	05/15/1996	10:17	13.0	14.0	7.1	HIGH	H,M,MI	3.0	9.3	OVC, -R	162	18	0.06	
01	BLUESTONE RIVER @ ST. PARK	05/30/1996	10:42	18.0	17.0	7.4	HIGH	H,SW,MI	9.7	8.3	SCT	167	170	0.38	AIR THERM. HAS SPACE IN MERCURY
01	BLUESTONE RIVER @ ST. PARK	06/13/1996	10:12	22.0	24.0	8.2	NORM	N,M,C	1.4	8.4	SCT	267	16	0.24	
01	BLUESTONE RIVER @ ST. PARK	06/27/1996	9:57	23.1	27.0	8.4	LOW	L,M,C	2.3	7.8	CLR, H	310	21	0.00	
01	BLUESTONE RIVER @ ST. PARK	07/11/1996	09:50	23.0	21.0	8.7	LOW	L,M,C	1.8	6.3	CLR	322	31	0.00	
01	BLUESTONE RIVER @ ST. PARK	07/22/1996	10:12	24.0	22.0	8.4	NORM	N,M,C	3.0	7.6	OVC	336	28	0.02	
02	LITTLE BLUESTONE RIVER	05/15/1996	11:20	10.0	12.0	7.3	HIGH	H,M,MI	4.0	13.0	OVC	56	53	0.06	
02	LITTLE BLUESTONE RIVER	05/30/1996	11:45	15.0	17.0	7.3	HIGH	H,M,MI	8.9	9.0	SCT	55	156	0.38	
02	LITTLE BLUESTONE RIVER	06/13/1996	11:19	22.0	25.0	7.7	NORM	N,M,C	2.5	9.6	SCT	76	42	0.24	
02	LITTLE BLUESTONE RIVER	06/27/1996	11:01	18.0	24.0	7.8	LOW	L,M,C	1.6	8.8	CLR, H	103	58	0.00	
02	LITTLE BLUESTONE RIVER	07/11/1996	11:00	18.0	23.5	7.7	LOW	L,M,C	2.1	6.5	SCT	113	29	0.00	
02	LITTLE BLUESTONE RIVER	07/22/1996	11:13	19.0	23.0	7.0	LOW	L,SL,C	1.4	8.2	OVC	124	18	0.02	
03	BLUESTONE RIVER @ CONFLUENCE	05/15/1996	11:44	12.8	13.0	7.7	NORM	N,SL,MI	3.9	10.3	OVC	170	8	0.06	
03	BLUESTONE RIVER @ CONFLUENCE	05/30/1996	12:10	18.0	20.0	7.5	HIGH	H,SL,MR	9.5	8.2	SCT	159	312	0.38	
03	BLUESTONE RIVER @ CONFLUENCE	06/13/1996	11:45	18.5	25.0	8.0	NORM	N,SL,C	1.7	7.8	SCT	308	19	0.24	TAKEN ABOVE NEW BRIDGE
03	BLUESTONE RIVER @ CONFLUENCE	06/27/1996	11:21	24.0	29.0	8.0	LOW	L,SL,MR	3.1	7.5	CLR, H	318	27	0.00	
03	BLUESTONE RIVER @ CONFLUENCE	07/11/1996	11:15	23.0	24.0	8.3	LOW	L,M,MI	4.3	5.6	SCT	333	28	0.00	
03	BLUESTONE RIVER @ CONFLUENCE	07/22/1996	11:33	23.0	25.0	7.9	LOW	L,SL,MR	4.4	7.0	OVC	353	21	0.02	
04	BLUESTONE RIVER @ PIPESTEM	05/15/1996	13:11	11.8	13.0	8.1	429	N,M,MI	3.1	11.7	OVC, R	181	19	0.06	
04	BLUESTONE RIVER @ PIPESTEM	05/30/1996	13:35	18.0	20.0	8.6	723	N,M,MI	7.8	9.0	SCT	185	242	0.38	
04	BLUESTONE RIVER @ PIPESTEM	06/13/1996	13:23	23.0	29.0	8.9	178	N,SL,C	1.6	9.0	SCT	273	13	0.24	
04	BLUESTONE RIVER @ PIPESTEM	06/27/1996	12:25	24.0	34.0	8.6	95	N,SL,C	2.0	8.7	SCT	307	9	0.00	
04	BLUESTONE RIVER @ PIPESTEM	07/11/1996	12:05	22.0	26.0	8.8	75	L,M,C	1.8	8.1	SCT	350	25	0.00	
04	BLUESTONE RIVER @ PIPESTEM	07/22/1996	12:34	23.0	26.0	8.2	122	N,SL,C	2.5	9.1	OVC	313	112	0.02	
05	MOUNTAIN CREEK	05/15/1996	12:53	10.0	11.0	7.5	HIGH	H,SW,MI	4.0	11.7	OVC, -R	101	48	0.06	
05	MOUNTAIN CREEK	05/30/1996	13:15	15.0	18.0	7.3	NORM	N,SW,MI	6.5	9.1	SCT	78	65	0.38	
05	MOUNTAIN CREEK	06/13/1996	13:03	18.0	25.0	7.9	NORM	N,M,C	2.1	8.7	SCT	81	36	0.24	
05	MOUNTAIN CREEK	06/27/1996	12:44	19.4	23.0	7.9	LOW	L,SL,C	2.2	8.4	SCT	207	51	0.00	
05	MOUNTAIN CREEK	07/11/1996	12:20	22.0	25.0	7.9	LOW	L,M,C	1.1	7.6	SCT	233	6	0.00	
05	MOUNTAIN CREEK	07/22/1996	12:50	20.0	25.0	7.2	LOW	L,M,C	0.9	8.1	OVC	333	13	0.02	

Raw Data for 1996 Fecal Coliform Bacteria
Gauley River National Recreation Area

Appendix 5.
1996-GARI

TE_NO	SITE_NAME	DATE	TIME	H2O_T	AIR_T	PH	H2O_LVL	H2O_CND	NTU	DO	WETHR	CNDUC	FC_100ML	PCP_48H	COMMENTS
01	SUMMERSVILLE DAM	05/06/1996	11:05	8.0	14.0	7.4	6890	H,SW,MI	18.0	13.4	OVC	71	190	1.34	SAMPLED AT GAGING STATION, HIGH WATER
01	SUMMERSVILLE DAM	05/22/1996	09:48	12.0	24.0	7.1	2320	H,SW,MI	17.0	12.0	SCT	46	228	0.87	
01	SUMMERSVILLE DAM	06/05/1996	10:15	14.3	23.0	7.4	1030	N,SW,C	5.2	11.1	SCT	53	26	0.27	
01	SUMMERSVILLE DAM	06/19/1996	10:38	16.0	28.5	7.6	591	N,M,C	3.0	-9999.0	SCT	48	4	0.00	DO METER MEASUREMENT TOO LOW
01	SUMMERSVILLE DAM	07/01/1996	09:54	16.0	24.0	7.1	354	L,M,C	2.1	9.2	OVC	54	2	0.00	
01	SUMMERSVILLE DAM	07/17/1996	09:40	16.0	23.0	6.8	200	L,M,C	0.2	9.8	CLR	60	1	0.37	
01	SUMMERSVILLE DAM	07/31/1996	10:04	19.0	23.0	8.2	1700	N,SW,MR	228.0	8.2	OVC, R	56	2900	0.30	SAMPLE DILUTED 1/4 FOR TURBIDITY
04	SOUTH SIDE SWISS	05/22/1996	12:53	16.0	27.0	7.2	HIGH	H,MI	19.0	10.0	SCT	70	248	0.87	
04	SOUTH SIDE SWISS	06/05/1996	13:02	18.2	31.0	7.3	NORM	N,SL,MI	9.0	8.7	SCT	77	18	0.27	
04	SOUTH SIDE SWISS	06/19/1996	13:50	23.8	35.5	7.3	NORM	N,SL,C	1.6	8.6	SCT	74	0	0.00	DO METER RECALIBRATED
04	SOUTH SIDE SWISS	07/01/1996	12:17	25.0	33.0	7.4	LOW	L,SL,C	1.5	-99999.0	SCT	80	2	0.00	DO MEASUREMENT INACCURATE
04	SOUTH SIDE SWISS	07/17/1996	11:40	24.5	29.0	7.3	NORM	N,SL,C	0.2	7.7	SCT	106	20	0.37	
04	SOUTH SIDE SWISS	07/31/1996	12:40	20.0	24.0	-99999.0	HIGH	H,SL,TR	60.0	6.0	R+, OV	77	270	0.30	FORDED CREEK MADE TURBID EDDY
05	MEADOW RIVER	05/06/1996	10:20	12.8	17.0	7.2	3170	H,SW,MR	23.0	9.8	OVC, -L	39	665	1.34	RIVER HIGH, NOT WADEABLE, SAMPLED IN A POOL
05	MEADOW RIVER	05/22/1996	09:11	18.0	18.0	7.0	410	N,MI	5.0	8.2	SCT	83	44	0.87	
05	MEADOW RIVER	06/05/1996	09:34	15.8	18.0	7.5	NORM	N,M,C	2.9	9.4	SCT	82	14	0.27	GAGE OUT
05	MEADOW RIVER	06/19/1996	09:55	24.0	28.5	7.5	NORM	N,M,C	1.3	-99999.0	BKN	114	25	0.00	DO METER READING TOO LOW
05	MEADOW RIVER	07/01/1996	09:23	25.0	25.0	7.3	NORM	N,SL,C	1.1	6.9	OVC	120	21	0.00	GAGE OUT
05	MEADOW RIVER	07/17/1996	09:15	21.0	21.0	6.9	NORM	N,M,MI	0.9	8.0	CLR	152	228	0.37	GAGE OUT
05	MEADOW RIVER	07/31/1996	09:04	21.0	22.0	7.0	280	N,SL,MR	8.6	7.8	R+, OV	128	51	0.30	
06	GAULEY R. @ MASON BRANCH	05/06/1996	12:00	8.0	21.0	6.9	HIGH	H,SW,MR	16.0	12.4	OVC	59	250	1.34	
06	GAULEY R @ MASON BRANCH	05/22/1996	10:53	16.0	19.0	7.1	NORM	N,MI	19.0	10.0	SCT	49	116	0.87	
06	GAULEY R @ MASON BRANCH	06/05/1996	11:58	15.7	24.0	7.5	NORM	N,M,C	4.0	10.2	SCT	61	9	0.27	
06	GAULEY R @ MASON BRANCH	06/19/1996	11:50	19.5	36.5	7.5	NORM	N,M,C	2.0	9.0	SCT	65	4	0.00	DO METER RECALIBRATED
06	GAULEY R @ MASON BRANCH	07/01/1996	10:41	20.0	25.0	7.1	LOW	L,M,C	1.3	8.0	SCT	66	2	0.00	
06	GAULEY R @ MASON BRANCH	07/17/1996	10:25	21.5	25.0	7.2	LOW	L,M,C	0.5	9.2	CLR	139	78	0.37	
06	GAULEY R @ MASON BRANCH	07/31/1996	11:00	21.0	23.0	-99999.0	NORM	N,M,MR	16.2	6.8	R+, OV	57	154	0.30	PH METER OUT
07	PETERS CREEK @ FORD	05/06/1996	12:50	13.2	17.0	7.1	HIGH	H,SW,TR	74.0	10.4	OVC	110	830	1.34	
07	PETERS CREEK @ FORD	05/22/1996	11:55	17.0	35.0	7.5	LOW	L,MI	25.0	9.1	SCT	265	1180	0.87	
07	PETERS CREEK @ FORD	06/05/1996	11:03	15.7	29.0	7.9	NORM	N,M,MR	33.0	9.9	SCT	307	340	0.27	
07	PETERS CREEK @ FORD	06/19/1996	13:05	24.0	33.0	8.1	NORM	N,M,C	1.7	8.4	BKN	418	50	0.00	DO METER OK
07	PETERS CREEK @ FORD	07/01/1996	11:37	25.0	30.0	8.1	LOW	L,M,C	2.6	7.2	SCT	445	91	0.00	
07	PETERS CREEK @ FORD	07/17/1996	11:15	22.0	28.0	8.0	LOW	L,M,MI	1.5	8.0	CLR	493	100	0.37	
07	PETERS CREEK @ FORD	07/31/1996	11:41	21.0	23.0	-99999.0	HIGH	H,SW,TR	594.0	6.4	R+, OV	217	9000	0.30	PH METER OUT

Appendix 5.
1997-NERI

SITE_NO	SITE_NAME	DATE	TIME	H2O_TEMP_	AIR_TEM	PH	STAGE_LVL	H2O_CND	TURBIDITY_NTU	DO	WEATHER	CONDUCT_FIELD	SP_CONDUCT@25C	FC_100ML	PRECIP_48HR	COMMENTS
N01	NEW RIVER @ HINTON VC	05/06/1997	13.05	15.8	20.5	8.5	7350	H,M,MI	6.2	11.4	SCT	102	123.6	33	0.08	
N01	NEW RIVER @ HINTON VC	05/21/1997	13.05	19.7	23.0	9.0	3500	L,SL,C	2.2	11.5	SCT	122	135.7	13	0.52	
N01	NEW RIVER @ HINTON VC	06/02/1997	13.13	19.8	25.2	7.6	11480	H,M,MI	5.1	9.3	BKN	120	133.2	100	0.20	
N01	NEW RIVER @ HINTON VC	06/16/1997	12.22	20.5	26.2	7.8	6360	N,M,MI	4.2	8.4	SCT,H	130	142.2	27	0.16	
N01	NEW RIVER @ HINTON VC	07/01/1997	10.57	25.5	25.0	7.5	4150	N,SL,MI	4.0	6.6	OVC	151	149.6	842	0.59	
N01	NEW RIVER @ HINTON VC	07/14/1997	12.50	28.0	31.5	8.0	2840	L,M,C	2.2	7.4	SCT,H	155	146.6	20	0.00	
N01	NEW RIVER @ HINTON VC	07/28/1997	11.00	27.8	30.2	7.8	3600	N,M,C	2.9	7.2	SCT	160	151.9	35	0.42	
N02	MADAM CREEK	05/06/1997	11.06	13.2	21.0	8.0	N,M	N,M,MI	5.7	10.2	SCT	75	96.7	1850	0.08	TRASH IN CREEK
N02	MADAM CREEK	05/21/1997	10.55	13.0	18.0	8.0	N,M	N,M,MI	4.8	11.7	SCT	76	98.4	220	0.52	
N02	MADAM CREEK	06/02/1997	11.28	16.8	26.8	7.8	H,M	H,M,MI	13.0	9.4	SCT	75	88.8	6780	0.20	
N02	MADAM CREEK	06/16/1997	10.23	17.5	25.0	8.2	L,M	L,M,MI	5.0	6.3	SCT	100	116.6	3080	0.16	QUEEN SNAKE IN CREEK
N02	MADAM CREEK	07/01/1997	11.20	19.0	25.0	7.9	H,SW	H,SW,TR	72.0	7.8	OVC	120	135.4	9000	0.59	
N02	MADAM CREEK	07/14/1997	10.53	21.8	27.0	8.1	L,SL	L,SL,C	3.2	8.0	CLR,-H	188	200.2	>300	0.00	COLONIES GROWING TOGETHER
N02	MADAM CREEK	07/28/1997	11.25	25.1	33.8	8.2	L,M	L,M,C	5.9	7.5	SCT	188	187.6	9020	0.42	BROWN SLIME ON ROCKS
N04	NEW R @ SNDSTN FALLS PKLOT	05/06/1997	11.50	15.2	22.5	8.9	H,M	H,M,MI	4.9	11.2	SCT	102	125.3	37	0.08	
N04	NEW R @ SNDSTN FALLS PKLOT	05/21/1997	11.34	17.0	19.0	8.9	L,M	L,M,C	3.6	12.2	SCT	117	138.0	23	0.52	
N04	NEW R @ SNDSTN FALLS PKLOT	06/02/1997	12.10	20.2	26.0	7.9	H,M	H,M,MI	8.3	9.3	BKN	117	128.7	202	0.20	
N04	NEW R @ SNDSTN FALLS PKLOT	06/16/1997	11.06	21.0	27.0	8.6	N,M	N,M,C	3.2	9.2	SCT,H	122	132.0	21	0.16	
N04	NEW R @ SNDSTN FALLS PKLOT	07/01/1997	12.10	24.0	26.0	7.7	H,M	H,M,MI	12.0	8.3	BKN	91	92.8	490	0.59	100ML COL, YELLOW-FEW BLUE
N04	NEW R @ SNDSTN FALLS PKLOT	07/14/1997	11.40	28.0	27.0	8.5	L,M	L,M,C	1.9	8.2	SCT,H	151	142.9	7	0.00	
N04	NEW R @ SNDSTN FALLS PKLOT	07/28/1997	12.30	29.0	32.5	8.2	L,M	L,M,C	4.3	7.1	SCT	163	151.5	23	0.42	YELLOW COLONIES ON FILTERS
N05	LICK CREEK	05/06/1997	10.05	12.9	22.4	8.1	27.88	H,M,MI	4.1	10.5	BKN	102	132.5	75	0.08	
N05	LICK CREEK	05/21/1997	10.18	12.0	19.0	8.0	53.4	H,M,MI	11.9	12.0	SCT	92	122.2	106	0.52	
N05	LICK CREEK	06/02/1997	10.45	16.4	27.8	7.9	36.91	H,M,MI	6.8	9.4	SCT	104	124.3	111	0.20	
N05	LICK CREEK	06/16/1997	9.40	19.0	24.8	8.3	8.9	L,M,MI	3.1	8.4	SCT	163	184.0	71	0.16	
N05	LICK CREEK	07/01/1997	9.48	20.3	24.0	7.9	10	N,M,MI	14.0	7.8	OVC,R	205	225.1	360	0.59	
N05	LICK CREEK	07/14/1997	10.08	21.6	26.0	8.2	4.7	L,M,C	2.6	8.4	CLR,-H	175	187.1	25	0.00	
N05	LICK CREEK	07/28/1997	10.10	24.2	29.8	8.2	6.9	L,M,MI	16.8	7.6	SCT	205	208.2	65	0.42	
N06	MEADOW CREEK	05/06/1997	9.41	11.0	17.9	7.4	112.53	N,M,MI	5.3	10.6	BKN	61	83.1	83	0.08	
N06	MEADOW CREEK	05/21/1997	9.51	11.1	19.0	7.7	150.52	H,M,MR	12.0	11.8	SCT	55	74.7	95	0.52	
N06	MEADOW CREEK	06/02/1997	10.15	14.8	23.0	7.5	102.35	N,M,MI	9.7	9.8	SCT	68	84.3	53	0.20	
N06	MEADOW CREEK	06/16/1997	9.19	15.5	20.8	7.9	29.09	L,M,MI	7.0	9.2	SCT	91	111.0	180	0.16	
N06	MEADOW CREEK	07/01/1997	9.12	17.5	22.0	7.5	71.47	H,M,TR	30.0	8.6	OVC,R	109	127.1	2004	0.59	
N06	MEADOW CREEK	07/14/1997	9.37	18.5	23.0	8.1	L,M	L,M,MI	4.4	9.0	H+	137	156.3	60	0.00	
N06	MEADOW CREEK	07/28/1997	9.47	22.0	26.0	8.1	L,M	L,M,MI	5.5	8.0	SCT	165	175.0	54	0.42	GAGE READING < RATING TABLE
N07	LAUREL CREEK @ QUINNIMONT	05/05/1997	11.10	9.0	20.05	7.2	39.29	N,M,MI	3.2	11.2	SCT	50	71.8	43	0.54	
N07	LAUREL CREEK @ QUINNIMONT	05/15/1997	13.40	12.8	19.0	7.6	36	N,M,C	3.0	10.5	SCT	55	71.6	5	0.11	
N07	LAUREL CREEK @ QUINNIMONT	06/04/1997	11.20	12.5	19.0	7.6	26.16	N,M,C	3.5	-9999	BKN	65	85.2	29	0.02	DO PROBE /BUBBLES
N07	LAUREL CREEK @ QUINNIMONT	06/17/1997	10.54	16.5	25.0	7.8	16.05	N,M,C	2.5	9.1	OVC	89	106.1	55	0.15	
N07	LAUREL CREEK @ QUINNIMONT	07/01/1997	15.10	18.0	28.5	7.5	64.55	H,SW,TR	39.0	9.7	SCT	70	80.7	43	0.65	
N07	LAUREL CREEK @ QUINNIMONT	07/16/1997	10.03	19.3	26.0	8.1	5.9	L,M,C	2.6	8.5	SCT,H	122	136.8	16	0.00	SEPTIC SMELL IN AIR
N07	LAUREL CREEK @ QUINNIMONT	07/29/1997	10.33	20.3	24.0	8.0	10.3	N,M,MI	11.1	8.4	SCT	122	134.0	109	2.07	
N08	NEW RIVER @ PRINCE	05/05/1997	10.44	15.0	21.2	7.7	9840	H,M,MR	5.5	9.7	SCT	99	122.2	15	0.54	
N08	NEW RIVER @ PRINCE	05/15/1997	13.10	16.0	19.8	8.0	7400	H,M,MI	4.1	9.9	SCT	98	118.2	11	0.11	
N08	NEW RIVER @ PRINCE	06/04/1997	11.00	17.0	19.2	7.2	25300	H,SW,TR	138.0	-9999	BKN	88	103.8	820	0.02	DO PROBE /BUBBLES
N08	NEW RIVER @ PRINCE	06/17/1997	10.35	22.2	25.0	7.9	6300	H,M,MI	2.0	7.7	OVC	128	135.2	18	0.15	
N08	NEW RIVER @ PRINCE	07/01/1997	14.45	26.0	31.0	7.5	4340	N,M,MI	4.8	8.2	BKN	150	147.2	482	0.65	
N08	NEW RIVER @ PRINCE	07/16/1997	9.31	27.2	26.5	7.9	2680	L,M,C	2.7	6.9	SCT,H	162	155.5	8	0.00	
N08	NEW RIVER @ PRINCE	07/29/1997	10.04	27.9	29.0	7.9	4060	N,M,MI	7.0	7.0	SCT	157	148.8	23	2.07	
N09	PINEY CREEK @ McCREERY	05/05/1997	10.21	10.0	16.0	7.9	46.93	H,M,MI	3.5	11.4	SCT	148	207.0	97	0.54	
N09	PINEY CREEK @ McCREERY	05/15/1997	12.49	12.2	20.5	8.1	226.37	H,M,MI	5.6	10.5	SCT	142	187.6	155	0.11	
N09	PINEY CREEK @ McCREERY	06/04/1997	10.37	14.6	17.8	7.7	128.42	N,M,MI	5.7	-9999	BKN	168	209.4	37	0.02	DO PROBE /BUBBLES
N09	PINEY CREEK @ McCREERY	06/17/1997	10.15	18.5	24.0	7.7	81.87	N,M,MI	3.0	8.5	OVC	240	273.8	110	0.15	
N09	PINEY CREEK @ McCREERY	07/01/1997	14.24	19.0	25.0	7.7	H,SW	H,SW,TR	81.0	9.2	BKN	180	203.2	>120	0.65	WATER HIGH, NO GAGE READING
N09	PINEY CREEK @ McCREERY	07/16/1997	9.04	21.0	23.5	7.8	37.41	N,M,MI	4.1	8.1	SCT,H	330	357.1	43	0.00	
N09	PINEY CREEK @ McCREERY	07/29/1997	9.40	21.2	26.0	7.6	210.5	H,M,TR	41.0	8.3	SCT	192	206.9	4575	2.07	STP SMELL
N11	DUNLOUP CREEK	04/28/1997	9.55	11.0	13.9	8.0	104.92	H,M,MI	7.6	10.9	OVC,L	238	324.3	626	0.40	
N11	DUNLOUP CREEK	05/13/1997	9.50	11.9	12.9	8.1	77.38	N,M,MI	6.0	9.8	OVC,L	269	358.1	275	0.08	
N11	DUNLOUP CREEK	05/29/1997	13.10	13.2	17.0	8.2	90.48	N,M,MI	6.9	10.6	OVC	253	326.1	160	0.11	
N11	DUNLOUP CREEK	06/10/1997	13.10	15.2	19.0	8.5	40.45	N,M,MI	3.7	9.8	CLR	405	497.7	66	0.09	

Raw Data for 1997 Fecal Coliform Bacteria
New River Gorge National River

Appendix 5.
1997-NERI

SITE_NO	SITE_NAME	DATE	TIME	H2O_TEMP_	AIR_TEM	PH	STAGE_LVL	H2O_CND	TURBIDITY_NTU	DO	WEATHER	CONDUCT_FIELD	SP_CONDUCT@25C	FC_100ML	PRECIP_48HR	COMMENTS
N11	DUNLOUP CREEK	06/24/1997	9.03	17.2	21.2	8.0	31.6	L,M,MI	4.4	9.1	CLR	450	528.3	212	0.00	
N11	DUNLOUP CREEK	07/08/1997	11.45	18.0	24.5	7.5	N,M	N,M,MI	3.7	5.6	CLR	459	529.4	176	0.00	BROWN SLIME ON ROCKS
N11	DUNLOUP CREEK	07/23/1997	8.48	19.0	23.0	8.2	23.13	L,M,MI	4.7	8.8	SCT	502	566.6	155	0.05	
N12	NEW RIVER @ THURMOND	04/28/1997	11.23	12.6	15.0	7.6	13755	H,M,MR	12.5	10.7	OVC	100	130.8	332	0.40	
N12	NEW RIVER @ THURMOND	05/13/1997	11.17	15.2	13.8	8.1	6269	H,M,MI	4.5	8.3	OVC	102	125.3	8	0.08	
N12	NEW RIVER @ THURMOND	05/29/1997	14.22	18.2	18.1	7.7	10500	H,M,MI	5.1	9.3	OVC,-R	125	143.5	46	0.11	
N12	NEW RIVER @ THURMOND	06/10/1997	14.45	19.2	21.0	8.1	7168	N,M,MI	5.2	9.3	CLR	105	118.0	12	0.09	
N12	NEW RIVER @ THURMOND	06/24/1997	10.26	24.8	25.0	7.4	5160	N,SL,C	3.0	6.9	CLR	142	142.5	6	0.00	
N12	NEW RIVER @ THURMOND	07/08/1997	10.12	25.0	23.0	7.9	3472	N,M,C	2.1	7.0	CLR	149	149	5	0.00	
N12	NEW RIVER @ THURMOND	07/23/1997	10.40	28.0	26.8	8.0	2354	L,M,C	2.6	7.3	BKN	170	160.8	4	0.05	
N13	ARBUCKLE CREEK	04/28/1997	10.38	11.1	15.0	8.2	10	N,M,MI	9.5	11.0	OVC,L	274	372.3	130	0.40	
N13	ARBUCKLE CREEK	05/13/1997	10.30	11.2	12.8	8.2	13.76	N,M,MI	7.2	9.7	OVC,L	275	372.7	380	0.08	DUCKS IN CREEK
N13	ARBUCKLE CREEK	05/29/1997	13.56	12.6	17.0	8.0	10.88	N,M,MI	15.0	10.4	OVC	262	342.8	425	0.11	MINNOW TRAP IN CREEK
N13	ARBUCKLE CREEK	06/10/1997	14.00	14.3	22.8	8.5	5.8	N,M,MI	6.7	9.6	CLR	388	487.0	1440	0.09	BEAVER IN CREEK
N13	ARBUCKLE CREEK	06/24/1997	9.43	17.5	22.0	7.3	4.6	L,M,MI	11.0	8.7	CLR,-H	400	466.5	330	0.00	STP SMELL
N13	ARBUCKLE CREEK	07/08/1997	11.01	17.0	32.0	7.4	5.6	N,M,MI	6.3	9.0	CLR	440	518.9	115	0.00	
N13	ARBUCKLE CREEK	07/23/1997	9.38	20.0	24.0	8.1	3.9	L,M,MR	26.0	8.1	SCT	455	502.8	2650	0.05	LOOKS LIKE A BYPASS
N15	COAL RUN	04/29/1997	12.30	10.5	22.0	8.1	N,M	N,M,MI	6.2	12.3	CLR	231	318.8	156	0.42	
N15	COAL RUN	05/12/1997	12.52	10.6	23.8	8.2	N,M	N,M,MI	7.1	11.4	SCT	231	318.0	163	0.00	
N15	COAL RUN	05/28/1997	12.03	12.0	20.0	8.1	N,SW	N,SW,MI	14.0	10.4	CLR	231	306.8	453	0.30	
N15	COAL RUN	06/09/1997	12.19	13.0	17.8	8.2	N,M	N,M,MI	12.0	9.2	OVC	310	401.6	510	0.08	
N15	COAL RUN	06/23/1997	11.40	18.0	23.0	7.6	N,M	N,M,MI	20.0	9.6	SCT	245	282.6	246	0.00	
N15	COAL RUN	07/10/1997	12.00	17.8	22.8	8.3	L,M	L,M,MR	23.0	10.6	BKN	338	391.6	1240	0.29	
N15	COAL RUN	07/22/1997	11.40	19.8	24.0	8.0	L,M	L,M,MI	15.0	8.6	OVC	400	443.9	40	0.04	
N16	KEENEY CREEK	04/29/1997	10.18	8.2	15.9	7.2	N,M	N,M,C	2.4	11.1	CLR	70	102.8	490	0.42	
N16	KEENEY CREEK	05/12/1997	9.50	9.2	17.5	7.1	N,M	N,M,C	3.5	10.6	SCT	67	95.7	560	0.00	
N16	KEENEY CREEK	05/28/1997	9.08	11.0	16.0	6.8	N,M	N,M,C	5.0	10.7	OVC	69	94.0	485	0.30	
N16	KEENEY CREEK	06/09/1997	9.51	12.0	18.0	7.6	N,M	N,M,C	1.7	10.2	OVC	100	132.8	1040	0.08	
N16	KEENEY CREEK	06/23/1997	9.28	15.9	22.0	6.8	L,M	L,M,C	2.1	9.0	SCT	128	154.8	4700	0.00	
N16	KEENEY CREEK	07/10/1997	13.05	17.8	22.0	7.8	L,M	L,M,C	6.2	10.7	OVC	145	168.0	1450	0.29	
N16	KEENEY CREEK	07/22/1997	9.28	19.5	26.0	7.4	L,M	L,M,C	2.2	7.6	OVC	160	178.7	140	0.04	
N17	NEW RIVER @ FAYETTE STATION	04/30/1997	11.28	13.6	21.0	7.6	18850	H,SW,MR	15.5	10.4	SCT	92	117.4	74	0.02	
N17	NEW RIVER @ FAYETTE STATION	05/12/1997	11.20	14.5	25.1	8.0	6381	H,M,MI	4.3	10.7	SCT	102	127.4	10	0.00	
N17	NEW RIVER @ FAYETTE STATION	05/28/1997	10.06	17.5	19.0	7.1	8405	H,SW,C	6.4	8.6	SCT	120	139.9	233	0.30	
N17	NEW RIVER @ FAYETTE STATION	06/09/1997	11.11	16.8	19.0	7.9	8405	N,M,MI	4.3	9.5	OVC	99	117.3	35	0.08	
N17	NEW RIVER @ FAYETTE STATION	06/23/1997	10.34	25.2	27.5	7.2	4834	N,M,MI	2.7	8.3	SCT,H	138	137.5	9	0.00	
N17	NEW RIVER @ FAYETTE STATION	07/10/1997	10.38	26.2	23.0	8.3	3350	N,M,MI	1.9	9.2	OVC	155	151.5	10	0.29	
N17	NEW RIVER @ FAYETTE STATION	07/22/1997	10.17	28.0	29.0	7.9	2667	L,SL,MI	1.9	7.4	BKN	175	165.6	14	0.04	
N18	WOLF CREEK	04/30/1997	11.06	10.5	22.0	7.9	17.97	N,M,MI	3.6	10.9	SCT	170	234.6	97	0.02	
N18	WOLF CREEK	05/12/1997	11.00	10.3	22.0	8.0	16.9	N,M,MI	3.1	11.1	SCT	167	231.7	31	0.00	
N18	WOLF CREEK	05/28/1997	9.52	13.0	19.0	7.9	25.66	N,SW,MI	7.8	10.8	OVC	170	220.2	138	0.30	
N18	WOLF CREEK	06/09/1997	10.56	13.5	19.0	8.6	L,M	L,M,MI	2.7	10.1	OVC	380	486.2	16	0.08	GAGE OUT OF WATER
N18	WOLF CREEK	06/23/1997	10.21	17.0	25.0	7.6	N,M	N,M,MI	5.0	9.8	SCT	499	588.4	10	0.00	GAGE OUT OF WATER
N18	WOLF CREEK	07/10/1997	10.08	16.8	21.5	8.7	N,M	N,M,MI	3.8	9.4	OVC	502	594.6	87	0.29	GAGE OUT OF WATER
N18	WOLF CREEK	07/22/1997	10.27	19.6	27.0	8.5	L,M	L,M,C	3.4	8.8	BKN	540	601.7	10	0.04	
N19	MARR BRANCH	04/29/1997	10.50	9.9	17.2	7.1	4.5	H,M,MI	5.4	11.4	CLR	78	109.4	80	0.42	
N19	MARR BRANCH	05/12/1997	10.30	10.4	22.0	7.2	7.5	H,M,MI	4.6	10.6	SCT	71	98.3	112	0.00	STP SMELL
N19	MARR BRANCH	05/28/1997	10.37	12.1	21.0	7.0	8.4	N,M,MI	27.0	10.1	OVC	80	106.0	584	0.30	
N19	MARR BRANCH	06/09/1997	10.28	13.5	19.0	7.6	1.1	L,SL,MI	2.7	9.1	OVC	170	217.5	66	0.08	
N19	MARR BRANCH	06/23/1997	9.56	18.2	24.0	7.2	0.87	L,M,MI	4.9	8.1	SCT	71	81.5	2490	0.00	30ML,1/2GRID=747 COLONIES
N19	MARR BRANCH	07/10/1997	9.39	18.2	21.0	7.7	1.6	L,M,MI	17.0	8.1	OVC,-L	192	220.5	1990	0.29	STREAMBED, HVY SEDIMNT
N19	MARR BRANCH	07/22/1997	10.44	21.7	28.0	7.8	0.5	L,M,MI	3.2	7.5	BKN,H	470	501.4	133	0.04	
N20	NEW RIVER @ CUNARD	04/29/1997	12.16	13.2	21.9	7.7	H,SL	H,SL,MR	8.0	11.5	CLR	96	123.7	160	0.42	
N20	NEW RIVER @ CUNARD	05/12/1997	12.25	15.5	25.0	8.2	H,M	H,M,MI	3.9	10.1	SCT	104	126.9	12	0.00	
N20	NEW RIVER @ CUNARD	05/28/1997	11.41	18.0	21.0	7.7	N,M	N,M,MI	8.0	8.6	OVC	112	129.2	165	0.30	
N20	NEW RIVER @ CUNARD	06/09/1997	12.00	17.0	20.8	7.9	N,M	N,M,MI	4.6	9.0	OVC,-R	100	117.9	70	0.08	
N20	NEW RIVER @ CUNARD	06/23/1997	11.23	25.5	30.2	7.5	N,M	N,M,MI	2.6	7.9	SCT,H	140	138.7	12	0.00	
N20	NEW RIVER @ CUNARD	07/10/1997	11.37	26.8	24.8	8.2	N,M	N,M,C	1.7	8.9	BKN	155	149.9	17	0.29	
N20	NEW RIVER @ CUNARD	07/22/1997	11.27	28.1	29.5	7.8	L,SL	L,SL,MI	2.0	7.2	OVC	175	165.2	8	0.04	
N21	NEW R. @ SNDSTN FALLS BDWLK	05/06/1997	12.20	15.2	20.2	8.7	H,SW	H,SW,MI	5.0	10.9	SCT	102	125.3	9	0.08	FC COLONIES SMEARED, ALGAE PRESENT

Raw Data for 1997 Fecal Coliform Bacteria
New River Gorge National River

Appendix 5.
1997-NERI

SITE_NO	SITE_NAME	DATE	TIME	H2O_TEMP_	AIR_TEM	PH	STAGE_LVL	H2O_CND	TURBIDITY_NTU	DO	WEATHER	CONDUCT_FIELD	SP_CONDUCT@25C	FC_100ML	PRECIP_48HR	COMMENTS
N21	NEW R @ SNDSTN FALLS BDWLK	05/21/1997	12 06	17.5	17.0	8.5	L,M	L,M,MI	4 0	10.7	SCT	115	134.1	18	0 52	
N21	NEW R @ SNDSTN FALLS BDWLK	06/02/1997	12:25	20 6	24 8	8 1	H,M	H,M,MI	7.1	8 6	BKN	115	125 5	98	0 20	
N21	NEW R @ SNDSTN FALLS BDWLK	06/16/1997	11.25	21 0	28 0	8 7	N,M	N,M,MI	3.1	7 8	SCT,H	121	131 0	77	0 16	
N21	NEW R @ SNDSTN FALLS BDWLK	07/01/1997	12:26	24 9	27 0	7 8	H,SW	H,SW,MI	5 0	8 0	BKN	149	149 3	70	0 59	
N21	NEW R @ SNDSTN FALLS BDWLK	07/14/1997	12 03	27 2	27 4	8 1	L,M	L,M,C	2.1	7 4	SCT,H	151	144.9	3	0 00	
N21	NEW R @ SNDSTN FALLS BDWLK	07/28/1997	12.10	28 0	31.5	8.1	N,M	N,M,MI	6 4	6.7	SCT	160	151 4	19	0 42	
													0			

Appendix 5.
1997-BLUE

Raw Data for 1997 Fecal Coliform Bacteria
Bluestone National Scenic River

SITE_NO	SITE_NAME	DATE	TIME	H2O_TEMP	AIR_TEMP	PH	STAGE_LVL	H2O_CND	TURBIDITY_NTU	DO	WEATHER	CONDUCT_FIELD	SP_CONDUCT@25C	FC_100ML	PRECIP_48H	COMMENTS
B01	BLUESTONE RIVER @ ST PARK	05/07/1997	9.33	13.8	17.0	8.0	N,M	N,M,C	2.6	10.2	CLR	142	180.4	8	0.02	
B01	BLUESTONE RIVER @ ST PARK	05/22/1997	9.30	14.0	15.0	7.8	N,SW	N,SW,MI	7.9	10.0	CLR	130	164.3	25	0.02	
B01	BLUESTONE RIVER @ ST PARK	06/05/1997	9.47	14.0	18.0	7.8	N,SW	N,SW,MI	12.0	10.0	BKN	130	164.3	48	0.05	
B01	BLUESTONE RIVER @ ST PARK	06/18/1997	9.40	22.5	27.5	7.9	N,M	N,M,C	2.1	7.6	BKN	218	228.9	104	0.18	
B01	BLUESTONE RIVER @ ST PARK	06/30/1997	9.53	21.5	23.0	7.8	N,SW	N,SW,C	5.5	7.8	OVC,R	218	233.5	133	0.00	
B01	BLUESTONE RIVER @ ST PARK	07/15/1997	10.04	25.5	28.5	8.7	L,M	L,M,C	2.8	7.4	CLR,H	255	252.6	19	0.00	
B01	BLUESTONE RIVER @ ST PARK	07/30/1997	9.58	24.0	26.0	7.9	H,SW	H,SW,MI	6.4	7.0	OVC	287	292.6	84	0.23	
B02	LITTLE BLUESTONE RIVER	05/07/1997	10.44	11.4	19.0	7.3	N,M	N,M,C	3.4	11.0	CLR	47	63.4	17	0.02	
B02	LITTLE BLUESTONE RIVER	05/22/1997	10.33	9.0	17.0	7.5	N,M	N,M,C	6.9	11.4	CLR	42	60.3	61	0.02	
B02	LITTLE BLUESTONE RIVER	06/05/1997	10.47	11.0	18.0	7.2	N,M	N,M,MI	11.0	10.6	BKN	45	61.3	114	0.05	
B02	LITTLE BLUESTONE RIVER	06/18/1997	10.45	18.5	25.0	7.5	N,M	N,M,MI	3.4	8.2	BKN	72	82.1	59	0.18	
B02	LITTLE BLUESTONE RIVER	06/30/1997	10.57	19.0	20.0	7.4	L,SL	L,SL,C	3.3	8.4	OVC,R	90	101.6	51	0.00	
B02	LITTLE BLUESTONE RIVER	07/15/1997	11:10	20.5	26.0	7.5	L,SL	L,SL,C	2.0	7.6	BKN	115	125.8	23	0.00	
B02	LITTLE BLUESTONE RIVER	07/30/1997	10.59	21.0	23.0	7.6	L,M	L,M,C	2.4	7.5	OVC	115	124.5	43	0.23	
B03	BLUESTONE RIVER @ CONFLUENCE	05/07/1997	11.09	14.0	23.0	7.7	N,SL	N,SL,C	2.3	9.9	CLR	149	188.4	4	0.02	
B03	BLUESTONE RIVER @ CONFLUENCE	05/22/1997	11:00	14.0	20.0	7.8	N,SL	.N,SL,C	7.0	9.6	CLR	137	173.2	20	0.02	
B03	BLUESTONE RIVER @ CONFLUENCE	06/05/1997	11.12	14.0	19.0	7.9	H,M	H,M,MI	11.0	9.6	BKN	150	189.6	22	0.05	
B03	BLUESTONE RIVER @ CONFLUENCE	06/18/1997	11:40	23.0	29.0	7.7	N,SL	N,SL,C	3.3	7.2	BKN	220	228.7	24	0.18	
B03	BLUESTONE RIVER @ CONFLUENCE	06/30/1997	11:15	21.0	21.0	7.7	N,SL	N,SL,MI	14.0	8.1	OVC,R	209	226.2	61	0.00	
B03	BLUESTONE RIVER @ CONFLUENCE	07/15/1997	11:27	26.0	29.0	8.2	L,SL	L,SL,MI	3.4	6.6	BKN	290	284.6	25	0.00	
B03	BLUESTONE RIVER @ CONFLUENCE	07/30/1997	11.21	24.0	22.0	8.0	L,M	L,M,C	7.7	6.4	OVC	290	295.6	110	0.23	
B04	BLUESTONE RIVER @ PIPESTEM	05/07/1997	12.22	14.0	23.0	8.3	363	N,SL,C	2.6	11.5	CLR	148	187.1	7	0.02	
B04	BLUESTONE RIVER @ PIPESTEM	06/18/1997	12.13	23.0	29.0	8.3	216	N,SL,C	4.0	8.5	BKN	230	239.1	37	0.18	
B04	BLUESTONE RIVER @ PIPESTEM	06/30/1997	12.30	22.0	22.0	8.1	184	N,SL,C	7.2	9.2	OVC,R	205	217.4	58	0.00	
B04	BLUESTONE RIVER @ PIPESTEM	07/15/1997	13.19	27.0	32.5	8.5	74	L,M,C	1.8	8.4	BKN,H	310	298.7	2	0.00	
B04	BLUESTONE RIVER @ PIPESTEM	07/30/1997	12.20	23.0	24.0	8.2	348	H,SL,MI	11.0	7.4	OVC	292	303.5	92	0.23	150ML FILTER NOT COUNTA
B05	MOUNTAIN CREEK	05/07/1997	12.34	11.0	23.5	7.1	N,SW	N,SW,C	2.3	10.4	CLR	78	106.3	8	0.02	
B05	MOUNTAIN CREEK	05/22/1997	12.03	10.0	18.0	7.1	N,SW	N,SW,C	4.4	10.8	CLR	-9999	-13984.6	14	0.02	NO CONDUCT READING
B05	MOUNTAIN CREEK	06/05/1997	12.19	11.5	20.0	7.3	N,M	N,M,MI	7.0	10.0	BKN	60	80.7	51	0.05	
B05	MOUNTAIN CREEK	06/18/1997	12.37	19.0	27.0	7.6	L,M	L,M,C	2.4	8.2	BKN	130	146.7	20	0.18	
B05	MOUNTAIN CREEK	06/30/1997	12.51	18.0	21.0	7.2	N,M	N,M,C	4.0	9.8	OVC	160	184.5	51	0.00	
B05	MOUNTAIN CREEK	07/15/1997	13.38	22.5	29.5	8.7	L,M	L,M,C	2.6	7.3	OVC	200	210.0	132	0.00	
B05	MOUNTAIN CREEK	07/30/1997	12.44	19.0	22.0	7.6	L,M	L,M,C	1.6	8.2	OVC	290	327,3	10	0.23	
													0			

SITE_N	SITE_NAME	DATE	TIME	H2O_TEMP	AIR_TEMP	PH	STAGE_LVL	H2O_CND	TURBIDITY_NTU	DO	WEATHER	CONDUCT_FIELD	SP_CONDUCT@25C	FC_100ML	PRECIP_48HR	COMMENTS
G01	SUMMERSVILLE DAM	04/30/1997	9.30	8.0	20.0	7.0	200	N,SW,C	4.6	11.8	BKN	40	59.1	<10	0.05	
G01	SUMMERSVILLE DAM	05/14/1997	10.44	9.0	15.0	7.3	2340	H,SW,C	2.9	11.9	OVC	49	70.4	<1	0.15	
G01	SUMMERSVILLE DAM	05/27/1997	10.21	11.0	16.0	7.2	2780	H,SW,C	2.9	12.3	OVC	45	61.3	7	1.42	
G01	SUMMERSVILLE DAM	06/11/1997	9.35	12.0	19.5	7.1	645	C	2.0	10.8	OVC	40	53.1	<1	0.00	
G01	SUMMERSVILLE DAM	06/25/1997	9.41	13.0	25.0	7.3	319	L,M,C	1.1	10.6	CLR,H	49	63.5	<1	-99999	NO PRECIP DATA
G01	SUMMERSVILLE DAM	07/09/1997	9.55	13.5	24.5	7.0	373	N,M,C	1.1	10.0	OVC,H	49	62.7	1	0.00	
G01	SUMMERSVILLE DAM	07/21/1997	10.05	14.0	25.5	7.1	213	L,M,C	1.3	9.7	CLR,H	50	63.2	<1	0.00	
G04	SOUTH SIDE SWISS	04/30/1997	12.21	12.0	25.0	7.0	N,SL	N,SL,MI	14.9	9.4	SCT	57	75.7	860	0.05	LAUREL CREEK ,HIGH/MUDDY
G04	SOUTH SIDE SWISS	05/14/1997	13.45	9.9	14.0	7.4	H,SL	H,SL,MI	4.4	-9999	OVC	50	70.1	20	0.15	NO DO READING
G04	SOUTH SIDE SWISS	05/27/1997	13.01	14.0	22.0	7.2	H,SL	H,SL,MI	13.0	10.4	OVC	42	53.1	108	1.42	
G04	SOUTH SIDE SWISS	06/11/1997	12.09	16.0	24.0	7.2	L,SL	L,SL,C	1.4	9.1	OVC	79	95.3	<2	0.00	
G04	SOUTH SIDE SWISS	06/25/1997	12.22	23.0	29.0	7.2	L,SL	L,SL,C	0.9	8.2	OVC	85	88.4	2	-99999	NO PRECIP DATA
G04	SOUTH SIDE SWISS	07/09/1997	12.03	22.0	32.0	6.9	L,SL	L,SL,C	1.1	7.9	BKN,H	80	84.8	2	0.00	PINK COLONIES ON FILTERS
G04	SOUTH SIDE SWISS	07/21/1997	12.15	28.5	32.0	7.0	L,SL	L,SL,C	1.2	6.9	SCT,H	105	98.5	2	0.00	
G05	MEADOW RIVER	04/30/1997	8.58	9.5	15.0	6.9	1274	H,M,MI	13.0	10.4	SCT	47	66.6	195	0.05	
G05	MEADOW RIVER	05/14/1997	9.32	10.4	16.0	6.9	780	C	4.2	10.8	R+	56	77.5	40	0.15	
G05	MEADOW RIVER	05/27/1997	9.37	13.5	16.0	7.1	1301	H,M,C	6.0	9.8	OVC	60	76.8	135	1.42	
G05	MEADOW RIVER	06/11/1997	9.03	17.0	21.0	7.0	205	N,M,C	2.5	8.2	OVC	90	106.1	20	0.00	
G05	MEADOW RIVER	06/25/1997	9.00	24.0	26.0	7.4	93	L,SL,C	0.8	6.2	CLR,H	124	126.4	25	-99999	NO PRECIP DATA
G05	MEADOW RIVER	07/09/1997	9.21	22.0	24.0	7.1	101	N,M,MI	2.8	6.6	OVC,H	111	117.7	30	0.00	
G05	MEADOW RIVER	07/21/1997	9.25	24.5	27.0	6.9	42	L,SL,C	2.1	6.6	H+	150	151.4	5	0.00	
G06	GAULEY R @ MASON BRANCH	04/30/1997	10.40	10.2	26.0	7.2	N,M	N,M,MI	8.9	10.2	SCT	42	58.4	104	0.05	
G06	GAULEY R @ MASON BRANCH	05/14/1997	11.24	9.2	12.0	7.3	H,M	H,M,C	3.2	11.9	R	46	65.7	5	0.15	
G06	GAULEY R @ MASON BRANCH	05/27/1997	11.21	11.8	18.0	7.1	H,SW	H,SW,C	5.1	11.8	OVC	40	53.4	84	1.42	
G06	GAULEY R @ MASON BRANCH	06/11/1997	10.29	14.0	22.0	7.3	N,M	N,M,C	1.7	9.9	OVC	60	75.9	6	0.00	
G06	GAULEY R @ MASON BRANCH	06/25/1997	10.40	18.5	30.0	7.3	L,M	L,M,C	1.0	7.4	SCT,H	-99999	-114089.0	4	-99999	NO PRECIP/CONDUCT DATA
G06	GAULEY R @ MASON BRANCH	07/09/1997	10.30	18.5	28.5	7.1	L,M	L,M,C	1.2	8.7	OVC,H	69	78.7	1	0.00	
G06	GAULEY R @ MASON BRANCH	07/21/1997	10.45	23.0	32.5	7.2	L	L,C	1.0	7.0	H+	94	97.7	<1	0.00	
G07	PETERS CREEK @ FORD	04/30/1997	11.35	11.0	27.0	7.5	N,SW	N,SW,MI	8.5	10.1	SCT	120	163.5	200	0.05	
G07	PETERS CREEK @ FORD	05/14/1997	12.00	10.4	12.5	7.6	N,SW	N,SW,C	5.2	11.4	OVC	147	203.4	110	0.15	
G07	PETERS CREEK @ FORD	05/27/1997	12.22	14.0	21.0	7.7	H,SW	H,SW,MI	35.0	10.2	OVC	152	192.2	1140	1.42	
G07	PETERS CREEK @ FORD	06/11/1997	11.21	16.5	25.0	7.8	L,M	L,M,C	2.1	8.8	OVC	320	381.6	93	0.00	
G07	PETERS CREEK @ FORD	06/25/1997	11.36	22.5	34.0	8.0	L,M	L,M,C	2.1	7.2	SCT,H	420	440.9	138	-99999	NO PRECIP DATA
G07	PETERS CREEK @ FORD	07/09/1997	11.25	21.0	28.0	8.0	L,M	L,M,MI	3.7	8.1	OVC,H	400	432.9	152	0.00	
G07	PETERS CREEK @ FORD	07/21/1997	11.40	25.0	31.5	8.1	N,M	N,M,MI	4.0	7.6	H+	461	461.0	12	0.00	
													0			

Raw Data for 1994 Physical/Chemical Tests
New River Gorge National River
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Appendix 6.
1994

SITE_NO	SITE_NAME	DATE	TIME	WATER_TEMP	AIR_TEMP	PH	STREAM_LVL	H2OCND_NTU	DISS_OXYGN	WEATHER	CNDUCTIVT	PRECIP_48H	ALKALINITY	ALUMINUM	TOTAL_IRON	MANGANESE
B01	BLUESTONE RIVER @ ST. PARK	02/01/1994	1024	4.1	-3.0	8.1	HIGH	H,M,MR 14.0NTU	99.99	BKN	83.0	999999	33.00	0.061	0.809	0.051
B01	BLUESTONE RIVER @ ST. PARK	04/05/1994	1036	9.0	15.0	7.8	HIGH	H,SW,MI 4.1NTU	99.99	CLR	100.0	T	36.00	0.023	0.322	0.035
B01	BLUESTONE RIVER @ ST. PARK	07/06/1994	955	26.0	25.0	8.6	NORM	N,M,C 2.6NTU	7.50	CLR	300.0	0.00"	83.60	0.033	0.000	0.041
B02	LITTLE BLUESTONE RIVER	02/01/1994	1121	2.3	-3.0	7.9	HIGH	H,SW,MI, 6.5NTU	99.99	SCT	30.0	999999	8.00	0.025	0.416	0.015
B02	LITTLE BLUESTONE RIVER	04/05/1994	1145	7.0	19.0	7.4	NORM	N,M,C, 4.5NTU	99.00	SCT	35.0	T	14.00	0.029	0.197	0.017
B02	LITTLE BLUESTONE RIVER	07/06/1994	1118	21.0	25.0	7.8	NORM	N,SL,C 2.4NTU	8.00	CLR	82.0	0.00"	31.60	0.021		0.030
B03	BLUESTONE RIVER @ CONFLUENC	02/01/1994	1135	2.7	-3.0	7.7	HIGH	H,SL,MR 12.0NTU	99.99	SCT	9999.9	999999	36.00	0.052	0.553	0.050
B03	BLUESTONE RIVER @ CONFLUENC	04/05/1994	1210	9.0	21.0	8.4	HIGH	H,SL,MR 4.1NTU	99.99	SCT	115.0	T	40.00	0.019	0.256	0.024
B03	BLUESTONE RIVER @ CONFLUENC	07/06/1994	1135	26.0	26.0	8.4	NORM	N,SL,MI 3.9NTU	6.30	CLR	303.0	0.00"	84.80	0.037		0.066
B04	BLUESTONE RIVER @ PIPESTEM	02/01/1994	1300	2.2	-3.0	7.5	HIGH	H,SW,MR 9.0NTU	99.99	BKN	90.0	999999	27.00	0.047	0.484	0.044
B04	BLUESTONE RIVER @ PIPESTEM	04/05/1994	1352	10.0	22.0	8.8	818	H,M,MI 4.3NTU	99.99	-OVC	116.0	T	42.00	0.023	0.281	0.011
B04	BLUESTONE RIVER @ PIPESTEM	07/06/1994	1252	27.0	29.0	8.9	76	N,SL,C 2.6NTU	9.80	SCT	330.0	0.00"	92.80	0.024		0.033
B05	MOUNTAIN CREEK	02/01/1994	1253	1.0	-3.0	6.8	NORM	N,SW,MI 4.0NTU	99.99	BKN	61.0	999999	7.00	0.016	0.388	0.012
B05	MOUNTAIN CREEK	04/05/1994	1330	8.0	22.0	7.7	NORM	N,SW,C 3.8NTU	99.99	-OVC	55.0	T	10.00	0.016	0.144	0.027
B05	MOUNTAIN CREEK	07/06/1994	1235	22.0	29.0	7.9	NORM	N,M,C 2.4NTU	8.40	SCT	234.0	0.00"	33.60	0.031		0.025
G01	SUMMERSVILLE DAM	01/25/1994	1105	1.5	4.0	8.6	1460	H,SW,MI 4.8NTU	99.99	OVC,-F,-R	32.0	999999	6.00	0.084	0.228	0.101
G01	SUMMERSVILLE DAM	04/14/1994	1018	8.0	15.0	7.0	250	L,M,MI 7.0NTU	99.99	CLR	33.0	1.68"	5.20	0.083	0.309	0.067
G01	SUMMERSVILLE DAM	07/12/1994	1046	13.0	27.0	7.3	1150	H,M,C 2.1NTU	9.90	CLR,-H	45.0	0.00"	7.80	0.038	0.140	0.158
G02	MID GAULEY	02/18/1994	1120	4.0	11.0	6.8	2680	H,M,MI 11.0NTU	99.99	CLR	38.0	999999	6.40	0.034	0.533	0.069
G02	MID GAULEY	04/14/1994	1145	12.0	21.0	7.4	3000+	H,M,TR 22.0NTU	99.99	CLR	41.0	1.68"	5.30	0.148	0.728	0.091
G02	MID GAULEY	07/12/1994	1218	16.0	23.0	7.4	NORM	N,SL,C 2.1NTU	10.10	SCT	50.0	0.00"	7.70	0.025	0.120	0.065
G03	PETERS CREEK	01/25/1994	1030	2.3	2.5	6.7	HIGH	H,SW,TR 24.0NTU	99.99	OVC,-F	103.0	999999	6.80	0.273	1.931	0.211
G03	PETERS CREEK	04/13/1994	1135	12.0	15.0	7.3	HIGH	H,SW,TR 240.0NTU	99.99	BKN	80.0	1.68"	14.00	0.023	18.138	0.205
G03	PETERS CREEK	07/12/1994	1201	22.0	24.0	8.1	NORM	N,SL,MI 6.4NTU	8.40	SCT	388.0	0.00"	56.00	0.025	0.320	0.048
G04	SOUTH SIDE SWISS	01/25/1994	0920	2.0	1.0	9.2	2680	H,SW,TR 9.9NTU	99.99	OVC,-F	50.0	999999	10.00	0.076	0.494	0.062
G04	SOUTH SIDE SWISS	04/14/1994	1301	14.0	24.0	7.2	3000+	H,SL,TR 15.0NTU	99.99	CLR	49.0	1.68"	8.60	0.113	0.681	0.075
G04	SOUTH SIDE SWISS	07/12/1994	1303	17.0	25.0	7.5	NORM	N,SL,MI 2.7NTU	9.50	SCT	52.0	0.00"	8.30	0.029	0.230	0.061
G05	MEADOW RIVER	02/18/1994	0955	2.5	11.0	6.5	1220	H,M,MI 6.0NTU	99.99	CLR	45.0	999999	10.40	0.035	0.313	0.056
G05	MEADOW RIVER	04/14/1994	0938	10.0	12.0	6.9	2890	H,M,TR 31.0NTU	99.99	CLR	22.0	1.68"	4.80	0.147	1.219	0.125
G05	MEADOW RIVER	07/12/1994	1006	23.5	24.0	7.1	NORM	N,SL,C 1.3NTU	7.50	SCT	148.0	0.00"	23.00	0.014	0.100	0.051
N01	NEW RIVER @ HINTON VC	01/27/1994	1221	4.4	5.0	7.9	29900	H,SW,MR 20.0NTU	99.99	OVC,-F	82.0	999999	36.00	0.090	0.950	0.086
N01	NEW RIVER @ HINTON VC	04/07/1994	1352	12.0	2.0	8.0	11620	H,SL,MR 20.0NTU	99.99	OVC	107.0	0.42"	44.00	0.059	1.122	0.087
N01	NEW RIVER @ HINTON VC	07/05/1994	1230	28.0	28.0	8.4	4310	N,M,C 3.7NTU	7.60	SCT	165.0	0.00"	53.00	0.115	0.630	0.157
N02	MADAM CREEK	01/27/1994	1214	4.0	5.0	7.4	HIGH	H,SW,TR 28.0NTU	99.99	OVC,-F	152.0	999999	8.00	0.095	1.397	0.071
N02	MADAM CREEK	04/07/1994	1328	7.0	2.0	8.0	NORM	N,M,MR 7.8NTU	99.99	OVC	48.0	0.42"	19.00	0.023	0.288	0.023
N02	MADAM CREEK	07/05/1994	1210	29.0	29.0	7.9	LOW	L,SL,C 3.6NTU	6.20	SCT	295.0	0.00"	108.00	0.032	0.230	0.167
N04	NEW RIVER @ SANDSTONE	01/27/1994	1125	3.9	5.0	7.5	29900	H,M,MR 24.0NTU	99.99	OVC,-F	80.0	999999	27.00	0.088	1.271	0.110
N04	NEW RIVER @ SANDSTONE	04/07/1994	1235	11.0	2.0	8.2	11620	H,SL,MR 16.5NTU	99.99	OVC	101.0	0.42"	41.00	0.054	0.856	0.081
N04	NEW RIVER @ SANDSTONE	07/05/1994	1055	27.0	27.0	8.1	4310	N,M,C 4.0NTU	7.60	SCT	160.0	0.00"	53.00	0.044	0.300	0.840
N05	LICK CREEK	01/27/1994	1013	5.0	3.0	7.0	281	H,SW,MR 22.0NTU	99.99	OVC,-F	53.0	999999	12.00	0.079	1.150	0.083
N05	LICK CREEK	04/07/1994	1137	8.0	3.0	8.0	76	N,M,MR 23.0NTU	99.99	OVC	73.0	0.42"	26.00	0.046	0.741	0.062
N05	LICK CREEK	07/05/1994	0950	22.0	26.0	8.1	0.6	N,SL,C 2.9NTU	8.40	SCT	285.0	0.00"	96.00	0.024	0.140	0.047
N06	MEADOW CREEK	01/27/1994	1025	4.4	3.0	7.1	318	H,SW,MR 22.0NTU	99.99	OVC,-F	32.0	999999	8.00	0.099	1.297	0.089
N06	MEADOW CREEK	04/07/1994	1115	8.0	2.0	7.6	NORM	N,SW,MI 12.0NTU	99.99	OVC,SW	51.0	0.42"	14.00	0.053	0.500	0.032
N06	MEADOW CREEK	07/05/1994	0930	21.0	23.0	8.1	2.0	N,M,C 1.9NTU	8.80	SCT	195.0	0.00"	51.00	0.024	0.100	0.028
N07	LAUREL CREEK @ QUINNIMONT	01/26/1994	1255	4.4	5.0	7.7	177+	H,SW,TR 18.5NTU	99.99	OVC,-F	30.0	999999	8.00	0.117	1.225	0.090
N07	LAUREL CREEK @ QUINNIMONT	04/22/1994	1238	11.0	11.0	7.7	20.3	H,M,C 1.5NTU	99.99	OVC	62.0	0.03"	18.00	0.025	0.153	0.014
N07	LAUREL CREEK @ QUINNIMONT	07/07/1994	1151	23.0	28.0	8.2	1.0	L,SL,C 1.8NTU	8.80	SCT	178.0	0.00"	46.40	0.058	0.150	0.039
N08	NEW RIVER @ PRINCE	01/26/1994	1245	1.7	5.0	9.0	17000	H,M,MR 15.0NTU	99.99	OVC,-F	93.0	999999	37.00	0.051	0.906	0.071
N08	NEW RIVER @ PRINCE	04/22/1994	1220	15.0	10.0	8.2	10500	H,M,MR 4.6NTU	99.99	OVC	105.0	0.03"	40.00	0.029	0.425	0.058
N08	NEW RIVER @ PRINCE	07/07/1994	1130	30.0	34.0	8.1	2380	N,M,C 2.4NTU	7.20	SCT	170.0	0.00"	52.00	0.025	0.200	0.043
N09	PINEY CREEK @ McCREERY	01/26/1994	1313	4.2	5.0	7.1	1000+	H,SW,TR 29.0NTU	99.99	OVC,-F	140.0	999999	12.00	0.258	2.120	0.202
N09	PINEY CREEK @ McCREERY	04/22/1994	1204	12.0	10.0	8.3	130.4	H,M,C 1.6NTU	99.99	OVC	165.0	0.03"	23.00	0.088	0.181	0.076
N09	PINEY CREEK @ McCREERY	07/07/1994	1105	23.0	29.0	8.1	21	N,M,C 1.7NTU	8.60	CLR	380.0	0.00"	55.60	0.083	0.170	0.088
N11	DUNLOUP CREEK	01/29/1994	1025	5.0	4.0	7.5	236	H,SW,MR 30.0NTU	99.99	OVC,-F	143.0	999999	22.00	0.725	3.046	0.342
N11	DUNLOUP CREEK	04/21/1994	0912	11.0	10.0	8.0	100	N,M,C 4.0NTU	99.99	OVC	309.0	0.00"	61.00	0.121	0.231	0.195
N11	DUNLOUP CREEK	07/14/1994	1240	19.0	21.0	8.3	25.6	N,M,MI 2.8NTU	9.20	OVC,-L	520.0	0.17"	123.00	0.033	0.320	0.044
N12	NEW RIVER @ THURMOND	01/26/1994	1005	1.5	4.0	7.8	17000	H,SW,MR 15.0NTU	99.99	OVC,-F	90.0	999999	31.00	0.060	0.969	0.070
N12	NEW RIVER @ THURMOND	04/21/1994	1021	16.0	11.0	8.3	10000	H,SL,MI 5.4NTU	99.99	OVC	108.0	0.00"	40.00	0.041	0.497	0.046
N12	NEW RIVER @ THURMOND	07/14/1994	1310	27.0	24.0	7.9	2590	N,M,C 2.1NTU	7.80	OVC,-L	170.0	0.17"	52.00	0.018	0.160	0.041

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SITE_NO	SITE_NAME	DATE	TIME	WATER_TEMP	AIR_TEMP	PH	STREAM_LVL	H2OCND_NTU	DISS_OXYGN	WEATHER	CNDUCTIVT	PRECIP_48H	ALKALINITY	ALUMINUM	TOTAL_IRON	MANGANESE
N13	ARBUCKLE CREEK	01/29/1994	0920	5.0	3.0	7.6	81	H,SW,MR 26.0NTU	99.99	OVC,-F,-L	159.0	999999	74.00	0.229	1.744	0.185
N13	ARBUCKLE CREEK	04/21/1994	0955	10.0	11.0	8.2	20	N,M,C 3.4NTU	99.99	OVC	255.0	0.00"	74.00	0.036	0.372	0.058
N13	ARBUCKLE CREEK	07/14/1994	1400	20.0	22.0	7.5	4.8	N,M,MI 5.9NTU	8.70	OVC	490.0	0.17"	158.00	0.051	0.350	0.055
N15	COAL RUN	01/26/1994	1125	6.0	4.5	7.3	HIGH	H,SW,MR 19.0NTU	99.99	OVC,-F	110.0	999999	19.00	0.088	1.644	0.125
N15	COAL RUN	04/19/1994	1145	13.0	25.0	8.5	NORM	N,M,C 2.0NTU	99.99	SCT	232.0	0.00"	46.00	0.036	0.144	0.051
N15	COAL RUN	07/13/1994	1305	19.0	21.0	7.7	NORM	N,M,MI 9.2NTU	8.90	OVC	409.0	T	73.20	0.057	0.440	0.075
N16	KEENEY CREEK	01/25/1994	1300	4.5	3.0	7.9	HIGH	H,SW,C 5.0NTU	99.99	OVC,-F,-L	83.0	999999	19.00	0.123	0.350	0.054
N16	KEENEY CREEK	04/19/1994	0935	10.0	19.0	7.4	NORM	N,M,C 2.4NTU	99.99	CLR	71.0	0.00"	4.40	0.094	0.075	0.046
N16	KEENEY CREEK	07/13/1994	1003	19.0	20.0	7.3	LOW	L,SL,C 1.9NTU	8.10	OVC,-R	199.0	T	47.20	0.026	0.150	0.037
N17	NEW RIVER @ FAYETTE STATION	01/25/1994	1400	2.5	3.0	7.8	13450	H,SW,MR 11.0NTU	99.99	OVC,-F,-R	120.0	999999	124.00	0.474	0.650	0.277
N17	NEW RIVER @ FAYETTE STATION	04/19/1994	1055	15.0	23.0	8.5	14000	H,M,MR 5.8NTU	99.99	SCT	98.0	0.00"	36.00	0.050	0.325	0.055
N17	NEW RIVER @ FAYETTE STATION	07/13/1994	1109	27.0	20.0	8.1	2223	N,SL,C 1.6NTU	7.80	OVC,R	174.0	T	56.80	0.013	0.110	0.035
N18	WOLF CREEK	01/25/1994	1345	3.6	3.0	7.7	74	H,SW,MI 7.0NTU	99.99	OVC,-F,-R	150.0	999999	12.00	1.020	0.900	0.558
N18	WOLF CREEK	04/19/1994	1042	12.0	23.0	8.3	26	N,M,MI 4.3NTU	99.99	CLR	207.0	0.00"	44.00	0.655	0.228	0.417
N18	WOLF CREEK	07/13/1994	1046	17.0	19.0	8.4	2.6	N,SL,MI 3.0NTU	8.70	OVC,-R	550.0	T	262.00	0.076	0.180	0.054
N19	MARR BRANCH	01/25/1994	1412	4.2	4.0	7.6	11	H,SW,TR 100+NTU	99.99	OVC,-F,-R	100.0	999999	96.00	3.675	27.200	0.424
N19	MARR BRANCH	04/19/1994	1015	12.0	21.0	7.6	5	N,SL,MR 5.2NTU	99.99	CLR	82.0	0.00"	19.00	0.063	0.669	0.210
N19	MARR BRANCH	07/13/1994	1128	19.0	21.0	7.4	NORM	N,SL,TR 39.0NTU	0.10	OVC	800.0	T	332.00	0.019	1.300	0.770
N20	NEW RIVER @ CUNARD	01/26/1994	1145	1.4	4.0	7.4	17000	H,M,MR 13.0NTU	99.99	OVC,-F	100.0	999999	31.00	0.069	1.034	0.059
N20	NEW RIVER @ CUNARD	04/19/1994	1210	16.0	25.0	8.5	14000	N,M,MR 5.8NTU	99.99	SCT	99.0	0.00"	38.00	0.046	0.334	0.053
N20	NEW RIVER @ CUNARD	07/13/1994	1322	27.0	22.0	8.0	2223	N,SL,C 1.6NTU	7.80	OVC	161.0	T	58.40	0.015	0.070	0.037
N21	NEW RIVER @ SANDSTONE FALLS	01/27/1994	1150	4.2	5.0	7.9	29900	H,SW,MR 25.0NTU	99.99	OVC,-F	75.0	999999	25.00	0.104	1.196	0.108
N21	NEW RIVER @ SANDSTONE FALLS	04/07/1994	1249	11.0	2.0	8.1	11620	H,M,MR 16.0NTU	99.99	OVC,SW	102.0	0.42"	43.00	0.050	1.094	0.075
N21	NEW RIVER @ SANDSTONE FALLS	07/05/1994	1115	27.0	27.0	8.2	4310	N,SW,C 2.6NTU	7.60	SCT	158.0	0.00"	53.00	0.035	0.230	0.070

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SITE_NO	SITE_NAME	DATE	TIME	WATER_TEMP	AIR_TEMP	PH	STREAM_LVL	H2OCND_NTU	DISS_OXYGN	WEATHER	CNDUCTIVTY	PRECIP_48H	ALKALINITY	ALUMINUM	TOTAL_IRON	MANGANESE
B01	BLUESTONE RIVER @ ST. PARK	02/02/1995	10:45	4.0	6.0	8.1	HIGH	H,M,MR 6.5 NTU	13.5	BKN	284	0.00	42.0	0.068	0.248	0.044
B01	BLUESTONE RIVER @ ST. PARK	04/06/1995	9:45	9.0	9.0	8.7	NORM	N,M,C 1.1 NTU	11.5	CLR	219	0.03	62.3	0.010	0.084	0.033
B01	BLUESTONE RIVER @ ST. PARK	07/24/1995	10:40	25.0	26.0	8.5	LOW	L,M,C 2.1 NTU	7.5	OVC	335	0.00	93.2	0.036	0.093	0.033
B01	BLUESTONE RIVER @ ST. PARK	10/16/1995	10:06	12.0	5.0	8.6	LOW	L,SL,C 1.2 NTU	9.9	CLR	319	1.25	94.8	0.011	0.033	0.026
B02	LITTLE BLUESTONE RIVER	02/02/1995	12:15	4.0	7.0	7.7	NORM	N,M,MI 12.0 NTU	13.3	OVC	75	0.00	15.0	0.077	0.188	0.023
B02	LITTLE BLUESTONE RIVER	04/06/1995	10:49	6.0	10.0	7.8	NORM	N,M,C 2.9 NTU	13.0	CLR	63	0.03	10.4	0.041	0.211	0.039
B02	LITTLE BLUESTONE RIVER	07/24/1995	11:50	22.0	24.0	7.3	LOW	L,M,C 4.1 NTU	8.4	OVC,R	154	0.00	49.6	0.051	0.136	0.049
B02	LITTLE BLUESTONE RIVER	10/16/1995	11:09	13.0	13.0	7.7	LOW	L,M,C 1.4 NTU	10.6	CLR	104	1.25	40.8	0.009	0.053	0.016
B03	BLUESTONE RIVER @ CONFLUENC	02/02/1995	12:30	4.0	7.0	8.3	HIGH	H,SL,MR 6.2 NTU	13.5	OVC	316	0.00	45.0	0.055	0.200	0.038
B03	BLUESTONE RIVER @ CONFLUENC	04/06/1995	11:12	9.0	22.0	8.4	NORM	N,SL,C 1.2 NTU	11.5	CLR	233	0.03	60.0	0.014	0.098	0.015
B03	BLUESTONE RIVER @ CONFLUENC	07/24/1995	12:17	25.0	24.0	7.7	LOW	L,SL,MI 10.2 NTU	-9999999.9	OVC,R	210	0.00	77.6	0.145	0.328	0.079
B03	BLUESTONE RIVER @ CONFLUENC	10/16/1995	11:32	12.0	15.0	8.3	LOW	L,SL,C 1.0 NTU	8.5	CLR	358	1.25	98.4	0.010	0.057	0.036
B04	BLUESTONE RIVER @ PIPESTEM	02/02/1995	14:10	4.0	7.0	8.1	444	H,M,MR 6.3 NTU	13.4	OVC	319	0.00	50.0	0.059	0.234	0.045
B04	BLUESTONE RIVER @ PIPESTEM	04/06/1995	12:20	10.0	18.0	8.9	190	N,SL,C 1.3 NTU	11.8	CLR	238	0.03	70.0	0.033	0.190	0.042
B04	BLUESTONE RIVER @ PIPESTEM	08/24/1995	12:45	25.0	28.0	8.9	33	L,SL,C 1.8 NTU	7.2	SCT	335	0.00	102.4	0.016	0.062	0.023
B04	BLUESTONE RIVER @ PIPESTEM	10/26/1995	12:35	11.0	16.0	8.9	61	L,SL,C 1.0 NTU	12.0	SCT	365	0.00	115.2	0.006	0.032	0.020
B05	MOUNTAIN CREEK	02/02/1995	13:50	4.0	7.0	7.6	NORM	N,M,MI 4.9 NTU	13.3	OVC	337	0.00	10.0	0.037	0.132	0.024
B05	MOUNTAIN CREEK	04/06/1995	12:45	10.0	18.0	7.6	NORM	N,M,C 1.4 NTU	11.2	CLR	140	0.03	16.0	0.014	0.027	0.018
B05	MOUNTAIN CREEK	08/24/1995	13:19	21.4	26.0	7.4	LOW	L,SL,C 1.2 NTU	6.4	SCT	320	0.00	52.0	0.014	0.039	0.044
B05	MOUNTAIN CREEK	10/16/1995	13:02	10.0	17.0	7.6	LOW	L,SL,C 0.7 NTU	10.2	CLR	336	1.25	34.0	0.011	0.025	0.013
G01	SUMMERSVILLE DAM	01/19/1995	9:15	7.0	6.0	7.0	3900	H,SW,MI 13.0 NTU	13.2	OVC	43	0.05	5.2	0.172	0.302	0.118
G01	SUMMERSVILLE DAM	04/13/1995	9:39	8.0	9.0	7.4	237	L,SW,C 2.8 NTU	12.0	OVC	60	0.35	6.7	0.055	0.086	0.072
G01	SUMMERSVILLE DAM	07/17/1995	10:10	15.0	21.0	7.0	128	L,M,C 2.4 NTU	9.8	OVC,+H	60	0.00	8.3	0.029	0.130	0.128
G01	SUMMERSVILLE DAM	10/11/1995	9:57	19.5	15.0	7.5	220	L,M,C 2.2 NTU	8.6	CLR	117	0.00	20.2	0.017	0.124	0.163
G02	MID GAULEY	01/19/1995	10:29	7.0	7.0	6.7	HIGH	H,M,MR 19.0 NTU	12.8	OVC	43	0.05	5.6	0.290	0.800	0.184
G02	MID GAULEY	04/13/1995	11:17	12.0	9.0	7.4	LOW	L,SL,C 1.7 NTU	10.6	OVC	86	0.35	7.8	0.030	0.093	0.057
G02	MID GAULEY	07/17/1995	11:40	26.0	28.0	7.4	LOW	L,SL,C 1.1 NTU	7.8	BKN,+H	95	0.00	13.1	0.025	0.036	0.040
G02	MID GAULEY	10/11/1995	11:36	19.0	19.0	7.7	LOW	L,SL,C 1.2 NTU	8.6	CLR	124	0.00	18.7	0.017	0.055	0.081
G03	PETERS CREEK	01/19/1995	10:18	7.0	7.0	7.2	HIGH	H,M,MI 4.4 NTU	13.0	OVC	175	0.05	26.8	0.035	0.165	0.073
G03	PETERS CREEK	04/13/1995	10:59	12.0	10.0	8.1	NORM	N,M,MI 11.0 NTU	10.6	OVC	305	0.35	44.6	0.061	0.527	0.085
G03	PETERS CREEK	07/17/1995	11:15	25.0	25.0	8.3	LOW	L,M,MI 2.5 NTU	8.0	BKN,+H	457	0.00	74.9	0.032	0.080	0.032
G03	PETERS CREEK	10/11/1995	11:16	15.5	16.0	8.3	LOW	L,SL,C 0.7 NTU	9.4	CLR	506	0.00	100.8	0.005	0.124	0.035
G04	SOUTH SIDE SWISS	01/19/1995	11:24	7.0	11.0	7.2	HIGH	H,SL,MI 12.0 NTU	12.6	OVC	46	0.05	7.6	0.136	0.314	0.063
G04	SOUTH SIDE SWISS	04/13/1995	12:08	13.0	10.0	7.3	NORM	N,SL,C 2.1 NTU	10.0	OVC	104	0.35	10.4	0.024	0.157	0.036
G04	SOUTH SIDE SWISS	07/17/1995	12:24	27.0	29.0	7.7	LOW	L,SL,C 1.2 NTU	7.4	SCT	128	0.00	17.8	0.023	0.041	0.042
G04	SOUTH SIDE SWISS	10/11/1995	12:27	19.5	20.0	7.6	LOW	L,SL,C 1.1 NTU	8.2	CLR	115	0.00	17.8	0.011	0.017	0.030
G05	MEADOW RIVER	01/17/1995	9:45	6.8	4.0	7.3	3098	H,SW,MR 9.5 NTU	10.3	OVC	34	1.10	11.2	0.203	0.465	0.085
G05	MEADOW RIVER	04/13/1995	9:05	13.0	12.0	7.5	185	N,SL,MI 1.2 NTU	10.0	OVC	110	0.35	9.4	0.023	0.155	0.026
G05	MEADOW RIVER	07/17/1995	9:27	26.0	23.5	7.3	58	L,SL,C 1.7 NTU	6.8	OVC,+H	142	0.00	22.8	0.028	0.137	0.076
G05	MEADOW RIVER	10/11/1995	9:19	15.0	11.0	7.4	50	L,SL,C 1.2 NTU	8.7	-GF,CLR	163	0.00	17.7	0.013	0.145	0.032
N01	NEW RIVER @ HINTON VC	01/26/1995	14:20	5.0	1.0	7.9	7425	H,SL,TR 38.0 NTU	13.8	CLR	112	0.01	33.0	0.330	1.053	0.083
N01	NEW RIVER @ HINTON VC	04/04/1995	13:00	12.0	14.0	8.3	4516	N,SL,MI 4.9 NTU	11.4	SCT	146	0.01	49.0	0.081	0.301	0.076
N01	NEW RIVER @ HINTON VC	07/25/1995	13:20	28.0	28.0	8.9	2360	L,SL,MI 5.4 NTU	-9999999.9	SCT	166	0.50	64.8	0.076	0.145	0.061
N01	NEW RIVER @ HINTON VC	10/24/1995	13:00	15.5	17.0	7.9	3680	N,M,MI 7.6 NTU	9.2	OVC	144	0.00	53.2	0.094	0.331	0.082
N02	MADAM CREEK	01/26/1995	12:20	1.0	2.0	7.2	HIGH	H,M,MI 5.1 NTU	-9999999.9	CLR	70	0.01	20.0	0.039	0.044	0.010
N02	MADAM CREEK	04/04/1995	11:00	10.0	13.0	7.8	NORM	N,M,MI 3.3 NTU	11.7	OVC	91	0.01	25.0	0.025	0.041	0.031
N02	MADAM CREEK	07/25/1995	11:20	28.0	27.0	8.0	LOW	L,SL,C 2.3 NTU	-9999999.9	SCT	257	0.50	117.2	0.017	0.078	0.166
N02	MADAM CREEK	10/24/1995	11:10	9.5	19.0	8.2	NORM	N,M,C 1.7 NTU	10.8	SCT	170	0.00	64.0	0.026	0.038	0.020
N04	NEW R @ SNDSTN FALLS PKLOT	01/26/1995	13:00	5.5	6.0	7.1	7425	H,M,TR 38.0 NTU	14.2	CLR	99	0.01	32.0	0.345	1.351	0.128
N04	NEW R @ SNDSTN FALLS PKLOT	04/04/1995	11:40	13.0	18.0	8.3	4516	N,M,MI 3.7 NTU	10.6	SCT	136	0.01	31.0	0.037	0.108	0.034
N04	NEW R @ SNDSTN FALLS PKLOT	07/25/1995	12:00	30.0	31.0	8.9	2360	L,M,MI 3.5 NTU	-9999999.9	SCT	160	0.50	64.4	0.046	0.074	0.044
N04	NEW R @ SNDSTN FALLS PKLOT	10/24/1995	12:18	15.5	21.0	9.0	3680	N,SL,MI 3.2 NTU	9.9	BKN	135	0.00	51.6	0.040	0.136	0.029
N05	LICK CREEK	01/26/1995	11:37	1.0	2.0	8.0	HIGH	H,M,C 4.4 NTU	-9999999.9	CLR	126	0.01	30.0	0.022	0.069	0.018
N05	LICK CREEK	04/04/1995	10:20	10.0	14.0	8.3	16.58	N,M,C 1.7 NTU	11.6	OVC	151	0.01	41.0	0.020	0.052	0.019
N05	LICK CREEK	07/25/1995	10:30	24.0	26.0	8.1	0.32	L,SL,C 2.1 NTU	-9999999.9	SCT	372	0.50	108.0	0.024	0.019	0.079
N05	LICK CREEK	10/24/1995	10:35	10.0	13.0	8.0	7.2	L,M,C 0.8 NTU	10.4	CLR	267	0.00	81.2	0.006	0.025	0.017
N06	MEADOW CREEK	01/26/1995	11:05	1.0	-3.0	7.1	95.6	H,M,C 4.2 NTU	-9999999.9	CLR	78	0.01	13.0	0.026	0.062	0.025
N06	MEADOW CREEK	04/04/1995	9:55	8.0	11.0	7.9	68.0	N,M,MI 2.0 NTU	11.6	-R, OVC	107	0.01	20.0	0.022	0.034	0.017
N06	MEADOW CREEK	07/25/1995	10:05	18.5	23.0	7.8	49.6	L,M,MI 8.2 NTU	-9999999.9	SCT	219	0.50	50.0	0.091	0.184	0.034
N06	MEADOW CREEK	10/24/1995	10:10	9.0	9.0	7.8	44.8	N,M,C 1.2 NTU	10.4	CLR	146	0.00	44.4	0.011	0.037	0.019

Raw Data for 1995 Physical/Chemical Tests
New River Gorge National River
Bluestone National Scenic River
Gauley River National Recreation Area

Appendix 6.
1995

SITE_NO	SITE_NAME	DATE	TIME	WATER_TEMP	AIR_TEMP	PH	STREAM_LVL	H2OCND_NTU	DISS_OXYGN	WEATHER	CNDUCTIVTY	PRECIP_48H	ALKALINITY	ALUMINUM	TOTAL_IRON	MANGANESE
N07	LAUREL CREEK @ QUINNIMONT	01/27/1995	12.30	1.0	-1 0	7.7	90.0	N,M,C 2 6 NTU	14 5	OVC	89	0 00	17 0	0 016	0 049	0 007
N07	LAUREL CREEK @ QUINNIMONT	04/05/1995	10.30	5 0	1 0	7.8	43.73	N,M,C 0 6 NTU	13 8	CLR	97	0.10	21 8	0.011	0.032	0.006
N07	LAUREL CREEK @ QUINNIMONT	07/26/1995	15 17	25.0	29 0	8 3	14 82	L,M,C 2 2 NTU	7.3	SCT	145	0.57	50 4	0 048	0.118	0 015
N07	LAUREL CREEK @ QUINNIMONT	10/25/1995	11.25	9 5	16 0	7.8	10 8	L,M,C 0 5 NTU	11.5	SCT	149	0 00	43 6	0 007	0 031	0 013
N08	NEW RIVER @ PRINCE	01/27/1995	12:10	3.0	-3 0	7.5	8475	N,M,TR 29 0 NTU	13 6	OVC	103	0.00	28 0	0 200	1 491	0 067
N08	NEW RIVER @ PRINCE	04/05/1995	10.05	10 0	1 0	8 0	6237	N,M,C 2 6 NTU	11.0	CLR	133	0.10	34 2	0 040	0.187	0 043
N08	NEW RIVER @ PRINCE	07/26/1995	15 00	28 5	30.0	8 5	2383	L,M,C 2.9 NTU	7.3	SCT	162	0 57	66 8	0.027	0 079	0 031
N08	NEW RIVER @ PRINCE	10/25/1995	10 50	13.5	14 0	7.8	4140	N,M,MI 4 4 NTU	9 2	SCT	147	0 00	53 6	0.051	0.160	0.035
N09	PINEY CREEK @ McCREERY	01/27/1995	11.25	1.0	-4 0	7 5	108	N,M,MI 5.3 NTU	14 2	OVC	236	0 00	19 0	0 108	0 162	0 104
N09	PINEY CREEK @ McCREERY	03/31/1995	17 25	8 0	7 0	8.9	108	N,M,C 1.6 NTU	11.4	OVC	234	0 00	22 0	0 093	0 116	0.049
N09	PINEY CREEK @ McCREERY	07/26/1995	13 57	24 0	27 0	8 2	43 6	N,M,MR 13 0 NTU	6 9	SCT	352	0 57	54 8	0 142	0 355	0 081
N09	PINEY CREEK @ McCREERY	10/25/1995	10 25	10 0	7 0	8.1	29	N,M,C 1.5 NTU	11 4	SCT	392	0 00	58 4	0.023	0 082	0 030
N11	DUNLOUP CREEK	01/31/1995	13.13	3 0	1 0	8.2	66.0	H,SW,C 2 4 NTU	14 5	SCT	371	0 67	56 0	0 090	0 151	0 183
N11	DUNLOUP CREEK	04/10/1995	9 32	13 0	13 0	8 4	42 4	N,M,MI 2 3 NTU	10 6	-R, OVC	529	0 02	105.0	0 068	0.248	0 087
N11	DUNLOUP CREEK	07/19/1995	9 50	17.5	-9999999 9	8 5	34	N,M,C 2 6 NTU	9 3	OVC,+H	583	0 02	140 0	0 040	0 163	0 047
N11	DUNLOUP CREEK	10/10/1995	13 10	13 5	19 0	8 8	17.1	L,M,C 1.0 NTU	10.0	CLR	629	0 00	150 0	0.008	0 095	0 027
N12	NEW RIVER @ THURMOND	01/31/1995	14 30	5 3	4 0	7 4	4842	H,SL,TR 19 0 NTU	13 6	SCT	131	0 67	36.0	0.109	0 205	0 044
N12	NEW RIVER @ THURMOND	04/10/1995	10 00	15 0	13.0	7.9	3026	L,SL,C 2 0 NTU	9 2	-R, OVC	151	0 02	44 0	0.022	0 055	0 024
N12	NEW RIVER @ THURMOND	07/19/1995	11.30	27 0	-9999999 9	8 4	3133	L,M,MI 3 4 NTU	-9999999 9	SCT	171	0 02	59 6	0 038	0 088	0.031
N12	NEW RIVER @ THURMOND	10/10/1995	14 25	19 0	23 0	8 0	6077	H,M,MI 5 8 NTU	8 7	CLR	141	0 00	41 0	0 060	0 194	0 047
N13	ARBUCKLE CREEK	01/31/1995	13 50	3.4	2.0	7 9	17 0	N,SL,MI 7.1 NTU	14.2	CLR	434	0 67	58 0	0 092	0 344	0 094
N13	ARBUCKLE CREEK	04/10/1995	11 35	13 0	17.0	8.9	14 0	N,M,C 1 9 NTU	12 2	BKN	466	0 02	126 0	0 024	0.121	0 031
N13	ARBUCKLE CREEK	07/19/1995	10 30	19 0	-9999999 9	8.3	3	L,M,MI 5 5 NTU	-9999999.9	SCT	513	0.02	148 0	0.073	0 206	0 053
N13	ARBUCKLE CREEK	10/10/1995	13 43	14 5	18 0	8 6	1.8	L,M,C 1 5 NTU	9.3	CLR	625	0 00	172 0	0 025	0 083	0 028
N15	COAL RUN	01/18/1995	10.12	5.0	4 0	7.5	NORM	N,M,C 3.7 NTU	13 8	SCT	255	0 97	23 2	0 032	0.115	0 048
N15	COAL RUN	04/12/1995	9 45	13 0	16 0	8 1	NORM	N,M,C 2 6 NTU	10 2	OVC	389	0 02	60.0	0 024	0.362	0 026
N15	COAL RUN	07/18/1995	12 05	19 0	21.0	8.1	LOW	L,M,MI 15 0 NTU	8 8	SCT	457	0 02	78 0	0 134	0 389	0 082
N15	COAL RUN	10/23/1995	12 55	9 0	14 0	8 0	NORM	N,M,C 2 3 NTU	10 1	CLR	399	0 01	57 0	0 024	0.100	0 034
N16	KEENEY CREEK	01/18/1995	11 05	7 0	11 0	7.6	HIGH	H,M,C 3 2 NTU	12 6	SCT	79	0 97	11 2	0 082	0 078	0 038
N16	KEENEY CREEK	04/12/1995	10 45	13 0	12.0	7.6	NORM	N,M,C 1.4 NTU	10 0	-R, OVC	142	0 02	17.0	0 030	0 054	0 015
N16	KEENEY CREEK	07/18/1995	9 00	19 0	20 0	7.3	LOW	L,M,C 2.7 NTU	8 4	OVC,+F	169	0 02	31 5	0 060	0 107	0 034
N16	KEENEY CREEK	10/23/1995	10 10	9 0	10.0	7.7	NORM	N,M,C 1.1 NTU	9 8	CLR	230	0 01	41 6	0 014	0.051	0 021
N17	NEW RIVER @ FAYETTE STATION	01/18/1995	12 17	7.7	9 0	7.3	66700	H,SW,TR 46.0 NTU	13 2	SCT	90	0 97	26 4	0 219	0 740	0.112
N17	NEW RIVER @ FAYETTE STATION	04/12/1995	12 20	15 0	13 0	7.7	4380	N,M,C 2.4 NTU	9 6	RW	154	0 02	46 0	0 021	0 117	0 026
N17	NEW RIVER @ FAYETTE STATION	07/18/1995	10.40	28 0	25 0	8.2	3400	L,M,MI 4 0 NTU	7.6	SCT	166	0 02	55 4	0 036	0 068	0 025
N17	NEW RIVER @ FAYETTE STATION	10/23/1995	11.40	14 0	12 0	7.8	3890	N,M,MI 3 4 NTU	10.2	CLR	154	0 01	55 6	0 048	0 202	0 030
N18	WOLF CREEK	01/18/1995	12:08	6 8	9 0	7.5	31 0	H,M,MI 5.8 NTU	13 0	CLR	150	0 97	22 0	0 089	0 193	0 081
N18	WOLF CREEK	04/12/1995	12 00	12 0	11.0	8 3	4.73	N,M,C 1.7 NTU	10 6	RW	428	0.02	110 0	0 026	0.210	0 024
N18	WOLF CREEK	07/18/1995	10.20	18 5	24 0	8.3	4.45	N,M,MI 11.0 NTU	8 8	SCT	390	0 02	140 0	0 132	0 300	0 099
N18	WOLF CREEK	10/23/1995	11 20	10 0	11 0	8 5	1 37	N,M,C 0.7 NTU	11.0	CLR	629	0.01	244 0	0 013	0.015	0 022
N19	MARR BRANCH	01/18/1995	11.35	6 0	10 0	7 4	5 8	H,SL,MI 5.5 NTU	12 6	SCT	110	0 97	20 0	0 049	0 224	0 096
N19	MARR BRANCH	04/12/1995	11 25	13 0	10 0	7.3	1.6	L,SL,MI 3 5 NTU	9 0	-R, OVC	223	0 02	43 0	0 018	0.433	0 242
N19	MARR BRANCH	07/18/1995	9 40	20 0	20 0	7 4	LOW	L,M,MI 4 5 NTU	7.1	OVC	287	0 02	62 0	0 021	0 338	0.087
N19	MARR BRANCH	10/23/1995	10 48	9 0	8 0	7.7	1 2	N,M,C 2.1 NTU	9 5	CLR	452	0 01	103 0	0.011	0 262	0 062
N20	NEW RIVER @ CUNARD	01/18/1995	9 55	7 0	7.0	7.7	66700	H,M,TR 47.0 NTU	13 2	OVC, -F	94	0 97	25 2	0 266	0 971	0 128
N20	NEW RIVER @ CUNARD	04/12/1995	9:25	16 0	18 0	8.1	4380	N,SL,C 2 4 NTU	9 3	BKN	145	0 02	44 0	0 025	0 154	0.023
N20	NEW RIVER @ CUNARD	07/18/1995	11 45	28 0	31.0	8.3	3400	L,SL,MI 4 0 NTU	7.3	SCT	166	0 02	59 8	0 036	0 080	0 031
N20	NEW RIVER @ CUNARD	10/23/1995	12 30	14 0	19 0	8.1	3890	N,M,MI 3.4 NTU	9 8	CLR	152	0 01	53.6	0.047	0.181	0.024
N21	NEW R @ SNDSTN FALLS BDWLK	01/26/1995	13 30	5.5	8 0	7.7	7425	H,SW,TR 38.0 NTU	14 4	CLR	99	0 01	31 0	0 395	1.096	0 066
N21	NEW R @ SNDSTN FALLS BDWLK	04/04/1995	11.58	13 0	14 0	8 3	4516	N,M,C 2 7 NTU	11.0	SCT	136	0 01	38.0	0.049	0 165	0 059
N21	NEW R @ SNDSTN FALLS BDWLK	07/25/1995	12:20	29 0	30 0	9 2	2360	L,M,MI 3 2 NTU	-9999999 9	SCT	160	0.50	65 6	0.032	0 071	0.041
N21	NEW R @ SNDSTN FALLS BDWLK	10/24/1995	11 58	15 0	22.0	8 5	3680	N,SW,MI 3.7 NTU	9 8	BKN	137	0 00	54 0	0 044	0.117	0.032

Raw Data for 1996 Physical/Chemical Tests
New River Gorge National River
Bluestone National Scenic River
Gauley River National Recreation Area

Appendix 6.
1996

SITE_NO	SITE_NAME	DATE	TIME	WATER_TEMP	AIR_TEMP	PH	STREAM_LVL	H20_CND	TUBIDITY_NTU	DISS_OXYGN	WEATHE	CNDUCTIVTY	PRECIP_48H	ALKALINITY	ALUMINUM	TOTAL_IRON	MANGANESE	COMMENTS
B01	BLUESTONE RIVER @ ST. PARK	04/11/1996	10.08	5.50	18.00	8.70	HIGH	H,M,C	2.00	13.20	CLR	198.0	T	52.8	0.018	0.098	0.016	
B01	BLUESTONE RIVER @ ST. PARK	06/27/1996	09.57	23.10	27.00	8.40	LOW	L,M,C	2.30	7.80	CLR,H	310.0	0.00	91.6	< 0.10*	< 0.10*	< 0.05*	*REIC/ND@MQL
B02	LITTLE BLUESTONE RIVER	04/11/1996	11.14	4.00	15.00	7.50	NORM	N,M,C	2.10	13.80	CLR	58.0	T	14.5	0.019	0	0.008	
B02	LITTLE BLUESTONE RIVER	06/27/1996	11.01	18.00	24.00	7.80	LOW	L,M,C	1.60	8.80	CLR,H	103.0	0.00	41.6	< 0.10*	< 0.10*	< 0.05*	*REIC/ND@MQL
B03	BLUESTONE RIVER @ CONFLUENC	04/11/1996	11.42	6.20	22.00	9.00	NORM	N,SL,C	2.20	14.60	CLR	202.0	T	53.6	0.019	0.152	0.023	
B03	BLUESTONE RIVER @ CONFLUENC	06/27/1996	11.21	24.00	29.00	8.00	LOW	L,SL,MR	3.10	7.50	CLR,H	318.0	0.00	97.6	< 0.10*	0.16	< 0.05*	*REIC/ND@MQL
B04	BLUESTONE RIVER @ PIPESTEM	04/11/1996	13.27	7.00	28.00	9.20	434	N,M,C	2.20	14.40	CLR	211.0	T	53.2	0.019	0.093	0.025	
B04	BLUESTONE RIVER @ PIPESTEM	06/27/1996	12.25	24.00	34.00	8.60	95	N,SL,C	2.00	8.70	SCT	307.0	0.00	95.6	< 0.10*	< 0.10*	< 0.05*	*REIC/ND@MQL
B05	MOUNTAIN CREEK	04/11/1996	13.02	6.00	15.00	7.40	NORM	N,M,C	2.00	12.90	CLR	164.0	T	10.5	0.017	0.014	0.008	
B05	MOUNTAIN CREEK	06/27/1996	12.44	19.40	23.00	7.90	LOW	L,SL,C	2.20	8.40	SCT	207.0	0.00	36.4	< 0.10*	< 0.10*	< 0.05*	*REIC/ND@MQL
G01	SUMMERSVILLE DAM	04/17/1996	10.08	5.00	6.00	7.20	200	N,M,C	4.60	12.20	SCT	8.0	1.26	6.5	0.086	0.166	0.076	
G01	SUMMERSVILLE DAM	07/01/1996	09.54	16.00	24.00	7.10	354	L,M,C	2.10	9.20	OVC	54.0	0.00	8.2	< 0.10*	0.14	0.11	*REIC/ND@MQL
G04	SOUTH SIDE SWISS	04/17/1996	13.12	8.00	20.00	7.30	HIGH	H,M,MR	30.00	12.10	SCT	62.0	1.26	7.6	0.248	0.812	0.114	
G04	SOUTH SIDE SWISS	07/01/1996	12.17	25.00	33.00	7.40	LOW	L,SL,C	1.50	-99999.00	SCT	80.0	0.00	12.0	< 0.10*	< 0.10*	< 0.05*	*REIC/ND@MQL
G05	MEADOW RIVER	04/17/1996	09.25	6.00	4.00	7.00	3044	H,SW,MR	12.00	11.60	SCT	19.0	1.26	3.1	0.143	0.386	0.054	
G05	MEADOW RIVER	07/01/1996	09.23	25.00	25.00	7.30	NORM	N,SL,C	1.10	6.90	OVC	120.0	0.00	19.0	< 0.10*	< 0.10*	< 0.05*	*REIC/ND@MQL
G06	GAULEY RIVER @ MASON BRANCH	04/17/1996	11.10	7.00	8.00	7.40	HIGH	H,SW,MR	25.00	12.60	SCT	53.0	1.26	6.4	0.226	0.748	0.113	
G06	GAULEY RIVER @ MASON BRANCH	07/01/1996	10.41	20.00	25.00	7.10	LOW	L,M,C	1.30	8.00	SCT	66.0	0.00	10.5	< 0.10*	< 0.10*	< 0.05*	*REIC/ND@MQL
G07	PETERS CREEK @ FORD	04/17/1996	12.24	8.00	15.00	7.40	HIGH	H,SW,MI	12.00	12.20	SCT	148.0	1.26	24.4	0.127	0.456	0.085	
G07	PETERS CREEK @ FORD	07/01/1996	11.37	25.00	30.00	8.10	LOW	L,M,C	2.60	7.20	SCT	445.0	0.00	96.0	< 0.10*	0.18	< 0.05*	*REIC/ND@MQL
N01	NEW RIVER @ HINTON VC	04/18/1996	12.55	12.50	20.00	8.30	10400	H,M,MI	7.30	10.80	SCT	147.0	0.05	52.8	0.08	0.181	0.061	
N01	NEW RIVER @ HINTON VC	06/26/1996	13.12	27.00	23.00	8.20	5050	N,M,C	5.40	9.00	SCT	149.0	0.50	50.8	0.18	0.31	0.08	
N02	MADAM CREEK	04/18/1996	11.00	8.20	17.00	7.60	HIGH	H,M,MI	8.70	12.40	SCT	70.0	0.05	22.8	0.081	0.043	0.005	
N02	MADAM CREEK	06/26/1996	11.00	21.80	24.90	8.80	LOW	L,M,C	2.40	8.40	CLR	161.0	0.50	72.4	< 0.10*	< 0.10*	< 0.05*	*REIC/ND@MQL
N04	NEW R @ SNDSTN FALLS PKLOT	04/18/1996	11.45	12.50	20.00	7.90	HIGH	H,M,MI	6.90	10.50	SCT	138.0	0.05	48	0.07	0.185	0.045	
N04	NEW R @ SNDSTN FALLS PKLOT	06/26/1996	11.50	26.50	25.00	9.00	NORM	N,M,C	3.00	8.00	SCT	145.0	0.50	49.2	0.12	0.21	< 0.05*	*REIC/ND@MQL
N05	LICK CREEK	04/18/1996	10.15	6.80	17.00	7.50	187.1	H,SW,MR	8.00	12.50	SCT	96.0	0.05	26.8	0.06	0.106	0.028	
N05	LICK CREEK	06/26/1996	10.12	21.00	22.00	8.30	NORM	N,M,C	1.50	8.20	CLR	232.0	0.50	45.2	< 0.10*	< 0.10*	< 0.05*	*REIC/ND@MQL
N06	MEADOW CREEK	04/18/1996	09.50	7.00	11.00	7.10	100	H,SW,MI	6.40	11.90	SCT	61.0	0.05	12.8	0.063	0.152	0.034	
N06	MEADOW CREEK	06/26/1996	09.45	17.80	21.50	8.10	0.37	L,M,C	4.60	8.80	CLR	129.0	0.50	32.4	0.18	0.17	< 0.05*	*REIC/ND@MQL
N07	LAUREL CREEK @ QUINNIMONT	04/19/1996	09.50	10.00	13.00	7.30	HIGH	H,M,C	2.40	11.90	OVC	66.0	0.00	12.6	0.049	0.103	0.016	
N07	LAUREL CREEK @ QUINNIMONT	06/25/1996	10.35	19.00	22.00	8.20	NORM	N,M,TR	108.00	9.60	OVC	146.0	0.82	41.6	3.09	4.79	0.07	VERY TURBID, STO
N08	NEW RIVER @ PRINCE	04/19/1996	09.28	12.50	14.00	7.30	11820	H,M,MI	4.70	10.40	OVC,L	135.0	0.00	49.6	0.069	0.206	0.046	
N08	NEW RIVER @ PRINCE	06/25/1996	10.10	26.00	24.90	8.00	5700	H,M,MR	9.00	7.90	OVC	145.0	0.82	48.0	0.23	0.37	0.05	
N09	PINEY CREEK @ McCREERY	04/19/1996	09.00	11.00	11.00	7.40	280	H,SW,MI	2.60	11.70	OVC,R	166.0	0.00	16	0.088	0.183	0.086	
N09	PINEY CREEK @ McCREERY	06/25/1996	09.35	21.20	22.00	7.90	88.8	H,M,TR	30.00	8.20	RW,OVC	283.0	0.82	34.8	0.68	1.41	0.17	
N11	DUNLOUP CREEK	04/04/1996	10.08	10.00	16.00	7.90	118.7	H,SW,C	2.40	10.40	CLR	336.0	0.00	51.6	0.171	0.233	0.202	
N11	DUNLOUP CREEK	07/01/1996	11.00	19.50	26.00	9.30	38.8	N,M,MI	3.10	7.60	SCT	558.0	0.00	125.6	0.13	0.35	0.07	
N12	NEW RIVER @ THURMOND	04/04/1996	11.40	11.00	23.00	7.90	16388	H,M,MI	5.80	11.80	SCT	123.0	0.00	46.4	0.045	0.185	0.037	
N12	NEW RIVER @ THURMOND	07/01/1996	10.30	27.60	26.50	8.80	3520	N,SL,C	2.70	6.90	SCT	154.0	0.00	56.4	< 0.10*	0.15	< 0.05*	*REIC/ND@MQL
N13	ARBUCKLE CREEK	04/04/1996	10.45	10.50	23.00	8.60	22.08	N,M,C	1.60	11.10	SCT	317.0	0.00	71.2	0.061	0.151	0.1	
N13	ARBUCKLE CREEK	07/01/1996	09.40	18.00	21.00	9.40	6.6	L,M,MI	4.20	9.10	SCT	405.0	0.00	123.6	0.19	0.42	0.05	
N15	COAL RUN	04/05/1996	12.15	7.50	4.00	7.50	HIGH	H,SW,C	2.50	11.60	OVC	292.0	0.21	49.6	0.027	0.156	0.049	
N15	COAL RUN	07/02/1996	13.20	18.00	20.00	6.70	NORM	N,SW,TR	504.00	8.60	OVC	346.0	0.00	66.8	6.20	25.3	0.60	VERY TURBID, STO
N16	KEENEY CREEK	04/05/1996	09.20	7.00	0.00	7.70	NORM	N,M,C	2.10	11.60	OVC,L	106.0	0.21	16	0.099	0	0.048	
N16	KEENEY CREEK	07/02/1996	09.15	19.00	21.00	7.30	LOW	L,M,C	2.40	7.80	OVC	169.0	0.00	28.1	0.48	0.18	< 0.05*	*REIC/ND@MQL
N17	NEW RIVER @ FAYETTE STATION	04/05/1996	10.50	11.00	3.00	7.70	14639	H,SW,MI	4.20	11.10	OVC,L	136.0	0.21	48	0.04	0.049	0.039	
N17	NEW RIVER @ FAYETTE STATION	07/02/1996	12.00	28.00	22.00	7.70	3592	N,M,MI	4.70	7.40	OVC,-R	172.0	0.00	56.0	0.11	0.18	< 0.05*	*REIC/ND@MQL
N18	WOLF CREEK	04/05/1996	10.35	8.50	2.00	7.40	53.8	H,SW,MI	3.30	12.00	OVC,L	163.0	0.21	29.6	0.059	0.091	0.089	
N18	WOLF CREEK	07/02/1996	11.40	18.50	21.00	8.10	10.52	N,M,TR	248.00	8.90	T,RW	422.0	0.00	170.4	4.22	4.34	0.91	VERY TURBID, STO
N19	MARR BRANCH	04/05/1996	10.00	8.00	1.00	7.10	11.98	H,M,MI	6.10	11.20	OVC,L	142.0	0.21	32	0.05	0.266	0.09	
N19	MARR BRANCH	07/02/1996	10.50	20.00	20.00	7.60	1.9	N,SL,TR	93.00	7.30	T,+RW	289.0	0.00	73.2	9.63	3.54	0.39	VERY TURBID, STO
N20	NEW RIVER @ CUNARD	04/05/1996	11.55	11.00	4.00	7.30	HIGH	H,M,MI	4.20	10.40	OVC	136.0	0.21	48	0.062	0.169	0.045	
N20	NEW RIVER @ CUNARD	07/02/1996	13.12	28.00	23.00	7.50	NORM	N,SL,MI	4.20	7.20	OVC,GF	217.0	0.00	58.4	< 0.10*	0.14	< 0.05*	*REIC/ND@MQL
N21	NEW R. @ SNDSTN FALLS BDWLK	04/18/1996	12.10	13.00	21.00	8.30	HIGH	H,SW,MI	7.00	10.80	SCT	136.0	0.05	48	0.073	0.229	0.054	
N21	NEW R. @ SNDSTN FALLS BDWLK	06/26/1996	12.08	26.50	24.00	8.90	NORM	N,M,C	4.00	8.80	SCT	145.0	0.50	49.6	0.12	0.22	< 0.05*	*REIC/ND@MQL

Raw Data for 1997 Physical/Chemical Tests
New River Gorge National River
Bluestone National Scenic River
Gauley River National Recreation Area

Appendix 6.
1997

ITE_NO	SITE_NAME	DATE	TIME	H2O_TEMP	AIR_TEMP	PH	STAGE_LVL	H2O_CND	TURBIDITY_NTU	DO	WEATHER	CONDUCT	PRECIP_48HR	ALK_MG/L	AL_MG/L	IRON_MG/L	MN_MG/L	COMMENTS
01	BLUESTONE RIVER @ ST. PARK	04/16/1997	9.48	9.0	10.2	8.0	N,M	N,M,C	2.1	11.3	CLR	137	0.00	63.2	0.023	0.103	0.026	
01	BLUESTONE RIVER @ ST PARK	07/15/1997	10.04	25.5	28.5	8.7	L,M	L,M,C	2.8	7.4	CLR,H	255	0.00	89.2	0.024	0.125	0.036	
02	LITTLE BLUESTONE RIVER	04/16/1997	10.55	6.2	17.2	7.4	N,M	N,M,C	3.6	12.5	CLR	42	0.00	19.1	0.016	0.099	0.008	
02	LITTLE BLUESTONE RIVER	07/15/1997	11.10	20.5	26.0	7.5	L,SL	L,SL,C	2.0	7.6	BKN	115	0.00	54.8	0.021	0.065	0.026	
03	BLUESTONE RIVER @ CONFLUENC	04/16/1997	11.29	9.8	19.0	7.9	N,SL	N,SL,C	2.3	11.1	CLR	147	0.00	65.2	0.023	0.100	0.021	
03	BLUESTONE RIVER @ CONFLUENC	07/15/1997	11.27	26.0	29.0	8.2	L,SL	L,SL,MI	3.4	6.6	BKN,H	290	0.00	97.2	0.042	0.244	0.099	
04	BLUESTONE RIVER @ PIPESTEM	04/16/1997	12.36	11.2	22.0	8.5	287	N,SL,C	2.0	10.7	CLR	150	0.00	62.4	0.026	0.163	0.023	
04	BLUESTONE RIVER @ PIPESTEM	07/15/1997	13.19	27.0	32.5	8.5	L,M	L,M,C	1.8	8.4	BKN,H	310	0.00	96.8	0.022	0.112	0.033	
05	MOUNTAIN CREEK	04/16/1997	13.04	9.0	21.0	7.3	N,SW	N,SW,C	2.8	11.4	CLR	70	0.00	14.5	0.021	0.067	0.010	
05	MOUNTAIN CREEK	07/15/1997	13.38	22.5	29.5	8.7	L,M	L,M,C	2.6	7.3	OVC	200	0.00	48.0	0.023	0.037	0.011	
01	SUMMERSVILLE DAM	04/03/1997	9.53	7.5	17.0	6.9	200	L,SW,MI	7.8	11.8	CLR	38	0.01	6.8	0.024	0.178	0.077	
01	SUMMERSVILLE DAM	07/09/1997	9.55	13.5	24.5	7.0	373	N,M,C	1.1	10.0	OVC,H	49	0.00	9.0	0.022	0.080	0.075	
04	SOUTH SIDE SWISS	04/03/1997	13.08	9.5	27.0	6.8	N,SL	N,SL,MI	6.7	10.2	CLR	42	0.01	7.8	0.004	0.199	0.046	
04	SOUTH SIDE SWISS	07/09/1997	12.03	22.0	32.0	6.9	L,SL	L,SL,C	1.1	7.9	BKN,H	80	0.00	14.0	0.022	0.042	0.032	
05	MEADOW RIVER	04/03/1997	9.07	7.0	20.0	6.9	973	N,M,MI	4.9	11.6	CLR	45	0.01	10.3	0.015	0.192	0.045	
05	MEADOW RIVER	07/09/1997	9.21	22.0	24.0	7.1	101	N,M,MI	2.8	6.6	OVC,H	111	0.00	22.1	0.036	0.153	0.089	
06	GAULEY R @ MASON BRANCH	04/03/1997	11.17	7.5	20.0	7.0	N,M	N,M,MI	5.2	11.6	CLR	40	0.01	8.3	0.013	0.203	0.036	
06	GAULEY R @ MASON BRANCH	07/09/1997	10.30	18.5	28.5	7.1	L,M	L,M,C	1.2	8.7	OVC,H	69	0.00	12.7	0.025	0.083	0.030	
07	PETERS CREEK @ FORD	04/03/1997	12.21	9.0	22.0	7.1	N,M	N,M,C	2.7	11.6	CLR	150	0.01	34.4	0.011	0.123	0.075	
07	PETERS CREEK @ FORD	07/09/1997	11.25	21.0	28.0	8.0	L,M	L,M,MI	3.7	8.1	OVC,H	400	0.00	88.8	0.029	0.199	0.074	
01	NEW RIVER @ HINTON VC	04/10/1997	13.01	13.8	13.8	8.6	5600	N,M,MI	5.5	10.4	CLR	122	0.00	62.8	0.062	0.227	0.065	
01	NEW RIVER @ HINTON VC	07/14/1997	12.50	28.0	31.5	8.0	2840	L,M,C	2.2	7.4	SCT,H	155	0.00	55.2	0.046	0.092	0.043	
02	MADAM CREEK	04/10/1997	11.05	5.5	9.9	7.7	N,M	N,M,C	3.1	12.1	CLR	63	0.00	33.2	0.031	0.040	0.012	
02	MADAM CREEK	07/14/1997	10.53	21.8	27.0	8.1	L,SL	L,SL,C	3.2	8.0	CLR,H	188	0.00	82.4	0.038	0.027	0.037	
04	NEW R @ SNDSTN FALLS PKLOT	04/10/1997	11.45	13.2	11.2	8.3	N,M	N,M,MI	4.5	11.1	CLR	120	0.00	61.6	0.039	0.161	0.047	
04	NEW R @ SNDSTN FALLS PKLOT	07/14/1997	11.40	28.0	27.0	8.5	L,M	L,M,C	1.9	8.2	SCT,H	151	0.00	56.8	0.035	0.050	0.044	
05	LICK CREEK	04/10/1997	10.20	5.0	12.0	7.8	16.09	H,M,MI	5.0	12.5	CLR	98	0.00	50.6	0.036	0.098	0.020	
05	LICK CREEK	07/14/1997	10.08	21.6	26.0	8.2	4.7	L,M,C	2.6	8.4	CLR,H	175	0.00	74.0	0.033	0.036	0.017	
06	MEADOW CREEK	04/10/1997	9.55	4.0	5.0	7.3	52.29	N,M,MI	2.7	12.8	CLR	58	0.00	20.2	0.022	0.039	0.010	DIESEL ODOR
06	MEADOW CREEK	07/14/1997	9.37	18.5	23.0	8.1	L,M	L,M,MI	4.4	9.0	H+	137	0.00	34.7	0.066	0.081	0.025	NO GAGE READING
07	LAUREL CREEK @ QUINNIMONT	04/09/1997	11.25	6.7	3.2	7.6	H,M	H,M,C	2.6	12.5	SCT	60	0.00	21.1	0.026	0.088	0.015	SAMPLED AT FORD
07	LAUREL CREEK @ QUINNIMONT	07/16/1997	10.03	19.3	26.0	8.1	5.9	L,M,C	2.6	8.5	SCT,H	122	0.00	44.0	0.037	0.046	0.017	
08	NEW RIVER @ PRINCE	04/09/1997	9.58	11.2	2.9	7.8	H,M	H,M,MI	4.6	10.6	SCT	103	0.00	53.2	0.047	0.200	0.044	
08	NEW RIVER @ PRINCE	07/16/1997	9.31	27.2	26.5	7.9	L,M	L,M,C	2.7	6.9	SCT,H	162	0.00	56.0	0.040	0.050	0.038	
09	PINEY CREEK @ McCREERY	04/09/1997	9.32	7.9	3.0	7.5	130.05	H,M,C	2.6	12.2	SCT	151	0.00	32.4	0.062	0.191	0.058	
09	PINEY CREEK @ McCREERY	07/16/1997	9.04	21.0	23.5	7.8	37.41	N,M,MI	4.1	8.1	SCT,H	330	0.00	54.4	0.063	0.175	0.066	
11	DUNLOUP CREEK	03/31/1997	8.53	9.2	5.5	7.9	157.57	H,SW,MI	12.2	11.3	OVC,-S	199	0.87	46.4	0.216	0.651	0.217	
11	DUNLOUP CREEK	07/08/1997	11.45	18.0	24.5	7.5	N,M	N,M,MI	3.7	5.6	CLR	459	0.00	123.2	0.076	0.340	0.072	BROWN SLIME ON R
12	NEW RIVER @ THURMOND	03/31/1997	10.30	12.1	6.0	8.0	12239	H,M,MI	8.0	10.9	OVC,-S	102	0.87	46.0	0.041	0.203	0.056	
12	NEW RIVER @ THURMOND	07/08/1997	10.12	25.0	23.0	7.9	3472	N,M,C	2.1	7.0	CLR	149	0.00	53.2	0.044	0.133	0.047	
13	ARBUCKLE CREEK	03/31/1997	9.37	8.2	7.0	8.2	25.5	H,SW,MI	7.5	12.6	OVC,-S	180	0.87	53.2	0.082	0.190	0.091	
13	ARBUCKLE CREEK	07/08/1997	11.01	17.0	32.0	7.4	5.6	N,M,MI	6.3	9.0	CLR	440	0.00	160.4	0.136	0.416	0.098	
15	COAL RUN	04/02/1997	12.15	8.8	16.5	7.8	H,M	H,M,MI	5.6	10.0	CLR	208	0.00	62.4	0.031	0.198	0.061	
15	COAL RUN	07/10/1997	12.00	17.8	22.8	8.3	L,M	L,M,MR	23.0	10.6	BKN	338	0.29	67.2	0.200	0.583	0.123	
16	KEENEY CREEK	04/02/1997	9.35	6.3	11.8	7.1	H,M	H,M,MI	2.9	11.4	CLR	55	0.00	12.0	0.088	0.085	0.047	
16	KEENEY CREEK	07/10/1997	13.05	17.8	22.0	7.8	L,M	L,M,C	6.2	10.7	OVC	145	0.29	32.7	0.128	0.212	0.058	
17	NEW RIVER @ FAYETTE STATION	04/02/1997	11.00	11.0	18.0	7.8	12900	H,M,MI	7.5	9.8	CLR	99	0.00	58.4	0.040	0.161	0.049	
17	NEW RIVER @ FAYETTE STATION	07/10/1997	10.38	26.2	23.0	8.3	3350	N,M,MI	1.9	9.2	OVC	155	0.29	57.6	0.033	0.091	0.038	
18	WOLF CREEK	04/02/1997	10.40	6.5	15.5	8.0	H,SW	H,SW,MI	3.9	11.1	CLR	110	0.00	39.6	0.062	0.172	0.076	GAGE BROKEN
18	WOLF CREEK	07/10/1997	10.08	16.8	21.5	8.7	N,M	N,M,MI	3.8	9.4	OVC	502	0.29	261.2	0.086	0.217	0.071	GAGE OUT OF WAT
19	MARR BRANCH	04/02/1997	10.15	6.8	13.5	7.0	11.41	H,M,MI	4.4	10.3	CLR	62	0.00	27.2	0.032	0.216	0.103	
19	MARR BRANCH	07/10/1997	9.39	18.2	21.0	7.7	1.6	L,M,MI	17.0	8.1	OVC,-L	192	0.29	67.6	0.147	0.751	0.134	
20	NEW RIVER @ CUNARD	04/02/1997	11.58	11.4	17.8	7.8	H,M	H,M,MI	8.1	9.5	CLR	101	0.00	55.2	0.038	0.289	0.049	
20	NEW RIVER @ CUNARD	07/10/1997	11.37	26.8	24.8	8.2	N,M	N,M,C	1.7	8.9	BKN	155	0.29	57.6	0.038	0.087	0.042	
21	NEW R @ SNDSTN FALLS BDWLK	04/10/1997	12.05	13.0	10.0	8.5	N,M	N,M,MI	5.0	10.6	CLR	118	0.00	60.0	0.046	0.197	0.052	
21	NEW R @ SNDSTN FALLS BDWLK	07/14/1997	12.03	27.2	27.4	8.1	L,M	L,M,C	2.1	7.4	SCT,H	151	0.00	56.8	0.033	0.056	0.044	