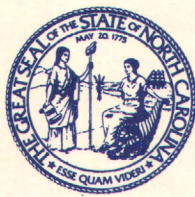
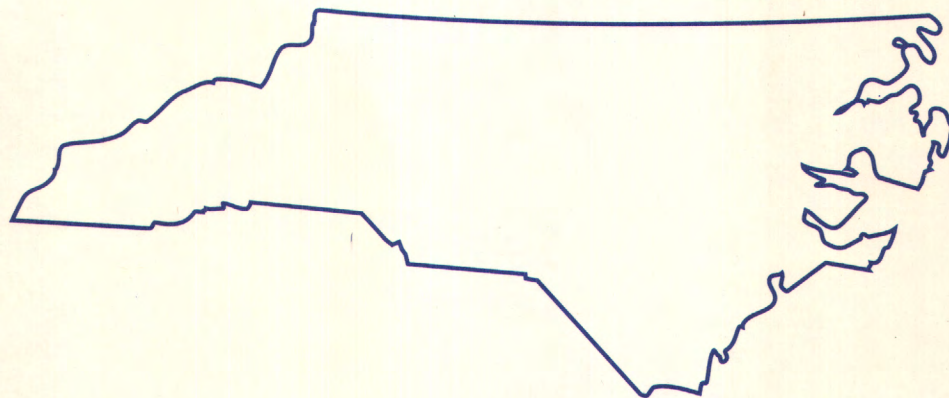
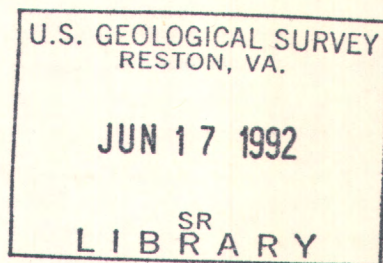


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North Carolina  
1991



# Water Resources Data North Carolina Water Year 1991



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT NC-91-1  
Prepared in cooperation with the North Carolina Department  
of Environment, Health, and Natural Resources, and with  
other State, municipal, and Federal agencies

# CALENDAR FOR WATER YEAR 1991

1990

OCTOBER							NOVEMBER							DECEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
	1	2	3	4	5	6					1	2	3							1
7	8	9	10	11	12	13	4	5	6	7	8	9	10	2	3	4	5	6	7	8
14	15	16	17	18	19	20	11	12	13	14	15	16	17	9	10	11	12	13	14	15
21	22	23	24	25	26	27	18	19	20	21	22	23	24	16	17	18	19	20	21	22
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														30	31					

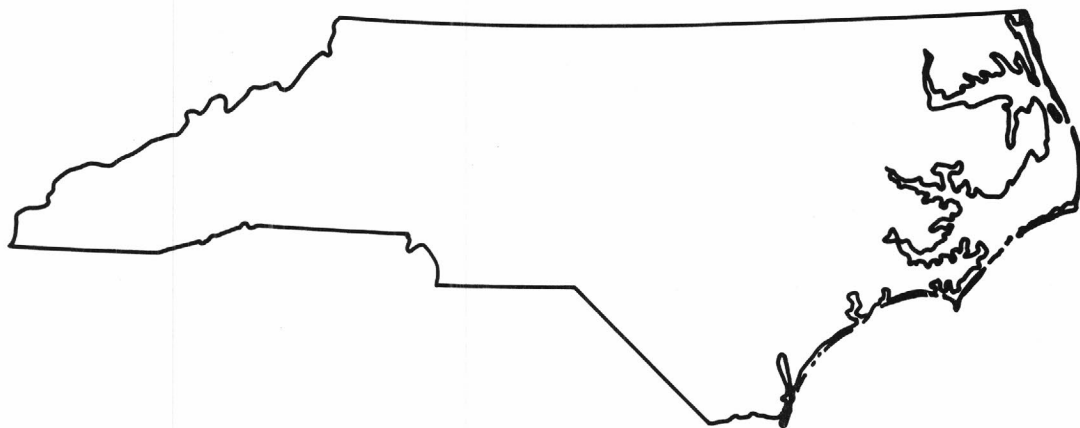
1991

JANUARY							FEBRUARY							MARCH						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
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13	14	15	16	17	18	19	10	11	12	13	14	15	16	10	11	12	13	14	15	16
20	21	22	23	24	25	26	17	18	19	20	21	22	23	17	18	19	20	21	22	23
27	28	29	30	31			24	25	26	27	28			24	25	26	27	28	29	30
														31						
APRIL							MAY							JUNE						
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28	29	30					26	27	28	29	30	31		23	24	25	26	27	28	29
														30						
JULY							AUGUST							SEPTEMBER						
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7	8	9	10	11	12	13	4	5	6	7	8	9	10	8	9	10	11	12	13	14
14	15	16	17	18	19	20	11	12	13	14	15	16	17	15	16	17	18	19	20	21
21	22	23	24	25	26	27	18	19	20	21	22	23	24	22	23	24	25	26	27	28
28	29	30	31				25	26	27	28	29	30	31	29	30					



# Water Resources Data North Carolina Water Year 1991

by R.G. Barker, B.C. Ragland, J.F. Rhinehardt, and W.H. Eddins



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT NC-91-1  
Prepared in cooperation with the North Carolina Department  
of Environment, Health, and Natural Resources, and with  
other State, municipal, and Federal agencies

UNITED STATES DEPARTMENT OF THE INTERIOR

MANUEL LUJAN, JR., SECRETARY

GEOLOGICAL SURVEY

Dallas L. Peck, Director

For information on the water program in North Carolina write to:

District Chief, Water Resources Division  
U. S. Geological Survey  
3916 Sunset Ridge Road  
Raleigh, NC 27607

1992

## PREFACE

This volume of the annual hydrologic-data report of North Carolina is one of a series of annual reports that document hydrologic data gathered from the U.S. Geological Survey's surface- and ground-water data-collection networks in each State, Puerto Rico, and the Trust Territories. These records of streamflow, ground-water levels, and quality of water provide the hydrologic information needed by State, local, and Federal agencies, and the private sector for developing and managing our Nation's land and water resources. Hydrologic data for North Carolina are contained in the volume.

This report is the culmination of a concerted effort by dedicated personnel of the U.S. Geological Survey who collected, compiled, analyzed, verified, and organized the data, and who typed, edited, and assembled the report. In addition to the authors, who had primary responsibility for assuring that the information contained herein is accurate, complete, and adheres to Geological Survey policy and established guidelines, the following individuals contributed significantly to the collection, processing, and tabulation of the data:

Thomas J. Zembrzusi  
Ronald W. Coble  
Herman C. Gunter  
Jerad D. Bales  
Bernice A. Allen  
Rufus J. Allen  
Bruce A. Billstein  
Herbert L. Blue  
Pam Breton  
Paul M. Brigham  
William S. Caldwell  
Geoffrey D. Cartano  
Moses Daniel

Donna G. Coates  
Michael L. Cox  
Michael D. Cranford  
Lloyd A. Edwards  
Amy E. Fogleman  
Roanld G. Garrett  
C. David Fowler  
Edwin D. George  
Herbert O. Harris III  
William F. Hazell  
Stewart J. Johnson  
Marc L. Lineberger  
Tammy K. Manning

Robert R. Mason  
Donald P. McGeary  
Terry L. Middleton  
Andrew J. Padyk  
Michael D. Penley  
Mike Pollard  
Benjamin F. Pope III  
Jerald B. Robinson  
Stanley C. Skrobialowski  
Douglas G. Smith  
Bruce C. Steiner  
Raymond E. Strain  
Jack M. Tankard  
John C. Weaver

Donna G. Coates and Amy E. Fogleman edited much of the text of this report. Amy E. Fogleman, Robert Mason, and Tammy K. Manning assembled the report.

This report was prepared in cooperation with the State of North Carolina, other agencies, and under the general supervision of James F. Turner, District Chief; and James L. Cook, Regional Hydrologist, Southeastern Region.

<b>REPORT DOCUMENTATION PAGE</b>		<b>1. REPORT NO.</b> USGS/WRD/92/270	<b>2.</b>	<b>3. Recipient's Accession No.</b>
<b>4. Title and Subtitle</b>  Water Resources Data, North Carolina, Water Year 1991				<b>5. Report Date</b> March 31, 1992
<b>7. Author(s)</b> R. G. Barker, B. C. Ragland, J. F. Rinehardt, and W. H. Eddins				<b>6.</b>
<b>9. Performing Organization Name and Address</b> U.S. Geological Survey, Water Resources Division 3916 Sunset Ridge Road Raleigh, North Carolina 27607				<b>8. Performing Organization Rept. No.</b> USGS-WDR-NC-91-1
<b>12. Sponsoring Organization Name and Address</b> U.S. Geological Survey, Water Resources Division 3916 Sunset Ridge Road Raleigh, North Carolina 27607				<b>10. Project/Task/Work Unit No.</b>
				<b>11. Contract(C) or Grant(G) No.</b>  (C) (G)
				<b>13. Type of Report &amp; Period Covered</b> Annual--Oct. 1, 1990 Sept. 30, 1991
<b>15. Supplementary Notes</b>  Prepared in cooperation with the State of North Carolina and with other agencies.				<b>14.</b>
<b>16. Abstract (Limit: 200 words)</b>  Water resources data for the 1991 water year for North Carolina consists of records of stage, discharge, and water quality of streams; stage and contents of lakes and reservoirs; and ground-water levels. This report contains discharge records for 157 gaging stations and stage and contents for 26 lakes and reservoirs; water quality for 18 gaging stations and 4 miscellaneous sites; continuous daily tide stage for 9 sites; and water levels for 64 observation wells. Additional water data were collected at various sites not involved in the systematic data-collection program, and are published as miscellaneous measurements in this report. The collection of water-resources data in North Carolina is part of the National Water-Data System operated by the U.S. Geological Survey in cooperation with State, municipal, and Federal agencies.				
<b>17. Document Analysis a. Descriptors</b>  *North Carolina, *Hydrologic data, *Surface water, *Ground water, *Water quality, Flow rate, Gaging stations, Lakes, Reservoirs, Chemical analyses, Sediments, Water temperatures, Sampling sites, Water levels, Water analyses  <b>b. Identifiers/Open-Ended Terms</b>          <b>c. COSATI Field/Group</b>				
<b>18. Availability Statement:</b> No restrictions on distributions. This report may be purchased from: National Technical Information Service, Springfield, VA 22161		<b>19. Security Class (This Report)</b> Unclassified		<b>21. No. of Pages</b> 350
		<b>20. Security Class (This Page)</b> Unclassified		<b>22. Price</b>

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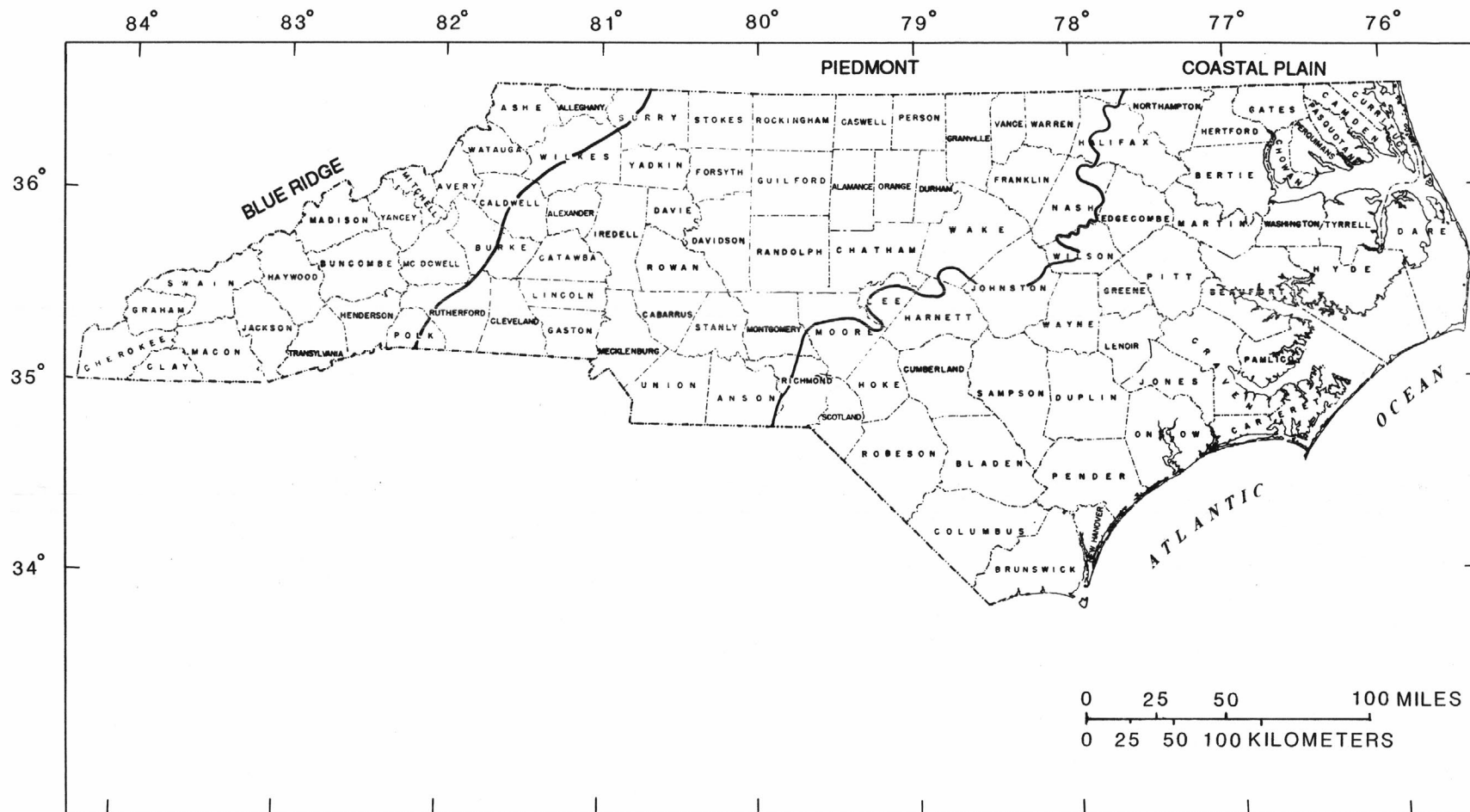
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COUNTIES AND PHYSIOGRAPHIC PROVINCES OF NORTH CAROLINA



## INTRODUCTION

Water-resources data for the 1991 water year for North Carolina consist of records of stage, discharge, and water quality of streams; stage and contents of lakes and reservoirs; and ground-water levels. This report contains discharge records for 157 gaging stations and stage and contents for 26 lakes and reservoirs; water quality for 18 gaging stations and 4 miscellaneous sites; continuous daily tide stage at 9 sites; and water levels for 64 observation wells. Additional water data were collected at various sites not involved in the systematic data-collection program, and are published as miscellaneous measurements in this report. The collection of water-resources data in North Carolina is a part of the National Water-Data System operated by the U.S. Geological Survey in cooperation with State, municipal, and Federal agencies.

Records of discharge of streams and contents and stage of lakes or reservoirs were first published in a series of U.S. Geological Survey water-supply papers entitled, "Surface Water Supply of the United States." Through September 30, 1960, these water-supply papers were in an annual series and then in a 5-year series for 1961-65 and 1966-70. Records of chemical quality, water temperatures, and suspended sediment were published from 1941 to 1970 in an annual series of water-supply papers entitled, "Quality of Surface Waters of the United States." Records of ground-water levels were published from 1935 to 1974 in a series of water-supply papers entitled "Ground-Water Levels in the United States." Water-supply papers may be consulted in the libraries of the principal cities and universities in the United States or may be purchased from Books and Open-File Reports, Federal Center, Bldg 810, Box 25425, Denver, Colorado 80225.

Streamflow data since the 1961 water year and water-quality data since the 1964 water year have been released by the Geological Survey in annual reports on a State-boundary basis. These reports provided rapid release of water data in each State shortly after the end of the water year. Through 1970 the data were also released in the water-supply paper series mentioned above.

Streamflow and water-quality data beginning with the 1971 water year, and the ground-water data beginning with the 1975 water year are published only in reports on a State-boundary basis. Beginning with the 1975 water year, these Survey reports carry an identification number consisting of the two-letter State abbreviation, the last two digits of the water year, and the volume number. For example, this report is identified as "U.S. Geological Survey Water-Data Report NC-91-1". Water-data reports are for sale by the National Technical Information Service, U.S. Department of Commerce, Springfield, Virginia 22161.

Additional information, including current prices for ordering specific reports, may be obtained from the district chief at the address given on the back of the title page or by telephone (919) 571-4000.

## COOPERATION

Cooperative agreements between the U.S. Geological Survey and organizations of the State of North Carolina for the systematic collection of streamflow records began in 1895 and continued through 1909. After a lapse of 8 years, the State of North Carolina resumed cooperation in October 1918. Organizations that assisted in collecting the data contained in this report through cooperative agreements with the Survey are:

North Carolina Agricultural Extension Service  
State Department of Environment, Health, and Natural Resources  
State Board of Transportation, Division of Highways  
City of Asheville  
City of Brevard  
City of Charlotte  
City of Durham  
City of Lexington  
City of Greensboro  
City of Raleigh  
City of Rocky Mount  
Town of Bethel  
Town of Chapel Hill  
Guilford Soil and Water Conservation District  
Forsyth County  
Mecklenburg County  
Orange County  
Orange Water and Sewer Authority

The following Federal agencies assisted in the data-collection program by furnishing funds or services:

Corps of Engineers, U.S. Army  
Tennessee Valley Authority  
Soil Conservation Service, U.S. Department of Agriculture  
National Weather Service, NOAA, U.S. Department of Commerce

The following organizations aided in collecting records:

City of Danville, Virginia; Carolina Power and Light Co.; Champion International Corp.; Piedmont Triad Regional Water Authority; Duke Power Co.; North Carolina Power Co.; and Yadkin, Inc.

## SUMMARY OF WATER-RESOURCES CONDITIONS

Rainfall and Surface Water

The 1991 water year began with above-average rainfall in October at all index weather stations across the State, except Elizabeth City, with amounts 2 to 5 times the normal precipitation (figs. 1 and 2). Above- or near-average rains during the first 4 months of the 1991 water year sustained flow in North Carolina streams at normal to excessive levels. Below-average rains from February to May caused streamflow to decline below normal levels in the middle and southern parts of the Coastal Plain Province. Above- or near-average rains during July and August increased streamflow to normal and above-normal levels throughout most of the State.

Total rainfall at most index weather stations for the 1991 water year ranged from 2 to 16 in. above average with the greatest departures from average being 11.25 and 16.37 in. at Greensboro and Charlotte, respectively. In contrast, Raleigh was the only weather station to record below-average total rainfall with an accumulation of 40.96 in., which is 0.80 in. below normal for the 1991 water year (fig. 2).

Flow conditions due to rainfall patterns in North Carolina are depicted in two sets of maps that show regions of normal, deficient (below normal), and excessive (above normal) streamflow. Streamflow statistics covering the 30-year base period 1951-80 for 35 gaging stations were used as the basis for the monthly normal flow. The descriptors "below normal" refers to flow in the lower quartile; "above normal" to the upper quartile, and "normal" to the middle two quartiles.

The effects of above-average rainfall in October were evident as streamflow everywhere in North Carolina was excessive except for the Coastal Plain Province (fig. 3A). The Piedmont and Blue Ridge Provinces experienced very heavy rainfall. The heavy rains were blamed for three deaths, minor flooding, mud slides, and road and school closings. Charlotte had the second highest October rainfall accumulation (16.37 in.) since 1894. Floods on most streams in Mecklenburg County had flood frequency intervals of 3 to 5 years. The South Yadkin (fig. 5), Haw, and Watauga Rivers reached their second highest monthly mean flow and seven other river basins reached their highest monthly mean flows for October.

Decreased rainfall throughout the State during November caused flow conditions to decrease into the normal range in the Blue Ridge and Piedmont (fig. 3B). However, above-normal flow conditions persisted in the South Yadkin (fig. 5), Rocky, and Lumber Rivers, and in the Big Bear and Twelve Mile Creek basins in the southern part of the State. Monthly mean flow in the Twelve Mile Creek basin was the third highest for November. Streamflow in the Coastal Plain Province increased but remained in the normal range.

Asheville and Greensboro were the only index weather stations that reported above-average rainfall for December (fig. 2). Minor flooding from heavy rains occurred in Swain County along with mud slides in Cherokee and Clay Counties. In western North Carolina, flow conditions increased into the excessive range in the Valley, East Fork Pigeon, Nantahala, and Oconaluftee River basins (fig. 3C). The only changes in flow condition in the Piedmont during December were observed in the Haw and Little Rivers where flow increased into the excessive range, and in the Lumber River basin where flow conditions decreased to the normal range. Streamflow in the rest of the State remained in the normal range except in the northern Coastal Plain Province where below-normal flow conditions were observed.

During January, rainfall decreased to below average in the Blue Ridge, but all other reporting weather stations had above-average rainfall. Streamflow decreased in the western part of the State to normal conditions except in the South Fork New River basin, which was excessive. Excessive flow was also reported for the entire Piedmont Province (fig. 3D) as shown by the hydrographs for the South Yadkin and Deep Rivers (figs. 5 and 6). The First Broad River flow also increased but remained in the normal range. The monthly mean flow in the Twelve Mile Creek basin reached the second highest for the period of record for January. All streamflow in eastern North Carolina increased, which brought flow conditions into the normal range for the entire Coastal Plain Province.

February rainfall decreased to below average across the State (fig. 2), but normal flow conditions were maintained at all streams in the Blue Ridge and southern Piedmont Provinces (fig. 3E). However, streamflow decreased from the excessive range in January to the below-normal range in February in the northeastern Piedmont. The Rocky River in the southwestern Piedmont decreased in flow but remained in the above-normal range. In the Coastal Plain Province, normal flow during February was reported only in the Black, Lumber, and Trent River basins. All other streamflow in this area decreased into the below-normal range as shown by the hydrograph for Contentnea Creek (fig. 7).

Above-average total rainfall for March at all index weather stations across the State produced minor flooding and mud slides in many western North Carolina counties. This flooding period is exemplified by the high discharge peak shown in the hydrograph of the French Broad River (fig. 8). Emergency-management officials monitored two dams in Jackson County and one along the Buncombe-Madison County line, but all three withstood the flooding. Streamflow for March increased but remained in the normal range for all stations in the Blue Ridge Province except the Watauga and Linville River basins, which were in the excessive range (fig. 3F). Decreased streamflow was reported for the Valley River basin but flow remained in the normal range. Increased rainfall elevated streamflow conditions to excessive and normal ranges in the central and northern parts of North Carolina, respectively. The second highest flow for the period of record for March was recorded in Twelve Mile Creek. In the Coastal Plain Province, streamflow remained below normal in the northeastern part; streamflow in the Black River basin also declined to the deficient range for the month. Elsewhere in the Coastal Plain streamflow was normal, including flow in the Trent River and Fishing Creek basins which increased to the normal range.

Above-average rainfall totals during April were reported at all index weather stations except Raleigh, which reported 1.87 in. below normal (fig. 2). Rainfall was spotty, however, because only 34 percent of the monitored basins reported an increase in streamflow. Above-average rainfall did not necessarily increase streamflow throughout the State, but maintained mostly normal flow conditions. In western North Carolina, flow decreased to the normal range in the Watauga, Linville, and South Toe River basins, but increased to the excessive range in the Yadkin River (fig. 5) and Elk Creek basins (fig. 4A). In the southern and eastern parts of the Piedmont Province, flows decreased into the normal range for the Little and Rocky River basins and the Big Bear Creek basin. Flow in parts of the Flat and Tar River basins north of Raleigh decreased to below-normal conditions. Streamflow increased at most monitored sites in the Coastal Plain producing normal flow conditions throughout this province.

## SUMMARY OF WATER-RESOURCES CONDITIONS--Continued

Below-average rainfall in May brought declining streamflow across the State but excessive flow conditions remained in many western North Carolina basins (fig 4B). Streamflow decreased seasonally in the French Broad (fig. 8), Nantahala, and South Fork New River basins in the Blue Ridge Province but were sustained in the excessive range for the month of May. Throughout the Piedmont Province, streamflow decreased. Excessive flow conditions during April in the First Broad and Haw River basins and Henry Fork basin declined to the normal range in May. Although streamflows decreased, the Fisher and Tar River basins sustained flows in the excessive and normal ranges, respectively, for May. Declining rainfall in the Coastal Plain brought flow conditions into the deficient range in the Black River, Fishing Creek, and Potecasi Creek basins, and down from excessive to normal flow conditions in the Trent River. All other stations in the Coastal Plain reported streamflow in the normal range.

Below-average rainfall continued throughout most of the State in June. Streamflow decreased to the normal range at all Blue Ridge and Piedmont stations that reported excessive flow in May (fig. 4C). However, above average June rainfall near Asheville created excessive flow conditions in the Oconaluftee River and Cataloochee Creek basins. The lack of rainfall decreased flow in the Hyco and Swift Creek basins and the Tar River basin from normal to the deficient range in the northern Piedmont. Flows in Fishing Creek basin remained in the deficient range. Most streams in the Coastal Plain sustained normal flows, but flow in the Black and Flat River basins remained below normal.

During July, near-average rainfall in the Piedmont resulted in normal streamflow in most basins of the province (fig. 4D). However, extensive above-average rainfall in the Blue Ridge and Coastal Plain Provinces caused above-normal streamflows in many areas. Heavy thunderstorms on July 27 and 28 in Avery and Mitchell Counties in western North Carolina caused flooding in those areas. In eastern North Carolina, 3 days of intermittent but locally severe thunderstorms during July 29 to 31 dropped more than 10 in. of rain in some areas of Wilson, Wayne, Johnston, and Sampson Counties. The resulting floods topped dozens of roads, destroyed several bridges and culverts, forced the evacuation of residents of low-lying areas, and inundated hundreds of acres of croplands.

In the Coastal Plain Province, even though flooding was widespread in July, most stations recorded moderate flood-recurrence intervals of less than 5 years. Isolated pockets of more severe flooding occurred on smaller tributaries to the Black, Neuse, and Little Rivers, Contentnea Creek, and Nahunta Swamp. For example, flows in the Six Runs Creek basin in eastern Sampson County exceeded the 25-yr recurrence interval. Rainfall caused streamflow in the Black River basin to increase into the normal range after 2 months of deficient flow.

The abundant rainfall during the last days of July along with above-average rainfall accumulations across the southern half of the State ultimately produced excessive flow conditions in many basins across the State for the month of August (figs. 4E, 7, 8). Streamflow in western North Carolina increased into the excessive range in all basins except the Watauga, Linville, and South Fork New River basins, which were in the normal range. Mean monthly streamflow in the East Fork Pigeon River basin (Blue Ridge Province) was the highest flow for the period of record for August. Streamflow in eastern North Carolina was excessive in all but the Fishing Creek basin, which reported flow conditions in the normal range. Streamflow across the northern half of the Piedmont was normal.

Rainfall across the State declined in September. In the Blue Ridge, this resulted in decreased flow in the French Broad (fig. 8) and South Toe Rivers from excessive to normal conditions (fig. 4F). Streamflow in the central and eastern parts of the State decreased into the normal range except for Contentnea Creek (fig. 5) and Black River basins in the Coastal Plain, which sustained streamflows in the excessive range for September.

Water Quality

Concentrations of six selected dissolved constituents in streamflow were compared with discharge at three sites, (1) French Broad River at Marshall (Blue Ridge), (2) Yadkin River at Yadkin College (Piedmont), and (3) Neuse River at Kinston (Coastal Plain) (fig. 1) for the period 1973 to the current water year. These constituents include dissolved sodium, potassium, calcium, sulfate, chloride, and total phosphorus. The concentrations of these constituents vary inversely with stream discharge; therefore, maximum concentrations occur during low flows and minimum concentrations occur during high flows. For these dissolved constituents, concentrations, in general, were lower at all three stations than the long-term means. For example, mean total phosphorus values at the three selected sites for period of record, 1990 water year and 1991 water year are as follows:

Station name	Long-term values	1990	1991
French Broad River at Marshall	0.22	0.17	0.16
Yadkin River at Yadkin College	.26	.25	.14
Neuse River at Kinston	.22	.11	.11

Daily concentrations of suspended sediment at the long-term sediment station on the Yadkin River at Yadkin College, are used to define sediment-transport trends in the Piedmont. As shown in figure 9, the sediment transport load for the 1991 water year was approximately 117 percent of the long-term average annual load for the reference period 1951-91. This was 12 percent lower than the annual load for the 1990 water year.

Ground Water

Ground-water levels in the surficial aquifer in the Coastal Plain and in the regolith in the Piedmont and Blue Ridge respond to climatic influences, as continual discharge to streamflow from the ground-water reservoir is offset by periodic recharge by rainfall. Water levels in these unconfined aquifers are typically highest in the winter months, when losses due to evapotranspiration are lowest, and lowest in the summer months when evapotranspiration losses are highest.

Ground-water level fluctuations were, for the most part, typical during the 1991 water year. Statewide, water levels in all climatic- and terrane-effects wells were higher at the end of the water year than at the beginning, an indication of the abundance of recharge to the ground-water reservoir that took place during this year of above average rainfall. Heavy rains throughout most of the State in October resulted in large rises in water levels in climatic wells, notably from west to east, in Cherokee, Haywood, Transylvania, Mecklenburg, Rowan, Wayne, Jones, and Pitt Counties. Small rises were seen in wells in the northeast and southeast Coastal Plain in Bertie, Passquotank, and Brunswick Counties.

## SUMMARY OF WATER-RESOURCES CONDITIONS--Continued

Recharge from heavy rains in summer interrupted the normal summer water-level recession in most climatic-effects wells. Largest rises during these events were in Cherokee County in the far west and in Coastal Plain Counties; Bertie, Brunswick, Jones, Pasquotank, Pitt, Washington, and Wayne. Smaller rises were seen in wells in Haywood, Transylvania, and Mecklenburg Counties, and no summer rises were measured in observation wells in Davie and Rowan Counties. These water-level responses closely match the rainfall events shown in figure 2.

Records for three index wells (fig. 10) reflect the above average to average rainfall during the water year. Water levels in the Blue Ridge and Piedmont index wells were above average at the beginning of the water year and remained high in response to above average rainfall during the nongrowing season. Water levels in the Piedmont well were at record levels for almost the entire year. In the Coastal Plain well, water levels were about average for nearly the entire year, but rose to above-average levels in September in response to high rainfall throughout the Coastal Plain during late summer.

Coastal Plain aquifers are composed of unconsolidated sand, silt, and clay, and partially consolidated limestone. The uppermost aquifer is the surficial aquifer, which is unconfined and contains the water-table, as discussed previously. Below the surficial aquifer, a number of confined aquifers have been identified, the most important of which are shown in figure 11. Ground-water withdrawals in the Coastal Plain province have resulted in declining water levels in some of the confined aquifers for a number of years. This declining trend is evidenced by the long-term record from observation wells that tap five of the major aquifers in eastern North Carolina (fig. 12), the Castle Hayne, Pee Dee, Black Creek, upper Cape Fear, and lower Cape Fear aquifers.

The record of observation well NC-13, in Beaufort County, shows a continuing decline in water levels in the Castle Hayne aquifer due to pumping at a large mining and manufacturing operation in the eastern part of the county. Withdrawals began here in 1965 and continue through the present. Changes in the rate of decline seen in the record from this well (fig. 12) reflect changes in the amount and location of pumping activity. Other Castle Hayne aquifer observation wells that show either the effect of this pumping or the areal limit of the effect are in Beaufort, Hyde, Pitt, Pamlico, and Washington Counties.

The record of observation well NC-139, in Carteret County, shows the effects of seasonal pumping from the Castle Hayne aquifer used to meet the increased demand for water in the coastal area during the summer months (fig. 12). The slight decline as seen in the long-term record indicates that annual recharge to the aquifer is less than the amount of water withdrawn. Castle Hayne observation wells in Brunswick and New Hanover Counties show similar gradual water-level declines.

An example of the long-term effect of pumpage in the central Coastal Plain is seen in the record of observation well NC-44, which is in Craven County and is near the city of New Bern well field where water has been withdrawn from the Black Creek and upper Cape Fear aquifers since 1968. Well NC-183 shows the effects of the central Coastal Plain withdrawals in northern Pitt County. Water-level records of several other wells in the central Coastal Plain show the effects of pumping from these two aquifers; examples include wells in Beaufort, Craven, Duplin, Jones, Lenoir, and Onslow Counties. Pumpage in Onslow County is also from the Pee Dee aquifer and the resultant decline is seen in well NC-187 (fig. 12) in adjacent Jones County. Water-level records of other observation wells tapping the Pee Dee aquifer generally show only seasonal fluctuations.

Water-level decline in the lower Cape Fear aquifer shown for well NC-55 in Hertford County results primarily from major withdrawals in Virginia which began in the 1940s. Other observation wells in that aquifer showing similar declines are in Hertford and Perquimans Counties.

Reference

Coble, R. W., and Strickland, A. G., 1989, Ground-water level data for North Carolina-1987: U.S. Geological Survey Open-File Report 89-68, 152p.

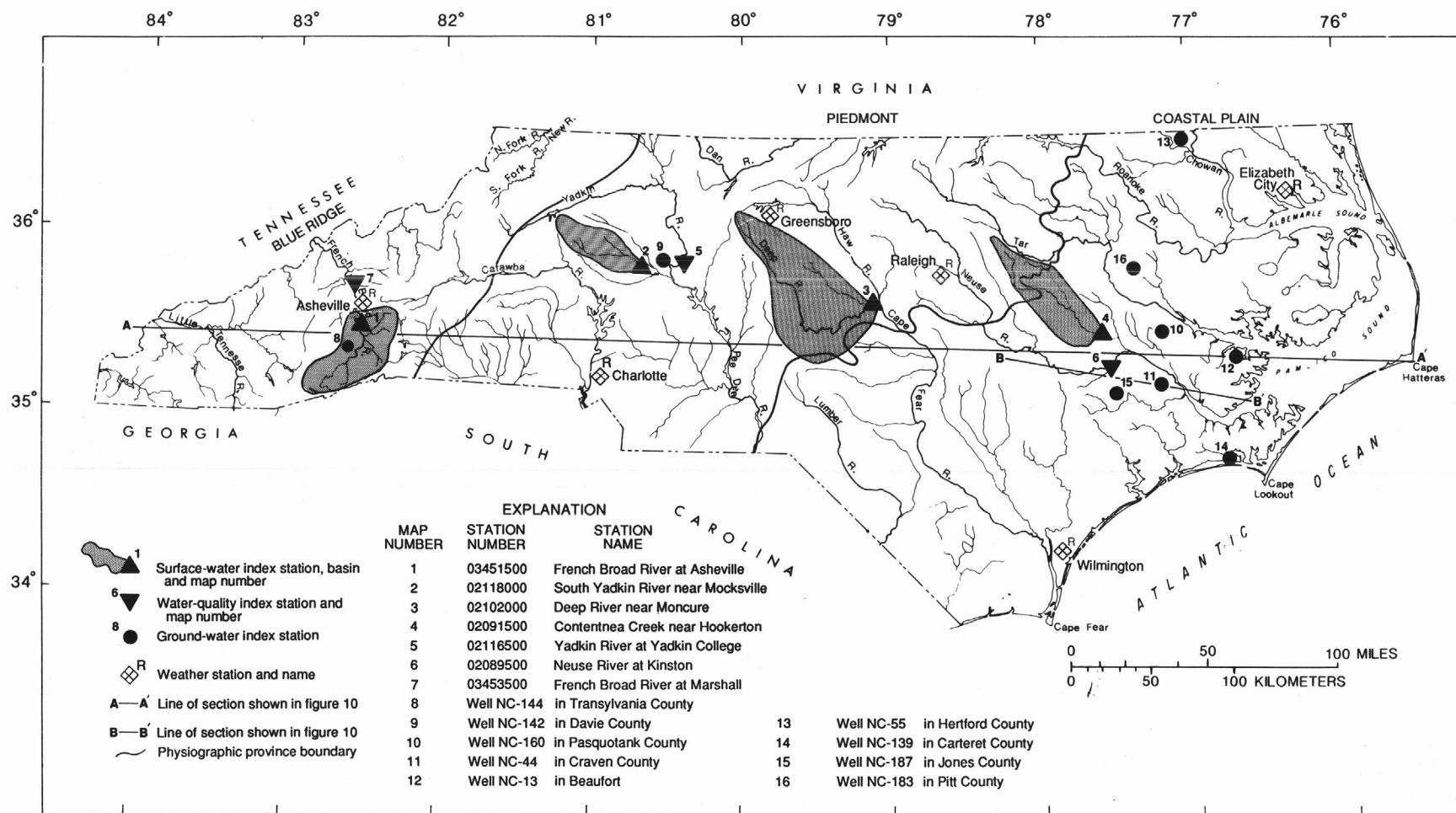


Figure 1.--Location of index stations.

# WATER RESOURCES DATA FOR NORTH CAROLINA, 1991

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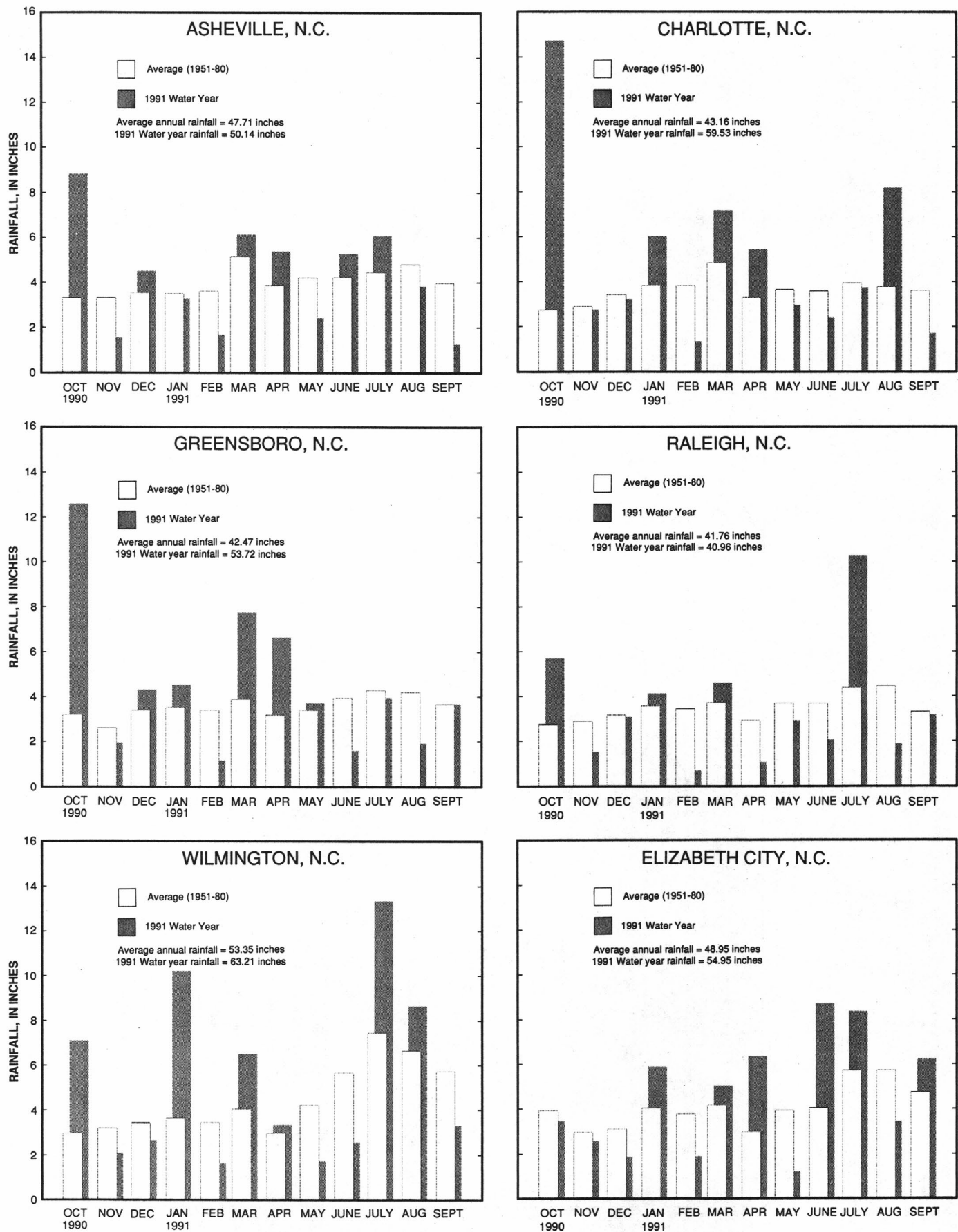


Figure 2.--Monthly rainfall at index weather stations for 1991 water year and average monthly rainfall for the period 1951-80 (Data from National Oceanic and Atmospheric Administration reports).

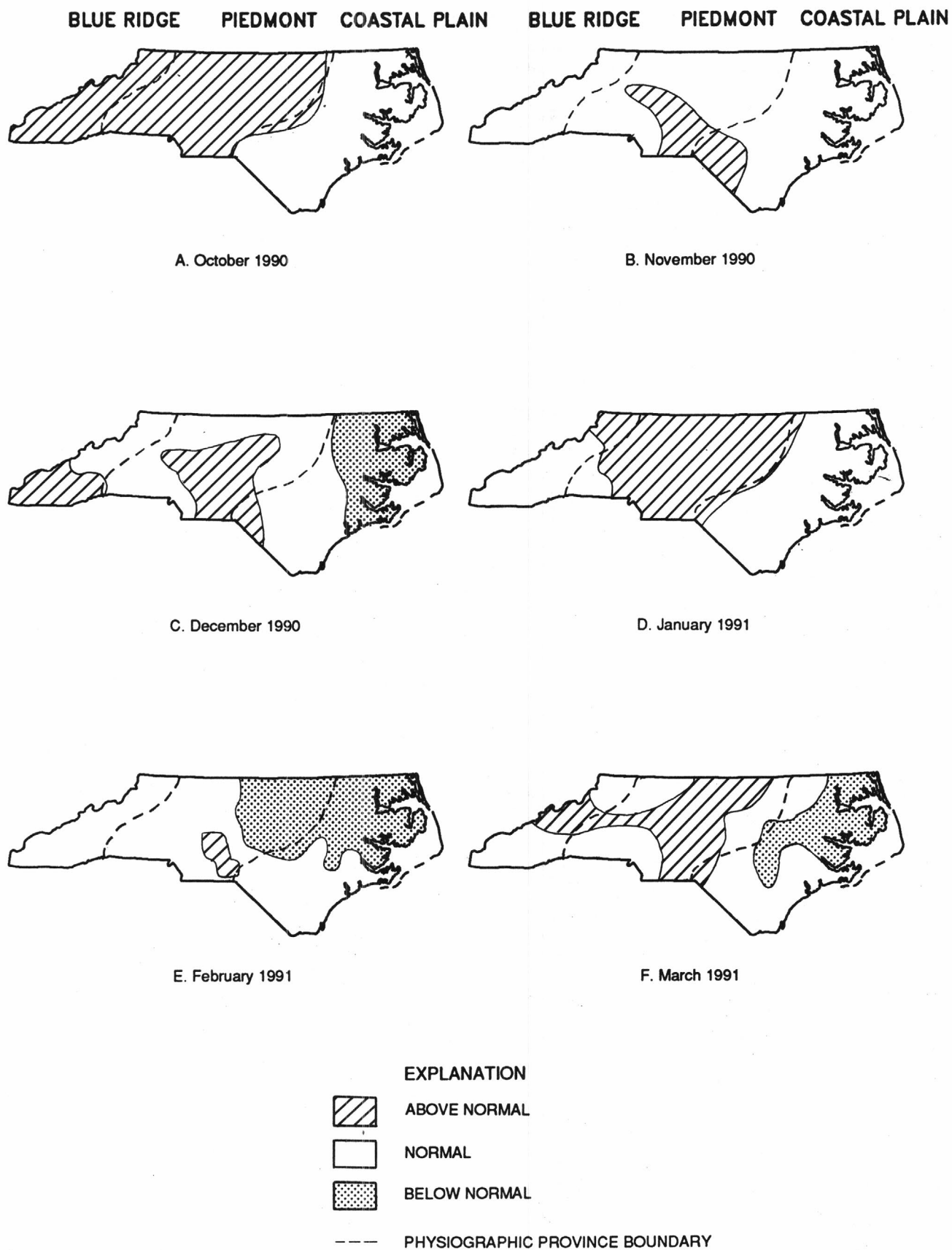


Figure 3.--Monthly streamflow, October - March, during 1991 water year.

## WATER RESOURCES DATA FOR NORTH CAROLINA, 1991

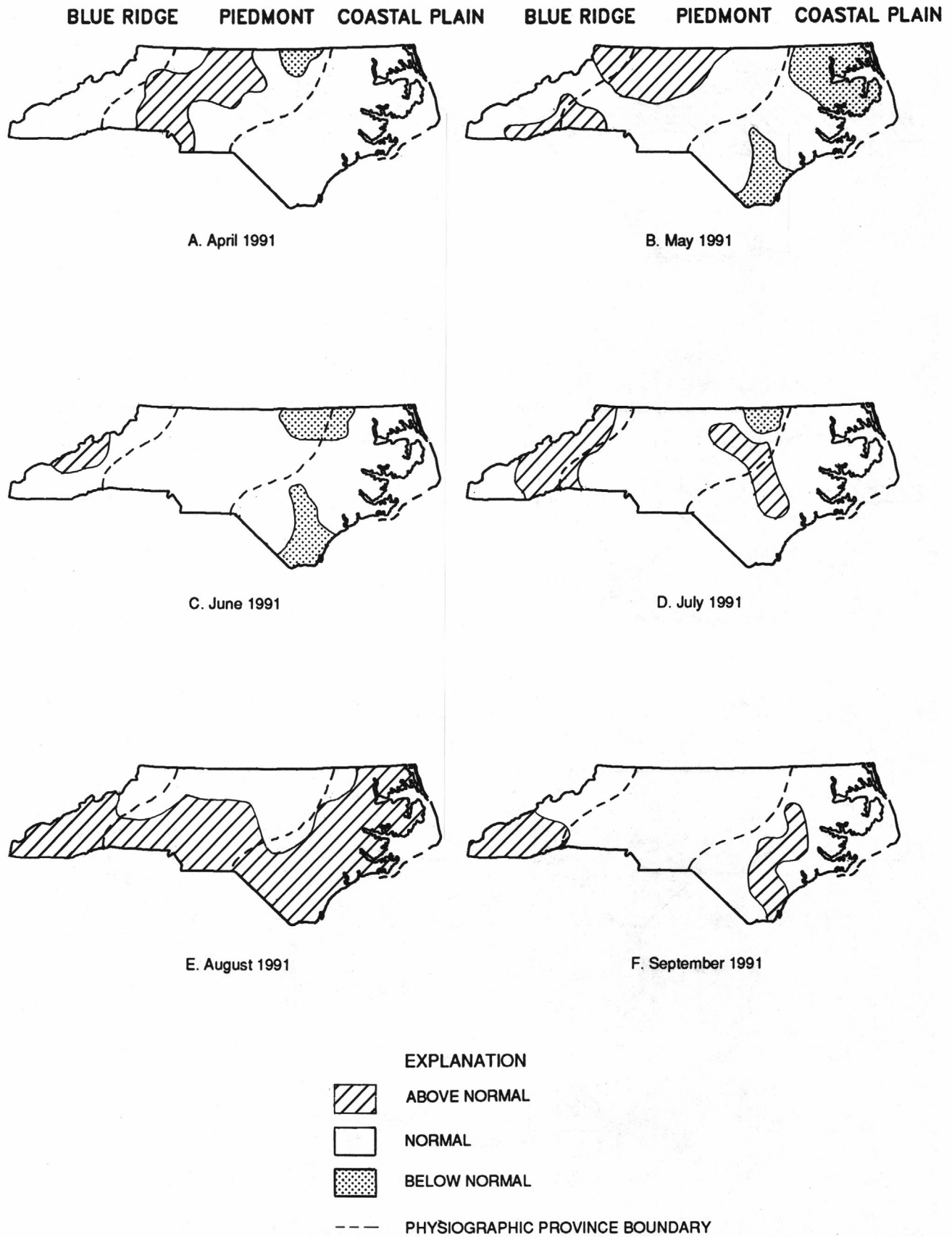


Figure 4.--Monthly streamflow, April - September, during 1991 water year.

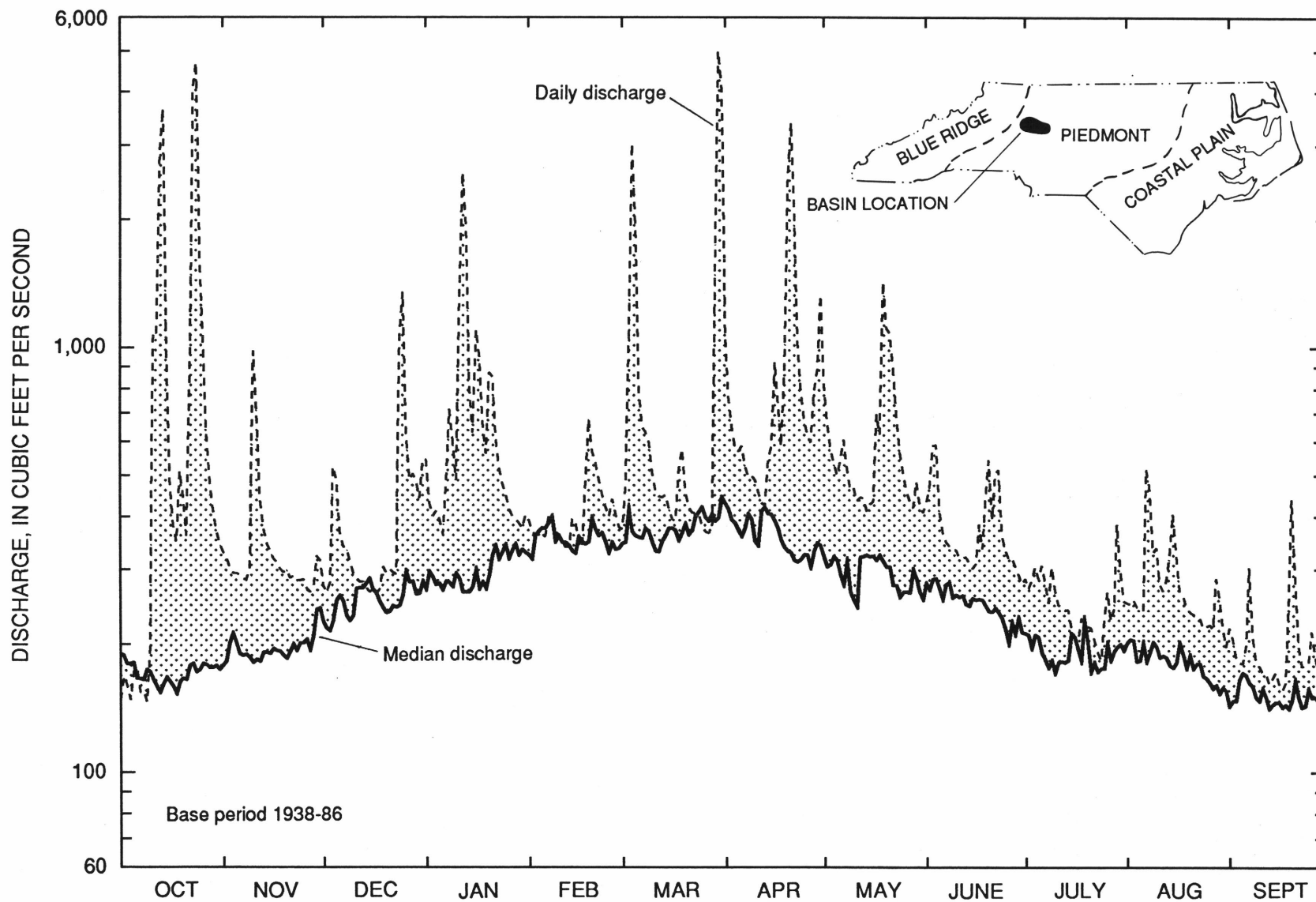


Figure 5.--Daily and median discharge for South Yadkin River at Mocksville, 1991 water year. Located in figure 1.

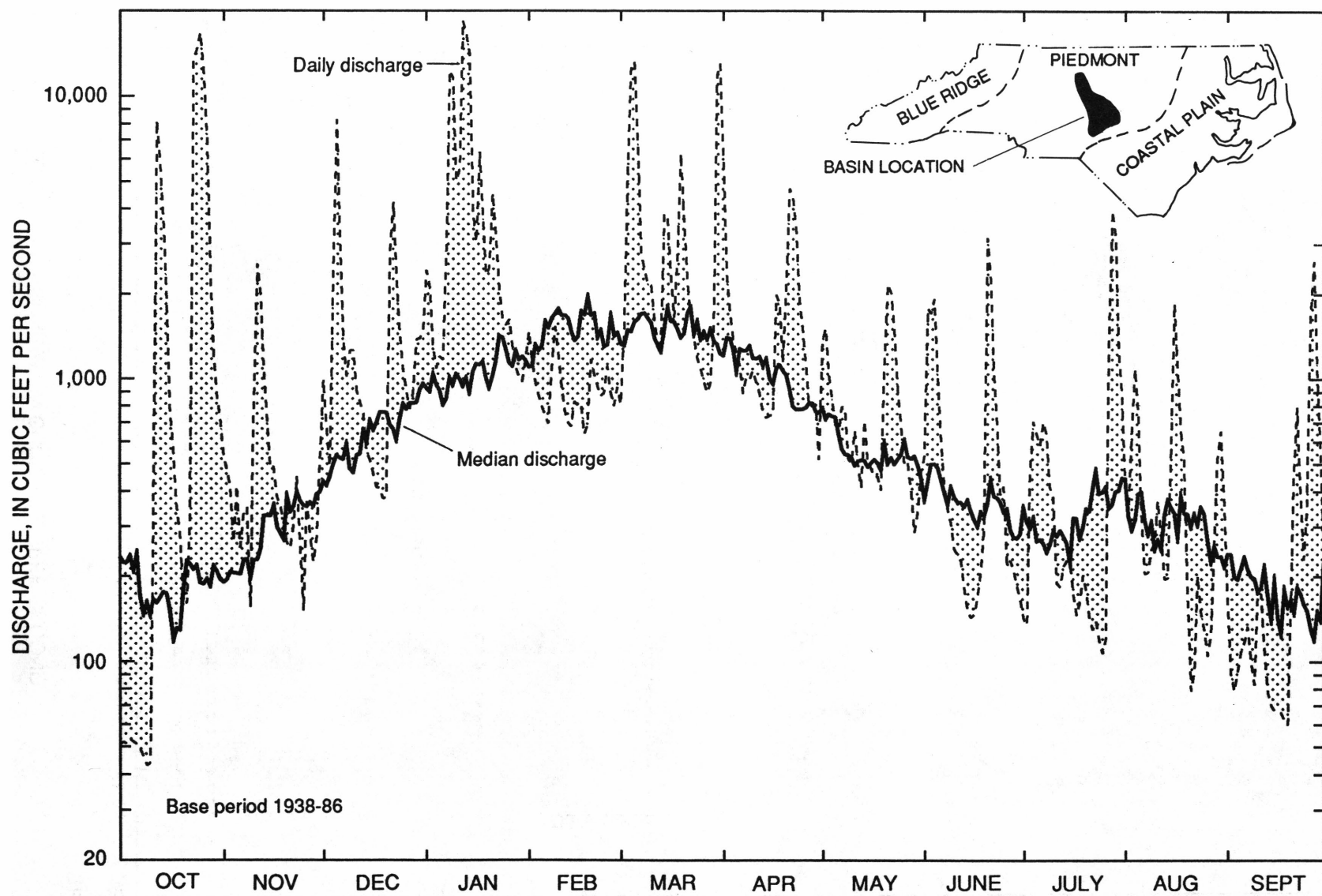


Figure 6.--Daily and median discharge for Deep River at Moncure, 1991 water year. Located in figure 1.

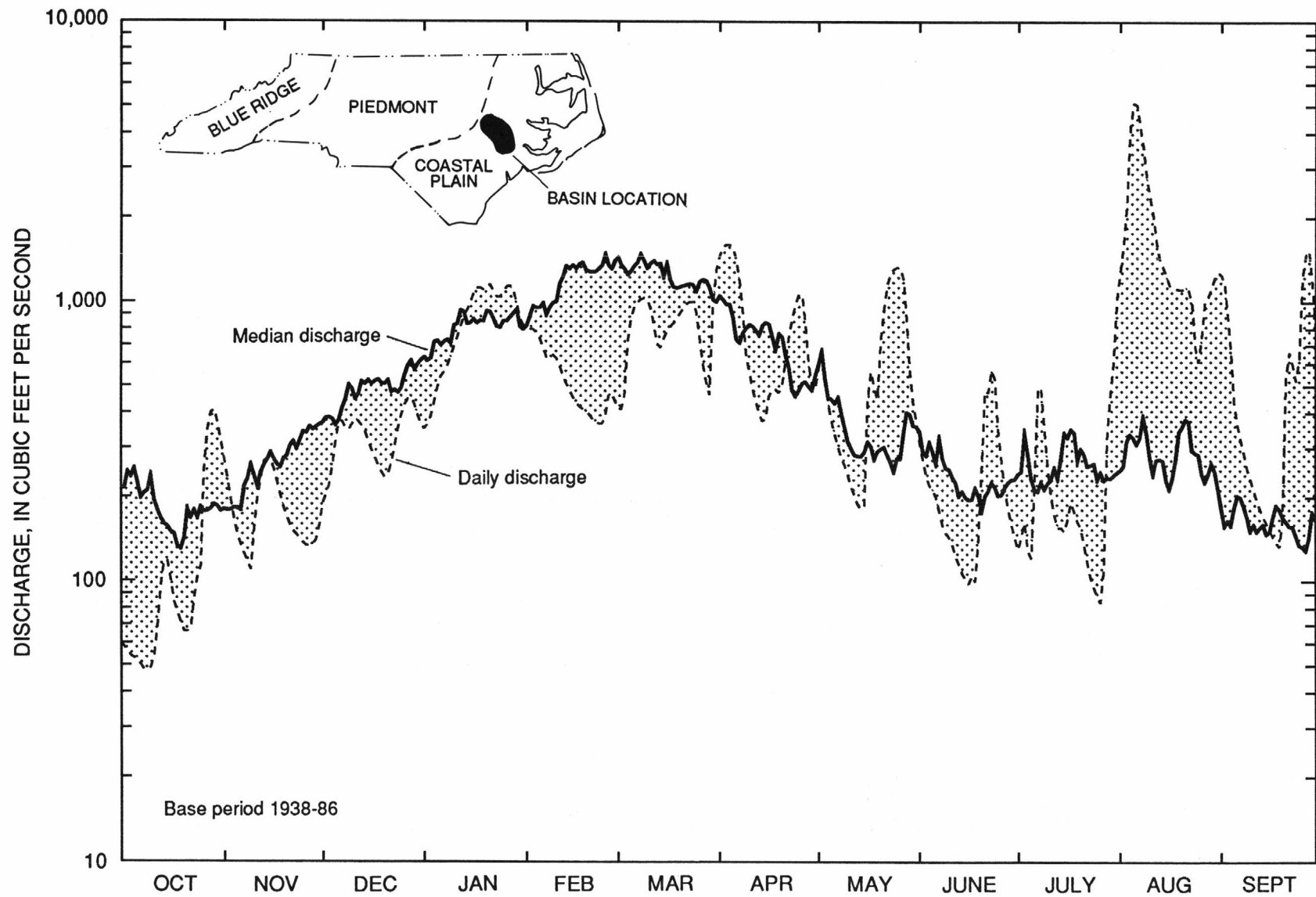


Figure 7.--Daily and median discharge for Contentnea Creek at Hookerton, 1991 water year. Located in figure 1.

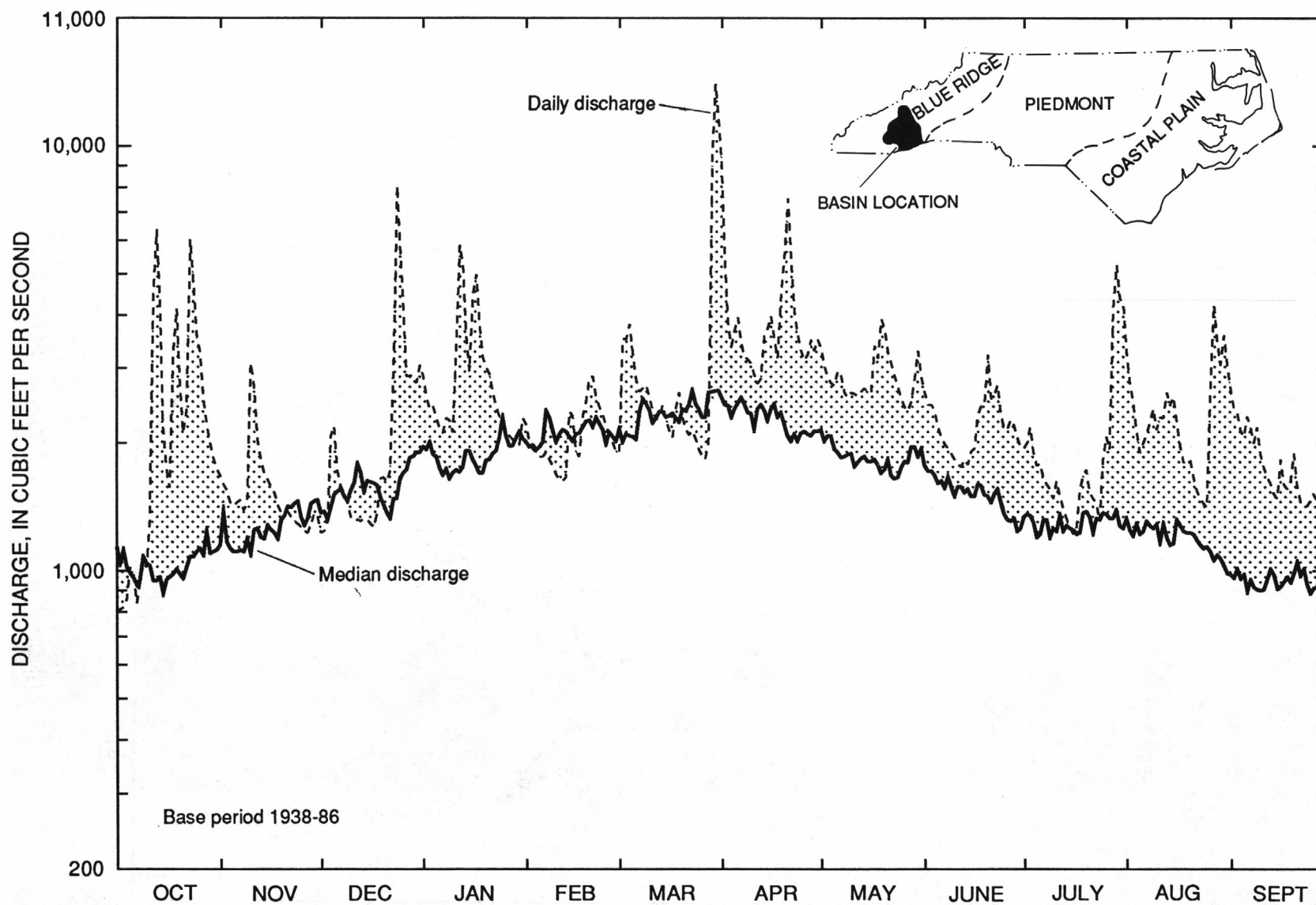


Figure 8.--Daily and median discharge for French Broad River at Asheville, 1991 water year. Located in figure 1.

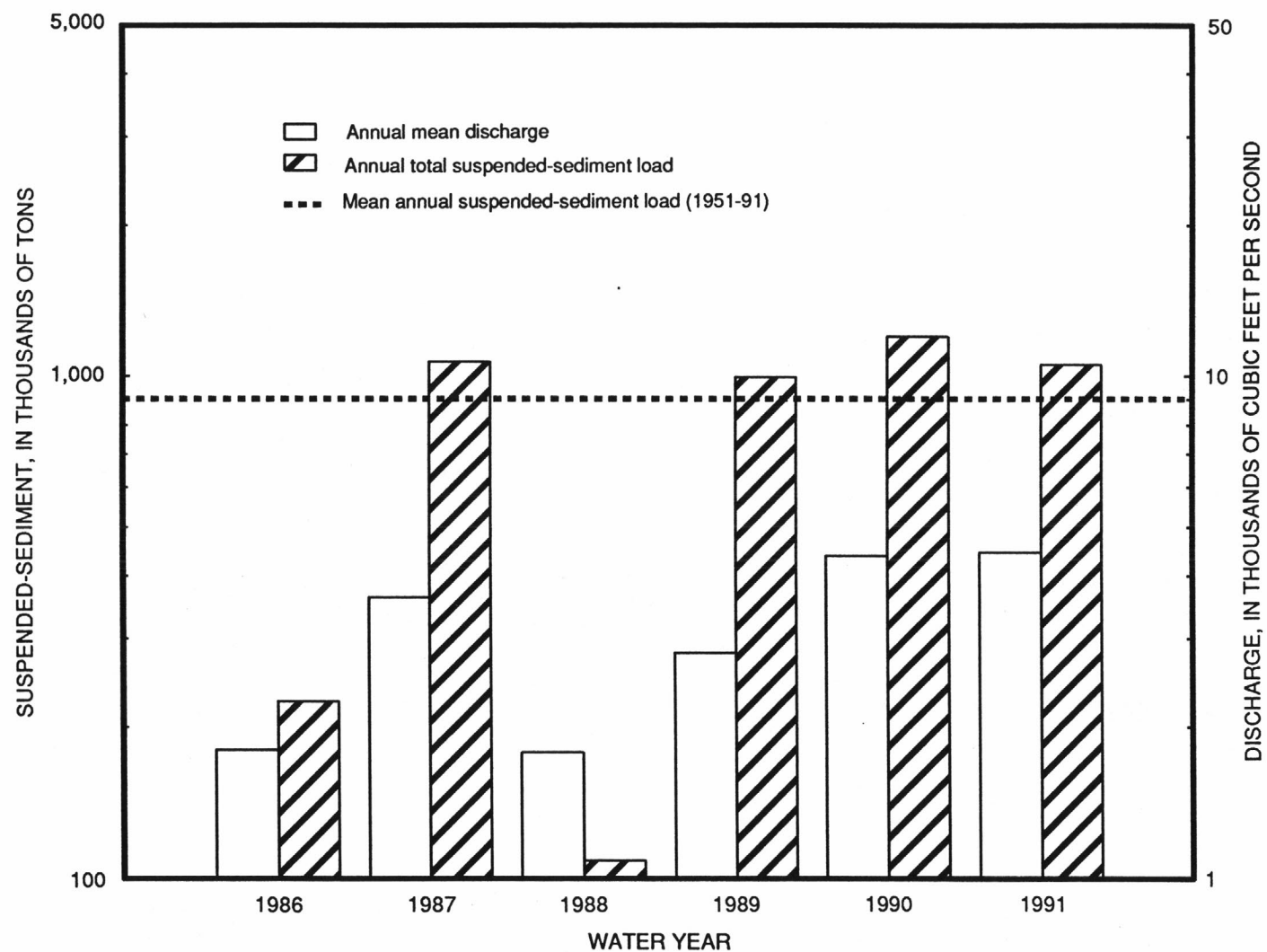
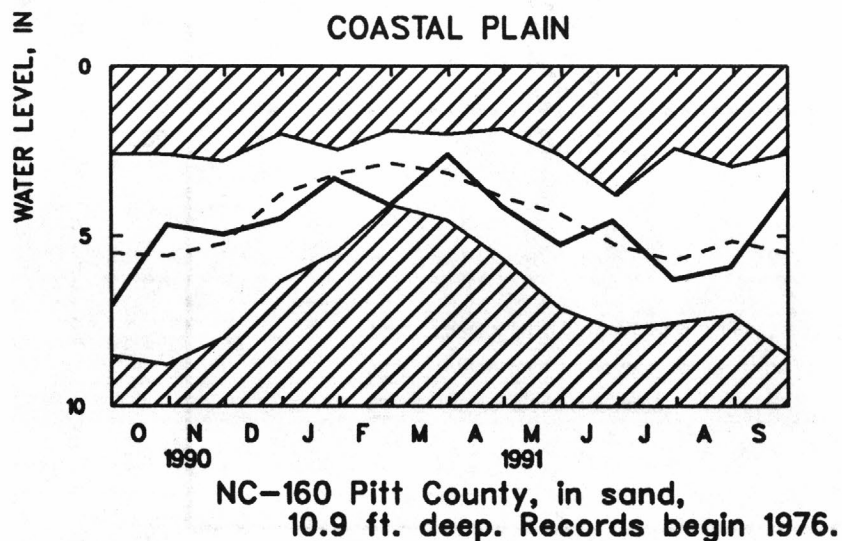
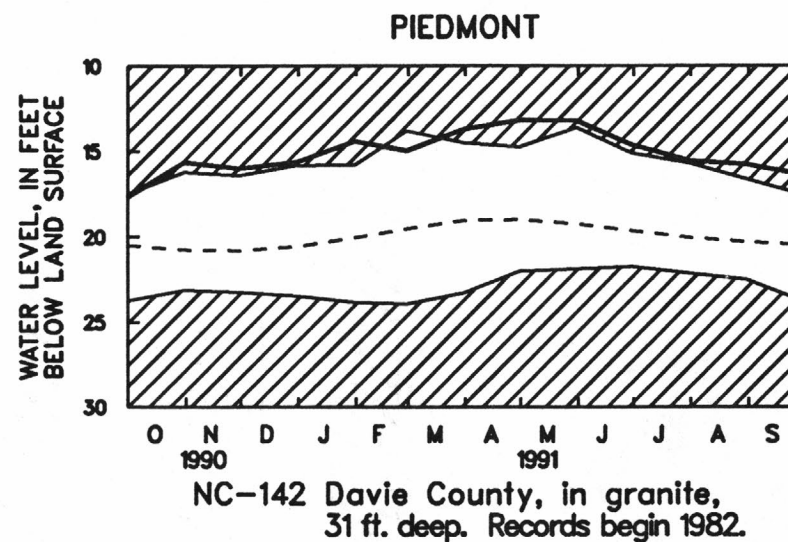
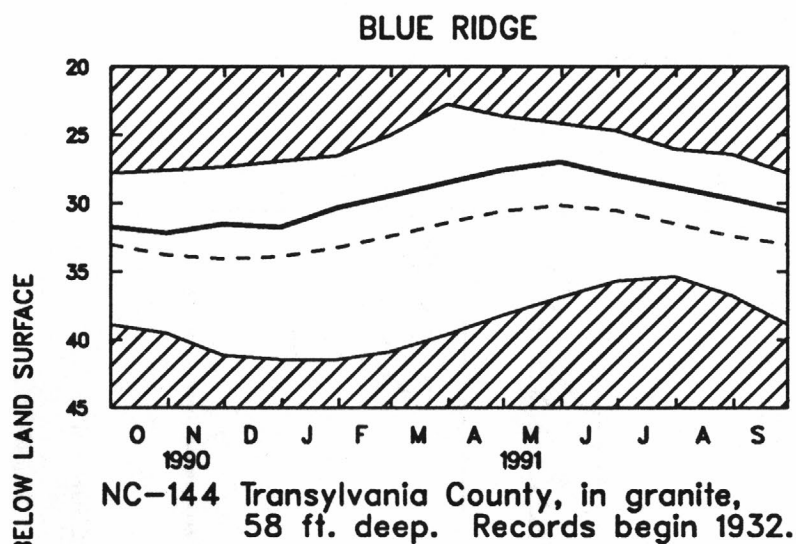


Figure 9.--Annual total suspended-sediment loads and annual mean discharge at Yadkin River at Yadkin College, North Carolina (02116500), water years 1986-91.



### EXPLANATION

Unshaded area indicates range between highest and lowest record for month-end levels.

Dashed line indicates average of month-end levels in previous years.

Solid line indicates month-end levels for 1991 water year.

Figure 10.-- Water levels in index observation wells in the Blue Ridge, Piedmont, and Coastal Plain Provinces of North Carolina, 1991 water year. Located in figure 1.

# WATER RESOURCES DATA FOR NORTH CAROLINA, 1991

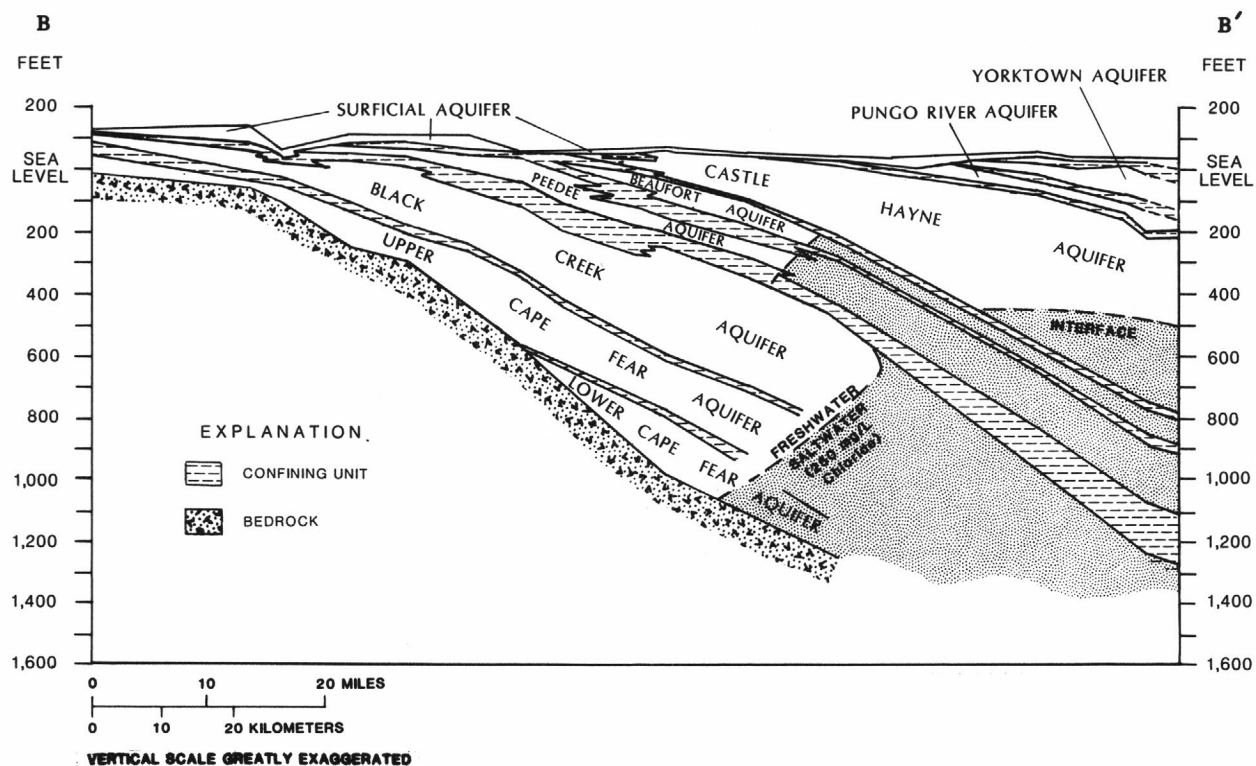
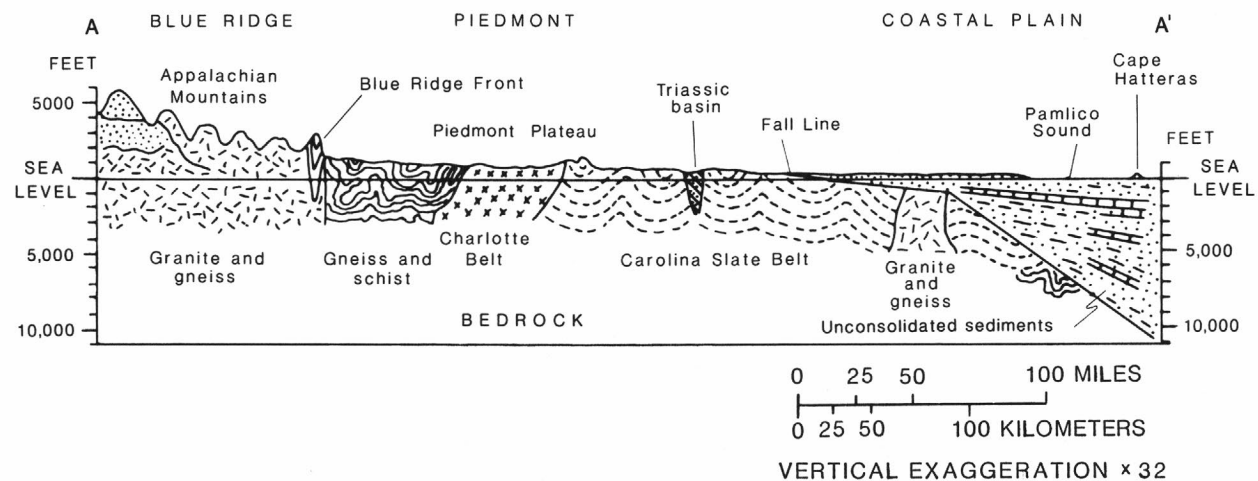


Figure 11.--Geologic section across North Carolina and hydrogeologic section of the Coastal Plain of North Carolina (from Coble and Strickland, 1989). Sections located in figure 1.

## WATER RESOURCES DATA FOR NORTH CAROLINA, 1991

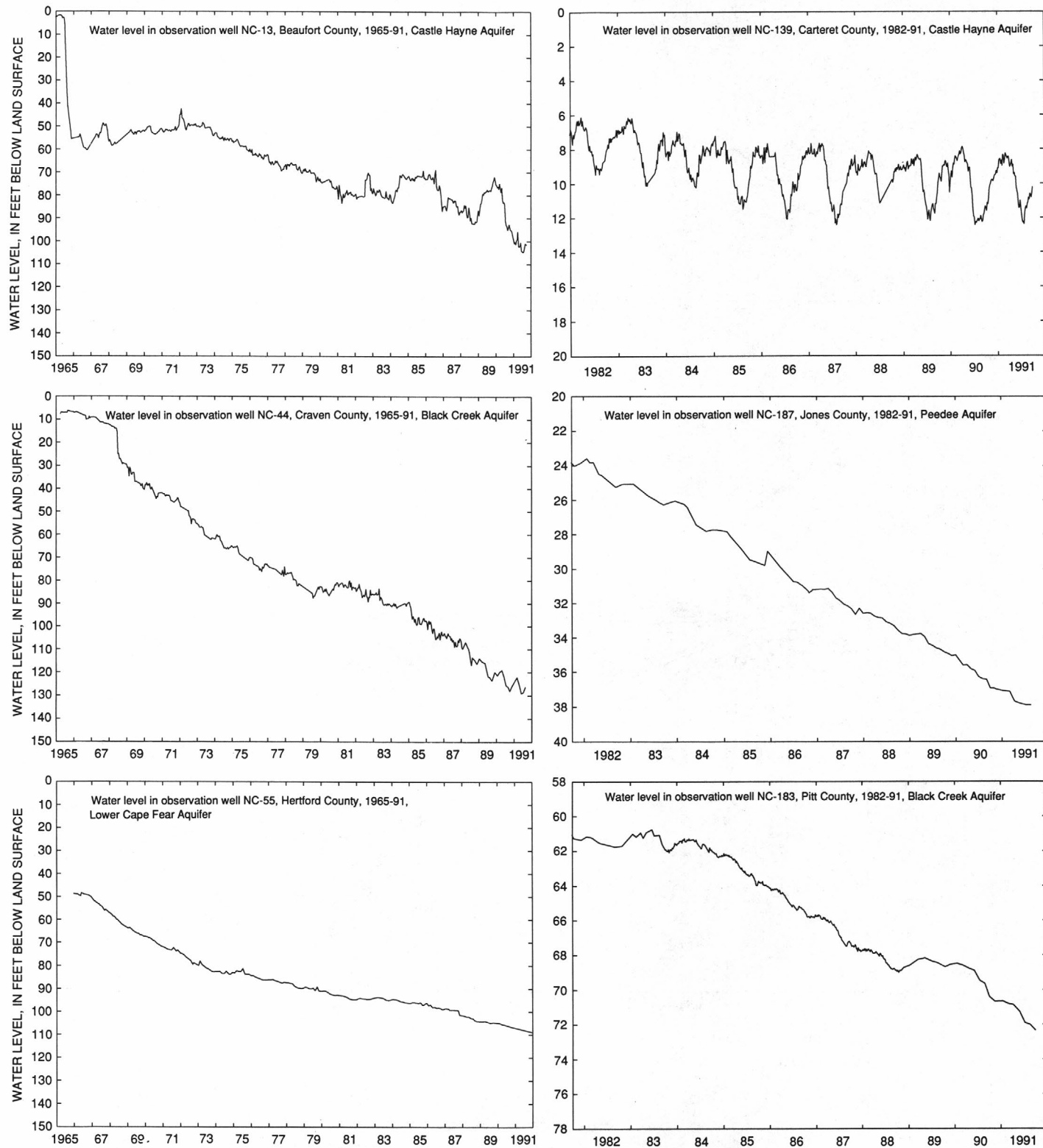


Figure 12.--Water levels in selected observation wells screened in the Castle Hayne, Peedee, upper Cape Fear, and lower Cape Fear aquifers in the Coastal Plain of North Carolina. Located in figure 1.

## SPECIAL NETWORKS AND PROGRAMS

**Hydrologic Bench-Mark Network** is a network of sites in small drainage basins around the country whose purpose is to provide consistent data on the hydrology, including water quality, and related factors in representative undeveloped watersheds nationwide, and to provide analyses on a continuing basis to compare and contrast conditions observed in basins more obviously affected by the activities of man.

**National Stream Quality Accounting Network (NASQAN)** is a nationwide data-collection network designed by the U.S. Geological Survey to meet many of the information needs of government agencies and other groups involved in natural or regional water-quality planning and management. The 500 or so sites in NASQAN are generally located at the downstream ends of hydrologic accounting units designated by the U.S. Geological Survey Office of Water Data Coordination in consultation with the Water Resources Council. The objectives of NASQAN are (1) to obtain information on the quality and quantity of water moving within and from the United States through a systematic and uniform process of data collection, summarization, analysis, and reporting such that the data may be used for, (2) description of the areal variability of water quality in the Nation's rivers through analysis of data from this and other programs, (3) detection of changes or trends with time in the pattern of occurrence of water-quality characteristics, and (4) providing a nationally consistent data base useful for water-quality assessment and hydrologic research.

**The National Trends Network (NTN)** is a 150-station network for sampling atmospheric deposition in the United States. The purpose of the network is to determine the variability, both in location and in time, of the composition of atmospheric deposition, which includes snow, rain, dust particles, aerosols, and gases. The core from which the NTN was built was the already-existing deposition-monitoring network of the National Atmospheric Deposition Program (NADP).

**Radiochemical program** is a network of regularly sampled water-quality stations where samples are collected to be analyzed for radioisotopes. The streams that are sampled represent major drainage basins in the conterminous United States.

**Tritium network** is a network of stations which has been established to provide baseline information on the occurrence of tritium in the Nation's surface waters. In addition to the surface-water stations in the network, tritium data are also obtained at a number of precipitation stations. The purpose of the precipitation stations is to provide an estimate sufficient for hydrologic studies of the tritium input to the United States.

## EXPLANATION OF THE RECORDS

The surface-water and ground-water records published in this report are for the 1991 water year that began October 1, 1990, and ended September 30, 1991. A calendar of the water year is provided on the inside of the front cover. The records contain streamflow data, stage and content data for lakes and reservoirs, water-quality data for surface and ground water, and ground-water-level data. The locations of the stations and wells where the data were collected are shown in figures 14, 15, 16, and 17. The following sections of the introductory text are presented to provide users with a more detailed explanation of how the hydrologic data published in this report were collected, analyzed, computed, and arranged for presentation.

Station Identification Numbers

Each data station in this report is assigned a unique identification number. This number is unique in that it applies specifically to a given station and to no other. The number usually is assigned when a station is first established and is retained for that station indefinitely. The systems used by the U.S. Geological Survey to assign identification numbers for surface-water stations and for ground-water well sites differ, but both are based on geographic location. The "downstream order number" system is used for surface-water stations and the "latitude-longitude" system is used for wells.

## Downstream Order System

Since October 1, 1950, the order of listing hydrologic-station records in Survey reports is in a downstream direction along the main stream. All stations on a tributary entering upstream from a mainstream station are listed before that station. A station on a tributary that enters between two mainstream stations is listed between them. A similar order is followed in listing stations on first rank, second rank, and other ranks of tributaries. The rank of any tributary with respect to the stream to which it is immediately tributary is indicated by an indentation in the "List of Stations" in the front of this report. Each indentation represents one rank. This downstream order and system of indentation show which stations are on tributaries between any two stations and the rank of the tributary on which each station is situated.

The station-identification number is assigned according to downstream order. In assigning station numbers, no distinction is made between partial-record stations and other stations; therefore, the station number for a partial-record station indicates downstream-order position in a list made up of both types of stations. Gaps are left in the series of numbers to allow for new stations that may be established; hence, the numbers are not consecutive. The complete eight-digit number for each station, such as 02053200, which appears just to the left of the station name, includes the two-digit Part number "02" plus the six-digit downstream-order number "053200." The part number designates the major river basin; for example, part "02" is the South Atlantic Slope Basin.

## Latitude-Longitude System

The identification numbers for wells and miscellaneous surface-water sites are assigned according to the grid system of latitude and longitude. The number consists of 15 digits. The first six digits denote the degrees, minutes, and seconds of latitude, the next seven digits denote degrees, minutes, and seconds of longitude, and the last two digits (assigned sequentially) identify the wells or other sites within a 1-second grid. This site-identification number, once assigned, is a pure number, and has no locational significance. In the rare instance where the initial determination of latitude and longitude are found to be in error, the station will retain its initial identification number; however, its true latitude and longitude will be listed in the LOCATION paragraph of the station description. (See fig. 13.)

## Latitude-Longitude System--Continued

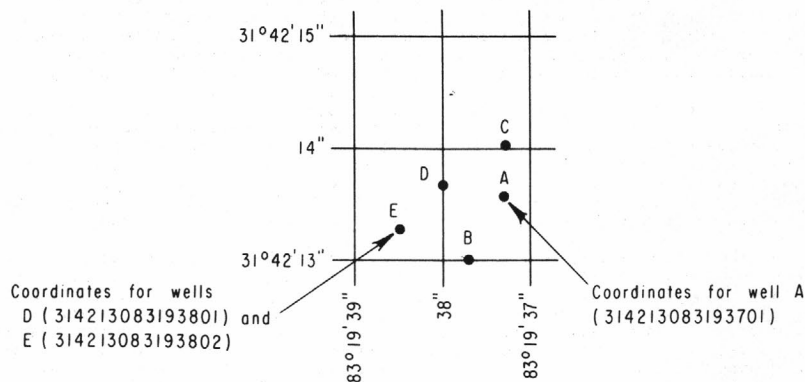


Figure 13.--System for numbering wells (latitude and longitude).

#### Records of Stage and Water Discharge

Records of stage and water discharge may be complete or partial. Complete records of discharge are those obtained using a continuous stage-recording device through which either instantaneous or mean daily discharges may be computed for any time, or any period of time, during the period of record. Complete records of lake or reservoir content, similarly, are those for which stage or content may be computed or estimated with reasonable accuracy for any time, or period of time. They may be obtained using a continuous stage-recording device, but need not be. Because daily mean discharges and end-of-day contents commonly are published for such stations, they are referred to as "daily stations."

By contrast, partial records are obtained through discrete measurements without using a continuous stage-recording device and pertain only to a few flow characteristics, or perhaps only one. The nature of the partial record is indicated by table titles such as "Crest-stage partial records," or "Low-flow partial records." Records of miscellaneous discharge measurements or of measurements from special studies, such as low-flow seepage studies, may be considered as partial records, but they are presented separately in this report.

#### Data Collection and Computation

The data obtained at a complete-record gaging station on a stream or canal consist of a continuous record of stage, individual measurements of discharge throughout a range of stages, and notations regarding factors that may affect the relationships between stage and discharge. These data, together with supplemental information, such as weather records, are used to compute daily discharges. The data obtained at a complete-record gaging station on a lake or reservoir consist of a record of stage and of notations regarding factors that may affect the relationship between stage and lake content. These data are used with stage-area and stage-capacity curves or tables to compute water-surface areas and lake storage.

Continuous records of stage are obtained with analog recorders that trace continuous graphs of stage or with digital recorders that punch stage values on paper tapes at selected time intervals. Measurements of discharge are made with current meters using methods adapted by the Geological Survey as a result of experience accumulated since 1880. These methods are described in standard textbooks, in Water-Supply Paper 2175, and in U.S. Geological Survey Techniques of Water-Resources Investigations, Book 3, Chapter A6.

In computing discharge records, results of individual measurements are plotted against the corresponding stages, and stage-discharge relation curves are then constructed. From these curves, rating tables indicating the approximate discharge for any stage within the range of the measurements are prepared. If it is necessary to define extremes of discharge outside the range of the current-meter measurements, the curves are extended using: (1) logarithmic plotting; (2) velocity-area studies; (3) results of indirect measurements of peak discharge, such as slope-area or contracted-opening measurements, and computations of flow over dams or weirs; or (4) step-backwater techniques.

Daily mean discharges are computed by applying the daily mean stages (gage heights) to the stage-discharge curves or tables. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features that form the control, the daily mean discharge is determined by the shifting-control method, in which correction factors based on the individual discharge measurements and notes of the personnel making the measurements are applied to the gage heights before the discharges are determined from the curves or tables. This shifting-control method also is used if the stage-discharge relation is changed temporarily because of aquatic growth or debris on the control. For some stations, formation of ice in the winter may so obscure the stage-discharge relations that daily mean discharges must be estimated from other information such as temperature and precipitation records, notes of observations, and records for other stations in the same or nearby basins for comparable periods.

## WATER RESOURCES FOR NORTH CAROLINA, 1991

## Data Collection and Computation--Continued

At some stream-gaging stations the stage-discharge relation is affected by the backwater from reservoirs, tributary streams, or other sources. This necessitates the use of the slope method in which the slope or fall in a reach of the stream is a factor in computing discharge. The slope or fall is obtained by means of an auxiliary gage set at some distance from the base gage. At some stations the stage-discharge relation is affected by changing stage; at these stations the rate of change in stage is used as a factor in computing discharge.

In computing records of lake or reservoir contents, it is necessary to have surveys available from curves or tables that define the relationship of stage and content. The tables are developed from bathymetric surveys. The application of stage to the stage-content curves or tables gives the contents from which daily, monthly, or yearly changes then are determined. If the stage-content relationship changes because of deposition of sediment in a lake or reservoir, periodic resurveys may be necessary to redefine the relationship. Even when this is done, the contents computed may become increasingly in error as time since the last survey increases. Discharges over lake or reservoir spillways are computed from stage-discharge relationships much as other stream discharges are computed.

For some gaging stations there are periods when no gage-height record is obtained, or the recorded gage height is so faulty that it cannot be used to compute daily discharge or contents. This happens when the recorder stops or otherwise fails to operate properly, intakes are plugged, the float is frozen in the well, or for various other reasons. For such periods, the daily discharges are estimated from the recorded range in stage, previous or following record, discharge measurements, weather records, and comparison with other station records from the same or nearby basins. Likewise, daily contents may be estimated from operator's logs, previous or following record, inflow-outflow studies, and other information. Information explaining how estimated daily-discharge values are identified in station records is included in the next two sections, "Data Presentation" (REMARKS paragraph) and "Identifying Estimated Daily Discharge."

## Data Presentation

The records published for each gaging station consist of two parts, the manuscript or station description and the data table for the current water year. The manuscript provides, under various headings, descriptive information, such as station location; period of record; average discharge; historical extremes; record accuracy; and other remarks pertinent to station operation and regulation. The following information, as appropriate, is provided with each continuous record of discharge or lake content. Comments to follow clarify information presented under the various headings of the station description.

**LOCATION.**--Information on locations is obtained from the most accurate maps available. The location of the gage with respect to the cultural and physical features in the vicinity and with respect to the reference place mentioned in the station name is given. River mileages, given for only a few stations, were determined by methods given in "River Mileage Measurement," Bulletin 14, Revision of October 1968, prepared by the Water Resources Council or were provided by the U.S. Army Corps of Engineers.

**DRAINAGE AREA.**--Drainage areas are measured using the most accurate maps available. Because the type of maps available varies from one drainage basin to another, the accuracy of drainage areas likewise varies. Drainage areas are updated as better maps become available.

**PERIOD OF RECORD.**--This indicates the period for which there are published records for the station or for an equivalent station. An equivalent station is one that was in operation at a time that the present station was not, and whose location was such that records from it can reasonably be considered equivalent with records from the present station.

**REVISED RECORDS.**--Published records, because of new information, occasionally are found to be incorrect, and revisions are printed in later reports. Listed under this heading are all the reports in which revisions have been published for the station and the water years to which the revisions apply. If a revision did not include daily, monthly, or annual figures of discharge, that fact is noted after the year dates as follows: "(M)" means that only the instantaneous maximum discharge was revised; "(m)" that only the instantaneous minimum was revised; and "(P)" that only peak discharges were revised. If the drainage area has been revised, the report in which the most recently revised figure was first published is given.

**GAGE.**--The type of gage in current use, the datum of the current gage referred to National Geodetic Vertical Datum of 1929 (see glossary), and a condensed history of the types, locations, and datums of previous gages are given under this heading.

**REMARKS.**--All periods of estimated daily-discharge record will either be identified by date in this paragraph of the station description for water-discharge stations or flagged in the daily-discharge table. (See next section, "Identifying Estimated Daily Discharge.") If a remarks statement is used to identify estimated record, the paragraph will begin with this information presented as the first entry. The paragraph is also used to present information relative to the accuracy of the records, to special methods of computation, to conditions that affect natural flow at the station, information regarding extremes for period of record and current year data and, possibly, to other pertinent items. For reservoir stations, information is given on the dam forming the reservoir, the capacity, outlet works and spillway, and purpose and use of the reservoir.

**COOPERATION.**--Records provided by a cooperating organization or obtained for the Geological Survey by a cooperating organization are identified here.

**EXTREMES OUTSIDE PERIOD OF RECORD.**--Included here is information concerning major floods or unusually low flows that occurred outside the stated period of record. The information may or may not have been obtained by the U.S. Geological Survey.

**REVISIONS.**--If a critical error in published records is discovered, a revision is included in the first report published following discovery of the error.

## Data Presentation--Continued

Although rare, occasionally the records of a discontinued gaging station may need revision. Because, for these stations, there would be no current or, possibly, future station manuscript published to document the revision in a "Revised Records" entry, users of data for these stations who obtained the record from previously published data reports may wish to contact the District office to determine if the published records were ever revised after the station was discontinued. Of course, if the data were obtained by computer retrieval, the data would be current and there would be no need to check because any published revision of data is always accompanied by revision of the corresponding data in computer storage.

Manuscript information for lake or reservoir stations differs from that for stream stations in the nature of the "Remarks" and in the inclusion of a skeleton stage-capacity table when daily contents are given.

The daily table for stream-gaging stations gives mean discharge for each day and is followed by monthly and yearly summaries. In the monthly summary below the daily table, the line headed "TOTAL" gives the sum of the daily figures. The line headed "MEAN" gives the average flow in cubic feet per second during the month. The lines headed "MAX" and "MIN" give the maximum and minimum daily discharges, respectively, for the month. Discharge for the month also is usually expressed in cubic feet per second per square mile (line headed "CFSM"), or in inches (line headed "IN."), or in acre-feet (line headed "AC-FT"). Figures for cubic feet per second per square mile and runoff in inches are omitted if there is extensive regulation or diversion or if the drainage area includes large noncontributing areas. In the yearly summary below the monthly summary, the figures shown are the appropriate discharges for the calendar and water years. At some stations monthly and (or) yearly observed discharges are adjusted for reservoir storage or diversion, or diversions or reservoir contents are given. These figures are identified by a symbol and corresponding footnote.

Data collected at partial-record stations follow the information for continuous-record sites. Data for partial-record discharge stations are presented in two tables. The first is a table of annual maximum stage and discharge at crest-stage stations, and the second is a table of discharge measurements at low-flow partial-record stations. The tables of partial-record stations are followed by a listing of discharge measurements made at sites other than continuous-record or partial-record stations. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

## Identifying Estimated Daily Discharge

Estimated daily-discharge values published in the water-discharge tables of annual State data reports are identified either by flagging individual daily values with the letter symbol "e" and printing a table footnote, "e Estimated," or by listing the dates of the estimated record in the REMARKS paragraph of the station description.

## Accuracy of the Records

The accuracy of streamflow records depends primarily on: (1) the stability of the stage-discharge relation or, if the control is unstable, the frequency of discharge measurements; and (2) the accuracy of measurements of stage, measurements of discharge, and interpretation of records.

The accuracy attributed to the records is indicated under "REMARKS." "Excellent" means that about 95 percent of the daily discharges are within 5 percent of the true; "good," within 10 percent; and "fair," within 15 percent. Records that do not meet the criteria mentioned, are rated "poor." Different accuracies may be attributed to different parts of a given record.

Daily mean discharges in this report are given to the nearest hundredth of a cubic foot per second for values less than 1 ft<sup>3</sup>/s; to the nearest tenth between 1.0 and 10 ft<sup>3</sup>/s; to whole numbers between 10 and 1,000 ft<sup>3</sup>/s; and to three significant figures for more than 1,000 ft<sup>3</sup>/s. The number of significant figures used is based solely on the magnitude of the discharge value. The same rounding rules apply to discharges listed for partial-record stations and miscellaneous sites.

Discharge at many stations, as indicated by the monthly mean, may not reflect natural runoff due to the effects of diversion, consumption, regulation by storage, increase or decrease in evaporation due to artificial causes or to other factors. For such stations, figures of cubic feet per second per square mile and of runoff, in inches, are not published unless satisfactory adjustments can be made for diversions, for changes in contents of reservoirs, or for other changes incident to use and control. Evaporation from a reservoir is not included in the adjustments for changes in reservoir contents, unless it is so stated. Even at those stations where adjustments are made, large errors in computed runoff may occur if adjustments or losses are large in comparison with the observed discharge.

## Other Records Available

Information used in the preparation of the records in this publication, such as discharge-measurement notes, gage-height records, temperature measurements, and rating tables are on file in the North Carolina District office. Also, most of the daily mean discharges are in computer-readable form and have been analyzed statistically. Information on the availability of the unpublished information or on the results of statistical analyses of the published records may be obtained from the District office.

## Records of Discharge Collected by Agencies Other Than the Geological Survey

Records of stream stage not published by the U.S. Geological Survey were collected in North Carolina during the 1981 water year by the National Weather Service, NOAA, U.S. Department of Commerce and other Federal agencies. The National Water Data Exchange (NAWDEX), Water Resources Division, U.S. Geological Survey, National Center, Reston, Virginia 22092, maintains an index of such sites. Information on records available at specific sites can be obtained upon request.

Records of Surface-Water Quality

Records of surface-water quality ordinarily are obtained at or near stream-gaging stations because interpretation of records of surface-water quality nearly always requires corresponding discharge data. Records of surface-water quality in this report may involve a variety of types of data and measurement frequencies.

### Classification of Records

Water-quality data for surface-water sites are grouped into one of three classifications. A **continuing-record station** is a site where data are collected on a regularly scheduled basis. Frequency may be one or more times daily, weekly, monthly, or quarterly. A **partial-record station** is a site where limited water-quality data are collected systematically over a period of years. Frequency of sampling is usually less than quarterly. A **miscellaneous sampling site** is a location other than a continuing- or partial-record station, where random samples are collected to give better areal coverage to define water-quality conditions in the river basin.

A careful distinction needs to be made between "continuing records" as used in this report and "continuous recordings," which refers to a continuous graph or a series of discrete values punched at short intervals on a paper tape. Some records of water quality, such as temperature and specific conductance, may be obtained through continuous recordings; however, because of costs, most data are obtained only monthly or less frequently. Locations of stations for which records on the quality of surface water appear in this report are shown in figures 14 & 15.

### Arrangement of Records

Water-quality records collected at a surface-water daily record station are published immediately following that record, regardless of the frequency of sample collection. Station number and name are the same for both records. Where a surface-water daily record station is not available or where the water quality differs significantly from that at the nearby surface-water station, the continuing water-quality record is published with its own station number and name in the regular downstream-order sequence. Water-quality data for partial-record stations and for miscellaneous sampling sites appear in separate tables following the table of discharge measurements at miscellaneous sites.

### On-Site Measurements and Sample Collection

In obtaining water-quality data, a major concern needs to be assuring that the data obtained represent the in situ quality of the water. To assure this, certain measurements, such as water temperature, pH, and dissolved oxygen, need to be made on site when the samples are taken. To assure that measurements made in the laboratory also represent the in situ water, carefully prescribed procedures need to be followed in collecting the samples, in treating the samples to prevent changes in quality-pending analysis, and in shipping the samples to the laboratory. Procedures for on site measurements and for collecting, treating, and shipping samples are given in publications on "Techniques of Water-Resources Investigations," Book 1, Chap. D2; Book 3, Chap. C2; Book 5, Chap. A1, A3, and A4. All of these references are listed on pages 34 and 35 of this report. Also, detailed information on collecting, treating, and shipping samples may be obtained from the Geological Survey North Carolina District office.

One sample can define adequately the water quality at a given time if the mixture of solutes throughout the stream cross section is homogeneous. However, the concentration of solutes at different locations in the cross section may vary widely with different rates of water discharge, depending on the source of material and the turbulence and mixing of the stream. Some streams must be sampled through several vertical sections to obtain a representative sample needed for an accurate mean concentration and for use in calculating load. All samples obtained for the National Stream Quality Accounting Network (see definitions) are obtained from at least several verticals. Whether samples are obtained from the centroid of flow or from several verticals, depends on flow conditions and other factors which must be evaluated by the collector.

Chemical-quality data published in this report are considered to be the most representative values available for the stations listed. The values reported represent water-quality conditions at the time of sampling as much as possible, consistent with available sampling techniques and methods of analysis. In the rare case where an apparent inconsistency exists between a reported pH value and the relative abundance of carbon dioxide species (carbonate and bicarbonate), the inconsistency is the result of a slight uptake of carbon dioxide from the air by the sample between measurement of pH in the field and determination of carbonate and bicarbonate in the laboratory.

For chemical-quality stations equipped with digital monitors, the records consist of daily maximum, minimum, and mean values for each constituent measured and are based upon hourly punches beginning at 0100 hours and ending at 2400 hours for the day of record. More detailed records (hourly values) may be obtained from the U.S. Geological Survey North Carolina District office whose address is given on the back of the title page of this report.

NOTICE: Values of dissolved and total selenium exceeding 5 µg/L in samples collected prior to 1975 are probably incorrect and should only be used with caution. Values of dissolved selenium greater than 1 µg/L collected prior to 1975 should also be considered questionable, although a fair percentage of them may, in fact, be correct.

### Water Temperature

Water temperatures are measured at most of the water-quality stations. In addition, water temperatures are taken at time of discharge measurements for water-discharge stations. For stations where water temperatures are taken manually once or twice daily, the water temperatures are taken at about the same time each day. Large streams have a small diurnal temperature change; shallow streams may have a daily range of several degrees and may follow closely the changes in air temperature. Some streams may be affected by waste-heat discharges.

At stations where recording instruments are used, either mean temperatures or maximum and minimum temperatures for each day are published. Water temperatures measured at the time of water-discharge measurements are on file in the District office.

### Sediment

Suspended-sediment concentrations are determined from samples collected by using depth-integrating samplers. Samples usually are obtained at several verticals in the cross section, or a single sample may be obtained at a fixed point and a coefficient applied to determine the mean concentration in the cross sections.

During periods of rapidly changing flow or rapidly changing concentration, samples may have been collected more frequently (twice daily or, in some instances, hourly). The published sediment discharges for days of rapidly changing flow or concentration were computed by the subdivided-day method (time-discharge weighted

## Sediment--Continued

average). Therefore, for those days when the published sediment discharge value differs from the value computed as the product of discharge times mean concentration times 0.0027, the reader can assume that the sediment discharge for that day was computed by the subdivided-day method. For periods when no samples were collected, daily discharges of suspended sediment were estimated on the basis of water discharge, sediment concentrations observed immediately before and after the periods, and suspended-sediment loads for other periods of similar discharge.

At other stations, suspended-sediment samples were collected periodically at many verticals in the stream cross section. Although data collected periodically may represent conditions only at the time of observations, such data are useful in establishing seasonal relations between quality and streamflow and in predicting long-term sediment-discharge characteristics of the stream.

In addition to the records of suspended-sediment discharge, records of the periodic measurements of the particle-size distribution of the suspended sediment and bed material are included for some stations.

## Laboratory Measurements

Sediment samples, samples for biochemical oxygen demand (BOD), samples for indicator bacteria, samples for turbidity, and daily samples for specific conductance are analyzed locally. All other samples are analyzed in the Geological Survey laboratories in Arvada, Colorado unless otherwise noted. Methods used in analyzing sediment samples and computing sediment records are given in TWRI, Book 5, Chap. C1. Methods used by the Geological Survey laboratories are given in TWRI, Book 1, Chap. D2; Book 3, Chap. C2; and Book 5, Chap. A1, A3, and A4.

In March 1990 the National Water-Quality Laboratory discovered a bias in the turbidimetric method for sulfate analysis, indicating that values below 75 mg/L have a median positive bias of 2 mg/L above the true value for the period between 1982 and 1990. Sulfate values in this report have not been corrected for this bias.

Traditionally, dissolved trace-element concentrations have been reported at the microgram per liter ( $\mu\text{g/L}$ ) level. Recent evidence, mostly from large rivers, indicates that actual dissolved-phase concentrations for a number of trace elements are within the range of 10's to 100's of nanograms per liter (ng/L). Present data above the  $\mu\text{g/L}$  level should be viewed with caution. Such data may actually represent elevated environmental concentrations from natural or human causes; however, these data could reflect contamination introduced during sampling, processing, or analysis. To confidently produce dissolved trace-element data with insignificant contamination, the U. S. Geological Survey will begin using new trace-element protocols in the near future.

## Data Presentation

For continuing-record stations, information pertinent to the history of station operation is provided in descriptive headings preceding the tabular data. These descriptive headings give details regarding location, drainage area, period of record, type of data available, instrumentation, general remarks, cooperation, and extremes for parameters currently measured daily. Tables of chemical, physical, biological, radiochemical data, and so forth, obtained at a frequency less than daily are presented first. Tables of "daily values" of specific conductance, pH, water temperature, dissolved oxygen, and suspended sediment then follow in sequence.

In the descriptive headings, if the location is identical to that of the discharge gaging station, neither the LOCATION nor the DRAINAGE AREA statements are repeated. The following information, as appropriate, is provided with each continuous-record station. Comments that follow clarify information presented under the various headings of the station description.

LOCATION.--See Data Presentation under "Records of Stage and Water Discharge"; same comments apply.

DRAINAGE AREA.--See Data Presentation under "Records of Stage and Water Discharge"; same comments apply.

PERIOD OF RECORD.--This indicates the periods for which there are published water-quality records for the station. The periods are shown separately for records of parameters measured daily or continuously and those measured less than daily. For those measured daily or continuously, periods of record are given for the parameters individually.

INSTRUMENTATION.--Information on instrumentation is given only if a water-quality-monitor temperature record, sediment pumping sampler, or other sampling device is in operation at a station.

REMARKS.--Remarks provide added information pertinent to the collection, analysis, or computation of the records.

COOPERATION.--Records provided by a cooperating organization or obtained for the Geological Survey by a cooperating organization are identified here.

EXTREMES.--Maximums and minimums are given only for parameters measured daily or more frequently. For parameters measured weekly or less frequently, true maximums or minimums may not have been obtained. Extremes, when given, are provided for both the period of record and for the current water year.

REVISIONS.--If errors in published water-quality records are discovered after publication, appropriate updates are made to the Water-Quality File in the U.S. Geological Survey's computerized data system, WATSTORE, and subsequently by monthly transfer of update transactions to the U.S. Environmental Protection Agency's STORET system. Because the usual volume of updates makes it impractical to document individual changes in the State data-report series or elsewhere, potential users of U.S. Geological Survey water-quality data are encouraged to obtain all required data from the appropriate computer file to insure the most recent updates.

The surface-water-quality records for partial-record stations and miscellaneous sampling sites are published in separate tables following the table of discharge measurements at miscellaneous sites. No descriptive statements are given for these records. Each station is published with its own station number and name in the regular downstream-order sequence.

## Remark Codes

The following remark codes may appear with the water-quality data in this report:

PRINTED OUTPUT	REMARK
E	Estimated value
>	Actual value is known to be greater than the value shown
<	Actual value is known to be less than the value shown
K	Results based on colony count outside the acceptance range (nonideal colony count)
L	Biological organism count less than 0.5 percent (organism may be observed rather than counted)
D	Biological organism count equal to or greater than 15 percent (dominant)
&	Biological organism estimated as dominant

**NOTE:** In March 1990 the National Water-Quality Laboratory discovered a bias in the turbidimetric method for sulfate analysis, indicating that values below 75 mg/L have a median positive bias of 2 mg/L above the true value for the period between 1982 and 1990. Sulfate values in this report have not been corrected for this bias.

Records of Ground-Water Levels

## Data Collection and Computation

The ground-water level data from observation wells in the basic statewide program and special project wells are published herein. This statewide program contains observation wells so located that the most significant data are obtained from the fewest wells in the most important aquifers. Wells in the statewide program are included in one of four networks based on meeting separate objectives. Two networks, climatic-effects and terrane-effects networks, have the objectives of measuring effects on the ground-water system caused by natural stresses. Two other networks, local-effects and areal-effects networks measure effects of manmade stresses on the system. Climatic-effects wells show the effects of climate, such as rainfall and the beginning and end of the growing season on ground-water storage in unconfined aquifers. Terrane-effects wells are used to define the effects of different depths of the water table, and topography and geology on ground-water storage in response to climatic stresses. The major manmade stress imposed upon the ground-water system is withdrawal of ground water by pumping; the local-effects wells are near large-capacity pumping wells or well fields and measure daily or weekly water-level fluctuations. Areal-effects wells are used to determine the status of ground-water storage in an aquifer over a large area and to aid in determining the areal extent of major aquifers.

Each well is identified by means of (1) a 15-digit number that is based on latitude and longitude and (2) a local number that is provided for local needs and which is used to identify the wells on figures 16 and 17. Local numbers for wells in the statewide network have a prefix of NC followed by a sequential number; example, NC-139. Local numbers for special project wells have a county abbreviation prefix followed by a sequential number; examples, Du-122, ME-252, On-10, and PA-3 for wells in Duplin, Mecklenburg, Onslow, and Pamlico Counties, respectively.

Tables of water-level data are presented by counties arranged in alphabetical order. The prime identification number for a given well is the 15-digit number that appears in the upper left corner of the table. The secondary identification number is the local well number.

Measurements of water levels are made in many types of wells under varying conditions, but the methods of measurement are standardized to the extent possible. The equipment and measuring techniques used at each observation well ensure that measurements at each well are of consistent accuracy and reliability.

Water-level records are obtained from direct measurements with a steel tape or an electric tape, or from the graph or punched tape of a water-stage recorder. Water-level measurements in this report are given in feet with reference to either National Geodetic Vertical Datum (NGVD) or land-surface datum (lsd). National Geodetic Vertical Datum is the plane on which the national network of precise levels is based; land-surface datum is a datum plane that is approximately at land surface at each well. If known, the elevation (NGVD) of the land-surface datum is given in the well description. The height of the measuring point (MP) above or below land-surface datum is given in each well description. Water levels in wells equipped with recording gages are the mean water level reported either for every day or for every fifth day and the day at the end of each month (eom).

Water levels are reported to as many significant figures as can be justified by the local conditions. Accordingly, all measurements are reported to a hundredth of a foot.

## Data Presentation

Each well record consists of two parts, the station description and the data table of water levels observed during the water year; for some wells, a hydrograph follows the data table. The description of the well is presented first through use of descriptive headings preceding the tabular data. The comments to follow clarify information presented under the various headings.

**LOCATION.**--This paragraph follows the well-identification number and reports the latitude and longitude (given in degrees, minutes, and seconds); the hydrologic-unit number; a geographic point of reference; and the owner's name.

## Data Presentation--Continued

**AQUIFER.**--This entry designates by name and geologic age the aquifer open to the well. Names of aquifers in the Coastal Plain Province are those used in the recently completed North Carolina Coastal Plain aquifer study which was part of the Geological Survey's North Atlantic Coastal Plain Regional Aquifer System Analysis (RASA). Aquifers in the Piedmont and Blue Ridge Provinces are listed as the rock type of the crystalline igneous or metamorphic rock or the weathered material derived from the rock that the well taps.

**WELL CHARACTERISTICS.**--This entry describes the well in terms of depth, diameter, casing depth and (or) screened interval, method of construction, use, and other changes since construction.

**INSTRUMENTATION.**--This paragraph provides information on both the frequency of measurement and the collection method used, allowing the user to better evaluate the reported water-level extremes by knowing whether they are based on continuous, monthly, or some other frequency of measurement.

**DATUM.**--This entry describes both the measuring point and the land-surface elevation at the well. The measuring point is described physically (such as top of casing, top of instrument shelf, and so on), and in relation to land surface (such as 1.3 ft above land-surface datum). The elevation of the land-surface datum is described in feet above National Geodetic Vertical Datum of 1929 (NGVD of 1929); it is reported with a precision depending on the method of determination.

**REMARKS.**--This entry describes factors that may influence the water level in a well or the measurement of the water level. It may describe when various methods of measurement were begun, and the network (climatic, terrane, local, or areal effects) to which the well belongs is noted here also.

**PERIOD OF RECORD.**--This entry indicates the period for which there are published records for the well. It reports the month and year of the start of publication of water-level records by the U.S. Geological Survey and the words "to current year" if the records are to be continued into the following year. Periods for which water-level records are available, but are not published by the Geological Survey, may be noted.

**EXTREMES FOR PERIOD OF RECORD.**--This entry contains the highest and lowest water levels of the period of published record, with respect to land-surface datum or National Geodetic Vertical Datum, and the dates of their occurrence.

A table of water levels follows the station description for each well. Water-level measurements in this report are given in feet with reference to either National Geodetic Vertical Datum (NGVD) or land-surface datum (lsd). For some wells equipped with recorders, abbreviated tables are published with mean water-levels for only every fifth day and at the end of the month (eom); generally, tables of daily values are published for wells in the climatic-effects network, and abbreviated tables are published for those in the terrane-, local- and areal-effects networks. The highest and lowest water levels of the water year and their dates of occurrence are shown on a line below the abbreviated table. Because all values are not published for some wells with recorders, the extremes may be values that are not listed in the table. Missing records are indicated by dashes in place of the water level.

## ACCESS TO WATSTORE DATA

The National Water Data Storage and Retrieval System (WATSTORE) was established in 1972 to provide an effective and efficient means for the processing and maintenance of water data collected through the activities of the U.S. Geological Survey. A variety of useful products ranging from data tables to complex statistical analyses such as Log Pearson Type III statistics can be produced using WATSTORE. The system resides on the central computer facilities of the U.S. Geological Survey at its National Center in Reston, Virginia and consists of related files and data bases.

- Station-Header File - Contains descriptive information on over 440,000 sites throughout the United States and its territories where the U.S. Geological Survey collects or has collected data.
- Daily Values File - Contains over 220 million daily values of stream flows, stages, reservoir contents, water temperatures, specific conductances, sediment concentrations, sediment discharges, and ground-water levels.
- Peak-Flow File - Contains approximately 500,000 maximum (peak) streamflow and gage height values at surface-water sites.
- Water-Quality File - Contains approximately 2million analyses of water samples that describe the chemical, physical, biological, and radiochemical characteristics of both surface and ground water.
- Ground-Water Site-Inventory Data Base - Contains inventory data for over 900,000 wells, springs, and other sources of ground water. The data includes site location, geohydrologic characteristics, well-construction history, and one-time field measurements such as water temperature.

## Data Presentation--Continued

In 1976, the U.S. Geological Survey opened WATSTORE to the public for direct access. The signing of a Memorandum of Agreement with the Survey is required to obtain direct access to WATSTORE. The system can be accessed either synchronously or asynchronously. The requestor will be expected to pay all computer costs he/she incurs. Direct access may be obtained by contacting:

U.S. Geological Survey  
National Water Data Exchange  
National Center, Mail Stop 421  
Reston, VA 22092

In addition to providing direct access to WATSTORE, the National Water Data Exchange (NAWDEX) services include data-search assistance, data dissemination, and data referrals. Data can be provided in various machine-readable formats on magnetic tape or 5-1/4 in floppy diskette. The request for water data should be forwarded to the local Geological Survey District office:

District Chief  
U.S. Geological Survey  
3916 Sunset Ridge Road  
Raleigh, NC 27607

If the District office does not have the facility to fulfill the request, it will be referred to the National Water Data Exchange (NAWDEX) office in Reston, Virginia.

## DEFINITION OF TERMS

Terms related to streamflow, water-quality, and other hydrologic data, as used in this report, are defined below. See also the table for converting English units to International System of Units (SI) on the inside of the back cover.

**Acre-foot (AC-FT, acre-ft)** is the quantity of water required to cover 1 acre to a depth of 1 foot and is equivalent to 43,560 cubic feet or about 326,000 gallons or 1,233 cubic meters.

**Algae** are mostly aquatic single-celled, colonial, or multi-celled plants, containing chlorophyll and lacking roots, stems, and leaves.

**Aquifer** is a geologic formation, group of formations, or part of a formation that contains sufficient saturated permeable material to yield significant quantities of water to wells and springs.

**Confined aquifer** is one which is completely filled with water and is overlain by a confining bed. Water in confined aquifers occurs at pressures greater than atmospheric pressure.

**Unconfined aquifer** is one which is only partially filled with water and the upper surface of the saturated zone (the water table) is free to rise and fall.

**Average discharge** is the arithmetic mean of the water-year mean discharges. It is computed only for stations having at least 5 water years of complete record, and only water years of complete record are included in the computation. It is not computed for stations where diversions, storage, or other water-use practices cause the value to be meaningless. If water developments that significantly altering the flow at a station are put into use after the station has been in operation for a period of years, a new average is computed as soon as 5 water years of record have been accumulated following the development.

**Bacteria** are microscopic unicellular organisms, typically spherical, rodlike, or spiral and threadlike in shape, often clumped into colonies. Some bacteria cause disease, others perform an essential role in nature in the recycling of materials; for example, by decomposing organic matter into a form available for reuse by plants.

**Total coliform bacteria** are a particular group of bacteria that are used as indicators of possible sewage pollution. They are characterized as aerobic or facultative anaerobic, gram-negative, nonspore-forming, rod-shaped bacteria which ferment lactose with gas formation within 48 hours at 35°C. In the laboratory these bacteria are defined as the organisms which produce colonies within 24 hours when incubated at 35°C plus or minus 0.5°C on M-Endo medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

**Fecal coliform bacteria** are bacteria that are present in the intestines or feces of warm-blooded animals. They are often used as indicators of the sanitary quality of the water. In the laboratory they are defined as all organisms which produce blue colonies within 24 hours when incubated at 44.5°C plus or minus 0.2°C on M-FC medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

**Fecal streptococcal bacteria** are bacteria found also in intestines of warm-blooded animals. Their presence in water is considered to verify fecal pollution. They are characterized as gram-positive, cocci bacteria which are capable of growth in brain-heart infusion broth. In the laboratory they are defined as all the organisms which produce red or pink colonies within 48 hours at 35°C plus or minus 0.5°C on KF streptococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

**Bed material** is the unconsolidated material of which a streambed, lake, pond, reservoir, or estuary bottom is composed.

**Biochemical oxygen demand (BOD)** is a measure of the quantity of dissolved oxygen, in milligrams per liter, necessary for the decomposition of organic matter by microorganisms, such as bacteria.

**Biomass** is the amount of living matter present at any given time, expressed as the mass per unit area or volume of habitat.

**Ash mass** is the mass or amount of residue present after the residue from the dry mass determination has been ashed in a muffle furnace at a temperature of 500°C for 1 hour. The ash mass values of zooplankton and phytoplankton are expressed in grams per cubic meter ( $\text{g}/\text{m}^3$ ). And periphyton and benthic organisms in grams per square meter ( $\text{g}/\text{m}^2$ ).

**Dry mass** refers to the mass of residue present after drying in an oven at 60°C for zooplankton and at not more than 105°C for periphyton, until the mass remains unchanged. This mass represents the total organic matter, ash and sediment, in the sample. Dry mass values are expressed in the same units as ash mass.

**Organic mass** or **volatile mass** of the living substance is the difference between the dry mass and ash mass, and represents the actual mass of the living matter. The organic mass is expressed in the same units as for ash mass and dry mass.

**Wet mass** is the mass of living matter plus contained water.

**Bottom material:** See Bed material.

**Cells/volume** refers to the number of cells of any organism which is counted by using a microscope and grid or counting cell. Many planktonic organisms are multicelled and are counted according to the number of contained cells per sample, usually milliliters (mL) or liters (L).

**Cfs-day** is the volume of water represented by a flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, approximately 1.9835 acre-feet, about 646,000 gallons or 2,447 cubic meters.

## DEFINITION OF TERMS--Continued

**Chemical oxygen demand (COD)** is a measure of the chemically oxidizable material in the water, and furnishes an approximation of the amount of organic and reducing material present. The determined value may correlate with natural water color or with carbonaceous organic pollution from sewage or industrial wastes.

**Chlorophyll** refers to the green pigments of plants. Chlorophyll a and b are the two most common pigments in plants.

**Color unit** is produced by one milligram per liter of platinum in the form of the chloroplatinate ion. Color is expressed in units of the platinum-cobalt scale.

**Confining bed** is a layer of rock having very low hydraulic conductivity that hampers the movement of water into and out of the aquifers which lie above and below the confining bed.

**Contents** is the volume of water in a reservoir or lake. Unless otherwise indicated, volume is computed on the basis of a level pool and does not include bank storage.

**Control** designates a feature downstream from the gage that determines the stage-discharge relation at the gage. This feature may be a natural constriction of the channel, an artificial structure, or a uniform cross section over a long reach of the channel.

**Cubic feet per second per square mile (CFSM)** is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming that the runoff is distributed uniformly in time and area.

**Cubic foot per second (FT<sup>3</sup>/s, ft<sup>3</sup>/s)** is the rate of discharge representing a volume of 1 cubic foot passing a given point during 1 second and is equivalent to approximately 7.48 gallons per second or 448.8 gallons per minute or 0.02832 cubic meters per second.

**Discharge** is the volume of water (or more broadly, volume of fluid plus suspended sediment), that passes a given point within a given period of time.

**Mean discharge (MEAN)** is the arithmetic mean of individual daily mean discharges during a specific period.

**Instantaneous discharge** is the discharge at a particular instant of time.

**Dissolved** is that material in a representative water sample which passes through a 0.45 um membrane filter. This is a convenient operational definition used by Federal agencies that collect water data. Determinations of "dissolved" constituents are made on subsamples of the filtrate.

**Drainage area** of a stream at a specific location is that area, measured in a horizontal plane, enclosed by a topographic divide from which direct surface runoff from precipitation normally drains by gravity into the river above the specified point. Figures of drainage area given herein include all closed basins, or noncontribution areas, within the area unless otherwise noted.

**Drainage basin** is a part of the surface of the earth that is occupied by a drainage system which consists of a surface stream or a body of impounded surface water together with all tributary surface streams and bodies of impounded surface water.

**Flow-duration curve percentiles** refer to interpolated values taken from a cumulative frequency curve that shows the percent of the time specified discharges were equaled or exceeded during a given period.

**Gage height (G.H.)** is the water-surface elevation referred to some arbitrary gage datum. Gage height is often used interchangeably with the general term "stage", although gage height is more appropriate when used with a reading on a gage.

**Gaging station** is a particular site on a stream, canal, lake, or reservoir where systematic observations of gage height or discharge are obtained. When used in connection with a discharge record, the term is applied only to those gaging stations where a continuous record of discharge is computed.

**Hardness** of water is a physical-chemical characteristic that is commonly recognized by the increased quantity of soap required to produce lather. It is computed as the sum of equivalents of polyvalent cations and is expressed as the equivalent concentration of calcium carbonate (CaCO<sub>3</sub>).

**Hydrologic unit** is a geographic area representing part or all of a surface drainage basin or distinct hydrologic feature as delineated by the Office of Water Data Coordination on the State Hydrologic Unit Maps; each hydrologic unit is identified by an 8-digit number.

**Land-surface datum (lsd)** is a datum plane that is approximately at land surface at each ground-water observation well.

**Measuring point (MP)** is an arbitrary permanent reference point from which the distance to the water surface in a well is measured to obtain the water level.

**Methylene blue active substance (MBAS)** is a measure of apparent detergents. This determination depends on the formation of a blue color when methylene blue dye reacts with synthetic detergent compounds.

**Micrograms per liter (UG/L, µg/L)** is a unit expressing the concentration of chemical constituents in solution as the weight (micrograms) of solute per unit volume (liter) of water. One thousand micrograms per liter is equivalent to 1 milligram per liter.

**Milligrams per liter (MG/L, mg/L)** is a unit for expressing the concentration of chemical constituents in solution. Milligrams per liter represent the mass of solute per unit volume (liter) of water. Concentration of suspended sediment also is expressed in mg/L, and is based on the mass of dry sediment per liter of water-sediment mixture.

## DEFINITION OF TERMS--Continued

**National Geodetic Vertical Datum of 1929 (NGVD)** is a geodetic datum derived from a general adjustment of the adjustment of the first order level nets of both the United States and Canada. It was formerly called "Sea Level Datum of 1929" or "mean sea level" in this series of reports. Although the datum was derived from the average sea level over a period of many years at 26 tide stations along the Atlantic, Gulf of Mexico, and Pacific Coasts, it does not necessarily represent local mean sea level at any particular place.

**Organism** is any living entity, such as an insect, phytoplankter, or zooplankter.

**Organism count/area** refers to the number of organisms collected and enumerated in a sample and adjusted to the number per area of habitat, usually square meters ( $m^2$ ), acres, or hectares. Periphyton benthic organisms, and macrophytes are expressed in these terms.

**Organism count/volume** refers to the number of organisms collected and enumerated in a sample and adjusted to the number per sample volume, usually milliliters (mL) or liters (L). Numbers of planktonic organisms can be expressed in these terms.

**Total organism count** is the total number of organisms collected and enumerated in any particular sample.

**Parameter Code** is a 5-digit number used in the U. S. Geological Survey computerized data system, WATSTORE, to uniquely identify a specific constituent. The codes used in WATSTORE are the same as those used in the U. S. Environmental Protection Agency data system, STORET. The Environmental Protection Agency assigns and approves all requests for new codes.

**Partial-record station** is a particular site where limited streamflow and/or water-quality data are collected systematically over a period of years for use in hydrologic analyses.

**Particle-size** is the diameter, in millimeters (mm), of suspended sediment or bed material determined by determined by either sieve or sedimentation methods. Sedimentation methods (pipet, bottom-withdrawal tube, visual-accumulation tube) determine fall diameter or particles in either distilled water (chemically dispersed) or in native water (the river water at the time and point of sampling).

**Particle-size classification** used in this report agrees with recommendations made by the American Geophysical Union Subcommittee on Sediment Terminology.

The classification is as follows:

Classification	Size (mm)	Method of analysis
Clay.....	0.00024 - 0.004	Sedimentation.
Silt.....	.004 - .062	Sedimentation.
Sand.....	.062 - 2.0	Sedimentation or sieve.
Gravel.....	2.0 - 64.0	Sieve.

The particle-size distribution given in this report is not necessarily representative of all particles in transport in the stream. Most of the organic material is removed and the sample is subjected to mechanical and chemical dispersion before analysis in distilled water. Chemical dispersion is not used for native water analysis.

**Percent composition** is a unit for expressing the ratio of a particular part of a sample or population to the total sample or population, in terms of types, numbers, mass or volume.

**Periphyton** is the assemblage of micro-organisms attached to and growing upon submerged solid surfaces. While primarily consisting of algae, they also include bacteria, fungi, protozoa, rotifers, and other small organisms. Periphyton is a useful indicator of water quality.

**Pesticides** are chemical compounds used to control undesirable plants and animals. Major categories of pesticides include insecticides, miticides, fungicides, herbicides, and rodenticides. Insecticides and herbicides, which control insects and plants respectively, are the two categories reported.

**Picocurie (PC, pCi)** is one trillionth ( $1 \times 10^{-12}$ ) of the amount of radioactivity represented by a curie (Ci). A curie is the amount of radioactivity that yields  $3.7 \times 10^{10}$  radioactive disintegrations per second. A picocurie yields 2.22 dpm (disintegrations per minute).

**Plankton** is the community of suspended, floating, or weakly-swimming organisms that live in the open water of lakes and rivers.

**Phytoplankton** is the plant part of the plankton. They are usually microscopic and their movement is subject to the water currents. Phytoplankton growth is dependent upon solar radiation and nutrients. Because they are able to incorporate as well as release materials to the surrounding water, the phytoplankton have a profound effect upon the quality of the water. They are the primary food producers in the aquatic environment and are commonly known as algae.

**Zooplankton** is the animal part of the plankton. Zooplankton are capable of extensive movements within the water column, and are often large enough to be seen with the unaided eye. Zooplankton are secondary consumers feeding upon bacteria, phytoplankton, and detritus. Because they are the grazers in the aquatic environment, the zooplankton are a vital part of the aquatic food web. The zooplankton community is dominated by small crustaceans and rotifers.

**Runoff in inches (IN, in)** shows the depth to which the drainage area would be covered if all the runoff for a given time were uniformly distributed on it.

## DEFINITION OF TERMS--Continued

**Sediment** is solid material that originates mostly from disintegrated rocks and is transported by, suspended in, or deposited from water; it includes chemical and biochemical precipitates and decomposed organic material, such as humus. The quantity, characteristics, and cause of the occurrence of sediment in streams are influenced by environmental factors. Some major factors are steepness of slope, length of slope, soil characteristics, land usage, and quantity and intensity of precipitation.

**Suspended sediment** is the sediment that at any given time is maintained in suspension by the upward components of turbulent currents or that exists in suspension as a colloid.

**Suspended-sediment concentration** is the velocity-weighted concentration of suspended sediment in the sampled zone (from the water surface to a point approximately 0.3 ft above the bed) expressed as milligrams of dry sediment per liter of water-sediment mixture.

**Suspended-sediment discharge (tons/day)** is the rate at which dry mass of sediment passes a section of a stream or is the quantity of sediment, as measured by dry weight or volume, that passes a section in a given time. It is computed by multiplying discharge times milligrams per liter times 0.0027.

**Suspended-sediment load** is quantity of suspended sediment passing a section in a specified period.

**Mean concentration** is the time-weighted concentration of suspended sediment passing a stream section during a 24-hour day.

**Solute** is any substance derived from the atmosphere, vegetation, soil, or rocks that is dissolved in water.

**Specific conductance** is a measure of the ability of a water to conduct an electrical current. It is expressed in microsiemens per centimeter at 25°C. Specific conductance is related to the type and concentration of ions in solution and can be used for approximating the dissolved-solids content of the water. Commonly, the concentration of dissolved solids (in milligrams per liter) is about 65 percent of the specific conductance (in microsiemens). This relation is not constant from stream to stream, and it may vary in the same stream with changes in the composition of the water.

**Stage-discharge relation** is the relation between gage height (stage) and volume of water per unit of time, flowing in a channel.

**Streamflow** is the discharge that occurs in a natural channel. Although the term "discharge" can be applied to the flow of a canal, the word "streamflow" uniquely describes the discharge in a surface stream course. The term "streamflow" is more general than "runoff" as streamflow may be applied to discharge whether or not it is affected by diversion or regulation.

**Suspended, recoverable** is the amount of a given constituent that is in solution after the part of a representative water-suspended sediment sample that is retained on a 0.45 um membrane filter has been digested by a method (usually using a dilute acid solution) that results in a dissolution of only readily soluble substances. Complete dissolution of all the particulate matter is not achieved by the digestion treatment and thus the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent present in the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results. Determinations of "suspended, recoverable" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total recoverable concentrations of the constituent.

**Suspended, total** is the total amount of a given constituent in the part of a representative water-suspended sediment sample that is retained on a 0.45 um membrane filter. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to determine when the results should be reported as "suspended, total." Determinations of "suspended, total" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total concentrations of the constituent.

**Taxonomy** is the division of biology concerned with the classification and naming of organisms. The classification of organisms is based upon a hierarchical scheme beginning with Kingdom and ending with Species at the base. The higher the classification level, the fewer features the organisms have in common. For example, the taxonomy of a particular mayfly, *Hexagenia limbata* is the following:

Kingdom.....Animal  
Phylum.....Arthropoda  
Class.....Insecta  
Order.....Ephemeroptera  
Family.....Ephemeridae  
Genus.....Hexagenia  
Species.....Hexagenia limbata

**Tons per acre-foot** indicates the dry mass of dissolved solids in 1 acre-foot of water. It is computed by multiplying the concentration in milligrams per liter by 0.00136.

**Tons per day** is the quantity of substance in solution or suspension that passes a stream section during a 24-hour day.

**Total** is the total amount of a given constituent in a representative water-suspended sediment sample, regardless of the constituent's physical or chemical form. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent present in both the dissolved and suspended phases of the sample. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as "total." (Note that the word "total" does double duty here, indicating both that the sample consists of a water-suspended sediment mixture and that the analytical method determines all of the constituent in the sample.)

## DEFINITION OF TERMS--Continued

**Total load (tons)** is the total quantity of any individual constituent, as measured mass or volume, that is dissolved in a specific amount of water (discharge) during a given time. It is computed by multiplying the total discharge times the mg/L of the constituent times the factor 0.027 times the number of days.

**Total, recoverable** is the amount of a given constituent that is in solution after a representative water-suspended sediment sample has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all particulate matter is not achieved by the digestion treatment, and thus the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent present in the dissolved and suspended phases of the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

**Recoverable from bottom material** is the amount of a given constituent that is in solution after a representative sample of bottom material has been digested by a method (usually using an acid or mixture of acids) that results in dissolution of only readily soluble substances. Complete dissolution of all bottom material is not achieved by the digestion treatment and thus the determination represents less than the total amount (that is, less than 95 percent) of the constituent in the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

**Total in bottom material** is the total amount of a given constituent in a representative sample of bottom material. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as "total in bottom material."

**Water table** is the level in the saturated zone in an unconfined aquifer at which the pressure is equal to atmospheric pressure, usually considered to be the top of the saturated zone.

**Water year** in the Geological Survey reports is the 12-month period October 1 through September 30. The water year is designated by the calendar year in which it ends and which includes 9 of the 12 months. Thus, the year ended September 30, 1991, is called the "1991 water year."

**WRD** is used as an abbreviation for "Water-Resources Data" in the REVISED RECORDS paragraph to refer to State annual basic-data reports published before 1975.

**WSP** is used as an abbreviation for "Water-Supply Paper" in reference to previously published reports.

## DISCONTINUED GAGING STATIONS

The following continuous-record streamflow stations in North Carolina have been discontinued or converted to partial-record stations. Daily streamflow or stage records were collected and published for the period of record shown for each station.

Station number	Station name	Drainage area (mi <sup>2</sup> )	Period of record
Chowan River Basin			
02053400	Ahoskie Creek near Rich Square, NC (d)	3.70	1964-73
02053450	Ahoskie Creek at Mintons Store, NC (d)	24.0	1964-73
02053510	Ahoskie Creek Tributary at Poortown, NC (d)	2.60	1963-73
Roanoke River Basin			
02068000	Dan River near Asbury, NC (d)	71.4	1924-26
02068500	Dan River near Francisco, NC (d)	129	1924-87
02069000	Dan River at Pine Hall, NC (d)	501	1924-26
			1986-90
02070500	Mayo River near Price, NC (d)	260	1929-71
02071500	Dan River at Leaksville, NC (d)	1,150	1929-49
02074218	Dan River near Mayfield, NC (d)	1,778	1976-84
02075160	Moon Creek near Yanceyville, NC (d)	32.8	1961-74
			1988-89
02077230	South Hyco Creek near Hesters Store, NC (d)	29.9	1964-67
02077240	Double Creek near Roseville, NC (d)	7.47	1964-75
			1977-82
02077250	South Hyco Creek near Roseville, NC (d)	56.5	1966-78
02077300	Hyco River at McGhees Mill, NC (d)	191	1964-73
02077660	Mayo Creek near Woodsdale, NC (d)	52.7	1975-77
02081000	Roanoke River near Scotland Neck, NC (e)	8,671	1940-56
			1974-76
Pamlico River Basin			
02081800	Cedar Creek near Louisburg, NC (d)	47.8	1956-75
02082000	Tar River near Nashville, NC (d)	701	1928-71
02082500	Sapony Creek near Nashville, NC (d)	64.8	1950-70
0208273070	Devils Cradle Creek at NC 39 near Kearney, NC (d)	2.9	1984-85
02084070	Green Mill Run at Arlington Blvd at Greenville, NC (d)	9.10	1980-85
02084160	Chicod Creek at Secondary Road 1760 near Simpson, NC (d)	45	1975-87
02084164	Juniper Branch near Simpson, NC (d)	7.5	1975-86
0208423100	Flat Swamp at SR 1157 near Robersonville, NC (d)	21.3	1986-88
02084317	Black Swamp near Batts Crossroads, NC (d)	1.02	1982
02084500	Herring Run near Washington, NC (d)	9.59	1950-80
0208453500	Bath Creek at Bath Creek, NC (e)	---	1989-90
02084556	North Lake Canal above Pungo Lake near Wenona, NC (d)	.29	1976-80
02084558	Albemarle Canal near Swindell, NC (d)	68.0	1977-81
Neuse River Basin			
02084903	Sevenmile Creek Trib at SR 1120 near Buckhorn, NC (d)	1.34	1981-82
02084904	Sevenmile Creek Trib at I-85 near Miles, NC (d)	.004	1981-82
02084905	Sevenmile Creek Trib at SR 1144 near Miles, NC (d)	1.57	1981-82
02084908	Sevenmile Creek Trib at I-85 near Efland, NC (d)	.29	1981-82
02085220	Little River near Orange Factory, NC (d)	80.4	1962-87
0208650112	Flat River tributary near Willardville, NC (d)	1.14	1988-90
02086849	Ellerbe Creek near Gorman, NC (d)	21.9	1982-89
02087000	Neuse River near Northside, NC (d)	535	1927-80
0208705200	Smith Creek at Grissom, NC (d)	6.2	1984-85
0208721055	Perry Creek at SR 2012 near Millbrook, NC (d)	2.43	1986-89
0208732810	Marsh Creek at SR 2030 at Millbrook, NC (d)	1.44	1986-89
02087570	Neuse River at Smithfield, NC (d)	1,206	1959-90
02088315	Beaverdam Creek near Grantham, NC (d)	5.01	1978-82
02088470	Little River near Kenly, NC (d)	191	1964-89
02088682	Big Ditch at Retha St at Goldsboro, NC (d)	2.17	1980-84
02089216	Daileys Creek near Liddell, NC (d)	3.80	1978-81
02089222	Bear Creek near Parkstown, NC (d)	4.27	1978-82
02090500	Contentnea Creek near Wilson, NC (d)	236	1930-54
02090512	Hominy Swamp at Phillips Street at Wilson, NC (d)	7.90	1978-85
02090625	Turner Swamp near Eureka, NC (d)	2.1	1968-87
02091700	Little Contentnea Creek near Farmville, NC (d)	93.3	1956-87
02091960	Creeping Swamp near Calico, NC (d)	9.80	1971-77
02091970	Creeping Swamp near Vanceboro, NC (d)	27.0	1971-85
02092000	Swift Creek near Vanceboro, NC (d)	182	1950-89
02092020	Palmetto Swamp near Vanceboro, NC (d)	24.0	1971-76
0209259278	Upper Broad Creek near Fairfield Harbor, NC (e)	---	1989-90
Hewletts Creek Basin			
02093229	Hewletts Creek at SR 1102 near Wilmington, NC (d)	1.98	1977-90

## WATER RESOURCES DATA FOR NORTH CAROLINA, 1991

## DISCONTINUED GAGING STATIONS--Continued

Station number	Station name	Drainage area (mi <sup>2</sup> )	Period of record
Cape Fear River Basin			
0209330990	Brooks Lake tributary near Browns Summit, NC (d)	0.06	1985-90
0209331325	Candy Creek at SR 2700 near Monticello, NC (d)	1.10	1985-90
02093500	Haw River near Benaja, NC (d)	168	1928-71
02094000	Horsepen Creek at Battle Ground, NC (d)	15.9	1925-31
			1934-59
02095000	S Buffalo Creek near Greensboro, NC (d)	33.6	1928-58
0209509100	S Buffalo Creek at SR 2821 at McLeansville, NC (d)	43.5	1986-88
02095500	North Buffalo Creek near Greensboro, NC (d)	37.1	1929-90
0209555450	Buffalo Creek at SR 2719 near Osceola, NC (d)	97.4	1986-87
0209560800	Reedy Fork Creek at NC 61 near Osceola, NC (d)	243	1986-88
02096000	Stony Creek near Burlington, NC (d)	44.2	1952-59
02096700	Big Alamance Creek near Elon College, NC (d)	116	1957-80
02096842	Cane Creek 0.1 m upst SR 1126 near Buckhorn, NC (d)	.64	1979-81
02096850	Cane Creek near Teer, NC (d)	33.7	1959-73
02097000	Haw River near Pittsboro, NC (d)	1,310	1928-73
02097243	Third Fork Creek at Durham, NC (d)	16.7	1968-73
02097500	Morgan Creek near Chapel Hill, NC (d)	30.1	1923-32
0209782150	New Hope River Trib at SR 1716 nr Farrington, NC (d)	2.05	1986-88
02098000	New Hope River near Pittsboro, NC (d)	285	1949-73
02098500	West Fork Deep River near High Point, NC (d)	32.1	1923-26
			1928-58
02100000	Muddy Creek near Archdale, NC (d)	16.7	1934-41
02101000	Bear Creek at Robbins, NC (d)	134	1939-71
0210108450	Suck Creek Trib near Zion Grove, NC (d)	.67	1986-88
02101800	Tick Creek near Mount Vernon Springs, NC (d)	15.5	1958-81
02103000	Little River at Manchester, NC (d)	348	1938-50
02103500	Little River at Linden, NC (d)	460	1928-71
02104000	Cape Fear River at Fayetteville, NC	4,395	1889-1903
			1928-40
02104387	Buckhead Creek near Owens, NC (d)	2.62	1976-80
02104500	Rockfish Creek near Hope Mills, NC (d)	284	1929-31
			1939-54
02105524	Ellis Creek Trib at SR 1325 near White Oak, NC (d)	1.81	1979-81
02105900	Hood Creek near Leland, NC (d)	21.6	1956-73
02106681	Black River near Dunn, NC (d)	48.3	1976-77
02107000	South River near Parkersburg, NC (d)	379	1951-86
02107500	Colly Creek near Kelly, NC (d)	103	1950-71
02107600	Northeast Cape Fear River near Seven Springs, NC (d)	47.5	1958-75
0210782005	Nahunga Creek at SR 1301 near Warsaw, NC (d)	8.28	1983-90
0210789100	Grove Creek at Kenansville, NC (d)	22.6	1983-90
0210797940	Limestone Creek at NC 24 near Hadley, NC (d)	1.61	1986-88
02108500	Rockfish Creek near Wallace, NC (d)	69.3	1955-81
Pee Dee River Basin			
02112500	Fisher River near Dobson, NC (d)	109	1920-32
02113500	Yadkin River at Siloam, NC (d)	1,226	1976-87
02115500	Forbush Creek near Yadkinville, NC (d)	21.7	1940-71
02115750	Muddy Creek near Lewisville, NC (d)	82.8	1964-70
02115800	Silas Creek near Clemmons, NC (d)	11.8	1964-70
02115841	Tar Br Trib at First St at Winston-Salem, NC (d)	.05	1979-82
02115850	Salem Creek at Winston-Salem, NC (d)	51.3	1964-70
02115854	Salem Creek Trib at Hawthorne Rd, Winston-Salem, NC (d)	.50	1979-82
02115856	Salem Creek near Atwood, NC (d)	65.6	1971-82
02117030	Humpy Creek near Fork, NC (d)	1.05	1968-83
02117500	Rocky Creek at Turnersburg, NC (d)	102	1940-71
02119000	South Yadkin River at Cooleemee, NC (d)	569	1928-65
02119400	Third Creek near Stony Point, NC (d)	4.84	1956-69
02120500	Third Creek at Cleveland, NC (d)	87.4	1940-71
02121000	Yadkin River near Salisbury, NC (d)	3,470	1895-1927
02121180	North Potts Creek at Linwood, NC (d)	9.62	1980-90
02121493	Leonard Creek near Bethesda, NC (d)	5.16	1978-81
02122500	Yadkin River at High Rock, NC (d)	4,000	1919-27
02123000	Uwharrie River near Trinity, NC (d)	11.3	1934-41
02123500	Uwharrie River near Eldorado, NC (d)	347	1938-71
02124471	Dutch Buffalo Creek at NC 49 nr Mt Pleasant, NC (d)	45.1	1985-87
02125500	Richardson Creek near Marshville, NC (d)	170	1940-44
02125557	Gourdvine Creek at SR 1715 near Olive Branch, NC (d)	8.75	1978-82
02125696	Lane Creek at SR 2115 near Trinity, NC (d)	3.98	1969-79
02125699	Wicker Branch at SR 1940 near Trinity, NC (d)	5.83	1978-82
02125816	Lane's Creek near Marshville, NC (d)	87.8	1985-87
02126500	Little Brown Creek near Polkton, NC (d)	13.5	1935-41
02127000	Brown Creek near Polkton, NC (d)	110	1937-71
02127500	Pee Dee River near Ansonville, NC (d)	6,330	1938-42
02129500	N Fork Jones Creek near Wadesboro, NC (d)	9.43	1935-41

## DISCONTINUED GAGING STATIONS--Continued

Station number	Station name	Drainage area (mi <sup>2</sup> )	Period of record
Santee River Basin			
02137000	Mill Creek at Old Fort, NC (d)	20.7	1960-75
02138000	Catawba River near Marion, NC (d)	172	1941-81
0213875850	High Shoals Creek near Dysartsville, NC (d)	2.38	1986-88
02139200	Bailey Fork near Morganton, NC (d)	7.86	1966-70
02139650	East Prong near Morganton, NC (d)	8.94	1966-74
0214042720	North Harper Creek near Kawana, NC (d)	1.25	1986-88
02141150	Lower Creek at Mulberry St at Lenoir, NC (d)	31.8	1966-78
02142500	Catawba River at Catawba, NC (d)	1,535	1896-99
			1935-62
02142600	Mountain Creek near Terrell, NC (d)	42.4	1957-62
02142950	Paw C Tri No 2 at Allenbrook Drive, Charlotte, NC (e)	.62	1966-70
02146450	Briar Creek at Sharon Road, Charlotte, NC (d)	18.5	1962-73
02146470	Little Hope Creek at Seneca Place, Charlotte, NC (d)	2.63	1983-90
02146500	Little Sugar Creek near Charlotte, NC (d)	41.0	1924-78
02146579	Irvin's Creek at Lebanon Road near Mint Hill, NC (d)	5.27	1983-90
02148500	Broad River near Chimney Rock, NC (d)	97.0	1927-58
02149702	Green River near Saluda, NC (d)	104	1972-75
02150000	Green River near Mill Spring, NC (d)	174	1940-54
02152000	Sandy Run Creek near Boiling Springs, NC (d)	67.0	1925-28
02152500	First Broad River near Lawndale, NC (d)	200	1940-71
02152610	Sugar Branch near Boiling Springs, NC (d)	1.42	1968-87
Savannah River Basin			
02184240	Horsepasture River near Sapphire, NC (e)	21.0	1963-69
Kanawha River Basin			
03161500	South Fork New River near Crumpler, NC (d)	325	1908-16
03162500	North Fork New River at Crumpler, NC (d)	277	1908-16
			1928-58
Tennessee River Basin			
03439500	French Broad at Calvert, NC (d)	103	1924-55
03440500	Davidson River near Davidson River, NC (d)	31.0	1904-09
03441000	Davidson River near Brevard, NC (d)	40.4	1921-90
03441440	Little River ab High Falls nr Cedar Mountain, NC (d)	26.8	1963-90
03441500	Little River near Penrose, NC (d)	41.4	1942-55
03442000	Crab Creek near Penrose, NC (d)	10.9	1942-55
03444000	Boylston Creek near Horseshoe, NC (d)	14.8	1942-55
03444500	South Fork Mills River at the Pink Beds, NC (d)	9.99	1926-49
			1965-73
03445000	South Fork Mills River near Sitton, NC (d)	40.0	1904-09
			1925-26
03445500	North Fork Mills River at Pinkbed, NC (d)	23.1	1904-09
03446500	Clear Creek near Hendersonville, NC (d)	42.2	1945-55
03447000	Mud Creek at Naples, NC (d)	109	1938-55
03447500	Cane Creek at Fletcher, NC (d)	63.1	1942-58
03448000	French Broad River at Bent Creek, NC (d)	676	1933-86
03448500	Hominy Creek at Candler, NC (d)	79.8	1942-77
03448960	N Fk Swannanoa Rv bl Burnett Res nr Black Mtn, NC (d)	22.1	1976-77
03449000	North Fork Swannanoa River near Black Mountain, NC (d)	23.8	1926-58
03449500	Swannanoa River at Swannanoa, NC (d)	58.8	1907-09
			1926-31
0345092550	Ross Creek at Beaucatcher Rd at Asheville, NC (d)	2.46	1986-89
0345112600	Nasty Branch at Asheville, NC (d)	1.19	1986-89
03451510	Reed Creek above Barnard Ave at Asheville, NC (d)	2.13	1986-89
03452000	Sandymush Creek near Alexander, NC (d)	79.5	1942-55
03452001	Sandymush Creek 1.1 mile above mouth near Alexander, NC (d)	.5	1975-77
03453000	Ivy River near Marshall, NC (d)	158	1934-73
03454000	Big Laurel Creek near Stackhouse, NC (d)	126	1934-71
03454500	French Broad River at Hot Springs, NC (d)	1,567	1934-49
03456000	W Fk Pigeon Rv bl Lake Logan nr Waynesville, NC (d)	55.3	1954-80
03457000	Pigeon River at Canton, NC (d)	133	1907-09
			1928-83
03457500	Allen Creek near Hazelwood, NC (d)	14.4	1949-72
03458500	Pigeon River near Crabtree, NC (d)	243	1920-29
03459000	Jonathan Creek near Cove Creek, NC (d)	65.3	1930-72
03460500	Pigeon River near Mount Sterling, NC (d)	460	1924-30
03462000	North Toe River at Altapass, NC (d)	104	1938-57
03462500	North Toe River above Spruce Pine, NC (d)	111	1934-38
03463500	South Toe River at Newdale, NC (d)	60.8	1934-52
03464000	Cane River near Sioux, NC (d)	157	1934-71
03464500	Nolichucky River at Poplar, NC (d)	608	1925-55
03480500	Elk River near Banner Elk, NC (d)	17.8	1934-40
03481000	Elk River near Elk Park, NC (d)	42.0	1934-55
03500500	Cullasaja River at Highlands, NC (d)	14.9	1931-71

## WATER RESOURCES DATA FOR NORTH CAROLINA, 1991

## DISCONTINUED GAGING STATIONS--Continued

Station number	Station name	Drainage area (mi <sup>2</sup> )	Period of record
Tennessee River Basin --Continued			
03501000	Cullasaja River at Cullasaja, NC (d)	86.5	1907-09 1921-71
03501500	Little Tennessee River at Franklin, NC (d)	295	1909-10 1921-25
03502000	Little Tennessee River at Iotla, NC (d)	323	1929-45
03502500	Little Tennessee River at Etna, NC (d)	374	1926-29
03503500	Little Tennessee River at Almond, NC (d)	451	1912-17
03505500	Nantahala River at Nantahala, NC (d)	144	1942-81
03506500	Nantahala River at Almond, NC (d)	174	1912-17 1920-43
03507000	Little Tennessee River at Judson, NC (d)	664	1912-44
03508000	Tuckasegee River at Tuckasegee, NC (d)	143	1934-76
03508136	Caney Fork near Cowarts, NC (d)	32.0	1975-76
03509000	Scott Creek above Sylva, NC (d)	50.7	1941-75
03509500	Scott Creek at Sylva, NC (d)	55.0	1928-41
03510500	Tuckasegee River at Dillsboro, NC (d)	347	1933-81
03511000	Oconaluftee River at Cherokee, NC (d)	131	1921-49
03513500	Noland Creek near Bryson City, NC (d)	13.8	1935-71
03514000	Hazel Creek at Proctor, NC (d)	44.4	1942-52
03515000	Little Tennessee River at Fontana Dam, NC (d)	1,571	1938-55
03016000	Snowbird Creek near Robbinsville, NC (d)	42.0	1942-52
03517000	Cheoah River at Johnson, NC (d)	177	1912-18 1920-26
03517500	Cheoah River at Tapoco, NC (d)	215	1924-27
03546000	Shooting Creek near Hayesville, NC (d)	37.6	1922-24 1942-45 1946-55
03547000	Hiwassee River bl Chatuge Dam nr Hayesville, NC (d)	190	1942-74
03548000	Hiwassee River below Hayesville, NC (d)	252	1934-45
03549000	Hiwassee River at Murphy, NC (e)	410	1896-1940
03554000	Nottely River near Ranger, NC (d)	272	1901-05 1914-17 1919-29 1932-45
03555000	Hiwassee River at Hiwassee Dam, NC (d)	968	1934-43



## PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

The U.S. Geological Survey publishes a series of manuals describing procedures for planning and conducting specialized work in water-resources investigations. The material is grouped under major subject headings called books and is further divided into sections and chapters. For example, Section A of Book 3 (Applications of Hydraulics) pertains to surface water. The chapter, the unit of publication, is limited to a narrow field of subject matter. This format permits flexibility in revision and publication as the need arises.

The reports listed below are for sale by the U.S. Geological Survey, Books and Open-File Reports Section, Federal Center, Box 25425, Denver, Colorado 80225 (authorized agent of the Superintendent of Documents, Government Printing Office). Prepayment is required. Remittance should be sent by check or money order payable to the U.S. Geological Survey. Prices are not included because they are subject to change. Current prices can be obtained by writing to the above address. When ordering or inquiring about prices for any of these publications, please give the title, book number, chapter number, and "U.S. Geological Survey Techniques of Water-Resources Investigations."

- 1-D1. *Water temperature--influential factors, field measurement, and data presentation*, by H. H. Stevens, Jr., J. F. Ficke, and G. F. Smoot: USGS--TWRI Book 1, Chapter D1. 1975. 65 pages.
- 1-D2. *Guidelines for collection and field analysis of ground-water samples for selected unstable constituents*, by W. W. Wood: USGS--TWRI Book 1, Chapter D2. 1976. 24 pages.
- 2-D1. *Application of surface geophysics to ground-water investigations*, by A. A. R. Zohdy, G. P. Eaton, and D. R. Mabey: USGS--TWRI Book 2, Chapter D1. 1974. 116 pages.
- 2-D2. *Application of seismic-refraction techniques to hydrologic studies*, by F. P. Haeni: USGS--TWRI Book 2, Chapter D2. 1988. 86 pages.
- 2-E1. *Application of borehole geophysics to water-resources investigations*, by W. S. Keys and L. M. McCary: USGS--TWRI Book 2, Chapter E1. 1971. 126 pages.
- 2-E2. *Borehole geophysics applied to ground-water investigations*, by W. Scott Keys: USGS--TWRI Book 2, Chapter E2. 1990. 150 pages.
- 2-F1. *Application of drilling, coring, and sampling techniques to test holes and wells*, by Eugene Shuter and Warren E. Teasdale: USGS--TWRI Book 2, Chapter F1. 1989. 97 pages.
- 3-A1. *General field and office procedures for indirect discharge measurements*, by M. A. Benson and Tate Dalrymple: USGS--TWRI Book 3, Chapter A1. 1967. 30 pages.
- 3-A2. *Measurement of peak discharge by the slope-area method*, by Tate Dalrymple and M. A. Benson: USGS--TWRI Book 3, Chapter A2. 1967. 12 pages.
- 3-A3. *Measurement of peak discharge at culverts by indirect methods*, by G. L. Bodhaine: USGS--TWRI Book 3, Chapter A3. 1968. 60 pages.
- 3-A4. *Measurement of peak discharge at width contractions by indirect methods*, by H. F. Matthai: USGS--TWRI Book 3, Chapter A4. 1967. 44 pages.
- 3-A5. *Measurement of peak discharge at dams by indirect methods*, by Harry Hulsing: USGS--TWRI Book 3, Chapter A5. 1967. 29 pages.
- 3-A6. *General procedure for gaging streams*, by R. W. Carter and Jacob Davidian: USGS--TWRI Book 3, Chapter A6. 1968. 13 pages.
- 3-A7. *Stage measurements at gaging stations*, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A7. 1968. 28 pages.
- 3-A8. *Discharge measurements at gaging stations*, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A8. 1969. 65 pages.
- 3-A9. *Measurement of time of travel in streams by dye tracing*, by F. A. Kilpatrick and J. F. Wilson, Jr.: USGS--TWRI Book 3, Chapter A9. 1989. 27 pages.
- 3-A10. *Discharge ratings at gaging stations*, by E. J. Kennedy: USGS--TWRI Book 3, Chapter A10. 1984. 59 pages.

**PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS--Continued**

- 3-A11. *Measurement of discharge by moving-boat method*, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 3, Chapter A11. 1969. 22 pages.
- 3-A12. *Fluorometric procedures for dye tracing*, by J. F. Wilson, Jr., E. D. Cobb, and F. A. Kilpatrick: USGS--TWRI Book 3, Chapter A12. 1986. 41 pages.
- 3-A13. *Computation of continuous records of streamflow*, by E. J. Kennedy: USGS--TWRI Book 3, Chapter A13. 1983. 53 pages.
- 3-A14. *Use of flumes in measuring discharge*, by F. A. Kilpatrick and V. R. Schneider: USGS--TWRI Book 3, Chapter A14. 1983. 46 pages.
- 3-A15. *Computation of water-surface profiles in open channels*, by Jacob Davidian: USGS--TWRI Book 3, Chapter A15. 1984. 48 pages.
- 3-A16. *Measurement of discharge using tracers*, by F. A. Kilpatrick and E. D. Cobb: USGS--TWRI Book 3, Chapter A16. 1985. 52 pages.
- 3-A17. *Acoustic velocity meter systems*, by Antonius Laenen: USGS--TWRI Book 3, Chapter A17. 1985. 38 pages.
- 3-A18. *Determination of stream reaeration coefficients by use of tracers*, by F. A. Kilpatrick, R. E. Rathburn, N. Yotsukura, G. W. Parker, and L. L. DeLong: USGS--TWRI Book 3, Chapter A18. 1989. 52 pages.
- 3-A19. *Levels of streamflow gaging stations*, by E.J. Kennedy: USGS--TWRI Book 3, Chapter A19. 1990. 27 pages.
- 3-B1. *Aquifer-test design, observation, and data analysis*, by R. W. Stallman: USGS--TWRI Book 3, Chapter B1. 1971. 26 pages.
- 3-B2. *Introduction to ground-water hydraulics, a programmed text for self-instruction*, by G. D. Bennett: USGS--TWRI Book 3, Chapter B2. 1976. 172 pages.
- 3-B3. *Type curves for selected problems of flow to wells in confined aquifers*, by J. E. Reed: USGS--TWRI Book 3, Chapter B3. 1980. 106 pages.
- 3-B4. *Regression modeling of ground-water flow*, by Richard L. Cooley and Richard L. Naff: USGS--TWRI Book 3, Chapter B4. 1990. 232 pages.
- 3-B5. *Definition of boundary and initial conditions in the analysis of saturated ground-water flow systems--An introduction*, by O. L. Franke, T. E. Reilly, and G. D. Bennett: USGS--TWRI Book 3, Chapter B5. 1987. 15 pages.
- 3-B6. *The principle of superposition and its application in ground-water hydraulics*, by T. E. Reilly, O. L. Franke, and G. D. Bennett: USGS--TWRI Book 3, Chapter B6. 1987. 28 pages.
- 3-C1. *Fluvial sediment concepts*, by H. P. Guy: USGS--TWRI Book 3, Chapter C1. 1970. 55 pages.
- 3-C2. *Field methods for measurement of fluvial sediment*, by H. P. Guy and V. W. Norman: USGS--TWRI Book 3, Chapter C2. 1970. 59 pages.
- 3-C3. *Computation of fluvial-sediment discharge*, by George Porterfield: USGS--TWRI Book 3, Chapter C3. 1972. 66 pages.
- 4-A1. *Some statistical tools in hydrology*, by H. C. Riggs: USGS--TWRI Book 4, Chapter A1. 1968. 39 pages.
- 4-A2. *Frequency curves*, by H. C. Riggs: USGS--TWRI Book 4, Chapter A2. 1968. 15 pages.
- 4-B1. *Low-flow investigations*, by H. C. Riggs: USGS--TWRI Book 4, Chapter B1. 1972. 18 pages.
- 4-B2. *Storage analyses for water supply*, by H. C. Riggs and C. H. Hardison: USGS--TWRI Book 4, Chapter B2. 1973. 20 pages.
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- 4-D1. *Computation of rate and volume of stream depletion by wells*, by C. T. Jenkins: USGS--TWRI Book 4, Chapter D1. 1970. 17 pages.
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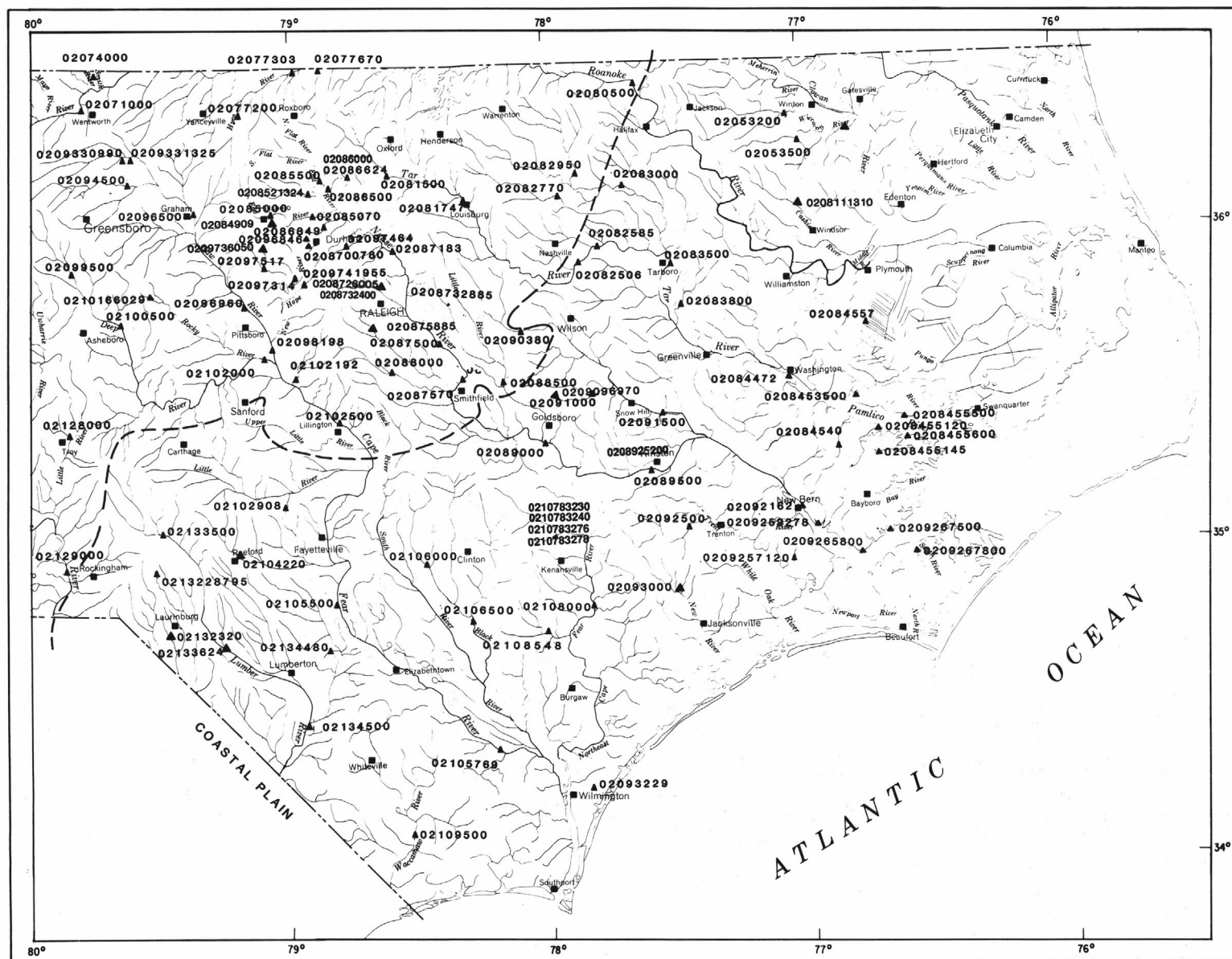


Figure 14.--Map of eastern part of North Carolina showing locations of gaging stations.

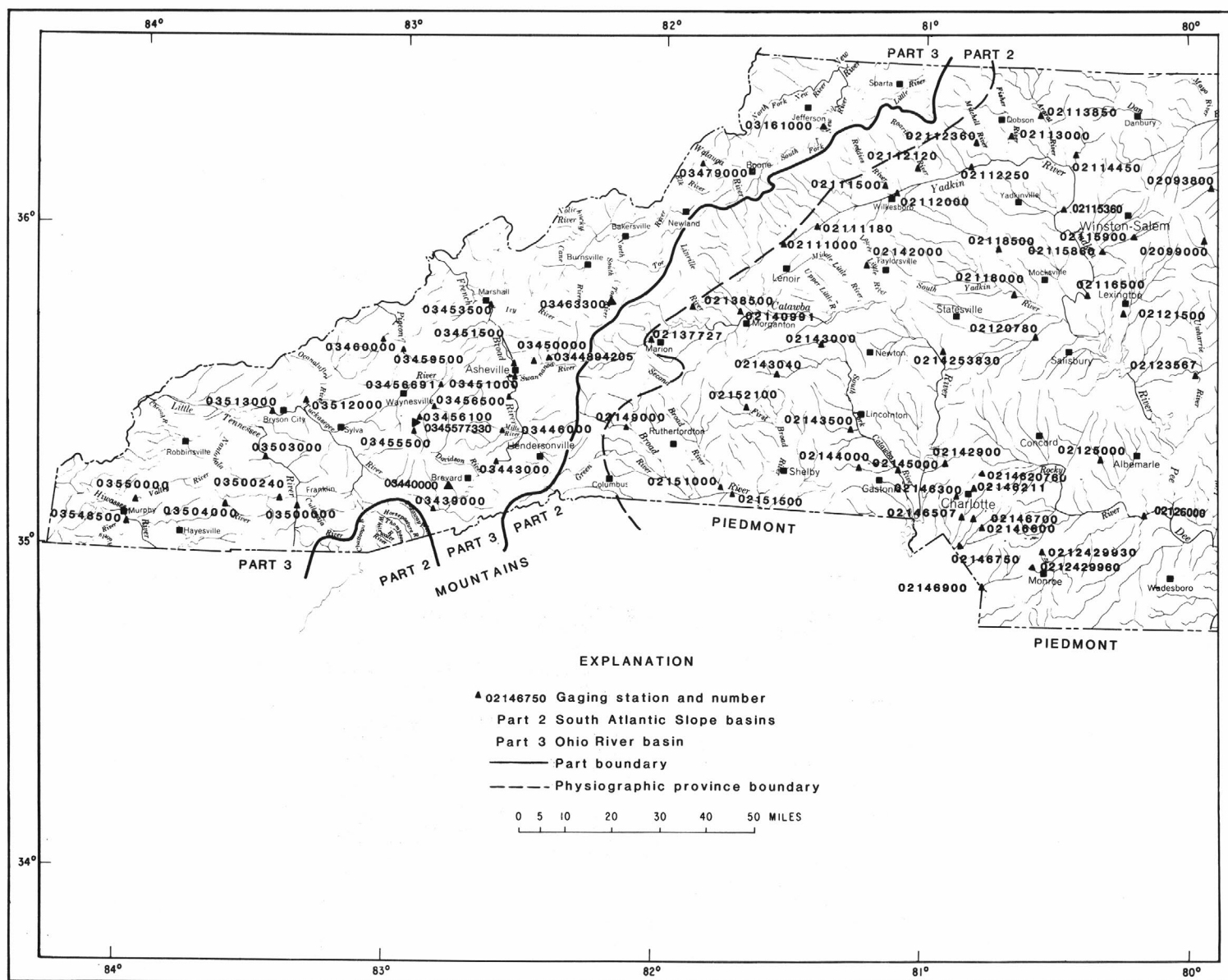


Figure 15.--Map of western part of North Carolina showing locations of gaging stations.

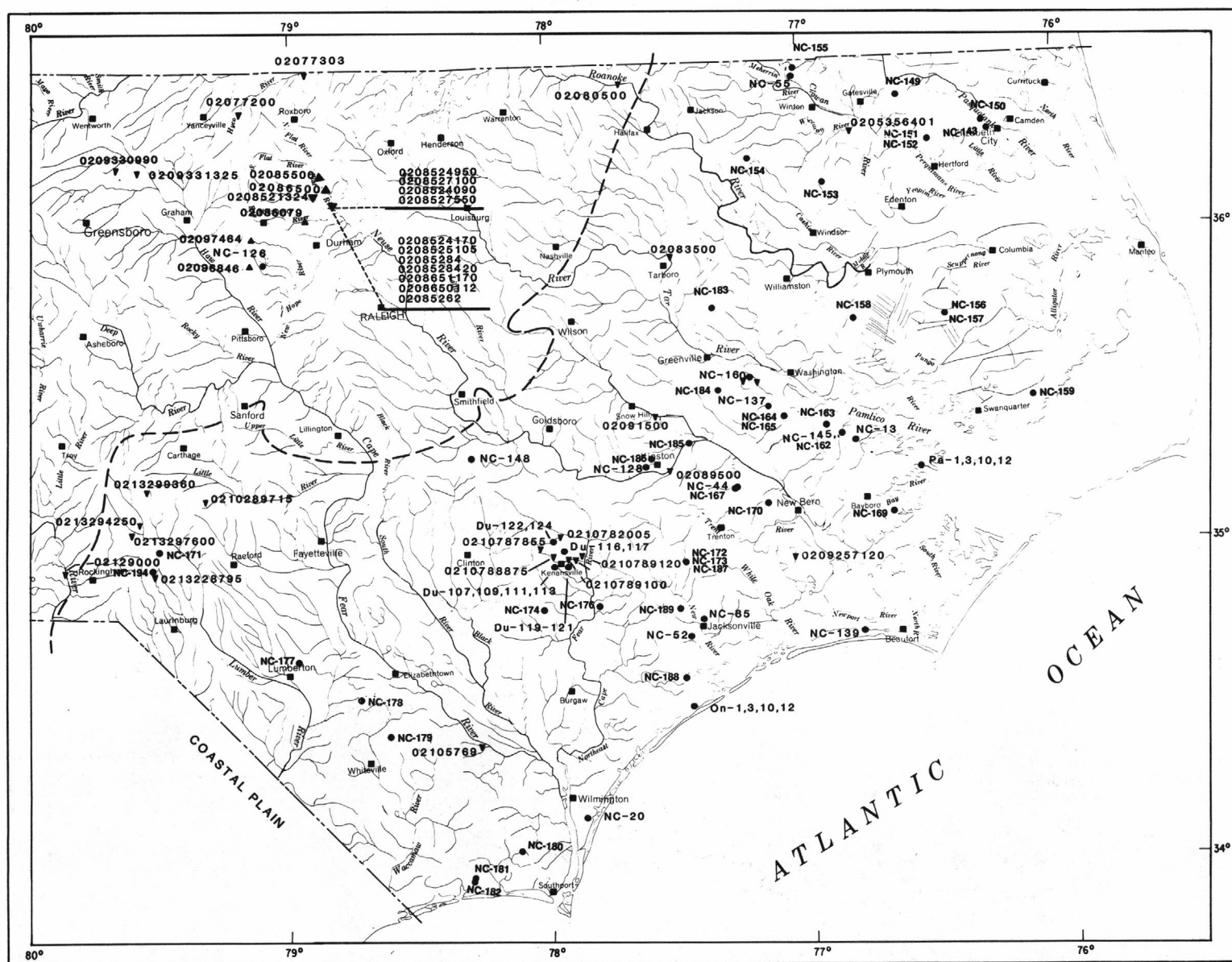


Figure 16.--Map of eastern part of North Carolina showing locations of water-quality stations and observation well sites.

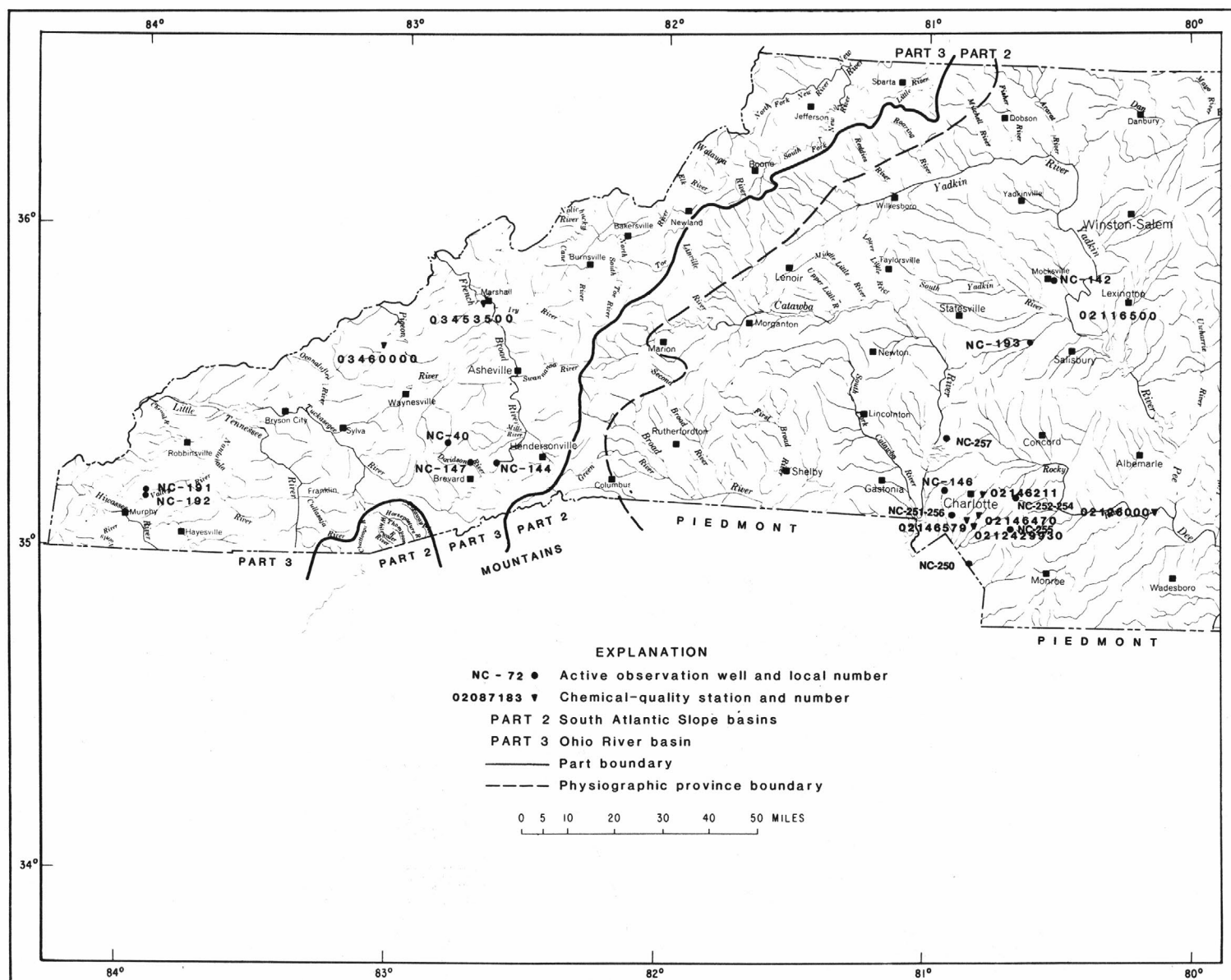


Figure 17.--Map of western part of North Carolina showing locations of water-quality stations and observation well sites.

## SOUTH ATLANTIC SLOPE BASINS

## CHOWAN RIVER BASIN

02053200 POTECAZI CREEK NEAR UNION, NC

LOCATION.--Lat 36°22'14", long 77°01'36", Hertford County, Hydrologic Unit 03010204, on right bank at downstream side of bridge on State Highway 11, 2.8 mi north of Union, 3 mi downstream from Cutawhiskie Swamp, and 3.5 mi upstream from Bells Branch.

DRAINAGE AREA.--225 mi<sup>2</sup>.

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1953-57. March 1958 to current year.

REVISED RECORDS.--WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3.53 ft above National Geodetic Vertical Datum of 1929. Prior to Dec. 1, 1958, nonrecording gage at same site and datum. Satellite data transmitter at the station.

REMARKS.--No estimated daily discharges. Records fair except those below 50 ft<sup>3</sup>/s, which are poor. Minimum discharge for current water year also occurred on Oct. 4.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1929 reached a stage of 19.1 ft, discharge, 4,050 ft<sup>3</sup>/s, and flood of August 1940 reached a stage of 24.1 ft, discharge, 7,000 ft<sup>3</sup>/s from rating curve extended above 4,000 ft<sup>3</sup>/s, from information furnished by North Carolina State Highway Commission.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.6	6.4	24	38	96	36	479	300	43	11	867	37
2	3.5	6.0	21	45	85	39	577	311	122	9.4	899	34
3	3.2	5.7	17	79	74	48	610	298	113	17	991	25
4	3.1	5.4	17	81	67	135	566	222	62	43	922	20
5	3.5	5.3	18	71	60	242	458	143	30	207	737	17
6	3.5	5.3	20	68	55	241	330	87	28	463	528	15
7	3.5	5.1	20	80	57	269	223	54	23	316	568	13
8	3.3	5.1	34	255	66	258	151	36	18	235	1470	12
9	3.2	5.3	66	417	70	225	107	27	18	146	1520	11
10	3.2	9.6	64	467	67	179	84	22	17	54	1460	11
11	3.3	10	46	421	65	135	61	18	14	28	1500	10
12	3.4	11	38	505	63	100	47	15	11	36	1320	9.7
13	3.8	11	36	683	61	79	38	13	9.6	31	1060	9.2
14	4.1	9.9	33	676	59	82	34	12	8.0	19	791	9.2
15	4.2	9.2	32	618	56	111	33	11	7.2	15	602	9.5
16	4.1	8.8	33	556	50	108	45	10	6.4	13	527	9.2
17	4.1	8.7	32	495	45	98	42	9.7	6.2	13	401	9.2
18	4.1	8.6	30	420	43	114	32	8.9	6.0	13	267	9.0
19	4.2	8.3	29	331	44	261	27	8.7	24	14	173	9.3
20	4.2	8.2	28	285	45	319	84	11	106	16	135	16
21	4.1	8.3	31	375	43	298	722	13	78	14	158	17
22	4.0	8.5	37	364	40	300	1080	12	65	11	167	16
23	6.4	8.9	38	303	38	292	925	11	198	8.4	129	14
24	8.7	9.8	36	282	36	272	664	10	219	6.0	100	14
25	8.4	9.8	34	267	36	225	436	9.1	88	6.4	146	18
26	16	9.8	33	246	38	174	254	8.4	36	12	169	39
27	34	10	31	211	39	139	141	8.1	28	11	155	42
28	19	10	37	172	38	106	108	8.1	22	15	108	25
29	11	18	44	138	---	89	362	14	17	87	62	19
30	8.7	22	43	114	---	231	421	16	13	200	46	18
31	7.3	---	41	103	---	452	---	13	---	789	41	---
TOTAL	200.7	268.0	1043	9166	1536	5657	9141	1740.0	1436.4	2859.2	18019	517.3
MEAN	6.47	8.93	33.6	296	54.9	182	305	56.1	47.9	92.2	581	17.2
MAX	34	22	66	683	96	452	1080	311	219	789	1520	42
MIN	3.1	5.1	17	38	36	36	27	8.1	6.0	6.0	41	9.0
CFSM	.03	.04	.15	1.31	.24	.81	1.35	.25	.21	.41	2.58	.08
IN.	.03	.04	.17	1.52	.25	.94	1.51	.29	.24	.47	2.98	.09

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 1991, BY WATER YEAR (WY)

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
MEAN	124	107	214	417	507	464	327	165	117	104	156	91.9																					
MAX	1108	619	619	957	1135	1439	994	925	700	531	618	809																					
(WY)	1960	1986	1990	1987	1960	1989	1983	1979	1979	1975	1969	1960																					
MIN	2.15	5.64	19.6	51.3	54.9	46.7	34.7	10.1	4.71	2.32	2.50	2.24																					
(WY)	1962	1982	1966	1981	1991	1988	1985	1985	1986	1983	1987	1961																					

## SUMMARY STATISTICS

## FOR 1990 CALENDAR YEAR

## FOR 1991 WATER YEAR

## WATER YEARS 1959 - 1991

ANNUAL TOTAL	69405.6	51583.6	232
ANNUAL MEAN	190	141	458
HIGHEST ANNUAL MEAN			73.0
LOWEST ANNUAL MEAN			1981
HIGHEST DAILY MEAN	1420	1520	4210
LOWEST DAILY MEAN	3.1	3.1	.30
ANNUAL SEVEN-DAY MINIMUM	3.3	3.3	.51
INSTANTANEOUS PEAK FLOW		1630	4280
INSTANTANEOUS PEAK STAGE		12.87	19.77
INSTANTANEOUS LOW FLOW		3.1*	.20
ANNUAL RUNOFF (CFSM)	.85	.63	1.03
ANNUAL RUNOFF (INCHES)	11.48	8.53	13.98
10 PERCENT EXCEEDS	699	427	670
50 PERCENT EXCEEDS	44	37	80
90 PERCENT EXCEEDS	5.2	6.4	6.0

\* See REMARKS.

## CHOWAN RIVER BASIN

02053500 AHOSKIE CREEK AT AHOSKIE, NC

LOCATION.--Lat 36°16'48", long 77°00'00", Hertford County, Hydrologic Unit 03010203, on right bank 10 ft downstream from bridge on State Highways 11 and 42, 0.5 mi upstream from Seaboard Coast Line Railroad bridge, and 0.8 mi southwest of Ahoskie.

DRAINAGE AREA.--63.3 mi<sup>2</sup>.

PERIOD OF RECORD.--January 1950 to current year.

REVISED RECORDS.--WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 17.46 ft above National Geodetic Vertical Datum of 1929 (Soil Conservation Service bench mark). Prior to Jan. 4, 1963, present site at datum 4.00 ft higher. Jan. 20, 1950, to May 24, 1951, nonrecording gage.

REMARKS.--No estimated daily discharges. Records fair except those below 10 ft<sup>3</sup>/s, which are poor. Entire basin above station canalized since July 1964. Excavation began downstream in July 1962 and reached the station in December 1962. Stretch was recanalized beginning in September 1984 and completed October 1984. Minimum discharge since canalization also occurred on Oct. 9, 1988. Minimum discharge for current water year also occurred on July 14. Prior to canalization, no flow occurred periodically.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of August 1940 reached a stage of 15.1 ft, present datum, from floodmark witnessed by local resident (discharge not determined).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.7	6.3	7.9	10	32	19	68	127	7.2	6.0	59	11
2	3.7	6.0	6.8	35	28	25	48	68	7.6	6.3	31	8.3
3	3.7	5.7	6.5	45	26	44	38	42	4.9	9.9	21	7.6
4	4.1	5.4	6.5	32	25	144	31	30	4.6	69	21	7.0
5	3.9	5.5	6.2	28	24	83	27	23	4.3	33	22	7.0
6	3.7	5.3	6.3	21	23	59	24	19	4.1	21	14	7.9
7	3.7	5.6	6.4	40	25	50	22	16	3.8	17	452	7.6
8	3.7	5.9	25	169	29	43	20	14	3.7	11	482	6.7
9	3.6	5.9	27	226	29	37	18	13	3.8	8.7	146	6.1
10	3.7	15	15	119	26	32	17	12	3.4	7.6	211	5.8
11	3.6	12	12	84	24	29	15	11	3.4	108	78	5.6
12	3.7	8.3	9.7	320	23	26	14	9.7	3.3	47	40	5.5
13	3.9	7.1	8.8	207	22	27	13	9.3	3.6	19	27	5.3
14	4.1	6.6	8.1	117	23	48	13	8.9	3.2	13	21	5.1
15	4.3	6.3	8.0	76	23	52	13	8.2	3.7	10	19	5.1
16	3.8	6.3	7.9	58	20	42	13	7.8	5.0	8.7	20	5.1
17	3.6	6.3	7.7	49	19	35	12	7.2	11	8.0	16	5.0
18	4.0	6.2	7.6	40	19	107	12	7.1	6.4	7.6	14	5.1
19	4.0	6.2	7.6	34	19	147	12	7.2	27	11	13	6.4
20	3.7	6.1	7.5	147	19	79	220	8.2	49	13	19	19
21	3.6	6.1	10	153	19	56	490	8.4	43	9.3	22	23
22	3.7	6.0	12	88	19	48	215	7.4	18	7.7	14	12
23	43	6.0	11	60	18	54	102	6.8	75	7.3	11	8.0
24	17	6.0	9.8	48	18	45	61	6.4	30	7.1	17	8.1
25	8.4	6.0	8.6	41	18	36	42	6.1	15	8.5	113	13
26	78	5.8	8.0	35	19	30	31	6.0	11	17	54	55
27	34	5.8	7.8	32	20	27	25	5.7	8.5	11	34	42
28	13	6.0	12	29	20	24	310	5.7	7.4	12	23	21
29	8.9	11	13	29	---	33	553	5.6	6.8	58	16	14
30	7.4	12	11	28	---	203	226	5.2	6.4	113	12	11
31	6.6	---	11	34	---	112	---	5.1	---	121	10	---
TOTAL	299.8	208.7	312.7	2434	629	1796	2705	517.0	384.1	806.7	2052	349.3
MEAN	9.67	6.96	10.1	78.5	22.5	57.9	90.2	16.7	12.8	26.0	66.2	11.6
MAX	78	15	27	320	32	203	553	127	75	121	482	55
MIN	3.6	5.3	6.2	10	18	19	12	5.1	3.2	6.0	10	5.0
CFSM	.15	.11	.16	1.24	.35	.92	1.42	.26	.20	.41	1.05	.18
IN.	.18	.12	.18	1.43	.37	1.06	1.59	.30	.23	.47	1.21	.21

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1991, BY WATER YEAR (WY)

	MEAN	40.0	24.4	52.1	108	130	129	79.8	53.1	35.5	35.9	42.4	23.5
MAX	297	120	177	260	262	303	243	238	112	126	151	132	
(WY)	1972	1986	1990	1979	1971	1989	1983	1979	1979	1975	1967	1964	
MIN	3.01	3.21	5.18	7.66	18.9	17.3	8.73	4.21	5.43	3.55	3.59	3.41	
(WY)	1977	1982	1989	1981	1968	1988	1985	1986	1986	1987	1983	1980	

## SUMMARY STATISTICS

## FOR 1990 CALENDAR YEAR

## FOR 1991 WATER YEAR

## WATER YEARS 1964 - 1991

ANNUAL TOTAL	18251.3	12494.3	62.5	
ANNUAL MEAN	50.0	34.2	109	1979
HIGHEST ANNUAL MEAN			14.7	1981
LOWEST ANNUAL MEAN			2490	Oct 6 1964
HIGHEST DAILY MEAN	507	Apr 3	553	Apr 29
LOWEST DAILY MEAN	2.5	Aug 4	3.2	Jun 14
ANNUAL SEVEN-DAY MINIMUM	2.8	Aug 1	3.5	Jun 8
INSTANTANEOUS PEAK FLOW			845	Aug 7
INSTANTANEOUS PEAK STAGE			8.98	Aug 7
INSTANTANEOUS LOW FLOW			3.1*	Jun 12
ANNUAL RUNOFF (CFSM)	.79		.54	
ANNUAL RUNOFF (INCHES)	10.73		7.34	
10 PERCENT EXCEEDS	151		75	
50 PERCENT EXCEEDS	14		13	
90 PERCENT EXCEEDS	4.0		5.0	
* Canalized period only (1964-1991). See REMARKS.			4.6	

## ROANOKE RIVER BASIN

02071000 DAN RIVER NEAR WENTWORTH, NC

LOCATION.--Lat 36°24'45", long 79°49'35", Rockingham County, Hydrologic Unit 03010103, on right bank 600 ft downstream from Settles Bridge on Secondary Road 2150, 3.5 mi northwest of Wentworth, 7.5 mi downstream from Mayo River, and 103.7 mi upstream from mouth.

DRAINAGE AREA.--1,053 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1939 to current year. Monthly discharge only for October 1939, published in WSP 1303.

REVISED RECORDS.--WDR NC-72-1: 1945(M). WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 512.98 ft above National Geodetic Vertical Datum of 1929. Prior to Aug. 3, 1949, water-stage recorder at site 150 ft upstream at same datum.

REMARKS.--No estimated daily discharges. Records poor. Slight fluctuation and regulation at low flow caused by Talbott and Townes Reservoirs (stations 02067800, 02067820). Maximum gage height 31.60 ft, from flood-mark in well.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1908 reached a stage of 34.9 ft, from information by North Carolina State Highway Commission, and flood in 1937 reached a stage of 29.8 ft, from information by local resident.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	422	959	1130	1640	1320	1160	3420	4340	1270	893	821	687
2	425	910	1090	1480	1290	1240	2850	2320	1160	862	779	693
3	432	870	1380	1320	1280	3220	2420	1880	1400	933	765	589
4	441	842	5960	1260	1250	11200	2160	1640	1210	1420	773	574
5	455	836	2850	1190	1150	4420	1980	1530	1080	946	743	593
6	480	830	1670	1160	1170	2850	1860	1530	1050	1010	682	701
7	491	840	1390	1540	1340	2080	1730	1620	1010	891	711	1300
8	487	811	1230	2210	1420	1800	1590	1390	990	821	1090	849
9	477	813	1130	1960	1260	1590	1570	1330	988	764	1050	648
10	477	3140	1050	1790	1190	1510	1750	1350	968	786	1150	600
11	8140	2070	1020	5600	1160	1400	1610	1360	949	757	933	576
12	3660	1330	1010	12500	1130	1360	1510	1330	947	2010	792	571
13	12400	1140	998	3850	1110	1410	1560	1300	953	1860	755	546
14	3570	1070	975	2560	1310	1510	1810	1280	921	1230	796	604
15	1760	1220	942	2060	1360	1420	1990	1510	895	895	1190	589
16	1250	1220	955	2960	1120	1330	2680	1400	989	818	918	598
17	970	1180	950	3080	1110	1300	1820	1260	1040	808	774	553
18	892	1150	941	2180	1190	1820	1610	1280	1020	812	718	550
19	1750	1130	997	1850	1760	2430	1740	1360	3070	833	711	522
20	1270	1140	997	3020	1880	1770	2330	2470	2060	996	667	668
21	948	1120	1080	2940	1800	1510	2160	4270	1380	839	785	602
22	1500	1110	1110	2080	1500	1550	2060	3360	1230	838	654	514
23	20600	1100	1290	1790	1380	2060	1750	2180	1750	774	629	498
24	12800	1090	10300	1700	1280	2440	1640	1810	1220	772	618	500
25	3340	1070	3530	1560	1230	1790	1540	1600	1050	786	681	522
26	2360	1050	2330	1390	1310	1580	1480	1410	981	957	629	571
27	1770	1050	1920	1330	1300	1490	1470	1330	955	868	589	537
28	1470	1080	2020	1310	1200	1370	1660	1360	937	855	767	482
29	1280	1200	2170	1300	---	8670	2050	1500	909	839	825	462
30	1150	1170	1910	1320	---	24900	9290	1280	915	957	743	455
31	1020	---	1810	1390	---	7420	---	1390	---	907	688	---
TOTAL	88487	34541	58135	73320	36800	101600	65090	54970	35297	29737	24426	18154
MEAN	2854	1151	1875	2365	1314	3277	2170	1773	1177	959	788	605
MAX	20600	3140	10300	12500	1880	24900	9290	4340	3070	2010	1190	1300
MIN	422	811	941	1160	1110	1160	1470	1260	895	757	589	455
CFSM	2.71	1.09	1.78	2.25	1.25	3.11	2.06	1.68	1.12	.91	.75	.57
IN.	3.13	1.22	2.05	2.59	1.30	3.59	2.30	1.94	1.25	1.05	.86	.64

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1991, BY WATER YEAR (WY)

	MEAN	942	930	1166	1374	1654	1855	1709	1329	1092	929	849	860
MAX	3676	2963	2433	3274	4308	5345	4951	3149	4220	2345	3067	3667	
(WY)	1960	1958	1974	1978	1960	1975	1987	1972	1972	1949	1940	1979	
MIN	237	297	422	392	771	661	592	515	333	268	218	166	
(WY)	1954	1954	1956	1956	1941	1985	1985	1981	1986	1986	1981	1954	

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR		FOR 1991 WATER YEAR		WATER YEARS 1940 - 1991	
ANNUAL TOTAL	654041		620557		1223	
ANNUAL MEAN	1792		1700		1985	
HIGHEST ANNUAL MEAN					587	
LOWEST ANNUAL MEAN					1981	
HIGHEST DAILY MEAN	20600	Oct 23	24900	Mar 30	47800	Jun 22 1972
LOWEST DAILY MEAN	422	Sep 30	422	Oct 1	107	Oct 2 1954
ANNUAL SEVEN-DAY MINIMUM	426	Sep 27	449	Oct 1	126	Oct 6 1954
INSTANTANEOUS PEAK FLOW			27400	Mar 30	54200	Jun 22 1972
INSTANTANEOUS PEAK STAGE			24.44	Mar 30	31.60*	Jun 22 1972
INSTANTANEOUS LOW FLOW			389	Sep 19	65	Oct 8 1954
ANNUAL RUNOFF (CFSM)	1.70		1.61		1.16	
ANNUAL RUNOFF (INCHES)	23.11		21.92		15.78	
10 PERCENT EXCEEDS	3340		2450		2060	
50 PERCENT EXCEEDS	1250		1230		837	
90 PERCENT EXCEEDS	539		629		412	

\* See REMARKS.

## ROANOKE RIVER BASIN

02074000 SMITH RIVER AT EDEN, NC

LOCATION.--Lat 36°31'31", long 79°45'57", Rockingham County, Hydrologic Unit 03010103, on right bank at Eden, 0.3 mi downstream from bridge on State Highway 14, 0.8 mi upstream from bridge on Secondary Road 1714, 1.2 mi south of Virginia-North Carolina State line, 1.3 mi downstream from Stuart Creek, and 3.9 mi upstream from mouth.

DRAINAGE AREA.--538 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1939 to current year. Prior to October 1970 published as "at Spray".

REVISED RECORDS.--WSP 1433: 1946.

GAGE.--Water-stage recorder. Datum of gage is 539.56 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow regulated since August 1950 by Philpott Lake 40 mi upstream (usable capacity, 6,325,000,000 ft<sup>3</sup>). Additional regulation by hydro-electric plant at Martinsville, Virginia 18 mi upstream. Maximum discharge prior to regulation, 45,600 ft<sup>3</sup>/s Aug. 15, 1940, gage height, 19.28 ft, from rating curve extended above 12,000 ft<sup>3</sup>/s on the basis of computation of peak flow over dam 1.5 mi downstream.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e422	1160	389	1210	947	748	2480	1270	1170	314	618	258
2	e528	1230	359	1230	810	643	1950	1090	511	671	613	162
3	e556	1020	738	1210	390	1400	1360	1030	518	643	616	386
4	393	344	2360	1190	557	4420	1200	884	897	655	295	484
5	408	452	1080	1040	801	2040	1390	532	891	662	229	464
6	449	719	1060	418	759	1700	1030	646	865	729	507	629
7	217	716	972	596	858	1660	576	1220	880	391	482	850
8	224	708	851	977	826	1490	731	1250	860	279	676	351
9	415	733	427	921	607	1270	1090	1220	437	588	683	217
10	423	1910	472	856	464	533	1130	1230	357	601	582	283
11	4120	827	984	3320	485	673	1060	1100	673	618	245	455
12	1330	618	992	4140	865	966	1040	473	634	1250	316	563
13	4030	622	988	2550	583	1050	894	527	658	1080	592	463
14	1350	630	979	2280	775	1050	603	853	628	513	579	691
15	827	950	854	2160	727	1020	697	884	644	334	676	218
16	1410	941	365	2410	912	772	1340	844	372	647	594	257
17	1300	829	422	1870	466	519	1190	817	664	615	598	503
18	1500	376	528	1600	568	970	1090	818	740	617	254	440
19	1780	390	579	1280	836	1110	1140	557	2140	615	229	432
20	1210	555	547	1170	808	987	1250	916	1400	642	556	610
21	495	551	595	1140	726	944	746	1600	1410	453	562	515
22	1550	449	539	1280	666	943	800	1430	1220	340	524	185
23	11800	400	578	1200	548	801	1200	1490	1190	570	531	212
24	2800	416	3350	1160	428	650	1160	1410	650	555	552	451
25	1860	344	1280	1120	550	628	1140	1390	1130	668	255	453
26	1640	342	1020	972	899	858	1090	1210	1120	675	167	478
27	1400	487	890	489	780	892	1040	488	1050	879	775	455
28	584	497	1560	594	733	870	594	1430	1090	392	845	510
29	655	517	1380	981	---	6310	698	1310	1020	346	677	140
30	1290	485	771	979	---	4840	1740	1250	416	684	716	270
31	1200	---	692	975	---	2800	---	1230	---	610	706	---
TOTAL	48166	20218	28601	43318	19374	45557	33449	32399	26235	18636	16250	12385
MEAN	1554	674	923	1397	692	1470	1115	1045	874	601	524	413
MAX	11800	1910	3350	4140	947	6310	2480	1600	2140	1250	845	850
MIN	217	342	359	418	390	519	576	473	357	279	167	140
(†)	+106	-51	+39	-36	+40	+103	-25	-45	+5	-30	-83	-78

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1991, BY WATER YEAR (WY)

	507	509	601	660	724	840	851	714	605	533	511	542
MEAN	507	509	601	660	724	840	851	714	605	533	511	542
MAX	1572	1530	1237	1453	1521	2329	3016	1567	2026	1477	2434	1794
(WY)	1990	1986	1949	1979	1960	1975	1987	1978	1972	1949	1940	1979
MIN	167	203	273	291	325	331	294	266	213	214	194	239
(WY)	1942	1942	1981	1989	1968	1967	1967	1964	1964	1981	1953	1941

SUMMARY STATISTICS FOR 1990 CALENDAR YEAR FOR 1991 WATER YEAR WATER YEARS 1940 - 1991

ANNUAL TOTAL	361751		344588									
ANNUAL MEAN	991	± 994	944	± 939						628	± 638	
HIGHEST ANNUAL MEAN										1010		1987
LOWEST ANNUAL MEAN										309		1981
HIGHEST DAILY MEAN	11800	Oct 23	11800	Oct 23						23300	Aug 15	1940
LOWEST DAILY MEAN	212	Sep 2	140	Sep 29						46	Aug 14	1967
ANNUAL SEVEN-DAY MINIMUM	361	Oct 4	361	Oct 4						119	Sep 5	1944
INSTANTANEOUS PEAK FLOW			18000	Oct 23						24800*	Jun 21	1972
INSTANTANEOUS PEAK STAGE			13.65	Oct 23						16.24*	Jun 21	1972
INSTANTANEOUS LOW FLOW			105	Oct 8						38	Aug 7	1967
ANNUAL RUNOFF (CFSM)	1.84		1.75							1.17		
ANNUAL RUNOFF (INCHES)	25.01		23.83							15.86		
10 PERCENT EXCEEDS	1580		1430							1140		
50 PERCENT EXCEEDS	760		733							450		
90 PERCENT EXCEEDS	392		390							229		

(†) Change in contents, equivalent in cubic feet per second, in Philpott Lake; provided by the U.S. Army Corps of Engineers.

(‡) Adjusted for change in contents.

\* For regulated period (1951 - 1991) only. See REMARKS.

## ROANOKE RIVER BASIN

02077200 HYCO CREEK NEAR LEASBURG, NC

LOCATION.--Lat 36°23'57", long 79°11'50", Caswell County, Hydrologic Unit 03010104, on right bank 10 ft upstream from bridge on U.S. Highway 158, 1.5 mi upstream from Kilgore Creek, and 2.5 mi west of Leasburg.

DRAINAGE AREA.--45.9 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1964 to current year. Prior to October 1968 published as North Hyco Creek near Leasburg.

REVISED RECORDS.--WDR NC-80-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 400.08 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records fair except those below 5 ft<sup>3</sup>/s, which are poor. Maximum discharge for period of record, from rating curve extended above 1,200 ft<sup>3</sup>/s. Periods of no flow occurs most years. Water temperature records collected during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	13	15	e150	27	26	124	36	7.0	.36	7.1	.18
2	0	11	13	e80	25	54	86	27	5.8	8.5	6.6	.02
3	0	9.9	16	59	24	176	66	22	5.7	26	6.2	0
4	0	8.9	191	51	23	395	55	19	5.1	15	2.6	0
5	0	8.6	123	45	22	145	48	18	4.1	9.0	4.0	0
6	0	8.6	65	38	22	86	45	20	3.1	5.5	4.4	0
7	0	8.3	43	158	27	71	40	22	2.2	3.3	3.3	0
8	0	7.8	41	504	35	55	36	17	2.2	1.6	2.4	0
9	0	8.0	44	235	26	45	34	15	1.7	1.2	3.8	0
10	0	66	34	205	22	39	32	14	1.5	.63	4.8	0
11	6.5	66	28	470	21	35	28	14	.76	2.7	4.9	0
12	39	35	25	1360	20	31	25	13	.76	2.4	4.9	0
13	26	25	22	259	19	36	24	12	.72	1.6	5.1	0
14	28	19	20	134	23	43	30	11	.73	1.0	7.0	0
15	11	17	19	93	24	35	31	11	.85	.42	13	0
16	5.2	16	21	159	19	30	33	9.8	2.1	.13	11	0
17	3.3	15	19	158	17	28	29	8.7	3.2	.15	9.1	0
18	3.0	13	18	92	22	88	26	7.8	2.2	.07	6.2	0
19	11	13	19	70	33	120	27	8.7	6.5	.14	5.4	0
20	11	12	20	203	33	66	177	33	22	1.3	2.6	0
21	6.0	11	38	186	31	52	124	54	14	1.8	2.5	0
22	6.5	11	60	98	28	55	137	34	9.6	14	2.3	0
23	1250	11	46	72	26	73	77	23	7.2	1.9	.89	0
24	280	11	40	62	24	73	56	18	5.9	1.2	e.45	.17
25	76	11	30	52	23	56	42	14	5.8	.72	.52	24
26	61	10	25	43	33	46	35	12	4.9	1.2	1.2	69
27	41	9.7	24	40	37	41	32	11	3.1	1.2	.63	20
28	27	9.7	53	37	29	38	29	10	1.9	.55	.76	6.6
29	20	16	e80	32	---	407	27	11	.98	.40	.50	3.2
30	16	18	e67	32	---	1470	42	11	.62	11	.04	2.0
31	14	---	e215	33	---	239	---	8.3	---	10	.98	---
TOTAL	1941.50	499.5	1474	5210	715	4154	1597	545.3	132.22	124.97	125.17	125.17
MEAN	62.6	16.6	47.5	168	25.5	134	53.2	17.6	4.41	4.03	4.04	4.17
MAX	1250	66	215	1360	37	1470	177	54	22	26	13	69
MIN	0	7.8	13	32	17	26	24	7.8	.62	.07	.04	0
CFSM	1.36	.36	1.04	3.66	.56	2.92	1.16	.38	.10	.09	.09	.09
IN.	1.57	.40	1.19	4.22	.58	3.37	1.29	.44	.11	.10	.10	.10

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1991, BY WATER YEAR (WY)

	MEAN	24.6	28.2	49.6	83.9	94.3	88.8	56.0	38.2	21.4	26.3	17.4	19.8
MAX	113	137	144	278	244	266	172	184	109	274	96.5	132	
(WY)	1965	1973	1973	1978	1979	1975	1978	1978	1982	1975	1985	1974	
MIN	0	2.63	4.77	6.15	19.7	23.1	9.59	5.53	1.80	.11	.026	0	
(WY)	1969	1968	1966	1981	1968	1976	1985	1981	1986	1966	1987	1968	

SUMMARY STATISTICS

FOR 1990 CALENDAR YEAR

FOR 1991 WATER YEAR

WATER YEARS 1964 - 1991

ANNUAL TOTAL	18907.23	16643.83	
ANNUAL MEAN	51.8	45.6	45.5
HIGHEST ANNUAL MEAN			92.3
LOWEST ANNUAL MEAN			15.2
HIGHEST DAILY MEAN	1250	Oct 23	1470
LOWEST DAILY MEAN	0	Sep 5	0
ANNUAL SEVEN-DAY MINIMUM	0	Sep 5	0
INSTANTANEOUS PEAK FLOW			2830
INSTANTANEOUS PEAK STAGE			36.39
INSTANTANEOUS LOW FLOW			0*
ANNUAL RUNOFF (CFSM)	1.13		.99
ANNUAL RUNOFF (INCHES)	15.32		13.47
10 PERCENT EXCEEDS	134		89
50 PERCENT EXCEEDS	23		15
90 PERCENT EXCEEDS	.02		.15

\* See REMARKS.

02077303 HYCO RIVER BELOW AFTERBAY DAM NEAR McGEHEES MILL, NC

LOCATION.--Lat 36°31'24", long 78°59'48", Person County, Hydrologic Unit 03010104, on right bank 600 ft downstream from afterbay dam of Carolina Power and Light Company, 1.2 mi upstream from Ghent Creek, and 1.8 mi east-northeast of McGehees Mill.

DRAINAGE AREA.--202 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1973 to current year.

REVISED RECORDS.--WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 342.98 ft above National Geodetic Vertical Datum of 1929 (levels by Carolina Power and Light Company). August 1964 to September 1973 at site 2.8 mi upstream at datum 349.78 ft above National Geodetic Vertical Datum of 1929. Published as Hyco River at McGehees Mill, NC.

REMARKS.--No estimated daily discharges. Records good except those above 150 ft<sup>3</sup>/s, which are fair. Flow regulated by Roxboro Steam-Electric Generating Plant Afterbay Reservoir (station 02077302). Water temperature records collected during the year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	20	15	268	14	73	1320	182	13	13	14	13
2	19	20	16	281	14	100	988	278	14	14	13	13
3	19	21	16	233	14	334	106	182	14	14	13	13
4	19	19	16	191	14	1560	107	111	14	14	13	13
5	19	15	16	160	14	1140	109	55	14	14	13	13
6	19	15	17	232	14	110	109	14	14	14	13	13
7	27	15	17	358	14	114	109	14	14	14	13	13
8	36	15	47	935	14	312	110	14	14	14	13	13
9	19	15	74	1180	14	395	109	14	14	14	13	13
10	19	15	83	726	14	381	109	14	14	14	13	13
11	19	15	81	997	14	291	109	14	14	14	13	13
12	19	15	76	4200	14	105	109	14	14	14	13	13
13	19	15	70	3650	14	105	108	14	14	14	13	13
14	18	16	61	1380	14	105	108	14	14	14	13	13
15	18	16	55	976	14	105	107	14	14	14	13	14
16	18	16	54	96	15	105	107	14	14	14	13	15
17	18	16	50	99	14	105	107	14	14	14	13	14
18	18	16	51	101	14	105	107	14	14	14	13	14
19	18	16	54	108	14	107	106	14	14	14	13	15
20	18	16	52	699	14	109	106	14	14	14	13	15
21	18	16	58	760	14	163	107	14	14	14	13	15
22	18	16	74	732	14	208	109	14	14	14	13	15
23	512	16	97	705	15	207	112	14	14	14	13	15
24	67	16	115	670	15	202	130	14	14	14	13	15
25	752	15	120	620	36	171	138	13	14	14	13	15
26	227	15	126	85	53	106	132	13	14	14	13	14
27	116	15	109	14	58	105	123	13	14	14	13	15
28	115	15	111	14	69	106	115	13	13	14	13	15
29	115	15	127	14	---	687	111	13	13	13	13	15
30	90	15	152	14	---	4370	111	13	13	14	13	14
31	20	---	188	14	---	3160	---	13	---	14	13	---
TOTAL	2448	481	2198	20512	555	15246	5438	1165	416	432	404	417
MEAN	79.0	16.0	70.9	662	19.8	492	181	37.6	13.9	13.9	13.0	13.9
MAX	752	21	188	4200	69	4370	1320	278	14	14	14	15
MIN	18	15	15	14	14	73	106	13	13	13	13	13

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1974 - 1991, BY WATER YEAR (WY)

	MEAN	50.8	62.4	127	416	357	427	242	137	75.6	131	71.4	136
MAX	224	334	361	1201	926	1135	692	864	456	1058	294	675	
(WY)	1990	1986	1983	1978	1979	1975	1983	1978	1982	1975	1982	1974	
MIN	6.56	6.78	12.1	18.9	11.0	18.3	12.9	7.90	3.96	9.60	1.43	1.55	
(WY)	1974	1974	1985	1981	1981	1981	1985	1981	1974	1985	1977	1977	

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1974 - 1991
ANNUAL TOTAL	60055	49712	
ANNUAL MEAN	165	136	185
HIGHEST ANNUAL MEAN			392
LOWEST ANNUAL MEAN			17.9
HIGHEST DAILY MEAN	1600	Jan 27	9280
LOWEST DAILY MEAN	14	Jul 10	13
ANNUAL SEVEN-DAY MINIMUM	14	Jul 10	13
INSTANTANEOUS PEAK FLOW			5680
INSTANTANEOUS PEAK STAGE			18.94
INSTANTANEOUS LOW FLOW			8.4
ANNUAL RUNOFF (CFSM)	.81		.67
ANNUAL RUNOFF (INCHES)	11.06		9.15
10 PERCENT EXCEEDS	465	207	426
50 PERCENT EXCEEDS	94	15	37
90 PERCENT EXCEEDS	15	13	10

## ROANOKE RIVER BASIN

02077670 MAYO CREEK NEAR BETHEL HILL, NC

LOCATION.--Lat 36°32'26", long 78°52'21" Person County, Hydrologic Unit 03010104, on right bank 0.1 mi upstream from Virginia State line, 0.3 mi downstream from Mayo Steam Electric Generating Plant Dam, 2.9 mi northeast of Bethel Hill, and 4.8 mi downstream from Spoonwater Creek.

DRAINAGE AREA.--53.5 mi<sup>2</sup>.

PERIOD OF RECORD.--August 1977 to current year.

REVISED RECORDS.--WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 338.84 ft above National Geodetic Vertical Datum of 1929 (levels by Carolina Power & Light Company).

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Mayo Steam Electric Generating Plant. Minimum discharge, no flow, occurred periodically in 1977, 1980, 1981, and 1982. Minimum discharge for current water year also occurred Oct. 6, July 3, and Sept. 30. Minimum discharge for current water year and period of record, result of regulation.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Sept. 4, 1974, reached a stage of 11.11 ft from floodmarks, discharge, 4,300 ft<sup>3</sup>/s; no flow July 31, 1977.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.9	3.8	4.0	48	42	28	256	31	4.9	3.4	3.5	3.7
2	2.9	3.8	4.0	45	38	39	199	27	4.3	3.6	3.4	3.7
3	2.9	3.8	4.2	42	34	60	160	23	4.0	3.4	3.4	3.6
4	2.9	3.8	5.1	39	32	103	134	20	3.8	3.4	3.4	3.5
5	2.9	4.0	4.7	37	30	104	118	19	3.8	3.4	3.4	3.5
6	3.0	3.8	4.8	34	30	100	107	20	3.8	3.4	3.4	3.6
7	3.4	3.8	5.0	50	33	93	97	19	3.8	3.4	3.4	3.5
8	3.4	3.8	4.8	92	40	85	90	17	3.8	3.4	3.4	3.4
9	3.4	3.8	5.3	102	39	76	82	16	3.8	3.4	3.7	3.4
10	3.4	4.3	5.8	101	37	69	73	14	3.8	3.4	3.4	3.3
11	3.9	3.9	5.6	175	34	61	63	13	3.6	3.4	3.4	3.3
12	3.5	3.8	5.8	402	31	56	57	13	3.4	3.4	3.3	3.4
13	4.9	3.8	6.3	353	30	58	52	13	3.4	3.4	3.3	3.4
14	3.6	3.8	5.8	279	30	60	50	12	3.4	3.4	3.5	3.4
15	3.6	3.8	7.2	215	27	57	51	9.7	3.3	3.7	3.5	3.4
16	3.6	3.8	7.9	189	23	54	50	8.5	3.5	6.0	3.4	3.4
17	3.6	3.8	7.7	163	21	50	48	7.9	3.4	6.0	3.4	3.5
18	3.6	3.8	9.7	138	23	60	43	6.4	3.4	6.0	3.4	3.4
19	3.7	3.8	11	120	27	68	39	5.9	3.4	6.0	3.4	3.5
20	3.8	3.8	11	125	30	65	47	10	3.4	6.7	3.4	3.7
21	3.7	3.9	16	124	31	63	50	12	3.4	6.3	3.4	3.5
22	4.2	4.0	22	110	31	62	51	12	3.4	6.3	3.4	3.4
23	13	4.0	26	100	29	61	48	12	3.4	6.5	3.4	3.5
24	4.0	4.0	28	89	28	60	44	11	3.4	6.6	3.4	3.8
25	3.9	4.0	26	78	27	56	38	9.8	3.4	6.6	3.4	4.4
26	3.9	4.0	25	71	32	52	35	8.4	3.4	6.7	3.4	3.7
27	3.8	4.0	25	64	31	51	32	9.3	3.4	6.6	3.5	3.4
28	3.8	4.1	31	59	30	48	30	8.7	3.4	4.9	3.4	3.3
29	3.8	4.1	33	53	---	113	27	7.7	3.4	3.4	3.3	3.3
30	3.8	4.0	36	50	---	358	31	7.1	3.4	6.1	3.6	3.1
31	3.8	---	47	47	---	322	---	6.0	---	3.7	3.6	---
TOTAL	120.6	116.9	440.7	3594	870	2592	2202	409.4	108.0	145.9	106.2	105.0
MEAN	3.89	3.90	14.2	116	31.1	83.6	73.4	13.2	3.60	4.71	3.43	3.50
MAX	13	4.3	47	402	42	358	256	31	4.9	6.7	3.7	4.4
MIN	2.9	3.8	4.0	34	21	28	27	5.9	3.3	3.4	3.3	3.1

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1977 - 1991, BY WATER YEAR (WY)

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
MEAN	10.9	16.1	22.6	70.7	61.4	90.3	64.3	43.6	14.3	15.3	11.5	12.2			
MAX	62.2	76.0	65.4	254	190	247	173	210	35.6	83.6	56.1	112			
(WY)	1990	1980	1978	1978	1979	1987	1978	1978	1979	1984	1984	1979			
MIN	.011	.011	.016	.003	.28	.14	.20	.12	.075	.24	.038	.000			
(WY)	1981	1981	1981	1981	1981	1981	1981	1981	1981	1981	1981	1980			

SUMMARY STATISTICS

FOR 1990 CALENDAR YEAR

FOR 1991 WATER YEAR

WATER YEARS 1977 - 1991

	1990 CALENDAR YEAR	1991 WATER YEAR	WATER YEARS 1977 - 1991
ANNUAL TOTAL	13650.3	10810.7	
ANNUAL MEAN	37.4	29.6	36.1
HIGHEST ANNUAL MEAN			87.8
LOWEST ANNUAL MEAN			.11
HIGHEST DAILY MEAN	189	402	2080
LOWEST DAILY MEAN	2.8	2.9	0
ANNUAL SEVEN-DAY MINIMUM	2.9	3.0	0
INSTANTANEOUS PEAK FLOW		414	3950
INSTANTANEOUS PEAK STAGE		4.69	10.83
INSTANTANEOUS LOW FLOW		2.7*	0*
ANNUAL RUNOFF (CFSM)	.70	.55	.67
ANNUAL RUNOFF (INCHES)	9.49	7.52	9.16
10 PERCENT EXCEEDS	107	74	91
50 PERCENT EXCEEDS	11	5.9	5.5
90 PERCENT EXCEEDS	2.9	3.4	.15

\* See Remarks.

## ROANOKE RIVER BASIN

02080500 ROANOKE RIVER AT ROANOKE RAPIDS, NC  
(National stream-quality accounting network station)

LOCATION.--Lat 36°27'37", long 77°38'04", Halifax County, Hydrologic Unit 03010107, on right bank 1.2 mi downstream from bridge on State Highway 48 at Roanoke Rapids, 2.5 mi upstream from Chockoyotte Creek, 2.8 mi downstream from Roanoke Rapids dam, and 133.6 mi upstream from mouth in Albemarle Sound.

DRAINAGE AREA.--8,384 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1911 to current year. Prior to January 1933, published as "at Old Gaston". Records published for both sites February 1930 to December 1932. Gage-height records collected at site of auxiliary gage since November 1890 are contained in reports of National Weather Service, NOAA, U.S. Department of Commerce.

REVISED RECORDS.--WSP 712: 1930. WSP 822: 1936. WSP 1032: 1912, 1928(M), 1930(M), 1932-33(M). WSP 1433: 1912-23, 1925-28, 1930, 1932-33, 1935, 1937-39. WSP 1904: 1958, 1960. WDR NC-83-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 43.84 ft above National Geodetic Vertical Datum of 1929. Dec. 7, 1911, to Nov. 21, 1921, and Apr. 7 to Dec. 31, 1932, nonrecording gage and Nov. 21, 1921, to Apr. 7, 1932, water-stage recorder, both at site 9 mi upstream at different datum. Aug. 6, 1941, to Mar. 1, 1973, auxiliary water-stage recorder, 3.6 mi downstream from base gage. Satellite data transmitter at station.

REMARKS.--No estimated daily discharges. Records good. Flow regulated since August 1950 by Philpott Lake on Smith River, usable capacity, 6,325,000,000 ft<sup>3</sup>; since September 1950 by John H. Kerr Reservoir, usable capacity, 101,247,000,000 ft<sup>3</sup>; since June 1955 by Roanoke Rapids Lake (station 02080100); since September 1962 by Leesville Lake, since October 1962 by Lake Gaston (station 02079964); and since September 1963 by Smith Mountain Lake. Prior to regulation, maximum discharge, 261,000 ft<sup>3</sup>/s, Aug. 18, 1940, gage height 39.0 ft, from floodmarks; minimum discharge, about 250 ft<sup>3</sup>/s Dec. 16, 1955.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in November 1877, discharge, 212,000 ft<sup>3</sup>/s, reached a stage of about 2 ft lower at Old Gaston than flood in August 1940 which was 21.5 ft. Flood in August 1940 is the maximum known since at least 1771.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2100	20000	2010	10300	20200	8260	20300	9170	9310	2050	8620	2060
2	1820	20200	1210	10800	20000	3310	20200	9480	9270	2010	8600	2030
3	1840	19800	1200	13000	20000	6390	20300	9470	9340	2000	8880	2020
4	1990	20300	3080	15000	17500	10200	20100	9510	9310	2020	2210	2020
5	1930	20200	10100	15000	15100	14800	19900	9460	9300	2750	2060	2000
6	1870	20200	12000	15100	14900	14800	19900	9510	9310	2740	2970	2440
7	1880	20000	3690	15100	15100	14800	19800	9490	9310	2000	4520	2030
8	1890	20100	1190	15100	15100	14900	20200	9480	9350	6310	8190	2690
9	2420	20000	2490	15200	14100	14900	20200	9530	9320	3650	3200	2080
10	2940	19900	4880	15200	2030	14800	20000	9340	6850	3050	2160	2020
11	4970	14900	6070	15100	6150	14800	20100	9230	6660	2000	2040	2030
12	6880	13600	8580	17000	5760	14900	19600	9240	6650	2690	2050	4130
13	14800	9140	6700	20000	9710	14900	20300	9240	6610	6340	2040	2590
14	14900	11400	8630	20400	3920	14800	20100	9290	5520	2740	2040	2040
15	14900	5010	12600	20200	9040	14900	20100	9270	7950	2000	3040	2040
16	15000	9160	6080	19600	13700	8220	20100	9290	5190	2000	2540	5640
17	14900	4860	4700	20200	1180	2310	20000	9280	4410	2000	6760	6260
18	15000	7210	2370	20000	6670	7560	20000	9260	2760	4260	2140	6260
19	14900	8840	2870	20100	4990	9410	20100	9240	2070	3220	6140	6190
20	13500	8060	5270	20100	3350	14400	19500	7200	2560	2010	5900	2060
21	10200	9450	10500	20000	5920	14700	14800	9160	6520	2030	5370	2020
22	10100	7010	2340	20200	8390	14900	10800	9160	4500	4990	4060	2030
23	14100	3660	1250	20200	9790	14900	10800	9160	2930	4030	2850	2030
24	20300	3630	4330	20100	5070	2270	10800	9270	2770	2850	3380	2040
25	20200	1240	4550	20000	7730	5570	10800	9300	4210	3000	2040	4610
26	20400	1680	8230	20100	10000	14900	10400	9330	7670	2250	2050	3450
27	20500	5630	11100	20000	12100	14500	7840	9320	7750	2800	4590	2020
28	20400	4180	10200	20100	8330	14800	7820	9320	7700	2010	8910	2040
29	20000	5940	10300	19900	---	14800	7760	9310	14300	2840	2990	2050
30	20000	13800	10100	20100	---	17000	8390	9310	12900	5600	2020	2030
31	20000	---	10100	20100	---	20100	---	9320	---	8740	2020	---
TOTAL	346630	349100	188720	553300	285830	381800	501010	286940	212300	103800	123380	84950
MEAN	11180	11640	6088	17850	10210	12320	16700	9256	7077	3348	3980	2832
MAX	20500	20300	12600	20400	20200	20100	20300	9530	14300	8740	8910	6260
MIN	1820	1240	1190	10300	1180	2270	7760	7200	2070	2000	2020	2000
(†)	+5247	-6797	+3981	-399	-3444	+7936	-3385	-724	-2233	+632	-1198	-847

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1991\*, BY WATER YEAR (WY)

MEAN	5812	6784	7300	9686	10260	10350	10490	10700	7364	5723	5300	5137
MAX	20360	17690	18380	17850	19590	23950	30700	31750	15260	20560	9755	12490
(WY)	1980	1986	1973	1991	1978	1979	1975	1978	1982	1972	1975	1987
MIN	2031	1987	3417	3540	2613	2259	2527	3974	2365	2581	2544	2186
(WY)	1971	1987	1981	1989	1981	1981	1985	1981	1977	1970	1977	1968

## SUMMARY STATISTICS

## FOR 1990 CALENDAR YEAR

## FOR 1991 WATER YEAR

## WATER YEARS 1964 - 1991\*

	ANNUAL TOTAL	3830590	ANNUAL MEAN	10490 (UNADJUSTED)	3417760	9364	†10450	7895	(UNADJUSTED)	12920	1973
HIGHEST ANNUAL MEAN										3117	1981
LOWEST ANNUAL MEAN										35600	Apr 14 1975
HIGHEST DAILY MEAN		20500	Apr 19		20500	Oct 27				818	Nov 15 1970
LOWEST DAILY MEAN		1120	Jan 21		1180	Feb 17				989	Nov 5 1986
ANNUAL SEVEN-DAY MINIMUM		1890	Oct 2		1890	Oct 2				37400	May 1 1978
INSTANTANEOUS PEAK FLOW					22700	Jan 16				11.74	May 1 1978
INSTANTANEOUS PEAK STAGE						9.19	Jan 16			760	Nov 23 1970
INSTANTANEOUS LOW FLOW						815	Dec 9				
ANNUAL RUNOFF (CFSM)		1.25				1.12					
ANNUAL RUNOFF (INCHES)		16.99				15.16					
10 PERCENT EXCEEDS		19600			20000					18700	
50 PERCENT EXCEEDS		9460			8840					6050	
90 PERCENT EXCEEDS		2090			2030					1980	

† Change in contents, equivalent in cubic feet per second, in Leesville and Smith Mountain Lakes, furnished by Appalachian Power Co.; Philpott and Kerr Reservoirs, furnished by U.S. Army Corps of Engineers; and Lake Gaston and Roanoke Rapids Lake, furnished by North Carolina Power Company.

‡ Adjusted for change in contents.

\* Regulated period only (1964-1991). See REMARKS.

02080500 ROANOKE RIVER AT ROANOKE RAPIDS, NC--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1949, 1968-73, 1977 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1976 to September 1984.

WATER TEMPERATURE: October 1948 to September 1949, October 1976 to September 1984.

REMARKS.--Station operated as part of NASQAN network from October 1976 to present. Samples collected at bridge on State Highway 48 at Roanoke Rapids, 1.2 mi upstream from gaging station. Miscellaneous chemical data collected at bridge on State Highway 48 and/or at gaging station 1.2 mi downstream are published for water years 1946-47, 1955-67.

COOPERATION.--Chemical and biological data shown in last table were provided by the North Carolina Department of Environment, Health, and Natural Resources.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 153 microsiemens Sept. 15, 1981; minimum daily, 65 microsiemens Apr. 7, 1979.

WATER TEMPERATURE: Maximum daily, 32.5°C July 30, 1949; minimum daily, 1.0°C Jan. 18-22, 30, 31, Feb. 1, 1977.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

[illegible]

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

[illegible]

## ROANOKE RIVER BASIN

0208111310 CASHIE RIVER AT SECONDARY ROAD 1527 NEAR WINDSOR, NC

LOCATION.--Lat 36°23'15", long 76°59'07", Bertie County, Hydrologic Unit 03010107, at downstream side of bridge on Secondary Road 1257, 2.0 miles above State Highway 13, near Windsor.

DRAINAGE AREA.--108 mi<sup>2</sup>.

PERIOD OF RECORD.--June 3, 1987, to current year.

GAGE.--Water-stage recorder. Datum of gage is 15.0 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records fair except those below 10 ft<sup>3</sup>/s and those for estimated daily discharges, which are poor. Minimum discharge for period of record, occurs periodically.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.03	e6.0	31	48	114	28	370	665	.99	1.7	982	39
2	.01	e5.5	56	82	109	33	317	482	.78	1.1	615	20
3	.01	e5.0	66	146	103	60	250	313	.77	1.6	423	7.6
4	.02	e4.5	59	220	96	176	181	201	.75	11	375	3.3
5	.04	e4.3	46	276	88	318	129	125	.81	68	303	2.0
6	.02	e4.1	43	260	79	310	100	83	.86	186	186	1.3
7	.01	e3.9	46	212	75	271	81	52	.80	250	176	.98
8	0	e3.7	57	218	87	215	66	31	.68	160	458	4.8
9	.01	e3.5	81	333	103	159	53	19	.62	66	575	21
10	0	e10	103	427	100	116	40	11	.54	18	544	9.9
11	0	e18	102	413	89	92	30	6.2	.38	12	525	3.1
12	0	e27	94	419	79	75	23	3.5	.32	49	375	1.4
13	0	e24	82	504	76	68	16	2.4	.30	138	288	.94
14	0	e20	67	507	69	79	15	4.7	.29	199	246	.82
15	0	15	56	458	58	98	15	14	.28	225	195	.79
16	e.06	12	47	374	50	115	20	17	.30	136	137	.78
17	e.05	11	42	292	43	123	21	9.1	.35	46	106	.66
18	e.05	10	49	225	40	142	28	4.6	.30	13	79	.60
19	e.06	9.0	44	178	44	200	27	3.4	1.6	4.1	60	.64
20	e.07	7.4	34	183	41	251	41	4.9	162	1.7	80	3.7
21	e.08	6.5	43	255	39	252	126	7.3	296	1.1	135	4.5
22	e1.0	5.8	67	315	37	237	421	7.3	170	.81	175	7.6
23	e15	5.2	74	336	31	209	547	5.8	149	.68	159	8.0
24	e25	4.7	68	300	27	167	461	4.7	237	.64	154	8.8
25	e38	5.0	61	240	28	130	324	4.0	181	.64	113	18
26	e45	5.0	54	191	32	107	216	1.9	134	.70	71	66
27	e23	3.9	48	155	30	92	143	1.3	78	2.2	46	95
28	e11	3.6	45	128	28	80	155	1.2	33	63	29	84
29	e7.5	8.4	52	111	---	73	406	1.1	13	175	35	85
30	e7.0	10	52	104	---	183	633	1.0	5.3	347	61	87
31	e6.5	---	49	107	---	392	---	1.0	---	995	59	---
TOTAL	179.52	262.0	1818	8017	1795	4851	5255	2088.4	1470.02	3173.97	7765	587.21
MEAN	5.79	8.73	58.6	259	64.1	156	175	67.4	49.0	102	250	19.6
MAX	45	27	103	507	114	392	633	665	296	995	982	95
MIN	0	3.5	31	48	27	28	15	1.0	.28	.64	29	.60
CFSM	.05	.08	.54	2.39	.59	1.45	1.62	.62	.45	.95	2.32	.18
IN.	.06	.09	.63	2.76	.62	1.67	1.81	.72	.51	1.09	2.67	.20

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1991, BY WATER YEAR (WY)

	MEAN	47.6	38.9	89.7	169	149	257	215	131	37.3	44.4	88.5	15.5
MAX	181	123	254	259	201	663	326	321	75.0	102	250	35.8	
(WY)	1990	1990	1990	1991	1989	1989	1989	1989	1989	1991	1991	1990	
MIN	.13	.89	15.1	73.4	64.1	58.3	146	63.9	5.41	.64	.65	2.75	
(WY)	1988	1988	1989	1989	1991	1988	1988	1988	1987	1987	1987	1989	

SUMMARY STATISTICS FOR 1990 CALENDAR YEAR FOR 1991 WATER YEAR WATER YEARS 1987 - 1991

ANNUAL TOTAL	31747.20	37262.12	
ANNUAL MEAN	87.0	102	111
HIGHEST ANNUAL MEAN			156
LOWEST ANNUAL MEAN			57.1
HIGHEST DAILY MEAN	750	Apr 4	1540
LOWEST DAILY MEAN	0	Jul 6	0
ANNUAL SEVEN-DAY MINIMUM	0	Oct 8	0
INSTANTANEOUS PEAK FLOW			1580
INSTANTANEOUS PEAK STAGE			9.57
INSTANTANEOUS LOW FLOW			0*
ANNUAL RUNOFF (CFSM)	.81	.95	1.02
ANNUAL RUNOFF (INCHES)	10.94	12.83	13.92
10 PERCENT EXCEEDS	231	301	282
50 PERCENT EXCEEDS	46	46	28
90 PERCENT EXCEEDS	.47	.67	.66

\* See REMARKS.

## PAMLICO RIVER BASIN

02081500 TAR RIVER NEAR TAR RIVER, NC

LOCATION.--Lat 36°11'41", long 78°35'00", Granville County, Hydrologic Unit 03020101, on right bank 90 ft upstream from bridge on State Highway 96, 1.2 mi upstream from Fishing Creek, 2.5 mi east of town of Tar River, and 8 mi south of Oxford.

DRAINAGE AREA.--167 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1939 to current year. Monthly discharge only for some periods, published in WSP 1303.

REVISED RECORDS.--WSP 972: 1940-41. WSP 1112: 1941 (calendar year figures). WSP 1273: 1941(M). WSP 1723: Drainage area.

GAGE.--Water-stage recorder and concrete control with a sharp-crested weir notch. Datum of gage is 287.25 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair except those for estimated daily discharges and those for period of beaver activity July to Sept., which are poor. Occasional intermittent diversion for irrigation.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e.95	23	70	349	75	82	333	192	14	2.8	4.1	4.6
2	e.97	21	45	159	67	184	221	105	61	3.1	3.1	3.3
3	e1.0	15	38	112	63	692	164	70	48	4.9	3.5	e3.0
4	e1.2	12	281	102	61	1510	132	52	26	3.0	3.3	e2.5
5	e1.5	8.9	281	98	57	471	118	44	19	e2.5	3.2	e2.0
6	e1.6	6.7	118	83	56	247	110	47	15	e2.2	3.5	e4.0
7	e1.4	5.1	80	414	72	183	101	47	12	e1.9	2.4	e3.5
8	e1.0	3.6	77	1630	88	142	90	42	11	e1.7	1.7	e3.0
9	e.74	3.4	135	660	86	116	86	37	10	1.6	1.6	e2.4
10	e.50	62	103	442	77	104	79	34	9.3	1.6	1.5	e2.0
11	e1.4	225	74	499	66	92	69	32	8.3	2.6	1.5	e1.5
12	2.3	83	56	3220	59	83	59	30	7.8	3.5	1.9	e1.2
13	16	46	46	1290	52	98	57	28	7.2	7.5	1.8	e1.0
14	32	32	40	361	58	288	66	27	7.1	e5.0	3.4	e.90
15	17	24	37	229	72	239	95	25	6.5	e2.0	10	e.80
16	8.7	20	38	264	65	143	158	23	5.9	e1.5	4.6	e.70
17	5.2	17	37	593	52	113	102	21	5.7	e1.8	2.6	e1.1
18	3.6	15	35	276	57	365	77	32	5.9	e3.0	2.3	e.90
19	5.9	13	36	178	130	560	66	28	6.6	e4.0	2.2	e.80
20	5.5	12	39	562	141	238	74	70	10	e5.5	2.7	e1.5
21	4.9	11	201	625	115	159	147	107	8.0	e4.0	1.9	e1.2
22	17	11	349	273	96	146	246	72	7.0	e3.0	1.2	e1.0
23	863	11	172	176	83	208	136	47	7.3	e2.0	.92	e1.5
24	545	11	120	137	72	166	94	36	7.4	e1.7	2.6	e4.0
25	107	11	87	119	66	131	74	28	6.2	e1.5	5.6	48
26	103	10	66	106	74	104	59	24	5.5	e1.4	3.6	335
27	68	9.9	53	97	131	92	52	21	4.9	e1.2	5.2	88
28	46	9.7	83	91	103	87	59	19	4.5	e1.1	13	37
29	34	38	120	83	---	338	74	18	4.1	1.6	4.4	19
30	28	121	124	79	---	3640	345	17	3.9	10	2.8	9.5
31	25	---	387	80	---	1130	---	15	---	7.2	5.6	---
TOTAL	1949.36	891.3	3428	13387	2194	12151	3543	1390	355.1	96.4	107.72	584.90
MEAN	62.9	29.7	111	432	78.4	392	118	44.8	11.8	3.11	3.47	19.5
MAX	863	225	387	3220	141	3640	345	192	61	10	13	335
MIN	.50	3.4	35	79	52	82	52	15	3.9	1.1	.92	.70
CFSM	.38	.18	.66	2.59	.47	2.35	.71	.27	.07	.02	.02	.12
IN.	.43	.20	.76	2.98	.49	2.71	.79	.31	.08	.02	.02	.13

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1991, BY WATER YEAR (WY)

	MEAN	69.3	116	153	248	329	316	217	129	78.2	80.5	82.4	65.3
MAX	565	599	558	819	798	917	675	475	488	677	542	671	
(WY)	1972	1973	1973	1978	1960	1975	1978	1978	1982	1975	1955	1945	
MIN	.41	.28	4.39	7.04	62.6	61.0	33.2	16.9	4.30	.92	1.39	.28	
(WY)	1971	1942	1942	1942	1968	1981	1942	1941	1970	1966	1976	1968	

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1940 - 1991
ANNUAL TOTAL	54697.63	40077.78	
ANNUAL MEAN	150	110	156
HIGHEST ANNUAL MEAN			336
LOWEST ANNUAL MEAN			51.0
HIGHEST DAILY MEAN	2230	3640	10500
LOWEST DAILY MEAN	.50	.50	.02
ANNUAL SEVEN-DAY MINIMUM	.96	.89	.07
INSTANTANEOUS PEAK FLOW		4670	14200
INSTANTANEOUS PEAK STAGE		10.86	18.87
INSTANTANEOUS LOW FLOW		NOT DETERMINED *	0
ANNUAL RUNOFF (CFSM)	.90	.66	.93
ANNUAL RUNOFF (INCHES)	12.18	8.93	12.70
10 PERCENT EXCEEDS	355	238	329
50 PERCENT EXCEEDS	53	35	45
90 PERCENT EXCEEDS	3.6	1.6	3.8

\* See REMARKS.

## PAMLICO RIVER BASIN

02081747 TAR RIVER AT U.S. 401 AT LOUISBURG, NC

LOCATION.--Lat 36°05'34", long 78°17'48", Franklin County, Hydrologic Unit 03020101, on left bank 0.1 mi downstream from bridge on U.S. Highway 401 (Bickett Boulevard), at Louisburg, and 0.2 mi upstream from Fox Creek.

DRAINAGE AREA.--427 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1963 to current year. Published as Tar River at Louisburg, NC (02081740) October 1963 to September 1973. Prior to October 1972, medium and high water discharges only.

REVISED RECORDS.--WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 176.71 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 21, 1973, nonrecording gage at bridge 0.4 mi upstream at datum 1.82 ft higher; Nov. 22, 1973, to June 24, 1980, at site 0.1 mi upstream at same datum.

REMARKS.--No estimated daily discharges. Records good. Maximum gage height for period of record, from floodmarks. National Weather Service gage-height telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods of December 1934, September 1945, and August 1955 reached stages of 26 ft, 24 ft, and 24 ft, respectively, at site and datum 0.4 mi upstream, from information of U.S. Army Corps of Engineers.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35	85	255	896	255	230	3860	983	71	30	93	46
2	37	80	167	532	230	295	864	471	100	34	52	44
3	36	79	134	368	222	729	552	306	215	122	40	40
4	37	71	155	314	209	2130	449	227	132	102	37	32
5	44	71	548	289	203	2350	390	186	84	53	50	29
6	45	66	373	260	200	768	360	188	66	43	49	27
7	41	60	228	319	230	535	333	187	58	39	39	28
8	40	57	205	2050	273	432	302	159	53	34	32	28
9	38	56	228	2850	261	359	276	140	49	30	33	28
10	37	105	281	1280	239	312	260	133	46	27	56	24
11	79	235	213	896	214	281	227	126	44	77	49	22
12	99	312	163	3030	192	253	200	117	42	70	38	21
13	94	169	139	4790	182	268	185	110	42	48	34	20
14	206	119	124	3760	194	522	210	104	43	40	37	19
15	139	100	123	914	209	746	239	100	43	33	69	18
16	91	89	131	625	199	482	423	94	40	27	134	18
17	63	85	130	1140	174	364	373	88	39	25	74	18
18	55	80	120	878	178	517	266	108	49	28	45	17
19	70	75	124	558	239	1600	207	201	95	32	35	18
20	69	74	126	706	341	858	215	315	103	36	63	53
21	67	71	256	1940	320	525	272	403	76	40	85	58
22	60	70	736	956	273	428	381	313	61	30	42	34
23	349	73	545	580	236	486	402	204	61	26	31	27
24	1750	77	368	466	204	472	272	147	97	25	33	26
25	535	76	274	406	188	383	207	121	69	23	67	105
26	292	74	206	355	197	320	170	104	49	21	48	842
27	284	71	174	324	234	281	150	96	41	22	83	634
28	178	71	214	307	284	262	196	96	37	32	128	229
29	129	100	289	289	---	318	369	96	34	47	288	115
30	102	277	318	272	---	2590	754	86	32	58	140	74
31	91	---	473	273	---	5030	---	76	---	124	66	---
TOTAL	5192	3028	7820	32623	6380	25126	13364	6085	1971	1378	2070	2694
MEAN	167	101	252	1052	228	811	445	196	65.7	44.5	66.8	89.8
MAX	1750	312	736	4790	341	5030	3860	983	215	124	288	842
MIN	35	56	120	260	174	230	150	76	32	21	31	17
CFSM	.39	.24	.59	2.46	.53	1.90	1.04	.46	.15	.10	.16	.21
IN.	.45	.26	.68	2.84	.56	2.19	1.16	.53	.17	.12	.18	.23

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1991, BY WATER YEAR (WY)

	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
MEAN	152	292	422	807	806	919	639	423	263	242	168	161																
MAX	582	1192	1108	1845	1616	2015	1407	984	1451	1692	512	688																
(WY)	1990	1986	1984	1978	1983	1989	1987	1989	1982	1975	1986	1974																
MIN	28.5	64.9	86.5	78.0	202	214	140	123	35.4	43.3	26.8	19.7																
(WY)	1987	1982	1981	1981	1977	1988	1985	1977	1986	1986	1988	1980																

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1964 - 1991
ANNUAL TOTAL	162374	107731	
ANNUAL MEAN	445	295	440
HIGHEST ANNUAL MEAN			729
LOWEST ANNUAL MEAN			131
HIGHEST DAILY MEAN	4860	5030	13000
LOWEST DAILY MEAN	30	17	8.1
ANNUAL SEVEN-DAY MINIMUM	34	18	9.2
INSTANTANEOUS PEAK FLOW		5450	13100
INSTANTANEOUS PEAK STAGE		18.88	24.36*
INSTANTANEOUS LOW FLOW		14	7.3
ANNUAL RUNOFF (CFSM)	1.04	.69	1.03
ANNUAL RUNOFF (INCHES)	14.15	9.39	14.00
10 PERCENT EXCEEDS	927	546	1070
50 PERCENT EXCEEDS	255	129	214
90 PERCENT EXCEEDS	49	33	42

\* See REMARKS.

02082506 TAR RIVER BELOW TAR RIVER RESERVOIR NEAR ROCKY MOUNT, NC

LOCATION.--Lat 35°53'58", long 77°51'57", Nash County, Hydrologic Unit 03020101, near center of span on downstream side of bridge on Secondary Road 1544, 1.8 mi downstream from Tar River Reservoir, 2.8 mi downstream from Sapony Creek, 2.9 mi upstream from Grape Branch, and 5.0 mi southwest of Rocky Mount.

DRAINAGE AREA.--777 mi<sup>2</sup>.

PERIOD OF RECORD.--August 1972 to current year.

GAGE.--Water-stage recorder. Datum of gage is 85.9 ft above National Geodetic Vertical Datum of 1929 (levels by North Carolina State Highway Commission).

REMARKS.--No estimated daily discharges. Records good. The city of Rocky Mount diverted an average of 14.8 ft<sup>3</sup>/s for municipal water supply, most of which was returned as treated effluent below station. National Weather Service gage-height telemeter at station. Minimum discharge for period of record, also occurred on Oct. 20, 1981.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	69	188	577	750	623	1360	3950	1010	150	73	264	162
2	69	175	530	1300	577	171	4600	1320	133	77	243	132
3	69	163	405	1090	510	170	3110	785	134	80	175	111
4	69	152	334	879	471	1410	1140	511	179	85	128	110
5	106	146	290	744	450	2680	802	387	223	95	98	125
6	163	140	488	628	431	2960	702	336	172	92	84	118
7	114	136	535	685	443	1670	647	290	133	95	88	242
8	110	130	475	1580	533	1070	594	280	111	87	89	149
9	107	122	450	2860	631	830	549	271	97	77	90	120
10	98	190	440	3460	562	700	500	251	86	77	107	115
11	84	216	441	2430	502	595	456	228	80	85	99	115
12	64	266	402	2480	449	531	405	222	96	80	94	123
13	65	386	339	3800	413	512	370	209	81	93	97	129
14	65	313	234	4570	411	647	362	201	79	95	100	138
15	66	242	196	4920	402	983	396	233	87	85	422	135
16	92	202	231	3510	390	1220	474	190	80	75	584	136
17	122	180	247	1490	374	910	625	172	78	74	524	123
18	136	169	268	1600	344	824	569	156	77	78	309	117
19	123	160	263	1430	359	1360	445	187	76	79	176	114
20	107	152	265	1370	405	2180	616	465	79	75	126	114
21	104	147	383	1720	504	1610	639	678	85	78	107	111
22	105	145	676	2460	537	1040	605	747	84	78	113	109
23	133	146	1140	1850	468	831	637	590	81	78	122	109
24	367	148	999	1200	433	817	674	410	71	77	105	113
25	1600	152	691	938	396	768	524	296	75	77	103	110
26	1210	154	510	797	384	660	418	230	89	86	110	110
27	672	154	413	721	381	585	356	196	91	91	135	112
28	497	158	426	663	384	514	333	202	86	110	131	113
29	372	300	474	654	---	527	342	233	75	191	147	114
30	277	634	543	652	---	1330	531	204	71	245	164	114
31	221	---	573	647	---	2940	---	176	---	275	182	---
TOTAL	7456	5966	14238	53878	12767	34405	26371	11666	3039	3043	5316	3743
MEAN	241	199	459	1738	456	1110	879	376	101	98.2	171	125
MAX	1600	634	1140	4920	631	2960	4600	1320	223	275	584	242
MIN	64	122	196	628	344	170	333	156	71	73	84	109
CFSM	.31	.26	.59	2.24	.59	1.43	1.13	.48	.13	.13	.22	.16
IN.	.36	.29	.68	2.58	.61	1.65	1.26	.56	.15	.15	.25	.18

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1972 - 1991, BY WATER YEAR (WY)

	MEAN	292	535	790	1357	1440	1700	1201	802	559	494	369	256
MAX	1190	1876	2406	2794	2803	3438	2864	2123	2064	2321	1045	1046	
(WY)	1973	1973	1973	1978	1983	1989	1987	1989	1982	1975	1973	1974	
MIN	64.6	66.2	125	186	456	358	284	213	101	67.9	77.9	75.9	
(WY)	1981	1981	1981	1981	1991	1981	1981	1976	1991	1986	1988	1988	

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1973 - 1991
ANNUAL TOTAL	298658	181888	
ANNUAL MEAN	818	498	814
HIGHEST ANNUAL MEAN			1471
LOWEST ANNUAL MEAN			211
HIGHEST DAILY MEAN	5620	Mar 31	10900
LOWEST DAILY MEAN	64	Oct 12	39
ANNUAL SEVEN-DAY MINIMUM	69	Sep 22	57
INSTANTANEOUS PEAK FLOW			5000
INSTANTANEOUS PEAK STAGE			13.29
INSTANTANEOUS LOW FLOW			64
ANNUAL RUNOFF (CFSM)	1.05	.64	1.05
ANNUAL RUNOFF (INCHES)	14.30	8.71	14.24
10 PERCENT EXCEEDS	1970	1140	1990
50 PERCENT EXCEEDS	475	242	372
90 PERCENT EXCEEDS	106	81	95

\* See REMARKS.

## PAMLICO RIVER BASIN

02082585 TAR RIVER AT NC 97 AT ROCKY MOUNT, NC

LOCATION.--Lat 35°57'15", long 77°47'15", Edgecombe County, Hydrologic Unit 03020101, on left bank 20 ft downstream from bridge on State Highway 97, 0.5 mi upstream from Cowlick Branch, and 1.0 mi north-northeast of Rocky Mount.

DRAINAGE AREA.--925 mi<sup>2</sup>.

PERIOD OF RECORD.--August 1976 to current year.

REVISED RECORDS.--WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 53.88 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Some regulation at low flow caused by mill above station. The city of Rocky Mount diverted an average of 24.1 ft<sup>3</sup>/s for municipal water supply, most of which was returned as treated effluent below station. Minimum discharge for period of record and current water year, result of temporary regulation. City of Rocky Mount gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	79	222	843	823	821	1090	4370	915	267	87	419	192
2	102	201	700	1410	767	667	4810	1290	175	94	403	128
3	58	191	526	1290	686	359	3830	877	212	133	226	98
4	64	177	449	1080	634	1470	1310	612	168	109	205	98
5	68	168	392	924	608	2790	957	468	301	123	175	98
6	192	161	512	805	589	3350	847	463	247	118	103	119
7	139	148	616	960	598	1930	803	342	202	113	118	210
8	119	147	632	1870	669	1200	744	369	185	105	93	164
9	117	141	601	3230	801	992	674	347	142	90	105	133
10	118	345	581	4080	762	858	670	323	128	85	162	102
11	136	308	550	3180	681	749	576	303	105	131	165	101
12	93	338	509	2850	613	679	550	291	96	89	137	89
13	108	446	437	4200	582	679	495	286	96	101	341	106
14	107	381	375	5200	573	836	504	257	91	107	259	119
15	96	297	224	5470	496	1090	544	288	141	115	889	117
16	123	249	329	4390	585	1300	608	382	137	104	847	118
17	131	228	384	1690	472	1050	745	134	93	109	672	117
18	146	211	366	1610	477	1060	727	156	102	103	429	105
19	144	200	370	1520	489	1440	565	330	98	84	240	97
20	133	183	370	1630	527	2310	889	599	155	92	196	118
21	124	215	532	1930	612	1790	775	805	149	71	154	116
22	121	156	879	2780	654	1180	744	860	141	77	132	82
23	231	194	1220	2120	604	981	754	715	107	82	130	67
24	344	190	1140	1340	563	952	793	509	95	80	109	102
25	1510	197	842	1120	526	897	653	406	89	75	89	107
26	1490	198	652	969	515	796	511	327	99	69	87	117
27	822	198	521	886	517	729	471	274	108	77	141	111
28	610	209	601	824	562	662	477	272	101	108	135	105
29	454	416	637	784	---	689	453	340	89	305	132	104
30	313	865	687	779	---	1390	625	314	90	545	156	102
31	258	---	723	833	---	3150	---	287	---	423	184	---
TOTAL	8550	7580	18200	62577	16983	39115	31474	14141	4209	4004	7633	3442
MEAN	276	253	587	2019	607	1262	1049	456	140	129	246	115
MAX	1510	865	1220	5470	821	3350	4810	1290	301	545	889	210
MIN	58	141	224	779	472	359	453	134	89	69	87	67
CFSM	.30	.27	.63	2.18	.66	1.36	1.13	.49	.15	.14	.27	.12
IN.	.34	.30	.73	2.52	.68	1.57	1.27	.57	.17	.16	.31	.14

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1977 - 1991, BY WATER YEAR (WY)

	MEAN	276	581	829	1531	1623	2065	1476	1022	683	396	409	211
	MAX	1079	1905	1720	3230	3280	4301	3447	2725	2238	1316	977	805
	(WY)	1990	1980	1984	1978	1983	1989	1987	1989	1982	1984	1989	1979
	MIN	70.4	74.5	142	254	546	477	359	258	128	54.1	79.7	84.3
	(WY)	1981	1981	1981	1981	1977	1981	1981	1986	1986	1986	1987	1980

SUMMARY STATISTICS

	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1977 - 1991
ANNUAL TOTAL	353444	217908	
ANNUAL MEAN	968	597	922
HIGHEST ANNUAL MEAN			1500
LOWEST ANNUAL MEAN			262
HIGHEST DAILY MEAN	7160	Apr 1	12100
LOWEST DAILY MEAN	28	Sep 27	6.6
ANNUAL SEVEN-DAY MINIMUM	60	Sep 27	40
INSTANTANEOUS PEAK FLOW			5480
INSTANTANEOUS PEAK STAGE			14.43
INSTANTANEOUS LOW FLOW			7.2
ANNUAL RUNOFF (CFSM)	1.05		.65
ANNUAL RUNOFF (INCHES)	14.21		8.76
10 PERCENT EXCEEDS	2290	1250	2280
50 PERCENT EXCEEDS	601	344	430
90 PERCENT EXCEEDS	118	98	99

\* See REMARKS.

## PAMLICO RIVER BASIN

02082770 SWIFT CREEK AT HILLIARDSTON, NC

LOCATION.--Lat 36°06'42", long 77°55'16", Nash County, Hydrologic Unit 03020101, near left bank at downstream side of bridge on Secondary Road 1310, 0.7 mi northeast of Hilliardston, and 2.8 mi downstream from Gideon Swamp.

DRAINAGE AREA.--166 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1963 to current year.

REVISED RECORDS.--WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 130.42 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are fair.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1924 reached a stage of 14.5 ft, discharge not determined, from information by North Carolina State Highway Commission.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e32	51	96	162	e125	97	692	158	61	21	66	46
2	e32	50	84	131	e116	116	452	185	56	24	61	38
3	e32	49	67	118	e105	179	210	125	57	89	46	33
4	e32	47	65	110	e98	441	170	99	58	99	39	29
5	e31	46	71	106	e97	462	152	90	59	65	39	27
6	32	45	73	92	e96	273	141	87	52	49	27	23
7	37	45	68	131	e104	195	135	89	46	40	46	21
8	34	45	73	354	e135	157	127	88	41	33	46	23
9	32	45	85	453	e185	136	121	82	37	27	33	20
10	30	57	82	381	e145	123	119	78	36	22	33	19
11	36	74	74	292	e128	117	110	77	33	51	30	18
12	58	75	66	886	e118	113	105	77	30	35	59	17
13	68	70	63	867	e114	116	102	74	30	94	49	15
14	63	60	62	791	e116	182	104	72	29	73	41	14
15	54	54	63	562	e118	223	116	71	33	49	69	14
16	56	52	66	250	e110	183	124	70	37	35	66	13
17	46	51	69	196	e102	140	134	69	38	27	77	12
18	39	51	67	170	e99	201	126	67	38	22	62	11
19	37	52	64	146	e102	394	106	67	38	19	46	9.8
20	37	52	65	280	e110	312	108	93	46	17	37	13
21	45	52	95	372	e112	211	122	139	58	20	32	35
22	44	53	164	313	e110	164	129	132	58	19	53	46
23	64	51	172	186	e104	169	123	101	61	30	45	27
24	146	53	122	148	e101	161	110	81	54	34	34	21
25	138	55	92	132	e96	142	99	73	48	22	28	22
26	124	54	80	e137	e97	126	90	68	45	17	70	37
27	100	53	73	e135	e120	118	87	66	38	17	84	106
28	79	53	84	e133	e106	118	90	67	32	17	87	121
29	69	88	97	e132	---	165	105	67	28	32	91	70
30	59	92	96	e131	---	938	179	66	25	36	74	48
31	54	---	121	e129	---	694	---	65	---	63	60	---
TOTAL	1740	1675	2619	8426	3169	7166	4588	2743	1302	1198	1630	948.8
MEAN	56.1	55.8	84.5	272	113	231	153	88.5	43.4	38.6	52.6	31.6
MAX	146	92	172	886	185	938	692	185	61	99	91	121
MIN	30	45	62	92	96	97	87	65	25	17	27	9.8
CFSM	.34	.34	.51	1.64	.68	1.39	.92	.53	.26	.23	.32	.19
IN.	.39	.38	.59	1.89	.71	1.61	1.03	.61	.29	.27	.37	.21

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 1991, BY WATER YEAR (WY)

	MEAN	82.9	115	155	230	288	287	230	157	120	97.1	87.5	60.5
MAX	420	436	382	500	516	711	774	466	468	470	326	202	
(WY)	1972	1986	1973	1987	1983	1989	1987	1984	1979	1975	1986	1974	
MIN	9.65	27.8	37.3	59.5	92.6	77.6	72.9	52.8	26.4	12.3	15.8	4.90	
(WY)	1971	1982	1966	1981	1968	1988	1981	1981	1981	1981	1977	1968	

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR		FOR 1991 WATER YEAR		WATER YEARS 1963 - 1991	
ANNUAL TOTAL	64477		37204.8		159	
ANNUAL MEAN	177		102		290	
HIGHEST ANNUAL MEAN					51.0	
LOWEST ANNUAL MEAN					1981	
HIGHEST DAILY MEAN	1960	Apr 5	938	Mar 30	4780	May 31 1984
LOWEST DAILY MEAN	30	Aug 4	9.8	Sep 19	.60	Sep 25 1968
ANNUAL SEVEN-DAY MINIMUM	32	Sep 29	12	Sep 14	1.1	Sep 21 1968
INSTANTANEOUS PEAK FLOW			1030	Mar 30	6030	Jun 5 1979
INSTANTANEOUS PEAK STAGE			7.82	Mar 30	14.27	Jun 5 1979
INSTANTANEOUS LOW FLOW			9.5	Sep 19	.60	Sep 25 1968
ANNUAL RUNOFF (CFSM)	1.06		.61		.96	
ANNUAL RUNOFF (INCHES)	14.45		8.34		13.00	
10 PERCENT EXCEEDS	370		170		343	
50 PERCENT EXCEEDS	98		70		90	
90 PERCENT EXCEEDS	37		28		24	

## PAMLICO RIVER BASIN

02082950 LITTLE FISHING CREEK NEAR WHITE OAK, NC

LOCATION.--Lat 36°11'08", long 77°52'34", Halifax County, Hydrologic Unit 03020102, on right bank 8 ft downstream from bridge on Secondary Road 1338, 1.1 mi west of White Oak, 1.8 mi upstream from Powells Creek, 4.3 mi upstream from mouth, and 12 mi west of Enfield.

DISCHARGE AREA.--177 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1959 to current year.

REVISED RECORDS.--WSP 1723: 1960(M). WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 116.44 ft above National Geodetic Vertical Datum of 1929. Feb. 14, 1962 to Apr. 23, 1979, auxiliary nonrecording gage 3.6 mi downstream.

REMARKS.--Records good except those for estimated daily discharge, which are poor. Maximum discharge for period of record, from rating curve extended above 6,900 ft<sup>3</sup>/s on basis of slope-conveyance study of peak flow. Maximum gage height for period of record, from floodmarks.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in July 1959 reached a stage of 19.3 ft, from floodmarks (discharge not determined).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e18	26	73	85	95	74	691	156	29	15	135	24
2	e16	25	55	87	85	90	221	109	35	76	64	21
3	e15	24	45	88	81	181	162	80	53	41	40	19
4	e14	24	43	88	81	435	138	66	56	90	32	18
5	14	23	54	85	80	422	125	59	40	40	76	17
6	14	23	56	77	79	201	120	57	30	27	46	16
7	17	23	48	79	85	145	117	57	24	21	33	15
8	17	23	48	304	108	122	109	55	22	18	30	15
9	15	22	69	442	129	104	101	50	21	16	30	14
10	15	28	70	353	104	96	95	47	19	14	30	14
11	17	55	59	211	91	91	88	46	18	20	30	13
12	24	60	51	926	83	88	79	45	17	97	32	12
13	35	48	46	1050	77	92	75	42	16	39	28	12
14	25	38	43	587	79	262	77	40	16	24	30	12
15	24	33	42	234	83	264	83	39	15	18	70	11
16	22	31	46	171	79	157	153	37	15	15	88	11
17	19	30	52	152	71	122	146	35	20	14	49	11
18	18	30	50	134	70	207	104	33	19	12	34	10
19	18	30	47	114	77	557	85	32	19	12	27	12
20	22	30	48	258	83	304	85	35	20	13	24	21
21	24	30	71	523	82	173	132	55	22	30	33	31
22	21	29	211	292	79	142	149	60	21	21	49	21
23	39	30	178	166	76	150	128	51	43	15	34	17
24	145	31	122	135	70	145	99	e43	72	13	27	15
25	77	33	90	123	69	122	83	e42	42	11	88	15
26	55	33	69	112	71	103	73	e38	27	90	67	65
27	58	32	58	105	87	98	67	e34	21	336	65	71
28	45	32	63	102	81	96	93	e31	18	57	57	39
29	35	39	90	100	---	168	222	e30	16	70	43	26
30	31	70	88	96	---	955	152	47	15	130	34	20
31	28	---	80	98	---	1160	---	36	---	395	27	---
TOTAL	937	985	2165	7377	2335	7326	4052	1587	801	1790	1452	618
MEAN	30.2	32.8	69.8	238	83.4	236	135	51.2	26.7	57.7	46.8	20.6
MAX	145	70	211	1050	129	1160	691	156	72	395	135	71
MIN	14	22	42	77	69	74	67	30	15	11	24	10
CFSM	.17	.19	.39	1.34	.47	1.34	.76	.29	.15	.33	.26	.12
IN.	.20	.21	.46	1.55	.49	1.54	.85	.33	.17	.38	.31	.13

e. Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1991, BY WATER YEAR (WY)

MEAN	106	125	161	249	346	322	239	148	105	90.4	82.7	51.7
MAX	982	860	482	570	742	648	720	550	300	602	330	202
(WY)	1973	1986	1973	1962	1984	1983	1987	1984	1965	1975	1967	1960
MIN	3.78	12.9	30.8	37.6	83.4	83.0	56.8	50.4	15.1	9.58	4.60	2.34
(WY)	1971	1982	1971	1981	1991	1981	1967	1981	1986	1981	1980	1980

SUMMARY STATISTICS

FOR 1990 CALENDAR YEAR

FOR 1991 WATER YEAR

WATER YEARS 1960 - 1991

ANNUAL TOTAL	62293	31425										
ANNUAL MEAN	171	86.1								168		
HIGHEST ANNUAL MEAN										327		1973
LOWEST ANNUAL MEAN										47.2		1981
HIGHEST DAILY MEAN	2020	Apr 3				1160	Mar 31			15000	Oct 7	1972
LOWEST DAILY MEAN	14	Oct 4				10	Sep 18			.78	Sep 4	1980
ANNUAL SEVEN-DAY MINIMUM	15	Oct 3				11	Sep 12			1.1	Sep 26	1968
INSTANTANEOUS PEAK FLOW						1240	Mar 31			18000 *	Oct 7	1972
INSTANTANEOUS PEAK STAGE						9.72	Mar 31			24.80*	Oct 7	1972
INSTANTANEOUS LOW FLOW						9.8	Jul 26			.72	Sep 5	1980
ANNUAL RUNOFF (CFSM)	.96	.49								.95		
ANNUAL RUNOFF (INCHES)	13.09	6.60								12.89		
10 PERCENT EXCEEDS	375	154								358		
50 PERCENT EXCEEDS	86	50								80		
90 PERCENT EXCEEDS	24	16								17		

\* See REMARKS.

## PAMLICO RIVER BASIN

02083000 FISHING CREEK NEAR ENFIELD, NC

LOCATION.--Lat 36°09'03", long 77°41'35", Edgecombe County, Hydrologic Unit 03020102, on right bank 15 ft downstream from bridge on U.S. Highway 301, 2,000 ft downstream from Seaboard Coast Line Railroad bridge, 2 mi southwest of Enfield, 4.8 mi downstream from Rocky Creek, and 40 mi upstream from mouth.

DRAINAGE AREA.--526 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1923 to current year. Figures of daily discharge below 250 ft<sup>3</sup>/s Oct 1, 1923, to July 3, 1924, below 350 ft<sup>3</sup>/s May 30, 1925, to May 31, 1926, below 150 ft<sup>3</sup>/s June 1 to Nov. 16, 1926, and below 100 ft<sup>3</sup>/s Nov. 17, 1926, to Sept. 30, 1928, published in WSP 622, 642, and 662 are unreliable and should not be used. Gage-height records collected at site 2,000 ft upstream and at different datum July 1, 1910, to Apr. 30, 1914, and at present site and datum since May 1, 1914, are contained in reports of National Weather Service, NOAA, U.S. Department of Commerce.

REVISED RECORDS.--WSP 872: 1935(M). WSP 1333: 1928(M), 1932-33, 1935. WDR NC-81-1: Drainage area. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Datum of gage is 76.26 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 28, 1932, nonrecording gage at same site and datum.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Slight diurnal fluctuation and some regulation at low flow caused by mills above station. The National Weather Service has telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--The flood of Apr. 19, 1910, reached a stage of 20.1 ft, present datum, from floodmarks of Seaboard Coast Line Railroad Co., at site 2,000 ft upstream. Flood of July 24, 1919, reached a stage of 19.6 ft discharge, 20,300 ft<sup>3</sup>/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	69	116	335	343	378	273	2800	462	134	60	575	e115
2	68	111	278	378	347	288	2050	456	119	78	351	e100
3	69	108	212	384	314	480	891	346	122	188	196	e95
4	68	105	190	387	304	791	538	261	145	164	136	e88
5	68	102	194	364	300	1260	462	221	194	196	170	e82
6	66	100	224	329	295	871	427	202	137	133	197	e78
7	66	98	206	333	310	585	407	196	106	102	143	e75
8	72	98	200	663	355	477	385	200	89	e84	119	e70
9	70	98	232	1150	411	407	361	190	80	e72	100	e85
10	66	116	284	1150	406	361	334	171	78	65	192	e100
11	70	139	250	862	342	330	306	163	74	89	172	e82
12	75	216	212	1340	306	312	276	161	69	107	129	e78
13	116	206	192	2240	284	315	253	153	69	209	125	e75
14	143	162	179	2380	279	459	255	147	66	152	102	e70
15	113	140	176	1730	292	749	278	148	65	99	180	e68
16	100	129	182	904	291	631	329	143	63	76	290	e65
17	92	125	201	602	267	472	442	139	61	67	252	e63
18	84	124	210	530	247	463	379	147	63	62	168	e61
19	79	124	200	467	252	982	302	137	73	58	120	e60
20	75	125	191	572	286	1070	284	142	99	56	92	e59
21	85	123	246	1100	297	691	356	189	84	54	79	e100
22	98	123	450	1110	287	519	427	268	89	55	93	e250
23	101	124	624	742	270	489	426	238	124	62	139	e160
24	226	127	476	551	255	491	349	188	144	68	109	e120
25	413	130	356	478	241	433	288	156	176	76	87	e150
26	321	136	282	439	245	374	250	139	137	66	211	e240
27	242	137	242	401	269	334	230	126	103	303	259	e350
28	224	135	251	383	300	317	236	119	81	453	e230	e440
29	181	175	311	377	---	330	390	135	71	271	e200	e300
30	145	246	351	373	---	1590	535	143	62	276	e170	e210
31	128	---	337	379	---	2510	---	154	---	517	e140	---
TOTAL	3793	3998	8274	23441	8430	19654	15246	6040	2977	4318	5526	3889
MEAN	122	133	267	756	301	634	508	195	99.2	139	178	130
MAX	413	246	624	2380	411	2510	2800	462	194	517	575	440
MIN	66	98	176	329	241	273	230	119	61	54	79	59
CFSM	.23	.25	.51	1.44	.57	1.21	.97	.37	.19	.26	.34	.25
IN.	.27	.28	.59	1.66	.60	1.39	1.08	.43	.21	.31	.39	.28

e Estimated

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1927 - 1991, BY WATER YEAR (WY)

	MEAN	262	332	491	707	884	873	712	447	318	310	340	261
MAX	2035	1948	1391	2303	2145	2158	2049	2174	1255	1483	1828	2080	
(WY)	1930	1986	1935	1936	1960	1989	1987	1958	1938	1975	1940	1928	
MIN	14.0	26.0	46.0	60.4	198	248	170	152	70.6	42.8	29.1	14.2	
(WY)	1934	1934	1934	1934	1934	1981	1967	1927	1986	1981	1980	1980	

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1927 - 1991
ANNUAL TOTAL	187842	105586	493
ANNUAL MEAN	515	289	871
HIGHEST ANNUAL MEAN			148
LOWEST ANNUAL MEAN			12100
HIGHEST DAILY MEAN	5090	2800	Apr 1
LOWEST DAILY MEAN	57	54	Jul 21
ANNUAL SEVEN-DAY MINIMUM	65	59	Jul 17
INSTANTANEOUS PEAK FLOW		2870	Apr 1
INSTANTANEOUS PEAK STAGE		12.50	Apr 1
INSTANTANEOUS LOW FLOW		52	Jul 21
ANNUAL RUNOFF (CFSM)	.98	.55	NOT DETERMINED
ANNUAL RUNOFF (INCHES)	13.28	7.47	.94
10 PERCENT EXCEEDS	1030	501	12.73
50 PERCENT EXCEEDS	284	196	1100
90 PERCENT EXCEEDS	84	70	272
			70

02083500 TAR RIVER AT TARBORO, NC  
(National stream-quality accounting network station)

LOCATION.--Lat 35°53'38", long 77°32'00", Edgecombe County, Hydrologic Unit 03020103, near right bank on downstream end of pier of bridge on U.S. Highway 64 in Tarboro, 6.5 mi downstream from Fishing Creek, and 49.2 mi upstream from Pamlico River at Washington.

DRAINAGE AREA.--2,183 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1896 to December 1900, October 1931 to current year. Gage-height records at various datums collected at same site since 1905 are contained in reports of National Weather Service, NOAA, U.S. Department of Commerce.

REVISED RECORDS.--WSP 1273: 1899-1900, 1933. WSP 1503: 1932. WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 10.37 ft above National Geodetic Vertical Datum of 1929. July 1896 to December 1900, nonrecording gage at Seaboard Coast Line Railroad bridge 600 ft downstream at different datum; Oct. 1 to Dec. 8, 1931, nonrecording gage at site 100 ft upstream at present datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Some diurnal fluctuation at low flow caused by mills above station. Town of Tarboro diverted 3.8 ft<sup>3</sup>/s for municipal water supply. Minimum discharge for period of record, also occurred on Oct. 22, 1933, and Oct. 6, 1968. Minimum discharge for current water year also occurred on Oct. 6 and 7. National Weather Service gage height telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 27, 1919 reached a stage of 34.0 ft, present datum, from floodmarks, discharge, 52,800 ft<sup>3</sup>/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	217	e550	1020	1330	1950	1100	5030	1430	494	e450	3880	538
2	217	e430	1130	1560	1880	1720	5730	1760	466	e420	3370	523
3	225	e400	1090	2370	1760	1490	6690	2200	422	e390	2710	453
4	222	e385	936	2380	1610	1600	7390	1860	370	e470	2010	371
5	215	e365	814	2140	1500	3150	5920	1430	386	e590	1440	345
6	214	e340	725	1940	1430	4450	3730	1150	426	e550	1120	335
7	262	e320	787	1790	1390	4980	2440	1020	464	e560	907	333
8	270	e305	990	2430	1390	4140	2040	863	398	e570	822	353
9	239	e290	1030	3590	1460	3190	1780	757	362	e420	725	331
10	235	e280	997	4540	1610	2550	1590	693	348	e360	635	325
11	246	e660	984	5380	1620	2110	1450	648	339	e303	616	319
12	263	e720	973	5760	1500	1800	1300	596	334	327	690	317
13	242	e800	910	5680	1380	1600	1180	560	329	407	701	315
14	222	e900	797	6070	1320	1630	1070	544	326	396	802	314
15	240	e800	722	6780	1280	1860	1050	524	323	491	877	313
16	273	e700	592	7510	1200	2310	1100	492	326	483	1490	312
17	275	e600	607	8000	1200	2600	1160	547	400	423	2050	312
18	e290	e530	660	6760	1100	2360	1310	464	324	326	1890	311
19	e310	e460	672	4970	1060	2640	1380	397	322	304	1510	436
20	e295	e420	680	4100	1060	3320	1640	550	325	294	1190	549
21	e272	e391	717	3950	1090	4180	3300	808	494	291	1030	368
22	e255	400	935	4310	1180	3990	3080	1010	496	377	1030	313
23	e240	378	1350	4910	1230	3120	2640	1110	404	449	716	310
24	e420	374	1920	4840	1180	2640	2320	1060	526	395	571	309
25	e610	381	1950	3700	1120	2380	2030	876	535	529	498	379
26	e1750	381	1550	3110	1090	2130	1640	733	e500	731	437	471
27	e2300	386	1270	2640	1060	1860	1330	614	e400	1410	449	423
28	e2500	e400	1120	2310	1060	1650	1130	536	e440	2270	572	372
29	e1400	416	1140	2070	---	1530	1160	513	e520	2530	614	446
30	e1000	589	1180	1940	---	1830	1160	526	e470	3150	591	446
31	e710	---	1260	1920	---	3240	---	509	---	3850	563	---
TOTAL	16429	14351	31508	120780	37710	79150	74770	26780	12269	24516	36506	11242
MEAN	530	478	1016	3896	1347	2553	2492	864	409	791	1178	375
MAX	2500	900	1950	8000	1950	4980	7390	2200	535	3850	549	549
MIN	214	280	592	1330	1060	1100	1050	397	322	291	437	309
CF5M	.24	.22	.47	1.78	.62	1.17	1.14	.40	.19	.36	.54	.17
IN.	.28	.24	.54	2.06	.64	1.35	1.27	.46	.21	.42	.62	.11

e Estimated

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1896 - 1991, BY WATER YEAR (WY)

MEAN	1033	1256	2046	3270	4331	4349	3297	1926	1348	1348	1455	1212
MAX	6591	5049	6195	10020	12920	11050	8553	8411	4873	6291	8260	7577
(WY)	1960	1948	1949	1936	1899	1989	1987	1958	1979	1975	1940	1945
MIN	56.7	115	191	253	497	1116	819	541	243	192	206	63.8
(WY)	1934	1934	1934	1934	1934	1981	1981	1981	1986	1986	1983	1968

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1896 - 1991
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ANNUAL TOTAL	813021			486011					
ANNUAL MEAN	2227			1332				2229	
HIGHEST ANNUAL MEAN								4057	1960
LOWEST ANNUAL MEAN								594	1981
HIGHEST DAILY MEAN	13100	Apr	5	8000	Jan	17	36100	Aug	20 1940
LOWEST DAILY MEAN	214	Oct	6	214	Oct	6	36	Oct	17 1933
ANNUAL SEVEN-DAY MINIMUM	218	Sep	30	225	Oct	1	40	Sep	26 1932
INSTANTANEOUS PEAK FLOW				8090	Jan	17	37200	Aug	20 1940
INSTANTANEOUS PEAK STAGE				16.42	Jan	17	31.77	Aug	20 1940
INSTANTANEOUS LOW FLOW				214*	Oct	5	36*	Oct	17 1933
ANNUAL RUNOFF (CFSM)	1.02			.61				1.02	
ANNUAL RUNOFF (INCHES)	13.85			8.28				13.88	
10 PERCENT EXCEEDS	5360			3150			5580		
50 PERCENT EXCEEDS	1270			800			1220		
90 PERCENT EXCEEDS	269			313			292		

\* See REMARKS.



## PAMLICO RIVER BASIN

02083500 TAR RIVER AT TARBORO, NC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
DEC 13...	24	<0.5	<1.0	--	<1	<3	2	530	<1	6	23
MAR 01...	26	<0.5	<1.0	<1	4	5	4	900	2	7	10
JUN 05...	28	<0.5	<1.0	--	5	<3	5	570	4	11	69
SEP 25...	26	<0.5	<1.0	<1	4	5	4	900	2	7	10

DATE	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDI- MENT, SUS- PENDEDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDEDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
DEC 13...	13	<10	1	<1	<1.0	44	<6	5	2	4.9	93
MAR 01...	--	<10	1	<1	<1.0	45	<6	9	26	79	73
JUN 05...	<0.1	<10	2	<1	<1.0	62	<6	53	10	10	50
SEP 25...	--	<10	1	<1	<1.0	45	<6	9	--	--	--

## PAMLICO RIVER BASIN

02083800 CONETOE CREEK NEAR BETHEL, NC

LOCATION.--Lat 35°46'33", long 77°27'45", Pitt County, Hydrologic Unit 03020103, on right bank 5 ft downstream from bridge on Secondary Road 1409, 5.5 mi downstream from Crisp Creek, and 5.5 mi west of Bethel.

DRAINAGE AREA.--78.1 mi<sup>2</sup>.

PERIOD OF RECORD.--December 1956 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 30 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Record fair. Minimum discharge for period of record also occurred on Aug. 29 and Sept. 3, 1980.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of 1955 reached a stage of 16.7 ft, from information by local resident (discharge not determined).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.3	9.0	13	17	74	24	182	47	12	37	221	29
2	6.0	8.4	11	26	62	29	131	43	11	28	244	25
3	5.9	7.6	11	52	56	52	103	39	22	65	211	24
4	5.7	7.0	11	53	52	163	87	35	15	55	145	22
5	5.9	6.7	11	55	48	131	78	32	10	90	89	20
6	5.7	6.4	10	47	46	94	71	31	8.7	55	67	19
7	5.4	6.0	10	45	49	82	66	31	7.7	39	56	17
8	5.1	5.7	15	76	50	72	60	28	7.1	30	51	16
9	5.0	5.5	27	86	48	65	55	26	6.1	24	45	14
10	4.7	9.6	24	78	45	59	51	25	5.7	21	42	14
11	5.1	12	22	66	41	53	46	23	4.9	120	40	13
12	4.8	11	22	107	38	48	42	21	4.3	119	35	13
13	4.9	9.5	21	119	36	48	40	21	3.8	57	36	12
14	4.7	8.5	17	91	38	72	40	21	3.7	37	37	12
15	4.4	8.2	15	75	37	89	45	24	3.4	27	65	11
16	4.2	8.6	15	68	32	73	54	22	3.0	20	65	11
17	4.1	8.0	14	64	30	63	50	20	58	17	50	11
18	4.2	7.4	13	55	29	76	46	19	27	16	41	11
19	4.5	7.0	14	50	29	161	42	20	76	17	37	11
20	4.2	6.8	13	94	29	117	76	25	114	16	43	43
21	4.0	6.6	15	146	29	90	244	29	301	20	124	47
22	3.6	6.5	21	104	28	77	202	29	153	18	105	32
23	5.7	6.6	20	80	26	68	144	26	90	15	54	25
24	6.1	6.3	19	69	24	62	110	23	68	12	42	23
25	5.4	6.0	18	69	25	55	87	20	52	12	42	28
26	17	5.8	15	66	26	48	72	18	42	13	40	87
27	24	5.5	14	61	26	45	62	16	36	15	125	88
28	14	5.5	15	56	26	43	57	15	30	61	76	55
29	13	9.6	17	54	---	44	55	14	26	87	51	40
30	11	18	17	52	---	310	51	14	23	188	41	33
31	9.4	---	18	77	---	317	---	12	---	230	34	---
TOTAL	214.0	235.3	498	2158	1079	2730	2449	769	1224.4	1561	2354	806
MEAN	6.90	7.84	16.1	69.6	38.5	88.1	81.6	24.8	40.8	50.4	75.9	26.9
MAX	24	18	27	146	74	317	244	47	301	230	244	88
MIN	3.6	5.5	10	17	24	24	40	12	3.0	12	34	11
CFSM	.09	.10	.21	.89	.49	1.13	1.05	.32	.52	.64	.97	.34
IN.	.10	.11	.24	1.03	.51	1.30	1.17	.37	.58	.74	1.12	.38

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 1991, BY WATER YEAR (WY)

	MEAN	52.5	35.6	61.1	115	157	157	99.0	66.6	43.4	39.9	65.3	39.2
MAX	462	181	218	296	327	282	282	251	274	210	452	329	
(WY)	1972	1978	1958	1978	1960	1983	1959	1978	1979	1962	1967	1960	
MIN	2.82	3.14	3.77	9.96	22.5	17.5	13.2	9.91	5.90	6.43	4.10	2.67	
(WY)	1979	1987	1969	1981	1981	1981	1981	1981	1986	1987	1983	1980	

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1957 - 1991
ANNUAL TOTAL	20336.5	16077.7	
ANNUAL MEAN	55.7	44.0	77.8
HIGHEST ANNUAL MEAN			148
LOWEST ANNUAL MEAN			12.0
HIGHEST DAILY MEAN	569	Mar 31	2480
LOWEST DAILY MEAN	3.6	Oct 22	.92
ANNUAL SEVEN-DAY MINIMUM	4.1	Oct 16	1.5
INSTANTANEOUS PEAK FLOW		404	2580
INSTANTANEOUS PEAK STAGE		8.55	15.74
INSTANTANEOUS LOW FLOW		2.8	.40*
ANNUAL RUNOFF (CFSM)	.71	.56	1.00
ANNUAL RUNOFF (INCHES)	9.69	7.66	13.54
10 PERCENT EXCEEDS	134	90	184
50 PERCENT EXCEEDS	26	29	34
90 PERCENT EXCEEDS	5.9	6.0	5.7

\* See REMARKS.

## PAMLICO RIVER BASIN

02084472 PAMLICO RIVER AT WASHINGTON, NC

LOCATION.--Lat 35°32'33", long 77°03'43", Beaufort County, Hydrologic Unit 03020104, at bridge on U.S. Highway 17 at Washington and 0.7 mi downstream from Kennedy Creek.

## TIDAL-ELEVATION RECORDS

PERIOD OF RECORD.--March 1988 to current year.

GAGE.--Water-stage recorder. Datum of gage is 10.0 ft below National Geodetic Vertical Datum of 1929; gage readings have been reduced to elevations NGVD.

REMARKS.--Records good.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 3.91 ft Sept. 22, 1989; minimum elevation, 3.70 ft below NGVD, Jan. 4, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 2.63 ft May 3; minimum elevation, 2.78 ft below NGVD, Feb. 16.

ELEVATION, FEET, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991, MEAN VALUES  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.86	1.15	.56	.76	1.20	.67	1.03	1.01	.64	.45	1.08	1.11
2	.69	1.15	.46	.47	.84	.68	1.02	.61	.83	.63	1.11	1.70
3	1.17	1.08	.86	.68	.55	.97	1.60	.78	1.05	---	.88	1.53
4	.71	1.00	.20	.89	.40	.49	1.24	1.45	.94	1.06	.88	1.20
5	.68	1.12	-.40	.86	.29	.70	.67	1.23	1.64	.80	1.22	1.02
6	.89	.86	.49	.63	.32	.94	.41	.67	1.68	.95	1.40	.97
7	.77	1.38	.50	.63	.41	.37	.27	.70	1.60	.98	1.20	1.55
8	.80	1.00	.56	1.00	.57	.92	.12	1.06	1.24	.84	1.20	1.57
9	.85	1.48	.69	.27	.82	.98	-.03	1.00	.89	.94	1.17	1.59
10	1.21	1.36	.53	1.15	.78	.66	-.21	.71	.80	1.06	.90	1.33
11	1.38	.17	.79	1.42	.35	.10	.65	1.11	.56	1.06	1.47	.93
12	1.32	.67	.64	1.02	.79	.86	.81	.48	.32	1.61	1.48	1.32
13	1.25	.65	.38	1.07	.74	1.11	.77	.17	1.01	1.01	1.07	1.46
14	.99	.88	.73	1.27	.13	.78	.48	.47	1.15	1.03	1.14	1.01
15	.78	.86	.45	1.11	-.46	1.04	.57	.71	.68	1.39	.78	1.22
16	1.28	.66	.20	1.13	-1.19	1.31	.68	1.15	.62	1.53	1.03	1.11
17	1.31	.20	.50	.45	.25	1.28	.72	.85	.76	1.19	1.01	.89
18	1.05	.32	.35	.58	.46	1.11	.91	.87	.92	.77	1.08	.97
19	.34	.89	.28	.83	.38	.52	1.57	1.47	1.00	.56	.79	.80
20	1.10	1.04	.67	.84	.05	1.01	.86	1.51	1.05	.26	.90	.78
21	.96	1.05	.60	.19	.27	1.05	.92	1.41	1.13	.33	.76	1.31
22	.88	1.06	.58	.99	.12	.78	.67	1.03	.89	.41	1.06	1.48
23	.87	.80	.52	1.15	.55	.86	1.34	.98	1.16	.34	1.19	1.08
24	1.03	.58	-.34	.79	.23	.36	.92	.92	1.64	.27	1.11	1.19
25	1.41	.57	.62	1.22	.53	1.24	1.33	.83	1.66	.48	1.29	1.04
26	.53	.59	.58	1.15	.49	1.34	1.28	.88	1.75	.59	1.36	.92
27	1.64	.54	.89	.91	.26	.83	1.03	.57	1.46	.61	1.45	1.25
28	1.16	.52	.29	.88	.51	.28	1.06	.33	1.12	.91	1.30	1.53
29	1.08	.26	.51	.94	---	.85	1.25	.80	.75	.86	1.06	1.24
30	1.29	.35	.40	1.02	---	.75	1.05	.83	.42	1.11	.89	.98
31	1.04	---	.48	.45	---	1.44	---	.39	---	1.13	.69	---
TOTAL	31.32	24.24	14.57	26.75	10.64	26.28	24.99	26.98	31.36	---	33.95	36.08
MEAN	1.01	.81	.47	.86	.38	.85	.83	.87	1.05	---	1.10	1.20
MAX	1.64	1.48	.89	1.42	1.20	1.44	1.60	1.51	1.75	---	1.48	1.70
MIN	.34	.17	-.40	.19	-1.19	.10	-.21	.17	.32	---	.69	.78

02084540 DURHAM CREEK AT EDWARD, NC

LOCATION.--Lat 35°19'25", long 76°52'26", Beaufort County, Hydrologic Unit 03020104, on left bank 5 ft downstream from bridge on Secondary Road 1949, at Edward, and 6.8 mi upstream from mouth.

DRAINAGE AREA.--26 mi<sup>2</sup>.

PERIOD OF RECORD.--Occasional low-flow measurements water years 1950-54, 1956-65. August 1965 to current year. Records of runoff in cubic feet per second per square mile and inches published in WDR NC-78-1 and NC-79-1 are unreliable and should not be used.

REVISED RECORDS.--WDR NC-74-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 0.19 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records poor due to beaver activity throughout the current water year. Runoff affected by ditches and canals above station. Several measurements of water temperature were made during the year. Periods of no flow occur periodically.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.2	16	27	19	74	12	207	64	5.9	17	214	41
2	1.9	18	16	21	60	15	136	82	6.3	14	141	29
3	1.7	19	19	23	48	27	94	77	11	12	119	23
4	1.5	18	21	23	40	94	69	60	11	11	101	18
5	1.4	19	20	23	35	97	52	46	11	11	74	14
6	1.2	20	24	22	31	79	42	35	9.1	9.4	52	12
7	1.1	21	23	24	35	62	35	27	6.5	7.8	46	11
8	.99	22	32	38	48	49	29	22	4.5	6.7	81	8.6
9	.87	23	43	52	44	40	25	17	3.2	5.8	93	6.9
10	.76	52	47	50	37	32	22	15	2.2	4.8	74	5.9
11	.65	61	48	49	32	27	20	13	1.7	4.1	54	5.1
12	.55	43	39	66	28	24	18	12	1.7	4.9	42	4.8
13	.49	34	18	72	25	23	16	11	1.7	4.9	38	4.8
14	.41	29	18	67	24	30	16	9.7	1.5	4.6	34	4.5
15	.35	26	19	57	23	32	16	9.1	1.3	4.5	30	5.2
16	.29	25	19	68	21	28	16	8.9	1.2	4.4	26	4.7
17	.23	26	25	101	18	25	14	7.6	1.1	4.4	23	4.4
18	.19	25	26	89	17	23	13	6.9	1.2	7.7	22	4.4
19	.16	26	33	71	16	23	12	13	2.6	12	24	4.2
20	.13	29	40	100	15	20	144	21	17	13	24	3.9
21	.08	34	47	141	15	18	314	37	40	12	25	3.6
22	.12	28	43	114	15	16	232	42	90	12	24	3.1
23	1.3	16	28	86	15	14	155	40	101	11	26	2.9
24	3.2	13	20	70	14	13	106	33	143	10	66	3.0
25	4.1	11	21	76	14	12	75	26	119	9.7	151	3.1
26	16	8.2	24	76	14	12	54	21	82	12	267	4.6
27	20	9.0	22	67	13	11	41	18	56	18	350	4.6
28	16	11	27	62	12	11	38	16	39	18	253	4.2
29	15	19	26	69	---	12	52	20	29	32	147	3.7
30	14	27	19	71	---	213	60	12	22	82	91	3.1
31	15	---	19	80	---	314	---	7.7	---	240	59	---
TOTAL	121.87	728.2	853	1947	783	1408	2123	829.9	822.7	620.7	2771	251.3
MEAN	3.93	24.3	27.5	62.8	28.0	45.4	70.8	26.8	27.4	20.0	89.4	8.38
MAX	20	61	48	141	74	314	314	82	143	240	350	41
MIN	.08	8.2	16	19	12	11	12	6.9	1.1	4.1	22	2.9

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 1991, BY WATER YEAR (WY)

	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
MEAN	24.8	20.5	36.1	62.2	61.3	60.2	39.5	27.3	22.5	16.8	37.2	21.1															
MAX	378	150	91.0	176	162	146	102	113	132	70.4	116	148															
(WY)	1972	1978	1984	1978	1972	1983	1973	1976	1976	1976	1971	1984															
MIN	0	0	.34	11.1	13.8	10.7	3.90	.33	.001	.034	0	0															
(WY)	1979	1974	1989	1989	1968	1981	1981	1986	1985	1980	1980	1980															

SUMMARY STATISTICS

FOR 1990 CALENDAR YEAR

FOR 1991 WATER YEAR

WATER YEARS 1965 - 1991

ANNUAL TOTAL	7751.84	13259.67	
ANNUAL MEAN	21.2	36.3	35.8
HIGHEST ANNUAL MEAN			78.4
LOWEST ANNUAL MEAN			18.8
HIGHEST DAILY MEAN	311	350	1880
LOWEST DAILY MEAN	0	.08	0
ANNUAL SEVEN-DAY MINIMUM	0	.17	0
INSTANTANEOUS PEAK FLOW		373	2070
INSTANTANEOUS PEAK STAGE		8.79	13.24
INSTANTANEOUS LOW FLOW		NOT DETERMINED	0
10 PERCENT EXCEEDS	36	82	91
50 PERCENT EXCEEDS	16	21	15
90 PERCENT EXCEEDS	1.4	3.1	.21

\* See REMARKS.

## PAMLICO RIVER BASIN

0208455120 SOUTH CREEK NEAR HICKORY POINT, NC

LOCATION.--Lat 35°21'34", long 76°42'39", Beaufort County, Hydrologic Unit 03020104, 0.8 mi east of Gage Point and 1.0 mi west of Hickory Point.

## TIDAL-ELEVATION RECORDS

PERIOD OF RECORD.--March 1988 to September 1991 (discontinued).

GAGE.--Water-stage recorder. Datum of gage is 10 ft above National Geodetic Vertical Datum of 1929, gage readings have been reduced to elevations NGVD.

REMARKS.--Records good.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 2.99 ft Sept. 22, 1989; minimum elevation, 1.07 ft below NGVD, Dec. 3, 1989, Feb. 25, 1990, and Feb. 15, 16, 1991.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 2.18 ft Oct. 25; minimum elevation, 1.07 ft below NGVD, Feb. 15, 16.

ELEVATION, FEET, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991, MEAN VALUES  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.83	1.10	.48	.75	1.12	.52	1.00	.92	.61	.34	---	1.09
2	.69	1.09	.40	.52	.73	.51	1.01	.77	.81	.59	---	1.62
3	.70	1.03	.61	.64	.47	.75	1.39	.86	.99	.78	---	1.39
4	.64	.99	.26	.84	.31	.40	1.02	1.30	1.03	.93	---	1.09
5	.78	1.06	-.05	.86	.21	.69	.50	1.05	1.58	.78	---	.95
6	.66	1.02	.46	.59	.24	.73	.31	.56	1.75	.95	---	.94
7	.64	1.22	.45	.61	.30	.41	.16	.69	1.55	.96	---	1.48
8	.70	1.17	.70	1.17	.63	.86	.01	.92	1.24	.83	---	1.53
9	.84	1.37	.76	.52	.83	.93	-.15	.83	.86	.95	---	1.52
10	1.14	1.02	.55	1.07	.76	.79	-.17	.65	.75	.96	---	1.23
11	1.06	.71	.74	1.19	.51	.43	.54	.92	.53	1.02	---	.91
12	1.20	.66	.55	.98	.83	.86	.70	.43	.31	1.46	---	1.27
13	1.07	.69	.34	1.12	.63	.98	.60	.18	.73	.97	---	1.31
14	.90	.91	.66	1.18	.22	.86	.41	.37	.98	1.02	---	.93
15	1.04	.71	.42	.96	-.03	1.11	.43	.62	.64	1.34	---	1.11
16	1.24	.56	.21	.99	-.37	1.28	.57	.98	.53	1.39	---	.96
17	1.09	.34	.43	.60	.19	1.11	.60	.74	.60	1.10	---	.80
18	.39	.59	.22	.63	.32	.99	.80	.78	.74	.72	---	.85
19	.92	.94	.22	.71	.22	.83	1.46	1.42	.87	.49	---	.71
20	1.03	.99	.61	.80	.00	1.00	1.11	1.46	1.00	.21	---	.91
21	.78	1.04	.52	.41	.17	.93	1.02	1.23	.95	.26	---	1.31
22	.80	.90	.49	1.08	.08	.70	.73	.91	.92	.37	---	1.40
23	.75	.75	.40	1.02	.53	.71	1.16	.82	1.00	.29	---	.98
24	1.07	.65	-.08	.76	.31	.51	.97	.78	1.62	.21	---	1.05
25	1.57	.52	.60	1.17	.50	1.15	1.21	.69	1.61	.35	---	.89
26	.94	.52	.57	1.09	.50	1.12	1.11	.72	1.48	.44	---	.89
27	1.64	.46	.86	.80	.33	.65	.90	.47	1.34	.50	---	1.27
28	1.16	.34	.34	.81	.42	.26	.93	.34	1.14	.82	1.13	1.43
29	1.24	.28	.47	.87	---	.63	1.09	.78	.71	---	.96	1.12
30	1.21	.44	.33	.93	---	.72	.97	.72	.45	---	.83	.88
31	.98	---	.38	.65	---	1.35	---	.40	---	---	.65	---
TOTAL	29.70	24.07	13.90	26.32	10.96	24.77	22.39	24.31	29.32	---	---	33.82
MEAN	.96	.80	.45	.85	.39	.80	.75	.78	.98	---	---	1.13
MAX	1.64	1.37	.86	1.19	1.12	1.35	1.46	1.46	1.75	---	---	1.62
MIN	.39	.28	-.08	.41	-.37	.26	-.17	.18	.31	---	---	.71

0208455145 CAMPBELL CREEK AT CAMPBELL CREEK, NC

LOCATION.--Lat 35°17'13", long 76°41'13", Beaufort County, Hydrologic Unit 03020104, at State Highway 33 and 0.5 mi southeast of Campbell Creek.

## TIDAL-ELEVATION RECORDS

PERIOD OF RECORD.--March 1988 to current year.

GAGE.--Water-stage recorder. Datum of gage is 10 ft above National Geodetic Vertical Datum of 1929, gage readings have been reduced to elevations NGVD.

REMARKS.--Records good.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 2.71 ft Sept. 21, 1989; minimum elevation, 1.94 ft below NGVD, Dec. 24, 1990.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 2.17 ft Nov. 10; minimum elevation, 1.94 ft below NGVD, Dec. 24.

ELEVATION, FEET, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991, MEAN VALUES  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.87	1.13	.50	.76	---	.19	---	---	---	.38	1.10	1.16
2	.71	1.13	.42	.22	---	---	---	---	---	.62	1.09	1.69
3	.95	1.06	.59	.42	---	---	---	---	---	.79	.82	1.42
4	.54	1.01	.29	.90	---	---	---	---	---	.90	.90	1.11
5	.68	1.08	.05	.84	---	---	---	---	---	.78	1.18	.97
6	.76	1.05	.48	.27	---	---	---	---	---	.94	1.29	.97
7	.67	1.27	.50	.47	---	---	---	---	---	.91	1.14	1.51
8	.67	1.25	.82	1.51	.80	---	---	---	---	.78	1.19	1.59
9	.70	1.43	.85	.35	.94	---	---	---	---	.90	1.05	1.56
10	.90	1.12	.59	1.20	.85	---	---	---	---	.88	.98	1.26
11	1.02	.80	.78	1.35	.62	---	---	---	---	.95	1.47	.94
12	1.15	.71	.57	1.02	.95	---	---	---	.33	1.39	1.50	1.31
13	1.17	.77	.34	1.34	.66	---	---	---	.76	.92	1.17	1.32
14	1.02	.95	.85	1.30	.27	---	---	---	1.00	1.00	1.11	.95
15	.87	.73	.07	.89	.14	---	---	---	.64	1.31	.83	1.13
16	1.28	.57	-.47	1.00	-.19	---	---	---	.54	1.36	.97	.97
17	1.15	.41	-.02	.67	.24	---	---	---	.63	1.08	.91	.81
18	.80	.68	-.53	.69	.39	---	---	---	.77	.71	1.09	.85
19	.61	.97	-.42	.74	.27	---	---	---	.89	.48	.79	.72
20	1.08	1.00	.35	.85	.04	---	---	---	1.02	.22	.75	1.08
21	.91	1.06	.11	.53	.25	---	---	---	.95	.28	.76	1.40
22	.74	.91	.04	1.50	.15	---	---	---	.92	.37	1.00	1.47
23	.75	.77	-.17	1.54	.78	---	---	---	1.05	.30	1.07	1.01
24	1.01	.67	-.96	1.51	.08	---	---	---	1.68	.22	1.00	1.07
25	1.46	.52	.38	1.58	.17	---	---	---	1.62	.35	1.28	.88
26	---	.53	.31	1.52	.21	---	---	---	1.47	.44	1.28	.95
27	1.72	.47	.87	1.51	.03	---	---	---	1.35	.54	1.28	1.34
28	1.23	.33	-.11	1.51	.08	---	---	---	1.14	.89	1.14	1.49
29	1.27	.34	.08	1.52	---	---	---	---	.72	.81	.99	1.16
30	1.26	.53	-.26	1.52	---	---	---	---	.47	1.07	.85	.91
31	1.00	---	-.02	1.52	---	---	---	---	---	1.12	.67	---
TOTAL	---	25.25	6.88	32.55	---	---	---	---	---	23.69	32.65	35.00
MEAN	---	.84	.22	1.05	---	---	---	---	---	.76	1.05	1.17
MAX	---	1.43	.87	1.58	---	---	---	---	---	1.39	1.50	1.69
MIN	---	.33	-.96	.22	---	---	---	---	---	.22	.67	.72

## PAMLICO RIVER BASIN

0208455500 PAMLICO RIVER AT PAMLICO BEACH, NC

LOCATION.--Lat 35°23'37", long 76°36'22", Beaufort County, Hydrologic Unit 03020104, 0.7 mi northwest of Adams Point at Pamlico Beach.

## TIDAL-ELEVATION RECORDS

PERIOD OF RECORD.--March 1988 to current year.

GAGE.--Water-stage recorder. Datum of gage is 10 ft above National Geodetic Vertical Datum of 1929, gage readings have been reduced to elevations NGVD.

REMARKS.-- Records good.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 2.76 ft Sept. 22, 1989; minimum elevation, 1.20 ft below NGVD, Feb. 25, 1990.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 2.21 ft Oct. 26; minimum elevation, 1.06 ft below NGVD, Feb. 16.

ELEVATION, FEET, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991, MEAN VALUES  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.86	1.12	.50	.74	1.11	.53	---	1.01	.70	.42	1.08	1.07
2	.73	1.11	.42	.55	.75	.58	---	.87	.89	.66	1.07	1.58
3	.96	1.05	.63	.66	.50	.73	---	.85	1.07	.82	.88	1.40
4	.63	1.01	.37	.85	.34	.61	---	1.35	1.08	.99	.95	1.14
5	.69	1.08	.07	.85	.24	.71	---	1.14	1.58	.85	1.20	1.02
6	.77	1.06	.51	.61	.26	.83	.35	.71	1.73	1.01	1.29	1.02
7	.70	1.24	.47	.63	.33	---	.34	.72	1.55	1.02	1.11	1.49
8	.70	1.14	.71	1.07	.59	---	.17	.97	1.28	.90	1.18	1.55
9	.73	1.34	.79	.65	.85	---	.04	.86	.92	1.01	1.08	1.54
10	.97	1.11	.61	1.06	.78	---	-.09	.70	.82	1.01	.96	1.28
11	1.09	.81	.75	1.20	.56	---	.42	.96	.63	1.07	1.40	.98
12	1.17	.73	.57	1.03	.82	---	.68	.56	.43	1.47	1.41	1.31
13	1.20	.72	.38	1.16	.72	---	.72	.30	.78	1.05	1.12	1.34
14	1.05	.91	.63	1.16	.42	---	.44	.48	1.00	1.08	1.10	1.00
15	.89	.74	.45	.99	.18	---	.59	.67	.71	1.35	.86	1.14
16	1.26	.60	.26	1.01	-.30	---	.57	1.01	.61	1.38	1.01	1.01
17	1.16	.37	.44	.71	.29	---	.67	.82	.68	1.13	.96	.86
18	.90	.61	.30	.70	.33	---	.73	.78	.79	.78	1.02	.91
19	.58	.97	.27	.75	.27	---	1.36	1.38	.91	.56	.88	.78
20	1.03	1.01	.60	.83	.08	---	1.21	1.45	1.03	.30	.85	.89
21	.88	1.06	.54	.50	.18	---	1.11	1.27	.97	.35	.80	1.31
22	.77	.92	.50	1.08	.12	---	.91	.98	.95	.44	1.04	1.40
23	.82	.80	.44	1.06	.39	---	1.13	.88	1.00	.38	1.10	1.03
24	1.03	.72	.06	.80	.31	---	1.10	.84	1.57	.30	1.03	1.09
25	1.39	.57	.60	1.15	.50	---	1.19	.75	1.58	.43	1.22	.97
26	1.05	.55	.58	1.10	.54	---	1.20	.78	1.44	.51	1.26	.96
27	1.66	.49	.83	.83	.39	---	1.00	.58	1.31	.55	1.28	1.28
28	1.22	.40	.39	.83	.47	---	.97	.46	1.13	.86	1.16	1.44
29	1.22	.30	.48	.90	---	---	1.13	.85	.74	.82	1.02	1.15
30	1.23	.46	.38	.95	---	---	1.09	.81	.52	1.03	.89	.92
31	1.01	---	.44	.71	---	---	---	.53	---	1.09	.73	---
TOTAL	30.35	25.00	14.97	27.12	12.02	---	---	26.32	30.40	25.62	32.94	34.86
MEAN	.98	.83	.48	.87	.43	---	---	.85	1.01	.83	1.06	1.16
MAX	1.66	1.34	.83	1.20	1.11	---	---	1.45	1.73	1.47	1.41	1.58
MIN	.58	.30	.06	.50	-.30	---	---	.30	.43	.30	.73	.78

## PAMLICO RIVER BASIN

0208455600 GOOSE CREEK NEAR LOWLAND, NC

LOCATION.--Lat 35°19'34", long 76°36'35", Pamlico County, Hydrologic Unit 03020104, at end of Secondary Road 1233 and 3.0 mi northwest of Lowland.

## TIDAL-ELEVATION RECORDS

PERIOD OF RECORD.--March 1988 to September 1991 (discontinued).

GAGE.--Water-stage recorder. Datum of gage is 10 ft above National Geodetic Vertical Datum of 1929, gage readings have been reduced to elevations NGVD.

REMARKS.--Records good.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 3.11 ft Apr. 13, 1988; minimum elevation, 1.08 ft below NGVD, Feb. 25, 1990.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 2.37 ft Oct. 26; minimum elevation, 0.83 ft below NGVD, Feb. 16.

ELEVATION, FEET, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991, MEAN VALUES  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.92	1.19	.56	.85	1.20	.60	1.13	1.01	.71	.47	1.12	1.18
2	.78	1.18	.49	.63	.81	.59	1.10	.92	.91	.70	1.10	1.69
3	1.01	1.12	.66	.74	.55	.82	1.45	.97	1.08	.88	.91	1.46
4	.63	1.08	.42	.96	.40	.53	1.08	1.36	1.14	1.02	.99	1.18
5	.73	1.14	.16	.95	.30	.79	.58	1.11	1.66	.89	1.25	1.05
6	.82	1.14	.56	.69	.33	.81	.40	.65	1.83	1.07	1.33	1.06
7	.74	1.31	.54	.74	.39	.54	.26	.77	1.64	1.07	1.15	1.56
8	.73	1.28	.84	1.25	.74	.95	.12	.98	1.32	.95	1.22	1.63
9	.76	1.43	.89	.75	.94	1.01	-.04	.88	.94	1.07	1.09	1.60
10	.97	1.17	.67	1.15	.85	.92	-.05	.73	.85	1.06	1.00	1.32
11	1.09	.90	.82	1.25	.65	.63	.62	.97	.63	1.12	1.45	1.02
12	1.20	.79	.63	1.10	.94	.96	.76	.53	.43	1.53	1.46	1.36
13	1.24	.82	.44	1.25	.72	1.05	.64	.31	.82	1.09	1.16	1.38
14	1.10	1.01	.75	1.23	.40	.98	.50	.46	1.03	1.13	1.12	1.03
15	.95	.80	.52	1.04	.22	1.24	.53	.70	.73	1.43	.89	1.19
16	1.33	.66	.32	1.07	-.10	1.37	.65	1.04	.63	1.45	1.06	1.04
17	1.21	.48	.51	.77	.29	1.18	.68	.82	.71	1.19	1.00	.89
18	.89	.74	.30	.77	.39	1.07	.88	.86	.83	.83	1.11	.93
19	.67	1.05	.33	.81	.30	1.02	1.51	1.49	.95	.60	.90	.80
20	1.11	1.08	.69	.90	.10	1.11	1.25	1.53	1.09	.33	.86	1.04
21	.95	1.13	.60	.59	.26	1.02	1.17	1.29	1.03	.38	.85	1.40
22	.81	.98	.57	1.19	.17	.80	.89	.98	1.01	.48	1.08	1.48
23	.84	.85	.48	1.10	.61	.80	1.23	.89	1.10	.42	1.14	1.07
24	1.08	.78	.11	.86	.43	.67	1.09	.85	1.70	.33	1.07	1.12
25	1.51	.62	.69	1.25	.59	1.22	1.29	.77	1.67	.44	1.30	.97
26	1.28	.61	.68	1.18	.62	1.17	1.18	.79	1.52	.52	1.31	1.00
27	1.75	.55	.94	.88	.48	.76	.99	.57	1.39	.59	1.32	1.37
28	1.29	.43	.46	.90	.51	.38	1.00	.45	1.20	.92	1.20	1.51
29	1.32	.39	.55	.97	---	.72	1.17	.87	.80	---	1.06	1.20
30	1.30	.57	.41	1.01	---	.84	1.05	.82	.56	---	.93	.96
31	1.08	---	.50	.81	---	1.45	---	.52	---	---	.77	---
TOTAL	32.09	27.28	17.09	29.64	14.09	28.00	25.11	26.89	31.91	---	34.20	36.49
MEAN	1.04	.91	.55	.96	.50	.90	.84	.87	1.06	---	1.10	1.22
MAX	1.75	1.43	.94	1.25	1.20	1.45	1.51	1.53	1.83	---	1.46	1.69
MIN	.63	.39	.11	.59	-.10	.38	-.05	.31	.43	---	.77	.80

## PAMLICO RIVER BASIN

02084557 VAN SWAMP NEAR HOKE, NC

LOCATION.--Lat 35°43'49", long 76°44'49", Washington County, Hydrologic Unit 03020104, on left bank at upstream side of culvert on State Highway 32, 4.8 mi east of Hoke.

DRAINAGE AREA.--23 mi<sup>2</sup>.

PERIOD OF RECORD.--May 1977 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 20 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records fair except those for period October 13-23, which are poor. Several measurements of water temperature were made during the year. No flow occurs periodically. Minimum discharge for current water year also occurred on Oct. 14-23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.04	.18	3.5	1.3	37	11	179	56	.63	3.3	47	15
2	.04	.07	2.5	3.4	34	12	170	45	.41	2.7	39	13
3	.04	.04	2.4	6.2	30	20	159	36	.40	2.3	32	11
4	.04	.04	2.5	6.4	28	55	146	30	.39	1.7	31	9.6
5	.04	.03	2.6	6.3	25	55	132	26	.23	1.3	25	8.1
6	.04	.03	2.7	5.7	23	48	119	22	.19	1.2	19	6.7
7	.05	.03	2.7	5.3	23	43	104	19	.15	.91	17	11
8	.11	.03	4.0	11	35	38	88	16	.12	.44	20	12
9	.05	.03	5.4	16	41	35	74	15	.07	.24	17	9.7
10	.04	8.0	4.7	17	38	32	63	14	.07	.26	14	7.8
11	.03	11	4.0	16	35	29	52	12	.07	2.1	12	6.2
12	.02	7.7	3.6	25	31	26	44	10	.07	2.9	9.9	4.8
13	.01	5.4	3.3	31	28	25	38	9.0	.07	5.6	9.3	3.9
14	.01	3.9	3.1	29	27	31	34	7.6	.12	8.5	8.0	3.3
15	.01	3.2	2.8	25	25	37	31	6.6	.13	5.8	7.3	3.0
16	.01	2.9	2.5	23	22	34	28	5.4	.12	3.9	6.8	2.7
17	.01	2.7	2.3	22	20	31	25	4.7	.07	2.8	5.5	2.3
18	.01	2.3	2.3	20	19	31	22	3.9	.10	2.2	5.2	2.1
19	.01	2.0	2.3	18	17	41	19	3.4	.18	1.6	7.2	2.0
20	.01	1.9	2.2	40	16	43	33	3.4	1.2	1.2	40	1.8
21	.01	1.6	2.2	59	15	43	77	3.4	8.2	.77	57	1.7
22	.01	1.5	2.2	50	15	35	76	3.1	6.7	.79	47	1.5
23	.16	1.4	2.2	43	14	30	67	2.8	15	1.9	36	1.2
24	.21	1.3	2.0	37	13	26	57	2.5	16	1.4	41	1.2
25	.09	1.1	1.7	36	13	24	46	2.2	11	.84	44	1.2
26	2.0	1.0	1.5	34	12	21	38	1.9	8.6	.98	38	2.2
27	3.2	.88	1.4	32	12	19	32	1.6	7.7	16	42	3.3
28	2.4	1.7	1.5	30	11	18	41	1.4	5.9	55	36	3.1
29	1.3	2.9	1.5	28	---	21	69	1.4	5.1	69	30	2.3
30	.53	3.3	1.7	27	---	171	65	1.1	4.4	59	24	1.6
31	.30	---	1.6	36	---	185	---	.91	---	51	19	---
TOTAL	10.83	68.16	80.9	739.6	659	1270	2128	367.31	93.39	307.63	786.2	155.3
MEAN	.35	2.27	2.61	23.9	23.5	41.0	70.9	11.8	3.11	9.92	25.4	5.18
MAX	3.2	11	5.4	59	41	185	179	56	16	69	57	15
MIN	.01	.03	1.4	1.3	11	11	19	.91	.07	.24	5.2	1.2
CFSM	.02	.10	.11	1.04	1.02	1.78	3.08	.52	.14	.43	1.10	.23
IN.	.02	.11	.13	1.20	1.07	2.05	3.44	.59	.15	.50	1.27	.25

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1977 - 1991, BY WATER YEAR (WY)

	8.02	18.3	17.4	44.7	45.1	60.9	49.5	33.2	9.11	7.16	13.2	11.1
MEAN	8.02	18.3	17.4	44.7	45.1	60.9	49.5	33.2	9.11	7.16	13.2	11.1
MAX	44.0	121	56.6	124	110	142	101	122	23.5	55.2	64.8	38.4
(WY)	1990	1978	1990	1978	1983	1983	1983	1978	1977	1989	1986	1984
MIN	.018	.052	.033	.72	10.2	14.2	4.68	.58	.29	.27	.090	.035
(WY)	1979	1979	1989	1989	1989	1981	1985	1985	1985	1982	1983	1980

SUMMARY STATISTICS

FOR 1990 CALENDAR YEAR

FOR 1991 WATER YEAR

WATER YEARS 1977 - 1991

ANNUAL TOTAL	7387.43	6666.32	
ANNUAL MEAN	20.2	18.3	26.2
HIGHEST ANNUAL MEAN			51.7
LOWEST ANNUAL MEAN			7.76
HIGHEST DAILY MEAN	134	185	385
LOWEST DAILY MEAN	.01	.01	0
ANNUAL SEVEN-DAY MINIMUM	.01	.01	0
INSTANTANEOUS PEAK FLOW		186	409
INSTANTANEOUS PEAK STAGE		5.04	5.66
INSTANTANEOUS LOW FLOW		.01	0*
ANNUAL RUNOFF (CFSM)	.88	.79	1.14
ANNUAL RUNOFF (INCHES)	11.95	10.78	15.49
10 PERCENT EXCEEDS	53	43	77
50 PERCENT EXCEEDS	8.5	6.6	7.8
90 PERCENT EXCEEDS	.07	.10	.14

\* See REMARKS.

## NEUSE RIVER BASIN

02084909 SEVENMILE CREEK NEAR EFLAND, NC

LOCATION.--Lat 36°03'56", long 79°08'39", Orange County, Hydrologic Unit 03020201, at culvert on I-85, 1 mile upstream of mouth, and 1.5 miles southeast of Efland.

DRAINAGE AREA.--14.1 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1981 to July 1982. June 1987 to current year.

GAGE.--Water-stage recorder. Datum of gage is 560 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records fair except those for estimated daily discharge and those below 1 ft<sup>3</sup>/s, which are poor. Maximum discharge from rating curve extended above 350 ft<sup>3</sup>/s. Minimum discharge for current water year and period of record, occurs frequently most years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.01	2.3	7.8	35	e12	6.0	24	27	17	5.2	3.6	.39
2	.01	2.3	5.5	18	e9.9	49	16	14	23	5.3	4.0	.31
3	.01	2.6	20	13	e10	133	13	9.1	15	7.3	4.0	.20
4	.16	2.7	133	13	e10	88	11	7.3	7.3	6.2	4.5	.16
5	.27	2.8	24	10	e9.7	39	10	7.3	5.1	6.4	5.4	.12
6	.32	3.3	11	8.8	e9.5	24	10	12	4.3	6.3	6.4	.07
7	.28	3.7	7.2	e8.9	e11	21	9.2	8.0	3.7	4.2	5.1	.04
8	.29	4.5	15	e138	e12	19	8.4	6.0	3.4	1.7	5.4	.01
9	.32	5.3	12	e170	e11	17	8.1	5.1	3.1	1.1	6.4	0
10	.42	48	7.7	e50	e9.7	13	7.6	4.9	2.8	.95	13	.02
11	7.1	14	6.7	e290	e9.5	11	6.7	4.6	2.4	3.6	7.2	.02
12	3.2	6.3	6.7	e385	e8.2	9.6	6.3	5.0	2.2	3.7	5.7	.01
13	1.9	4.1	5.3	e125	e7.9	20	6.6	4.0	2.1	3.9	5.1	0
14	1.1	3.4	4.4	e70	e9.4	37	8.9	3.8	1.9	3.5	6.4	.02
15	1.4	2.9	3.8	e50	e9.1	21	9.6	3.6	1.7	1.9	15	0
16	1.2	3.1	3.7	e68	e9.0	14	11	3.2	15	.72	7.0	0
17	1.2	2.9	3.2	e45	e8.0	12	7.5	2.9	18	.28	3.9	0
18	2.5	3.9	3.2	e29	e9.8	59	6.4	4.4	3.6	1.2	2.4	0
19	5.3	4.1	4.3	e20	e9.0	38	7.5	51	10	4.6	.81	8.8
20	6.3	4.0	4.2	e52	e10	20	48	131	10	2.3	.60	13
21	6.3	4.1	38	e30	e8.9	15	49	75	11	.53	.52	2.4
22	8.9	4.2	22	e28	e8.3	12	33	23	4.6	.09	.45	1.2
23	383	4.7	13	e22	e8.3	11	16	12	3.4	.46	.89	.77
24	22	5.6	9.4	e18	e8.1	10	11	8.1	2.8	.11	.85	119
25	8.1	6.6	6.3	e17	e8.0	8.6	8.3	6.3	2.0	.07	.77	291
26	28	7.0	5.1	e16	e7.9	8.2	7.3	5.3	1.4	.62	.63	56
27	9.7	7.3	5.2	e15	7.4	8.0	6.9	5.1	1.6	6.2	.76	11
28	5.3	11	11	e15	6.5	8.0	6.4	63	2.0	5.5	.73	5.1
29	3.8	40	13	e14	---	156	6.2	41	2.1	4.5	.62	3.6
30	3.0	15	9.9	e14	---	147	110	11	2.9	4.0	.47	2.9
31	2.5	---	124	e15	---	40	---	6.8	---	4.9	.52	---
TOTAL	513.89	231.7	545.6	1802.7	258.1	1074.4	489.9	570.8	185.4	97.33	119.12	516.14
MEAN	16.6	7.72	17.6	58.2	9.22	34.7	16.3	18.4	6.18	3.14	3.84	17.2
MAX	383	48	133	385	12	156	110	131	23	7.3	15	291
MIN	.01	2.3	3.2	8.8	6.5	6.0	6.2	2.9	1.4	.07	.45	0
CFSM	1.18	.55	1.25	4.12	.65	2.46	1.16	1.31	.44	.22	.27	1.22
IN.	1.36	.61	1.44	4.76	.68	2.83	1.29	1.51	.49	.26	.31	1.36

e Estimated

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 1991, BY WATER YEAR (WY)

	MEAN	8.96	9.04	11.5	26.4	24.8	28.0	17.9	18.3	5.61	4.94	4.78	6.38
MAX	16.6	13.9	17.6	58.2	46.5	55.6	23.6	36.3	10.6	14.4	8.27	17.2	
(WY)	1991	1989	1991	1991	1989	1989	1990	1989	1989	1989	1989	1991	
MIN	.45	4.22	2.94	7.63	9.22	4.39	8.37	4.19	1.20	.21	.93	.027	
(WY)	1988	1988	1989	1989	1991	1988	1988	1988	1988	1988	1990	1990	

## SUMMARY STATISTICS

## FOR 1990 CALENDAR YEAR

## FOR 1991 WATER YEAR

## WATER YEARS 1988 - 1991

ANNUAL TOTAL	4814.83	6405.08	
ANNUAL MEAN	13.2	17.5	13.8
HIGHEST ANNUAL MEAN			19.1
LOWEST ANNUAL MEAN			5.92
HIGHEST DAILY MEAN	383	Oct 23	635
LOWEST DAILY MEAN	0	Sep 8	0
ANNUAL SEVEN-DAY MINIMUM	0	Sep 8	0
INSTANTANEOUS PEAK FLOW			1020
INSTANTANEOUS PEAK STAGE			7.41
INSTANTANEOUS LOW FLOW			0*
ANNUAL RUNOFF (CFSM)	.94	1.24	.98
ANNUAL RUNOFF (INCHES)	12.70	16.90	13.33
10 PERCENT EXCEEDS	25	38	24
50 PERCENT EXCEEDS	6.6	6.7	5.6
90 PERCENT EXCEEDS	.19	.52	.24

\* See REMARKS.

## NEUSE RIVER BASIN

02085000 ENO RIVER AT HILLSBOROUGH, NC

LOCATION.--Lat 36°04'18", long 79°05'49", Orange County, Hydrologic Unit 03020201, on left bank 900 ft downstream from bridge on State Highway 86, at Hillsborough, and 2 mi downstream from Sevenmile Creek.

DRAINAGE AREA.--66.0 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1927 to September 1971, October 1985 to current year.

GAGE.--Water-stage recorder. Datum of gage is 487.44 ft above National Geodetic Vertical Datum of 1929. Gage-height telephone telemeter at station.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Diversions above station of 1.1 ft<sup>3</sup>/s by Orange-Alamance Water System, Inc. and 2.1 ft<sup>3</sup>/s for municipal supply for town of Hillsborough, part of which is returned below station as treated effluent.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.4	15	31	66	43	34	107	44	21	5.0	6.9	4.3
2	2.1	13	48	57	40	140	83	37	15	4.5	6.2	4.0
3	2.1	12	424	55	39	392	67	34	13	7.1	5.4	3.3
4	4.5	12	134	45	38	391	60	58	12	9.3	6.0	2.9
5	9.3	9.9	71	e80	36	142	56	48	11	7.8	5.6	2.9
6	9.0	9.2	48	e250	37	95	55	34	11	7.9	6.0	3.3
7	9.0	9.4	72	590	49	82	51	e30	8.8	6.7	4.8	3.2
8	9.0	8.2	72	585	51	74	46	e28	8.7	5.0	3.9	3.0
9	6.4	8.7	49	218	42	67	44	e26	9.3	5.5	8.9	3.0
10	3.0	124	38	150	38	57	43	26	8.6	8.1	13	2.9
11	35	79	34	e700	35	49	34	24	7.9	45	8.5	2.7
12	17	39	32	e1100	32	46	42	24	7.2	21	4.3	2.2
13	95	26	28	e340	32	72	52	22	76	14	3.4	1.9
14	54	20	26	e160	47	116	71	20	28	13	9.8	1.8
15	18	17	26	e100	45	82	50	19	23	11	35	1.5
16	12	16	23	159	34	62	39	19	35	7.9	16	1.2
17	8.8	16	23	142	29	56	35	19	30	4.5	7.9	1.0
18	11	14	25	96	55	178	170	17	16	6.8	5.5	.75
19	10	12	26	78	76	142	156	63	23	6.4	4.5	21
20	8.0	12	116	269	60	86	164	192	18	5.0	4.3	33
21	7.9	11	94	173	52	68	88	168	16	4.8	4.1	8.2
22	16	12	67	108	45	60	65	81	16	5.5	4.5	3.0
23	1340	13	49	82	41	70	48	48	14	4.0	5.6	2.0
24	237	13	36	72	37	60	39	34	12	4.1	5.3	100
25	103	12	31	64	35	48	38	27	8.6	4.2	4.3	632
26	121	10	34	56	45	42	36	26	7.3	49	2.7	220
27	66	9.5	52	53	47	40	34	29	7.0	14	3.2	45
28	40	43	61	50	38	41	260	24	5.4	11	4.7	23
29	27	121	63	47	---	357	106	50	5.4	8.2	4.3	12
30	21	46	211	46	---	732	64	58	5.7	8.2	4.2	11
31	18	---	95	51	---	172	---	31	---	7.4	4.5	---
TOTAL	2322.5	762.9	2139	6042	1198	4053	2203	1360	479.9	321.9	213.3	1156.05
MEAN	74.9	25.4	69.0	195	42.8	131	73.4	43.9	16.0	10.4	6.88	38.5
MAX	1340	124	424	1100	76	732	260	192	76	49	35	632
MIN	2.1	8.2	.23	45	29	34	34	17	5.4	4.0	2.7	.75
CFSM	1.14	.39	1.05	2.95	.65	1.98	1.11	.66	.24	.16	.10	.58
IN.	1.31	.43	1.21	3.41	.68	2.28	1.24	.77	.27	.18	.12	.65

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 1991, BY WATER YEAR (WY)

	MEAN	28.3	45.5	57.7	86.3	113	111	91.8	54.2	36.1	40.6	36.2	33.8
MAX	181	213	166	326	273	270	264	165	155	359	256	342	
(WY)	1930	1986	1946	1936	1960	1929	1936	1931	1938	1938	1939	1945	
MIN	.63	.82	3.64	5.16	21.5	29.9	18.8	9.67	1.75	1.28	.85	.28	
(WY)	1987	1942	1942	1942	1931	1988	1942	1986	1986	1986	1987	1954	

SUMMARY STATISTICS

FOR 1990 CALENDAR YEAR

FOR 1991 WATER YEAR

WATER YEARS 1928 - 1991

ANNUAL TOTAL	23425.36	22251.55	
ANNUAL MEAN	64.2	61.0	60.9
HIGHEST ANNUAL MEAN			108
LOWEST ANNUAL MEAN			26.3
HIGHEST DAILY MEAN	1340	Oct 23	4570
LOWEST DAILY MEAN	.86	Aug 15	.02
ANNUAL SEVEN-DAY MINIMUM	1.9	Sep 2	1.5
INSTANTANEOUS PEAK FLOW			2730
INSTANTANEOUS PEAK STAGE			13.66
INSTANTANEOUS LOW FLOW			.56
ANNUAL RUNOFF (CFSM)	.97		.92
ANNUAL RUNOFF (INCHES)	13.20		12.54
10 PERCENT EXCEEDS	146		116
50 PERCENT EXCEEDS	35		27
90 PERCENT EXCEEDS	2.5		4.6

02085000 ENO RIVER AT HILLSBOROUGH, NC, NC--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1989, October 1989 to current year.

REMARKS.--Station operated to define water quality as part of a six-county regional surface water-quality assessment. QW data not previously published.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (MG/L)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM PERCENT	
OCT 25...	1115	92	85	7.0	17.0	65	740	8.7	5.8	2.4	4.6	27	
NOV 19...	1100	14	93	6.8	7.0	45	749	10.8	7.3	2.9	5.8	28	
DEC 19...	1050	23	102	7.4	10.5	50	749	10.9	6.3	2.6	11	46	
JAN 15...	1045	95	63	6.9	5.5	75	753	11.8	4.8	2.0	3.8	27	
FEB 26...	1040	45	72	7.0	8.0	45	746	11.6	6.0	2.4	5.2	30	
MAR 27...	1045	40	75	6.8	15.5	55	746	10.2	6.1	2.5	5.0	29	
APR 16...	1015	42	73	6.8	15.0	50	750	8.6	6.2	2.6	5.2	29	
MAY 29...	1215	103	70	7.1	23.0	--	748	7.3	--	--	--	--	
JUN 19...	1330	23	80	7.3	24.0	25	753	6.4	6.6	2.8	4.7	25	
JUL 29...	0945	9.3	91	6.8	23.0	55	753	5.2	7.6	3.0	5.1	25	
AUG 22...	1050	4.3	107	6.6	21.0	30	753	6.1	9.2	3.4	6.0	25	
SEP 19...	1015	0.56	115	6.9	22.5	30	753	3.9	9.8	3.6	6.5	25	
DATE		SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS NH4)
OCT 25...	0.4	2.2	5.5	4.7	<0.10	9.6	59	0.190	0.010	0.200	0.130	0.17	
NOV 19...	0.5	2.3	7.8	5.5	<0.10	12	60	--	<0.010	0.300	0.070	0.09	
DEC 19...	0.9	1.7	6.0	5.2	<0.10	13	73	--	<0.010	0.300	0.040	0.05	
JAN 15...	0.4	1.5	6.7	4.2	<0.10	11	37	0.390	0.010	0.400	0.040	0.05	
FEB 26...	0.5	1.0	5.4	5.2	<0.10	13	115	--	<0.010	0.300	0.020	0.03	
MAR 27...	0.4	1.2	4.6	4.4	<0.10	12	51	--	<0.010	0.230	<0.010	--	
APR 16...	0.4	1.0	3.2	4.4	<0.10	13	58	--	<0.010	0.270	0.050	0.06	
MAY 29...	--	--	--	--	--	--	--	0.410	0.040	0.450	0.120	0.15	
JUN 19...	0.4	2.1	3.7	5.0	0.10	13	61	0.540	0.040	0.580	0.110	0.14	
JUL 29...	0.4	1.8	4.0	3.6	0.20	11	64	0.250	0.010	0.260	0.060	0.08	
AUG 22...	0.4	2.0	7.1	6.3	0.10	14	82	--	<0.010	0.240	0.040	0.05	
SEP 19...	0.5	1.9	3.6	4.7	0.10	11	78	--	<0.010	0.098	0.050	0.06	

02085000 ENO RIVER AT HILLSBOROUGH, NC, NC--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS NO3)	NITRO- GEN DIS- SOLVED (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHATE, TOTAL (MG/L AS PO4)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO TOTAL (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)
OCT 25...	0.57	0.38	0.70	0.50	0.90	4.0	0.70	0.040	0.03	0.020	0.010	0.010
NOV 19...	0.33	0.45	0.40	0.50	0.70	3.1	0.80	0.030	--	0.010	<0.010	<0.010
DEC 19...	0.46	0.24	0.50	0.30	0.80	3.5	0.60	0.040	0.06	0.020	0.020	0.010
JAN 15...	0.16	0.35	0.20	0.40	0.60	2.7	0.80	0.030	0.06	0.010	0.020	0.030
FEB 26...	0.28	0.28	0.30	0.30	0.60	2.7	0.60	0.030	--	0.010	<0.010	0.020
MAR 27...	--	--	0.30	0.30	0.53	2.3	0.55	0.030	--	<0.010	<0.010	<0.010
APR 16...	0.45	0.26	0.50	0.30	0.77	3.4	0.57	0.020	--	0.020	<0.010	<0.010
MAY 29...	1.1	0.41	1.2	0.50	1.7	7.3	0.95	0.130	0.18	0.010	0.060	<0.010
JUN 19...	0.59	0.41	0.70	0.50	1.3	5.7	1.1	0.110	0.15	0.010	0.050	<0.010
JUL 29...	0.44	0.24	0.50	0.30	0.76	3.4	0.56	0.040	--	0.030	<0.010	<0.010
AUG 22...	0.26	0.27	0.30	0.30	0.54	2.4	0.54	0.030	--	0.010	<0.010	<0.010
SEP 19...	0.35	0.36	0.40	0.40	0.50	2.2	0.50	0.030	0.03	0.010	0.010	<0.010

[illegible]

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

[illegible]

## NEUSE RIVER BASIN

02085000 ENO RIVER AT HILLSBOROUGH, NC, NC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

[illegible][illegible]



## NEUSE RIVER BASIN

02085070 ENO RIVER NEAR DURHAM, NC

LOCATION.--Lat 36°04'20", long 78°54'30", Durham County, Hydrologic Unit 03020201, on right bank 275 ft downstream from bridge on U.S. Highway 501, 0.2 mi downstream from Crooked Creek, and 5 mi north of Durham.

DRAINAGE AREA.--141 mi<sup>2</sup>.

PERIOD OF RECORD.--Occasional low-flow measurements, water year 1955. August 1963 to current year.

REVISED RECORDS.--WDR NC-72-1: 1968-71(M), 1971(P).

GAGE.--Water-stage recorder. Datum of gage is 270 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Nov. 19, 1966, at site 275 ft upstream at datum 2.35 ft higher. Nov. 20, 1966 to Sept. 30, 1967, water-stage recorder at present site at datum 0.94 ft higher.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Some regulation during periods of low flow caused by mill 600 ft upstream. Minimum discharge for period of record, also occurred on Aug. 15, 1977. Minimum discharge for current water year is due to regulation. U.S. Army Corps of Engineers satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.8	42	93	384	100	65	305	254	68	8.0	13	8.0
2	5.0	37	68	206	88	222	215	141	103	8.5	10	8.0
3	4.6	32	81	146	87	695	168	101	81	14	8.2	8.0
4	6.5	28	695	132	83	1010	146	83	59	9.6	7.9	6.8
5	10	26	336	112	84	419	133	76	40	13	9.5	6.2
6	15	25	162	89	80	240	130	94	31	13	10	7.7
7	23	23	111	884	87	190	122	110	27	11	14	8.0
8	26	22	114	1250	133	154	111	87	28	10	16	7.9
9	29	21	147	601	111	148	104	74	26	8.6	17	8.5
10	25	235	112	398	92	121	101	70	25	6.9	16	7.5
11	90	194	87	1180	85	104	91	67	23	7.9	26	6.6
12	74	91	75	2280	81	95	78	62	18	10	22	6.5
13	307	62	69	696	77	129	76	61	18	9.8	17	6.1
14	111	50	67	371	83	292	92	56	18	8.2	18	7.2
15	55	47	63	253	100	220	164	53	16	9.8	26	7.5
16	30	44	62	452	87	143	190	49	22	7.8	50	7.4
17	18	41	60	446	74	122	126	46	115	6.3	29	7.9
18	25	37	56	265	91	372	96	45	65	9.3	18	5.9
19	17	37	59	193	161	428	84	71	41	16	13	18
20	27	35	59	568	136	225	270	289	50	15	7.7	80
21	16	32	226	515	113	160	306	426	43	11	7.4	46
22	20	31	264	288	97	137	384	196	40	8.1	7.5	20
23	2310	31	162	201	85	131	194	110	29	8.0	7.7	9.9
24	561	31	124	165	75	131	140	78	24	8.4	7.2	25
25	233	31	94	147	e71	107	109	58	22	7.5	7.1	749
26	289	31	76	129	e69	97	94	50	16	18	7.7	584
27	167	31	76	120	75	91	82	49	13	42	8.6	125
28	92	37	101	114	74	89	81	50	12	38	9.0	61
29	68	171	117	106	---	668	85	150	11	29	7.9	42
30	55	179	125	101	---	1590	545	99	8.9	40	8.7	26
31	47	---	672	101	---	525	---	62	---	20	9.2	---
TOTAL	4761.9	1734	4613	12893	2579	9120	4822	3217	1092.9	432.7	436.3	1917.6
MEAN	154	57.8	149	416	92.1	294	161	104	36.4	14.0	14.1	63.9
MAX	2310	235	695	2280	161	1590	545	426	115	42	50	749
MIN	4.6	21	56	89	69	65	76	45	8.9	6.3	7.1	5.9
CFSM	1.09	.41	1.06	2.95	.65	2.09	1.14	.74	.26	.10	.10	.45
IN.	1.26	.46	1.22	3.40	.68	2.41	1.27	.85	.29	.11	.12	.51

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 1991, BY WATER YEAR (WY)

	MEAN	59.1	76.9	115	194	256	262	177	138	89.7	77.5	59.3	50.0
MAX	456	462	406	491	551	626	424	429	411	452	282	312	
(WY)	1972	1986	1973	1978	1979	1975	1983	1978	1982	1975	1985	1974	
MIN	4.77	11.0	19.5	21.4	64.7	67.4	46.2	26.1	6.86	6.35	3.34	.84	
(WY)	1964	1970	1981	1981	1968	1988	1985	1986	1986	1977	1977	1968	

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1963 - 1991
ANNUAL TOTAL	54885.0	47619.4	
ANNUAL MEAN	150	130	129
HIGHEST ANNUAL MEAN			244
LOWEST ANNUAL MEAN			60.4
HIGHEST DAILY MEAN	2310	Oct 23	6210
LOWEST DAILY MEAN	3.3	Aug 1	.08
ANNUAL SEVEN-DAY MINIMUM	4.0	Jul 30	.20
INSTANTANEOUS PEAK FLOW			9620
INSTANTANEOUS PEAK STAGE			11.94
INSTANTANEOUS LOW FLOW			2.4
ANNUAL RUNOFF (CFSM)	1.07	.93	.92
ANNUAL RUNOFF (INCHES)	14.48	12.56	12.44
10 PERCENT EXCEEDS	389	289	265
50 PERCENT EXCEEDS	77	68	53
90 PERCENT EXCEEDS	10	8.0	7.4

\* See REMARKS.

## NEUSE RIVER BASIN

02085079 ENO RIVER NEAR WEAVER, NC

LOCATION.--Lat 36°04'19", long 78°51'47", Durham County, Hydrologic Unit 03020201, at bridge on Secondary Road 1004, 1.3 mi above Little River, and 1.5 mi northeast of Weaver.

DRAINAGE AREA.--148 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1983 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1982 to September 1985.

WATER TEMPERATURE: October 1982 to September 1985.

INSTRUMENTATION.--Water-quality monitor from October 1982 to September 1985.

REMARKS.--Station operated to define water quality as part of a six-county regional surface water-quality assessment.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 293 microsiemens July 11, 1984, minimum, 32 microsiemens Aug. 18, 1984.

WATER TEMPERATURE: Maximum recorded, 30.5°C Aug. 23, 1983, minimum, 0.0°C on several days during winter months.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

		DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (MG/L)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM PERCENT	
OCT													
30...	1330	47	147	6.6	11.0	48	760	10.5	8.2	2.8	14	46	
NOV													
20...	1100	30	222	6.5	8.0	23	758	10.8	11	3.5	25	54	
DEC													
13...	1030	62	133	6.7	6.0	48	754	12.1	8.4	2.9	13	44	
JAN													
16...	1115	452	92	6.8	8.0	65	746	11.0	6.3	2.5	7.2	36	
FEB													
28...	1020	72	124	6.1	7.0	30	761	--	7.4	2.8	12	45	
MAR													
26...	1050	97	86	6.7	15.0	45	758	9.6	6.9	2.6	15	52	
APR													
24...	1030	<145	101	6.9	15.0	--	749	9.4	--	--	--	--	
MAY													
30...	0930	103	152	6.8	24.0	43	756	7.7	7.0	2.6	19	57	
JUN													
12...	1100	18	226	6.7	22.5	25	758	7.2	11	3.8	28	56	
18...	1200	57	260	7.4	25.0	28	758	7.0	9.0	3.9	40	67	
JUL													
08...	1100	--	--	--	--	--	--	--	--	--	--	--	
30...	0945	62	410	7.6	22.5	55	759	6.9	9.6	3.3	69	77	
AUG													
14...	1030	14	362	7.5	23.5	12	760	7.2	13	3.8	50	67	
DATE		SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS NH4)
OCT													
30...	1	2.7	23	9.2	<0.10	11	88	0.790	0.010	0.800	0.020	0.03	
NOV													
20...	2	3.4	39	20	0.20	12	124	1.78	0.020	1.80	0.070	0.09	
DEC													
13...	1	2.2	22	12	0.40	12	98	0.680	0.020	0.700	0.030	0.04	
JAN													
16...	0.6	1.6	12	7.8	<0.10	11	53	0.580	0.020	0.600	0.040	0.05	
FEB													
28...	1	1.5	16	10	<0.10	7.2	91	0.590	0.010	0.600	0.060	0.08	
MAR													
26...	1	1.7	19	9.0	<0.10	6.6	77	0.380	0.020	0.400	0.030	0.04	
APR													
24...	--	--	--	--	--	--	--	0.480	0.020	0.500	0.050	0.06	
MAY													
30...	2	2.7	31	8.8	0.20	13	96	0.880	0.020	0.900	0.030	0.04	
JUN													
12...	2	3.1	32	14	0.20	12	134	2.27	0.030	2.30	0.040	0.05	
18...	3	3.9	66	9.3	0.20	12	170	--	--	--	--	--	
JUL													
08...	--	--	--	--	--	--	--	--	--	--	--	--	--
30...	5	6.2	110	19	0.30	9.5	246	2.06	0.040	2.10	0.050	0.06	
AUG													
14...	3	5.0	54	32	0.30	10	209	3.08	0.020	3.10	0.030	0.04	

## NEUSE RIVER BASIN

02085079 ENO RIVER NEAR WEAVER, NC

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS NO3)	NITRO- GEN DIS- SOLVED (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHATE, TOTAL (MG/L AS PO4)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO TOTAL (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)
OCT												
30...	0.68	0.48	0.70	0.50	1.5	6.6	1.3	0.030	0.09	<0.010	0.030	0.020
NOV												
20...	0.23	0.41	0.30	0.50	2.1	9.3	2.3	0.040	0.09	0.030	0.030	0.020
DEC												
13...	0.47	0.47	0.50	0.50	1.2	5.3	1.2	0.030	0.06	0.020	0.020	0.020
JAN												
16...	0.26	0.26	0.30	0.30	0.90	4.0	0.90	0.040	0.09	0.020	0.030	0.030
FEB												
28...	0.24	0.25	0.30	0.30	0.90	4.0	0.90	0.020	--	0.010	<0.010	0.010
MAR												
26...	0.37	0.49	0.40	0.50	0.80	3.5	0.92	0.040	0.06	0.020	0.020	<0.010
APR												
24...	0.35	0.45	0.40	0.50	0.90	4.0	0.99	0.070	0.06	0.020	0.020	<0.010
MAY												
30...	0.37	0.47	0.40	0.50	1.3	5.8	1.4	0.080	0.18	0.050	0.060	0.040
JUN												
12...	0.46	0.45	0.50	0.50	2.8	12	2.8	0.100	0.18	0.100	0.060	0.050
18...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
08...	--	--	--	--	--	--	--	--	--	--	--	--
30...	0.45	0.36	0.50	0.40	2.6	12	2.5	0.150	0.28	0.110	0.090	0.070
AUG												
14...	0.57	0.47	0.60	0.50	3.7	16	3.2	0.090	0.18	0.070	0.060	0.060

DATE	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	ALUM- INUM, TOTAL RECOV- ERABLE (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)
OCT											
30...	0.06	220	<1	<1	<1	<1	3	740	1	50	<0.10
NOV											
20...	0.06	--	--	--	--	--	--	--	--	--	--
DEC											
13...	0.06	--	--	--	--	--	--	--	--	--	--
JAN											
16...	0.09	--	--	--	--	--	--	--	--	--	--
FEB											
28...	0.03	--	--	--	--	--	--	--	--	--	--
MAR											
26...	--	--	--	--	--	--	--	--	--	--	--
APR											
24...	--	--	--	--	--	--	--	--	--	--	--
MAY											
30...	0.12	--	--	--	--	--	--	--	--	--	--
JUN											
12...	0.15	290	<1	<1	<1	2	6	750	4	60	<0.10
18...	--	530	<1	<1	<1	<1	9	880	3	70	<0.10
JUL											
08...	--	--	--	--	--	--	--	--	--	--	--
30...	0.21	--	--	--	--	--	--	--	--	--	--
AUG											
14...	0.18	180	<1	<1	1	<1	3	350	2	80	<0.10

## NEUSE RIVER BASIN

02085079 ENO RIVER NEAR WEAVER, NC

## WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	CARBON, ORGANIC TOTAL (MG/L AS C)	ALDRIN, TOTAL (UG/L)	CHLOR- DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI- AZINON, TOTAL (UG/L)
OCT 30...	2	<1	<1	<10	6.0	<0.001	<0.1	<0.001	<0.001	<0.001	<0.01
NOV 20...	--	--	--	--	5.6	--	--	--	--	--	--
DEC 13...	--	--	--	--	4.9	--	--	--	--	--	--
JAN 16...	--	--	--	--	6.2	--	--	--	--	--	--
FEB 28...	--	--	--	--	3.4	--	--	--	--	--	--
MAR 26...	--	--	--	--	3.8	--	--	--	--	--	--
APR 24...	--	--	--	--	--	<0.001	<0.1	<0.001	<0.001	<0.001	<0.01
MAY 30...	--	--	--	--	5.4	--	--	--	--	--	--
JUN 12...	3	<1	<1	20	5.2	--	--	--	--	--	--
18...	6	<1	<1	<10	4.7	--	--	--	--	--	--
JUL 08...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	6.0	--	--	--	--	--	--
AUG 14...	4	<1	<1	20	5.1	<0.001	<0.1	<0.001	<0.001	<0.001	<0.01
DATE	DI- ELDRIN TOTAL (UG/L)	ENDO- SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	PCB, TOTAL (UG/L)	NAPH- THA- LENES, POLY- CHLOR. TOTAL (UG/L)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)	HEPTA- CHLOR, TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA- THION, TOTAL (UG/L)	METH- OXY- CHLOR, TOTAL (UG/L)
OCT 30...	<0.001	<0.001	<0.001	<0.01	<0.1	<0.10	<0.001	<0.001	0.001	<0.01	<0.01
NOV 20...	--	--	--	--	--	--	--	--	--	--	--
DEC 13...	--	--	--	--	--	--	--	--	--	--	--
JAN 16...	--	--	--	--	--	--	--	--	--	--	--
FEB 28...	--	--	--	--	--	--	--	--	--	--	--
MAR 26...	--	--	--	--	--	--	--	--	--	--	--
APR 24...	<0.001	<0.001	<0.001	<0.01	<0.1	<0.10	<0.001	<0.001	<0.001	<0.01	<0.01
MAY 30...	--	--	--	--	--	--	--	--	--	--	--
JUN 12...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
JUL 08...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
AUG 14...	<0.001	<0.001	<0.001	<0.01	<0.1	<0.10	<0.001	<0.001	<0.001	<0.01	<0.01

02085079 ENO RIVER NEAR WEAVER, NC

## WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	METHYL PARA- THION, TOTAL (UG/L)	METHYL TRI- THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA- THION, TOTAL (UG/L)	PER- THANE TOTAL (UG/L)	TOX- APHENE, TOTAL (UG/L)	TOTAL TRI- THION (UG/L)	BENZENE TOTAL (UG/L)	BROMO- FORM TOTAL (UG/L)	CARBON- TETRA- CHLO- RIDE TOTAL (UG/L)	CHLORO- BENZENE TOTAL (UG/L)
OCT 30...	<0.01	<0.01	<0.01	<0.01	<0.1	<1	<0.01	<0.20	<0.20	<0.20	<0.20
NOV 20...	--	--	--	--	--	--	--	--	--	--	--
DEC 13...	--	--	--	--	--	--	--	--	--	--	--
JAN 16...	--	--	--	--	--	--	--	--	--	--	--
FEB 28...	--	--	--	--	--	--	--	--	--	--	--
MAR 26...	--	--	--	--	--	--	--	--	--	--	--
APR 24...	<0.01	<0.01	<0.01	<0.01	<0.1	<1	<0.01	<0.20	<0.20	<0.20	<0.20
MAY 30...	--	--	--	--	--	--	--	--	--	--	--
JUN 12...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
JUL 08...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
AUG 14...	<0.01	--	<0.01	<0.01	<0.1	<1	<0.01	<0.20	<0.20	<0.20	<0.20

[illegible]

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

		TETRA- CHLORO- ETHYL- ENE	TOLUENE	TRANS- 1,3-DI- CHLORO- PROPENE	TRI- CHLORO- ETHYL- ENE	TRI- CHLORO- FLUORO- METHANE	VINYL CHLO- RIDE	XYLENE TOTAL WATER WHOLE	1,1-DI- CHLORO- ETHYL- ENE	1,1-DI- CHLORO- ETHANE	1,1,1- TRI- CHLORO- ETHANE	1,1,2- TRI- CHLORO- ETHANE
DATE		TOTAL (UG/L)	TOTAL (UG/L)	TOTAL (UG/L)	TOTAL (UG/L)	TOTAL (UG/L)	TOTAL (UG/L)	TOT REC (UG/L)	TOTAL (UG/L)	TOTAL (UG/L)	TOTAL (UG/L)	TOTAL (UG/L)
OCT												
30...		<0.20	<0.20	<0.20	<0.2	<0.20	<0.20	<0.2	<0.20	<0.20	<0.20	<0.20
NOV												
20...		--	--	--	--	--	--	--	--	--	--	--
DEC												
13...		--	--	--	--	--	--	--	--	--	--	--
JAN												
16...		--	--	--	--	--	--	--	--	--	--	--
FEB												
28...		--	--	--	--	--	--	--	--	--	--	--
MAR												
26...		--	--	--	--	--	--	--	--	--	--	--
APR												
24...		<0.20	<0.20	<0.20	<0.2	<0.20	<0.20	<0.2	<0.20	<0.20	<0.20	<0.20
MAY												
30...		--	--	--	--	--	--	--	--	--	--	--
JUN												
12...		--	--	--	--	--	--	--	--	--	--	--
18...		--	--	--	--	--	--	--	--	--	--	--
JUL												
08...		--	--	--	--	--	--	--	--	--	--	--
30...		--	--	--	--	--	--	--	--	--	--	--
AUG												
14...		<0.20	<0.20	<0.20	<0.2	<0.20	<0.20	<0.2	<0.20	<0.20	<0.20	<0.20
		1,1,2,2 TETRA- CHLORO- ETHANE	1,2-DI- CHLORO- BENZENE	1,2-DI- CHLORO- ETHANE	1,2-DI- CHLORO- PROPANE	1,3-DI- CHLORO- PROPENE	1,2- TRANSDI CHLORO- ETHER	2- CHLORO- ETHYL- VINYL	1,3-DI- CHLORO- BENZENE	1,4-DI- CHLORO- BENZENE	SEDI- MENT, SUS- PENDED	SEDI- MENT, DIS- CHARGE, SUS- PENDED
DATE		TOTAL (UG/L)	TOTAL (UG/L)	TOTAL (UG/L)	TOTAL (UG/L)	TOTAL (UG/L)	TOTAL (UG/L)	TOTAL (UG/L)	TOTAL (UG/L)	TOTAL (UG/L)	(MG/L)	(T/DAY)
OCT												
30...		<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	--	--
NOV												
20...		--	--	--	--	--	--	--	--	--	2	0.16
DEC												
13...		--	--	--	--	--	--	--	--	--	2	0.33
JAN												
16...		--	--	--	--	--	--	--	--	--	48	59
FEB												
28...		--	--	--	--	--	--	--	--	--	5	0.97
MAR												
26...		--	--	--	--	--	--	--	--	--	11	2.9
APR												
24...		<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	18	--
MAY												
30...		--	--	--	--	--	--	--	--	--	16	4.4
JUN												
12...		--	--	--	--	--	--	--	--	--	11	0.53
18...		--	--	--	--	--	--	--	--	--	--	--
JUL												
08...		--	--	--	--	--	--	--	--	--	--	--
30...		--	--	--	--	--	--	--	--	--	20	3.3
AUG												
14...		<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	--	--

## NEUSE RIVER BASIN

0208521324 LITTLE RIVER AT SECONDARY ROAD 1461 NEAR ORANGE FACTORY, NC

LOCATION.--Lat 36°08'30", long 78°55'10", Durham County, Hydrologic Unit 03020201, at Secondary Road 1461 and 1.8 mi northwest of Orange Factory.

DRAINAGE AREA.--78.2 mi<sup>2</sup>.

## WATER DISCHARGE RECORDS

PERIOD OF RECORD.--October 1987 to current year.

GAGE.--Water-stage recorder. Datum of gage is 380 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records fair except periods of Oct., Nov., June, July, and Sept., which are poor. Minimum discharge for period of record also occurred on Aug. 19-29, 1988.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.61	21	67	195	56	45	148	93	23	3.6	2.6	1.2
2	.61	18	48	111	50	164	108	55	23	3.1	2.3	1.2
3	.61	15	47	82	48	528	85	41	21	3.0	2.3	1.2
4	.64	14	457	75	47	627	73	35	20	3.1	2.3	1.2
5	.64	13	204	72	45	205	66	33	18	3.8	2.0	.93
6	.53	13	104	60	44	130	61	32	15	4.4	1.7	.81
7	.47	13	72	549	44	105	57	33	15	4.3	1.4	.72
8	.43	16	74	776	51	87	52	33	14	3.2	1.3	.60
9	.36	12	110	323	51	76	50	30	14	2.7	1.4	.52
10	.36	104	77	215	47	67	49	30	14	2.5	1.0	.45
11	2.0	117	60	879	43	61	42	29	12	2.8	8.7	.38
12	6.1	60	51	1540	40	56	37	28	8.3	2.6	4.6	.33
13	222	41	44	352	38	63	36	28	8.2	4.0	3.3	.32
14	101	32	40	195	44	132	40	27	8.2	3.2	2.7	.27
15	33	27	38	138	51	102	51	27	8.2	2.5	2.6	.24
16	12	25	38	233	46	72	74	25	7.7	2.0	6.7	.18
17	8.1	22	36	214	39	62	54	24	7.9	1.8	7.2	.14
18	4.1	20	33	138	48	181	44	24	9.9	1.8	4.8	.14
19	5.9	20	32	109	93	202	36	22	11	1.8	3.7	.15
20	5.9	19	32	380	81	110	138	39	11	1.8	2.8	.25
21	5.9	19	134	296	66	83	158	82	10	1.7	2.5	.18
22	5.9	18	157	160	56	76	180	62	9.3	1.9	2.0	.22
23	1700	18	106	116	50	110	87	42	8.3	1.9	1.9	.68
24	330	18	79	99	45	89	63	33	7.3	1.9	1.6	1.2
25	100	18	60	87	43	69	49	29	6.5	1.6	1.4	287
26	137	17	47	76	43	56	43	25	6.1	3.4	1.3	278
27	144	17	39	70	58	53	40	24	5.4	14	1.4	61
28	50	18	46	68	53	53	40	32	4.9	5.8	1.6	22
29	37	171	76	63	---	618	39	107	4.7	3.3	1.6	10
30	30	127	75	63	---	1250	129	44	4.0	2.6	1.4	6.1
31	24	---	334	62	---	258	---	30	---	2.6	1.4	---
TOTAL	2969.16	1063	2817	7796	1420	5790	2129	1198	335.9	98.7	92.5	677.61
MEAN	95.8	35.4	90.9	251	50.7	187	71.0	38.6	11.2	3.18	2.98	22.6
MAX	1700	171	457	1540	93	1250	180	107	23	14	10	287
MIN	.36	12	32	60	38	45	36	22	4.0	1.6	1.3	.14
CFSM	1.22	.45	1.16	3.22	.65	2.39	.91	.49	.14	.04	.04	.29
IN.	1.41	.51	1.34	3.71	.68	2.75	1.01	.57	.16	.05	.04	.32

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1991, BY WATER YEAR (WY)

	MEAN	48.4	38.3	73.2	131	141	158	105	91.6	30.9	31.0	32.9	12.1
MAX	95.8	57.1	136	251	256	318	154	165	64.1	104	114	22.6	
(WY)	1991	1989	1990	1991	1989	1989	1990	1990	1989	1989	1989	1991	
MIN	6.12	16.7	13.3	29.0	50.7	30.9	51.5	24.3	7.74	1.59	2.98	1.27	
(WY)	1988	1988	1989	1989	1991	1988	1988	1988	1988	1988	1991	1990	

## SUMMARY STATISTICS

## FOR 1990 CALENDAR YEAR

## FOR 1991 WATER YEAR

## WATER YEARS 1987 - 1991

ANNUAL TOTAL	31516.48	26386.87	74.3
ANNUAL MEAN	86.3	72.3	105
HIGHEST ANNUAL MEAN			30.8
LOWEST ANNUAL MEAN			2200
HIGHEST DAILY MEAN	1700	Oct 23	0
LOWEST DAILY MEAN	.36	Oct 9	0
ANNUAL SEVEN-DAY MINIMUM	.49	Oct 4	0
INSTANTANEOUS PEAK FLOW			4170
INSTANTANEOUS PEAK STAGE			7.59
INSTANTANEOUS LOW FLOW			0*
ANNUAL RUNOFF (CFSM)	1.10		.95
ANNUAL RUNOFF (INCHES)	14.99		12.91
10 PERCENT EXCEEDS	213	146	163
50 PERCENT EXCEEDS	49	32	26
90 PERCENT EXCEEDS	2.2	1.4	1.3

\* See REMARKS.

0208521324 LITTLE RIVER AT SECONDARY ROAD 1461 NEAR ORANGE FACTORY, NC

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1988 to current year.

REMARKS.--Station operated to define the impacts of various land-use development on surface-water quality in the upper Neuse River Basin.

COOPERATION.--For the period October 1988 through June 1989 the inorganic chemical data and trace metal data were analyzed by the City of Durham's Brown Water Treatment Laboratory. Samples for December 12, 1988 and April 4, 1989 were collected by the North Carolina Department of Environment, Health and Natural Resources and analyzed by the U. S. Geological Survey.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (MG/L)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM PERCENT
OCT												
12...	0945	4.8	115	6.8	20.0	13	749	6.9	9.2	3.8	5.3	21
22...	1025	5.9	96	7.1	18.0	--	--	6.5	--	--	--	--
MAR												
19...	0945	202	62	7.1	11.0	110	746	10.8	4.7	1.9	4.3	31
APR												
22...	1135	162	62	6.8	13.5	--	--	10.6	--	--	--	--
SEP												
26...	1000	258	60	6.7	19.0	170	--	--	3.7	1.6	3.1	25
DATE	RATIO	SODIUM AD- SORP- TION (MG/L AS K)	POTAS- SIUM, DIS- SOLVED (MG/L AS SO4)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS NH4)
OCT												
12...	0.4	3.6	2.0	6.3	0.20	8.4	66	--	<0.010	<0.100	0.020	0.03
22...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
19...	0.4	1.2	5.5	4.1	<0.10	9.8	37	0.210	0.010	0.220	0.040	0.05
APR												
22...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
26...	0.3	3.8	7.0	4.0	<0.10	6.9	59	--	<0.010	0.420	0.030	0.04
DATE	AS N	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS NO3)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHATE, TOTAL (MG/L AS PO4)	PHOS- PHORUS ORTHO TOTAL (MG/L AS P)	ALUM- INUM, TOTAL RECOV- ERABLE (UG/L AS AL)	ARSENIC TOTAL RECOV- ERABLE (UG/L AS AS)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO)
OCT												
12...	0.38	0.40	--	--	0.040	--	<0.010	110	<1	<1	<1	1
22...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
19...	0.56	0.60	0.82	3.6	0.100	--	<0.010	1100	<1	<1	1	1
APR												
22...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
26...	1.1	1.1	1.5	6.7	0.230	0.12	0.040	2400	<1	<1	1	1

## NEUSE RIVER BASIN

0208521324 LITTLE RIVER AT SECONDARY ROAD 1461 NEAR ORANGE FACTORY, NC

## WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

[illegible]

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

[illegible]

## NEUSE RIVER BASIN

02085500 FLAT RIVER AT BAHAMA, NC

LOCATION.--Lat 36°10'57", long 78°52'44", Durham County, Hydrologic Unit 03020201, on right bank 0.5 mi upstream from Lake Michie, 1.2 mi upstream from bridge on Secondary Road 1616, 1.2 mi north of Bahama, and 1.5 mi upstream from Dial Creek.

DRAINAGE AREA.--149 mi<sup>2</sup>.

## WATER DISCHARGE RECORDS

PERIOD OF RECORD.--July 1925 to current year.

REVISED RECORDS.--WSP 1333: 1926, 1928(M), 1938, 1946. WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 346.85 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 22, 1925, nonrecording gage at same site at datum 0.58 ft lower.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Prior to December 1962, some diurnal fluctuation and infrequent regulation at low flow caused by small mill 5 mi upstream. Maximum discharge for period of record computed on the basis of records for nearby stations (gage height, not determined). Maximum discharge for current water year from floodmark in gage house.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.85	30	86	291	73	70	308	127	27	5.2	7.8	4.7
2	.87	27	60	154	63	267	211	78	29	4.8	8.3	3.7
3	.93	24	55	112	61	800	161	62	24	5.1	6.3	3.2
4	1.1	21	637	101	60	1220	139	54	21	7.1	5.6	2.8
5	1.3	19	303	96	58	380	134	50	19	12	8.2	3.2
6	1.4	16	138	78	59	222	128	55	17	8.9	5.0	3.5
7	1.4	16	93	737	71	172	108	61	15	7.0	4.2	3.7
8	1.6	16	120	1300	83	136	90	56	14	5.6	3.8	3.5
9	1.5	18	179	581	70	109	90	47	14	4.7	3.8	3.0
10	1.4	262	102	398	61	97	81	45	13	4.2	4.2	2.9
11	5.7	194	77	1310	58	85	69	44	12	6.4	3.9	2.8
12	46	80	62	2990	55	76	63	41	12	6.0	8.8	2.7
13	382	54	57	673	53	90	62	39	11	5.2	6.1	2.6
14	117	43	53	332	60	173	74	38	10	4.3	4.6	2.4
15	45	36	49	229	74	133	89	37	10	3.8	4.8	2.3
16	22	33	51	386	59	96	121	36	9.9	3.3	14	2.4
17	15	32	50	383	52	81	88	34	9.7	3.0	14	2.3
18	11	28	46	214	63	307	68	33	9.5	2.7	9.0	2.2
19	15	28	48	161	153	370	62	34	11	2.7	7.2	2.8
20	37	28	56	594	129	176	256	64	11	2.1	5.5	4.2
21	20	28	337	442	101	130	233	113	11	1.7	4.6	3.7
22	15	27	302	226	81	139	282	72	12	1.8	3.8	3.8
23	2900	25	183	161	70	254	136	54	11	2.2	3.4	4.2
24	422	25	127	135	63	176	97	44	9.7	2.6	3.8	7.7
25	145	25	89	117	60	130	75	39	8.5	2.4	4.5	149
26	174	23	67	100	88	102	66	34	8.0	2.7	10	259
27	118	24	60	93	127	92	64	32	7.3	4.7	12	64
28	65	24	90	88	86	87	65	34	7.0	4.6	7.9	27
29	51	389	167	82	---	e750	61	37	6.4	5.4	5.7	13
30	40	177	130	77	---	e2290	156	35	5.8	5.5	5.2	7.5
31	33	---	472	81	---	553	---	29	---	4.5	5.9	---
TOTAL	4691.05	1772	4346	12722	2091	9763	3637	1558	385.8	142.2	201.9	599.8
MEAN	151	59.1	140	410	74.7	315	121	50.3	12.9	4.59	6.51	20.0
MAX	2900	389	637	2990	153	2290	308	127	29	12	14	259
MIN	.85	16	46	77	52	70	61	29	5.8	1.7	3.4	2.2
CFSM	1.02	.40	.94	2.75	.50	2.11	.81	.34	.09	.03	.04	.13
IN.	1.17	.44	1.09	3.18	.52	2.44	.91	.39	.10	.04	.05	.15

e Estimated

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1925 - 1991, BY WATER YEAR (WY)

	MEAN	67.1	97.4	135	216	275	271	218	119	78.2	90.1	80.3	72.6
MAX	561	489	421	761	669	893	612	573	551	798	431	647	
(WY)	1972	1986	1973	1936	1979	1975	1936	1978	1938	1975	1939	1945	
MIN	1.24	.71	1.81	4.29	44.4	72.4	31.1	22.2	7.85	4.59	2.93	.71	
(WY)	1942	1934	1934	1934	1931	1967	1942	1927	1986	1991	1977	1968	

## SUMMARY STATISTICS

## FOR 1990 CALENDAR YEAR

## FOR 1991 WATER YEAR

## WATER YEARS 1925 - 1991

ANNUAL TOTAL	53566.30	41909.75	
ANNUAL MEAN	147	115	143
HIGHEST ANNUAL MEAN			285
LOWEST ANNUAL MEAN			53.5
HIGHEST DAILY MEAN	2900	Oct 23	9900
LOWEST DAILY MEAN	.77	Sep 27	.27
ANNUAL SEVEN-DAY MINIMUM	.85	Sep 26	.28
INSTANTANEOUS PEAK FLOW			20000
INSTANTANEOUS PEAK FLOW			NOT DETERMINED*
INSTANTANEOUS LOW FLOW			.23
ANNUAL RUNOFF (CFSM)	.98		.96
ANNUAL RUNOFF (INCHES)	13.37		13.02
10 PERCENT EXCEEDS	392		280
50 PERCENT EXCEEDS	72		50
90 PERCENT EXCEEDS	3.8		7.4

\* See REMARKS.

## NEUSE RIVER BASIN

02085500 FLAT RIVER AT BAHAMA, NC

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1988 to current year.

REMARKS.--Station operated to define the impacts of various land-use development on surface-water quality in the upper Neuse River Basin.

COOPERATION.--For the period October 1988 through June 1989 the inorganic chemical data and trace metal data were analyzed by the City of Durham's Brown Water Treatment Laboratory. Samples for December 19, 1988 and April 6, 1989 were collected by the North Carolina Department of Environment, Health and Natural Resources and analyzed by the U. S. Geological Survey.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

		DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (MG/L)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM PERCENT	
OCT													
12...	1100	64	92	7.3	20.0	25	749	4.8	6.1	3.2	6.5	30	
29...	1150	50	76	6.9	11.0	--	--	9.9	--	--	--	--	
MAR													
19...	1045	350	60	7.4	9.5	130	747	10.9	4.0	1.7	4.3	33	
APR													
18...	1125	69	74	7.0	19.5	--	--	8.1	--	--	--	--	
SEP													
26...	1120	285	65	6.6	19.0	250	--	--	3.9	1.7	4.6	32	
		SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS NH4)
OCT													
12...	0.5	3.4	3.3	10	0.30	7.5	54	--	0.010	<0.100	0.020	0.03	
29...	--	--	--	--	--	--	--	--	--	--	--	--	
MAR													
19...	0.5	1.5	6.5	4.4	<0.10	9.0	46	0.240	0.030	0.270	0.100	0.13	
APR													
18...	--	--	--	--	--	--	--	--	--	--	--	--	
SEP													
26...	0.5	3.7	5.5	5.2	<0.10	6.9	55	0.330	0.010	0.340	0.030	0.04	
		NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS NO3)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHATE, TOTAL (MG/L AS PO4)	PHOS- PHORUS ORTHO TOTAL (MG/L AS P)	ALUM- INUM, TOTAL RECOV- ERABLE (UG/L AS AL)	ARSENIC TOTAL RECOV- ERABLE (UG/L AS AS)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO)
OCT													
12...	0.68	0.70	--	--	0.050	--	<0.010	400	<1	<1	<1	<1	
29...	--	--	--	--	--	--	--	--	--	--	--	--	
MAR													
19...	0.60	0.70	0.97	4.3	0.100	--	<0.010	1600	<1	<1	2	1	
APR													
18...	--	--	--	--	--	--	--	--	--	--	--	--	
SEP													
26...	1.1	1.1	1.4	6.4	0.250	0.06	0.020	3900	<1	<1	4	2	
		COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	CARBON, ORGANIC TOTAL (MG/L AS C)	ALDRIN, TOTAL (UG/L)	CHLOR- DANE, TOTAL (UG/L)
OCT													
12...	3	820	1	260	<0.10	<1	<1	<1	<10	8.0	<0.010	<0.1	
29...	--	--	--	--	--	--	--	--	--	--	<0.001	<0.1	
MAR													
19...	4	2200	<1	60	<0.10	2	<1	<1	<10	8.8	<0.010	<0.1	
APR													
18...	--	--	--	--	--	--	--	--	--	--	<0.001	<0.1	
SEP													
26...	6	5200	6	230	<0.10	3	<1	<1	10	13	<0.010	<0.1	

02085500 FLAT RIVER AT BAHAMA, NC

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI- AZINON, TOTAL (UG/L)	DI- ELDRIN TOTAL (UG/L)	ENDO- SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	PCB, TOTAL (UG/L)	NAPH- THA- LENES, POLY- CHLOR. TOTAL (UG/L)	HEPTA- CHLOR EPOXIDE TOTAL (UG/L)	HEPTA- CHLOR, TOTAL (UG/L)
OCT												
12...	<0.010	<0.010	<0.010	<0.01	<0.010	<0.010	<0.010	<0.01	<0.1	<0.10	<0.010	<0.010
29...	<0.001	<0.001	<0.001	<0.01	<0.001	<0.001	<0.001	<0.01	<0.1	<0.10	<0.001	<0.001
MAR												
19...	<0.010	<0.010	<0.010	<0.01	<0.010	<0.010	<0.010	<0.01	<0.1	<0.10	<0.010	<0.010
APR												
18...	<0.001	<0.001	<0.001	<0.01	<0.001	<0.001	<0.001	<0.01	<0.1	<0.10	<0.001	<0.001
SEP												
26...	<0.010	<0.010	<0.010	<0.01	<0.010	<0.010	<0.010	<0.01	<0.1	<0.10	<0.010	<0.010

DATE	LINDANE TOTAL (UG/L)	MALA- THION, TOTAL (UG/L)	METH- OXY- CHLOR, TOTAL (UG/L)	METHYL PARA- THION, TOTAL (UG/L)	METHYL TRI- THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)	PARA- THION, TOTAL (UG/L)	PER- THANE TOTAL (UG/L)	TOX- APHENE, TOTAL (UG/L)	TOTAL TRI- THION (UG/L)	BENZENE TOTAL (UG/L)	BROMO- FORM TOTAL (UG/L)
OCT												
12...	<0.010	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<1	<0.01	--	--
29...	<0.001	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<1	<0.01	<0.20	<0.20
MAR												
19...	<0.010	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<1	<0.01	--	--
APR												
18...	<0.001	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<1	<0.01	<0.20	<0.20
SEP												
26...	<0.010	<0.01	<0.01	<0.01	--	<0.01	<0.01	<0.1	<1	<0.01	--	--

[illegible][illegible]

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

[illegible]

02086000 DIAL CREEK NEAR BAHAMA, NC

LOCATION.--Lat 36°01'36", Long 78°51'24", Durham County, on right bank 0.4 mi upstream from bridge on Secondary Road 1616 and Lake Michie, 1.5 mi northeast of Bahama.

DRAINAGE AREA.--4.71 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1925 to September 1971. August 1989 to current year. Prior to October 1929 published as "at Bahama".

REVISIONS (WATER YEARS).--WSP 1233: 1926-40, 1941-42 (M), 1944-45 (M), 1946-47 (M), 1948-50 (P). WSP 1333: 1931.  
WSP 1723: Drainage area.

GAGE.--Water-stage recorder and V-notch, sharp-crested weir. Datum of gage is 357.67 ft above mean sea level.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Maximum gage height for period of record, 7.60 ft May 24, 1940 (discharge not determined but probably greater than 3000 cfs). Minimum discharge for period of record occurs frequently many years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.07	1.1	1.9	5.7	2.9	2.8	8.4	4.1	1.6	e.26	.39	.16
2	.08	.94	1.6	3.8	2.9	10	6.3	2.9	1.9	e.25	.12	.06
3	.07	.81	3.0	3.2	3.1	28	5.3	2.4	1.2	e1.0	.11	.10
4	.12	.73	17	3.4	2.9	29	4.7	2.1	.95	e.40	.24	.09
5	.14	.75	4.8	2.9	2.8	10	4.6	2.4	.74	e.35	.89	.08
6	.13	.75	3.2	2.7	3.0	6.8	4.4	3.4	.66	e.32	.52	.10
7	.16	.72	2.5	36	4.2	5.5	4.0	2.6	.56	e.29	.26	.08
8	.13	.68	4.2	24	5.3	4.4	3.9	2.1	.51	e.26	.20	.05
9	.07	.72	3.4	12	3.6	3.9	3.7	2.1	.54	e.23	.19	.04
10	.08	16	2.6	7.9	3.1	3.6	3.3	2.2	.50	e.20	1.3	.03
11	1.2	3.9	2.2	52	2.9	3.4	3.0	2.0	e.46	e.50	.39	.61
12	1.1	2.2	2.0	47	2.9	3.3	2.9	1.9	e.39	e.25	.17	.05
13	3.4	1.6	1.9	14	2.5	5.2	3.2	1.9	e.37	e.23	.16	0
14	1.3	1.4	1.7	7.5	4.3	7.6	4.2	1.7	e.35	e.21	.21	0
15	.61	1.3	1.9	5.6	3.4	4.7	5.9	1.6	e.33	e.19	.28	0
16	.39	1.2	2.0	15	2.7	3.7	5.5	1.5	e.32	e.17	.17	0
17	.30	1.2	1.8	9.9	2.6	3.6	3.6	1.4	e.31	e.15	.15	0
18	.40	1.1	1.7	6.2	5.0	12	3.2	1.4	e.30	e.18	.13	0
19	.54	1.0	2.0	5.0	5.1	7.8	3.1	2.0	e1.0	.20	.12	.01
20	.49	1.0	1.8	20	4.1	5.3	4.6	5.4	e.60	.15	.12	.10
21	.36	.99	8.4	11	3.7	4.4	6.3	3.9	e.40	.14	.06	.04
22	.88	.99	5.0	6.4	3.3	7.4	4.9	2.4	e.35	.11	.04	.01
23	45	1.4	3.5	5.1	3.1	7.3	3.7	1.8	e.34	.09	.55	.01
24	5.4	1.7	2.9	4.5	3.0	5.3	3.2	1.5	e.33	.81	.22	.36
25	2.4	1.1	2.2	4.0	3.0	4.2	2.6	1.4	e.32	.30	.10	5.8
26	3.3	1.1	2.0	3.7	3.9	3.8	2.6	1.2	e.31	.11	.05	4.3
27	2.0	.93	2.2	3.6	3.3	3.7	2.6	1.3	e.30	.11	.15	.84
28	1.5	1.8	3.5	3.5	2.9	3.6	3.2	1.5	e.29	.10	.25	.48
29	1.2	6.1	3.8	3.3	---	55	3.0	1.3	e.28	.16	.13	.33
30	1.2	2.7	3.6	3.4	---	50	9.1	1.2	e.27	.25	.32	.27
31	1.1	---	13	3.5	---	14	---	1.0	---	.81	.23	---
TOTAL	75.12	57.91	113.3	335.8	95.5	319.3	129.0	65.6	16.78	8.78	8.22	14.00
MEAN	2.42	1.93	3.65	10.8	3.41	10.3	4.30	2.12	.56	.28	.27	.47
MAX	45	16	17	52	5.3	55	9.1	5.4	1.9	1.0	1.3	5.8
MIN	.07	.68	1.6	2.7	2.5	2.8	2.6	1.0	.27	.09	.04	0
CFSM	.51	.41	.77	2.28	.72	2.16	.90	.44	.12	.06	.06	.10
IN.	.59	.45	.89	2.62	.75	2.50	1.01	.51	.13	.07	.06	.11

e Estimated

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1926 - 1991, BY WATER YEAR (WY)

MEAN	1.88	2.88	3.90	5.80	7.79	7.40	6.70	3.58	2.73	2.88	2.57	1.89
MAX	18.1	13.8	11.8	21.8	18.2	15.3	20.3	17.7	12.7	17.9	12.9	19.8
(WY)	1930	1948	1949	1936	1960	1963	1928	1940	1938	1938	1952	1945
MIN	0	.009	.20	.31	1.34	2.08	1.36	.59	.27	.010	0	0
(WY)	1934	1934	1934	1934	1931	1967	1942	1926	1970	1932	1932	1932

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1926 - 1991
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ANNUAL TOTAL	1673.68		1239.31						
ANNUAL MEAN	4.59		3.40			4.16			
HIGHEST ANNUAL MEAN						7.57			1936
LOWEST ANNUAL MEAN						1.83			1932
HIGHEST DAILY MEAN	78	May 29	55	Mar 29		389	May 24		1940
LOWEST DAILY MEAN	.04	Sep 28	0	Sep 13		0	Oct 1		1925
ANNUAL SEVEN-DAY MINIMUM	.05	Sep 22	0	Sep 13		0	Oct 1		1925
INSTANTANEOUS PEAK FLOW			224	Mar 29		NOT DETERMINED*			
INSTANTANEOUS PEAK STAGE			3.68	Mar 29		7.60	May 24		1940
INSTANTANEOUS LOW FLOW			0*	Sep 13		0*	Oct 1		1925
ANNUAL RUNOFF (CFSM)	.96		.71			.87			
ANNUAL RUNOFF (INCHES)	13.08		9.69			11.88			
10 PERCENT EXCEEDS	9.7		6.1			7.8			
50 PERCENT EXCEEDS	2.8		1.7			1.7			
90 PERCENT EXCEEDS	.15		.12			.20			

\* See REMARKS.

## 02086500 FLAT RIVER AT DAM NEAR BAHAMA, NC

LOCATION.--Lat 36°08'55", long 78°49'43", Durham County, Hydrologic Unit 03020201, on right bank 900 ft downstream from Durham municipal dam, 3 mi southeast of Bahama, and 5 mi upstream from confluence with Eno River.

DRAINAGE AREA.--168 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1956, 1983 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1982 to September 1985.

WATER TEMPERATURE: October 1982 to September 1985.

INSTRUMENTATION.--Water-quality monitor from October 1982 to September 1985.

REMARKS.--Station operated to define water quality as part of a six-county regional surface water-quality assessment.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 112 microsiemens Sept. 22, 1985; minimum, 39 microsiemens Apr. 23, 1983.

WATER TEMPERATURE: Maximum recorded, 32.5°C Aug. 23, 1983; minimum recorded, 1.0°C Dec. 7, 1984.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (MG/L)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM PERCENT	
OCT 30...	1445	17	50	7.0	17.0	80	760	9.6	4.2	1.8	3.7	27	
NOV 20...	1145	23	74	7.1	12.0	65	758	6.8	5.2	2.1	4.4	27	
DEC 13...	1115	51	76	7.1	10.0	130	758	6.5	5.2	2.1	4.5	28	
JAN 16...	1230	348	40	7.1	7.0	130	745	11.4	3.4	1.5	3.1	28	
FEB 28...	1115	103	62	7.2	8.0	65	765	12.1	4.3	1.9	4.4	32	
MAR 26...	1200	114	57	6.4	14.0	65	758	9.8	4.2	1.8	4.3	32	
APR 24...	1430	123	57	6.8	16.0	--	748	10.2	--	--	--	--	
MAY 30...	1045	42	62	6.6	17.0	55	756	2.8	4.9	1.8	4.5	31	
JUN 18...	1315	39	68	6.7	19.5	30	758	2.4	5.5	2.6	4.9	29	
DATE		SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS NH4)
OCT 30...	0.4	2.9	5.5	4.7	<0.10	7.8	53	0.170	0.030	0.200	0.140	0.18	
NOV 20...	0.4	3.0	7.3	5.6	0.10	8.7	54	0.180	0.020	0.200	0.280	0.36	
DEC 13...	0.4	2.8	7.4	6.4	0.20	10	54	0.180	0.020	0.200	0.330	0.42	
JAN 16...	0.4	1.9	6.7	3.6	<0.10	7.3	43	0.260	0.040	0.300	0.110	0.14	
FEB 28...	0.4	1.5	6.6	4.6	<0.10	10	42	--	<0.010	0.400	0.050	0.06	
MAR 26...	0.4	1.5	6.1	4.5	<0.10	10	51	0.290	0.010	0.300	0.030	0.04	
APR 24...	--	--	--	--	--	--	--	0.250	0.010	0.260	0.090	0.12	
MAY 30...	0.4	1.6	4.4	4.2	0.40	12	28	0.220	0.020	0.240	0.080	0.10	
JUN 18...	0.4	1.5	5.1	5.4	0.20	11	52	--	<0.010	0.079	0.030	0.04	

## NEUSE RIVER BASIN

02086500 FLAT RIVER AT DAM NEAR BAHAMA, NC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS NO3)	NITRO- GEN DIS- SOLVED (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHATE, TOTAL (MG/L AS PO4)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO TOTAL (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)
OCT 30...	0.76	0.59	0.90	0.70	1.1	4.9	0.90	0.060	0.09	<0.010	0.030	<0.010
NOV 20...	0.42	0.41	0.70	0.70	0.90	4.0	0.90	0.030	0.03	<0.010	0.010	<0.010
DEC 13...	0.57	0.59	0.90	0.90	1.1	4.9	1.1	0.050	0.06	0.010	0.020	0.030
JAN 16...	0.39	0.53	0.50	0.60	0.80	3.5	0.90	0.070	0.15	0.030	0.050	0.030
FEB 28...	--	0.27	<0.20	0.30	--	--	0.70	0.050	--	0.020	<0.010	<0.010
MAR 26...	0.77	--	0.80	0.30	1.1	4.9	0.63	0.040	--	0.020	<0.010	<0.010
APR 24...	0.31	0.30	0.40	0.40	0.66	2.9	0.67	0.050	--	0.020	<0.010	<0.010
MAY 30...	0.62	0.64	0.70	0.70	0.94	4.2	0.95	0.020	--	<0.010	<0.010	<0.010
JUN 18...	0.47	0.27	0.50	0.30	0.58	2.6	0.38	0.040	--	0.030	<0.010	0.010
DATE	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	ALUM- INUM, TOTAL RECOV- ERABLE (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	
OCT 30...	--	710	<1	<1	<1	1	3	1200	2	160	<0.10	
NOV 20...	--	--	--	--	--	--	--	--	--	--	--	
DEC 13...	0.09	--	--	--	--	--	--	--	--	--	--	
JAN 16...	0.09	--	--	--	--	--	--	--	--	--	--	
FEB 28...	--	--	--	--	--	--	--	--	--	--	--	
MAR 26...	--	--	--	--	--	--	--	--	--	--	--	
APR 24...	--	--	--	--	--	--	--	--	--	--	--	
MAY 30...	--	--	--	--	--	--	--	--	--	--	--	
JUN 18...	0.03	140	<1	<1	<1	1	3	730	3	390	<0.10	

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991



WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

[illegible]

## NEUSE RIVER BASIN

02086624 Knap of Reeds Creek near Butner, NC

LOCATION.--Lat 36°07'40", long 78°48'55", Granville County, Hydrologic Unit 03020201, on left bank 60 ft downstream of Butner wastewater treatment plant outfall, 1.5 mi downstream from bridge on Secondary Road 1120, and 2.5 mi upstream from mouth.

DRAINAGE AREA.--43.0 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1982 to current year.

GAGE.--Water-stage recorder. Datum of gage is 255 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records poor, due to beaver activity. Some diurnal fluctuation at low flow. The town of Butner diverted an average of 3.0 ft<sup>3</sup>/s for municipal water supply upstream of station and returned an average of 2.3 ft<sup>3</sup>/s as treated effluent upstream of station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e4.9	e6.1	34	100	21	16	111	68	8.0	4.7	6.2	e5.7
2	e5.3	e5.8	30	45	19	64	59	38	36	4.4	6.3	e5.6
3	e5.2	e5.6	30	32	17	375	41	23	18	17	6.5	e5.6
4	e5.8	e5.4	199	34	17	611	34	17	11	5.8	6.3	e5.5
5	e8.2	e5.2	71	27	17	165	34	14	8.2	6.2	10	e5.5
6	e6.6	e5.1	33	22	18	65	31	23	6.6	4.6	7.5	e5.4
7	e5.8	e5.1	23	404	25	48	29	19	5.2	4.5	8.5	e5.4
8	e5.6	e5.1	31	709	46	36	30	16	4.4	4.8	9.1	e5.3
9	e5.5	e5.0	34	225	29	28	28	11	4.6	5.5	9.7	e5.3
10	e5.4	e82	27	106	24	24	25	9.5	4.8	4.9	9.9	e5.2
11	e15	e41	21	426	21	22	21	7.9	5.6	8.5	9.1	e5.2
12	e9.9	e24	17	1060	18	20	20	7.5	4.7	5.8	10	e5.1
13	e110	e18	14	283	17	32	16	7.3	4.9	5.4	11	e5.1
14	e25	e13	13	114	22	98	23	8.1	4.6	4.9	14	e5.0
15	e10	e9.4	11	60	24	59	49	8.0	4.2	5.5	13	e5.0
16	e6.0	e9.5	11	182	19	32	75	7.5	4.3	6.1	7.6	e4.9
17	e5.4	e9.2	13	206	16	26	38	7.8	5.0	6.1	7.7	e4.9
18	e6.3	e8.6	16	74	26	204	31	7.2	6.0	8.4	7.7	e4.8
19	e29	e8.3	22	46	47	148	25	11	5.8	21	7.8	e4.8
20	e6.5	e8.0	20	364	39	56	33	38	6.1	6.1	e6.4	e22
21	e5.6	e7.7	109	201	31	37	46	44	5.6	e5.9	e6.2	e9.0
22	e5.4	e7.4	89	80	26	41	66	25	5.2	e5.7	e6.0	e7.0
23	e920	e7.1	47	49	24	64	37	17	4.4	e5.5	e5.8	e6.2
24	e87	e7.3	34	39	19	41	28	12	4.5	e5.4	e5.6	e10
25	e26	e6.9	24	35	17	34	24	9.0	5.5	e5.6	e5.4	e50
26	e38	e6.8	19	29	20	26	18	6.9	5.4	e6.4	e5.4	e75
27	e15	e6.7	19	25	20	22	15	5.9	4.6	e5.6	e9.4	e8.0
28	e12	25	36	26	17	21	19	6.4	4.0	e6.6	e7.0	e6.0
29	e10	40	37	24	---	310	20	7.1	3.7	e5.8	e6.2	e5.8
30	e8.3	40	34	23	---	1110	275	6.2	5.0	54	e5.9	e5.6
31	e7.0	---	270	25	---	231	---	5.8	---	8.5	e5.7	---
TOTAL	1415.7	434.3	1388	5075	656	4066	1301	494.1	205.9	255.2	242.9	303.9
MEAN	45.7	14.5	44.8	164	23.4	131	43.4	15.9	6.86	8.23	7.84	10.1
MAX	920	82	270	1060	47	1110	275	68	36	54	14	75
MIN	4.9	5.0	11	22	16	16	15	5.8	3.7	4.4	5.4	4.8
CFSM	1.06	.34	1.04	3.81	.54	3.05	1.01	.37	.16	.19	.18	.24
IN.	1.22	.38	1.20	4.39	.57	3.52	1.13	.43	.18	.22	.21	.26

e Estimated

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 1991, BY WATER YEAR (WY)

	1983	1984	1985	1986	1987	1988	1989	1990	1991
MEAN	23.1	29.6	50.3	66.7	99.4	113	73.7	50.1	9.49
MAX	105	147	124	164	170	228	147	109	19.1
(WY)	1990	1986	1984	1991	1983	1983	1989	1989	1987
MIN	3.65	4.59	6.54	6.00	14.8	14.0	6.52	5.33	2.41
(WY)	1985	1985	1989	1989	1988	1988	1985	1986	1986

## SUMMARY STATISTICS

## FOR 1990 CALENDAR YEAR

## FOR 1991 WATER YEAR

## WATER YEARS 1983 - 1991

ANNUAL TOTAL	19636.5	15838.0	
ANNUAL MEAN	53.8	43.4	47.5
HIGHEST ANNUAL MEAN			78.9
LOWEST ANNUAL MEAN			13.2
HIGHEST DAILY MEAN	1260	1110	2260
LOWEST DAILY MEAN	3.7	3.7	1.2
ANNUAL SEVEN-DAY MINIMUM	4.3	4.5	1.6
INSTANTANEOUS PEAK FLOW		1780	3210
INSTANTANEOUS PEAK STAGE		6.86	7.59
INSTANTANEOUS LOW FLOW		NOT DETERMINED	.96
ANNUAL RUNOFF (CFSM)	1.25	1.01	1.11
ANNUAL RUNOFF (INCHES)	16.99	13.70	15.01
10 PERCENT EXCEEDS	108	72	88
50 PERCENT EXCEEDS	16	14	9.1
90 PERCENT EXCEEDS	5.1	5.2	2.9

0208700780 LITTLE LICK CREEK ABOVE SECONDARY ROAD 1814 NEAR OAK GROVE, NC

LOCATION.--Lat 35°59'11", long 78°47'58", Durham County, Hydrologic Unit 03020201, on right bank 300 ft upstream from bridge on Secondary Road 1814, and 1.3 mi northeast of Oak Grove.

DRAINAGE AREA.--10.1 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1982 to current year.

GAGE.--Water-stage recorder. Datum of gage is 265 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records fair except those for estimated daily discharges, due to beaver activity and below 2 ft<sup>3</sup>/s, which are poor. Slight diurnal fluctuation at low flow. An average of 36.9 ft<sup>3</sup>/s was diverted from the Neuse River basin for Durham municipal water supply, of which 19.2 ft<sup>3</sup>/s was diverted to the Cape Fear River basin. An average of 0.8 ft<sup>3</sup>/s was returned as treated effluent upstream from station. Minimum discharge for period of record, occurs periodically.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.9	1.6	3.1	12	.90	2.8	7.8	2.1	1.4	1.5	1.7	e.88
2	2.1	1.5	2.4	7.6	.75	17	6.0	1.5	2.0	1.6	1.5	e.76
3	2.4	1.6	5.4	6.4	.71	114	5.3	1.4	1.6	12	1.4	e.71
4	4.2	1.4	37	11	1.1	82	4.9	1.5	1.2	2.8	1.4	e.69
5	4.5	1.3	6.7	7.1	.66	15	4.6	1.6	e1.0	1.5	1.4	e.68
6	3.8	1.3	3.9	5.7	.62	7.1	4.6	3.2	e.92	1.6	1.3	e.67
7	3.7	1.4	3.4	166	1.6	6.6	4.3	1.5	e.87	1.2	1.3	e.66
8	4.1	1.4	9.5	98	1.6	5.3	4.0	1.3	e.84	1.1	2.4	e.65
9	4.1	1.9	6.6	48	1.0	4.4	3.5	1.2	e.82	1.2	1.7	e.64
10	4.4	18	4.1	19	.79	3.8	2.0	1.2	e.81	1.2	2.4	e.63
11	15	5.8	3.4	210	.61	3.3	1.7	1.4	e.80	8.6	1.0	e.62
12	4.2	2.9	3.2	232	.75	3.1	2.1	1.2	e.79	1.8	.93	e.61
13	23	2.2	2.6	20	.72	10	2.7	1.3	e.78	1.5	.93	e.60
14	3.8	2.2	2.2	8.4	1.5	23	4.0	1.3	e.77	1.1	17	e.59
15	2.1	1.8	2.7	5.3	1.2	7.2	3.5	1.4	4.4	.94	29	e.58
16	3.2	1.7	2.7	13	.66	4.8	3.7	1.7	2.0	.84	3.6	e.57
17	4.0	1.8	2.9	8.0	.64	4.1	2.9	1.9	2.2	.85	1.7	e.56
18	11	1.7	4.0	4.1	3.0	97	2.7	2.0	2.3	13	1.2	e.55
19	8.1	1.5	5.6	2.8	2.9	15	2.3	6.4	14	44	1.2	e.54
20	2.9	1.9	4.9	48	2.2	7.1	3.9	26	3.2	3.1	4.1	8.7
21	2.1	1.3	88	11	1.6	5.4	5.7	14	2.3	1.6	1.4	1.4
22	2.1	1.3	15	4.3	1.5	4.6	4.0	4.3	2.1	1.4	1.1	.85
23	278	1.3	9.4	2.5	3.9	4.4	2.4	2.2	e2.1	1.2	1.0	.67
24	12	1.4	7.1	2.0	3.4	4.0	2.3	1.8	e2.0	1.1	1.0	5.2
25	5.1	1.7	4.9	1.6	3.2	3.5	1.9	1.6	e1.9	1.0	.98	110
26	56	1.5	3.9	1.4	3.8	3.4	1.9	1.4	e1.8	.94	1.0	18
27	6.3	1.7	6.7	1.2	3.3	3.2	2.1	1.5	e1.7	4.6	1.3	4.0
28	3.3	1.8	20	1.1	2.9	3.3	1.8	1.6	e1.6	3.1	1.4	1.8
29	2.3	8.9	10	.95	---	92	1.6	1.5	e1.6	2.2	1.3	1.3
30	1.7	4.2	8.4	1.1	---	145	3.9	1.4	e1.5	16	e1.2	.96
31	1.6	---	45	1.6	---	12	---	1.4	---	4.0	e1.0	---
TOTAL	484.0	80.0	334.7	961.15	47.51	713.4	104.1	93.8	61.30	138.57	89.84	165.07
MEAN	15.6	2.67	10.8	31.0	1.70	23.0	3.47	3.03	2.04	4.47	2.90	5.50
MAX	278	18	88	232	3.9	145	7.8	26	14	44	29	110
MIN	1.6	1.3	2.2	.95	.61	2.8	1.6	1.2	.77	.84	.93	.54
CFSM	1.55	.26	1.07	3.07	.17	2.28	.34	.30	.20	.44	.29	.54
IN.	1.78	.29	1.23	3.54	.17	2.63	.38	.35	.23	.51	.33	.61

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 1991, BY WATER YEAR (WY)

	6.93	10.3	13.7	19.6	26.8	25.0	14.1	11.2	4.47	2.51	5.70	2.57
MEAN	6.93	10.3	13.7	19.6	26.8	25.0	14.1	11.2	4.47	2.51	5.70	2.57
MAX	22.5	38.9	33.9	36.7	46.7	53.6	32.2	23.4	24.9	6.00	23.3	7.88
(WY)	1990	1986	1984	1987	1989	1989	1987	1990	1989	1984	1986	1987
MIN	.52	.71	2.69	4.70	1.70	3.33	1.20	1.35	.50	.76	1.27	.35
(WY)	1987	1985	1989	1986	1991	1988	1985	1987	1985	1983	1983	1984

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1983 - 1991
ANNUAL TOTAL	4083.43	3273.44	
ANNUAL MEAN	11.2	8.97	11.8
HIGHEST ANNUAL MEAN			18.4
LOWEST ANNUAL MEAN			5.85
HIGHEST DAILY MEAN	278 Oct 23	278 Oct 23	515 Aug 20 1986
LOWEST DAILY MEAN	.60 Sep 10	.54 Sep 19	.13 Jul 17 1983
ANNUAL SEVEN-DAY MINIMUM	.79 Sep 5	.57 Sep 13	.19 Sep 12 1984
INSTANTANEOUS PEAK FLOW		735 Jan 12	1720 Aug 20 1986
INSTANTANEOUS PEAK STAGE		7.53 Jan 12	9.26 Aug 20 1986
INSTANTANEOUS LOW FLOW		.33 Sep 24	0 Aug 28 1984
ANNUAL RUNOFF (CFSM)	1.11	.89	1.17
ANNUAL RUNOFF (INCHES)	15.04	12.06	15.93
10 PERCENT EXCEEDS	23	13	23
50 PERCENT EXCEEDS	3.8	2.1	2.2
90 PERCENT EXCEEDS	1.1	.84	.50

\* See REMARKS.

## NEUSE RIVER BASIN

02087183 NEUSE RIVER NEAR FALLS, NC

LOCATION (REVISED).--Lat 35°56'25", long 78°34'56", Wake County, Hydrologic Unit 03020201, on right bank 300 ft downstream from Falls Lake Dam, and 0.3 mi northwest of Falls.

DRAINAGE AREA.--771 mi<sup>2</sup>, revised.

PERIOD OF RECORD.--July 1970 to current year.

REVISED RECORDS.--WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 194.69 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1990, water-stage recorder at site 0.4 mi downstream at datum 12.07 ft lower.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Falls Lake (station 02087182). June 5, 1980 to May 6, 1981, flows affected by incidental storage in Falls Lake under construction; May 6, 1981 to Jan. 13, 1983, gates closed and Falls Lake partially filled to provide storage for city of Raleigh water supply; Jan. 13, 1983, gates closed and normal pool elevation of 250 ft reached Dec. 7, 1983. The city of Raleigh diverted an average of 57.9 ft<sup>3</sup>/s, 1.2 mi upstream from station for municipal water supply, most of which was returned downstream as treated effluent. See diversions for municipal water supply for cities of Durham and Butner (stations 02086500 and 02086624). Minimum discharge for current water year and period of record not determined, due to intermittent gage closure. U.S. Army Corps of Engineers satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in September 1945 reached a stage of 216.1 ft above National Geodetic Vertical Datum of 1929, discharge, 23,300 ft<sup>3</sup>/s at bridge 0.1 mi downstream, from information provided by the U.S. Army Corps of Engineers.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	228	171	171	564	249	218	2970	316	168	161	171	146
2	229	171	171	1330	218	221	3550	313	168	168	171	144
3	229	171	171	1320	218	222	3690	313	168	168	170	143
4	230	171	171	705	218	1240	3210	313	168	168	168	143
5	232	171	171	412	218	2780	1960	313	168	168	166	143
6	230	171	171	412	218	3040	870	313	168	168	166	143
7	229	171	171	412	218	3040	625	228	168	168	167	142
8	229	171	171	1130	218	2360	463	174	168	168	166	140
9	229	172	171	2480	218	860	305	172	195	168	168	163
10	229	174	170	2880	218	616	308	171	212	168	168	174
11	203	174	168	2440	337	829	226	171	204	168	168	174
12	197	174	168	1400	426	975	177	171	192	168	166	174
13	195	174	168	1840	311	974	177	171	192	168	165	170
14	195	174	168	3330	218	976	177	171	192	168	165	168
15	195	174	168	3690	218	976	177	171	192	168	165	168
16	195	174	168	3700	218	756	177	171	192	168	165	171
17	195	174	168	3670	218	616	179	171	192	168	165	171
18	195	174	168	3470	218	749	181	171	177	168	165	169
19	195	174	168	3170	218	1670	183	171	169	168	165	169
20	195	171	168	2980	345	2080	183	171	168	168	165	174
21	195	171	485	3080	426	2050	183	171	168	168	158	174
22	179	171	893	3050	426	1090	426	171	170	168	138	172
23	170	171	893	2860	426	338	601	171	168	168	138	170
24	171	171	911	2460	426	338	598	171	168	168	138	168
25	171	171	682	1960	426	524	436	171	168	173	138	168
26	171	171	572	1490	426	669	317	169	168	173	138	153
27	171	171	572	1010	320	669	317	168	168	170	140	146
28	171	171	572	743	218	512	317	168	159	169	140	165
29	171	171	572	572	---	338	317	168	151	169	141	165
30	171	171	572	394	---	785	318	168	151	171	144	165
31	171	---	566	303	---	2710	---	168	---	168	146	---
TOTAL	6166	5161	10679	59257	8032	35221	23618	6200	5260	5218	4894	4835
MEAN	199	172	344	1912	287	1136	787	200	175	168	158	161
MAX	232	174	911	3700	426	3040	3690	316	212	173	171	174
MIN	170	171	168	303	218	218	177	168	151	161	138	140
(†)	+271	-65	+196	-41	0	+509	-348	-32	-166	-156	-178	-59

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 1991\*, BY WATER YEAR (WY)

	1983	1984	1985	1986	1987	1988	1989	1990	1991
MEAN	281	314	667	923	1276	1775	1290	695	357
MAX	865	1122	1818	2014	2531	3992	2586	1821	735
(WY)	1990	1986	1986	1984	1985	1989	1984	1989	1984
MIN	72.6	65.2	70.1	210	287	233	141	170	126
(WY)	1984	1984	1988	1986	1991	1988	1985	1985	1987

SUMMARY STATISTICS

FOR 1990 CALENDAR YEAR

FOR 1991 WATER YEAR

WATER YEARS 1983 - 1991\*

ANNUAL TOTAL	249091	174541	
ANNUAL MEAN	682	478	
HIGHEST ANNUAL MEAN		474	
LOWEST ANNUAL MEAN			1161
HIGHEST DAILY MEAN			205
LOWEST DAILY MEAN	3720	3700	6810
ANNUAL SEVEN-DAY MINIMUM	119	138	60
INSTANTANEOUS PEAK FLOW	132	139	60
INSTANTANEOUS PEAK STAGE		3790	6850
INSTANTANEOUS LOW FLOW		3.99	18.21
ANNUAL RUNOFF (CFSM)	.88	NOT DETERMINED	NOT DETERMINED
ANNUAL RUNOFF (INCHES)	12.00	8.41	12.28
10 PERCENT EXCEEDS	2300	1040	2410
50 PERCENT EXCEEDS	188	174	194
90 PERCENT EXCEEDS	165	165	73

† Change in contents, equivalent in cubic feet per second, in Falls Lake Reservoir; furnished by U.S. Army Corps of Engineers.

‡ Adjusted for change in contents.

\* Regulated period only (1983-1991). See REMARKS.

0208726005 CRABTREE CREEK AT SECONDARY ROAD 1649 NEAR RALEIGH, NC

LOCATION.--Lat 35°50'43", long 78°43'29", Wake County, Hydrologic Unit 03020201, on downstream side of bridge on Secondary Road 1649, 0.1 mi upstream from Sycamore Creek, and 6.6 mi northwest of Raleigh.

DRAINAGE AREA.--76 mi<sup>2</sup>.

PERIOD OF RECORD.--December 1987 to current year.

GAGE.--Water-stage recorder. Datum of gage is 240 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow regulated by flood control dams upstream. Minimum discharge for period of record and current water year also occurred on Dec. 18.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.2	182	7.9	10	25	8.8	174	11	12	8.4	62	e19
2	6.1	165	5.0	8.6	21	44	123	8.2	50	14	41	e17
3	6.1	16	6.1	7.2	20	180	97	6.9	45	165	32	e15
4	5.9	13	22	11	18	354	96	5.8	19	172	24	e13
5	14	16	9.0	9.4	17	255	97	4.9	13	70	20	e12
6	6.2	19	4.8	7.5	17	171	96	7.6	9.4	48	16	e11
7	6.2	19	3.7	147	17	131	92	7.7	8.1	34	15	e10
8	8.2	19	11	348	17	102	87	8.4	7.8	25	14	e9.5
9	35	22	10	299	17	87	87	8.7	7.7	19	12	e9.0
10	38	55	5.5	223	17	72	78	7.7	7.8	15	10	e8.5
11	67	44	3.7	187	17	59	62	8.7	7.6	170	8.8	e7.8
12	68	25	3.5	185	17	49	37	8.3	7.5	109	8.5	e7.4
13	68	23	2.8	185	17	63	24	8.3	7.3	75	9.8	e6.8
14	68	30	2.5	185	17	121	28	8.2	7.2	65	14	e6.4
15	70	30	2.4	185	17	111	27	8.1	7.0	62	37	e6.0
16	81	28	2.6	185	15	86	22	7.9	7.0	48	27	e5.8
17	94	26	2.2	184	11	70	17	7.9	7.6	35	22	e5.6
18	100	27	2.1	166	12	237	13	7.8	23	22	19	e5.4
19	118	25	3.7	142	16	270	9.5	29	28	95	17	e70
20	116	20	3.2	133	18	183	18	127	73	78	e15	e25
21	113	19	94	133	19	131	32	105	36	46	e14	11
22	111	15	32	133	17	94	35	73	28	32	e12	8.2
23	195	10	28	133	14	74	23	57	22	24	e11	7.8
24	150	13	27	119	13	61	18	45	18	18	e30	11
25	141	10	18	103	13	48	14	35	14	17	e16	67
26	261	6.5	13	75	12	40	9.8	29	11	31	e70	82
27	180	5.2	14	54	12	35	8.0	24	10	41	e60	62
28	164	6.1	43	43	10	33	8.0	24	8.6	105	e45	40
29	160	20	28	34	---	90	9.1	22	8.1	78	e33	27
30	166	16	19	27	---	375	13	18	7.7	122	e25	21
31	185	---	16	25	---	245	---	15	---	110	e22	---
TOTAL	2807.9	924.8	445.7	3686.7	453	3879.8	1454.4	745.1	518.4	1953.4	762.1	607.2
MEAN	90.6	30.8	14.4	119	16.2	125	48.5	24.0	17.3	63.0	24.6	20.2
MAX	261	182	94	348	25	375	174	127	73	172	70	82
MIN	5.9	5.2	2.1	7.2	10	8.8	8.0	4.9	7.0	8.4	8.5	5.4

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 1991, BY WATER YEAR (WY)

	MEAN	74.1	76.9	52.0	102	122	162	94.2	82.7	34.8	43.2	37.1	14.7
MAX	90.6	104	143	127	195	341	143	144	74.7	89.8	108	20.2	
(WY)	1991	1990	1990	1988	1989	1989	1989	1989	1989	1989	1989	1991	
MIN	41.3	30.8	14.4	43.1	16.2	25.0	48.5	21.2	15.9	9.15	6.74	5.35	
(WY)	1989	1991	1991	1989	1991	1988	1991	1988	1988	1988	1990	1990	

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR			FOR 1991 WATER YEAR			WATER YEARS 1988 - 1991		
ANNUAL TOTAL	27657.9			18238.5			83.8		
ANNUAL MEAN	75.8			50.0			109		
HIGHEST ANNUAL MEAN							50.0		
LOWEST ANNUAL MEAN							1989		
HIGHEST DAILY MEAN	1080	Mar 29		375	Mar 30		1090	Mar 24	1989
LOWEST DAILY MEAN	2.1	Dec 18		2.1	Dec 18		2.1	Dec 18	1990
ANNUAL SEVEN-DAY MINIMUM	2.6	Dec 12		2.6	Dec 12		2.6	Dec 12	1990
INSTANTANEOUS PEAK FLOW				474	Jul 4		2110	Mar 29	1990
INSTANTANEOUS PEAK STAGE				5.42	Jul 4		10.11	Mar 29	1990
INSTANTANEOUS LOW FLOW				1.8*	Dec 17		1.8*	Dec 17	1990
10 PERCENT EXCEEDS	197			141			189		
50 PERCENT EXCEEDS	30			22			29		
90 PERCENT EXCEEDS	5.2			7.2			6.8		

\* See REMARKS.

## NEUSE RIVER BASIN

02087324 CRABTREE CREEK AT US 1 AT RALEIGH, NC

LOCATION.--Lat 35°48'40", long 78°36'43", Wake County, Hydrologic Unit 03020201, on downstream side of bridge on U.S. Highway 1, 7.2 mi upstream from mouth, and 2.7 mi northeast of Raleigh.

DRAINAGE AREA.--121 mi<sup>2</sup>.

PERIOD OF RECORD.--Occasional discharge measurements, water year 1973. July 1990 to current year.

GAGE.--Water-stage recorder. Datum of gage is 183.27 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Record good except those for estimated daily discharges, which are fair. Flow regulated by flood control dams upstream.

DISCHARGE, CUBIC FEET PER SECOND, JULY TO SEPTEMBER 1990  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	12	7.6	17
2	---	---	---	---	---	---	---	---	---	17	7.6	16
3	---	---	---	---	---	---	---	---	---	12	8.0	15
4	---	---	---	---	---	---	---	---	---	9.8	7.2	14
5	---	---	---	---	---	---	---	---	---	9.2	6.7	13
6	---	---	---	---	---	---	---	---	---	8.5	15	14
7	---	---	---	---	---	---	---	---	---	7.2	46	13
8	---	---	---	---	---	---	---	---	---	8.1	33	25
9	---	---	---	---	---	---	---	---	---	7.5	195	16
10	---	---	---	---	---	---	---	---	---	33	47	14
11	---	---	---	---	---	---	---	---	---	29	25	20
12	---	---	---	---	---	---	---	---	---	17	19	15
13	---	---	---	---	---	---	---	---	---	104	15	15
14	---	---	---	---	---	---	---	---	---	68	67	17
15	---	---	---	---	---	---	---	---	---	32	75	16
16	---	---	---	---	---	---	---	---	---	23	308	16
17	---	---	---	---	---	---	---	---	---	100	403	13
18	---	---	---	---	---	---	---	---	---	160	86	11
19	---	---	---	---	---	---	---	---	---	51	75	12
20	---	---	---	---	---	---	---	---	---	31	31	13
21	---	---	---	---	---	---	---	---	---	58	23	12
22	---	---	---	---	---	---	---	---	---	80	21	13
23	---	---	---	---	---	---	---	---	---	31	21	14
24	---	---	---	---	---	---	---	---	---	22	31	11
25	---	---	---	---	---	---	---	---	---	16	24	12
26	---	---	---	---	---	---	---	---	---	12	68	12
27	---	---	---	---	---	---	---	---	---	11	29	11
28	---	---	---	---	---	---	---	---	---	12	20	12
29	---	---	---	---	---	---	---	---	---	12	66	12
30	---	---	---	---	---	---	---	---	---	11	37	13
31	---	---	---	---	---	---	---	---	---	11	22	---
TOTAL	---	---	---	---	---	---	---	---	---	1015.3	1839.1	427
MEAN	---	---	---	---	---	---	---	---	---	32.8	59.3	14.2
MAX	---	---	---	---	---	---	---	---	---	160	403	25
MIN	---	---	---	---	---	---	---	---	---	7.2	6.7	11

## STATISTICS OF MONTHLY MEAN DATA FOR PERIOD JULY TO SEPTEMBER 1990

MEAN	---	---	---	---	---	---	---	---	---	32.8	59.3	14.2
MAX	---	---	---	---	---	---	---	---	---	32.8	59.3	14.2
(WY)	---	---	---	---	---	---	---	---	---	1990	1990	1990
MIN	---	---	---	---	---	---	---	---	---	32.8	59.3	14.2
(WY)	---	---	---	---	---	---	---	---	---	1990	1990	1990

## SUMMARY STATISTICS

FOR PERIOD JULY TO SEPTEMBER 1990

ANNUAL TOTAL  
ANNUAL MEAN  
HIGHEST ANNUAL MEAN  
LOWEST ANNUAL MEAN  
HIGHEST DAILY MEAN  
LOWEST DAILY MEAN  
ANNUAL SEVEN-DAY MINIMUM  
INSTANTANEOUS PEAK FLOW  
INSTANTANEOUS PEAK STAGE  
INSTANTANEOUS LOW FLOW

2070  
9.73  
5.0  
Aug 16  
Aug 16  
Aug 6

## NEUSE RIVER BASIN

02087324 CRABTREE CREEK AT US 1 AT RALEIGH, NC--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	130	33	78	71	47	209	34	31	15	128	27
2	13	128	28	91	65	146	149	28	86	48	95	22
3	12	48	40	76	63	342	121	23	72	595	78	19
4	35	24	83	88	61	535	118	22	39	461	62	16
5	33	24	51	77	59	339	119	22	24	165	50	15
6	19	23	35	71	59	211	119	36	16	97	100	14
7	14	21	32	337	66	167	115	24	13	e62	55	14
8	14	22	85	477	67	141	110	20	11	e45	41	13
9	23	24	58	365	76	121	111	18	10	34	34	12
10	29	106	41	250	71	105	104	18	9.0	27	30	11
11	278	58	33	690	65	94	92	18	8.3	412	25	9.4
12	95	37	30	1610	61	83	74	16	6.9	170	63	9.1
13	78	30	29	750	58	126	59	16	6.5	117	36	8.9
14	70	25	27	449	67	185	80	18	5.3	95	129	9.2
15	66	25	27	294	61	150	70	17	4.8	95	146	9.2
16	64	25	28	237	55	123	57	15	4.4	80	73	10
17	63	25	27	220	51	106	49	14	118	83	52	9.2
18	67	24	26	186	57	399	43	16	147	116	45	8.6
19	80	23	47	159	59	374	37	240	179	166	37	36
20	78	23	41	276	58	215	60	315	392	130	45	141
21	76	23	351	237	58	149	80	190	109	89	28	41
22	77	24	139	186	54	117	67	117	64	66	22	30
23	482	29	108	156	53	98	51	88	53	52	19	32
24	157	34	101	142	51	85	43	71	41	42	44	55
25	153	27	86	131	50	72	38	58	29	75	57	189
26	377	23	78	109	51	64	32	47	23	185	32	171
27	157	22	105	92	50	60	29	43	21	261	112	129
28	126	27	149	82	49	58	37	43	18	199	94	94
29	117	77	111	76	---	267	29	51	16	164	59	69
30	116	54	93	84	---	579	29	37	13	327	44	55
31	134	---	94	84	---	328	---	29	---	206	34	---
TOTAL	3117	1185	2216	8160	1666	5886	2331	1704	1570.2	4679	1869	1278.6
MEAN	101	39.5	71.5	263	59.5	190	77.7	55.0	52.3	151	60.3	42.6
MAX	482	130	351	1610	76	579	209	315	392	595	146	189
MIN	12	21	26	71	49	47	29	14	4.4	15	19	8.6

e Estimated

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 1991, BY WATER YEAR (WY)

	1990	1991	1991	1991	1991	1991	1991	1991	1990	1991	1991	1991
MEAN	101	39.5	71.5	263	59.5	190	77.7	55.0	257	90.9	59.8	28.4
MAX	101	39.5	71.5	263	59.5	190	77.7	55.0	257	149	60.3	42.6
(WY)	1991	1991	1991	1991	1991	1991	1991	1991	1990	1991	1991	1991
MIN	101	39.5	71.5	263	59.5	190	77.7	55.0	257	32.8	59.3	14.2
(WY)	1991	1991	1991	1991	1991	1991	1991	1991	1990	1990	1990	1990

## SUMMARY STATISTICS

## FOR 1991 WATER YEAR

## WATER YEARS 1990 - 1991

ANNUAL TOTAL	35661.8		
ANNUAL MEAN	97.7		97.7
HIGHEST ANNUAL MEAN	97.7		97.7
LOWEST ANNUAL MEAN	97.7		97.7
HIGHEST DAILY MEAN	1610	Jan 12	1610 Jan 12 1991
LOWEST DAILY MEAN	4.4	Jun 16	4.4 Jun 16 1991
ANNUAL SEVEN-DAY MINIMUM	6.5	Jun 10	6.5 Jun 10 1991
INSTANTANEOUS PEAK FLOW	2450	Jan 12	2450 Jan 12 1991
INSTANTANEOUS PEAK STAGE	10.66	Jan 12	10.66 Jan 12 1991
INSTANTANEOUS LOW FLOW	3.2	Jun 17	3.2 Jun 17 1991
10 PERCENT EXCEEDS	207		261
50 PERCENT EXCEEDS	59		51
90 PERCENT EXCEEDS	16		13

\* See REMARKS.

## NEUSE RIVER BASIN

0208732885 MARSH CREEK NEAR NEW HOPE, NC

LOCATION.--Lat 35°48'59", long 78°35'37", Wake County, Hydrologic Unit 03020201, on right upstream wingwall, 0.2 mi downstream from U.S. 401, and 2.9 mi southwest of New Hope.

DRAINAGE AREA.--6.84 mi<sup>2</sup>.

PERIOD OF RECORD.--January 1984 to current year.

GAGE.--Water-stage recorder. Datum of gage is 198 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good. Recording rain gage at station. Minimum discharge for period of record also occurred on Oct. 17, 18, 1990. Minimum discharge for current water year also occurred on Oct. 17, 18.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.4	1.9	2.6	5.7	3.2	2.2	4.5	2.8	4.9	1.4	5.6	2.3
2	1.3	1.9	2.4	9.4	2.9	26	3.8	2.6	5.7	13	5.3	2.2
3	1.2	1.8	4.2	6.7	2.8	56	3.5	2.4	3.3	57	3.6	2.1
4	6.3	1.5	6.5	7.9	2.8	38	3.4	2.3	2.3	5.1	2.8	2.4
5	2.6	1.6	3.0	5.7	2.8	7.0	3.4	2.6	1.9	2.7	2.6	2.1
6	1.3	1.5	2.5	5.2	2.9	4.5	3.4	5.5	1.7	3.2	31	2.2
7	1.3	1.4	3.1	61	4.3	5.2	3.2	2.9	1.9	2.6	8.3	2.1
8	1.3	1.4	16	19	3.9	5.3	3.2	2.5	2.0	2.5	3.8	2.1
9	1.2	1.9	5.4	11	3.1	4.1	3.4	2.3	1.8	2.4	3.0	1.8
10	1.2	19	3.4	7.7	2.7	3.3	3.2	2.3	1.6	2.1	2.9	1.8
11	68	4.8	2.8	113	2.5	3.1	3.0	2.2	1.4	87	2.4	1.8
12	3.2	2.8	2.5	63	2.3	2.9	3.0	2.3	1.2	6.7	21	1.9
13	1.2	2.2	2.6	11	2.3	13	3.2	4.4	1.2	3.7	10	1.9
14	.60	1.9	2.4	6.4	3.8	16	9.3	3.7	1.1	2.9	44	1.9
15	.49	1.9	2.8	5.3	2.4	4.9	8.1	2.6	1.1	2.5	31	1.8
16	.41	2.0	2.7	6.8	2.1	3.4	5.9	2.4	1.3	2.8	5.8	1.8
17	.37	2.0	2.5	5.0	2.2	3.0	3.5	2.6	29	15	3.5	1.8
18	1.4	2.0	2.5	3.9	3.9	46	3.1	2.5	21	37	3.6	1.8
19	.73	2.2	7.0	3.6	3.0	6.6	3.5	97	65	26	3.0	9.5
20	.52	2.3	4.7	31	2.7	3.7	7.6	53	64	4.9	17	16
21	.42	2.3	66	6.8	2.5	3.2	11	14	7.6	3.6	7.8	2.6
22	1.2	2.2	9.1	4.3	2.4	3.0	5.6	5.1	3.3	3.0	3.5	1.9
23	71	3.2	6.8	3.6	2.2	2.8	3.4	3.9	3.1	2.5	2.7	1.8
24	5.2	3.5	6.2	3.8	2.2	2.6	3.0	3.4	2.4	2.0	11	7.5
25	18	2.1	5.6	3.8	2.2	2.7	2.6	3.2	2.0	16	2.9	14
26	41	2.0	5.3	3.1	3.0	2.9	2.4	3.0	1.9	55	2.6	5.6
27	5.0	1.9	13	3.0	2.3	2.6	2.6	3.3	1.8	31	7.5	2.5
28	3.1	3.6	13	3.0	2.2	2.7	4.7	4.2	1.7	7.5	3.8	1.9
29	2.4	15	6.5	2.8	---	61	3.1	3.2	1.6	9.3	3.7	1.7
30	2.1	4.5	6.1	6.4	---	36	3.2	2.6	1.5	56	3.0	1.6
31	2.0	---	7.0	6.8	---	5.9	---	2.2	---	8.8	2.6	---
TOTAL	247.44	98.3	226.2	435.7	77.6	379.6	126.8	249.0	240.3	475.2	261.3	102.4
MEAN	7.98	3.28	7.30	14.1	2.77	12.2	4.23	8.03	8.01	15.3	8.43	3.41
MAX	71	19	66	113	4.3	61	11	97	65	87	44	16
MIN	.37	1.4	2.4	2.8	2.1	2.2	2.4	2.2	1.1	1.4	2.4	1.6
CFSM	1.17	.48	1.07	2.05	.41	1.79	.62	1.17	1.17	2.24	1.23	.50
IN.	1.35	.53	1.23	2.37	.42	2.06	.69	1.35	1.31	2.58	1.42	.56

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 1991, BY WATER YEAR (WY)

	5.38	6.98	6.39	11.0	12.7	12.3	9.50	11.8	7.73	8.71	9.98	4.89
MEAN	5.38	6.98	6.39	11.0	12.7	12.3	9.50	11.8	7.73	8.71	9.98	4.89
MAX	10.1	14.9	10.3	20.7	20.7	21.3	19.2	25.9	20.3	17.5	38.0	14.4
(WY)	1990	1989	1990	1987	1989	1989	1989	1984	1989	1984	1986	1989
MIN	1.95	2.51	4.22	3.77	2.77	3.71	2.08	3.63	4.15	2.44	2.91	1.14
(WY)	1987	1987	1986	1986	1991	1985	1985	1985	1985	1987	1988	1985

## SUMMARY STATISTICS

## FOR 1990 CALENDAR YEAR

## FOR 1991 WATER YEAR

## WATER YEARS 1984 - 1991

ANNUAL TOTAL	3399.64	2919.84	
ANNUAL MEAN	9.31	8.00	8.60
HIGHEST ANNUAL MEAN			14.2
LOWEST ANNUAL MEAN			5.17
HIGHEST DAILY MEAN	220	113	397
LOWEST DAILY MEAN	.37	.37	.37
ANNUAL SEVEN-DAY MINIMUM	.62	.62	.62
INSTANTANEOUS PEAK FLOW		429	1320
INSTANTANEOUS PEAK STAGE		8.26	10.54
INSTANTANEOUS LOW FLOW		.37*	.37*
ANNUAL RUNOFF (CFSM)	1.36	1.17	1.26
ANNUAL RUNOFF (INCHES)	18.49	15.88	17.09
10 PERCENT EXCEEDS	21	16	18
50 PERCENT EXCEEDS	4.4	3.0	3.5
90 PERCENT EXCEEDS	1.5	1.7	1.4

\* See REMARKS.

## 02087500 NEUSE RIVER NEAR CLAYTON, NC

LOCATION.--Lat 35°38'50", long 78°24'22", Johnston County, Hydrologic Unit 03020201, on left bank at downstream side of bridge on State Highway 42, 2.3 mi upstream from Mill Creek, and 3 mi east of Clayton.

DRAINAGE AREA.--1,150 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1927 to current year.

REVISED RECORDS.--WSP 1032: 1930, 1935 (M). WSP 1333: 1935. WSP 1503: 1949. WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 128.41 ft above National Geodetic Vertical Datum of 1929. Prior to Mar. 18, 1942, at site 1,100 ft upstream at same datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow regulated by Falls Lake (station 02087182) since Dec. 7, 1983. Diversions for municipal water supply for cities of Durham and Butner (stations 02086500 and 02086624). The City of Raleigh diverted from the Neuse River upstream from station an average of 57.9 ft<sup>3</sup>/s, most of which was returned as treated effluent upstream from station. Satellite data transmitter at station. Prior to regulation, maximum discharge, 22,900 ft<sup>3</sup>/s Sept. 19, 1945, gage height, 22.12 ft; minimum, 44 ft<sup>3</sup>/s Sept. 15, 1932, gage height, 0.28 ft, site then in use.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 23, 1919, reached a stage of 21.15 ft, from floodmark at former site, discharge, 21,200 ft<sup>3</sup>/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	276	403	402	e1000	608	423	3180	553	309	256	e615	e315
2	284	394	348	e1030	492	598	3380	548	411	265	512	e290
3	284	367	338	1990	463	768	3780	520	403	1120	444	e274
4	285	296	399	1500	452	1660	3960	505	367	897	e400	275
5	355	291	388	940	455	2740	3480	508	316	657	e400	269
6	317	285	341	728	445	3260	1950	532	297	447	e350	261
7	291	293	327	953	453	3370	1030	527	286	376	426	252
8	291	281	433	2060	488	3300	969	389	278	333	337	249
9	290	290	463	2670	455	2290	737	338	273	e303	328	243
10	295	453	378	3280	448	1060	636	335	299	e289	453	263
11	685	428	355	3550	442	951	606	330	321	1330	344	275
12	e440	352	334	5830	620	1230	484	323	310	998	357	270
13	e357	317	324	3950	674	1350	419	317	294	521	833	266
14	e333	306	319	3390	511	1610	450	320	294	417	525	268
15	e330	298	317	4020	443	1490	530	324	306	376	1590	271
16	e331	302	322	4330	417	1360	499	314	290	358	873	266
17	e326	300	321	4370	407	1010	443	311	295	370	507	263
18	e330	300	313	4300	414	1270	426	301	1070	422	417	260
19	e330	300	e340	4080	433	2020	411	696	706	673	424	262
20	e331	295	e346	4090	435	2440	457	2460	1990	506	520	519
21	e328	299	899	3880	613	2430	478	1300	1180	402	512	401
22	e345	289	1490	3660	668	2290	540	682	545	352	345	307
23	780	294	1380	3530	661	983	808	505	418	322	311	283
24	901	322	1310	3310	651	650	891	434	389	303	349	276
25	465	312	1240	2750	655	607	858	392	350	329	389	413
26	1060	305	887	2340	659	839	595	368	320	328	372	541
27	708	296	861	1720	653	893	545	352	305	907	539	433
28	471	317	1110	1360	458	898	550	359	300	e1040	629	357
29	422	668	999	1030	---	730	559	358	273	1370	451	336
30	397	640	e956	921	---	2140	544	350	257	1320	e365	314
31	401	---	e980	742	---	2510	---	327	---	e1040	e350	---
TOTAL	13039	10293	19220	83304	14573	49170	34195	15878	13452	18627	15267	9272
MEAN	421	343	620	2687	520	1586	1140	512	448	601	492	309
MAX	1060	668	1490	5830	674	3370	3960	2460	1990	1370	1590	541
MIN	276	281	313	728	407	423	411	301	257	256	311	243

e Estimated

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 1991\*, BY WATER YEAR (WY)

	1984	1985	1986	1987	1988	1989	1990	1991
MEAN	435	542	925	1487	1781	2280	1672	1023
MAX	1289	1305	2013	2821	3188	4906	3211	2864
(WY)	1990	1986	1986	1984	1985	1989	1984	1989
MIN	212	240	289	419	520	483	290	320
(WY)	1984	1987	1989	1986	1991	1988	1986	1985

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1984 - 1991 *
ANNUAL TOTAL	386883	296290	
ANNUAL MEAN	1060	812	1033
HIGHEST ANNUAL MEAN			1653
LOWEST ANNUAL MEAN			458
HIGHEST DAILY MEAN	6300	Mar 30	8350
LOWEST DAILY MEAN	242	Aug 5	105
ANNUAL SEVEN-DAY MINIMUM	248	Jul 31	117
INSTANTANEOUS PEAK FLOW		6450	8790
INSTANTANEOUS PEAK STAGE		10.28	12.74
INSTANTANEOUS LOW FLOW		225	78
ANNUAL RUNOFF (CFSM)	.92	.71	.90
ANNUAL RUNOFF (INCHES)	12.51	9.58	12.21
10 PERCENT EXCEEDS	2890	2000	3180
50 PERCENT EXCEEDS	505	434	428
90 PERCENT EXCEEDS	281	290	259

\* Regulated period only (1984-1991). See REMARKS.

## NEUSE RIVER BASIN

02087570 NEUSE RIVER AT SMITHFIELD, NC

LOCATION.--Lat 35°30'46", long 78°21'00", Johnston County, Hydrologic Unit 03020201, on left bank 10 ft downstream from bridge on U.S. Highway 70, at Smithfield, 2.1 mi upstream from Swift Creek, and 178 mi upstream from mouth.

DRAINAGE AREA.--1,206 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1955, 1959-67, October 1988 to current year.

REMARKS.--Station operated to define water quality as part of a six-county regional surface water-quality assessment.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (MG/L)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM PERCENT	
OCT 04...	1230	302	260	6.9	22.0	18	758	7.8	8.3	2.9	33	65	
NOV 21...	1100	339	255	6.7	9.5	7	765	11.8	9.2	2.9	34	65	
DEC 12...	1100	394	183	6.8	7.5	20	761	11.2	7.7	2.5	21	57	
JAN 17...	1045	4990	116	6.9	8.5	43	756	11.2	6.0	2.3	12	49	
FEB 27...	1150	794	134	7.5	8.0	55	760	11.0	6.2	2.2	17	57	
MAR 25...	0945	727	155	6.7	15.5	55	760	8.6	6.3	2.2	18	58	
APR 18...	1200	487	137	7.3	21.0	45	754	7.4	7.1	2.3	19	57	
MAY 28...	1100	375	217	6.9	26.0	43	760	6.8	6.5	2.4	28	66	
JUN 11...	1215	330	217	7.3	24.5	16	763	7.5	7.0	3.2	39	70	
JUL 23...	1030	343	218	7.3	28.0	8	761	6.8	7.1	2.7	29	65	
AUG 06...	1030	379	201	7.4	27.0	40	766	6.3	7.5	3.0	25	60	
SEP 17...	0910	260	281	6.7	24.5	22	764	6.8	8.9	3.5	37	66	
DATE		SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS NH4)
OCT 04...	3	4.4	35	17	<0.10	9.8	155	2.19	0.010	2.20	0.030	0.04	
NOV 21...	3	4.0	30	18	0.20	11	146	--	<0.010	2.40	0.080	0.10	
DEC 12...	2	3.4	25	16	0.10	11	138	1.89	0.010	1.90	0.050	0.06	
JAN 17...	1	2.4	13	8.5	0.20	6.6	76	0.480	0.020	0.500	0.070	0.09	
FEB 27...	1	2.8	19	12	0.20	9.6	84	0.870	0.030	0.900	0.370	0.48	
MAR 25...	2	2.5	25	10	<0.10	11	90	--	<0.010	0.910	0.040	0.05	
APR 18...	2	2.8	730	9.0	<0.10	11	105	1.29	0.010	1.30	0.020	0.03	
MAY 28...	2	3.6	38	13	0.30	11	112	1.48	0.020	1.50	0.030	0.04	
JUN 11...	3	4.2	48	19	0.20	10	156	1.29	0.010	1.30	0.040	0.05	
JUL 23...	2	3.8	32	16	0.20	10	123	1.98	0.020	2.00	0.030	0.04	
AUG 06...	2	4.2	34	13	0.20	11	118	0.990	0.010	1.00	0.030	0.04	
SEP 17...	3	4.3	55	25	0.30	9.6	166	2.48	0.020	2.50	0.010	0.01	

## WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

[illegible]

02087570 NEUSE RIVER AT SMITHFIELD, NC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	CARBON, ORGANIC TOTAL (MG/L AS C)	METHY- LENE BLUE ACTIVE SUB- STANCE (MG/L)	ALDRIN, TOTAL (UG/L)	CHLOR- DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI- AZINON, TOTAL (UG/L)
OCT 04...	<1	<1	20	5.7	0.07	<0.001	<0.1	<0.001	<0.001	<0.001	<0.01
NOV 21...	--	--	--	5.0	--	--	--	--	--	--	--
DEC 12...	--	--	--	4.8	--	--	--	--	--	--	--
JAN 17...	--	--	--	7.6	--	--	--	--	--	--	--
FEB 27...	--	--	--	6.7	--	--	--	--	--	--	--
MAR 25...	--	--	--	6.1	--	--	--	--	--	--	--
APR 18...	<1	<1	<10	5.9	--	<0.001	<0.1	<0.001	<0.001	<0.001	<0.01
MAY 28...	--	--	--	5.8	--	--	--	--	--	--	--
JUN 11...	<1	<1	<10	5.9	--	--	--	--	--	--	--
JUL 23...	--	--	--	6.8	--	--	--	--	--	--	--
AUG 06...	<1	<1	<10	7.9	--	<0.001	<0.1	<0.001	<0.001	<0.001	<0.01
SEP 17...	--	--	--	5.7	--	--	--	--	--	--	--

[illegible]

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

[illegible]

## NEUSE RIVER BASIN

02087570 NEUSE RIVER AT SMITHFIELD, NC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

[illegible][illegible]

## NEUSE RIVER BASIN

0208758850 SWIFT CREEK NEAR MCCULLARS CROSSROADS, NC

LOCATION.--Lat 35°41'33", long 78°41'34", Wake County, Hydrologic Unit 03020201, 0.1 mi downstream from Secondary Road 1375, 0.1 mi downstream from Lake Wheeler, and 2.0 mi north of McCullars Crossroads.

DRAINAGE AREA.--35.8 mi<sup>2</sup>.

PERIOD OF RECORD.--December 1987 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 258 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Record good. Minimum discharge for current water year also occurred on Oct. 3. Minimum discharge for period of record also occurred on Oct. 3, 1990.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.04	3.3	15	19	26	8.0	51	6.8	5.0	2.4	28	4.5
2	.04	2.9	10	23	21	35	30	5.5	9.9	1.9	15	2.6
3	.04	2.7	11	24	17	96	20	3.7	6.0	126	11	1.6
4	.06	2.4	24	24	15	219	16	2.3	3.7	88	7.5	1.2
5	.06	2.3	18	21	14	118	15	2.2	1.6	35	4.2	.96
6	.06	2.9	9.5	17	13	55	15	5.2	.80	19	2.7	.74
7	.08	2.2	6.3	73	15	48	14	3.8	.36	11	3.5	.62
8	.09	1.7	15	217	22	37	13	2.4	.23	6.3	3.0	.48
9	.10	1.3	20	108	25	28	12	1.8	.16	3.1	2.5	.15
10	.12	8.0	17	55	20	23	9.8	1.8	.15	2.5	2.1	.15
11	.51	8.5	12	98	16	18	6.7	1.7	.25	5.8	1.3	.10
12	1.4	6.5	9.7	702	12	14	5.3	2.3	.26	6.8	3.0	.09
13	4.1	4.7	8.1	218	12	24	4.9	1.5	.20	5.6	7.7	.10
14	4.1	2.9	6.5	78	18	64	9.8	1.1	.22	3.2	17	.16
15	3.1	2.6	6.0	44	16	54	18	1.3	.28	1.2	88	.22
16	1.7	2.4	3.6	36	9.9	34	17	2.4	.33	.67	47	.21
17	1.1	2.8	3.4	32	8.2	24	14	2.1	.30	.50	20	.27
18	1.7	1.6	5.6	26	7.7	72	10	4.6	.33	.68	11	.33
19	.72	1.4	7.1	20	11	108	7.5	50	5.2	1.6	7.1	.54
20	.16	1.2	8.1	53	15	52	14	171	181	1.9	9.2	2.7
21	.17	1.5	128	66	13	32	23	101	115	1.4	14	3.2
22	.21	1.5	110	39	13	24	29	45	135	.29	7.3	2.0
23	57	2.5	50	27	11	21	20	24	48	.13	4.2	1.7
24	61	3.8	32	23	11	19	15	15	19	.11	2.9	1.7
25	31	2.9	17	23	10	12	9.7	10	9.1	.13	2.4	12
26	112	2.6	11	20	11	10	7.2	7.1	5.3	.20	2.5	20
27	57	2.6	11	18	11	13	6.5	7.0	3.6	3.1	13	12
28	24	5.2	28	17	8.8	12	6.9	9.4	2.8	8.1	62	6.0
29	11	31	27	16	---	36	6.5	7.6	2.5	8.0	32	3.5
30	6.3	25	22	19	---	274	6.8	6.0	2.6	45	16	2.3
31	4.4	---	20	32	---	109	---	4.8	---	64	8.2	---
TOTAL	383.36	142.9	671.9	2188	402.6	1693.0	433.6	510.4	559.17	453.61	455.3	82.12
MEAN	12.4	4.76	21.7	70.6	14.4	54.6	14.5	16.5	18.6	14.6	14.7	2.74
MAX	112	31	128	702	26	274	51	171	181	126	88	20
MIN	.04	1.2	3.4	16	7.7	8.0	4.9	1.1	.15	.11	1.3	.09
CFSM	.35	.13	.61	1.97	.40	1.53	.40	.46	.52	.41	.41	.08
IN.	.40	.15	.70	2.27	.42	1.76	.45	.53	.58	.47	.47	.09

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 1991, BY WATER YEAR (WY)

	1988	1989	1990	1991	1988	1989	1990	1991	1988	1989	1990	1991
MEAN	19.6	22.9	23.1	43.9	44.3	66.8	31.8	37.4	21.0	18.0	28.5	6.52
MAX	35.6	32.2	50.9	70.6	75.2	120	56.8	75.7	38.7	51.5	81.4	18.6
(WY)	1990	1990	1990	1991	1989	1989	1989	1989	1989	1989	1989	1989
MIN	10.8	4.76	7.81	19.7	14.4	15.1	14.5	9.05	11.5	1.16	2.04	.11
(WY)	1989	1991	1989	1989	1991	1988	1991	1988	1990	1988	1988	1990

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1988 - 1991
ANNUAL TOTAL	10496.16	7975.96	
ANNUAL MEAN	28.8	21.9	35.4
HIGHEST ANNUAL MEAN			48.9
LOWEST ANNUAL MEAN			21.9
HIGHEST DAILY MEAN	660	702	893
LOWEST DAILY MEAN	.04	.04	.04
ANNUAL SEVEN-DAY MINIMUM	.05	.05	.05
INSTANTANEOUS PEAK FLOW		917	1170
INSTANTANEOUS PEAK STAGE		9.55	10.14
INSTANTANEOUS LOW FLOW		.03*	.03*
ANNUAL RUNOFF (CFSM)	.80	.61	.99
ANNUAL RUNOFF (INCHES)	10.91	8.29	13.44
10 PERCENT EXCEEDS	70	52	72
50 PERCENT EXCEEDS	11	8.1	14
90 PERCENT EXCEEDS	.16	.32	.76

\* See REMARKS.

## NEUSE RIVER BASIN

02088000 MIDDLE CREEK NEAR CLAYTON, NC

LOCATION.--Lat 35°34'10", long 78°35'30", Johnston County, Hydrologic Unit 03020201, on right bank 300 ft downstream from bridge on State Highway 50, 0.5 mi upstream from Buffalo Branch, 3.7 mi downstream from Wake-Johnston County line, and 9.5 mi southwest of Clayton.

DRAINAGE AREA.--83.5 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1939 to current year. Monthly discharge only for October 1939, published in WSP 1303.

REVISED RECORDS.--WSP 952: 1940(M), 1941. WSP 1233: 1943(M), 1945, 1949. WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 184.53 ft above National Geodetic Vertical Datum of 1929. Nov. 1-20, 1939, nonrecording gage at same site and datum.

REMARKS.--No estimated daily discharges. Records good. Maximum discharge for period of record, result of dam failure. No flow also occurred on Oct. 12-13, 1954, and July 13-28, 1986. Minimum discharge for current water year also occurred on Nov. 3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.8	.98	36	51	93	35	279	41	22	15	101	28
2	5.1	.88	19	50	68	79	133	43	19	13	63	24
3	5.4	.91	14	61	61	159	100	32	19	31	61	20
4	5.7	1.1	24	57	57	341	78	26	16	171	49	18
5	11	3.4	27	53	53	338	68	23	13	357	34	16
6	18	6.1	17	44	51	151	64	26	11	206	27	16
7	18	7.9	13	67	54	108	64	30	9.5	96	22	15
8	22	6.2	21	345	63	98	57	23	8.7	58	19	14
9	27	6.1	41	354	75	84	59	20	8.3	37	21	14
10	30	13	29	181	62	70	54	19	7.8	28	43	13
11	47	28	20	131	53	61	45	19	7.3	25	31	10
12	43	24	16	397	47	55	39	18	6.8	31	35	9.5
13	20	21	14	693	44	59	36	17	6.8	26	271	9.3
14	19	18	12	417	49	150	76	16	7.2	21	102	8.7
15	17	17	11	164	51	165	147	15	5.7	18	230	8.9
16	14	15	11	131	44	103	104	17	6.2	15	291	9.3
17	11	14	11	124	39	76	71	16	10	15	104	9.0
18	17	14	12	96	40	74	54	15	9.7	15	59	7.7
19	33	13	16	78	43	209	45	153	32	20	46	7.7
20	38	13	18	163	44	150	59	402	1130	30	41	20
21	37	11	123	229	46	91	80	411	652	26	43	28
22	38	9.8	234	137	45	71	88	156	235	21	41	19
23	60	9.9	99	95	42	62	64	83	106	15	33	14
24	66	12	58	82	42	58	50	56	56	12	28	12
25	25	14	37	98	40	52	42	43	39	10	26	13
26	88	14	28	87	39	47	35	36	31	8.6	26	25
27	62	13	24	75	38	43	33	30	27	17	36	23
28	13	17	46	70	36	41	32	42	23	118	89	17
29	3.8	71	56	64	---	43	32	42	19	269	73	14
30	1.7	104	44	63	---	129	31	33	16	313	51	12
31	1.2	---	44	117	---	419	---	26	---	155	35	---
TOTAL	801.7	499.27	1175	4774	1419	3621	2119	1929	2560.0	2192.6	2131	455.1
MEAN	25.9	16.6	37.9	154	50.7	117	70.6	62.2	85.3	70.7	68.7	15.2
MAX	88	104	234	693	93	419	279	411	1130	357	291	28
MIN	1.2	.88	11	44	36	35	31	15	5.7	8.6	19	7.7
CFSM	.31	.20	.45	1.84	.61	1.40	.85	.75	1.02	.85	.82	.18
IN.	.36	.22	.52	2.13	.63	1.61	.94	.86	1.14	.98	.95	.20

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1991, BY WATER YEAR (WY)

	MEAN	46.0	61.4	85.8	132	164	165	117	73.8	49.9	56.5	59.2	48.2
MAX	275	226	254	356	450	352	319	330	181	472	340	436	
(WY)	1960	1958	1973	1954	1973	1989	1959	1958	1957	1965	1949	1955	
MIN	.77	4.67	19.7	31.6	46.2	45.1	16.1	11.4	2.15	.23	1.75	.50	
(WY)	1987	1974	1952	1942	1941	1981	1986	1981	1986	1986	1983	1954	

## SUMMARY STATISTICS FOR 1990 CALENDAR YEAR FOR 1991 WATER YEAR WATER YEARS 1940 - 1991

	ANNUAL TOTAL	25944.47	23676.67	
ANNUAL MEAN	71.1	64.9	87.9	
HIGHEST ANNUAL MEAN			161	1965
LOWEST ANNUAL MEAN			30.0	1981
HIGHEST DAILY MEAN	859	Mar 30	1130	Jun 20
LOWEST DAILY MEAN	.88	Nov 2	.88	Nov 2
ANNUAL SEVEN-DAY MINIMUM	1.5	Oct 30	1.5	Oct 30
INSTANTANEOUS PEAK FLOW			1390	Jun 20
INSTANTANEOUS PEAK STAGE			9.29	Jun 20
INSTANTANEOUS LOW FLOW			.83*	Nov 2
ANNUAL RUNOFF (CFSM)	.85		.78	
ANNUAL RUNOFF (INCHES)	11.56		10.55	
10 PERCENT EXCEEDS	171		148	
50 PERCENT EXCEEDS	36		36	
90 PERCENT EXCEEDS	5.1		9.8	

\* See REMARKS.

02088500 LITTLE RIVER NEAR PRINCETON, NC

LOCATION.--Lat 35°30'40", long 78°09'38", Johnston County, Hydrologic Unit 03020201, on left bank 600 ft downstream from bridge on Secondary Road 2320, 0.8 mi upstream from Little Creek, and 3 mi north of Princeton.

DRAINAGE AREA.--232 mi<sup>2</sup>.

PERIOD OF RECORD.--February 1930 to current year. Monthly discharge only for some periods, published in WSP 1303.

REVISED RECORD.--WSP 1233: 1935(M). WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 107.75 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 17, 1934, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges and those for July, which are fair. Slight fluctuation and occasional regulation for short periods, caused by mills above station. Minimum discharge for period of record occurred frequently in June 1986 due to regulation from unknown source.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	61	306	145	309	109	606	113	37	22	2750	216
2	12	51	350	158	252	130	529	106	36	15	2270	141
3	10	45	203	205	213	236	358	97	31	33	1240	112
4	12	38	142	226	193	440	227	76	30	36	663	94
5	18	33	112	212	181	541	178	65	35	46	345	80
6	14	29	96	182	167	471	155	59	14	e150	187	69
7	15	33	87	167	166	421	143	59	5.5	e400	136	58
8	14	28	97	279	172	355	133	52	14	e230	137	54
9	17	18	122	506	172	272	126	48	13	e95	113	50
10	20	37	134	627	162	219	125	44	9.5	61	175	47
11	53	70	122	602	151	185	114	39	6.1	39	288	45
12	52	80	105	575	142	162	102	37	5.4	402	263	38
13	72	69	97	645	131	158	93	34	4.4	647	323	34
14	72	57	95	771	134	341	124	34	2.4	681	355	29
15	64	53	87	859	144	468	206	47	2.7	431	432	20
16	64	49	88	809	137	340	167	38	1.6	164	526	24
17	57	38	89	543	123	258	151	29	3.4	99	680	29
18	49	31	86	371	117	303	135	19	11	73	583	21
19	43	32	83	291	122	526	117	32	22	54	367	30
20	40	30	85	398	127	481	484	380	153	41	209	103
21	37	32	119	671	127	382	545	745	254	41	219	79
22	33	40	226	652	123	308	325	743	185	34	149	62
23	50	29	266	511	120	241	217	542	99	34	112	48
24	58	30	227	385	118	197	163	308	80	26	100	39
25	66	32	182	344	118	168	130	156	84	38	90	47
26	132	36	144	323	121	145	107	109	72	30	89	68
27	138	37	126	272	121	134	94	86	64	64	183	83
28	140	54	129	236	116	125	88	76	55	286	604	73
29	104	68	153	222	---	136	83	65	40	693	702	58
30	86	142	160	216	---	572	84	56	29	1210	456	46
31	72	---	151	298	---	676	---	46	---	2210	314	---
TOTAL	1626	1382	4469	12701	4279	9500	6109	4340	1399.0	8385	15060	1897
MEAN	52.5	46.1	144	410	153	306	204	140	46.6	270	486	63.2
MAX	140	142	350	859	309	676	606	745	254	2210	2750	216
MIN	10	18	83	145	116	109	83	19	1.6	15	89	20
CFSM	.23	.20	.62	1.77	.66	1.32	.88	.60	.20	1.17	2.09	.27
IN.	.26	.22	.72	2.04	.69	1.52	.98	.70	.22	1.34	2.41	.30

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 1991, BY WATER YEAR (WY)

	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941
MEAN	132	140	234	381	477	470	334	198	150	187	192	129
MAX	1202	645	717	999	1285	1204	969	835	573	826	783	905
(WY)	1965	1948	1937	1954	1948	1989	1959	1989	1953	1959	1931	1955
MIN	6.00	13.0	16.0	24.1	49.6	120	53.3	17.3	14.1	21.9	5.65	2.83
(WY)	1934	1934	1934	1934	1934	1981	1986	1986	1986	1963	1980	1980

SUMMARY STATISTICS

FOR 1990 CALENDAR YEAR

FOR 1991 WATER YEAR

WATER YEARS 1930 - 1991

ANNUAL TOTAL	78452.14	71147.0	252
ANNUAL MEAN	215	195	511
HIGHEST ANNUAL MEAN			1960
LOWEST ANNUAL MEAN			1951
HIGHEST DAILY MEAN	2700	2750	6790
LOWEST DAILY MEAN	.38	1.6	.08
ANNUAL SEVEN-DAY MINIMUM	.82	3.7	.82
INSTANTANEOUS PEAK FLOW		2860	7150
INSTANTANEOUS PEAK STAGE		11.83	13.94
INSTANTANEOUS LOW FLOW		1.3	.08*
ANNUAL RUNOFF (CFSM)	.93	.84	1.09
ANNUAL RUNOFF (INCHES)	12.58	11.41	14.76
10 PERCENT EXCEEDS	526	493	626
50 PERCENT EXCEEDS	105	114	118
90 PERCENT EXCEEDS	12	29	22

\* See REMARKS.

## NEUSE RIVER BASIN

02089000 NEUSE RIVER NEAR GOLDSBORO, NC

LOCATION.--Lat 35°20'14", long 77°59'51", Wayne County, Hydrologic Unit 03020202, on left bank at downstream side of bridge on Secondary Road 1915, 0.2 mi upstream from Stony Creek, 1.5 mi downstream from Seaboard Coast Line Railroad bridge, 3.2 mi south of Wayne County courthouse in Goldsboro, 4.3 mi downstream from Little River, and 135 mi upstream from mouth.

DRAINAGE AREA.--2,399 mi<sup>2</sup>.

PERIOD OF RECORD.--February 1930 to current year.

REVISED RECORDS.--WSP 1333: 1931, 1935. WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 42.95 ft above National Geodetic Vertical Datum of 1929. Prior to July 24, 1931, nonrecording gage at railroad bridge, 1.5 mi upstream at datum 2.00 ft higher. July 24, 1931 to Aug. 31, 1948, water-stage recorder at site 2.3 mi upstream at datum 1.71 ft higher than present datum. National Weather Service gage height telemeter at station.

REMARKS.--Records good. Flow regulated by Falls Lake (station 02087182). Diversions for municipal water supply for cities of Durham and Butner (station 02087183). National Weather Service gage height telemeter at station. Prior to regulation, maximum discharge, 30,700 ft<sup>3</sup>/s Sept. 27, 1945, gage height, 26.72 ft, site and datum then in use; minimum discharge, 76 ft<sup>3</sup>/s Sept. 26, 1968. Minimum discharge during regulation also occurred Oct. 3, 1985. Minimum discharge for current water year also occurred on Oct. 6, 10.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods of June 1866 and July 1919, reached stages of about 29 ft and 28 ft, respectively, at site 2.3 mi upstream at present datum, from flood profiles of U.S. Army Corps of Engineers. Flood of Oct. 5, 1929, reached a stage of 27.3 ft at railroad bridge at present datum, discharge, 38,600 ft<sup>3</sup>/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	458	1040	1270	1780	2840	1480	5380	1210	610	475	7570	1800
2	376	879	1520	1790	2700	1410	5730	1300	575	561	8170	1440
3	318	787	1470	1820	2440	1630	5660	1240	630	518	8650	1150
4	318	724	1210	2250	2100	2560	5400	1130	685	673	8410	960
5	339	665	1020	2800	1850	3540	5130	1010	691	1470	6220	846
6	319	585	965	2580	1710	4060	5000	946	624	1910	3750	768
7	357	540	923	2030	1680	4380	4980	932	525	1800	2180	718
8	360	511	970	1900	1830	4500	4810	913	458	1830	1700	655
9	329	483	1020	2800	1880	4560	3170	865	413	1600	1490	613
10	320	724	1210	3440	1910	4610	2120	724	393	1130	1880	586
11	580	817	1270	3890	1860	4550	1740	635	374	874	2100	554
12	581	1110	1180	4190	1740	3320	1530	595	375	783	2060	540
13	1040	1180	1070	4350	1640	2650	1370	568	396	1700	2220	549
14	1100	1070	962	4550	1710	2800	1260	559	376	1640	2290	535
15	847	928	892	4890	1670	3310	1800	536	344	1330	2940	510
16	676	812	847	5330	1510	3730	2490	563	333	1120	3010	486
17	562	728	822	5780	1400	3670	2360	565	346	796	3270	463
18	513	678	815	6050	1320	3310	2000	515	346	615	3010	450
19	497	640	802	6070	1270	3110	1690	585	629	554	2530	441
20	472	606	808	6220	1260	3590	2010	965	1290	579	1980	828
21	460	597	914	6350	1270	3980	3200	2710	2260	767	1660	1080
22	457	582	1140	6480	1290	4120	3620	3660	3120	681	1630	1230
23	567	595	2230	6610	1450	4090	3540	3810	3190	559	1470	1100
24	615	589	2730	6620	1600	3600	2950	2830	2510	482	1350	1080
25	1180	577	2690	6540	1780	2400	2570	1910	1680	434	1400	1120
26	1930	583	2390	6320	1720	1850	2190	1410	1260	400	1270	1460
27	1960	583	2020	6010	1680	1690	1830	1080	944	802	2020	1520
28	2530	578	1690	5570	1600	1770	1460	892	741	1650	2120	1590
29	2330	672	1700	4490	---	1990	1290	776	631	2410	2250	1470
30	1790	790	1890	3360	---	3690	1200	702	557	4520	2600	1230
31	1350	---	1880	2950	---	4670	---	661	---	7050	2360	---
TOTAL	25531	21653	42320	135810	48710	100620	89480	36797	27306	41713	95560	27772
MEAN	824	722	1365	4381	1740	3246	2983	1187	910	1346	3083	926
MAX	2530	1180	2730	6620	2840	4670	5730	3810	3190	7050	8650	1800
MIN	318	483	802	1780	1260	1410	1200	515	333	400	1270	441

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 1991\*, BY WATER YEAR (WY)

	MEAN	842	1029	2068	3112	3958	5378	4450	2420	1425	1472	1613	904
MAX	2902	2775	4517	5726	7006	10290	7850	7276	3081	4668	3601	2468	
(WY)	1990	1990	1990	1987	1983	1989	1989	1989	1989	1989	1989	1984	
MIN	310	326	622	884	1517	1575	631	433	342	394	264	246	
(WY)	1984	1988	1988	1986	1986	1988	1986	1986	1986	1986	1987	1983	1985

SUMMARY STATISTICS

FOR 1990 CALENDAR YEAR

FOR 1991 WATER YEAR

WATER YEARS 1983 - 1991\*

ANNUAL TOTAL	797911	693272	
ANNUAL MEAN	2186	1899	2382
HIGHEST ANNUAL MEAN			3786
LOWEST ANNUAL MEAN			1042
HIGHEST DAILY MEAN	9530	Apr 6	17800
LOWEST DAILY MEAN	318	Oct 3	162
ANNUAL SEVEN-DAY MINIMUM	334	Oct 3	172
INSTANTANEOUS PEAK FLOW			18000
INSTANTANEOUS PEAK STAGE			22.93
INSTANTANEOUS LOW FLOW			157*
ANNUAL RUNOFF (CFSM)	.91	.79	.99
ANNUAL RUNOFF (INCHES)	12.37	10.75	13.49
10 PERCENT EXCEEDS	5040	4420	6600
50 PERCENT EXCEEDS	1290	1400	1210
90 PERCENT EXCEEDS	468	512	348

\* Regulated period only (1983-1991). See REMARKS.

0208925200 BEAR CREEK AT MAYS STORE, NC

LOCATION.--Lat 35°16'28", long 77°47'40", Lenoir County, Hydrologic Unit 03020202, at downstream side of bridge on Secondary Road 1318, 1.0 mi downstream from Secondary Road 1002, and 0.7 mi west of Mays Store.

DRAINAGE AREA.--57.7 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1987 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 50 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good. Minimum discharge for current water year also occurred on Oct. 4.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	28	27	29	72	41	200	39	24	30	190	74
2	13	25	25	34	63	52	144	80	24	252	152	66
3	13	24	25	37	57	88	109	59	34	173	149	60
4	13	24	26	37	53	198	88	46	29	78	127	55
5	16	24	26	36	49	135	80	41	25	65	100	52
6	16	23	25	34	47	103	76	38	22	57	87	48
7	15	22	25	34	51	87	66	35	21	50	127	43
8	15	22	33	42	67	75	61	32	20	44	216	40
9	15	22	41	46	59	69	58	29	19	39	132	38
10	15	49	37	43	53	63	54	27	18	34	392	36
11	26	45	34	42	49	57	50	26	17	31	216	35
12	35	38	31	53	45	53	46	24	16	33	161	34
13	25	33	30	55	43	57	42	24	16	29	283	33
14	21	30	29	49	44	96	46	24	15	26	188	32
15	19	29	29	44	42	95	59	24	15	25	192	32
16	18	28	29	45	39	78	53	23	15	25	150	31
17	18	27	28	46	37	69	48	22	16	29	119	35
18	18	26	28	41	37	70	44	22	17	28	104	31
19	18	25	27	39	38	84	41	33	117	33	97	31
20	18	25	27	90	38	70	73	118	263	30	92	112
21	22	24	33	100	39	63	87	137	468	26	82	88
22	17	24	34	75	39	58	80	101	150	25	63	66
23	25	24	32	61	39	55	67	74	120	24	57	50
24	29	24	31	58	40	51	58	58	90	23	54	85
25	25	23	29	67	54	46	50	50	68	23	67	177
26	115	23	27	62	54	43	44	44	57	35	74	519
27	84	23	27	56	48	41	41	40	50	71	345	308
28	55	23	30	53	44	40	40	38	42	144	365	197
29	43	26	31	51	---	51	38	34	37	93	199	139
30	35	28	31	53	---	442	36	30	33	258	124	112
31	31	---	30	87	---	278	---	27	---	265	89	---
TOTAL	842	811	917	1599	1340	2808	1979	1399	1858	2098	4793	2659
MEAN	27.2	27.0	29.6	51.6	47.9	90.6	66.0	45.1	61.9	67.7	155	88.6
MAX	115	49	41	100	72	442	200	137	468	265	392	519
MIN	13	22	25	29	37	40	36	22	15	23	54	31
CFSM	.47	.47	.51	.89	.83	1.57	1.14	.78	1.07	1.17	2.68	1.54
IN.	.54	.52	.59	1.03	.86	1.81	1.28	.90	1.20	1.35	3.09	1.71

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 1991, BY WATER YEAR (WY)

	MEAN	35.3	35.3	48.8	57.6	52.7	86.4	80.7	102	61.0	52.2	80.0	48.1
MAX	62.8	65.7	112	88.8	70.3	149	150	216	93.8	98.5	155	88.6	
(WY)	1990	1990	1990	1990	1990	1989	1989	1989	1990	1989	1991	1991	
MIN	18.1	21.1	23.2	32.4	45.0	35.3	45.9	32.1	22.4	14.9	22.1	20.3	
(WY)	1988	1988	1989	1989	1988	1988	1988	1988	1988	1988	1988	1990	

SUMMARY STATISTICS FOR 1990 CALENDAR YEAR FOR 1991 WATER YEAR WATER YEARS 1988 - 1991

ANNUAL TOTAL	20309	23103	
ANNUAL MEAN	55.6	63.3	61.8
HIGHEST ANNUAL MEAN			83.5
LOWEST ANNUAL MEAN			31.7
HIGHEST DAILY MEAN	1060	May 29	1060
LOWEST DAILY MEAN	13	Oct 2	10
ANNUAL SEVEN-DAY MINIMUM	14	Sep 28	11
INSTANTANEOUS PEAK FLOW			1220
INSTANTANEOUS PEAK STAGE			8.26
INSTANTANEOUS LOW FLOW			12*
ANNUAL RUNOFF (CFSM)	.96	1.10	1.07
ANNUAL RUNOFF (INCHES)	13.09	14.89	14.55
10 PERCENT EXCEEDS	100	127	127
50 PERCENT EXCEEDS	35	41	39
90 PERCENT EXCEEDS	20	22	20

\* See REMARKS.

## NEUSE RIVER BASIN

02089500 NEUSE RIVER AT KINSTON, NC

LOCATION.--Lat 35°15'29", long 77°35'09", Lenoir County, Hydrologic Unit 03020202, on left bank at Kinston, 600 ft downstream from bridge on State Highway 11, and 90 mi upstream from mouth.

DRAINAGE AREA.--2,692 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1930 to current year.

REVISED RECORDS.--WSP 1333: 1931-32. WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 10.90 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 25, 1934, nonrecording gage at highway bridge 1 mi downstream at datum 0.80 ft lower. The National Weather Service has telemetry at station.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Falls Lake (station 02087182). Diversions for municipal water supply for cities of Durham and Butner (station 02087183). Prior to regulation, maximum discharge 26,000 cfs Oct. 13, 1964, gage height, 22.86 ft, site and datum then in use; minimum discharge 124 cfs Sept. 26, 1932, at site then in use.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in July 1919 reached a stage of 25.0 ft, present site and datum, discharge, about 39,000 cfs, from information provided by North Carolina State Highway Commission. Flood in October 1924 reached a stage of 24.7 ft, present site and datum, discharge, 36,000 cfs, from information provided by North Carolina State Highway Commission. Flood of Sept. 25-26, 1928, reached a stage of 24.2 ft, present site and datum, discharge, 34,000 cfs.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	604	1670	882	2020	4660	1800	4680	1470	846	811	4680	2760
2	587	1330	1180	1990	3800	1750	5140	1440	818	751	6050	2340
3	536	1130	1490	1980	3300	1820	5580	1500	802	960	6790	1870
4	479	1010	1540	2000	2960	2340	5890	1450	811	1010	7620	1520
5	467	922	1400	2220	2610	2900	6000	1350	802	1010	8270	1290
6	478	855	1220	2620	2310	3330	5920	1240	815	1620	8460	1140
7	454	785	1140	2710	2140	3800	5730	1150	772	1960	7940	1040
8	462	733	1160	2450	2180	4220	5540	1110	696	2010	5860	949
9	484	702	1220	2240	2250	4510	5400	1080	631	1960	3940	872
10	462	860	1230	2500	2250	4690	5090	1040	583	1830	2990	811
11	446	1060	1310	3050	2230	4780	3530	936	549	1440	2850	769
12	619	1100	1410	3570	2180	4820	2650	833	525	1170	2840	732
13	752	1220	1360	3940	2070	4700	1990	781	509	1000	2840	706
14	908	1330	1270	4220	1960	3850	1740	755	518	1550	3030	703
15	1130	1270	1170	4430	1950	3490	1620	733	511	1720	3050	691
16	995	1160	1100	4660	1920	3460	1820	718	488	1520	3230	670
17	828	1040	1040	4950	1800	3700	2370	706	485	1310	3390	648
18	718	944	1000	5240	1680	3890	2530	715	484	1060	3500	635
19	652	893	981	5570	1590	3820	2320	806	628	833	3470	627
20	624	828	981	6060	1530	3570	2360	1060	1580	757	3160	673
21	606	798	1010	6410	1490	3550	2640	1450	2320	723	2620	985
22	596	782	1090	6570	1490	3810	3130	2450	3280	815	2130	1160
23	698	766	1230	6610	1500	4070	3600	3300	3630	820	1950	1320
24	746	759	1920	6700	1610	4220	3810	3620	3810	723	1800	1290
25	774	756	2420	6830	1760	4210	3580	3580	3530	648	1690	1430
26	1330	742	2630	6890	1950	3410	3100	2600	2500	596	1770	2220
27	2180	737	2550	6860	1930	2460	2640	1830	1770	604	1760	2770
28	2260	742	2310	6770	1880	2070	2240	1460	1390	1020	2560	2580
29	2420	741	2020	6570	---	2190	1850	1200	1100	2090	2850	2240
30	2450	797	1890	6260	---	3460	1600	1030	920	2690	2840	1980
31	2120	---	1990	5670	---	4090	---	911	---	3600	2860	---
TOTAL	28865	28462	45144	140560	60980	108780	106090	44304	38103	40611	118790	39421
MEAN	931	949	1456	4534	2178	3509	3536	1429	1270	1310	3832	1314
MAX	2450	1670	2630	6890	4660	4820	6000	3620	3810	3600	8460	2770
MIN	446	702	882	1980	1490	1750	1600	706	484	596	1690	627

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 1991\*, BY WATER YEAR (WY)

	1983	1984	1985	1986	1987	1988	1989	1990	1991
MEAN	1002	1179	2352	3341	4348	5980	5190	2893	1792
MAX	3288	2924	5097	5465	7673	10720	9582	8773	3513
(WY)	1990	1990	1990	1987	1983	1989	1989	1983	1989
MIN	366	430	760	1181	1767	1673	878	563	460
(WY)	1984	1988	1988	1986	1986	1988	1986	1986	1986

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1983 - 1991*
ANNUAL TOTAL	898463	800110	
ANNUAL MEAN	2462	2192	2726
HIGHEST ANNUAL MEAN			4216
LOWEST ANNUAL MEAN			1204
HIGHEST DAILY MEAN	9690	Apr 9	18500
LOWEST DAILY MEAN	365	Aug 6	200
ANNUAL SEVEN-DAY MINIMUM	404	Aug 1	214
INSTANTANEOUS PEAK FLOW			18600
INSTANTANEOUS PEAK STAGE		15.09	22.03
INSTANTANEOUS LOW FLOW		441	196
ANNUAL RUNOFF (CFSM)	.91	.81	1.01
ANNUAL RUNOFF (INCHES)	12.42	11.06	13.76
10 PERCENT EXCEEDS	5470	4680	7310
50 PERCENT EXCEEDS	1600	1720	1490
90 PERCENT EXCEEDS	541	694	453

\* Regulated period only (1983-1991). See REMARKS.

02089500 NEUSE RIVER AT KINSTON, NC--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1950, 1955-56, 1959-67, 1973 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: July 1973 to September 1986.

WATER TEMPERATURE: October 1949 to September 1950, January 1955 to September 1956, July 1973 to September 1986.

INSTRUMENTATION.--Water-quality monitor from October 1981 to September 1986.

REMARKS.--Station operated as part of NASQAN network from October 1974 to present. Daily records of specific conductance for January 1955 to September 1956 are available in the files of the district office in Raleigh, NC.

COOPERATION.--Chemical and biological data shown in last table were provided by the Department of Natural Resources and Community Development.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 242 microsiemens Sept. 21, 1983; minimum daily, 43 microsiemens Mar. 28, 1975.

WATER TEMPERATURE: Maximum recorded, 36.0°C July 13, 14, 19, 20, 1986; minimum daily, 0.0°C Feb. 7, 1978, Jan. 13, 1981.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	TUR- BID- ITY (NTU)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (MG/L)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)
DEC 12...	1130	1410	147	7.7	8.0	--	6.5	766	11.5	7.2	2.5
JAN 29...	1215	6560	97	7.0	6.5	--	12	764	12.6	5.5	2.1
APR 02...	1030	5110	95	7.5	16.0	--	18	767	11.9	4.9	1.8
JUN 04...	1200	819	138	7.2	29.0	--	12	751	5.8	7.1	2.6
SEP 27...	1100	2800	105	6.5	11.0	100	--	767	9.0	6.9	1.7
DATE		SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)
DEC 12...	15	49	1	4.3	20	15	0.20	9.5	104	1.09	--
JAN 29...	8.1	41	0.7	2.6	12	7.6	<0.10	8.3	60	0.500	--
APR 02...	7.6	42	0.7	2.8	11	8.8	<0.10	5.6	53	0.660	--
JUN 04...	14	48	1	3.5	16	11	0.10	10	112	1.44	1.44
SEP 27...	3.4	21	0.3	2.8	6.0	3.2	0.20	4.6	48	0.160	0.170

## NEUSE RIVER BASIN

02089500 NEUSE RIVER AT KINSTON, NC--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS NH4)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)
DATE											
DEC 12...	0.010	<0.010	1.10	1.10	0.090	0.100	0.12	0.13	0.81	--	0.90
JAN 29...	0.020	<0.010	0.520	0.590	0.050	0.050	0.06	0.06	0.45	--	0.50
APR 02...	0.020	<0.010	0.680	0.480	0.080	0.070	0.10	0.09	0.72	--	0.80
JUN 04...	0.060	0.060	1.50	1.50	0.110	0.110	0.14	0.14	0.59	--	0.70
SEP 27...	0.030	0.010	0.190	0.180	0.030	0.030	0.04	0.04	0.67	0.27	0.70
	NITRO- GEN, AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS NO3)	NITRO- GEN, DIS- SOLVED (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHATE, TOTAL (MG/L AS PO4)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO TOTAL (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	
DATE											
DEC 12...	--	2.0	8.9	--	0.080	0.15	0.040	0.050	0.040	0.12	
JAN 29...	--	1.0	4.5	--	0.050	0.09	0.020	0.030	<0.010	--	
APR 02...	--	1.5	6.6	--	0.120	0.15	0.150	0.050	<0.010	--	
JUN 04...	--	2.2	9.7	--	0.230	0.28	0.080	0.090	0.060	0.18	
SEP 27...	0.30	0.89	3.9	0.48	0.060	0.06	<0.010	0.020	--	--	
	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO)	COBALT, DIS- SOLVED (UG/L AS CO)
DATE											
DEC 12...	70	--	1	24	<0.5	--	<1.0	--	1	--	<3
JAN 29...	200	--	<1	27	<0.5	--	1.0	--	2	--	<3
APR 02...	--	--	--	--	--	--	--	--	--	--	--
JUN 04...	40	--	<1	32	<0.5	--	<1.0	--	<1	--	<3
SEP 27...	--	--	1	--	--	--	<1	--	3	--	<3
	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)
DATE											
DEC 12...	--	3	--	360	1	12	--	28	--	<0.1	<10
JAN 29...	--	4	--	280	2	<4	--	16	--	--	<10
APR 02...	--	--	--	--	--	--	--	--	--	--	--
JUN 04...	--	4	--	460	1	10	--	45	--	<0.1	<10
SEP 27...	--	5	--	330	--	--	--	50	--	<0.10	--
	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)	CARBON, ORGANIC TOTAL (MG/L AS C)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
DATE											
DEC 12...	2	<1	--	<1.0	45	<6	7	--	13	49	64
JAN 29...	2	<1	--	<1.0	41	<6	8	--	20	355	65
APR 02...	--	--	--	--	--	--	--	--	--	--	--
JUN 04...	1	<1	--	<1.0	52	<6	14	--	272	601	60
SEP 27...	--	--	1	--	--	--	--	7.6	--	--	--

## NEUSE RIVER BASIN

02090380 CONTENTNEA CREEK NEAR LUCAMA, NC

LOCATION.--Lat 35°41'29", long 78°06'38", Wilson County, Hydrologic Unit 03020203, on right bank 250 ft upstream from bridge on State Highway 581, 1.0 mi downstream from Buckhorn Reservoir, 1.0 mi upstream from Buckhorn Branch, and 6.5 mi northwest of Lucama.

DRAINAGE AREA.--161 mi<sup>2</sup>.

PERIOD OF RECORD.--September 1964 to current year.

REVISED RECORDS.--WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 117.43 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers).

REMARKS.--No estimated daily discharges. Records good. Since September 1976, some regulation at low flow by Buckhorn Reservoir 1 mi upstream (station 02090370). Minimum discharge for period of record also occurred on Sept. 10-14, 1976, due to regulation.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	29	318	128	214	64	434	75	25	15	592	64
2	15	25	294	155	194	91	267	73	23	15	220	48
3	24	23	149	241	151	159	161	61	22	16	137	40
4	25	20	115	247	135	291	131	39	47	17	93	35
5	24	18	86	214	132	372	113	32	38	20	66	30
6	24	19	68	170	124	333	95	33	24	81	50	27
7	24	16	56	159	125	255	87	30	19	62	40	25
8	24	15	74	307	131	201	82	25	17	34	34	23
9	20	13	111	584	122	166	77	21	17	22	38	21
10	16	63	123	702	106	139	72	21	16	18	100	20
11	17	75	96	585	107	111	62	20	16	54	88	19
12	17	67	82	468	96	94	55	20	16	176	71	18
13	17	50	72	558	92	104	57	19	15	124	110	17
14	17	35	63	664	107	177	62	16	15	73	141	17
15	17	31	61	547	119	235	70	16	15	42	203	17
16	18	28	59	332	89	205	88	15	15	28	422	16
17	17	32	55	258	71	166	89	14	15	23	455	16
18	17	24	52	225	75	165	78	11	15	22	219	15
19	18	22	53	183	81	289	67	103	17	18	111	16
20	18	22	62	279	94	325	171	494	31	17	95	28
21	17	25	143	486	87	262	185	683	39	16	91	44
22	17	26	252	471	85	182	151	415	34	15	66	35
23	18	25	286	350	78	145	114	199	32	15	49	28
24	18	26	234	251	80	126	95	109	33	15	50	24
25	18	26	146	227	76	95	66	73	29	15	53	29
26	36	26	113	220	83	85	59	53	24	21	57	61
27	104	28	95	203	81	84	54	45	20	26	108	69
28	119	31	100	192	72	82	48	42	18	26	217	51
29	63	78	145	176	---	92	44	37	17	361	222	38
30	40	191	142	165	---	272	57	35	16	2700	140	30
31	34	---	140	212	---	463	---	31	---	1710	90	---
TOTAL	864	1109	3845	9959	3007	5830	3191	2860	680	5797	4428	921
MEAN	27.9	37.0	124	321	107	188	106	92.3	22.7	187	143	30.7
MAX	119	191	318	702	214	463	434	683	47	2700	592	69
MIN	11	13	52	128	71	64	44	11	15	15	34	15

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1991, BY WATER YEAR (WY)

MEAN	73.3	81.3	140	252	313	336	212	138	92.8	93.8	110	47.3
MAX	644	287	404	690	533	803	701	537	359	624	512	231
(WY)	1965	1973	1973	1987	1983	1989	1987	1989	1965	1984	1986	1979
MIN	2.05	2.76	21.2	39.4	87.5	67.7	24.7	8.08	10.4	3.96	3.18	2.52
(WY)	1981	1974	1966	1981	1986	1981	1986	1981	1970	1981	1980	1968

SUMMARY STATISTICS FOR 1990 CALENDAR YEAR FOR 1991 WATER YEAR WATER YEARS 1964 - 1991

ANNUAL TOTAL	61616.2	42491	
ANNUAL MEAN	169	116	157
HIGHEST ANNUAL MEAN			278
LOWEST ANNUAL MEAN			35.5
HIGHEST DAILY MEAN	2690	2700	5500
LOWEST DAILY MEAN	8.9	11	.04
ANNUAL SEVEN-DAY MINIMUM	9.6	15	.04
INSTANTANEOUS PEAK FLOW		2920	5860
INSTANTANEOUS PEAK STAGE		13.10	16.28
INSTANTANEOUS LOW FLOW		7.9	.04*
ANNUAL RUNOFF (CFSM)	1.05	.72	.97
ANNUAL RUNOFF (INCHES)	14.24	9.82	13.23
10 PERCENT EXCEEDS	389	256	385
50 PERCENT EXCEEDS	74	63	69
90 PERCENT EXCEEDS	12	17	9.8

\* See REMARKS.

## NEUSE RIVER BASIN

0209096970 MOCCASIN RUN NEAR PATETOWN, NC

LOCATION.--Lat 35°28'46", long 77°54'37", Wayne County, Hydrologic Unit 03020203, on left bank at downstream side of bridge on State Highway 111, and 1.5 mi northeast of Patetown.

DRAINAGE AREA.--1.89 mi<sup>2</sup>.

PERIOD OF RECORD.--April 1988 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 90 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good. Minimum discharge for period of record, also occurred on July 12, 17, 18, 19, Aug., 20, 1988, and Jan 17, 1991. Minimum discharge for current water year effected by regulation from unknown source. Minimum unregulated discharge for current water year 0.18 ft<sup>3</sup>/s occurred Oct. 3, 9, 10.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.25	.57	1.1	.80	1.3	1.5	4.0	2.0	.57	.41	25	2.0
2	.23	.52	1.2	1.6	1.1	3.5	3.0	1.7	.87	.41	14	1.9
3	.20	.46	1.0	1.2	1.1	6.5	2.4	1.0	.84	.50	39	1.7
4	.22	.45	1.5	1.4	1.0	7.2	2.3	.78	.72	.73	6.9	1.6
5	.28	.45	1.1	.98	.97	3.0	2.2	.70	.53	1.5	4.0	1.6
6	.24	.46	1.1	.89	.97	2.3	2.1	.81	.48	1.1	3.2	1.5
7	.25	.44	1.1	1.2	2.2	2.1	1.9	.77	.42	.62	6.2	1.5
8	.23	.45	3.1	1.9	1.8	2.0	1.7	.52	.42	.48	4.3	1.4
9	.22	.46	1.7	1.4	1.3	1.9	1.6	.53	.40	.43	5.3	1.4
10	.21	4.1	1.1	1.1	1.1	1.8	1.5	.58	.39	.39	8.9	1.3
11	2.0	1.1	1.0	1.2	1.1	1.7	1.3	.47	.36	.43	3.1	1.3
12	.79	.74	.83	1.5	.96	1.6	1.3	.45	.36	.72	5.3	1.2
13	.41	.71	.89	1.1	.96	2.3	1.3	.43	.35	.46	7.7	1.2
14	.36	.62	.84	.95	1.1	4.5	3.8	4.5	.34	.38	3.4	1.3
15	.37	.63	.91	.91	.96	2.8	3.4	3.5	.37	.34	3.1	1.2
16	.28	.70	.94	1.1	.84	2.2	2.3	1.1	.37	.33	2.6	1.2
17	.26	.63	.82	.90	.83	1.9	1.8	.84	.58	.35	2.3	1.1
18	.38	.64	.89	.84	.89	3.9	1.5	.69	2.2	.35	2.6	1.2
19	.74	.80	.90	.82	1.0	3.4	1.4	9.5	23	.34	2.2	2.0
20	.39	.71	1.1	4.6	.92	2.4	4.7	13	5.9	.33	1.9	11
21	.35	.95	2.1	2.0	.87	2.0	3.4	6.4	6.6	.31	1.8	2.3
22	.38	.58	1.2	1.3	.81	1.8	2.5	2.8	4.5	.29	1.5	1.7
23	2.1	.78	.97	1.1	.88	1.7	1.9	1.8	2.2	.29	1.5	1.6
24	.85	.83	.90	1.3	4.4	1.6	1.6	1.4	1.3	.27	4.7	12
25	.77	.86	.77	1.8	4.0	1.5	1.3	1.1	.87	.25	4.4	12
26	9.9	.89	.77	1.3	2.6	1.4	1.1	.93	.68	.62	2.8	17
27	1.4	1.0	.93	1.2	2.0	1.5	1.0	.91	.62	2.5	15	4.4
28	.78	1.5	1.2	1.1	1.7	1.4	1.1	.88	.53	2.4	6.6	2.9
29	.64	2.2	.94	1.0	---	4.5	1.0	.79	.50	12	3.2	2.4
30	.60	1.4	.89	1.8	---	25	.89	.70	.44	25	2.5	2.1
31	.56	---	.92	2.5	---	6.3	---	.63	---	27	2.1	---
TOTAL	26.64	26.63	34.71	42.79	39.66	107.2	61.29	62.21	57.71	81.53	197.1	97.0
MEAN	.86	.89	1.12	1.38	1.42	3.46	2.04	2.01	1.92	2.63	6.36	3.23
MAX	9.9	4.1	3.1	4.6	4.4	25	4.7	13	23	27	39	17
MIN	.20	.44	.77	.80	.81	1.4	.89	.43	.34	.25	1.5	1.1
CFSM	.45	.47	.59	.73	.75	1.83	1.08	1.06	1.02	1.39	3.36	1.71
IN.	.52	.52	.68	.84	.78	2.11	1.21	1.22	1.14	1.60	3.88	1.91

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 1991, BY WATER YEAR (WY)

	1988	1989	1990	1991	1988	1989	1990	1991	1988	1989	1990	1991
MEAN	1.38	2.18	2.82	2.51	2.80	5.78	4.48	3.09	1.72	2.72	3.46	1.53
MAX	2.67	3.02	6.15	4.53	3.66	9.45	11.2	7.12	3.59	7.57	6.36	3.23
(WY)	1990	1989	1990	1990	1990	1989	1989	1989	1989	1989	1991	1991
MIN	.61	.89	1.12	1.38	1.42	3.46	1.73	.97	.52	.27	.77	.26
(WY)	1989	1991	1991	1991	1991	1991	1988	1988	1988	1988	1988	1990

## SUMMARY STATISTICS FOR 1990 CALENDAR YEAR FOR 1991 WATER YEAR WATER YEARS 1988 - 1991

	1990 CALENDAR YEAR	1991 WATER YEAR	WATER YEARS 1988 - 1991
ANNUAL TOTAL	698.36	834.47	
ANNUAL MEAN	1.91	2.29	3.20
HIGHEST ANNUAL MEAN			4.69 1989
LOWEST ANNUAL MEAN			2.29 1991
HIGHEST DAILY MEAN	20 May 29	39 Aug 3	53 Apr 30 1989
LOWEST DAILY MEAN	.19 Sep 19	.20 Oct 3	.14 Jul 18 1988
ANNUAL SEVEN-DAY MINIMUM	.22 Sep 17	.23 Oct 3	.16 Jul 15 1988
INSTANTANEOUS PEAK FLOW		82 Aug 3	82 Aug 3 1991
INSTANTANEOUS PEAK STAGE		4.00 Aug 3	4.23 Aug 16 1989
INSTANTANEOUS LOW FLOW		.12* Jan 17	.12* Jul 18 1988
ANNUAL RUNOFF (CFSM)	1.01	1.21	1.70
ANNUAL RUNOFF (INCHES)	13.75	16.42	23.03
10 PERCENT EXCEEDS	4.1	4.4	6.2
50 PERCENT EXCEEDS	.94	1.1	1.3
90 PERCENT EXCEEDS	.25	.39	.31

\* See REMARKS.

02091000 NAHUNTA SWAMP NEAR SHINE, NC

LOCATION.--Lat 35°29'20", long 77°48'22", Greene County, Hydrologic Unit 03020203, on right bank 10 ft downstream from bridge on Secondary Road 1058, 2 mi upstream from Appletree Swamp, 3.5 mi north of Shine, and 8 mi northwest of Snow Hill.

DRAINAGE AREA.--80.4 mi<sup>2</sup>.

PERIOD OF RECORD.--April 1954 to current year. Monthly discharges only for some periods, published in WSP 1723.

REVISED RECORDS.--WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 50.74 ft above National Geodetic Vertical Datum of 1929. Prior to Apr. 1, 1955, nonrecording gage at same site and datum.

REMARKS.--No estimated daily discharges. Records good. Minimum discharge for period of record also occurred Oct. 8, 1954.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.8	12	29	26	78	45	191	77	29	14	588	69
2	2.7	11	24	34	61	76	121	81	27	14	764	61
3	2.7	10	22	47	55	125	93	48	39	13	912	53
4	2.7	9.9	24	44	50	257	78	39	28	13	821	48
5	3.4	9.8	24	43	45	141	70	35	24	60	246	45
6	3.5	9.7	22	37	42	96	66	33	21	70	131	40
7	3.1	9.4	22	36	68	79	61	34	19	33	104	37
8	3.0	9.7	45	70	96	69	54	31	17	21	160	35
9	2.9	9.6	60	75	68	68	50	28	16	16	111	32
10	2.7	59	43	59	57	59	48	27	15	15	346	30
11	24	56	34	50	50	54	41	26	14	14	181	28
12	31	30	29	61	45	49	40	25	13	13	122	26
13	12	22	27	56	42	60	36	23	13	14	222	25
14	8.6	17	25	47	43	131	54	40	12	13	147	25
15	7.2	16	23	41	41	117	129	593	12	12	155	24
16	6.6	15	24	40	37	83	95	163	11	11	153	23
17	5.6	15	23	40	33	68	70	74	14	10	99	22
18	5.0	15	22	36	33	90	57	55	14	10	110	21
19	8.4	14	22	34	36	140	48	115	91	10	112	22
20	9.6	14	23	106	37	96	119	435	116	10	82	369
21	7.5	15	43	119	35	80	184	327	64	10	69	147
22	6.9	15	44	79	34	64	159	164	141	9.9	57	79
23	23	15	37	60	34	57	100	103	70	9.5	50	59
24	27	15	33	54	54	52	77	77	56	9.1	73	183
25	14	14	28	68	139	46	61	62	39	8.6	142	229
26	158	14	24	61	76	42	51	52	29	20	107	572
27	101	14	23	53	60	40	47	49	24	87	190	197
28	37	15	31	49	50	39	45	62	20	178	281	110
29	22	42	32	47	---	47	45	53	17	187	181	80
30	17	41	30	53	---	456	42	41	15	418	109	67
31	14	---	29	104	---	368	---	34	---	520	82	---
TOTAL	574.9	564.1	921	1729	1499	3194	2332	3006	1020	1843.1	6907	2758
MEAN	18.5	18.8	29.7	55.8	53.5	103	77.7	97.0	34.0	59.5	223	91.9
MAX	158	59	60	119	139	456	191	593	141	520	912	572
MIN	2.7	9.4	22	26	33	39	36	23	11	8.6	50	21
CFSM	.23	.23	.37	.69	.67	1.28	.97	1.21	.42	.74	2.77	1.14
IN.	.27	.26	.43	.80	.69	1.48	1.08	1.39	.47	.85	3.20	1.28

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 1991, BY WATER YEAR (WY)

	MEAN	47.0	53.8	69.2	113	145	147	108	63.3	51.8	62.8	71.9	59.1
MAX	473	253	184	253	307	311	252	277	190	395	360	396	
(WY)	1965	1978	1958	1978	1983	1983	1974	1989	1969	1965	1974	1955	
MIN	2.26	11.2	22.3	31.1	34.6	33.7	19.1	10.8	5.35	3.10	4.71	2.58	
(WY)	1955	1987	1988	1955	1988	1986	1986	1986	1986	1987	1954	1954	

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1954 - 1991
ANNUAL TOTAL	18164.5	26348.1	
ANNUAL MEAN	49.8	72.2	82.8
HIGHEST ANNUAL MEAN			150
LOWEST ANNUAL MEAN			22.9
HIGHEST DAILY MEAN	453	May 29	4560
LOWEST DAILY MEAN	2.7	Sep 28	1.0
ANNUAL SEVEN-DAY MINIMUM	2.7	Sep 28	1.3
INSTANTANEOUS PEAK FLOW			5470
INSTANTANEOUS PEAK STAGE			14.14
INSTANTANEOUS LOW FLOW			1.0*
ANNUAL RUNOFF (CFSM)	.62		1.03
ANNUAL RUNOFF (INCHES)	8.40	12.19	13.99
10 PERCENT EXCEEDS	116	147	176
50 PERCENT EXCEEDS	26	42	43
90 PERCENT EXCEEDS	4.7	11	10

\* See REMARKS.

## NEUSE RIVER BASIN

02091500 CONTENTNEA CREEK AT HOOKERTON, NC  
(National stream-quality accounting network station)

LOCATION.--(Revised) Lat 35°25'44", long 77°34'59", Greene County, Hydrologic Unit 03020203, on left bank at bridge on State Highway 123, at Hookerton, and 2.2 mi upstream from Wheat Swamp Creek.

DRAINAGE AREA.--733 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1928 to current year.

REVISED RECORDS.--WSP 1333: 1903-35. WSP 1383: Drainage area. WSP 1503: 1951. WSP 1723: 1932.

WRD NC-90-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 14.85 ft above National Geodetic Vertical Datum of 1929 (U.S. Army Corps of Engineers bench mark). Prior to Nov. 26, 1934, nonrecording gage at site 1,400 ft upstream and Nov. 27, 1934, to Sept. 30, 1987, water-stage recorder at site 0.3 mi upstream at present datum.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Buckhorn Reservoir since Sept. 1976 (station 02090370).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of September 1928 reached a stage of 23.3 ft, from floodmark; high water of autumn 1924 was about 0.1 ft lower, from information by local resident.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	60	274	189	351	799	416	1460	572	317	130	1290	1250
2	58	234	204	363	798	413	1570	685	273	143	1620	1150
3	56	197	220	388	795	461	1600	554	240	163	2270	892
4	54	168	258	438	776	722	1600	433	221	129	4210	669
5	53	147	317	494	738	871	1550	378	213	121	5130	439
6	52	135	367	541	683	955	1410	336	201	213	5070	366
7	50	125	374	560	634	995	1180	304	179	480	4240	324
8	48	117	354	589	630	1020	910	276	159	497	3580	289
9	48	110	347	635	645	1030	651	261	149	356	2730	255
10	49	153	363	696	627	1020	564	240	144	261	2360	233
11	54	198	380	747	589	949	493	218	135	203	2020	214
12	69	230	374	817	548	828	442	203	123	174	1640	197
13	96	268	360	880	512	709	401	188	115	156	1410	183
14	118	274	343	933	484	686	375	182	107	156	1330	171
15	118	267	317	994	456	739	381	185	102	151	1240	162
16	101	252	295	1070	436	782	458	450	98	166	1150	153
17	84	226	277	1120	423	814	486	564	105	192	1130	145
18	77	203	260	1120	414	837	487	496	100	178	1120	138
19	71	184	246	1100	404	868	474	448	142	164	1110	133
20	66	171	235	1130	395	909	501	736	252	156	1110	168
21	66	159	242	1150	381	945	608	957	482	135	1130	537
22	68	151	263	1090	370	983	749	1160	474	117	1100	661
23	87	147	303	1040	367	1000	869	1270	571	103	983	597
24	103	142	352	1040	367	998	981	1310	529	95	689	523
25	113	137	393	1090	385	918	1060	1330	348	88	611	625
26	250	134	428	1130	461	742	1060	1320	271	84	762	1240
27	345	134	449	1140	473	598	840	1200	215	109	1020	1480
28	400	135	454	1090	441	519	604	856	183	321	1050	1530
29	409	141	429	986	---	466	502	565	161	461	1130	1160
30	368	159	393	872	---	969	484	436	144	607	1230	820
31	316	---	365	824	---	1300	---	377	---	1020	1280	---
TOTAL	3907	5372	10151	26418	15031	25462	24750	18490	6753	7329	56745	16704
MEAN	126	179	327	852	537	821	825	596	225	236	1830	557
MAX	409	274	454	1150	799	1300	1600	1330	571	1020	5130	1530
MIN	48	110	189	351	367	413	375	182	98	84	611	133
CFSM	.17	.24	.45	1.16	.73	1.12	1.13	.81	.31	.32	2.50	.76
IN.	.20	.27	.52	1.34	.76	1.29	1.26	.94	.34	.37	2.88	.85

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 1991, BY WATER YEAR (WY)

	MEAN	449	447	667	1078	1363	1439	1047	608	458	570	651	513
MAX	4183	2150	2349	2610	4316	3491	2752	3363	1708	2203	2422	3675	
(WY)	1965	1948	1949	1987	1948	1989	1989	1989	1989	1929	1960	1955	
MIN	20.3	41.1	64.7	92.5	239	382	202	82.9	38.5	63.3	37.2	24.9	
(WY)	1955	1955	1934	1934	1934	1981	1986	1986	1986	1952	1954	1954	

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR		FOR 1991 WATER YEAR		WATER YEARS 1929 - 1991	
ANNUAL TOTAL	247046		217112			
ANNUAL MEAN	677		595		763	
HIGHEST ANNUAL MEAN					1422	
LOWEST ANNUAL MEAN					242	
HIGHEST DAILY MEAN	3740		5130		16000	
LOWEST DAILY MEAN	48		48		15	
ANNUAL SEVEN-DAY MINIMUM	51		51		16	
INSTANTANEOUS PEAK FLOW			5330		17200	
INSTANTANEOUS PEAK FLOW			14.49		22.11	
INSTANTANEOUS LOW FLOW			47		15	
ANNUAL RUNOFF (CFSM)	.92		.81		1.04	
ANNUAL RUNOFF (INCHES)	12.54		11.02		14.14	
10 PERCENT EXCEEDS	1550		1150		1910	
50 PERCENT EXCEEDS	380		416		443	
90 PERCENT EXCEEDS	87		117		86	

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: March 1979 to September 1984.

WATER TEMPERATURE: October 1949 to September 1950, March 1979 to September 1984.

INSTRUMENTATION.--Water-quality monitor from October 1981 to September 1984.

REMARKS.--Station operated as part of NASQAN network from March 1979 to present. Miscellaneous chemical data published for water years 1945, 1947-49, 1955-67.

COOPERATION.--Chemical and biological data shown in last table were provided by the North Carolina Department of Environment, Health, and Natural Resources.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 218 microsiemens Nov. 1, 10, 1983; minimum daily, 41 microsiemens June 11, 1979.

WATER TEMPERATURE: Maximum, 29.5°C Aug. 23, 1983; minimum daily, 1.0°C Jan. 13, 14, 1981, Jan. 18, 1982.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TUR- BID- ITY (NTU)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCHI FECAL, 0.7 KF AGAR (COLS. PER 100 ML)	CALCIUM DIS- SOLVED (MG/L AS CA)
DEC 12...	1345	372	64	5.9	8.5	3.7	766	10.3	K70	110	5.5
JAN 29...	1415	975	110	6.6	6.0	6.5	764	11.8	--	--	5.5
APR 02...	1300	1570	83	6.5	15.0	14	767	10.0	--	--	4.8
JUN 04...	1400	220	104	6.5	27.0	7.0	753	4.8	--	--	5.9
SEP 27...	1300	1520	75	6.5	17.0	--	765	6.0	--	--	--

[illegible]

## NEUSE RIVER BASIN

02091500 CONTENTNEA CREEK AT HOOKERTON, NC--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS NH4)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)
DEC 12...	0.890	0.020	0.010	0.900	0.900	0.200	0.200	0.26	0.26	0.60	0.80
JAN 29...	0.720	0.030	0.020	0.670	0.740	0.140	0.140	0.18	0.18	0.56	0.70
APR 02...	--	0.020	<0.010	0.610	0.200	0.140	0.080	0.18	0.10	0.76	0.90
JUN 04...	0.980	0.030	0.020	1.00	1.00	0.180	0.190	0.23	0.24	0.72	0.90
SEP 27...	--	0.020	<0.010	0.610	0.200	0.140	0.080	0.18	0.10	0.76	0.90

DATE	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS NO3)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHATE, TOTAL (MG/L AS PO4)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO TOTAL (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)
DEC 12...	1.7	7.5	0.120	0.28	0.090	0.090	0.080	0.25	110	1	28
JAN 29...	1.4	6.1	0.070	0.18	0.040	0.060	0.010	0.03	180	<1	34
APR 02...	1.5	6.7	0.180	0.34	0.080	0.110	<0.010	--	--	--	--
JUN 04...	1.9	8.4	0.350	0.95	0.150	0.310	0.140	0.43	70	1	33
SEP 27...	1.5	6.7	0.180	0.34	0.080	0.110	<0.010	--	--	--	--

[illegible][illegible]

## NEUSE RIVER BASIN

02092162 NEUSE RIVER AT NEW BERN, NC

LOCATION.--Lat 35°06'42", long 77°01'37", Craven County, Hydrologic Unit 03020204, at bridge on U.S. Highway 17 at New Bern and 0.9 mi upstream from Trent River.

## TIDAL-ELEVATION RECORDS

PERIOD OF RECORD.--March 1988 to current year.

GAGE.--Water-stage recorder. Datum of gage is 10 ft above National Geodetic Vertical Datum of 1929, gage readings have been reduced to elevations NGVD.

REMARKS.--Records good.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 4.29 ft Apr. 13, 1988; minimum elevation, 2.27 ft below NGVD, Jan. 4, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 2.98 ft June 4, Sept. 1, 2; minimum elevation, 1.42 ft below NGVD, Feb. 15.

ELEVATION, FEET, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991, MEAN VALUES  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.98	1.15	.54	1.16	1.43	.62	.98	.83	.49	.16	1.03	1.44
2	.77	1.14	.45	.57	.86	.42	1.05	.72	.81	.35	1.01	2.22
3	1.07	1.06	.70	.72	.51	.88	1.91	.78	.97	.83	.66	1.67
4	.45	1.02	.09	1.21	.35	-.05	1.18	1.54	1.16	.80	.85	1.15
5	.81	1.12	.03	1.02	.25	.73	.52	1.08	1.94	.63	1.21	.97
6	.82	1.09	.45	.64	.29	.69	.34	.31	2.32	.90	1.38	.93
7	.66	1.40	.56	.87	.36	.27	.10	.67	1.96	.93	1.13	1.74
8	.72	1.48	1.06	1.56	1.00	1.06	-.12	1.10	1.36	.77	1.21	1.83
9	.73	1.63	.91	.69	1.00	1.17	-.33	.89	.86	.91	.93	1.77
10	1.00	.85	.50	1.31	.85	.87	-.29	.70	.75	.84	.87	1.33
11	1.04	.83	.93	1.30	.57	.59	.89	1.20	.43	.98	1.52	.87
12	1.21	.60	.59	1.00	1.01	1.00	1.17	.32	.15	1.57	1.54	1.42
13	1.19	.82	.33	1.17	.52	1.09	.69	.08	.71	.85	1.02	1.42
14	1.00	1.13	1.04	1.17	-.14	1.01	.55	.24	.96	.96	.96	.94
15	.86	.75	.47	1.06	-.20	1.37	.30	.63	.54	1.43	.76	1.23
16	1.51	.59	.18	.94	-.37	1.40	.67	1.10	.43	1.47	1.04	.97
17	1.22	.47	.58	.53	.00	1.22	.62	.71	.54	1.10	.94	.76
18	.64	.84	.16	.61	.40	.96	1.09	.96	.66	.68	1.40	.81
19	.77	1.02	.22	.76	.25	.80	2.13	1.99	.85	.36	.65	.65
20	1.35	1.08	.95	.83	-.12	.98	1.42	1.73	.99	.00	.57	1.41
21	1.03	1.18	.54	.30	.31	.86	1.12	1.37	.92	.11	.78	1.69
22	.79	.95	.52	1.24	.09	.51	.59	.94	.76	.25	1.08	1.86
23	.66	.75	.34	.99	1.29	.50	1.19	.88	1.10	.15	1.19	1.04
24	.99	.61	-.21	.84	.56	.43	.97	.78	2.09	-.01	1.06	1.16
25	1.72	.45	.86	1.52	.56	1.23	1.37	.68	1.93	.15	1.49	.77
26	1.46	.53	.79	1.32	.63	1.26	1.22	.71	1.67	.30	1.34	.88
27	1.87	.51	1.36	.86	.38	.34	.93	.35	1.57	.38	1.30	1.50
28	1.19	.37	.40	.87	.46	-.10	.92	.22	1.20	.85	1.22	1.78
29	1.43	.48	.57	.97	---	.12	1.09	.78	.67	.66	1.03	1.29
30	1.33	.67	.26	.98	---	.63	.92	.68	.32	.95	.85	.98
31	.99	---	.59	.60	---	1.66	---	.24	---	1.07	.60	---
TOTAL	32.26	26.57	16.76	29.61	13.10	24.52	25.19	25.21	31.11	21.38	32.62	38.48
MEAN	1.04	.89	.54	.96	.47	.79	.84	.81	1.04	.69	1.05	1.28
MAX	1.87	1.63	1.36	1.56	1.43	1.66	2.13	1.99	2.32	1.57	1.54	2.22
MIN	.45	.37	-.21	.30	-.37	-.10	-.33	.08	.15	-.01	.57	.65

## NEUSE RIVER BASIN

02092500 TRENT RIVER NEAR TRENTON, NC

LOCATION.--Lat 35°03'54", long 77°27'24", Jones County, Hydrologic Unit 03020204, on left bank 50 ft downstream from free bridge on Secondary Road 1129, 800 ft downstream from Little Chinquapin Branch, 1.5 mi southwest of Phillips Crossroads, and 6 mi west of Trenton.

DRAINAGE AREA.--168 mi<sup>2</sup>.

PERIOD OF RECORD.--January 1951 to current year.

GAGE.--Water-stage recorder. Datum of gage is 19.15 ft above National Geodetic Vertical Datum of 1929. Prior to Mar. 21, 1951, nonrecording gage on bridge 50 ft upstream at same datum.

REMARKS.--No estimated daily discharges. Records good. Minimum discharge for period of record, also occurred on Oct. 24, 25, and 26, 1974. Satellite data transmitter at the station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1928 reached a stage of 17.3 ft, discharge, 7,600 ft<sup>3</sup>/s, from information provided by North Carolina State Highway Commission.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.2	119	46	57	489	108	672	122	83	55	342	336
2	3.2	87	45	62	498	114	784	137	62	56	440	267
3	3.0	65	46	70	474	183	712	137	59	47	524	221
4	3.1	51	47	78	417	396	558	109	61	81	520	177
5	8.1	43	46	79	347	490	392	82	60	401	461	137
6	8.0	39	44	76	278	642	304	69	63	559	390	117
7	7.5	35	42	74	243	697	225	60	52	896	305	259
8	7.2	31	47	85	259	619	173	52	39	975	226	290
9	6.5	29	60	117	280	498	135	44	29	757	172	234
10	5.8	89	70	146	285	395	111	38	24	538	291	157
11	4.9	225	72	156	276	306	94	33	20	326	383	111
12	5.0	285	71	227	255	238	81	30	17	163	424	86
13	5.0	303	69	302	221	199	69	28	15	112	561	69
14	4.8	274	67	354	196	200	58	26	13	88	612	59
15	4.9	220	63	381	183	228	63	24	12	75	612	51
16	5.1	166	58	393	166	242	70	24	11	73	588	44
17	4.8	128	54	410	147	242	69	29	11	71	481	39
18	4.9	103	51	384	129	230	64	32	15	67	368	34
19	5.1	85	48	346	117	213	59	89	23	75	285	31
20	5.1	72	46	383	109	192	98	298	138	77	216	29
21	4.9	64	48	466	106	168	293	509	236	77	162	28
22	4.7	58	55	523	106	146	583	695	267	69	126	32
23	23	57	63	570	111	130	804	763	354	61	101	35
24	44	51	65	541	116	117	757	675	394	48	126	38
25	47	46	63	508	122	105	610	531	387	35	331	43
26	105	44	60	480	126	93	464	352	326	28	369	50
27	187	42	55	465	123	83	312	206	207	25	434	53
28	215	42	52	457	116	76	220	154	135	27	534	54
29	205	42	50	450	---	75	156	136	93	39	598	51
30	179	43	52	444	---	272	123	126	68	120	552	46
31	154	---	55	470	---	446	---	108	---	246	446	---
TOTAL	1273.8	2938	1710	9554	6295	8143	9113	5718	3274	6267	11980	3178
MEAN	41.1	97.9	55.2	308	225	263	304	184	109	202	386	106
MAX	215	303	72	570	498	697	804	763	394	975	612	336
MIN	3.0	29	42	57	106	75	58	24	11	25	101	28
CFSM	.24	.58	.33	1.83	1.34	1.56	1.81	1.10	.65	1.20	2.30	.63
IN.	.28	.65	.38	2.12	1.39	1.80	2.02	1.27	.72	1.39	2.65	.70

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 1991, BY WATER YEAR (WY)

	MEAN	93.9	90.3	166	296	327	346	225	130	125	159	178	128
MAX	864	295	551	703	746	963	684	435	768	1381	1587	1577	
(WY)	1972	1963	1958	1978	1973	1983	1973	1978	1961	1962	1955	1955	
MIN	1.58	1.80	6.65	17.2	31.8	36.5	23.1	10.2	2.77	5.33	4.97	4.56	
(WY)	1955	1955	1955	1955	1955	1955	1955	1985	1985	1985	1957	1954	

SUMMARY STATISTICS

FOR 1990 CALENDAR YEAR

FOR 1991 WATER YEAR

WATER YEARS 1951 - 1991

ANNUAL TOTAL	43188.3	69443.8	
ANNUAL MEAN	118	190	190
HIGHEST ANNUAL MEAN			316
LOWEST ANNUAL MEAN			79.8
HIGHEST DAILY MEAN	957	Apr 3	8580
LOWEST DAILY MEAN	2.8	Aug 6	.34
ANNUAL SEVEN-DAY MINIMUM	3.2	Sep 28	.39
INSTANTANEOUS PEAK FLOW			9100
INSTANTANEOUS PEAK STAGE			11.47
INSTANTANEOUS LOW FLOW			2.6
ANNUAL RUNOFF (CFSM)	.70		1.13
ANNUAL RUNOFF (INCHES)	9.56		15.38
10 PERCENT EXCEEDS	294	493	476
50 PERCENT EXCEEDS	60	109	82
90 PERCENT EXCEEDS	5.0	26	8.8

\* See REMARKS.

0209257120 W. P. BRICE CREEK BELOW SR 1101 NEAR RIVERDALE, NC

LOCATION.--Lat 34°58'09", long 77°02'55", Craven County, Hydrologic Unit 03020204, on left bank at downstream side of bridge on road 170, 2.7 mi below Secondary Road 1101, and 4.2 mi southwest of Riverdale.

DRAINAGE AREA.--11.2 mi<sup>2</sup>, revised.

PERIOD OF RECORD.--April 1986 to current year. Prior to October 1991, published as W. P. Brice Creek at Secondary Road 1101 near Riverdale.

GAGE.--Water-stage recorder. Elevation of gage is 25 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records fair above 10 ft<sup>3</sup>/s and poor below. No flow for periods during the 1990-91 water years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	3.5	11	11	33	18	16	21	11	13	28	40
2	0	3.5	11	11	31	19	16	22	12	13	26	37
3	0	3.5	11	12	29	24	15	21	12	12	26	31
4	0	3.5	11	12	28	34	15	20	11	12	26	23
5	.04	3.5	11	11	27	33	15	19	11	11	24	21
6	.05	3.5	11	11	25	31	14	18	10	11	29	21
7	.05	3.5	11	12	27	29	13	16	9.8	10	31	24
8	.05	3.6	12	15	29	28	13	15	9.3	9.5	36	25
9	.04	3.6	13	16	28	27	12	14	8.3	8.7	33	23
10	.03	12	13	16	27	25	12	14	6.9	8.2	29	21
11	.02	14	13	16	26	24	11	14	6.5	8.0	27	20
12	0	14	13	22	25	23	10	13	6.2	8.5	25	18
13	0	13	13	22	24	22	10	13	5.9	7.9	26	17
14	0	13	13	21	24	25	9.8	12	5.7	7.5	24	16
15	0	12	12	20	23	25	9.7	12	6.0	7.8	45	16
16	0	12	12	22	22	24	9.3	13	5.6	9.5	106	16
17	0	12	12	23	21	23	9.0	11	6.2	9.4	69	14
18	0	11	12	22	21	22	8.7	11	6.9	9.2	52	14
19	0	11	12	21	20	22	8.4	11	7.0	8.8	52	13
20	0	11	12	30	20	20	11	13	10	8.4	55	14
21	0	11	12	31	20	20	13	16	16	8.5	58	14
22	0	11	13	29	20	19	14	16	17	8.4	48	13
23	.20	10	13	27	20	18	13	15	19	8.3	41	13
24	.64	11	13	28	19	17	13	14	23	8.0	38	13
25	.71	10	12	33	19	16	12	14	22	7.7	40	13
26	2.5	10	12	31	19	16	12	13	20	9.0	51	18
27	2.7	10	12	30	19	15	11	13	18	11	71	19
28	2.9	11	12	30	18	15	11	12	17	11	70	18
29	3.2	11	12	31	---	15	11	13	15	16	63	17
30	3.4	11	12	34	---	16	12	12	14	19	54	15
31	3.4	---	12	36	---	16	---	11	---	26	45	---
TOTAL	19.93	272.7	374	686	664	681	359.9	452	348.3	326.3	1348	577
MEAN	.64	9.09	12.1	22.1	23.7	22.0	12.0	14.6	11.6	10.5	43.5	19.2
MAX	3.4	14	13	36	33	34	16	22	23	26	106	40
MIN	.00	3.5	11	11	18	15	8.4	11	5.6	7.5	24	13
CFSM	.06	.81	1.08	1.98	2.12	1.96	1.07	1.30	1.04	.94	3.88	1.72
IN.	.07	.91	1.24	2.28	2.21	2.26	1.20	1.50	1.16	1.08	4.48	1.92

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 1991, BY WATER YEAR (WY)

	MEAN	8.40	8.31	19.1	31.1	23.2	28.9	24.8	17.7	9.62	7.43	32.7	11.8
MAX	32.5	13.4	47.5	40.7	34.0	41.7	47.4	32.6	18.3	21.7	73.2	19.2	
(WY)	1990	1990	1990	1987	1987	1987	1989	1989	1988	1989	1986	1991	
MIN	.64	5.43	7.03	14.7	12.9	16.9	12.0	2.42	.92	1.28	1.82	.13	
(WY)	1991	1988	1989	1989	1989	1990	1986	1986	1986	1990	1990	1990	

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1986 - 1991
ANNUAL TOTAL	4511.30	6109.13	
ANNUAL MEAN	12.4	16.7	18.6
HIGHEST ANNUAL MEAN			19.7
LOWEST ANNUAL MEAN			16.7
HIGHEST DAILY MEAN	104	106	470
LOWEST DAILY MEAN	0	0	0
ANNUAL SEVEN-DAY MINIMUM	0	0	0
INSTANTANEOUS PEAK FLOW		127	781
INSTANTANEOUS PEAK STAGE		3.35	4.48
INSTANTANEOUS LOW FLOW		0*	0*
ANNUAL RUNOFF (CFSM)	1.10	1.49	1.66
ANNUAL RUNOFF (INCHES)	14.98	20.29	22.61
10 PERCENT EXCEEDS	27	30	40
50 PERCENT EXCEEDS	11	13	13
90 PERCENT EXCEEDS	.03	3.5	1.4

\* See REMARKS.

## NEUSE RIVER BASIN

0209265800 NEUSE RIVER AT MINNESOTT BEACH, NC

LOCATION.--Lat 34°57'58", long 76°48'20", Pamlico County, Hydrologic Unit 03020204, at ferry landing, north shore of Neuse River, at State Highway 306, and 0.3 mi southeast of Minnesott Beach.

## TIDAL-ELEVATION RECORDS

PERIOD OF RECORD.--March 1988 to current year.

GAGE.--Water-stage recorder. Datum of gage is 10 ft above National Geodetic Vertical Datum of 1929, gage readings have been reduced to elevations NGVD.

REMARKS.--Records good.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 3.59 ft Dec. 9, 1989; minimum elevation, 1.66 ft below NGVD, June 13, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 3.45 ft Oct. 26; minimum elevation, 1.05 ft below NGVD, Apr. 9.

ELEVATION, FEET, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991, MEAN VALUES  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.95	1.15	.51	1.17	---	.57	1.09	.89	.55	.19	1.03	1.45
2	.75	1.14	.42	.69	---	.35	1.11	.91	.85	.33	.97	2.15
3	1.00	1.06	.50	.72	---	.77	1.76	.88	1.02	.84	.71	1.62
4	.38	1.03	.21	1.30	---	-.04	1.10	1.47	1.30	.82	.92	1.14
5	.80	1.09	.25	1.07	---	.78	.45	1.04	1.91	.69	1.22	.98
6	.78	1.24	.44	.61	---	.62	.33	.25	2.30	.97	1.30	.97
7	.62	1.36	.57	.99	---	.31	.07	.71	1.97	.99	1.06	1.70
8	.67	1.60	1.25	1.73	---	1.10	-.16	1.04	1.36	.82	1.20	1.84
9	.67	1.55	1.14	1.14	---	1.18	-.38	.82	.85	.97	.90	1.76
10	.85	1.05	.55	1.30	---	1.11	-.26	.69	.71	.85	.91	1.33
11	.84	1.18	.90	1.26	---	.93	.82	1.09	.39	1.00	1.50	.97
12	1.15	.71	.57	1.08	---	1.06	1.07	.28	.14	1.53	1.48	1.37
13	1.16	1.01	.32	1.35	---	1.04	.58	.13	.69	.89	1.09	1.39
14	1.11	1.14	1.06	1.16	---	1.12	.52	.21	.89	1.02	1.03	.95
15	.97	.73	.48	1.02	---	1.48	.26	.61	.49	1.42	.78	1.21
16	1.51	.57	.20	1.02	---	1.42	.60	1.04	.38	1.40	1.05	.96
17	1.14	.68	.55	---	---	1.17	.58	.66	.54	1.10	.93	.74
18	.50	1.17	.10	---	---	.96	1.05	.98	.65	.69	1.46	.75
19	1.02	1.10	.26	---	---	1.20	2.04	1.97	.83	.33	.68	.63
20	1.34	1.06	.90	---	---	1.08	1.66	1.72	.97	-.02	.56	1.43
21	1.00	1.16	.51	---	---	.92	1.32	1.29	.92	.11	.79	1.75
22	.73	.93	.48	---	---	.57	.86	.88	.79	.24	1.08	1.86
23	.64	.84	.28	---	---	.46	1.16	.81	1.19	.13	1.11	1.11
24	1.05	.70	.02	---	---	.57	1.07	.73	2.07	-.03	1.02	1.08
25	1.81	.46	.97	---	---	1.21	1.37	.63	1.85	.07	1.52	.78
26	1.97	.50	.91	---	---	1.19	1.17	.65	1.58	.22	1.27	.89
27	1.88	.48	1.26	---	---	.33	.92	.30	1.50	.33	1.20	1.44
28	1.25	.28	.52	---	---	-.10	.89	.26	1.14	.82	1.16	1.80
29	1.51	.53	.53	---	---	-.05	1.07	.81	.63	---	1.00	1.33
30	1.34	.79	.20	---	---	.77	.98	.66	.29	---	.87	.92
31	1.02	---	.73	---	---	1.65	---	.27	---	---	.62	---
TOTAL	32.41	28.29	17.59	---	---	25.73	25.10	24.68	30.75	---	32.42	38.30
MEAN	1.05	.94	.57	---	---	.83	.84	.80	1.02	---	1.05	1.28
MAX	1.97	1.60	1.26	---	---	1.65	2.04	1.97	2.30	---	1.52	2.15
MIN	.38	.28	.02	---	---	-.10	-.38	.13	.14	---	.56	.63

## NEUSE RIVER BASIN

0209267500 NEUSE RIVER AT ORIENTAL, NC

LOCATION.--Lat 35°01'26", long 76°41'35", Pamlico County, Hydrologic Unit 03020204, at private pier, Oriental.

## TIDAL-ELEVATION RECORDS

PERIOD OF RECORD.--March 1988 to September 1989, October 1990 to September 1991 (discontinued).

GAGE.--Water-stage recorder. Datum of gage is 10 ft above National Geodetic Vertical Datum of 1929, gage readings have been reduced to elevations NGVD.

REMARKS.--Records good.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 3.60 ft Mar. 7, 1989; minimum elevation, 1.46 ft below NGVD, Apr. 7, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 3.36 ft October 26; minimum elevation, 1.05 ft below NGVD, Apr. 9.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991, MEAN VALUES  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.01	1.19	.66	1.18	1.39	.61	.88	.76	.63	.34	1.06	1.52
2	.83	1.19	.46	.73	.87	.46	.96	.84	.90	.51	1.01	2.08
3	1.04	1.11	.59	.79	.54	.77	1.49	.86	1.04	.89	.75	1.61
4	.49	1.07	.35	1.26	.38	.16	.89	1.39	1.32	.84	.93	1.17
5	.85	1.13	.28	1.10	.27	.83	.32	.99	1.91	.74	1.24	1.03
6	.83	1.21	.61	.67	.32	.69	.20	.32	2.25	1.00	1.31	1.02
7	.70	1.44	.48	.97	.37	.23	-.06	.68	1.97	1.00	1.10	1.73
8	.74	1.51	1.00	1.70	1.05	.91	-.27	.98	1.39	.85	1.20	1.86
9	.74	1.64	1.21	1.00	1.10	.99	-.50	.78	.92	1.03	.94	1.75
10	.87	1.11	.85	1.29	.91	.87	-.37	.68	.79	.90	.96	1.35
11	.88	1.06	.92	1.21	.76	.72	.61	1.01	.53	1.06	1.51	.98
12	1.20	.77	.63	1.10	1.10	.86	.82	.34	.28	1.53	1.49	1.46
13	1.22	1.00	.39	---	.57	.88	.40	.17	.76	.95	1.11	1.40
14	1.10	1.17	1.04	---	.17	.92	.36	.26	.95	1.04	1.00	1.00
15	1.01	.85	.53	---	.28	1.29	.15	.64	.61	1.44	.84	1.17
16	1.54	.67	.29	---	.22	1.26	.45	1.03	.53	1.42	1.08	1.00
17	1.19	.61	.59	---	.11	1.00	.45	.72	.64	1.13	.97	.83
18	.62	1.03	.17	.77	.38	.80	.86	.98	.75	.76	1.41	.85
19	1.03	1.11	.32	.79	.24	.92	1.76	1.90	.88	.46	.79	.73
20	1.36	1.08	.92	.93	-.05	.88	1.43	1.72	1.02	.10	.66	1.59
21	1.05	1.19	.57	.63	.29	.71	1.12	1.30	.99	.22	.82	1.77
22	.81	1.07	.54	1.40	.15	.43	.66	.93	.88	.36	1.10	1.80
23	.71	.85	.38	1.02	1.19	.33	1.01	.85	1.24	.25	1.13	1.10
24	1.12	.75	.12	.92	.72	.43	.93	.79	2.06	.11	1.05	1.12
25	1.86	.64	.95	1.54	.63	1.02	1.25	.71	1.85	.22	1.49	.83
26	2.02	.57	.89	1.34	.74	1.00	1.05	.72	1.59	.35	1.30	1.01
27	1.95	.58	1.29	.88	.53	.21	.81	.47	1.48	.47	1.25	1.57
28	1.31	.43	.55	.91	.47	-.16	.79	.36	1.17	.87	1.17	1.75
29	1.58	.27	.60	1.01	---	-.09	.99	.87	.73	.73	1.03	1.28
30	1.39	.99	.29	1.00	---	.64	.84	.74	.44	.96	.90	1.00
31	1.05	---	.65	.87	---	1.45	---	.38	---	1.09	.70	---
TOTAL	34.10	29.29	19.12	---	15.70	22.02	20.28	25.17	32.50	23.62	33.30	39.36
MEAN	1.10	.98	.62	---	.56	.71	.68	.81	1.08	.76	1.07	1.31
MAX	2.02	1.64	1.29	---	1.39	1.45	1.76	1.90	2.25	1.53	1.51	2.08
MIN	.49	.27	.12	---	-.05	-.16	-.50	.17	.28	.10	.66	.73

## NEUSE RIVER BASIN

0209267800 BIG CREEK AT SOUTH RIVER, NC

LOCATION.--Lat 34°57'12", long 76°35'02", Carteret County, Hydrologic Unit 03020204, at mouth and 0.8 mi southeast of South River.

## TIDAL-ELEVATION RECORDS

PERIOD OF RECORD.--March 1988 to September 1991 (discontinued).

GAGE.--Water-stage recorder. Datum of gage is 10 ft above National Geodetic Vertical Datum of 1929, gage readings have been reduced to elevations NGVD.

REMARKS.--Records good.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 4.90 ft Apr. 13, 1988; minimum elevation, 1.52 ft below NGVD, June 9, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 2.83 ft Aug. 18; minimum elevation, 1.01 ft below NGVD, Apr. 9.

ELEVATION, FEET, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991, MEAN VALUES  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.83	1.03	.41	1.06	1.23	.44	.95	.71	.47	.17	.93	1.48
2	.65	1.02	.31	.60	.70	.24	1.00	.84	.76	.28	.87	1.85
3	.81	.94	.34	.63	.39	.54	1.47	.83	.90	.73	.62	1.43
4	.27	.91	.19	1.12	.23	.03	.90	1.29	1.18	.69	.82	.99
5	.66	.96	.31	.96	.13	.69	.32	.90	1.75	.58	1.11	.87
6	.63	1.11	.36	.52	.17	.48	.24	.16	2.09	.87	1.16	.93
7	.49	1.23	.48	.84	.20	.28	-.02	.59	1.84	.88	.96	1.58
8	.53	1.49	1.15	1.66	1.01	1.00	-.25	.88	1.24	.73	1.06	1.71
9	.52	1.37	1.01	.93	.97	1.04	-.47	.66	.77	.90	.75	1.57
10	---	.88	.49	1.13	.75	.99	-.34	.57	.62	.76	.81	1.16
11	---	.99	.77	.97	.67	.86	.63	.87	.33	.90	1.35	.83
12	---	.64	.46	.95	.98	.93	.80	.22	.11	1.37	1.31	1.30
13	---	.88	.25	1.26	.38	.89	.37	.07	.58	.80	.98	1.20
14	---	1.03	.90	1.03	.04	1.00	.38	.11	.75	.90	.84	.83
15	---	.64	.38	.90	.26	1.41	.15	.49	.40	1.29	.69	1.08
16	---	.47	.14	.82	.26	1.32	.46	.89	.29	1.27	.94	.80
17	---	.61	.41	.70	-.03	1.03	.45	.56	.46	1.00	.82	.64
18	---	1.05	.00	.66	.22	.82	.86	.82	.55	.61	1.28	.64
19	---	.98	.14	.64	.06	1.08	1.71	1.74	.72	.27	.65	.54
20	---	.95	.75	.81	-.22	.96	1.48	1.57	.86	-.04	.46	1.63
21	---	1.04	.38	.58	.13	.73	1.19	1.12	.84	.07	.69	1.68
22	---	.82	.37	1.31	-.01	.44	.71	.74	.70	.19	.97	1.61
23	---	.66	.21	.86	1.17	.33	1.01	.66	1.11	.09	.95	.92
24	---	.64	.02	.80	.60	.48	.96	.60	1.91	-.06	.89	.91
25	---	.39	.85	1.41	.49	1.05	1.25	.51	1.67	.01	1.35	.60
26	---	.41	.77	1.20	.61	1.02	1.00	.52	1.39	.13	1.15	.90
27	---	.38	1.15	.73	.42	.22	.76	.22	1.31	.27	1.08	1.46
28	---	.16	.41	.77	.32	-.13	.74	---	1.00	.72	1.00	1.57
29	---	.47	.42	.85	---	-.19	.94	.71	.55	.55	.88	1.11
30	---	.76	.13	.84	---	.72	.82	.58	.23	.82	.75	.85
31	.90	---	.48	.82	---	1.53	---	.22	---	.94	.53	---
TOTAL	---	24.91	14.44	28.36	12.13	22.23	20.47	---	27.38	18.69	28.65	34.67
MEAN	---	.83	.47	.91	.43	.72	.68	---	.91	.60	.92	1.16
MAX	---	1.49	1.15	1.66	1.23	1.53	1.71	---	2.09	1.37	1.35	1.85
MIN	---	.16	.00	.52	-.22	-.19	-.47	---	.11	-.06	.46	.54

## NEW RIVER BASIN

02093000 NEW RIVER NEAR GUM BRANCH, NC

LOCATION.--Lat 34°50'56", long 77°31'11", Onslow County, Hydrologic Unit 03030001, on right bank 5 ft downstream from Secondary Road 1314, 0.7 mile downstream from Jenkins Swamp, 1.8 miles southwest of town of Gum Branch, and 3.8 miles southeast of Richlands.

DRAINAGE AREA.--94 mi<sup>2</sup>.

PERIOD OF RECORD.--August 1949 to September 1973. July 1987 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Aug. 19, 1949, to Mar. 22, 1950, nonrecording gage and Mar. 23, 1950, to Mar. 25, 1969, water-stage recorder at site 0.2 mile upstream at datum 2.52 ft higher. Mar. 26, 1969, to Sept. 1973 water-stage recorder at present site and datum.

REMARKS.--No estimated daily discharges. Records fair. Maximum discharge for period of record, from floodmark, at site and datum then in use. Low flows possibly affected by tide.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of 1908 reached a stage of about 18 ft, at former site and datum, from information by local resident.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.8	22	26	29	241	66	446	121	33	45	400	106
2	4.0	20	24	31	181	107	243	98	72	81	282	112
3	3.5	19	28	37	150	201	182	71	50	52	593	102
4	4.2	17	33	35	129	541	145	58	36	46	446	89
5	12	17	22	33	116	424	124	52	31	97	200	78
6	5.9	19	21	31	105	237	110	50	27	150	160	69
7	4.9	18	21	32	121	180	99	43	24	98	184	68
8	4.4	15	33	97	180	146	88	36	21	64	358	68
9	4.8	16	41	104	160	128	80	33	18	45	246	64
10	6.9	287	35	86	134	113	72	36	16	35	202	57
11	15	216	32	81	116	101	66	34	16	30	303	50
12	11	115	29	270	100	95	62	31	15	32	318	43
13	12	78	27	230	93	98	58	30	14	45	618	37
14	13	60	26	162	105	160	65	34	16	54	462	34
15	8.0	51	25	123	99	150	131	32	17	84	766	30
16	5.1	46	25	223	85	127	101	42	16	203	695	28
17	6.3	41	24	255	78	110	83	33	85	110	288	26
18	11	37	24	171	76	102	72	29	522	88	187	25
19	6.2	35	24	132	75	96	64	80	193	171	165	25
20	4.1	34	25	368	73	84	205	125	212	87	134	23
21	3.9	31	43	456	71	77	250	189	311	54	117	23
22	3.9	30	37	275	73	70	232	136	354	38	96	26
23	76	28	34	186	79	66	176	96	241	29	89	25
24	48	28	32	160	82	61	136	71	243	26	157	29
25	15	25	28	294	85	55	106	59	154	26	222	36
26	119	25	26	253	83	51	89	50	112	44	511	62
27	97	24	25	197	76	49	77	43	94	53	431	52
28	58	23	27	199	70	48	85	41	74	78	325	37
29	39	25	31	242	---	76	80	48	60	171	379	31
30	28	29	32	263	---	880	71	44	49	249	200	24
31	24	---	33	331	---	867	---	39	---	524	135	---
TOTAL	657.9	1431	893	5386	3036	5566	3798	1884	3126	2909	9669	1479
MEAN	21.2	47.7	28.8	174	108	180	127	60.8	104	93.8	312	49.3
MAX	119	287	43	456	241	880	446	189	522	524	766	112
MIN	3.5	15	21	29	70	48	58	29	14	26	89	23
CFSM	.28	.64	.39	2.33	1.46	2.41	1.70	.82	1.40	1.26	4.19	.66
IN.	.33	.71	.45	2.69	1.52	2.78	1.90	.94	1.56	1.75	4.83	.74

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1949 - 1991, BY WATER YEAR (WY)

	MEAN	72.4	62.2	88.3	142	169	175	123	78.2	94.8	133	110	92.0
MAX	553	190	277	299	403	418	377	188	423	717	734	887	
(WY)	1972	1970	1958	1963	1973	1959	1973	1969	1961	1962	1955	1955	
MIN	2.01	4.30	13.3	32.4	33.1	27.7	21.0	16.4	11.3	8.82	6.25	4.25	
(WY)	1955	1955	1955	1955	1955	1955	1955	1957	1970	1970	1954	1954	

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1949 - 1991
ANNUAL TOTAL	26823.1	39834.9	
ANNUAL MEAN	73.5	109	112
HIGHEST ANNUAL MEAN			208
LOWEST ANNUAL MEAN			59.9
HIGHEST DAILY MEAN	1210	880	6490
LOWEST DAILY MEAN	3.4	3.5	1.9
ANNUAL SEVEN-DAY MINIMUM	3.8	5.5	2.0
INSTANTANEOUS PEAK FLOW		978	7900*
INSTANTANEOUS PEAK STAGE		10.82	19.99*
INSTANTANEOUS LOW FLOW		2.6	1.8
ANNUAL RUNOFF (CFSM)	.99	1.46	1.50
ANNUAL RUNOFF (INCHES)	13.39	19.89	20.42
10 PERCENT EXCEEDS	150	249	241
50 PERCENT EXCEEDS	36	68	53
90 PERCENT EXCEEDS	12	19	12

\* See REMARKS.

## CAPE FEAR RIVER BASIN

02093800 REEDY FORK NEAR OAK RIDGE, NC

LOCATION.--Lat 36°10'22", long 79°57'12", Guilford County, Hydrologic Unit 03030002, on left bank at downstream side of bridge on Secondary Road 2128, 0.8 mi downstream from Beaver Creek, and 2 mi east of Oak Ridge.

DRAINAGE AREA.--20.6 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1955 to current year.

REVISED RECORDS.--WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 771.30 ft above National Geodetic Vertical Datum of 1929. Prior to Dec. 13, 1955, nonrecording gage at same site and datum.

REMARKS.--No estimated daily discharges. Records fair. Some diurnal fluctuation at medium and low flows caused by mill upstream. Maximum discharge, 3,950 ft<sup>3</sup>/s, from rating curve extended above 1,500 ft<sup>3</sup>/s on basis of contracted-opening measurement at gage height 10.94 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.0	21	18	52	23	23	59	42	21	14	11	7.9
2	5.3	20	17	34	23	31	46	32	27	13	13	7.8
3	5.8	19	64	28	23	180	38	26	35	30	15	7.6
4	7.2	19	187	26	22	418	34	24	21	29	11	7.8
5	9.2	19	56	23	22	91	33	23	18	22	9.7	7.5
6	8.8	18	33	22	23	49	30	25	17	27	9.2	7.6
7	9.4	18	27	55	26	40	27	24	17	18	9.3	35
8	10	17	25	64	24	36	28	22	17	16	15	14
9	11	19	22	44	23	31	27	22	17	15	14	10
10	17	146	20	34	22	28	27	22	16	14	16	9.1
11	315	47	19	234	22	26	24	21	15	14	12	8.7
12	97	29	19	225	21	25	23	21	15	14	11	8.5
13	448	23	19	71	22	30	27	21	15	15	13	8.3
14	90	21	18	42	25	26	32	20	15	14	13	8.3
15	38	19	18	35	23	24	48	20	14	12	19	8.5
16	27	19	18	94	20	22	497	18	14	11	13	8.4
17	22	18	17	52	20	22	91	18	14	11	11	8.0
18	27	18	18	36	28	56	51	22	14	11	10	7.8
19	31	17	23	31	30	39	84	625	38	11	9.2	9.3
20	20	17	18	88	26	32	92	261	21	11	8.6	18
21	18	17	22	52	25	27	93	185	19	11	8.3	10
22	42	17	21	36	24	26	57	81	18	9.9	8.1	8.8
23	758	18	21	31	23	26	40	46	19	9.7	8.2	8.5
24	160	17	53	29	23	25	34	36	18	9.2	8.4	8.6
25	75	17	29	27	23	23	32	30	16	9.1	8.1	14
26	82	17	24	26	28	22	29	26	15	9.4	7.9	19
27	42	17	23	25	26	22	28	24	15	10	8.6	11
28	32	18	28	25	24	22	28	24	15	10	9.5	9.2
29	26	23	26	24	---	490	28	25	14	12	12	8.7
30	24	18	24	25	---	410	97	21	14	13	9.4	8.4
31	22	---	154	26	---	115	---	20	---	13	8.3	---
TOTAL	2484.7	723	1081	1616	664	2437	1784	1827	544	438.3	339.8	314.3
MEAN	80.2	24.1	34.9	52.1	23.7	78.6	59.5	58.9	18.1	14.1	11.0	10.5
MAX	758	146	187	234	30	490	497	625	38	30	19	35
MIN	5.0	17	17	22	20	22	23	18	14	9.1	7.9	7.5
CFSM	3.89	1.17	1.69	2.53	1.15	3.82	2.89	2.86	.88	.69	.53	.51
IN.	4.49	1.31	1.95	2.92	1.20	4.40	3.22	3.30	.98	.79	.61	.57

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1956 - 1991, BY WATER YEAR (WY)

	MEAN	19.8	17.5	24.3	29.4	35.7	36.2	28.6	24.2	19.6	20.6	16.9	17.0
MAX	80.2	40.4	48.7	82.0	78.7	102	75.8	58.9	74.4	152	62.0	85.5	
(WY)	1991	1986	1963	1978	1979	1975	1987	1991	1982	1984	1978	1979	
MIN	5.90	7.21	8.67	8.52	13.5	12.4	9.79	8.19	5.03	3.64	5.88	3.39	
(WY)	1968	1968	1956	1956	1968	1967	1967	1986	1986	1977	1977	1968	

## SUMMARY STATISTICS

## FOR 1990 CALENDAR YEAR

## FOR 1991 WATER YEAR

## WATER YEARS 1956 - 1991

ANNUAL TOTAL	12026.2	14253.1	
ANNUAL MEAN	32.9	39.0	24.1
HIGHEST ANNUAL MEAN			42.7
LOWEST ANNUAL MEAN			11.7
HIGHEST DAILY MEAN	758	Oct 23	1250
LOWEST DAILY MEAN	4.5	Sep 8	1.7
ANNUAL SEVEN-DAY MINIMUM	4.9	Sep 25	2.3
INSTANTANEOUS PEAK FLOW			3950*
INSTANTANEOUS PEAK STAGE			12.41
INSTANTANEOUS LOW FLOW			1.2
ANNUAL RUNOFF (CFSM)	1.60	1.90	1.17
ANNUAL RUNOFF (INCHES)	21.72	25.74	15.90
10 PERCENT EXCEEDS	58	56	38
50 PERCENT EXCEEDS	22	22	14
90 PERCENT EXCEEDS	6.1	9.2	6.9

\* See REMARKS.

## CAPE FEAR RIVER BASIN

02094500 REEDY FORK NEAR GIBSONVILLE, NC

LOCATION.--Lat 36°10'31", long 79°37'01", Guilford County, Hydrologic Unit 03030002, on right bank 0.2 mi downstream from Huffines Mill on Secondary Road 2719, 1.2 mi upstream from Buffalo Creek, and 6 mi northwest of Gibsonville.

DRAINAGE AREA.--131 mi<sup>2</sup>.

PERIOD OF RECORD.--September 1928 to current year.

REVISED RECORDS.--WSP 1303: 1929-40 (monthly and yearly runoff). WSP 1383: 1929-30, 1933(M), 1934, 1937(M), 1939-42(M), 1948. WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder and rock-masonry control. Datum of gage is 626.88 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good except those below 4 ft<sup>3</sup>/s, which are fair. Flow regulated since 1923 by Lake Brandt 14 mi upstream (station 02094117), since 1957 by Lake Higgins on Brush Creek, a tributary to Lake Brandt, (station 02093981), since 1943 by Richland Lake 12 mi above station, and since 1968 by Lake Townsend 9 mi above station (station 02094305). City of Greensboro diverted from Lake Brandt an average of 23.2 ft<sup>3</sup>/s and an average of 28.1 ft<sup>3</sup>/s from Lake Townsend for municipal water supply. Prior to regulation by Lake Townsend, maximum discharge, 11,600 ft<sup>3</sup>/s Sept. 25 1947, gage height 20.77 ft.; minimum discharge not determined. Maximum discharge for regulated period, 5,660 ft<sup>3</sup>/s, from high-water mark in well. Minimum discharge for regulated period, 1.4 ft<sup>3</sup>/s, also occurred July 30, Aug. 6, 7, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in July 1916 reached a stage of 17.90 ft, from information by local resident, discharge, 8,640 ft<sup>3</sup>/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.7	26	18	405	24	24	643	155	26	19	32	11
2	4.9	30	17	376	23	84	494	37	33	15	31	11
3	5.2	23	328	89	23	518	87	33	328	22	28	13
4	5.6	21	1590	367	23	1380	40	30	95	80	36	11
5	6.1	20	1070	145	22	1110	51	31	22	438	46	10
6	7.2	18	868	28	23	842	290	77	19	135	29	11
7	7.1	17	166	363	25	409	45	167	18	29	27	20
8	6.6	17	92	744	25	124	35	34	17	26	27	18
9	6.4	39	31	897	24	34	83	28	16	25	48	12
10	6.2	536	26	466	27	30	322	27	15	25	55	9.6
11	1610	448	23	1480	23	27	137	26	14	26	31	9.0
12	358	105	22	1840	21	26	29	327	14	39	28	9.0
13	1070	30	22	888	21	50	27	35	14	52	29	8.8
14	775	222	21	823	26	371	384	22	13	31	70	8.7
15	742	48	20	307	23	70	99	21	13	26	92	8.7
16	95	24	21	276	20	26	778	19	14	25	38	8.3
17	25	21	20	537	19	215	1490	18	28	26	31	8.5
18	51	18	347	742	29	109	404	17	48	32	28	8.5
19	269	18	57	95	33	61	338	451	90	37	27	14
20	38	17	22	149	28	37	612	1750	394	27	26	29
21	24	17	29	396	25	32	605	814	74	25	22	14
22	35	17	26	379	23	85	533	637	56	24	13	9.9
23	2770	17	24	330	23	86	474	448	63	24	12	8.8
24	2830	16	293	59	23	37	141	324	109	23	11	11
25	1110	15	201	33	22	36	37	38	51	25	13	48
26	393	15	69	29	32	27	31	25	47	30	13	47
27	251	15	355	29	291	27	31	26	46	61	26	20
28	421	18	204	322	78	328	39	42	46	31	35	14
29	101	26	165	294	---	1240	38	42	46	31	19	11
30	313	20	36	44	---	3430	455	32	43	32	15	9.9
31	50	---	542	30	---	2000	---	28	---	33	12	---
TOTAL	13391.0	1874	6725	12962	999	12875	8772	5761	1812	1474	950	432.7
MEAN	432	62.5	217	418	35.7	415	292	186	60.4	47.5	30.6	14.4
MAX	2830	536	1590	1840	291	3430	1490	1750	394	438	92	48
MIN	4.7	15	17	28	19	24	27	17	13	15	11	8.3

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 1991, BY WATER YEAR (WY)

	MEAN	MAX	(WY)	MIN	(WY)
1929	73.7	661	1960	2.85	1969
1930	63.3	233	1950	6.70	1970
1931	99.4	275	1933	5.97	1969
1932	162	644	1978	11.1	1981
1933	174	468	1960	19.9	1977
1934	170	479	1952	16.4	1976
1935	142	613	1987	11.2	1976
1936	88.8	365	1978	7.43	1986
1937	68.8	477	1982	6.08	1986
1938	68.0	596	1984	2.83	1986
1939	58.6	315	1940	2.82	1977
1940	63.1	534	1947	2.27	1968

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1929 - 1991
ANNUAL TOTAL	55133.5	68027.7	102
ANNUAL MEAN	151	186	188
HIGHEST ANNUAL MEAN			20.1
LOWEST ANNUAL MEAN			1967
HIGHEST DAILY MEAN	2830	Oct 24	7240
LOWEST DAILY MEAN	4.1	Sep 25	4.0
ANNUAL SEVEN-DAY MINIMUM	4.4	Sep 23	1.2
INSTANTANEOUS PEAK FLOW			5660*
INSTANTANEOUS PEAK STAGE			14.92*
INSTANTANEOUS LOW FLOW			1.4*
ANNUAL RUNOFF (CFSM)	1.15		.78
ANNUAL RUNOFF (INCHES)	15.66		10.61
10 PERCENT EXCEEDS	452	504	237
50 PERCENT EXCEEDS	30	31	38
90 PERCENT EXCEEDS	5.4	13	7.6

\* See REMARKS.

## CAPE FEAR RIVER BASIN

02096500 HAW RIVER AT HAW RIVER, NC

LOCATION.--Lat 36°05'13", long 79°22'02", Alamance County, Hydrologic Unit 03030002, on left bank at town of Haw River, 650 ft downstream from Southern Railway bridge, 800 ft downstream from bridge on U.S. Highway 70 and State Highway 49, and 3 mi downstream from Stony Creek.

DRAINAGE AREA.--606 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1928 to current year.

REVISED RECORDS.--WSP 757: 1929(M). WSP 782: 1934. WSP 1383: 1930, 1932(M), 1933(m), 1936, 1943, 1944(M), 1947(m). WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 471.69 ft above National Geodetic Vertical Datum of 1929. U. S. Army Corps of Engineers gage-height telephone telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Diurnal fluctuation and occasional regulation at low flows. City of Burlington diverted from two Stony Creek Reservoirs (stations 02096003, 02096432) an average of 11.6 ft<sup>3</sup>/s for municipal water supply, about half of which was returned upstream from station as treated effluent, the remainder was returned downstream from station. Maximum discharge 37,000 ft<sup>3</sup>/s, gage height, 31.10 ft, from floodmark.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	85	330	328	1770	425	398	3610	926	273	592	231	139
2	85	302	299	1110	393	708	1830	644	259	284	213	132
3	95	283	456	824	374	1900	1160	574	848	1960	197	132
4	101	271	5720	829	358	6170	741	466	575	1170	202	150
5	130	251	3190	778	345	3270	610	382	285	663	235	105
6	135	236	2050	486	348	2440	785	375	228	735	193	133
7	99	244	1240	1870	409	1690	593	536	208	293	159	141
8	92	232	904	4530	444	1110	500	348	195	206	155	222
9	89	229	654	2780	401	752	582	299	196	189	214	152
10	101	1880	482	1830	373	539	601	292	188	193	531	187
11	4780	1460	414	4920	345	467	629	298	187	254	265	271
12	4660	864	376	11200	328	425	392	540	164	275	194	133
13	4240	578	359	3730	317	494	389	361	168	349	195	157
14	3850	540	342	2520	397	886	729	270	173	328	351	152
15	2350	488	329	1780	441	677	725	249	155	201	1170	138
16	1260	339	343	2410	351	467	1850	233	173	172	372	145
17	689	335	327	2230	314	541	2360	229	1050	172	247	139
18	429	305	467	1760	395	1210	1110	222	1200	180	199	159
19	1010	283	509	1170	672	1400	808	509	2140	202	173	203
20	457	265	387	2030	522	763	2500	2540	1080	178	168	880
21	310	262	539	1960	486	604	2170	2690	623	160	159	340
22	306	270	582	1300	439	530	2280	1790	463	174	144	198
23	10600	269	472	1090	417	696	1310	1230	390	128	132	170
24	10100	262	626	770	401	571	931	1030	369	138	131	205
25	4680	262	809	570	368	486	557	582	284	135	123	537
26	2820	251	490	514	500	402	469	377	245	204	121	1590
27	1490	246	650	481	689	366	441	312	221	285	142	415
28	1140	266	828	591	601	507	424	452	205	214	388	250
29	713	512	830	724	---	4060	411	415	193	176	269	206
30	659	395	612	515	---	14500	1120	353	182	193	211	171
31	448	---	2450	479	---	8590	---	310	---	306	160	---
TOTAL	58003	12710	28064	59551	11853	57619	32617	19834	12920	10709	7644	7952
MEAN	1871	424	905	1921	423	1859	1087	640	431	345	247	265
MAX	10600	1880	5720	11200	689	14500	3610	2690	2140	1960	1170	1590
MIN	85	229	299	479	314	366	389	222	155	128	121	105
CFSM	3.09	.70	1.49	3.17	.70	3.07	1.79	1.06	.71	.57	.41	.44
IN.	3.56	.78	1.72	3.66	.73	3.54	2.00	1.22	.79	.66	.47	.49

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 1991, BY WATER YEAR (WY)

	MEAN	400	402	579	873	1004	970	789	494	412	396	351	363
MAX	2480	1286	1487	2977	2394	2764	2771	1948	2145	2348	1662	2884	
(WY)	1960	1948	1946	1937	1960	1975	1987	1978	1982	1984	1939	1945	
MIN	48.9	61.1	118	172	272	289	184	139	101	70.9	57.2	33.4	
(WY)	1942	1954	1934	1956	1931	1967	1967	1986	1986	1932	1953	1954	

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR			FOR 1991 WATER YEAR			WATER YEARS 1929 - 1991		
ANNUAL TOTAL	282582			319476			584		
ANNUAL MEAN	774			875			1033		
HIGHEST ANNUAL MEAN							229		
LOWEST ANNUAL MEAN							1033		
HIGHEST DAILY MEAN	10600			14500			32000		
LOWEST DAILY MEAN	77			85			5.0		
ANNUAL SEVEN-DAY MINIMUM	85			104			16		
INSTANTANEOUS PEAK FLOW				17400			37000*		
INSTANTANEOUS PEAK STAGE				23.25			31.10*		
INSTANTANEOUS LOW FLOW				41			3.0		
ANNUAL RUNOFF (CFSM)	1.28			1.44			.96		
ANNUAL RUNOFF (INCHES)	17.35			19.61			13.09		
10 PERCENT EXCEEDS	1870			1990			1210		
50 PERCENT EXCEEDS	395			401			295		
90 PERCENT EXCEEDS	101			159			99		

\* See REMARKS.

## CAPE FEAR RIVER BASIN

02096846 CANE CREEK NEAR ORANGE GROVE, NC

LOCATION.--Lat 35°59'13", long 74°12'23", Orange County, Hydrologic Unit 03030002, on right bank at downstream side of bridge on Secondary Road 1114, and 1.0 mi northwest of Orange Grove.

DRAINAGE AREA.--7.54 mi

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1988 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 510 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Periods of no flow occur periodically.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	.52	1.9	14	5.2	3.3	14	11	7.6	e.40	.80	.18
2	0	.62	2.4	8.4	4.8	16	10	5.5	17	e.48	.69	.17
3	0	.63	16	6.0	4.7	69	8.2	3.7	6.9	4.6	.65	.16
4	0	.57	44	7.1	4.6	39	7.1	3.0	3.1	.94	.57	.14
5	0	.61	9.6	5.5	4.4	16	6.8	2.8	2.0	e.60	.46	.15
6	.01	.57	5.8	4.4	4.4	11	6.6	4.2	1.5	e.44	.48	.15
7	0	.48	4.1	125	5.4	8.8	5.7	2.9	1.3	e.36	.54	.14
8	0	.44	7.5	56	5.2	8.0	5.0	2.2	1.2	e.30	.44	.14
9	0	.39	7.2	30	4.4	7.2	4.7	2.0	1.1	e.27	2.1	.13
10	0	7.9	4.8	19	3.9	6.1	4.4	2.0	.95	e.33	1.9	.11
11	.76	2.9	3.8	171	3.7	5.3	3.9	1.8	e.85	33	.68	.11
12	.26	1.6	3.2	92	3.5	4.8	3.6	1.7	e.78	2.7	.48	.12
13	.25	1.2	2.9	28	3.4	8.7	3.6	1.6	e.70	1.4	.48	.11
14	.21	.95	2.5	16	4.0	18	4.6	1.4	e.64	.86	1.9	.11
15	.14	.78	2.2	12	3.7	11	5.5	1.3	e.60	.62	3.0	.12
16	.11	.69	2.2	31	3.1	7.4	6.2	1.1	e.57	.48	1.1	.11
17	.10	.72	1.9	22	3.1	6.2	4.4	1.1	e.58	.45	1.0	.10
18	.15	.64	1.9	13	7.6	39	3.7	2.1	e.55	.43	.49	.10
19	.14	.57	2.2	10	9.3	19	4.9	17	2.8	.69	.38	.70
20	.12	.55	2.2	42	7.3	11	24	84	1.3	.52	.34	2.1
21	.14	.49	24	20	6.1	8.2	20	37	1.0	.39	.30	.33
22	1.2	.49	13	12	5.3	7.0	14	11	e.81	.39	.28	.19
23	77	.51	8.2	9.7	4.4	6.3	7.8	5.8	e.70	.35	.26	.15
24	3.6	.58	5.7	8.5	3.9	5.6	5.8	4.0	e.61	.31	.26	71
25	2.1	.54	3.7	7.5	3.8	4.8	4.5	3.1	e.55	.27	.29	124
26	8.1	.50	3.0	6.8	4.1	4.5	3.8	2.5	e.50	40	.23	21
27	2.3	.49	3.1	6.3	3.8	4.3	3.6	2.2	e.48	10	.23	5.8
28	1.4	1.3	6.7	6.0	3.5	4.3	3.1	5.6	e.45	2.4	.22	3.6
29	.89	4.5	9.0	5.7	---	114	2.9	6.7	e.43	1.4	.22	2.4
30	.58	3.0	7.5	5.7	---	80	37	2.9	e.41	1.2	.21	1.7
31	.53	---	66	6.1	---	21	---	2.1	---	1.0	.19	---
TOTAL	100.09	35.73	278.2	806.7	130.6	574.8	239.4	235.3	57.96	107.58	21.17	235.32
MEAN	3.23	1.19	8.97	26.0	4.66	18.5	7.98	7.59	1.93	3.47	.68	7.84
MAX	77	7.9	66	171	9.3	114	37	84	17	40	3.0	124
MIN	0	.39	1.9	4.4	3.1	3.3	2.9	1.1	.41	.27	.19	.10
CFSM	.43	.16	1.19	3.45	.62	2.46	1.06	1.01	.26	.46	.09	1.04
IN.	.49	.18	1.37	3.98	.64	2.84	1.18	1.16	.29	.53	.10	1.16

e Estimated

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 1991, BY WATER YEAR (WY)

	4.23	2.56	7.05	13.9	15.6	19.2	10.1	13.4	2.44	4.72	.76	2.93
MEAN	4.23	2.56	7.05	13.9	15.6	19.2	10.1	13.4	2.44	4.72	.76	2.93
MAX	5.24	3.34	10.2	26.0	23.9	28.6	11.4	18.7	3.76	10.2	1.41	7.84
(WY)	1990	1990	1990	1991	1989	1989	1990	1989	1989	1989	1989	1991
MIN	3.23	1.19	1.95	3.89	4.66	10.4	7.98	7.59	1.62	.49	.20	.018
(WY)	1991	1991	1989	1989	1991	1990	1991	1991	1990	1990	1990	1990

## SUMMARY STATISTICS

## FOR 1990 CALENDAR YEAR

## FOR 1991 WATER YEAR

## WATER YEARS 1989 - 1991

ANNUAL TOTAL	2454.91	2822.85	
ANNUAL MEAN	6.73	7.73	7.46
HIGHEST ANNUAL MEAN			7.73
LOWEST ANNUAL MEAN			7.18
HIGHEST DAILY MEAN	104	171	260
LOWEST DAILY MEAN	0	0	0
ANNUAL SEVEN-DAY MINIMUM	0	0	0
INSTANTANEOUS PEAK FLOW		516	864
INSTANTANEOUS PEAK STAGE		5.01	6.04
INSTANTANEOUS LOW FLOW		0*	0*
ANNUAL RUNOFF (CFSM)	.89	1.03	.99
ANNUAL RUNOFF (INCHES)	12.11	13.93	13.44
10 PERCENT EXCEEDS	16	16	17
50 PERCENT EXCEEDS	2.9	2.5	2.8
90 PERCENT EXCEEDS	.05	.19	.27

\* See REMARKS.

## CAPE FEAR RIVER BASIN

02096846 CANE CREEK NEAR ORANGE GROVE, NC--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1988 to current year.

REMARKS.--Station operated to define water quality as part of a six-county regional surface water-quality assessment.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	COLOR (PLAT-INUM-COBALT UNITS)	BARO-METRIC PRES-SURE (MM OF HG)	OXYGEN, DIS-SOLVED (MG/L)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM PERCENT	
OCT 25...	1430	1.9	78	7.1	14.5	75	<736	--	5.4	2.1	4.2	26	
NOV 19...	1245	0.51	90	7.1	7.0	27	747	11.4	7.0	2.7	5.3	27	
DEC 19...	1145	2.2	72	8.1	12.0	25	749	11.6	6.4	2.3	5.3	30	
JAN 15...	1210	12	64	7.1	6.0	55	750	12.6	4.6	1.8	4.0	30	
FEB 26...	1200	4.2	70	7.2	7.5	25	745	12.2	5.4	1.9	4.9	32	
MAR 27...	1230	4.6	66	8.1	17.5	45	745	13.4	5.1	1.8	4.8	33	
APR 16...	1320	6.1	64	7.6	18.0	55	749	12.0	5.3	1.9	5.1	33	
MAY 29...	1110	6.2	75	7.2	20.5	130	750	7.8	5.6	1.9	3.5	24	
JUN 19...	1515	2.4	122	7.3	21.5	80	753	7.4	9.1	3.4	5.6	20	
JUL 29...	1115	1.4	87	7.1	22.0	70	752	7.2	6.9	2.9	4.3	22	
AUG 28...	1040	0.23	117	7.1	21.5	25	756	7.2	10	3.1	6.0	24	
SEP 19...	1145	0.08	125	7.4	22.0	30	753	7.0	11	4.1	6.5	22	
DATE		SODIUM AD-SORPTION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS NH4)
OCT 25...	0.4	3.2	8.1	5.8	<0.10	11	48	0.890	0.010	0.900	0.050	0.06	
NOV 19...	0.4	2.3	6.4	6.7	<0.10	13	55	--	<0.010	0.600	0.050	0.06	
DEC 19...	0.5	1.6	5.8	7.7	<0.10	14	73	--	<0.010	0.900	0.030	0.04	
JAN 15...	0.4	0.90	6.2	5.1	<0.10	11	50	0.890	0.010	0.900	0.030	0.04	
FEB 26...	0.5	0.80	4.5	6.1	<0.10	9.8	32	0.690	0.010	0.700	<0.010	--	
MAR 27...	0.5	0.80	3.6	5.3	<0.10	10	101	--	<0.010	0.350	<0.010	--	
APR 16...	0.5	1.3	3.2	5.0	0.10	12	57	0.340	0.010	0.350	0.020	0.03	
MAY 29...	0.3	2.3	3.6	4.9	0.10	11	69	1.24	0.060	1.30	0.110	0.14	
JUN 19...	0.4	8.4	4.7	11	<0.10	12	83	--	--	--	--	--	
JUL 29...	0.3	2.8	4.3	6.2	0.20	12	57	1.09	0.010	1.10	0.030	0.04	
AUG 28...	0.4	3.7	2.5	8.3	<0.10	16	65	--	<0.010	0.590	0.020	0.03	
SEP 19...	0.4	3.5	1.4	6.8	0.10	15	69	0.066	0.010	0.076	0.020	0.03	

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

[illegible]

02096846 CANE CREEK NEAR ORANGE GROVE, NC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	CARBON, ORGANIC TOTAL (MG/L AS C)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L)	ALDRIN, TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI- AZINON, TOTAL (UG/L)
OCT 25...	<1	<1	<10	13	0.07	<0.001	<0.1	<0.001	<0.001	<0.001	<0.01
NOV 19...	--	--	--	5.6	--	--	--	--	--	--	--
DEC 19...	--	--	--	4.1	--	--	--	--	--	--	--
JAN 15...	--	--	--	4.7	--	--	--	--	--	--	--
FEB 26...	--	--	--	2.9	--	--	--	--	--	--	--
MAR 27...	--	--	--	3.1	--	--	--	--	--	--	--
APR 16...	<1	<1	<10	5.1	--	<0.001	<0.1	<0.001	<0.001	<0.001	<0.01
MAY 29...	--	--	--	9.3	--	--	--	--	--	--	--
JUN 19...	<1	<1	<10	12	--	--	--	--	--	--	--
JUL 29...	--	--	--	7.5	--	--	--	--	--	--	--
AUG 28...	<1	<1	<10	3.9	--	<0.001	<0.1	<0.001	<0.001	<0.001	<0.01
SEP 19...	--	--	--	4.2	--	--	--	--	--	--	--

[illegible]

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

## CAPE FEAR RIVER BASIN

02096846 CANE CREEK NEAR ORANGE GROVE, NC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

[illegible][illegible]

## CAPE FEAR RIVER BASIN

02096960 HAW RIVER NEAR BYNUM, NC

LOCATION.--Lat 35°45'48", long 79°08'02", Chatham County, Hydrologic Unit 03030002, on right bank 500 ft upstream from Pokeberry Creek, 0.9 mi south-southeast of Bynum, and 1.1 mi downstream from U.S. Highways 15 and 501.

DRAINAGE AREA.--1,275 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1973 to current year.

REVISED RECORDS.--WDR NC-80-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 283.31 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Considerable regulation for short periods at low flow caused by powerplant above station. Satellite data transmitter at the station. Minimum discharge for period of record also occurred on Sept. 27, 1983.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	91	708	757	4280	994	878	5960	2210	512	250	375	168
2	102	626	635	2220	855	1140	3260	1240	944	682	270	186
3	106	573	553	1740	825	3250	2300	991	670	2690	255	160
4	106	520	7530	1390	875	10700	1550	856	1400	1970	236	157
5	160	497	6450	1590	902	6230	1280	644	662	1270	287	170
6	111	472	3350	1140	592	3950	1240	680	335	848	303	136
7	126	453	2420	3540	818	3060	1380	701	344	794	250	151
8	135	451	1640	11800	1030	2280	1070	814	301	254	173	170
9	108	435	1570	6020	946	1810	1020	500	277	284	199	230
10	105	1410	1120	4000	792	1350	1100	519	271	264	504	174
11	3480	3370	901	7180	773	1110	1160	487	348	725	587	212
12	8300	1720	784	25200	718	986	954	529	230	487	312	310
13	5030	1140	700	9080	691	1020	698	768	195	373	219	137
14	5990	870	671	4510	748	1890	800	537	226	513	227	176
15	3270	840	614	3370	941	1860	1280	484	239	334	1640	181
16	2180	706	573	3850	801	1230	1450	446	216	257	1150	154
17	1160	487	580	5130	625	1010	3520	416	767	219	475	155
18	792	526	552	3150	701	2330	2200	415	1370	231	288	171
19	841	460	832	2540	1290	3910	1200	400	2970	284	254	170
20	1090	460	712	3360	1210	2030	4110	2200	1910	279	213	888
21	569	437	1110	4660	1040	1490	3490	4320	1170	226	211	1060
22	420	414	1450	2750	936	1230	4960	2980	688	199	196	317
23	18200	425	1050	2170	843	1210	2570	1900	614	215	177	215
24	17100	418	907	1800	797	1160	1860	1490	470	154	161	222
25	7080	395	1170	1390	748	1080	1170	1150	470	181	155	1680
26	4810	390	991	1200	778	905	910	721	351	178	150	3720
27	3090	418	746	1100	1060	835	864	527	307	431	148	1410
28	1960	389	1310	1050	1100	811	770	523	281	415	170	535
29	1510	853	1450	1250	---	2000	750	972	262	279	596	373
30	1010	1120	1320	1210	---	21500	1400	613	246	257	237	322
31	1050	---	3330	1040	---	12900	---	538	---	265	303	---
TOTAL	90082	21983	47778	124710	24429	97145	56276	31571	19046	15808	10721	14110
MEAN	2906	733	1541	4023	872	3134	1876	1018	635	510	346	470
MAX	18200	3370	7530	25200	1290	21500	5960	4320	2970	2690	1640	3720
MIN	91	389	552	1040	592	811	698	400	195	154	148	136
CFSM	2.28	.57	1.21	3.16	.68	2.46	1.47	.80	.50	.40	.27	.37
IN.	2.63	.64	1.39	3.64	.71	2.83	1.64	.92	.56	.46	.31	.41

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1973 - 1991, BY WATER YEAR (WY)

	MEAN	694	725	1258	2329	2253	2542	1623	1306	899	896	595	757
MAX	2906	2888	2681	5895	5465	6110	4044	3936	4632	4477	1893	2809	
(WY)	1991	1986	1984	1978	1979	1975	1987	1978	1982	1975	1985	1979	
MIN	154	225	275	262	627	648	419	256	155	135	118	111	
(WY)	1987	1974	1981	1981	1977	1988	1986	1986	1986	1986	1987	1983	

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1973 - 1991
ANNUAL TOTAL	546135	553659	
ANNUAL MEAN	1496	1517	1320
HIGHEST ANNUAL MEAN			2181
LOWEST ANNUAL MEAN			603
HIGHEST DAILY MEAN	18200	Oct 23	39400
LOWEST DAILY MEAN	78	Sep 18	.18
ANNUAL SEVEN-DAY MINIMUM	94	Jul 31	46
INSTANTANEOUS PEAK FLOW			46800
INSTANTANEOUS PEAK STAGE			17.67
INSTANTANEOUS LOW FLOW			.18*
ANNUAL RUNOFF (CFSM)	1.17	1.19	1.03
ANNUAL RUNOFF (INCHES)	15.93	16.15	14.06
10 PERCENT EXCEEDS	3620	3370	2900
50 PERCENT EXCEEDS	833	792	590
90 PERCENT EXCEEDS	119	191	160

\* See REMARKS.

## CAPE FEAR RIVER BASIN

02097314 NEW HOPE CREEK NEAR BLANDS, NC

LOCATION.--Lat 35°53'05", long 78°57'58", Durham County, Hydrologic Unit 03030002, on right bank 15 ft downstream from bridge on Secondary Road 1107, 0.5 mi southwest of Blands, and 2 mi downstream from Third Fork Creek.

DRAINAGE AREA.--75.9 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1982 to current year.

GAGE.--Water-stage recorder. Datum of gage is 230 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records fair. Slight diurnal fluctuation at low flow. The city of Durham diverted an average of 36.9 ft<sup>3</sup>/s from Neuse River basin for municipal water supply and returned 19.2 ft<sup>3</sup>/s as treated effluent into the Cape Fear River basin, of which 15.2 ft<sup>3</sup>/s entered upstream from station. About 11.1 ft<sup>3</sup>/s was returned to the Neuse River basin. Maximum gage height for period of record, result of backwater from B. Everett Jordan Lake. Minimum discharge and gage height for period of record, result of regulation. Minimum discharge unregulated, 4.2 ft<sup>3</sup>/s Apr. 28, 29, May 1, 2, July 10, 1985. Minimum discharge for current water year also occurred on Nov. 30, due to regulation or wildlife impoundment upstream.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	25	2.0	145	100	35	520	107	37	13	40	28
2	10	23	3.3	140	156	113	296	52	88	13	26	22
3	9.9	19	6.1	107	145	232	160	37	57	98	22	18
4	11	20	12	91	164	620	88	32	42	43	19	17
5	13	19	8.7	82	178	714	61	29	34	23	17	17
6	13	18	9.4	69	166	380	56	40	30	19	17	17
7	11	17	11	117	242	143	51	39	27	16	16	15
8	11	18	12	650	289	113	47	32	25	15	22	14
9	12	16	12	681	237	101	43	30	23	14	42	14
10	12	121	12	449	126	75	43	29	24	13	57	15
11	49	183	13	443	68	63	39	32	23	176	24	15
12	71	61	11	1510	90	56	36	28	22	192	19	15
13	94	39	14	1710	80	82	34	27	22	38	18	16
14	85	23	19	2400	58	257	42	28	21	22	29	16
15	30	15	23	2320	53	210	44	28	61	17	176	16
16	20	14	26	1380	41	104	82	26	30	16	56	17
17	15	14	27	932	36	74	59	25	32	15	26	17
18	15	15	30	621	54	203	42	24	28	15	20	16
19	68	15	31	359	99	556	37	26	115	103	22	17
20	30	9.1	32	244	78	287	63	234	50	42	19	100
21	18	2.2	84	296	61	109	92	323	33	22	18	41
22	16	7.4	168	243	52	82	117	143	24	17	17	24
23	371	10	144	166	47	69	67	74	20	15	16	20
24	1010	12	105	121	43	60	48	56	18	14	14	21
25	313	14	75	97	37	51	39	47	16	14	14	212
26	251	17	56	81	40	45	37	44	15	24	15	349
27	194	19	50	71	40	43	32	42	15	312	17	261
28	79	13	73	65	37	42	31	47	14	176	26	59
29	40	.71	84	60	---	88	31	73	13	53	25	34
30	30	.99	80	58	---	637	112	50	12	125	19	28
31	26	---	85	58	---	787	---	42	---	139	18	---
TOTAL	2937.9	780.40	1318.5	15766	2817	6431	2449	1846	971	1814	886	1471
MEAN	94.8	26.0	42.5	509	101	207	81.6	59.5	32.4	58.5	28.6	49.0
MAX	1010	183	168	2400	289	787	520	323	115	312	176	349
MIN	9.9	.71	2.0	58	36	35	31	24	12	13	14	14

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 1991, BY WATER YEAR (WY)

	1983	1984	1985	1986	1987	1988	1989	1990	1991
MEAN	45.5	82.4	96.9	166	218	197	166	99.3	30.3
MAX	122	371	264	509	402	339	618	207	58.6
(WY)	1990	1986	1984	1991	1985	1984	1987	1989	1989
MIN	12.8	16.1	17.0	38.6	62.3	42.0	13.5	34.8	14.3
(WY)	1987	1985	1989	1986	1986	1985	1985	1988	1985

## SUMMARY STATISTICS

## FOR 1990 CALENDAR YEAR

## FOR 1991 WATER YEAR

## WATER YEARS 1983 - 1991

ANNUAL TOTAL	30250.50	39487.80	
ANNUAL MEAN	82.9	108	101
HIGHEST ANNUAL MEAN			156
LOWEST ANNUAL MEAN			48.3
HIGHEST DAILY MEAN	1010	2400	4620
LOWEST DAILY MEAN	.71	.71	.39
ANNUAL SEVEN-DAY MINIMUM	4.8	4.8	4.8
INSTANTANEOUS PEAK FLOW		2560	4980
INSTANTANEOUS PEAK STAGE		10.56	15.03*
INSTANTANEOUS LOW FLOW		.60*	.28*
ANNUAL RUNOFF (CFSM)	1.09	1.43	1.33
ANNUAL RUNOFF (INCHES)	14.83	19.35	18.09
10 PERCENT EXCEEDS	192	235	218
50 PERCENT EXCEEDS	33	37	33
90 PERCENT EXCEEDS	12	14	13

\* See REMARKS.



[illegible]

0209741955 NORTHEAST CREEK AT SECONDARY ROAD 1100 NEAR GENLEE, NC

LOCATION.--Lat 35°52'20", long 78°54'49", Durham County, Hydrologic Unit 03030002, on left bank at downstream side of bridge on Secondary Road 1100, 1.3 mi west of Genlee, and 1.6 mi downstream from Burdens Creek.

DRAINAGE AREA.--21.1 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1982 to current year.

GAGE.--Water-stage recorder. Datum of gage is 235 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records fair except those for estimated daily discharges, those for Oct. 1-11 and June 1-21, due to beaver activity and those below 5 ft<sup>3</sup>/s, which are poor. Slight diurnal fluctuation at low flow. The city of Durham diverted from Neuse River basin an average of 36.9 ft<sup>3</sup>/s for municipal water supply and returned an average of 19.2 ft<sup>3</sup>/s as treated effluent into the Cape Fear River basin, of which 4.0 ft<sup>3</sup>/s entered upstream from station. About 11.1 ft<sup>3</sup>/s was returned to Neuse River basin.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.3	6.5	6.7	18	15	8.0	33	10	12	10	21	4.1
2	5.6	6.4	5.3	12	13	78	22	8.1	233	9.6	18	3.7
3	5.5	5.5	12	11	8.7	143	19	7.6	29	32	17	4.5
4	5.8	6.4	95	28	9.3	370	18	5.8	13	9.6	15	5.3
5	6.8	8.8	24	15	9.8	156	17	5.3	8.6	8.1	17	5.3
6	5.3	8.8	13	9.6	9.9	45	15	12	7.0	8.7	18	5.4
7	4.7	8.3	9.6	135	13	41	13	9.7	6.0	8.2	19	4.4
8	5.2	8.3	25	402	14	42	13	8.1	4.6	12	18	3.2
9	5.3	8.6	19	236	11	32	12	7.1	3.9	17	19	4.1
10	5.5	41	12	90	8.0	20	11	7.1	4.8	21	17	5.0
11	19	16	9.0	197	8.2	17	10	5.7	4.8	58	15	6.1
12	3.2	9.0	7.2	667	8.2	14	9.1	5.3	5.1	8.6	16	5.8
13	19	8.4	7.0	174	7.5	35	7.3	6.7	5.4	1.7	17	5.7
14	5.3	8.8	6.6	64	10	97	7.8	7.0	7.9	.83	37	5.3
15	4.6	10	5.5	39	10	47	10	6.9	8.2	.94	230	4.4
16	6.2	9.1	4.9	76	7.0	24	11	6.6	8.5	.74	91	5.7
17	7.5	7.4	5.0	68	5.9	16	10	6.8	e14	.86	45	6.4
18	11	6.4	5.4	37	15	178	11	5.5	e25	e1.8	28	6.5
19	17	6.2	7.4	23	21	197	11	28	e45	50	20	6.9
20	8.5	6.1	7.0	117	15	41	13	146	e30	6.2	14	22
21	6.4	5.4	154	91	18	25	18	92	e15	1.7	9.0	6.4
22	7.1	4.6	84	39	13	19	17	23	8.4	1.8	4.5	4.2
23	346	4.0	23	26	8.3	15	10	13	7.0	1.6	5.2	4.5
24	125	4.1	15	22	7.6	13	8.6	10	7.6	2.2	4.5	12
25	14	4.0	9.4	19	7.9	12	8.4	7.0	7.9	2.6	5.9	262
26	154	4.9	7.6	16	9.6	12	7.8	4.8	8.0	2.7	6.3	197
27	23	5.2	15	13	9.3	11	6.4	4.8	9.1	47	9.6	21
28	10	5.5	76	14	7.8	10	5.8	8.3	9.4	16	11	9.0
29	8.2	18	29	13	---	44	7.4	24	9.2	9.5	7.0	6.3
30	7.2	13	19	16	---	430	9.2	9.2	9.8	42	5.9	6.4
31	6.8	---	24	23	---	88	---	7.1	---	41	4.1	---
TOTAL	863.0	264.7	742.6	2710.6	301.0	2280.0	371.8	508.5	567.2	433.97	765.0	648.6
MEAN	27.8	8.82	24.0	87.4	10.7	73.5	12.4	16.4	18.9	14.0	24.7	21.6
MAX	346	41	154	667	21	430	33	146	233	58	230	262
MIN	3.2	4.0	4.9	9.6	5.9	8.0	5.8	4.8	3.9	.74	4.1	3.2
CFSM	1.32	.42	1.14	4.14	.51	3.49	.59	.78	.90	.66	1.17	1.02
IN.	1.52	.47	1.31	4.78	.53	4.02	.66	.90	1.00	.77	1.35	1.14

e Estimated

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 1991, BY WATER YEAR (WY)

	1983	1984	1985	1986	1987	1988	1989	1990	1991
MEAN	14.8	21.7	32.6	47.9	65.5	61.6	32.7	25.5	11.2
MAX	49.2	73.8	86.3	87.4	102	111	69.6	59.1	30.8
(WY)	1990	1986	1984	1991	1989	1988	1984	1990	1989
MIN	3.27	3.89	4.32	12.6	10.7	8.18	4.00	8.57	4.55
(WY)	1986	1985	1989	1986	1991	1985	1985	1987	1987

## SUMMARY STATISTICS

## FOR 1990 CALENDAR YEAR

## FOR 1991 WATER YEAR

## WATER YEARS 1983 - 1991

ANNUAL TOTAL	11510.3	10456.97	
ANNUAL MEAN	31.5	28.6	29.8
HIGHEST ANNUAL MEAN			45.0
LOWEST ANNUAL MEAN			14.7
HIGHEST DAILY MEAN	560	Feb 17	1000
LOWEST DAILY MEAN	2.9	Sep 30	.74
ANNUAL SEVEN-DAY MINIMUM	3.5	Sep 24	2.2
INSTANTANEOUS PEAK FLOW			984
INSTANTANEOUS PEAK STAGE			10.03
INSTANTANEOUS LOW FLOW			NOT DETERMINED
ANNUAL RUNOFF (CFSM)	1.49		1.36
ANNUAL RUNOFF (INCHES)	20.29		18.44
10 PERCENT EXCEEDS	70		53
50 PERCENT EXCEEDS	11		9.6
90 PERCENT EXCEEDS	5.2		4.8

## CAPE FEAR RIVER BASIN

02097464 MORGAN CREEK NEAR WHITE CROSS, NC

LOCATION.--Lat 35°55'25", long 79°06'56", Orange County, Hydrologic Unit 030200201, at bridge on State Highway 54, 2 miles above University Lake, and 3.5 miles east of White Cross.

DRAINAGE AREA.--8.35 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1988 to current year.

GAGE.--Water-stage recorder. Datum of gage is 420 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good. Minimum discharge for period of record also occurred on Sept. 25-30 and Oct. 1-4, 1990. Minimum discharge for current water year also occurred on Oct. 2-4.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.02	1.6	2.9	7.6	4.4	2.2	15	10	4.9	1.1	2.8	2.1
2	.02	1.4	2.5	5.1	4.1	10	11	7.3	9.3	1.3	2.7	2.8
3	.03	1.2	7.4	4.1	4.1	44	9.5	5.8	7.8	17	2.5	2.7
4	.03	1.3	28	5.8	4.0	38	8.5	5.3	4.1	5.1	1.7	2.5
5	.10	1.3	7.0	4.4	3.9	15	7.8	5.6	2.7	3.2	1.7	2.2
6	.10	1.4	3.9	3.8	3.9	9.4	7.6	7.9	2.3	3.1	1.2	2.0
7	.08	1.4	2.9	80	4.5	8.7	6.7	5.9	2.1	2.9	4.8	1.5
8	.08	1.4	5.4	46	5.7	9.3	5.6	4.8	1.9	2.7	2.8	1.4
9	.08	1.4	4.6	26	4.9	8.1	5.6	4.8	1.7	.76	4.0	1.1
10	.09	6.9	3.3	16	4.1	6.8	5.9	4.9	1.5	.50	6.0	.87
11	4.7	4.0	2.4	125	3.7	5.6	6.5	5.2	1.3	64	2.4	.45
12	2.6	2.4	1.8	75	3.5	5.0	6.2	4.2	1.6	12	1.7	.37
13	4.5	1.6	2.0	27	3.5	9.4	6.5	4.0	2.0	8.3	2.2	.32
14	1.9	1.5	1.6	16	4.3	16	7.9	4.0	1.5	6.1	3.6	.55
15	.69	1.5	1.4	12	3.7	10	12	3.7	1.6	4.3	6.9	.36
16	.28	1.6	1.4	33	3.1	7.8	12	3.3	1.6	3.2	3.7	.21
17	.24	1.9	1.3	21	3.8	6.8	8.3	3.5	2.7	3.2	2.3	.19
18	.80	2.3	1.2	13	6.4	34	7.0	4.4	5.4	3.6	1.6	.17
19	1.5	2.5	1.8	9.5	6.4	20	7.0	16	15	5.9	1.3	1.1
20	.80	2.6	1.4	27	5.1	11	16	40	6.3	3.6	2.0	4.3
21	.74	2.7	16	16	4.3	9.2	16	16	4.6	2.8	1.7	1.3
22	1.7	2.7	8.2	11	3.9	8.3	13	13	3.3	2.0	1.6	.49
23	59	2.9	5.2	8.6	3.7	7.5	9.4	9.2	2.7	1.6	2.0	.25
24	9.4	3.1	4.9	7.8	3.8	6.2	8.0	6.5	2.2	1.4	2.0	6.9
25	5.1	3.0	2.5	6.7	4.9	5.2	6.8	5.0	1.5	1.5	2.5	47
26	17	2.9	2.0	6.0	3.2	4.6	6.5	4.1	1.4	28	2.4	16
27	5.9	2.8	2.2	5.8	2.8	4.6	6.7	4.5	1.5	18	3.2	2.6
28	3.4	3.3	5.9	5.5	2.4	4.7	6.8	4.8	1.4	7.0	3.9	.79
29	2.5	5.8	6.0	5.1	---	60	6.5	5.3	.99	4.6	3.5	.76
30	2.0	3.9	5.3	4.9	---	65	18	3.4	1.0	5.9	3.3	.72
31	1.7	---	17	5.1	---	22	---	4.2	---	3.8	2.6	---
TOTAL	127.08	74.3	159.4	639.8	116.1	474.4	270.3	226.6	97.89	228.46	86.6	104.00
MEAN	4.10	2.48	5.14	20.6	4.15	15.3	9.01	7.31	3.26	7.37	2.79	3.47
MAX	59	6.9	28	125	6.4	65	18	40	15	64	6.9	47
MIN	.02	1.2	1.2	3.8	2.4	2.2	5.6	3.3	.99	.50	1.2	.17
CFSM	.49	.30	.62	2.47	.50	1.83	1.08	.88	.39	.88	.33	.42
IN.	.57	.33	.71	2.85	.52	2.11	1.20	1.01	.44	1.02	.39	.46

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 1991, BY WATER YEAR (WY)

	MEAN	8.60	4.52	6.64	12.1	16.3	19.7	13.7	18.9	3.96	4.58	2.16	1.93
MAX	13.1	7.61	13.2	20.6	22.7	27.9	17.2	30.1	4.69	7.37	2.79	3.47	
(WY)	1990	1990	1990	1991	1990	1989	1989	1989	1990	1991	1991	1991	
MIN	4.10	2.48	1.56	2.54	4.15	15.3	9.01	7.31	3.26	1.09	1.08	.075	
(WY)	1991	1991	1989	1989	1991	1991	1991	1991	1991	1990	1990	1990	

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1989 - 1991
ANNUAL TOTAL	3150.85	2604.93	
ANNUAL MEAN	8.63	7.14	8.82
HIGHEST ANNUAL MEAN			10.5
LOWEST ANNUAL MEAN			7.14
HIGHEST DAILY MEAN	87 May 4	125 Jan 11	258 May 2 1989
LOWEST DAILY MEAN	.02 Sep 27	.02 Oct 1	.02 Sep 27 1990
ANNUAL SEVEN-DAY MINIMUM	.02 Sep 26	.05 Oct 1	.02 Sep 26 1990
INSTANTANEOUS PEAK FLOW		388 Jan 11	770 May 1 1989
INSTANTANEOUS PEAK STAGE		6.48 Jan 11	7.87 May 1 1989
INSTANTANEOUS LOW FLOW		.02* Oct 1	.02* Sep 24 1990
ANNUAL RUNOFF (CFSM)	1.03	.85	1.06
ANNUAL RUNOFF (INCHES)	14.04	11.61	14.35
10 PERCENT EXCEEDS	19	16	19
50 PERCENT EXCEEDS	4.8	4.0	4.6
90 PERCENT EXCEEDS	.14	1.1	.94

\* See REMARKS.

## CAPE FEAR RIVER BASIN

02097464 MORGAN CREEK NEAR WHITE CROSS, NC--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1988 to current year.

REMARKS.--Station operated to define water quality as part of a six-county regional surface water-quality assessment.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS-CHARGE,	SPE-CIFIC	PH (STAND-ARD	TEMPER-ATURE	COLOR (PLAT-INUM-COBALT	BARO-METRIC	OXYGEN,	CALCIUM	MAGNE-SIUM,	SODIUM,	SODIUM	
		INST. CUBIC FEET PER SECOND	CON-DUCT-ANCE (US/CM)				PRES-SURE (MM OF HG)						DIS-SOLVED (MG/L AS CA)
OCT 26...	1145	18	94	7.2	12.5	75	746	9.8	6.6	2.7	4.6	23	
NOV 19...	1330	2.7	120	7.1	7.0	27	750	11.6	9.2	3.5	5.4	22	
DEC 19...	1240	1.8	106	7.5	13.0	27	751	11.8	9.1	3.0	5.6	24	
JAN 15...	1300	12	78	7.0	6.0	45	753	12.6	5.8	2.3	4.2	26	
FEB 26...	1250	3.2	90	7.3	8.0	25	748	12.8	7.8	2.6	5.0	25	
MAR 27...	1330	4.8	76	8.0	18.5	45	747	12.4	6.3	2.2	4.9	28	
APR 23...	1040	9.7	73	7.1	12.0	35	746	11.7	6.5	2.2	4.4	26	
MAY 29...	0930	5.6	108	6.9	20.0	65	750	7.8	8.7	2.9	4.7	21	
JUN 24...	1105	2.2	109	7.5	20.0	55	759	8.3	10	3.7	5.2	20	
JUL 29...	1330	4.8	119	7.4	22.0	65	754	7.9	8.4	3.2	5.5	22	
AUG 15...	1345	6.5	122	7.5	20.0	45	755	8.3	10	3.4	4.8	18	
SEP 23...	1015	0.24	222	7.3	14.0	100	760	5.9	15	5.5	6.6	15	
DATE		SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS NH4)
OCT 26...	0.4	4.5	11	7.3	<0.10	11	76	--	--	--	--	--	--
NOV 19...	0.4	3.8	5.6	7.5	<0.10	16	80	--	<0.010	0.700	0.050	0.06	
DEC 19...	0.4	2.8	5.3	7.5	<0.10	7.9	56	--	<0.010	0.500	0.030	0.04	
JAN 15...	0.4	1.9	7.1	5.9	<0.10	12	45	0.890	0.010	0.900	0.040	0.05	
FEB 26...	0.4	1.6	4.7	6.0	<0.10	7.2	52	0.710	0.010	0.720	0.010	0.01	
MAR 27...	0.4	1.6	4.0	5.4	<0.10	8.6	51	0.320	0.010	0.330	0.010	0.01	
APR 23...	0.4	1.4	4.0	4.8	<0.10	13	68	0.440	0.010	0.450	0.020	0.03	
MAY 29...	0.4	3.0	3.8	6.3	0.20	15	84	0.600	0.050	0.650	0.070	0.09	
JUN 24...	0.4	4.4	2.6	6.7	0.10	18	88	1.68	0.020	1.70	0.020	0.03	
JUL 29...	0.4	6.9	4.5	7.5	0.20	15	80	0.950	0.010	0.960	<0.010	--	
AUG 15...	0.3	7.3	4.7	7.7	0.40	14	93	1.15	0.050	1.20	0.050	0.06	
SEP 23...	0.4	18	12	17	0.10	14	151	1.37	0.030	1.40	1.60	2.1	

## CAPE FEAR RIVER BASIN

02097464 MORGAN CREEK NEAR WHITE CROSS, NC--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

[illegible]

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

[illegible]

02097464 MORGAN CREEK NEAR WHITE CROSS, NC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

[illegible][illegible]

## CAPE FEAR RIVER BASIN

02097464 MORGAN CREEK NEAR WHITE CROSS, NC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TOLUENE TOTAL (UG/L)	TRANS- 1,3-DI- CHLORO- PROPENE TOTAL (UG/L)	TRI- CHLORO- ETHYL- ENE TOTAL (UG/L)	TRI- CHLORO- FLUORO- METHANE TOTAL (UG/L)	VINYL CHLO- RIDE TOTAL (UG/L)	XYLENE TOTAL WATER WHOLE TOT REC (UG/L)	1,1-DI- CHLORO- ETHYL- ENE TOTAL (UG/L)	1,1-DI- CHLORO- ETHANE TOTAL (UG/L)	1,1,1- TRI- CHLORO- ETHANE TOTAL (UG/L)	1,1,2- TRI- CHLORO- ETHANE TOTAL (UG/L)	1,1,2,2 TETRA- CHLORO- ETHANE TOTAL (UG/L)
OCT 26...	--	--	--	--	--	--	--	--	--	--	--
NOV 19...	--	--	--	--	--	--	--	--	--	--	--
DEC 19...	--	--	--	--	--	--	--	--	--	--	--
JAN 15...	--	--	--	--	--	--	--	--	--	--	--
FEB 26...	--	--	--	--	--	--	--	--	--	--	--
MAR 27...	--	--	--	--	--	--	--	--	--	--	--
APR 23...	<0.20	<0.20	<0.2	<0.20	<0.20	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20
MAY 29...	--	--	--	--	--	--	--	--	--	--	--
JUN 24...	--	--	--	--	--	--	--	--	--	--	--
JUL 29...	--	--	--	--	--	--	--	--	--	--	--
AUG 15...	<0.20	<0.20	<0.2	<0.20	<0.20	<0.2	<0.20	<0.20	<0.20	<0.20	<0.20
SEP 23...	--	--	--	--	--	--	--	--	--	--	--
DATE	1,2-DI- CHLORO- BENZENE TOTAL (UG/L)	1,2-DI- CHLORO- ETHANE TOTAL (UG/L)	1,2-DI- CHLORO- PROPANE TOTAL (UG/L)	1,3-DI- CHLORO- PROPENE TOTAL (UG/L)	1,2- TRANS DI CHLORO- ETHENE TOTAL (UG/L)	2- CHLORO- ETHYL- VINYL- ETHER TOTAL (UG/L)	1,3-DI- CHLORO- BENZENE TOTAL (UG/L)	1,4-DI- CHLORO- BENZENE TOTAL (UG/L)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 26...	--	--	--	--	--	--	--	--	--	--	--
NOV 19...	--	--	--	--	--	--	--	0	0.0	--	--
DEC 19...	--	--	--	--	--	--	--	5	0.02	--	--
JAN 15...	--	--	--	--	--	--	--	7	0.23	--	--
FEB 26...	--	--	--	--	--	--	--	4	0.03	--	--
MAR 27...	--	--	--	--	--	--	--	5	0.06	--	--
APR 23...	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	1	0.03	--	--
MAY 29...	--	--	--	--	--	--	--	8	0.12	--	--
JUN 24...	--	--	--	--	--	--	--	--	--	--	--
JUL 29...	--	--	--	--	--	--	--	13	0.17	--	--
AUG 15...	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	18	0.32	99	--
SEP 23...	--	--	--	--	--	--	--	8	0.01	--	--

## CAPE FEAR RIVER BASIN

02097517 MORGAN CREEK NEAR CHAPEL HILL, NC

LOCATION.--Lat 35°53'36", long 79°01'10", Orange County, Hydrologic Unit 03030002, on left bank 3.8 mi downstream from U.S. Highway 501, and 2.5 mi southeast of Chapel Hill.

DRAINAGE AREA.--41.0 mi<sup>2</sup>.

PERIOD OF RECORD.--November 1982 to current year.

GAGE.--Water-stage recorder. Datum of gage is 245 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records fair except those below 30 ft<sup>3</sup>/s and those for estimated daily discharges, which are poor. Slight diurnal fluctuation at low flow. Minimum discharge for current water year also occurred on Oct. 2.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	e15	e14	30	18	16	105	24	15	14	16	15
2	12	e15	e14	26	16	48	67	20	15	27	16	15
3	13	e15	e16	26	17	203	46	18	16	60	16	16
4	14	e15	e60	28	17	297	38	16	15	17	16	16
5	14	e15	e40	24	17	140	36	17	15	15	16	16
6	12	e14	e20	20	16	86	34	20	15	15	16	16
7	12	e14	e16	340	19	63	28	17	15	14	16	16
8	13	e14	e30	367	19	56	27	16	14	15	16	16
9	13	e14	e24	198	18	42	25	16	14	15	17	16
10	14	e80	e20	120	17	35	24	16	15	15	20	16
11	79	e60	e19	577	17	30	21	16	14	156	16	16
12	15	e46	e18	767	15	26	19	16	15	35	16	16
13	62	e30	16	212	15	51	19	16	15	18	16	16
14	14	e20	16	118	18	112	23	16	15	16	33	18
15	13	e14	16	73	17	66	24	16	14	16	21	19
16	13	e14	16	147	17	42	27	16	14	16	16	17
17	13	e26	16	120	15	34	22	16	15	16	16	17
18	24	e20	16	64	20	206	20	16	15	29	16	17
19	15	e18	18	41	19	154	22	43	124	19	16	29
20	13	e16	19	114	21	85	29	108	21	15	16	32
21	13	15	82	92	18	57	44	145	17	15	17	16
22	38	13	25	47	17	41	33	50	15	15	16	16
23	647	13	20	34	17	35	24	26	16	16	17	16
24	89	14	25	29	17	32	22	21	15	16	16	56
25	42	14	19	25	17	27	20	17	14	15	17	105
26	161	e14	18	23	17	25	18	16	15	36	17	48
27	38	e14	30	22	16	25	18	15	15	23	18	19
28	19	e16	39	21	16	25	19	19	15	18	19	17
29	e16	e20	32	21	---	263	18	18	14	16	20	16
30	e15	e18	29	22	---	519	25	16	14	37	17	17
31	e15	---	35	23	---	162	---	16	---	17	19	---
TOTAL	1483	626	778	3771	483	3003	897	818	561	767	540	681
MEAN	47.8	20.9	25.1	122	17.2	96.9	29.9	26.4	18.7	24.7	17.4	22.7
MAX	647	80	82	767	21	519	105	145	124	156	33	105
MIN	12	13	14	20	15	16	18	15	14	14	16	15
CFSM	1.17	.51	.61	2.97	.42	2.36	.73	.64	.46	.60	.42	.55
IN.	1.35	.57	.71	3.42	.44	2.72	.81	.74	.51	.70	.49	.62

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 1990, BY WATER YEAR (WY)

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
MEAN	20.3	36.6	45.7	55.4	89.8	95.6	63.1	45.8	19.2	19.8	23.1
MAX	42.0	141	105	107	141	181	131	91.2	30.8	51.5	65.0
(WY)	1990	1986	1984	1984	1984	1984	1984	1990	1984	1984	1985
MIN	13.3	10.5	12.9	15.2	24.6	18.0	17.5	14.5	11.1	8.93	12.1
(WY)	1985	1983	1989	1989	1986	1988	1986	1986	1986	1988	1988

SUMMARY STATISTICS

FOR 1990 CALENDAR YEAR

FOR 1991 WATER YEAR

WATER YEARS 1983 - 1990

ANNUAL TOTAL	17210	14408	41.9
ANNUAL MEAN	47.2	39.5	75.6
HIGHEST ANNUAL MEAN			21.7
LOWEST ANNUAL MEAN			1270
HIGHEST DAILY MEAN	647	767	.60
LOWEST DAILY MEAN	10	12	2.1
ANNUAL SEVEN-DAY MINIMUM	11	13	2240
INSTANTANEOUS PEAK FLOW		1830	12.75
INSTANTANEOUS PEAK STAGE		11.76	Mar 6 1984
INSTANTANEOUS LOW FLOW		9.6*	NOT DETERMINED
ANNUAL RUNOFF (CFSM)	1.15	.96	1.02
ANNUAL RUNOFF (INCHES)	15.61	13.07	13.88
10 PERCENT EXCEEDS	109	69	94
50 PERCENT EXCEEDS	20	17	18
90 PERCENT EXCEEDS	13	14	11

\* See REMARKS.

## CAPE FEAR RIVER BASIN

02098198 HAW RIVER BELOW B. EVERETT JORDAN DAM NEAR MONCURE, NC

LOCATION.--Lat 35°39'11", long 79°04'03", Chatham County, Hydrologic Unit 03030002, on right bank 300 ft downstream from B. Everett Jordan Dam, 2.5 mi north of Moncure, and 4.2 mi upstream from mouth.

DRAINAGE AREA.--1,689 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1965 to current year. Published as Haw River near Haywood, NC (0209820) October 1965 to September 1978.

REVISED RECORDS.--WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 155.00 ft above National Geodetic Vertical Datum of 1929 (U.S. Army Corps of Engineers bench mark). Prior to Oct. 1, 1978, water-stage recorder at site 0.3 mi downstream at same datum. Since June 22, 1966, auxiliary water-stage recorder 2.9 mi downstream. U.S. Army Corps of Engineers satellite data transmitter at station.

REMARKS.--Records fair. Prior to 1972, some regulation for short periods at low flow caused by powerplants above station and Dec. 16, 1972, to Aug. 31, 1981, by temporary storage in B. Everett Jordan Lake (sta 02098197). Prior to regulation from B. Everett Jordan Lake, maximum discharge, 25,800 ft<sup>3</sup>/s Oct. 25, 1971, gage height, 22.41 ft at former site; minimum, no flow for part of Aug. 1, 1980, result of gate closure by U.S. Army Corps of Engineers to facilitate construction of gaging station, and part of June 19, 1981 and Aug. 19, 1982, for maintenance work at dam and gaging station; minimum daily discharge, 35 ft<sup>3</sup>/s Sept. 12, 1966, at former site.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	557	1210	545	1890	1410	842	4790	1420	515	500	811	541
2	549	615	543	2540	1400	966	11400	2060	554	535	806	551
3	540	612	544	3040	1390	1100	14300	1740	557	531	825	546
4	539	609	627	3410	1380	1310	13600	1430	882	1230	822	554
5	569	617	2120	3170	1390	3870	10600	1420	1450	2050	712	556
6	574	607	4010	2610	1370	9280	5300	1240	1430	2370	576	578
7	576	563	4250	2040	1380	9930	2580	843	869	2370	571	608
8	579	444	4160	2200	1380	9320	2230	630	426	1240	739	610
9	581	442	4120	4380	1400	7370	2790	684	437	378	813	614
10	584	489	4180	6160	1390	4200	2700	561	424	385	793	613
11	433	609	3710	5840	1370	2400	e2130	426	420	383	765	612
12	798	477	2150	e2190	1370	1870	1430	423	413	469	752	616
13	571	1750	1130	e1200	872	1860	1430	424	465	552	740	618
14	393	2520	850	2920	596	3030	1110	427	534	550	719	625
15	262	1730	852	8370	594	3920	937	771	554	549	716	632
16	200	1420	854	13200	594	2240	1460	891	549	566	745	632
17	192	1060	855	14300	603	1510	1970	594	552	575	696	641
18	259	744	861	14000	607	1540	2780	426	546	636	665	645
19	336	580	857	15200	885	1710	2850	415	548	679	608	651
20	411	579	856	14900	1500	2620	2520	442	646	672	524	650
21	436	580	1750	15000	1680	3850	2690	792	786	696	558	649
22	441	584	2050	14400	1680	4330	3500	1160	951	697	589	669
23	e460	566	2290	11100	1480	3450	4990	2240	949	707	567	665
24	e2400	529	2240	7240	1490	2260	4950	3240	1180	749	551	662
25	4620	527	2190	3400	1180	1850	3420	3340	1140	768	548	667
26	8110	533	1680	1430	722	1870	1310	3310	818	766	546	725
27	14200	531	1410	1420	715	1520	931	3310	622	810	543	599
28	15300	529	1410	1410	725	925	932	2310	393	986	547	373
29	12500	537	1420	1400	---	953	932	945	388	917	549	561
30	7510	535	1430	1390	---	1420	936	938	426	825	557	678
31	4090	---	1680	1400	---	1530	---	644	---	813	554	---
TOTAL	79570	23128	57624	183150	32553	94846	113498	39496	20424	25954	20507	18341
MEAN	2567	771	1859	5908	1163	3060	3783	1274	681	837	662	611
MAX	15300	2520	4250	15200	1680	9930	14300	3340	1450	2370	825	725
MIN	192	442	543	1200	594	842	931	415	388	378	524	373
(†)	+1098	+24	+117	-117	0	+1625	-1517	-46	+47	0	-156	-46

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1982 - 1991\*, BY WATER YEAR (WY)

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
MEAN	1009	833	1589	2535	3149	3802	2885	1530	1629	921
MAX	3104	3254	3823	5908	5169	8158	5412	3460	7837	2309
(WY)	1990	1986	1984	1991	1990	1989	1984	1989	1982	1984
MIN	402	314	219	738	1163	651	422	496	482	470
(WY)	1983	1989	1987	1986	1991	1988	1985	1986	1987	1985

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1982 - 1991*
ANNUAL TOTAL	721198	709091	
ANNUAL MEAN	1976	1943 † 2021	† 1650
HIGHEST ANNUAL MEAN			2802
LOWEST ANNUAL MEAN			853
HIGHEST DAILY MEAN	15300	15300	16400
LOWEST DAILY MEAN	192	192	136
ANNUAL SEVEN-DAY MINIMUM	293	293	139
INSTANTANEOUS PEAK FLOW		16600	16800
INSTANTANEOUS PEAK STAGE		14.80	14.91
INSTANTANEOUS LOW FLOW		181	0*
ANNUAL RUNOFF (CRSM)	1.17	1.15	1.06
ANNUAL RUNOFF (INCHES)	15.88	15.62	14.35
10 PERCENT EXCEEDS	5420	4140	4970
50 PERCENT EXCEEDS	748	850	610
90 PERCENT EXCEEDS	440	496	372

† Change in contents, equivalent in cubic feet per second, in B. Everett Jordan Reservoir; furnished by U.S. Army Corp of Engineers.

\* Adjusted for change in contents.

\* Regulated period only (1982-1991). See REMARKS.

## CAPE FEAR RIVER BASIN

02099000 EAST FORK DEEP RIVER NEAR HIGH POINT, NC

LOCATION.--Lat 36°02'15", long 79°56'46", Guilford County, Hydrologic Unit 03030003, on left bank 5 ft upstream from bridge on Secondary Road 1541, 3.3 mi upstream from High Point Dam, and 5.2 mi northeast of High Point College, High Point.

DRAINAGE AREA.--14.8 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1928 to current year.

REVISED RECORDS.--WSP 1723: 1929(M). WDR NC-80-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 764.02 ft above National Geodetic Vertical Datum of 1929. Intake pipe extended to downstream side of bridge since Mar. 1, 1934.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Slight diurnal fluctuation at low flow during growing season. Maximum discharge, 6,300 ft<sup>3</sup>/s, gage height, 10.87 ft, from floodmark, from rating curve extended above 1,600 ft<sup>3</sup>/s on basis of contracted-opening measurement of peak flow. Minimum discharge, 0.6 ft<sup>3</sup>/s, result of temporary regulation. Minimum unregulated, 1.0 ft<sup>3</sup>/s, Aug. 8, 1977. Minimum discharge for current water year also occurred several days in Oct.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.4	5.9	5.8	21	15	9.9	20	16	21	6.1	e32	3.9
2	2.3	5.5	5.8	15	14	36	15	13	30	5.2	e18	3.9
3	1.9	5.2	149	14	11	376	13	10	20	24	e10	3.9
4	5.5	5.1	88	16	9.6	318	12	9.7	12	12	e6.0	3.8
5	3.3	4.9	20	12	11	29	13	9.5	9.6	24	e4.9	3.8
6	2.2	4.7	15	11	15	21	12	15	8.0	12	e4.6	3.8
7	2.1	4.7	12	188	15	17	11	12	7.9	7.7	e4.4	65
8	2.0	4.7	12	83	10	18	13	9.0	7.4	6.2	e8.6	8.3
9	2.0	20	9.6	40	9.5	15	12	8.8	6.8	5.7	e5.2	6.1
10	52	105	8.9	23	8.7	13	12	8.6	6.7	5.4	e4.6	4.8
11	466	16	8.4	371	8.4	12	9.5	11	6.6	12	e4.4	4.4
12	66	11	8.0	79	8.3	12	9.2	8.5	6.6	5.4	e7.0	4.4
13	332	8.2	7.7	28	10	19	15	8.1	6.4	9.3	e5.6	4.0
14	17	7.1	7.4	19	16	14	16	7.8	6.2	5.4	e36	4.4
15	11	6.5	7.8	16	10	12	34	7.5	6.2	4.8	e49	4.2
16	7.3	6.4	7.5	92	8.5	11	173	7.1	6.1	4.6	e14	3.9
17	5.4	5.9	7.1	24	8.8	11	21	6.9	6.0	5.1	e9.0	3.9
18	26	5.7	7.3	17	27	75	17	6.7	6.3	4.9	e5.3	3.9
19	13	6.0	12	15	18	21	102	186	26	4.7	e4.7	26
20	7.7	6.1	9.6	96	15	16	40	126	8.9	4.6	e4.3	16
21	5.5	6.1	18	26	13	14	116	80	7.9	4.4	e3.9	6.1
22	136	6.1	13	17	11	13	27	24	9.1	4.2	e3.7	4.6
23	624	6.3	12	15	12	12	18	16	8.4	4.1	3.8	4.3
24	28	6.2	46	14	11	11	15	13	6.9	4.0	3.8	5.1
25	41	6.0	15	12	10	9.8	13	11	6.0	4.2	3.7	51
26	41	5.8	12	12	25	9.3	12	9.6	5.7	13	3.8	14
27	14	5.8	15	11	13	9.4	11	12	5.7	e10	4.6	8.0
28	10	9.6	20	11	11	9.4	11	10	5.5	e5.2	35	5.8
29	7.9	7.5	16	10	---	517	21	9.9	5.2	e5.0	22	4.7
30	6.9	6.1	14	13	---	141	48	9.4	5.7	e7.0	4.9	4.4
31	6.4	---	143	14	---	27	---	17	---	e6.6	4.1	---
TOTAL	1947.8	310.1	732.9	1335	354.8	1828.8	861.7	699.1	280.8	236.8	330.9	290.4
MEAN	62.8	10.3	23.6	43.1	12.7	59.0	28.7	22.6	9.36	7.64	10.7	9.68
MAX	624	105	149	371	27	517	173	186	30	24	49	65
MIN	1.9	4.7	5.8	10	8.3	9.3	9.2	6.7	5.2	4.0	3.7	3.8
CFSM	4.25	.70	1.60	2.91	.86	3.99	1.94	1.52	.63	.52	.72	.65
IN.	4.90	.78	1.84	3.36	.89	4.60	2.17	1.76	.71	.60	.83	.73

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 1991, BY WATER YEAR (WY)

	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940
MEAN	12.3	11.6	16.5	23.3	27.8	25.7	19.4	15.3	12.4	12.9	12.1	12.7
MAX	79.5	39.2	48.5	82.9	83.0	106	71.6	58.8	61.5	97.5	55.9	88.9
(WY)	1960	1980	1933	1978	1979	1975	1987	1978	1969	1975	1949	1979
MIN	1.88	2.35	3.53	4.32	6.48	6.76	5.52	4.57	3.41	2.93	2.87	1.74
(WY)	1942	1942	1942	1942	1931	1967	1942	1941	1986	1977	1981	1954

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1929 - 1991
ANNUAL TOTAL	8238.7	9209.1	
ANNUAL MEAN	22.6	25.2	16.8
HIGHEST ANNUAL MEAN			34.1
LOWEST ANNUAL MEAN			7.28
HIGHEST DAILY MEAN	624	624	1670
LOWEST DAILY MEAN	1.9	1.9	1.1
ANNUAL SEVEN-DAY MINIMUM	2.2	2.7	1.2
INSTANTANEOUS PEAK FLOW		1940	6300*
INSTANTANEOUS PEAK STAGE		6.66	10.87*
INSTANTANEOUS LOW FLOW		1.9*	.60*
ANNUAL RUNOFF (CFSM)	1.53	1.70	1.13
ANNUAL RUNOFF (INCHES)	20.71	23.15	15.41
10 PERCENT EXCEEDS	45	38	26
50 PERCENT EXCEEDS	9.5	10	7.1
90 PERCENT EXCEEDS	3.0	4.4	3.6

\* See REMARKS.

## CAPE FEAR RIVER BASIN

02099500 DEEP RIVER NEAR RANDLEMAN, NC

LOCATION.--Lat 35°54'06", long 79°51'05", Randolph County, Hydrologic Unit 03030003, on left bank 500 ft downstream from bridge on Secondary Road 1929, 0.2 mi downstream from Coltrane's Mill, 0.5 mi south of Guilford County line, 4.8 mi upstream from Muddy Creek, and 7 mi north of Randleman.

DRAINAGE AREA.--125 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1928 to current year.

REVISED RECORDS.--WSP 782: 1929-30. WSP 1383: 1934-35, 1941. WSP 1723: 1929(M). WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 638.11 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers).

REMARKS.--No estimated daily discharges. Records good. Large diurnal fluctuation at times at low flow caused by Coltrane's Mill. Some regulation by Oak Hollow Reservoir and High Point Lake (stations 02098495, 02099096). City of High Point diverted an average of 17.2 ft<sup>3</sup>/s for municipal water supply during water year; 16.7 ft<sup>3</sup>/s was discharged as treated effluent into Richland Creek above station and 6.2 ft<sup>3</sup>/s into Rich Fork Creek in Pee Dee River basin. Maximum discharge, 20,000 ft<sup>3</sup>/s, gage height, 32.2 ft, from floodmark, from rating curve extended above 7,100 ft<sup>3</sup>/s on basis of contracted-opening measurement of peak flow at bridge 1.5 mi upstream.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	60	60	368	94	95	275	186	175	29	173	23
2	16	59	53	206	79	279	199	126	98	28	185	19
3	16	74	660	151	80	1200	158	91	344	165	103	17
4	16	68	1850	187	75	2880	137	75	141	316	89	19
5	19	68	388	130	71	537	129	66	76	125	86	21
6	19	66	211	117	79	273	133	76	53	189	82	21
7	19	64	149	844	116	210	112	77	46	79	96	89
8	18	44	155	913	104	265	124	63	40	54	129	42
9	17	44	116	479	81	203	181	57	36	43	102	20
10	24	915	96	299	71	158	131	55	34	42	55	23
11	3180	332	84	2000	64	131	95	56	33	90	39	24
12	830	170	73	1820	65	113	79	71	32	52	34	23
13	2240	112	75	487	61	174	87	89	31	44	38	22
14	419	84	75	286	137	175	155	63	30	40	172	21
15	168	70	65	217	102	133	177	115	29	36	236	20
16	96	64	67	744	72	109	802	62	27	33	114	19
17	63	64	61	384	56	98	317	52	33	31	101	18
18	124	59	59	253	197	497	184	49	349	29	90	19
19	198	53	96	206	205	315	470	378	268	27	80	118
20	86	50	74	670	159	187	673	631	112	27	45	297
21	58	46	221	361	130	144	958	556	69	28	37	51
22	92	44	151	230	117	127	480	258	61	25	34	33
23	4220	44	120	195	106	118	256	141	53	24	30	27
24	846	48	223	169	98	111	185	99	46	23	26	26
25	392	48	157	106	87	98	139	77	39	23	17	274
26	810	47	108	84	227	89	115	66	34	24	20	214
27	256	45	100	78	149	76	104	71	31	38	25	93
28	156	102	179	74	110	79	100	90	30	29	32	51
29	112	127	154	71	---	1750	99	78	29	30	74	37
30	85	83	146	80	---	3350	316	58	27	38	32	29
31	72	---	976	124	---	511	---	51	---	50	26	---
TOTAL	14683	3154	7002	12333	2992	14485	7370	3983	2406	1811	2402	1710
MEAN	474	105	226	398	107	467	246	128	80.2	58.4	77.5	57.0
MAX	4220	915	1850	2000	227	3350	958	631	349	316	236	297
MIN	16	44	53	71	56	76	79	49	27	23	17	17
CFSM	3.79	.84	1.81	3.18	.85	3.74	1.97	1.03	.64	.47	.62	.46
IN.	4.37	.94	2.08	3.67	.89	4.31	2.19	1.19	.72	.54	.71	.51

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 1991, BY WATER YEAR (WY)

	MEAN	79.3	80.6	129	197	233	222	166	109	78.8	83.5	76.2	76.2
MAX	472	354	389	645	584	697	529	445	351	465	311	543	
(WY)	1991	1986	1933	1937	1960	1975	1936	1978	1982	1975	1949	1947	
MIN	5.78	9.56	16.8	15.8	38.6	54.4	27.6	23.5	16.7	17.2	17.1	10.5	
(WY)	1931	1932	1934	1942	1986	1967	1985	1977	1933	1947	1945	1941	

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR			FOR 1991 WATER YEAR			WATER YEARS 1929 - 1991		
ANNUAL TOTAL	66295			74331					
ANNUAL MEAN	182			204			127		
HIGHEST ANNUAL MEAN							230		
LOWEST ANNUAL MEAN							45.9		
HIGHEST DAILY MEAN	4220	Oct 23		4220	Oct 23		12000	Sep 25	1947
LOWEST DAILY MEAN	12	Sep 23		16	Oct 1		1.2	Nov 12	1933
ANNUAL SEVEN-DAY MINIMUM	15	Aug 8		17	Oct 1		3.9	Sep 30	1930
INSTANTANEOUS PEAK FLOW				6390	Mar 30		20000*	Sep 25	1947
INSTANTANEOUS PEAK STAGE				21.47	Mar 30		32.20*	Sep 25	1947
INSTANTANEOUS LOW FLOW				7.1	Sep 9		.50	Nov 28	1931
ANNUAL RUNOFF (CFSM)				1.63			1.02		
ANNUAL RUNOFF (INCHES)				22.12			13.81		
10 PERCENT EXCEEDS	396			380			240		
50 PERCENT EXCEEDS	82			87			51		
90 PERCENT EXCEEDS	16			26			16		

\* See REMARKS.

02100500 DEEP RIVER AT RAMSEUR, NC

LOCATION.--Lat 34°43'34", long 79°39'20", Randolph County, Hydrologic Unit 03030003, on right bank 0.2 mi downstream from Main Street bridge in Ramseur, 0.5 mi downstream from mill dam, and 1.5 mi downstream from Sandy Creek.

DRAINAGE AREA.--349 mi<sup>2</sup>.

PERIOD OF RECORD.--November 1922 to current year.

REVISED RECORDS.--WSP 1032: 1923-24, 1925(M), 1926, 1927-28(M), 1929, 1930(M), 1932-33, 1934(M), 1935, 1936-37(M), 1944(M). WSP 1383: 1923(m), 1925, 1927, 1930, 1936. WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 419.50 ft above National Geodetic Vertical Datum of 1929 (levels by U. S. Army Corps of Engineers).

REMARKS.--Records good except those for estimated daily discharges, which are poor. Flow slightly regulated by Oak Hollow Reservoir, High Point Municipal Lake, (stations 02098495, 02099096) and small powerplant reservoirs. Prior to January 1963 large diurnal fluctuation caused by powerplant immediately above station. Town of Asheboro diverted an average of 6.8 ft<sup>3</sup>/s for water supply from Pee Dee River basin and discharged an average of 7.4 ft<sup>3</sup>/s of treated effluent into the Deep River above the station. Maximum discharge, 43,000 ft<sup>3</sup>/s, gage height, 34.04 ft, from rating curve extended above 18,000 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow. Minimum discharge, 0.4 ft<sup>3</sup>/s, occurred frequently in 1941.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in August 1901 reached a stage of 28.75 ft, from floodmarks, 0.2 mi upstream, discharge, 30,000 ft<sup>3</sup>/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	171	252	811	282	245	693	525	e340	60	58	60
2	21	173	170	438	251	687	498	384	e195	77	373	62
3	32	165	825	342	211	2330	423	292	e880	84	287	61
4	36	146	6190	392	214	6300	353	248	e400	287	104	52
5	31	153	1250	342	179	1550	352	234	e220	274	105	37
6	40	141	568	267	234	710	347	225	e190	375	124	3
7	38	128	414	2800	273	563	324	187	151	235	141	104
8	29	116	405	3420	360	546	292	182	131	182	137	184
9	24	120	400	1310	292	595	332	185	110	129	168	47
10	20	1420	322	763	207	439	352	173	76	85	76	43
11	7390	795	268	4040	205	389	286	174	83	116	87	42
12	2400	402	175	7350	197	354	252	314	76	156	72	38
13	3390	281	237	1530	272	383	252	220	71	121	58	37
14	978	233	205	760	191	627	231	200	97	81	364	39
15	391	172	183	575	340	450	297	199	80	80	1030	40
16	203	194	179	2130	228	386	1850	195	77	89	258	40
17	178	173	134	1210	195	339	801	209	69	20	150	41
18	120	106	176	659	307	1370	455	161	740	22	110	41
19	243	137	201	507	558	1080	750	136	823	32	113	47
20	236	168	251	1560	412	552	2380	855	394	36	133	697
21	78	154	471	1020	364	435	2220	932	254	38	95	202
22	189	87	428	585	312	383	1520	554	175	36	52	86
23	13400	118	338	458	273	317	673	342	123	39	48	54
24	2720	119	323	417	271	312	482	237	125	41	42	42
25	782	93	360	366	244	312	379	208	111	47	39	563
26	2190	169	270	300	352	282	333	180	92	74	38	1140
27	679	106	243	233	416	272	289	158	78	82	115	270
28	400	119	360	276	293	259	289	170	76	78	409	140
29	287	569	413	233	---	1730	275	235	79	76	98	107
30	205	383	359	243	---	8120	710	213	71	55	56	97
31	237	---	1300	311	---	1430	---	e190	---	44	62	---
TOTAL	36985	7311	17670	35648	7933	33747	18690	8717	6387	3151	5002	4447
MEAN	1193	244	570	1150	283	1089	623	281	213	102	161	148
MAX	13400	1420	6190	7350	558	8120	2380	932	880	375	1030	1140
MIN	18	87	134	233	179	245	231	136	69	20	38	34
CFSM	3.42	.70	1.63	3.29	.81	3.12	1.79	.81	.61	.29	.46	.42
IN.	3.94	.78	1.88	3.80	.85	3.60	1.99	.93	.68	.34	.53	.47

e Estimated

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1923 - 1991, BY WATER YEAR (WY)

MEAN	215	213	357	548	665	632	483	299	216	230	216	234
MAX	1193	1237	1050	1660	1642	1842	1440	944	978	1434	896	1934
(WY)	1991	1986	1933	1937	1979	1975	1936	1978	1982	1975	1939	1928
MIN	8.69	14.1	39.1	40.8	131	144	116	71.3	48.1	36.5	32.4	17.7
(WY)	1942	1942	1934	1942	1931	1967	1967	1986	1933	1986	1956	1954

### SUMMARY STATISTICS

FOR 1990 CALENDAR YEAR

FOR 1991 WATER YEAR

## WATER YEARS 1923 - 1991

ANNUAL TOTAL	186256		185688						
ANNUAL MEAN	510		509			355			
HIGHEST ANNUAL MEAN						665			1975
LOWEST ANNUAL MEAN						155			1967
HIGHEST DAILY MEAN	13400	Oct 23	13400	Oct 23		27800			Sep 18 1945
LOWEST DAILY MEAN	18	Aug 13	18	Oct 1					Nov 29 1941
ANNUAL SEVEN-DAY MINIMUM	21	Aug 24	31	Oct 1		.70			Oct 19 1941
INSTANTANEOUS PEAK FLOW			18900	Oct 23		43000*			Sep 18 1945
INSTANTANEOUS PEAK STAGE			24.30	Oct 23		34.04*			Sep 18 1945
INSTANTANEOUS LOW FLOW			8.7	Oct 10		.40*			May 27 1941
ANNUAL RUNOFF (CFSM)	1.46		1.46			1.02			
ANNUAL RUNOFF (INCHES)	19.85		19.79			13.82			
10 PERCENT EXCEEDS	1210		901			688			
50 PERCENT EXCEEDS	237		235			153			
90 PERCENT EXCEEDS	31		47			36			

\* See REMARKS.

0210166029 ROCKY RIVER NEAR CRUTCHFIELD CROSSROADS, NC

LOCATION.--Lat 35°48'25", long 79°31'41", Chatham County, Hydrologic Unit 03030003, on right bank at downstream side of culvert on Secondary Road 1300 and 5.5 mi west of Crutchfields Crossroads.

DRAINAGE AREA.--7.42 mi<sup>2</sup>.

PERIOD OF RECORD.--May 1988 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 620 ft, from topographic map.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Several days of zero flow occurred in August 1988. Minimum discharge for current water year occurred several days in October.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.29	.98	e2.8	e5.0	3.8	2.7	6.8	4.6	1.1	.46	.63	.38
2	.27	.71	e1.2	e2.1	3.3	29	5.2	3.6	1.8	.43	.58	.36
3	.23	.62	e4.8	e1.5	3.2	67	3.8	3.2	8.8	.61	.61	.38
4	.32	.70	e80	e6.6	3.2	54	3.3	2.9	2.8	.59	.53	.37
5	.66	.72	e19	e1.8	3.0	19	3.1	2.9	1.4	.50	.46	.37
6	.25	1.1	e4.7	e1.1	3.0	9.7	3.4	3.8	1.1	.52	.59	.35
7	.21	2.2	e1.9	e2.5	4.3	8.0	2.8	3.1	.99	.36	.43	.36
8	.20	1.1	e12	e78	22	10	2.6	2.5	.95	.28	.41	.35
9	.21	.39	e4.9	e37	6.7	7.8	2.5	2.4	.86	.27	.41	.34
10	.70	32	e3.2	e21	4.5	5.5	2.4	2.5	.77	.29	.37	.34
11	107	11	e2.1	e37	3.5	4.8	1.8	2.4	.73	7.9	.36	.33
12	28	4.1	e1.6	e155	3.0	4.8	1.7	2.3	.74	1.1	.39	.32
13	28	3.5	e1.3	e39	2.9	13	2.4	2.2	1.5	.63	.42	.33
14	16	3.0	e1.1	e16	5.2	17	2.7	2.0	.71	.47	2.7	.30
15	5.0	2.8	e2.0	e9.2	3.8	8.3	2.8	2.0	.66	.39	6.0	.31
16	4.5	2.7	e1.2	e28	2.5	5.6	14	1.7	.62	.37	1.0	.32
17	3.9	2.4	e1.0	e16	2.4	5.4	4.4	1.4	.59	.35	.55	.33
18	.88	4.1	e.90	e7.2	9.8	43	2.4	1.4	.64	.35	.46	.35
19	1.7	3.1	e1.8	e3.4	8.0	17	33	1.6	3.6	.35	.43	.39
20	.96	.97	e1.3	e24	7.1	8.9	33	9.3	1.3	.34	.40	.80
21	.53	.92	e18	e8.2	5.5	6.2	43	6.7	2.1	.33	.36	.58
22	.80	1.5	e4.3	e4.9	4.1	4.5	17	3.7	13	.31	.33	.44
23	213	1.8	e2.1	e3.8	4.0	3.9	8.8	2.8	3.6	.28	.33	.41
24	32	2.0	e1.7	e2.4	4.3	3.5	6.3	2.3	2.0	.28	.34	8.1
25	15	1.4	e1.3	e5.2	3.5	3.1	4.8	2.1	1.4	.32	.34	56
26	41	e1.3	e.98	e4.5	4.0	2.8	3.6	1.6	.90	14	.36	16
27	9.4	e1.2	e.94	e4.4	3.5	2.7	3.5	1.5	.72	21	.37	3.6
28	5.0	e7.0	e9.8	e4.2	2.9	3.5	3.3	1.9	.62	2.3	.47	1.9
29	2.8	e25	e7.0	e4.1	---	53	3.3	2.5	.56	1.7	1.7	.91
30	2.0	e7.8	e6.2	4.4	---	50	8.4	1.5	.52	.92	.57	.64
31	1.5	---	e19	5.8	---	13	---	1.3	---	.73	.42	---
TOTAL	522.31	128.11	220.12	543.3	137.0	486.7	236.1	85.7	57.08	58.73	23.32	95.96
MEAN	16.8	4.27	7.10	17.5	4.89	15.7	7.87	2.76	1.90	1.89	.75	3.20
MAX	213	32	80	155	22	67	43	9.3	13	21	6.0	56
MIN	.20	.39	.90	1.1	2.4	2.7	1.7	1.3	.52	.27	.33	.30
CFSM	2.27	.58	.96	2.36	.66	2.12	1.06	.37	.26	.26	.10	.43
IN.	2.62	.64	1.10	2.72	.69	2.44	1.18	.43	.29	.29	.12	.48

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 1991, BY WATER YEAR (WY)

	1988	1989	1990	1991	1988	1989	1990	1991	1988	1989	1990	1991
MEAN	11.8	6.49	6.25	11.3	13.4	17.6	9.87	9.06	2.41	4.43	1.07	1.96
MAX	17.1	9.84	10.6	17.5	19.4	25.0	12.0	19.2	5.65	14.8	1.77	3.64
(WY)	1990	1990	1990	1991	1989	1989	1990	1990	1989	1989	1988	1988
MIN	2.46	4.09	1.36	2.33	4.91	12.2	8.51	1.58	.44	.50	.44	.26
(WY)	1989	1991	1989	1989	1991	1990	1991	1988	1988	1988	1990	1990

SUMMARY STATISTICS FOR 1990 CALENDAR YEAR FOR 1991 WATER YEAR WATER YEARS 1988 - 1991

ANNUAL TOTAL	3177.69	2594.43	
ANNUAL MEAN	8.71	7.11	8.27
HIGHEST ANNUAL MEAN			9.49
LOWEST ANNUAL MEAN			7.00
HIGHEST DAILY MEAN	213	213	210
LOWEST DAILY MEAN	.20	.20	.00
ANNUAL SEVEN-DAY MINIMUM	.23	.30	.02
INSTANTANEOUS PEAK FLOW		469	469
INSTANTANEOUS PEAK STAGE		10.38	10.38
INSTANTANEOUS LOW FLOW		.19	.00*
ANNUAL RUNOFF (CFSM)	1.17	.96	1.11
ANNUAL RUNOFF (INCHES)	15.93	13.01	15.14
10 PERCENT EXCEEDS	23	16	16
50 PERCENT EXCEEDS	2.8	2.4	2.0
90 PERCENT EXCEEDS	.27	.36	.30

\* See REMARKS.

## CAPE FEAR RIVER BASIN

02102000 DEEP RIVER AT MONCURE, NC

LOCATION.--Lat 35°37'38", long 79°06'58", Lee County, Hydrologic Unit 03030003, on right bank 1.0 mi upstream from Lockville Dam, 1.2 mi upstream from bridge on U.S. Highway 1, 1.5 mi northwest of Moncure, 2.2 mi downstream from Rocky River, and 4.5 mi upstream from confluence with Haw River.

DRAINAGE AREA.--1,434 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1930 to current year. Records for May 1898 to December 1899 published in 21st Annual Report, Part 4, and in Bulletins 34 and 39 of North Carolina Department of Conservation and Development have been found to be unreliable and should not be used.

REVISED RECORDS.--WSP 1082: (1930-46 not previously published). WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 185.06 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Diurnal fluctuation and some regulation at low flow caused by small powerplants upstream from station. Satellite data transmitter at station. Minimum discharge for current water year also occurred on Oct. 10.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	51	543	991	2420	1470	811	5920	1360	528	142	436	168
2	52	477	676	2100	1170	1510	2340	1510	1780	135	314	90
3	51	420	491	1310	978	5660	1730	1040	1710	457	644	79
4	53	264	2540	1090	875	12700	1380	854	1920	707	1090	92
5	52	418	8260	1200	798	13200	1230	688	1030	639	745	108
6	51	253	2960	1170	743	6680	1120	628	626	582	334	117
7	49	338	1380	2960	695	2780	888	797	430	705	205	133
8	46	350	1020	12300	1090	2430	1010	790	348	636	207	100
9	43	156	1260	11600	1530	2160	990	522	309	416	249	83
10	44	781	1260	5010	1230	2140	1070	504	250	381	261	176
11	278	2550	905	5550	949	1640	973	656	239	189	373	174
12	8170	1980	826	18400	772	1330	889	499	227	184	279	111
13	5830	1060	759	16600	701	1340	766	413	181	217	196	78
14	3610	705	552	14100	678	3850	728	714	150	228	198	70
15	1890	482	519	3930	829	3670	741	509	143	226	518	67
16	783	489	463	3050	805	2300	747	484	147	172	1860	66
17	563	382	414	6350	817	1650	1980	450	171	146	1100	66
18	355	353	410	3840	637	2880	1840	453	210	162	653	62
19	283	311	377	2330	682	6280	1140	404	297	203	526	60
20	175	258	381	2470	1170	3600	2230	1150	3160	178	173	153
21	160	255	2840	4540	1040	2230	4710	2170	2240	141	79	445
22	323	305	4210	3190	946	1680	4430	2010	1060	130	93	792
23	13400	453	2320	2100	868	1420	3400	1460	688	139	202	410
24	14600	252	1470	1620	888	1190	1910	917	390	118	150	230
25	16700	151	1090	1550	1110	1090	1490	696	417	107	129	348
26	12400	368	910	1620	898	984	1130	496	219	121	105	1680
27	7010	280	783	1310	802	895	792	507	228	1420	125	2610
28	2390	224	888	1100	933	955	804	406	212	3970	249	1060
29	1230	274	1380	1020	---	1440	814	285	185	3200	525	586
30	873	510	1390	976	---	11800	518	338	166	1240	654	268
31	723	---	1480	1160	---	13000	---	469	---	875	377	---
TOTAL	92238	15642	45205	137966	26104	115295	49710	24179	19661	18166	13049	10482
MEAN	2975	521	1458	4451	932	3719	1657	780	655	586	421	349
MAX	16700	2550	8260	18400	1530	13200	5920	2170	3160	3970	1860	2610
MIN	43	151	377	976	637	811	518	285	143	107	79	60
CFSM	2.07	.36	1.02	3.10	.65	2.59	1.16	.54	.46	.41	.29	.24
IN.	2.39	.41	1.17	3.58	.68	2.99	1.29	.63	.51	.47	.34	.27

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 1991, BY WATER YEAR (WY)

	MEAN	725	823	1370	2379	2907	2824	2075	1161	785	865	882	765
MAX	3590	4789	4765	7182	7945	7103	6455	3590	4147	5528	3861	10580	
(WY)	1965	1986	1973	1978	1960	1952	1936	1989	1982	1975	1931	1945	
MIN	28.2	14.1	34.6	130	424	566	393	193	135	79.7	75.2	24.1	
(WY)	1931	1942	1934	1934	1931	1981	1981	1981	1977	1986	1980	1968	

SUMMARY STATISTICS FOR 1990 CALENDAR YEAR FOR 1991 WATER YEAR WATER YEARS 1930 - 1991

	ANNUAL TOTAL	581834	567697	1458
ANNUAL MEAN	1594	1555	2711	1984
HIGHEST ANNUAL MEAN			606	1988
LOWEST ANNUAL MEAN			66400	Sep 18 1945
HIGHEST DAILY MEAN	16700	Oct 25	18400	Jan 12
LOWEST DAILY MEAN	42	Aug 4	43	Oct 9
ANNUAL SEVEN-DAY MINIMUM	45	Sep 4	48	Oct 4
INSTANTANEOUS PEAK FLOW			22000	Jan 12
INSTANTANEOUS PEAK STAGE			8.96	Jan 12
INSTANTANEOUS LOW FLOW			42*	Oct 9
ANNUAL RUNOFF (CFSM)	1.11		1.08	1.02
ANNUAL RUNOFF (INCHES)	15.09		14.73	13.82
10 PERCENT EXCEEDS	4370		3280	3350
50 PERCENT EXCEEDS	728		741	542
90 PERCENT EXCEEDS	55		137	99

\* See REMARKS.

## 02102192 BUCKHORN CREEK NEAR CORINTH, NC

LOCATION.--Lat 35°33'34", long 78°58'25", Chatham County, Hydrologic Unit 03030004, on left bank at upstream side of bridge on State Highway 42, 0.2 mi downstream from White Oak Creek, 1.2 mi downstream from Shearon Harris Main Reservoir, and 2 mi east of Corinth.

DRAINAGE AREA.--76.3 mi<sup>2</sup>.

PERIOD OF RECORD.--June 1972 to current year.

REVISED RECORDS.--WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 154.63 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for period Oct. to Nov. due to beaver activity, which are fair. Since Dec. 1, 1980, considerable regulation by Shearon Harris Main Reservoir (station 02102190). Prior to regulation, maximum discharge, 6,920 ft<sup>3</sup>/s Feb. 2, 1973, gage height, 20.02 ft; minimum, 0.01 ft/s Sept. 2, 1976.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.51	e6.3	5.4	4.2	59	8.6	139	35	52	1.4	3.3	1.3
2	.46	e5.9	4.8	5.3	54	18	128	27	83	.86	3.3	1.2
3	.44	e5.5	11	4.7	50	45	116	22	69	6.1	4.9	1.1
4	.46	5.1	17	5.4	47	92	104	20	58	22	3.6	1.1
5	.76	6.1	8.5	4.7	42	98	96	18	44	21	2.5	1.1
6	1.7	8.6	6.4	4.1	39	93	90	20	33	20	2.3	1.6
7	1.9	7.9	5.6	48	38	91	83	20	25	17	2.3	1.5
8	2.0	6.4	12	26	51	88	76	16	19	14	2.1	1.3
9	1.4	5.8	9.7	14	44	81	71	14	16	11	2.3	1.2
10	1.7	13	7.1	7.5	40	76	67	13	13	7.6	2.9	1.1
11	15	6.4	5.9	82	37	68	61	11	9.7	6.4	2.3	1.1
12	2.2	3.8	5.2	127	33	61	53	9.7	7.1	4.2	2.9	1.1
13	5.8	3.2	4.9	115	30	67	47	8.6	6.3	3.0	5.3	1.1
14	2.6	2.4	4.6	109	29	82	53	8.2	4.7	1.9	13	1.1
15	2.4	1.9	4.4	104	28	83	51	8.5	3.2	1.9	20	1.1
16	2.4	1.6	4.5	102	24	77	48	7.7	2.3	1.1	5.1	1.0
17	3.1	2.6	4.2	97	19	74	43	6.4	1.3	1.1	2.6	.93
18	4.8	3.8	4.4	90	21	88	40	44	.85	1.4	1.8	.87
19	5.9	4.2	6.1	83	20	100	38	150	6.0	2.6	1.6	.90
20	6.5	3.3	5.7	103	19	95	40	216	38	2.9	3.1	2.4
21	7.6	3.4	31	107	19	87	39	176	33	2.4	4.1	1.4
22	9.8	3.2	11	99	18	82	36	150	28	2.1	1.8	1.0
23	34	4.8	7.0	89	20	78	34	126	27	2.2	1.3	.89
24	13	8.0	5.8	84	17	73	31	108	21	1.8	1.1	1.1
25	12	7.4	4.6	85	15	69	29	94	15	1.8	1.1	2.0
26	42	7.8	4.1	77	16	62	26	82	11	1.7	1.2	1.5
27	14	7.7	4.4	72	12	55	24	74	8.6	14	2.2	.96
28	9.5	10	7.9	68	9.5	53	23	71	6.1	10	2.0	.75
29	8.6	24	5.5	62	---	70	23	63	4.3	3.7	1.4	.76
30	e7.7	7.8	4.9	62	---	160	21	55	2.9	12	1.1	.80
31	e6.8	---	5.2	67	---	152	---	46	---	5.4	1.0	---
TOTAL	227.03	187.9	228.8	2007.9	850.5	2426.6	1730	1720.1	648.35	204.56	105.5	35.26
MEAN	7.32	6.26	7.38	64.8	30.4	78.3	57.7	55.5	21.6	6.60	3.40	1.18
MAX	42	24	31	127	59	160	139	216	83	22	20	2.4
MIN	.44	1.6	4.1	4.1	9.5	8.6	21	6.4	.85	.86	1.0	.75

e Estimated

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1981 - 1991\*, BY WATER YEAR (WY)

	MEAN	9.00	12.2	32.7	64.3	96.0	129	95.7	47.8	25.6	20.1	29.3	5.93
MAX	60.5	48.7	143	241	223	335	262	184	138	102	199	40.2	
(WY)	1990	1990	1984	1984	1984	1989	1984	1989	1984	1989	1986	1986	
MIN	.70	1.92	2.20	2.54	8.86	2.73	1.80	1.97	.67	.34	.75	.88	
(WY)	1982	1982	1989	1981	1981	1981	1981	1981	1981	1981	1988	1981	

## SUMMARY STATISTICS

## FOR 1990 CALENDAR YEAR

## FOR 1991 WATER YEAR

## WATER YEARS 1981 - 1991\*

ANNUAL TOTAL	15534.54	10372.50	
ANNUAL MEAN	42.6	28.4	47.0
HIGHEST ANNUAL MEAN			126
LOWEST ANNUAL MEAN			2.47
HIGHEST DAILY MEAN	328	216	889
LOWEST DAILY MEAN	.44	.44	.11
ANNUAL SEVEN-DAY MINIMUM	.49	.89	.12
INSTANTANEOUS PEAK FLOW		429	2110
INSTANTANEOUS PEAK STAGE		4.80	11.66
INSTANTANEOUS LOW FLOW		.35	.05
ANNUAL RUNOFF (CFSM)	.56	.37	.62
ANNUAL RUNOFF (INCHES)	7.57	5.06	8.37
10 PERCENT EXCEEDS	122	84	150
50 PERCENT EXCEEDS	11	9.5	6.3
90 PERCENT EXCEEDS	.73	1.3	.70

\* See REMARKS.

## CAPE FEAR RIVER BASIN

02102500 CAPE FEAR RIVER AT LILLINGTON, NC

LOCATION.--Lat 35°24'22", long 78°48'48", Harnett County, Hydrologic Unit 03030004, on right bank 60 ft downstream from downstream bridge on U.S. Highway 401, 1,860 ft downstream from Southern Railway bridge, 0.5 mi north of Lillington, 1 mi downstream from Neal Creek, and at mile 178.

DRAINAGE AREA.--3,464 mi<sup>2</sup>.

PERIOD OF RECORD.--December 1923 to current year.

REVISED RECORDS.--WSP 1002: 1930(M). WSP 1032: 1942(m). WSP 1303: 1944(M). WSP 1333: 1945. WSP 1383: 1924-29, 1936. WSP 1703: 1929. WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 104.62 ft above National Geodetic Vertical Datum of 1929. Dec. 6, 1923, to Oct. 7, 1927, nonrecording gage and Oct. 8, 1927, to Dec. 2, 1975, water-stage recorder at site 60 ft upstream in bridge pier at same datum.

REMARKS.--No estimated daily discharges. Records good. Some regulation at high flows, December 1972 to August 1981, caused by temporary storage in B. Everett Jordan Lake. Flow regulated since September 1981 by B. Everett Jordan Lake (station 02098197). Diurnal fluctuation and slight regulation at low flow caused by powerplants above station. Fluctuation and regulation by Buckhorn Reservoir 13 mi above station ended in December 1962. Prior to regulation, maximum discharge, 150,000 ft<sup>3</sup>/s Sept. 19, 1945, gage height, 33.19 ft, from floodmark, from rating curve extended above 76,000 ft<sup>3</sup>/s; minimum discharge, 11 ft<sup>3</sup>/s Oct. 14, 15, 1954, gage height, -0.17 ft. Gage height telemeter and satellite data transmitter at the station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	566	2550	1400	3730	2880	1580	11300	1650	997	564	1360	840
2	562	1200	1370	4510	2720	2030	12300	3330	1740	597	1070	687
3	563	1100	1210	4580	2470	5010	15400	2870	2140	767	1340	656
4	569	987	1480	4400	2310	14000	14700	2080	2240	1250	1460	642
5	584	1010	8460	4660	2210	16100	13400	1940	2480	2480	1460	636
6	586	984	8000	4090	2160	17500	7780	1830	2010	3050	974	685
7	589	890	6000	3770	2070	13200	4480	1590	1670	2940	682	734
8	589	887	5510	13900	2540	12200	2830	1320	801	2670	642	710
9	586	806	5480	16300	2860	10700	3560	1220	720	929	946	681
10	584	807	5600	13100	2780	7600	3730	1080	672	743	1240	690
11	926	2260	5190	9870	2340	4410	3530	950	586	696	959	771
12	4620	3040	3560	24600	2200	3290	2310	999	605	550	1110	737
13	8260	2050	2270	18900	1920	3220	2120	743	581	640	1320	681
14	3550	3610	1450	18700	1430	5650	2100	956	598	683	935	663
15	3080	2310	1470	12600	1450	7970	1810	1040	628	679	1480	656
16	1310	2020	1350	14900	1450	5730	1890	1270	627	673	2060	647
17	855	1480	1310	18500	1490	3250	2970	1090	629	638	1970	644
18	734	1290	1250	17400	1390	3370	4300	839	653	605	1380	644
19	637	973	1280	16500	1320	7730	4180	1270	749	755	1210	650
20	697	879	1250	16500	2270	6680	3830	1950	3010	730	922	731
21	588	857	3290	18000	2590	5970	7040	2650	3940	669	738	789
22	722	884	7560	17400	2670	6140	6670	3050	2110	682	702	1320
23	7710	990	4760	14300	2340	5490	8300	3180	1650	635	745	1110
24	17400	1000	3880	10200	2230	3860	7330	4120	1420	669	762	886
25	21600	722	3310	6790	2400	2840	5940	4160	1590	656	737	928
26	20600	821	2870	3160	1700	2790	2790	3940	1120	644	699	1340
27	19900	885	2210	2890	1520	2670	1700	3940	924	988	835	3300
28	17300	905	2260	2590	1560	1810	1590	3550	673	3670	882	1630
29	14600	937	2620	2520	---	1940	1600	1470	551	4970	1080	1060
30	9770	965	2820	2440	---	10800	1500	1140	538	3390	1230	989
31	6550	---	2880	2650	---	14400	---	1210	---	1720	1070	---
TOTAL	167187	40099	103350	324450	59270	209930	162980	62427	38652	41332	34000	27137
MEAN	5393	1337	3334	10470	2117	6772	5433	2014	1288	1333	1097	905
MAX	21600	3610	8460	24600	2880	17500	15400	4160	3940	4970	2060	3300
MIN	562	722	1210	2440	1320	1580	1500	743	538	550	642	636

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1982 - 1991\*, BY WATER YEAR (WY)

	1989	1919	3320	5376	6666	7801	5280	3106	2595	1743	2071	852
MAX	6442	7919	8595	10470	11560	15160	11010	7784	12510	5348	5448	1318
(WY)	1990	1986	1984	1991	1984	1989	1984	1989	1982	1984	1985	1989
MIN	640	655	885	1373	1860	1628	969	824	702	654	634	596
(WY)	1987	1982	1989	1986	1986	1988	1985	1986	1986	1986	1983	1990

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR		FOR 1991 WATER YEAR		WATER YEARS 1982 - 1991*	
ANNUAL TOTAL	1335838		1270814			
ANNUAL MEAN	3660		3482		3538	
HIGHEST ANNUAL MEAN					6167	
LOWEST ANNUAL MEAN					1488	
HIGHEST DAILY MEAN	21600	Oct 25	24600	Jan 12	33500	Mar 1 1987
LOWEST DAILY MEAN	532	Jul 31	538	Jun 30	210	Oct 23 1981
ANNUAL SEVEN-DAY MINIMUM	552	Jul 27	574	Oct 1	223	Oct 2 1981
INSTANTANEOUS PEAK FLOW			29100	Jan 12	36500	Mar 1 1987
INSTANTANEOUS PEAK STAGE			13.76	Jan 12	15.59	Mar 1 1987
INSTANTANEOUS LOW FLOW			497	Jun 30	190	Oct 23 1981
ANNUAL RUNOFF (CFM)	1.06		1.01		1.02	
ANNUAL RUNOFF (INCHES)	14.35		13.65		13.88	
10 PERCENT EXCEEDS	10000		9810		10800	
50 PERCENT EXCEEDS	1520		1650		1270	
90 PERCENT EXCEEDS	589		652		632	

\* Regulated period only (1982-1991). See REMARKS.

## 02102908 FLAT CREEK NEAR INVERNESS, NC

LOCATION.--Lat 35°10'54", long 79°10'40", Hoke County, Hydrologic Unit 03030004, Fort Bragg military reservation, on left bank 15 ft downstream from culvert on Manchester Road, 0.4 mi upstream from mouth, and 3.6 mi east of Inverness.

DRAINAGE AREA.--7.63 mi<sup>2</sup>.

PERIOD OF RECORD.--June 1968 to current year.

REVISED RECORDS.--WDR NC-72-1: 1968-70 (M). WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 191.18 ft above National Geodetic Vertical Datum of 1929. Recording rain gage at station.

REMARKS.--No estimated daily discharges. Records good. Some diurnal fluctuation at low flow during growing season. Minimum discharge some years effected by regulation from unknown source. Minimum discharge for period of record also occurred on June 8, 25, 1988.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.9	9.3	8.9	8.8	11	8.8	12	7.3	4.9	11	14	9.4
2	5.5	9.0	8.8	14	11	17	11	6.7	5.2	31	21	9.5
3	5.5	8.7	11	11	10	22	10	6.3	4.9	41	25	8.5
4	5.8	8.7	13	12	10	29	9.8	6.2	4.8	44	12	8.2
5	6.8	8.5	9.4	10	9.7	15	9.7	6.7	4.6	18	9.2	7.9
6	5.7	8.4	8.8	9.5	9.6	12	10	16	4.7	22	8.3	7.7
7	5.6	8.1	8.6	12	13	12	9.4	10	4.7	11	26	7.9
8	5.7	8.2	15	17	20	11	9.5	7.4	4.7	8.6	64	7.8
9	5.5	8.1	12	13	13	11	11	6.7	4.7	7.7	17	7.2
10	6.5	21	9.5	11	11	11	10	8.0	4.5	6.9	18	7.2
11	45	12	8.8	16	10	10	9.0	7.6	4.5	6.9	12	7.1
12	29	9.6	8.5	27	10	9.9	8.6	7.2	4.6	6.8	19	7.1
13	11	8.8	8.5	14	9.9	14	8.5	6.9	4.6	6.7	24	7.3
14	9.0	8.5	8.6	12	11	20	10	7.0	4.8	5.8	15	7.5
15	7.8	8.5	8.5	11	10	13	11	6.6	5.5	5.6	15	7.1
16	7.2	8.4	8.5	12	9.5	11	9.7	6.2	5.2	6.3	12	7.3
17	7.0	8.3	8.4	11	9.5	10	8.7	6.1	5.7	6.9	10	7.1
18	7.5	8.1	8.4	10	9.4	16	8.5	5.9	7.4	7.2	9.8	7.0
19	9.8	8.1	8.9	10	9.5	14	8.3	6.1	17	15	9.6	8.1
20	7.6	8.1	9.3	22	9.4	11	11	12	34	7.8	9.3	43
21	7.2	8.0	20	14	9.2	10	14	11	12	6.4	8.8	13
22	7.7	8.0	12	11	9.8	9.6	12	8.0	11	6.1	8.2	9.7
23	60	8.1	10	11	13	9.5	9.5	6.9	7.4	5.7	8.2	8.9
24	25	8.2	9.6	12	12	9.1	8.9	6.3	6.5	5.2	8.4	9.2
25	13	7.8	8.8	17	10	8.7	8.0	6.2	6.0	5.1	10	13
26	34	7.6	8.8	12	9.9	8.6	7.9	5.9	5.8	5.0	11	12
27	15	7.6	9.4	11	9.5	8.6	7.9	5.7	5.9	6.9	26	9.2
28	12	11	13	11	9.1	8.8	7.8	5.6	5.4	19	33	8.4
29	11	17	10	10	---	14	7.6	6.1	5.2	18	14	8.0
30	10	10	9.8	13	---	40	7.7	5.3	4.8	59	11	7.7
31	9.7	---	9.6	16	---	14	---	5.0	---	19	9.5	---
TOTAL	404.0	279.7	312.4	401.3	299.0	418.6	287.0	224.9	211.0	431.6	498.3	289.0
MEAN	13.0	9.32	10.1	12.9	10.7	13.5	9.57	7.25	7.03	13.9	16.1	9.63
MAX	60	21	20	27	20	40	14	16	34	59	64	43
MIN	5.5	7.6	8.4	8.8	9.1	8.6	7.6	5.0	4.5	5.0	8.2	7.0
CFSM	1.71	1.22	1.32	1.70	1.40	1.77	1.25	.95	.92	1.82	2.11	1.26
IN.	1.97	1.36	1.52	1.96	1.46	2.04	1.40	1.10	1.03	2.10	2.43	1.41

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1991, BY WATER YEAR (WY)

	MEAN	10.3	11.1	12.3	14.0	15.4	17.9	18.0	11.7	10.8	11.1	9.92	9.69
MAX	19.9	20.5	19.5	20.2	32.0	73.6	106	18.9	22.3	24.5	16.4	20.0	
(WY)	1972	1980	1973	1975	1973	1974	1974	1973	1973	1989	1974	1979	
MIN	5.73	6.10	7.64	8.69	9.76	8.77	6.50	6.59	4.85	4.70	5.28	4.35	
(WY)	1987	1982	1971	1969	1989	1981	1981	1988	1981	1986	1968	1968	

## SUMMARY STATISTICS

## FOR 1990 CALENDAR YEAR

## FOR 1991 WATER YEAR

## WATER YEARS 1968 - 1991

ANNUAL TOTAL	4321.1	4056.8	
ANNUAL MEAN	11.8	11.1	12.7
HIGHEST ANNUAL MEAN			26.3
LOWEST ANNUAL MEAN			8.12
HIGHEST DAILY MEAN	143	May 28	314
LOWEST DAILY MEAN	4.9	Sep 8	2.2
ANNUAL SEVEN-DAY MINIMUM	5.1	Sep 24	3.2
INSTANTANEOUS PEAK FLOW			394
INSTANTANEOUS PEAK STAGE			7.30
INSTANTANEOUS LOW FLOW			1.9*
ANNUAL RUNOFF (CFSM)	1.55	1.46	1.67
ANNUAL RUNOFF (INCHES)	21.07	19.78	22.65
10 PERCENT EXCEEDS	18	17	20
50 PERCENT EXCEEDS	9.6	9.4	9.9
90 PERCENT EXCEEDS	5.7	5.8	5.6

\* See REMARKS.

## CAPE FEAR RIVER BASIN

02104220 ROCKFISH CREEK AT RAEFORD, NC

LOCATION.--Lat 34°59'55", long 79°12'55", Hoke County, Hydrologic Unit 03030004, at upstream side of bridge on U.S. Highway 401, 1.0 mi downstream from Nicholsons Creek, and 1.0 mile north of Raeford.

DRAINAGE AREA.--93.1 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1988 to current year.

GAGE.--Water-stage recorder. Datum of gage is 178 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good. Minimum discharge for period of record also occurred on Aug. 20, 1988.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	62	85	120	97	143	90	261	90	62	53	266	96
2	60	81	98	104	120	131	209	83	72	61	229	93
3	59	78	98	114	109	176	133	78	69	139	251	83
4	61	76	116	115	104	241	119	75	61	185	222	78
5	72	75	108	111	101	261	116	78	57	248	133	74
6	66	74	93	101	99	235	122	133	54	198	94	72
7	63	74	88	104	115	186	119	139	53	111	105	72
8	63	74	110	134	140	137	116	100	53	80	356	72
9	62	72	129	141	144	121	139	85	53	68	263	67
10	63	116	114	126	142	114	134	88	53	60	219	65
11	185	135	97	122	120	110	124	88	52	56	212	64
12	406	125	91	171	105	106	110	86	51	54	162	64
13	396	97	88	183	99	123	103	90	52	54	166	63
14	261	83	87	172	100	192	105	89	52	51	174	67
15	141	79	88	136	99	209	116	90	55	48	151	65
16	94	78	87	122	96	184	117	121	55	61	126	70
17	83	79	87	125	93	136	108	89	66	108	103	66
18	85	77	86	114	93	132	110	83	61	79	91	64
19	109	75	87	106	93	157	103	101	65	87	87	63
20	97	75	93	141	93	145	126	147	135	83	83	160
21	85	75	142	165	92	122	134	137	138	67	80	192
22	82	75	150	154	93	114	150	110	199	76	74	132
23	182	76	136	123	120	111	130	92	148	64	71	89
24	356	78	112	117	133	107	112	82	95	57	75	81
25	365	76	98	147	118	101	101	77	74	55	133	106
26	300	75	93	145	106	97	94	75	66	51	113	122
27	249	74	91	126	99	96	93	73	66	78	116	95
28	197	87	117	115	94	99	93	73	60	157	246	79
29	144	147	116	110	---	120	91	69	59	178	293	73
30	102	161	107	118	---	240	91	65	56	270	219	69
31	90	---	104	150	---	270	---	62	---	329	128	---
TOTAL	4640	2632	3231	4009	3063	4663	3679	2848	2192	3266	5041	2556
MEAN	150	87.7	104	129	109	150	123	91.9	73.1	105	163	85.2
MAX	406	161	150	183	144	270	261	147	199	329	356	192
MIN	59	72	86	97	92	90	91	62	51	48	71	63
CFSM	1.61	.95	1.12	1.40	1.18	1.62	1.32	.99	.79	1.14	1.75	.92
IN.	1.86	1.06	1.30	1.61	1.23	1.87	1.48	1.14	.88	1.31	2.02	1.03

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 1991, BY WATER YEAR (WY)

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
MEAN	143	126	125	133	124	156	157	138	110	124	128	101
MAX	201	169	186	164	167	173	180	182	175	224	176	162
(WY)	1990	1990	1990	1990	1990	1989	1989	1989	1989	1989	1989	1989
MIN	77.6	87.7	84.0	106	96.2	144	123	91.9	73.1	74.8	65.2	63.9
(WY)	1989	1991	1989	1989	1989	1990	1991	1991	1991	1990	1988	1990

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1988 - 1991
ANNUAL TOTAL	44181	41820	
ANNUAL MEAN	121	115	133
HIGHEST ANNUAL MEAN			147
LOWEST ANNUAL MEAN			115
HIGHEST DAILY MEAN	531	406	699
LOWEST DAILY MEAN	51	48	40
ANNUAL SEVEN-DAY MINIMUM	52	52	45
INSTANTANEOUS PEAK FLOW		518	740
INSTANTANEOUS PEAK STAGE		7.22	7.67
INSTANTANEOUS LOW FLOW		47	40*
ANNUAL RUNOFF (CFSM)	1.31	1.24	1.44
ANNUAL RUNOFF (INCHES)	17.73	16.78	19.56
10 PERCENT EXCEEDS	190	185	220
50 PERCENT EXCEEDS	107	99	112
90 PERCENT EXCEEDS	61	63	61

\* See REMARKS.

02105500 CAPE FEAR RIVER AT WILLIAM O. HUSKE LOCK NEAR TARHEEL, NC

LOCATION.--Lat 34°50'05", long 78°49'27", Bladen County, Hydrologic Unit 03030005, on right bank 100 ft upstream from William O. Huske Lock, 1 mi downstream from Cumberland-Bladen County line, 7 mi north of Tarheel, 9 mi upstream from Phillips Creek, and at mile 123.

DRAINAGE AREA.--4,852 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1937 to current year. Prior to October 1964, published as Cape Fear River at Lock 3 near Tarheel, NC.

REVISED RECORDS.--WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder and concrete lock and dam control. Datum of gage is 28.97 ft above National Geodetic Vertical Datum of 1929. Prior to Jan. 8, 1939, nonrecording gage on upper lock wall 100 ft downstream at same datum. Auxiliary water-stage recorder 1.8 mi downstream from base gage; prior to Jan. 14, 1943, auxiliary nonrecording gage 400 ft downstream on lower end of lock wall; Jan. 14, 1943, to Sept. 30, 1953, auxiliary water-stage recorder at site 600 ft downstream.

REMARKS.--No estimated daily discharges. Records good. Slight regulation at high flows, December 1972 to August 1981, caused by temporary storage in B. Everett Jordan Lake. Flow regulated since September 1981 by B. Everett Jordan Lake (station 02098197). Slight diurnal fluctuation and some regulation for short periods at low flow caused by powerplants above station. Prior to regulation, maximum discharge not determined; minimum discharge, 170 ft<sup>3</sup>/s Sep. 20, 1950. Minimum discharge during regulation also occurred Oct 8, 9, 10, 1981. U.S. Army Corps of Engineers satellite rain gage and gage height-telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	846	6350	2150	4060	4920	2550	18500	2170	1710	992	5490	2340
2	859	3070	2390	5120	5140	2910	13900	2900	1590	1480	4790	1990
3	857	1940	2280	5680	4600	4580	15800	3740	2310	1560	4810	1680
4	869	1740	2170	5620	4000	11100	16300	3160	2460	1730	4700	1380
5	944	1590	3920	5930	3850	22100	15200	2590	2680	2600	3990	1200
6	892	1600	9670	5670	3530	20100	11600	2580	2570	4930	3100	1210
7	861	1570	7700	4980	3370	18600	8890	2710	2210	5140	2530	1370
8	899	1510	6620	8130	3800	15600	5020	2430	1750	4560	2750	1340
9	907	1490	6330	18300	4780	13600	4500	2110	1110	3280	2900	1240
10	907	1790	6350	18100	5010	9690	5110	1920	965	1750	3210	1180
11	2160	2180	6340	13000	4540	8420	5110	1710	938	1350	3110	1180
12	3340	3600	5480	15700	4020	5700	4370	1540	883	1170	2640	1210
13	8610	3620	3910	22000	3470	4750	3340	1560	883	999	2760	1160
14	7190	3360	2860	21500	2980	6180	3070	1420	909	997	2830	1120
15	5050	3930	2290	20600	2700	9890	3000	1650	964	1010	2610	1080
16	3370	2950	2320	16900	2640	10000	2940	1730	919	1090	2870	1030
17	1990	2590	2150	17700	2510	7190	3270	1820	972	1180	3420	1070
18	1500	2130	2030	19600	2500	5480	4560	1620	1070	1090	2950	1080
19	1320	1850	1990	18600	2360	7080	5250	1630	1120	1080	2330	1090
20	1150	1590	2060	18200	2490	9630	5820	2950	2010	1230	2050	1660
21	1150	1460	2660	18900	3430	8100	6860	4100	4890	1250	1690	1960
22	1060	1420	6470	20000	3630	7600	8540	4680	4240	1190	1440	1880
23	1550	1450	7840	19300	3620	7440	9130	4420	2970	1160	1340	2030
24	13800	1560	6360	15500	3440	6230	9470	4520	2420	1130	1330	1830
25	21100	1520	5300	10200	3470	4700	8110	4830	2180	1100	1480	1790
26	21900	1300	4510	8140	3500	3990	5830	4630	2090	1050	1490	1920
27	21600	1370	3710	5210	2930	3740	3460	4350	1570	1120	1540	2600
28	21100	1440	3290	4720	2650	3420	2580	4340	1320	2470	1760	3550
29	18700	1710	3410	4360	---	3080	2420	3450	1060	5640	2460	2260
30	14100	2130	3790	4170	---	7820	2370	2110	906	7990	2670	1660
31	6610	---	3850	4580	---	19700	---	1800	---	7010	2680	---
TOTAL	187191	65810	132200	380470	99880	270970	214320	87170	53669	70328	85720	48090
MEAN	6038	2194	4265	12270	3567	8741	7144	2812	1789	2269	2765	1603
MAX	21900	6350	9670	22000	5140	22100	18500	4830	4890	7990	5490	3550
MIN	846	1300	1990	4060	2360	2550	2370	1420	883	992	1330	1030

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1982 - 1991\*, BY WATER YEAR (WY)

	MEAN	2595	2781	4704	7387	8682	10460	7145	4346	3540	2928	3210	1604
MAX	8666	9035	11360	12600	14160	19760	14830	11770	14200	8725	7358	2927	
(WY)	1990	1986	1984	1984	1984	1989	1984	1989	1982	1984	1984	1989	
MIN	979	1297	1647	2197	2799	3078	1508	1184	1051	958	969	935	
(WY)	1987	1982	1989	1986	1986	1988	1986	1986	1986	1986	1983	1990	

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR		FOR 1991 WATER YEAR		WATER YEARS 1982 - 1991*	
ANNUAL TOTAL	1765719		1695818			
ANNUAL MEAN	4838		4646		4933	
HIGHEST ANNUAL MEAN					8328	
LOWEST ANNUAL MEAN					2426	
HIGHEST DAILY MEAN	21900	Oct 26	22100	Mar 5	39100	Mar 2 1987
LOWEST DAILY MEAN	808	Aug 2	846	Oct 1	414	Oct 8 1981
ANNUAL SEVEN-DAY MINIMUM	841	Jul 29	875	Oct 1	429	Oct 4 1981
INSTANTANEOUS PEAK FLOW			25200	Oct 25	31800	Oct 3 1989
INSTANTANEOUS PEAK STAGE			13.62	Oct 27	18.67	Jun 13 1982
INSTANTANEOUS LOW FLOW			810	Jul 1	408*	Oct 8 1981
ANNUAL RUNOFF (CFSM)	1.00		.96		1.02	
ANNUAL RUNOFF (INCHES)	13.54		13.00		13.81	
10 PERCENT EXCEEDS	12300		10600		13700	
50 PERCENT EXCEEDS	2590		2900		2360	
90 PERCENT EXCEEDS	924		1110		1010	

\* Regulated period only (1982-1991). See REMARKS.

## CAPE FEAR RIVER BASIN

02105769 CAPE FEAR RIVER AT LOCK 1 NEAR KELLY, NC  
(National stream-quality accounting network station)

LOCATION.--Lat 34°24'15", long 78°17'38", Bladen County, Hydrologic Unit 03030005, on right bank near upstream end of lock No. 1, 1.3 mi upstream from Natmore Creek, 2.0 mi upstream from bridge on State Highway 11, 4.6 mi southeast on Kelly, and at mile 67.

DRAINAGE AREA.--5,255 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1969 to current year.

REVISED RECORDS.--WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder with concrete lock and dam control. Datum of gage is 2.90 ft below National Geodetic Vertical Datum of 1929 (U.S. Army Corps of Engineers bench mark).

REMARKS.--No estimated daily discharges. Records good. Slight regulation at high flow December 1972 to August 1981, caused by storage in B. Everett Jordan Lake. Flow regulated since September 1981 by B. Everett Jordan Lake (station 02098197). Slight diurnal fluctuation and some regulation for short periods at low flow caused by powerplants upstream from station. The city of Wilmington diverted an average of 13.9 ft<sup>3</sup>/s for municipal water supply, most of which was returned as treated effluent downstream from station. Prior to regulation, maximum discharge, 57,000 ft<sup>3</sup>/s March 3, 1979, gage height, 24.92 ft from floodmarks; minimum discharge prior to regulation, 406 ft<sup>3</sup>/s July 1, 1981.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	856	14900	2470	4670	6610	3420	15600	2960	2210	1000	8660	3470
2	846	8990	2540	5200	6730	3490	17000	2850	2230	1290	7370	3040
3	848	4280	2690	6290	6600	4560	17000	3880	2260	1590	6490	2530
4	859	2650	2600	6750	5860	8370	17200	4230	2840	1740	6350	2120
5	916	2220	2640	6730	5260	13000	17500	3570	2960	2160	5670	1750
6	921	1990	6630	7050	4920	16000	17300	3140	3100	3650	4650	1530
7	897	1920	9910	6650	4590	18000	15900	3170	2840	5630	3570	1560
8	878	1840	8930	6580	5070	18800	11800	3030	2460	5630	3110	1680
9	900	1770	8050	11100	6240	18200	7290	2780	1810	4850	3400	1590
10	899	2250	7660	14700	6710	17000	6320	2510	1270	3090	3490	1480
11	1590	2710	7630	16200	6540	15000	6350	2250	1120	1930	3840	1410
12	3500	3470	7310	15900	5800	11100	6140	2010	1060	1580	3550	1420
13	5680	4780	6080	16700	5110	7740	5060	1820	1060	1280	3350	1390
14	9600	4320	4440	18500	4550	6940	4160	1820	1020	1100	3510	1340
15	7600	4620	3300	19600	3900	8830	3950	1820	1100	1080	3400	1280
16	5720	4400	2830	20100	3500	11300	3850	2010	1100	1150	3320	1220
17	3540	3600	2700	19400	3360	11300	3770	2120	1160	1280	3650	1220
18	2240	3020	2480	18900	3260	8840	4400	2110	1360	1300	4100	1220
19	1730	2530	2370	19100	3160	7280	6050	1890	1330	1240	3550	1210
20	1440	2170	2410	19500	3050	9270	7520	2390	1600	1290	2990	1580
21	1280	1910	2920	19500	3490	10500	8110	3860	3310	1400	2570	2140
22	1220	1770	4300	19500	4260	9660	9640	5020	5650	1370	2100	2340
23	1410	1720	8430	19700	4580	9290	10500	5450	4580	1310	1880	2350
24	4940	1760	8720	19800	4570	8820	11100	5220	3440	1250	2000	2340
25	13000	1830	7520	18900	4550	7120	11100	5560	2830	1200	2240	2350
26	16000	1690	6250	16300	4680	5470	9840	5670	2620	1110	2390	3200
27	17900	1550	5340	11600	4340	4800	6900	5410	2250	1090	2380	3150
28	19100	1650	4430	7930	3750	4430	4390	5200	1770	1530	2770	4120
29	19900	1810	4100	6560	---	3990	3390	4970	1450	3890	3390	3900
30	19700	2150	4290	6080	---	6870	3110	3560	1190	7320	3760	2710
31	18300	---	4620	6380	---	12000	---	2450	---	9530	3730	---
TOTAL	184210	96270	156590	411870	135040	301390	272240	104730	64980	74860	117230	62640
MEAN	5942	3209	5051	13290	4823	9722	9075	3378	2166	2415	3782	2088
MAX	19900	14900	9910	20100	6730	18800	17500	5670	5650	9530	8660	4120
MIN	846	1550	2370	4670	3050	3420	3110	1820	1020	1000	1880	1210

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1982 - 1991\*, BY WATER YEAR (WY)

	MEAN	2764	2974	5107	8035	9279	11400	8454	4618	4012	3067	3563	1946
MAX	9751	8260	11050	13290	14970	20140	16980	12110	15070	8313	7883	3592	
(WY)	1990	1986	1984	1991	1983	1989	1984	1989	1982	1984	1984	1989	
MIN	1068	1398	1935	2265	3025	3629	1667	1272	1147	1046	1046	985	
(WY)	1988	1988	1985	1986	1986	1988	1986	1986	1986	1986	1983	1990	

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR		FOR 1991 WATER YEAR		WATER YEARS 1982 - 1991 *	
ANNUAL TOTAL	2033663		1982050			
ANNUAL MEAN	5572		5430		5417	
HIGHEST ANNUAL MEAN					8529	
LOWEST ANNUAL MEAN					2865	
HIGHEST DAILY MEAN	19900	Oct 29	20100	Jan 16	44300	Mar 6 1987
LOWEST DAILY MEAN	822	Aug 3	846	Oct 2	445	Oct 9 1981
ANNUAL SEVEN-DAY MINIMUM	850	Jul 31	878	Oct 1	463	Oct 4 1981
INSTANTANEOUS PEAK FLOW			20300	Jan 16	44500	Mar 6 1987
INSTANTANEOUS PEAK STAGE			20.43	Jan 16	23.61	Mar 6 1987
INSTANTANEOUS LOW FLOW			800	Oct 4	380	Oct 7 1981
ANNUAL RUNOFF (CFSM)	1.06		1.03		1.03	
ANNUAL RUNOFF (INCHES)	14.40		14.03		14.01	
10 PERCENT EXCEEDS	13400		14800		15100	
50 PERCENT EXCEEDS	3240		3570		2740	
90 PERCENT EXCEEDS	980		1280		1080	

\* Regulated period only (1982 - 1991). See REMARKS.

02105769 CAPE FEAR RIVER AT LOCK 1 NEAR KELLY, NC--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1956 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: January 1973 to September 1984.

WATER TEMPERATURE: January 1973 to September 1984.

INSTRUMENTATION.--Water-quality monitor from May 1973 to September 1984.

REMARKS.--Station operated as part of NASQAN network from January 1973 to present. Daily records of specific conductance for period October 1956 to September 1961 are available in the district office in Raleigh, NC. During period 1956-73, data were collected at bridge on State Highway 11 located 2 mi downstream and published as Cape Fear River near Acme (station 02105771).

COOPERATION.--Chemical and biological data shown in last table were provided by the North Carolina Department of Environment, Health, and Natural Resources.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 317 microsiemens Oct. 19, 20, 1976; minimum, 40 microsiemens June 26, 1973.

WATER TEMPERATURE: Maximum, 32.0°C July 9, 19, 20, 21, 1977, Aug. 10, 1979; minimum, 0.5°C Jan. 24, 1976.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TUR- BID- ITY (NTU)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	CALCIUM DIS- SOLVED (MG/L AS CA)
DEC 10...	1130	7630	118	8.1	15.0	5.5	764	9.7	K48	K60	6.0
FEB 18...	1100	3550	91	8.7	20.5	--	762	8.0	K20	K50	--
MAY 15...	1145	1810	108	6.3	25.5	7.9	758	6.5	K25	K70	5.1
SEP 24...	1100	2340	100	6.5	15.0	--	765	6.5	K20	K65	5.1
DATE		MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE WATER DIS IT FIELD MG/L AS HCO3	ALKA- LINITY WAT DIS TOT IT FIELD MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
DEC 10...	2.1	10	44	0.9	3.0	20	16	11	8.8	0.20	9.7
FEB 18...	2.1	9	40	1	2.5	19	16	10	7.2	<0.10	8.5
MAY 15...	2.1	11	49	1	2.4	15	12	9.8	7.0	<0.10	8.4
SEP 24...	2.1	11	47	1	2.4	17	14	9.8	7.4	<0.10	8.6
DATE		SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4)
DEC 10...	96	0.670	0.680	0.030	0.020	0.700	0.700	0.110	0.110	0.14	0.14
FEB 18...	--	0.670	0.650	0.020	0.020	0.690	0.670	0.150	0.120	0.15	0.16
MAY 15...	71	0.670	0.640	0.020	0.020	0.690	0.660	0.160	0.150	0.21	0.19
SEP 24...	--	0.670	0.640	0.020	0.020	0.690	0.660	0.160	0.150	0.21	0.19

## CAPE FEAR RIVER BASIN

02105769 CAPE FEAR RIVER AT LOCK 1 NEAR KELLY, NC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS NO3)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHATE, TOTAL (MG/L AS PO4)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO TOTAL (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)
DEC 10...	0.59	0.70	1.4	6.2	0.200	0.31	0.090	0.100	0.080	0.25	200
FEB 18...	0.64	0.70	1.5	6.5	0.140	0.20	0.070	0.050	0.050	0.15	80
MAY 15...	0.84	1.0	1.7	7.5	0.110	0.15	0.070	0.050	0.050	0.15	70
SEP 24...	0.76	1.0	1.7	7.0	0.120	0.18	0.070	0.050	0.050	0.15	70

DATE	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)
DEC 10...	<1	23	<0.5	<1.0	3	<3	5	460	1	<4
FEB 18...	<1	23	<0.5	<1.0	1	<3	3	440	1	<4
MAY 15...	<1	23	<0.5	<1.0	1	<3	3	430	1	<4
SEP 24...	<1	23	<0.5	<1.0	1	<3	3	430	1	<4

DATE	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT)
DEC 10...	48	<0.1	<10	2	<2	<1.0	42	<6	11	--
FEB 18...		<0.1	<10	1	<1	<1.0	43	<6	18	--
MAY 15...	110	<0.1	<10	1	<1	<1.0	43	<6	18	<0.6
SEP 24...		<0.1	<10	1	<1	<1.0	43	<6	18	--

DATE	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, DIS- SOLVED (PCI/L AS SR/ YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90)	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L)	URANIUM NATURAL DIS- SOLVED (UG/L AS U)	SEDI- MENT, SUS- PENDEDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDEDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
DEC 10...	--	--	--	--	--	--	--	28	577	92
FEB 18...	--	--	--	--	--	--	--	16	153	71
MAY 15...	1.8	3.1	<0.6	2.7	<0.6	<0.02	0.05	13	64	75

## CAPE FEAR RIVER BASIN

02106000 LITTLE COHARIE CREEK NEAR ROSEBORO, NC

LOCATION.--Lat 34°57'13", long 78°29'17", Sampson County, Hydrologic Unit 03030006, on downstream end of center pier of bridge on State Highway 24, 1.2 mi east of Roseboro, and 1.5 mi upstream from Bearskin Swamp.

DRAINAGE AREA.--92.8 mi<sup>2</sup>.

PERIOD OF RECORD.--January 1950 to current year.

REVISED RECORDS.--WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 80.52 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to Jan. 12, 1951, nonrecording gage at same site and datum.

REMARKS.--No estimated daily discharges. Records poor. Minimum discharge for period of record also occurred on Sept. 14, 27, and Oct. 1-11, 1954.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1924 reached a stage of 11.6 ft, from information by North Carolina State Highway Commission.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.8	122	56	58	101	66	255	45	9.5	15	1650	127
2	1.9	82	56	62	104	76	307	39	8.6	14	1130	113
3	2.1	72	56	65	107	90	206	33	18	12	558	92
4	3.2	66	61	66	100	109	160	29	34	15	315	73
5	5.0	63	62	64	87	123	130	27	22	170	217	63
6	6.5	62	60	63	76	130	111	30	12	210	186	56
7	7.3	61	58	61	72	138	98	30	7.6	149	169	50
8	7.6	63	68	65	75	131	87	29	5.2	95	147	53
9	10	67	75	72	83	114	82	26	5.2	40	141	60
10	13	145	75	74	90	102	75	29	4.2	25	153	63
11	74	177	72	69	96	92	66	29	4.5	21	148	58
12	97	171	67	73	99	81	58	27	3.6	50	131	56
13	92	173	64	74	88	79	51	27	2.9	54	122	57
14	93	175	61	73	76	96	47	26	1.8	28	115	58
15	69	150	59	68	67	107	48	26	1.6	21	111	59
16	52	103	58	69	62	119	48	28	1.1	28	111	59
17	46	85	57	68	58	132	47	25	4.4	28	108	60
18	47	78	57	65	54	126	45	21	9.6	26	110	60
19	47	72	57	61	52	111	44	23	7.4	27	116	61
20	49	69	62	84	54	97	79	46	23	29	104	81
21	52	65	81	94	53	89	87	71	73	21	87	106
22	52	62	82	93	54	81	116	74	84	15	62	112
23	89	60	82	95	63	71	222	64	135	12	51	119
24	103	57	76	95	77	62	198	44	204	8.8	46	117
25	104	54	64	98	94	55	154	35	161	6.8	50	98
26	186	51	57	93	93	50	121	29	106	4.4	57	126
27	234	50	53	92	88	47	98	26	46	7.5	87	146
28	226	50	58	90	78	46	79	23	29	15	106	144
29	260	53	61	82	---	55	64	21	22	29	112	144
30	240	56	62	82	---	142	53	16	17	106	131	144
31	191	---	60	99	---	170	---	13	---	905	142	---
TOTAL	2462.4	2614	1977	2367	2201	2987	3236	1011	1063.2	2187.5	6773	2615
MEAN	79.4	87.1	63.8	76.4	78.6	96.4	108	32.6	35.4	70.6	218	87.2
MAX	260	177	82	99	107	170	307	74	204	905	1650	146
MIN	1.9	50	53	58	52	46	44	13	1.1	4.4	46	50
CFSM	.86	.94	.69	.82	.85	1.04	1.16	.35	.38	.76	2.35	.94
IN.	.99	1.05	.79	.95	.88	1.20	1.30	.41	.43	.88	2.72	1.05

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 1991, BY WATER YEAR (WY)

	MEAN	65.0	75.5	108	168	199	215	149	76.3	58.6	79.4	97.8	77.4
MAX	451	237	308	358	555	571	448	252	206	388	350	465	
(WY)	1965	1963	1958	1978	1983	1983	1973	1978	1965	1965	1974	1984	
MIN	5.24	6.96	33.8	46.7	45.4	61.5	27.9	16.7	7.73	6.00	2.39	.81	
(WY)	1974	1974	1966	1986	1951	1981	1981	1981	1951	1952	1953	1954	

SUMMARY STATISTICS FOR 1990 CALENDAR YEAR FOR 1991 WATER YEAR WATER YEARS 1950 - 1991

ANNUAL TOTAL	26708.3	31494.1	
ANNUAL MEAN	73.2	86.3	115
HIGHEST ANNUAL MEAN			191
LOWEST ANNUAL MEAN			45.6
HIGHEST DAILY MEAN	406	1650	2820
LOWEST DAILY MEAN	1.9	1.1	.10
ANNUAL SEVEN-DAY MINIMUM	2.6	2.8	.10
INSTANTANEOUS PEAK FLOW		1750	3400
INSTANTANEOUS PEAK STAGE		9.01	10.34
INSTANTANEOUS LOW FLOW		.90	.10*
ANNUAL RUNOFF (CFSM)	.79	.93	1.24
ANNUAL RUNOFF (INCHES)	10.71	12.62	16.80
10 PERCENT EXCEEDS	144	145	263
50 PERCENT EXCEEDS	62	65	69
90 PERCENT EXCEEDS	9.6	15	12

\* See REMARKS.

## CAPE FEAR RIVER BASIN

02106500 BLACK RIVER NEAR TOMAHAWK, NC

LOCATION.--Lat 34°45'17", long 78°17'21", Sampson County, Hydrologic Unit 03030006, on left bank 30 ft upstream from bridge on State Highway 411, 0.2 mi downstream from Clear Run Swamp, and 3.8 mi northeast of Tomahawk.

DRAINAGE AREA.--676 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1951 to current year.

REVISED RECORDS.--WSP 1723: 1955 (M). WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 24.61 ft above National Geodetic Vertical Datum of 1929. Oct. 1, 1951 to June 29, 1961, nonrecording gage on downstream side of bridge. June 30, 1961, to Sept. 30, 1964, water-stage recorder at present site at datum 25.00 ft lower.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Minimum discharge for period of record, present site and datum. Satellite data transmitter at the station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1928 reached a stage of 22.0 ft, present datum, discharge, 14,500 ft<sup>3</sup>/s and floods in 1945 and 1948 reached a stage of 17.6 ft, present datum, discharge, 5,420 ft<sup>3</sup>/s, from information furnished by North Carolina State Highway Commission.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	1570	440	495	1310	737	1860	538	141	180	1440	2070
2	44	1280	419	474	1350	720	2130	507	129	131	3260	2060
3	41	1070	401	539	1340	857	2330	421	156	100	6220	1860
4	39	800	397	573	1260	1160	2390	349	135	84	6860	1560
5	50	533	403	547	1110	1370	2300	307	124	90	5960	1300
6	62	419	402	518	998	1480	2070	289	124	289	4760	1050
7	63	362	388	494	930	1570	1790	277	103	582	3780	827
8	52	324	444	541	989	1600	1540	252	88	803	3030	653
9	46	294	635	641	1090	1510	1280	228	78	949	2490	528
10	41	464	692	655	1050	1350	995	224	69	808	2200	454
11	143	870	654	633	932	1210	787	265	62	432	2030	433
12	e250	1000	597	699	826	1110	663	238	57	299	1910	405
13	e450	1010	541	822	773	1000	587	208	52	360	1770	368
14	e500	959	498	835	771	951	537	212	48	457	1730	333
15	e450	868	461	768	771	961	600	264	45	446	1840	310
16	e400	772	431	711	714	983	660	246	42	321	2100	280
17	e380	708	410	726	631	1040	585	227	44	558	2280	256
18	286	616	394	708	564	1100	514	209	56	762	2170	231
19	215	509	384	647	533	1090	468	239	61	877	1870	210
20	168	439	387	767	516	1040	581	240	91	986	1530	342
21	141	400	587	1080	506	971	835	339	273	995	1330	627
22	124	377	792	1230	511	890	974	506	313	828	1290	661
23	177	361	808	1300	548	786	977	501	415	552	1250	613
24	554	354	749	1330	608	690	924	445	609	321	1030	573
25	695	347	661	1350	686	615	888	377	756	216	806	650
26	967	397	579	1350	764	561	897	306	707	177	722	1250
27	1380	382	515	1350	786	524	953	242	628	149	754	1750
28	1540	378	489	1320	778	503	976	202	624	134	1040	2280
29	1670	419	526	1270	---	500	878	190	468	228	1320	2600
30	1760	448	530	1200	---	1070	658	235	270	557	1590	2400
31	1770	---	517	1240	---	1600	---	185	---	1060	1930	---
TOTAL	14499	18730	16131	26813	23645	31549	33627	9268	6768	14731	72292	28934
MEAN	468	624	520	865	844	1018	1121	299	226	475	2332	964
MAX	1770	1570	808	1350	1350	1600	2390	538	756	1060	6860	2600
MIN	39	294	384	474	506	500	468	185	42	84	722	210
CFSM	.69	.92	.77	1.28	1.25	1.51	1.66	.44	.33	.70	3.45	1.43
IN.	.80	1.03	.89	1.48	1.30	1.74	1.85	.51	.37	.81	3.98	1.53

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1952 - 1991, BY WATER YEAR (WY)

MEAN	433	467	692	1096	1300	1450	1110	569	443	493	708	555
MAX	2613	1412	2092	2069	2903	3410	3070	1687	1179	2088	2810	3319
(WY)	1965	1963	1958	1958	1973	1983	1973	1978	1957	1965	1974	1955
MIN	29.6	57.1	238	287	448	460	225	141	113	76.7	25.2	13.4
(WY)	1955	1974	1989	1986	1989	1981	1981	1986	1985	1953	1954	1954

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1952 - 1991
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ANNUAL TOTAL	205256			296987			
ANNUAL MEAN	562			814		774	
HIGHEST ANNUAL MEAN						1300	1960
LOWEST ANNUAL MEAN						327	1986
HIGHEST DAILY MEAN	2540	Apr	6	6860	Aug	4	17000 Sep 17 1984
LOWEST DAILY MEAN	23	Aug	6	39	Oct	4	8.9 Sep 13 1954
ANNUAL SEVEN-DAY MINIMUM	29	Aug	1	49	Oct	1	9.9 Oct 9 1954
INSTANTANEOUS PEAK FLOW				7160	Aug	4	17500 Sep 17 1984
INSTANTANEOUS PEAK STAGE				18.84	Aug	4	22.08 Sep 17 1984
INSTANTANEOUS LOW FLOW				37	Oct	11	8.5* Oct 13 1954
ANNUAL RUNOFF (CFSM)	.83			1.20			1.14
ANNUAL RUNOFF (INCHES)	11.30			16.34			15.55
10 PERCENT EXCEEDS	1230			1630		1770	
50 PERCENT EXCEEDS	447			608		510	
90 PERCENT EXCEEDS	53			142		106	

\* See REMARKS.

02108000 NORTHEAST CAPE FEAR RIVER NEAR CHINQUAPIN, NC

LOCATION.--Lat 34°49'40", long 77°50'00", Duplin County, Hydrologic Unit 03030007, on right bank 540 ft downstream from bridge on State Highway 41, 0.5 mi downstream from Muddy Creek, and 1.2 mi west of Chinquapin.

DRAINAGE AREA.--599 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1940 to current year.

REVISED RECORDS.--WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 17.28 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers).

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Minimum discharge for period of record also occurred on Oct. 11, 1954. Minimum discharge for current water year also occurred Oct. 2 and 4.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1908 reached a stage of 22.6 ft at old bridge site 1,000 ft upstream from gage. Flood in 1928 reached a stage of 0.8 ft lower than that in 1908, from information by North Carolina State Highway Commission.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	1210	226	388	1630	509	2350	398	e200	799	2070	1120
2	31	1090	233	383	1600	559	2810	465	e130	491	2590	889
3	33	816	238	420	1480	796	2860	447	e120	257	3410	680
4	32	540	234	433	1320	1470	2470	341	e115	112	4350	534
5	38	393	226	430	1170	2040	2000	243	e105	174	4380	434
6	51	313	222	414	1040	2310	1550	195	e84	691	3700	362
7	66	262	223	397	955	2310	1180	165	e72	1040	2800	328
8	58	227	237	440	1000	2120	891	140	e64	1240	2120	316
9	47	202	324	581	1030	1800	699	121	e60	1350	1610	290
10	40	338	404	672	985	1510	574	111	e52	1280	1430	240
11	35	590	459	688	904	1280	487	106	e50	1010	1400	196
12	33	734	456	832	808	1060	419	100	e48	581	1430	185
13	55	816	433	1010	721	881	365	92	e44	532	1590	190
14	130	797	406	1100	687	869	339	85	e40	766	1790	176
15	164	734	378	1100	661	927	532	90	e38	966	1840	157
16	171	667	347	1090	614	968	560	127	e36	1150	1790	140
17	192	598	321	1130	562	1010	477	139	e34	1190	1660	127
18	177	523	299	1140	518	1020	397	123	e40	817	1510	117
19	145	445	284	1080	484	1010	331	124	e50	663	1400	110
20	118	384	273	1180	460	942	458	261	e40	684	1220	127
21	95	338	305	1440	444	845	790	575	35	711	998	200
22	78	303	375	1600	444	732	1060	813	41	612	740	245
23	83	280	429	1660	468	628	1170	902	94	463	561	266
24	180	263	445	1590	494	551	1150	822	258	330	752	267
25	260	247	426	1570	538	489	995	628	458	238	1060	320
26	433	233	397	1590	561	435	807	425	721	197	1260	521
27	795	222	365	1590	553	391	641	298	961	175	1360	838
28	1030	213	335	1550	532	358	485	223	1040	203	1370	1230
29	1180	215	331	1500	---	358	393	189	993	572	1480	1750
30	1210	222	362	1470	---	1120	343	263	937	1120	1540	2060
31	1220	---	389	1560	---	1770	---	368	---	1530	1360	---
TOTAL	8210	14215	10382	32028	22663	33068	29583	9379	6960	21944	56571	14415
MEAN	265	474	335	1033	809	1067	986	303	232	708	1825	480
MAX	1220	1210	459	1660	1630	2310	2860	902	1040	1530	4380	2060
MIN	30	202	222	383	444	358	331	85	34	112	561	110
CFSM	.44	.79	.56	1.72	1.35	1.78	1.65	.51	.39	1.18	3.05	.80
IN.	.51	.88	.64	1.99	1.41	2.05	1.84	.58	.43	1.36	3.51	.90

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1991, BY WATER YEAR (WY)

	404	417	656	1032	1191	1241	866	498	396	579	684	532
MEAN	404	417	656	1032	1191	1241	866	498	396	579	684	532
MAX	2448	1852	2225	2249	3832	3506	2958	1901	1953	3922	2681	4754
(WY)	1943	1948	1949	1978	1973	1983	1973	1969	1961	1962	1955	1955
MIN	7.59	15.6	59.6	158	249	261	145	71.5	20.8	25.9	13.8	11.0
(WY)	1955	1955	1955	1955	1955	1955	1986	1985	1985	1954	1954	1954

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1940 - 1991
ANNUAL TOTAL	193619	259418	
ANNUAL MEAN	530	711	707
HIGHEST ANNUAL MEAN			1243
LOWEST ANNUAL MEAN			279
HIGHEST DAILY MEAN	2970	Apr 4	4380 Aug 5
LOWEST DAILY MEAN	15	Jul 7	30 Oct 1
ANNUAL SEVEN-DAY MINIMUM	20	Jul 1	39 Jun 15
INSTANTANEOUS PEAK FLOW			4520 Aug 4
INSTANTANEOUS PEAK STAGE			13.01 Aug 4
INSTANTANEOUS LOW FLOW			30* Oct 1
ANNUAL RUNOFF (CFSM)	.89		1.19
ANNUAL RUNOFF (INCHES)	12.02		16.11
10 PERCENT EXCEEDS	1330		1550
50 PERCENT EXCEEDS	378		485
90 PERCENT EXCEEDS	45		95

\* See REMARKS.

## CAPE FEAR RIVER BASIN

02108548 LITTLE ROCKFISH CREEK AT WALLACE, NC

LOCATION.--Lat 34°44'02", long 77°58'03", Duplin County, Hydrologic Unit 03030007, on right bank, 0.4 mi downstream from bridge on State Highway 41, 0.6 mi east-southeast of Wallace, and 1.2 mi upstream from mouth.

DRAINAGE AREA.--7.8 mi<sup>2</sup>.

PERIOD OF RECORD.--September 1976 to current year.

REVISED RECORDS.--WDR NC-78-1: Drainage area.

GAGE.--Water-stage recorder and V-notch, sharp-crested weir. Datum of gage is 27.58 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Several measurements of water temperature were made during the year. No flow occurs periodically.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.11	1.4	1.9	4.0	32	4.2	19	2.6	1.6	.86	30	22
2	.07	1.8	1.9	4.5	21	14	13	1.7	1.2	.30	43	16
3	.09	1.4	1.4	4.3	17	56	9.1	1.0	.46	.15	52	11
4	.18	1.4	1.4	4.1	14	122	7.3	1.7	.23	.16	25	8.5
5	.23	.83	1.2	3.4	12	41	6.2	1.4	.30	.28	13	6.3
6	.60	.70	.93	2.9	11	24	5.6	1.9	.47	.49	27	7.1
7	.07	.54	1.6	3.7	16	17	4.9	.71	.39	.71	26	5.4
8	.09	.65	7.7	12	20	13	4.0	.48	.22	.22	39	3.0
9	.11	.56	7.1	12	17	11	3.5	.54	.59	.11	20	1.8
10	.83	33	4.6	9.0	13	8.9	3.1	.78	.33	.11	15	1.5
11	2.5	19	3.0	11	11	7.5	2.5	.82	.24	.22	31	2.5
12	.17	9.6	2.4	24	9.0	6.6	2.1	2.2	.24	.44	30	9.1
13	.10	6.2	2.2	22	8.3	10	1.9	.85	.43	.40	35	6.4
14	.47	3.9	2.0	15	10	16	7.6	.45	.26	5.2	23	2.9
15	.20	3.0	1.8	11	8.8	13	19	.53	.29	4.7	16	1.9
16	.12	2.4	1.6	25	7.1	9.0	10	.27	.89	3.2	11	1.0
17	.12	2.1	1.5	24	6.1	7.3	6.7	.26	3.2	.24	7.4	.56
18	.77	1.8	1.5	16	5.8	6.9	5.4	2.8	.17	.73	7.3	.45
19	.41	1.4	1.5	13	5.6	6.4	7.6	3.4	.49	.18	5.0	.46
20	.51	1.3	6.4	59	5.6	5.4	30	3.1	.16	.39	4.3	9.0
21	.69	1.2	9.5	50	5.3	4.6	36	1.9	.16	.80	3.6	4.8
22	.29	1.1	7.0	26	5.1	4.1	27	1.1	.12	.22	1.8	1.7
23	14	1.1	6.0	18	7.0	4.0	16	.79	5.8	.15	28	1.4
24	5.4	1.1	5.0	21	7.4	3.5	11	.52	.28	3.1	180	3.9
25	6.3	1.2	3.9	41	7.2	3.0	7.8	.39	.12	1.6	121	12
26	55	.85	3.0	33	6.8	2.6	5.6	.48	.12	.50	46	23
27	31	.67	1.9	22	5.9	2.4	9.0	.42	.11	.20	66	15
28	11	1.5	3.3	28	4.8	2.7	8.2	.33	.12	8.2	107	8.3
29	5.6	4.8	6.1	33	---	21	5.1	.40	.36	16	78	7.9
30	3.2	3.8	5.9	39	---	84	3.5	.25	.96	30	39	3.3
31	2.1	---	5.2	55	---	35	---	.22	---	48	28	---
TOTAL	142.33	110.30	110.43	645.9	299.8	566.1	297.7	34.29	20.31	127.86	1158.4	198.17
MEAN	4.59	3.68	3.56	20.8	10.7	18.3	9.92	1.11	.68	4.12	37.4	6.61
MAX	55	33	9.5	59	32	122	36	3.4	5.8	48	180	23
MIN	.07	.54	.93	2.9	4.8	2.4	1.9	.22	.11	.11	1.8	.45
CFSM	.59	.47	.46	2.67	1.37	2.34	1.27	.14	.09	.53	4.79	.85
IN.	.68	.53	.53	3.08	1.43	2.70	1.42	.16	.10	.61	5.52	.95

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1976 - 1991, BY WATER YEAR (WY)

	MEAN	3.24	4.79	9.27	16.9	16.8	19.7	10.1	5.32	6.26	7.47	8.74	8.52
MAX	23.6	24.7	25.1	39.0	49.1	54.0	27.5	11.7	25.1	19.8	37.4	33.9	
(WY)	1990	1978	1990	1987	1983	1983	1983	1977	1982	1984	1991	1984	
MIN	.10	.17	.60	1.69	2.63	6.31	1.33	1.11	.53	.68	.26	.30	
(WY)	1979	1982	1989	1989	1989	1988	1986	1991	1978	1988	1983	1983	

SUMMARY STATISTICS FOR 1990 CALENDAR YEAR FOR 1991 WATER YEAR WATER YEARS 1976 - 1991

ANNUAL TOTAL	2251.10	3711.59	
ANNUAL MEAN	6.17	10.2	9.74
HIGHEST ANNUAL MEAN			17.4
LOWEST ANNUAL MEAN			3.35
HIGHEST DAILY MEAN	92	180	301
LOWEST DAILY MEAN	.07	.07	0
ANNUAL SEVEN-DAY MINIMUM	.11	.19	0
INSTANTANEOUS PEAK FLOW		252	361
INSTANTANEOUS PEAK STAGE		5.67	7.92
INSTANTANEOUS LOW FLOW		.02	0*
ANNUAL RUNOFF (CFSM)	.79	1.30	1.25
ANNUAL RUNOFF (INCHES)	10.74	17.70	16.97
10 PERCENT EXCEEDS	15	28	23
50 PERCENT EXCEEDS	2.1	3.9	3.2
90 PERCENT EXCEEDS	.18	.24	.21

\* See REMARKS.

02109500 WACCAMAW RIVER AT FREELAND, NC

LOCATION.--Lat 34°05'43", long 78°32'55", Brunswick County, Hydrologic Unit 03040206, on left bank 150 ft downstream from New Britton bridge on State Highway 130, 1 mi southwest of Freeland, 7 mi downstream from Juniper Creek, and 117 mi upstream from mouth in Winyah Bay.

DRAINAGE AREA.--680 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1939 to current year.

REVISED RECORDS.--WDR NC-80-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 15.52 ft above National Geodetic Vertical Datum of 1929. Prior to July 15, 1943, nonrecording gage 150 ft upstream at same datum. Auxiliary nonrecording gage 3.3 mi downstream from base gage Oct. 7, 1949, to July 14, 1952. Since July 15, 1952, auxiliary water-stage recorder at same site and datum.

REMARKS.--No estimated daily discharges. Records good. Minimum discharge for period of record also occurred on Sept. 9, 10, 28, and Oct. 4-14, 1954.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	209	115	406	2910	730	671	746	106	29	97	2140
2	18	183	114	392	2940	719	663	765	96	25	229	2120
3	18	161	114	375	2920	756	658	758	93	24	366	1980
4	19	142	119	355	2890	955	692	723	91	24	444	1880
5	17	124	125	334	2820	1180	847	669	90	25	485	1810
6	17	108	127	312	2700	1460	1090	613	88	25	498	1720
7	17	92	124	292	2590	1690	1290	553	83	25	500	1610
8	16	77	135	293	2470	1920	1450	486	75	25	471	1490
9	16	68	169	339	2340	2090	1480	422	65	24	450	1370
10	15	125	196	382	2200	2140	1430	384	54	22	445	1140
11	40	168	209	410	2080	2130	1270	350	44	22	432	1040
12	95	191	209	495	1950	2080	1090	317	38	24	460	940
13	99	201	202	593	1800	2020	960	285	33	32	592	824
14	81	199	194	660	1680	1950	822	257	29	35	791	721
15	94	198	190	706	1560	1860	717	231	26	33	1090	629
16	142	203	190	753	1440	1760	640	208	25	45	1410	547
17	156	200	190	818	1300	1650	581	187	24	54	1640	475
18	167	191	194	867	1120	1540	518	181	25	52	1750	409
19	190	181	196	907	1060	1440	465	172	40	47	1740	355
20	203	169	201	1320	1010	1330	570	167	58	44	1730	311
21	204	155	232	1650	962	1140	716	174	79	41	1680	276
22	200	145	266	1950	912	1080	842	180	85	39	1640	245
23	230	137	293	2220	866	1030	944	178	76	36	1610	220
24	272	134	307	2400	831	976	971	168	65	32	1690	200
25	300	132	319	2550	814	915	936	166	56	29	1790	217
26	305	127	341	2600	801	853	866	166	50	26	1910	333
27	294	122	364	2570	785	795	795	163	45	24	2060	490
28	285	119	381	2520	758	742	742	157	41	22	2170	590
29	276	115	395	2480	---	699	714	148	37	23	2220	624
30	257	114	409	2610	---	681	713	134	33	28	2260	599
31	234	---	414	2780	---	675	---	120	---	46	2200	---
TOTAL	4295	4490	7034	37339	48509	40986	26143	10228	1750	982	36850	27305
MEAN	139	150	227	1204	1732	1322	871	330	58.3	31.7	1189	910
MAX	305	209	414	2780	2940	2140	1480	765	106	54	2260	2140
MIN	15	68	114	292	758	675	465	120	24	22	97	200
CFSM	.20	.22	.33	1.77	2.55	1.94	1.28	.49	.09	.05	1.75	1.34
IN.	.23	.25	.38	2.04	2.65	2.24	1.43	.56	.10	.05	2.02	1.49

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 1991, BY WATER YEAR (WY)

	376	322	462	955	1308	1450	1008	350	323	546	673	631
MEAN	376	322	462	955	1308	1450	1008	350	323	546	673	631
MAX	1778	2332	3080	2964	4197	5319	2895	1928	1474	3040	2740	4825
(WY)	1948	1978	1949	1987	1948	1983	1973	1978	1969	1961	1981	1955
MIN	1.14	.54	3.53	20.6	44.6	219	120	35.6	5.51	5.72	7.59	.31
(WY)	1941	1955	1955	1955	1941	1955	1967	1950	1952	1952	1954	1954

SUMMARY STATISTICS

FOR 1990 CALENDAR YEAR

FOR 1991 WATER YEAR

WATER YEARS 1939 - 1991

ANNUAL TOTAL	142506.5	245911	
ANNUAL MEAN	390	674	698
HIGHEST ANNUAL MEAN			1392
LOWEST ANNUAL MEAN			230
HIGHEST DAILY MEAN	2160	Apr 6	9910
LOWEST DAILY MEAN	7.9	Aug 7	.10
ANNUAL SEVEN-DAY MINIMUM	14	Jul 27	.10
INSTANTANEOUS PEAK FLOW			10200
INSTANTANEOUS PEAK STAGE			16.63
INSTANTANEOUS LOW FLOW			.10*
ANNUAL RUNOFF (CFSM)	.57	.99	1.03
ANNUAL RUNOFF (INCHES)	7.80	13.45	13.94
10 PERCENT EXCEEDS	1200	1930	1850
50 PERCENT EXCEEDS	190	350	342
90 PERCENT EXCEEDS	22	33	28

\* See REMARKS.

## PEE DEE RIVER BASIN

02111500 REDDIES RIVER AT NORTH WILKESBORO, NC

LOCATION.--Lat 36°10'29", long 81°10'09", Wilkes County, Hydrologic Unit 03040101, on left bank 550 ft upstream from bridge on Secondary Road 1517, 1.2 mi northwest of North Wilkesboro, 1.4 mi upstream from North Wilkesboro municipal dam, and 2.3 mi upstream from mouth.

DRAINAGE AREA.--89.2 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1939 to current year. Monthly discharge only for some periods, published in WSP 1303.

REVISED RECORDS.--WSP 1433: 1944. WDR NC-80-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 978.62 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Slight diurnal fluctuation at low flow during growing season. Several water temperature measurements were made during the year. Maximum discharge, 27,000 ft<sup>3</sup>/s, gage height, 22.02 ft, from rating curve extended above 5,600 ft<sup>3</sup>/s on basis of computation of peak flow over dam. Minimum discharge for current water year also occurred on Oct. 8, 9, 10.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	60	124	100	143	142	151	265	317	221	e180	e140	86
2	64	123	100	138	141	264	229	273	237	e170	130	85
3	57	122	152	134	140	263	210	247	224	e200	124	85
4	61	122	163	129	139	323	200	229	208	e240	117	88
5	66	121	124	123	138	244	203	223	199	e300	114	92
6	57	131	119	120	155	214	192	264	195	e180	124	95
7	55	119	115	128	154	211	184	244	192	e160	131	92
8	55	116	113	139	143	190	180	212	189	e150	117	85
9	55	147	108	134	139	181	191	227	184	e140	114	83
10	62	289	106	127	136	173	223	213	180	e135	116	81
11	181	165	105	524	134	168	180	203	179	e140	110	82
12	873	148	103	431	132	166	173	242	191	e160	114	78
13	808	136	102	249	137	172	196	255	177	e170	124	91
14	229	129	101	200	183	198	191	245	173	e140	131	92
15	156	126	99	180	154	174	280	324	182	e130	141	81
16	131	124	104	350	137	165	233	278	204	e125	112	80
17	121	122	102	251	140	162	203	494	185	e135	106	79
18	553	118	108	209	228	207	189	313	179	e160	103	79
19	308	116	115	192	255	179	1010	530	205	e145	102	88
20	183	114	104	270	281	170	466	450	183	e150	98	79
21	152	112	120	215	245	165	402	552	188	e130	95	74
22	347	111	115	192	207	167	307	432	205	e122	92	74
23	925	112	300	180	187	184	268	348	173	e120	91	75
24	285	109	502	174	175	165	244	307	166	e120	90	77
25	217	106	220	166	169	157	223	280	166	e200	89	83
26	183	105	172	161	166	152	214	261	164	e180	94	81
27	156	104	161	159	157	151	276	282	162	e270	97	73
28	144	111	170	157	152	162	329	321	e152	e210	109	72
29	137	108	174	153	---	1260	452	271	e150	e280	96	71
30	137	100	164	153	---	578	415	258	e160	e175	91	70
31	127	---	158	152	---	323	---	235	---	e150	88	---
TOTAL	6945	3790	4499	6033	4666	7439	8328	9330	5573	5267	3400	2451
MEAN	224	126	145	195	167	240	278	301	186	170	110	81.7
MAX	925	289	502	524	281	1260	1010	552	237	300	141	95
MIN	55	100	99	120	132	151	173	203	150	120	88	70
CFSM	2.51	1.42	1.63	2.18	1.87	2.69	3.11	3.37	2.08	1.90	1.23	.92
IN.	2.90	1.58	1.88	2.52	1.95	3.10	3.47	3.89	2.32	2.20	1.42	1.02

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1991, BY WATER YEAR (WY)

	113	120	131	136	167	193	197	162	145	124	122	118
MEAN	113	120	131	136	167	193	197	162	145	124	122	118
MAX	309	379	273	297	386	405	536	353	412	335	587	479
(WY)	1977	1978	1974	1978	1960	1975	1980	1973	1976	1941	1940	1945
MIN	34.5	46.7	49.5	44.5	71.5	77.3	78.3	68.6	47.6	43.0	31.0	30.8
(WY)	1955	1982	1956	1956	1989	1940	1986	1941	1956	1986	1956	1954

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR		FOR 1991 WATER YEAR		WATER YEARS 1940 - 1991	
ANNUAL TOTAL	67836		67721			
ANNUAL MEAN	186		186		144	
HIGHEST ANNUAL MEAN					218	
LOWEST ANNUAL MEAN					67.5	
HIGHEST DAILY MEAN	985	Mar 17	1260	Mar 29	7600	Aug 14 1940
LOWEST DAILY MEAN	55	Oct 7	55	Oct 7	23	Aug 17 1954
ANNUAL SEVEN-DAY MINIMUM	58	Oct 3	58	Oct 3	25	Aug 11 1954
INSTANTANEOUS PEAK FLOW			3340	Oct 12	27000*	Aug 14 1940
INSTANTANEOUS PEAK STAGE			7.80	Oct 12	22.02*	Aug 14 1940
INSTANTANEOUS LOW FLOW			55*	Oct 7	22	Aug 17 1954
ANNUAL RUNOFF (CFSM)	2.08		2.08		1.61	
ANNUAL RUNOFF (INCHES)	28.29		28.24		21.94	
10 PERCENT EXCEEDS	292		283		232	
50 PERCENT EXCEEDS	168		158		113	
90 PERCENT EXCEEDS	90		89		60	

\* See REMARKS.

LOCATION.--Lat 36°09'09", long 81°08'45", Wilkes County, Hydrologic Unit 03040101, on right bank 150 ft upstream from bridge on State Highway 18 and 268 between North Wilkesboro and Wilkesboro, 150 ft downstream from Reddies River, 0.5 mi northeast of Wilkesboro, and 382 mi upstream from mouth of Pee Dee River in Winyah Bay.

PERIOD OF RECORD.--April 1903 to June 1909, October 1920 to current year. Prior to October 1928, published as "at North Wilkesboro".

GAGE.--Water-stage recorder. Datum of gage is 942.35 ft above National Geodetic Vertical Datum of 1929. Apr. 10, 1903 to June 30, 1909 and Oct. 17, 1920 to Apr. 10, 1929, nonrecording gage at site 1.2 mi downstream at different datum. Apr. 11, 1929 to Jan. 9, 1930, nonrecording gage at present site and datum. Datum used 1920-29 was about 1.2 ft lower than that used 1903-09. U.S. Army Corps of Engineers gage height radio telemeter, gage height telephone telemeter, and satellite data transmitter at station.

REMARKS.--No estimated daily discharges. Records good except those above 1,000 ft<sup>3</sup>/s, which are fair. Flow regulated by W. Kerr Scott Reservoir (station 02111391) 5.5 mi upstream since 1962 (station 02111391). Maximum discharge prior to regulation, 160,000 ft<sup>3</sup>/s Aug. 14, 1940, gage height, 37.6 ft, from floodmarks, from rating curve extended above 20,000 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow; minimum daily, 110 ft<sup>3</sup>/s Sept. 18, 19, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in July 1916 reached a stage of 34.5 ft present site and datum, from floodmark, discharge, 116,000 ft<sup>3</sup>/s, from rating curve extended as explained above.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	333	846	723	907	809	822	3780	1930	1020	841	670	520
2	356	868	766	865	737	1080	2540	1530	1050	867	624	497
3	345	848	827	862	736	1320	1600	1320	1200	868	620	462
4	358	847	945	853	779	1780	1100	1210	1040	854	614	446
5	362	838	880	791	817	1690	1150	1170	970	1120	586	453
6	357	828	811	786	840	1300	1080	1280	894	1000	562	453
7	360	855	755	812	839	1200	1030	1260	891	827	588	453
8	361	831	745	872	823	1010	967	1140	891	686	582	446
9	365	896	734	878	805	886	989	1060	901	704	650	439
10	417	1530	710	827	731	984	1170	1110	912	743	647	434
11	603	1320	665	1580	722	890	1030	1090	877	714	580	435
12	2150	974	657	2150	719	865	941	1040	856	718	568	428
13	3940	892	660	2540	730	933	1070	1020	878	749	595	444
14	5350	885	674	1800	899	925	1040	1080	826	732	655	451
15	5070	887	673	1180	858	814	1310	1280	830	595	774	435
16	4840	875	672	1800	765	800	1280	1340	981	573	636	432
17	3970	846	661	1760	663	845	1110	2140	1240	588	553	428
18	2590	845	668	1340	1030	1030	1010	1930	1400	725	540	427
19	2070	836	757	1190	1400	966	4090	2440	1370	815	530	436
20	2060	807	758	1480	1610	860	2740	2860	1210	982	500	428
21	1770	780	725	1340	1420	841	3940	2670	1030	955	475	422
22	2170	785	679	1070	1180	842	3930	2130	1100	662	473	423
23	3680	806	1400	1030	1030	906	3140	1780	1030	564	469	417
24	3530	850	2940	961	967	916	2030	1490	913	580	471	420
25	2460	824	3030	979	920	850	1480	1330	836	1120	475	430
26	1810	795	1990	930	894	783	1180	1310	830	1090	476	427
27	1220	755	1070	887	862	876	1280	1330	879	953	480	424
28	1070	792	1060	882	805	847	1850	1330	834	833	505	453
29	1070	811	1050	874	---	2860	2540	1380	836	834	534	452
30	925	725	1040	874	---	2480	2660	1180	843	798	526	445
31	904	---	985	871	---	3990	---	1140	---	743	532	---
TOTAL	56866	26277	30710	35971	25390	37191	55057	46300	29368	24833	17490	13260
MEAN	1834	876	991	1160	907	1200	1835	1494	979	801	564	442
MAX	5350	1530	3030	2540	1610	3990	4090	2860	1400	1120	774	520
MIN	333	725	657	786	663	783	941	1020	826	564	469	417
(+)	+3	0	-3	0	+4	+140	-135	-13	+3	-3	+3	-13
MEAN±	1837	876	988	11								

MEAN	694	683	767	871	968	1078	1078	916	827	706	752	646
MAX	3209	2571	1640	2269	2303	2341	2868	2334	2492	1642	4088	2462
(WY)	1907	1978	1907	1937	1960	1975	1980	1909	1909	1905	1940	1928
MIN	164	230	212	198	318	426	424	366	232	234	159	136
(WY)	1955	1956	1956	1956	1931	1927	1927	1926	1956	1988	1956	1956

ANNUAL TOTAL	417821			398713					
ANNUAL MEAN	1145	± 1095		1092	± 1066		821	± 822	
HIGHEST ANNUAL MEAN							1530		1907
LOWEST ANNUAL MEAN							345		1956
HIGHEST DAILY MEAN	5350	Oct 14		5350	Oct 14		66900	Aug 14	1940
LOWEST DAILY MEAN	327	Sep 28		333	Oct 1		110*	Sep 18	1956
ANNUAL SEVEN-DAY MINIMUM	331	Sep 25		353	Oct 1		116	Sep 15	1956
INSTANTANEOUS PEAK FLOW				8560	Apr 19		12800*	Apr 10	1983
INSTANTANEOUS PEAK STAGE				10.77	Apr 19		16.22*	Apr 10	1983
INSTANTANEOUS LOW FLOW				260	Oct 4		86*	Dec 4	1965
ANNUAL RUNOFF (CFSM)	2.27			2.17			1.63		
ANNUAL RUNOFF (INCHES)	30.84			29.43			22.14		
10 PERCENT EXCEEDS	2060			1950			1390		
50 PERCENT EXCEEDS	943			871			635		
90 PERCENT EXCEEDS	512			453			329		

(†) Change in contents, equivalent in cubic feet per second, in W. Kerr Scott Reservoir; provided by U.S. Army Corps of Engineers.

(+) Adjusted for change in W. Kerr Scott Reservoir.

\* For regulated period (1963 - 1991) only. See REMARKS.

## PEE DEE RIVER BASIN

02112120 ROARING RIVER NEAR ROARING RIVER, NC

LOCATION.--Lat 36°14'59", long 81°02'39", Wilkes County, Hydrologic Unit 03040101, on left bank at downstream end of old bridge pier, 800 ft upstream from bridge on Secondary Road 1990, 3.8 mi northwest of village of Roaring River, and 4.1 mi upstream from mouth.

DRAINAGE AREA.--128 mi<sup>2</sup>.

PERIOD OF RECORD.--Occasional low-flow measurements water years 1925, 1947, 1949-56, 1963. April 1964 to current year.

REVISED RECORDS.--WDR NC-80-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 964.85 ft above National Geodetic Vertical Datum of 1929. Prior to May 1, 1964, nonrecording gage on downstream side of bridge at same site and datum.

REMARKS.--No estimated daily discharges. Records good. Maximum discharge 26,600 ft<sup>3</sup>/s, from rating curve extended above 2,400 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow at gage heights 22.54 ft, 14.40 ft, and 10.83 ft. Minimum discharge for current water year also occurred Oct. 10.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of 1916 reached a stage of about 28 ft, estimated discharge, 45,000 ft<sup>3</sup>/s and the flood of August 1940 about 24 ft, estimated discharge, 31,000 ft<sup>3</sup>/s, from information by local residents and rating curve extended as explained above. A discharge of 24 ft<sup>3</sup>/s was measured Sept. 18, 1956.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	85	150	108	192	172	171	365	469	290	227	180	106
2	88	143	108	184	170	285	309	387	347	217	169	105
3	80	138	213	176	164	295	277	341	386	235	160	105
4	93	135	256	168	161	473	259	313	299	306	149	158
5	96	135	166	161	157	306	260	301	266	381	144	167
6	82	155	149	156	177	265	244	387	253	227	153	127
7	80	131	141	165	182	265	228	334	245	195	197	121
8	79	126	135	171	166	231	220	281	240	182	162	111
9	81	168	127	164	159	215	248	289	231	175	150	107
10	96	398	124	156	150	203	274	272	222	171	150	105
11	351	209	121	701	147	194	218	255	217	177	140	106
12	809	177	118	612	144	189	208	376	228	200	142	101
13	1190	161	118	351	150	195	242	345	216	208	155	104
14	351	151	115	276	226	221	232	424	207	175	161	107
15	213	145	113	246	178	192	416	468	220	159	179	99
16	168	141	118	456	157	181	325	369	226	154	143	105
17	147	136	116	334	173	178	270	538	230	160	134	100
18	975	130	123	278	294	269	244	334	239	188	131	100
19	497	127	138	251	359	217	1090	888	281	174	129	104
20	276	125	121	389	397	199	624	730	234	178	125	111
21	212	124	139	297	330	190	724	1030	304	157	120	94
22	635	121	132	258	268	197	467	658	282	147	119	94
23	1690	123	330	235	233	207	381	506	224	142	117	96
24	471	118	775	223	210	189	334	431	210	143	115	98
25	327	115	336	210	199	178	299	380	208	266	115	108
26	263	113	248	198	195	173	283	345	203	221	116	104
27	217	113	224	195	182	172	373	375	202	338	121	92
28	195	124	251	193	175	184	469	436	192	265	122	89
29	178	119	257	186	---	1820	513	401	193	352	120	88
30	167	110	233	187	---	820	669	345	198	229	114	87
31	158	---	217	187	---	463	---	316	---	194	109	---
TOTAL	10350	4361	5870	7956	5675	9337	11065	13324	7293	6543	4341	3199
MEAN	334	145	189	257	203	301	369	430	243	211	140	107
MAX	1690	398	775	701	397	1820	1090	1030	386	381	197	167
MIN	79	110	108	156	144	171	208	255	192	142	109	87
CFSM	2.61	1.14	1.48	2.01	1.58	2.35	2.88	3.36	1.90	1.65	1.09	.83
IN.	3.01	1.27	1.71	2.31	1.65	2.71	3.22	3.87	2.12	1.90	1.26	.93

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1991, BY WATER YEAR (WY)

	MEAN	163	158	172	184	225	253	256	219	191	161	140	143
MAX	422	426	382	372	413	539	637	430	432	349	355	446	
(WY)	1977	1978	1974	1978	1990	1975	1980	1991	1975	1989	1970	1971	
MIN	56.9	63.3	72.1	83.8	99.5	97.4	100	90.7	62.2	50.8	47.3	57.9	
(WY)	1989	1982	1989	1981	1989	1988	1986	1988	1988	1986	1988	1988	

## SUMMARY STATISTICS

## FOR 1990 CALENDAR YEAR

## FOR 1991 WATER YEAR

## WATER YEARS 1964 - 1991

ANNUAL TOTAL	85148		89314									
ANNUAL MEAN	233		245							190		
HIGHEST ANNUAL MEAN										258		1974
LOWEST ANNUAL MEAN										98.5		1988
HIGHEST DAILY MEAN	1690	Oct 23	1820	Mar 29	4530	Nov 6	1977					
LOWEST DAILY MEAN	79	Sep 28	79	Oct 8	32	Aug 27	1988					
ANNUAL SEVEN-DAY MINIMUM	81	Sep 24	84	Oct 3	38	Aug 22	1988					
INSTANTANEOUS PEAK FLOW			4540	Oct 12	26600*	Oct 17	1975					
INSTANTANEOUS PEAK STAGE			8.37	Oct 12	22.54*	Oct 17	1975					
INSTANTANEOUS LOW FLOW			77*	Oct 8	31	Aug 27	1988					
ANNUAL RUNOFF (CFSM)	1.82		1.91		1.48							
ANNUAL RUNOFF (INCHES)	24.75		25.96		20.12							
10 PERCENT EXCEEDS	394		397		304							
50 PERCENT EXCEEDS	200		193		145							
90 PERCENT EXCEEDS	101		109		81							

\* See REMARKS

## 02112250 YADKIN RIVER AT ELKIN, NC

LOCATION.--Lat 36°14'30", long 80°50'49", Yadkin County, Hydrologic Unit 03040101, on right bank at downstream side of bridge on U.S. Highway 21 at Elkin, 0.3 mi downstream from Elkin River, and 362 mi upstream from mouth of Pee Dee River in Winyah Bay.

DRAINAGE AREA.--869 mi<sup>2</sup>.

PERIOD OF RECORD.--April 1964 to current year.

REVISED RECORDS.--WDR NC-80-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 866.03 ft above National Geodetic Vertical Datum of 1929. Prior to Aug. 28, 1964, nonrecording gage on upstream side of bridge at same datum. U. S. Army Corps of Engineers gage-height radio telemeter and satellite telemeter at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Considerable regulation by W. Kerr Scott Reservoir (station 02111391). Maximum gage height, 24.88 ft, from graph based on hourly gage-height readings and floodmark. Minimum discharge for current water year also occurred on Oct. 2.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 1916 reached a stage of 36.0 ft, from information by North Carolina State Highway Commission. Flood of August 1940 reached a stage of 37.5 ft. A discharge of 172 ft<sup>3</sup>/s was measured on Sept. 19, 1956.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC.	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	688	1310	e980	1500	1340	1310	5190	3490	1810	1300	1170	877
2	719	1310	e960	1420	1230	1670	3920	2610	1670	1370	1060	829
3	721	1290	e1100	1360	1220	2350	2660	2240	2050	1340	1040	801
4	749	1270	e2300	1390	1220	3410	1850	2080	1900	1470	1010	782
5	813	1260	e1650	1280	1270	2820	1850	1940	1640	1800	989	917
6	749	1250	e1300	1260	1310	2020	1790	2150	1500	1670	986	820
7	730	1220	1100	1300	1390	2020	1710	2210	1470	1370	1400	819
8	729	1210	1080	1390	1330	1710	1610	1960	1460	1210	1040	792
9	729	1250	1050	1410	1300	1520	1550	1780	1450	1080	1070	774
10	792	2600	1020	1330	1220	1510	1840	1810	1460	1180	1090	755
11	1720	2170	968	3800	1180	1540	1690	1800	1420	1140	1010	743
12	2400	1570	946	4310	1160	1390	1500	1790	1380	1150	953	716
13	8200	1350	945	3760	1170	1520	1600	1840	1430	1230	984	717
14	6520	1290	956	2970	1390	1490	1740	1830	1360	1190	1030	755
15	5950	1260	961	1930	1400	1460	2220	2180	1390	1000	1240	732
16	5640	1240	966	2930	1240	1300	2250	2120	1510	962	1120	729
17	5220	1190	973	2920	1130	1360	1890	3380	1770	927	969	725
18	4490	1170	966	2210	1540	1680	1690	3110	2070	1090	937	719
19	3650	1150	1060	1900	2170	1690	6920	3790	2030	1200	914	739
20	2980	1120	1100	2450	2490	1460	4440	4680	2020	1400	900	764
21	2500	1080	1110	2320	2360	1410	6590	5210	1640	1540	836	713
22	3920	1070	1070	1810	1970	1410	5420	3980	1810	1130	819	701
23	9280	1070	2110	1700	1710	1590	4740	3000	1670	969	814	700
24	5290	1070	5650	1580	1580	1550	3120	2570	1470	940	808	700
25	3990	1070	4490	1570	1530	1500	2500	2200	1360	1880	802	714
26	2720	1050	3150	1540	1470	1280	1960	2120	1300	1670	808	728
27	2120	1020	1770	1440	1420	1410	2200	2110	1350	1690	831	694
28	1660	e980	1800	1430	1340	1420	3090	2160	1340	1590	851	701
29	1670	e1000	1760	1400	---	8070	4450	2460	1250	1620	865	710
30	1480	e990	1720	1390	---	5450	5180	1990	1360	1390	866	710
31	1430	---	1650	1390	---	5140	---	1970	---	1290	851	---
TOTAL	90249	37880	48661	60390	41080	65460	89160	78560	47340	40788	30063	22576
MEAN	2911	1263	1570	1948	1467	2112	2972	2534	1578	1316	970	753
MAX	9280	2600	5650	4310	2490	8070	6920	5210	2070	1880	1400	917
MIN	688	980	945	1260	1130	1280	1500	1780	1250	927	802	694
IN.	3.86	1.62	2.08	2.59	1.76	2.80	3.82	3.36	2.03	1.75	1.29	.97

e Estimated

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1991, BY WATER YEAR (WY)

	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
MEAN	1197	1188	1263	1369	1645	1898	1902	1589	1401	1096	1108	1024																
MAX	2911	3871	2591	3129	2978	3885	4510	2887	2942	1922	3128	2910																
(WY)	1991	1978	1974	1978	1990	1975	1980	1973	1975	1989	1970	1979																
MIN	372	428	532	617	751	745	737	729	507	433	361	416																
(WY)	1989	1982	1989	1966	1989	1988	1986	1988	1988	1988	1988	1988																

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1964 - 1991
ANNUAL TOTAL	641213	652207	
ANNUAL MEAN	1757	1787	1395
HIGHEST ANNUAL MEAN			1951
LOWEST ANNUAL MEAN			698
HIGHEST DAILY MEAN	9280	Oct 23	21500
LOWEST DAILY MEAN	678	Sep 26	246
ANNUAL SEVEN-DAY MINIMUM	684	Sep 25	257
INSTANTANEOUS PEAK FLOW			28700
INSTANTANEOUS PEAK STAGE			24.88*
INSTANTANEOUS LOW FLOW			239
ANNUAL RUNOFF (INCHES)	27.45	27.92	21.81
10 PERCENT EXCEEDS	3270	3130	2310
50 PERCENT EXCEEDS	1400	1410	1060
90 PERCENT EXCEEDS	791	808	618

\* See REMARKS.

## PEE DEE RIVER BASIN

02112360 MITCHELL RIVER NEAR STATE ROAD, NC

LOCATION.--Lat 36°18'42", long 80°48'26", Surry County, Hydrologic Unit 03040101, on right bank 280 ft upstream from bridge on Secondary Road 1001, 1.8 mi upstream from Grass Creek, and 3.3 mi east of State Road.

DRAINAGE AREA.--78.8 mi<sup>2</sup>.

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1952-58, 1963. April 1964 to current year.

REVISED RECORDS.--WDR NC-80-1: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 927.12 ft above National Geodetic Vertical Datum of 1929. Prior to Aug. 29, 1964, nonrecording gage at same site and datum.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Several measurements of water temperatures were made during the year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known since at least 1900, about 18 ft in August 1940, from information by local resident, estimated discharge, 9,000 ft<sup>3</sup>/s. A discharge of 16 ft<sup>3</sup>/s was measured on Sept. 19, 1956.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	68	119	94	131	132	133	253	304	179	161	109	121
2	71	116	93	128	130	e132	226	262	179	154	111	79
3	73	112	139	125	130	e180	207	242	215	159	98	73
4	81	110	174	121	130	e700	198	229	182	157	93	73
5	84	109	124	118	130	e330	194	221	169	160	91	78
6	71	119	115	116	137	e200	188	287	164	155	91	75
7	68	108	112	125	148	e195	182	240	159	137	94	74
8	66	106	109	127	136	e170	177	212	169	130	101	70
9	65	122	105	125	131	e160	178	205	173	125	101	71
10	88	256	103	120	128	e150	190	203	173	127	94	67
11	382	150	101	500	126	e135	168	218	170	149	92	68
12	419	134	101	386	123	e122	164	400	171	132	86	66
13	1380	125	101	225	125	142	181	250	172	157	93	65
14	217	119	98	185	164	167	182	226	164	132	97	70
15	152	115	97	168	144	157	265	213	162	121	112	64
16	127	114	97	277	128	149	231	197	168	e100	93	76
17	113	112	97	199	129	148	198	196	197	e105	85	69
18	471	107	101	175	156	194	185	186	190	108	79	66
19	277	106	110	164	e220	168	358	260	271	116	81	79
20	173	105	100	237	e210	157	324	309	185	122	83	95
21	144	103	107	184	e180	154	477	513	181	110	75	72
22	576	103	106	165	166	155	301	342	186	101	73	71
23	1110	103	166	155	155	162	261	274	163	97	71	71
24	308	103	348	150	147	157	238	251	156	93	69	71
25	223	96	173	144	145	148	219	232	153	147	65	72
26	182	95	146	139	143	146	211	216	148	126	65	71
27	161	95	138	138	138	146	248	214	148	147	69	64
28	149	99	154	138	134	149	289	214	145	137	86	61
29	138	101	159	133	---	1140	357	209	138	155	85	61
30	129	95	149	135	---	546	564	194	149	127	77	61
31	124	---	142	139	---	300	---	189	---	118	75	---
TOTAL	7690	3457	3959	5372	4065	7092	7414	7708	5179	4065	2694	2174
MEAN	248	115	128	173	145	229	247	249	173	131	86.9	72.5
MAX	1380	256	348	500	220	1140	564	513	271	161	112	121
MIN	65	95	93	116	123	122	164	186	138	93	65	61
CFSM	3.15	1.46	1.62	2.20	1.84	2.90	3.14	3.16	2.19	1.66	1.10	.92
IN.	3.63	1.63	1.87	2.54	1.92	3.35	3.50	3.64	2.44	1.92	1.27	1.03

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1991, BY WATER YEAR (WY)

	118	108	116	122	147	170	170	152	127	109	108	108
MEAN	118	108	116	122	147	170	170	152	127	109	108	108
MAX	248	211	230	218	258	321	426	264	233	228	247	313
(WY)	1991	1980	1974	1978	1966	1975	1983	1973	1975	1989	1970	1979
MIN	40.1	48.7	47.0	48.3	64.9	72.8	69.1	69.4	50.0	35.9	32.1	54.3
(WY)	1989	1982	1989	1981	1989	1981	1981	1988	1988	1986	1981	1988

SUMMARY STATISTICS

FOR 1990 CALENDAR YEAR

FOR 1991 WATER YEAR

WATER YEARS 1964 - 1991

ANNUAL TOTAL	57480	60869	
ANNUAL MEAN	157	167	129
HIGHEST ANNUAL MEAN			175
LOWEST ANNUAL MEAN			66.5
HIGHEST DAILY MEAN	1380	Oct 13	3260
LOWEST DAILY MEAN	64	Sep 27	23
ANNUAL SEVEN-DAY MINIMUM	66	Sep 24	25
INSTANTANEOUS PEAK FLOW			2360
INSTANTANEOUS PEAK STAGE			5.86
INSTANTANEOUS LOW FLOW			53
ANNUAL RUNOFF (CFSM)	2.00	2.12	1.64
ANNUAL RUNOFF (INCHES)	27.14	28.74	22.32
10 PERCENT EXCEEDS	230	258	201
50 PERCENT EXCEEDS	146	139	102
90 PERCENT EXCEEDS	79	75	57

LOCATION.--Lat 36°21'26", long 80°41'10", Surry County, Hydrologic Unit 03040101, on left bank 500 ft upstream from bridge on State Highway 268, 1 mi upstream from Cody Creek, and 2 mi northwest of Copeland.

PERIOD OF RECORD.--October 1931 to current year.

REVISED RECORDS.--WSP 1303: 1933 (M). WDR NC-80-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 913 ft, by barometer. Prior to Sept. 5, 1936, nonrecording gage at same site and datum.

REMARKS.--No estimated daily discharges. Records good. Some irrigation diversions at times in the growing season. Several measurements of water temperature were made during the year. Maximum discharge, 34,200 ft<sup>3</sup>/s, from rating curve extended above 6,200 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow at gage height 18.4 ft. Minimum discharge for current water year also occurred on Sept. 15, 18.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	75	152	116	184	152	151	322	382	170	133	121	120
2	81	147	116	175	149	218	270	294	167	136	114	89
3	74	142	189	169	149	491	244	257	232	143	108	82
4	84	138	339	162	147	1110	229	239	174	138	101	83
5	101	138	184	156	146	336	226	231	158	151	94	84
6	80	148	160	153	159	259	215	275	154	143	95	85
7	76	134	151	168	186	257	203	237	150	121	98	87
8	74	130	146	176	161	220	196	208	148	113	107	81
9	77	147	138	169	152	203	202	204	144	109	113	76
10	97	505	134	159	147	195	232	205	138	117	101	74
11	739	223	132	1310	142	183	191	255	135	197	96	76
12	365	183	129	881	138	177	182	243	139	126	89	74
13	1580	165	127	354	142	188	217	227	139	147	99	71
14	338	155	125	263	208	205	225	275	129	114	103	81
15	213	149	123	230	170	185	362	255	126	104	130	74
16	171	145	126	656	143	172	318	197	137	102	100	74
17	151	142	123	338	151	169	244	195	183	101	91	74
18	704	137	130	256	238	251	221	185	206	107	88	72
19	489	133	142	229	290	205	456	214	1110	110	86	104
20	242	132	127	399	283	183	453	349	291	209	104	144
21	195	129	146	264	240	176	663	914	226	162	83	84
22	885	128	141	220	205	196	377	441	218	116	79	80
23	2260	130	281	203	188	213	297	294	181	103	77	79
24	490	127	836	192	177	192	263	250	168	96	75	80
25	303	123	282	182	171	174	240	227	162	235	74	87
26	246	120	216	174	171	168	229	212	157	127	73	89
27	212	119	201	168	160	165	310	204	154	172	82	79
28	193	124	248	163	154	170	445	213	148	176	194	74
29	178	128	256	157	---	2560	480	202	140	162	120	74
30	166	118	219	155	---	1050	861	185	137	150	91	73
31	159	---	203	160	---	441	---	178	---	131	83	---
TOTAL	11098	4591	5986	8625	4919	10863	9373	8247	5921	4251	3069	2504
MEAN	358	153	193	278	176	350	312	266	197	137	99.0	83.5
MAX	2260	505	836	1310	290	2560	861	914	1110	235	194	144
MIN	74	118	116	153	138	151	182	178	126	96	73	71
CFSM	2.80	1.20	1.51	2.17	1.37	2.74	2.44	2.08	1.54	1.07	.77	.65
IN.	3.23	1.33	1.74	2.51	1.43	3.16	2.72	2.40	1.72	1.24	.89	.47

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1932 - 1991, BY WATER YEAR (WY)

MEAN	154	149	169	194	219	244	242	199	176	151	152	146
MAX	580	344	365	526	539	551	746	387	491	397	510	735
(WY)	1938	1935	1974	1936	1960	1975	1983	1950	1947	1943	1940	1979
MIN	40.2	53.7	58.1	54.4	68.7	103	103	77.6	47.5	31.3	24.6	27.9
(WY)	1942	1932	1956	1956	1934	1981	1981	1941	1956	1986	1981	1954

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1932 - 1991
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ANNUAL TOTAL	78296		79447			
ANNUAL MEAN	215		218		183	
HIGHEST ANNUAL MEAN					281	1979
LOWEST ANNUAL MEAN					87.6	1956
HIGHEST DAILY MEAN	2260	Oct 23	2560	Mar 29	12100	Sep 22 1979
LOWEST DAILY MEAN	70	Sep 8	71	Sep 13	13	Aug 28 1981
ANNUAL SEVEN-DAY MINIMUM	71	Sep 24	74	Sep 12	15	Aug 25 1981
INSTANTANEOUS PEAK FLOW			5240	Mar 29	34200*	Sep 22 1979
INSTANTANEOUS PEAK STAGE			8.80	Mar 29	19.61	Sep 22 1979
INSTANTANEOUS LOW FLOW			69*	Sep 13	12	Aug 30 1981
ANNUAL RUNOFF (CFSM)	1.68		1.70		1.43	
ANNUAL RUNOFF (INCHES)	22.75		23.09		19.40	
10 PERCENT EXCEEDS	336		337		291	
50 PERCENT EXCEEDS	184		162		137	
90 PERCENT EXCEEDS	85		84		67	

\* See REMARKS.

## PEE DEE RIVER BASIN

02113850 ARARAT RIVER AT ARARAT, NC

LOCATION.--Lat 36°24'16", long 80°33'43", Surry County, Hydrologic Unit 03040101, on right bank 265 ft upstream from bridge on Secondary Road 2019 at Ararat, and 300 ft downstream from Flat Shoal Creek.

DRAINAGE AREA.--231 mi<sup>2</sup>.

PERIOD OF RECORD.--April 1964 to current year.

GAGE.--Water-stage recorder. Datum of gage is 880.97 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Minimum discharge, 19 ft<sup>3</sup>/s also occurred Aug. 30, 1981. Minimum discharge for current water year also occurred Sept. 13, 15.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 14, 1947 reached a stage of 21.4 ft, result of failure of dams upstream, discharge 26,000 ft<sup>3</sup>/s, from information by local resident.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	154	294	265	e350	e300	336	660	690	428	301	256	184
2	164	281	265	e335	e300	447	578	583	774	307	234	163
3	150	280	e360	e320	e290	758	534	528	836	362	221	156
4	172	280	e640	e310	e290	1620	506	501	452	344	213	162
5	198	296	e400	e295	e295	632	501	494	e370	383	195	162
6	157	281	e330	e280	e320	517	489	557	e350	319	190	173
7	152	265	e300	e320	e360	536	468	535	e340	281	266	174
8	148	261	e290	e340	e320	464	458	480	e340	266	477	151
9	152	714	e270	e320	e300	436	467	474	e320	259	386	148
10	231	461	e260	e300	e290	421	512	471	e310	279	312	142
11	1830	362	e255	e1750	e280	402	442	459	e310	418	240	148
12	626	335	e250	e1250	e270	395	430	481	e320	326	225	138
13	1710	308	e250	e830	e290	427	516	469	e310	425	234	137
14	510	299	e240	e680	e380	460	505	558	e300	286	245	148
15	344	296	e235	e460	e350	417	633	678	e290	250	268	156
16	293	288	e250	e980	e290	392	575	469	e340	236	234	175
17	263	278	e240	e750	e310	385	501	456	e370	234	215	144
18	1090	275	e260	e560	e450	606	474	437	468	256	209	138
19	799	272	e280	482	e580	486	678	459	1710	349	204	275
20	385	271	e250	684	e520	432	676	702	564	336	281	238
21	305	266	e290	452	e460	413	728	1390	518	413	185	149
22	1860	265	e270	394	e410	513	580	827	438	268	170	144
23	2530	274	e600	378	e370	494	e500	615	389	250	165	141
24	766	259	e1200	359	e350	441	e470	549	370	239	161	144
25	526	248	e700	348	e340	410	e450	512	355	373	159	157
26	437	262	e450	344	e335	397	428	487	350	278	163	182
27	375	259	e390	335	e320	394	551	480	339	290	179	172
28	349	274	e465	336	341	391	898	499	334	288	288	148
29	334	278	e500	329	---	3370	719	471	332	297	232	143
30	320	268	e445	310	---	1640	1120	457	325	287	190	139
31	306	---	e380	307	---	846	---	448	---	256	177	---
TOTAL	17636	9050	11580	15488	9711	19878	17047	17216	13252	9456	7174	4831
MEAN	569	302	374	500	347	641	568	555	442	305	231	161
MAX	2530	714	1200	1750	580	3370	1120	1390	1710	425	477	275
MIN	148	248	235	280	270	336	428	437	290	234	159	137
CFSM	2.46	1.31	1.62	2.16	1.50	2.78	2.46	2.40	1.91	1.32	1.00	.70
IN.	2.84	1.46	1.86	2.49	1.56	3.20	2.75	2.77	2.13	1.52	1.16	.78

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1991, BY WATER YEAR (WY)

	MEAN	258	246	285	319	371	425	430	367	322	260	244	236
MAX	587	469	584	743	691	851	1048	591	736	554	536	879	
(WY)	1977	1972	1974	1978	1990	1975	1980	1973	1982	1989	1985	1979	
MIN	104	111	124	120	187	172	170	167	110	81.9	45.4	98.2	
(WY)	1987	1982	1989	1981	1989	1981	1967	1988	1988	1986	1981	1968	

SUMMARY STATISTICS

FOR 1990 CALENDAR YEAR

FOR 1991 WATER YEAR

WATER YEARS 1964 - 1991

ANNUAL TOTAL	148644		152319										
ANNUAL MEAN	407		417							314			
HIGHEST ANNUAL MEAN										462		1979	
LOWEST ANNUAL MEAN										150		1981	
HIGHEST DAILY MEAN	2680	Feb 10		3370	Mar 29					13600	Sep 22	1979	
LOWEST DAILY MEAN	137	Jul 7		137	Sep 13					21	Aug 29	1981	
ANNUAL SEVEN-DAY MINIMUM	152	Sep 25		145	Sep 8					23	Aug 24	1981	
INSTANTANEOUS PEAK FLOW				6730	Mar 29					35000	Sep 22	1979	
INSTANTANEOUS PEAK STAGE				10.99	Mar 29					24.46	Sep 22	1979	
INSTANTANEOUS LOW FLOW				134*	Sep 12					19*	Aug 29	1981	
ANNUAL RUNOFF (CFSM)	1.76			1.81						1.36			
ANNUAL RUNOFF (INCHES)	23.94			24.53						18.44			
10 PERCENT EXCEEDS	634			666						505			
50 PERCENT EXCEEDS	341			336						240			
90 PERCENT EXCEEDS	178			173						127			

\* See REMARKS.

## 02114450 LITTLE YADKIN RIVER AT DALTON, NC

LOCATION.--Lat 36°17'56", long 80°25'53", Stokes County, Hydrologic Unit 03040101, on left bank 1,200 ft downstream from bridge on U.S. Highway 52, 1.0 mi southwest of Dalton, 1.3 mi downstream from Southern Railway bridge, and 2.0 mi downstream from Danbury Creek.

DRAINAGE AREA.--42.8 mi<sup>2</sup>.

PERIOD OF RECORD.--August 1960 to current year.

REVISED RECORDS.--WSP 2104: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 813.7 ft above National Geodetic Vertical Datum of 1929 (North Carolina State Highway Commission bench mark).

REMARKS.--No estimated daily discharges. Records good. A Soil Conservation Service flood-control dam on upstream tributary, drainage area 4.7 mi<sup>2</sup> with flood storage of 695 acre-ft, was completed on June 21, 1977. Maximum discharge, 9,400 ft<sup>3</sup>/s, from rating curve extended above 2,700 ft<sup>3</sup>/s on basis of slope-area measurement at gage height 17.86 ft. Minimum discharge for current water year also occurred Aug. 7 and several days in Sept.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	36	27	55	35	42	117	109	34	23	18	16
2	16	34	27	49	35	61	83	69	50	22	18	15
3	15	33	62	46	35	306	68	57	58	24	17	16
4	18	34	158	44	34	344	61	51	38	25	15	16
5	22	33	67	41	34	108	58	49	32	24	14	16
6	17	34	48	38	40	76	54	52	30	24	13	16
7	17	31	41	75	50	78	51	51	29	21	15	16
8	17	30	37	72	42	62	50	43	29	20	37	15
9	18	39	34	60	39	55	52	43	29	19	46	14
10	94	194	32	51	37	52	54	42	27	19	38	14
11	806	67	31	565	36	49	46	40	27	28	21	14
12	260	49	30	302	34	47	44	40	28	29	19	14
13	776	41	29	114	37	52	53	39	27	27	19	13
14	118	39	28	67	44	49	59	43	25	21	39	14
15	59	37	27	54	37	46	107	43	25	19	37	18
16	43	35	28	291	35	44	86	37	25	18	22	16
17	34	34	27	108	35	44	62	36	26	18	19	14
18	89	30	29	64	85	125	53	34	42	19	18	14
19	74	30	33	52	100	75	77	43	145	26	17	14
20	43	30	28	238	76	57	76	107	48	21	18	14
21	36	33	32	95	63	51	89	249	37	20	16	13
22	1000	30	30	61	54	53	66	98	44	18	16	12
23	1020	32	870	51	48	104	56	64	41	16	15	12
24	253	30	663	47	45	86	51	54	33	15	15	13
25	132	29	160	43	45	60	47	48	31	21	17	15
26	95	28	87	41	50	53	46	43	28	17	16	17
27	60	27	67	40	44	50	57	40	27	18	17	14
28	51	31	93	40	42	48	82	57	26	19	35	13
29	42	33	92	38	---	1540	167	44	25	21	31	12
30	39	29	69	39	---	467	399	37	24	21	20	12
31	36	---	74	39	---	179	---	34	---	21	17	---
TOTAL	5316	1192	3060	2920	1291	4463	2371	1796	1090	654	675	432
MEAN	171	39.7	98.7	94.2	46.1	144	79.0	57.9	36.3	21.1	21.8	14.4
MAX	1020	194	870	565	100	1540	399	249	145	29	46	18
MIN	15	27	27	38	34	42	44	34	24	15	13	12
CFSM	4.01	.93	2.31	2.20	1.08	3.36	1.85	1.35	.85	.49	.51	.34
IN.	4.62	1.04	2.66	2.54	1.12	3.88	2.06	1.56	.95	.57	.59	.38

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1991, BY WATER YEAR (WY)

	MEAN	40.1	31.8	48.3	57.1	68.2	80.8	61.0	48.5	40.5	34.1	30.7	27.9
MAX	171	79.9	113	136	163	250	217	154	155	128	120	172	
(WY)	1991	1986	1974	1978	1990	1975	1987	1984	1962	1978	1970	1979	
MIN	7.47	11.2	16.4	17.2	25.0	20.1	18.0	14.0	7.15	4.27	6.48	5.08	
(WY)	1987	1968	1966	1981	1977	1967	1967	1986	1986	1986	1986	1968	

## SUMMARY STATISTICS

## FOR 1990 CALENDAR YEAR

## FOR 1991 WATER YEAR

## WATER YEARS 1960 - 1991

ANNUAL TOTAL	31897	25260	
ANNUAL MEAN	87.4	69.2	47.2
HIGHEST ANNUAL MEAN			75.2
LOWEST ANNUAL MEAN			22.1
HIGHEST DAILY MEAN	1910	Mar 17	3350
LOWEST DAILY MEAN	14	Jul 7	1.6
ANNUAL SEVEN-DAY MINIMUM	15	Sep 24	2.3
INSTANTANEOUS PEAK FLOW			9400*
INSTANTANEOUS PEAK STAGE			20.29
INSTANTANEOUS LOW FLOW			1.3
ANNUAL RUNOFF (CFSM)	2.04	1.62	1.10
ANNUAL RUNOFF (INCHES)	27.72	21.95	15.00
10 PERCENT EXCEEDS	156	99	73
50 PERCENT EXCEEDS	43	38	26
90 PERCENT EXCEEDS	18	16	12

See REMARKS.

## PEE DEE RIVER BASIN

02115360 YADKIN RIVER AT ENON, NC

LOCATION.--Lat 36°07'55", long 80°26'39", Forsyth County, Hydrologic Unit 03040101, on left bank 50 ft upstream from bridge on Secondary Road 1525, 1.5 mi east of Enon, 4 mi upstream from Forbush Creek, and 324 mi upstream from mouth of Pee Dee River in Winyah Bay.

DRAINAGE AREA.--1,694 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1964 to current year.

REVISED RECORDS.--WDR NC-72-1: 1970 (M). WDR NC-80-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 701.71 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 6, 1968, nonrecording gage on downstream side of bridge at same site and datum. U.S. Army Corps of Engineers gage height radio telemeter and satellite data transmitter at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Some regulation by W. Kerr Scott Reservoir (station 02111391). Minimum discharge, 363 ft<sup>3</sup>/s, also occurred Sept. 1, 1981.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Aug. 15, 1940 reached an elevation of 737.5 ft above National Geodetic Vertical Datum of 1929 (35.8 ft above gage datum), from information by U. S. Army Corps of Engineers.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1160	2380	1840	2930	2530	2510	7500	6770	3310	2450	2140	1550
2	1190	2270	1830	2720	2420	2850	6310	4880	3110	2440	2000	1520
3	1220	2260	1960	2610	2340	4360	4740	4180	4230	2730	1910	1450
4	1200	2200	4480	2570	2330	11500	3810	3800	3480	2880	1870	1430
5	1420	2180	2980	2480	2360	5440	3400	3590	3070	2780	1800	1470
6	1330	2200	2450	2380	2430	4160	3450	3660	2850	3200	1710	1530
7	1220	2190	2240	2530	2740	3780	3240	4180	2740	2590	2110	1480
8	1190	2130	2150	2840	2610	3390	3120	3600	2700	2290	2230	1440
9	1190	2090	2080	2730	2460	3050	3050	3350	2680	2090	2380	1380
10	1340	4760	2020	2600	2390	2840	3330	3330	2620	2080	2040	1340
11	9210	4020	2000	6830	2300	2860	3280	3380	2600	2560	1900	1330
12	3560	3080	e1950	10700	2250	2690	2960	3410	2570	2240	1700	1340
13	17900	2590	e1900	e5500	2240	2710	2920	3430	2600	2460	1710	1300
14	8520	2390	e1930	e4400	2500	2840	3450	3270	2520	2300	1880	1340
15	7440	2320	e1900	e4700	2730	2840	3580	4020	2470	2070	2120	1370
16	6670	2270	e1900	e7000	2430	2570	4850	3570	2640	1870	1990	1370
17	6270	2240	e1930	e6000	2290	2520	3740	4200	2900	1830	1730	1350
18	5240	2150	e1950	e5600	2540	3190	3360	4630	3720	1900	1580	1310
19	8510	2120	e2050	e5000	4090	e3300	5330	4810	6140	2110	1540	1310
20	4320	2090	e2000	e6000	4120	e2750	8900	6810	4140	2580	1610	1660
21	3860	2040	2080	e5500	4310	e2630	9090	10800	3270	2670	1510	1390
22	6090	1990	2120	e4500	3640	e2600	7870	7640	3370	2370	1400	1270
23	30100	1990	3540	e3900	3250	e2900	6840	5240	4080	1960	1380	1250
24	e9000	2020	14800	e3300	2980	e2800	5320	4460	2890	1800	1370	1260
25	e6500	2030	7000	e3700	2850	e2730	4390	3890	2690	2440	1350	1300
26	e4800	1980	5120	e3500	2830	e2700	3690	3640	2560	2830	1350	1380
27	e4100	1930	3810	e4000	2710	e2750	3650	3530	2530	2700	1370	1310
28	e3600	1910	3450	e3400	2600	2600	5790	3670	2550	2770	1990	1240
29	e3200	2010	3600	e2700	---	16400	6550	3940	2440	2600	2070	1260
30	2680	1960	3330	e2600	---	22100	13400	3560	2450	2610	1600	1250
31	2470	---	3240	e2700	---	7860	---	3380	---	2300	1510	---
TOTAL	166500	69790	95630	127920	77270	140220	150910	136620	91920	74500	54850	41180
MEAN	5371	2326	3085	4126	2760	4523	5030	4407	3064	2403	1769	1373
MAX	30100	4760	14800	10700	4310	22100	13400	10800	6140	3200	2380	1660
MIN	1160	1910	1830	2380	2240	2510	2920	3270	2440	1800	1350	1240
IN.	3.66	1.53	2.10	2.81	1.70	3.08	3.31	3.00	2.02	1.64	1.20	.90

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1991, BY WATER YEAR (WY)

	2204	2075	2351	2604	3030	3495	3420	2925	2518	1991	2001	1863
MEAN	2204	2075	2351	2604	3030	3495	3420	2925	2518	1991	2001	1863
MAX	5371	5128	4814	5725	5645	7848	7337	4989	5435	3485	5611	5810
(WY)	1991	1978	1974	1978	1990	1975	1980	1973	1972	1989	1970	1979
MIN	689	896	1107	1051	1560	1443	1390	1298	748	654	623	815
(WY)	1989	1982	1966	1981	1989	1981	1985	1988	1988	1986	1988	1988

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR		FOR 1991 WATER YEAR		WATER YEARS 1964 - 1991	
ANNUAL TOTAL	1252090		1227310			
ANNUAL MEAN	3430		3362		2534	
HIGHEST ANNUAL MEAN					3605	
LOWEST ANNUAL MEAN					1332	
HIGHEST DAILY MEAN	30100	Oct 23	30100	Oct 23	48400	Sep 22 1979
LOWEST DAILY MEAN	1130	Sep 28	1160	Oct 1	368	Sep 1 1981
ANNUAL SEVEN-DAY MINIMUM	1150	Sep 25	1250	Oct 1	384	Aug 26 1981
INSTANTANEOUS PEAK FLOW			39200	Mar 29	73300	Jun 21 1972
INSTANTANEOUS PEAK STAGE			23.67	Mar 29	29.52	Sep 22 1979
INSTANTANEOUS LOW FLOW			1150	Oct 1	363*	Aug 31 1981
ANNUAL RUNOFF (CFSM)	2.03		1.98		1.50	
ANNUAL RUNOFF (INCHES)	27.50		26.95		20.33	
10 PERCENT EXCEEDS	5930		5680		4230	
50 PERCENT EXCEEDS	2860		2630		1940	
90 PERCENT EXCEEDS	1430		1410		1080	

\* See REMARKS.

02115860 MUDDY CREEK NEAR MUDDY CREEK, NC

LOCATION.--Lat 36°00'01", long 80°20'25", Forsyth County, Hydrologic Unit 03040101, on right bank 100 ft upstream from bridge on Secondary Road 2995, 0.2 mi downstream from Salem Creek, and 1.8 mi east of community of Muddy Creek.

DRAINAGE AREA.--178 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1964 to September 1979, February 1988 to September 1991 (discontinued).

GAGE.--Water-stage recorder. Datum of gage is 682.67 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records fair. Records on falling stages following peaks above 14 ft, may be affected by backwater and subject to error. Some regulation by Salem Lake and considerable diurnal fluctuation from sewage effluent and waste water. The City of Winston-Salem diverted an average of about 31.0 ft<sup>3</sup>/s from Salem Lake in the basin and 46.0 ft<sup>3</sup>/s from the Yadkin River for water supply. An average of about 25.0 ft<sup>3</sup>/s sewage effluent was returned to Salem Creek 3.5 mi above the station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	82	152	169	332	167	157	428	1080	207	141	140	112
2	84	148	158	249	160	238	309	405	178	133	205	112
3	81	143	460	232	156	1270	258	256	161	195	163	110
4	107	138	1260	252	158	1740	224	209	130	217	123	110
5	110	138	429	200	161	493	238	186	117	195	119	109
6	82	148	263	183	171	282	211	236	114	232	118	109
7	71	138	224	502	196	238	183	197	115	147	306	129
8	78	136	203	475	176	226	181	153	115	137	535	109
9	80	189	184	325	166	193	197	149	115	133	213	108
10	413	1040	180	256	164	173	226	160	117	130	230	107
11	4380	297	175	1770	162	166	171	184	121	163	129	107
12	2060	209	167	1690	161	165	162	151	122	132	139	106
13	3960	182	165	523	166	201	182	159	122	131	140	106
14	922	168	162	313	214	182	260	140	123	127	248	105
15	338	161	157	248	173	164	415	150	124	124	320	105
16	236	157	154	643	154	155	1530	130	125	123	142	105
17	192	154	152	343	154	152	365	128	136	122	128	103
18	289	144	162	244	364	613	234	129	246	124	124	103
19	278	144	253	210	284	279	409	3140	445	121	122	139
20	170	143	173	923	236	189	384	1240	208	143	120	177
21	149	144	210	426	214	166	665	1030	177	124	119	103
22	592	142	185	266	198	163	312	428	204	119	118	102
23	4080	144	221	223	185	162	230	233	654	118	117	101
24	1680	152	1250	207	172	149	199	177	203	117	116	100
25	492	142	357	196	175	140	178	146	162	124	115	168
26	486	144	239	185	251	138	170	130	155	157	114	130
27	254	147	243	183	174	138	167	123	152	150	117	100
28	198	216	308	178	162	139	206	305	147	120	194	101
29	178	420	249	174	---	2980	307	312	141	118	167	115
30	164	202	222	181	---	5210	2890	144	143	161	116	99
31	158	---	846	197	---	1000	---	135	---	146	114	---
TOTAL	22444	5982	9580	12329	5274	17661	11891	11745	5279	4424	5171	3390
MEAN	724	199	309	398	188	570	396	379	176	143	167	113
MAX	4380	1040	1260	1770	364	5210	2890	3140	654	232	535	177
MIN	71	136	152	174	154	138	162	123	114	117	114	99
CFSM	3.89	1.07	1.66	2.14	1.01	3.06	2.13	2.04	.95	.77	.90	.61
IN.	4.49	1.20	1.92	2.47	1.05	3.53	2.38	2.35	1.06	.88	1.03	.68

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1991, BY WATER YEAR (WY)

	MEAN	250	161	241	296	300	303	232	275	214	184	189	168
MAX	724	330	519	697	670	570	396	546	784	644	705	500	
(WY)	1991	1973	1974	1978	1979	1991	1991	1972	1972	1975	1970	1979	
MIN	71.3	78.8	75.6	117	121	117	103	120	88.0	81.8	82.2	50.6	
(WY)	1968	1968	1989	1966	1968	1967	1967	1988	1967	1967	1968	1968	

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR			FOR 1991 WATER YEAR			WATER YEARS 1964 - 1991		
ANNUAL TOTAL	108595			115170					
ANNUAL MEAN	298			316			238		
HIGHEST ANNUAL MEAN							336		
LOWEST ANNUAL MEAN							118		
HIGHEST DAILY MEAN	4380	Oct 11		5210	Mar 30		8130	Jun 22	1972
LOWEST DAILY MEAN	71	Oct 7		71	Oct 7		35	Oct 6	1968
ANNUAL SEVEN-DAY MINIMUM	79	Sep 2		87	Oct 3		46	Sep 30	1968
INSTANTANEOUS PEAK FLOW				6340	Mar 30		14500	Jun 22	1972
INSTANTANEOUS PEAK STAGE				18.59	Mar 30		21.26	Jun 22	1972
INSTANTANEOUS LOW FLOW				64	Oct 7		21	Oct 6	1968
ANNUAL RUNOFF (CFSM)	1.60			1.70			1.28		
ANNUAL RUNOFF (INCHES)	21.72			23.03			17.41		
10 PERCENT EXCEEDS	584			466			370		
50 PERCENT EXCEEDS	174			167			143		
90 PERCENT EXCEEDS	86			115			84		

## PEE DEE RIVER BASIN

02115900 SOUTH FORK MUDDY CREEK NEAR CLEMMONS, NC

LOCATION.--Lat 36°00'22", long 80°18'07, Forsyth County, Hydrologic Unit 03040101, on right bank 5 ft upstream from bridge on Secondary Road 2902, 1.9 mi downstream from Leak Creek, and 4.2 mi southeast of Clemmons.

DRAINAGE AREA.--42.2 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1964 to September 1979. February 1988 to September 1991 (discontinued).

GAGE.--Water-stage recorder. Elevation of gage is 684 ft, from topographic map.

REMARKS.--Records fair except those estimated daily discharges, which are poor. Minimum discharge for current water year also occurred Sept. 12, 13.

EXTREMES OUTSIDE PERIOD OF RECORD.--In the period 1930-64, three floods equalled or exceeded 15 ft. The highest was about 16.3 ft on Aug. 13, 1959 as a result of dam failure (from information by local resident).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	42	32	103	44	36	99	e320	94	29	19	14
2	17	40	32	77	43	54	e80	e120	58	26	20	14
3	15	39	97	68	41	411	e71	e80	139	40	20	14
4	19	37	254	68	41	456	e62	e68	53	52	17	13
5	21	38	83	59	39	123	e66	e58	44	34	15	13
6	16	37	60	57	41	91	e56	e65	41	77	14	13
7	15	35	50	161	44	83	e50	e60	40	32	17	17
8	15	36	46	162	40	78	e48	e50	39	28	92	15
9	15	47	41	113	38	74	e53	e48	38	40	29	14
10	66	226	39	85	37	68	e56	e50	36	26	22	14
11	1120	74	36	515	36	61	e47	e54	35	24	20	14
12	260	55	35	358	35	56	e43	e48	36	24	21	13
13	1020	46	35	123	37	53	e50	e49	35	25	22	13
14	128	42	33	85	45	53	e72	e45	33	22	38	14
15	66	43	34	72	36	51	e100	e49	33	21	38	17
16	45	40	34	131	32	49	e350	e40	33	20	22	16
17	35	38	33	81	33	48	e110	e39	34	21	20	16
18	61	36	34	67	71	113	e70	e45	41	21	19	16
19	53	35	45	61	56	78	e90	e960	107	20	19	30
20	31	34	35	186	49	61	e86	e370	45	30	18	45
21	26	33	42	91	44	57	e140	e200	51	26	17	14
22	103	33	40	68	41	53	e90	e130	44	20	17	13
23	1230	34	43	60	40	52	e65	90	42	18	16	13
24	235	32	111	57	38	50	e52	77	36	17	15	13
25	124	32	58	53	37	44	e48	65	33	17	15	25
26	155	31	49	50	53	42	e47	58	31	19	15	24
27	79	32	50	49	40	42	e46	53	31	23	18	15
28	63	35	61	49	37	42	e55	64	30	21	23	15
29	53	43	55	47	---	736	e80	81	29	21	19	15
30	48	33	52	50	---	1040	e780	49	30	21	16	15
31	44	---	325	50	---	147	---	44	---	21	15	---
TOTAL	5195	1358	1974	3256	1168	4402	3062	3529	1371	836	688	497
MEAN	168	45.3	63.7	105	41.7	142	102	114	45.7	27.0	22.2	16.6
MAX	1230	226	325	515	71	1040	780	960	139	77	92	45
MIN	15	31	32	47	32	36	43	39	29	17	14	13
CFSM	3.91	1.06	1.48	2.45	.97	3.31	2.38	2.65	1.07	.63	.52	.39
IN.	4.50	1.18	1.71	2.82	1.01	3.82	2.66	3.06	1.19	.72	.60	.43

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1991, BY WATER YEAR (WY)

	MEAN	49.5	31.5	50.9	65.0	68.9	72.7	48.3	55.6	41.7	34.8	36.2	30.7
MAX	168	57.3	98.9	153	162	203	95.1	116	115	139	137	92.8	
(WY)	1991	1973	1974	1978	1990	1975	1991	1991	1972	1975	1970	1979	
MIN	12.8	13.8	17.3	24.0	27.2	25.0	18.7	19.9	14.2	11.0	10.1	6.33	
(WY)	1968	1968	1966	1966	1968	1967	1967	1967	1967	1967	1977	1968	

SUMMARY STATISTICS

FOR 1990 CALENDAR YEAR

FOR 1991 WATER YEAR

WATER YEARS 1964 - 1991

ANNUAL TOTAL	26698		27336									
ANNUAL MEAN	73.1		74.9							49.8		
HIGHEST ANNUAL MEAN										74.6		1991
LOWEST ANNUAL MEAN										24.0		1967
HIGHEST DAILY MEAN	1230	Oct 23	1230	Oct 23						1920	Aug 10	1970
LOWEST DAILY MEAN	11	Sep 8	13	Sep 4						3.1	Aug 19	1988
ANNUAL SEVEN-DAY MINIMUM	12	Sep 2	14	Aug 31						4.6	Sep 30	1968
INSTANTANEOUS PEAK FLOW			2130	Mar 30						2980	Aug 10	1970
INSTANTANEOUS PEAK STAGE			14.28	Mar 30						16.30	Aug 10	1970
INSTANTANEOUS LOW FLOW			12*	Sep 6						2.5	Aug 20	1988
ANNUAL RUNOFF (CFSM)	1.71		1.75							1.16		
ANNUAL RUNOFF (INCHES)	23.15		23.70							15.79		
10 PERCENT EXCEEDS	146		112							79		
50 PERCENT EXCEEDS	44		42							28		
90 PERCENT EXCEEDS	18		16							14		

\* See REMARKS.

## PEE DEE RIVER BASIN

02116500 YADKIN RIVER AT YADKIN COLLEGE, NC  
(National stream-quality accounting network station)

LOCATION.--Lat 35°51'23", long 80°23'14", Davie County, Hydrologic Unit 03040101, on right bank on downstream side of new bridge on U.S. Highway 64, 1.5 mi south of Yadkin College, 6.2 mi downstream from Reedy Creek, and 295 mi upstream from mouth of Pee Dee River in Winyah Bay.

DRAINAGE AREA.--2,280 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1928 to current year.

REVISED RECORDS.--WSP 822: Drainage area. WSP 852: 1935-37(m).

GAGE.--Water-stage recorder. Datum of gage is 638.45 ft above National Geodetic Vertical Datum of 1929. Prior to July 26, 1957 at site on left bank 100 ft downstream at same datum. July 27, 1957 to Sept. 19, 1984 at site 20 ft downstream on bridge pier near left bank, at same datum. U.S. Army Corps of Engineers satellite data transmitter, and Yadkin, Inc. gage-height telephone telemeter, at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Diurnal fluctuation and occasionally some regulation during low flow caused by small hydroelectric plant with little storage capacity 10 mi upstream. Since August 1962, some regulation by W. Kerr Scott Reservoir (station 0211391). Maximum discharge prior to regulation, 80,200 ft<sup>3</sup>/s Aug. 15, 1940 gage height, 33.75 ft; minimum observed, 177 ft<sup>3</sup>/s Oct. 12, 1954, gage height, -0.42 ft. Minimum discharge for period of record, result of regulation.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 1916, reached a stage of 36.3 ft, from floodmarks, discharge, 94,300 ft<sup>3</sup>/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1450	3060	2340	e3850	3360	3170	10000	e11000	4220	3010	2670	1850
2	1490	2920	2300	3760	3200	3450	8850	e7700	e4100	2860	2640	1920
3	1530	2820	2470	3510	3100	6010	6990	5780	e5400	2920	2470	1770
4	1520	2770	6380	3490	3090	15500	5600	5050	e4400	3600	2210	1710
5	1620	2750	4120	3340	3050	6950	4630	4660	e3950	3200	2120	1690
6	1730	2780	e3400	3180	3120	6320	4640	4560	e3600	3940	2010	1790
7	1570	2810	e2800	3760	3410	5090	4340	5190	e3500	3360	2360	1820
8	1620	2710	2790	4810	3460	4840	4150	4690	e3400	2870	3230	1760
9	1460	2690	2680	4150	3210	4150	4110	4290	e3400	2630	2990	1610
10	1620	6490	2580	3800	3150	3820	4160	4130	e3300	2420	2880	1600
11	16300	6090	2530	e9000	3050	3760	4380	4190	e3200	2730	2440	1570
12	12000	4410	2430	e14000	2950	3610	4020	4200	e3100	2820	2220	1600
13	e20000	3500	2380	e9200	2910	3540	3810	4430	e3200	2670	2210	1480
14	e17500	3090	2370	e5500	3200	3730	4460	4170	e3200	2890	2170	1510
15	e8700	2950	2360	6330	3360	3640	4630	4730	e3150	2580	3100	1620
16	7650	2870	2370	9810	2700	3460	9060	4640	e3400	2330	2760	1560
17	7020	2820	2390	8150	2830	3260	5890	4440	e4000	2150	2400	1590
18	6420	2730	2410	7240	3320	4230	4740	5620	e5200	2050	2080	1560
19	8780	2670	2630	6630	4750	5040	4460	11200	e8000	2420	1980	1540
20	5820	2620	2600	7910	5080	4050	11700	10600	e6000	2740	1860	1980
21	4680	2550	2670	7220	5280	3620	10300	13100	4230	3040	2020	1900
22	4490	2480	2740	6090	4860	3510	11000	11900	3950	3110	1840	1580
23	24500	2510	e7000	e4800	4260	3640	8830	7650	5360	2460	1630	1510
24	32700	2520	e17000	e4200	3720	4120	7540	6040	3720	2100	1750	1510
25	12100	2510	e11000	e5000	3520	3710	5870	5240	3280	2060	1720	1610
26	7680	2460	e8000	e4700	3660	3530	5100	4660	3070	3430	1700	1820
27	5420	2350	e5000	e5200	3340	3350	4520	4440	2980	3260	1730	1670
28	4380	2400	4610	e4700	3290	3450	6210	4520	3020	3190	1980	1550
29	3720	2830	4780	3490	---	10100	e9000	5190	2950	3220	3360	1560
30	3520	2610	4440	3420	---	34300	e18000	4720	2820	3230	2220	1530
31	3230	---	e4000	3510	---	16500	---	4160	---	2970	1960	---
TOTAL	232220	90770	127570	173750	98230	187450	200990	186890	117100	88260	70710	49770
MEAN	7491	3026	4115	5605	3508	6047	6700	6029	3903	2847	2281	1659
MAX	32700	6490	17000	14000	5280	34300	18000	13100	8000	3940	3360	1980
MIN	1450	2350	2300	3180	2700	3170	3810	4130	2820	2050	1630	1480
IN.	3.79	1.48	2.08	2.83	1.60	3.06	3.28	3.05	1.91	1.44	1.15	.81

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 1991, BY WATER YEAR (WY)

	MEAN	2602	2421	2827	3371	3783	4196	3992	3198	2749	2362	2466	2236
MAX	8125	5995	5784	10590	10110	10380	9419	6277	7755	4861	7858	7985	
(WY)	1930	1958	1974	1937	1960	1975	1987	1984	1972	1943	1928	1928	
MIN	800	845	910	891	1369	1798	1691	1340	927	749	584	494	
(WY)	1954	1932	1956	1956	1931	1981	1985	1941	1956	1986	1956	1954	

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1928 - 1991
ANNUAL TOTAL	1645820	1623710	2998
ANNUAL MEAN	4509	4449	4740
HIGHEST ANNUAL MEAN			1516
LOWEST ANNUAL MEAN			66000
HIGHEST DAILY MEAN	32700	Oct 24	34300
LOWEST DAILY MEAN	1390	Sep 26	1450
ANNUAL SEVEN-DAY MINIMUM	1430	Sep 25	1550
INSTANTANEOUS PEAK FLOW			40800
INSTANTANEOUS PEAK STAGE			24.65
INSTANTANEOUS LOW FLOW			914
ANNUAL RUNOFF (CFSM)	1.98		1.95
ANNUAL RUNOFF (INCHES)	26.85		26.49
10 PERCENT EXCEEDS	7760		7950
50 PERCENT EXCEEDS	3670		3400
90 PERCENT EXCEEDS	1690		1760

\* For regulated period (1963 - 1991) only. See REMARKS.

## PEE DEE RIVER BASIN

02116500 YADKIN RIVER AT YADKIN COLLEGE, NC--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1944, 1951 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1964 to September 1967, October 1970 to September 1978, February 1979 to current year.

WATER TEMPERATURE: October 1943 to September 1944, October 1950 to September 1951, October 1955 to September 1967, October 1970 to September 1989.

SUSPENDED-SEDIMENT DISCHARGE: January 1951 to September 1989.

INSTRUMENTATION.--Water-quality monitor from October 1970 to September 1975.

REMARKS.--Station operated as part of NASQAN network from March 1979 to present. Miscellaneous chemical data published for water years 1947-49, 1955. Daily records of specific conductance for water years 1956-64 are available in files of district office in Raleigh, NC.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum recorded, 815 microsiemens Aug. 26, 1971; minimum recorded, 20 microsiemens Nov. 2, 16, 28, Dec. 1, 6, 7, 1971.

WATER TEMPERATURE: Maximum daily, 35.0°C July 20, 1986; minimum daily, 0.0°C on many days during most winter months.

SEDIMENT CONCENTRATION: Maximum daily mean, 2,970 mg/L May 26, 1952; minimum daily mean, 1 mg/L Dec. 3, 1953.

SEDIMENT LOAD: Maximum daily, 182,000 tons June 22, 1972; minimum daily, 3 tons Dec. 3, 1953.

EXTREMES FOR CURRENT YEAR.--

SEDIMENT CONCENTRATION: Maximum daily mean, 1,030 mg/L Oct. 23; minimum daily mean, 15 mg/L Nov. 22, 26.

SEDIMENT LOAD: Maximum daily, 63,800 tons Oct 23; minimum daily, 82 tons Sept. 23.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TUR- BID- ITY (NTU)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)
NOV 07...	1000	2810	90	7.6	12.0	10	744	10.9	--	--	5.0	1.7
JAN 23...	1000	7120	65	7.4	4.0	23	752	14.7	--	--	4.2	1.5
MAR 19...	1200	5180	110	6.9	12.0	31	741	10.3	--	--	4.0	1.4
MAY 21...	1055	12700	60	8.1	16.0	90	760	9.4	460	560	3.9	1.5
JUL 24...	1000	2090	110	7.0	27.0	45	738	6.0	--	--	4.2	1.4
SEP 04...	1045	1710	99	7.6	19.0	20	744	3.8	K95	K85	5.0	1.6
DATE		SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE WATER DIS IT FIELD MG/L AS HCO3	ALKA- LINITY WAT DIS TOT IT FIELD MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	
NOV 07...		7.6	42	0.7	2.3	17	14	5.8	6.7	<0.10	59	
JAN 23...		5.3	37	0.6	2.1	17	14	6.6	5.3	<0.10	35	
MAR 19...		4.5	35	0.5	1.6	22	18	4.1	3.5	<0.10	34	
MAY 21...		3.3	28	0.4	2.2	22	18	5.0	3.3	<0.10	44	
JUL 24...		7.6	46	0.8	2.6	24	20	5.5	6.0	0.10	72	
SEP 04...	12		54	1	2.4	24	20	6.3	9.3	0.10	--	

## PEE DEE RIVER BASIN

02116500 YADKIN RIVER AT YADKIN COLLEGE, NC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS NH4)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)
NOV 07...	0.490	0.490	0.010	0.010	0.500	0.500	0.070	0.070	0.09	0.09	0.33
JAN 23...	0.590	0.590	0.010	0.010	0.600	0.600	0.060	0.050	0.08	0.06	0.34
MAR 19...	0.520	0.580	0.030	0.010	0.550	0.590	0.060	0.040	0.08	0.05	0.44
MAY 21...	0.660	--	0.040	<0.010	0.700	0.720	0.080	0.080	0.10	0.10	1.1
JUL 24...	--	--	<0.010	<0.010	0.780	0.790	0.040	0.040	0.05	0.05	0.56
SEP 04...	0.720	--	0.020	<0.010	0.740	0.770	0.040	0.050	0.05	0.06	0.46
DATE	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS NO3)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHATE, TOTAL (MG/L AS PO4)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHOPHOS- PHATE, DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHOPHOS- PHATE, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHOPHOS- PHATE, DIS- SOLVED (MG/L AS PO4)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)
NOV 07...	0.40	--	0.90	4.0	0.080	0.18	0.040	0.060	0.050	0.15	20
JAN 23...	0.40	--	1.0	4.4	0.080	0.18	0.040	0.060	0.040	0.12	110
MAR 19...	0.50	--	1.0	4.6	0.060	0.12	0.030	0.040	<0.010	--	210
MAY 21...	1.2	--	1.9	8.4	0.240	0.25	0.030	0.080	0.030	0.09	20
JUL 24...	0.60	<0.20	1.4	6.1	0.200	0.34	0.120	0.110	0.120	0.37	220
SEP 04...	0.50	--	1.2	5.5	0.200	0.31	0.150	0.100	0.090	0.28	80
DATE	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
NOV 07...	<1	20	<0.5	2.0	<1	<3	3	81	<1	<4	24
JAN 23...	<1	17	<0.5	<1.0	<1	<3	6	150	1	<4	15
MAR 19...	<1	17	<0.5	1.0	<1	<3	8	380	3	<4	29
MAY 21...	<1	16	<0.5	<1.0	1	<3	8	71	1	<4	5
JUL 24...	<1	16	<0.5	3.0	<1	<3	18	330	2	<4	21
SEP 04...	<1	20	0.7	<1.0	1	<3	4	190	<1	<4	12
DATE	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. & FINER THAN .062 MM
NOV 07...	<0.1	<10	1	<1	<1.0	41	<6	6	48	364	32
JAN 23...	<0.1	<10	1	<1	<1.0	36	<6	21	44	846	55
MAR 19...	--	<10	2	<1	<1.0	33	<6	52	--	--	--
MAY 21...	<0.1	<10	1	<1	<1.0	30	<6	8	359	12300	39
JUL 24...	--	20	4	<1	<1.0	35	<6	15	76	429	62
SEP 04...	<0.1	<10	2	<1	<1.0	41	<6	6	40	184	79

## PEE DEE RIVER BASIN

02116500 YADKIN RIVER AT YADKIN COLLEGE, NC--Continued

SUSPENDED-SEDIMENT, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MEAN CONCEN- TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN- TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN- TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN- TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN- TRATION (MG/L)	LOADS (T/DAY)	MEAN CONCEN- TRATION (MG/L)	LOADS (T/DAY)
OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	26	102	60	496	55	347	263	2730	40	363	35	300
2	26	105	43	339	55	342	195	1980	40	346	77	717
3	20	83	43	327	27	180	78	739	39	326	196	4090
4	21	86	42	314	276	5200	54	509	40	334	727	30400
5	30	131	44	327	188	2090	44	397	30	247	345	6470
6	31	145	48	360	110	1010	30	258	25	211	241	4110
7	24	102	60	455	61	461	100	1020	39	359	175	2410
8	35	153	31	227	32	241	112	1450	50	467	160	2090
9	45	177	19	138	20	145	98	1100	38	329	169	1890
10	55	241	270	5230	23	160	85	872	28	238	106	1090
11	894	40500	228	3750	34	232	352	8550	25	206	38	386
12	540	17500	141	1680	22	144	592	22400	21	167	43	419
13	970	52400	76	718	18	116	339	8420	30	236	46	440
14	445	21000	30	250	20	128	215	3190	30	259	46	463
15	423	9940	25	199	30	191	170	2910	31	281	68	668
16	275	5680	22	170	28	179	280	7580	39	284	68	635
17	215	4080	35	266	20	129	277	6100	40	306	45	396
18	237	4110	25	184	30	195	220	4300	40	359	148	1690
19	595	15100	18	130	40	284	168	3010	130	1670	192	2610
20	350	5500	37	262	48	337	278	5940	170	2330	121	1320
21	200	2530	23	158	45	324	215	4190	170	2420	64	626
22	220	2670	15	100	40	296	130	2140	153	2010	45	426
23	1030	63800	24	163	38	718	99	1280	110	1270	50	491
24	270	23800	20	136	620	28500	82	930	80	804	62	690
25	225	7350	18	122	460	13700	89	1200	42	399	80	801
26	240	4980	15	100	310	6700	70	888	30	296	60	572
27	190	2780	19	121	260	3510	53	744	55	496	50	452
28	175	2070	19	123	149	1850	53	673	52	462	47	438
29	140	1410	50	382	85	1100	50	471	---	---	358	16300
30	163	1550	35	247	126	1510	48	443	---	---	611	56500
31	100	872	---	---	300	3240	48	455	---	---	200	8910
TOTAL	---	290947	---	17474	---	73559	---	96869	---	17475	---	148800
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	215	5800	565	16800	143	1630	79	642	80	577	48	240
2	150	3580	373	7750	165	1830	75	579	90	642	60	311
3	135	2550	200	3120	387	5640	73	576	73	487	40	191
4	140	2120	224	3050	321	3810	165	1600	68	406	40	185
5	140	1750	180	2260	165	1760	152	1310	70	401	40	183
6	115	1440	135	1660	125	1220	228	2430	53	288	38	184
7	75	879	175	2450	102	964	169	1530	95	605	40	197
8	65	728	230	2910	90	826	130	1010	214	1870	35	166
9	120	1330	170	1970	80	734	85	604	185	1490	30	130
10	130	1460	120	1340	70	624	68	444	180	1400	27	117
11	95	1120	108	1220	80	691	78	575	120	791	24	102
12	69	749	105	1190	67	561	103	784	80	480	28	121
13	60	617	124	1480	65	562	96	692	78	465	22	88
14	70	843	105	1180	73	631	100	780	78	457	30	122
15	103	1290	190	2430	70	595	95	662	102	854	38	166
16	428	10900	280	3510	48	441	78	491	140	1040	30	126
17	210	3340	200	2400	65	702	58	337	95	616	28	120
18	77	985	230	3490	128	1800	53	293	65	365	30	126
19	80	963	621	20500	254	5490	68	444	50	267	28	116
20	500	15800	481	13800	214	3470	75	555	50	251	57	305
21	335	9320	500	17700	188	2150	138	1130	55	300	38	195
22	254	7540	471	15100	180	1920	115	966	50	248	30	128
23	180	4290	389	8030	490	7090	88	584	48	211	20	82
24	152	3090	345	5630	240	2410	62	352	28	132	23	94
25	148	2350	200	2830	119	1050	53	295	35	163	32	139
26	120	1650	169	2130	103	854	131	1210	31	142	38	187
27	100	1220	140	1680	123	990	155	1360	30	140	33	149
28	168	2820	125	1530	96	783	133	1150	45	241	25	105
29	262	6370	1230	17200	89	709	115	1000	135	1220	28	118
30	825	40100	215	2740	81	617	121	1060	82	492	25	103
31	---	---	161	1810	---	---	98	786	50	265	---	---
TOTAL	---	136994	---	170890	---	52554	---	26231	---	17306	---	4596

TOTAL LOAD FOR YEAR: 1053695 TONS.

LONG-TERM ANNUAL AVERAGE LOAD FOR PERIOD 1951-91 901,958 TONS.

02118000 SOUTH YADKIN RIVER NEAR MOCKSVILLE, NC

LOCATION.--Lat 35°50'41", long 80°39'34", Rowan County, Hydrologic Unit 03040102, on right bank 90 ft downstream from bridge on Secondary Road 1972, 1 mi upstream from Little Creek, 4 mi downstream from Fifth Creek, 4.5 mi upstream from Hunting Creek, and 6.5 mi southwest of Mocksville.

DRAINAGE AREA.--306 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1938 to current year.

REVISED RECORDS.--WDR NC-80-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 663.62 ft above National Geodetic Vertical Datum of 1929. Yadkin Inc. stage telephone telemeter at station.

REMARKS.--No estimated daily discharges. Records good. The city of Statesville diverted an average of 7.6 ft<sup>3</sup>/s for water supply and waste treatment dilution. The Alexander Water Corporation withdrew an average of 1.7 ft<sup>3</sup>/s for water supply. Maximum discharge, 11,800 ft<sup>3</sup>/s, also occurred Mar. 2, 1987. Minimum discharge, 21 ft<sup>3</sup>/s, also occurred July 24, 1986.

EXTREMES OUTSIDE PERIOD OF RECORD.--The flood of Oct. 3, 1929 reached a stage of 22.6 ft, from floodmark established by local resident (discharge, about 22,000 ft<sup>3</sup>/s).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	148	330	274	543	391	373	1070	822	430	285	250	218
2	168	321	265	430	368	474	765	664	467	270	248	205
3	160	302	279	400	362	1150	653	577	587	282	254	186
4	148	294	524	411	362	3030	580	533	588	304	245	181
5	172	294	489	393	354	1880	569	500	410	285	242	180
6	176	291	365	363	360	796	585	541	366	306	240	198
7	154	284	339	480	400	649	524	606	348	280	516	303
8	155	284	335	715	402	632	495	517	340	250	470	208
9	146	301	312	602	369	598	498	462	334	304	328	181
10	198	981	294	487	361	505	487	467	333	268	337	177
11	1090	690	287	1360	347	458	456	434	319	247	277	171
12	1080	439	280	2590	338	446	430	443	319	245	267	170
13	2880	375	280	1910	338	443	423	442	320	240	282	161
14	3650	344	271	805	395	449	545	412	310	241	328	166
15	967	331	265	629	387	417	583	427	301	217	406	172
16	482	317	270	1100	345	394	927	433	309	208	324	161
17	380	312	263	952	337	389	738	697	383	203	265	156
18	348	300	269	664	479	516	584	623	335	230	260	162
19	512	295	304	561	677	576	880	1430	443	225	243	248
20	448	298	294	873	569	455	2480	1110	543	220	238	440
21	360	286	300	853	536	420	3390	1080	393	218	235	292
22	831	289	295	612	489	408	2060	890	506	204	231	198
23	4070	283	292	521	451	407	1020	688	514	191	230	177
24	4690	282	1060	477	421	404	789	565	361	183	218	179
25	1610	284	1350	451	399	379	676	506	333	230	220	181
26	1020	270	628	417	439	368	621	458	317	266	222	214
27	632	265	487	400	405	365	597	433	319	227	217	189
28	492	272	503	394	377	375	784	419	305	242	285	170
29	415	322	486	385	---	1830	883	483	291	384	257	169
30	371	314	441	375	---	5000	1330	425	277	296	217	167
31	346	---	545	403	---	4020	---	408	---	252	197	---
TOTAL	28299	10250	12646	21556	11458	28606	26422	18495	11401	7803	8549	5980
MEAN	913	342	408	695	409	923	881	597	380	252	276	199
MAX	4690	981	1350	2590	677	5000	3390	1430	588	384	516	440
MIN	146	265	263	363	337	365	423	408	277	183	197	156
CFSM	2.98	1.12	1.33	2.27	1.34	3.02	2.88	1.95	1.24	.82	.90	.65
IN.	3.44	1.25	1.54	2.62	1.39	3.48	3.21	2.25	1.39	.95	1.04	.73

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 1991, BY WATER YEAR (WY)

	MEAN	261	259	341	407	503	535	464	372	300	237	228	240
MAX	1246	791	738	1088	1458	1485	1110	885	774	628	706	880	
(WY)	1965	1958	1962	1978	1960	1975	1958	1984	1972	1941	1970	1979	
MIN	70.4	99.7	102	97.7	181	220	159	127	75.0	47.3	61.2	45.7	
(WY)	1955	1956	1956	1956	1941	1955	1986	1986	1986	1986	1956	1954	

SUMMARY STATISTICS

FOR 1990 CALENDAR YEAR

FOR 1991 WATER YEAR

WATER YEARS 1939 - 1991

ANNUAL TOTAL	196401	191465	
ANNUAL MEAN	538	525	345
HIGHEST ANNUAL MEAN			592
LOWEST ANNUAL MEAN			171
HIGHEST DAILY MEAN	4690	Oct 24	9750
LOWEST DAILY MEAN	131	Sep 8	22
ANNUAL SEVEN-DAY MINIMUM	142	Sep 5	28
INSTANTANEOUS PEAK FLOW			5980
INSTANTANEOUS PEAK STAGE			14.72
INSTANTANEOUS LOW FLOW			140
ANNUAL RUNOFF (CFSM)	1.76		1.71
ANNUAL RUNOFF (INCHES)	23.88		23.28
10 PERCENT EXCEEDS	987		876
50 PERCENT EXCEEDS	382		373
90 PERCENT EXCEEDS	172		204
			120

\* See REMARKS.

## PEE DEE RIVER BASIN

02118500 HUNTING CREEK NEAR HARMONY, NC

LOCATION.--Lat 36°00'00", long 80°44'44", Iredell County, Hydrologic Unit 03040102, on right bank 52 ft downstream from bridge on Secondary Road 2115, 0.8 mi downstream from Kennedy Creek, 1 mi east of Houstonville, 2 mi downstream from U.S. Highway 21, and 3.5 mi northeast of Harmony.

DRAINAGE AREA.--155 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1950 to current year. Monthly discharge only for some periods, published in WSP 1723.

REVISED RECORDS.--WDR NC-80-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 734.78 ft above National Geodetic Vertical Datum of 1929. Prior to Apr. 5, 1951, nonrecording gage on upstream side of bridge at same datum.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Maximum gage height, 25.05 ft, from floodmark in gage house.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	118	205	160	256	222	207	560	482	521	199	192	154
2	122	200	159	241	219	298	465	411	425	191	186	137
3	117	195	208	233	217	937	412	347	314	517	182	132
4	118	193	509	239	215	1610	383	328	312	454	170	131
5	134	192	271	220	212	558	392	315	274	282	163	130
6	122	194	215	211	219	397	380	363	258	254	164	130
7	118	191	196	317	279	340	348	342	248	215	360	130
8	116	185	190	344	243	301	332	297	241	218	343	127
9	115	208	179	307	224	274	325	289	237	207	234	124
10	153	618	174	271	217	261	329	294	229	193	187	119
11	765	329	171	1830	211	246	298	282	222	187	185	118
12	1090	258	166	1470	204	244	283	300	226	186	173	117
13	4120	230	165	587	207	249	298	332	230	197	185	116
14	626	209	165	393	250	251	340	290	216	183	204	121
15	336	197	162	323	222	246	494	399	214	173	294	116
16	243	194	162	824	191	235	e728	288	217	168	198	123
17	203	191	161	504	198	231	e361	493	314	166	173	117
18	258	184	162	372	301	324	e296	353	250	173	161	124
19	480	180	178	318	358	291	1530	898	398	174	155	131
20	272	180	167	652	315	256	1120	867	378	173	152	224
21	222	178	171	445	296	248	1450	1080	279	167	148	130
22	1370	176	171	342	268	240	716	676	501	160	145	120
23	3640	176	495	304	249	242	490	468	323	153	143	117
24	746	177	3360	282	229	254	419	386	259	150	140	117
25	438	173	659	270	222	232	352	338	243	296	138	120
26	379	169	385	255	237	224	333	315	230	212	141	130
27	287	166	303	248	218	224	376	295	228	208	143	117
28	259	172	323	247	211	224	706	407	218	297	154	111
29	238	193	308	241	---	3350	519	423	207	452	161	107
30	222	168	287	238	---	2650	704	308	198	255	148	106
31	212	---	337	242	---	766	---	335	---	212	152	---
TOTAL	17639	6281	10719	13026	6654	16410	15739	13001	8410	7072	5674	3796
MEAN	569	209	346	420	238	529	525	419	280	228	183	127
MAX	4120	618	3360	1830	358	3350	1530	1080	521	517	360	224
MIN	115	166	159	211	191	207	283	282	198	150	138	106
CFSM	3.67	1.35	2.23	2.71	1.53	3.42	3.38	2.71	1.81	1.47	1.18	.82
IN.	4.23	1.51	2.57	3.13	1.60	3.94	3.78	3.12	2.02	1.70	1.36	.99

e Estimated

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 1991, BY WATER YEAR (WY)

MEAN	163	159	201	225	281	319	300	232	195	149	141	150
MAX	654	508	373	585	752	959	713	527	636	355	383	615
(WY)	1965	1978	1974	1978	1960	1975	1987	1990	1972	1987	1970	1979
MIN	50.0	56.9	53.1	56.4	132	123	102	92.8	63.3	41.2	43.5	40.4
(WY)	1955	1956	1956	1956	1977	1956	1985	1981	1956	1986	1956	1954

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1951 - 1991
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ANNUAL TOTAL	126793		124421			
ANNUAL MEAN	347		341		210	
HIGHEST ANNUAL MEAN					346	1960
LOWEST ANNUAL MEAN					101	1956
HIGHEST DAILY MEAN	4120	Oct 13	4120	Oct 13	10400	Sep 22 1979
LOWEST DAILY MEAN	106	Sep 9	106	Sep 30	22	Sep 16 1956
ANNUAL SEVEN-DAY MINIMUM	112	Sep 3	115	Sep 24	24	Sep 16 1956
INSTANTANEOUS PEAK FLOW			7750	Mar 29	14800	Sep 22 1979
INSTANTANEOUS PEAK STAGE			17.27	Mar 29	25.05*	Sep 22 1979
INSTANTANEOUS LOW FLOW			106	Sep 30	18	Oct 8 1954
ANNUAL RUNOFF (CFSM)	2.24		2.20		1.36	
ANNUAL RUNOFF (INCHES)	30.43		29.86		18.43	
10 PERCENT EXCEEDS	603		512		340	
50 PERCENT EXCEEDS	244		237		148	
90 PERCENT EXCEEDS	127		136		74	

\* See REMARKS.

## PEE DEE RIVER BASIN

02120780 SECOND CREEK NEAR BARBER, NC

LOCATION.--Lat 35°43'05", long 80°35'45", Rowan County, Hydrologic Unit 03040102, on right bank 70 ft upstream from bridge on U. S. Highway 70, 1.3 mi downstream from Withrow Creek, and 2.7 mi east of Barber.

DRAINAGE AREA.--118 mi<sup>2</sup>.

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1949-57, 1961-63. April 1979 to current year.

GAGE.--Water-stage recorder. Datum of gage is 642.31 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those above 200 ft<sup>3</sup>/s, which are fair, and those for estimated daily discharges, which are poor. Some diurnal fluctuation caused by industry 0.7 mi upstream. Minimum daily discharge for period of record also occurred Oct. 7, 1986.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	103	79	155	120	e120	e400	e160	88	56	50	39
2	22	98	78	127	119	e320	200	e140	90	56	60	39
3	21	93	87	126	119	e1000	178	131	94	82	57	38
4	22	90	171	128	117	e2700	164	124	107	83	47	38
5	37	88	107	113	116	e600	166	120	83	69	45	37
6	25	86	95	109	121	e370	161	124	80	72	42	46
7	23	83	91	921	124	e220	150	113	e78	62	42	43
8	22	82	92	386	116	e180	156	108	e76	58	72	38
9	21	132	85	216	113	e160	198	108	e74	57	58	32
10	93	860	83	175	112	e150	157	108	e74	54	49	27
11	1520	208	82	1610	110	e140	149	107	e73	52	45	26
12	1170	146	80	742	108	e135	148	105	e73	52	48	26
13	2700	123	80	264	114	e140	148	102	e74	51	54	32
14	530	112	81	202	125	e140	160	100	69	48	66	32
15	174	104	80	181	109	e135	196	97	69	46	95	28
16	130	99	80	458	105	e130	155	92	71	45	54	25
17	110	96	78	226	111	e130	134	92	103	50	48	26
18	137	92	79	183	220	e180	130	89	80	64	46	34
19	122	90	95	166	151	e160	182	249	75	55	44	66
20	92	88	85	458	145	e140	181	161	79	51	42	34
21	86	86	138	219	134	e135	910	178	73	48	40	35
22	294	85	110	173	129	e130	291	128	76	46	38	31
23	2720	85	127	155	126	e125	193	114	70	43	39	29
24	1030	84	220	147	123	e140	162	106	68	41	37	62
25	448	81	123	140	130	e125	144	100	66	44	40	56
26	668	81	108	132	134	e120	137	96	65	50	41	34
27	213	80	109	129	125	e120	133	92	64	49	41	35
28	160	84	114	127	123	e115	132	92	62	57	72	37
29	134	96	110	124	---	e2900	130	94	59	53	56	33
30	120	82	134	128	---	e1800	597	88	58	53	45	30
31	111	---	412	131	---	e700	---	85	---	52	42	---
TOTAL	12975	3717	3493	8551	3499	13660	6342	3603	2271	1699	1555	1088
MEAN	419	124	113	276	125	441	211	116	75.7	54.8	50.2	36.3
MAX	2720	860	412	1610	220	2900	910	249	107	83	95	66
MIN	20	80	78	109	105	115	130	85	58	41	37	25
CFSM	3.55	1.05	.95	2.34	1.06	3.73	1.79	.98	.64	.46	.43	.31
IN.	4.09	1.17	1.10	2.70	1.10	4.31	2.00	1.14	.72	.54	.49	.34

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1979 - 1991, BY WATER YEAR (WY)

	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
MEAN	110	100	114	143	188	192	153	94.5	84.6	53.6	49.0	57.3	
MAX	419	246	222	276	301	334	390	178	196	98.3	126	196	
(WY)	1991	1986	1984	1991	1990	1987	1987	1990	1979	1989	1985	1979	
MIN	15.8	33.3	54.1	38.9	70.7	67.2	45.5	29.6	13.0	13.2	16.7	11.7	
(WY)	1987	1982	1985	1981	1986	1981	1986	1986	1986	1986	1983	1986	

SUMMARY STATISTICS

FOR 1990 CALENDAR YEAR

FOR 1991 WATER YEAR

WATER YEARS 1979 - 1991

ANNUAL TOTAL	56447	62453	
ANNUAL MEAN	155	171	109
HIGHEST ANNUAL MEAN			161
LOWEST ANNUAL MEAN			62.1
HIGHEST DAILY MEAN	2720	Oct 23	4470
LOWEST DAILY MEAN	19	Sep 28	5.0*
ANNUAL SEVEN-DAY MINIMUM	20	Sep 25	5.6
INSTANTANEOUS PEAK FLOW			3370
INSTANTANEOUS PEAK STAGE			14.70
INSTANTANEOUS LOW FLOW			19
ANNUAL RUNOFF (CFSM)	1.31	1.45	.93
ANNUAL RUNOFF (INCHES)	17.80	19.69	12.57
10 PERCENT EXCEEDS	238	217	176
50 PERCENT EXCEEDS	99	100	66
90 PERCENT EXCEEDS	29	39	24

\* See REMARKS.

## PEE DEE RIVER BASIN

02121500 ABBOTTS CREEK AT LEXINGTON, NC

LOCATION.--Lat 35°48'23", long 80°14'05", Davidson County, Hydrologic Unit 03040103, on right bank 150 ft upstream from bridge on Secondary Road 1243, 1.5 mi southeast of Lexington, and 4.5 mi downstream from Rich Fork Creek.

DRAINAGE AREA.--174 mi<sup>2</sup>.

PERIOD OF RECORD.--March 1940 to December 1957. October 1988 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 630 ft from topographic map. March 1, 1940 to December 1957 at site 100 ft upstream at different datum.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. The city of Lexington diverts an average of 5.6 ft<sup>3</sup>/s for water supply. City of High Point discharges an average of 6.3 ft<sup>3</sup>/s of sewage effluent diverted from Deep River, into Rich Fork Creek above station. Maximum discharge, 14,800 ft<sup>3</sup>/s, Sept. 25, 1947, at former site, from floodmark. Minimum discharge, 0.4 ft<sup>3</sup>/s, Oct. 8, 1954, at former site. Minimum discharge, 2.4 ft<sup>3</sup>/s, also occurred Sept. 5, 1990.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.0	102	71	680	119	127	375	330	71	70	40	33
2	11	93	67	249	104	240	283	226	73	52	122	28
3	14	86	122	188	100	944	244	200	184	151	109	24
4	18	82	955	202	99	3100	218	175	143	127	53	21
5	24	79	635	171	97	1430	201	137	80	88	34	e19
6	30	79	225	144	100	372	199	120	62	179	29	e17
7	18	74	165	544	123	293	163	102	53	89	47	e45
8	12	72	148	1540	122	305	140	86	48	71	373	e38
9	10	119	128	762	104	329	212	79	44	57	210	e22
10	48	1190	107	343	95	241	198	80	43	56	112	e17
11	2470	858	100	907	92	193	142	77	42	44	66	12
12	3230	249	92	2890	89	161	110	75	39	40	51	11
13	3700	165	90	1170	88	188	111	154	41	29	56	7.3
14	e2900	122	90	405	133	213	172	103	39	25	112	12
15	e900	103	84	303	127	169	215	96	35	22	338	64
16	230	96	88	642	93	138	2060	81	34	16	122	29
17	209	97	84	666	85	126	891	69	39	13	66	18
18	199	88	83	339	247	401	275	65	173	12	49	13
19	267	80	114	268	304	449	317	691	262	14	38	36
20	223	78	108	580	215	226	775	1390	246	16	34	640
21	192	75	259	677	187	178	1040	745	100	17	28	273
22	247	74	221	335	153	154	1090	476	e120	12	23	71
23	3730	75	172	258	141	145	393	256	e140	12	20	48
24	e2000	78	250	222	137	135	275	206	e95	8.1	19	38
25	e750	72	244	192	121	122	229	166	e75	26	16	137
26	e380	69	162	157	214	111	200	119	e40	65	23	458
27	e230	67	137	137	197	106	177	94	39	85	21	166
28	e185	74	192	128	146	107	159	94	36	56	104	72
29	e150	108	192	120	---	906	159	115	32	43	74	53
30	e130	87	184	119	---	4240	437	86	29	50	61	41
31	120	---	430	147	---	1530	---	72	---	64	41	---
TOTAL	22636.0	4691	5999	15485	3832	17379	11460	6765	2457	1609.1	2491	2463.3
MEAN	730	156	194	500	137	561	382	218	81.9	51.9	80.4	82.1
MAX	3730	1190	955	2890	304	4240	2060	1390	262	179	373	640
MIN	9.0	67	67	119	85	106	110	65	29	8.1	16	7.3
CFSM	4.20	.90	1.11	2.87	.79	3.22	2.20	1.25	.47	.30	.46	.47
IN.	4.84	1.00	1.28	3.31	.82	3.72	2.45	1.45	.53	.34	.53	.53

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 1991, BY WATER YEAR (WY)

	MEAN	517	159	199	327	462	497	298	398	112	58.9	65.7	87.7
MAX	731	210	319	500	753	705	382	515	182	89.5	102	158	
(WY)	1990	1989	1990	1991	1990	1989	1991	1989	1989	1989	1989	1989	
MIN	90.9	110	84.6	108	137	224	224	218	73.0	35.1	14.9	22.6	
(WY)	1989	1990	1989	1989	1991	1990	1989	1991	1990	1990	1990	1990	

SUMMARY STATISTICS

FOR 1990 CALENDAR YEAR

FOR 1991 WATER YEAR

WATER YEARS 1988 - 1991

ANNUAL TOTAL	100202.1	97267.4	265
ANNUAL MEAN	275	266	281
HIGHEST ANNUAL MEAN			246
LOWEST ANNUAL MEAN			1990
HIGHEST DAILY MEAN	3730	Oct 23	7120
LOWEST DAILY MEAN	2.7	Sep 4	2.7
ANNUAL SEVEN-DAY MINIMUM	3.9	Sep 1	3.9
INSTANTANEOUS PEAK FLOW			5170*
INSTANTANEOUS PEAK STAGE			19.52*
INSTANTANEOUS LOW FLOW			2.4*
ANNUAL RUNOFF (CFSM)	1.58	1.53	1.52
ANNUAL RUNOFF (INCHES)	21.42	20.80	20.66
10 PERCENT EXCEEDS	634	602	532
50 PERCENT EXCEEDS	116	119	108
90 PERCENT EXCEEDS	14	25	23

\* See REMARKS.

02123567 DUTCHMANS CREEK NEAR UWHARRIE, NC

LOCATION.--Lat 35°22'05", long 80°01'49", Montgomery County, Hydrologic Unit 03040103, near midstream at upstream end of two 6 ft corrugated, metal-pipe culverts on Secondary Road 1150, 1.0 mi upstream from mouth and 3.0 mi southwest of Uwharrie.

DRAINAGE AREA.--3.44 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1981 to September 1983, October 1985 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 340 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are poor. Minimum discharge and minimum daily discharge for period of record also occurred periodically in July and Oct. 1986. Minimum discharge for current water year also occurred Oct. 4. Maximum gage height from floodmark. Maximum discharge from rating curve extended above 412 ft<sup>3</sup>/s on basis of Type Five, culvert-flow computation of peak flow.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.10	2.0	3.4	2.1	2.8	2.5	5.2	4.6	1.4	.94	.98	.60
2	.10	1.9	3.1	2.1	2.7	12	4.4	3.4	1.7	.92	32	.62
3	.09	1.8	36	2.0	2.6	37	3.9	2.9	1.5	4.2	14	.54
4	.31	1.7	24	2.5	2.5	34	3.6	2.7	1.4	2.7	2.0	.53
5	.69	1.7	4.9	2.1	2.4	9.7	4.0	2.8	1.3	1.8	e5.0	.53
6	.33	1.7	3.1	2.0	2.5	5.9	3.8	5.3	1.3	1.9	e2.0	.51
7	.25	1.6	2.4	47	3.3	4.9	3.5	2.9	1.2	1.3	e1.7	.54
8	.24	1.6	3.2	19	4.4	6.1	5.7	2.5	1.2	1.1	e1.4	.50
9	.24	2.1	2.3	8.4	2.9	5.1	6.7	2.5	1.2	1.0	e1.1	.44
10	7.3	14	2.0	4.9	2.7	4.1	4.6	2.8	1.2	.95	e.80	.43
11	113	3.7	1.8	87	2.5	3.6	3.7	2.6	1.1	.94	e1.0	.45
12	7.1	2.8	1.7	30	2.3	3.4	3.5	2.5	1.1	.91	e2.2	.40
13	11	2.4	1.6	9.6	2.4	12	3.4	2.6	1.1	.91	e4.0	.39
14	2.3	2.2	1.6	5.7	3.4	8.2	3.4	2.4	1.1	.79	e6.5	.44
15	1.5	2.6	1.5	4.4	2.6	5.4	3.5	2.3	1.0	.74	e5.6	.37
16	1.2	2.9	1.5	23	2.2	4.3	3.2	2.1	1.2	.76	e4.5	.31
17	1.1	3.6	1.5	8.6	2.3	3.9	3.0	2.1	1.7	.86	e3.5	.30
18	1.3	3.6	1.8	5.2	2.5	15	2.9	1.9	1.4	.98	e3.0	.30
19	1.4	2.9	2.3	4.1	2.4	7.5	15	2.9	8.8	.92	e2.4	3.4
20	1.1	2.9	3.2	9.8	2.6	5.3	11	2.8	1.8	.80	e1.5	3.7
21	1.1	2.9	18	5.5	2.4	4.5	8.6	2.4	1.8	.76	e1.2	.64
22	33	2.9	4.8	3.9	2.3	4.1	5.6	2.1	2.7	.74	e1.0	.50
23	120	3.1	3.3	3.4	6.5	4.0	4.3	1.9	1.5	.64	e1.1	.46
24	5.8	3.1	2.6	3.7	4.4	3.7	3.7	1.8	1.3	.57	e3.0	.65
25	24	2.9	2.1	3.8	3.3	3.4	3.2	1.7	1.2	2.6	e1.8	7.9
26	21	2.9	1.9	3.2	3.0	3.2	3.1	1.6	1.2	5.8	e1.2	2.6
27	3.2	2.9	2.6	3.0	2.7	3.2	3.0	1.9	1.2	4.3	e2.7	1.0
28	2.1	6.2	3.2	2.9	2.5	3.3	2.9	1.9	1.1	1.4	e2.3	.79
29	2.0	9.9	2.5	2.7	---	34	3.4	1.7	1.1	1.2	e1.5	.70
30	2.4	4.3	2.7	3.7	---	23	16	1.5	1.0	1.3	e1.1	.65
31	2.2	---	2.5	3.9	---	7.2	---	1.5	---	1.1	e.84	---
TOTAL	367.45	100.8	149.1	319.2	81.1	283.5	151.8	76.6	47.8	45.83	112.92	31.19
MEAN	11.9	3.36	4.81	10.3	2.90	9.15	5.06	2.47	1.59	1.48	3.64	1.04
MAX	120	14	36	87	6.5	37	16	5.3	8.8	5.8	32	7.9
MIN	.09	1.6	1.5	2.0	2.2	2.5	2.9	1.5	1.0	.57	.80	.30
CFSM	3.45	.98	1.40	2.99	.84	2.66	1.47	.72	.46	.43	1.06	.30
IN.	3.97	1.09	1.61	3.45	.88	3.07	1.64	.83	.52	.50	1.22	.34

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1982 - 1991, BY WATER YEAR (WY)

	3.27	2.65	3.00	5.19	6.32	6.98	4.74	3.20	1.28	.92	1.26	.77
MEAN	3.27	2.65	3.00	5.19	6.32	6.98	4.74	3.20	1.28	.92	1.26	.77
MAX	11.9	8.69	4.81	10.3	9.62	12.3	9.36	6.49	1.77	1.58	3.64	1.46
(WY)	1991	1986	1991	1991	1990	1989	1987	1990	1982	1982	1991	1988
MIN	.19	.82	1.40	1.95	1.83	3.05	1.41	.82	.24	.26	.35	.20
(WY)	1987	1987	1989	1986	1986	1988	1986	1986	1986	1986	1990	1986

SUMMARY STATISTICS

FOR 1990 CALENDAR YEAR

FOR 1991 WATER YEAR

WATER YEARS 1982 - 1991

ANNUAL TOTAL	1715.76	1767.29	
ANNUAL MEAN	4.70	4.84	3.28
HIGHEST ANNUAL MEAN			4.84
LOWEST ANNUAL MEAN			1.60
HIGHEST DAILY MEAN	120	Oct 23	127
LOWEST DAILY MEAN	.07	Sep 8	.01*
ANNUAL SEVEN-DAY MINIMUM	.08	Sep 3	.03
INSTANTANEOUS PEAK FLOW			690*
INSTANTANEOUS PEAK STAGE			10.90*
INSTANTANEOUS LOW FLOW			.09*
ANNUAL RUNOFF (CFSM)	1.37	1.41	.95
ANNUAL RUNOFF (INCHES)	18.55	19.11	12.97
10 PERCENT EXCEEDS	9.4	8.0	5.7
50 PERCENT EXCEEDS	2.4	2.5	1.6
90 PERCENT EXCEEDS	.24	.74	.33

\* See REMARKS.

## PEE DEE RIVER BASIN

0212429930 WIBERLY BRANCH NEAR WILGROVE, NC

LOCATION.--Lat 35°13'40", long 80°41'34", Mecklenburg County, Hydrologic Unit 03050103, on left bank 1700 ft above mouth and 0.3 mi from Secondary Road 2805 and 4.0 mi northwest of Mint Hill. Located within Harrisburg Road Landfill.

DRAINAGE AREA.--0.35 mi<sup>2</sup>.

## WATER DISCHARGE RECORDS

PERIOD OF RECORD.--December 1984 to current year.

REVISED RECORDS.--WDR NC-87-1: Drainage area.

GAGE.--Water-stage recorder and wooden, V-notch, sharp-crested weir. Datum of gage is 675.01 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair except estimated daily discharges, which are poor. Smith Lake acts as a sediment basin for the landfill runoff and has a surface area of 1.83 acres. Minimum discharge for period of record, no flow, occurs most water years. Minimum discharge, no flow, for current water year occurred parts of days in July and August.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.06	.09	.10	.22	.25	.27	.26	.35	.09	.07	.04	.10
2	.03	.08	.09	.16	.17	2.6	.19	.12	.18	.16	3.7	.09
3	.01	.08	2.2	.20	.13	30	.14	.09	.09	.39	1.6	.09
4	.19	.08	2.2	.25	.11	4.8	.11	.10	.09	.07	.30	.09
5	.06	.11	.42	.15	.11	.75	.31	.19	.08	.78	.08	.09
6	.05	.11	.24	.10	.33	.38	.23	2.0	.07	.12	.03	.09
7	.07	.09	.20	8.3	.60	.28	.15	.38	.09	.06	1.5	.09
8	.06	.08	.29	2.0	.26	1.7	.14	.20	.09	.05	1.8	.09
9	.11	8.8	.15	.75	.18	.69	.21	.13	.09	.05	.13	.09
10	20	2.6	.12	.38	.14	.31	.17	.16	.09	.04	.06	.09
11	29	.46	.02	11	.11	.18	.09	.11	.10	.04	.04	.09
12	9.4	.23	.01	2.7	.10	.21	.09	.11	.11	.02	.13	.09
13	2.2	.14	.07	.69	.12	1.3	.09	.11	.11	.02	.04	.08
14	.48	.07	.15	.35	.34	.60	.10	.10	.11	.02	8.2	.09
15	.24	.04	.11	.26	.16	.39	.32	.09	.11	.02	1.7	.08
16	.14	.03	.08	3.9	.09	.23	.14	.09	2.0	.03	.37	.08
17	.10	.10	.08	.58	.10	.18	.09	.08	.80	.02	e.13	.08
18	3.0	.09	.12	.30	.19	2.2	.09	.08	.48	.32	e.10	.08
19	.86	.04	.35	.21	.17	.49	.28	.53	.16	.07	e.09	.10
20	.27	.01	2.8	1.9	.37	.26	.91	.59	5.7	.00	e.09	.09
21	.14	.01	2.2	.44	.26	.18	5.0	.30	10	.00	e.09	.08
22	23	.08	.57	.25	.19	.18	.67	.18	.93	.00	e.09	.08
23	22	.08	.31	.17	3.0	.14	.28	.11	.34	.00	e.09	.08
24	.98	.08	.39	.24	.68	.10	.17	.10	.20	.00	e.08	.08
25	3.7	.08	.19	.24	.33	.10	.10	.08	.13	.00	e.11	6.2
26	1.8	.08	.13	.17	.25	.10	.10	.08	.11	5.1	e.10	.59
27	.41	.07	.50	.13	.18	.10	.15	.23	.10	.97	e.10	.21
28	.22	.63	.48	.13	.13	.12	.20	.15	.08	.19	e.10	.12
29	.14	.41	.30	.14	---	12	.45	.09	.07	1.3	.10	.09
30	.11	.17	.33	.75	---	2.2	1.4	.08	.07	.40	.09	.09
31	.09	---	.42	.56	---	.46	---	.08	---	.12	.09	---
TOTAL	118.92	15.02	15.62	37.62	9.05	63.50	12.63	7.09	22.67	10.43	21.17	9.39
MEAN	3.84	.50	.50	1.21	.32	2.05	.42	.23	.76	.34	.68	.31
MAX	29	8.8	2.8	11	3.0	30	5.0	2.0	10	5.1	8.2	6.2
MIN	.01	.01	.01	.10	.09	.10	.09	.08	.07	.00	.03	.08
CFSM	11.0	1.43	1.44	3.47	.92	5.85	1.20	.65	2.16	.96	1.95	.89
IN.	12.64	1.60	1.66	4.00	.96	6.75	1.34	.75	2.41	1.11	2.25	1.00

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1985 - 1991, BY WATER YEAR (WY)

	1985	1986	1987	1988	1989	1990	1991
MEAN	1.01	.51	.39	.70	.74	.83	.34
MAX	3.84	.93	.74	1.21	1.39	2.05	.62
(WY)	1991	1988	1988	1991	1990	1991	1989
MIN	.085	.20	.019	.022	.023	.036	.013
(WY)	1988	1990	1986	1986	1986	1986	1986

SUMMARY STATISTICS FOR 1990 CALENDAR YEAR FOR 1991 WATER YEAR WATER YEARS 1985 - 1991

	1990 CALENDAR YEAR	1991 WATER YEAR	WATER YEARS 1985 - 1991
ANNUAL TOTAL	280.11	343.11	
ANNUAL MEAN	.77	.94	.59
HIGHEST ANNUAL MEAN			.94
LOWEST ANNUAL MEAN			.14
HIGHEST DAILY MEAN	29 Oct 11	30 Mar 3	47 Sep 7 1987
LOWEST DAILY MEAN	.01 Oct 3	.00* Jul 20	.00 May 30 1986
ANNUAL SEVEN-DAY MINIMUM	.04 Sep 2	.01 Jul 19	.00 Jun 1 1986
INSTANTANEOUS PEAK FLOW		190 Oct 22	190 Oct 22 1990
INSTANTANEOUS PEAK STAGE		2.94 Oct 22	2.94 Oct 22 1990
INSTANTANEOUS LOW FLOW		.00* Jul 20	.00* May 1 1986
ANNUAL RUNOFF (CFSM)	2.19	2.69	1.67
ANNUAL RUNOFF (INCHES)	29.77	36.47	22.71
10 PERCENT EXCEEDS	1.0	1.8	.93
50 PERCENT EXCEEDS	.11	.14	.13
90 PERCENT EXCEEDS	.05	.07	.02

\* See REMARKS.

## PEE DEE RIVER BASIN

0212429930 WIBERLY BRANCH NEAR WILGROVE, NC--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1985 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: December 1984 to September 1990.

WATER TEMPERATURE: December 1984 to September 1990.

INSTRUMENTATION.--Water-quality monitor from December 1984 to September 1990.

REMARKS.--Station operated as part of the Charlotte-Mecklenburg County Water-Quality Study.

COOPERATION.--Chemical samples were collected by the U.S. Geological Survey. Laboratory analyses, other than biological data, were performed by the National Water Quality Laboratory.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 458 microsiemens, Nov. 24, 1987; minimum, &lt;28 microsiemens, Aug. 28, 1988.

WATER TEMPERATURE: Maximum, 37.2°C, Aug. 7, 1988; minimum, 0.0°C, Dec. 12, 13, 18, 1988.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCHI FECAL, KF AGAR (COLS. PER 100 ML)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)
NOV												
19...	1100	--	--	--	--	--	110	680	--	--	--	--
19...	1200	163	6.4	9.5	9.4	--	--	--	7.3	9.0	0.10	111
MAR												
27...	1115	170	7.5	17.0	8.2	1.5	81	54	7.1	7.8	<0.10	124
MAY												
09...	1030	142	7.1	20.0	--	2.9	1200	4000	6.4	7.9	0.10	84
09...	1050	142	7.1	20.0	--	2.9	3000	3100	5.6	7.1	0.20	80
JUL												
09...	1130	143	7.1	25.0	6.6	0.8	3000	920	4.6	5.6	0.20	99
AUG												
27...	1400	158	6.7	24.5	6.2	1.0	1200	2100	3.3	8.0	0.20	107
DATE		NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS NH4)	PHOS- PHATE, TOTAL (MG/L AS PO4)	PHOS- PHORUS ORTHO TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)
NOV												
19...		--	--	--	--	--	--	--	--	--	--	--
19...		0.180	0.020	0.200	0.230	0.30	0.06	0.020	<1	<100	<1	3
MAR												
27...		--	--	0.069	--	--	--	--	<1	<100	<1	1
MAY												
09...		--	--	0.050	--	--	--	--	<1	<100	<1	1
09...		--	--	<0.050	--	--	--	--	<1	<100	<1	2
JUL												
09...		--	--	--	--	--	--	--	<1	<100	<1	1
AUG												
27...		--	--	0.330	--	--	--	--	1	<100	<1	<1

## PEE DEE RIVER BASIN

0212429930 WIBERLY BRANCH NEAR WILGROVE, NC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	CARBON, ORGANIC TOTAL (MG/L AS C)	SEDI- MENT, SUS- PENDEDED (MG/L)	HALO- GENS, ORGANIC TOTAL (MG/L)
NOV 19...	--	--	--	--	--	--	--	--	--	--	--
MAR 27...	2	4200	2	3100	<0.10	<2	<1	20	3.6	--	<0.01
MAY 09...	3	2500	1	790	<0.10	<1	<1	30	4.7	25	<0.01
JUL 09...	3	2700	3	640	<0.10	<1	<1	10	6.7	--	0.03
AUG 27...	3	2600	3	620	<0.10	<1	<1	<10	6.6	26	0.03
	6	3800	3	810	<0.10	<1	<1	40	3.1	59	<0.01
	2	890	<1	100	<0.10	<1	<1	<10	2.3	74	0.02

0212429960 REEDY CREEK TRIBUTARY No. 2 BELOW WIBERLY BRANCH NEAR MINT HILL, NC

LOCATION.--Lat 35°13'52", long 80°41'32", Mecklenburg County, Hydrologic Unit 03050103, on left bank 700 ft downstream from Wiberly Branch, 1.0 mi upstream from bridge on Secondary Road 2822, and 4.4 mi northwest of Mint Hill.

DRAINAGE AREA.--1.0 mi<sup>2</sup>.

## WATER DISCHARGE RECORDS

PERIOD OF RECORD.--April 1988 to current year.

GAGE.--Water-stage recorder and wooden, V-notch, sharp-crested weir. Datum of gage is 755 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records fair. Minimum daily discharge for period of record also occurred Sept. 4, 7, 8, 1990. Minimum discharge for current water year also occurred Oct. 6. Maximum stage from floodmark. Maximum discharge was determined by slope-area indirect measurement.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.17	.31	.31	.82	.59	2.3	.99	.85	.25	.31	.46	.33
2	.16	.30	.29	.77	.49	3.7	.81	.47	.33	.50	4.8	.34
3	.13	.26	4.1	.81	.45	52	.65	.36	.23	.99	2.2	.32
4	.30	.25	4.1	.85	.44	10	.60	.35	.22	.48	.85	.33
5	.16	.26	1.2	.78	.44	1.9	.92	.50	.21	1.8	.55	.32
6	.15	.25	.94	.76	.66	1.0	.75	3.9	.22	1.4	.48	.33
7	.16	.22	.87	14	.84	.82	.57	.98	.23	1.1	1.2	.37
8	.14	.21	.91	4.0	.60	3.2	.54	.54	.24	1.0	3.1	.39
9	.17	11	.81	1.7	.52	1.5	.63	.44	.25	.72	.94	.38
10	23	5.3	.79	1.0	.49	1.0	.51	.45	.23	.34	.86	.41
11	41	.85	.67	25	.46	.75	.42	.41	.22	.31	.56	.48
12	19	.52	.66	5.8	.44	.66	.40	.42	.24	.30	.68	.53
13	4.6	.36	.74	1.4	.45	2.9	.41	.43	.25	.29	.47	.54
14	.75	.29	.77	.84	.64	1.8	.40	.32	.22	.31	8.2	.53
15	.39	.26	.75	.65	.46	1.4	.81	.29	.22	.30	2.8	.51
16	.23	.24	.74	7.7	.42	1.0	.53	.28	2.3	.36	.99	.49
17	.21	.26	.72	1.2	.43	.82	.38	.28	1.3	.37	.57	.48
18	5.1	.25	.82	.83	.48	4.5	.37	.27	.84	.85	.41	.47
19	1.3	.22	.90	.72	.48	1.3	.71	.83	.32	.71	.36	.51
20	.59	.20	5.0	3.2	.76	.93	1.5	.85	4.7	.48	.34	.50
21	.42	.19	3.9	.87	.69	.66	9.5	.49	13	.47	.34	.48
22	39	.22	1.3	.69	.63	.58	1.7	.35	1.7	.47	.34	.48
23	35	.23	1.0	.57	5.9	.51	.91	.31	.81	.46	.33	.48
24	2.7	.23	1.0	.62	1.4	.42	.54	.28	.51	.43	.32	.50
25	9.5	.22	.86	.59	.95	.43	.52	.26	.43	.40	.42	7.7
26	4.0	.21	.80	.53	.72	.48	.44	.24	.41	3.3	.38	1.2
27	1.0	.21	1.2	.46	.57	.47	.49	.38	.35	2.0	.38	.43
28	.70	.93	1.1	.46	.55	.51	.51	.29	.34	.77	.38	.31
29	.53	.69	.90	.45	---	14	.82	.24	.34	1.7	.37	.26
30	.43	.36	.93	1.1	---	5.4	2.1	.23	.34	.98	.36	.25
31	.36	---	1.0	.85	---	1.5	---	.22	---	.57	.34	---
TOTAL	191.35	25.30	40.08	80.02	21.95	118.44	30.43	16.51	31.25	24.47	34.78	20.65
MEAN	6.17	.84	1.29	2.58	.78	3.82	1.01	.53	1.04	.79	1.12	.69
MAX	41	11	5.0	25	5.9	52	9.5	3.9	13	3.3	8.2	7.7
MIN	.13	.19	.29	.45	.42	.42	.37	.22	.21	.29	.32	.25
CFSM	6.17	.84	1.29	2.58	.78	3.82	1.01	.53	1.04	.79	1.12	.69
IN.	7.12	.94	1.49	2.98	.82	4.41	1.13	.61	1.16	.91	1.29	.77

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 1991, BY WATER YEAR (WY)

	1988	1989	1990	1991
MEAN	3.19	.68	1.02	1.85
MAX	6.23	.84	1.38	2.58
(WY)	1991	1991	1990	1991
MIN	.56	.57	.38	.75
(WY)	1989	1990	1989	1989

## SUMMARY STATISTICS

## FOR 1990 CALENDAR YEAR

## FOR 1991 WATER YEAR

## WATER YEARS 1988 - 1991

ANNUAL TOTAL	565.41	635.23	
ANNUAL MEAN	1.55	1.74	1.42
HIGHEST ANNUAL MEAN			1.75
LOWEST ANNUAL MEAN			1.25
HIGHEST DAILY MEAN	41 Oct 11	52 Mar 3	52 Mar 3 1991
LOWEST DAILY MEAN	.12 Sep 3	.13 Oct 3	.12* Sep 3 1990
ANNUAL SEVEN-DAY MINIMUM	.12 Sep 2	.17 Oct 2	.12 Sep 2 1990
INSTANTANEOUS PEAK FLOW		398* Oct 22	398* Oct 22 1990
INSTANTANEOUS PEAK STAGE		5.86* Oct 22	5.86* Oct 22 1990
INSTANTANEOUS LOW FLOW		.12* Oct 5	.09 Sep 3 1990
ANNUAL RUNOFF (CFSM)	1.55	1.74	1.42
ANNUAL RUNOFF (INCHES)	21.03	23.63	19.23
10 PERCENT EXCEEDS	2.4	3.2	2.2
50 PERCENT EXCEEDS	.43	.52	.42
90 PERCENT EXCEEDS	.17	.24	.21

\* See REMARKS.

## PEE DEE RIVER BASIN

0212429960 REEDY CREEK TRIBUTARY NO. 2 BELOW WIBERLY BRANCH NEAR MINT HILL, NC

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1988 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: April 1988 to September 1990.

WATER TEMPERATURE: April 1988 to September 1990.

INSTRUMENTATION.--Water-quality monitor from April 1988 to September 1990.

REMARKS.--Station operated as part of the Charlotte-Mecklenburg County Water-Quality Study.

COOPERATION.--Chemical samples were collected by the U.S. Geological Survey. Laboratory analyses, other than biological data, were performed by the National Water-Quality Laboratory.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 303 microsiemens, Aug. 4, 1988; minimum, 31 microsiemens, Sept. 4, 1988.

WATER TEMPERATURE: Maximum, 27.9°C, Aug. 5, 1988; minimum, 0.0°C, Dec. 22-25, 1989.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN DEMAND, BIO- CHEM- ICAL, 5 DAY (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)
NOV												
07...	1130	--	--	--	--	--	780	300	--	--	--	--
19...	1400	130	6.8	11.5	9.8	--	570	130	6.8	5.5	0.10	88
JAN												
10...	1530	--	--	--	--	--	1700	24000	--	--	--	--
FEB												
11...	1040	--	--	--	--	--	1700	91	--	--	--	--
MAR												
20...	1545	--	--	--	--	--	200	180	--	--	--	--
27...	1345	125	7.4	19.5	10.4	1.0	8500	4600	5.1	4.5	<0.10	84
APR												
17...	1310	--	--	--	--	--	820	510	--	--	--	--
MAY												
09...	1300	125	7.5	18.5	--	1.3	1300	1600	4.4	4.7	<0.10	74
JUL												
01...	1435	--	--	--	--	--	790	3200	--	--	--	--
09...	1330	128	7.5	27.0	8.4	0.4	6000	3400	4.0	5.5	0.20	90
AUG												
06...	1400	--	--	--	--	--	21000	2500	--	--	--	--
27...	1515	146	7.4	22.5	7.3	1.2	1900	2100	4.2	11	0.30	86

DATE	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS NH4)	PHOS- PHATE, TOTAL (MG/L AS PO4)	PHOS- PHORUS ORTHO TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)
NOV											
07...	--	--	--	--	--	--	--	--	--	--	--
19...	0.080	0.020	0.100	0.200	0.26	0.12	0.040	1	<100	<1	2
JAN											
10...	--	--	--	--	--	--	--	--	--	--	--
FEB											
11...	--	--	--	--	--	--	--	--	--	--	--
MAR											
20...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	0.100	--	--	--	--	<1	<100	<1	1
APR											
17...	--	--	--	--	--	--	--	--	--	--	--
MAY											
09...	--	--	0.110	--	--	--	--	1	<100	<1	2
JUL											
01...	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	1	<100	<1	8
AUG											
06...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	0.300	--	--	--	--	<1	<100	<1	1

## PEE DEE RIVER BASIN

0212429960 REEDY CREEK TRIBUTARY NO. 2 BELOW WIBERLY BRANCH NEAR MINT HILL, NC

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	SELE- NIUM, TOTAL RECOV- ERABLE (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	CARBON, ORGANIC TOTAL (MG/L AS C)	SEDI- MENT, SUS- PENDEDED (MG/L)	HALO- GENS, ORGANIC TOTAL (MG/L)
NOV 07...	--	--	--	--	--	--	--	--	--	--	--
19...	3	760	1	400	<0.10	<1	<1	20	3.3	--	0.01
JAN 10...	--	--	--	--	--	--	--	--	--	--	--
FEB 11...	--	--	--	--	--	--	--	--	--	--	--
MAR 20...	--	--	--	--	--	--	--	--	--	--	--
27...	4	1100	1	160	<0.10	<1	<1	<10	2.9	17	<0.01
APR 17...	--	--	--	--	--	--	--	--	--	--	--
MAY 09...	3	1500	2	120	<0.10	<1	<1	20	--	30	<0.02
JUL 01...	--	--	--	--	--	--	--	--	--	--	--
09...	9	6600	6	410	<0.10	<1	<1	30	4.8	30	<0.01
AUG 06...	--	--	--	--	--	--	--	--	--	--	--
27...	5	4500	2	840	<0.10	<1	<1	<10	4.3	12	0.01

## PEE DEE RIVER BASIN

02125000 BIG BEAR CREEK NEAR RICHFIELD, NC

LOCATION.--Lat 35°20'02", long 80°20'09", Stanly County, Hydrologic Unit 03040105, on left bank 300 ft downstream from Little Creek, 400 ft upstream from bridge on Secondary Road 1134, and 10 mi southwest of Richfield.

DRAINAGE AREA.--55.6 mi<sup>2</sup>.

PERIOD OF RECORD.--May 1954 to current year.

REVISED RECORDS.--WSP 1503: 1955, 1956(M). WDR NC-80-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 426.62 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. No flow occurs periodically. Minimum discharge for current water year, no flow, also occurred Oct. 2-10.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of August 1921 reached a stage of about 19 ft, information from State Highway Commission.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	26	33	47	44	28	78	43	5.1	5.9	17	8.6
2	.00	22	27	41	38	274	56	28	5.9	5.3	360	7.5
3	.00	19	317	37	35	1650	44	21	5.9	194	280	6.6
4	.00	17	724	47	32	1200	37	18	5.3	173	72	6.0
5	.00	16	161	39	30	263	37	16	4.3	213	173	5.5
6	.00	14	84	35	30	138	41	28	3.4	139	45	5.1
7	.00	13	60	1290	40	114	33	20	2.6	40	29	4.7
8	.00	12	71	608	38	170	30	15	2.6	24	26	4.4
9	.00	19	55	278	31	172	44	13	2.5	17	21	3.8
10	363	633	44	150	27	97	40	13	2.2	13	16	3.4
11	5240	130	37	1310	25	68	29	13	2.1	11	13	3.2
12	375	66	33	789	23	57	24	15	1.9	36	18	3.0
13	328	46	30	269	22	191	21	37	1.9	48	23	2.8
14	82	35	29	143	30	169	21	72	1.6	15	225	2.8
15	42	29	26	99	27	97	38	23	1.6	11	304	2.6
16	28	26	24	411	20	66	44	15	2.5	8.5	75	2.3
17	21	24	22	197	18	55	28	11	114	8.3	40	2.2
18	28	21	21	110	21	352	22	9.5	123	10	28	2.0
19	38	19	23	79	22	170	201	78	22	11	22	2.1
20	22	17	26	198	24	88	279	63	41	9.3	17	5.8
21	16	16	356	125	29	63	874	50	313	7.3	14	3.2
22	173	15	130	76	25	52	251	30	262	6.2	12	2.8
23	2860	14	84	60	110	45	104	20	51	5.4	11	2.5
24	226	14	65	58	100	40	63	15	28	4.5	13	2.3
25	242	13	46	61	58	33	44	12	18	4.0	34	36
26	619	12	38	48	46	29	36	9.8	14	161	15	53
27	127	11	39	43	37	27	32	8.6	11	282	13	16
28	69	30	73	41	31	30	30	7.8	9.1	165	30	9.5
29	48	71	60	37	---	638	28	7.0	7.8	62	23	6.9
30	37	49	63	44	---	573	77	6.1	6.7	35	15	5.7
31	31	---	61	70	---	136	---	5.5	---	24	11	---
TOTAL	11015.00	1449	2862	6840	1013	7085	2686	723.3	1072.0	1748.7	1995	222.3
MEAN	355	48.3	92.3	221	36.2	229	89.5	23.3	35.7	56.4	64.4	7.41
MAX	5240	633	724	1310	110	1650	874	78	313	282	360	53
MIN	.00	11	21	35	18	27	21	5.5	1.6	4.0	11	2.0
CFSM	6.39	.87	1.66	3.97	.65	4.11	1.61	.42	.64	1.01	1.16	.13
IN.	7.37	.97	1.91	4.58	.68	4.74	1.80	.48	.72	1.17	1.33	.15

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 1991, BY WATER YEAR (WY)

	MEAN	41.6	28.4	59.0	106	138	122	73.0	40.9	29.8	30.8	27.3	17.6
MAX	351	212	186	293	284	267	247	234	140	220	223	116	
(WY)	1991	1986	1977	1978	1984	1980	1958	1975	1957	1984	1967	1975	
MIN	.006	.34	2.12	4.38	16.2	13.2	6.87	1.32	.24	.31	.002	.009	
(WY)	1962	1962	1966	1981	1986	1981	1967	1986	1986	1986	1980	1990	

## SUMMARY STATISTICS

## FOR 1990 CALENDAR YEAR

## FOR 1991 WATER YEAR

## WATER YEARS 1954 - 1991

ANNUAL TOTAL	37589.44	38711.30	
ANNUAL MEAN	103	106	59.4
HIGHEST ANNUAL MEAN			112
LOWEST ANNUAL MEAN			27.3
HIGHEST DAILY MEAN	5240	5240	5240
LOWEST DAILY MEAN	.00	.00	.00
ANNUAL SEVEN-DAY MINIMUM	.00	.00	.00
INSTANTANEOUS PEAK FLOW		10100	11100
INSTANTANEOUS PEAK STAGE		15.31	15.95
INSTANTANEOUS LOW FLOW		.00*	.00*
ANNUAL RUNOFF (CFSM)	1.85	1.91	1.07
ANNUAL RUNOFF (INCHES)	25.15	25.90	14.51
10 PERCENT EXCEEDS	214	218	120
50 PERCENT EXCEEDS	23	30	12
90 PERCENT EXCEEDS	.00	4.2	.45

\* See REMARKS.

## PEE DEE RIVER BASIN

02126000 ROCKY RIVER NEAR NORWOOD, NC  
(National stream-quality accounting network station)

LOCATION.--Lat 35°08'54", long 80°10'33", Stanly County, Hydrologic Unit 03040105, on left bank 1,000 ft downstream from Lanes Creek, 1.5 mi upstream from bridge on Secondary Road 1935, 6 mi southwest of Norwood, and 11.2 mi upstream from mouth.

DRAINAGE AREA.--1,372 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1929 to current year.

REVISED RECORDS.--WSP 852: 1937. WSP 1052: 1936(M). WSP 1503: 1935, 1945. WDR NC-80-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 212.91 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Satellite telemetry installed June 1991.

REMARKS.--No estimated daily discharges. Records good. Maximum gage height for period of record derived from floodmark. Minimum discharge for current water year also occurred Oct. 3.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in August 1908 reached a stage of 35 ft, from information by local residents, discharge, 67,600 ft<sup>3</sup>/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	68	743	895	1740	2200	823	3120	3200	307	179	522	236
2	66	604	654	1230	1280	4870	1890	1370	1020	180	2800	203
3	66	533	1260	1070	1080	14600	1360	923	2110	5250	12800	184
4	71	471	8840	1050	988	33700	1150	720	981	3270	3150	184
5	81	430	4220	1040	918	17200	1050	616	667	1300	1250	183
6	103	410	1960	903	868	4810	1430	1490	392	3290	1010	178
7	132	385	1310	5740	1020	3100	1290	2160	303	1130	707	174
8	95	369	1240	19400	2840	2730	1030	853	259	539	2460	180
9	83	364	1210	11100	1690	3890	5330	606	237	376	1820	159
10	372	8710	1010	4110	1100	2600	3190	540	220	332	856	152
11	52900	7640	874	9650	914	1800	1780	524	204	282	783	147
12	39300	2600	754	26400	800	1430	1100	744	205	250	629	147
13	16000	1420	661	12900	729	2440	875	849	198	313	2200	142
14	7470	1060	621	4230	848	5010	784	716	191	239	2550	137
15	2230	823	582	2800	1050	3140	801	544	335	198	8870	137
16	1190	705	547	6590	825	1880	1240	553	220	180	3170	129
17	837	631	517	6480	646	1390	1130	473	390	229	1240	127
18	638	555	493	3230	628	3010	836	582	1160	250	790	127
19	852	507	527	2210	683	4760	2510	1180	636	360	549	131
20	729	512	690	3710	711	2430	9990	2170	821	415	428	180
21	492	441	7920	4600	791	1550	8720	1330	4830	283	360	211
22	422	418	4490	2610	774	1260	8780	889	1870	208	308	178
23	32100	397	2450	1760	2220	1120	3380	663	1190	185	278	144
24	25700	384	1710	1480	5040	1020	1880	507	545	176	257	129
25	7730	371	1350	2380	2230	871	1280	405	361	170	258	147
26	10400	349	1060	1990	1400	766	1040	352	299	157	373	1900
27	6050	360	908	1370	1120	704	952	318	260	2940	302	751
28	2360	583	1380	1200	943	682	984	1110	233	1600	352	331
29	1420	1820	1550	1090	---	3820	900	889	214	829	458	218
30	1090	1530	1310	1150	---	23300	2810	629	195	2970	392	175
31	894	---	1360	3850	---	11600	---	370	---	1390	295	---
TOTAL	211941	36125	54353	149063	36336	162306	72612	28275	20853	29470	52217	7421
MEAN	6837	1204	1753	4808	1298	5236	2420	912	695	951	1684	247
MAX	52900	8710	8840	26400	5040	33700	9990	3200	4830	5250	12800	1900
MIN	66	349	493	903	628	682	784	318	191	157	257	127
CFSM	4.98	.88	1.28	3.50	.95	3.82	1.76	.66	.51	.69	1.23	.18
IN.	5.75	.98	1.47	4.04	.99	4.40	1.97	.77	.57	.80	1.42	.20

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 1991, BY WATER YEAR (WY)

MEAN	903	760	1340	2430	2791	2717	1745	856	677	762	766	677
MAX	6837	4763	4564	7263	7922	6663	7097	3998	3017	3443	2917	8262
(WY)	1991	1949	1933	1936	1960	1980	1936	1975	1982	1941	1967	1945
MIN	45.9	54.1	105	152	321	412	234	142	88.5	95.6	82.4	41.0
(WY)	1931	1942	1934	1934	1938	1981	1967	1981	1986	1986	1957	1954

## SUMMARY STATISTICS

## FOR 1990 CALENDAR YEAR

## FOR 1991 WATER YEAR

## WATER YEARS 1930 - 1991

ANNUAL TOTAL	696223	860972	
ANNUAL MEAN	1907	2359	1346
HIGHEST ANNUAL MEAN			2492
LOWEST ANNUAL MEAN			449
HIGHEST DAILY MEAN	52900	Oct 11	52900
LOWEST DAILY MEAN	66	Oct 2	66
ANNUAL SEVEN-DAY MINIMUM	71	Sep 28	84
INSTANTANEOUS PEAK FLOW			61800
INSTANTANEOUS PEAK STAGE			32.93
INSTANTANEOUS LOW FLOW			63*
ANNUAL RUNOFF (CFSM)	1.39		1.72
ANNUAL RUNOFF (INCHES)	18.88		23.34
10 PERCENT EXCEEDS	4220		4850
50 PERCENT EXCEEDS	600		875
90 PERCENT EXCEEDS	96		184
* See REMARKS.			

## PEE DEE RIVER BASIN

02126000 ROCKY RIVER NEAR NORWOOD, NC--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1948, 1956-73, 1977-80, October 1986 to September 1987.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1955 to September 1967, October 1976 to September 1980.

WATER TEMPERATURE: October 1947 to September 1948, October 1955 to September 1967, October 1976 to September 1980.

REMARKS.--Station operated as part of NASQAN network from October 1986 to September 1987. Miscellaneous chemical data published for water years 1945, 1955-56, 1958, 1960, 1963-64, 1966. Daily records of specific conductance for water years 1956-64 are available in files of district office in Raleigh, NC. For water years 1958-67, data were published as Rocky River at Gaddy, near Norwood. (station 02125681)

COOPERATION.--Chemical and biological data shown in last table were provided by the North Carolina Department of Environment, Health, and Natural Resources.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 1,050 microsiemens September 9, 10, 11, 1966; minimum daily, 38 microsiemens January 31, 1960.

WATER TEMPERATURE: Maximum daily, 35.0°C July 18, 1977, Aug. 6, 1980; minimum daily, 0.0°C on several days during most winters.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TUR- BID- ITY (NTU)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)
NOV												
06...	1045	407	210	6.8	15.0	4.1	756	7.5	310	250	11	4.2
JAN												
09...	1130	11700	85	7.1	8.0	88	765	12.1	--	--	5.8	2.7
MAR												
28...	1000	673	200	7.6	18.5	4.9	752	8.6	--	--	8.2	3.7
MAY												
22...	1100	888	165	7.7	21.0	20	--	6.8	K1000	K400	9.3	3.9
JUL												
22...	1100	208	350	8.1	29.0	10	762	7.8	2100	380	11	4.6
SEP												
25...	1000	128	450	8.3	21.0	2.2	750	5.2	K140	K500	13	5.2
DATE		SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE WATER DIS IT FIELD MG/L AS HCO3	ALKA- LINITY WAT DIS TOT IT FIELD MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)
NOV												
06...	23	50	1	4.1	63	52	28	17	<0.10	16	136	1.49
JAN												
09...	4.4	25	0.4	2.6	19	15	9.9	5.4	<0.10	9.9	69	0.660
MAR												
28...	22	55	2	2.7	44	36	24	18	<0.10	8.5	107	0.750
MAY												
22...	16	44	1	4.4	68	56	20	16	0.30	12	120	1.56
JUL												
22...	52	68	3	6.0	85	70	48	31	0.30	11	228	1.58
SEP												
25...	71	71	4	8.2	98	80	61	34	0.30	8.7	263	--

## PEE DEE RIVER BASIN

02126000 ROCKY RIVER NEAR NORWOOD, NC--Continued

## WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS NH4)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)
NOV 06...	1.49	0.010	0.010	1.50	1.50	0.040	0.040	0.05	0.05	0.56	--	0.60
JAN 09...	0.680	0.040	0.020	0.700	0.700	0.160	0.130	0.21	0.17	0.64	--	0.80
MAR 28...	0.810	0.020	0.020	0.770	0.830	0.010	<0.010	0.01	--	0.39	--	0.40
MAY 22...	1.57	0.040	0.030	1.60	1.60	0.060	0.060	0.08	0.08	0.84	--	0.90
JUL 22...	1.49	0.020	0.010	1.60	1.50	0.040	0.030	0.05	0.04	0.76	0.67	0.80
SEP 25...	--	<0.010	<0.010	0.980	1.00	0.020	0.030	0.03	0.04	0.78	--	0.80
DATE	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS NO3)	NITRO- GEN DIS- SOLVED (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHATE, TOTAL (MG/L AS PO4)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO TOTAL (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	
NOV 06...	--	2.1	9.3	--	0.100	0.28	0.100	0.090	0.090	0.28	30	
JAN 09...	--	1.5	6.6	--	0.190	0.34	0.180	0.110	0.150	0.46	560	
MAR 28...	--	1.2	5.2	--	0.090	0.18	0.120	0.060	0.070	0.21	--	
MAY 22...	--	2.5	11	--	0.260	0.64	0.180	0.210	0.150	0.46	170	
JUL 22...	0.70	2.4	11	2.2	0.300	0.80	0.320	0.260	0.250	0.77	--	
SEP 25...	--	1.8	7.9	--	0.360	0.95	0.340	0.310	0.310	0.95	10	
DATE	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	
NOV 06...	2	28	<0.5	<1.0	<1	<3	3	170	<1	<4	16	
JAN 09...	<1	19	0.5	<1.0	<1	<3	5	530	<1	<4	21	
MAR 28...	--	--	--	--	--	--	--	--	--	--	--	
MAY 22...	1	22	<0.5	<1.0	<1	<3	6	380	1	<4	11	
JUL 22...	--	--	--	--	--	--	--	--	--	--	--	
SEP 25...	3	24	<0.5	<1.0	<1	<3	8	93	<1	24	6	
DATE	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. & FINER THAN .062 MM	
NOV 06...	<0.1	<10	1	<1	<1.0	90	<6	11	4	4.4	65	
JAN 09...	<0.1	<10	1	<1	<1.0	47	<6	10	119	3760	69	
MAR 28...	--	--	--	--	--	--	--	--	6	11	74	
MAY 22...	<0.1	<10	1	<1	<1.0	79	<6	4	31	74	70	
JUL 22...	--	--	--	--	--	--	--	--	18	10	89	
SEP 25...	<0.1	<10	2	<1	<1.0	120	<6	20	17	5.9	30	

## PEE DEE RIVER BASIN

02128000 LITTLE RIVER NEAR STAR, NC

LOCATION.--Lat 35°23'11", long 79°49'56", Montgomery County, Hydrologic Unit 03040104, on left bank 9 ft downstream from bridge on Secondary Road 1340, 50 ft upstream from Black Rock Branch, 0.2 mi upstream from Norfolk Southern Railway bridge, 0.3 mi downstream from West Fork Little River, and 3 mi west of Star.

DRAINAGE AREA.--106 mi<sup>2</sup>.

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1949-54. April 1954 to current year.

REVISED RECORDS.--WDR NC-80-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 409.00 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Minimum discharge for period of record also occurred Oct. 5, 1968, as a result of upstream withdrawals for water supply. Minimum discharge for current water year also occurred Oct. 3 and 4.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in September 1945 reached a stage of about 20 ft, from information by local resident.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.6	36	55	147	102	75	184	141	38	25	19	17
2	2.1	32	42	81	86	249	146	92	61	24	115	15
3	2.1	29	87	67	83	830	125	81	56	34	410	13
4	2.4	27	1580	83	82	1640	114	67	48	48	86	13
5	3.1	27	246	87	81	398	110	66	37	37	40	12
6	2.4	26	113	66	82	200	115	101	32	36	28	13
7	2.8	24	80	619	94	195	107	83	29	33	24	11
8	3.1	25	83	1110	213	173	101	64	28	27	21	11
9	5.8	25	101	373	137	192	106	59	27	23	20	18
10	7.9	196	68	193	99	139	103	62	26	20	46	14
11	1470	119	58	1500	87	118	95	61	25	19	43	11
12	578	57	52	2210	80	108	84	60	24	18	28	9.9
13	227	42	48	403	77	204	83	60	24	17	29	9.2
14	102	35	47	199	90	292	86	60	23	17	29	9.3
15	47	31	44	144	99	182	100	57	22	15	349	8.6
16	33	31	43	530	77	132	113	53	21	14	104	8.1
17	26	30	42	366	69	115	113	50	23	14	45	7.6
18	23	29	40	173	79	643	88	48	34	30	30	7.0
19	23	30	45	132	103	377	109	108	51	31	24	8.2
20	21	30	46	240	92	180	604	147	513	19	21	22
21	24	29	272	218	89	140	235	112	103	17	18	19
22	22	28	146	136	84	123	251	75	125	20	16	28
23	5550	29	86	110	101	116	128	60	56	20	15	31
24	443	30	70	106	172	109	101	53	47	15	15	23
25	160	33	57	112	113	98	86	49	38	13	14	19
26	1230	28	49	102	98	92	77	47	33	15	19	16
27	195	28	50	95	88	89	75	58	31	67	21	14
28	88	34	104	94	79	93	74	49	29	45	43	13
29	61	140	106	91	---	704	71	72	28	28	42	12
30	48	112	88	93	---	1890	271	54	26	24	26	11
31	41	---	178	122	---	299	---	43	---	21	20	---
TOTAL	10446.3	1372	4126	10002	2736	10195	4055	2192	1658	786	1760	423.9
MEAN	337	45.7	133	323	97.7	329	135	70.7	55.3	25.4	56.8	14.1
MAX	5550	196	1580	2210	213	1890	604	147	513	67	410	31
MIN	2.1	24	40	66	69	75	71	43	21	13	14	7.0
CFSM	3.18	.43	1.26	3.04	.92	3.10	1.28	.67	.52	.24	.54	.13
IN.	3.67	.48	1.45	3.51	.96	3.58	1.42	.77	.58	.28	.62	.15

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 1991, BY WATER YEAR (WY)

	MEAN	71.1	64.6	103	167	218	217	167	104	71.1	62.2	55.7	44.2
MAX	337	366	361	463	467	450	429	296	273	465	249	261	
(WY)	1991	1986	1973	1978	1960	1989	1958	1990	1972	1975	1985	1979	
MIN	4.03	10.7	18.7	26.7	56.1	47.0	38.0	30.3	12.8	6.37	4.80	.76	
(WY)	1987	1962	1966	1981	1986	1967	1967	1981	1967	1977	1983	1968	

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1954 - 1991
ANNUAL TOTAL	56536.0	49752.2	
ANNUAL MEAN	155	136	112
HIGHEST ANNUAL MEAN			209
LOWEST ANNUAL MEAN			42.4
HIGHEST DAILY MEAN	5550	Oct 23	5640
LOWEST DAILY MEAN	1.9	Sep 9	.27
ANNUAL SEVEN-DAY MINIMUM	2.3	Sep 5	.30
INSTANTANEOUS PEAK FLOW			10400
INSTANTANEOUS PEAK STAGE			16.46
INSTANTANEOUS LOW FLOW			2.0*
ANNUAL RUNOFF (CFSM)	1.46	1.29	1.06
ANNUAL RUNOFF (INCHES)	19.84	17.46	14.36
10 PERCENT EXCEEDS	302	215	195
50 PERCENT EXCEEDS	76	58	50
90 PERCENT EXCEEDS	6.0	15	9.7

\* See REMARKS.



## PEE DEE RIVER BASIN

0213228795 JORDAN CREEK NEAR SILVER HILL, NC  
(National Acid Precipitation Assessment Program)

LOCATION.--Lat 34°58'12", long 79°31'34", Scotland County, Hydrologic Unit 03040204, on right bank 8 ft upstream from culvert on Gardner Farm Road Extension in State Sandhills Game Management Area, 0.15 mi west of Secondary Road 1328, 3.5 mi east of Marston, 4.9 mi south of Hoffman, and 6.0 mi southwest of Silver Hill.

DRAINAGE AREA.--0.36 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1983 to current year.

GAGE.--Water-stage recorder. V-notch, sharp-crested weir since Nov. 8, 1984. Elevation of gage is 385 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Diurnal fluctuation at low flows in the growing season. Maximum gage height and discharge prior to installation of weir occurred on July 17, 1984, discharge not determined. Maximum discharge, since installation of weir on Nov. 8, 1984; 7.9 ft<sup>3</sup>/s July 31, 1987. Minimum discharge for period of record occurred many times in June, July, and Aug. 1988, and periodically in July and August 1990. Minimum discharge for current water year occurred several times in October and July.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.13	.23	.23	e.23	.21	.19	.27	.26	.21	.15	.33	.21
2	.13	.23	.23	e.21	.21	.30	.25	.24	.38	.15	.41	.20
3	.13	.23	.27	e.19	.21	.49	.25	.23	.28	.22	.29	.19
4	.20	.23	.25	e.19	.19	.30	.25	.24	.22	.18	.22	.19
5	.17	.23	.21	.19	.19	.25	.28	.26	.20	.17	.20	.18
6	.13	.23	.21	.19	.20	.23	.27	.40	.20	.18	.19	.18
7	.13	.23	.22	.25	.23	.24	.26	.26	.20	.17	.28	.19
8	.13	.23	.29	.23	.25	.23	.36	.25	.19	.16	.29	.18
9	.13	.24	.23	.21	.21	.23	.32	.27	.19	.16	.29	.17
10	.27	.36	.21	.19	.20	.23	.30	.26	.18	.16	.27	.17
11	1.4	.25	.21	.31	.19	.23	.27	.26	.18	.15	.22	.17
12	.29	.23	.21	.26	.19	.23	.27	.30	.18	.15	.35	.17
13	.23	.23	.21	.22	.19	.35	.27	.31	.18	.14	.26	.18
14	.20	.23	.21	.21	.21	.47	.28	.28	.20	.14	.23	.18
15	.18	.23	.21	.20	.19	.27	.27	.26	.21	.14	.22	.17
16	.17	.23	.21	.28	.19	.25	.27	.25	.20	.16	.20	.17
17	.17	.23	.19	.22	.19	.25	.27	.24	.22	.20	.19	.17
18	.20	.23	.20	.21	.19	.30	.29	.25	.19	.29	.19	.17
19	.18	.22	.21	.20	.19	.27	.31	.28	.20	.24	.18	.18
20	.17	.22	.22	.30	.19	.25	.30	.29	.26	.16	.18	.50
21	.16	.21	.29	.22	.19	.25	.33	.26	.28	.18	.17	.19
22	.22	.22	.23	.21	.22	.24	.29	.24	.39	.17	.17	.17
23	.88	.23	.21	.21	.26	.24	.28	.23	.20	.15	.17	.17
24	.28	.23	.21	.25	.22	.24	.27	.22	.19	.14	.22	.20
25	.37	.21	.21	.26	.21	.23	.26	.23	.17	.16	.23	.24
26	.46	.21	e.27	.22	.21	.23	.27	.22	.17	.14	.23	.20
27	.27	.21	e.22	.21	.19	.23	.27	.24	.17	.50	.25	.17
28	.25	.26	e.21	.21	.19	.25	.26	.22	.16	.47	.25	.17
29	.25	.28	e.19	.21	---	.44	.27	.21	.16	.28	.22	.16
30	.25	.24	e.19	.27	---	.42	.27	.21	.15	.34	.20	.16
31	.24	---	e.19	.25	---	.28	---	.20	---	.38	.19	---
TOTAL	8.37	7.04	6.85	7.01	5.71	8.61	8.38	7.87	6.31	6.38	7.29	5.75
MEAN	.27	.23	.22	.23	.20	.28	.28	.25	.21	.21	.24	.19
MAX	1.4	.36	.29	.31	.26	.49	.36	.40	.39	.50	.41	.50
MIN	.13	.21	.19	.19	.19	.19	.25	.20	.15	.14	.17	.16
CFSM	.75	.65	.61	.63	.57	.77	.78	.71	.58	.57	.65	.53
IN.	.86	.73	.71	.72	.59	.89	.87	.81	.65	.66	.75	.59

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 1991, BY WATER YEAR (WY)

	MEAN	MAX	(WY)	MIN	(WY)
1983	.27	.36	1986	.16	1987
1984	.27	.41	1986	.17	1987
1985	.26	.41	1986	.15	1987
1986	.26	.37	1986	.16	1987
1987	.26	.33	1985	.16	1989
1988	.28	.39	1984	.20	1988
1989	.28	.46	1984	.20	1988
1990	.26	.40	1984	.17	1988
1991	.24	.44	1984	.15	1988
1992	.27	.58	1984	.15	1988
1993	.30	.55	1984	.17	1988
1994	.26	.46	1984	.14	1990

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1983 - 1991
ANNUAL TOTAL	80.33	85.57	
ANNUAL MEAN	.22	.23	.27
HIGHEST ANNUAL MEAN			.40 1984
LOWEST ANNUAL MEAN			.20 1988
HIGHEST DAILY MEAN	1.4 Oct 11	1.4 Oct 11	2.1 Jul 17 1984
LOWEST DAILY MEAN	.12 Jul 5	.13 Oct 1	.11 Nov 24 1986
ANNUAL SEVEN-DAY MINIMUM	.13 Sep 1	.15 Oct 1	.11 Jul 5 1988
INSTANTANEOUS PEAK FLOW		4.6 Oct 11	NOT DETERMINED* Jul 17 1984
INSTANTANEOUS PEAK STAGE		1.86 Oct 11	2.70 Jul 17 1984
INSTANTANEOUS LOW FLOW		.11* Oct 1	.09* Jun 19 1988
ANNUAL RUNOFF (CFSM)	.61	.65	.74
ANNUAL RUNOFF (INCHES)	8.30	8.84	10.09
10 PERCENT EXCEEDS	.28	.29	.40
50 PERCENT EXCEEDS	.22	.22	.25
90 PERCENT EXCEEDS	.13	.17	.15

\* See REMARKS.

0213228795 JORDAN CREEK NEAR SILVER HILL, NC--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1984 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1983 to current year.

pH: October 1983 to current year.

WATER TEMPERATURE: October 1983 to current year.

INSTRUMENTATION.--Water-quality monitor since Oct. 1983. Automatic water sampler from May 1987 to Apr. 1988.

REMARKS.--Station operated as a continuous record index station in the National Acid Precipitation Assessment Program for defining effects of atmospheric deposition on surface-water chemistry. Precipitation monitoring station, which is part of the National Atmospheric Deposition Program/National Trends Network, is co-located with this station.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 65 microsiemens, March 3, 1991; minimum, 7 microsiemens, Nov. 5-15, 1986.

pH: Maximum, 5.97 units May 16, 1988; minimum, 3.6 units Nov. 16, 17, 18, 20, 1983.

WATER TEMPERATURE: Maximum, 22.3°C, July 27, 1991; minimum, 8.3°C, Dec. 25, 1989.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 65 microsiemens, March 3; minimum, 9 microsiemens, March 13.

pH: Maximum, 5.01 units, Nov. 15; minimum, 4.06 units, Oct. 11.

WATER TEMPERATURE: Maximum, 22.3°C, July 27; minimum, 10.6°C, Jan. 26.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

		DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	SULFATE DIS- SOLVED (MG/L AS SO4)	
DATE	TIME										
OCT											
10...	1700	0.39	17	4.6	18.5	0.15	0.16	0.80	0.16	0.48	
10...	1820	0.54	31	4.3	19.0	0.29	0.41	1.1	0.26	1.7	
11...	1150	1.56	60	4.1	20.0	0.52	0.54	1.1	0.48	3.1	
DEC											
05...	1500	0.20	17	4.8	14.0	0.18	0.14	0.80	0.08	0.73	
FEB											
14...	1515	0.20	17	4.7	13.5	<0.10	0.15	0.80	0.10	0.94	
14...	1520	0.20	17	4.7	13.5	<0.10	0.15	0.80	0.10	0.96	
APR											
23...	1410	0.26	17	4.6	16.0	<0.10	0.15	0.80	0.09	0.97	
JUN											
18...	1545	0.15	15	4.6	19.0	<0.10	0.12	0.80	0.03	0.47	
AUG											
22...	1715	0.15	16	4.6	19.5	0.12	0.13	0.90	0.04	0.39	
DATE		CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C)
OCT											
10...	1.4	0.01	4.4	<0.010	0.025	0.004	50	31	2	3.9	
10...	1.8	0.02	5.2	0.030	0.025	0.001	190	75	5	11	
11...	2.1	0.04	4.2	<0.010	0.040	0.001	370	140	19	25	
DEC											
05...	1.5	<0.01	4.5	<0.010	0.012	<0.001	50	21	2	3.0	
FEB											
14...	1.4	<0.01	4.3	<0.010	0.011	<0.001	50	13	<1	2.7	
14...	1.4	<0.01	4.3	<0.010	0.004	<0.001	50	13	<1	2.7	
APR											
23...	1.5	<0.01	3.9	0.020	0.024	0.004	80	26	1	3.6	
JUN											
18...	1.5	<0.01	4.0	<0.010	0.036	<0.001	40	17	1	2.2	
AUG											
22...	1.4	0.02	4.4	<0.010	0.013	<0.001	40	24	1	2.5	

## PEE DEE RIVER BASIN

0213228795 JORDAN CREEK NEAR SILVER HILL, NC--Continued

SPECIFIC CONDUCTANCE, US/CM ± 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	15	14	15	20	19	19	17	16	17	17	16	16
2	15	15	15	19	18	19	17	15	16	16	15	16
3	15	15	15	19	18	18	19	15	16	16	14	15
4	28	15	18	19	18	18	19	17	18	16	15	16
5	23	17	20	18	18	18	---	---	---	16	15	16
6	18	16	17	18	17	17	---	---	---	16	13	15
7	16	16	16	17	16	17	---	---	---	23	14	17
8	16	16	16	17	16	17	---	---	---	21	18	19
9	16	15	16	27	17	18	---	---	---	19	17	18
10	42	15	21	32	21	26	---	---	---	17	17	17
11	60	38	51	21	19	20	---	---	---	33	16	22
12	38	22	28	19	17	18	---	---	---	29	21	24
13	24	21	23	19	18	18	---	---	---	22	20	21
14	22	20	21	18	17	18	17	17	17	20	19	19
15	22	19	21	18	17	18	18	17	17	19	16	18
16	20	17	19	18	16	17	17	16	17	21	16	19
17	19	17	18	17	16	17	17	17	17	20	17	19
18	19	17	18	17	16	17	17	15	16	19	17	18
19	21	18	19	17	16	17	16	15	16	18	16	17
20	20	18	19	17	16	17	21	16	17	25	17	21
21	18	16	17	17	16	17	28	18	22	21	18	20
22	24	16	18	17	15	16	18	15	17	19	18	19
23	53	22	40	16	15	16	16	15	16	20	18	19
24	31	23	27	16	15	16	17	15	16	22	18	20
25	42	22	26	16	15	16	17	16	17	22	20	21
26	44	29	36	16	15	16	17	16	17	21	19	20
27	29	25	27	16	15	16	19	16	17	20	18	19
28	26	23	24	18	15	16	19	18	19	18	16	18
29	24	22	23	18	17	17	18	17	17	18	16	17
30	23	21	22	17	16	17	17	15	16	21	15	18
31	22	19	20	---	---	---	16	15	16	20	17	19
MONTH	60	14	22	32	15	18	---	---	---	33	13	18
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	20	15	19	31	28	29	21	18	20	16	15	16
2	16	12	13	41	31	37	20	17	19	17	15	16
3	12	11	12	65	40	52	19	17	18	17	15	16
4	12	11	12	63	58	61	19	16	18	16	15	16
5	12	11	12	57	50	54	20	16	18	18	15	15
6	13	12	12	50	36	44	20	16	18	32	18	23
7	14	13	13	35	27	31	19	16	17	20	17	18
8	16	14	15	27	26	27	26	16	20	18	16	17
9	15	14	14	27	26	27	25	19	21	18	16	17
10	15	15	15	27	26	26	21	18	19	17	16	17
11	16	15	15	28	26	27	18	17	18	17	16	17
12	17	15	16	29	28	29	18	17	17	21	16	18
13	17	16	17	30	9	29	18	17	17	20	18	19
14	18	16	17	11	10	10	18	16	17	19	17	18
15	18	17	17	12	11	11	18	16	17	18	16	17
16	19	17	18	13	12	12	17	15	16	17	16	17
17	20	18	19	14	13	13	17	15	16	17	16	17
18	21	19	20	15	14	14	21	15	17	17	16	16
19	21	19	20	17	15	16	21	19	20	20	16	18
20	19	19	19	18	17	18	20	18	19	20	18	19
21	20	19	19	19	17	19	22	18	20	19	17	18
22	22	20	21	19	17	18	21	19	20	18	16	17
23	24	19	23	19	18	19	19	16	18	17	16	16
24	27	24	26	19	17	18	18	16	17	17	15	16
25	30	28	29	19	17	18	18	16	17	17	15	16
26	33	30	31	19	17	18	18	16	17	17	15	16
27	37	34	36	18	17	17	17	16	16	16	16	16
28	37	21	30	18	17	17	17	16	16	16	15	16
29	---	---	---	41	17	23	17	16	16	16	15	16
30	---	---	---	39	25	30	16	15	16	16	15	16
31	---	---	---	23	20	22	---	---	---	16	15	16
MONTH	37	11	19	65	9	25	26	15	18	32	15	17

## PEE DEE RIVER BASIN

0213228795 JORDAN CREEK NEAR SILVER HILL, NC--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	16	15	16	16	15	16	---	---	---	18	17	17
2	43	16	24	16	15	15	---	---	---	17	16	16
3	32	19	23	19	16	17	---	---	---	16	16	16
4	20	17	19	17	16	17	---	---	---	16	14	15
5	18	17	18	17	16	16	---	---	---	15	14	14
6	18	17	17	16	16	16	---	---	---	16	14	15
7	18	16	17	16	15	16	---	---	---	16	14	15
8	17	16	16	16	15	16	---	---	---	13	13	13
9	17	16	16	16	15	15	---	---	---	13	13	13
10	17	15	16	16	15	15	---	---	---	13	13	13
11	16	15	16	16	15	15	---	---	---	13	13	13
12	16	15	15	15	15	15	---	---	---	13	12	13
13	16	14	15	15	15	15	---	---	---	13	12	12
14	16	14	15	15	15	15	---	---	---	13	12	13
15	15	14	15	15	15	15	---	---	---	13	13	13
16	15	14	14	15	15	15	---	---	---	13	12	13
17	16	14	15	19	15	16	---	---	---	13	13	13
18	15	15	15	36	16	21	---	---	---	18	13	14
19	16	15	15	33	19	23	---	---	---	18	15	16
20	19	16	17	19	16	18	---	---	---	48	24	33
21	48	15	19	18	16	17	---	---	---	25	20	22
22	47	21	30	18	16	17	---	---	---	20	17	18
23	21	18	20	16	15	16	---	---	---	17	15	17
24	19	17	18	16	15	15	---	---	---	19	14	16
25	18	16	17	16	15	16	---	---	---	14	14	14
26	17	16	17	16	15	15	---	---	---	15	14	15
27	17	15	16	63	15	28	---	---	---	15	15	15
28	16	15	16	56	24	38	---	---	---	15	15	15
29	16	15	16	29	24	25	---	---	---	15	15	15
30	16	15	16	---	---	---	---	---	---	15	15	15
31	---	---	---	---	---	---	21	18	19	---	---	---
MONTH	48	14	17	---	---	---	---	---	---	48	12	15

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	18.1	17.4	17.9	16.4	15.1	15.7	14.4	12.9	13.7	14.2	14.0	14.1
2	18.0	17.2	17.6	16.4	15.2	15.9	15.1	13.9	14.6	14.2	13.6	14.1
3	18.1	17.2	17.7	16.6	15.4	16.0	15.7	15.1	15.4	14.3	13.6	14.0
4	18.6	17.8	18.2	16.7	15.5	16.1	15.6	14.0	15.2	14.3	13.3	14.1
5	18.3	17.4	18.0	16.8	15.7	16.3	---	---	---	13.8	13.0	13.4
6	18.0	16.9	17.5	16.7	15.5	16.2	---	---	---	14.5	12.9	13.8
7	18.3	17.5	18.0	16.4	15.2	15.7	---	---	---	14.8	13.4	14.2
8	18.5	17.9	18.2	15.7	15.1	15.4	---	---	---	13.4	12.9	13.2
9	18.6	17.8	18.2	15.5	15.0	15.2	---	---	---	13.3	12.9	13.1
10	19.3	18.0	18.5	15.8	15.1	15.6	---	---	---	13.5	13.2	13.3
11	20.7	19.3	19.9	15.5	14.6	15.1	---	---	---	13.4	12.8	13.3
12	19.4	19.1	19.3	15.8	14.5	15.1	---	---	---	13.6	13.0	13.3
13	19.3	18.9	19.1	15.3	14.4	14.9	---	---	---	13.4	12.3	12.9
14	19.3	18.6	19.0	15.0	13.9	14.4	14.0	13.5	13.7	13.0	11.9	12.4
15	18.7	17.9	18.4	15.1	13.7	14.4	13.8	13.2	13.5	13.6	11.9	12.7
16	18.4	17.6	18.0	15.4	14.1	14.7	14.3	13.6	14.0	14.1	13.4	13.8
17	18.4	17.5	18.0	15.1	14.2	14.7	13.8	13.3	13.6	13.6	12.7	13.2
18	18.7	18.2	18.5	14.6	13.6	14.1	14.8	13.6	14.4	13.4	12.3	12.8
19	18.0	16.6	17.3	14.7	13.4	14.0	15.2	14.2	14.8	13.0	12.2	12.7
20	17.2	16.0	16.7	15.0	13.7	14.3	14.4	13.7	14.1	13.3	12.6	13.0
21	17.8	16.9	17.4	14.8	13.6	14.2	14.4	13.7	14.1	13.2	12.2	12.9
22	18.2	17.4	17.8	15.0	13.7	14.4	15.2	14.2	14.8	12.2	11.2	11.8
23	18.8	18.2	18.6	15.4	14.5	15.0	15.8	14.8	15.4	12.2	10.9	11.5
24	18.1	17.5	17.8	15.2	14.2	14.7	15.5	13.5	14.9	11.9	11.4	11.7
25	17.6	16.8	17.4	15.3	14.0	14.6	13.5	12.8	13.2	11.9	11.0	11.6
26	16.8	15.9	16.6	15.2	13.9	14.6	13.4	12.8	13.0	11.7	10.6	11.1
27	16.2	15.3	15.8	15.3	14.0	14.7	13.1	12.4	12.8	12.2	10.8	11.5
28	16.4	15.1	15.7	16.1	14.9	15.7	13.4	12.4	12.9	13.0	12.1	12.5
29	16.0	14.9	15.4	16.0	14.5	15.6	14.1	13.4	13.7	13.3	12.7	13.1
30	15.9	14.6	15.3	14.4	13.4	14.0	15.0	14.0	14.6	13.6	13.2	13.4
31	16.2	14.6	15.4	---	---	---	15.2	14.0	15.0	13.6	12.2	13.3
MONTH	20.7	14.6	17.7	16.8	13.4	15.0	---	---	---	14.8	10.6	13.0

## PEE DEE RIVER BASIN

0213228795 JORDAN CREEK NEAR SILVER HILL, NC--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	12.8	11.6	12.2	14.3	12.6	13.5	15.4	14.1	14.8	18.3	17.5	17.9
2	14.0	12.2	13.1	14.7	14.1	14.4	15.3	13.9	14.6	17.9	16.9	17.5
3	14.3	12.7	13.6	14.6	14.0	14.5	15.0	13.8	14.4	17.5	16.5	17.0
4	14.3	12.8	13.6	14.7	14.0	14.5	15.2	13.9	14.5	17.2	16.7	17.0
5	14.4	12.9	13.7	14.7	13.4	14.0	15.3	14.3	14.9	17.5	16.9	17.2
6	14.9	13.9	14.4	14.6	13.4	14.1	16.4	15.1	15.7	18.1	17.5	17.8
7	15.0	14.8	14.9	15.3	14.5	14.8	16.6	15.3	16.0	17.8	17.0	17.6
8	14.9	13.5	14.4	14.6	13.2	14.1	16.6	15.5	16.1	17.4	16.6	17.1
9	14.2	12.9	13.5	14.1	12.9	13.4	17.3	16.2	16.8	17.1	16.8	17.0
10	13.9	12.6	13.2	13.8	13.0	13.4	17.4	16.3	16.8	17.5	16.8	17.2
11	13.2	12.0	12.7	13.8	12.6	13.2	16.6	15.6	16.1	17.6	17.1	17.4
12	12.5	11.5	12.0	13.6	12.6	13.2	16.0	15.2	15.6	17.6	17.0	17.4
13	13.0	11.4	12.2	13.9	11.5	13.4	16.0	15.2	15.6	17.7	17.1	17.4
14	13.5	12.9	13.2	13.1	12.5	12.9	16.8	15.7	16.1	18.1	17.4	17.8
15	13.1	11.4	12.4	13.4	13.0	13.2	16.8	15.8	16.3	18.2	17.6	17.9
16	11.6	10.8	11.2	13.2	12.6	13.0	17.2	16.1	16.6	18.5	17.6	18.0
17	12.4	10.7	11.6	13.6	12.8	13.1	17.2	16.5	16.8	18.5	17.9	18.2
18	13.4	12.3	12.9	14.2	13.6	14.0	17.1	16.3	16.7	18.4	17.8	18.1
19	14.3	13.5	14.0	14.2	13.7	14.0	16.8	16.0	16.4	18.2	17.4	17.7
20	14.9	14.1	14.6	14.1	13.2	13.7	16.5	15.8	16.1	17.6	17.2	17.4
21	14.8	14.5	14.7	15.1	13.9	14.4	16.3	15.6	15.8	18.2	17.4	17.7
22	14.8	14.4	14.6	15.5	14.4	15.0	15.8	15.0	15.5	18.3	17.4	17.8
23	14.5	13.3	13.9	16.0	15.1	15.5	16.4	14.9	15.7	18.2	17.7	17.9
24	13.5	13.0	13.3	16.0	14.8	15.4	16.8	15.7	16.2	18.2	17.6	17.9
25	14.3	13.4	13.8	15.8	14.3	15.0	16.3	15.3	15.9	18.1	17.4	17.9
26	13.8	12.6	13.3	15.8	14.2	15.1	16.8	15.6	16.2	18.4	17.7	18.0
27	13.4	12.2	12.8	16.1	15.1	15.7	17.2	16.5	16.8	18.6	17.7	18.1
28	13.7	12.2	13.0	16.3	15.7	16.0	17.9	16.5	17.2	19.0	18.0	18.5
29	---	---	---	16.4	15.7	16.1	18.1	17.0	17.5	19.0	18.5	18.7
30	---	---	---	16.2	15.2	15.8	18.0	17.3	17.6	18.9	18.4	18.6
31	---	---	---	15.6	14.6	15.1	---	---	---	19.0	18.4	18.7
MONTH	15.0	10.7	13.3	16.4	11.5	14.3	18.1	13.8	16.0	19.0	16.5	17.8

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	19.1	18.2	18.5	19.5	18.8	19.1	---	---	---	19.5	19.3	19.5
2	20.2	18.1	19.0	20.1	18.8	19.5	---	---	---	19.3	18.8	19.1
3	19.5	18.9	19.2	20.4	19.3	19.8	---	---	---	19.0	18.4	18.8
4	19.3	18.8	19.0	20.1	19.4	19.6	---	---	---	19.0	18.4	18.7
5	18.8	18.1	18.5	20.2	19.3	19.7	---	---	---	19.0	18.5	18.8
6	18.2	17.5	17.9	19.9	19.3	19.6	---	---	---	19.1	18.6	18.9
7	17.9	17.2	17.6	19.9	19.4	19.6	---	---	---	19.2	18.7	19.0
8	17.8	16.8	17.4	19.9	19.4	19.6	---	---	---	19.1	18.5	18.8
9	17.6	17.0	17.4	19.6	19.1	19.4	---	---	---	18.8	18.0	18.4
10	17.9	17.1	17.5	19.8	19.1	19.5	---	---	---	18.8	18.1	18.5
11	17.9	17.2	17.6	20.0	19.5	19.7	---	---	---	19.1	18.4	18.7
12	18.0	17.5	17.8	19.8	19.3	19.5	---	---	---	19.3	18.6	18.9
13	18.0	17.5	17.8	19.9	19.3	19.5	---	---	---	19.0	18.4	18.7
14	18.2	17.6	17.8	19.6	19.1	19.3	---	---	---	19.6	18.8	19.2
15	18.7	17.8	18.3	19.5	19.0	19.2	---	---	---	19.6	19.0	19.3
16	19.0	18.2	18.6	19.4	19.0	19.2	---	---	---	19.7	18.6	19.3
17	19.0	18.3	18.6	19.9	19.2	19.5	---	---	---	19.7	19.3	19.5
18	19.4	18.3	18.8	21.0	19.4	19.9	---	---	---	19.6	19.0	19.4
19	19.3	18.8	19.1	20.7	19.9	20.3	---	---	---	19.6	19.0	19.3
20	19.6	19.2	19.4	20.1	19.6	19.9	---	---	---	20.1	18.4	19.2
21	21.2	19.1	19.5	20.1	19.5	19.7	---	---	---	18.7	18.0	18.3
22	21.1	19.4	20.2	20.1	19.4	19.8	---	---	---	18.3	17.5	18.0
23	19.7	19.3	19.5	20.0	19.4	19.8	---	---	---	19.2	17.9	18.4
24	19.4	18.9	19.3	19.8	19.4	19.6	---	---	---	19.9	19.0	19.5
25	19.0	18.5	18.8	20.0	19.2	19.6	---	---	---	20.1	19.9	20.0
26	19.0	18.4	18.6	20.0	19.1	19.6	---	---	---	20.2	19.5	20.0
27	19.2	18.6	18.9	22.3	19.2	20.2	---	---	---	19.6	18.7	19.3
28	19.2	18.7	18.9	21.8	20.5	21.1	---	---	---	19.1	18.1	18.6
29	19.3	18.8	19.0	20.6	20.2	20.4	---	---	---	19.0	18.1	18.6
30	19.4	18.7	19.1	---	---	---	---	---	---	19.0	18.2	18.6
31	---	---	---	---	---	---	19.8	19.2	19.5	---	---	---
MONTH	21.2	16.8	18.6	---	---	---	---	---	---	20.2	17.5	19.0

## PEE DEE RIVER BASIN

0213228795 JORDAN CREEK NEAR SILVER HILL, NC--Continued

PH (STANDARD UNITS), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	4.76	4.70	4.73	4.62	4.59	4.61	4.86	4.80	4.83	4.70	4.56	4.65
2	4.75	4.68	4.72	4.63	4.60	4.61	4.82	4.64	4.79	4.75	4.56	4.67
3	4.73	4.68	4.71	4.62	4.49	4.53	4.80	4.52	4.58	4.75	4.64	4.72
4	4.71	4.38	4.60	4.59	4.51	4.56	4.71	4.53	4.58	4.85	4.52	4.64
5	4.61	4.38	4.48	4.60	4.56	4.57	---	---	---	4.89	4.83	4.86
6	4.69	4.60	4.65	4.73	4.58	4.64	---	---	---	4.88	4.68	4.85
7	4.69	4.64	4.67	4.74	4.70	4.72	---	---	---	4.70	4.50	4.61
8	4.68	4.63	4.66	4.79	4.74	4.76	---	---	---	4.57	4.52	4.55
9	4.67	4.62	4.65	4.80	4.52	4.71	---	---	---	4.67	4.53	4.58
10	4.68	4.33	4.58	4.75	4.44	4.55	---	---	---	4.67	4.52	4.57
11	4.84	4.06	4.46	4.90	4.76	4.82	---	---	---	4.55	4.36	4.48
12	4.65	4.41	4.53	4.91	4.89	4.90	---	---	---	4.48	4.39	4.44
13	4.80	4.65	4.71	4.97	4.92	4.94	---	---	---	4.56	4.47	4.51
14	4.93	4.78	4.85	5.00	4.97	4.98	4.85	4.56	4.73	4.71	4.56	4.64
15	4.99	4.92	4.95	5.01	4.97	4.99	4.85	4.74	4.78	4.76	4.71	4.74
16	5.00	4.95	4.98	5.00	4.97	4.99	4.88	4.73	4.82	4.75	4.47	4.55
17	5.00	4.97	4.98	4.97	4.92	4.95	4.87	4.82	4.85	4.68	4.53	4.61
18	4.97	4.90	4.94	4.98	4.91	4.95	4.86	4.80	4.83	4.73	4.69	4.71
19	4.94	4.91	4.93	4.95	4.90	4.93	4.84	4.60	4.74	4.73	4.65	4.70
20	4.95	4.91	4.92	4.93	4.89	4.91	4.90	4.72	4.80	4.68	4.65	4.67
21	4.92	4.86	4.89	4.93	4.89	4.91	4.77	4.58	4.67	4.69	4.66	4.67
22	4.88	4.75	4.84	4.91	4.86	4.89	4.81	4.66	4.74	4.72	4.69	4.70
23	4.67	4.51	4.58	4.88	4.67	4.82	4.81	4.75	4.77	4.73	4.66	4.71
24	4.74	4.64	4.69	4.89	4.86	4.87	4.85	4.75	4.83	4.70	4.47	4.64
25	4.74	4.52	4.68	4.88	4.84	4.86	4.88	4.83	4.86	4.63	4.42	4.51
26	4.66	4.46	4.54	4.88	4.81	4.85	4.88	4.82	4.86	4.70	4.65	4.68
27	4.72	4.67	4.70	4.85	4.81	4.83	4.85	4.51	4.69	4.72	4.67	4.69
28	4.74	4.70	4.72	4.82	4.60	4.67	4.84	4.70	4.77	4.69	4.64	4.67
29	4.73	4.64	4.69	4.75	4.54	4.63	4.84	4.78	4.80	4.67	4.45	4.54
30	4.68	4.61	4.66	4.83	4.76	4.80	4.82	4.69	4.78	4.46	4.35	4.41
31	4.65	4.61	4.62	---	---	---	4.78	4.37	4.51	4.55	4.35	4.43
MONTH	5.00	4.06	4.72	5.01	4.44	4.79	4.90	4.37	4.75	4.89	4.35	4.63

PH (STANDARD UNITS), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	4.83	4.56	4.65	4.56	4.51	4.54	4.70	4.66	4.68	4.78	4.74	4.76
2	4.90	4.83	4.86	4.57	4.39	4.50	4.71	4.68	4.69	4.76	4.73	4.74
3	4.91	4.83	4.87	4.69	4.41	4.58	4.72	4.69	4.71	4.75	4.70	4.73
4	4.92	4.86	4.88	4.69	4.47	4.55	4.73	4.71	4.72	4.70	4.60	4.67
5	4.92	4.86	4.89	4.77	4.70	4.73	4.73	4.56	4.68	4.69	4.65	4.68
6	4.90	4.79	4.87	4.77	4.74	4.75	4.68	4.50	4.58	4.61	4.47	4.55
7	4.87	4.78	4.85	4.78	4.62	4.71	4.69	4.65	4.67	4.61	4.59	4.60
8	4.84	4.78	4.81	4.82	4.67	4.76	4.75	4.57	4.63	4.62	4.59	4.60
9	4.85	4.77	4.81	4.73	4.67	4.70	4.67	4.56	4.62	4.61	4.51	4.58
10	4.85	4.79	4.81	4.69	4.53	4.59	4.66	4.58	4.62	4.60	4.58	4.59
11	4.84	4.77	4.80	4.59	4.55	4.57	4.69	4.66	4.68	4.59	4.58	4.59
12	4.84	4.75	4.80	4.58	4.54	4.56	4.70	4.68	4.69	4.58	4.42	4.54
13	4.75	4.67	4.72	4.54	4.29	4.41	4.69	4.60	4.67	4.47	4.28	4.38
14	4.69	4.59	4.66	4.32	4.29	4.30	4.66	4.49	4.56	4.55	4.43	4.49
15	4.67	4.63	4.65	4.38	4.29	4.31	4.65	4.46	4.53	4.55	4.45	4.53
16	4.77	4.65	4.71	4.54	4.39	4.47	4.61	4.59	4.60	4.67	4.55	4.60
17	4.74	4.69	4.71	4.60	4.54	4.58	4.63	4.57	4.60	4.76	4.67	4.70
18	4.70	4.67	4.69	4.61	4.43	4.48	4.67	4.51	4.62	4.76	4.60	4.71
19	4.67	4.55	4.64	4.60	4.46	4.53	4.60	4.48	4.56	4.76	4.64	4.71
20	4.67	4.63	4.65	4.64	4.58	4.61	4.64	4.53	4.59	4.68	4.46	4.54
21	4.67	4.64	4.66	4.64	4.43	4.57	4.64	4.58	4.61	4.83	4.64	4.76
22	4.66	4.58	4.62	4.62	4.55	4.58	4.65	4.61	4.62	4.83	4.63	4.78
23	4.59	4.55	4.58	4.64	4.58	4.61	4.75	4.61	4.66	4.83	4.80	4.82
24	4.59	4.52	4.56	4.68	4.61	4.65	4.78	4.66	4.71	4.83	4.77	4.80
25	4.59	4.55	4.56	4.69	4.63	4.65	4.80	4.71	4.75	4.78	4.75	4.76
26	4.58	4.54	4.57	4.71	4.64	4.67	4.83	4.59	4.72	4.76	4.62	4.74
27	4.61	4.56	4.58	4.71	4.67	4.69	4.84	4.69	4.81	4.67	4.61	4.63
28	4.59	4.51	4.55	4.71	4.64	4.69	4.81	4.65	4.75	4.75	4.65	4.71
29	---	---	---	4.70	4.29	4.58	4.81	4.77	4.79	4.76	4.68	4.72
30	---	---	---	4.59	4.30	4.45	4.81	4.77	4.79	4.75	4.71	4.73
31	---	---	---	4.66	4.59	4.63	---	---	---	4.74	4.71	4.73
MONTH	4.92	4.51	4.71	4.82	4.29	4.58	4.84	4.46	4.66	4.83	4.28	4.66



## PEE DEE RIVER BASIN

02132320 BIG SHOE HEEL CREEK NEAR LAURINBURG, NC

LOCATION.--Lat 34°45'01", long 79°23'12", Scotland County, Hydrologic Unit 03040204, at downstream side of bridge near center of span on U.S. Highway 74, 2.5 mi downstream from Jordan Creek, and 4.5 mi southeast of Laurinburg.

DRAINAGE AREA.-- 83.3 mi<sup>2</sup>.

PERIOD OF RECORD.--Occasional discharge measurements, water years 1949-54, 1959, 1962, 1968-69. June 1987 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 170 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good. Minimum discharge for current water year also occurred Oct. 4, 10.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	130	97	78	131	77	217	69	43	46	215	96
2	20	100	94	76	125	92	235	61	46	57	291	74
3	19	83	82	76	118	120	211	55	53	63	383	66
4	19	76	78	77	116	170	172	51	62	66	331	59
5	21	72	77	78	112	205	138	50	63	67	280	53
6	24	69	75	76	105	232	118	82	53	66	222	52
7	23	66	72	75	96	234	110	100	45	64	155	58
8	21	64	75	81	96	210	108	110	41	65	132	62
9	20	63	81	89	102	176	107	91	38	67	138	58
10	21	76	87	92	111	143	109	76	35	56	145	58
11	76	87	84	91	115	122	116	74	33	49	142	55
12	101	95	78	101	107	107	114	72	31	45	196	51
13	124	93	75	110	97	106	101	85	29	42	335	49
14	177	81	72	120	91	120	88	79	35	40	317	48
15	222	74	71	120	88	138	82	72	53	37	291	48
16	192	70	70	109	89	173	79	66	44	37	244	50
17	139	68	69	100	88	195	77	61	44	38	197	47
18	83	66	68	97	82	186	74	58	43	39	152	41
19	78	64	67	92	71	160	72	72	69	46	98	40
20	68	63	69	103	66	141	72	91	280	49	78	105
21	58	62	88	112	65	132	78	102	251	44	75	124
22	55	61	99	124	64	122	88	94	238	42	70	149
23	92	61	107	126	70	112	94	75	305	52	65	166
24	114	61	106	117	79	104	94	65	353	49	63	146
25	142	60	95	119	88	97	87	60	265	38	68	112
26	207	60	82	139	90	90	78	55	177	34	78	103
27	243	59	77	152	84	85	70	52	104	37	77	99
28	251	61	79	144	79	82	64	50	62	65	92	82
29	242	78	83	132	---	92	66	47	53	95	120	71
30	212	89	84	131	---	142	68	44	49	132	131	64
31	172	---	81	136	---	173	---	41	---	187	128	---
TOTAL	3257	2212	2522	3273	2625	4338	3187	2160	2997	1814	5309	2286
MEAN	105	73.7	81.4	106	93.7	140	106	69.7	99.9	58.5	171	76.2
MAX	251	130	107	152	131	234	235	110	353	187	383	166
MIN	19	59	67	75	64	77	64	41	29	34	63	40
CFSM	1.26	.89	.98	1.27	1.13	1.68	1.28	.84	1.20	.70	2.06	.91
IN.	1.45	.99	1.13	1.46	1.17	1.94	1.42	.96	1.34	.81	2.37	1.02

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1991, BY WATER YEAR (WY)

	MEAN	76.4	75.7	88.3	107	93.2	113	104	81.9	62.4	64.2	78.7	66.0
MAX	116	93.1	141	134	120	140	153	157	104	175	171	82.9	
(WY)	1990	1990	1990	1988	1990	1991	1989	1989	1989	1989	1991	1987	
MIN	41.3	67.0	50.2	69.3	62.0	72.0	64.6	43.8	28.3	15.6	26.8	20.3	
(WY)	1988	1989	1989	1989	1989	1988	1988	1988	1990	1990	1988	1990	

## SUMMARY STATISTICS

## FOR 1990 CALENDAR YEAR

## FOR 1991 WATER YEAR

## WATER YEARS 1987 - 1991

ANNUAL TOTAL	25680.4	35980	
ANNUAL MEAN	70.4	98.6	84.7
HIGHEST ANNUAL MEAN			99.0
LOWEST ANNUAL MEAN			63.6
HIGHEST DAILY MEAN	251	383	508
LOWEST DAILY MEAN	4.7	19	4.7
ANNUAL SEVEN-DAY MINIMUM	5.9	21	5.9
INSTANTANEOUS PEAK FLOW		395	546
INSTANTANEOUS PEAK STAGE		4.34	4.63
INSTANTANEOUS LOW FLOW		19*	3.9
ANNUAL RUNOFF (CFSM)	.84	1.18	1.02
ANNUAL RUNOFF (INCHES)	11.47	16.07	13.82
10 PERCENT EXCEEDS	132	177	149
50 PERCENT EXCEEDS	68	81	67
90 PERCENT EXCEEDS	14	45	25

\* See REMARKS.

## PEE DEE RIVER BASIN

02133500 DROWNING CREEK NEAR HOFFMAN, NC

LOCATION.--Lat 35°03'38", long 79°29'39", Richmond County, Hydrologic Unit 03040203, on right bank 10 ft downstream from bridge on U.S. Highway 1, 0.8 mi downstream from Deep Creek, 1 mi upstream from Seaboard Coast Line Railroad bridge, and 4 mi northeast of Hoffman.

DRAINAGE AREA.--183 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1939 to current year.

REVISED RECORDS.--WSP 972: 1941(M). WDR NC-80-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 270 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good. Since 1984, the town of Southern Pines withdraws water for public supply 0.5 mi upstream from the gage causing some diurnal fluctuation at low to medium flows; a daily average of 2.46 ft<sup>3</sup>/s was diverted during the year. Minimum discharge for period of record also occurred Aug. 18, 1988. Minimum daily discharge for period of record also occurred July 10, Aug. 20, 1988. Minimum discharge for current water year also occurred Oct. 4.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	42	278	240	211	364	208	653	280	78	63	382	93
2	41	252	186	212	344	246	518	272	124	61	394	91
3	40	224	178	234	305	377	385	242	197	96	322	87
4	41	202	216	242	270	535	305	177	186	205	342	80
5	54	194	260	238	259	631	276	156	104	249	304	72
6	61	184	269	228	252	651	285	216	85	207	168	68
7	54	171	231	224	255	537	306	287	78	212	140	63
8	48	165	217	292	313	438	295	279	71	128	271	67
9	47	163	258	371	406	360	304	195	65	93	320	67
10	49	228	271	412	389	327	359	165	67	80	186	63
11	229	329	235	452	305	315	345	166	66	72	142	61
12	569	407	197	497	261	291	293	159	60	69	136	56
13	692	373	181	576	241	284	243	174	59	59	191	58
14	561	300	174	707	238	339	234	177	59	55	203	54
15	420	225	167	569	256	414	263	160	85	54	188	58
16	243	200	168	467	270	413	271	164	85	54	198	63
17	144	184	172	435	252	360	274	142	75	60	172	61
18	127	175	176	434	229	311	245	123	70	79	117	62
19	150	173	183	414	226	321	242	127	65	140	104	61
20	158	171	194	407	229	332	306	205	111	125	102	118
21	125	164	223	408	225	316	376	264	167	91	91	159
22	117	162	290	396	219	273	426	238	242	77	86	115
23	309	162	335	375	235	253	445	161	319	85	81	88
24	579	158	343	334	270	242	376	132	202	64	69	80
25	886	157	313	328	286	234	292	111	110	56	73	104
26	840	156	234	346	267	216	236	105	91	54	85	146
27	706	150	202	341	240	203	215	108	87	147	102	132
28	652	161	212	321	223	202	211	124	77	309	192	93
29	554	229	225	293	---	231	217	125	66	431	214	79
30	424	271	230	286	---	402	235	98	62	408	182	76
31	325	---	225	318	---	589	---	87	---	322	124	---
TOTAL	9287	6368	7005	11368	7629	10851	9431	5419	3213	4205	5681	2475
MEAN	300	212	226	367	272	350	314	175	107	136	183	82.5
MAX	886	407	343	707	406	651	653	287	319	431	394	159
MIN	40	150	167	211	219	202	211	87	59	54	69	54
CFSM	1.64	1.16	1.23	2.00	1.49	1.91	1.72	.96	.59	.74	1.00	.45
IN.	1.89	1.29	1.42	2.31	1.55	2.21	1.92	1.10	.65	.85	1.15	.50

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1991, BY WATER YEAR (WY)

MEAN	198	229	266	324	361	381	330	236	175	203	195	180
MAX	595	499	530	501	687	619	842	465	421	624	497	932
(WY)	1965	1980	1973	1978	1960	1952	1973	1958	1976	1944	1985	1945
MIN	48.5	93.4	135	151	156	173	111	84.5	34.5	32.9	43.4	28.8
(WY)	1941	1942	1989	1942	1941	1981	1986	1988	1988	1986	1968	1968

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR		FOR 1991 WATER YEAR		WATER YEARS 1940 - 1991	
ANNUAL TOTAL	76563		82932		256	
ANNUAL MEAN	210		227		397	
HIGHEST ANNUAL MEAN					141	
LOWEST ANNUAL MEAN					1951	
HIGHEST DAILY MEAN	886	Oct 25	886	Oct 25	8530	Sep 18 1945
LOWEST DAILY MEAN	30	Aug 4	40	Oct 3	20	Jul 9 1988
ANNUAL SEVEN-DAY MINIMUM	34	Jul 31	48	Oct 1	24	Jul 4 1988
INSTANTANEOUS PEAK FLOW			1000	Oct 25	10900	Sep 18 1945
INSTANTANEOUS PEAK STAGE			6.27	Oct 25	10.29	Sep 18 1945
INSTANTANEOUS LOW FLOW			36*	Oct 3	19*	Aug 11 1988
ANNUAL RUNOFF (CFSM)	1.15		1.24		1.40	
ANNUAL RUNOFF (INCHES)	15.56		16.86		19.01	
10 PERCENT EXCEEDS	390		407		482	
50 PERCENT EXCEEDS	194		212		206	
90 PERCENT EXCEEDS	44		65		82	

\* See REMARKS.

## 02133624 LUMBER RIVER NEAR MAXTON, NC

LOCATION.--Lat 34°46'22", long 79°19'55", Robeson County, Hydrologic Unit 03040203, at downstream side of bridge, near right center of span, on State Highway 71, 2.6 mi north of Maxton, and 7.5 mi upstream from Gum Swamp.

DRAINAGE AREA.--365 mi<sup>2</sup>.

PERIOD OF RECORD.--Occasional discharge measurements, water years 1974, 1980-85. June 1987 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 180 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good except those for estimated discharges, which are fair. Minimum discharge for current water year also occurred Oct. 2.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	101	797	419	443	575	471	e720	e390	228	173	793	480
2	102	677	446	437	574	474	e840	e380	207	166	809	406
3	111	577	460	428	567	503	e910	386	226	159	733	299
4	115	504	458	425	573	598	e920	391	250	186	671	241
5	115	452	425	427	568	682	e880	388	272	251	685	216
6	123	418	404	440	535	782	e760	409	277	304	599	200
7	136	388	409	447	499	899	e520	397	224	336	528	201
8	138	368	433	453	471	961	e490	399	186	348	491	189
9	131	357	451	453	494	934	e470	412	171	333	405	182
10	128	371	467	476	529	811	e460	422	160	281	511	175
11	206	371	468	516	572	700	e450	415	152	211	738	167
12	290	412	464	572	600	631	e470	371	147	184	775	164
13	458	464	463	641	599	587	e500	347	141	168	782	170
14	792	499	448	740	557	e560	e500	352	136	157	569	160
15	1030	536	415	795	498	e550	e470	353	137	143	524	155
16	982	554	387	850	457	e560	e450	346	170	135	500	150
17	796	527	370	916	439	e570	e430	344	210	137	452	150
18	652	469	360	862	437	e580	e410	339	211	157	414	151
19	543	407	357	756	443	e600	e400	326	205	187	387	150
20	407	373	369	719	442	e580	e410	332	433	215	337	205
21	335	357	402	692	428	e540	e400	349	390	254	275	230
22	319	347	420	700	420	e500	e440	368	429	283	246	275
23	349	342	464	689	426	e490	e480	391	447	281	225	307
24	387	337	496	668	440	e500	e560	406	423	241	210	279
25	575	333	511	656	469	e470	e600	380	426	200	209	234
26	884	331	529	632	484	e430	e620	305	434	170	222	240
27	1170	327	537	625	484	e420	e620	255	353	170	235	270
28	1490	329	534	599	482	e390	e590	234	244	201	257	295
29	1340	356	503	577	---	e390	e500	225	210	331	345	294
30	1080	372	465	581	---	e470	e410	231	190	435	447	241
31	919	---	453	586	---	e620	---	229	---	621	509	---
TOTAL	16204	12952	13787	18801	14062	18253	16680	10872	7689	7418	14883	6876
MEAN	523	432	445	606	502	589	556	351	256	239	480	229
MAX	1490	797	537	916	600	961	920	422	447	621	809	480
MIN	101	327	357	425	420	390	400	225	136	135	209	150
CFSM	1.43	1.18	1.22	1.66	1.38	1.61	1.52	.96	.70	.66	1.32	.63
IN.	1.65	1.32	1.41	1.92	1.43	1.86	1.70	1.11	.78	.76	1.52	.70

e Estimated

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1991, BY WATER YEAR (WY)

	MEAN	406	419	440	556	498	614	543	426	283	304	332	294
MAX	620	479	650	627	632	888	826	769	524	640	577	433	
(WY)	1990	1990	1990	1988	1990	1989	1989	1989	1989	1989	1989	1989	1989
MIN	184	307	284	406	349	434	342	218	135	147	154	129	
(WY)	1988	1988	1989	1989	1989	1988	1988	1988	1988	1990	1988	1990	

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR		FOR 1991 WATER YEAR		WATER YEARS 1987 - 1991	
ANNUAL TOTAL	145636		158477		428	
ANNUAL MEAN	399		434		539	
HIGHEST ANNUAL MEAN					321	
LOWEST ANNUAL MEAN					1989	
HIGHEST DAILY MEAN	1490	Oct 28	1490	Oct 28	1660	Jul 22 1989
LOWEST DAILY MEAN	86	Aug 6	101	Oct 1	86	Aug 6 1990
ANNUAL SEVEN-DAY MINIMUM	91	Jul 31	115	Oct 1	91	Jul 31 1990
INSTANTANEOUS PEAK FLOW			1550	Oct 28	1720	Jul 22 1989
INSTANTANEOUS PEAK STAGE			11.63	Oct 28	11.75	Jul 22 1989
INSTANTANEOUS LOW FLOW			100*	Oct 1	83	Aug 6 1990
ANNUAL RUNOFF (CFSM)	1.09		1.19		1.17	
ANNUAL RUNOFF (INCHES)	14.84		16.15		15.93	
10 PERCENT EXCEEDS	658		700		726	
50 PERCENT EXCEEDS	404		423		389	
90 PERCENT EXCEEDS	122		171		151	

\* See REMARKS.

## PEE DEE RIVER BASIN

02134480 BIG SWAMP NEAR TARHEEL, NC

LOCATION.--Lat 34°42'37", long 78°50'14", Robeson County, Hydrologic Unit 03040203, on left bank at downstream side of bridge on Secondary Road 1004 and 2.8 mi southwest of Tarheel.

DRAINAGE AREA.--229 mi<sup>2</sup>.

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1949-54, 1957-58, 1962-68. October 1985 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 105 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good except those for estimated daily discharges, which are poor.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37	156	73	170	459	242	597	274	52	32	505	186
2	34	116	79	168	491	241	646	238	61	28	633	168
3	34	85	79	170	472	256	624	210	78	26	667	137
4	35	71	85	171	432	325	540	182	92	25	643	121
5	36	65	89	170	390	459	462	152	78	30	e560	113
6	36	61	92	169	349	520	398	135	60	38	e540	101
7	36	57	92	167	323	506	347	130	48	51	e515	89
8	37	55	101	166	326	475	310	132	40	60	e480	78
9	37	55	110	164	320	434	297	138	35	64	e430	72
10	37	129	116	164	315	397	273	143	33	53	e360	67
11	57	177	118	167	299	366	250	141	32	39	e340	62
12	77	196	113	176	280	334	228	133	32	35	e300	56
13	93	205	103	185	260	312	209	136	32	29	e280	52
14	110	203	94	195	241	313	190	140	32	24	e260	50
15	125	186	89	204	224	325	176	136	34	21	e240	49
16	136	156	87	216	208	344	162	141	35	34	e255	48
17	123	118	86	222	193	353	149	131	37	64	e280	47
18	73	94	80	226	181	351	135	104	37	65	e350	45
19	55	83	77	227	170	342	130	97	37	49	e400	45
20	49	78	84	258	160	328	230	120	52	43	477	74
21	45	74	127	295	152	309	304	133	80	38	410	111
22	44	72	153	326	148	285	445	141	95	31	336	148
23	58	68	179	346	158	263	678	139	102	25	276	219
24	74	67	206	356	176	238	792	126	71	20	234	290
25	88	68	234	377	201	217	726	103	56	19	209	261
26	146	67	243	375	231	196	618	87	54	16	189	219
27	180	69	231	378	250	176	537	79	51	17	187	209
28	204	67	213	382	253	156	460	76	46	52	185	236
29	210	66	190	369	---	148	385	71	42	86	184	252
30	207	66	178	369	---	252	323	63	37	121	183	233
31	187	---	175	411	---	444	---	56	---	191	186	---
TOTAL	2700	3030	3976	7739	7662	9907	11621	4087	1571	1426	11094	3838
MEAN	87.1	101	128	250	274	320	387	132	52.4	46.0	358	128
MAX	210	205	243	411	491	520	792	274	102	191	667	290
MIN	34	55	73	164	148	148	130	56	32	16	183	45
CFSM	.38	.44	.56	1.09	1.19	1.40	1.69	.58	.23	.20	1.56	.56
IN.	.44	.49	.65	1.26	1.24	1.61	1.89	.66	.26	.23	1.80	.62

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 1991, BY WATER YEAR (WY)

	1986	1987	1988	1989	1990	1991
MEAN	93.5	121	201	343	246	392
MAX	197	159	396	920	488	856
(WY)	1990	1990	1990	1987	1987	1989
MIN	5.05	33.5	68.8	92.9	127	138
(WY)	1988	1988	1988	1986	1986	1988

SUMMARY STATISTICS FOR 1990 CALENDAR YEAR FOR 1991 WATER YEAR WATER YEARS 1986 - 1991

	1990	1991	1986-1991
ANNUAL TOTAL	44411.5	68651	
ANNUAL MEAN	122	188	179
HIGHEST ANNUAL MEAN			285
LOWEST ANNUAL MEAN			101
HIGHEST DAILY MEAN	584	792	2650
LOWEST DAILY MEAN	5.5	16	.59
ANNUAL SEVEN-DAY MINIMUM	7.2	24	1.3
INSTANTANEOUS PEAK FLOW		801	2670
INSTANTANEOUS PEAK STAGE		11.33	13.14
INSTANTANEOUS LOW FLOW		15	.43
ANNUAL RUNOFF (CFSM)	.53	.82	.78
ANNUAL RUNOFF (INCHES)	7.21	11.15	10.65
10 PERCENT EXCEEDS	282	397	420
50 PERCENT EXCEEDS	72	152	103
90 PERCENT EXCEEDS	17	37	18

02134500 LUMBER RIVER AT BOARDMAN, NC

LOCATION.--Lat 34°26'32", long 78°57'38", Robeson County, Hydrologic Unit 03040203, on right bank 50 ft downstream from bridge on U.S. Highway 74, 1 mi downstream from Seaboard Coast Line Railroad bridge at Boardman, 1.5 mi downstream from Big Swamp, and 40.5 mi upstream from mouth.

DRAINAGE AREA.--1,228 mi<sup>2</sup>.

PERIOD OF RECORD.--September 1929 to current year.

REVISED RECORDS.--WSP 1303: 1932(M). WDR NC-80-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 72.05 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to Sept. 30, 1936, nonrecording gage at site 100 ft downstream at same datum. Sept. 30, 1936, to June 8, 1943, nonrecording gage at present site and datum. Satellite data transmitter at station.

REMARKS.--No estimated daily discharges. Records good. Minimum discharge for current water year also occurred Oct. 6, 7, and 8.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of September 1928 reached a stage of 11.8 ft, from floodmark witnessed by local resident, discharge, 25,000 ft<sup>3</sup>/s. Flood of July 22, 1901, the highest during the period 1896-1913, reached a stage of 10.8 ft, from observations by Butters Lumber Co., discharge, 14,800 ft<sup>3</sup>/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	128	1060	623	1200	2430	1390	2580	1920	533	701	638	1100
2	122	1220	606	1220	2480	1440	2820	1790	547	649	852	1060
3	119	1360	605	1220	2470	1520	2880	1630	540	573	1080	1050
4	117	1410	619	1200	2410	1640	2810	1480	536	496	1350	1080
5	114	1390	635	1170	2300	1790	2680	1350	508	517	1680	1120
6	114	1320	661	1150	2190	1970	2570	1250	462	474	1930	1150
7	113	1230	699	1130	2110	2080	2500	1160	418	439	2160	1130
8	114	1140	774	1160	2080	2150	2450	1080	379	389	2230	1040
9	115	1030	833	1150	1990	2190	2370	1010	345	389	2150	901
10	119	1250	864	1150	1900	2220	2240	973	321	403	2120	761
11	237	1280	872	1150	1850	2250	2040	941	302	414	1990	643
12	326	1230	868	1200	1810	2280	1840	910	280	420	1900	554
13	373	1170	868	1230	1770	2310	1670	898	258	411	1870	489
14	390	1110	869	1250	1730	2400	1540	925	239	393	1790	444
15	404	1070	876	1280	1680	2350	1510	919	226	356	1730	405
16	433	1040	884	1320	1640	2310	1430	920	285	314	1710	390
17	464	1040	887	1360	1610	2260	1360	934	316	352	1800	383
18	498	1040	885	1400	1570	2170	1310	928	320	430	2030	355
19	532	1040	872	1460	1520	2060	1350	897	295	532	2210	334
20	578	1050	874	1640	1440	1970	1580	842	281	554	2200	429
21	659	1050	910	1760	1360	1930	1800	787	296	487	2080	476
22	759	1030	922	1870	1290	1900	2020	746	374	449	1900	527
23	867	1010	953	1970	1260	1870	2280	721	443	428	1750	553
24	893	954	989	2040	1250	1810	2440	709	519	392	1670	596
25	867	885	1030	2140	1270	1740	2440	702	604	357	1610	677
26	845	811	1060	2140	1300	1660	2320	685	681	332	1460	739
27	804	748	1090	2150	1350	1570	2190	671	726	320	1360	781
28	794	702	1120	2200	1380	1500	2100	659	736	344	1400	833
29	797	676	1140	2220	---	1500	2020	649	739	416	1370	878
30	808	646	1160	2290	---	1830	1950	638	727	408	1260	882
31	895	---	1180	2380	---	2270	---	597	---	505	1160	---
TOTAL	14398	31992	27228	48200	49440	60330	63090	30321	13236	13644	52440	21760
MEAN	464	1066	878	1555	1766	1946	2103	978	441	440	1692	725
MAX	895	1410	1180	2380	2480	2400	2880	1920	739	701	2230	1150
MIN	113	646	605	1130	1250	1390	1310	597	226	314	638	334
CFSM	.38	.87	.72	1.27	1.44	1.58	1.71	.80	.36	.36	1.38	.59
IN.	.44	.97	.82	1.46	1.50	1.83	1.91	.92	.40	.41	1.59	.66

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 1991, BY WATER YEAR (WY)

	MEAN	795	869	1293	1791	2179	2349	1905	1014	763	821	946	980
MAX	4721	4142	3977	3375	5486	5259	5688	3430	2587	2808	3741	4787	
(WY)	1965	1948	1949	1946	1973	1983	1936	1978	1969	1943	1974	1945	
MIN	141	211	237	262	429	611	420	276	215	174	138	92.2	
(WY)	1941	1934	1934	1934	1934	1934	1981	1986	1941	1990	1954	1968	

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR			FOR 1991 WATER YEAR			WATER YEARS 1930 - 1991		
ANNUAL TOTAL	292150			426079					
ANNUAL MEAN	800			1167			1304		
HIGHEST ANNUAL MEAN							2391		
LOWEST ANNUAL MEAN							524		
HIGHEST DAILY MEAN	2440	Jan 12		2880	Apr 3		13400	Sep 24	1945
LOWEST DAILY MEAN	94	Aug 6		113	Oct 7		68	Oct 1	1968
ANNUAL SEVEN-DAY MINIMUM	100	Aug 1		115	Oct 3		72	Oct 3	1968
INSTANTANEOUS PEAK FLOW				2890	Apr 3		13400	Sep 24	1945
INSTANTANEOUS PEAK STAGE				7.24	Apr 3		10.64	Sep 24	1945
INSTANTANEOUS LOW FLOW				113*	Oct 5		66	Oct 9	1968
ANNUAL RUNOFF (CFSM)	.65			.95			1.06		
ANNUAL RUNOFF (INCHES)	8.85			12.91			14.43		
10 PERCENT EXCEEDS	1630			2190			2800		
50 PERCENT EXCEEDS	702			1060			950		
90 PERCENT EXCEEDS	136			377			295		

REMARKS.

## SANTEE RIVER BASIN

02137727 CATAWBA RIVER NEAR PLEASANT GARDENS, NC

LOCATION.--Lat 35°41'09", long 82°03'40", McDowell County, Hydrologic Unit 03050101, on right bank 18 ft downstream from bridge on Secondary Road 1221, 0.8 mi upstream from Buck Creek, 0.8 mi southeast of Pleasant Gardens, and at mile 297.

DRAINAGE AREA.--126 mi<sup>2</sup>.

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1963, 1970-73, 1975. October 1980 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,230 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good. Maximum discharge 11,000 ft<sup>3</sup>/s, from rating curve extended above 7,130 ft<sup>3</sup>/s on basis of contracted-opening measurement of peak flow. Minimum discharge for current water year also occurred Oct. 8.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	132	278	182	255	227	251	519	338	230	286	453	288
2	131	264	182	247	222	738	432	313	325	406	383	273
3	125	254	209	248	218	616	386	295	291	355	323	253
4	140	249	216	251	215	675	359	284	238	257	282	243
5	140	246	190	240	212	484	431	284	217	261	260	245
6	123	249	188	233	228	407	380	308	206	230	250	263
7	120	234	187	248	222	368	347	269	198	214	259	232
8	128	229	185	284	212	388	337	256	196	209	243	222
9	128	335	179	270	205	345	326	261	192	202	252	213
10	153	476	178	257	200	322	313	255	184	190	235	204
11	300	310	177	682	198	303	288	246	179	211	228	201
12	3270	281	175	599	193	292	278	247	177	184	375	194
13	1970	261	174	419	203	300	327	253	175	228	350	209
14	657	251	186	354	277	304	312	248	173	176	378	209
15	431	244	177	330	227	278	379	240	202	169	355	208
16	346	238	174	653	205	263	339	285	224	166	295	196
17	302	233	177	442	212	258	308	308	255	178	263	191
18	777	227	192	377	455	327	290	276	286	197	247	189
19	521	223	215	347	416	280	1410	395	318	270	241	179
20	386	219	189	362	429	266	883	309	1510	330	214	172
21	338	213	206	318	381	258	787	356	566	248	203	167
22	544	210	199	294	339	252	591	329	443	229	199	164
23	1070	210	696	280	319	258	489	294	324	189	192	164
24	646	204	1010	273	290	242	426	269	293	198	184	169
25	561	199	446	261	276	234	383	252	275	353	223	182
26	498	197	342	251	262	229	361	242	282	418	522	175
27	412	193	305	244	249	227	398	254	272	387	374	158
28	370	199	297	239	240	256	408	291	248	331	311	154
29	337	197	280	234	---	2110	361	273	231	452	405	151
30	310	185	266	243	---	1280	370	290	250	2340	332	149
31	294	---	283	252	---	668	---	250	---	648	305	---
TOTAL	15660	7308	8062	9987	7332	13479	13218	8770	8960	10512	9136	6017
MEAN	505	244	260	322	262	435	441	283	299	339	295	201
MAX	3270	476	1010	682	455	2110	1410	395	1510	2340	522	288
MIN	120	185	174	233	193	227	278	240	173	166	184	149
CFSM	3.98	1.92	2.05	2.54	2.06	3.42	3.47	2.23	2.35	2.67	2.32	1.58
IN.	4.59	2.14	2.36	2.93	2.15	3.95	3.87	2.57	2.62	3.08	2.68	1.76

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1981 - 1991, BY WATER YEAR (WY)

	190	228	252	229	352	345	323	252	196	185	185	184
MEAN	190	228	252	229	352	345	323	252	196	185	185	184
MAX	505	606	573	345	629	622	688	444	316	339	295	435
(WY)	1991	1986	1984	1990	1990	1990	1983	1984	1983	1991	1991	1989
MIN	69.2	69.0	77.6	107	159	130	138	109	70.7	57.9	50.5	71.5
(WY)	1982	1982	1989	1981	1988	1988	1986	1988	1988	1988	1988	1988

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1981 - 1991
ANNUAL TOTAL	120647	118441	
ANNUAL MEAN	331	324	243
HIGHEST ANNUAL MEAN			351 1984
LOWEST ANNUAL MEAN			126 1988
HIGHEST DAILY MEAN	3680	Mar 17	3270 Oct 12 5210 Feb 2 1983
LOWEST DAILY MEAN	113	Aug 20	120 Oct 7 33 Aug 19 1988
ANNUAL SEVEN-DAY MINIMUM	127	Jul 1	129 Oct 3 42 Jul 18 1986
INSTANTANEOUS PEAK FLOW			7700 Oct 12 11000* Feb 2 1983
INSTANTANEOUS PEAK STAGE			11.04 Oct 12 13.60 Feb 2 1983
INSTANTANEOUS LOW FLOW			118* Oct 7 32 Aug 28 1988
ANNUAL RUNOFF (CFSM)	2.60		2.56 1.91
ANNUAL RUNOFF (INCHES)	35.34		34.69 25.96
10 PERCENT EXCEEDS	528		452 423
50 PERCENT EXCEEDS	254		258 179
90 PERCENT EXCEEDS	136		179 85

\* See REMARKS.

## SANTEE RIVER BASIN

02138500 LINVILLE RIVER NEAR NEBO, NC

LOCATION.--Lat 35°47'41", long 81°53'25", Burke County, Hydrologic Unit 03050101, in Pisgah National Forest, on right bank 370 ft upstream from bridge on State Highway 126, 0.2 mi downstream from Shooks Creek, 0.5 mi upstream from Lake James, 2.0 mi northeast of Longtown, and 6.0 mi northeast of Nebo.

DRAINAGE AREA.--66.7 mi<sup>2</sup>.

PERIOD OF RECORD.--May 1907 to August 1908 (fragmentary). June 1922 to current year. Published as "at Fonta Flora" prior to 1908 and as "at Branch" 1923-70. Records for October to December 1908, "at Fonta Flora", published in WSP 242 have been found to be unreliable and should not be used.

REVISED RECORDS.--WSP 892: 1929, 1935, 1937. WSP 1503: 1923(M), 1924-28, 1930, 1932-33(M), 1938(M), 1939(P). WDR NC-80-1: Drainage area. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder and crest-stage gages. Datum of gage is 1,203.87 ft above National Geodetic Vertical Datum of 1929. May 1907 to August 1908, nonrecording gage about 1.2 mi downstream at different datum. June 1922 to Aug. 27, 1937, nonrecording gage, and Aug. 28, 1937, to Sept. 30, 1970, water-stage recorder at site on right bank 20 ft downstream from bridge on State Highway 126 at datum 1.00 ft higher; Oct. 1, 1970, to Sept. 30, 1973, at present site at datum 1.00 ft higher; Oct. 1, 1973, to Aug. 25, 1981, at present site at datum 1.00 ft higher.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Maximum discharge, 39,500 ft<sup>3</sup>/s, site and datum then in use, from rating curve extended above 6,400 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow. Minimum discharge, for period of record, 2.0 ft<sup>3</sup>/s, result of freezeup. Minimum daily discharge for period of record, 8 ft<sup>3</sup>/s, also occurred Sept. 8, 9, 1925.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 1916 reached a stage of about 11 ft at former site and datum, discharge, 34,600 ft<sup>3</sup>/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	53	e150	e86	204	133	145	343	261	123	e140	e115	68
2	60	e140	e88	189	122	715	276	218	142	e140	e100	60
3	72	e130	e112	177	119	493	230	189	158	e130	e94	58
4	76	e120	e138	171	116	632	208	172	131	e190	e87	57
5	63	e110	e110	159	116	419	205	163	112	e140	e80	62
6	57	e120	e99	152	118	342	201	158	98	e125	e76	e62
7	55	e110	e95	148	124	317	176	147	90	e130	92	e64
8	54	e105	e91	158	120	274	159	132	85	e130	65	e58
9	54	e98	e88	158	114	236	160	131	81	e110	59	e56
10	59	e240	e85	150	110	215	200	133	76	e120	61	e54
11	128	e190	e83	271	104	200	165	125	72	e105	63	43
12	2480	e160	e82	382	101	188	147	118	70	e97	60	41
13	1980	e135	e80	276	100	187	149	113	69	e91	88	42
14	538	e125	e82	227	125	218	164	148	e100	e88	127	e63
15	371	e118	e81	204	143	200	169	173	e95	e85	132	48
16	224	e112	e79	335	111	177	175	137	e120	e93	101	44
17	229	e107	e80	299	114	169	156	e260	e180	e110	83	47
18	793	e104	e83	247	218	199	150	e190	e340	e105	69	49
19	636	e100	94	218	422	202	911	e350	e200	e120	e67	48
20	356	e97	96	273	442	178	664	e250	e210	e103	e65	49
21	309	e95	91	249	377	169	483	e290	e400	e88	e62	50
22	308	e93	100	215	284	160	361	e280	e290	e83	e60	45
23	653	e91	434	192	239	171	291	e230	e190	65	e57	40
24	458	e90	866	185	209	182	246	e190	e160	60	e56	41
25	326	e88	370	175	187	162	211	e180	e155	79	e55	45
26	294	e87	269	160	174	151	190	e160	e155	e150	e56	48
27	e250	e87	226	154	160	149	193	e170	e140	e108	e62	46
28	e225	e92	211	148	149	150	236	e190	e130	e140	e71	43
29	e205	e91	226	143	---	1320	654	e200	e125	e135	107	41
30	e185	e87	208	141	---	1070	331	e170	e145	e120	86	39
31	e165	---	226	144	---	478	---	148	---	e140	e76	---
TOTAL	11716	3472	5059	6304	4851	9868	8204	5776	4442	3520	2432	1511
MEAN	378	116	163	203	173	318	273	186	148	114	78.5	50.4
MAX	2480	240	866	382	442	1320	911	350	400	190	132	68
MIN	53	87	79	141	100	145	147	113	69	60	55	39
CFSM	5.67	1.74	2.45	3.05	2.60	4.77	4.10	2.79	2.22	1.70	1.18	.76
IN.	6.53	1.94	2.82	3.52	2.71	5.50	4.58	3.22	2.48	1.96	1.36	.84

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1922 - 1991, BY WATER YEAR (WY)

	128	138	139	164	190	228	200	150	125	101	117	117
MEAN	128	138	139	164	190	228	200	150	125	101	117	117
MAX	433	678	349	443	454	632	479	369	598	449	1084	605
(WY)	1937	1978	1984	1937	1983	1979	1983	1976	1972	1989	1940	1979
MIN	18.9	27.8	30.9	31.8	60.7	74.3	62.0	48.9	33.7	23.0	15.5	13.8
(WY)	1955	1932	1940	1940	1941	1988	1986	1941	1941	1930	1925	1925

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1922 - 1991
ANNUAL TOTAL	69435	67155	150
ANNUAL MEAN	190	184	246
HIGHEST ANNUAL MEAN			77.6
LOWEST ANNUAL MEAN			8.0*
HIGHEST DAILY MEAN	3360	Mar 17	14000
LOWEST DAILY MEAN	32	Jul 7	10
ANNUAL SEVEN-DAY MINIMUM	36	Jul 2	39
INSTANTANEOUS PEAK FLOW			8650
INSTANTANEOUS PEAK STAGE			7.94
INSTANTANEOUS LOW FLOW			38
ANNUAL RUNOFF (CFSM)	2.85	2.76	2.0*
ANNUAL RUNOFF (INCHES)	38.73	37.45	2.24
10 PERCENT EXCEEDS	329	321	266
50 PERCENT EXCEEDS	114	140	100
90 PERCENT EXCEEDS	53	60	38

\* See REMARKS.

## SANTÉE RIVER BASIN

02140991 JOHNS RIVER AT ARNEYS STORE, NC

LOCATION.--Lat 35°50'01", long 81°42'43", Burke County, Hydrologic Unit 03050101, on right bank 12 ft downstream from bridge on Secondary Road 1438, 0.2 mi downstream from Sims Branch, and 0.8 mi northeast of Arneys Store.

DRAINAGE AREA.--201 mi<sup>2</sup>.

PERIOD OF RECORD.--May 1985 to current year.

REVISED RECORDS.--WDR NC-87-1: 1985-86 (P).

GAGE.--Water-stage recorder. Datum of gage is 1,001.74 ft above National Geodetic Vertical Datum of 1929. Station has landline telemetry.

REMARKS.--No estimated daily discharges. Records good except those above 1500 ft/s, which are fair. Minimum discharge for period of record also occurred on Aug. 20, 1988. Minimum discharge for current water year also occurred Oct. 8, 10, and Sept. 30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	153	352	236	398	319	344	802	789	406	393	285	201
2	169	334	236	378	308	1140	680	696	385	379	265	185
3	146	323	294	366	304	833	595	624	451	387	246	179
4	170	313	394	357	299	1070	540	574	391	341	226	179
5	186	308	283	336	294	799	547	546	361	516	217	185
6	149	337	264	326	324	673	515	569	346	371	222	185
7	141	296	258	330	334	614	472	532	333	337	258	196
8	138	283	256	358	303	536	452	465	328	354	250	179
9	141	307	244	342	290	484	454	475	322	352	219	170
10	150	695	240	327	283	453	507	457	309	302	216	162
11	400	429	236	837	277	423	429	429	301	329	209	166
12	4090	371	232	1060	270	409	405	414	301	281	213	160
13	6440	342	231	680	276	421	435	416	298	272	256	162
14	1210	323	234	547	363	442	446	432	282	252	336	219
15	744	310	225	484	316	397	513	427	326	239	334	166
16	571	303	225	936	268	369	497	475	291	231	245	155
17	474	301	224	751	284	358	444	754	387	237	214	167
18	1810	290	234	618	550	462	422	549	540	301	202	158
19	1470	284	264	544	728	412	2550	1000	917	283	199	175
20	832	280	236	662	756	378	1930	731	527	328	188	157
21	652	275	259	575	708	366	1330	852	569	278	179	145
22	814	270	265	508	580	356	948	831	1100	238	174	144
23	1920	270	810	466	505	399	787	675	613	223	169	144
24	985	266	1930	443	449	384	696	576	480	216	165	147
25	749	257	790	414	419	348	616	516	431	437	171	163
26	648	250	573	389	396	335	568	479	423	291	189	171
27	542	247	487	378	370	330	621	496	418	427	211	151
28	482	267	470	368	354	343	797	566	370	380	325	143
29	435	264	474	354	---	2360	1580	563	338	332	259	141
30	400	242	438	350	---	2240	974	492	343	395	226	140
31	374	---	443	351	---	1060	---	440	---	318	199	---
TOTAL	27585	9389	11985	15233	10927	19538	22552	17840	12887	10020	7067	4995
MEAN	890	313	387	491	390	630	752	575	430	323	228	166
MAX	6440	695	1930	1060	756	2360	2550	1000	1100	516	336	219
MIN	138	242	224	326	268	330	405	414	282	216	165	140
CFSM	4.43	1.56	1.92	2.44	1.94	3.14	3.74	2.86	2.14	1.61	1.13	.83
IN.	5.11	1.74	2.22	2.82	2.02	3.62	4.17	3.30	2.39	1.85	1.31	.92

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1985 - 1991, BY WATER YEAR (WY)

	1985	1986	1987	1988	1989	1990	1991
MEAN	349	385	327	335	386	519	468
MAX	890	754	456	548	838	878	883
(WY)	1991	1986	1987	1990	1990	1990	1987
MIN	85.7	161	113	180	206	179	206
(WY)	1989	1989	1989	1989	1988	1988	1988

SUMMARY STATISTICS FOR 1990 CALENDAR YEAR FOR 1991 WATER YEAR WATER YEARS 1985 - 1991

	1990 CALENDAR YEAR	1991 WATER YEAR	WATER YEARS 1985 - 1991
ANNUAL TOTAL	172516	170018	
ANNUAL MEAN	473	466	346
HIGHEST ANNUAL MEAN			488
LOWEST ANNUAL MEAN			169
HIGHEST DAILY MEAN	6440 Oct 13	6440 Oct 13	6440 Oct 13 1990
LOWEST DAILY MEAN	138 Oct 8	138 Oct 8	35 Aug 19 1988
ANNUAL SEVEN-DAY MINIMUM	145 Sep 24	151 Sep 24	45 Aug 14 1988
INSTANTANEOUS PEAK FLOW		15900 Oct 13	15900 Oct 13 1990
INSTANTANEOUS PEAK STAGE		18.03 Oct 13	18.03 Oct 13 1990
INSTANTANEOUS LOW FLOW		138* Oct 7	33* Aug 19 1988
ANNUAL RUNOFF (CFSM)	2.35	2.32	1.72
ANNUAL RUNOFF (INCHES)	31.93	31.47	23.41
10 PERCENT EXCEEDS	803	788	597
50 PERCENT EXCEEDS	349	354	239
90 PERCENT EXCEEDS	169	179	110

\* See REMARKS.

## SANTÉE RIVER BASIN

02142000 LOWER LITTLE RIVER NEAR ALL HEALING SPRINGS, NC

LOCATION.--Lat 35°56'44", long 81°14'13", Alexander County, Hydrologic Unit 03050101, on left bank at upstream side of bridge on Secondary Road 1313, 0.3 mi downstream from Grassy Creek, 0.4 mi upstream from Lambert Creek, 2.2 mi northeast of All Healing Springs, and 4 mi northwest of Taylorsville.

DRAINAGE AREA.--28.2 mi<sup>2</sup>.

PERIOD OF RECORD.--October to December 1952 (monthly discharge only), January 1953 to current year.

REVISED RECORDS.--WDR NC-79-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 1,070 ft, by barometer. Prior to June 13, 1953, nonrecording gage at same site and datum.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Minimum discharge of 2.9 ft<sup>3</sup>/s also occurred Sept. 21, 1955. Minimum discharge for current water year also occurred Oct. 9, 10.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	38	25	42	35	36	77	98	e64	e26	36	e32
2	18	36	25	40	35	58	65	82	e89	e27	35	e28
3	17	35	36	40	35	107	58	72	71	e26	34	e27
4	22	34	39	38	34	132	54	67	63	53	32	e27
5	20	33	31	36	34	79	56	64	e55	63	31	e27
6	18	33	29	35	40	64	52	80	e52	44	109	e26
7	17	31	27	40	41	56	49	66	e51	38	132	e26
8	17	30	26	40	36	52	46	e58	e50	45	45	e26
9	17	54	25	38	35	47	47	e57	e49	45	42	e25
10	23	85	24	37	34	43	47	e65	e48	38	40	25
11	51	52	24	218	33	41	43	e60	e47	37	e39	25
12	578	44	23	158	32	40	42	e58	e46	36	e37	24
13	355	39	23	88	35	41	46	e56	e48	35	e38	26
14	90	37	23	67	40	40	46	73	e46	34	e40	25
15	64	35	23	57	34	37	83	63	e46	33	e58	25
16	54	33	23	108	32	36	76	57	e110	33	e41	27
17	45	32	23	76	33	36	60	99	e80	37	e37	25
18	84	31	24	61	67	51	53	67	e65	35	e34	25
19	76	30	27	56	66	41	1400	317	79	34	e33	33
20	58	30	23	85	69	38	239	141	49	35	e32	30
21	51	29	24	65	59	38	228	182	114	33	e31	25
22	360	28	24	56	53	37	139	128	337	31	e30	25
23	405	29	417	51	49	38	108	90	72	31	e30	25
24	104	28	351	48	44	36	92	77	e50	49	e29	25
25	77	27	96	44	42	35	82	67	e41	168	e30	27
26	63	26	66	42	42	34	76	e64	e36	44	e30	26
27	54	26	57	40	38	35	103	e62	e36	50	e31	24
28	48	28	55	39	37	34	209	97	e33	46	e32	23
29	44	27	52	38	---	674	122	84	e30	45	e34	23
30	41	25	49	39	---	218	129	66	e28	41	e31	23
31	39	---	48	37	---	101	---	e62	---	38	e31	---
TOTAL	2930	1045	1762	1859	1164	2355	3927	2679	1985	1330	1264	780
MEAN	94.5	34.8	56.8	60.0	41.6	76.0	131	86.4	66.2	42.9	40.8	26.0
MAX	578	85	417	218	69	674	1400	317	337	168	132	33
MIN	17	25	23	35	32	34	42	56	28	26	29	23
CFSM	3.35	1.24	2.02	2.13	1.47	2.69	4.64	3.06	2.35	1.52	1.45	.92
IN.	3.87	1.38	2.32	2.45	1.54	3.11	5.18	3.53	2.62	1.75	1.67	1.03

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1953 - 1991, BY WATER YEAR (WY)

	MEAN	29.0	28.3	36.4	40.6	52.2	57.8	59.0	42.7	38.2	27.9	27.5	26.3
MAX	103	115	76.3	117	134	153	137	98.5	106	88.1	123	102	
(WY)	1965	1978	1984	1978	1960	1975	1958	1975	1975	1984	1970	1979	
MIN	6.04	7.03	8.16	9.36	22.4	21.1	18.8	16.4	10.1	9.11	4.86	4.75	
(WY)	1955	1956	1956	1956	1956	1956	1966	1956	1956	1954	1956	1954	

SUMMARY STATISTICS FOR 1990 CALENDAR YEAR FOR 1991 WATER YEAR WATER YEARS 1953 - 1991

	ANNUAL TOTAL	22385	23080	
ANNUAL MEAN	61.3	63.2	39.0	
HIGHEST ANNUAL MEAN			61.9	1991
LOWEST ANNUAL MEAN			14.9	1956
HIGHEST DAILY MEAN	578	Oct 12	1400	Apr 19
LOWEST DAILY MEAN	17	Sep 24	17	Oct 3
ANNUAL SEVEN-DAY MINIMUM	17	Sep 24	18	Oct 3
INSTANTANEOUS PEAK FLOW			4030	Apr 19
INSTANTANEOUS PEAK STAGE			14.90	Apr 19
INSTANTANEOUS LOW FLOW			16*	Oct 8
ANNUAL RUNOFF (CFSM)	2.17		2.24	
ANNUAL RUNOFF (INCHES)	29.53		30.45	
10 PERCENT EXCEEDS	101		97	
50 PERCENT EXCEEDS	48		40	
90 PERCENT EXCEEDS	22		25	

\* See REMARKS.

## SANTEE RIVER BASIN

0214253830 NORWOOD CREEK NEAR TROUTMAN, NC

LOCATION.--Lat 35°40'48", long 80°56'44", Iredell County, Hydrologic Unit 03040102, on left upstream wingwall of culvert on Secondary Road 1328, 0.4 mi upstream from Lake Norman, 0.7 mi downstream from Powder Spring Branch, 1.0 mi northeast of community of East Monbo, and 3.7 mi southwest of Troutman.

DRAINAGE AREA.--7.18 mi<sup>2</sup>.

PERIOD OF RECORD.--December 1983 to current year.

GAGE.--Water-stage recorder. Datum of gage is 761.09 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records fair except those for estimated daily discharges and those above 400 ft<sup>3</sup>/s, which are poor. Maximum discharge, 1,320 ft<sup>3</sup>/s from rating curve extended above 400 ft<sup>3</sup>/s by logarithmic plotting. Minimum discharge for current water year also occurred Oct. 3, 4.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.9	6.7	6.2	8.3	7.5	7.1	17	17	7.6	4.8	4.3	4.7
2	2.9	6.5	6.2	7.5	7.4	10	15	13	7.6	4.7	5.1	4.2
3	2.7	6.4	11	7.6	7.3	163	14	12	7.4	5.6	5.0	4.1
4	3.3	6.3	14	7.9	7.1	100	13	12	7.2	5.1	4.3	4.1
5	3.3	6.5	8.3	7.2	7.0	21	14	12	6.8	5.6	4.1	4.6
6	3.0	6.3	7.2	7.1	7.4	14	13	12	6.7	5.3	4.1	9.2
7	3.0	6.3	7.2	14	7.6	12	12	11	6.5	4.8	4.4	4.9
8	3.1	6.3	7.1	16	7.2	14	13	10	6.3	4.7	6.4	4.5
9	3.0	25	6.6	12	7.1	13	14	11	6.3	4.6	4.9	4.3
10	22	42	6.4	9.6	7.0	11	12	10	6.1	4.6	4.5	4.2
11	42	15	6.3	154	6.9	11	11	9.9	5.9	4.5	4.4	4.1
12	167	11	6.2	49	6.7	10	11	9.7	6.0	4.4	7.2	3.9
13	153	8.9	6.1	19	7.0	11	13	9.5	5.9	4.2	5.4	4.1
14	20	8.1	6.1	13	7.3	10	14	9.4	5.7	4.1	6.7	4.1
15	10	7.5	6.0	11	7.0	9.6	21	9.2	5.7	4.0	6.3	3.7
16	7.5	7.3	6.0	42	6.4	9.4	17	9.3	7.1	4.2	5.0	3.6
17	5.8	7.4	5.9	15	6.7	9.2	13	9.6	7.0	4.5	4.7	3.6
18	6.2	7.0	6.0	11	19	15	12	9.1	6.2	6.1	4.6	3.6
19	5.3	7.0	6.9	9.6	12	11	28	23	6.0	4.8	4.5	14
20	4.9	6.8	6.4	34	9.5	10	22	12	6.0	4.5	4.4	8.6
21	4.7	6.5	6.9	14	8.5	9.8	70	12	6.0	4.4	4.2	4.6
22	209	6.5	6.9	11	8.0	9.5	22	10	6.1	4.3	4.3	4.3
23	265	6.5	7.0	9.6	7.7	9.2	16	9.5	5.7	4.1	4.3	4.1
24	34	6.3	10	9.0	7.6	8.9	14	9.1	5.6	4.0	4.2	4.0
25	46	6.4	8.0	8.5	7.4	8.7	13	8.8	5.6	7.1	4.4	4.8
26	37	6.3	7.2	8.2	8.3	8.7	12	8.2	5.5	4.6	4.6	4.4
27	17	6.2	7.5	8.0	7.6	8.8	13	8.0	5.4	4.3	4.5	3.8
28	12	6.7	7.8	7.7	7.3	8.8	13	9.6	5.3	4.5	4.4	3.7
29	9.0	6.7	7.3	7.6	---	286	14	8.7	5.0	4.6	4.4	3.6
30	7.9	6.4	7.2	8.0	---	78	32	7.8	4.9	4.5	4.2	3.6
31	7.0	---	13	7.7	---	24	---	7.5	---	4.4	4.5	---
TOTAL	1119.5	268.8	230.9	554.1	223.5	931.7	518	329.9	185.1	145.9	148.3	143.0
MEAN	36.1	8.96	7.45	17.9	7.98	30.1	17.3	10.6	6.17	4.71	4.78	4.77
MAX	265	42	14	154	19	286	70	23	7.6	7.1	7.2	14
MIN	2.7	6.2	5.9	7.1	6.4	7.1	11	7.5	4.9	4.0	4.1	3.6
CFSM	5.03	1.25	1.04	2.49	1.11	4.19	2.40	1.48	.86	.66	.67	.66
IN.	5.80	1.39	1.20	2.87	1.16	4.83	2.68	1.71	.96	.76	.77	.74

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 1991, BY WATER YEAR (WY)

	MEAN	12.7	8.18	9.99	10.7	15.9	14.2	10.5	8.23	5.23	6.98	5.45	4.98
MAX	37.0	9.98	15.8	16.6	25.1	29.9	19.9	15.2	6.93	22.1	11.4	10.5	
(WY)	1991	1988	1984	1991	1990	1991	1984	1990	1984	1989	1985	1989	
MIN	3.01	4.83	4.23	4.97	5.14	6.23	3.60	2.86	1.61	1.90	2.62	2.43	
(WY)	1987	1985	1989	1986	1986	1985	1986	1986	1986	1986	1987	1986	

## SUMMARY STATISTICS

## FOR 1990 CALENDAR YEAR

## FOR 1991 WATER YEAR

## WATER YEARS 1984 - 1991

ANNUAL TOTAL	4618.4	4798.7	9.03	
ANNUAL MEAN	12.7	13.1	13.0	1991
HIGHEST ANNUAL MEAN			4.73	1986
LOWEST ANNUAL MEAN			387	Oct 1 1989
HIGHEST DAILY MEAN	265	Oct 23	.82	Aug 2 1986
LOWEST DAILY MEAN	2.7	Sep 6	.99	Jul 29 1986
ANNUAL SEVEN-DAY MINIMUM	2.8	Sep 24	1320*	Oct 1 1989
INSTANTANEOUS PEAK FLOW			7.50	Oct 22 1989
INSTANTANEOUS PEAK STAGE			2.7*	Oct 2 1986
INSTANTANEOUS LOW FLOW			1.83	1.26
ANNUAL RUNOFF (CFSM)	1.76		24.86	17.08
ANNUAL RUNOFF (INCHES)	23.93		16	14
10 PERCENT EXCEEDS	20		7.2	5.6
50 PERCENT EXCEEDS	7.5		4.2	2.9
90 PERCENT EXCEEDS	3.4			

\* See REMARKS.

0214269560 KILLIAN CREEK NEAR MARIPOSA, NC

LOCATION.--Lat 35°26'03", long 81°01'49", Lincoln County, Hydrologic Unit 03050305, on right bank 1,000 ft upstream from Forney Creek, 1.7 mi upstream from bridge on Secondary Road 1511, 1.5 mi northwest of Lowesville, and 2.4 mi northeast of Mariposa.

DRAINAGE AREA.--36.4 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1990 to current year.

GAGE.--Water-stage recorder and V-notch, sharp-crested weir. Datum of gage is 643.08 ft above National Geodetic Vertical Datum of 1929 (levels by Duke Power Co.).

REMARKS.--Records good except for estimated daily discharges, which are fair. Station was established to study low-flow conditions for Duke Power Co., no structure exists near the site for measuring high stage flow; therefore, a peak flow was not determined to coincide with the peak stage for the year. Missing values on the daily value table are days when the flow exceeded the rating. Minimum discharge for current water year also occurred Oct. 4, 9.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.9	37	25	62	38	31	71	69	30	25	19	19
2	10	35	25	48	37	63	63	63	e30	24	25	18
3	9.4	34	30	43	37	---	62	56	e68	24	22	17
4	10	34	64	45	36	---	61	53	e58	23	16	18
5	11	33	38	41	35	---	64	51	51	28	16	17
6	10	31	33	38	36	---	64	51	44	32	13	17
7	9.6	31	32	---	41	---	61	49	38	25	---	16
8	9.4	30	32	---	37	87	58	46	36	24	---	15
9	9.7	---	29	71	36	79	57	45	32	23	---	15
10	---	---	28	55	35	69	57	44	30	22	43	14
11	---	57	28	---	34	61	56	43	27	21	36	14
12	---	44	27	---	33	55	53	41	26	20	38	13
13	---	39	27	---	32	50	51	40	26	19	36	13
14	---	36	27	84	34	48	51	40	24	18	---	16
15	45	33	26	74	34	44	55	42	24	18	---	13
16	37	32	26	---	32	40	57	38	25	18	40	12
17	31	30	25	---	32	38	53	43	---	18	38	11
18	29	29	26	78	34	59	51	39	---	26	31	13
19	22	29	35	70	36	58	---	38	36	21	29	15
20	16	28	29	---	36	48	---	40	34	20	28	15
21	14	28	35	---	36	44	---	41	35	19	27	12
22	---	27	32	81	36	42	---	39	49	21	26	12
23	---	27	31	69	35	41	80	36	41	17	25	12
24	---	27	---	63	34	39	70	35	33	15	24	11
25	---	26	45	59	33	37	65	33	31	22	23	23
26	---	25	38	56	33	36	61	33	29	18	25	25
27	62	25	36	54	33	35	58	32	29	16	25	15
28	50	27	38	52	32	37	57	39	28	16	24	14
29	44	31	34	48	---	---	56	34	26	19	23	e13
30	41	26	34	47	---	---	---	31	26	19	21	e12
31	39	---	---	43	---	---	---	30	---	16	20	---
TOTAL	519.0	891	935	1281	977	1141	1492	1314	966	649	693	450
MEAN	24.7	31.8	32.2	58.2	34.9	49.6	59.7	42.4	34.5	20.9	26.7	15.0
MAX	62	57	64	84	41	87	80	69	68	32	43	25
MIN	9.4	25	25	38	32	31	51	30	24	15	13	11

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1991 - 1991, BY WATER YEAR (WY)

	1991	1991	1991	1991	1991	1991	1991	1991	1991	1991	1991	1991
MEAN	24.7	31.8	31.1	54.8	34.9	47.8	58.7	42.4	34.6	20.9	26.7	15.0
MAX	24.7	31.8	31.1	54.8	34.9	47.8	58.7	42.4	34.6	20.9	26.7	15.0
(WY)	1991	1991	1991	1991	1991	1991	1991	1991	1991	1991	1991	1991
MIN	24.7	31.8	31.1	54.8	34.9	47.8	58.7	42.4	34.6	20.9	26.7	15.0
(WY)	1991	1991	1991	1991	1991	1991	1991	1991	1991	1991	1991	1991

SUMMARY STATISTICS

FOR 1991 WATER YEAR

ANNUAL TOTAL	NOT DETERMINED
ANNUAL MEAN	NOT DETERMINED
HIGHEST DAILY MEAN	NOT DETERMINED
LOWEST DAILY MEAN	9.4 Oct 3
ANNUAL SEVEN-DAY MINIMUM	9.9 Oct 3
INSTANTANEOUS PEAK FLOW	NOT DETERMINED Mar 29
INSTANTANEOUS PEAK STAGE	13.36 Mar 29
INSTANTANEOUS LOW FLOW	9.0* Oct 3

\* See REMARKS.

## SANTEE RIVER BASIN

02142900 LONG CREEK NEAR PAW CREEK, NC

LOCATION.--Lat 35°19'42", long 80°54'35", Mecklenburg County, Hydrologic Unit 03050101, on right bank at upstream side of bridge on Secondary Road 2042, 600 ft downstream from McIntyre Creek, 1.2 mi upstream from Gutter Branch, and 3.6 mi north of Paw Creek.

DRAINAGE AREA.--16.4 mi<sup>2</sup>.

PERIOD OF RECORD.--June 1965 to current year.

REVISED RECORDS.--WDR NC-80-1: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 648.7 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those below 4.0 ft<sup>3</sup>/s and estimated daily discharges, which are fair. Frequent diversions for irrigation by upstream golf course. Minimum discharge for period of record also occurred Oct. 2, 3, 1986, and Sept. 3, 1987.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.87	6.8	8.0	14	11	8.5	24	e16	6.8	3.0	2.4	2.2
2	.87	6.3	7.5	12	10	43	19	e12	7.8	2.8	4.3	2.0
3	.80	6.0	25	11	10	564	15	e10	6.3	2.8	4.2	1.9
4	8.3	5.8	64	15	9.9	256	14	8.7	6.4	3.5	2.3	1.9
5	5.0	5.6	17	11	9.5	47	24	8.7	4.3	15	1.9	1.8
6	1.5	5.2	12	10	11	30	23	32	3.9	9.1	2.1	1.8
7	1.3	5.0	10	473	20	36	17	11	3.6	3.9	2.9	1.7
8	1.2	4.8	12	107	12	55	78	8.8	3.5	3.2	36	1.6
9	1.3	68	9.5	47	10	45	129	8.4	3.4	2.8	16	1.4
10	100	219	8.6	29	9.6	26	41	8.5	3.3	2.5	3.5	1.3
11	279	27	8.1	490	9.3	18	21	7.7	3.2	2.5	2.8	1.4
12	174	15	7.8	107	8.9	15	15	7.4	3.4	2.3	4.9	1.3
13	147	11	7.6	40	8.9	32	13	8.0	3.6	2.3	3.8	1.2
14	17	9.4	8.0	25	15	26	14	7.3	3.3	2.0	53	1.5
15	9.2	8.5	7.6	19	9.7	17	47	6.8	3.7	2.0	15	1.3
16	6.8	8.2	7.5	120	8.2	14	27	6.3	3.5	2.7	5.0	1.0
17	5.4	8.0	7.2	34	8.3	13	15	6.2	27	3.2	3.3	1.1
18	13	7.7	7.5	21	9.8	99	12	6.3	18	8.8	2.8	3.9
19	7.9	7.4	26	17	9.2	33	e14	10	14	3.5	2.5	1.5
20	5.0	7.1	15	82	11	19	e13	8.0	8.9	3.6	2.2	1.8
21	4.3	6.8	57	34	10	15	e90	7.7	9.9	2.6	2.1	1.3
22	186	6.6	27	20	9.5	14	e25	6.7	14	2.3	1.9	1.2
23	571	7.0	18	15	13	13	e16	6.2	6.2	1.9	2.0	1.2
24	45	6.9	35	15	10	12	e14	5.9	4.8	1.8	15	1.2
25	434	6.5	16	15	9.5	10	e13	5.5	4.2	2.1	23	16
26	115	6.3	12	12	9.3	10	e14	5.1	3.7	2.0	4.9	5.2
27	18	5.9	16	12	8.7	10	e15	5.5	3.7	7.7	4.4	2.0
28	12	7.6	21	11	8.4	12	e17	8.8	3.3	4.6	5.7	1.6
29	9.7	33	16	11	---	411	e24	9.0	3.3	3.2	3.4	1.5
30	8.1	10	25	17	---	114	e32	5.5	3.2	2.7	2.9	1.4
31	7.5	---	24	21	---	34	---	4.7	---	2.6	2.5	---
TOTAL	2196.04	538.4	542.9	1867	289.7	2051.5	835	268.7	194.2	115.0	238.7	66.2
MEAN	70.8	17.9	17.5	60.2	10.3	66.2	27.8	8.67	6.47	3.71	7.70	2.21
MAX	571	219	64	490	20	564	129	32	27	15	53	16
MIN	.80	4.8	7.2	10	8.2	8.5	12	4.7	3.2	1.8	1.9	1.0
CFSM	4.32	1.09	1.07	3.67	.63	4.04	1.70	.53	.39	.23	.47	.13
IN.	4.98	1.22	1.23	4.23	.66	4.65	1.89	.61	.44	.26	.54	.15

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 1991, BY WATER YEAR (WY)

	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
MEAN	13.6	13.9	20.7	29.1	33.8	34.9	19.1	18.4	11.0	6.51	8.33	9.15															
MAX	70.8	91.3	59.5	68.7	78.4	75.6	44.3	101	66.5	16.2	59.0	66.2															
(WY)	1991	1986	1984	1978	1979	1975	1987	1975	1982	1984	1967	1975															
MIN	1.48	2.42	2.53	4.04	8.92	8.80	4.38	3.60	1.68	1.08	1.44	1.27															
(WY)	1984	1982	1966	1981	1968	1967	1967	1981	1986	1986	1987	1986															

SUMMARY STATISTICS

	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1965 - 1991
ANNUAL TOTAL	8508.38	9203.34	
ANNUAL MEAN	23.3	25.2	18.2
HIGHEST ANNUAL MEAN			36.2
LOWEST ANNUAL MEAN			6.79
HIGHEST DAILY MEAN	571	571	1600
LOWEST DAILY MEAN	.47	.80	.43
ANNUAL SEVEN-DAY MINIMUM	.65	1.3	.49
INSTANTANEOUS PEAK FLOW		1480	4300
INSTANTANEOUS PEAK STAGE		11.31	11.70
INSTANTANEOUS LOW FLOW		.57	.35*
ANNUAL RUNOFF (CFSM)	1.42	1.54	1.11
ANNUAL RUNOFF (INCHES)	19.30	20.88	15.07
10 PERCENT EXCEEDS	40	38	30
50 PERCENT EXCEEDS	8.2	8.8	6.6
90 PERCENT EXCEEDS	1.2	2.0	1.9

\* See REMARKS.



## SANTEE RIVER BASIN

02143040 JACOB FORK AT RAMSEY, NC

LOCATION.--Lat 35°35'26", long 81°34'02", Burke County, Hydrologic Unit 03050102, on left bank 16 ft downstream from bridge on Secondary Road 1924, 0.6 mi downstream from Queens Creek, and 0.6 mi north of Ramsey.

DRAINAGE AREA.--25.7 mi<sup>2</sup>.

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1960-61. October 1961 to current year.

REVISED RECORDS.--WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,103.00 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Maximum discharge, 7,220 ft<sup>3</sup>/s, from rating curve extended above 3,400 ft<sup>3</sup>/s on basis of contracted-opening measurement of peak flow. Minimum discharge for current water year also occurred Oct. 4, 9, 10.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of August 1940 reached a stage of about 39 ft, from information by local resident. Flood of July 1916 reached a stage of about 19 ft, from information by North Carolina State Highway Commission.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	38	31	60	e48	e44	88	99	66	38	38	33
2	12	37	32	55	e48	e48	75	90	65	37	36	32
3	11	36	41	51	e48	e70	68	83	62	36	33	31
4	13	34	47	50	e47	e110	64	79	58	38	30	31
5	15	36	36	47	e47	e100	75	77	55	36	30	29
6	12	39	33	45	e49	e88	73	79	53	35	33	29
7	11	37	32	50	e52	e65	68	71	52	34	47	29
8	11	37	31	55	e49	e71	66	67	52	38	35	29
9	11	60	29	57	e47	e66	76	68	49	51	34	28
10	22	112	29	58	e46	e64	70	67	47	35	32	27
11	45	64	28	346	e45	e62	65	65	46	35	35	26
12	1420	50	29	167	e43	58	61	64	46	32	132	23
13	368	44	29	96	e44	59	76	64	46	31	88	23
14	100	39	31	75	e51	57	99	63	52	29	73	24
15	60	37	30	77	e48	53	184	63	48	28	81	27
16	46	36	29	190	e45	50	136	62	46	28	56	25
17	39	35	29	117	e46	49	95	69	61	31	45	23
18	72	32	30	86	e65	66	82	70	65	37	40	23
19	70	33	40	74	e85	62	449	81	54	47	36	23
20	49	29	34	89	e74	57	225	94	55	49	34	22
21	42	30	35	79	e66	54	202	169	60	34	32	21
22	146	31	36	69	e62	52	146	124	65	30	30	21
23	278	31	86	62	e57	51	114	89	52	28	30	22
24	100	30	202	59	e54	49	99	75	48	39	31	22
25	79	28	79	56	e50	47	88	68	46	66	39	29
26	76	28	59	53	e52	46	83	64	45	36	51	27
27	60	29	51	52	e49	45	152	74	45	33	45	22
28	52	34	48	51	e47	47	212	129	43	39	39	20
29	46	35	49	49	---	592	132	121	40	42	36	20
30	42	31	53	53	---	231	113	86	39	67	37	19
31	40	---	64	55	---	113	---	73	---	45	35	---
TOTAL	3359	1172	1412	2483	1464	2626	3536	2547	1561	1184	1373	760
MEAN	108	39.1	45.5	80.1	52.3	84.7	118	82.2	52.0	38.2	44.3	25.3
MAX	1420	112	202	346	85	592	449	169	66	67	132	33
MIN	11	28	28	45	43	44	61	62	39	28	30	19
CFSM	4.22	1.52	1.77	3.12	2.03	3.30	4.59	3.20	2.02	1.49	1.72	.99
IN.	4.86	1.70	2.04	3.59	2.12	3.80	5.12	3.69	2.26	1.71	1.99	1.10

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 1991, BY WATER YEAR (WY)

	MEAN	43.5	42.0	49.1	56.6	67.4	76.2	68.9	55.8	41.7	35.5	33.4	30.5
MAX	154	130	92.6	117	134	177	157	109	82.3	72.7	152	102	
(WY)	1965	1978	1984	1978	1966	1975	1983	1984	1972	1985	1970	1989	
MIN	11.7	12.7	14.8	20.9	27.9	27.4	22.6	19.9	11.9	9.23	8.81	15.6	
(WY)	1964	1982	1989	1981	1986	1988	1967	1988	1988	1988	1988	1988	

SUMMARY STATISTICS

FOR 1990 CALENDAR YEAR

FOR 1991 WATER YEAR

WATER YEARS 1962 - 1991

ANNUAL TOTAL	22184	23477	
ANNUAL MEAN	60.8	64.3	50.0
HIGHEST ANNUAL MEAN			68.2
LOWEST ANNUAL MEAN			23.8
HIGHEST DAILY MEAN	1420	Oct 12	1730
LOWEST DAILY MEAN	11	Sep 27	4.7
ANNUAL SEVEN-DAY MINIMUM	11	Sep 27	5.7
INSTANTANEOUS PEAK FLOW			7220*
INSTANTANEOUS PEAK STAGE			19.74
INSTANTANEOUS LOW FLOW			4.4
ANNUAL RUNOFF (CFSM)	2.36	2.50	1.94
ANNUAL RUNOFF (INCHES)	32.11	33.98	26.42
10 PERCENT EXCEEDS	102	97	83
50 PERCENT EXCEEDS	43	48	34
90 PERCENT EXCEEDS	17	28	16

\* See REMARKS.

## SANTEE RIVER BASIN

02143500 INDIAN CREEK NEAR LABORATORY, NC

LOCATION.--Lat 35°25'20", long 81°15'52", Lincoln County, Hydrologic Unit 03050102, on left bank 250 ft upstream from remains of Rudisill Mill dam, 0.5 mi upstream from bridge on Secondary Road 1252, 1.5 mi upstream from mouth, 1.5 mi south of Laboratory, and 3.5 mi south of Lincolnton.

DRAINAGE AREA.--69.2 mi<sup>2</sup>.

PERIOD OF RECORD.--August 1951 to current year.

REVISED RECORDS.--WDR NC-71-1: 1970(M). WDR NC-80-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 736 ft above National Geodetic Vertical Datum of 1929, by barometer. Satellite telemetry installed June 1991.

REMARKS.--No estimated daily discharges. Records good. Minimum discharge for current water year also occurred Oct. 10.

EXTREMES OUTSIDE PERIOD OF RECORD.--Peak discharge of flood in October 1929 was 9,920 ft<sup>3</sup>/s; flood in July 1916, 7,840 ft<sup>3</sup>/s; flood in August 1940, 6,000 ft<sup>3</sup>/s. Discharge based on computation of peak flow over dam 1 mi downstream, using floodmarks and information by local resident.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	71	54	107	81	77	174	183	79	49	38	36
2	19	66	53	91	78	152	141	136	70	45	44	34
3	21	63	70	86	79	385	121	115	69	45	44	34
4	22	61	111	96	77	287	111	107	64	75	34	34
5	27	60	78	82	76	168	140	105	60	62	32	32
6	19	60	72	79	79	133	132	126	58	72	34	32
7	18	57	70	109	93	123	110	98	58	47	130	32
8	22	56	74	129	82	145	103	89	57	43	76	32
9	21	89	68	111	77	136	134	89	56	42	45	31
10	25	244	66	97	74	115	115	88	54	38	47	29
11	108	119	66	633	71	102	96	84	51	36	48	28
12	530	94	65	556	71	97	93	81	51	36	319	29
13	3180	82	65	208	71	111	101	84	50	35	188	28
14	300	71	67	152	86	106	127	83	47	33	233	28
15	141	67	66	125	77	92	300	87	50	32	252	27
16	99	65	65	255	72	87	219	106	48	33	96	27
17	79	63	63	168	73	88	147	206	49	39	73	26
18	74	60	65	130	87	162	123	101	81	50	65	29
19	73	63	92	114	84	124	464	122	80	55	53	28
20	66	60	74	223	88	105	356	104	95	42	47	28
21	55	59	79	154	87	95	661	102	115	36	43	25
22	482	58	76	121	81	91	229	89	335	32	42	26
23	1910	59	76	109	84	89	171	80	102	30	41	28
24	276	58	117	102	82	85	143	75	79	29	40	25
25	289	56	86	96	80	81	122	71	72	94	40	46
26	292	56	76	90	80	80	117	67	65	42	44	42
27	159	55	71	87	76	83	139	71	63	44	44	28
28	123	60	78	90	76	89	179	180	58	40	41	27
29	100	70	74	85	---	699	143	182	53	41	40	25
30	86	56	78	92	---	1460	369	98	48	64	38	25
31	79	---	149	99	---	232	---	105	---	42	36	---
TOTAL	8715	2158	2364	4676	2222	5879	5580	3314	2217	1403	2347	901
MEAN	281	71.9	76.3	151	79.4	190	186	107	73.9	45.3	75.7	30.0
MAX	3180	244	149	633	93	1460	661	206	335	94	319	46
MIN	18	55	53	79	71	77	93	67	47	29	32	25
CFSM	4.06	1.04	1.10	2.18	1.15	2.74	2.69	1.54	1.07	.65	1.09	.43
IN.	4.68	1.16	1.27	2.51	1.19	3.16	3.00	1.78	1.19	.75	1.26	.48

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 1991, BY WATER YEAR (WY)

	MEAN	70.0	63.7	93.2	114	136	150	118	89.8	72.7	54.3	55.2	46.6
MAX	324	272	236	313	309	424	301	250	165	130	275	155	
(WY)	1965	1958	1968	1978	1960	1952	1958	1984	1962	1964	1970	1959	
MIN	8.30	19.2	26.0	25.8	44.0	59.8	38.1	27.6	11.8	12.7	13.7	8.62	
(WY)	1955	1955	1956	1956	1986	1986	1986	1986	1986	1986	1988	1954	

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR		FOR 1991 WATER YEAR		WATER YEARS 1951 - 1991	
ANNUAL TOTAL	41675		41776			
ANNUAL MEAN	114		114		88.4	
HIGHEST ANNUAL MEAN					134	
LOWEST ANNUAL MEAN					40.4	
HIGHEST DAILY MEAN	3180	Oct 13	3180	Oct 13	4350	Aug 10 1970
LOWEST DAILY MEAN	16	Sep 28	18	Oct 7	2.1	Jul 20 1986
ANNUAL SEVEN-DAY MINIMUM	19	Sep 27	21	Oct 1	3.1	Jul 16 1986
INSTANTANEOUS PEAK FLOW			4610	Oct 13	8450	Aug 10 1970
INSTANTANEOUS PEAK STAGE			7.74	Oct 13	10.61	Aug 10 1970
INSTANTANEOUS LOW FLOW			16*	Oct 9	1.7	Jul 21 1986
ANNUAL RUNOFF (CFSM)	1.65		1.65		1.28	
ANNUAL RUNOFF (INCHES)	22.40		22.46		17.35	
10 PERCENT EXCEEDS	184		176		146	
50 PERCENT EXCEEDS	75		77		56	
90 PERCENT EXCEEDS	25		32		24	

\* See REMARKS.

02144000 LONG CREEK NEAR BESSEMER CITY, NC

LOCATION.--Lat 35°18'23", long 81°14'05", Gaston County, Hydrologic Unit 03050102, on right bank 700 ft upstream from bridge on Secondary Road 1456, 3.3 mi northeast of Bessemer City, and 8.2 mi upstream from mouth.

DRAINAGE AREA.--31.8 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1952 to current year. Monthly discharge only for some periods, published in WSP 1723.

REVISED RECORDS.--WSP 1723: 1959-60 (M). WSP 1904: 1959-60. WDR NC-80-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 706.1 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Bessemer City diverts water supply from above gaging station and returns treated effluent to South Fork Catawba River below mouth of Long Creek causing some diurnal fluctuation; a daily average of 1.26 ft<sup>3</sup>/s was diverted during the year. Lowest annual mean for period of record also occurred for 1988 water year. Minimum discharge for current water year also occurred Oct. 8, 9.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 1916 reached a stage of 26 ft at site on left bank 1,500 ft upstream, from information by local resident.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.4	24	20	37	35	25	62	75	25	13	14	7.1
2	4.8	22	20	32	33	78	53	46	25	13	23	6.8
3	4.2	20	32	31	33	404	46	39	24	13	17	6.4
4	8.2	20	59	32	31	189	42	38	23	15	11	6.5
5	10	19	34	30	31	72	57	37	20	17	9.2	6.3
6	5.2	19	29	30	33	55	52	57	20	16	10	6.3
7	4.3	18	27	107	37	54	44	40	19	12	20	6.6
8	4.4	17	30	88	32	82	52	34	19	12	13	6.8
9	4.4	65	25	63	30	67	113	32	19	12	9.2	6.3
10	13	150	25	47	30	53	70	34	19	10	8.6	5.8
11	40	46	25	384	29	48	52	31	18	10	9.3	5.6
12	509	36	22	158	28	43	46	32	17	9.4	11	5.4
13	731	32	21	72	29	50	45	41	18	8.9	12	5.3
14	63	27	23	56	32	44	46	36	21	8.1	28	5.8
15	41	24	21	49	28	40	65	31	20	8.1	28	5.2
16	32	24	22	136	25	38	53	64	18	10	13	4.7
17	27	23	21	60	27	37	43	266	19	14	11	4.8
18	31	22	22	49	30	68	39	97	28	16	9.7	5.5
19	31	22	37	45	28	49	95	87	20	13	9.1	13
20	23	21	28	119	33	42	68	61	20	11	8.4	13
21	20	20	42	60	32	38	135	53	32	10	7.8	5.4
22	209	20	36	47	29	36	67	48	65	8.9	7.6	4.8
23	566	20	36	42	33	36	52	41	24	8.3	7.6	5.6
24	78	23	93	40	31	34	46	36	20	7.8	7.3	6.0
25	206	23	45	40	28	32	40	33	19	15	11	18
26	162	19	37	36	28	31	42	33	17	8.5	12	12
27	57	18	34	36	27	31	47	31	17	12	9.9	6.1
28	43	22	38	36	26	35	57	40	16	9.8	9.1	5.3
29	37	33	35	34	---	514	44	41	15	11	8.7	5.0
30	32	22	39	41	---	393	78	29	14	12	8.4	4.8
31	27	---	40	43	---	76	---	27	---	10	7.8	---
TOTAL	3027.9	871	1018	2080	848	2794	1750	1590	651	354.8	371.7	206.2
MEAN	97.7	29.0	32.8	67.1	30.3	90.1	58.3	51.3	21.7	11.4	12.0	6.87
MAX	731	150	93	384	37	514	135	266	65	17	28	18
MIN	4.2	17	20	30	25	25	39	27	14	7.8	7.3	4.7
CFSM	3.07	.91	1.03	2.11	.95	2.83	1.83	1.61	.68	.36	.38	.22
IN.	3.54	1.02	1.19	2.43	.99	3.27	2.05	1.86	.76	.43	.43	.22

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1953 - 1991, BY WATER YEAR (WY)

MEAN	26.7	25.7	35.1	47.9	58.6	60.9	48.6	33.8	25.2	19.5	20.5	16.4
MAX	147	128	85.2	127	137	133	142	89.2	72.5	65.9	81.7	59.3
(WY)	1972	1958	1977	1978	1960	1963	1958	1975	1962	1975	1985	1971
MIN	2.37	7.09	7.37	8.17	22.5	22.8	14.3	10.0	3.74	2.41	4.14	1.99
(WY)	1955	1954	1956	1956	1986	1955	1967	1986	1986	1986	1987	1954

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1953 - 1991
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ANNUAL TOTAL	14577.7		15562.6				
ANNUAL MEAN	39.9		42.6			34.9	
HIGHEST ANNUAL MEAN						55.5	1975
LOWEST ANNUAL MEAN						16.7*	1988
HIGHEST DAILY MEAN	731	Oct 13	731	Oct 13		2940	Oct 16 1971
LOWEST DAILY MEAN	3.4	Sep 7	4.2	Oct 3		.55	Jul 14 1986
ANNUAL SEVEN-DAY MINIMUM	4.4	Sep 27	5.2	Sep 12		.76	Jul 9 1986
INSTANTANEOUS PEAK FLOW			1500	Oct 13		6500	Oct 16 1971
INSTANTANEOUS PEAK STAGE			6.48	Oct 13		9.10	Oct 16 1971
INSTANTANEOUS LOW FLOW			3.9*	Oct 4		.40	Oct 7 1954
ANNUAL RUNOFF (CFSM)	1.26		1.34			1.10	
ANNUAL RUNOFF (INCHES)	17.05		18.21			14.91	
10 PERCENT EXCEEDS	64		67			56	
50 PERCENT EXCEEDS	26		28			21	
90 PERCENT EXCEEDS	5.5		7.7			6.8	

\* See REMARKS.

\* See REMARKS.

## SANTEE RIVER BASIN

0214620760 IRWIN CREEK AT STARITA ROAD AT CHARLOTTE, NC

LOCATION.--Lat 35°16'32", long 80°47'05", Mecklenburg County, Hydrologic Unit 03050103, on right bank 200 ft upstream from Starita Road and 600 ft upstream from Interstate 85, 0.5 mi northeast from intersection of Starita Road and U.S. Highway 21, and 1.5 mi upstream from Kennedy Branch.

DRAINAGE AREA.--4.40 mi<sup>2</sup>.

PERIOD OF RECORD.--February 1989 to current year.

GAGE.--Water-stage recorder. Datum of gage is 679.347 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Minimum discharge for current water year also occurred Oct. 4.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.24	1.7	2.6	3.4	4.2	4.6	6.8	3.8	22	1.0	1.1	.94
2	.25	1.6	2.4	3.1	3.7	16	5.6	2.8	25	1.2	12	.91
3	.24	1.6	8.0	3.4	3.6	178	4.8	2.4	3.9	1.2	4.3	.85
4	1.7	1.6	10	3.6	3.5	48	4.3	2.3	1.8	1.0	1.3	.81
5	.54	1.7	3.9	2.9	3.3	14	9.1	2.8	1.4	7.0	1.1	.78
6	.33	1.6	2.9	2.8	4.4	10	6.0	18	1.2	2.8	1.2	.77
7	.30	1.6	2.9	109	5.6	9.5	4.3	3.7	1.1	1.1	1.4	.75
8	.32	1.5	3.5	23	4.1	19	5.3	2.5	1.1	.99	2.1	.70
9	.31	51	2.5	11	3.7	12	9.2	2.5	1.1	.98	1.5	.71
10	46	43	2.3	6.2	3.5	8.3	5.6	2.8	1.0	.86	1.3	.66
11	100	6.4	2.2	94	3.3	7.2	3.9	2.2	1.0	.81	1.1	.72
12	53	4.0	2.1	27	3.1	6.8	3.4	2.1	1.0	.82	2.3	.72
13	24	3.1	2.1	9.8	3.5	15	3.4	2.1	1.1	.80	1.2	.63
14	3.4	2.7	2.4	6.3	6.7	9.5	3.5	1.9	1.1	.76	16	.68
15	1.7	2.5	2.0	5.3	3.8	7.7	12	1.8	1.1	.74	5.0	.62
16	1.4	2.6	2.1	23	2.9	6.8	5.0	1.7	2.3	1.8	1.4	.60
17	1.3	2.6	2.0	7.4	3.2	6.5	3.5	2.0	24	1.8	1.1	.68
18	7.8	2.5	3.6	5.5	3.9	29	3.3	1.7	5.6	5.3	1.1	.67
19	2.3	2.5	5.1	4.7	3.5	9.9	9.7	3.2	1.8	1.7	1.0	2.6
20	1.4	2.5	9.2	16	6.5	7.0	8.1	2.4	4.7	1.2	1.0	.88
21	1.3	2.4	14	6.8	4.5	6.3	43	2.0	2.5	1.7	.89	.60
22	98	2.3	6.1	5.0	4.1	5.9	9.9	1.7	2.6	1.1	.90	.56
23	98	2.5	4.7	4.3	7.7	5.7	5.6	1.6	1.4	1.0	.84	.57
24	7.3	2.4	6.8	4.8	4.6	5.2	4.3	1.5	1.3	.88	6.0	.96
25	110	2.3	3.6	4.6	4.1	4.8	3.5	1.4	1.2	.94	3.5	18
26	23	2.3	3.0	4.1	3.9	4.7	3.3	1.4	1.1	19	1.2	1.8
27	5.3	2.2	6.2	3.9	3.5	4.8	3.6	1.6	1.1	8.7	.99	.79
28	3.3	5.6	5.5	3.7	3.5	5.3	3.9	2.3	.99	2.1	1.0	.65
29	2.3	9.3	4.6	3.5	---	119	5.8	1.6	.98	1.6	1.1	.71
30	1.9	3.3	4.9	7.5	---	27	8.6	1.3	.98	1.3	1.1	.61
31	1.7	---	4.7	6.4	---	9.5	---	1.2	---	1.2	.99	---
TOTAL	598.63	172.9	137.9	422.0	115.9	623.0	208.3	82.3	117.45	73.38	77.01	41.93
MEAN	19.3	5.76	4.45	13.6	4.14	20.1	6.94	2.65	3.91	2.37	2.48	1.40
MAX	110	51	14	109	7.7	178	43	18	25	19	16	18
MIN	.24	1.5	2.0	2.8	2.9	4.6	3.3	1.2	.98	.74	.84	.56
CFSM	4.39	1.31	1.01	3.09	.94	4.57	1.58	.60	.89	.54	.56	.32
IN.	5.06	1.46	1.17	3.57	.98	5.27	1.76	.70	.99	.62	.65	.35

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 1991, BY WATER YEAR (WY)

MEAN	16.1	4.69	5.49	11.4	10.6	13.6	5.21	8.87	3.01	1.87	1.64	3.11
MAX	19.3	5.76	6.54	13.6	18.4	20.0	6.95	13.1	3.91	2.37	2.48	7.12
(WY)	1991	1991	1990	1991	1990	1991	1991	1990	1991	1991	1991	1989
MIN	12.8	3.62	4.45	9.19	4.14	7.05	4.18	2.65	1.74	1.18	.52	.82
(WY)	1990	1990	1991	1990	1991	1990	1990	1991	1990	1990	1990	1990

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1989 - 1991
ANNUAL TOTAL	2588.54	2670.70	
ANNUAL MEAN	7.09	7.32	6.93
HIGHEST ANNUAL MEAN			7.31
LOWEST ANNUAL MEAN			6.54
HIGHEST DAILY MEAN	228	178	236
LOWEST DAILY MEAN	.23 Aug 31	.24 Oct 1	.23 Aug 31 1990
ANNUAL SEVEN-DAY MINIMUM	.24 Sep 27	.51 Oct 1	.24 Sep 27 1990
INSTANTANEOUS PEAK FLOW		680	820
INSTANTANEOUS PEAK STAGE		5.52 Mar 3	6.00 May 28 1990
INSTANTANEOUS LOW FLOW		.22* Oct 3	.21 Aug 31 1990
ANNUAL RUNOFF (CFSM)	1.61	1.66	1.57
ANNUAL RUNOFF (INCHES)	21.88	22.58	21.39
10 PERCENT EXCEEDS	9.4	12	10
50 PERCENT EXCEEDS	2.5	2.8	2.4
90 PERCENT EXCEEDS	.35	.85	.67

\* See REMARKS.

02146211 IRWIN CREEK AT STATESVILLE AVENUE AT CHARLOTTE, NC

LOCATION.--Lat 35°15'43", long 80°50'15", Mecklenburg County, Hydrologic Unit 03050103, on right bank 50 ft upstream from bridge on U.S. Highway 21 (Statesville Avenue), 1,000 ft upstream from Kennedy Branch, 0.2 mi upstream from Interstate Highway 77, and 2.5 mi north of Trade and Tryon Street intersection in downtown Charlotte.

DRAINAGE AREA.--5.97 mi<sup>2</sup>.

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1969-77, 1970-80, October 1981 to current year.

REVISED RECORDS.--WDR NC-84-1: 1982.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 656.85 ft above National Geodetic Vertical Datum of 1929 (levels by city of Charlotte).

REMARKS.--Records good except for estimated daily discharges, which are fair. A 140-acre solid-waste landfill, used 1940 to 1970, is located just above station. The drainage area is urbanized and has an impervious area of about 15 percent. Minimum discharge for period of record, no flow for parts of Aug. 2-4, 1987, occurred as a result of upstream construction; minimum discharge not affected by construction, 0.12 ft<sup>3</sup>/s Aug. 30, 31, 1987. Minimum daily discharge for period of record also occurred Aug. 2, 1986.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.58	2.2	2.8	4.0	4.8	13	e10	5.3	26	1.4	1.5	1.0
2	.62	2.0	2.6	3.7	4.2	18	e8.0	3.9	48	1.6	22	.95
3	.63	2.0	13	4.5	3.9	242	e6.0	4.1	7.4	1.7	9.7	.95
4	3.4	1.8	14	4.5	3.8	55	e4.7	3.2	3.9	1.4	2.1	.97
5	.87	1.9	4.9	3.5	3.7	14	e14	3.8	2.9	9.7	1.5	.93
6	.59	1.9	3.4	3.3	6.0	12	e8.0	29	2.4	4.4	1.6	.93
7	.52	1.8	3.4	141	6.7	9.5	e5.2	5.5	1.9	1.7	1.7	.94
8	e.56	1.8	4.7	34	4.5	26	e7.0	3.9	1.9	1.4	2.8	.89
9	e.55	75	3.0	14	3.8	12	e9.5	3.7	1.8	1.4	2.1	.91
10	e60	63	2.8	8.2	3.6	7.5	7.3	4.8	1.8	1.3	1.5	.80
11	e130	8.3	2.6	135	3.5	6.1	4.9	3.6	1.7	1.3	1.3	.76
12	e60	4.8	2.5	40	3.3	15	4.2	3.5	1.7	1.3	3.9	.80
13	e30	3.6	2.5	14	3.7	10	4.2	3.7	1.8	1.2	1.5	.79
14	e4.5	3.1	3.1	8.6	9.6	7.3	4.2	3.4	1.6	1.1	30	.80
15	e2.5	2.7	2.4	7.0	4.2	5.8	18	3.2	1.7	1.1	8.8	.80
16	e1.9	2.7	2.4	36	3.1	5.3	6.7	3.0	3.6	2.4	2.2	.76
17	e2.5	2.5	2.4	10	3.1	e5.5	4.6	3.7	40	3.4	1.5	.83
18	e9.0	2.3	5.2	7.1	4.3	e36	4.1	3.2	12	10	1.3	.86
19	e3.0	2.2	7.4	6.0	3.5	e10	15	7.3	3.2	3.1	1.2	4.5
20	e1.9	2.2	17	25	8.7	e6.3	12	4.4	13	1.6	1.2	1.5
21	e1.8	2.1	21	8.9	4.9	e5.8	60	3.6	5.9	2.1	1.1	.72
22	e100	2.1	8.2	6.3	4.1	e5.4	12	2.9	4.1	1.4	1.1	.68
23	e110	2.2	5.9	5.3	11	e5.0	7.0	2.8	2.5	1.2	1.0	.71
24	e10	2.1	9.9	6.6	5.3	e4.5	5.5	2.6	2.0	1.2	14	1.2
25	e150	2.0	4.7	5.6	4.3	e4.2	4.6	2.5	1.8	1.3	8.5	39
26	34	2.0	3.6	4.6	4.2	e4.1	4.3	2.3	1.7	30	2.0	3.5
27	7.2	2.0	10	4.2	3.6	e4.5	4.7	2.4	1.6	15	1.4	1.1
28	4.3	6.3	7.6	4.1	3.4	e10	5.1	4.7	1.4	3.8	1.3	.84
29	3.2	11	6.2	3.9	---	e130	8.9	2.7	1.4	3.3	1.2	.88
30	2.7	3.6	6.3	12	---	e50	13	2.2	1.4	2.4	1.2	.78
31	2.4	---	6.0	8.0	---	e25	---	1.9	---	1.8	1.1	---
TOTAL	739.22	223.2	191.5	578.9	132.8	764.8	282.7	136.8	202.1	116.0	133.3	71.08
MEAN	23.8	7.44	6.18	18.7	4.74	24.7	9.42	4.41	6.74	3.74	4.30	2.37
MAX	150	75	21	141	11	242	60	29	48	30	30	39
MIN	.52	1.8	2.4	3.3	3.1	4.1	4.1	1.9	1.4	1.1	1.0	.68
CFSM	3.99	1.25	1.03	3.13	.79	4.13	1.58	.74	1.13	.63	.72	.40
IN.	4.61	1.39	1.19	3.61	.83	4.77	1.76	.85	1.26	.72	.83	.44

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1981 - 1991, BY WATER YEAR (WY)

	MEAN	6.07	6.95	8.36	10.8	14.1	13.8	6.90	7.83	6.73	3.84	4.27	3.96
MAX	23.8	27.8	21.3	18.7	23.1	24.7	13.2	16.5	24.9	8.15	11.3	16.2	
(WY)	1991	1986	1984	1991	1990	1991	1984	1990	1982	1984	1985	1987	
MIN	1.38	1.08	2.97	4.04	4.71	2.99	2.71	1.94	.88	.93	.39	.47	
(WY)	1985	1982	1989	1986	1986	1985	1986	1986	1986	1986	1987	1983	

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1981 - 1991
ANNUAL TOTAL	3455.31	3572.40	
ANNUAL MEAN	9.47	9.79	7.76
HIGHEST ANNUAL MEAN			10.7
LOWEST ANNUAL MEAN			5.44
HIGHEST DAILY MEAN	248 May 28	242 Mar 3	388 Nov 21 1985
LOWEST DAILY MEAN	.52 Sep 7	.52 Oct 7	.16* Aug 1 1986
ANNUAL SEVEN-DAY MINIMUM	.56 Aug 26	.79 Sep 10	.26 Jul 28 1986
INSTANTANEOUS PEAK FLOW		781 Mar 29	1430 Jun 18 1982
INSTANTANEOUS PEAK STAGE		5.02 Mar 29	7.58 Jun 18 1982
INSTANTANEOUS LOW FLOW		.46 Oct 7	.12* Aug 30 1987
ANNUAL RUNOFF (CFSM)	1.59	1.64	1.30
ANNUAL RUNOFF (INCHES)	21.53	22.26	17.67
10 PERCENT EXCEEDS	15	16	14
50 PERCENT EXCEEDS	3.3	3.7	2.7
90 PERCENT EXCEEDS	.70	1.1	.76

\* See REMARKS.

## SANTEE RIVER BASIN

02146300 IRWIN CREEK NEAR CHARLOTTE, NC

LOCATION.--Lat 35°11'50", long 80°54'18", Mecklenburg County, Hydrologic Unit 03050103, on left bank at sewage-disposal plant of City of Charlotte, 2,200 ft upstream from Southern Railway bridge, 0.7 mi upstream from Taggart Creek, and 4.2 mi southwest of City Hall, Charlotte.

DRAINAGE AREA.--30.7 mi<sup>2</sup>.

PERIOD OF RECORD.--May 1962 to current year. Prior to October 1963, published as Sugar (Irwin) Creek at Charlotte.

REVISED RECORDS.--WDR NC-80-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 591.53 ft above National Geodetic Vertical Datum of 1929 (levels by city of Charlotte).

REMARKS.--Records good except estimated daily discharges, which are fair. Since July 2, 1981, wastewater from upstream of city water filtration plant enters creek below gage via sewer to wastewater treatment plant. Creek channel improved by dredging in 1917 and maintained by Mecklenburg County Drainage Commission to present time. The drainage area is urbanized and has an impervious area of about 20 percent. Minimum discharge for period of record also occurred July 14, 1986. Minimum discharge for current water year also occurred Oct. 8, 9, 10.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr. 6, 1936, reached a stage of about 17.3 ft at site 400 ft downstream, from information by plant employee. Peak may have been affected by failure of Lakewood Dam, 5 mi upstream. Flood of Jan. 6, 1962, reached a stage of 14.32 ft, from floodmarks, discharge, 4,120 ft<sup>3</sup>/s. Flood of Apr. 11, 1962, reached a stage of 15.18 ft, from floodmarks, discharge, 4,740 ft<sup>3</sup>/s, on basis of slope-area measurement of peak flow.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.9	16	15	21	24	20	37	30	37	9.2	18	8.0
2	4.9	16	14	19	22	170	32	23	581	35	197	7.5
3	4.9	16	90	22	22	1120	28	20	47	17	57	7.4
4	33	15	70	26	21	317	26	19	26	9.2	12	7.5
5	9.9	16	22	18	19	69	75	31	17	45	10	7.1
6	5.1	15	18	17	34	46	33	235	15	21	52	6.8
7	4.7	14	18	710	38	53	26	29	13	10	32	6.7
8	4.7	14	29	163	21	131	50	21	13	22	21	6.5
9	4.7	426	16	61	19	53	88	21	12	9.0	26	6.6
10	590	311	15	40	19	35	38	28	12	8.2	44	6.5
11	786	39	15	717	18	30	26	57	12	7.7	12	7.0
12	404	28	15	184	17	32	23	23	11	7.8	43	7.0
13	171	24	14	59	19	98	23	20	11	7.4	13	7.3
14	28	22	21	41	53	39	23	18	11	7.4	e300	7.7
15	19	19	13	35	22	31	118	17	11	6.9	e65	7.2
16	15	18	13	220	17	26	33	17	11	9.5	15	7.1
17	14	17	13	44	18	25	24	23	162	23	12	10
18	170	16	18	34	28	199	25	52	58	70	9.6	30
19	27	16	55	31	18	44	116	129	19	19	9.0	16
20	14	16	121	151	59	30	54	29	95	9.3	8.0	31
21	13	15	116	39	24	27	341	21	48	9.0	7.6	6.7
22	555	15	39	30	21	26	55	18	37	9.0	7.4	6.4
23	697	16	29	27	73	25	35	16	17	7.7	7.5	6.9
24	48	15	59	37	26	25	29	15	13	7.0	106	6.7
25	937	14	23	28	22	23	25	14	12	7.1	125	283
26	176	14	20	23	22	21	24	14	12	269	18	25
27	40	14	64	22	19	21	38	14	11	85	64	9.4
28	29	51	36	22	18	24	36	46	11	30	20	7.0
29	23	68	29	21	---	689	78	21	9.4	37	11	6.9
30	21	19	31	78	---	155	110	14	9.1	16	9.3	6.8
31	19	---	32	40	---	46	---	13	---	11	8.7	---
TOTAL	4872.8	1315	1083	2980	733	3650	1669	1048	1353.5	841.4	1340.1	565.7
MEAN	157	43.8	34.9	96.1	26.2	118	55.6	33.8	45.1	27.1	43.2	18.9
MAX	937	426	121	717	73	1120	341	235	581	269	300	283
MIN	4.7	14	13	17	17	20	23	13	9.1	6.9	7.4	6.4
CFSM	5.12	1.43	1.14	3.13	.85	3.84	1.81	1.10	1.47	.88	1.41	.61
IN.	5.90	1.59	1.31	3.61	.89	4.42	2.02	1.27	1.64	1.02	1.62	.69

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 1991, BY WATER YEAR (WY)

	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
MEAN	37.3	35.1	43.3	57.5	64.6	70.2	40.3	43.0	35.0	30.2	31.2	34.5																		
MAX	157	137	107	119	124	139	81.6	204	123	77.6	96.0	135																		
(WY)	1991	1986	1984	1978	1979	1980	1979	1975	1982	1975	1967	1975																		
MIN	10.6	9.32	10.2	13.4	20.7	18.5	14.9	14.0	6.95	6.67	7.97	6.00																		
(WY)	1964	1982	1966	1981	1968	1985	1981	1986	1986	1986	1987	1983																		

SUMMARY STATISTICS

FOR 1990 CALENDAR YEAR

FOR 1991 WATER YEAR

WATER YEARS 1962 - 1991

	1990	1991	1962-1991
ANNUAL TOTAL	19811.5	21451.5	
ANNUAL MEAN	54.3	58.8	43.6
HIGHEST ANNUAL MEAN			78.6
LOWEST ANNUAL MEAN			28.6
HIGHEST DAILY MEAN	1180	May 28	2600
LOWEST DAILY MEAN	4.7	Oct 7	3.1
ANNUAL SEVEN-DAY MINIMUM	5.1	Sep 27	3.5
INSTANTANEOUS PEAK FLOW			8880
INSTANTANEOUS PEAK STAGE			18.04
INSTANTANEOUS LOW FLOW			2.8*
ANNUAL RUNOFF (CFSM)	1.77		1.42
ANNUAL RUNOFF (INCHES)	24.01		19.31
10 PERCENT EXCEEDS	88		78
50 PERCENT EXCEEDS	19		18
90 PERCENT EXCEEDS	6.0		8.7

\* See REMARKS.

02146507 LITTLE SUGAR CREEK AT ARCHDALE DRIVE AT CHARLOTTE, NC

LOCATION.--Lat 35°08'52", long 80°51'29", Mecklenburg County, Hydrologic Unit 03050103, near left bank at downstream side of bridge on Archdale Drive (Secondary Road 3657) in Charlotte, 0.7 mi downstream from Little Hope Creek, and 5.3 mi south of City Hall, Charlotte.

DRAINAGE AREA.--42.6 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1977 to current year.

GAGE.--Water-stage recorder. Datum of gage is 564.46 ft above National Geodetic Vertical Datum of 1929 (levels by city of Charlotte).

REMARKS.-- No estimated daily discharges. Records good. The city of Charlotte diverted a daily average of 103 ft<sup>3</sup>/s for municipal water supply from Catawba River at Mountain Island Lake. A daily average of 20.8 ft<sup>3</sup>/s of treated sewage effluent from Little Sugar Creek wastewater treatment plant was discharged into the stream 0.4 mi upstream from gage. Since 1911 the creek channel has been dredged and improved periodically. The drainage area is urbanized and has an impervious area of about 20 percent. Minimum discharge for period of record also occurred Oct. 14, 1981.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Sept. 22, 1975, reached a stage of about 12.7 ft, from flood-marks, discharge, 7,360 ft<sup>3</sup>/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	35	36	43	47	47	59	55	67	36	52	39
2	23	36	35	40	46	358	53	48	811	87	763	37
3	23	34	114	45	46	1830	49	44	94	130	221	38
4	53	33	119	53	45	488	49	44	54	37	51	38
5	34	34	44	39	43	110	131	92	41	84	42	38
6	24	34	41	39	70	74	60	373	40	54	56	37
7	23	33	38	976	78	79	51	53	38	37	66	38
8	24	33	58	204	47	227	125	47	38	147	69	36
9	25	633	39	99	43	83	148	50	37	42	64	37
10	891	472	37	69	41	59	90	70	37	36	107	37
11	2180	62	39	1240	40	55	54	153	38	35	49	37
12	677	48	37	287	40	53	50	82	38	35	108	36
13	222	43	37	112	41	190	49	50	38	34	49	36
14	55	40	43	60	85	81	47	175	37	33	509	36
15	43	37	37	60	45	58	134	75	37	34	131	34
16	39	35	37	348	39	50	56	55	46	56	56	35
17	35	37	35	72	39	48	48	66	151	58	49	37
18	323	36	39	56	59	331	59	46	97	125	46	42
19	64	35	86	52	45	67	215	196	59	50	44	39
20	37	32	235	247	117	55	96	58	48	36	41	64
21	33	31	217	63	49	51	575	46	66	46	41	34
22	829	31	66	52	46	48	79	44	111	37	39	32
23	1050	32	52	49	242	46	58	43	47	34	39	34
24	83	32	86	69	59	44	53	42	38	33	38	35
25	801	31	46	56	49	44	49	40	37	61	116	801
26	176	31	38	45	49	42	49	38	37	755	47	63
27	60	31	115	43	43	43	65	49	37	213	155	29
28	46	105	69	43	42	49	73	77	36	56	61	26
29	40	92	49	41	---	979	106	44	36	145	43	25
30	39	39	53	140	---	243	215	41	35	87	41	25
31	34	---	62	70	---	68	---	39	---	40	39	---
TOTAL	8009	2237	2039	4812	1635	6000	2945	2335	2326	2693	3232	1875
MEAN	258	74.6	65.8	155	58.4	194	98.2	75.3	77.5	86.9	104	62.5
MAX	2180	633	235	1240	242	1830	575	373	811	755	763	801
MIN	23	31	35	39	39	42	47	38	35	33	38	25
CFSM	6.06	1.75	1.54	3.64	1.37	4.54	2.30	1.77	1.82	2.04	2.45	1.47
IN.	6.99	1.95	1.78	4.20	1.43	5.24	2.57	2.04	2.03	2.35	2.82	1.64

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 1991, BY WATER YEAR (WY)

	MEAN	70.7	70.2	71.0	105	116	122	75.7	76.1	69.6	57.9	64.8	63.4
MAX	258	197	164	207	194	215	127	119	151	95.7	144	147	
(WY)	1991	1986	1984	1978	1979	1980	1979	1985	1982	1984	1985	1979	
MIN	30.0	22.6	32.8	31.6	44.7	40.0	30.8	33.8	20.5	27.2	29.5	21.7	
(WY)	1988	1982	1981	1981	1986	1985	1981	1986	1986	1986	1987	1986	

SUMMARY STATISTICS

FOR 1990 CALENDAR YEAR

FOR 1991 WATER YEAR

WATER YEARS 1978 - 1991

ANNUAL TOTAL	35318	40138	
ANNUAL MEAN	96.8	110	80.0
HIGHEST ANNUAL MEAN			110
LOWEST ANNUAL MEAN			51.7
HIGHEST DAILY MEAN	2180	Oct 11	2180
LOWEST DAILY MEAN	23	Sep 29	15
ANNUAL SEVEN-DAY MINIMUM	23	Sep 27	16
INSTANTANEOUS PEAK FLOW			8100
INSTANTANEOUS PEAK STAGE			12.61
INSTANTANEOUS LOW FLOW			11*
ANNUAL RUNOFF (CFSM)	2.27	2.58	1.88
ANNUAL RUNOFF (INCHES)	30.84	35.05	25.52
10 PERCENT EXCEEDS	175	208	146
50 PERCENT EXCEEDS	44	48	37
90 PERCENT EXCEEDS	28	34	24

\* See REMARKS.

## SANTEE RIVER BASIN

02146600 McALPINE CREEK AT SARDIS ROAD NEAR CHARLOTTE, NC

LOCATION.--Lat 35°08'14", long 80°46'05", Mecklenburg County, Hydrologic Unit 03050103, near left bank on downstream end of bridge pier at Sardis Road (Secondary Road 3356), 1.7 mi downstream from Irwins Creek, and 7 mi southeast of City Hall, Charlotte.

DRAINAGE AREA.--39.6 mi<sup>2</sup>.

PERIOD OF RECORD.--April 1962 to current year.

REVISED RECORDS.--WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 553.39 ft above National Geodetic Vertical Datum of 1929 (levels by city of Charlotte).

REMARKS.--No estimated daily discharges. Records good. Occasional minor fluctuation and regulation of unknown origin. Creek channel improved by dredging in 1917 and maintained by the Mecklenburg County Drainage Commission to present time. This drainage basin is mostly within the city of Charlotte, is urbanized, and has an impervious area of about 15 percent; expected development by 1995, is about 22 percent. Minimum discharge for period of record, no flow for part of Nov. 15, 1972, was result of upstream construction; minimum discharge not affected by construction, 0.17 ft<sup>3</sup>/s July 19, 1986.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Jan. 6, 1962, reached a stage of about 14.0 ft from floodmarks, discharge, 4,150 ft<sup>3</sup>/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.8	11	12	24	27	20	32	28	31	6.5	7.9	5.6
2	2.7	10	11	20	22	284	26	20	193	6.5	603	6.1
3	2.5	9.5	88	19	21	1750	23	16	21	46	467	5.4
4	17	9.1	139	26	19	584	21	15	16	8.8	23	5.1
5	13	9.0	31	19	18	79	75	47	11	14	11	5.5
6	4.1	8.8	20	17	34	46	37	172	9.2	18	8.7	6.0
7	3.4	8.5	18	650	61	42	25	28	8.6	7.9	152	6.0
8	2.8	8.2	35	162	27	148	38	19	8.4	54	54	4.9
9	2.6	301	18	69	21	69	71	16	8.5	23	38	4.5
10	498	406	15	40	19	38	37	28	8.3	7.4	36	4.4
11	1970	40	13	890	17	30	22	18	7.8	6.2	18	4.4
12	441	23	13	263	16	26	19	44	7.7	5.8	30	4.2
13	178	18	12	91	17	125	17	22	7.9	5.6	16	4.0
14	31	13	17	43	48	71	18	46	7.5	5.0	310	4.0
15	16	12	12	31	22	43	90	31	7.5	4.9	123	4.6
16	11	12	12	317	16	29	34	15	14	43	20	3.6
17	9.6	11	12	63	15	26	21	17	27	55	13	3.3
18	119	11	12	35	23	202	18	36	38	124	11	4.1
19	42	10	35	28	18	51	60	143	20	35	9.9	3.9
20	16	10	135	184	74	32	71	65	18	11	9.1	6.4
21	10	9.8	242	49	34	26	475	26	19	10	8.5	5.0
22	425	10	50	30	23	24	64	18	47	8.7	8.0	3.4
23	2090	10	32	24	275	23	32	15	22	6.7	7.8	3.1
24	67	11	39	42	70	21	24	13	9.9	6.4	7.3	3.6
25	312	9.8	21	38	37	19	20	12	8.8	6.9	25	420
26	172	9.3	18	24	29	18	18	11	7.6	36	9.6	44
27	35	9.3	40	22	23	18	22	17	7.4	76	23	12
28	22	60	38	22	20	24	35	24	6.8	16	11	8.2
29	17	53	25	19	---	656	41	18	6.6	37	7.6	7.4
30	13	19	30	98	---	222	142	11	6.5	18	7.2	6.3
31	13	---	44	64	---	49	---	10	---	10	6.5	---
TOTAL	6558.5	1142.3	1239	3423	1046	4795	1628	1001	612.0	719.3	2082.1	609.0
MEAN	212	38.1	40.0	110	37.4	155	54.3	32.3	20.4	23.2	67.2	20.3
MAX	2090	406	242	890	275	1750	475	172	193	124	603	420
MIN	2.5	8.2	11	17	15	18	17	10	6.5	4.9	6.5	3.1
CFSM	5.34	.96	1.01	2.79	.94	3.91	1.37	.82	.52	.59	1.70	.51
IN.	6.16	1.07	1.16	3.22	.98	4.50	1.53	.94	.57	.68	1.96	.57

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 1991, BY WATER YEAR (WY)

	MEAN	33.6	26.7	41.4	65.9	75.9	86.1	45.1	34.0	28.1	24.1	25.8	23.9
MAX	212	109	128	157	169	200	120	173	103	66.5	103	162	
(WY)	1991	1986	1984	1978	1979	1977	1962	1975	1982	1965	1967	1987	
MIN	3.16	4.65	7.55	7.46	16.9	13.6	7.45	8.04	3.60	4.04	3.42	1.46	
(WY)	1963	1982	1966	1981	1968	1985	1967	1968	1986	1977	1968	1968	

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR		FOR 1991 WATER YEAR		WATER YEARS 1962 - 1991	
ANNUAL TOTAL	21164.3		24855.2			
ANNUAL MEAN	58.0		68.1		42.5	
HIGHEST ANNUAL MEAN					72.4	
LOWEST ANNUAL MEAN					19.6	
HIGHEST DAILY MEAN	2090	Oct 23	2090	Oct 23	2550	Oct 9 1976
LOWEST DAILY MEAN	1.7	Aug 5	2.5	Oct 3	.26	Jul 19 1986
ANNUAL SEVEN-DAY MINIMUM	2.0	Sep 2	3.9	Sep 13	.40	Jul 14 1986
INSTANTANEOUS PEAK FLOW			4990	Oct 23	6690	Mar 24 1979
INSTANTANEOUS PEAK STAGE			15.21	Oct 23	16.70	Mar 24 1979
INSTANTANEOUS LOW FLOW			2.2	Oct 4	.17*	Jul 19 1986
ANNUAL RUNOFF (CFSM)	1.46		1.72		1.07	
ANNUAL RUNOFF (INCHES)	19.88		23.35		14.57	
10 PERCENT EXCEEDS	106		137		71	
50 PERCENT EXCEEDS	17		20		13	
90 PERCENT EXCEEDS	3.4		6.4		3.7	

\* See REMARKS.

## SANTEE RIVER BASIN

02146700 McMULLEN CREEK AT SHARON VIEW ROAD NEAR CHARLOTTE, NC

LOCATION.--Lat 35°08'27", long 80°49'13", Mecklenburg County, Hydrologic Unit 03050103, on left bank downstream of culvert wingwall at Sharon View Road (Secondary Road 3673), 3.3 mi south of Queens College, Charlotte, and 6.9 mi upstream from mouth.

DRAINAGE AREA.--6.95 mi<sup>2</sup>.

PERIOD OF RECORD.--April 1962 to current year.

REVISED RECORDS.--WDR NC-80-1: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 592.91 ft above National Geodetic Vertical Datum of 1929 (levels by City of Charlotte). Prior to Oct. 13, 1970, at site 73 ft upstream at same datum. Oct. 13, 1970, to Dec. 30, 1971, at site 154 ft downstream at datum 2.00 ft lower.

REMARKS.--No estimated daily discharges. Records good. Creek channel improved by dredging in 1928. The drainage area is in the eastern part of the city and has an impervious area of about 15 percent. No flow occurred periodically from 1962 to 1973. Minimum discharge for current water year also occurred Oct. 3.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Jan. 6, 1962, reached a stage of 7.5 ft, former site and datum, from floodmarks, discharge, 1,040 ft<sup>3</sup>/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.09	1.2	1.3	2.7	3.3	6.2	3.5	2.9	3.8	.57	.93	.69
2	.08	.92	1.3	2.0	2.7	52	2.8	1.7	98	.55	138	.56
3	.09	.85	14	3.0	2.4	350	2.4	1.4	11	5.6	20	.58
4	6.2	.81	18	3.7	2.2	56	2.0	1.5	3.4	.71	2.1	.49
5	1.2	.79	2.7	1.8	2.1	9.6	15	20	1.5	5.4	1.3	.50
6	.27	.74	1.8	1.6	11	5.9	3.3	44	1.2	1.6	1.4	.60
7	.19	.70	1.8	85	11	5.9	2.3	2.9	1.2	.59	9.4	1.2
8	.17	.66	5.8	19	3.5	34	4.5	1.7	1.1	23	6.1	.48
9	.16	125	1.6	8.2	2.6	9.1	9.4	2.4	.94	2.4	8.4	.39
10	129	41	1.4	4.3	2.2	4.7	11	12	.94	.82	13	.34
11	264	4.0	1.4	189	1.9	3.5	2.1	2.8	.95	.70	2.6	.35
12	73	2.3	1.3	36	1.8	3.0	1.6	2.5	.81	.51	15	.33
13	17	1.7	1.3	11	2.1	26	1.9	2.3	.85	.40	2.0	.33
14	2.7	1.5	1.3	5.1	7.1	9.0	1.7	87	.86	.40	87	.40
15	1.2	1.3	1.4	3.8	2.1	6.2	15	12	.88	.34	12	.40
16	.77	1.3	1.8	54	1.5	3.3	2.9	7.6	6.0	7.6	2.1	.42
17	.64	1.2	1.8	7.3	1.6	2.8	1.8	9.0	7.8	6.6	1.4	.41
18	26	1.2	2.9	4.1	3.9	43	2.1	2.1	5.7	31	1.2	.35
19	3.6	1.1	6.9	3.3	1.8	5.8	25	22	23	3.1	.98	.37
20	1.1	.99	50	36	19	3.6	19	4.7	3.2	.81	.87	.80
21	.75	.94	25	6.1	4.0	3.0	86	2.7	1.4	3.4	.77	.39
22	174	.94	7.0	3.5	3.2	2.6	6.8	2.0	7.6	.91	.75	.23
23	120	1.1	3.8	2.9	51	2.5	3.2	1.6	2.1	1.6	.75	.30
24	5.4	1.2	6.7	8.5	7.5	2.2	2.4	1.5	.91	.63	.67	.74
25	89	.94	2.2	4.7	4.4	2.1	1.9	1.4	.84	4.4	6.9	194
26	17	.97	1.8	2.8	3.8	2.3	1.7	1.3	.76	91	1.4	5.6
27	3.2	.94	11	2.6	2.8	2.0	3.8	6.7	.80	16	7.6	1.4
28	1.9	23	5.6	2.5	2.4	3.6	4.2	14	.73	3.0	2.5	.99
29	1.4	9.7	3.8	2.1	---	128	15	2.0	.62	18	1.1	.73
30	1.3	1.7	4.9	24	---	28	20	6.1	.63	2.6	.99	.63
31	1.2	---	8.0	8.5	---	5.3	---	1.6	---	1.4	.77	---
TOTAL	942.61	230.69	199.6	549.1	164.9	821.2	274.3	283.4	189.52	235.64	349.98	215.00
MEAN	30.4	7.69	6.44	17.7	5.89	26.5	9.14	9.14	6.32	7.60	11.3	7.17
MAX	264	125	50	189	51	350	86	87	98	91	138	194
MIN	.08	.66	1.3	1.6	1.5	2.0	1.6	1.3	.62	.34	.67	.23
CFSM	4.38	1.11	.93	2.55	.85	3.81	1.32	1.32	.91	1.09	1.62	1.03
IN.	5.05	1.23	1.07	2.94	.88	4.40	1.47	1.52	1.01	1.26	1.87	1.15

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 1991, BY WATER YEAR (WY)

	MEAN	5.97	5.40	8.20	12.2	13.6	15.5	7.03	6.93	5.86	5.71	5.78	6.69
MAX	30.4	21.3	24.3	33.5	28.1	38.8	19.0	31.3	24.8	14.4	46.6	41.0	
(WY)	1991	1986	1977	1978	1979	1977	1962	1975	1973	1971	1991	1991	
MIN	.21	.54	.86	1.02	1.77	1.74	1.13	1.08	.75	.61	.24	.084	
(WY)	1964	1970	1966	1981	1968	1985	1981	1962	1966	1963	1968	1970	

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR		FOR 1991 WATER YEAR		WATER YEARS 1962 - 1991	
ANNUAL TOTAL	3571.22		4455.94		8.24	
ANNUAL MEAN	9.78		12.2		18.1	
HIGHEST ANNUAL MEAN					3.19	
LOWEST ANNUAL MEAN						
HIGHEST DAILY MEAN	264	Oct 11	350	Mar 3	463	Aug 17 1985
LOWEST DAILY MEAN	.08	Sep 28	.08	Oct 2	.00	Aug 31 1962
ANNUAL SEVEN-DAY MINIMUM	.10	Sep 27	.36	Sep 9	.01	Sep 19 1968
INSTANTANEOUS PEAK FLOW			1280	Oct 11	3150	Jun 10 1982
INSTANTANEOUS PEAK STAGE			8.08	Oct 11	10.89	Jun 10 1982
INSTANTANEOUS LOW FLOW			.05*	Oct 1	.00*	Aug 31 1962
ANNUAL RUNOFF (CFSM)	1.41		1.76		1.19	
ANNUAL RUNOFF (INCHES)	19.12		23.85		16.12	
10 PERCENT EXCEEDS	18		23		16	
50 PERCENT EXCEEDS	1.8		2.4		1.5	
90 PERCENT EXCEEDS	.22		.63		.27	

\* See REMARKS.

## SANTEE RIVER BASIN

02146750 McALPINE CREEK BELOW McMULLEN CREEK NEAR PINEVILLE, NC

LOCATION.--Lat 35°03'59", long 80°52'12", Mecklenburg County, Hydrologic Unit, 03050103, on right bank at McAlpine Creek Wastewater Treatment Plant of Charlotte, 150 ft downstream from McMullen Creek, 735 ft upstream from effluent outfall, and 2.1 mi south of Pineville.

DRAINAGE AREA.--92.4 mi<sup>2</sup>.

PERIOD OF RECORD.--April 1974 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 516.38 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1977 at datum 1.00 ft higher. Landline telemetry installed July 2, 1991.

REMARKS.--No estimated daily discharges. Records fair except periods when intakes were plugged, which are poor. Records for periods of heavy overbank flow may be affected by variable backwater not adequately defined. The drainage area includes the eastern side of the city of Charlotte and has an impervious area of about 15 percent. Minimum discharge for current water year also occurred Oct. 4. Maximum gage height occurred as a result of debris in the stream left by Tropical Storm Hugo in September 1989.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known since at least 1964, about 12.9 ft (former datum), Apr. 1, 1973, from information by wastewater treatment plant operator.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.6	26	28	66	97	45	98	124	27	10	24	22
2	4.3	22	22	46	62	540	71	57	683	9.8	185	21
3	4.8	20	32	41	54	2410	58	43	424	82	1370	21
4	11	20	493	51	50	4010	51	36	69	17	204	20
5	26	19	118	39	45	559	150	61	36	12	37	20
6	8.9	18	41	33	47	163	166	546	28	26	35	19
7	6.0	17	31	542	157	130	60	106	26	12	45	20
8	5.7	16	59	1360	71	129	81	45	22	21	441	20
9	5.3	78	38	387	51	367	390	38	20	150	428	18
10	78	1680	28	124	44	146	145	73	19	16	205	18
11	3300	390	25	1170	40	74	60	61	17	11	174	17
12	3010	77	23	1810	36	48	44	78	16	11	117	17
13	1250	45	21	554	35	170	39	67	17	10	143	16
14	245	35	24	159	121	272	39	64	16	9.3	444	16
15	53	27	21	89	68	104	134	462	15	9.3	1060	16
16	34	25	19	660	39	62	125	64	14	29	109	17
17	30	23	19	450	33	50	47	111	36	46	45	17
18	110	21	18	134	44	305	41	49	67	259	32	16
19	274	21	43	86	39	282	139	264	47	242	29	17
20	45	22	52	413	102	83	147	338	107	20	27	18
21	26	22	839	268	121	62	1240	76	31	15	25	18
22	77	19	296	97	55	54	631	51	28	16	24	16
23	4630	19	92	70	321	51	128	41	52	11	23	15
24	1180	19	90	72	568	46	73	38	17	10	23	15
25	421	18	47	148	132	41	58	33	14	12	40	574
26	1350	18	37	76	88	38	54	29	13	42	48	863
27	341	18	45	60	66	37	55	32	13	614	35	46
28	82	75	103	56	52	50	90	66	12	49	84	18
29	52	166	55	49	---	709	61	154	11	127	43	14
30	36	53	60	109	---	1840	387	36	10	75	29	13
31	30	---	114	381	---	263	---	34	---	31	25	---
TOTAL	16730.6	3029	2933	9600	2638	13140	4862	3277	1907	2004.4	5553	1958
MEAN	540	101	94.6	310	94.2	424	162	106	63.6	64.7	179	65.3
MAX	4630	1680	839	1810	568	4010	1240	546	683	614	1370	863
MIN	4.3	16	18	33	33	37	39	29	10	9.3	23	13
CFSM	5.84	1.09	1.02	3.35	1.02	4.59	1.75	1.14	.69	.70	1.94	.71
IN.	6.74	1.22	1.18	3.86	1.06	5.29	1.96	1.32	.77	.81	2.24	.79

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1974 - 1991, BY WATER YEAR (WY)

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
MEAN	106	108	149	250	239	285	119	111	66.7	80.4	82.1	97.2						
MAX	540	414	497	550	506	544	302	397	209	355	407	510						
(WY)	1991	1986	1984	1978	1984	1980	1979	1975	1982	1984	1985	1987						
MIN	6.82	11.5	24.0	18.6	39.0	35.8	21.9	18.2	7.43	7.07	8.66	5.03						
(WY)	1979	1982	1981	1981	1978	1981	1981	1981	1986	1977	1977	1983						

SUMMARY STATISTICS

FOR 1990 CALENDAR YEAR

FOR 1991 WATER YEAR

WATER YEARS 1974 - 1991

ANNUAL TOTAL	55933.0	67632.0	
ANNUAL MEAN	153	185	141
HIGHEST ANNUAL MEAN			235
LOWEST ANNUAL MEAN			70.6
HIGHEST DAILY MEAN	4630	4630	5340
LOWEST DAILY MEAN	3.0	4.3	.46
ANNUAL SEVEN-DAY MINIMUM	3.9	9.4	.76
INSTANTANEOUS PEAK FLOW		7100*	7340
INSTANTANEOUS PEAK STAGE		15.02*	15.02*
INSTANTANEOUS LOW FLOW		3.4*	.45
ANNUAL RUNOFF (CFSM)	1.66	2.01	1.53
ANNUAL RUNOFF (INCHES)	22.52	27.23	20.78
10 PERCENT EXCEEDS	336	426	283
50 PERCENT EXCEEDS	35	47	33
90 PERCENT EXCEEDS	8.1	16	8.0

\* See REMARKS.

## SANTEE RIVER BASIN

0214677974 STEELE CREEK ABOVE SR 1344 NEAR SHOPTON, NC

LOCATION.--Lat 35°07'45", long 80°57'12", Mecklenburg County, Hydrologic Unit 03050103, on right bank, 1,500 ft upstream of bridge on Secondary Road 1344 (John Price Road), 2.9 mi south of Shopton.

DRAINAGE AREA.--3.57 mi<sup>2</sup>.

PERIOD OF RECORD.--Established October 1990.

GAGE.--Water-stage recorder. Datum of gage is 580.692 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good above 10 cfs, and fair below. Minimum discharge for current water year also occurred Sept. 21, 22, and 23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.8	1.8	2.0	6.8	7.6	3.3	6.2	4.5	1.7	.28	.72	.40
2	3.0	1.5	1.6	5.5	7.1	25	3.9	3.9	6.2	.35	5.0	.35
3	3.1	1.4	7.0	5.2	5.7	162	4.4	3.0	2.3	.28	2.0	.32
4	5.7	1.3	5.8	5.7	5.3	37	4.6	2.7	3.5	.23	.74	.31
5	4.1	1.2	1.9	4.5	5.2	9.7	6.7	3.9	1.1	5.5	.58	.29
6	3.3	1.1	1.2	4.3	6.3	5.6	3.4	21	.89	.71	.53	.43
7	3.1	.98	1.1	65	6.9	5.0	3.0	3.3	.69	.30	39	.27
8	3.0	.89	2.3	19	5.0	17	6.1	1.3	.48	.30	79	.21
9	3.4	57	1.5	8.5	4.6	8.9	11	1.6	.46	.31	43	.19
10	51	35	1.5	4.2	3.7	4.6	4.8	2.6	.46	.24	9.5	.19
11	56	9.8	2.0	92	3.4	3.4	3.2	82	.42	.76	5.3	.19
12	77	6.8	2.2	26	3.6	2.9	2.6	20	.41	.21	9.7	.17
13	34	5.1	1.8	11	3.9	10	2.1	6.9	.38	.19	4.5	.18
14	15	4.6	.96	6.9	5.4	6.5	1.7	3.7	.42	.15	97	.20
15	14	4.5	.81	7.0	3.7	3.9	10	3.9	.45	.14	20	.13
16	13	4.0	.97	32	2.8	2.6	3.1	3.0	.38	.42	5.2	.12
17	13	4.0	1.1	7.9	2.8	2.2	2.0	2.5	.96	1.2	2.4	.12
18	25	3.9	1.5	5.9	3.1	16	1.6	45	1.2	5.0	1.5	.12
19	17	3.8	1.6	6.4	2.5	4.8	3.7	24	1.4	.73	1.1	.12
20	13	3.7	18	21	7.3	3.0	6.9	7.5	.80	.24	.84	.16
21	13	3.4	18	7.6	4.4	2.4	38	4.6	3.1	.18	.67	.10
22	107	3.2	10	5.8	4.4	2.0	9.0	3.9	.56	.15	.66	.10
23	79	2.2	7.2	6.3	17	1.8	4.9	3.1	.50	.14	.63	.09
24	10	.76	9.6	7.6	5.6	1.6	4.7	2.6	.45	.12	.52	.11
25	196	.97	5.1	8.1	3.7	1.5	3.7	2.2	.42	.11	2.4	17
26	27	.93	4.8	7.1	3.5	1.4	2.8	1.9	.37	56	.77	.66
27	8.1	1.0	8.9	6.4	2.6	1.4	2.9	2.1	.38	19	7.7	.35
28	3.5	4.7	8.8	5.8	1.8	1.7	3.1	3.0	.42	4.3	6.4	.34
29	2.6	5.9	6.8	5.3	---	69	6.2	2.0	.36	2.0	1.4	.28
30	2.7	2.7	7.9	11	---	19	9.1	1.5	.32	1.3	.81	.26
31	2.5	---	9.8	11	---	7.0	---	1.3	---	.90	.51	---
TOTAL	815.9	178.13	153.74	426.8	138.9	442.2	175.4	274.5	31.48	101.74	350.08	23.76
MEAN	26.3	5.94	4.96	13.8	4.96	14.3	5.85	8.85	1.05	3.28	11.3	.79
MAX	196	57	18	92	17	162	38	82	6.2	56	97	17
MIN	2.5	.76	.81	4.2	1.8	1.4	1.6	1.3	.32	.11	.51	.09
CFSM	7.37	1.66	1.39	3.86	1.39	4.00	1.64	2.48	.29	.92	3.16	.22
IN.	8.50	1.86	1.60	4.45	1.45	4.61	1.83	2.86	.33	1.06	3.65	.25

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1991 - 1991, BY WATER YEAR (WY)

	1991	1991	1991	1991	1991	1991	1991	1991	1991	1991	1991	1991
MEAN	28.2	6.75	5.34	13.8	4.96	14.3	5.85	8.85	1.05	3.28	11.3	.79
MAX	28.2	6.75	5.34	13.8	4.96	14.3	5.85	8.85	1.05	3.28	11.3	.79
(WY)	1991	1991	1991	1991	1991	1991	1991	1991	1991	1991	1991	1991
MIN	28.2	6.75	5.34	13.8	4.96	14.3	5.85	8.85	1.05	3.28	11.3	.79
(WY)	1991	1991	1991	1991	1991	1991	1991	1991	1991	1991	1991	1991

## SUMMARY STATISTICS

## FOR 1991 WATER YEAR

ANNUAL TOTAL	3112.63
ANNUAL MEAN	8.53
HIGHEST DAILY MEAN	196 Oct 25
LOWEST DAILY MEAN	.09 Sep 23
ANNUAL SEVEN-DAY MINIMUM	.11 Sep 18
INSTANTANEOUS PEAK FLOW	711 Oct 22
INSTANTANEOUS PEAK STAGE	8.79 Oct 22
INSTANTANEOUS LOW FLOW	.08* Sep 19
ANNUAL RUNOFF (CFSM)	2.39
ANNUAL RUNOFF (INCHES)	32.43

\* See REMARKS.

## SANTEE RIVER BASIN

0214678230 WALKER BRANCH AT SR1123 NEAR PINE HARBOR, NC

LOCATION.--Lat 35°05'48", long 80°58'22", Mecklenburg County, Hydrologic Unit 03050103, on right bank, at upstream side of bridge on Secondary Road 1123 (Smith Road), 4.1 mi southeast of Pine Harbor.

DRAINAGE AREA.--4.52 mi<sup>2</sup>.

PERIOD OF RECORD.--Established October 1990.

GAGE.--Water-stage recorder. Datum of gage is 567.190 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except for estimated daily discharges, which are fair, and discharges below 10 cfs, which are poor. Station was established to study high flow conditions; therefore, an instantaneous low flow was not determined. Missing values on daily value table are days when the discharge fell below the rating.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.4	.97	3.1	2.6	4.6	3.0	4.4	3.7	.67	---	---	1.3
2	.77	1.0	7.7	1.9	3.6	34	3.2	2.4	1.5	---	---	1.3
3	.71	1.1	3.4	1.7	3.1	237	2.6	1.7	.99	6.9	30	1.5
4	1.1	1.1	2.6	1.9	2.8	65	2.3	1.5	.68	3.3	2.1	1.6
5	1.1	1.2	2.2	1.6	2.6	12	4.4	1.9	.54	1.4	.88	1.4
6	1.0	1.3	1.4	1.5	2.9	6.8	4.2	23	.47	1.5	.76	1.5
7	1.1	1.4	1.3	60	4.8	5.8	3.0	4.6	.47	---	20	1.6
8	1.2	1.4	1.3	21	3.4	e13	3.1	2.7	.47	---	108	1.6
9	1.1	35	1.1	7.7	2.8	e7.0	8.7	2.1	.45	---	116	1.6
10	13	70	1.1	4.2	2.6	e4.5	4.7	3.8	.44	---	64	1.6
11	32	6.8	.95	125	2.3	e3.5	3.0	30	.48	---	22	1.5
12	68	3.5	.86	39	2.1	e7.0	2.3	18	.49	---	19	1.4
13	24	2.2	.84	15	2.1	e11	2.1	5.1	.55	---	10	1.3
14	4.3	1.6	.84	7.1	4.5	e6.0	2.0	3.2	.57	---	96	1.4
15	2.1	1.3	.78	5.1	3.0	e3.2	4.7	2.3	.61	---	33	1.4
16	1.2	1.3	.70	37	2.2	e2.5	3.2	1.9	.62	---	7.7	1.4
17	.90	1.4	.71	9.1	2.1	e6.0	2.3	1.7	.59	---	4.4	1.5
18	2.2	1.7	.77	5.5	2.6	e24	1.8	10	.62	---	3.3	1.5
19	1.9	1.6	.97	4.3	2.5	6.0	2.1	13	.86	---	2.5	2.4
20	1.1	1.6	11	26	7.8	3.8	6.4	5.2	.75	---	2.1	3.3
21	.91	1.5	19	8.3	6.1	3.0	51	3.3	.50	---	1.8	4.4
22	71	1.5	6.3	5.0	4.3	2.6	10	2.3	.50	---	1.6	4.6
23	91	1.5	4.0	3.8	25	2.4	4.8	1.7	.41	---	1.7	4.6
24	7.7	1.6	5.6	4.1	9.8	2.1	3.3	1.4	.37	---	1.7	4.6
25	286	1.8	2.5	5.0	5.7	1.8	2.5	1.1	.35	---	2.6	6.6
26	45	2.0	1.8	3.7	4.3	1.6	2.2	.94	.30	---	2.5	1.3
27	7.0	3.3	2.7	3.3	3.3	1.6	2.2	.87	.27	6.9	2.1	.88
28	3.6	2.4	4.2	3.0	2.9	1.8	2.6	.90	---	.38	2.5	.72
29	2.2	2.2	2.7	2.8	---	83	3.0	.73	---	.24	2.0	.71
30	1.5	2.2	3.3	8.0	---	31	8.7	.67	---	.37	1.8	.77
31	1.1	---	5.1	8.9	---	7.0	---	.69	---	---	1.5	---
TOTAL	677.19	157.47	100.82	433.1	125.8	599.0	160.8	152.40	15.52	20.99	563.54	61.28
MEAN	21.8	5.25	3.25	14.0	4.49	19.3	5.36	4.92	.57	2.62	19.4	2.04
MAX	286	70	19	125	25	237	51	30	1.5	6.9	116	6.6
MIN	.71	.97	.70	1.5	2.1	1.6	1.8	.67	.27	.24	.76	.71

e Estimated

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1991 - 1991, BY WATER YEAR (WY)

	MEAN	21.8	5.25	3.25	14.0	4.49	19.3	5.36	4.92	.57	2.62	19.4	2.04
MAX	21.8	5.25	3.25	14.0	4.49	19.3	5.36	4.92	.57	2.62	19.4	2.04	
(WY)	1991	1991	1991	1991	1991	1991	1991	1991	1991	1991	1991	1991	
MIN	21.8	5.25	3.25	14.0	4.49	19.3	5.36	4.92	.57	2.62	19.4	2.04	
(WY)	1991	1991	1991	1991	1991	1991	1991	1991	1991	1991	1991	1991	

## SUMMARY STATISTICS

## FOR 1991 WATER YEAR

ANNUAL TOTAL	NOT DETERMINED
ANNUAL MEAN	NOT DETERMINED
HIGHEST DAILY MEAN	286 Oct 25
LOWEST DAILY MEAN	NOT DETERMINED
ANNUAL SEVEN-DAY MINIMUM	NOT DETERMINED
INSTANTANEOUS PEAK FLOW	1120 Aug 8
INSTANTANEOUS PEAK STAGE	8.86 Aug 8
INSTANTANEOUS LOW FLOW	NOT DETERMINED

## SANTÉE RIVER BASIN

02146900 TWELVE MILE CREEK NEAR WAXHAW, NC

LOCATION.--Lat 34°57'08", long 80°45'21", Union County, Hydrologic Unit 03050103, on left bank 90 ft upstream from bridge on State Highway 16, 680 ft downstream from West Fork Twelve Mile Creek, and 2.5 mi north of Waxhaw.

DRAINAGE AREA.--76.5 mi<sup>2</sup>.

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1949-60. October 1960 to current year.

REVISED RECORDS.--WDR NC-80-1: Drainage area.

GAGE.--Water-stage recorder and concrete control. Landline telemetry unit installed June 1991.

Datum of gage is 489.04 ft above National Geodetic Vertical Datum of 1929. Prior to Mar. 13, 1962, water-stage recorder at site 70 ft downstream at same datum.

REMARKS.--Records good except estimated daily discharges, which are fair. No flow also occurred Oct. 6, 1968, Oct. 7-15, 1970, and Oct. 1-22, 1983. Minimum discharge for current water year also occurred Oct. 9, 10.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known since at least 1900, 23.6 ft Sept. 7, 1949, from floodmarks. No flow observed on Oct. 6, 1954.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.7	31	52	65	166	61	107	123	22	11	18	8.2
2	1.7	28	37	50	109	711	79	72	68	11	141	7.2
3	1.6	25	67	47	93	1830	64	51	60	32	337	6.6
4	1.4	19	531	52	81	2910	56	43	31	20	48	6.3
5	1.6	18	150	47	75	327	80	59	23	12	24	6.1
6	2.0	16	77	38	70	147	133	261	20	16	17	5.8
7	1.6	15	57	514	107	137	75	85	18	14	26	5.5
8	1.4	15	65	1120	230	127	427	50	17	10	180	5.3
9	1.3	58	65	349	88	173	1330	40	17	10	177	4.8
10	136	1130	46	181	69	99	221	38	16	9.5	55	4.2
11	3240	225	38	912	59	77	114	36	15	7.8	104	4.1
12	1640	90	33	1970	53	69	80	99	15	7.0	131	3.9
13	432	56	32	430	51	150	66	71	15	9.4	131	3.8
14	101	42	30	210	78	264	61	43	14	7.8	176	4.0
15	45	35	28	144	74	133	90	47	14	6.5	563	3.9
16	28	32	28	556	50	95	148	33	14	6.0	83	3.6
17	20	30	27	330	44	76	69	30	14	6.0	40	3.4
18	18	27	26	164	49	240	52	27	14	13	28	3.3
19	93	25	30	118	51	149	263	470	43	21	22	3.2
20	33	24	83	481	51	87	577	353	102	11	19	21
21	24	22	834	257	56	71	592	109	411	7.7	16	8.8
22	97	21	221	137	55	62	219	63	47	6.4	14	5.4
23	3250	20	127	100	512	59	101	43	26	5.9	13	5.2
24	882	20	100	104	406	54	74	35	19	5.3	11	5.0
25	233	19	69	273	152	47	56	30	16	4.6	12	18
26	879	18	47	140	107	43	53	28	14	73	15	73
27	169	18	42	105	82	41	56	27	13	42	13	20
28	78	123	77	91	68	48	74	92	12	20	14	12
29	52	313	65	79	---	751	60	42	11	42	13	e8.3
30	40	108	59	257	---	2180	570	28	11	41	11	e7.2
31	34	---	78	515	---	181	---	24	---	27	9.3	---
TOTAL	11538.3	2623	3221	9836	3086	11399	5947	2552	1132	515.9	2461.3	277.1
MEAN	372	87.4	104	317	110	368	198	82.3	37.7	16.6	79.4	9.24
MAX	3250	1130	834	1970	512	2910	1330	470	411	73	563	73
MIN	1.3	15	26	38	44	41	52	24	11	4.6	9.3	3.2
CFSM	4.87	1.14	1.36	4.15	1.44	4.81	2.59	1.08	.49	.22	1.04	.12
IN.	5.61	1.28	1.57	4.78	1.50	5.54	2.89	1.24	.55	.25	1.20	.13

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1991, BY WATER YEAR (WY)

	MEAN	56.4	34.1	69.9	133	166	172	92.0	48.9	33.5	39.4	39.0	32.3
MAX	372	161	261	331	351	425	289	178	106	238	249	161	
(WY)	1991	1986	1984	1978	1990	1980	1973	1989	1976	1978	1981	1987	
MIN	.39	2.18	5.97	11.5	22.7	25.8	14.2	6.19	1.26	2.33	.93	.15	
(WY)	1984	1962	1966	1981	1986	1985	1981	1981	1986	1986	1983	1968	

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR		FOR 1991 WATER YEAR		WATER YEARS 1961 - 1991	
ANNUAL TOTAL	42050.01		54588.6		76.0	
ANNUAL MEAN	115		150		150	
HIGHEST ANNUAL MEAN					25.4	
LOWEST ANNUAL MEAN					1991	
HIGHEST DAILY MEAN	3250	Oct 23	3250	Oct 23	5180	Oct 2 1989
LOWEST DAILY MEAN	.91	Sep 4	1.3	Oct 9	.00*	Oct 6 1968
ANNUAL SEVEN-DAY MINIMUM	1.3	Aug 30	1.6	Oct 3	.00	Oct 7 1970
INSTANTANEOUS PEAK FLOW			4570	Mar 4	7700	Apr 1 1973
INSTANTANEOUS PEAK STAGE			16.76	Mar 4	20.92	Oct 2 1989
INSTANTANEOUS LOW FLOW			1.2*	Oct 4	.00*	Oct 5 1968
ANNUAL RUNOFF (CFSM)	1.51		1.96		.99	
ANNUAL RUNOFF (INCHES)	20.45		26.55		13.50	
10 PERCENT EXCEEDS	223		328		138	
50 PERCENT EXCEEDS	31		49		19	
90 PERCENT EXCEEDS	2.9		6.8		2.3	

\* See REMARKS.

## SANTEE RIVER BASIN

02149000 COVE CREEK NEAR LAKE LURE, NC

LOCATION.--Lat 35°25'24", long 82°06'42", Rutherford County, Hydrologic Unit 03050105, on left bank 40 ft upstream from bridge on U.S. Highways 64 and 74, 1.0 mi upstream from mouth, and 5 mi east of town of Lake Lure.

DRAINAGE AREA.--79.0 mi<sup>2</sup>.

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1949-50. October 1950 to current year. Monthly discharge only for some periods, published in WSP 1723.

REVISED RECORDS.--WDR NC-80-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 815.4 ft above National Geodetic Vertical Datum of 1929. Prior to Dec. 20, 1954, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Minimum discharge for period of record occurred several days in Sept. and Oct. 1954.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of 1916 reached a stage of about 23 ft, from records of North Carolina State Highway Commission.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	75	140	104	146	123	116	238	206	160	123	188	125
2	76	135	105	141	121	202	204	187	158	131	172	125
3	73	131	117	141	121	222	183	175	164	127	144	120
4	88	129	120	144	119	270	171	166	146	113	129	117
5	88	127	107	136	118	195	209	170	138	128	120	114
6	76	128	107	132	123	169	192	198	133	112	158	111
7	74	122	107	141	122	159	175	165	129	105	152	108
8	75	119	106	154	116	172	166	153	126	103	143	106
9	76	173	103	148	113	161	162	155	124	104	167	104
10	82	289	103	142	112	149	156	152	119	98	128	101
11	148	170	101	506	110	142	148	148	116	117	122	102
12	1810	150	101	417	107	138	144	147	117	99	372	99
13	1070	141	100	252	112	142	177	147	117	153	272	100
14	374	134	109	204	141	135	174	142	117	101	240	105
15	240	129	101	184	118	128	258	139	123	94	212	97
16	185	127	100	407	e101	122	238	140	117	92	167	100
17	157	125	100	261	112	122	196	164	127	101	145	95
18	429	122	107	211	184	156	176	264	148	128	134	94
19	289	121	121	187	157	135	826	737	130	108	127	95
20	209	119	106	190	157	128	496	304	274	102	120	90
21	176	116	114	167	145	126	374	290	230	100	114	88
22	305	115	111	154	138	123	279	266	249	96	111	88
23	613	115	289	148	138	121	238	223	164	89	108	88
24	323	112	526	145	129	117	213	194	167	95	105	88
25	262	109	231	141	126	113	194	176	148	129	114	101
26	231	107	179	136	121	111	185	165	148	113	214	96
27	196	107	161	134	116	112	266	169	144	122	147	87
28	177	114	160	132	114	118	276	264	134	150	147	86
29	162	110	154	128	---	1030	230	226	125	176	233	84
30	153	105	151	136	---	638	233	217	119	1260	169	83
31	146	---	161	136	---	308	---	181	---	254	137	---
TOTAL	8438	3941	4362	5801	3514	6080	7177	6430	4411	4823	5011	2997
MEAN	272	131	141	187	125	196	239	207	147	156	162	99.9
MAX	1810	289	526	506	184	1030	826	737	274	1260	372	125
MIN	73	105	100	128	101	111	144	139	116	89	105	83
CFSM	3.45	1.66	1.78	2.37	1.59	2.48	3.03	2.63	1.86	1.97	2.05	1.26
IN.	3.97	1.86	2.05	2.73	1.65	2.86	3.38	3.03	2.08	2.27	2.36	1.41

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 1991, BY WATER YEAR (WY)

	115	116	130	135	169	194	185	151	131	101	108	97.8
MEAN	115	116	130	135	169	194	185	151	131	101	108	97.8
MAX	381	264	278	259	327	479	391	384	283	189	377	333
(WY)	1965	1980	1984	1978	1960	1979	1980	1975	1974	1974	1974	1979
MIN	24.5	33.1	38.2	39.5	79.8	68.6	69.6	59.2	37.3	33.1	31.5	24.5
(WY)	1955	1955	1989	1956	1988	1988	1989	1988	1988	1988	1956	1954

SUMMARY STATISTICS FOR 1990 CALENDAR YEAR FOR 1991 WATER YEAR WATER YEARS 1951 - 1991

ANNUAL TOTAL	66348	62985	
ANNUAL MEAN	182	173	137
HIGHEST ANNUAL MEAN			213
LOWEST ANNUAL MEAN			65.3
HIGHEST DAILY MEAN	2110	Mar 17	3190
LOWEST DAILY MEAN	60	Aug 20	21
ANNUAL SEVEN-DAY MINIMUM	66	Aug 14	21
INSTANTANEOUS PEAK FLOW			7050
INSTANTANEOUS PEAK STAGE			16.37
INSTANTANEOUS LOW FLOW			72
ANNUAL RUNOFF (CFSM)	2.30	2.18	1.73
ANNUAL RUNOFF (INCHES)	31.24	29.66	23.49
10 PERCENT EXCEEDS	286	259	225
50 PERCENT EXCEEDS	138	136	106
90 PERCENT EXCEEDS	75	100	51

\* See REMARKS.

## SANTÉE RIVER BASIN

02151000 SECOND BROAD RIVER AT CLIFFSIDE, NC

LOCATION.--Lat 35°14'08", long 81°45'57", Rutherford County, Hydrologic Unit 03050105, on left bank 0.2 mi downstream from dam at Cliffside Mills, at Cliffside, and 1.3 mi upstream from mouth.

DRAINAGE AREA.--220 mi<sup>2</sup>.

PERIOD OF RECORD.--June 1925 to current year.

REVISED RECORDS.--WSP 892: 1928(M). WSP 1553: 1935-39(m). WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 670.5 ft above National Geodetic Vertical Datum of 1929 (levels by Soil Conservation Service).

REMARKS.--No estimated daily discharges. Records good. Considerable diurnal fluctuation and some low-flow regulation by mills above station. Minimum discharge for period of record also occurred Aug. 3, 1937, and July 24, 1943. Minimum discharge for current water year also occurred Oct. 8, 10.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	116	281	196	323	290	259	703	663	356	246	276	229
2	105	267	194	293	259	314	569	530	370	261	249	175
3	106	249	200	293	258	408	482	468	385	256	256	212
4	134	251	225	300	266	628	428	443	366	232	205	168
5	91	218	205	264	255	480	471	411	300	223	203	168
6	132	242	196	246	271	410	532	450	315	281	185	169
7	121	231	194	272	285	393	448	425	281	208	255	169
8	84	224	194	297	243	375	428	367	309	212	253	181
9	125	253	190	297	239	416	441	380	249	218	191	160
10	94	631	185	267	270	358	416	354	288	246	181	158
11	229	416	186	844	213	368	384	367	264	195	177	160
12	1590	338	184	1570	236	311	361	364	267	223	526	147
13	3650	319	184	752	236	333	377	347	269	186	675	185
14	1380	280	192	522	274	325	468	335	243	220	383	121
15	592	264	194	435	263	307	588	379	306	189	492	168
16	429	269	187	1130	244	292	693	325	262	208	336	135
17	356	242	179	793	204	264	534	336	247	230	299	151
18	346	235	197	549	280	334	465	396	309	238	247	152
19	457	223	241	461	355	353	2140	605	318	253	237	171
20	333	227	223	518	347	316	1830	553	388	231	195	150
21	296	217	212	440	353	302	1150	475	478	230	202	139
22	480	218	213	386	336	294	769	485	606	174	193	109
23	1720	216	219	354	315	292	605	435	458	201	191	160
24	875	214	732	346	299	265	517	422	379	181	194	146
25	612	205	514	332	294	250	458	340	325	222	183	122
26	577	210	372	309	295	259	433	347	297	249	207	174
27	425	202	319	287	268	256	576	345	325	194	228	162
28	382	209	311	295	257	264	862	404	280	251	220	146
29	329	229	288	286	---	1330	723	376	272	286	441	161
30	315	208	288	293	---	3240	1100	552	291	432	274	90
31	296	---	325	330	---	1080	---	467	---	365	248	---
TOTAL	16777	7788	7739	14084	7705	15076	19951	13146	9803	7341	8402	4738
MEAN	541	260	250	454	275	486	665	424	327	237	271	158
MAX	3650	631	732	1570	355	3240	2140	663	606	432	675	229
MIN	84	202	179	246	204	250	361	325	243	174	177	90
CFSM	2.46	1.18	1.13	2.07	1.25	2.21	3.02	1.93	1.49	1.08	1.23	.72
IN.	2.84	1.32	1.31	2.38	1.30	2.55	3.37	2.22	1.66	1.24	1.42	.80

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1925 - 1991, BY WATER YEAR (WY)

	MEAN	268	242	308	370	416	454	397	306	267	233	256	211
MAX	1438	598	674	1182	999	1242	1044	950	588	641	1421	879	
(WY)	1965	1978	1968	1937	1960	1975	1936	1975	1975	1941	1928	1945	
MIN	57.4	91.6	90.2	91.8	152	169	166	124	91.5	71.3	59.9	55.8	
(WY)	1955	1956	1956	1956	1941	1955	1986	1941	1956	1986	1956	1954	

## SUMMARY STATISTICS

## FOR 1990 CALENDAR YEAR

## FOR 1991 WATER YEAR

## WATER YEARS 1925 - 1991

ANNUAL TOTAL	137643		132550		311	
ANNUAL MEAN	377		363		500	1965
HIGHEST ANNUAL MEAN					151	1955
LOWEST ANNUAL MEAN					13200	Aug 16 1928
HIGHEST DAILY MEAN	3650	Oct 13	3650	Oct 13	6.0	Jun 9 1940
LOWEST DAILY MEAN	84	Oct 8	84	Oct 8	39	Oct 28 1926
ANNUAL SEVEN-DAY MINIMUM	108	Sep 24	110	Oct 2	15000	Aug 14 1940
INSTANTANEOUS PEAK FLOW			4480	Oct 12	17.93	Aug 14 1940
INSTANTANEOUS PEAK STAGE			7.13	Oct 12	4.0*	Sep 27 1935
INSTANTANEOUS LOW FLOW			28*	Oct 3	1.41	
ANNUAL RUNOFF (CFSM)	1.71		1.65		19.18	
ANNUAL RUNOFF (INCHES)	23.27		22.41		506	
10 PERCENT EXCEEDS	617		559		226	
50 PERCENT EXCEEDS	294		286		112	
90 PERCENT EXCEEDS	144		175			

\* See REMARKS.



## SANTÉE RIVER BASIN

02152100 FIRST BROAD RIVER NEAR CASAR, NC

LOCATION.--Lat 35°29'35", long 81°40'56", Cleveland County, Hydrologic Unit 03050105, on right bank 570 ft upstream from bridge on Secondary Road 1530, 0.5 mi upstream from No Business Creek, and 4.0 mi southwest of Casar.

DRAINAGE AREA.--60.5 mi<sup>2</sup>.

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1949-56, March 1959 to current year.

REVISED RECORDS.--WDR.NC-81-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 890 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good. Minimum discharge for current water year also occurred Oct. 3, 8, 10, and Sept. 30.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of 1916 and August 1940 reached a stage of about 25 ft, from information by local resident. A discharge of 14.5 ft<sup>3</sup>/s was measured on Sept. 21, 1955.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36	62	51	91	74	75	160	160	87	65	57	47
2	37	59	51	83	73	112	132	139	111	63	55	42
3	35	57	55	79	73	147	116	125	116	63	52	41
4	40	56	63	79	72	185	107	118	89	68	47	44
5	48	56	55	74	70	134	141	118	82	62	46	45
6	37	57	54	74	76	113	135	122	78	61	58	44
7	36	54	54	76	84	111	120	107	76	58	66	44
8	35	53	53	80	77	117	110	101	76	57	69	44
9	35	77	52	79	74	118	122	104	75	59	74	42
10	40	176	51	76	72	107	115	103	72	55	56	41
11	80	92	51	398	70	98	102	99	71	53	65	42
12	1330	76	51	354	68	93	97	97	70	52	265	40
13	780	69	50	170	70	96	123	97	72	51	144	39
14	173	64	53	123	85	90	157	101	76	49	101	42
15	103	61	52	105	74	84	230	102	74	47	115	39
16	78	60	52	370	68	79	215	106	70	47	78	39
17	67	59	51	203	69	78	155	132	98	50	63	39
18	100	57	53	141	144	109	131	119	132	57	57	51
19	93	56	69	118	134	97	517	121	146	53	53	43
20	72	55	58	132	128	90	355	121	101	69	50	39
21	64	54	60	112	119	86	257	143	109	57	47	37
22	233	54	60	100	108	83	195	127	150	49	46	37
23	539	54	72	93	100	81	160	110	98	45	44	38
24	182	53	324	88	92	78	140	101	86	45	44	37
25	143	52	128	84	87	75	125	95	81	62	46	45
26	142	52	94	81	84	73	118	91	79	54	57	46
27	104	52	82	79	79	73	237	95	78	49	51	38
28	87	57	79	77	76	76	319	106	73	64	47	36
29	76	58	78	75	---	954	209	130	69	60	49	36
30	70	52	81	81	---	517	193	113	67	119	49	35
31	65	---	101	84	---	219	---	95	---	68	44	---
TOTAL	4960	1894	2238	3859	2400	4448	5293	3498	2662	1811	2095	1232
MEAN	160	63.1	72.2	124	85.7	143	176	113	88.7	58.4	67.6	41.1
MAX	1330	176	324	398	144	954	517	160	150	119	265	51
MIN	35	52	50	74	68	73	97	91	67	45	44	35
CFSM	2.64	1.04	1.19	2.06	1.42	2.37	2.92	1.87	1.47	.97	1.12	.68
IN.	3.05	1.16	1.38	2.37	1.48	2.73	3.25	2.15	1.64	1.11	1.29	.76

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 1991, BY WATER YEAR (WY)

	MEAN	81.7	69.2	87.8	98.1	126	137	126	101	80.7	64.1	69.3	57.9
MAX	318	191	185	200	286	386	291	254	168	138	262	132	
(WY)	1965	1978	1962	1978	1960	1975	1983	1975	1975	1984	1970	1959	
MIN	24.7	27.3	26.6	44.4	50.8	44.6	48.1	33.9	23.4	19.2	19.5	27.2	
(WY)	1964	1982	1989	1989	1988	1988	1967	1988	1988	1988	1988	1988	

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR		FOR 1991 WATER YEAR		WATER YEARS 1959 - 1991	
ANNUAL TOTAL	40726		36390			
ANNUAL MEAN	112		99.7		91.6	
HIGHEST ANNUAL MEAN					139	
LOWEST ANNUAL MEAN					43.4	
HIGHEST DAILY MEAN	1330	Oct 12	1330	Oct 12	3130	Mar 14 1975
LOWEST DAILY MEAN	35	Sep 28	35	Oct 3	11	Aug 27 1988
ANNUAL SEVEN-DAY MINIMUM	36	Sep 27	38	Oct 3	15	Aug 21 1988
INSTANTANEOUS PEAK FLOW			4290	Oct 12	7760	Oct 17 1975
INSTANTANEOUS PEAK STAGE			11.58	Oct 12	16.70	Oct 17 1975
INSTANTANEOUS LOW FLOW			34*	Oct 1	10	Aug 28 1988
ANNUAL RUNOFF (CFSM)			1.65		1.51	
ANNUAL RUNOFF (INCHES)	25.04		22.38		20.56	
10 PERCENT EXCEEDS	184		145		147	
50 PERCENT EXCEEDS	78		76		65	
90 PERCENT EXCEEDS	44		44		35	

\* See REMARKS.

## SOUTH ATLANTIC SLOPE BASIN

## Lakes and Reservoirs in South Atlantic Slope basin

- 02067800; 02067820 TALBOTT AND TOWNES RESERVOIRS.**--on Dan River. These two reservoirs are operated as a unit for storage of water for Pinnacles hydroelectric plant. **Talbott Dam**, lat 36°40'36", long 80°23'51", Patrick County, VA, Hydrologic Unit 03010103, 4.5 mi northeast of Kibler. Drainage area is 20.2 mi<sup>2</sup>. **Townes Dam**, lat 36°41'11", long 80°25'49", Patrick County, VA, Hydrologic Unit 03010103, 4 mi north of Kibler. Drainage area is 32.9 mi<sup>2</sup>. Period of record is February 1939 to December 1945 and January 1948 to September 1960 (combined monthend contents only published in WSP 1723), October 1960 to current year. Total capacity of Talbott Reservoir, 350,000,000 ft<sup>3</sup> and Townes Reservoir, 60,000,000 ft<sup>3</sup>. Storage was started in Talbott Reservoir on Feb. 13, 1939, and in Townes Reservoir several months earlier. Records furnished by city of Danville, Virginia. (See sta 02068500)
- 02077280 HYCO LAKE.**--Lat 36°30'28", long 79°02'48", Person County, Hydrologic Unit 03010104, at outlet control structure 0.4 mi northwest of dam on Hyco River, 1.1 mi southwest of McGehees Mill and 8 mi northwest of Roxboro.  
**DRAINAGE AREA.**--189 mi<sup>2</sup>.  
**PERIOD OF RECORD.**--October 1964 to current year. Prior to October 1970, published as "Roxboro Steam-Electric Generating Plant Lake."  
**GAGE.**--Water-stage recorder and tape gage. Prior to Feb. 11, 1965, staff gage at upstream end of outlet control structure. Datum of gage is 399.79 ft, National Geodetic Vertical Datum of 1929 (levels by Carolina Power and Light Co.).  
**REMARKS.**--Lake, used for cooling water at the Roxboro Steam-Electric Generating Plant of Carolina Power and Light Co., first began to fill Sept. 19, 1964, and first reached spillway elevation (9.97 ft gage height) Mar. 19, 1965. Total capacity at top of spillway is 3,288,000,000 ft<sup>3</sup>. Lake cannot be drawn below -0.03 ft (bottom of gated flume).
- 02079964 LAKE GASTON.**--Lat 36°30'04", long 77°48'43", Halifax County, Hydrologic Unit 03010106, at Gaston Dam on Roanoke River, 0.2 mi upstream from Black Gut Creek, and 2.7 mi northwest of Thelma.  
**DRAINAGE AREA.**--8,339 mi<sup>2</sup>.  
**PERIOD OF RECORD.**--October 1962 to current year.  
**GAGE.**--Water-stage recorder and staff gage. Datum of gage is National Geodetic Vertical Datum of 1929.  
**REMARKS.**--Lake, used mainly for hydroelectric power development, was first filled Oct. 13-15, 1962, and has a total capacity of 22,434,000,000 ft<sup>3</sup>. Usable capacity at top of spillway gates is between elevations 165 and 203 ft (20,127,000,000 ft<sup>3</sup>); between elevations 200 and 203 ft (2,788,000 ft<sup>3</sup>) is reserved for flood control. Storage for power generation is between elevations 185 and 200 ft (10,673,000,000 ft<sup>3</sup>).  
**COOPERATION.**--Records furnished by Virginia Electric and Power Co. (See sta 02080500)
- 02080100 ROANOKE RAPIDS LAKE.**--Lat 36°29'10", long 77°39'31", Halifax County, Hydrologic Unit 03010107, at Roanoke Rapids Dam on Roanoke River, 1.5 mi upstream from bridge on State Highway 48, and 2.2 mi north of Roanoke Rapids.  
**DRAINAGE AREA.**--8,371 mi<sup>2</sup>.  
**PERIOD OF RECORD.**--June 1955 to September 1960 (monthend contents only published in WSP 1723), October 1960 to current year.  
**GAGE.**--Water-stage recorder and staff gage. Datum of gage is National Geodetic Vertical Datum of 1929.  
**REMARKS.**--Lake, used for hydroelectric power development, was put in operation June 25, 1955, and has a total capacity of 3,360,220,000 ft<sup>3</sup> at normal highwater; elevation 132.0 ft. Elevation 132.75 ft, at top of gates, is 3,515,290,000 ft<sup>3</sup>.  
**COOPERATION.**--Records furnished by Virginia Electric and Power Co. (See sta 02080500)
- 02087182 FALLS LAKE.**--Lat 35°56'00", long 78°35'00", Wake County, Hydrologic Unit 03020201, at Falls Dam on Neuse River at Falls, 10 mi north of Raleigh, and 235 mi above mouth.  
**DRAINAGE AREA.**--770 mi<sup>2</sup>.  
**PERIOD OF RECORD.**--February 1979 to current year.  
**GAGE.**--Datum of gage is National Geodetic Vertical Datum of 1929.  
**REMARKS.**--Lake, used for flood control, water supply, low-flow augmentation, and recreation. Temporary storage began May 1981 for water supply for city of Raleigh during drought conditions. Jan. 13, 1983, gates closed and normal pool elevation of 250 ft was reached Dec. 7, 1983. (See sta 02087183)
- 02098197 B. EVERETT JORDAN LAKE.**--Lat 35°39'17", long 79°04'02", Chatham County, Hydrologic Unit 03030002, at B. Everett Jordan Dam on Haw River, 0.3 mi downstream of mouth of New Hope River, 2.5 mi north of Moncure, 4.2 mi upstream of mouth of Haw River, and 202.2 mi upstream from mouth of Cape Fear River.  
**DRAINAGE AREA.**--1,689 mi<sup>2</sup>.  
**PERIOD OF RECORD.**--December 1972 to current year.  
**GAGE.**--Water-stage recorder and staff gage at dam. Datum of gage is National Geodetic Vertical Datum of 1929.  
**REMARKS.**--Lake, used for flood control, water supply, low-flow augmentation, and recreation. Some storage was affected during construction and then operated temporarily as a "dry reservoir" January 1975 to August 1981. Reservoir began filling September 1981 and reached normal pool elevation of 216 ft Feb. 4, 1982. Total capacity is 32,825,074,000 ft<sup>3</sup> at elevation 240.0 ft of which 23,454,011,000 ft<sup>3</sup> is controlled flood storage. (See sta 02098198)
- 02111391 W. KERR SCOTT RESERVOIR.**--Lat 36°08'04", long 81°13'30", Wilkes County, Hydrologic Unit 03040101, at W. Kerr Scott Dam on Yadkin River, 0.1 mi upstream from Fish Trap Creek, 2.0 mi upstream from Millers Creek, and 4.0 mi west of Wilkesboro.  
**DRAINAGE AREA.**--350 mi<sup>2</sup>, approximately.  
**PERIOD OF RECORD.**--August 1962 to current year.  
**GAGE.**--Water-stage recorder and staff gage at dam. Datum of gage is National Geodetic Vertical Datum of 1929.  
**REMARKS.**--Lake, used for flood control, low-flow augmentation, and recreation. Some storage was affected during construction in July 1962, but gates were closed Aug. 22, 1962. Reservoir reached minimum pool elevation on Sept. 11, 1962. Total capacity is 6,664,680,000 ft<sup>3</sup> of which 6,316,200,000 ft<sup>3</sup> is controlled storage.  
**COOPERATION.**--Records furnished by Corps of Engineers. (See sta 02129000)

## SOUTH ATLANTIC SLOPE BASIN

## Lakes and Reservoirs in South Atlantic Slope basin--continued

- 02122400 HIGH ROCK LAKE.**--Lat 35°36'02", long 80°14'06", Davidson County, Hydrologic Unit 03040103, at High Rock Dam on Yadkin River, 0.8 mi northwest of High Rock, 2 mi upstream from Lick Creek, and 256 mi upstream from mouth of Pee Dee River in Winyah Bay.  
**DRAINAGE AREA.**--4,000 mi<sup>2</sup>, approximately.  
**PERIOD OF RECORD.**--November 1927 to September 1960 (monthend contents only, published in WSP 1723), October 1960 to current year.  
**GAGE.**--Water-stage recorder and staff gage at dam. Datum of gage is 30.9 ft below National Geodetic Vertical Datum of 1929.  
**REMARKS.**--Lake, used for hydroelectric power development, was first put in operation Nov. 7, 1927. Total capacity is 11,090,000,000 ft<sup>3</sup>. Usable capacity is between elevations 625 and 655 ft gage datum, top of gates, (10,230,000,000 ft<sup>3</sup>).  
**COOPERATION.**--Records furnished by Yadkin, Inc. (See sta 02129000)
- 02122699 TUCKERTOWN RESERVOIR.**--Lat 35°29'03", long 80°10'30", Stanly County, Hydrologic Unit 03040103, at Tuckertown Dam on Yadkin River, 2.5 mi upstream from Garr Creek, 3.8 mi northeast of New London, and 250 mi upstream from mouth of Pee Dee River in Winyah Bay.  
**DRAINAGE AREA.**--4,120 mi<sup>2</sup>, approximately.  
**PERIOD OF RECORD.**--April 1962 to current year.  
**GAGE.**--Remote water-stage recorder in powerhouse. Datum of gage is 30.9 ft below National Geodetic Vertical Datum of 1929.  
**REMARKS.**--Lake, used for hydroelectric power development, was first filled Apr. 6, 1962. Total capacity is 1,852,400,000 ft<sup>3</sup>. Usable capacity is between elevations 593 and 596 ft gage datum (293,800,000 ft<sup>3</sup>).  
**COOPERATION.**--Records furnished by Yadkin, Inc. (See sta 02129000)
- 02122844 BADIN LAKE.**--Lat 35°35'10", long 80°05'34", Stanly County, Hydrologic Unit 03040103, at Badin Dam on Yadkin River, 1.5 mi northeast of Badin, 2.5 mi upstream from Falls Dam, and 242 mi upstream from mouth of Pee Dee River in Winyah Bay.  
**DRAINAGE AREA.**--4,180 mi<sup>2</sup>, approximately.  
**PERIOD OF RECORD.**--December 1917 to September 1960 (monthend contents only, published in WSP 1723), October 1960 to current year.  
**GAGE.**--Water-stage recorder and staff gage at dam. Datum of gage is 30.9 ft below National Geodetic Vertical Datum of 1929.  
**REMARKS.**--Lake, generally known as Narrows Reservoir, used for hydroelectric power development, was first put in operation July 12, 1917. Total capacity is 10,497,960,000 ft<sup>3</sup>. Usable capacity is between 510.00 and 541.10 ft (5,616,584,000 ft<sup>3</sup>).  
**COOPERATION.**--Records furnished by Yadkin, Inc. (See sta 02129000).
- 02123736 LAKE TILLERY.**--Lat 35°12'24", long 80°03'57", Stanly County, Hydrologic Unit 03040104, at Norwood Dam on Pee Dee River, 700 ft upstream from Norfolk Southern Railroad bridge, 3.5 mi southeast of Norwood, 5 mi upstream from Rocky River, and 224 mi upstream from mouth in Winyah Bay.  
**DRAINAGE AREA.**--4,600 mi<sup>2</sup>, approximately.  
**PERIOD OF RECORD.**--February 1928 to September 1960 (monthend contents only, published in WSP 1723), October 1960 to current year.  
**GAGE.**--Water-stage recorder and float-tape gage at dam. Datum of gage is 38.67 ft National Geodetic Vertical Datum of 1929 (levels by Carolina Power and Light Co.).  
**REMARKS.**--Lake, used for hydroelectric power development, was first put in operation during January 1928. Total capacity is 7,274,520,000 ft<sup>3</sup>. Usable capacity is between elevations 200.5 and 239.5 ft gage datum, top of gates, (5,927,040,000 ft<sup>3</sup>).  
**COOPERATION.**--Records furnished by Carolina Power and Light Co. (See sta 02129000)
- 02128800 BLEWETT FALLS LAKE.**--Lat 34°58'58", long 79°52'40", Richmond County, Hydrologic Unit 03040104, at Blewett Falls Dam on Pee Dee River, 1.2 mi upstream from Cartledge Creek, 6.5 mi northwest of Rockingham, and 195 mi upstream from mouth in Winyah Bay.  
**DRAINAGE AREA.**--6,830 mi<sup>2</sup>, approximately.  
**PERIOD OF RECORD.**--December 1929 to September 1960 (monthend contents only, published in WSP 1723), October 1960 to current year.  
**GAGE.**--Self-synchronous motor, dial indicator and staff gage at dam. Datum of gage is 39.08 ft National Geodetic Vertical Datum of 1929 (levels by Carolina Power and Light Co.).  
**REMARKS.**--Lake, used for hydroelectric power development, was first put in use during 1911. Total capacity is 4,225,320,000 ft<sup>3</sup>. Usable capacity is between elevations 120.0 and 139.0 ft gage datum, top of flashboards, (1,850,000,000 ft<sup>3</sup>).  
**COOPERATION.**--Records furnished by Carolina Power and Light Co. (See sta 02129000)
- 02138519 LAKE JAMES.**--Lat 35°44'36", long 81°50'22", Burke County, Hydrologic Unit 03050101, at Linville Dam at intake tower on Catawba River, 2.1 mi northeast of Bridgewater, and 279 mi upstream from mouth of Wateree River.  
**DRAINAGE AREA.**--380 mi<sup>2</sup>, approximately.  
**PERIOD OF RECORD.**--March 1920 to September 1960 (monthend contents only, published in WSP 1723), October 1960 to current year.  
**GAGE.**--Float gage with self-synchronous motor to indicator in powerhouse. Staff gage at Catawba River Dam is also read when lake elevation drops below 1,160 ft, (60 ft gage datum), and lake becomes two separate reservoirs. Datum of gage is 1,100.00 ft National Geodetic Vertical Datum of 1929 (levels by Duke Power Co.).  
**REMARKS.**--Lake, (generally known as Bridgewater Reservoir), used for hydroelectric power development, was first put in operation May 5, 1919. The total capacity at elevation 100.0 ft gage datum, (crest of spillway), is 12,581,800,000 ft<sup>3</sup>. Usable capacity is between elevations (gage datum) 65.0 and 100.0 ft (7,943,700,000 ft<sup>3</sup>).  
**COOPERATION.**--Records furnished by Duke Power Co.

## SOUTH ATLANTIC SLOPE BASIN

## Lakes and Reservoirs in South Atlantic Slope basin--Continued

- 02141490 RHODHISS LAKE.**--Lat 35°46'54", long 81°26'42", Caldwell County, Hydrologic Unit 03030101, at Rhodhiss Dam on Catawba River, 0.8 mi west of Rhodhiss, 1.8 mi south of Granite Falls, and 243 mi upstream from mouth of Wateree River.  
**DRAINAGE AREA.**--1,090 mi<sup>2</sup>, approximately.  
**PERIOD OF RECORD.**--September 1935 to September 1960 (monthend contents only, published in WSP 1723), October 1960 to current year.  
**GAGE.**--Float gage, indicator and reference point at dam. Datum of gage is 895.1 ft National Geodetic Vertical Datum of 1929 (levels by Duke Power Co.).  
**REMARKS.**--Lake, used for hydroelectric power development, was first put in operation Feb. 18, 1925. Total capacity is 3,188,592,000 ft<sup>3</sup>. Usable capacity is between elevations (gage datum) 85.0 and 100.0 ft (1,717,000,000 ft<sup>3</sup>), crest of spillway.  
**COOPERATION.**--Records furnished by Duke Power Co.
- 02141961 LAKE HICKORY.**--Lat 35°49'28", long 81°11'28", Alexander County, Hydrologic Unit 03050101, at Oxford Dam on Catawba River, 2 mi upstream from Lower Little River, 7 mi south of Taylorsville, and 226 mi upstream from mouth of Wateree River.  
**DRAINAGE AREA.**--1,310 mi<sup>2</sup>, approximately.  
**PERIOD OF RECORD.**--September 1935 to September 1960 (monthend contents only, published in WSP 1723), October 1960 to current year.  
**GAGE.**--Float gage and indicator at dam. Datum of gage is 835.0 ft National Geodetic Vertical Datum of 1929 (levels by Duke Power Co.).  
**REMARKS.**--Lake, generally known as Oxford Reservoir used for hydroelectric power development, was first put in operation Apr. 5, 1928. Total capacity is 5,552,985,000 ft<sup>3</sup>. Sept. 30, 1935, to Sept. 30, 1957, the usable capacity was considered between elevations (gage datum) 85.0 ft and 100.0 ft (2,277,970,200 ft<sup>3</sup>), (top of flood gates). From Apr. 30, 1928, to Aug. 31, 1935, and Oct. 31, 1957, to Sept. 30, 1964, usable capacity considered between elevations 75.0 ft and 100.0 ft (3,378,400,000 ft<sup>3</sup>), (top of flood gates) from Oct. 1, 1964, to present, usable capacity considered between elevations (gage datum) 85.0 ft and 100.0 ft (2,277,800,000 ft<sup>3</sup>), (top of flood gates)  
**COOPERATION.**--Records furnished by Duke Power Co.
- 02142441 LOOKOUT SHOALS LAKE.**--Lat 35°45'57", long 81°05'36", Catawba County, Hydrologic Unit 03050101, at Lookout Shoals Dam on Catawba River, 4 mi upstream from bridge on U.S. Highways 64 and 70, 4.2 mi north of Catawba, and 216 mi upstream from mouth of Wateree River.  
**DRAINAGE AREA.**--1,450 mi<sup>2</sup>, approximately.  
**PERIOD OF RECORD.**--December 1915 to September 1960 (monthend contents only, published in WSP 1723), October 1960 to current year.  
**GAGE.**--Float gage, indicator and staff gage at dam. Datum of gage is 738.1 ft National Geodetic Vertical Datum of 1929 (levels by Duke Power Co.).  
**REMARKS.**--Lake used for hydroelectric power development, was first put in operation Dec. 2, 1915. Total capacity was originally 1,355,190,000 ft<sup>3</sup>. Capacity has been reduced by silting. Prior to October 1957, the usable capacity considered as 473,980,000 ft<sup>3</sup> and October 1957 to Sept. 30, 1964, as 388,300,000 ft<sup>3</sup> between elevations (gage datum) 90.0 ft and 100.0 ft (crest of spillway). From Oct. 1, 1964, to present, usable capacity considered between elevations (gage datum) 95.0 ft and 100.0 ft (208,200,000 ft<sup>3</sup>), (crest of spillway). Flood of July 16, 1916, washed out an earth dike.  
**COOPERATION.**--Records furnished by Duke Power Co.
- 02142647 LAKE NORMAN.**--Lat 35°26'05", long 80°57'28", Mecklenburg County, Hydrologic Unit 03050101, at Cowans Ford Dam on Catawba River, 0.8 mi upstream from Derr Creek, 7.8 mi southwest of Davidson, and 182 mi upstream from mouth of Wateree River.  
**DRAINAGE AREA.**--1,790 mi<sup>2</sup>, approximately.  
**PERIOD OF RECORD.**--March 1962 to current year.  
**GAGE.**--Float gage with transmitter to dial meter in control room. Datum of gage is 660 ft National Geodetic Vertical Datum of 1929 (levels by Duke Power Co.).  
**REMARKS.**--Lake, used for hydroelectric power development began filling in March 1962. Total capacity is 47,586,200,000 ft<sup>3</sup>. Usable capacity is between elevations (gage datum) 75.0 ft and 100.0 ft (26,910,400,000 ft<sup>3</sup>) (top of flood gates).  
**COOPERATION.**--Records furnished by Duke Power Co.
- 02142676 MOUNTAIN ISLAND LAKE.**--Lat 35°20'03", long 80°59'12", Gaston County, Hydrologic Unit 03050101, at Mountain Island Dam on Catawba River, 1.5 mi downstream from bridge on State Highway 16, 3 mi northeast of Mount Holly, and 167 mi upstream from mouth of Wateree River.  
**DRAINAGE AREA.**--1,860 mi<sup>2</sup>, approximately.  
**PERIOD OF RECORD.**--December 1923 to September 1960 (monthend contents only, published in WSP 1723), October 1960 to current year.  
**GAGE.**--Float gage, indicator and stage gage at dam. Datum of gage is 547.5 ft National Geodetic Vertical Datum of 1929 (levels by Duke Power Co.).  
**REMARKS.**--Lake, used for hydroelectric power development, was first put in operation Dec. 16, 1923. Total capacity is 2,495,988,000 ft<sup>3</sup>. Prior to October 1964 usable capacity is considered between elevations (gage datum) 90.0 ft and 100.0 ft (1,132,000,000 ft<sup>3</sup>), (crest of spillway) October 1964 to present considered between elevations (gage datum) 93.0 ft and 100.0 ft (845,000,000 ft<sup>3</sup>), (crest of spillway).  
**COOPERATION.**--Records furnished by Duke Power Co.
- OTHER RESERVOIRS** The following smaller reservoirs in the South Atlantic Slope basin are described below. Records of contents are not published herein.
- 02077229 LAKE ROXBORO.**--Lat 79°08'26", long 36°20'55", Caswell County, Hydrologic Unit 03010104, on South Hyco Creek near Roseville, part of Roxboro's municipal water supply. Drainage area is 23.2 mi<sup>2</sup>. Total capacity is 380,991,000 ft<sup>3</sup>. Dam completed and filled April 1978. (See sta 02077250)
- 02077302 ROXBORO STEAM-ELECTRIC GENERATING PLANT AFTERBAY RESERVOIR.**--Lat 36°31'51", long 78°59'50", Person County, Hydrologic Unit 03010104, on Hyco River near McGehees Mill, cooling water reservoir for Carolina Power and Light Company plant. Drainage area, 196 mi<sup>2</sup>. Total capacity is approximately 522,720,000 ft<sup>3</sup> with a surface area of about 650 acres at a normal elevation of 385 ft, National Geodetic Vertical Datum of 1929. Dam completed May 30, 1974, and storage began Apr. 26, 1974. Water in reservoir first reached normal water-level elevation of 385 ft on Aug. 22, 1974.

## SOUTH ATLANTIC SLOPE BASIN

## Lakes and Reservoirs in South Atlantic Slope basin--continued

- 02077665 MAYO STREAM-ELECTRIC GENERATING PLANT LAKE.**--Lat 36°32'15", long 78°52'30", Person County, Hydrologic Unit 03010104, on Mayo Creek near Bethel Hill, cooling-water reservoir for Carolina Power and Light Company plant. Drainage area is 52.2 mi<sup>2</sup>. Total capacity is 3,831,000,000 ft<sup>3</sup> with a surface area of 2,800 acres at a normal elevation of 434 ft National Geodetic Vertical Datum of 1929. Dam was completed and storage began Aug. 1, 1980. Water in reservoir first reached normal water-level elevation of 434 ft on April 16, 1983. (See sta 02077660)
- 02086490 LAKE MICHIE.**--Lat 36°09'02", long 79°49'49", Durham County, Hydrologic Unit 03020201, at Durham municipal dam on Flat River, 3 mi southeast of Bahama, and 5 mi upstream from confluence with Eno River. Drainage area is 170 mi<sup>2</sup>, approximately. Period of record is October 1962 to April 1975. Lake, used for municipal water supply, began filling in May 1926 and reached spillway elevation Dec. 26, 1926. Total capacity is 618,000,000 ft<sup>3</sup> between elevations (gage datum) 300.0 and 341.0 ft (crest of spillway). (See sta 02087000)
- 02087339 LAKE JOHNSON.**--Lat 35°45'44", long 78°42'17", Wake County, Hydrologic Unit 03020201, on Walnut Creek near Raleigh, part of Raleigh's municipal water supply. Drainage area is 7.05 mi<sup>2</sup>. Total capacity is 98,900,000 ft<sup>3</sup>. Dam was completed in 1923 and spillway raised to its present elevation in 1951. (See sta 02087500)
- 02087344 LAKE RALEIGH.**--Lat 35°45'56", long 78°40'38", Wake County, Hydrologic Unit 03020201, on Walnut Creek near Raleigh, part of Raleigh's municipal water supply. Drainage area is 12.3 mi<sup>2</sup>. Total capacity is 13,400,000 ft<sup>3</sup>. Dam completed in 1914 and raised to its present elevation in 1919. (See sta 02087500)
- 02087588 LAKE WHEELER.**--Lat 35°41'30", long 78°41'31", Wake County, Hydrologic Unit 03020201, on Swift Creek near Raleigh, part of Raleigh's municipal water supply. Drainage area is 38 mi<sup>2</sup>, approximately. Total capacity is 267,400,000 ft<sup>3</sup>. Dam was completed and storage began in 1956. (See sta 02087500)
- 02087701 LAKE BENSON.**--Lat 35°39'44", long 78°36'42", Wake County, Hydrologic Unit 03020201, on Swift Creek near Garner, part of Raleigh's municipal water supply. Drainage area is 67 mi<sup>2</sup>, approximately. Total capacity is 133,700,000 ft<sup>3</sup>. Lake, formerly known as Rand's Mill, acquired by city of Raleigh in 1927 and spillway raised to its present elevation in 1954. (See sta 02087500)
- 02090370 BUCKHORN RESERVOIR.**--Lat 35°41'22", long 78°07'33", Wilson County, Hydrologic Unit 03020203, on Contentnea Creek near Lucama, part of Wilson's municipal water supply. Drainage area is 155 mi<sup>2</sup>. Total capacity is 133,680,000 ft<sup>3</sup>. Dam was completed Nov. 12, 1976, and reservoir filled Dec. 1, 1976. (See sta 02090380)
- 02093981 LAKE HIGGINS.**--Lat 36°10'11", long 79°52'49", Guilford County, Hydrologic Unit 03030002, on Brush Creek near Greensboro, part of Greensboro's municipal water supply. Drainage area is 12 mi<sup>2</sup>, approximately. Total capacity is 107,000,000 ft<sup>3</sup>. Reservoir first filled Mar. 1, 1957. (See sta 02094500)
- 02094117 LAKE BRANDT.**--Lat 36°10'20", long 79°50'20", Guilford County, Hydrologic Unit 03030002, on Reedy Fork and Horsepen Creek near Greensboro, part of Greensboro's municipal water supply. Drainage area is 70.0 mi<sup>2</sup>, approximately. Total capacity is 294,000,000 ft<sup>3</sup>. Dam was completed February 1923 and raised to present level 1959-60. Reservoir first filled to present level on Oct. 8, 1960. (See sta 02094500)
- 02094305 LAKE TOWNSEND.**--Lat 36°11'25", long 79°43'57", Guilford County, Hydrologic Unit 03030002, on Reedy Fork near Greensboro, part of Greensboro's municipal water supply. Drainage area is 105 mi<sup>2</sup>. Total capacity is 869,000,000 ft<sup>3</sup>. Dam was completed Oct. 18, 1968, and reservoir was first filled on Aug. 17, 1969. (See sta 02094500)
- 02096003 LAKE BURLINGTON.**--Lat 36°10'25", long 79°24'53", Alamance County, Hydrologic Unit 03030002, on Stony Creek near Burlington, part of Burlington's municipal water supply. Drainage area is 44 mi<sup>2</sup>, approximately. Prior to October 1971 published as "Stony Creek Reservoir." Total capacity is 427,800,000 ft<sup>3</sup>. Dam completed August 1960 and reservoir first filled Jan. 28, 1961. (See sta 02096500)
- 02096432 STONY CREEK RESERVOIR.**--Lat 36°07'37", long 79°24'20", Alamance County, Hydrologic Unit 03030002, on Stony Creek near Burlington, part of Burlington's water supply. Drainage area is 95.0 mi<sup>2</sup>, approximately. Prior to October 1971 published as "Lake Burlington." Total capacity is 64,900,000 ft<sup>3</sup>. Dam completed and reservoir filled in 1928. (See sta 02096500)
- 02098495 OAK HOLLOW RESERVOIR.**--Lat 36°00'42", long 79°59'11", Guilford County, Hydrologic Unit 03030003, on West Fork Deep River and 1.8 mi southwest of Deep River, part of High Point's municipal water supply. Drainage area is 32 mi<sup>2</sup>, approximately. Total capacity is 468,000,000 ft<sup>3</sup>. Dead storage (non-withdrawal) is minor. Total surface area, about 725 acres. Dam completed and storage began in May 1970. Reservoir first filled Dec. 24, 1970. (See sta 02099500)
- 02099096 HIGH POINT MUNICIPAL LAKE.**--Lat 35°59'43", long 79°56'42", Guilford County, Hydrologic Unit 03030003, on Deep River near High Point, High Point's municipal water supply. Drainage area is 61.4 mi<sup>2</sup>. Total capacity is 220,588,000 ft<sup>3</sup>. Dam completed in 1926 and reservoir first filled in 1927. (See sta 02099500)
- 02102178 BUCKHORN RESERVOIR.**--Lat 35°31'35", long 78°59'22", Chatham County, Hydrologic Unit 03030004, on Cape Fear River near Corinth. Drainage area is 3,200 mi<sup>2</sup>, approximately. Usable capacity is 69,700,000 ft<sup>3</sup>. Completed and filled in 1908. Hydroelectric power operation stopped Dec. 31, 1962.
- 02102190 SHEARON HARRIS MAIN RESERVOIR.**--Lat 35°34'00", long 78°57'55", Chatham County, Hydrologic Unit 03030004, on Buckhorn Creek near Corinth, cooling water reservoir for Carolina Power and Light Co. plant. Drainage area is 71 mi<sup>2</sup>. Total capacity is 3,136,320,000 ft<sup>3</sup> with a surface area of 4,150 acres at a normal elevation of 220 ft, National Geodetic Vertical Datum of 1929. Dam completed Dec. 23, 1981, and storage began Dec. 1, 1980. (See sta 02102192)
- 02121461 LEXINGTON-THOMASVILLE RESERVOIR.**--Lat 35°51'54", long 80°11'41", Davidson County, Hydrologic Unit 03050103, on Abbotts Creek near Lexington, Lexington and Thomasville's municipal water supply. Drainage area is 70.3 mi<sup>2</sup>. Total capacity is 284,100,000 ft<sup>3</sup> of which 281,400,000 ft<sup>3</sup> is usable. Dam completed Aug. 8, 1957, and reservoir first filled Nov. 23, 1957.
- 02184122 LAKE TOXAWAY.**--Lat 35°07'27", long 82°55'56", Transylvania County, Hydrologic Unit 03060101, on Toxaway River at town of Lake Toxaway, a recreation lake. Drainage area is 7.79 mi<sup>2</sup>. Total surface area is about 640 acres. Lake reached spillway elevation September 1961.

## SOUTH ATLANTIC SLOPE BASIN

## Lakes and Reservoirs in South Atlantic Slope basin--Continued

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

Date	Elevation (feet)	Combined contents (million cubic feet)	Change in contents (million cubic feet)	Gage Height (feet)	Contents (million cubic feet)	Change in contents (million cubic feet)	Elevation (feet)	Contents (million cubic feet)	Change in contents (million cubic feet)
		02067800 & 02067820 Talbot & Townes Reservoirs			02077280 Hyco Lake		02079964 Lake Gaston		
Sept. 30.....		278	-	8.86	3,107	-	199.53	19,192	-
Oct. 31.....		340	+62	10.53	3,375	+268	199.40	19,079	-113
Nov. 30.....		336	-4	10.47	3,366	-9	199.45	19,122	+43
Dec. 31.....		322	-14	10.83	3,422	+56	199.27	18,966	-156
CAL YR 1990		-	+89		-	+16		-	-332
Jan. 31.....		331	+9	10.57	3,381	-41	199.48	19,149	+183
Feb. 28.....		334	+3	10.58	3,383	+2	199.49	19,157	+8
Mar. 31.....		357	+23	11.24	3,492	+109	200.19	19,767	+610
Apr. 30.....		343	-14	10.61	3,388	-104	200.67	20,186	+419
May 31.....		337	-6	10.45	3,362	-26	200.73	20,238	+52
June 30.....		336	-1	10.06	3,302	-60	198.80	18,548	-1,690
July 31.....		336	0	9.76	3,254	-48	199.48	19,149	+601
Aug. 31.....		294	-42	9.30	3,179	-75	199.35	19,036	-113
Sept. 30.....		267	-27	9.36	3,189	+10	199.21	18,914	-122
WTR YR 1991		-	-11		-	+82		-	-278

Date	Elevation (feet)	Contents (million cubic feet)	Change in contents (million cubic feet)	Elevation (feet)	Contents (million cubic feet)	Change in contents (million cubic feet)	Elevation (feet)	Contents (million cubic feet)	Change in contents (million cubic feet)
		02080100 Roanoke Rapids Lake			02087182 Falls Lake		02098197 B. Everett Jordan Lake		
Sept. 30.....	129.9	2,953	-	247.94	3,800	-	210.5	6,429	-
Oct. 31.....	131.3	3,216	+263	249.61	4,526	+726	216.0	9,371	+2,942
Nov. 30.....	130.4	3,044	-172	249.25	4,357	-169	216.1	9,434	+63
Dec. 31.....	130.0	2,972	-72	250.34	4,882	+525	216.6	9,748	+314
CAL YR 1990		-	+74		-	+36		-	+314
Jan. 31.....	130.9	3,142	+170	250.12	4,771	-111	216.1	9,434	-314
Feb. 28.....	128.7	2,744	-398	250.12	4,771	0	216.1	9,434	0
Mar. 31.....	130.2	3,008	+264	252.66	6,134	+1,363	221.8	13,365	+3,931
Apr. 30.....	130.9	3,142	+134	251.03	5,232	-902	216.1	9,434	-3,931
May 31.....	131.5	3,252	+110	250.86	5,145	-87	215.9	9,312	-122
June 30.....	129.5	2,879	-373	250.01	4,715	-430	216.1	9,434	+122
July 31.....	130.6	3,082	+203	249.12	4,296	-419	216.1	9,434	0
Aug. 31.....	128.2	2,663	-419	247.99	3,819	-477	215.4	9,017	-417
Sept. 30.....	131.0	3,162	+499	247.59	3,666	-153	215.2	8,899	-118
WTR YR 1991		-	+209		-	-134		-	+2,470

## SOUTH ATLANTIC SLOPE BASIN

## Lakes and Reservoirs in South Atlantic Slope basin--Continued

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

Date	Elevation (feet)	Contents (million cubic feet)	Change in contents (million cubic feet)	Gage height (feet)	Contents (million cubic feet)	Change in contents (million cubic feet)	Gage height (feet)	Contents (million cubic feet)	Change in contents (million cubic feet)
		02111391 W. Kerr Scott Reservoir			02122400 High Rock Lake			02122699 Tuckertown Reservoir	
Sept. 30.....	1,029.95	1,790.23	-	649.1	7,616	-	594.40	1,690	-
Oct. 31.....	1,030.14	1,798.70	+8.5	653.4	10,061	+2,445	594.63	1,712	+22
Nov. 30.....	1,030.10	1,798.70	0	646.2	6,203	-3,858	594.65	1,714	+2
Dec. 31.....	1,030.01	1,790.23	-8.5	651.9	9,155	+2,952	595.01	1,750	+36
CAL YR 1990		-	-50.0		-	+1,843		-	-90
Jan. 31.....	1,030.00	1,790.23	0	651.0	8,644	-511	594.69	1,718	-32
Feb. 28.....	1,030.10	1,798.70	+8.5	648.0	7,060	-1,584	595.37	1,787	+69
Mar. 31.....	1,035.37	2,173.97	+375.3	655.0	11,090	+4,030	595.89	1,841	+54
Apr. 30.....	1,030.43	1,824.11	-349.9	655.0	11,090	0	596.00	1,852	+11
May 31.....	1,030.02	1,790.23	-33.9	652.5	9,517	-1,573	595.60	1,811	-41
June 30.....	1,030.09	1,798.70	+8.5	653.6	10,182	+665	594.31	1,681	-130
July 31.....	1,030.02	1,790.23	-8.5	653.1	9,880	-302	595.28	1,778	+97
Aug. 31.....	1,030.08	1,798.70	+8.5	652.0	9,215	-665	594.42	1,692	-86
Sept. 30.....	1,029.38	1,764.20	-34.5	651.5	8,925	-290	594.49	1,699	+7
WTR YR 1991		-	-26.0		-	+1,309		-	+9
Date	Gage height (feet)	Contents (million cubic feet)	Change in contents (million cubic feet)	Gage height (feet)	Contents (million cubic feet)	Change in contents (million cubic feet)	Gage height (feet)	Contents (million cubic feet)	Change in contents (million cubic feet)
		02122844 Badin Lake			02123736 Lake Tillery			02128800 Blewett Falls Lake	
Sept. 30.....	538.7	9,937	-	239.0	5,815	-	138.4	1,787	-
Oct. 31.....	540.5	10,357	+420	238.9	5,794	-21	135.9	1,530	-257
Nov. 30.....	540.6	10,381	+24	237.5	5,492	-302	138.8	1,829	+299
Dec. 31.....	539.9	10,217	-164	238.2	5,643	+151	139.7	1,920	+91
CAL YR 1990		-	+116		-	+129		-	+960
Jan. 31.....	539.3	10,077	-140	238.0	5,600	-43	139.0	1,850	-70
Feb. 28.....	539.7	10,171	+94	237.9	5,578	-22	139.9	1,940	+90
Mar. 31.....	540.7	10,404	+233	239.5	5,925	+347	143.4	2,294	+354
Apr. 30.....	541.0	10,474	+70	238.9	5,794	-131	140.0	1,950	-344
May 31.....	540.2	10,287	-187	239.3	5,881	+87	138.6	1,808	-142
June 30.....	539.7	10,171	-116	238.7	5,750	-131	136.6	1,600	-208
July 31.....	538.6	9,914	-257	238.7	5,750	0	137.3	1,672	+72
Aug. 31.....	538.5	9,891	-23	239.1	5,837	+87	137.3	1,672	0
Sept. 30.....	539.3	10,077	+186	238.0	5,600	-237	137.3	1,672	0
WTR YR 1991		-	+140		-	-215		-	-115

## SOUTH ATLANTIC SLOPE BASIN

## Lakes and Reservoirs in South Atlantic Slope basin--Continued

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

Date	Gage height (feet)	Contents (million cubic feet)	Change in contents (million cubic feet)	Gage height (feet)	Contents (million cubic feet)	Change in contents (million cubic feet)	Gage height (feet)	Contents (million cubic feet)	Change in contents (million cubic feet)
		02138519 Lake James			02141490 Rhodhiss Lake			02141961 Lake Hickory	
Sept. 30.....	96.2	11,540	-	97.0	1,284	-	97.3	1,808	-
Oct. 31.....	98.5	12,163	+623	97.5	1,353	+69	97.6	1,859	+51
Nov. 30.....	96.0	11,487	-676	96.9	1,270	-83	97.3	1,808	-51
Dec. 31.....	98.1	12,053	+566	97.7	1,381	+111	97.5	1,842	+34
CAL YR 1990		-	+539		-	+83		-	+17
Jan. 31.....	97.1	11,781	-272	97.3	1,325	-56	97.1	1,775	-67
Feb. 28.....	93.8	10,916	-865	97.0	1,284	-41	97.0	1,758	-17
Mar. 31.....	99.4	12,413	+1,497	99.8	1,686	+402	99.8	2,242	+484
Apr. 30.....	98.8	12,246	-167	99.4	1,626	-60	99.7	2,224	-18
May 31.....	98.6	12,190	-56	97.6	1,367	-259	98.0	1,927	-297
June 30.....	97.9	11,998	-192	96.9	1,270	-97	97.2	1,791	-136
July 31.....	98.5	12,163	+165	96.4	1,203	-67	97.1	1,775	-16
Aug. 31.....	97.8	11,971	-195	96.0	1,150	-53	97.0	1,758	-17
Sept. 30.....	96.2	11,540	-431	96.2	1,176	+26	96.9	1,741	-17
WTR YR 1991		-	0		-	-108		-	-67
		02142441 Lookout Shoals Lake			02142647 Lake Norman			02142676 Mountain Island Lake	
Sept. 30.....	97.4	94	-	97.0	43,470	-	95.9	318	-
Oct. 31.....	98.3	138	+44	98.7	45,780	+2,310	96.9	438	+120
Nov. 30.....	97.0	80	-58	96.9	43,340	-2,440	96.8	426	-12
Dec. 31.....	97.2	88	+8	97.8	44,550	+1,210	96.3	366	-60
CAL YR 1990		-	+ 88		-	+950		-	-12
Jan. 31.....	97.2	88	0	96.4	42,680	-1,870	97.6	525	+159
Feb. 28.....	97.3	92	+4	92.9	38,280	-4,400	96.0	330	-195
Mar. 31.....	99.7	195	+103	98.0	44,820	+6,540	99.1	719	+389
Apr. 30.....	99.3	177	-18	99.2	46,470	+1,650	97.7	538	-181
May 31.....	97.7	109	-68	98.4	45,370	-1,100	97.1	462	-76
June 30.....	97.2	88	-21	98.3	45,230	-140	96.9	438	-24
July 31.....	97.4	94	+6	98.5	45,500	+270	97.4	500	+62
Aug. 31.....	97.3	92	-2	98.0	44,820	-680	96.5	390	-110
Sept. 30.....	97.8	113	+21	97.7	44,420	-400	96.0	330	-60
WTR YR 1991		-	+19		-	+950		-	-12

## OHIO RIVER BASIN

## KANAWHA RIVER BASIN

03161000 SOUTH FORK NEW RIVER NEAR JEFFERSON, NC

LOCATION.--Lat 36°23'35", long 81°24'26", Ashe County, Hydrologic Unit 05050001, on right bank 600 ft upstream from bridge on State Highways 16 and 88, 0.2 mi downstream from Bear Creek, and 4 mi southeast of Jefferson.

DRAINAGE AREA.--205 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1924 to current year. Monthly discharge only for some periods, published in WSP 1305.

REVISED RECORDS.--WSP 1275: 1925-26(M), 1928-30(M), 1931-32, 1933-35(M), 1941-42(m), 1944(m). WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,657.04 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 14, 1934, nonrecording gage on bridge 400 ft downstream at same datum. Oct. 14, 1934, to Mar. 25, 1935, nonrecording gage at present site and datum. U.S. Army Corps of Engineers satellite data transmitter at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location. Maximum discharge, 52,800 ft<sup>3</sup>/s, from rating curve extended above 5,100 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow. Minimum discharge for period of record, 52 ft<sup>3</sup>/s, result of freezeup. Minimum discharge for current water year also occurred on Oct. 9, 10.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 15, 1916, reached a stage of 18.0 ft, from floodmarks witnessed by local resident, discharge, 35,200 ft<sup>3</sup>/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	177	472	310	519	421	451	866	828	490	413	351	253
2	201	454	309	481	399	1170	748	737	481	383	329	244
3	190	442	437	461	392	941	673	664	566	370	315	245
4	181	428	608	445	388	1110	631	621	505	405	292	241
5	188	425	434	423	382	847	612	601	460	444	279	238
6	188	517	377	402	414	730	624	620	448	387	277	236
7	167	457	361	413	445	787	566	609	441	347	313	245
8	163	413	354	478	408	691	546	547	431	328	284	245
9	163	439	339	458	388	623	559	571	424	314	276	237
10	181	1010	330	427	372	585	814	597	412	307	278	220
11	508	657	322	712	366	557	607	551	405	306	275	220
12	2450	534	317	1030	357	537	552	583	413	328	276	217
13	6780	490	314	705	367	551	573	679	439	305	344	244
14	1370	457	312	585	600	724	593	631	409	293	358	556
15	813	437	308	539	572	670	568	819	412	284	397	316
16	615	423	320	994	e381	574	578	636	403	275	349	256
17	523	414	320	823	e403	539	526	772	547	280	285	238
18	1780	399	334	661	693	594	507	617	496	373	275	237
19	1910	384	359	595	1120	595	1450	1040	620	341	269	293
20	941	375	360	703	1040	534	1640	959	492	484	256	281
21	732	365	373	666	881	509	1050	1000	513	334	249	228
22	739	360	387	589	699	506	856	871	763	292	242	217
23	1510	359	501	543	610	515	754	757	527	273	236	213
24	987	365	1400	532	556	510	689	684	454	267	230	215
25	816	345	804	497	524	467	637	637	444	564	227	229
26	821	333	608	471	502	453	605	598	433	735	235	243
27	666	329	537	458	473	446	609	599	444	756	250	224
28	599	334	525	453	453	491	784	605	415	844	339	206
29	552	342	594	445	---	1620	1730	569	406	526	555	200
30	521	323	542	439	---	2230	1040	538	433	439	324	196
31	495	---	548	456	---	1110	---	510	---	382	274	---
TOTAL	27927	13082	13944	17403	14606	22667	22987	21050	14126	12379	9239	7433
MEAN	901	436	450	561	522	731	766	679	471	399	298	248
MAX	6780	1010	1400	1030	1120	2230	1730	1040	763	844	555	556
MIN	163	323	308	402	357	446	507	510	403	267	227	196
CFSM	4.39	2.13	2.19	2.74	2.54	3.57	3.74	3.31	2.30	1.95	1.45	1.21
IN.	5.07	2.37	2.53	3.16	2.65	4.11	4.17	3.82	2.56	2.25	1.68	1.35
e Estimated												
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1925 - 1991, BY WATER YEAR (WY)												
MEAN	378	406	408	461	522	592	563	463	386	340	356	337
MAX	901	1889	797	966	973	1316	1350	1052	905	904	2613	1212
(WY)	1991	1978	1958	1946	1983	1979	1983	1973	1976	1941	1940	1979
MIN	117	124	146	140	197	308	275	220	163	111	93.7	99.5
(WY)	1955	1932	1934	1940	1934	1925	1925	1941	1956	1930	1925	1954

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1925 - 1991
ANNUAL TOTAL	185603	196843	
ANNUAL MEAN	509	539	434
HIGHEST ANNUAL MEAN			669
LOWEST ANNUAL MEAN			247
HIGHEST DAILY MEAN	6780	Oct 13	27700
LOWEST DAILY MEAN	163	Oct 8	65
ANNUAL SEVEN-DAY MINIMUM	170	Sep 25	72
INSTANTANEOUS PEAK FLOW			52800*
INSTANTANEOUS PEAK STAGE			22.50
INSTANTANEOUS LOW FLOW			52*
ANNUAL RUNOFF (CFSM)	2.48	2.63	2.12
ANNUAL RUNOFF (INCHES)	33.68	35.72	28.75
10 PERCENT EXCEEDS	791	822	714
50 PERCENT EXCEEDS	439	456	351
90 PERCENT EXCEEDS	203	245	173

\* See REMARKS.

## TENNESSEE RIVER BASIN

03439000 FRENCH BROAD RIVER AT ROSMAN, NC

LOCATION.--Lat 35°08'32", long 82°49'28", Transylvania County, Hydrologic Unit 06010105, on left bank 50 ft upstream from bridge on U.S. Highway 178 at Rosman, 1.0 mi upstream from East Fork, and at mile 216.4.

DRAINAGE AREA.--67.9 mi<sup>2</sup>.

PERIOD OF RECORD.--May 1907 to June 1909, October 1935 to current year. Monthly discharge only for some periods published in WSP 1306.

REVISED RECORDS.--WSP 823: Drainage area. WSP 1306: 1908(M). WSP 1910: 1936(M), 1938(M), 1939-40, 1942- 43.

GAGE.--Water-stage recorder. Datum of gage is 2,173.83 ft above National Geodetic Vertical Datum of 1929. Prior to June 30, 1909, nonrecording gage at site 500 ft downstream at different datum. Jan. 1, 1936 to July 6, 1937, nonrecording gage at present site and datum. The National Weather Service has gage height and rainfall telemetry at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Minimum discharge, for period of record, 23 ft<sup>3</sup>/s, result of freezeup. Minimum daily discharge for period of record, 37 ft<sup>3</sup>/s, occurred several days in Sept. and Oct. 1954. Minimum discharge for current water year also occurred on Oct. 4.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 1916 reached a stage of 13.9 ft, from floodmarks.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	64	121	100	274	259	223	503	388	315	258	381	392
2	60	116	100	251	247	535	446	362	301	238	340	438
3	58	112	445	248	239	474	403	343	294	223	308	358
4	103	109	379	243	231	446	380	331	275	210	270	324
5	85	116	227	226	225	359	523	343	257	203	274	303
6	66	124	191	213	234	330	441	370	248	195	293	308
7	63	108	172	221	225	318	396	318	240	189	353	295
8	116	104	159	236	215	331	386	302	233	187	382	311
9	84	233	147	216	207	309	386	313	226	191	373	271
10	81	299	141	208	203	292	370	315	219	184	343	255
11	113	181	137	839	198	277	338	308	213	174	307	245
12	593	157	134	566	194	265	332	314	215	169	349	235
13	220	143	130	427	221	299	501	313	214	162	361	227
14	147	136	136	366	318	280	462	308	222	156	337	221
15	123	130	132	393	242	259	751	313	245	153	317	224
16	109	125	127	679	e204	247	550	464	271	154	279	217
17	102	120	125	464	e215	249	471	417	267	183	257	227
18	575	115	147	400	e294	358	426	377	254	253	257	272
19	271	112	183	369	297	285	886	442	311	201	238	294
20	189	110	157	364	365	265	684	396	294	186	236	226
21	157	109	190	327	315	252	607	382	408	202	215	210
22	397	108	196	305	285	243	525	355	363	186	208	202
23	437	109	1030	291	277	242	477	332	286	170	201	197
24	271	105	823	284	254	227	442	313	261	180	194	198
25	221	102	441	269	242	219	412	298	249	213	232	228
26	187	100	335	260	232	214	394	286	315	209	851	205
27	165	100	305	252	221	210	438	329	297	222	481	188
28	151	119	330	247	214	225	440	416	283	442	395	181
29	140	115	310	238	---	2050	433	378	255	306	588	175
30	134	102	302	307	---	937	424	386	257	835	559	171
31	128	---	331	302	---	607	---	338	---	443	412	---
TOTAL	5610	3840	8062	10285	6873	11827	14227	10850	8088	7277	10591	7598
MEAN	181	128	260	332	245	382	474	350	270	235	342	253
MAX	593	299	1030	839	365	2050	886	464	408	835	851	438
MIN	58	100	100	208	194	210	332	286	213	153	194	171
CFSM	2.67	1.89	3.83	4.89	3.62	5.62	6.98	5.15	3.97	3.46	5.03	3.73
IN.	3.07	2.10	4.42	5.63	3.77	6.48	7.79	5.94	4.43	3.99	5.80	4.16

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1908 - 1991, BY WATER YEAR (WY)

	MEAN	176	198	245	273	317	334	326	268	222	181	186	166
MAX	734	578	482	672	648	787	582	551	882	624	475	447	
(WY)	1965	1980	1984	1937	1939	1979	1983	1909	1909	1989	1940	1950	
MIN	42.2	56.7	72.6	72.0	130	135	108	114	79.8	75.8	65.3	43.6	
(WY)	1955	1955	1940	1981	1963	1988	1986	1941	1988	1986	1954	1954	

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1908 - 1991
ANNUAL TOTAL	94412	105128	
ANNUAL MEAN	259	288	238
HIGHEST ANNUAL MEAN			370
LOWEST ANNUAL MEAN			136
HIGHEST DAILY MEAN	2180	Mar 17	5630
LOWEST DAILY MEAN	58	Oct 3	37
ANNUAL SEVEN-DAY MINIMUM	64	Sep 27	38
INSTANTANEOUS PEAK FLOW			6190
INSTANTANEOUS PEAK STAGE			11.49
INSTANTANEOUS LOW FLOW			58*
ANNUAL RUNOFF (CFSM)	3.81		4.24
ANNUAL RUNOFF (INCHES)	51.72		57.60
10 PERCENT EXCEEDS	479		442
50 PERCENT EXCEEDS	189		257
90 PERCENT EXCEEDS	83		122
* See REMARKS.			

## TENNESSEE RIVER BASIN

03440000 CATHEYS CREEK NEAR BREVARD, NC

LOCATION.--Lat 35°12'40", long 82°47'00", Transylvania County, Hydrologic Unit 06010105, on right bank 1,200 ft downstream from Kuykendall Creek, 1.0 mi upstream from U.S. Highway 64, 2.1 mi upstream from mouth, and 3.2 mi southwest of Brevard.

DRAINAGE AREA.--11.7 mi<sup>2</sup>.

PERIOD OF RECORD.--Oct. 1944 to Sept. 1955, Nov. 1986 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,230 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Oct. 2, 1946, at site 0.9 mi downstream at different datum. October 2, 1946 to Jan. 9, 1947, at site 0.8 mi downstream from present gage at different datum. Jan. 10, 1947, to Oct. 3, 1951, at present site at different datum. Oct. 3, 1951, to Sept. 30, 1955 at site 40 ft downstream at different datum.

REMARKS.--Records good except those above 600 ft<sup>3</sup>/s and for estimated daily discharges, which are fair. Maximum discharge, 1,920 ft<sup>3</sup>/s, from rating curve extended above 600 ft<sup>3</sup>/s by logarithmic plotting. City of Brevard diverted about 1.5 ft<sup>3</sup>/s from Catheys Creek for municipal water supply.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	21	17	39	39	36	74	58	42	31	49	67
2	13	20	16	37	38	52	65	55	40	29	46	62
3	13	20	42	37	37	55	60	52	39	27	37	55
4	23	20	34	36	36	52	57	51	37	26	32	50
5	15	21	25	35	35	45	82	52	35	25	39	94
6	14	20	23	33	36	42	66	55	34	24	35	95
7	13	19	22	35	34	40	60	49	33	24	32	71
8	31	18	21	36	33	42	58	47	33	23	53	67
9	17	40	20	34	32	40	56	48	31	23	48	57
10	25	39	20	33	32	39	53	49	30	22	43	52
11	25	28	19	122	31	37	50	46	30	21	39	49
12	114	25	19	77	30	36	50	47	31	21	42	46
13	38	23	19	58	36	41	70	45	30	20	45	43
14	26	23	20	50	42	37	64	55	30	19	44	41
15	21	22	19	61	34	35	98	56	38	19	41	40
16	19	21	18	90	e34	34	74	94	37	19	36	42
17	18	20	19	65	e36	36	65	81	32	28	33	40
18	82	20	23	57	41	49	60	64	39	29	33	42
19	39	19	24	54	40	40	147	61	41	22	31	47
20	29	19	23	53	47	37	102	58	38	22	31	38
21	25	19	26	48	42	36	85	56	42	29	28	36
22	62	19	28	45	39	35	75	53	40	25	27	35
23	68	18	126	43	39	35	69	50	36	21	26	34
24	44	18	97	42	36	33	64	48	33	22	25	35
25	37	17	54	40	35	32	60	45	32	23	37	40
26	31	17	43	39	34	32	59	44	39	30	134	38
27	28	17	41	38	32	31	66	47	36	28	65	34
28	26	20	45	37	32	33	65	46	33	63	65	32
29	24	18	44	36	---	444	63	47	31	50	132	30
30	23	17	42	48	---	156	62	45	30	82	90	30
31	22	---	44	45	---	93	---	44	---	49	65	---
TOTAL	978	638	1033	1503	1012	1785	2079	1648	1052	896	1483	1442
MEAN	31.5	21.3	33.3	48.5	36.1	57.6	69.3	53.2	35.1	28.9	47.8	48.1
MAX	114	40	126	122	47	444	147	94	42	82	134	95
MIN	13	17	16	33	30	31	50	44	30	19	25	30
CFSM	2.70	1.82	2.85	4.14	3.09	4.92	5.92	4.54	3.00	2.47	4.09	4.11
IN.	3.11	2.03	3.28	4.78	3.22	5.68	6.61	5.24	3.34	2.85	4.72	4.58

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 1991, BY WATER YEAR (WY)

	MEAN	22.8	30.0	34.7	41.1	45.3	54.2	49.4	39.7	32.4	31.7	27.6	26.3
MAX	52.3	77.9	63.2	81.4	84.9	110	69.3	57.3	78.2	94.9	63.3	67.8	
(WY)	1990	1949	1949	1946	1990	1952	1991	1949	1989	1949	1949	1950	
MIN	7.30	8.69	14.5	14.5	24.7	20.7	27.2	17.2	11.6	10.9	9.64	8.21	
(WY)	1955	1955	1989	1955	1989	1988	1988	1988	1988	1988	1988	1954	

SUMMARY STATISTICS FOR 1990 CALENDAR YEAR FOR 1991 WATER YEAR WATER YEARS 1945 - 1991

ANNUAL TOTAL	14971	15549	
ANNUAL MEAN	41.0	42.6	36.2
HIGHEST ANNUAL MEAN			59.7
LOWEST ANNUAL MEAN			18.3
HIGHEST DAILY MEAN	375	Mar 17	467
LOWEST DAILY MEAN	13	Aug 17	6.6
ANNUAL SEVEN-DAY MINIMUM	13	Sep 25	6.6
INSTANTANEOUS PEAK FLOW		1920*	1920*
INSTANTANEOUS PEAK STAGE		5.32	5.32
INSTANTANEOUS LOW FLOW		9.4	3.6
ANNUAL RUNOFF (CFSM)	3.51	3.64	3.09
ANNUAL RUNOFF (INCHES)	47.60	49.44	41.99
10 PERCENT EXCEEDS	77	65	62
50 PERCENT EXCEEDS	29	37	30
90 PERCENT EXCEEDS	15	20	13

\* See REMARKS.

## TENNESSEE RIVER BASIN

03443000 FRENCH BROAD RIVER AT BLANTYRE, NC

LOCATION.--Lat 35°17'56", long 82°37'26", Transylvania County, Hydrologic Unit 06010105, on left bank 40 ft upstream from bridge on Secondary Road 1503, 700 ft east of railroad at Blantyre, 3.5 mi downstream from Little River, and at mile 183.7.

DRAINAGE AREA.--296 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1920 to current year. Monthly discharge only for some periods, published in WSP 1306.

REVISED RECORDS.--WSP 923: 1921-23, 1929, 1933, 1935-36(M), 1938, 1940.

GAGE.--Water-stage recorder. Datum of gage is 2,060.32 ft above National Geodetic Vertical Datum of 1929 (levels by Tennessee Valley Authority). Prior to July 5, 1930, nonrecording gage at same site and datum. The National Weather Service has telemetry at station.

REMARKS.--No estimated daily discharges. Records good except those above 2,600 ft<sup>3</sup>/s, which are fair. Considerable diurnal fluctuation at low flow caused by powerplant about 8 mi above station. Maximum gage height, 25.50 ft, from floodmarks.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1791, 27.1 ft July 16, 1916, from floodmarks (from studies by Tennessee Valley Authority).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	288	739	528	1360	1010	798	2750	1480	1310	850	1530	1350
2	317	717	509	1180	941	1490	1830	1330	1160	816	1440	1430
3	304	653	649	1100	913	1370	1600	1230	1340	815	1200	1230
4	350	620	1490	1120	888	1600	1450	1180	1130	737	1040	1120
5	470	618	976	1020	871	1300	1680	1160	1020	711	954	1090
6	328	685	798	963	876	1150	1760	1400	962	717	1020	1520
7	302	638	738	951	885	1160	1490	1210	924	674	1010	1130
8	394	588	692	1050	848	1120	1390	1100	894	663	1090	1280
9	437	706	612	997	797	1200	1400	1110	872	632	1160	1180
10	371	1670	590	929	746	1090	1340	1170	846	642	1120	1000
11	557	1050	600	2560	741	1010	1240	1170	825	694	1170	947
12	2150	860	595	3340	753	960	1170	1110	817	604	1060	908
13	2470	798	567	2060	764	1030	1480	1170	830	587	1170	851
14	1090	758	574	1530	1180	1040	2030	1130	768	562	1120	817
15	824	729	572	1380	994	951	2050	1190	791	536	1220	814
16	725	709	547	2690	853	898	2210	1290	850	512	1020	842
17	668	640	562	2130	850	866	1740	1800	904	592	919	843
18	1660	602	587	1650	1040	1210	1550	1640	985	828	869	916
19	1890	609	798	1460	1060	1150	2220	1870	1210	822	952	1100
20	1110	618	697	1460	1180	999	2890	1810	1150	744	874	994
21	895	606	782	1310	1190	937	2340	1580	1050	698	814	857
22	1390	557	758	1190	1060	903	1880	1470	1210	773	770	816
23	2690	552	1460	1110	1030	888	1650	1350	1050	646	744	783
24	1720	547	3640	1070	978	868	1520	1250	958	586	709	738
25	1330	537	2840	1030	927	827	1400	1160	903	769	718	741
26	1170	528	1510	980	895	807	1320	1110	927	785	2300	852
27	978	539	1230	950	836	793	1440	1100	1020	788	2770	765
28	888	565	1350	931	810	821	1570	1280	968	2090	1650	701
29	824	628	1350	907	---	3020	1490	1520	906	1270	2400	685
30	782	539	1390	972	---	6770	1670	1610	873	2850	2300	633
31	762	---	1540	1250	---	5140	---	1380	---	2450	1610	---
TOTAL	30134	20605	31531	42630	25916	44166	51550	41360	29453	27443	38723	28933
MEAN	972	687	1017	1375	926	1425	1718	1334	982	885	1249	964
MAX	2690	1670	3640	3340	1190	6770	2890	1870	1340	2850	2770	1520
MIN	288	528	509	907	741	793	1170	1100	768	512	709	633
CFSM	3.28	2.32	3.44	4.65	3.13	4.81	5.81	4.51	3.32	2.99	4.22	3.26
IN.	3.79	2.59	3.96	5.36	3.26	5.55	6.48	5.20	3.70	3.45	4.87	3.64

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1921 - 1991, BY WATER YEAR (WY)

	MEAN	763	828	1027	1178	1262	1383	1309	1082	873	740	769	694
MAX	3504	2486	2142	2783	2582	3169	2509	2339	1872	2214	2259	1828	
(WY)	1965	1980	1962	1937	1990	1979	1936	1973	1989	1949	1928	1979	
MIN	157	235	301	260	561	550	473	434	278	290	191	169	
(WY)	1955	1955	1956	1956	1941	1988	1986	1988	1988	1925	1925	1954	

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1921 - 1991
ANNUAL TOTAL	408638	412444	
ANNUAL MEAN	1120	1130	991
HIGHEST ANNUAL MEAN			1564
LOWEST ANNUAL MEAN			534
HIGHEST DAILY MEAN	6970	Mar 18	22700
LOWEST DAILY MEAN	281	Sep 29	123
ANNUAL SEVEN-DAY MINIMUM	305	Sep 27	133
INSTANTANEOUS PEAK FLOW			30000
INSTANTANEOUS PEAK STAGE			25.50*
INSTANTANEOUS LOW FLOW			119
ANNUAL RUNOFF (CFSM)	3.78	3.82	3.35
ANNUAL RUNOFF (INCHES)	51.36	51.83	45.49
10 PERCENT EXCEEDS	1960	1700	1710
50 PERCENT EXCEEDS	824	985	805
90 PERCENT EXCEEDS	394	598	359

\* See REMARKS.

## TENNESSEE RIVER BASIN

03446000 MILLS RIVER NEAR MILLS RIVER, NC

LOCATION.--Lat 35°23'55", long 82°35'42", Henderson County, Hydrologic Unit 06010105, on right bank 1.5 mi downstream from confluence of North and South Forks, 1.8 mi northwest of Mills River, 4.2 mi northwest of Horseshoe, and at mile 4.6.

DRAINAGE AREA.--66.7 mi<sup>2</sup>.

PERIOD OF RECORD.--September 1924 to September 1926, October 1933 to current year. Monthly discharge only for some periods, published in WSP 1306.

REVISED RECORDS.--WSP 823: Drainage area. WSP 923: 1935, 1937, 1939. WSP 1003: 1938, 1940-42. WSP 1143: 1940 (P). WSP 1276: 1926.

GAGE.--Water-stage recorder. Datum of gage is 2,088.47 ft above National Geodetic Vertical Datum of 1929 (levels by Tennessee Valley Authority). Prior to Oct. 1, 1926, nonrecording gage at site 500 ft upstream at datum 2.97 ft higher.

REMARKS.--No estimated daily discharges. Records good. City of Hendersonville diverted about 7.6 ft<sup>3</sup>/s from North Fork and Bradley Creek for municipal water supply. Maximum discharge, 13,400 ft<sup>3</sup>/s, from rating curve extended above 6,200 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow. Minimum discharge, 16 ft<sup>3</sup>/s, result of freezeup. Minimum discharge for current water year also occurred Oct. 3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40	112	76	206	154	137	368	255	208	240	330	276
2	39	106	76	192	148	337	318	238	186	348	291	294
3	39	102	132	190	146	282	287	226	189	349	246	255
4	54	99	220	190	142	292	265	220	175	274	216	238
5	65	99	135	180	139	244	334	220	164	248	210	229
6	44	106	119	171	148	219	297	228	157	223	231	217
7	40	96	110	176	143	203	268	204	153	204	252	207
8	68	92	104	190	134	200	253	195	149	196	263	212
9	56	133	98	176	129	188	244	201	144	185	234	192
10	53	249	95	167	127	180	232	206	138	179	233	182
11	85	156	92	477	123	171	216	195	134	179	227	177
12	517	137	90	439	121	164	209	192	138	164	248	169
13	236	126	88	331	135	181	254	210	140	156	258	161
14	144	117	92	280	212	171	247	198	163	149	271	157
15	113	112	87	268	157	159	326	190	174	145	272	153
16	99	108	87	455	139	152	298	287	199	144	235	164
17	90	105	84	345	143	151	262	253	251	164	212	157
18	412	100	92	298	162	195	242	229	282	188	212	156
19	258	97	115	269	166	167	481	260	300	160	231	160
20	172	95	98	258	199	158	512	246	439	164	198	145
21	141	92	118	234	184	152	527	242	350	153	181	137
22	246	90	130	215	170	148	408	225	330	143	173	134
23	423	89	516	202	168	147	348	212	288	135	168	130
24	273	86	699	195	156	140	311	199	273	131	159	133
25	225	84	351	186	149	134	285	187	254	152	181	153
26	191	82	264	178	145	132	269	180	273	208	562	146
27	163	81	234	172	137	130	298	187	268	231	425	127
28	147	84	252	168	133	144	291	211	249	531	304	121
29	135	85	245	161	---	1190	277	239	225	714	314	118
30	125	78	227	168	---	785	275	234	214	685	357	116
31	118	---	233	172	---	465	---	220	---	415	290	---
TOTAL	4811	3198	5359	7309	4209	7518	9202	6789	6607	7557	7984	5216
MEAN	155	107	173	236	150	243	307	219	220	244	258	174
MAX	517	249	699	477	212	1190	527	287	439	714	562	294
MIN	39	78	76	161	121	130	209	180	134	131	159	116
CFSM	2.33	1.60	2.59	3.53	2.25	3.64	4.60	3.28	3.30	3.65	3.86	2.61
IN.	2.68	1.78	2.99	4.08	2.35	4.19	5.13	3.79	3.68	4.21	4.45	2.91

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1925 - 1991, BY WATER YEAR (WY)

	125	141	163	194	217	242	237	190	150	122	128	114
MEAN	125	141	163	194	217	242	237	190	150	122	128	114
MAX	465	510	338	534	448	520	468	412	326	356	506	354
(WY)	1965	1980	1962	1937	1939	1979	1957	1973	1967	1989	1940	1979
MIN	24.8	35.2	40.7	43.5	88.9	87.5	79.7	76.2	41.7	38.6	25.4	22.8
(WY)	1955	1955	1940	1956	1941	1988	1986	1988	1988	1988	1925	1925

SUMMARY STATISTICS FOR 1990 CALENDAR YEAR FOR 1991 WATER YEAR WATER YEARS 1925 - 1991

ANNUAL TOTAL	69195	75759	
ANNUAL MEAN	190	208	168
HIGHEST ANNUAL MEAN			272
LOWEST ANNUAL MEAN			86.8
HIGHEST DAILY MEAN	1450	Mar 17	4470
LOWEST DAILY MEAN	39	Oct 2	18
ANNUAL SEVEN-DAY MINIMUM	40	Sep 27	46
INSTANTANEOUS PEAK FLOW			2660
INSTANTANEOUS PEAK STAGE			6.89
INSTANTANEOUS LOW FLOW			38*
ANNUAL RUNOFF (CFSM)			3.11
ANNUAL RUNOFF (INCHES)	38.59		42.25
10 PERCENT EXCEEDS	365		321
50 PERCENT EXCEEDS	145		185
90 PERCENT EXCEEDS	59		97
			56

\* See REMARKS.

## TENNESSEE RIVER BASIN

0344894205 NORTH FORK SWANNANOVA RIVER NEAR WALKERTOWN, NC

LOCATION.--Lat 35°41'07", long 82°19'58", Buncombe County, Hydrologic Unit 06010105, on left bank above Sugar Springs Cove and 0.6 miles above Burnett Reservoir, and 2.3 miles north of Walkertown.

DRAINAGE AREA.--14.5 mi<sup>2</sup>.

PERIOD OF RECORD.--February 1989 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,650 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good except those above 700 ft<sup>3</sup>/s, which are fair. Maximum discharge, 3,370 ft<sup>3</sup>/s, from rating curve extended above 700 ft<sup>3</sup>/s by logarithmic plotting. Minimum discharge for current water year also occurred on Oct. 4.

REVISIONS.--Maximum discharge for period February to September 1989 has been revised to 3370 ft<sup>3</sup>/s, Sept. 22. These figures supersede those published in the Water-Data Report for 1989.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.5	34	14	60	44	54	105	61	21	18	34	43
2	5.2	30	14	53	40	187	87	55	24	17	25	43
3	4.8	28	48	49	37	118	76	50	22	15	21	35
4	9.7	25	52	46	35	110	67	46	19	14	17	30
5	9.6	27	32	42	34	86	82	44	17	13	15	26
6	6.1	31	28	39	35	76	74	42	17	12	14	23
7	5.4	26	25	41	35	66	66	37	16	11	13	25
8	8.0	23	23	42	33	65	61	35	15	17	11	27
9	8.0	38	21	39	31	57	58	35	14	14	12	22
10	12	64	19	37	29	54	54	33	13	13	12	20
11	32	43	18	73	27	50	49	31	13	16	12	19
12	390	37	17	72	26	48	46	31	12	12	26	17
13	133	33	18	57	29	53	49	30	12	10	39	16
14	65	30	21	50	43	71	48	36	34	9.8	38	15
15	45	28	20	49	34	60	52	35	45	8.9	40	13
16	36	26	19	93	33	55	48	32	25	8.3	27	13
17	31	25	21	67	36	53	43	30	25	9.3	22	13
18	279	22	32	57	134	89	40	31	27	11	19	12
19	100	21	48	53	186	69	159	41	29	9.2	16	12
20	64	20	36	61	247	60	113	38	46	11	14	11
21	49	19	52	53	129	55	115	43	44	9.4	13	9.7
22	115	18	60	47	96	51	88	42	33	8.2	11	9.2
23	184	17	371	44	82	62	76	37	28	7.1	11	9.0
24	100	16	221	40	71	55	66	34	25	9.1	9.8	9.5
25	101	15	106	37	62	49	59	31	24	21	15	14
26	92	15	79	35	55	45	54	29	28	19	102	12
27	74	14	66	33	49	42	68	30	29	22	49	9.3
28	64	16	67	32	46	51	77	29	25	31	41	8.5
29	53	18	62	31	---	496	67	27	22	56	38	8.0
30	44	15	59	43	---	233	70	25	20	32	43	7.5
31	38	---	80	59	---	136	---	23	---	30	36	---
TOTAL	2163.3	774	1749	1534	1738	2756	2117	1123	724	494.3	795.8	531.7
MEAN	69.8	25.8	56.4	49.5	62.1	88.9	70.6	36.2	24.1	15.9	25.7	17.7
MAX	390	64	371	93	247	496	159	61	46	56	102	43
MIN	4.8	14	14	31	26	42	40	23	12	7.1	9.8	7.5
CFSM	4.82	1.78	3.89	3.42	4.28	6.14	4.87	2.50	1.67	1.10	1.77	1.22
IN.	5.55	1.99	4.49	3.94	4.46	7.08	5.43	2.88	1.86	1.27	2.04	1.37

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 1991, BY WATER YEAR (WY)

	MEAN	MAX	(WY)	MIN	(WY)
1989	62.2	69.8	1991	54.6	1990
1990	37.8	49.7	1990	25.8	1991
1991	49.3	56.4	1991	42.1	1990
1992	57.8	66.2	1990	49.5	1991
1993	73.0	120	1990	36.6	1989
1994	89.0	102	1991	76.4	1989
1995	49.9	70.6	1990	35.2	1990
1996	57.1	71.0	1990	36.2	1991
1997	38.4	68.1	1989	23.0	1990
1998	29.3	43.0	1989	15.9	1991
1999	18.4	25.7	1991	12.8	1989
2000	31.3	64.3	1989	11.8	1990

## SUMMARY STATISTICS

## FOR 1990 CALENDAR YEAR

## FOR 1991 WATER YEAR

## WATER YEARS 1989 - 1991

ANNUAL TOTAL	18964.7	16500.1	
ANNUAL MEAN	52.0	45.2	48.3
HIGHEST ANNUAL MEAN			51.4
LOWEST ANNUAL MEAN			45.2
HIGHEST DAILY MEAN	661	496	788
LOWEST DAILY MEAN	4.8	4.8	4.8
ANNUAL SEVEN-DAY MINIMUM	5.3	6.6	5.3
INSTANTANEOUS PEAK FLOW		1200	3370*
INSTANTANEOUS PEAK STAGE		5.89	7.57
INSTANTANEOUS LOW FLOW		4.5*	4.5*
ANNUAL RUNOFF (CFSM)	3.59	3.12	3.33
ANNUAL RUNOFF (INCHES)	48.69	42.36	45.30
10 PERCENT EXCEEDS	100	79	92
50 PERCENT EXCEEDS	35	34	35
90 PERCENT EXCEEDS	9.0	12	11

\* See REMARKS.

## TENNESSEE RIVER BASIN

03450000 BEETREE CREEK NEAR SWANNANOVA, NC

LOCATION.--Lat 35°39'11", long 82°24'20", Buncombe County, Hydrologic Unit 06010105, on left bank 0.5 mi downstream from Wolfe Branch, 0.8 mi upstream from Beetree Reservoir dam, 3.8 mi north of Swannanoa, and 4.8 mi above mouth.

DRAINAGE AREA.--5.46 mi<sup>2</sup>.

PERIOD OF RECORD.--February 1926 to September 1975, October 1979 to September 1981, Oct. 1985 to September 1986, and May 1987 to current year.

REVISED RECORDS.--WSP 823: Drainage area. WSP 893: 1928, 1936-37 (M). WSP 953: 1929 (M). WSP 1276: 1932.

GAGE.--Water-stage recorder and masonry control. Datum of gage is 2,728.39 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Maximum discharge, 1,370 ft<sup>3</sup>/s, from rating curve extended above 240 ft<sup>3</sup>/s on basis of computation of peak flow over weir. Minimum discharge, 0.3 ft<sup>3</sup>/s occurred several days in September and October 1954. Minimum discharge for current water year also occurred on Oct. 3, 4.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.4	9.7	4.3	16	11	13	36	19	6.9	4.0	6.2	18
2	1.3	8.8	4.1	15	10	31	30	17	6.4	3.7	6.2	14
3	1.2	7.9	6.3	14	10	28	26	16	6.4	3.6	6.9	11
4	2.5	7.3	7.4	13	9.4	28	23	16	5.9	3.3	5.3	9.1
5	1.8	8.7	6.3	12	9.0	24	28	15	5.2	3.1	4.4	7.7
6	1.4	8.7	6.2	11	9.0	21	25	15	4.8	3.0	3.9	6.6
7	1.2	7.3	5.9	12	8.7	19	23	13	4.8	2.8	3.5	6.0
8	1.8	6.8	5.6	12	8.3	18	21	12	4.5	2.9	3.1	5.0
9	1.8	10	5.2	11	7.7	17	21	12	4.1	2.7	3.4	4.3
10	2.7	16	4.9	10	7.2	16	19	12	3.9	2.5	3.2	3.9
11	5.1	12	4.8	14	6.8	15	17	11	3.7	2.8	3.0	3.8
12	49	11	4.6	15	6.5	15	16	11	3.6	2.4	7.0	3.5
13	25	10	4.5	14	6.9	15	15	12	3.7	2.6	8.5	3.3
14	14	8.9	5.2	13	9.6	19	15	12	4.5	2.2	8.3	3.2
15	10	7.8	4.9	13	8.6	17	15	21	4.7	2.0	8.8	2.8
16	7.8	7.4	4.6	19	8.6	16	14	22	3.7	1.9	6.6	3.5
17	6.4	7.1	5.2	17	9.6	15	13	18	5.2	2.3	5.7	3.3
18	37	6.7	7.3	15	29	18	12	16	5.0	2.7	4.5	2.8
19	23	6.2	10	14	37	15	28	18	7.0	2.2	3.9	3.2
20	16	5.9	8.7	15	47	15	29	16	11	2.2	3.6	2.8
21	12	5.6	9.5	14	35	14	35	15	7.2	2.1	3.2	2.4
22	19	5.3	10	13	27	13	29	15	6.0	1.8	2.9	2.4
23	42	5.1	67	11	23	17	25	13	5.5	1.6	2.7	2.3
24	27	4.8	67	10	20	15	22	12	5.2	3.8	2.5	2.5
25	34	4.5	40	9.3	18	14	20	11	5.0	5.0	2.9	3.9
26	31	4.3	26	9.0	16	13	18	11	6.5	5.3	5.1	3.0
27	23	4.1	21	8.6	14	12	19	10	5.9	4.2	3.7	2.4
28	19	5.1	19	8.3	13	15	20	9.9	4.9	7.5	4.8	2.2
29	15	5.4	17	8.0	---	135	19	9.1	4.5	19	6.2	2.0
30	13	4.5	16	11	---	77	21	8.4	4.1	9.7	18	1.9
31	11	---	19	14	---	47	---	7.5	---	7.4	14	---
TOTAL	456.4	222.9	427.5	391.2	425.9	747	654	425.9	159.8	122.3	172.0	142.8
MEAN	14.7	7.43	13.8	12.6	15.2	24.1	21.8	13.7	5.33	3.95	5.55	4.76
MAX	49	16	67	19	47	135	36	22	11	19	18	18
MIN	1.2	4.1	4.1	8.0	6.5	12	12	7.5	3.6	1.6	2.5	1.9
CFSM	2.70	1.36	2.53	2.31	2.79	4.41	3.99	2.52	.98	.72	1.02	.87
IN.	3.11	1.52	2.91	2.67	2.90	5.09	4.46	2.90	1.09	.83	1.17	.97

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1926 - 1991, BY WATER YEAR (WY)

	MEAN	6.45	8.42	10.4	12.9	15.5	18.9	16.7	11.9	8.36	6.34	6.52	5.16
MAX	33.8	45.3	25.4	38.5	43.0	43.1	34.1	28.5	27.0	37.9	61.8	21.2	
(WY)	1930	1980	1933	1937	1990	1975	1936	1973	1949	1949	1940	1928	
MIN	.65	1.23	1.58	1.99	4.46	5.25	5.21	4.68	1.82	1.34	1.15	.51	
(WY)	1955	1955	1940	1940	1941	1988	1986	1948	1988	1930	1956	1954	

SUMMARY STATISTICS FOR 1990 CALENDAR YEAR FOR 1991 WATER YEAR WATER YEARS 1926 - 1991

	ANNUAL TOTAL	5545.5	4347.7	
ANNUAL MEAN		15.2	11.9	10.6
HIGHEST ANNUAL MEAN				17.8
LOWEST ANNUAL MEAN				6.18
HIGHEST DAILY MEAN	198	Mar 17	135	Mar 29
LOWEST DAILY MEAN	1.2	Sep 8	1.2	Oct 3
ANNUAL SEVEN-DAY MINIMUM	1.3	Sep 27	1.5	Oct 1
INSTANTANEOUS PEAK FLOW			336	Mar 29
INSTANTANEOUS PEAK STAGE			4.13	Mar 29
INSTANTANEOUS LOW FLOW			1.2*	Oct 2
ANNUAL RUNOFF (CFSM)	2.78		2.18	1.95
ANNUAL RUNOFF (INCHES)	37.78		29.62	26.47
10 PERCENT EXCEEDS	32		23	21
50 PERCENT EXCEEDS	10		8.9	7.3
90 PERCENT EXCEEDS	1.8		2.8	1.7

\* See REMARKS.

03451000 SWANNANOA RIVER AT BILTMORE, NC

LOCATION.--Lat 35°34'06", long 82°32'42", Buncombe County, Hydrologic Unit 06010105, on left bank at Biltmore, 100 ft downstream from Biltmore Avenue Bridge, 200 ft upstream from Southern Railway bridge, and 1.6 mi upstream from mouth.

DRAINAGE AREA.--130 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1920 to September 1926, May 1934 to current year. Monthly discharge only for some periods, published in WSP 1306.

REVISED RECORDS.--WSP 803: 1921 (M), 1923 (M), 1925 (M). WSP 823: Drainage area. WSP 1306: 1921 (M), 1924 (M), 1926 (M).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,976.58 ft above National Geodetic Vertical Datum of 1929 levels by Tennessee Valley Authority. Dam 1, 1920, to Sept. 30, 1926, nonrecording gage at site 100 ft upstream at same datum. The National Weather Service has telemetry at station.

REMARKS. --No estimated daily discharges. Records good. Considerable regulation by Lake Craig 3.6 mi above station from 1925 to 1950 (reservoir silted). City of Asheville diverted an average of 35.2 ft<sup>3</sup>/s for water supply from Burnett Lake on North Fork Swannanoa River 20 mi above station (station 03448959) and Bee Tree Lake on Bee Tree Creek 13 mi above station (station 03450000); an average of 40.2 ft<sup>3</sup>/s was discharged as treated sewage effluent into the French Broad River below station. Textile mills, the town of Black Mountain, and recreational camps diverted about 8 ft<sup>3</sup>/s above station, of which about half was discharged into the French Broad River below station. Complete dam and diversion station on French Broad River at dam and sediment discharge, 18.40 mi from rating curve, extended above 9,100 ft<sup>3</sup>/s on basis of computation of peak flow over dam 3.6 mi above station. Minimum discharge, 1.1 ft<sup>3</sup>/s, occurred several days in October 1941.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage observed, 26 ft, discharge, 40,000 ft<sup>3</sup>/s in April 1791, from studies by Tennessee Valley Authority. Flood of July 1916 reached a stage of 20.7 ft, discharge, 23,000 ft<sup>3</sup>/s, from flood profile by Tennessee Valley Authority. Flood of Aug. 16, 1928, reached a stage of 18.74 ft, from floodmarks, discharge, 17,800 ft<sup>3</sup>/s. High stages are subject to backwater from French Broad River.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	38	124	70	214	149	189	543	259	102	105	82	171
2	39	110	69	194	137	501	430	234	98	88	84	117
3	34	107	82	192	130	460	357	215	105	79	90	99
4	52	102	90	188	125	435	313	203	99	79	69	94
5	52	101	78	165	118	351	421	203	90	82	63	95
6	42	104	78	151	122	305	348	214	87	72	63	95
7	43	92	76	166	119	268	306	177	87	70	65	83
8	79	87	78	181	111	310	286	162	86	77	62	78
9	48	155	74	155	106	262	279	163	83	76	74	74
10	59	235	69	147	102	235	266	158	81	70	61	71
11	120	158	68	287	98	214	232	149	79	68	58	68
12	836	134	66	273	93	200	215	168	80	63	102	64
13	362	117	66	239	103	214	222	172	83	66	105	64
14	156	108	74	206	176	252	217	211	101	59	125	68
15	107	101	68	221	129	224	225	170	112	58	109	60
16	86	96	68	362	109	212	204	187	130	56	81	59
17	78	94	72	274	113	200	189	184	153	60	73	73
18	482	89	98	239	327	254	177	153	155	69	67	60
19	206	82	129	223	390	229	560	191	120	68	65	60
20	160	78	101	237	571	210	671	172	199	75	61	58
21	148	75	107	212	487	193	674	167	113	59	59	55
22	287	77	119	185	364	181	477	165	111	61	57	54
23	699	77	702	169	319	219	388	156	103	53	56	54
24	407	76	1150	157	264	199	332	146	101	61	54	60
25	463	74	533	146	233	177	289	137	95	97	62	77
26	355	67	350	136	211	164	263	131	107	150	169	65
27	267	67	280	130	186	155	280	129	103	98	103	57
28	220	80	249	125	169	227	298	132	93	160	99	54
29	183	85	220	120	---	2390	279	124	87	335	135	54
30	157	69	215	129	---	1520	293	119	83	225	148	53
31	136	---	262	163	---	765	---	109	---	96	98	---
TOTAL	6401	3021	5761	5986	5561	11715	10034	5260	3126	2835	2599	2194
MEAN	206	101	186	193	199	378	334	170	104	91.5	83.8	73.1
MAX	836	235	1150	362	571	2390	674	259	199	335	169	171
MIN	34	67	66	120	93	155	177	109	79	53	54	53

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1921 - 1991, BY WATER YEAR (WY)

MEAN	99.5	120	141	186	227	275	249	188	135	104	100	88.6
MAX	569	604	385	581	598	740	560	480	387	503	828	421
(WY)	1965	1980	1962	1937	1990	1975	1936	1973	1949	1949	1940	1979
MIN	13.7	27.0	35.3	32.3	65.7	45.7	55.6	45.5	17.7	18.2	18.8	13.8
(WY)	1955	1982	1989	1956	1988	1988	1986	1988	1988	1986	1956	1954

### SUMMARY STATISTICS

FOR 1990 CALENDAR YEAR

FOR 1991 WATER YEAR

## WATER YEARS 1921 - 1991

ANNUAL TOTAL	83122		64493						
ANNUAL MEAN	228		177			159			
HIGHEST ANNUAL MEAN						277			1949
LOWEST ANNUAL MEAN						55.9			1988
HIGHEST DAILY MEAN	3140	Mar 17	2390	Mar 29	7560		Aug 13		1940
LOWEST DAILY MEAN	34	Oct 3	34	Oct 3	1.2		Oct 14		1941
ANNUAL SEVEN-DAY MINIMUM	38	Sep 27	43	Oct 1	7.3		Sep 13		1953
INSTANTANEOUS PEAK FLOW			4260	Mar 29	18400*		Aug 13		1940
INSTANTANEOUS PEAK STAGE			9.93	Mar 29	19.00		Aug 13		1940
INSTANTANEOUS LOW FLOW			26	Oct 3	1.1*		Oct 9		1941
ANNUAL RUNOFF (CFSM)	1.75		1.36		1.22				
ANNUAL RUNOFF (INCHES)	23.79		18.45		16.62				
10 PERCENT EXCEEDS	446		322		308				
50 PERCENT EXCEEDS	151		122		106				
90 PERCENT EXCEEDS	52		61		37				

\* See REMARKS.

## TENNESSEE RIVER BASIN

03451500 FRENCH BROAD RIVER AT ASHEVILLE, NC

LOCATION.--Lat 35°36'33", long 82°34'43", Buncombe County, Hydrologic Unit 06010105, on right bank 27 ft upstream from Pearson Bridge (Secondary Road 1348) at Asheville, 1.4 mi downstream from bridge on U.S. Highways 19 and 23, 3.2 mi downstream from Swannanoa River, and at mile 145.8.

DRAINAGE AREA.--945 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1895 to current year. Monthly discharge only for some periods, published in WSP 1306.

REVISED RECORDS.--WSP 823: Drainage area. WSP 1306: 1895-1909, 1901(M), 1914-15(M), 1917(M), 1920-22(M), 1927(M).

GAGE.--Water-stage recorder. Datum of gage is 1,950.28 ft above National Geodetic Vertical Datum of 1929. Sept. 17, 1895, to Dec. 31, 1901, nonrecording gage at present site at different datum. Mar. 19, 1903, to July 15, 1916, and Jan. 1, 1917, to Sept. 30, 1922, nonrecording gage at Smith bridge 1.5 mi upstream at datum 11.52 ft higher. Oct. 1, 1922, to Aug. 9, 1930, nonrecording gage at present site and datum. The National Weather Service has telemetry at station.

REMARKS.--No estimated daily discharges. Records good. Many small diversions from tributaries above station for water supply. Diversions by city of Asheville and others from upstream tributaries in the Swannanoa River basin totaled about 35.2 ft<sup>3</sup>/s (station 03451000), of which 40.2 ft<sup>3</sup>/s was discharged as treated effluent 4 mi downstream from station. Slight diurnal fluctuation and occasional slight regulation at low flow caused by powerplant 46 mi upstream and small reservoirs above station. Maximum discharge, 110,000 ft<sup>3</sup>/s, from floodmarks, from rating curve extended above 43,000 ft<sup>3</sup>/s. Minimum discharge, 239 ft<sup>3</sup>/s, occurred several days in August and September 1925.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage observed since at least 1791, that of July 16, 1916, and flood of June 17, 1876, reached a stage of 18 ft, from studies by Tennessee Valley Authority.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	808	1680	1230	2880	2210	1900	8800	3350	2630	1940	3270	2670
2	811	1600	1240	2570	2010	3520	5200	3050	2460	2000	2770	2420
3	821	1550	1310	2470	1940	3510	3750	2860	2460	2180	2510	2360
4	861	1450	2080	2440	1900	3810	3390	2770	2380	1900	2140	2140
5	1020	1420	2190	2300	1860	3250	3700	2730	2180	1770	1900	2070
6	982	1450	1720	2160	1860	2820	3950	2960	2060	1790	2000	2310
7	840	1470	1580	2110	1900	2640	3450	2880	1990	1660	2100	2190
8	938	1390	1530	2290	1830	2690	3200	2630	1940	1600	2230	2000
9	1040	1450	1440	2260	1770	2740	3150	2560	1890	1560	2410	2180
10	1020	3090	1340	2120	1690	2570	3080	2630	1830	1480	2150	1880
11	1310	2710	1310	3380	1640	2390	2900	2610	1780	1630	2300	1760
12	4540	2040	1320	5850	1630	2270	2760	2580	1760	1510	2290	1670
13	6360	1820	1310	5230	1660	2300	2830	2640	1830	1400	2630	1610
14	4170	1700	1330	3600	2370	2460	3570	2690	1780	1330	2450	1520
15	2200	1640	1320	2950	2320	2270	3720	2640	1910	1270	2570	1480
16	1760	1580	1290	4500	1910	2140	3980	2620	1940	1220	2250	1830
17	1570	1530	1270	4980	1860	2060	3520	3390	2330	1270	1960	1600
18	3270	1430	1370	3820	2310	2410	3170	3170	2440	1550	1800	1560
19	4150	1370	1650	3180	2510	2630	4500	3920	2450	1670	1820	1620
20	2770	1380	1660	3020	2850	2310	5560	3720	3230	1730	1830	1890
21	2110	1380	1620	2910	2870	2160	7530	3280	2540	1530	1660	1600
22	2370	1340	1720	2630	2560	2090	5280	3080	2600	1480	1540	1460
23	6040	1310	3020	2430	2430	2140	4060	2880	2740	1450	1480	1430
24	4740	1290	8080	2310	2340	2050	3610	2710	2330	1310	1440	1420
25	3570	1270	5730	2240	2190	1940	3310	2550	2160	1830	1410	1460
26	3270	1240	4120	2150	2110	1870	3130	2430	2160	2070	2640	1520
27	2540	1230	2870	2080	2010	1830	3230	2380	2270	1930	4230	1470
28	2220	1290	2880	2040	1910	2000	3500	2500	2200	4140	3470	1340
29	2000	1370	2880	1990	---	9330	3300	2830	2060	5250	3050	1290
30	1850	1340	2770	1980	---	14000	3510	3300	1960	4370	3590	1240
31	1740	---	3050	2290	---	11500	---	2860	---	4280	3050	---
TOTAL	73691	46810	68230	89090	58450	103600	118640	89200	66290	62100	72940	52990
MEAN	2377	1560	2201	2874	2087	3342	3955	2877	2210	2003	2353	1766
MAX	6360	3090	8080	5850	2870	14000	8800	3920	3230	5250	4230	2670
MIN	808	1230	1230	1980	1630	1830	2760	2380	1760	1220	1410	1240
CFSM	2.52	1.65	2.33	3.04	2.21	3.54	4.18	3.04	2.34	2.12	2.49	1.87
IN.	2.90	1.84	2.69	3.51	2.30	4.08	4.67	3.51	2.61	2.44	2.87	2.09

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1896 - 1991, BY WATER YEAR (WY)

	1896	1903	2099	2365	2638	2987	2746	2196	1873	1728	1688	1471
MEAN	1588	1603	2099	2365	2638	2987	2746	2196	1873	1728	1688	1471
MAX	7025	5121	5700	6068	5673	7928	5705	4961	5774	11500	8362	4967
(WY)	1965	1980	1915	1937	1990	1899	1899	1973	1909	1916	1901	1906
MIN	353	507	636	548	1083	1037	973	859	547	559	328	346
(WY)	1955	1932	1956	1956	1931	1988	1986	1988	1988	1986	1925	1954

## SUMMARY STATISTICS

## FOR 1990 CALENDAR YEAR

## FOR 1991 WATER YEAR

## WATER YEARS 1896 - 1991

	1990	1991	1896-1991
ANNUAL TOTAL	927524	902031	
ANNUAL MEAN	2541	2471	2079
HIGHEST ANNUAL MEAN			3671
LOWEST ANNUAL MEAN			1004
HIGHEST DAILY MEAN	15500	14000	66000
LOWEST DAILY MEAN	797	808	239
ANNUAL SEVEN-DAY MINIMUM	824	878	258
INSTANTANEOUS PEAK FLOW		17200	110000*
INSTANTANEOUS PEAK STAGE		8.47	23.10*
INSTANTANEOUS LOW FLOW		789	239*
ANNUAL RUNOFF (CFSM)	2.69	2.62	2.20
ANNUAL RUNOFF (INCHES)	36.51	35.51	29.90
10 PERCENT EXCEEDS	4460	3710	3610
50 PERCENT EXCEEDS	2040	2180	1620
90 PERCENT EXCEEDS	1050	1340	780

\* See REMARKS.



## TENNESSEE RIVER BASIN

03453500 FRENCH BROAD RIVER AT MARSHALL, NC--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1957-67, 1973 to current year.

## PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1964 to September 1967, August 1973 to September 1978, March 1979 to September 1984.

WATER TEMPERATURES: October 1957 to September 1967, August 1973 to September 1978, March 1979 to September 1984.

INSTRUMENTATION.--Water-quality monitor since October 1980.

REMARKS.--Station operated as part of NASQAN network from March 1979 to present. Daily records of specific conductance for water years 1958-64 are available in files of district office in Raleigh, NC.

## EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 265 microsiemens Oct. 18, 1981; minimum daily, 33 microsiemens May 31, 1976.

WATER TEMPERATURE: Maximum, 32.5°C, July 5, 1982, July 26, 1984; minimum daily, 0.0°C on several days during the winter months of most years.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	BARO-METRIC PRES-SURE (MM OF HG)	OXYGEN, DIS-SOLVED (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI, FECAL, KF AGAR (COLS. PER 100 ML)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
DEC 11...	1200	1410	75	6.2	5.0	2.0	724	12.2	54	42	4.4	1.2
FEB 13...	0930	1710	76	6.3	6.0	5.0	712	13.9	K140	20	4.0	1.1
MAY 20...	1130	4360	48	7.2	16.5	52	725	13.8	K3700	K2300	3.2	1.0
AUG 19...	0930	2070	68	6.8	21.5	--	716	7.4	K17000	K8100	--	--
DATE		SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE WATER DIS IT FIELD (MG/L AS HCO3)	ALKA-LINITY WAT DIS TOT IT FIELD (MG/L AS CaCO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)
DEC 11...	11	57	1	1.6	41	34	6.7	6.6	0.10	9.5	55	0.660
FEB 13...	8.4	53	1	1.4	29	24	6.4	6.5	<0.10	9.5	50	0.670
MAY 20...	4.3	40	0.5	1.6	29	24	1.6	2.5	<0.10	9.2	39	0.470
AUG 19...	--	--	--	--	10	8	--	--	--	--	--	0.700

## TENNESSEE RIVER BASIN

03453500 FRENCH BROAD RIVER AT MARSHALL, NC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS NH4)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)
DEC 11...	0.660	0.040	0.040	0.700	0.700	0.130	0.120	0.17	0.15	0.27	--	0.40
FEB 13...	0.680	0.030	0.020	0.700	0.700	0.070	0.060	0.09	0.08	0.33	--	0.40
MAY 20...	0.510	0.040	0.020	0.510	0.530	0.080	0.080	0.10	0.10	0.72	--	0.80
AUG 19...	0.730	0.030	0.020	0.730	0.750	0.040	0.040	0.05	0.05	0.76	0.26	0.80

DATE	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS NO3)	NITRO- GEN DIS- SOLVED (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHATE, TOTAL (MG/L AS PO4)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, TOTAL (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, DIS- SOLVED (MG/L AS PO4)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)
DEC 11...	--	1.1	4.9	--	0.120	0.28	0.080	0.090	0.070	0.21	40
FEB 13...	--	1.1	4.9	--	0.120	0.25	0.080	0.080	0.070	0.21	30
MAY 20...	--	1.3	5.8	--	0.210	0.15	0.050	0.050	0.030	0.09	110
AUG 19...	0.30	1.5	6.8	1.0	0.210	0.25	0.090	0.080	0.070	0.21	--

DATE	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
DEC 11...	<1	13	<0.5	<1.0	3	<3	5	150	1	<4	12
FEB 13...	<1	12	<0.5	<1.0	<1	<3	3	110	<1	5	10
MAY 20...	<1	11	<0.5	<1.0	<1	<3	4	110	2	<4	3
AUG 19...	--	--	--	--	--	--	--	--	--	--	--

DATE	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
DEC 11...	<0.1	<10	3	<1	<1.0	26	<6	10	6	23	29
FEB 13...	<0.1	<10	1	<1	<1.0	23	<6	9	9	42	48
MAY 20...	<0.1	<10	1	<1	<1.0	19	<6	9	120	1410	77
AUG 19...	--	--	--	--	--	--	--	--	97	542	46

03455500 WEST FORK PIGEON RIVER ABOVE LAKE LOGAN NEAR HAZELWOOD, NC

LOCATION.--Lat 35°23'46", long 82°56'17", Haywood County, Hydrologic Unit 06010106, on right bank at upstream side of bridge on Secondary Road 1216, 600 ft upstream from Big Creek, 1.1 mi upstream from Lake Logan, 6.7 mi southeast of Hazelwood, and at mile 9.3.

DRAINAGE AREA.--27.6 mi<sup>2</sup>.

PERIOD OF RECORD.--February 1954 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,976.00 ft above National Geodetic Vertical Datum of 1929 (Tennessee Valley Authority bench mark). Landline telemetry at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Maximum gage height, 9.50 ft, from floodmarks. Minimum discharge, 9.4 ft<sup>3</sup>/s, also occurred Sept. 30, 1954. Minimum discharge for current year also occurred Oct. 3, 4.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	56	37	165	95	310	225	140	144	105	78	172
2	18	53	37	146	90	454	196	126	115	107	78	178
3	18	51	306	154	86	368	175	117	108	95	75	112
4	72	49	119	141	82	267	165	120	103	77	60	114
5	31	60	69	122	81	204	254	121	91	70	57	122
6	22	60	63	113	95	185	174	125	86	65	68	95
7	21	48	58	132	91	174	154	105	80	62	84	92
8	42	46	55	137	81	164	165	98	74	60	98	92
9	30	162	50	113	76	149	176	103	70	56	114	80
10	67	131	49	105	71	139	159	109	67	53	89	74
11	60	75	47	346	69	130	138	101	64	50	85	70
12	524	66	46	198	67	126	134	127	70	48	195	66
13	104	61	47	157	129	188	200	134	71	45	168	62
14	70	57	59	140	249	162	156	107	71	43	197	60
15	56	54	54	157	116	133	359	120	136	42	139	57
16	49	52	66	240	117	124	180	136	93	41	106	58
17	45	51	65	149	125	121	157	130	79	68	92	60
18	639	48	132	134	e245	214	143	139	75	119	83	55
19	134	46	134	129	e300	139	571	148	78	64	76	57
20	94	45	90	139	463	126	265	121	104	55	76	51
21	79	43	105	116	249	118	222	123	95	51	66	47
22	260	42	105	104	202	114	190	109	76	45	62	46
23	221	44	1170	113	189	140	171	100	73	41	58	44
24	123	41	450	97	163	113	156	92	68	40	56	49
25	108	39	238	92	148	105	142	86	65	51	83	80
26	93	38	183	88	136	100	135	81	113	80	666	56
27	82	38	208	85	123	96	182	114	97	61	143	46
28	76	49	252	86	116	134	172	111	98	200	109	43
29	68	49	189	83	---	1200	163	284	93	105	184	41
30	63	38	177	178	---	397	164	251	109	97	180	40
31	59	---	257	128	---	274	---	139	---	133	116	---
TOTAL	3347	1692	4917	4287	4054	6668	5843	3917	2666	2229	3741	2219
MEAN	108	56.4	159	138	145	215	195	126	88.9	71.9	121	74.0
MAX	639	162	1170	346	463	1200	571	284	144	200	666	178
MIN	18	38	37	83	67	96	134	81	64	40	56	40
CFSM	3.91	2.04	5.75	5.01	5.25	7.79	7.06	4.58	3.22	2.61	4.37	2.68
IN.	4.51	2.28	6.63	5.78	5.46	8.99	7.88	5.28	3.59	3.00	5.04	2.99

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 1991, BY WATER YEAR (WY)

	MEAN	74.1	87.6	111	119	154	163	145	113	83.1	61.8	55.3	57.3
MAX	229	301	234	207	355	312	291	289	213	207	165	260	
(WY)	1965	1980	1962	1974	1966	1975	1983	1976	1967	1967	1967	1979	
MIN	13.5	26.8	29.7	34.0	68.7	53.8	47.8	51.6	30.8	25.3	20.9	13.0	
(WY)	1955	1979	1966	1981	1968	1988	1986	1988	1988	1986	1954	1954	

SUMMARY STATISTICS FOR 1990 CALENDAR YEAR FOR 1991 WATER YEAR WATER YEARS 1954 - 1991

ANNUAL TOTAL	43350	45580	
ANNUAL MEAN	119	125	102
HIGHEST ANNUAL MEAN			143
LOWEST ANNUAL MEAN			59.6
HIGHEST DAILY MEAN	1320	1200	4500
LOWEST DAILY MEAN	18	18	10
ANNUAL SEVEN-DAY MINIMUM	19	29	11
INSTANTANEOUS PEAK FLOW		3900	9740
INSTANTANEOUS PEAK STAGE		6.32	9.50*
INSTANTANEOUS LOW FLOW		18*	9.4*
ANNUAL RUNOFF (CFSM)	4.30	4.52	3.71
ANNUAL RUNOFF (INCHES)	58.43	61.43	50.39
10 PERCENT EXCEEDS	240	203	186
50 PERCENT EXCEEDS	71	100	71
90 PERCENT EXCEEDS	29	47	27

\* See REMARKS.

## TENNESSEE RIVER BASIN

0345577330 WEST FORK PIGEON RIVER NEAR RETREAT, NC

LOCATION.--Lat 35°25'36", long 82°55'12", Haywood County, Hydrologic Unit 06010106, on right bank at upstream side of bridge on State Highway 215, and 1.6 mi southwest of Retreat.

DRAINAGE AREA.--33.5 mi<sup>2</sup>.

PERIOD OF RECORD.--March 1988 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 2,839 ft above National Geodetic Vertical Datum from topographic map. Landline telemetry at station.

REMARKS.--No estimated daily discharges. Records fair. Considerable regulation at times caused by Lake Logan (station 03455773). Several measurements of water temperature were made during the year. Minimum discharge for current water year also occurred on Oct. 6.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34	65	42	186	98	259	266	176	210	135	80	144
2	37	62	39	165	93	568	231	158	159	119	81	212
3	40	58	300	167	90	401	204	146	139	118	79	115
4	39	56	151	161	86	305	187	152	131	92	63	105
5	31	63	79	140	82	229	286	148	113	85	58	136
6	32	74	72	130	93	208	201	155	105	79	67	95
7	40	56	68	143	94	199	177	130	101	73	89	90
8	42	53	64	157	83	185	181	119	95	72	96	93
9	41	154	59	129	76	164	203	122	90	67	128	80
10	44	166	58	119	73	154	185	128	85	65	92	72
11	37	86	55	359	71	141	155	126	81	61	89	69
12	462	77	53	220	70	139	148	149	89	60	213	65
13	132	69	52	172	123	208	214	165	93	56	166	61
14	87	62	63	154	292	184	174	129	94	53	229	59
15	71	58	61	156	131	152	389	139	153	52	158	58
16	62	56	72	274	106	139	202	164	120	50	115	58
17	57	55	67	159	131	136	175	159	101	71	97	61
18	665	51	126	142	344	235	159	166	95	131	87	56
19	155	50	174	134	365	157	621	182	95	78	80	56
20	107	49	97	149	540	139	325	149	118	65	80	52
21	88	48	120	125	292	132	274	147	121	63	70	48
22	253	47	114	109	234	128	238	133	94	54	65	46
23	265	47	1230	104	214	155	213	121	90	49	61	45
24	141	46	521	99	186	127	196	112	84	47	58	47
25	118	41	262	94	166	116	178	103	80	52	72	80
26	105	42	206	91	153	109	171	99	133	88	663	60
27	92	43	221	89	136	108	209	130	118	74	156	47
28	85	49	274	89	129	146	216	135	120	208	108	44
29	78	57	212	88	---	1350	201	279	103	127	169	42
30	72	42	196	174	---	502	208	345	127	103	203	41
31	68	---	283	140	---	332	---	181	---	140	126	---
TOTAL	3580	1882	5391	4618	4551	7507	6787	4747	3337	2587	3898	2237
MEAN	115	62.7	174	149	163	242	226	153	111	83.5	126	74.6
MAX	665	166	1230	359	540	1350	621	345	210	208	663	212
MIN	31	41	39	88	70	108	148	99	80	47	58	41
(†)	+3.1	-0.1	+0.4	-0.2	+0.1	+0.2	-0.1	-0.1	+0.1	-0.1	-0.1	-0.2
MEAN‡	118	62.6	174	149	163	242	226	153	111	83.4	126	74.4

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 1991, BY WATER YEAR (WY)

	1988	1989	1990	1991	1988	1989	1990	1991	1988	1989	1990	1991
MEAN	108	83.6	119	151	222	206	156	144	105	97.7	69.2	69.6
MAX	161	115	174	184	360	309	226	193	210	209	126	136
(WY)	1990	1990	1991	1990	1990	1990	1991	1990	1989	1991	1989	1989
MIN	48.2	62.7	52.1	119	143	62.6	123	62.9	40.0	32.3	35.9	30.6
(WY)	1989	1991	1989	1989	1989	1988	1988	1988	1988	1988	1988	1988

## SUMMARY STATISTICS FOR 1990 CALENDAR YEAR FOR 1991 WATER YEAR WATER YEARS 1988 - 1991

	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1988 - 1991
ANNUAL TOTAL	52513	51122	
ANNUAL MEAN	144	140	140
HIGHEST ANNUAL MEAN			148
LOWEST ANNUAL MEAN			132
HIGHEST DAILY MEAN	1760	1350	1760
LOWEST DAILY MEAN	26	31	22
ANNUAL SEVEN-DAY MINIMUM	30	36	25
INSTANTANEOUS PEAK FLOW		5310	5960
INSTANTANEOUS PEAK STAGE		6.48	6.73
INSTANTANEOUS LOW FLOW		28*	22
ANNUAL RUNOFF (CFSM)	4.29	4.18	4.18
ANNUAL RUNOFF (INCHES)	58.31	56.77	56.77
10 PERCENT EXCEEDS	283	232	236
50 PERCENT EXCEEDS	90	115	91
90 PERCENT EXCEEDS	35	52	36

† Change in contents, equivalent in cubic feet per second, in Lake Logan.

‡ Adjusted for change in Lake contents.

\* See REMARKS.

## TENNESSEE RIVER BASIN

03456100 WEST FORK PIGEON RIVER AT BETHEL, NC

LOCATION.--Lat 35°27'48", long 82°54'00", Haywood County, Hydrologic Unit 06010106, on left bank 20 ft downstream from bridge on Secondary Road 1112, 0.6 mi southwest of Bethel, 1.6 mi upstream from confluence with East Fork Pigeon River, and 5.6 mi downstream from Lake Logan.

DRAINAGE AREA.--58.4 mi<sup>2</sup>.

PERIOD OF RECORD.--January 1981 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,667.78 ft above National Geodetic Vertical Datum of 1929 (levels by Tennessee Valley Authority). Landline telemetry at station.

REMARKS.--No estimated daily discharges. Records good. Considerable regulation at times caused by Lake Logan (station 03455773). Several measurements of water temperature were made during the year. Minimum discharge for current water year also occurred Oct. 6.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	44	90	59	264	134	253	443	226	282	164	131	158
2	45	85	59	234	128	812	383	204	206	141	124	269
3	49	81	291	232	122	544	338	190	186	148	121	154
4	61	78	202	224	117	479	308	194	181	117	99	141
5	44	84	108	194	114	373	404	192	160	109	92	178
6	39	100	98	178	127	330	312	199	150	102	96	135
7	46	76	91	192	127	305	278	169	141	96	115	129
8	51	73	86	209	113	291	273	160	133	95	121	129
9	48	153	80	177	107	257	303	163	126	89	176	114
10	53	228	78	163	103	242	279	166	120	85	127	106
11	54	118	75	436	99	223	242	164	114	81	124	102
12	532	104	73	317	96	215	230	187	123	79	305	96
13	164	96	71	250	140	295	300	203	127	74	242	91
14	105	91	88	221	380	268	257	168	125	71	300	87
15	84	86	82	209	189	227	470	173	168	69	237	89
16	74	82	91	358	155	210	297	204	157	68	178	86
17	70	82	83	230	174	200	261	199	139	89	152	89
18	718	76	133	206	441	312	241	212	127	148	135	82
19	212	74	210	194	465	226	702	239	124	100	125	84
20	144	72	123	205	669	206	439	200	148	88	121	77
21	120	69	145	176	440	193	375	192	153	82	108	72
22	265	68	138	156	353	187	326	177	123	71	100	69
23	343	68	1290	150	317	215	294	162	121	66	94	68
24	186	67	714	147	274	182	267	151	115	65	90	70
25	160	61	377	137	244	168	244	142	109	72	96	107
26	143	60	287	132	225	161	231	135	168	106	728	89
27	126	60	300	127	200	156	261	159	158	113	234	71
28	118	67	370	126	188	211	275	168	156	288	163	65
29	108	81	291	123	---	1790	256	288	131	239	202	63
30	100	61	267	200	---	812	265	455	150	158	240	61
31	95	---	374	191	---	543	---	238	---	206	174	---
TOTAL	4401	2591	6734	6358	6241	10886	9554	6079	4421	3489	5350	3131
MEAN	142	86.4	217	205	223	351	318	196	147	113	173	104
MAX	718	228	1290	436	669	1790	702	455	282	288	728	269
MIN	39	60	59	123	96	156	230	135	109	65	90	61

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1981 - 1991, BY WATER YEAR (WY)

	MEAN	82.7	117	176	157	252	249	219	177	107	93.8	77.2	67.3
MAX	242	203	334	266	511	443	481	368	255	281	173	207	
(WY)	1990	1986	1984	1990	1990	1983	1984	1989	1989	1989	1991	1989	
MIN	36.7	43.0	83.5	53.5	102	83.6	83.5	81.7	53.0	49.5	30.8	33.1	
(WY)	1982	1982	1989	1981	1986	1988	1986	1986	1988	1988	1986	1986	

## SUMMARY STATISTICS

## FOR 1990 CALENDAR YEAR

## FOR 1991 WATER YEAR

## WATER YEARS 1981 - 1991

ANNUAL TOTAL	70814	69235	
ANNUAL MEAN	194	190	
HIGHEST ANNUAL MEAN			151
LOWEST ANNUAL MEAN			207
HIGHEST DAILY MEAN	2230	Feb 16	1990
LOWEST DAILY MEAN	39	Sep 7	1988
ANNUAL SEVEN-DAY MINIMUM	43	Sep 4	87.5
INSTANTANEOUS PEAK FLOW			207
INSTANTANEOUS PEAK STAGE			1988
INSTANTANEOUS LOW FLOW			3810
ANNUAL RUNOFF (CFSM)	3.32	3.25	9.2
ANNUAL RUNOFF (INCHES)	45.11	44.10	16
10 PERCENT EXCEEDS	383	317	290
50 PERCENT EXCEEDS	123	152	101
90 PERCENT EXCEEDS	48	71	46

\* See REMARKS.

## TENNESSEE RIVER BASIN

03456500 EAST FORK PIGEON RIVER NEAR CANTON, NC

LOCATION.--Lat 35°27'42", long 82°52'13", Haywood County, Hydrologic Unit 06010106, on right bank 800 ft upstream from bridge on U.S. Highway 276, 0.3 mi downstream from Dix Creek, 1.6 mi upstream from confluence with West Fork Pigeon River, and 5.2 mi southwest of Canton.

DRAINAGE AREA.--51.5 mi<sup>2</sup>.

PERIOD OF RECORD.--March 1954 to current year.

REVISED RECORDS.--WDR NC-73-1: 1966(M), 1972(M).

GAGE.--Water-stage recorder. Datum of gage is 2,674.34 ft above National Geodetic Vertical Datum of 1929 (Tennessee Valley Authority bench mark). Landline telemetry at station.

REMARKS.--No estimated daily discharges. Records good. Several measurements of water temperature were made during the year. Maximum discharge, 12,000 ft<sup>3</sup>/s, from rating curve extended above 5,470 ft<sup>3</sup>/s, on basis of contracted-opening measurement of peak flow. Minimum discharge, 12 ft<sup>3</sup>/s, also occurred on Dec. 11, 1981, both result of freezeup.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	33	111	70	221	127	189	347	170	192	159	217	214
2	32	105	70	204	123	713	291	159	183	175	191	194
3	31	101	296	200	119	503	254	152	195	176	164	173
4	59	96	232	191	116	482	234	151	171	149	147	168
5	49	97	149	176	113	372	294	149	155	134	137	172
6	35	104	134	166	116	312	238	147	144	123	134	153
7	33	91	123	168	114	272	217	133	135	117	137	146
8	37	87	115	174	108	258	206	126	127	114	126	139
9	40	150	108	160	104	232	205	129	121	104	148	127
10	55	217	103	152	101	218	193	136	115	101	130	120
11	91	144	99	436	99	200	176	133	110	96	130	115
12	536	131	95	350	97	191	169	145	113	90	221	108
13	181	121	93	275	116	219	224	142	113	87	183	103
14	123	114	101	240	230	203	197	131	113	83	197	101
15	101	108	94	233	144	184	383	128	112	80	177	99
16	89	104	93	393	131	174	270	151	127	79	153	96
17	81	101	89	280	140	167	237	149	157	94	139	93
18	516	96	98	250	216	211	216	200	145	129	136	92
19	242	93	129	230	210	174	565	267	139	105	128	91
20	180	90	103	220	291	165	421	210	195	110	121	84
21	153	87	125	198	235	157	367	199	158	94	113	81
22	264	85	126	181	207	154	303	181	149	86	107	79
23	335	83	801	170	198	163	263	165	143	79	102	77
24	233	81	676	163	179	148	233	154	139	76	97	79
25	205	78	385	154	166	141	211	144	133	81	109	93
26	178	76	291	147	158	136	199	134	161	89	709	84
27	158	75	277	141	148	131	206	152	160	135	325	74
28	146	78	306	138	141	155	205	152	160	540	229	71
29	134	80	258	132	---	1230	191	178	142	557	301	69
30	124	72	238	148	---	690	186	244	137	406	278	67
31	117	---	265	152	---	440	---	197	---	316	213	---
TOTAL	4591	3056	6142	6443	4247	8984	7701	5008	4344	4764	5699	3362
MEAN	148	102	198	208	152	290	257	162	145	154	184	112
MAX	536	217	801	436	291	1230	565	267	195	557	709	214
MIN	31	72	70	132	97	131	169	126	110	76	97	67
CFSM	2.88	1.98	3.85	4.04	2.95	5.63	4.98	3.14	2.81	2.98	3.57	2.18
IN.	3.32	2.21	4.44	4.65	3.07	6.49	5.56	3.62	3.14	3.44	4.12	2.43

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 1991, BY WATER YEAR (WY)

	MEAN	109	129	148	152	203	233	215	161	116	76.3	72.7	81.8
MAX	363	484	337	282	411	541	480	453	339	268	184	436	
(WY)	1965	1980	1962	1978	1966	1979	1957	1976	1967	1989	1991	1979	
MIN	17.1	27.9	42.4	33.8	71.9	60.9	63.2	59.8	35.7	25.3	26.5	16.0	
(WY)	1955	1955	1956	1956	1986	1988	1986	1986	1988	1986	1954	1954	

SUMMARY STATISTICS

FOR 1990 CALENDAR YEAR

FOR 1991 WATER YEAR

WATER YEARS 1954 - 1991

ANNUAL TOTAL	59986	64341	
ANNUAL MEAN	164	176	142
HIGHEST ANNUAL MEAN			204
LOWEST ANNUAL MEAN			71.9
HIGHEST DAILY MEAN	1760	Mar 17	4390
LOWEST DAILY MEAN	30	Aug 19	14
ANNUAL SEVEN-DAY MINIMUM	32	Aug 15	14
INSTANTANEOUS PEAK FLOW			3430
INSTANTANEOUS PEAK STAGE			5.94
INSTANTANEOUS LOW FLOW			30
ANNUAL RUNOFF (CFSM)	3.19	3.42	2.76
ANNUAL RUNOFF (INCHES)	43.33	46.48	37.44
10 PERCENT EXCEEDS	306	284	262
50 PERCENT EXCEEDS	114	147	101
90 PERCENT EXCEEDS	39	84	36

\* See REMARKS.

## TENNESSEE RIVER BASIN

03456991 PIGEON RIVER NEAR CANTON, NC

LOCATION.--Lat 35°31'19", long 82°50'53", Haywood County, Hydrologic Unit 06010106, on right bank 600 ft upstream from State Highway 215 bridge, 1.3 miles upstream from U.S. Highways 19 and 23 at Canton, and at mile 64.9.

DRAINAGE AREA.--130 mi<sup>2</sup>.

PERIOD OF RECORD.--May 1907 to June 1909, October 1928 to current year. Monthly discharge only for some periods published in WSP 1306. Published as Pigeon River at Canton, NC (03457000) May 1907 to June 1909, October 1928 to September 1983.

REVISED RECORDS.--WSP 823: Drainage area. WSP 853: 1929-37(M). WSP 1306: 1903(M).

GAGE.--Water-stage recorder. Datum of gage is 2,581.66 ft above National Geodetic Vertical Datum of 1929 (Tennessee Valley Authority bench mark). Prior to June 1909, nonrecording gage at bridge 1.2 mi downstream at different datum. Dec. 6, 1928, to Jan. 3, 1929, nonrecording gage at site 0.8 mi downstream at different datum. Prior to Oct. 1, 1983, water-stage recorder at site 0.8 mile downstream at different datum. Land line telemetry at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Occasional diurnal fluctuation and considerable regulation at low flow caused by Lake Logan on West Fork Pigeon River 11.2 mi upstream (station 03455773). Maximum discharge before regulation 21,500 ft<sup>3</sup>/s, Aug. 16, 1928, gage height, 16.40 ft. Maximum discharge since regulation, 31,600 ft<sup>3</sup>/s, gage height, 20.75, at former site from floodmarks in gage well. Minimum discharge before regulation, 39 ft<sup>3</sup>/s, Sept. 3, 1930. Minimum discharge since regulation, 15 ft<sup>3</sup>/s, at former site, result of freezeup. Minimum discharge for current water year also occurred Oct. 5, 6, 7.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of about 1810 is believed to have been approximately equal to that of Aug. 30, 1940, and flood of June 15, 1876, reached a stage of 18.3 ft, discharge, 25,700 ft<sup>3</sup>/s, at former site, from studies by Tennessee Valley Authority.

REVISIONS.--The maximum discharges for some water years have been revised, as shown in the following table. They supersede figures published in the Water-Data Reports for 1984, 1985, 1986, 1987, 1988, and 1989.

Water Year	Date	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Water Year	Date	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
1984	Feb. 13, 1984	7590	8.30	1987	Nov. 26, 1986	7410	8.21
1985	Nov. 28, 1984	4260	6.26	1988	Jan. 20, 1988	4470	6.41
1986	Nov. 1, 1985	5140	6.86	1989	May 5, 1989	5230	6.92

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	88	194	120	500	257	363	836	467	598	419	e458	457
2	85	184	117	453	246	1710	717	428	491	389	e415	546
3	88	174	492	437	236	1040	636	402	503	426	e350	401
4	122	164	506	434	228	994	580	403	464	334	e320	372
5	118	165	266	382	221	757	733	407	414	303	e295	442
6	83	196	233	351	233	658	599	416	384	278	e295	352
7	84	155	213	360	238	598	538	361	360	256	e295	339
8	93	148	199	396	215	578	516	340	335	256	286	328
9	100	213	184	345	203	517	549	348	316	235	397	292
10	99	535	175	319	195	488	521	364	300	227	308	273
11	175	272	167	830	189	448	464	362	288	218	301	264
12	1090	236	160	684	183	428	444	392	299	202	623	250
13	418	217	154	540	222	524	556	432	316	191	544	233
14	264	201	184	475	649	502	507	368	298	179	599	223
15	207	188	172	439	350	436	871	357	338	171	534	220
16	176	180	177	741	275	406	625	431	392	167	420	221
17	160	174	164	522	303	383	556	437	383	e226	365	212
18	1240	163	218	468	661	531	517	500	362	326	338	205
19	505	156	343	434	684	423	1310	656	353	240	317	205
20	345	152	226	435	995	388	932	529	457	240	299	190
21	282	146	268	381	707	367	824	495	427	210	267	174
22	481	144	263	339	577	355	711	459	374	179	250	169
23	755	142	2110	321	529	352	631	421	355	165	e239	163
24	458	138	1600	310	470	349	574	391	341	156	212	170
25	386	128	775	290	426	322	521	365	320	172	217	232
26	338	126	592	274	398	310	494	341	427	216	1370	212
27	293	126	572	264	357	300	517	380	434	249	670	164
28	267	130	686	262	335	389	559	422	425	992	483	153
29	241	155	561	252	---	3550	511	476	364	e1080	563	148
30	223	122	516	311	---	1680	527	924	376	e745	621	144
31	206	---	649	369	---	1030	---	579	---	e590	476	---
TOTAL	9470	5424	13062	12918	10582	21216	18876	13653	11494	10037	13127	7754
MEAN	305	181	421	417	378	684	629	440	383	324	423	258
MAX	1240	535	2110	830	995	3550	1310	924	598	1080	1370	546
MIN	83	122	117	252	183	300	444	340	288	156	212	144

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1932 - 1991, BY WATER YEAR (WY)

	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955
MEAN	222	260	325	407	475	531	471	338	260	197	198	192												
MAX	787	964	872	1017	1150	1058	1005	981	781	583	1476	818												
(WY)	1965	1980	1933	1937	1939	1975	1983	1976	1967	1989	1940	1979												
MIN	48.2	59.2	64.5	85.3	150	155	167	132	96.5	91.0	65.9	50.2												
(WY)	1955	1955	1940	1956	1941	1988	1986	1941	1941	1954	1954	1954												

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1932 - 1991
ANNUAL TOTAL	143964	147613	
ANNUAL MEAN	394	404	322
HIGHEST ANNUAL MEAN			503
LOWEST ANNUAL MEAN			170
HIGHEST DAILY MEAN	4680	3550	12800
LOWEST DAILY MEAN	83	83	27
ANNUAL SEVEN-DAY MINIMUM	88	95	43
INSTANTANEOUS PEAK FLOW		9960	31600*
INSTANTANEOUS PEAK STAGE		9.48	20.75*
INSTANTANEOUS LOW FLOW		83*	15*
ANNUAL RUNOFF (CFSM)	3.03	3.11	2.48
ANNUAL RUNOFF (INCHES)	41.20	42.24	33.67
10 PERCENT EXCEEDS	734	657	606
50 PERCENT EXCEEDS	267	352	230
90 PERCENT EXCEEDS	108	164	87

\* Regulated period only (1932-1991). See REMARKS.

## TENNESSEE RIVER BASIN

03459500 PIGEON RIVER NEAR HEPKO, NC

LOCATION.--Lat 35°38'05", long 82°59'21", Haywood County, Hydrologic Unit 06010106, on left bank 95 ft east of Interstate Highway 40, 0.8 mi downstream from Jonathan Creek, 2.0 mi south of Hepco, 2.4 mi upstream from Fines Creek, and at mile 45.1.

DRAINAGE AREA.--350 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1927 to current year.

REVISED RECORDS.--WSP 823: Drainage area. WSP 893: 1928-31, 1932(M), 1933-36, 1937-39(M).

GAGE.--Water-stage recorder. Datum of gage is 2,335.95 ft above National Geodetic Vertical Datum of 1929 (levels by Tennessee Valley Authority). Tennessee Valley Authority has satellite telemetry at upper gage. Landline telemetry at lower gage.

REMARKS.--No estimated daily discharges. Records good. Considerable regulation by Lake Junaluska on Richland Creek and Lake Logan on West Fork Pigeon River for periods at low flow, combined capacity of reservoirs, about 2,000 ft<sup>3</sup>/s-day (stations 03455773, 03458319). Several measurements of water temperature were made during the year. Maximum discharge, 32,700 ft<sup>3</sup>/s, from floodmark in gage house, from rating curve extended above 12,000 ft<sup>3</sup>/s on basis of slope-area measurements at gage heights 14.94 ft and 15.82 ft.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods of June 1876 and February 1902 reached a stage of about 18 ft, from flood profiles by Tennessee Valley Authority, discharge, about 42,000 ft<sup>3</sup>/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	191	397	291	1110	572	819	2000	986	1070	835	917	759
2	186	375	285	979	538	3200	1720	872	764	782	710	867
3	190	363	442	913	520	1930	1520	684	763	794	618	687
4	202	351	1130	912	506	2020	1210	646	734	649	550	634
5	274	350	536	802	495	1520	1570	663	649	593	530	705
6	202	416	464	743	507	1330	1490	668	604	550	518	632
7	186	351	432	737	523	1250	1330	618	577	544	540	608
8	197	332	409	788	488	1250	1250	637	547	538	583	574
9	218	377	382	716	464	1150	1280	623	523	489	974	533
10	208	933	369	667	449	1100	1250	638	499	486	726	501
11	308	543	357	1590	480	987	1060	689	482	461	641	490
12	1530	468	346	1510	501	944	821	743	537	430	1960	468
13	795	432	340	1130	464	1190	1000	803	596	409	1560	456
14	486	409	408	971	1500	1300	1030	716	576	386	1670	451
15	388	391	384	897	868	1070	1360	702	623	372	1490	444
16	338	377	423	1310	658	973	1200	858	869	365	1060	463
17	309	368	398	999	714	913	1110	858	653	371	881	452
18	1950	352	476	891	1780	1180	1130	813	748	507	807	404
19	1020	340	742	830	1830	1010	2190	1170	777	464	781	469
20	649	332	551	831	2820	907	1850	928	1210	534	689	418
21	532	324	580	764	2020	854	1500	832	939	452	614	355
22	816	318	558	690	1560	835	1320	792	873	404	578	338
23	1560	321	3030	653	1340	976	1090	733	770	357	544	352
24	875	317	3850	635	1150	861	929	688	687	554	513	401
25	736	301	1760	610	1020	773	886	650	646	601	504	497
26	661	292	1290	578	954	737	901	617	1150	544	1710	489
27	571	289	1110	562	848	708	949	604	1020	521	1200	385
28	519	301	1390	554	792	938	1040	711	851	1690	846	314
29	467	376	1120	541	---	6390	1000	706	752	2520	926	333
30	441	311	1020	588	---	4310	1090	1370	787	1420	1120	337
31	417	---	1510	784	---	2560	---	855	---	1260	806	---
TOTAL	17422	11407	26383	26285	26361	45985	38076	23873	22276	20882	27566	14816
MEAN	562	380	851	848	941	1483	1269	770	743	674	889	494
MAX	1950	933	3850	1590	2820	6390	2190	1370	1210	2520	1960	867
MIN	186	289	285	541	449	708	821	604	482	357	504	314

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1927 - 1991, BY WATER YEAR (WY)

	MEAN	411	492	671	858	1020	1145	990	725	534	430	424	381
MAX	1353	1627	2125	2275	2227	2455	2009	1630	1502	1141	2246	1214	
(WY)	1965	1980	1933	1937	1990	1929	1936	1984	1967	1989	1940	1928	
MIN	122	133	193	194	319	346	359	283	200	183	163	129	
(WY)	1955	1954	1940	1940	1941	1988	1986	1941	1988	1986	1953	1954	

SUMMARY STATISTICS FOR 1990 CALENDAR YEAR FOR 1991 WATER YEAR WATER YEARS 1927 - 1991

	ANNUAL TOTAL	307121	301332										
ANNUAL MEAN		841	826							672			
HIGHEST ANNUAL MEAN										943			1949
LOWEST ANNUAL MEAN										341			1988
HIGHEST DAILY MEAN		10900	Mar 17		6390	Mar 29				17100		Aug 13	1940
LOWEST DAILY MEAN		186	Oct 2		186	Oct 2				95		Sep 30	1941
ANNUAL SEVEN-DAY MINIMUM		193	Sep 27		204	Oct 1				109		Oct 12	1941
INSTANTANEOUS PEAK FLOW					13900	Mar 29				32700*		Aug 30	1940
INSTANTANEOUS PEAK STAGE					10.44	Mar 29				15.82		Aug 30	1940
INSTANTANEOUS LOW FLOW					178	Oct 4				81		Sep 30	1941
ANNUAL RUNOFF (CFSM)		2.40			2.36					1.92			
ANNUAL RUNOFF (INCHES)		32.64			32.03					26.07			
10 PERCENT EXCEEDS		1590			1490					1240			
50 PERCENT EXCEEDS		543			687					502			
90 PERCENT EXCEEDS		234			352					207			

\* See REMARKS.

## TENNESSEE RIVER BASIN

03460000 CATALOOCHEE CREEK NEAR CATALOOCHEE, NC  
(Hydrologic bench-mark station)

LOCATION.--Lat 35°40'02", long 83°04'22", Haywood County, Hydrologic Unit 06010106, in Great Smoky Mountains National Park, on left bank 20 ft downstream from bridge on State Highway 284, 500 ft upstream from Little Cataloochee Creek, 2 mi north of Cataloochee and 3.7 mi upstream from mouth.

DRAINAGE AREA.--49.2 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1933 to September 1952, October 1962 to current year. Monthly discharge only for some periods, published in WSP 1306.

REVISED RECORDS.--WSP 823: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 2,456.88 ft above National Geodetic Vertical Datum of 1929 (levels by Tennessee Valley Authority).

REMARKS.--Records good except those for estimated daily discharges, which are fair. Minimum discharge for period of record, 9.4 ft<sup>3</sup>/s, result of freezeup, also occurred Jan. 2, 1940, and Dec. 17, 24, 1943. Minimum discharge for current water year also occurred Oct. 7, 8.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	33	67	45	251	87	189	386	147	137	150	136	102
2	32	63	45	215	84	482	306	136	103	177	109	96
3	31	60	83	188	82	328	255	128	100	197	96	93
4	40	58	79	163	81	281	223	132	104	152	87	87
5	35	63	62	145	79	241	249	132	92	138	83	84
6	31	64	61	132	83	222	201	133	86	120	88	92
7	29	55	58	133	78	198	183	119	81	109	96	82
8	35	52	56	125	76	189	175	114	78	105	96	77
9	39	65	54	114	73	168	178	118	75	96	212	73
10	35	77	53	109	71	159	171	111	72	92	143	73
11	40	59	52	231	69	147	153	113	71	87	136	73
12	166	57	50	228	67	144	146	123	113	87	518	69
13	76	55	51	197	128	229	161	117	90	94	416	66
14	59	53	66	174	204	265	146	112	98	77	401	65
15	52	52	56	161	146	235	153	145	116	72	358	65
16	48	52	68	170	e127	209	138	164	111	67	272	78
17	46	53	66	143	e136	191	132	134	107	67	216	70
18	279	50	109	132	e398	260	127	171	107	67	195	65
19	137	49	175	126	e605	214	219	185	104	67	175	150
20	102	48	126	124	e877	197	186	166	150	85	149	79
21	86	47	116	114	596	182	175	152	167	76	129	71
22	130	46	105	105	418	174	164	140	176	72	117	66
23	160	49	810	e103	319	194	154	130	158	64	110	64
24	125	47	725	97	255	164	143	120	136	85	103	74
25	117	45	374	91	220	155	133	114	126	102	117	85
26	104	43	252	89	191	146	127	106	195	146	149	73
27	92	43	216	86	168	139	126	105	185	118	109	65
28	85	52	240	85	152	174	146	109	168	191	101	62
29	79	62	209	82	---	1280	155	121	149	215	134	60
30	75	46	203	104	---	876	165	112	136	186	131	59
31	70	---	324	106	---	521	---	108	---	148	110	---
TOTAL	2468	1632	4989	4323	5870	8553	5376	4017	3591	3509	5292	2318
MEAN	79.6	54.4	161	139	210	276	179	130	120	113	171	77.3
MAX	279	77	810	251	877	1280	386	185	195	215	518	150
MIN	29	43	45	82	67	139	126	105	71	64	83	59
CFSM	1.62	1.11	3.27	2.83	4.26	5.61	3.64	2.63	2.43	2.30	3.47	1.57
IN.	1.87	1.23	3.77	3.27	4.44	6.47	4.06	3.04	2.72	2.65	4.00	1.75

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1934 - 1991, BY WATER YEAR (WY)

	MEAN	53.0	69.8	110	164	177	203	154	108	82.7	72.9	70.9	53.0
MAX	146	159	302	392	394	496	305	283	252	182	223	123	
(WY)	1990	1980	1973	1937	1990	1963	1936	1984	1967	1949	1940	1989	
MIN	22.3	22.3	26.0	35.5	49.5	63.2	58.8	46.2	34.7	29.6	26.9	24.9	
(WY)	1940	1940	1940	1940	1941	1988	1986	1986	1986	1986	1987	1941	

## SUMMARY STATISTICS

## FOR 1990 CALENDAR YEAR

## FOR 1991 WATER YEAR

## WATER YEARS 1934 - 1991

ANNUAL TOTAL	50217	51938	110	
ANNUAL MEAN	138	142	158	1973
HIGHEST ANNUAL MEAN			51.5	1986
LOWEST ANNUAL MEAN			2690	Mar 16 1973
HIGHEST DAILY MEAN	2000	Mar 17	12	Jan 2 1940
LOWEST DAILY MEAN	29	Aug 20	19	Dec 31 1939
ANNUAL SEVEN-DAY MINIMUM	33	Oct 1	33	Oct 1
INSTANTANEOUS PEAK FLOW			2230	Mar 29
INSTANTANEOUS PEAK STAGE			5.97	Mar 29
INSTANTANEOUS LOW FLOW			29*	Oct 6
ANNUAL RUNOFF (CFSM)	2.80	2.89	8.08	Mar 6 1963
ANNUAL RUNOFF (INCHES)	37.97	39.27	9.4*	Mar 6 1963
10 PERCENT EXCEEDS	278	228	2.23	Jan 2 1940
50 PERCENT EXCEEDS	86	114	30.31	
90 PERCENT EXCEEDS	37	53	203	
			80	
			33	

\* See REMARKS.

## TENNESSEE RIVER BASIN

03460000 CATALOOCHEE CREEK NEAR CATALOOCHEE, NC--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1963 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: August 1973 to September 1986.

WATER TEMPERATURE: October 1962 to September 1986.

INSTRUMENTATION.--Temperature recorder from October 1962 to September 1986. Water-quality monitor from May 1974 to September 1986.

REMARKS.--Miscellaneous chemical data published for 1945 water year.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 43 microsiemens June 13, 1974; minimum, 7 microsiemens Feb. 28, 1983.

WATER TEMPERATURE: Maximum, 23.5°C Aug. 5, 1977; minimum, 0.0°C on several days during winter months of most years.

## WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TUR- BID- ITY (NTU)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (MG/L)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	CALCIUM DIS- SOLVED (MG/L AS CA)
DEC 10...	1145	53	13	6.2	2.0	0.30	699	12.7	--	--	1.0
FEB 12...	1030	67	11	6.1	4.0	0.40	697	13.7	--	--	0.91
MAY 21...	1130	153	13	5.9	13.0	0.80	702	14.8	K5	K34	0.95
AUG 20...	1000	153	15	7.2	14.5	1.0	694	9.8	K14	64	0.98
DATE		MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE WATER DIS IT FIELD MG/L AS HCO3	ALKA- LINITY WAT DIS TOT IT FIELD MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)
DEC 10...	0.30	1.3	39	0.3	0.60	6	5	<1.0	0.20	<0.10	7.6
FEB 12...	0.32	1.1	37	0.3	0.40	6	5	1.6	0.60	<0.10	7.3
MAY 21...	0.31	1.1	36	0.3	0.50	4	4	1.2	0.50	<0.10	7.7
AUG 20...	0.32	1.1	35	0.2	0.50	5	4	1.2	0.50	<0.10	7.7
DATE		SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED TOTAL (MG/L AS NH4)	NITRO- GEN, AMMONIA DIS- SOLVED TOTAL (MG/L AS NH4)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)
DEC 10...	6	0.180	0.020	<0.010	0.200	0.200	0.040	<0.010	0.05	--	0.26
FEB 12...	16	0.190	0.010	<0.010	0.200	0.200	0.020	<0.010	0.03	--	0.18
MAY 21...	13	--	<0.010	<0.010	0.190	0.190	<0.010	0.020	--	0.03	--
AUG 20...	9	0.140	0.010	<0.010	0.150	0.150	<0.010	<0.010	--	--	--

## TENNESSEE RIVER BASIN

03460000 CATALOOCHEE CREEK NEAR CATALOOCHEE, NC--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, AM- MONIA + ORGANIC DIS. (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS NO3)	NITRO- GEN DIS- SOLVED (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO TOTAL (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)
DEC 10...	0.30	--	0.50	2.2	--	0.010	<0.010	<0.010	<0.010	--	20
FEB 12...	0.20	--	0.40	1.8	--	0.020	<0.010	<0.010	0.010	0.03	80
MAY 21...	<0.20	--	--	--	--	0.020	<0.010	<0.010	<0.010	--	30
AUG 20...	<0.20	0.30	--	--	0.45	0.020	0.020	<0.010	0.010	0.03	<10

DATE	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	LITHIUM DIS- SOLVED (UG/L AS LI)
DEC 10...	<1	6	<0.5	<1.0	1	<3	3	11	1	<4
FEB 12...	<1	5	<0.5	<1.0	<1	<3	<1	8	<1	<4
MAY 21...	<1	6	<0.5	<1.0	<1	<3	4	8	2	<4
AUG 20...	<1	7	<0.5	1.0	<1	<3	<1	21	<1	<4

DATE	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT)
DEC 10...	2	<0.1	<10	1	<1	<1.0	8	<6	10	--
FEB 12...	<1	<0.1	<10	<1	<1	<1.0	8	<6	4	<0.6
MAY 21...	<1	<0.1	<10	2	<1	<1.0	9	<6	4	--
AUG 20...	2	<0.1	<10	<1	<1	<1.0	8	<6	<3	<0.6

DATE	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DIS- SOLVED (PCI/L CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L CS-137)	GROSS BETA, DIS- SOLVED (PCI/L YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L YT-90)	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L)	URANIUM NATURAL DIS- SOLVED (UG/L AS U)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
DEC 10...	--	--	--	--	--	--	--	0	0.0	--
FEB 12...	<0.6	1.1	<0.6	1.1	<0.6	<0.02	0.02	2	0.36	0
MAY 21...	--	--	--	--	--	--	--	5	2.1	45
AUG 20...	<0.6	1.0	<0.6	0.9	<0.6	0.04	<0.01	6	2.5	56

## TENNESSEE RIVER BASIN

03463300 SOUTH TOE RIVER NEAR CELO, NC

LOCATION.--Lat 35°49'53", long 82°11'04", Yancey County, Hydrologic Unit 06010108, on right bank on Secondary Road 1168, 800 ft upstream from bridge on Secondary Road 1167, 0.3 mi downstream from Whiteoak Creek, 1.9 mi southeast of Celo, and at mile 20.1.

DRAINAGE AREA.--43.3 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1957 to current year.

REVISED RECORDS.--WSP 1910: 1958-59. WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,658 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Maximum discharge, 32,900 ft<sup>3</sup>/s, gage height, 17.41 ft, from outside floodmarks, from rating curve extended above 4,500 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow. Minimum discharge for current water year also occurred on Oct. 8, 10.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	52	158	72	168	109	209	293	184	100	115	141	173
2	50	147	70	150	103	744	249	171	111	116	121	195
3	46	138	202	140	99	481	220	159	127	101	104	152
4	57	131	179	133	95	443	203	151	113	92	91	133
5	57	136	115	123	93	311	244	147	97	87	85	122
6	47	148	103	117	96	264	212	145	91	81	81	128
7	45	121	97	124	93	233	187	131	86	76	100	118
8	47	114	91	127	89	234	174	125	82	74	98	112
9	47	237	85	118	84	202	172	128	78	73	86	100
10	98	324	82	111	81	185	178	124	74	69	80	95
11	207	190	79	362	78	167	152	142	71	70	75	91
12	1690	164	76	263	75	157	143	132	70	64	201	84
13	687	149	78	192	87	182	185	142	69	62	213	91
14	352	134	92	164	145	225	169	146	99	59	218	88
15	249	126	83	169	103	180	171	144	127	57	193	77
16	199	120	80	402	e88	162	154	130	87	56	139	73
17	170	118	83	233	e108	153	141	122	96	61	117	74
18	731	109	100	196	570	244	134	146	129	68	108	79
19	352	104	131	178	408	185	839	164	153	60	104	82
20	262	101	102	194	523	161	469	149	325	88	88	69
21	222	96	133	165	309	150	414	173	259	73	81	65
22	417	93	117	143	240	146	314	161	214	59	77	63
23	550	94	574	e133	218	191	272	141	159	53	74	61
24	342	88	468	128	191	153	243	130	165	64	71	62
25	349	84	247	120	171	136	219	121	150	187	158	73
26	307	82	194	115	154	127	203	114	172	195	761	67
27	259	80	177	111	139	122	215	113	166	231	355	58
28	235	83	207	108	131	149	230	115	144	281	278	55
29	211	84	184	104	---	1190	208	112	125	258	265	53
30	188	75	168	119	---	570	203	121	123	240	199	52
31	167	---	239	142	---	365	---	106	---	173	161	---
TOTAL	8692	3828	4708	5052	4680	8421	7210	4289	3862	3343	4923	2745
MEAN	280	128	152	163	167	272	240	138	129	108	159	91.5
MAX	1690	324	574	402	570	1190	839	184	325	281	761	195
MIN	45	75	70	104	75	122	134	106	69	53	71	52
CFSM	6.48	2.95	3.51	3.76	3.86	6.27	5.55	3.20	2.97	2.49	3.67	2.11
IN.	7.47	3.29	4.04	4.34	4.02	7.23	6.19	3.68	3.32	2.87	4.23	2.36

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 1991, BY WATER YEAR (WY)

MEAN	131	155	142	150	180	229	191	158	123	85.2	88.2	113
MAX	326	714	277	268	360	596	361	373	415	199	199	517
(WY)	1971	1978	1984	1979	1966	1979	1983	1976	1972	1967	1990	1979
MIN	19.7	25.9	41.5	62.2	76.6	69.1	59.7	53.1	34.8	23.3	28.5	21.3
(WY)	1964	1982	1966	1966	1963	1988	1986	1986	1988	1986	1987	1958

SUMMARY STATISTICS

FOR 1990 CALENDAR YEAR

FOR 1991 WATER YEAR

WATER YEARS 1957 - 1991

ANNUAL TOTAL	64107	61753	
ANNUAL MEAN	176	169	
HIGHEST ANNUAL MEAN			145
LOWEST ANNUAL MEAN			227
HIGHEST DAILY MEAN	1690	Oct 12	79.4
LOWEST DAILY MEAN	31	Jul 7	9960
ANNUAL SEVEN-DAY MINIMUM	35	Jul 1	12
INSTANTANEOUS PEAK FLOW			15
INSTANTANEOUS PEAK STAGE			32900*
INSTANTANEOUS LOW FLOW			4.20
ANNUAL RUNOFF (CFSM)	4.06	3.91	17.41*
ANNUAL RUNOFF (INCHES)	55.08	53.05	11
10 PERCENT EXCEEDS	319	274	3.35
50 PERCENT EXCEEDS	132	132	45.57
90 PERCENT EXCEEDS	52	71	259
			101
			39

\* See REMARKS.

03479000 WATAUGA RIVER NEAR SUGAR GROVE, NC

LOCATION.--Lat 36°14'18", long 81°49'22", Watauga County, Hydrologic Unit 06010103, on right bank 250 ft upstream from bridge on Secondary Road 1121, 300 ft downstream from Cove Creek, 2.3 mi southwest of Sugar Grove, and at mile 64.4.

DRAINAGE AREA.--92.1 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1939 to current year. Monthly discharge only for some periods, published in WSP 1306.

REVISED RECORDS.--WDR NC-81-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,607.84 ft above National Geodetic Vertical Datum of 1929. Tennessee Valley Authority has telemetry at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Slight diurnal fluctuation at low flow caused by small mills above station. Maximum discharge, 50,800 ft<sup>3</sup>/s, from profile based on floodmarks, from rating curve extended above 4,900 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow. Minimum discharge, 6.5 ft<sup>3</sup>/s, result of freezeup. Minimum daily, 13 ft<sup>3</sup>/s, also occurred Sept. 30, 1954.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 1916 reached a stage of 22.1 ft from floodmarks on barn 0.25 mi above station as witnessed by local resident, discharge, 28,000 ft<sup>3</sup>/s, from rating curve extended above 4,900 ft<sup>3</sup>/s on basis of slope-area measurement at gage height 29.6 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	45	138	80	263	128	198	484	270	106	98	89	52
2	44	128	79	239	123	1580	381	237	129	86	82	53
3	38	119	210	212	120	757	322	205	174	84	75	49
4	39	113	213	190	117	798	280	194	122	91	68	49
5	43	121	143	171	115	553	283	191	107	167	64	47
6	38	149	127	159	126	435	245	191	99	97	61	54
7	37	113	119	162	121	502	215	169	95	85	60	59
8	35	104	112	160	116	395	201	154	93	77	60	56
9	35	160	103	147	109	337	256	173	89	72	62	47
10	38	448	98	139	106	296	356	153	85	68	67	45
11	169	254	95	297	101	259	243	143	83	89	60	48
12	2160	202	92	341	96	240	218	155	100	73	71	44
13	1420	172	91	271	111	239	230	175	90	70	82	234
14	480	153	91	231	267	399	206	165	86	66	100	105
15	276	140	86	213	e200	319	209	159	96	62	104	63
16	188	131	90	548	e175	271	191	140	112	59	71	53
17	150	130	89	380	e162	242	176	141	192	60	63	47
18	1400	119	97	305	e519	276	163	130	234	68	59	47
19	705	113	130	265	834	233	1420	356	212	91	58	59
20	380	107	107	330	758	206	891	210	151	93	54	48
21	270	101	119	e282	557	192	616	217	144	73	51	43
22	342	97	116	e258	406	193	466	193	244	64	48	40
23	691	105	583	e227	326	204	368	168	155	59	47	39
24	404	98	873	213	270	183	313	151	135	70	45	40
25	398	91	428	190	240	169	264	138	126	123	44	49
26	359	87	309	173	216	161	243	129	129	202	49	49
27	277	85	e252	165	190	158	233	144	123	197	57	41
28	230	88	275	159	174	201	313	139	107	164	113	39
29	193	87	275	148	---	2380	534	132	102	139	79	36
30	168	81	255	146	---	1420	320	124	105	117	67	34
31	151	---	311	148	---	693	---	114	---	101	57	---
TOTAL	11203	4034	6048	7132	6783	14489	10640	5360	3825	2965	2067	1669
MEAN	361	134	195	230	242	467	355	173	127	95.6	66.7	55.6
MAX	2160	448	873	548	834	2380	1420	356	244	202	113	234
MIN	35	81	79	139	96	158	163	114	83	59	44	34
CFSM	3.92	1.46	2.12	2.50	2.63	5.07	3.85	1.88	1.38	1.04	.72	.60
IN.	4.52	1.63	2.44	2.88	2.74	5.85	4.30	2.16	1.54	1.20	.83	.67

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1991, BY WATER YEAR (WY)

	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951
MEAN	114	152	178	194	267	305	258	183	139	112	116	116
MAX	380	662	434	429	599	858	689	411	519	461	1169	691
(WY)	1965	1978	1951	1946	1966	1979	1987	1973	1976	1989	1940	1979
MIN	19.2	34.6	45.6	55.5	67.5	77.0	82.1	67.5	41.4	35.0	25.6	18.1
(WY)	1955	1982	1964	1956	1941	1988	1986	1941	1988	1944	1956	1954

SUMMARY STATISTICS

	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1940 - 1991
ANNUAL TOTAL	75814	76215	
ANNUAL MEAN	208	209	176
HIGHEST ANNUAL MEAN			297
LOWEST ANNUAL MEAN			84.7
HIGHEST DAILY MEAN	3610	Mar 17	15900
LOWEST DAILY MEAN	35	Oct 8	13*
ANNUAL SEVEN-DAY MINIMUM	38	Oct 3	15
INSTANTANEOUS PEAK FLOW		6770	50800*
INSTANTANEOUS PEAK STAGE		11.16	29.60
INSTANTANEOUS LOW FLOW		34	6.5*
ANNUAL RUNOFF (CFSM)	2.26	2.27	1.91
ANNUAL RUNOFF (INCHES)	30.62	30.78	25.89
10 PERCENT EXCEEDS	397	380	326
50 PERCENT EXCEEDS	131	140	116
90 PERCENT EXCEEDS	46	52	40

\* See REMARKS.

## TENNESSEE RIVER BASIN

03500000 LITTLE TENNESSEE RIVER NEAR PRENTISS, NC

LOCATION.--Lat 35°08'59", long 83°22'47", Macon County, Hydrologic Unit 06010202, on left bank 600 ft upstream from Owenby Branch, 0.5 mi upstream from Cartoogechaye Creek, 2 mi north of Prentiss, and at mile 119.5.

DRAINAGE AREA.--140 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1943 to current year. Monthly discharge only for some periods, published in WSP 1306.

REVISED RECORDS.--WSP 1236: 1949(M).

GAGE.--Water-stage recorder. Datum of gage is 2,008.39 ft above National Geodetic Vertical Datum of 1929 (levels by Tennessee Valley Authority). Since Oct. 1, 1954, auxiliary water-stage recorder 0.5 mi downstream from base gage at same datum.

REMARKS.--No estimated daily discharges. Records good. Minimum discharge for current water year also occurred Oct. 4.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in October 1898 reached a stage of about 15 ft, from profiles by Tennessee Valley Authority.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	134	249	190	577	447	443	887	610	546	391	281	378
2	129	241	189	523	411	1090	775	565	537	378	278	366
3	127	236	350	506	389	1060	704	527	498	319	252	327
4	175	231	571	519	371	958	661	513	475	296	240	307
5	214	230	337	471	360	730	870	541	436	291	229	291
6	150	254	294	446	371	652	826	681	416	277	225	277
7	138	227	268	450	368	639	708	565	403	269	216	303
8	143	217	253	464	346	653	667	518	389	262	232	270
9	147	251	240	443	334	632	709	527	376	257	293	256
10	148	418	233	424	326	583	691	575	363	250	265	247
11	218	293	225	972	315	543	621	605	352	248	236	242
12	502	261	221	869	306	517	589	575	348	237	294	237
13	350	246	215	660	358	615	747	620	358	234	422	229
14	250	238	242	571	690	581	768	570	358	224	336	226
15	208	231	232	541	474	529	746	527	346	215	372	225
16	188	225	232	755	398	497	681	668	350	221	298	236
17	179	219	223	602	407	477	630	766	335	234	267	214
18	1200	210	239	538	637	608	595	652	324	318	251	210
19	683	205	330	503	620	544	966	842	439	292	245	265
20	408	200	283	523	917	498	959	676	430	340	277	225
21	328	198	333	471	772	473	768	630	366	293	238	209
22	481	197	311	436	631	457	681	590	373	248	225	200
23	760	197	1050	417	590	484	625	576	330	232	216	196
24	499	193	1800	407	529	448	595	535	309	221	206	200
25	446	189	849	394	489	422	565	506	306	701	203	264
26	399	185	648	380	460	413	541	488	430	529	780	249
27	344	184	606	370	432	404	551	557	428	384	633	208
28	314	206	640	362	414	459	650	809	378	386	409	198
29	290	235	579	351	---	1610	630	777	342	325	394	193
30	273	196	565	429	---	2460	692	726	429	320	738	188
31	260	---	672	601	---	1120	---	603	---	317	460	---
TOTAL	10085	6862	13420	15975	13162	21599	21098	18920	11770	9509	10011	7436
MEAN	325	229	433	515	470	697	703	610	392	307	323	248
MAX	1200	418	1800	972	917	2460	966	842	546	701	780	378
MIN	127	184	189	351	306	404	541	488	306	215	203	188
CFSM	2.32	1.63	3.09	3.68	3.36	4.98	5.02	4.36	2.80	2.19	2.31	1.77
IN.	2.68	1.82	3.57	4.24	3.50	5.74	5.61	5.03	3.13	2.53	2.66	1.98

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1944 - 1991, BY WATER YEAR (WY)

	MEAN	246	294	394	481	566	605	568	437	341	261	239	220
MAX	1078	815	841	1008	1252	1199	1014	999	694	772	695	671	
(WY)	1965	1980	1962	1946	1990	1952	1964	1976	1949	1989	1974	1950	
MIN	70.5	101	154	120	222	244	172	157	110	94.8	78.3	80.2	
(WY)	1955	1955	1981	1981	1986	1988	1986	1986	1988	1986	1986	1954	

SUMMARY STATISTICS FOR 1990 CALENDAR YEAR FOR 1991 WATER YEAR WATER YEARS 1944 - 1991

	ANNUAL TOTAL	170998	159847	387	
ANNUAL MEAN	468	438			
HIGHEST ANNUAL MEAN				588	1949
LOWEST ANNUAL MEAN				173	1986
HIGHEST DAILY MEAN	4770	Feb 16	2460	Mar 30	7280 Oct 5 1964
LOWEST DAILY MEAN	118	Sep 8	127	Oct 3	56 Oct 7 1986
ANNUAL SEVEN-DAY MINIMUM	127	Sep 2	152	Oct 1	62 Oct 2 1986
INSTANTANEOUS PEAK FLOW			3470	Mar 30	12200 Oct 4 1964
INSTANTANEOUS PEAK STAGE			8.46	Mar 30	17.30 Oct 4 1964
INSTANTANEOUS LOW FLOW			127*	Oct 3	55 Oct 7 1986
ANNUAL RUNOFF (CFSM)	3.35		3.13		2.77
ANNUAL RUNOFF (INCHES)	45.44		42.47		37.58
10 PERCENT EXCEEDS	883		706		700
50 PERCENT EXCEEDS	315		380		305
90 PERCENT EXCEEDS	153		210		130

\* See REMARKS.

## TENNESSEE RIVER BASIN

03500240 CARTOOGECCHAYE CREEK NEAR FRANKLIN, NC

LOCATION.--Lat 35°09'31", long 83°23'40", Macon County, Hydrologic Unit 06010202, on downstream side of center pier of bridge on Secondary Road 1152, 0.1 mi downstream from unnamed creek, 1.8 mi south of Franklin, and 1.9 mi upstream from mouth.

DRAINAGE AREA.--57.1 mi<sup>2</sup>.

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1944, 1947, 1953-55, 1960. June 1961 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,017.18 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Minimum discharge for period of record also occurred Oct. 8, 1986. Minimum discharge for current water year also occurred on Oct. 3, 4.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1949 reached a stage of 15.6 ft, from studies by Tennessee Valley Authority, discharge, about 7,000 ft<sup>3</sup>/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	48	71	57	224	147	229	318	237	164	154	111	139
2	47	69	57	201	137	585	275	209	142	207	94	130
3	46	67	178	196	131	448	246	191	136	178	82	122
4	63	66	161	184	125	384	228	182	138	140	77	114
5	56	69	107	166	122	308	258	203	124	129	73	108
6	49	75	90	157	133	271	228	212	120	116	70	103
7	48	66	83	170	128	271	210	177	116	110	79	100
8	48	64	77	168	118	268	209	166	113	105	86	96
9	49	92	73	155	113	243	227	192	110	99	310	92
10	82	115	70	152	112	222	239	186	106	99	162	90
11	109	78	67	376	108	207	211	177	103	103	120	88
12	267	72	65	325	104	198	202	181	105	92	195	89
13	126	69	64	251	172	274	227	189	108	89	287	84
14	90	67	77	214	380	258	211	175	113	83	233	82
15	75	66	70	202	235	228	245	166	113	80	209	79
16	69	65	74	250	184	210	214	208	105	79	163	77
17	64	64	74	196	199	199	199	183	102	83	137	79
18	323	62	94	177	384	241	188	189	127	105	124	76
19	158	61	129	171	498	206	363	251	147	109	114	112
20	108	61	120	174	724	194	280	204	123	106	131	81
21	91	60	131	159	512	184	243	185	120	99	103	75
22	206	59	116	148	363	180	219	171	127	89	95	72
23	247	61	720	142	297	204	202	162	122	79	91	71
24	155	59	880	140	250	177	189	154	103	78	86	79
25	123	57	344	135	225	167	176	147	104	109	87	129
26	105	56	242	130	208	160	171	141	195	128	356	94
27	94	56	254	126	189	157	188	145	154	130	237	78
28	87	62	309	125	177	193	222	151	138	121	167	73
29	80	70	266	119	---	906	256	153	122	104	220	70
30	76	58	231	161	---	716	277	184	142	99	276	68
31	73	---	278	178	---	404	---	154	---	211	167	---
TOTAL	3262	2017	5558	5672	6475	8892	6921	5625	3742	3513	4742	2750
MEAN	105	67.2	179	183	231	287	231	181	125	113	153	91.7
MAX	323	115	880	376	724	906	363	251	195	211	356	139
MIN	46	56	57	119	104	157	171	141	102	78	70	68
CFSM	1.84	1.18	3.14	3.20	4.05	5.02	4.04	3.18	2.18	1.98	2.68	1.61
IN.	2.13	1.31	3.62	3.70	4.22	5.79	4.51	3.66	2.44	2.29	3.09	1.79

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1991, BY WATER YEAR (WY)

	MEAN	84.3	105	151	188	221	242	204	160	119	89.7	82.8	73.1
MAX	295	241	317	336	460	440	375	339	259	195	167	161	
(WY)	1965	1980	1962	1974	1990	1980	1964	1976	1989	1989	1967	1989	
MIN	33.9	41.5	52.2	55.2	102	84.7	72.9	61.2	42.3	33.1	33.1	34.7	
(WY)	1979	1979	1966	1981	1986	1988	1986	1986	1988	1986	1986	1986	

SUMMARY STATISTICS

FOR 1990 CALENDAR YEAR

FOR 1991 WATER YEAR

WATER YEARS 1961 - 1991

ANNUAL TOTAL	67135	59169	
ANNUAL MEAN	184	162	143
HIGHEST ANNUAL MEAN			204
LOWEST ANNUAL MEAN			69.9
HIGHEST DAILY MEAN	2340	Mar 17	906
LOWEST DAILY MEAN	46	Oct 3	46
ANNUAL SEVEN-DAY MINIMUM	49	Sep 27	51
INSTANTANEOUS PEAK FLOW			1760
INSTANTANEOUS PEAK STAGE			9.00
INSTANTANEOUS LOW FLOW			46*
ANNUAL RUNOFF (CFSM)	3.22	2.84	2.50
ANNUAL RUNOFF (INCHES)	43.74	38.55	33.95
10 PERCENT EXCEEDS	343	266	258
50 PERCENT EXCEEDS	123	135	106
90 PERCENT EXCEEDS	56	69	50

\* See REMARKS.

## TENNESSEE RIVER BASIN

03503000 LITTLE TENNESSEE RIVER AT NEEDMORE, NC

LOCATION.--Lat 35°20'11", long 83°31'37", Swain County, Hydrologic Unit 06010202, on left bank on Secondary Road 1113, 0.8 mi downstream from DeHart Creek, 0.8 mi north of Needmore, 2.4 mi downstream from Brush Creek, 6.3 mi downstream from Tellico Creek and at mile 92.9.

DRAINAGE AREA.--436 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1943 to December 1981, October 1983 to current year. Monthly discharge only for some periods, published in WSP 1306.

GAGE.--Water-stage recorder. Datum of gage is 1,761.19 ft above National Geodetic Vertical Datum of 1929 (levels by Tennessee Valley Authority). Tennessee Valley Authority has telemetry at station.

REMARKS.--No estimated daily discharges. Records fair. Considerable diurnal fluctuation caused by Porters Bend powerplant at Lake Emory 20 mi upstream. Several measurements of water temperatures were made during the year. Minimum discharge, 52 ft<sup>3</sup>/s, also occurred Nov. 8, 1954.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods of October 1898 and Aug. 30, 1940, reached stages of about 13 ft and 11.5 ft, respectively, from flood profiles by Tennessee Valley Authority.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	389	694	525	1710	1170	1170	2830	1790	1310	1070	886	986
2	392	657	521	1490	1060	3450	2270	1570	1340	1220	754	976
3	391	628	712	1440	1020	2840	2020	1410	1200	1060	765	868
4	409	613	2030	1530	976	3060	1860	1340	1160	894	766	815
5	645	612	1070	1330	949	2260	2190	1400	1060	842	662	800
6	460	670	873	1260	966	1930	2320	1850	1010	798	659	794
7	415	617	781	1250	999	1890	1900	1460	974	760	614	779
8	411	586	745	1310	929	1800	1790	1310	943	748	622	738
9	441	606	685	1230	886	1850	1960	1320	920	717	1180	702
10	446	1180	648	1150	856	1630	1960	1410	899	685	1000	671
11	648	845	630	2530	833	1500	1740	1500	890	713	911	657
12	1390	723	613	3020	810	1440	1620	1450	900	665	1520	639
13	1300	655	602	2140	887	1720	1850	1580	909	641	1520	618
14	774	659	637	1670	2270	1760	2070	1410	900	616	1360	605
15	636	618	651	1770	1620	1540	2040	1310	889	590	1210	600
16	568	606	628	2240	1230	1420	1920	1650	933	579	940	615
17	533	598	631	1870	1190	1340	1720	2340	940	592	834	605
18	2400	581	685	1580	2260	1610	1600	1770	901	735	781	587
19	2310	566	924	1460	2810	1530	2600	2250	1150	871	760	796
20	1140	557	843	1410	4170	1360	2870	2010	1200	777	814	670
21	898	551	936	1290	3250	1260	2230	1750	1050	728	699	587
22	1150	544	902	1170	2250	1190	1950	1600	1030	650	656	558
23	2540	548	3840	1110	1870	1280	1770	1510	1030	603	631	541
24	1500	542	7010	1080	1580	1270	1640	1420	861	699	619	553
25	1170	522	2570	1050	1420	1130	1490	1310	823	1430	655	728
26	1120	513	1650	1000	1320	1070	1420	1260	1080	1270	2350	766
27	936	505	1430	983	1210	1040	1460	1230	1270	1050	1400	597
28	853	527	1760	971	1140	1360	1810	1750	1060	1060	1100	551
29	751	665	1540	949	---	5930	1800	1760	983	980	1670	532
30	785	563	1690	1030	---	8310	2060	1630	1240	868	1730	519
31	704	---	2070	1520	---	3670	---	1380	---	1050	1110	---
TOTAL	28505	18751	40832	45543	41931	64610	58760	48730	30855	25961	31178	20453
MEAN	920	625	1317	1469	1498	2084	1959	1572	1028	837	1006	682
MAX	2540	1180	7010	3020	4170	8310	2870	2340	1340	1430	2350	986
MIN	389	505	521	949	810	1040	1420	1230	823	579	614	519
CFSM	2.11	1.43	3.02	3.37	3.43	4.78	4.49	3.61	2.36	1.92	2.31	1.56
IN.	2.43	1.60	3.48	3.89	3.58	5.51	5.01	4.16	2.63	2.22	2.66	1.75

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1944 - 1991, BY WATER YEAR (WY)

	MEAN	644	785	1045	1335	1585	1733	1555	1199	923	713	641	581
MAX	2557	2169	2231	2570	3718	3372	2746	2573	2061	2136	1670	1605	
(WY)	1965	1980	1962	1946	1990	1990	1964	1976	1949	1989	1967	1950	
MIN	192	282	368	349	660	596	553	489	351	238	213	208	
(WY)	1955	1955	1966	1981	1986	1988	1986	1986	1988	1986	1986	1954	

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1944 - 1991
ANNUAL TOTAL	519993	456109	
ANNUAL MEAN	1425	1250	1063
HIGHEST ANNUAL MEAN			1565
LOWEST ANNUAL MEAN			495
HIGHEST DAILY MEAN	14800	Mar 17	17200
LOWEST DAILY MEAN	356	Sep 8	71
ANNUAL SEVEN-DAY MINIMUM	391	Sep 3	142
INSTANTANEOUS PEAK FLOW			22100
INSTANTANEOUS PEAK STAGE			12.87
INSTANTANEOUS LOW FLOW			52*
ANNUAL RUNOFF (CFSM)	3.27	2.87	2.44
ANNUAL RUNOFF (INCHES)	44.37	38.92	33.12
10 PERCENT EXCEEDS	2660	2050	1910
50 PERCENT EXCEEDS	936	1060	814
90 PERCENT EXCEEDS	448	591	364

\* See REMARKS.



## TENNESSEE RIVER BASIN

03512000 OCONALUFTEE RIVER AT BIRDTOWN, NC

LOCATION.--Lat 35°27'41", long 83°21'13", Swain County, Hydrologic Unit 06010203, in Cherokee Indian Reservation on left bank 200 ft upstream from bridge on Secondary Road 1359, 0.5 mi south of Birdtown, 0.6 mi downstream from Adams Creek, 0.6 mi upstream from Goose Creek, 2.2 mi southwest of Cherokee, and at mile 3.1.

DRAINAGE AREA.--184 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1945 to September 1946, July 1948 to current year.

GAGE.--Water-stage recorder and crest-stage gages. Datum of gage is 1,843.30 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1946, nonrecording gage at same site and datum. Tennessee Valley Authority satellite data transmitter at station.

REMARKS.--No estimated daily discharges. Records fair. Maximum gage height, 12.46 ft, from floodmarks. Minimum discharge, 79 ft<sup>3</sup>/s, also occurred Nov. 9, 1987. Minimum discharge for current water year also occurred Oct. 8.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods of Nov. 19, 1906, and Mar. 27, 1913, reached stages of 18 ft and 14.5 ft, respectively, discharge not determined, from studies by Tennessee Valley Authority.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	156	263	198	1120	465	726	1310	704	761	489	420	392
2	149	245	192	949	438	1890	1120	645	500	559	310	464
3	143	236	699	846	421	1130	996	607	441	658	270	381
4	170	223	738	738	407	1070	903	633	449	483	245	358
5	178	228	441	652	397	917	1110	681	395	441	252	348
6	148	270	371	597	437	867	939	689	371	400	227	343
7	142	216	334	611	418	813	858	600	350	372	224	341
8	193	205	305	629	391	826	848	560	334	362	264	322
9	276	220	280	574	375	733	854	585	317	340	1020	306
10	203	350	266	535	366	696	869	547	306	317	571	300
11	248	258	252	1680	351	650	766	522	296	311	500	288
12	898	232	243	1320	344	631	722	578	461	313	1460	274
13	463	219	239	1020	481	915	898	616	529	300	1100	266
14	311	207	300	873	879	1010	849	554	443	283	1040	264
15	260	202	285	781	614	872	819	554	443	264	897	263
16	237	197	368	887	536	799	759	620	406	256	686	271
17	225	223	343	740	533	760	714	548	424	247	569	261
18	1780	212	603	669	1350	1260	676	517	462	264	521	271
19	743	201	1110	630	2260	983	1110	543	500	255	524	777
20	496	201	656	645	4010	886	973	531	525	281	449	379
21	404	195	601	581	2330	813	887	490	598	268	399	317
22	576	191	577	524	1560	778	824	469	610	256	369	290
23	973	203	4430	501	1220	944	775	458	583	221	345	298
24	653	205	3110	482	1020	805	721	433	519	380	321	333
25	537	189	1520	454	905	720	671	413	472	472	310	476
26	483	183	1060	435	811	670	633	396	846	402	380	379
27	404	181	944	423	719	634	637	415	782	326	364	304
28	362	210	1260	419	657	787	659	506	620	396	329	286
29	330	297	1060	404	---	3490	723	568	552	565	402	267
30	305	208	1080	497	---	2630	809	444	509	381	561	251
31	285	---	1680	611	---	1710	---	411	---	418	462	---
TOTAL	12731	6670	25545	21827	24695	32415	25432	16837	14804	11280	15791	10070
MEAN	411	222	824	704	882	1046	848	543	493	364	509	336
MAX	1780	350	4430	1680	4010	3490	1310	704	846	658	1460	777
MIN	142	181	192	404	344	631	633	396	296	221	224	251
CFSM	2.23	1.21	4.48	3.83	4.79	5.68	4.61	2.95	2.68	1.98	2.77	1.82
IN.	2.57	1.35	5.16	4.41	4.99	6.55	5.14	3.40	2.99	2.28	3.19	2.04

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 1991, BY WATER YEAR (WY)

	MEAN	264	375	569	701	810	877	718	532	412	383	326	253
MAX	645	777	1266	1428	1700	1714	1265	1202	1136	938	694	584	
(WY)	1990	1958	1962	1974	1990	1963	1964	1984	1989	1989	1971	1989	
MIN	94.5	125	162	170	392	330	277	239	175	169	161	121	
(WY)	1955	1988	1966	1981	1978	1988	1986	1986	1988	1952	1987	1954	

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1945 - 1991
ANNUAL TOTAL	234458	218097	
ANNUAL MEAN	642	598	517
HIGHEST ANNUAL MEAN			704
LOWEST ANNUAL MEAN			274
HIGHEST DAILY MEAN	7950	Mar 17	8470
LOWEST DAILY MEAN	142	Oct 7	80
ANNUAL SEVEN-DAY MINIMUM	155	Sep 2	82
INSTANTANEOUS PEAK FLOW			8030
INSTANTANEOUS PEAK STAGE			7.81
INSTANTANEOUS LOW FLOW			138*
ANNUAL RUNOFF (CFSM)	3.49		3.25
ANNUAL RUNOFF (INCHES)	47.40		44.09
10 PERCENT EXCEEDS	1270		1010
50 PERCENT EXCEEDS	419		481
90 PERCENT EXCEEDS	184		228
			167

\* See REMARKS.

## TENNESSEE RIVER BASIN

03513000 TUCKASEGEE RIVER AT BRYSON CITY, NC

LOCATION.--Lat 35°25'40", long 83°26'51", Swain County, Hydrologic Unit 06010203, on left bank 400 ft downstream from bridge on Secondary Road 1364, Everett Street, in Bryson City, 0.6 mi downstream from Deep Creek, and at mile 12.6.

DRAINAGE AREA.--655 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1897 to December 1981, October 1983 to current year. Monthly discharge only for some periods, published in WSP 1306.

REVISED RECORDS.--WSP 523: 1916, 1918-20. WSP 823: Drainage area. WSP 1306: 1898-1913. WSP 1336: 1907, 1915(M), 1916-20, 1921-29(M), 1933-34(M).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,714.54 ft above National Geodetic Vertical Datum of 1929 (levels by Tennessee Valley Authority). Nov. 7, 1897, to Feb. 2, 1914, and May 18, 1920, to June 27, 1927, nonrecording gage at bridge 400 ft upstream at datum 2.00 ft higher. Feb. 3, 1914, to May 17, 1920, water-stage recorder at site 200 ft upstream at datum 2.00 ft higher. June 28, 1927, to Sept. 30, 1960, water-stage recorder at present site at datum 2.00 ft higher. Tennessee Valley Authority has telemetry at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Considerable diurnal fluctuation caused by powerplants above station. Flow regulated by Thorpe Reservoir, Cedar Cliff Lake, Bear Creek Lake, Tennessee Creek project lakes (see pp. 286, 287), and two small reservoirs with combined capacity of 250 ft<sup>3</sup>/s-day. Maximum discharge, 61,600 ft<sup>3</sup>/s, from rating curve extended above 28,000 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow. Minimum daily discharge, 31 ft<sup>3</sup>/s Sept. 9, 10, 1925, caused by filling reservoir on Oconaluftee River; minimum daily during normal regulation, 186 ft<sup>3</sup>/s Oct. 13, 1925. Minimum discharge for current water year also occurred on Oct. 7.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 1840, Mar. 6, 1867, and June 1876 reached stages of 22 ft, 19 ft, and 19 ft, respectively, present site and datum, discharge not determined, from studies by Tennessee Valley Authority. The flood in May 1840 exceeded all other observed floods at this location.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	564	698	615	2880	1510	2100	3970	2640	1980	1260	1820	1560
2	505	667	564	2480	1450	5090	3710	2410	1750	1850	1370	1620
3	571	646	1190	2280	1080	3470	3380	2270	1630	1880	1220	1600
4	522	630	1760	2150	1270	3400	3160	2120	1660	1420	1130	1480
5	613	633	1310	1810	1470	3100	3760	2090	1350	1290	1100	1460
6	507	761	1220	1650	1460	2930	3290	2310	1420	1140	e1030	1430
7	447	643	1190	1670	1160	2620	3070	1990	1280	981	e1000	1450
8	525	650	1030	2070	1340	2820	3040	1910	1110	1150	1130	1390
9	717	626	739	1780	1030	2490	3100	1970	1400	1110	2730	1390
10	571	1050	789	1670	944	2160	3140	2010	993	946	1930	1350
11	719	789	991	3840	1060	2190	2730	1950	1010	1060	1600	1150
12	1880	711	999	3750	1090	2150	2650	1910	1170	1100	4090	1090
13	1150	723	997	2930	1340	2740	2610	2030	1420	950	3530	1080
14	773	649	1070	2650	2590	2800	2390	1970	1210	745	2810	1110
15	662	625	983	2600	1870	2540	2600	1860	1210	1050	2610	1080
16	590	613	888	2910	1670	2130	2570	2130	1050	839	2120	1190
17	560	626	959	2500	1500	1780	2480	2120	1120	788	1820	1030
18	3240	605	1520	2410	3730	2920	2210	2200	1180	860	1690	1070
19	1690	597	2470	2350	4920	2680	3500	2310	1320	1210	1590	2030
20	1070	575	1760	2350	9000	2630	3200	2140	1600	1140	1450	1610
21	885	571	1710	1790	5850	2490	2850	2050	1620	917	1420	1210
22	1250	606	1470	1820	4250	2390	2860	1920	1410	942	1290	959
23	2320	587	7910	1600	3370	2450	2800	1870	1400	825	1220	1030
24	1480	590	7730	1520	2720	1880	2670	1780	1300	1150	1250	1270
25	1290	553	4090	1450	2370	1870	2520	1660	1200	1380	1140	1520
26	1120	547	2840	1280	2330	1700	2390	1660	1670	1400	1640	1360
27	957	543	2500	1100	1980	1810	2470	1640	1990	1280	1850	1130
28	867	593	3230	1210	1990	2370	2620	1750	1930	1830	1690	955
29	809	804	2690	1330	---	8970	2740	2330	1570	1980	2330	896
30	764	608	2480	1450	---	7380	3000	1890	1420	1480	2810	848
31	740	---	3740	1790	---	4810	---	1700	---	2050	1810	---
TOTAL	30358	19519	63414	65070	66344	92860	87480	62590	42373	38003	56220	38348
MEAN	979	651	2046	2099	2369	2995	2916	2019	1412	1226	1814	1278
MAX	3240	1050	7910	3840	9000	8970	3970	2640	1990	2050	4090	2030
MIN	447	543	564	1100	944	1700	2210	1640	993	745	1000	848

e Estimated

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1898 - 1991, BY WATER YEAR (WY)

	MEAN	2925	1046	1565	1993	2286	2569	2218	1738	1389	1246	1157	948
MAX	3654	2899	3704	4819	5847	6504	4843	3744	3199	3378	4251	3589	
(WY)	1899	1907	1933	1937	1899	1899	1920	1984	1909	1916	1901	1898	
MIN	347	378	457	599	736	926	841	602	531	503	220	195	
(WY)	1932	1932	1940	1940	1941	1988	1986	1941	1941	1925	1925	1925	

SUMMARY STATISTICS FOR 1990 CALENDAR YEAR FOR 1991 WATER YEAR WATER YEARS 1898 - 1991

ANNUAL TOTAL	746478	662579	1588
ANNUAL MEAN	2045	1815	2576
HIGHEST ANNUAL MEAN			879
LOWEST ANNUAL MEAN			28000
HIGHEST DAILY MEAN	11200	Feb 16	9000
LOWEST DAILY MEAN	447	Oct 7	447
ANNUAL SEVEN-DAY MINIMUM	527	Oct 2	527
INSTANTANEOUS PEAK FLOW			17600
INSTANTANEOUS PEAK STAGE			9.82
INSTANTANEOUS LOW FLOW			435*
ANNUAL RUNOFF (CFSM)	3.12		2.77
ANNUAL RUNOFF (INCHES)	42.40		37.63
10 PERCENT EXCEEDS	3890		2960
50 PERCENT EXCEEDS	1570		1590
90 PERCENT EXCEEDS	632		665

\* See REMARKS.

## TENNESSEE RIVER BASIN

03548500 HIWASSEE RIVER ABOVE MURPHY, NC

LOCATION.--Lat 35°04'49", long 84°00'10", Cherokee County, Hydrologic Unit 06020002, on right bank on U.S. Highway 64, 600 ft upstream from Will Scott Creek, 2.0 mi southeast of Murphy, and at mile 99.1.

DRAINAGE AREA.--406 mi<sup>2</sup>.

PERIOD OF RECORD.--June 1896 to August 1897 (gage heights only), October 1897 to current year. Published as "at Murphy" 1897-1940. Records published for both sites August 1939 to April 1940. Monthly discharge only for some periods, published in WSP 1306.

REVISED RECORD.--WSP 583: 1899(M). WSP 973: Drainage area. WSP 1003: 1943. WSP 1306: 1901-2, 1904-17, 1919(M), 1922(M), 1924-26(M). WSP 1706: 1899, 1907.

GAGE.--Water-stage recorder. Datum of gage is 1,538.23 ft above National Geodetic Vertical Datum of 1929 (levels by Tennessee Valley Authority). Prior to Jan. 30, 1921, nonrecording gage at bridge 2.8 mi downstream at datum 30.40 ft lower. Jan. 30, 1921 to Nov. 8, 1926, nonrecording gage 2.8 mi downstream at datum 28.40 ft lower. Nov. 9, 1926, to Apr. 30, 1940, water-stage recorder 2.8 mi downstream at datum 28.20 ft lower.

REMARKS.--No estimated daily discharges. Records good. Considerable diurnal fluctuation since 1924 caused by Mission powerplant at Andrews Dam 7 mi upstream, normal regulated storage, about 75 ft<sup>3</sup>/s-day. Flow regulated since 1942 by Chatuge Lake 22 mi upstream (station 03546500). Maximum discharge before regulation, 23,100 ft<sup>3</sup>/s, Mar. 19, 1899, gage height 18.4 ft, from graph based on gage readings, site and datum then in use, from rating curve extended above 5,000 ft<sup>3</sup>/s. Minimum daily discharge before regulation, 10 ft<sup>3</sup>/s, Dec. 3, 1924, result of freezeup and filling of Lake Andrews. Minimum discharge for current year also occurred on Oct. 8.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage observed is that of Mar. 19, 1899.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	247	970	243	2370	1180	984	1140	1180	1420	817	725	1010
2	252	763	203	2140	775	2120	986	1270	1430	1090	840	721
3	247	360	876	2090	599	1640	822	1500	1440	1070	827	1290
4	249	407	1670	2020	693	1980	853	1700	1500	828	825	982
5	273	914	1440	1530	908	1610	1030	1970	900	347	813	879
6	243	1100	989	1320	924	1390	912	1810	481	678	847	904
7	244	1060	790	1360	930	1390	711	1840	488	1060	884	824
8	295	1240	499	1260	1150	1360	1170	1800	449	1170	1050	610
9	728	1140	277	1310	789	1550	1370	1870	448	754	1250	865
10	836	742	734	1420	464	1630	1380	1810	439	402	938	958
11	985	244	1120	1600	425	1630	912	1110	429	406	873	1080
12	1120	345	1080	1430	819	1360	800	785	503	682	1930	948
13	619	441	1180	1300	1170	1430	895	1280	651	567	1710	1130
14	396	384	1280	1410	1210	1340	683	1620	478	356	1710	1050
15	783	367	577	1300	1290	1270	924	1470	553	658	1470	1080
16	1180	579	288	1090	1490	1170	824	1810	383	909	1300	1140
17	1030	410	879	745	771	1250	856	1620	445	1050	1010	1080
18	1750	453	1440	1010	1680	1200	925	1160	645	1050	648	1030
19	1450	762	1560	680	1940	1090	1210	829	979	1010	722	1090
20	699	605	1160	611	4250	1100	1100	1070	1170	853	1080	847
21	297	367	1120	1120	2410	1060	904	1200	1200	612	590	919
22	1070	197	608	1340	1730	1060	1090	1400	850	929	931	602
23	1750	195	6590	1430	1680	953	1210	1510	536	961	756	907
24	1090	321	4060	1160	1270	651	1170	1510	465	956	702	989
25	782	194	2000	890	1160	624	1370	1070	437	885	529	1250
26	1100	342	1820	480	1150	495	1220	726	802	817	2630	969
27	595	189	2120	489	1120	575	964	642	725	841	1570	1080
28	287	202	2390	643	921	741	1090	1240	613	815	1330	746
29	674	631	1960	754	---	3700	1590	1470	520	1040	1360	570
30	769	924	1640	497	---	2620	1700	1470	541	837	1440	1080
31	740	---	2630	1290	---	1480	---	1450	---	750	1200	---
TOTAL	22780	16848	45223	38089	34898	42453	31811	43192	21920	25200	34490	28630
MEAN	735	562	1459	1229	1246	1369	1060	1393	731	813	1113	954
MAX	1750	1240	6590	2370	4250	3700	1700	1970	1500	1170	2630	1290
MIN	243	189	203	480	425	495	683	642	383	347	529	570

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1942 - 1991, BY WATER YEAR (WY)

	MEAN	475	527	902	1082	1213	1086	1046	951	909	909	864	710
MAX	1530	1654	2268	2462	3076	2784	2155	2033	1852	1517	1530	1628	1628
(WY)	1990	1990	1968	1974	1990	1990	1953	1953	1989	1989	1967	1943	1943
MIN	98.8	106	214	223	408	373	219	212	237	228	120	141	141
(WY)	1953	1954	1948	1948	1954	1988	1986	1988	1953	1953	1953	1953	1953

SUMMARY STATISTICS

FOR 1990 CALENDAR YEAR

FOR 1991 WATER YEAR

WATER YEARS 1942 - 1991

ANNUAL TOTAL	454096	385534	888
ANNUAL MEAN	1244	1056	1414
HIGHEST ANNUAL MEAN			397
LOWEST ANNUAL MEAN			1990
HIGHEST DAILY MEAN	11600	Feb 16	11600
LOWEST DAILY MEAN	150	Sep 9	62
ANNUAL SEVEN-DAY MINIMUM	234	Nov 22	80
INSTANTANEOUS PEAK FLOW			18600
INSTANTANEOUS PEAK STAGE			13.88
INSTANTANEOUS LOW FLOW			2.19
ANNUAL RUNOFF (CFSM)	3.06		29.72
ANNUAL RUNOFF (INCHES)	41.61		1600
10 PERCENT EXCEEDS	2470		790
50 PERCENT EXCEEDS	917		207
90 PERCENT EXCEEDS	279		

\* Regulated period only (1942-1991). See REMARKS.

## TENNESSEE RIVER BASIN

03550000 VALLEY RIVER AT TOMOTLA, NC

LOCATION.--Lat 35°08'20", long 83°58'50", Cherokee County, Hydrologic Unit 06020002, on right bank at site of former bridge on Secondary Road 1373 at Tomotla, 600 ft upstream from bridge on U.S. Highway 19 and 74, 0.2 mi upstream from Roger Creek, 4.7 mi northeast of Murphy, and at mile 6.6.

DRAINAGE AREA.--104 mi<sup>2</sup>.

PERIOD OF RECORD.--June 1904 to December 1909, January 1914 to April 1917, October 1918 to current year.

REVISED RECORDS.--WSP 503: 1905-9, 1915-17. WSP 823: Drainage area. WSP 1306: 1917(M), 1920(M), 1922(M), 1925(M), 1930(M), 1933(M). WSP 1626: 1907(M).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,556.46 ft above National Geodetic Vertical Datum of 1929 (levels by Tennessee Valley Authority). Prior to May 11, 1934, nonrecording gage at same site and datum. Satellite telemetry installed 11/27/90.

REMARKS.--No estimated daily discharges. Record good. Maximum discharge, 18,000 ft<sup>3</sup>/s, from flood profile by Tennessee Valley Authority, from rating curve extended above 5,800 ft<sup>3</sup>/s on basis of slope-conveyance study. Minimum discharge, 12 ft<sup>3</sup>/s, occurred several days in August and September 1925. Minimum discharge for current water year also occurred Oct. 4.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of September 1898 reached a stage of 21.2 ft, from floodmark by Tennessee Valley Authority, discharge, about 20,000 ft<sup>3</sup>/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	55	96	98	533	279	454	596	433	183	164	178	430
2	54	92	96	454	258	935	506	388	171	178	130	351
3	51	89	332	429	244	684	447	349	164	222	109	296
4	59	88	412	393	232	617	411	326	210	161	101	260
5	66	98	263	354	223	529	576	356	164	165	99	232
6	54	121	206	328	234	478	484	370	152	151	92	215
7	51	97	178	346	222	445	436	320	159	137	124	202
8	79	92	158	338	210	441	450	295	145	133	105	184
9	75	111	141	313	201	405	549	308	139	125	316	172
10	103	167	132	299	194	375	586	289	134	118	204	163
11	158	125	125	663	187	353	510	283	130	124	161	163
12	203	114	119	762	181	338	459	325	148	128	676	154
13	128	107	121	601	353	479	441	349	163	151	671	154
14	97	103	183	486	809	429	412	306	162	115	548	164
15	84	100	152	429	501	393	390	298	198	141	478	152
16	77	97	167	436	392	362	362	367	153	159	342	159
17	72	95	223	378	460	343	341	333	147	117	264	136
18	461	91	393	344	1390	415	324	310	138	139	222	130
19	218	88	548	329	1590	372	501	329	179	119	217	158
20	145	88	398	337	2300	349	452	292	147	118	241	134
21	118	86	340	309	1360	331	406	269	188	111	184	124
22	281	84	287	283	881	317	374	248	189	103	164	118
23	438	90	2750	267	694	429	346	237	309	97	150	116
24	268	89	2130	258	564	363	323	225	207	104	146	131
25	197	83	810	244	497	333	300	212	178	148	157	198
26	159	82	542	232	451	312	286	202	351	107	645	152
27	138	79	498	226	410	298	326	221	306	179	478	127
28	124	102	680	222	380	537	390	214	245	167	330	118
29	113	155	606	213	---	1480	411	195	207	137	407	112
30	106	106	517	297	---	1330	464	205	185	127	704	108
31	101	---	666	341	---	781	---	182	---	165	622	---
TOTAL	4333	3015	14271	11444	15697	15707	12859	9036	5551	4310	9265	5313
MEAN	140	100	460	369	561	507	429	291	185	139	299	177
MAX	461	167	2750	762	2300	1480	596	433	351	222	704	430
MIN	51	79	96	213	181	298	286	182	130	97	92	108
CFSM	1.34	.97	4.43	3.55	5.39	4.87	4.12	2.80	1.78	1.34	2.87	1.70
IN.	1.55	1.08	5.10	4.09	5.61	5.62	4.60	3.23	1.99	1.54	3.31	1.90

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1904 - 1991, BY WATER YEAR (WY)

	MEAN	98.0	154	288	394	456	457	366	261	186	169	137	101
MAX	442	685	1045	936	1022	1379	835	755	607	443	563	434	
(WY)	1907	1930	1933	1974	1957	1917	1936	1929	1989	1949	1920	1928	
MIN	25.2	38.6	57.4	69.9	92.7	155	135	88.9	44.8	42.4	24.6	21.3	
(WY)	1955	1934	1934	1981	1941	1988	1986	1941	1988	1988	1925	1925	

SUMMARY STATISTICS	FOR 1990 CALENDAR YEAR	FOR 1991 WATER YEAR	WATER YEARS 1904 - 1991
ANNUAL TOTAL	123424	110801	
ANNUAL MEAN	338	304	255
HIGHEST ANNUAL MEAN			379
LOWEST ANNUAL MEAN			111
HIGHEST DAILY MEAN	4630	Feb 16	7780
LOWEST DAILY MEAN	49	Sep 7	12
ANNUAL SEVEN-DAY MINIMUM	52	Sep 3	13
INSTANTANEOUS PEAK FLOW		5960	Dec 23
INSTANTANEOUS PEAK STAGE		14.36	Dec 23
INSTANTANEOUS LOW FLOW		49*	Oct 3
ANNUAL RUNOFF (CFSM)	3.25	2.92	2.45
ANNUAL RUNOFF (INCHES)	44.15	39.63	33.29
10 PERCENT EXCEEDS	719	535	500
50 PERCENT EXCEEDS	197	222	174
90 PERCENT EXCEEDS	70	99	59

\* See REMARKS.

## OHIO RIVER BASIN

## Lakes and Reservoirs in Ohio River basin

**03460242 WATERVILLE LAKE.**--Lat 35°41'41", long 83°03'02", Haywood County, Hydrologic Unit 06010206, at Water-ville Dam on Pigeon River, 0.1 mi downstream from Cataloochee Creek, 5.5 mi southeast of Mount Sterling, and at mile 38.0.

**DRAINAGE AREA.**--455 mi<sup>2</sup>.

**PERIOD OF RECORD.**--October 1961 to current year. Prior to October 1979, published as Lake Walters.

**GAGE.**--Nonrecording gage read once daily. Datum of gage is National Geodetic Vertical Datum of 1929.

**REMARKS.**--Reservoir is formed by single-arch, variable-radius, concrete dam with 14 taintor gates 10 ft high by 24 ft wide. Dam was completed in 1929 and filling began October 1929; water in reservoir first reached minimum pool elevation November 1929. Total capacity (new capacity table put into use Jan. 1, 1971), at elevation 2,258.6 ft, top of gate is 12,800 ft<sup>3</sup>/s-day, of which 10,400 ft<sup>3</sup>/s-day is controlled storage above elevation 2,175 ft, normal minimum pool elevation. Reservoir is used for power. Prior to Jan. 1, 1971, records furnished by Carolina Power and Light Co.

**COOPERATION.**--Gage-height record furnished by Carolina Power and Light Co.; water-level storage records furnished by Tennessee Valley Authority.

**EXTREMES FOR PERIOD OF RECORD.**--Maximum contents: 12,800 ft<sup>3</sup>/s-day, several days each year; elevation, 2,258.6 ft. Minimum contents: 1,030 ft<sup>3</sup>/s-day, Sept. 16, 1980; elevation, 2,141.5 ft.

**EXTREMES FOR CURRENT YEAR.**--Maximum contents: 12,800 ft<sup>3</sup>/s-day, Dec. 23-24, Feb. 20-21, March 29-31, April 1-2, July 29, and Aug. 12, 14; elevation, 2,258.60 ft.

Minimum contents: 8,250 ft<sup>3</sup>/s-day, Oct. 15; elevation, 2,228.80 ft.

**03504500 NANTAHALA LAKE.**--Lat 35°11'56", long 83°39'17", Macon County, Hydrologic Unit 06010202, at Nantahala Dam on Nantahala River, 4.2 mi southeast of Topton, 5.5 mi upstream from Whiteoak Creek, and at mile 22.8.

**DRAINAGE AREA.**--91.0 mi<sup>2</sup>.

**PERIOD OF RECORD.**--January 1942 to current year. Prior to October 1944 monthend contents only, published in WSP 1306.

**GAGE.**--Water-stage recorder. Datum of gage is 122.16 ft National Geodetic Vertical Datum of 1929 (levels by Aluminum Co. of America); gage readings have been reduced to elevations NGVD. Prior to June 3, 1942, nonrecording gage at same site and datum.

**REMARKS.**--Reservoir is formed by rockfill dam with side-channel, gate-controlled spillway supplemented by fuse-plug dam. Dam completed and storage began Jan. 30, 1942; water in reservoir first reached minimum pool elevation Feb. 16, 1942. Total capacity (based on 1969 resurvey; new capacity table put into use Jan. 1, 1971), at elevation 2,890.0 ft, top of gates is 69,200 ft<sup>3</sup>/s-day, of which 63,500 ft<sup>3</sup>/s-day is controlled storage above 2,758.84 ft, normal minimum pool elevations. Reservoir is used for flood control and power.

**COOPERATION.**--Gage-height record furnished by Nantahala Power and Light Co.; water level storage records furnished by Tennessee Valley Authority.

**EXTREMES FOR PERIOD OF RECORD.**--Maximum contents: 70,400 ft<sup>3</sup>/s-day, Apr. 12, 1957; elevation, 2,890.55 ft.

Minimum contents (after first filling): 6,700 ft<sup>3</sup>/s-day, Jan. 28, 1955; elevation, 2,760.11 ft.

**EXTREMES FOR CURRENT YEAR.**--Maximum contents: 66,900 ft<sup>3</sup>/s-day, June 4; elevation, 2,887.08 ft.

Minimum contents: 27,000 ft<sup>3</sup>/s-day, Oct. 10; elevation, 2,822.77 ft.

**03507500 THORPE RESERVOIR.**--Lat 35°11'46", long 83°09'09", Jackson County, Hydrologic Unit 06010203, at Thorpe Dam on West Fork Tuckasegee River, 2.3 mi northwest of Glenville, 3.0 mi upstream from Shoal Creek, and at mile 9.7.

**DRAINAGE AREA.**--36.7 mi<sup>2</sup>.

**PERIOD OF RECORD.**--February 1941 to current year. Prior to October 1944 monthend contents only, published in WSP 1306. Prior to October 1948, published as Glenville Reservoir.

**GAGE.**--Water-stage recorder. Datum of gage is 391.75 ft National Geodetic Vertical Datum of 1929 (levels by Aluminum Co. of America); gage readings have been reduced to elevations NGVD. Prior to Apr. 9, 1941, nonrecording gage at same site and datum.

**REMARKS.**--Reservoir is formed by earth and rock dam and six 40 ft fuse-plug dams. Side-channel spillway equipped with two taintor gates 12 ft high by 25 ft wide. Dam completed and storage began Feb. 12, 1941. Water in reservoir first reached minimum pool elevation Mar. 15, 1941. Total capacity (based on 1969 resurvey; new capacity table put into use Jan. 1, 1971), at elevation 3,100.0 ft, top of gate is 35,500 ft<sup>3</sup>/s-day, of which 33,700 ft<sup>3</sup>/s-day is controlled storage above elevation 3,023.25 ft, normal minimum pool elevation. Reservoir is used for flood control and power.

**COOPERATION.**--Gage-height record furnished by Nantahala Power and Light Co.; water-level storage records furnished by Tennessee Valley Authority.

**EXTREMES FOR PERIOD OF RECORD.**--Maximum contents: 35,700 ft<sup>3</sup>/s-day, Mar. 13, 1950; maximum elevation, 3,100.07 ft, May 4, 1990.

Minimum contents (after first filling): 2,200 ft<sup>3</sup>/s-day, Feb. 5, 1955, Jan. 13, 1956; minimum elevation, 3,025.10 ft Feb. 5, 1955.

**EXTREMES FOR CURRENT YEAR.**--Maximum contents: 33,700 ft<sup>3</sup>/s-day, June 30; elevation, 3097.44 ft.

Minimum contents: 19,200 ft<sup>3</sup>/s-day, Oct. 12; elevation, 3,074.60 ft.

**03514500 FONTANA LAKE.**--Lat 35°27'07", long 83°48'18", Graham County, Hydrologic Unit 06010202, at Fontana Dam on Little Tennessee River, 5.7 mi upstream from Twenty Mile Creek, 9.0 mi north of Robbinsville, 9.6 mi upstream from Cheoah Dam, and at mile 61.0.

**DRAINAGE AREA.**--1,571 mi<sup>2</sup>.

**PERIOD OF RECORD.**--October 1944 to current year. Prior to November 1944, monthend contents only, published in WSP 1306.

**GAGE.**--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.

**REMARKS.**--Reservoir is formed by gravity, nonoverflow-type concrete dam. Spillway equipped with four radial gates 35 ft high by 35 ft wide. Storage began Nov. 7, 1944; dam completed March 1945; water in reservoir first reached minimum pool elevation Jan. 16, 1945. Total capacity (based on 1967 resurvey; new capacity table put into use Jan. 1, 1971); at elevation, 1,710.0 ft, top of gate is 727,500 ft<sup>3</sup>/s-day, of which 476,900 ft<sup>3</sup>/s-day is controlled storage above elevation 1,580.0 ft, normal minimum pool elevation. Reservoir is used for navigation, flood control, and power.

**COOPERATION.**--Records furnished by Tennessee Valley Authority.

**EXTREMES FOR PERIOD OF RECORD.**--Maximum contents: 728,600 ft<sup>3</sup>/s-day, May 28, 1973; elevation, 1,710.20 ft.

Minimum contents (after first filling): 78,300 ft<sup>3</sup>/s-day, Jan. 29, 1955; elevation, 1,472.0 ft.

**EXTREMES FOR CURRENT YEAR.**--Maximum contents: 703,700 ft<sup>3</sup>/s-day, July 1; elevation, 1,705.52 ft.

Minimum contents: 217,400 ft<sup>3</sup>/s-day, Oct. 24, elevation, 1,564.18 ft.

## OHIO RIVER BASIN

## Lakes and Reservoirs in the Ohio River basin--Continued

- 03516500 SANTEEELAH LAKE.**--Lat 35°22'38", long 83°52'33", Graham County, Hydrologic Unit 06010204, at Santeeelah Dam on Cheoah River, 1.0 mi downstream from Santeeelah Creek, 5.5 mi northwest of Robbinsville, and at mile 9.3.  
**DRAINAGE AREA.**--176 mi<sup>2</sup>.  
**PERIOD OF RECORD.**--December 1927 to current year. Prior to October 1946 monthend contents only, published in WSP 1306.  
**GAGE.**--Water-stage recorder. Datum of gage is 122.92 ft National Geodetic Vertical Datum of 1929 (levels by Aluminum Co. of America); gage readings have been reduced to elevations NGVD. Prior to February 1937, nonrecording gage at same site and datum.  
**REMARKS.**--Reservoir is formed by concrete gravity and arch dam with concrete spillway controlled by six taintor gates 12 ft high by 25 ft wide. Dam completed and storage began Dec. 7, 1927. Water in reservoir first reached minimum pool elevation December 1927. Total capacity (new capacity table put into use Jan. 1, 1971), at elevation 1,817.0 ft; top of gate is 78,800 ft<sup>3</sup>/s-day, of which 66,600 ft<sup>3</sup>/s-day is controlled storage above 1,740.08 ft, normal minimum pool elevation. Reservoir is used for power.  
**COOPERATION.**--Gage-height record furnished by Aluminum Co. of America; water level storage records furnished by Tennessee Valley Authority.  
**EXTREMES FOR PERIOD OF RECORD.**--Maximum contents: 81,100 ft<sup>3</sup>/s-day, Sept. 3, 1928; elevation, 1,817.90 ft. Minimum contents (after first filling): 13,100 ft<sup>3</sup>/s-day, Feb. 6, 1940; elevation, 1,741.39 ft.  
**EXTREMES FOR CURRENT YEAR.**--Maximum contents: 75,500 ft<sup>3</sup>/s-day, Apr. 1; elevation, 1,814.65 ft. Minimum contents: 52,300 ft<sup>3</sup>/s-day, Dec. 14, elevation, 1,795.88 ft.
- 03546500 CHATUGE LAKE.**--Lat 35°01'01", long 83°47'28", Clay County, Hydrologic Unit 06020002, at Chatuge Dam on Hiwassee River, 2.0 mi upstream from Hyatt Mill Creek, 2.5 mi downstream from Georgia-North Carolina State line, 2.4 mi southeast of Hayesville, and at mile 121.0.  
**DRAINAGE AREA.**--189 mi<sup>2</sup>.  
**PERIOD OF RECORD.**--February 1942 to current year.  
**GAGE.**--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Aug. 4, 1942, nonrecording gage at same site and datum.  
**REMARKS.**--Reservoir is formed by a rolled, earthfill dam with side-channel spillway equipped with flashboards. Dam completed and storage began Feb. 12, 1942; water in reservoir first reached minimum pool elevation Feb. 26, 1942. Total capacity (based on 1965 resurvey; new capacity table put into use Jan. 1, 1971), at elevation 1,928.0 ft, top of flashboard is 121,200 ft<sup>3</sup>/s-day, of which 61,700 ft<sup>3</sup>/s-day is controlled storage above elevation 1,905.0 ft, normal minimum pool elevation. Reservoir is used for navigation, flood control, and power.  
**COOPERATION.**--Records furnished by Tennessee Valley Authority. (See sta 03548500)  
**EXTREMES FOR PERIOD OF RECORD.**--Maximum contents: 124,200 ft<sup>3</sup>/s-day, Apr. 20, 1943; elevation, 1,927.80 ft. Minimum contents (after first filling): 9,400 ft<sup>3</sup>/s-day, Sept. 5, 1947 and Jan. 27, 1956; elevation, 1,860.11 ft, Sept. 5, 1947.  
**EXTREMES FOR CURRENT YEAR.**--Maximum contents: 117,900 ft<sup>3</sup>/s-day, May 6; elevation, 1,927.06 ft. Minimum contents: 78,200 ft<sup>3</sup>/s-day, Jan. 10; elevation, 1,913.57 ft.
- 03554500 HIWASSEE LAKE.**--Lat 35°09'01", long 84°10'40", Cherokee County, Hydrologic Unit 06020002, at Hiwassee Dam on Hiwassee River, 0.3 mi northwest of village of Hiwassee Dam, 3.9 mi upstream from Shoal Creek, and at mile 75.8.  
**DRAINAGE AREA.**--968 mi<sup>2</sup>.  
**PERIOD OF RECORD.**--September 1939 to current year.  
**GAGE.**--Water-stage recorder. Datum of gage is 0.63 ft below National Geodetic Vertical Datum of 1929.  
**REMARKS.**--Reservoir is formed by gravity overflow concrete dam with seven taintor gates 23 ft high by 32 ft wide. Slight storage began Apr. 13, 1939, during construction; systematic storage operation began Jan. 14, 1940; dam completed February 1940; water in reservoir first reached minimum pool elevation Feb. 23, 1940. Total capacity (based on 1965 resurvey; new capacity table put into use Jan. 1, 1971), at elevation 1,526.5 ft, top of gate is 218,800 ft<sup>3</sup>/s-day of which 154,300 ft<sup>3</sup>/s-day is controlled storage above elevation 1,450.0 ft, normal minimum pool elevation. Reservoir is used for navigation, flood control, and power.  
**COOPERATION.**--Records furnished by Tennessee Valley Authority.  
**EXTREMES FOR PERIOD OF RECORD.**--Maximum contents: 223,400 ft<sup>3</sup>/s-day, May 28, 1973; elevation, 1,528.02 ft. Minimum contents (after first filling): 35,800 ft<sup>3</sup>/s-day, Jan. 28, 1948; elevation, 1,413.41 ft.  
**EXTREMES FOR CURRENT YEAR.**--Maximum contents: 217,500 ft<sup>3</sup>/s-day, May 18; elevation, 1,526.11 ft. Minimum contents: 88,000 ft<sup>3</sup>/s-day, Dec. 17, elevation, 1,468.87 ft.
- 03555500 APPALACHIA LAKE.**--Lat 35°10'04", long 84°17'49", Cherokee County, Hydrologic Unit 06020002, at Appalachia Dam on Hiwassee River, 0.1 mi upstream from North Carolina-Tennessee State line, 1.5 mi northeast of Farner, Tennessee, 9.8 mi downstream from Hiwassee Dam, and at mile 66.0.  
**DRAINAGE AREA.**--1,018 mi<sup>2</sup>.  
**PERIOD OF RECORD.**--February 1943 to current year.  
**GAGE.**--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.  
**REMARKS.**--Reservoir is formed by concrete gravity dam. Spillway equipped with 10 radial gates. Dam completed and storage began Feb. 14, 1943; water in reservoir first reached minimum pool elevation Feb. 21, 1943. Total capacity (based on 1965 resurvey; new capacity table put into use Jan. 1, 1971), at elevation 1,280.00 ft, top of gate is 29,100 ft<sup>3</sup>/s-day, of which 4,400 ft<sup>3</sup>/s-day is controlled storage above elevation 1,272.00 ft, normal minimum pool elevation. Reservoir is used for navigation, flood control, and power.  
**COOPERATION.**--Records furnished by Tennessee Valley Authority.  
**EXTREMES FOR PERIOD OF RECORD.**--Maximum contents: 30,300 ft<sup>3</sup>/s-day, June 13, 1952; elevation, 1,281.40 ft. Minimum contents (after first filling): 15,300 ft<sup>3</sup>/s-day, Apr. 25, 1971; elevation, 1,251.00 ft.  
**EXTREMES FOR CURRENT YEAR.**--Maximum contents, 29,100 ft<sup>3</sup>/s-day, Nov. 21; elevation, 1,279.90 ft. Minimum contents: 24,500 ft<sup>3</sup>/s-day, Dec. 29; elevation, 1,271.51 ft.
- OTHER RESERVOIRS** The following smaller reservoirs in the Tennessee River basin are described below. Records of contents are not published herein.
- 03447832 LAKE JULIAN.**--Lat 35°28'37", long 82°32'51", Buncombe County, Hydrologic Unit 06010105, on Powells Creek near Skyland, cooling water reservoir for Carolina Power and Light Co. plant. Prior to November 1967, published as Asheville Steam-Electric Generating Plant Lake. Drainage area is 4.78 mi<sup>2</sup>. Total capacity is 4,540 ft<sup>3</sup>/s-day, of which 2,120 ft<sup>3</sup>/s-day is controlled storage. Storage began Mar. 27, 1963, and lake reached spillway elevation, 2,160 ft, June 3, 1963. Most of initial storage and occasional, supplemental storage provided by pumped diversion from French Broad River.

## OHIO RIVER BASIN

## Lakes and Reservoirs in the Ohio River basin--Continued

- 03448959 BURNETT LAKE.**--Lat 35°39'44", long 82°20'43", Buncombe County, Hydrologic Unit 06010105, on North Fork Swannanoa River near Black Mountain, part of Asheville's municipal water supply. Drainage area, 21.9 mi<sup>2</sup>. Total capacity at crest of spillway is 11,600 ft<sup>3</sup>/s-day, of which 8,900 ft<sup>3</sup>/s-day is controlled storage. Storage began Jan. 28, 1954. (See sta 03451000)
- 03450134 BEETREE RESERVOIR.**--Lat 35°38'27", long 82°24'04", Buncombe County, Hydrologic Unit 06010105, on Beetree Creek near Swannanoa, part of Asheville's municipal water supply. Drainage area, 7.62 mi<sup>2</sup>. Total capacity is 844 ft<sup>3</sup>/s-day, of which 823 ft<sup>3</sup>/s-day is controlled storage. Dam completed December 1926, and storage began Jan. 11, 1927; water in reservoir first reached maximum pool elevation Mar. 8, 1927. (See sta 03451000)
- 03455773 LAKE LOGAN.**--Lat 35°25'15", long 82°55'30", Haywood County, Hydrologic Unit 06010106, on West Fork Pigeon River near Canton and at mile 7.0. Drainage area, 33.3 mi<sup>2</sup>. Total capacity, top of flashboards, is 1,040 ft<sup>3</sup>/s-day, all of which is usable. Storage began November 1931. (See sta 03456100)
- 03458319 LAKE JUNALUSKA.**--Lat 35°31'38", long 82°57'48", Haywood County, Hydrologic Unit 06010106, on Richland Creek at Lake Junaluska and at mile 2.4. Drainage area is 63.6 mi<sup>2</sup>. Total surface area is about 195 acres. The lake reached spillway elevation in the spring of 1913.
- 03500466 SEQUOYAH LAKE.**--Lat 35°04'02", long 83°13'31", Macon County, Hydrologic Unit 06010202, on Cullasaja River near Highlands, and at mile 18.4. Drainage area is 14.4 mi<sup>2</sup>. Total capacity, at crest of spillway, is 233 ft<sup>3</sup>/s-day, of which approximately 116 ft<sup>3</sup>/s-day is usable. Storage began in 1926.
- 03507111; 03507131 EAST FORK LAKE AND WOLF CREEK LAKE.**--These two reservoirs are operated as a unit for storage of water for the Tennessee Creek Project. **East Fork Dam.**--Lat 35°12'48", long 83°00'08", Jackson County, Hydrologic Unit 06010203, on Tuckasegee River near Tuckasegee. Drainage area is 24.9 mi<sup>2</sup>. Total capacity of East Fork Lake is 671 ft<sup>3</sup>/s-day, of which 625 ft<sup>3</sup>/s-day is controlled storage. Storage began April 18, 1955. **Wolf Creek Dam.**--Lat 35°13'18", long 83°00'00", on Wolf Creek near Tuckasegee. Drainage area is 15.2 mi<sup>2</sup>. Total capacity of Wolf Creek Lake is 5,070 ft<sup>3</sup>/s-day, of which 3,850 ft<sup>3</sup>/s-day is controlled storage. Storage began Mar. 22, 1955.
- 03507216 BEAR CREEK LAKE.**--Lat 35°14'29", long 83°04'22", Jackson County, Hydrologic Unit 06010203, on Tuckasegee River near Tuckasegee. Drainage area is 74.8 mi<sup>2</sup>. Total capacity is 17,500 ft<sup>3</sup>/s-day, of which 2,290 ft<sup>3</sup>/s-day is controlled storage. Storage began Oct. 9, 1953.
- 03507289 CEDAR CLIFF LAKE.**--Lat 35°15'12", long 83°05'58", Jackson County, Hydrologic Unit 06010203, on Tuckasegee River near Tuckasegee and at mile 51.9. Drainage area is 80.3 mi<sup>2</sup>. Total capacity is 3,200 ft<sup>3</sup>/s-day, of which 350 ft<sup>3</sup>/s-day is controlled storage. Storage began Apr. 26, 1952.
- 03515152 CHEOAH LAKE.**--Lat 35°26'54", long 83°56'11", Graham County, Hydrologic Unit 06010202, on Little Tennessee River at Cheoah and at mile 51.4. Drainage area is 1,608 mi<sup>2</sup>. Total capacity is 17,700 ft<sup>3</sup>/s-day, of which 920 ft<sup>3</sup>/s-day is controlled storage. Storage began Dec. 8, 1918.

## OHIO RIVER BASIN

## Lakes and Reservoirs in Ohio River basin--Continued

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

Date	Elevation (feet)	Contents (cfs- days)	Change in contents (cfs- days)	Gage height (feet)	Contents (cfs- days)	Change in contents (cfs- days)	Gage height (feet)	Contents (cfs- days)	Change in contents (cfs- days)	Elevation (feet)	Contents (cfs- days)	Change in contents (cfs- days)
	03460242 Waterville Lake			03504500 Nantahala Lake			03507500 Thorpe Reservoir			03524500 Fontana Lake		
Sept. 30.....	2,252.10	11,790	-	2,825.27	28,200	-	3,074.12	19,000	-	1,603.10	307,200	-
Oct. 31.....	2,244.50	10,600	-1,190	2,833.30	32,100	+3,900	3,078.64	21,400	+2,400	1,564.30	217,700	-89,500
Nov. 30.....	2,254.00	12,100	+1,500	2,844.82	38,400	+6,300	3,081.78	23,300	+1,900	1,572.50	234,400	+16,700
Dec. 31.....	2,248.60	11,240	-860	2,862.74	49,500	+11,100	3,083.44	24,300	+1,000	1,612.14	332,600	+98,200
CAL YR 1990		-	0		-	+2,800		-	+100		-	-150,800
Jan. 31.....	2,243.20	10,400	-840	2,860.00	47,700	-1,800	3,084.64	25,000	+700	1,637.08	410,900	+78,300
Feb. 28.....	2,235.80	9,270	-1,130	2,868.59	53,400	+5,700	3,089.00	27,900	+2,900	1,654.59	474,500	+63,600
Mar. 31.....	2,258.60	12,850	+3,580	2,877.68	59,800	+6,400	3,095.12	32,100	+4,200	1,669.71	535,200	+60,700
Apr. 30.....	2,244.90	10,660	-2,190	2,883.50	64,100	+4,300	3,096.62	33,100	+1,000	1,696.19	655,900	+120,700
May 31.....	2,245.90	10,820	+160	2,886.77	66,700	+2,600	3,096.65	33,100	0	1,703.71	694,200	+38,300
June 30.....	2,255.80	12,390	+1,570	2,884.60	65,000	-1,700	3,097.44	33,700	+600	1,705.34	702,700	+8,500
July 31.....	2,254.40	12,160	-230	2,879.90	61,400	-3,600	3,096.50	33,000	-700	1,699.36	671,800	-30,900
Aug. 31.....	2,253.00	11,940	-220	2,873.30	56,600	-4,800	3,093.25	30,800	-2,200	1,692.44	637,600	-34,200
Sept. 30.....	2,252.20	11,810	-130	2,860.02	47,800	-8,800	3,088.20	27,300	-3,500	1,677.61	569,200	-68,400
WTR YR 1991		-	+20		-	+19,600		-	+8,300		-	+262,000

Date	Gage height (feet)	Contents (cfs- days)	Change in contents (cfs- days)	Elevation (feet)	Contents (cfs- days)	Change in contents (cfs- days)	Elevation (feet)	Contents (cfs- days)	Change in contents (cfs- days)	Elevation (feet)	Contents (cfs- days)	Change in contents (cfs- days)
	03516500 Santeetlah Lake			03546500 Chatuge Lake			03554500 Hiwassee Lake			03555500 Appalachia Lake		
Sept. 30.....	1,807.00	65,300	-	1,917.54	88,400	-	1,498.97	143,800	-	1,277.17	27,600	-
Oct. 31.....	1,806.86	65,100	-200	1,916.72	86,200	-2,200	1,493.78	132,300	-11,500	1,277.36	27,700	+100
Nov. 30.....	1,796.88	53,400	-11,700	1,915.27	82,400	-3,800	1,476.61	100,500	-31,800	1,277.35	27,700	0
Dec. 31.....	1,807.64	66,100	+12,700	1,915.25	82,400	0	1,483.48	112,500	+12,000	1,273.58	25,600	-2,100
CAL YR 1990		-	+9,100		-	+1,400		-	+3,500		-	-3,200
Jan. 31.....	1,804.58	62,300	-3,800	1,914.48	80,400	-2,000	1,475.23	98,200	-14,300	1,277.67	27,800	+2,200
Feb. 28.....	1,811.91	71,700	+9,400	1,916.45	85,500	+5,100	1,483.10	111,800	+13,600	1,275.93	26,900	-900
Mar. 31.....	1,814.57	75,400	+3,700	1,921.56	100,000	+14,500	1,498.80	143,400	+31,600	1,276.40	27,100	+200
Apr. 30.....	1,814.08	74,700	-700	1,926.42	115,700	+15,700	1,518.70	194,300	+50,900	1,276.88	27,400	+300
May 31.....	1,813.39	73,800	-900	1,925.97	114,100	-1,600	1,523.28	208,300	+14,000	1,276.70	27,300	-100
June 30.....	1,814.42	75,200	+1,400	1,926.83	117,100	+3,000	1,523.58	209,300	+1,000	1,276.44	27,200	-100
July 31.....	1,812.07	71,900	-3,300	1,924.91	110,600	-6,500	1,519.72	197,300	-12,000	1,276.42	27,200	0
Aug. 31.....	1,807.69	66,200	-5,700	1,925.33	112,000	+1,400	1,520.08	198,400	+1,100	1,277.78	27,900	+700
Sept. 30.....	1,812.30	72,200	+6,000	1,922.54	103,000	-9,000	1,511.92	175,800	-22,600	1,277.40	27,700	-200
WTR YR 1991		-	+6,900		-	+14,600		-	+32,000		-	+100

## DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

As the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the Geological Survey collects limited streamflow data at sites other than stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. Data collected at these partial-record stations are usable in low-flow or floodflow analyses, depending on the type of data collected. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in times of drought or flood to give better areal coverage to these events. These measurements and others collected for special reasons are called measurements at miscellaneous sites.

Records collected at peak-stage, partial-record stations are presented in the following table. Discharge measurements made at low-flow, partial-record sites and at miscellaneous sites and for special studies are given in separate tables.

## Peak discharge stations

The following table contains annual maximum discharges for peak discharge stations. A peak discharge gage is a device which will register the peak stage occurring between inspections of the gage. A stage-discharge relation for each gage is developed from discharge measurements made by indirect measurements of peak flow or by current meter. The date of the maximum discharge is not always certain but is usually determined by comparison with nearby continuous-record stations, weather records, or local inquiry. Only the maximum discharge for each water year is given. Information on some lower floods may have been obtained but is not published herein. The years given in the period of record represent water years for which the annual maximum has been determined.

## Annual maximum discharge at peak discharge stations during water year 1991

Station No.	Station name	Location	Drainage area (mi <sup>2</sup> )	Period of Record	Annual Maximum		
					Date	Gage height (feet)	Dis-charge (ft <sup>3</sup> /s)
02086500	Flat River at Dam near Bahama	Lat 36°08'55", long 78°49'43", Durham County, Hydrologic Unit 03020201, on right bank 900 ft downstream from Durham municipal dam, 3 mi southeast of Bahama, and 5 mi upstream from confluence with Eno River.	168	1927-59†	1-12-91	12.58	6520
				1961-66,	3-30-91	12.58	6520
				1982-90			

†Operated as a continuous-record gaging station.

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## MEASUREMENTS AT MISCELLANEOUS SITES

Stream	Tributary to	Location	Drainage area (mi <sup>2</sup> )	Measured previously (water years)	Date	Discharge (ft <sup>3</sup> /s)
DISCHARGE MEASUREMENTS MADE AT MISCELLANEOUS SITES DURING WATER YEAR 1991, IN ATLANTIC SLOPE BASINS						
ROANOKE RIVER BASIN						
02070500 Mayo River	Dan River	Lat 36°32'05", long 79°59'30", Rockingham County, Hydrologic Unit 03010103, at bridge on Secondary Road 1358, 0.5 mi downstream from confluence of North and South Mayo Rivers, 0.8 mi downstream from Virginia-North Carolina State Line, and 4 mi west of Price.	261	1929-71†, 1981, 1985-90	3-11-91 5- 8-91 8-19-91	408 406 213
02077348 Marlowe Creek	Dan River	Lat 36°29'03", long 78°58'47", Person County, Hydrologic Unit 03010104, at bridge on Secondary Road 1322, downstream from Fishing Branch, and 1.2 mi west of Woodsdale.	17.8	1970, 1974, 1976, 1978, 1980-90	4- 8-91	19.9
02079101 Grassy Creek	Roanoke River	Lat 36°29'22", long 78°37'08", Granville County, Hydrologic Unit 03010102, at bridge on Secondary Road 1436, 0.7 mi downstream from Little Grassy Creek, and 2.8 mi east-northeast of Cornwall.	61.2	1981-90	11-13-90 2-12-91 5-23-91	12.6 19.7 17.7
02079264 Nutbush Creek	Roanoke River	Lat 36°22'10", long 78°24'31", Vance County, Hydrologic Unit 03010102, at bridge on Secondary Road 1317, 0.1 mi upstream from Buggs Island Reservoir, and 3 mi north of Henderson.	6.0	1970, 1974, 1976, 1978-90	11-13-90 2-12-91 5-23-91 9- 9-91	4.77 5.19 7.33 1.26
02079717 Smith Creek	Roanoke River	Lat 36°32'27", long 78°11'43", Warren County, Hydrologic Unit 03010106, at bridge on U.S. Highway 1, 0.3 mi downstream from Blue Mud Creek, and 2.1 mi west of Paschall.	52.9	1954, 1961-63, 1966, 1976, 1979-90	11-13-90 2-12-91 5-23-91 9- 9-91	14.3 25.5 28.4 3.93
NEUSE RIVER BASIN						
02087251 Crabtree Creek	Neuse River	Lat 35°50'15", long 78°46'52", Wake County, Hydrologic Unit 03020201, at bridge on Secondary Road 1795, 0.3 mi downstream from Hayleys Branch, and 3.5 mi north of Cary.	52.2	1983-90	2-12-91 9-27-91	15.4 63.7
0208732544 Pigeon House Creek	Crabtree Creek	Lat 35°47'37", long 78°38'35", Wake County, Hydrologic Unit 03020201, at Dortch Street, and 1.2 mi north of Post Office Building in Raleigh.	0.59	1984-90	11-14-90 2-11-91 5-22-91 9-26-91	0.55 0.08 1.62 0.78
0208758450 Dutchman's Branch	Neuse River	Lat 35°41'28", long 78°43'30", Wake County, Hydrologic Unit 03020201, 0.2 mi above mouth and 2.2 mi northwest of McCullers Crossroads.	5.23	1987-90	3-22-91 6 -7-91 9-27-91	3.16 0.10 0.08
0208772185 Swift Creek	Neuse River	Lat 35°37'46", long 78°32'57", Johnston County, Hydrologic Unit 03020201, at State Highway 42, and 1.4 mi northeast of Drug Store.	86.6	1984-90	3-22-91 6- 6-91 9-24-91	77.9 8.29 8.60
02091814 Neuse River	Atlantic Ocean	Lat 35°18'40", long 77°18'20", Craven County, Hydrologic Unit 03020202, at bridge on Secondary Road 1470, 1.5 mi upstream from Core Creek, and 2 mi east of Fort Barnwell.	a3900	1970, 1972-73, 1976, 1978, 1980-82, 1985-90	3-26-91 9-10-91	5,110 1,320

† Operated as a continuous-record gaging station.

a Approximately

## DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

## DISCHARGE MEASUREMENTS MADE AT MISCELLANEOUS SITES DURING WATER YEAR 1991

Stream	Tributary to	Location	Drainage area (mi <sup>2</sup> )	Measured previously (water years)	Measurements	
					Date	Discharge (ft <sup>3</sup> /s)
CAPE FEAR RIVER BASIN						
02093250 Haw River	Cape Fear River	Lat 36°12'47", long 79°57'24", Guilford County, Hydrologic Unit 03030002, on Secondary Road 2109, 0.2 mi downstream of Rocky Branch, and 3.3 mi northeast of Oak Ridge.	14.1	1971, 1973, 1984, 1986-90	12-20-90 2- 4-91 3-21-91 5- 2-91 8-26-91	13.1 19.4 18.4 19.8 15.1
02095091 South Buffalo Creek	Buffalo Creek	Lat 36°06'45", long 79°40'19", Guilford County, Hydrologic Unit 03030002, at bridge on Secondary Road 2821, 0.8 mi northwest of McLeansville, and 1.4 mi upstream from mouth.	43.5	1969-70, 1973, 1976-81, 1983-89	11-13-90 12-20-90 8-21-91	50.8 46.6 30.1
02095681 Reedy Fork	Haw River	Lat 36°10'23", long 79°30'38", Alamance County, Hydrologic Unit 03030002, at bridge on State Highway 87, at Ossipee, and 0.5 mi upstream from mouth.	256	1969-70, 1973, 1976-90	3-21-91	120
02096879 Haw River	Cape Fear River	Lat 35°53'43", long 79°15'31", Alamance County, Hydrologic Unit 03030002, at bridge on Secondary Road 1005, 0.7 mi upstream from Cane Creek, and 5.8 mi north of Terrells.	1083	1974-75, 1979-86, 1989-90	5-16-91	427
02097360 Bolin Creek	Little Creek	Lat 35°55'40", long 79°02'08", Orange County, Hydrologic Unit 03030002, at bridge on U.S. Highway 15A, 1.0 mi above Booker Creek, and 1.5 mi northeast of Chapel Hill.	10.7	1954, 1960, 1962, 1964, 1965-68, 1974-76, 1978, 1980-90	2-11-91	2.80
02097521 Morgan Creek	New Hope River	Lat 35°51'48", long 79°00'35", Chatham County, Hydrologic Unit 03030002, at bridge on Secondary Road 1726, 2 mi upstream from Cub Creek, and 4 mi north of Farrington.	45.6	1970, 1973, 1976, 1978, 1980-90	2-11-91 5-22-91 9- 6-91	16.4 63.1 9.33
02099484 Richland Creek	Deep River	Lat 35°56'26", long 79°54'08", Guilford County, Hydrologic Unit 03030003, at bridge on Secondary Road 1147, 0.2 mi upstream from mouth, and 4 mi southwest of Groomtown.	16.2	1971, 1973-76, 1978-90	8-22-91	28.1
02101001 Bear Creek	Deep River	Lat 35°26'26", long 79°35'20", Moore County, Hydrologic Unit 03030003, at bridge on State Highway 705, 0.5 mi north of Robbins, and 1 mi downstream from Cabin Creek.	139	1973-74, 1985-90	10- 3-90 1-10-91 4-11-91 9-19-91	1.82 234 99.0 1.57
02102634 Upper Little River	Cape Fear River	Lat 35°19'33", long 78°43'26", Harnett County, Hydrologic Unit 03030004, at bridge on Secondary Road 2021, 1.5 mi upstream from mouth, and 2.8 mi west of Erwin.	217	1968, 1974-76, 1979, 1985-90	11-28-90 3-22-91 6- 6-91 9-30-91	37.8 305 36.6 31.9
02103000 Little River	Cape Fear River	Lat 35°11'38", long 78°59'14", Cumberland County, Hydrologic Unit 03030004, at bridge on State Highway 87, at Manchester, and 0.3 mi upstream from Tank Creek.	347	1939-50†, 1978, 1980-90	3-22-91 6- 6-91 9- 4-91	402 90.7 165
02104279 Rockfish Creek	Cape Fear River	Lat 34°58'10", long 79°06'40", Hoke County, Hydrologic Unit 03030004, at bridge on Secondary Road 1432, 0.2 mi downstream from Puppy Creek, and 1.2 mi northeast of Arabia.	a150	1973-74, 1978, 1980-90	11-27-90 3-21-91 6- 4-91 9- 4-91	129 207 112 156
02104380 Beaver Creek	Little Rockfish Creek	Lat 35°00'09", long 78°58'45", Cumberland County, Hydrologic Unit 03030004, at bridge on Secondary Road 1141 at Cumberland, and 1 mi upstream from mouth.	32.6	1961-65, 1968, 1973-75, 1979-90	11-27-90 3-21-91 6- 4-91 9- 4-91	16.6 26.7 12.8 16.9

† Operated as a continuous-record gaging station.

a Approximately

## DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

## DISCHARGE MEASUREMENTS MADE AT MISCELLANEOUS SITES DURING WATER YEAR 1991

Stream	Tributary to	Location	Drainage area (mi <sup>2</sup> )	Measured previously (water years)	Measurements	
					Date	Discharge (ft <sup>3</sup> /s)
CAPE FEAR RIVER BASIN--Continued						
02104500 Rockfish Creek	Cape Fear River	Lat 34°57'57", long 78°55'00", Cumberland County, Hydrologic Unit 03030004, at bridge on U.S. Highway 301, 0.1 mi downstream from Little Rockfish Creek, and 1.7 mi east of Hope Mills.	292	1974-76, 1979-90	3-21-91	410
					6- 5-91	173
					9- 4-91	217
02105520 Harrisons Creek	Cape Fear River	Lat 34°43'55", long 78°42'59", Bladen County, Hydrologic Unit 03030005, at bridge on Secondary Road 1320, 1.2 mi upstream from mouth, and 1.2 mi south of White Oak.	50.1	1985-90	11-26-90	30.5
					3-20-91	67.3
					6- 4-91	14.5
					9- 3-91	57.3
0210563128 Turnbull Creek	Cape Fear River	Lat 34°33'49", long 78°33'26", Bladen County, Hydrologic Unit 03030005, at bridge on State Highway 41, 3.0 mi upstream from mouth, and 3.0 mi northeast of Elizabethtown.	81.4	1985-90	11-26-90	62.0
					3-20-91	120
					6- 3-91	58.8
					9- 3-91	155
02108500 Rockfish Creek	Northeast Cape Fear River	Lat 34°44'32", long 78°02'22", Duplin County, Hydrologic Unit 03030007, on right bank at down- stream side of bridge on State Highway 41, 1.5 mi upstream from Doctors Creek, and 2.5 mi west of Wallace.	69.3	1955-80†, 1981-90	11-29-90	25.0
					3-20-91	53.1
PEE DEE RIVER BASIN						
02120521 Third Creek	South Yadkin River	Lat 35°46'03", long 80°37'34", Rowan County, Hydrologic Unit 03040102, at bridge on Secondary Road 1970, and 2.2 mi west of Woodleaf.	96.6	1986-90	1-17-91	151
					4-18-91	138
02123500 Uwharrie River	Pee Dee River	Lat 35°25'47", long 80°01'05", Montgomery County, Hydrologic Unit 03040103, at State Highway 109, 1 mi upstream from McLeans Creek, and 3 mi south of Eldorado.	342	1938-71†, 1981-90	10- 3-90	9.37
					1-10-91	862
					4-11-91	265
					9-19-91	29.0
0212388100 Rocky River	Pee Dee River	Lat 35°28'29", long 80°46'48", Mecklenburg County, Hydrologic Unit 03040105, at bridge on Secondary Road 1608, 1.3 mi upstream from West Branch, and 4.2 mi southeast of Davidson.	13.4	1970-90	10-30-90	15.2
					12- 5-90	16.7
					4-17-91	20.8
					7-22-91	13.6
					9-10-91	11.1
02124374 Irish Buffalo Creek	Rocky River	Lat 35°20'50", long 80°32'52", Cabarrus County, Hydrologic Unit 03040105, at bridge on Secondary Road 1132, 1 mi south of Faggarts Crossroads, and 1 mi upstream from mouth.	45.4	1974-84, 1986-90	11- 8-90	15.3
					4-18-91	27.4
					7-25-91	26.1
					9-19-91	23.2
02124401 Rocky River	Pee Dee River	Lat 35°19'26", long 80°30'59", Cabarrus County, Hydrologic Unit 03040105, at bridge on U.S. Highway 601, 1 mi upstream from Hamby Branch, and 3 mi southeast of Faggarts Crossroads.	393	1970-71, 1973-90	11- 8-90	170
					4-18-91	340
					7-25-91	125
					9-19-91	135
02124596 Dutch Buffalo Creek	Rocky River	Lat 35°18'51", long 80°27'52", Cabarrus County, Hydrologic Unit 03040105, at bridge on State Highway 200, and 0.2 mi west of Georgeville.	98.2	1986-90	11- 8-90	22.6
					4-18-91	50.7

† Operated as a continuous-record gaging station.

## DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

## DISCHARGE MEASUREMENTS MADE AT MISCELLANEOUS SITES DURING WATER YEAR 1991

Stream	Tributary to	Location	Drainage area (mi <sup>2</sup> )	Measured previously (water years)	Measurements	
					Date	Discharge (ft <sup>3</sup> /s)
PEE DEE RIVER BASIN--Continued						
02125126 Long Creek	Rocky River	Lat 35°13'05", long 80°15'28", Stanly County, Hydrologic Unit 03040105, at bridge on Secondary Road 1917, 1 mi upstream from mouth, and 4 mi east of Oakboro.	198	1970-71, 1973-90	11- 8-90 4-18-91 9-19-91	66.2 98.4 18.9
02125482 Richardson Creek	Rocky River	Lat 35°04'16", long 80°24'25", Union County, Hydrologic Unit 03040105, at bridge on Secondary Road 1649, 1.2 mi downstream from Watson Creek, and 1.5 mi northwest of Fairfield.	153	1961-62, 1981-84, 1986-90	11- 8-90 4-18-91 9-18-91	17.5 53.7 12.9
02127318 Brown Creek	Pee Dee River	Lat 35°04'04", long 80°05'54", Anson County, Hydrologic Unit 03040104, at bridge on U.S. Highway 52, 0.9 mi downstream from Goulds Fork, and 4 mi north of Pinkston.	153	1985-90	11- 8-90 3-28-91 7-24-91 9-23-91	11.5 35.6 0.51 0.41
02129341 Hitchcock Creek	Pee Dee River	Lat 34°55'05", long 79°47'50", Richmond County, Hydrologic Unit 03040201, downstream from dam at Cordova, and 1.2 mi upstream from mouth.	134	1970-71, 1974, 1979-84, 1986-90	11- 8-90 3-28-91 6-10-91 7-24-91 9-23-91	109 88.4 35.4 28.0 116
02129527 Jones Creek	Pee Dee River	Lat 34°54'15", long 79°55'51", Anson County, Hydrologic Unit 03040201, at bridge on State Highway 145, 3.1 mi southwest of Pee Dee, and 2.9 mi downstream from Hale Creek.	92.8	1985-90	11- 8-90 3-28-91 7-24-91 9-23-91	45.6 75.9 16.1 14.6
0212955844 Marks Creek	Pee Dee River	Lat 34°51'45", long 79°43'09", Richmond County, Hydrologic Unit 03040201, at bridge on Secondary Road 1812, 1.3 mi downstream from City Lake spillway, and 2.4 mi southwest of Hamlet.	12.9	1970-71, 1979-84, 1986-90	11- 8-90 3-28-91 6-11-91 7-24-91 9-23-91	8.71 6.35 4.35 4.64 12.0
02132269 Leith Creek	Little Pee Dee River	Lat 34°44'37", long 79°25'13", Scotland County, Hydrologic Unit 03040204 at bridge on Secondary Road 1609, 4 mi west of Maxton, and 5.4 mi upstream from mouth.	21.8	1973-75, 1979-90	11- 9-90 1- 9-91 5- 2-91 7- 2-91	7.66 12.6 11.8 8.41
02134623 Lumber River	Little Pee Dee River	Lat 34°18'50", long 79°02'19", Columbus County, Hydrologic Unit 03040203, at bridge on State Highway 904 at Fairbluff, and 1.4 mi downstream from Poster Swamp.	1364	1959, 1962, 1968, 1974-75, 1980, 1984-90	3-19-91 6- 3-91 9- 3-91	2,420 630 1,310
02137513 Catawba River	Santee River	Lat 35 38'23", long 82 07'38", McDowell County, Hydrologic Unit 03050101, at bridge on Interstate 40, 0.3 mi downstream from Brevard Creek, and 3.2 mi east of Old Fort.	57.9	1970-75, 1981-82, 1984-88, 1990	12- 6-90 3- 7-91 7-18-91 8- 8-91	88.7 171 77.8 97.9
SANTEE RIVER BASIN						
0213875850 High Shoals Creek	Catawba River	Lat 35°35'57", long 81°54'19", McDowell County, Hydrologic Unit 03050101, on left bank 0.5 mi above mouth and 1.9 mi west of Dysartsville.	2.38	1986-90 <sup>†</sup>	11-16-90 3- 6-91 7-19-91 8- 8-91	3.56 4.42 2.92 2.48
02140304 Wilson Creek	Johns River	Lat 36°05'49", long 81°48'28", Avery County, Hydrologic Unit 03050101, at bridge on U.S. Highway 221, 0.8 mi upstream from Linn Core Branch, and 2.7 mi northwest of Gragg.	0.72	1964, 1969-70, 1978-81, 1983-90	11- 1-90 3-27-91 5- 8-91 7-24-91 8- 2-91 b 8- 2-91 c	1.71 1.25 1.27 0.61 1.49 1.70
02141245 Lower Creek	Catawba River	Lat 35°49'31", long 81°38'10", Burke County, Hydrologic Unit 03050102, at bridge on Secondary Road 1501, 0.8 mi downstream from Husband Creek, and 7 mi northeast of Morganton.	89.5	1949-50, <sup>2</sup> 1964-69, <sup>2</sup> 1972-73, 1975-84, 1986-90	11-20-90 2-27-91 6-14-91 7-18-91	87.2 114 96.0 87.9
0214272204 Dutchman's Creek	Catawba River	Lat 35°20'10", long 81°00'50", Gaston County, Hydrologic Unit 03050102, at bridge on Secondary Road 1918, and 0.7 mi west of Mountain Island.	116	1986-90	1-31-91 5-30-91 7-25-91	132 93.8 59.8
02143069 South Fork Catawba River	Catawba River	Lat 35°37'58", long 81°18'20", Catawba County, Hydrologic Unit 03050102, at bridge on State Highway 10, 1 mi downstream from Henry Fork, and 2.2 mi west of Startown.	210	1974-77, 1979-88	10- 5-90 1-17-91 3-11-91 5- 9-91 6-27-91 8-21-91	66.4 814 342 393 280 220
<sup>2</sup> Baseflow.						

<sup>2</sup> Baseflow.

† Operated as a continuous-record gaging station.

b 1200 Time of measurement

c 1300 Time of measurement

## DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

## DISCHARGE MEASUREMENTS MADE AT MISCELLANEOUS SITES DURING WATER YEAR 1991

Stream	Tributary to	Location	Drainage area (mi <sup>2</sup> )	Measured previously (water years)	Measurements	
					Date	Discharge (ft <sup>3</sup> /s)
SANTEE RIVER BASIN--Continued						
02143260 Clark Creek	South Fork Catawba River	Lat 35°28'30", long 81°16'00", Lincoln County, Hydrologic Unit 03050102, at bridge on Secondary Road 1008 at Lincolnton, and 0.2 mi upstream from mouth.	91.2	1947, 1949-57, 1962-64, 1970-72, 1975, 1978-90	10- 2-90 11-28-90 1-31-91 6-19-91 8- 7-91	42.0 82.4 110 116 64.9
02145640 Crowders Creek	Catawba River	Lat 35°08'15", long 81°08'15", York County, South Carolina, Hydrologic Unit 03050101, at bridge on Ridge Road, 3.4 mi upstream from Beaver Dam Creek, and 3.2 mi east- southeast of Bowling Green, South Carolina.	89	1970-77, 1979-90	11- 7-90 4- 4-91	57.1 120
02146381 Sugar Creek	Catawba River	Lat 35°05'20", long 80°54'00", Mecklenburg County, Hydrologic Unit 03050103, at bridge on U.S. Highway 51, 0.5 mi upstream from McCullough Branch, and 0.8 mi west of Pineville.	65.3	1969-74, 1979-90	11- 7-90 4- 9-91 9-19-91	42.9 198 86.1
02146530 Little Sugar Creek	Catawba River	Lat 35°05'06", long 80°52'58", Mecklenburg County, Hydrologic Unit 03050103, at bridge on State Highway 51, .5 mi east of intersection of State Highway 51 and U.S Highway 521 at Pineville.	49.2	1966-69 1989-90	11- 8-90 4- 9-91 7- 2-91	340 114 31.2
02146800 Sugar Creek	Catawba River	Lat 35°00'21", long 80°54'09", York County, Hydrologic Unit 03050103, at bridge on State Highway 160, 0.7 mi downstream from Clems Branch, and 2.6 mi east of Fort Mill, South Carolina.	262	1969, 1974-78†, 1982-90	11- 7-90 3-20-91 7- 1-91 7-24-91 9-12-91	151 310 127 116 135
02147126 Waxhaw Creek	Catawba River	Lat 34°50'12", long 80°47'31", Union County, Hydrologic Unit 03050103, at bridge on Secondary Road 1103, 6 mi upstream from mouth, and 6.5 mi south of Waxhaw.	35.0	1957, 1961-62, 1974-77, 1981-90	4- 4-91 7- 1-91 7-24-91	22.1 5.47 3.46
02152596 First Broad River	Broad River	Lat 35°13'03", long 81°36'28", Cleveland County, Hydrologic Unit 03050105, at bridge on Secondary Road 1140, 3 mi upstream from mouth, and 4.8 mi northwest of Earl.	296	1968-77, 1980-90	10- 3-90 4- 4-91 9-19-91	131 489 208
02153456 Buffalo Creek	Broad River	Lat 35°10'20", long 81°31'02", Cleveland County, Hydrologic Unit 03050105, at bridge on State Highway 198, 0.1 mi upstream from North Carolina-South Carolina State Line, and 4 mi west of Grover.	161	1968-77, 1979-90	10- 3-90 4- 4-91 9-19-91 b 9-19-91 c	43.7 278 108 105
SAVANNAH RIVER BASIN						
02184242 Horsepasture River	Toxaway River	Lat 35°05'33", long 82°58'04", Transylvania County, Hydrologic Unit 03060101, at bridge on State Highway 281, and 4 mi southwest of Lake Toxaway.	24.1	1985-90	11- 8-90 3-15-91 7-19-91 8-21-91	47.6 105 84.2 48.0

## DISCHARGE MEASUREMENTS MADE AT MISCELLANEOUS SITES DURING WATER YEAR 1991, IN OHIO RIVER BASIN

## KANAWA RIVER BASIN

03160271 South Fork New River	New River	Lat 36°13'14", long 81°38'25", Watauga County, Hydrologic Unit 05050001, at bridge on U.S. Highway 421, and 2 mi east of Boone.	34.8	1925, 1955-56, 1960, 1962, 1974-90	11- 6-90 3-11-91 6-14-91 8-23-91	91.2 115 54.6 29.7
03161361 South Fork New River	New River	Lat 36°28'26", long 81°20'13", Ashe County, Hydrologic Unit 05050001, downstream from Cranberry Creek, 1.2 mi downstream from Nathans Creek, and 2 mi southwest of Scottville.	300	1974-75, 1977, 1981-83, 1986-90	11-21-90 3-11-91 6-13-91 8- 7-91	477 787 562 436

† Operated as a continuous-record gaging station.

b 1145 Time of measurement

c 1225 Time of measurement

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES  
DISCHARGE MEASUREMENTS MADE AT MISCELLANEOUS SITES DURING WATER YEAR 1991

Stream	Tributary to	Location	Drainage area (mi <sup>2</sup> )	Measured previously (water years)	Measurements	
					Date	Discharge (ft <sup>3</sup> /s)
KANAWHA RIVER BASIN--Continued						
03162500 North Fork New River	New River	Lat 36°30'14", long 81°23'25", Ashe County, Hydrologic Unit 05050001, 0.2 mi downstream from bridge on State Highway 16 at Crumpler, and 6 mi upstream from South Fork.	277	1930-58†, 1977, 1981-90	11- 7-90	312
					3-11-91	702
					6-13-91	340
					8- 7-91	161
03162850 New River	Kanawha River	Lat 36°33'08", long 81°11'00", Alleghany County, Hydrologic Unit 05050001, at bridge on Secondary Road 1345, 0.8 mi downstream from Rock Creek, and 1.3 mi north- northeast of Amelia.	823	1968-69, 1971-75, 1979-84, 1985, 1987-90	11- 7-90	1,320
					2-22-91	3,490
					6-13-91	1,290
03162951 Little River	New River	Lat 36°32'35", long 81°01'17", Alleghany County, Hydrologic Unit 05050001, at bridge on State Highway 18, 1 mi downstream from Brush Creek, and 0.5 mi west of Blevins Crossroads.	99.2	1974-75, 1978-84, 1986-89	6-12-91	222
TENNESSEE RIVER BASIN						
03457124 Pigeon River	French Broad River	Lat 35°32'05", long 82°54'41", Haywood County, Hydrologic Unit 06010106, at bridge on Secondary Road 1818 at Clyde, and 0.2 mi down- stream from Chambers Branch.	162	1969-78, 1980-90	11- 1-90	241
					2- 7-91	295
					6- 4-91	439
					7- 9-91	259
03457138 Pigeon River	French Broad River	Lat 35°32'56", long 82°56'23", Haywood County, Hydrologic Unit 06010106, at bridge on road connecting Secondary Roads 1513 and 1519, 0.5 mi upstream from Richlands Creek, 2 mi east of Dam, and at mile 55.5.	169	1964-65, 1968-84, 1986-90	11- 6-90	243
					2- 7-91	275
					6- 4-91	449
					7- 9-91	248
03458121 Richland Creek	Pigeon River	Lat 35°30'30", long 82°58'19", Haywood County, Hydrologic Unit 06010106, at bridge on Secondary Road 1184, 0.8 mi upstream of Raccoon Creek, and 1.5 mi northeast of Waynesville.	48.0	1981-90	11- 1-90	50.0
					2- 5-91	83.6
					6- 7-91	86.5
					7- 9-91	68.4
03458421 Richland Creek	Pigeon River	Lat 35°32'51", long 82°56'44", Haywood County, Hydrologic Unit 06010106, at bridge on Secondary Road 1519, 0.2 mi upstream from mouth, and 2.2 mi northwest of Clyde.	68.4	1964-65, 1968-73, 1975-76, 1979-83, 1986-90	11- 1-90	72.8
					2- 5-91	96.2
					6- 7-91	106
					7- 9-91	92.9
03458441 Pigeon River	French Broad River	Lat 35°33'41", long 82°57'14", Haywood County, Hydrologic Unit 06010106, at bridge on State Highway 209, 0.5 mi downstream from Yates Cover, and 3 mi northwest of Clyde.	238	1968-84, 1986-90	10-31-90	301
					2- 5-91	353
					6- 4-91	610
					7- 8-91	364
03458620 Crabtree Creek	Pigeon River	Lat 35°36'00", long 82°56'56", Haywood County, Hydrologic Unit 06010106, 0.2 mi upstream from mouth, and 0.6 mi west of Crabtree.	25.8	1944, <sup>2</sup> 1953-54, <sup>2</sup> 1962-66, <sup>2</sup> 1968-69, <sup>2</sup> 1976, 1978, 1981-84, 1986-90	10-31-90	11.9
					2- 5-91	15.5
					6- 7-91	12.9
					7- 8-91	21.5
03458638 Pigeon River	French Broad River	Lat 35°36'52", long 82°58'01", Haywood County, Hydrologic Unit 06010106, at bridge on Secondary Road 1363, and 0.1 mi downstream of Dotson Branch, 1.8 mi northwest of Crabtree.	278	1964-65, 1968-78, 1980-84, 1986-90	10-31-90	337
					2- 5-91	384
					6- 5-91	563
					7- 8-91	384
03460766 Pigeon River	French Broad River	Lat 35°46'32", long 83°06'01", Haywood County, Hydrologic Unit 06010106, at Carolina Power and Light power plant, downstream from Big Creek, and at Waterville.	536	1968-71, 1973-78, 1980-90	2-12-91	652
					6- 5-91	1,210
					7-12-91	1,330
					7-23-91	59.7
03461976 North Toe River	Nolichucky River	Lat 35°58'51", long 82°00'59", Avery County, Hydrologic Unit 06010108, at bridge on U.S. Highway 19E, 0.1 mi downstream from Jones Creek, 0.7 mi north of Ingalls, and at mile 50.9.	74.1	1969-71, 1973-74, 1976-90	11- 2-90	167
					5- 6-91	202
					6-10-91	127
					8-22-91	84.5

<sup>2</sup> Baseflow.

† Operated as a continuous-record gaging station.

## DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

## DISCHARGE MEASUREMENTS MADE AT MISCELLANEOUS SITES DURING WATER YEAR 1991

Stream	Tributary to	Location	Drainage area (mi <sup>2</sup> )	Measured previously (water years)	Measurements	
					Date	Discharge (ft <sup>3</sup> /s)
TENNESSEE RIVER BASIN--Continued						
03463021 North Toe River	Nolichucky River	Lat 35°55'46", long 82°06'57", Mitchell County, Hydrologic Unit 06010108, at bridge on Secondary Road 1162 at Penland, 0.4 mi down- stream from Bear Creek, and at mile 27.6	145	1969-70, 1972-75, 1978, 1982-90	11- 2-90 5- 8-91 6-10-91 8-22-91	272 352 225 144
03463162 South Toe River	Cane River	Lat 35°43'08", long 82°14'55", Yancey County, Hydrologic Unit 06010108, 3 mi southeast of Mt. Mitchell, and 4.7 mi southwest of Busick.	1.8	1985-90	11- 1-90 5- 6-91 7-24-91 8-22-91	7.61 6.81 4.04 6.05
03464000 Cane River	Nolichucky River	Lat 36°00'52", long 82°19'40", Yancey County, Hydrologic Unit 06010108, 1.3 mi upstream from North Toe River, and 1.5 mi east of Sioux.	157	1933-71†, 1974-78, 1980-90	10-31-90 5- 7-91 7-15-91 9-16-91	205 278 110 101
03464500 Nolichucky River	French Broad River	Lat 36°04'28", long 82°20'42", Mitchell County, Hydrologic Unit 06010108, at Poplar, and 0.7 mi upstream from Hollow Poplar Creek.	608	1922-45†, 1962-63, 1968-72, 1974-78, 1980-90	12-13-90 7-15-91 9-16-91	540 448 422
03478819 Watauga River	South Fork Holston River	Lat 36°11'39", long 81°44'45", Watauga County, Hydrologic Unit 06010103, at bridge on State Highway 105, 300 ft upstream from Laurel Fork, and 1.4 mi north of Shulls Mills.	26.6	1971-73, 1975, 1986-90	11- 6-90 3-12-91 6-14-91 8-23-91	59.3 83.9 39.2 19.9
03502000 Little Tennessee River	Tennessee River	Lat 35°14'01", long 83°23'35", Macon County, Hydrologic Unit 06010202, 0.2 mi upstream from State Highway 28 at Iotla, and 0.2 mi upstream from Iotla Creek.	323	1929-45†, 1972-79, 1982-90	11- 5-90 2- 6-91 6-11-91 7-22-91	510 804 789 565
03515633 Cheoah River	Little Tennessee River	Lat 35°20'04", long 83°48'21", Graham County, Hydrologic Unit 06010204, 0.1 mi upstream from Long Creek, and 0.9 mi north of Robbinsville.	55.3	1968-71, 1973-90	11- 5-90 2- 6-91 7-10-91 7-22-91	36.3 91.0 48.8 32.0

† Operated as a continuous-record gaging station.

## ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Water-quality partial-record stations are particular sites where chemical-quality, biological and/or sediment data are collected systematically over a period of years for use in hydrologic analyses. These data are collected usually less than quarterly. Samples collected at sites other than gaging stations and partial-record stations to give better areal coverage in a river basin are referred to as miscellaneous sites.

For the period October 1988 through June 1989, the inorganic chemical data and trace metal data were analyzed by the City of Durham's Brown Water Treatment laboratory.

## MISCELLANEOUS STATION ANALYSES

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	COLOR (PLAT- INUM- COBALT UNITS)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (MG/L)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM PERCENT
0208524090 MOUNTAIN CREEK AT SR 1617 NR BAHAMA, NC (LAT 36 08 58N LONG 078 53 49W)												
NOV 1989												
06...	1220	3.2	106	7.0	12.0	23	754	9.9	9.3	3.4	6.4	25
JAN 1990												
24...	1330	5.3	72	6.5	9.0	47	755	--	7.7	2.9	6.2	--
MAR												
14...	1120	5.1	98	7.2	17.0	18	754	10.2	7.7	2.8	5.8	28
29...	1315	--	81	6.4	10.0	55	759	11.1	6.2	2.2	4.7	28
MAY												
09...	1330	5.7	91	6.7	17.0	40	755	9.1	7.0	2.5	4.6	25
JUN												
28...	1310	0.72	105	7.6	23.0	17	754	8.4	9.8	3.0	5.7	24
SEP												
26...	1230	0.00	148	7.6	16.0	20	748	9.0	13	4.2	6.6	22
0208524170 LITTLE RIVER TRIB NR DURHAM, NC (LAT 36 06 45N LONG 078 53 00W)												
NOV 1989												
06...	1010	0.12	75	6.2	12.0	50	754	8.8	4.7	2.2	5.7	34
JAN 1990												
24...	1145	0.56	--	7.8	9.5	60	752	--	4.2	2.0	6.5	41
MAR												
14...	1230	0.51	72	7.4	20.5	35	754	7.1	4.4	1.9	5.9	39
29...	1145	37	75	6.2	--	65	--	--	4.9	2.3	4.0	26
MAY												
09...	1035	0.40	65	6.4	18.5	130	755	7.5	4.0	1.7	4.4	34
JUN												
28...	0950	0.01	92	7.0	20.0	17	755	4.8	6.1	2.5	7.1	36
0208527100 ENO RIVER TRIB AT SR 1004 NR FAIRNTOSH, NC (LAT 36 05 17N LONG 078 50 42W)												
NOV 1989												
06...	0915	0.54	43	6.4	10.0	60	758	8.6	3.0	1.3	3.2	33
JAN 1990												
23...	1130	0.59	44	7.6	8.5	55	758	--	2.7	1.1	3.2	37
MAR												
14...	0900	0.37	52	6.6	14.0	70	757	9.2	3.8	1.6	3.7	32
29...	1030	18	33	6.5	--	65	--	--	2.2	0.81	2.1	31
MAY												
09...	0930	0.19	50	6.8	15.0	110	758	8.9	3.8	1.4	2.7	27

## MISCELLANEOUS STATION ANALYSES

DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	NITRO- GEN, NITRITE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS NH4)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)
0208524090 MOUNTAIN CREEK AT SR 1617 NR BAHAMA, NC (LAT 36 08 58N LONG 078 53 49W)												
NOV 1989												
06...	0.5	2.8	7.0	9.4	0.10	13	54	--	0.500	0.150	0.19	0.25
JAN 1990												
24...	--	1.5	7.0	8.0	<0.10	12	75	--	0.800	0.020	0.03	--
MAR												
14...	0.5	1.3	<1.0	7.8	<0.10	11	68	--	0.600	0.040	0.05	0.26
29...	0.4	2.2	6.2	5.9	<0.10	8.9	64	--	0.600	0.120	--	1.1
MAY												
09...	0.4	1.3	4.7	5.7	<0.10	14	72	--	0.600	0.070	0.09	--
JUN												
28...	0.4	1.6	3.4	7.0	0.20	15	62	--	0.600	<0.010	--	--
SEP												
26...	0.4	3.0	4.3	8.3	0.10	14	91	<0.010	<0.100	<0.010	<0.010	--
0208524170 LITTLE RIVER TRIB NR DURHAM, NC (LAT 36 06 45N LONG 078 53 00W)												
NOV 1989												
06...	0.5	2.6	6.0	9.2	0.10	8.0	62	--	0.100	0.010	0.01	0.69
JAN 1990												
24...	0.7	1.5	7.0	9.9	<0.10	7.9	72	--	<0.100	0.020	0.03	0.38
MAR												
14...	0.6	1.3	4.7	6.6	<0.10	8.3	64	--	0.100	0.040	0.05	0.56
29...	0.4	2.6	16	4.7	0.20	5.5	72	--	0.200	0.350	--	0.85
MAY												
09...	0.5	1.0	4.6	4.8	<0.10	11	65	--	0.100	0.040	0.05	1.2
JUN												
28...	0.6	1.5	4.3	9.2	0.30	17	61	--	0.700	0.010	0.01	--
0208527100 ENO RIVER TRIB AT SR 1004 NR FAIRNTOSH, NC (LAT 36 05 17N LONG 078 50 42W)												
NOV 1989												
06...	0.4	0.80	4.0	6.1	<0.10	11	66	--	<0.100	0.010	0.01	0.49
JAN 1990												
23...	0.4	0.70	5.0	5.0	<0.10	8.1	38	--	0.100	0.050	0.06	0.35
MAR												
14...	0.4	1.0	<1.0	<0.50	<0.10	8.8	44	--	<0.100	0.040	0.05	0.46
29...	0.3	1.1	4.6	3.0	0.20	5.3	44	--	0.100	0.060	0.08	0.84
MAY												
09...	0.3	0.80	2.3	3.8	<0.10	9.7	49	--	<0.100	0.160	0.21	0.94

## MISCELLANEOUS STATION ANALYSES

DATE	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS NO3)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHATE, TOTAL (MG/L AS PO4)	PHOS- PHORUS ORTHO TOTAL (MG/L AS P)	ALUM- INUM, TOTAL RECOV- ERABLE (UG/L AS AL)	ARSENIC TOTAL IN BOT- TOM MA- TERIAL (UG/G AS AS)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CADMIUM RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)
0208524090 MOUNTAIN CREEK AT SR 1617 NR BAHAMA, NC (LAT 36 08 58N LONG 078 53 49W)											
NOV 1989											
06...	0.40	0.90	4.0	0.020	0.03	0.010	<10	<1	--	<1	<1
JAN 1990											
24...	<0.20	--	--	0.010	0.06	0.020	90	<1	--	<1	<1
MAR											
14...	0.30	0.90	4.0	0.020	0.06	0.020	140	<1	--	<1	<1
29...	1.2	--	--	0.171	--	0.041	4600	<1	--	<1	3
MAY											
09...	<0.20	--	--	0.040	0.09	0.030	200	<1	--	<1	1
JUN											
28...	0.20	0.80	3.5	0.020	0.03	0.010	110	1	5	<1	<1
SEP											
26...	0.40	--	--	<0.010	0.03	0.010	130	<1	--	<1	<1
0208524170 LITTLE RIVER TRIB NR DURHAM, NC (LAT 36 06 45N LONG 078 53 00W)											
NOV 1989											
06...	0.70	0.80	3.5	0.040	0.12	0.040	220	<1	--	<1	<1
JAN 1990											
24...	0.40	--	--	0.040	0.09	0.030	320	<1	--	<1	<1
MAR											
14...	0.60	0.70	3.1	0.030	0.06	0.020	350	<1	--	2	<1
29...	1.2	--	--	0.24	--	0.171	2600	<1	--	<1	2
MAY											
09...	1.2	1.3	5.8	0.050	0.09	0.030	340	<1	--	<1	<1
JUN											
28...	<0.20	--	--	0.020	0.03	0.010	50	1	3	<1	<1
0208527100 ENO RIVER TRIB AT SR 1004 NR FAIRNTOSH, NC (LAT 36 05 17N LONG 078 50 42W)											
NOV 1989											
06...	0.50	--	--	0.030	0.12	0.040	380	<1	--	<1	<1
JAN 1990											
23...	0.40	0.50	2.2	<0.010	0.06	0.020	--	--	--	--	--
MAR											
14...	0.50	--	--	0.020	0.06	0.020	520	<1	--	2	<1
29...	0.90	--	--	0.060	0.06	0.021	2400	<1	--	2	4
MAY											
09...	1.1	--	--	0.030	0.06	0.020	330	<1	--	<1	2

## MISCELLANEOUS STATION ANALYSES

DATE	CHROMIUM, RECOV. FM BOT- TOM MA- TERIAL (UG/G)	COBALT, TOTAL RECOV- ERABLE (UG/L AS CO)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	COPPER, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS CU)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS FE)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	LEAD, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS PB)	MANGANESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGANESE, RECOV. FM BOT- TOM MA- TERIAL (UG/G)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	MERCURY RECOV. FM BOT- TOM MA- TERIAL (UG/G AS HG)
0208524090 MOUNTAIN CREEK AT SR 1617 NR BAHAMA, NC (LAT 36 08 58N LONG 078 53 49W)												
NOV 1989												
06...	--	1	<1	--	700	--	1	--	140	--	<0.10	--
JAN 1990												
24...	--	<1	1	--	790	--	1	--	200	--	<0.10	--
MAR												
14...	--	1	4	--	1200	--	2	--	240	--	<0.10	--
29...	--	--	5	--	7100	--	5	--	900	--	<0.10	--
MAY												
09...	--	<1	3	--	1700	--	2	--	280	--	<0.10	--
JUN												
28...	20	1	1	7	190	17000	1	20	40	1000	<0.10	0.02
SEP												
26...	--	<1	3	--	400	--	<1	--	250	--	<0.10	--
0208524170 LITTLE RIVER TRIB NR DURHAM, NC (LAT 36 06 45N LONG 078 53 00W)												
NOV 1989												
06...	--	1	1	--	1600	--	<1	--	80	--	<0.10	--
JAN 1990												
24...	--	1	1	--	1500	--	1	--	60	--	<0.10	--
MAR												
14...	--	<1	1	--	2400	--	3	--	100	--	<0.10	--
29...	--	1	5	--	3300	--	3	--	320	--	0.10	--
MAY												
09...	--	1	2	--	3100	--	2	--	90	--	<0.10	--
JUN												
28...	3	<1	1	5	680	8000	<1	<10	100	240	<0.10	0.02
0208527100 ENO RIVER TRIB AT SR 1004 NR FAIRNTOSH, NC (LAT 36 05 17N LONG 078 50 42W)												
NOV 1989												
06...	--	2	1	--	1700	--	2	--	120	--	<0.10	--
JAN 1990												
23...	--	--	5	--	960	--	3	--	120	--	<0.10	--
MAR												
14...	--	1	2	--	2900	--	3	--	270	--	<0.10	--
29...	--	2	2	--	3800	--	3	--	380	--	<0.10	--
MAY												
09...	--	1	2	--	3100	--	2	--	330	--	0.10	--

## MISCELLANEOUS STATION ANALYSES

DATE	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI)	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	ZINC, RECOV. FM BOT- TOM MA- TERIAL (UG/G AS ZN)	CARBON, ORGANIC TOTAL (MG/L AS C)	ALDRIN, TOTAL (UG/L)	CHLOR- DANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DI- AZINON, TOTAL (UG/L)
0208524090 MOUNTAIN CREEK AT SR 1617 NR BAHAMA, NC (LAT 36 08 58N LONG 078 53 49W)												
NOV 1989												
06...	<1	<1	<1	<10	--	3.6	--	--	--	--	--	--
JAN 1990												
24...	<1	<1	<1	<10	--	3.5	--	--	--	--	--	--
MAR												
14...	1	<1	<1	<10	--	2.9	--	--	--	--	--	--
29...	2	<1	<1	20	--	12	<0.010	<0.1	<0.010	<0.010	<0.010	<0.01
MAY												
09...	1	<1	--	<10	--	5.1	--	--	--	--	--	--
JUN												
28...	1	<1	<1	<10	20	3.7	--	--	--	--	--	--
SEP												
26...	2	<1	<1	<10	--	4.9	--	--	--	--	--	--
0208524170 LITTLE RIVER TRIB NR DURHAM, NC (LAT 36 06 45N LONG 078 53 00W)												
NOV 1989												
06...	1	<1	<1	<10	--	7.4	--	--	--	--	--	--
JAN 1990												
24...	<1	<1	<1	<10	--	8.3	--	--	--	--	--	--
MAR												
14...	1	<1	<1	<10	--	7.6	--	--	--	--	--	--
29...	3	<1	<1	20	--	--	<0.010	<0.1	<0.010	<0.010	<0.010	<0.01
MAY												
09...	2	<1	--	<10	--	11	--	--	--	--	--	--
JUN												
28...	2	<1	<1	<10	20	4.7	--	--	--	--	--	--
0208527100 ENO RIVER TRIB AT SR 1004 NR FAIRNTOSH, NC (LAT 36 05 17N LONG 078 50 42W)												
NOV 1989												
06...	3	<1	<1	<10	--	7.2	--	--	--	--	--	--
JAN 1990												
23...	<1	<1	<1	<10	--	5.4	--	--	--	--	--	--
MAR												
14...	2	<1	<1	<10	--	8.3	--	--	--	--	--	--
29...	3	<1	<1	10	--	--	<0.010	<0.1	<0.010	<0.010	<0.010	<0.01
MAY												
09...	2	<1	--	<10	--	11	--	--	--	--	--	--

[illegible]

## MISCELLANEOUS STATION ANALYSES

[illegible]

[illegible]

### MISCELLANEOUS STATION ANALYSES

[illegible]

[illegible]

## GROUND WATER LEVELS

## BEAUFORT COUNTY

**351932076480001.** Local number, NC-13.

LOCATION.--Lat 35°19'32", long 76°48'00", Hydrologic Unit 03020104, 1.5 mi north of Aurora, east of intersection of State Highway 306 and Secondary Road 1942. Owner: Texasgulf Chemicals Company.

AQUIFER.--Castle Hayne aquifer of Oligocene and Eocene age.

WELL CHARACTERISTICS.--Drilled observation well, drilled to 168 ft, diameter 4 in., cased to 156 ft, open hole to 168 ft; measured depth 165.5 ft, September 1981.

INSTRUMENTATION.--Digital recorder with 60-minute punch interval.

DATUM.--Land-surface datum is 10 ft above National Geodetic Vertical Datum of 1929 (from topographic map).

Measuring point: Top of casing, 0.36 ft below land-surface datum (since Feb. 16, 1984).

REMARKS.--Since 1965 water levels affected by nearby pumping associated with mining operations. Well is part of local-effects network.

PERIOD OF RECORD.--June 1964 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 1.38 ft below land-surface datum, Apr. 9, 1965; lowest water level recorded, 107.25 ft below land-surface datum, July 11, 1991.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	93.22	95.37	---	---	100.30	99.20	100.26	102.21	103.47	104.44	101.79	101.21
10	92.06	94.90	---	---	100.56	99.26	101.76	102.13	103.93	106.09	102.32	100.38
15	---	95.20	---	---	101.31	99.26	102.13	101.87	104.28	104.78	103.05	101.23
20	---	93.91	---	100.08	99.61	98.76	102.25	101.81	104.39	104.02	103.71	101.24
25	94.96	94.97	---	99.48	98.44	98.76	102.96	101.69	104.65	103.50	103.63	101.25
EOM	---	96.17	---	100.21	99.61	95.77	102.39	100.50	104.22	104.45	100.99	101.55

WTR YR 1991 MEAN 100.55 HIGH 92.06 OCT 10 LOW 106.96 JUL 11

**352615077083401.** Local number, NC-137; DEHNR Creeping Swamp Research Station well O21q1.

LOCATION.--Lat 35°26'15", long 77°08'38", Hydrologic Unit 03020202, 3 mi north of Wilmar, 1 mi west of U.S. Highway 17 on State Highway 102. Owner: DEHNR (North Carolina Department of Environment, Health, and Natural Resources).

AQUIFER.--Castle Hayne aquifer of Oligocene and Eocene age.

WELL CHARACTERISTICS.--Drilled observation well, drilled to 143 ft, diameter 4 in., cased to 72 ft, open hole to 143 ft; measured depth 141.6 ft, September 1981.

INSTRUMENTATION.--Digital recorder with 60-minute punch interval.

DATUM.--Land-surface datum is 56.84 ft above National Geodetic Vertical Datum of 1929 (levels by DEHNR). Measuring point: Top of collar on casing, 0.8 ft above land-surface datum.

REMARKS.--Well is part of areal-effects network.

PERIOD OF RECORD.--January 1972 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 19.90 ft below land-surface datum, Feb. 3, 1972; lowest water level recorded, 26.34 ft below land-surface datum, Dec. 5, 6, 7, 13, and 14, 1986.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	25.11	25.55	24.70	24.36	23.03	22.26	21.87	21.92	22.99	23.45	23.52	22.88
10	25.32	25.27	24.56	24.25	22.72	22.27	21.77	22.04	23.25	23.48	23.28	22.93
15	25.54	25.31	24.52	24.04	22.52	22.16	21.76	22.16	23.47	23.51	23.18	23.03
20	25.83	25.10	24.50	23.63	22.48	22.06	21.72	22.43	23.50	23.50	23.04	23.21
25	25.71	24.90	24.50	23.56	22.38	22.01	21.86	---	23.65	23.57	23.04	23.29
EOM	25.77	24.84	24.39	23.21	22.44	21.88	21.84	22.77	23.57	23.51	22.89	23.57

WTR YR 1991 MEAN 23.45 HIGH 21.69 APR 21 LOW 25.84 OCT 21

**352037076514101.** Local Number, NC-145; DEHNR Bonnett Research Station well P18v5.

LOCATION.--Lat 35°20'37", long 76°51'41", Hydrologic Unit 03020104, 1 mi south of Bonnett on Secondary Road 1936. Owner: DEHNR (North Carolina Department of Environment, Health, and Natural Resources).

AQUIFER.--Castle Hayne aquifer of Oligocene and Eocene age.

WELL CHARACTERISTICS.--Drilled observation well, drilled to 280 ft, diameter 4 in., cased to 169 ft, open hole to 280 ft; measured depth 278 ft, September 1981.

INSTRUMENTATION.--Digital recorder with 60-minute punch interval.

DATUM.--Land-surface datum is 36.41 ft above National Geodetic Vertical Datum of 1929 (levels by DEHNR) - revised from 36.64 ft above NGVD, October 1987. Measuring point: Top of instrument shelf, 2.70 ft above land-surface datum - revised from 2.47 ft above land-surface datum, October 1987.

REMARKS.--Water level is affected by nearby pumping associated with mining operations. Well is part of local-effects network.

PERIOD OF RECORD.--June 1980 to current year. Continuous record began July 1984. Records from June 1980 to June 1984 are unpublished and available in the files of the Groundwater section, DEHNR.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 68.18 ft below land-surface datum, Oct. 26, 1982; lowest water level recorded, 100.32 ft below land-surface datum, Oct. 9 and 10, 1989.

REVISIONS.--Water-level mean values and extremes for period of record published in Water Resources Data, North Carolina, NC-85-1, NC-86-1, and NC-87-1, should be adjusted by -0.23 ft.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	91.14	91.52	88.98	91.44	85.31	83.99	---	83.08	82.48	82.82	82.14	81.46
10	91.46	89.96	88.64	89.85	86.06	83.94	---	82.98	82.46	83.75	81.37	80.79
15	90.19	89.56	87.34	87.75	86.59	83.71	83.99	82.78	82.56	83.72	81.91	80.87
20	89.22	89.11	86.97	86.56	86.24	84.36	83.84	82.71	82.41	83.15	82.05	81.15
25	90.78	89.32	92.11	84.97	84.65	84.86	83.79	82.50	82.68	83.00	83.11	80.52
EOM	92.85	89.60	92.64	85.15	84.43	---	83.24	82.23	82.77	82.68	81.85	80.68

WTR YR 1991 MEAN 85.37 HIGH 80.15 SEP 11 LOW 93.01 NOV 1

## BEAUFORT COUNTY--Continued

**352037076514106.** Local number, NC-162; DEHNR Bonnerton Research Station well P18v6.

LOCATION.--Lat 35°20'37", long 76°51'41", Hydrologic Unit 03020104, 1 mi south of Bonnerton on Secondary Road 1936. Owner: DEHNR (North Carolina Department of Environment, Health, and Natural Resources).

AQUIFER.--Yorktown aquifer of Pliocene and Miocene age.

WELL CHARACTERISTICS.--Drilled observation well, drilled to 86 ft, diameter 2.5 in., cased to 76 ft, screened interval from 76 to 86 ft; measured depth 83.4 ft, October 1986.

INSTRUMENTATION.--Measured periodically with steel tape.

DATUM.--Land-surface datum is 37.09 ft above National Geodetic Vertical Datum of 1929 (levels by DEHNR).

Measuring point: Top of instrument shelf, 3.07 ft above land-surface datum - revised from 2.72 ft above land-surface datum, October 1987.

REMARKS.--Water level is affected by nearby pumping associated with mining operations. Well is part of local-effects network.

PERIOD OF RECORD.--June 1980 to current year. Continuous record December 1986 to November 1990. Records from June 1980 to July 1986 are unpublished and available in the files of the Groundwater Section, DEHNR.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 36.68 ft below land-surface datum, Mar. 8, 1983; lowest water level recorded, 40.58 ft below land-surface datum, July 21, 1990.

REVISIONS.--Water-level mean values and extremes for period of record published in Water Resources Data, North Carolina, NC-87-1, should be adjusted by -0.35 ft.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	39.57	39.22	---	---	---	---	---	---	---	---	---	---
10	39.61	38.81	---	---	---	---	---	---	---	---	---	---
15	39.39	39.09	---	---	---	---	---	---	---	---	---	---
20	39.37	---	---	---	---	---	---	---	---	---	---	---
25	39.01	---	---	---	---	---	---	---	---	---	---	---
EOM	39.20	---	---	---	---	---	---	---	---	---	---	---

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JAN 16	38.67	FEB 28	38.83	APR 11	38.76	MAY 30	38.60	JUL 11	38.75	AUG 22	38.44

**352224076570403.** Local number, NC-163; DEHNR Coks Crossroads Research Station well P19m3.

LOCATION.--Lat 35°22'24", long 76°57'04", Hydrologic Unit 03020104, at North Carolina Department of Transportation Maintenance Yard near Coks Crossroads, 0.25 mi north of State Highway 32 on Secondary Road 1100.

Owner: DEHNR (North Carolina Department of Environment, Health, and Natural Resources).

AQUIFER.--Castle Hayne aquifer of Oligocene and Eocene age.

WELL CHARACTERISTICS.--Drilled observation well, drilled to 250 ft, diameter 4 in., cased to 81 ft, open hole to 250 ft, measured depth 236.5 ft, September 1981.

INSTRUMENTATION.--Digital recorder with 60-minute punch interval.

DATUM.--Land-surface datum is 25.38 ft above National Geodetic Vertical Datum of 1929 (levels by DEHNR).

Measuring point: Top of plastic sleeve on instrument shelf, 2.07 ft above land-surface datum (since July 1990).

REMARKS.--Well is part of areal-effects network.

PERIOD OF RECORD.--June 1967 to current year. Continuous record began November 1986. Records from June 1967 to November 1986 are unpublished and available in the files of the Groundwater Section, DEHNR.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 21.14 ft below land-surface datum, Feb. 23, 1972; lowest water level recorded, 31.36 ft below land-surface datum, Feb. 4 and 5, 1989.

REVISIONS.--Water-level mean values and extremes for period of record published in Water Resources Data, North Carolina, NC-87-1, should be adjusted by -0.1 ft.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	28.80	29.08	28.88	29.14	27.09	26.30	26.03	25.48	25.88	26.35	26.89	26.69
10	28.93	28.81	28.66	29.02	26.78	26.31	25.79	25.66	26.10	26.61	26.66	26.72
15	29.00	28.95	28.51	28.58	26.68	26.17	26.00	25.64	26.30	26.89	26.63	26.67
20	29.11	28.79	28.41	27.90	26.93	26.06	25.58	25.67	26.37	26.97	26.52	26.78
25	28.77	28.63	28.58	27.75	26.73	26.11	25.72	25.68	26.27	27.03	26.78	26.68
EOM	29.10	28.85	28.90	27.15	26.81	26.07	25.53	25.71	26.34	26.90	26.64	26.97

WTR YR 1991 MEAN 27.15 HIGH 25.46 APR 21 LOW 29.19 NOV 3

## GROUND-WATER LEVELS

## BEAUFORT COUNTY--Continued

**352252077050707.** Local number, NC-164; DEHNR Wilmar Research Station well P21k7.  
 LOCATION.--Lat 35°22'53", long 77°05'17", Hydrologic Unit 03020202, 3.5 mi southeast of Wilmar, 0.5 mi east of intersection of Secondary Roads 1129 and 1130 on logging road. Owner: DEHNR (North Carolina Department of Environment, Health, and Natural Resources).  
 AQUIFER.--Peedee aquifer of Late Cretaceous age.  
 WELL CHARACTERISTICS.--Drilled observation well, drilled to 320 ft, diameter 6 in., cased to 290 ft, screened interval from 290 to 310 ft.  
 INSTRUMENTATION.--Measured periodically with steel tape.  
 DATUM.--Land-surface datum is 40.56 ft above National Geodetic Vertical Datum of 1929 (levels by DEHNR).  
 Measuring point: Top of instrument shelf, 2.94 ft above land-surface datum.  
 REMARKS.--Well is part of areal-effects network.  
 PERIOD OF RECORD.--March 1969 to current year. Continuous record December 1986 to November 1990. Records from March 1969 to July 1986 are unpublished and available in the files of the Groundwater Section, DEHNR.  
 EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 12.03 ft below land-surface datum, Apr. 27, 1973; lowest water level recorded, 19.40 ft below land-surface datum, Jan. 11 and 14, 1989.

 DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	16.81	17.51	---	---	---	---	---	---	---	---	---	---
10	16.98	17.38	---	---	---	---	---	---	---	---	---	---
15	17.15	17.63	---	---	---	---	---	---	---	---	---	---
20	17.42	---	---	---	---	---	---	---	---	---	---	---
25	17.33	---	---	---	---	---	---	---	---	---	---	---
EOM	17.56	---	---	---	---	---	---	---	---	---	---	---

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JAN 16	16.91	FEB 28	15.59	APR 11	14.82	MAY 30	14.81	JUL 11	15.76	AUG 22	15.90

**352252077050709.** Local number, NC-165; DEHNR Wilmar Research Station well P21k9.  
 LOCATION.--Lat 35°22'53", long 77°05'17", Hydrologic Unit 03020202, 3.5 mi southeast of Wilmar, 0.5 mi east of intersection of Secondary Roads 1129 and 1130 on logging road. Owner: DEHNR (North Carolina Department of Environment, Health, and Natural Resources).  
 AQUIFER.--Black Creek aquifer of Late Cretaceous age.  
 WELL CHARACTERISTICS.--Drilled observation well, drilled to 712 ft, diameter 4 in., cased to 695 ft, screened interval from 695 to 705 ft.  
 INSTRUMENTATION.--Measured periodically with steel tape.  
 DATUM.--Land-surface datum is 41.63 ft above National Geodetic Vertical Datum of 1929 (levels by DEHNR).  
 Measuring point: Top of instrument shelf, 2.74 ft above land-surface datum - revised from 2.91 ft above land-surface datum, October 1987.  
 REMARKS.--Well is part of areal-effects network.  
 PERIOD OF RECORD.--March 1969 to current year. Continuous record December 1986 to November 1990. Records from March 1969 to July 1986 are unpublished and available in the files of the Groundwater Section, DEHNR.  
 EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 12.94 ft below land-surface datum, Mar. 11, 1969; lowest water level recorded, 59.37 ft below land-surface datum, Aug. 22, 1991.  
 REVISIONS.--Water-level mean values and extremes for period of record published in Water Resources Data, North Carolina, NC-87-1, should be adjusted by +0.17 ft.

 DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	55.67	55.68	---	---	---	---	---	---	---	---	---	---
10	55.76	55.52	---	---	---	---	---	---	---	---	---	---
15	55.75	55.73	---	---	---	---	---	---	---	---	---	---
20	55.91	---	---	---	---	---	---	---	---	---	---	---
25	55.65	---	---	---	---	---	---	---	---	---	---	---
EOM	55.73	---	---	---	---	---	---	---	---	---	---	---

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JAN 16	55.96	FEB 28	56.66	APR 11	56.69	MAY 30	59.10	JUL 11	59.29	AUG 22	59.37

## BERTIE COUNTY

**361002076562106.** Local number, NC-153; DEHNR Cremo Research Station well G19b6.  
 LOCATION.--Lat 36°10'02", long 76°56'21", Hydrologic Unit 03010203, 0.75 mi south of Cremona, south of Secondary Road 1313 on logging road. Owner: DEHNR (North Carolina Department of Environment, Health, and Natural Resources).  
 AQUIFER.--Upper Cape Fear aquifer of Late Cretaceous age.  
 WELL CHARACTERISTICS.--Drilled observation well, drilled to 431 ft, diameter 6 in., cased to 400 ft, screened interval from 400 to 410 ft; measured depth 412 ft, October 1986.  
 INSTRUMENTATION.--Measured periodically with steel tape.  
 DATUM.--Land-surface datum is 64.49 ft above National Geodetic Vertical Datum of 1929 (levels by DEHNR).  
 Measuring point: Top of instrument shelf, 3.01 ft above land-surface datum.  
 REMARKS.--Well is part of areal-effects network.  
 PERIOD OF RECORD.--August 1974 to current year. Continuous record November 1986 to November 1990. Records from August 1974 to August 1986 are unpublished and available in the files of the Groundwater Section, DEHNR.  
 EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 31.51 ft below land-surface datum, July 30, 1975; lowest water level recorded, 39.89 ft below land-surface datum, Dec. 26 and 27, 1988, and Feb. 17, 1989.

 DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	39.64	39.51	---	---	---	---	---	---	---	---	---	---
10	39.67	39.42	---	---	---	---	---	---	---	---	---	---
15	39.64	---	---	---	---	---	---	---	---	---	---	---
20	39.73	---	---	---	---	---	---	---	---	---	---	---
25	39.46	---	---	---	---	---	---	---	---	---	---	---
EOM	39.53	---	---	---	---	---	---	---	---	---	---	---

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JAN 10	39.39	MAR 6	39.25	APR 17	39.38	JUN 13	39.71	AUG 6	39.72

## BERTIE COUNTY

361420077111407. Local number, NC-154; DEHNR Roxobel Research Station well F22b7.

LOCATION.--Lat 36°14'20", long 77°11'14", Hydrologic Unit 03010203, 3.8 mi northeast of Roxobel on Secondary Road 1249. Owner: DEHNR (North Carolina Department of Environment, Health, and Natural Resources).

AQUIFER.--Surficial aquifer of post-Miocene age.

WELL CHARACTERISTICS.--Drilled observation well, drilled to 12 ft, diameter 4 in., cased to 7 ft, screened interval from 7 to 12 ft.

INSTRUMENTATION.--Digital recorder with 60-minute punch interval.

DATUM.--Land-surface datum is 74 ft above National Geodetic Vertical Datum of 1929 (from topographic map).

Measuring point: Top of instrument shelf, 3.05 ft above land-surface datum.

REMARKS.--Well is part of climatic-effects network.

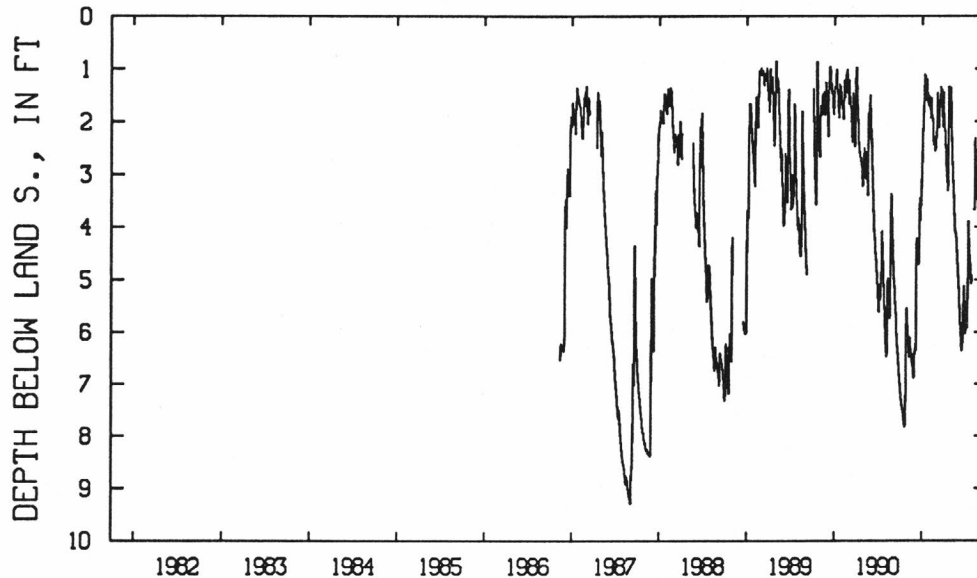
PERIOD OF RECORD.--November 1986 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 0.80 ft below land-surface datum, Oct. 20, 1989; lowest water level recorded, 9.31 ft below land-surface datum, Sept. 5, 1987.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.97	5.69	6.49	3.26	1.53	2.51	1.43	1.35	4.92	5.88	---	3.32
2	7.03	5.83	6.41	3.11	1.62	2.41	1.59	1.47	5.02	6.03	---	3.53
3	7.10	5.97	6.37	2.52	1.68	2.06	1.80	1.74	5.11	5.94	---	3.67
4	7.16	6.08	6.32	2.23	1.77	1.59	1.97	2.01	5.17	5.77	---	3.77
5	7.20	6.15	6.34	2.14	1.85	1.45	2.08	2.27	5.29	5.71	---	3.89
6	7.25	6.21	6.37	2.16	1.94	1.46	2.15	2.43	5.46	5.62	---	3.92
7	7.31	6.32	6.37	2.17	1.85	1.49	2.25	2.61	5.61	5.58	3.68	3.93
8	7.35	6.41	5.94	1.80	1.58	1.64	2.38	2.78	5.72	5.64	2.61	4.02
9	7.39	6.49	4.90	1.47	1.53	1.79	2.48	2.93	5.82	5.77	2.53	4.12
10	7.43	6.39	4.28	1.37	1.62	1.90	2.57	3.04	5.92	5.93	2.31	4.23
11	7.45	6.16	4.21	1.32	1.76	2.03	2.74	3.17	6.01	5.36	2.34	4.32
12	7.49	6.09	4.28	1.13	1.92	2.13	2.91	3.27	6.07	4.32	2.56	4.44
13	7.50	6.10	4.36	1.10	2.00	2.12	3.00	3.36	6.15	3.96	2.69	4.57
14	7.52	6.19	4.48	1.18	1.92	1.77	3.04	3.48	6.24	3.89	2.84	4.67
15	7.56	6.29	4.61	1.26	1.96	1.59	3.08	3.60	6.31	4.02	2.94	4.79
16	7.62	6.34	4.62	1.25	2.20	1.63	3.11	3.76	6.36	4.20	3.00	4.91
17	7.68	6.35	4.63	1.29	2.36	1.72	3.16	3.86	6.30	4.36	3.15	5.01
18	7.71	6.40	4.58	1.46	2.44	1.67	3.22	3.97	6.23	4.50	3.29	5.11
19	7.72	6.45	4.59	1.60	2.38	1.37	3.32	4.08	6.24	4.54	3.39	5.21
20	7.77	6.51	4.72	1.45	2.29	1.34	3.04	4.13	6.20	4.58	3.49	4.65
21	7.81	6.58	4.58	1.19	2.31	1.43	1.81	4.13	5.83	4.65	3.48	4.02
22	7.83	6.63	4.03	1.24	2.35	1.52	1.33	4.11	5.65	4.73	3.53	3.90
23	7.78	6.64	3.62	1.37	2.45	1.39	1.35	4.14	5.34	4.83	3.66	3.94
24	7.54	6.65	3.45	1.45	2.56	1.38	1.50	4.20	5.11	4.93	3.77	3.99
25	7.41	6.71	3.55	1.52	2.52	1.61	1.74	4.28	5.11	5.04	2.89	3.72
26	7.11	6.77	3.71	1.62	2.46	1.83	1.95	4.38	5.18	5.08	2.44	2.80
27	6.44	6.84	3.88	1.68	2.37	1.96	2.11	4.49	5.32	5.03	2.34	2.49
28	5.95	6.89	3.72	1.69	2.43	2.05	2.03	4.59	5.48	4.92	2.48	2.71
29	5.61	6.86	3.33	1.71	---	2.11	1.47	4.67	5.62	---	2.71	2.93
30	5.54	6.62	3.14	1.69	---	1.71	1.36	4.74	5.75	---	2.90	3.09
31	5.59	---	3.10	1.49	---	1.45	---	4.82	---	---	3.08	---

WTR YR 1991 MEAN 3.94 HIGH 1.10 LOW 7.83



361420077111407 BE-080 (NC-154) ROXOBL 7  
MEAN DAILY DEPTH BELOW LAND S. (FT)

## GROUND-WATER LEVELS

## BLADEN COUNTY

**343027078451903.** Local number, NC-178; DEHNR Bladenboro Research Station well Z41u3.  
**LOCATION.**--Lat 34°30'27", long 78°45'19", Hydrologic Unit 03040206, 3 mi southeast of Bladenboro, south of State Highway 211 on Secondary Road 1172. Owner: DEHNR (North Carolina Department of Environment, Health, and Natural Resources).  
**AQUIFER.**--Pee Dee aquifer of Late Cretaceous age.  
**WELL CHARACTERISTICS.**--Drilled observation well, drilled to 110 ft, diameter 6 in., cased to 100 ft, screened interval from 100 to 110 ft.  
**INSTRUMENTATION.**--Digital recorder with 60-minute punch interval.  
**DATUM.**--Land-surface datum is 116.45 ft above National Geodetic Vertical Datum of 1929 (levels by DEHNR).  
 Measuring point: Top of instrument shelf, 2.78 ft above land-surface datum - revised from 2.89 ft above land-surface datum, October 1987.  
**REMARKS.**--Well is part of areal-effects network. Records prior to January 1987 are from Bladenboro Research Station well Z41u4 which was adjacent to and of similar construction to well Z41u3.  
**PERIOD OF RECORD.**--March 1976 to current year. Continuous record began January 1987. Records for well Z42u4 from March 1976 to December 1986 are unpublished and available in the files of the Groundwater Section, DEHNR.  
**EXTREMES FOR PERIOD OF RECORD.**--Highest water level recorded, 2.73 ft below land-surface datum, Apr. 19, 1978; lowest water level recorded, 7.84 ft below land-surface datum, Oct. 10, 1990.  
**REVISIONS.**--Water-level mean values and extremes for period of record published in Water Resources Data, North Carolina, NC-87-1, should be adjusted by +0.11 ft.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	7.75	6.74	6.05	5.44	4.13	3.74	3.56	3.74	4.42	5.72	6.14	5.31
10	7.83	6.47	5.95	5.30	3.98	3.69	3.59	3.89	4.49	5.97	6.05	5.37
15	7.43	6.31	5.89	5.05	3.93	3.66	3.65	3.98	4.72	6.27	5.98	5.49
20	7.33	6.11	5.82	4.75	3.98	3.65	3.57	4.13	4.93	6.32	5.79	5.54
25	7.09	6.01	5.65	4.56	3.90	3.73	3.54	4.26	5.22	6.50	5.56	5.46
EOM	6.89	6.07	5.48	4.26	3.90	3.64	3.59	4.51	5.45	6.35	5.35	5.32

WTR YR 1991 MEAN 5.19 HIGH 3.52 APR 24 LOW 7.83 OCT 10

## BRUNSWICK COUNTY

**340416078084202.** Local number, NC-180; DEHNR Bolivia Research Station well FF33d2.  
**LOCATION.**--Lat 34°04'16", long 78°08'42", Hydrologic Unit 03040207, in Bolivia at Town Hall on U.S. Highway 17. Owner: DEHNR (North Carolina Department of Environment, Health, and Natural Resources).  
**AQUIFER.**--Pee Dee aquifer of Late Cretaceous age.  
**WELL CHARACTERISTICS.**--Drilled observation well, drilled to 140 ft, diameter 4 in., cased to 92 ft, open hole to 140 ft.  
**INSTRUMENTATION.**--Digital recorder with 60-minute punch interval.  
**DATUM.**--Land-surface datum is 40.97 ft above National Geodetic Vertical Datum of 1929 (levels by DEHNR).  
 Measuring point: Top of instrument shelf, 2.70 ft above land-surface datum.  
**REMARKS.**--Well is part of areal-effects network.  
**PERIOD OF RECORD.**--April 1971 to current year. Continuous record began May 1987. Records from April 1971 to March 1987 are unpublished and available in the files of the Groundwater Section, DEHNR.  
**EXTREMES FOR PERIOD OF RECORD.**--Highest water level recorded, 5.52 ft below land-surface datum, Aug. 14, 1973; lowest water level recorded, 14.54 ft below land-surface datum, Oct. 22, 1990.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	13.31	13.17	13.43	12.64	10.53	9.54	9.44	---	10.94	12.18	11.98	10.43
10	13.64	12.99	13.34	12.62	10.01	9.55	9.36	---	11.31	12.84	11.16	10.56
15	13.27	13.42	13.08	12.25	10.00	10.12	9.88	---	11.36	12.85	10.79	11.98
20	13.59	13.36	13.17	11.29	10.24	9.55	9.53	---	12.18	12.86	9.99	10.94
25	13.33	12.88	12.64	11.44	9.87	9.40	9.58	10.33	12.17	12.69	13.46	11.15
EOM	13.47	13.50	12.22	10.77	9.96	9.27	---	10.69	12.14	12.50	10.51	11.14

WTR YR 1991 MEAN 11.57 HIGH 9.10 MAR 3 LOW 13.72 OCT 22

**335629078115406.** Local number, NC-181; DEHNR Sunset Harbor Research Station well GG34s6.  
**LOCATION.**--Lat 33°56'29", long 78°11'54", Hydrologic Unit 03040207, 1 mi north of Sunset Harbor, 4.3 mi south of N.C. Highway 211 on Secondary Road 1112. Owner: DEHNR (North Carolina Department of Environment, Health, and Natural Resources).  
**AQUIFER.**--Castle Hayne aquifer of Oligocene and Eocene age.  
**WELL CHARACTERISTICS.**--Drilled observation well, drilled to 102 ft, diameter 6 in., cased to 84 ft, open hole to 102 ft.  
**INSTRUMENTATION.**--Digital recorder with 60-minute punch interval.  
**DATUM.**--Land-surface datum is 28.06 ft above National Geodetic Vertical Datum of 1929 (levels by DEHNR).  
 Measuring point: Top of instrument shelf, 2.02 ft above land-surface datum.  
**REMARKS.**--Well is part of areal-effects network. Records from December 1978 to March 1986 are from Sunset Harbor Research Station well GG34s5 which was adjacent to and of similar construction to well GG34s6.  
**PERIOD OF RECORD.**--September 1974 to current year. Records from September 1974 to March 1986 are unpublished and available in the files of the Groundwater Section, DEHNR. U.S. Geological Survey periodic water-level measurements for well GG34s6 began December 1986 and continuous record began March 1987.  
**EXTREMES FOR PERIOD OF RECORD.**--Highest water level recorded, 6.37 ft below land-surface datum, Mar. 13, 1987; lowest water level recorded, 13.53 ft below land-surface datum, Aug. 1, 1990.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	12.87	12.80	13.19	13.32	12.04	11.49	11.27	10.95	11.58	12.17	10.45	9.73
10	12.90	12.81	13.14	13.33	11.90	11.37	11.38	10.93	11.68	12.37	10.31	9.86
15	13.06	12.96	13.16	13.30	11.90	11.35	11.41	11.05	11.76	12.29	10.16	10.06
20	13.18	13.04	13.23	12.75	11.80	11.33	11.10	11.16	11.79	11.91	10.13	10.05
25	12.69	13.09	13.26	12.57	11.72	11.37	10.91	11.14	11.96	11.73	10.15	9.98
EOM	12.78	13.15	13.28	12.25	11.76	11.36	10.90	11.37	12.05	11.02	9.70	10.15

WTR YR 1991 MEAN 11.79 HIGH 9.70 AUG 30 LOW 13.34 JAN 14

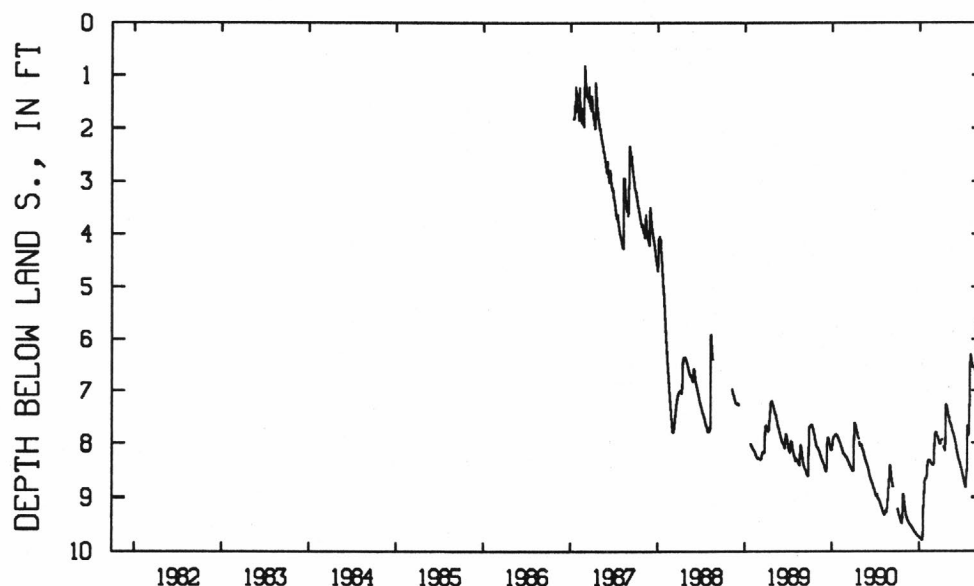
## BRUNSWICK COUNTY--Continued

**335629078115406.** Local number, NC-182; DEHNR Sunset Harbor Research Station well GG34s7.  
 LOCATION.--Lat 33°56'29", long 78°11'54". Hydrologic Unit 03040207, 1 mi north of Sunset Harbor, 4.3 mi south of State Highway 211 on Secondary Road 1112. Owner: DEHNR (North Carolina Department of Environment, Health, and Natural Resources).  
 AQUIFER.--Surficial aquifer of post-Miocene age.  
 WELL CHARACTERISTICS.--Drilled observation well, drilled to 15 ft, diameter 4 in., cased to 10 ft, screened interval from 10 to 15 ft.  
 INSTRUMENTATION.--Digital recorder with 60-minute punch interval.  
 DATUM.--Land-surface datum is 28.06 ft above National Geodetic Vertical Datum of 1929 (levels by DEHNR).  
 Measuring point: Top of collar on casing, 2.65 ft above land-surface datum.  
 REMARKS.--Well is part of climatic-effects network.  
 PERIOD OF RECORD.--January 1987 to current year.  
 EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 0.65 ft below land-surface datum, Apr. 15, 1987; lowest water level recorded, 9.80 ft below land-surface datum, Jan. 15 and 16, 1991.

 DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	9.12	9.55	9.74	8.61	8.41	7.95	7.41	7.98	8.57	6.51	5.79
2	---	9.16	9.56	9.74	8.54	8.40	7.94	7.44	8.00	8.59	6.40	5.85
3	9.21	9.20	9.57	9.74	8.46	8.36	7.94	7.47	8.02	8.61	6.35	5.89
4	9.23	9.23	9.57	9.75	8.41	8.24	7.94	7.49	8.05	8.63	6.31	5.93
5	9.25	9.26	9.58	9.75	8.37	8.04	7.93	7.50	8.09	8.65	6.31	5.98
6	9.27	9.28	9.59	9.76	8.35	7.91	7.93	7.52	8.11	8.67	6.34	6.03
7	9.29	9.32	9.59	9.76	8.33	7.84	7.93	7.55	8.13	8.68	6.37	6.07
8	9.31	9.34	9.60	9.77	8.32	7.81	7.94	7.59	8.14	8.70	6.40	6.12
9	9.33	9.36	9.61	9.77	8.31	7.80	---	7.60	8.17	8.73	6.44	6.16
10	9.34	9.37	9.61	9.77	8.31	7.79	---	7.60	8.19	8.75	6.48	6.19
11	9.36	9.39	9.62	9.78	8.31	7.79	---	7.62	8.21	8.77	6.52	6.23
12	9.36	9.40	9.63	9.78	8.32	7.81	8.06	7.63	8.23	8.78	6.54	6.26
13	9.38	9.41	9.63	9.79	8.32	7.79	8.07	7.64	8.26	8.79	6.53	6.30
14	9.39	9.42	9.64	9.79	8.31	7.80	8.08	7.66	8.27	8.82	6.52	6.33
15	9.40	9.43	9.64	9.80	8.33	7.83	8.09	7.68	8.29	8.76	6.51	6.36
16	9.42	9.44	9.65	9.73	8.35	7.86	8.10	7.70	8.30	8.67	6.53	6.40
17	9.43	9.45	9.66	9.47	8.36	7.86	8.11	7.72	8.32	8.61	6.54	6.43
18	9.44	9.46	9.66	9.26	8.36	7.86	8.13	7.74	8.34	8.56	6.53	6.46
19	9.45	9.47	9.67	9.15	8.37	7.88	8.14	7.76	8.35	8.53	6.54	6.49
20	9.47	9.48	9.68	9.07	8.37	7.91	7.80	7.77	8.36	8.36	6.54	6.47
21	9.48	9.49	9.68	8.97	8.38	7.92	7.37	7.78	8.36	7.85	6.57	6.49
22	9.49	9.49	9.69	8.84	8.38	7.93	7.27	7.81	8.39	7.67	6.60	6.53
23	9.33	9.50	9.69	8.75	8.39	7.94	7.26	7.83	8.41	7.66	6.61	6.54
24	9.03	9.50	9.70	8.70	8.40	7.95	7.26	7.83	8.43	7.70	6.61	6.55
25	8.96	9.51	9.70	8.67	8.39	7.98	7.30	7.83	8.45	7.77	6.61	6.56
26	8.94	9.52	9.71	8.66	8.39	8.01	7.32	7.85	8.46	7.86	6.57	6.57
27	8.95	9.53	9.71	8.65	8.40	8.01	7.33	7.88	8.48	7.83	5.84	6.60
28	8.98	9.53	9.72	8.65	8.41	8.01	7.35	7.90	8.50	7.52	5.64	6.62
29	9.01	9.54	9.72	8.65	---	8.02	7.37	7.92	8.53	7.37	5.66	6.64
30	9.05	9.55	9.73	8.65	---	8.00	7.40	7.94	8.55	7.25	5.70	6.66
31	9.09	---	9.73	8.64	---	7.98	---	7.96	---	6.89	5.74	---

WTR YR 1991 MEAN 8.22 HIGH 5.64 LOW 9.80


 335629078115407 BR-80 (NC-182) SUNSET HARBOR 7  
 MEAN DAILY DEPTH BELOW LAND S. (FT)

## GROUND-WATER LEVELS

## CARTERET COUNTY

**344323076451301.** Local number, NC-139; DEHNR Camp Glenn Research Station well X17j5.  
 LOCATION.--Lat 34°43'23", long 76°45'13", Hydrologic Unit 03020106, on west edge of Morehead City, south of U.S. Highway 70 at DEHNR Marine Fisheries Facility on north shore of Bogue Sound. Owner: DEHNR (North Carolina Department of Environment, Health, and Natural Resources).  
 AQUIFER.--Castle Hayne aquifer of Oligocene and Eocene age.  
 WELL CHARACTERISTICS.--Drilled observation well, drilled to 238 ft, diameter 4 in., cased to 180 ft, open hole to 191 ft, hole collapsed from 191 to 238 ft.  
 INSTRUMENTATION.--Digital recorder with 30-minute punch interval.  
 DATUM.--Land-surface datum is 8.72 ft above National Geodetic Vertical Datum of 1929 (levels by DEHNR).  
 Measuring point: Top of collar on casing, 1.73 ft above land-surface datum.  
 REMARKS.--Well is part of areal-effects network.  
 PERIOD OF RECORD.--January 1976 to current year.  
 EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 4.23 ft below land-surface datum, Dec. 7, 1976; lowest water level recorded, 13.20 ft below land-surface datum, Aug. 21, 1990.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	11.48	10.06	9.63	9.15	9.00	8.42	9.15	9.45	10.61	11.76	11.53	10.57
10	11.39	9.51	9.42	9.11	8.33	8.37	8.72	9.38	11.10	12.12	11.45	10.68
15	11.40	10.15	9.49	8.98	8.40	8.34	8.88	9.46	11.44	12.29	11.55	10.76
20	11.40	9.80	9.34	8.46	8.86	8.36	8.75	9.63	11.43	12.24	11.13	11.01
25	10.39	9.86	9.24	8.87	8.59	8.42	8.99	9.79	11.01	12.40	11.12	10.16
EOM	10.33	9.75	9.04	8.66	8.63	8.73	9.10	10.44	11.37	11.65	10.83	10.27

WTR YR 1991 MEAN 10.02 HIGH 8.10 MAR 3 LOW 12.40 JUL 25

## CHEROKEE COUNTY

**351117083545001.** Local number, NC-191.  
 LOCATION.--Lat 35°11'17", long 83°54'50", Hydrologic Unit 06020002, 0.6 mi north of Marble, 100 ft west of Secondary Road 1377, in Marble. Owner: American Thread Company.  
 AQUIFER.--Saprolite derived from schist of Precambrian age.  
 WELL CHARACTERISTICS.--Drilled observation well, drilled to 108.5 ft, diameter 4 in., cased to 53 ft, screened interval from 53 to 83 ft, sand packed from 40 to 83 ft, back-filled with saprolite from 83 to 108.5 ft.  
 INSTRUMENTATION.--Digital recorder with 60-minute punch interval.  
 DATUM.--Land-surface datum is 1,720 ft above National Geodetic Vertical Datum of 1929 (from topographic map). Measuring point: Top of instrument shelf, 1.15 ft above land-surface datum.  
 REMARKS.--Well is part of terrane-effects network. Water-level measured by personnel of N.C. Department of Environment, Health, and Natural Resources Sept. 1985 to Sept. 1989.  
 PERIOD OF RECORD.--October 1989 to current year.  
 EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 19.78 ft below land-surface datum, Feb. 17, 1990; lowest water level recorded, 35.89 ft below land-surface datum, Oct. 17, 1990.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990  
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24.86	27.42	25.49	25.57	22.88	23.03	24.00	27.52	29.95	31.77	33.26	34.60
2	23.64	27.48	25.50	25.38	22.95	23.14	24.12	27.60	30.00	31.82	33.31	34.65
3	23.30	27.60	25.59	25.20	23.08	23.19	24.26	---	30.03	31.90	33.34	34.68
4	23.32	27.70	25.64	25.04	23.02	23.28	24.43	---	30.04	31.97	33.38	34.73
5	23.59	27.80	25.70	24.86	22.89	23.36	24.59	---	30.09	32.03	33.40	34.77
6	23.90	27.83	25.80	24.63	22.83	23.47	24.73	---	30.17	32.09	33.41	34.80
7	24.18	27.86	25.94	24.38	22.85	23.58	24.90	---	30.23	32.16	33.46	34.84
8	24.43	27.87	25.93	24.13	22.96	23.66	25.04	---	30.29	32.24	33.48	34.89
9	24.70	27.93	25.91	23.89	23.02	23.66	25.14	---	30.38	32.29	33.52	34.95
10	24.88	28.00	25.93	23.67	22.61	23.60	25.18	---	30.45	32.34	33.55	34.98
11	25.06	28.07	25.91	23.54	21.87	23.52	25.28	---	30.52	32.39	33.59	35.00
12	25.23	28.13	25.78	23.55	21.79	23.50	25.45	---	30.59	32.44	33.64	35.04
13	25.37	28.17	25.58	23.71	21.90	23.51	25.59	---	30.65	32.47	33.69	35.08
14	25.48	28.18	25.36	23.81	22.11	23.57	25.70	---	30.70	32.46	33.74	35.10
15	25.60	28.07	25.14	23.95	22.32	23.69	25.80	---	30.74	32.45	33.79	35.10
16	25.72	27.53	25.13	24.09	21.50	23.59	25.94	---	30.83	32.45	33.84	35.13
17	25.80	26.76	25.12	24.19	19.86	21.68	26.07	---	30.91	32.46	33.88	35.20
18	25.91	26.40	25.11	24.28	19.96	20.32	26.26	---	30.97	32.56	33.93	35.25
19	26.02	26.25	25.07	24.41	20.26	20.48	26.42	---	31.01	32.66	33.98	35.27
20	26.17	26.08	25.10	24.47	20.64	20.90	26.53	---	31.08	32.71	34.02	35.30
21	26.30	26.04	25.14	24.25	21.02	21.34	26.58	---	31.16	32.76	34.07	35.35
22	26.44	26.05	25.22	23.92	21.27	21.74	26.67	---	31.20	32.80	34.10	35.36
23	26.55	25.90	25.28	23.81	21.58	22.11	26.79	---	31.25	32.82	34.16	35.38
24	26.64	25.63	25.29	23.81	21.95	22.41	26.91	---	31.33	32.86	34.21	35.42
25	26.73	25.43	25.29	23.71	22.31	22.70	27.03	---	31.42	32.92	34.26	35.45
26	26.84	25.32	25.37	23.40	22.54	22.96	27.10	---	31.49	32.96	34.32	35.49
27	26.95	25.31	25.49	23.20	22.71	23.18	27.17	---	31.54	33.00	34.36	35.55
28	27.04	25.32	25.62	23.13	22.85	23.39	27.22	---	31.61	33.05	34.40	35.59
29	27.12	25.42	25.70	23.01	---	23.55	27.32	29.72	31.68	33.09	34.45	35.63
30	27.19	25.46	25.77	22.89	---	23.69	27.42	29.80	31.73	33.14	34.48	35.66
31	27.27	---	25.70	22.84	---	23.84	---	29.87	---	33.20	34.54	---

WTR YR 1990 MEAN 27.78 HIGH 19.86 LOW 35.66

## GROUND WATER LEVELS

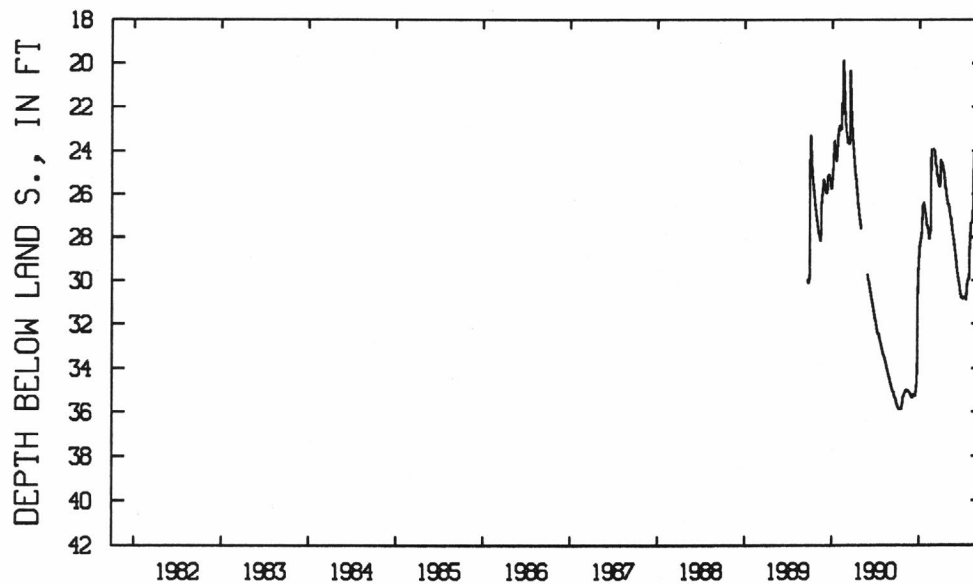
## CHEROKEE COUNTY--Continued

351117083545001. Local number, NC-191.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35.70	35.14	35.36	28.78	27.46	23.95	24.42	26.44	28.85	30.83	28.01	---
2	35.75	35.13	35.36	28.56	27.47	23.93	24.41	26.47	28.94	30.87	27.65	---
3	35.79	35.12	35.31	28.43	27.46	23.92	24.48	26.49	29.04	30.83	27.46	---
4	35.79	35.09	35.29	28.34	27.48	23.92	24.55	26.54	29.11	30.81	27.35	---
5	35.81	35.03	35.28	28.26	27.52	23.98	24.56	26.58	29.25	30.79	27.31	23.95
6	35.83	35.03	35.22	28.19	27.55	23.98	24.55	26.63	29.38	30.79	27.32	24.12
7	35.85	35.05	35.21	28.08	27.61	24.12	24.58	26.76	29.48	30.78	27.33	24.30
8	35.88	35.05	35.23	28.06	27.71	24.28	24.63	26.84	29.55	30.78	27.31	24.49
9	35.88	35.04	35.28	28.07	27.81	24.41	24.68	26.88	29.65	30.77	27.25	24.68
10	35.87	34.97	35.27	28.01	27.86	24.56	24.72	26.96	29.74	30.78	27.22	24.83
11	35.88	35.05	35.28	27.81	28.01	24.66	24.83	27.05	29.81	30.80	27.27	24.94
12	35.87	35.06	35.29	27.49	28.10	24.70	24.92	27.08	29.88	30.82	27.06	25.10
13	35.87	35.05	35.29	27.26	28.04	24.68	24.95	27.10	29.95	30.83	26.10	25.27
14	35.85	35.07	35.30	27.00	27.84	24.78	24.98	27.18	30.04	30.85	25.40	25.41
15	35.86	35.07	35.28	26.76	27.79	24.96	25.03	27.30	30.09	30.90	24.79	25.53
16	35.88	35.05	35.25	26.54	27.83	25.10	25.18	27.42	30.16	30.74	24.42	25.66
17	35.89	35.05	35.22	26.59	27.70	25.12	25.28	27.50	30.24	30.49	24.22	25.78
18	35.83	35.07	35.07	26.58	27.21	25.08	25.35	27.59	30.34	30.29	24.13	25.91
19	35.78	35.09	34.99	26.48	25.85	25.21	25.50	27.70	30.43	30.19	24.15	26.08
20	35.74	35.12	34.88	26.37	24.31	25.33	25.78	27.79	30.51	30.13	24.28	26.22
21	35.72	35.14	34.72	26.47	23.92	25.40	25.72	27.87	30.57	30.06	24.48	26.37
22	35.66	35.13	34.59	26.56	---	25.48	25.74	27.95	30.62	30.00	24.65	26.52
23	35.60	35.12	34.28	26.63	---	25.52	25.84	28.04	30.65	29.96	24.82	26.63
24	35.54	35.16	32.69	26.69	---	25.55	25.98	28.12	30.72	29.91	25.00	26.70
25	35.37	35.20	31.15	26.79	---	25.59	26.11	28.19	30.79	29.92	25.13	26.71
26	35.32	35.23	30.30	26.85	---	25.63	26.18	28.28	30.80	29.95	25.19	26.86
27	35.30	35.26	29.86	26.88	---	25.65	26.24	28.38	30.78	29.94	24.97	27.04
28	35.27	35.27	29.58	26.92	---	25.65	26.31	28.50	30.77	29.95	24.83	27.20
29	35.23	35.31	29.35	27.09	---	25.49	26.39	28.58	30.77	28.71	24.76	27.35
30	35.20	35.35	29.08	27.13	---	24.94	26.45	28.64	30.79	28.43	24.21	27.42
31	35.17	---	28.93	27.31	---	24.57	---	28.75	---	28.26	---	---

WTR YR 1991 MEAN 29.16 HIGH 23.92 LOW 35.89



351117083545001 NC-191 (R-102,P1) AMERICAN THREAD CO. NR MARBLE  
MEAN DAILY DEPTH BELOW LAND S. (FT)

## GROUND WATER LEVELS

## CHEROKEE COUNTY--Continued

351121083545002. Local number, NC-192.

LOCATION.--Lat 35°11'21", long 83°54'50", Hydrologic Unit 06020002, 0.7 mi north of Marble, 75 ft west of Secondary Road 1377, in Marble. Owner: American Thread Company.

AQUIFER.--Saprolite derived from schist of Precambrian age.

WELL CHARACTERISTICS.--Drilled observation well, drilled to 24 ft, diameter 4 in., cased to 14 ft, screened interval from 14 to 24 ft, sand packed from 6 to 24 ft.

INSTRUMENTATION.--Digital recorder with 60-minute punch interval.

DATUM.--Land-surface datum is 1,710 ft above National Geodetic Vertical Datum of 1929 (from topographic map). Measuring point: Three saw cuts in top of pvc casing, 3.35 ft above land-surface datum.

REMARKS.--Well is part of climatic-effects network.

PERIOD OF RECORD.--October 1989 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 0.08 ft above land-surface datum, Aug. 30 and 31, 1991; lowest water level recorded, 11.69 ft below land-surface datum, Oct. 8, 1990.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.22	5.81	3.59	1.90	1.77	3.49	4.27	5.91	6.38	7.65	8.50	10.68
2	1.28	5.85	3.75	2.12	1.93	3.23	4.38	5.95	6.40	7.67	8.68	10.72
3	1.43	5.94	3.94	2.33	2.02	2.56	4.46	5.99	6.42	7.72	8.82	10.77
4	1.72	6.00	4.05	1.89	1.24	2.88	4.53	6.01	6.36	7.75	8.96	10.86
5	2.24	6.07	4.19	1.57	1.46	3.14	4.62	6.03	6.42	7.83	9.05	10.90
6	2.69	6.10	4.33	1.39	1.69	3.35	4.71	6.09	6.53	7.96	9.09	10.94
7	3.06	6.04	4.47	1.42	1.77	3.51	4.90	6.14	6.58	8.10	9.15	11.01
8	3.39	5.93	3.75	1.25	2.15	3.47	4.98	6.18	6.62	8.25	9.23	11.09
9	3.72	5.51	3.45	1.27	2.23	2.88	5.04	6.19	6.67	8.39	9.31	11.16
10	3.92	5.42	3.43	1.49	1.06	2.64	5.09	5.91	6.71	8.51	9.34	11.20
11	4.12	5.50	3.55	1.75	1.13	2.76	5.11	5.78	6.76	8.65	9.39	11.24
12	4.29	5.60	2.53	2.11	1.31	2.93	5.20	5.87	6.81	8.84	9.49	11.29
13	4.42	5.68	1.81	2.51	1.52	3.04	5.25	5.91	6.85	8.99	9.55	11.33
14	4.53	5.71	1.97	2.81	1.80	3.14	5.32	6.05	6.87	9.03	9.62	11.33
15	4.62	4.40	2.00	3.08	1.94	3.29	5.36	6.14	6.91	8.88	9.70	11.30
16	4.71	1.55	2.22	3.33	.91	2.03	5.42	6.23	6.97	8.46	9.75	11.32
17	4.58	1.45	2.52	3.55	.93	1.01	5.48	6.33	7.00	8.14	9.81	11.41
18	4.66	1.74	2.75	3.56	1.04	1.32	5.51	6.32	7.03	8.02	9.88	11.45
19	4.63	2.19	2.88	3.74	1.07	1.53	5.55	6.28	7.07	7.99	9.93	11.43
20	4.77	2.54	3.33	3.45	1.33	1.83	5.58	6.26	7.13	8.00	10.01	11.44
21	4.89	2.91	3.67	1.31	1.55	2.07	5.60	6.18	7.19	8.01	10.05	11.48
22	5.02	2.73	3.87	1.40	1.55	2.34	5.62	6.13	7.20	8.02	10.10	11.45
23	5.14	1.63	4.00	1.72	1.80	2.59	5.67	6.16	7.25	7.97	10.15	11.42
24	5.22	1.91	4.12	1.87	2.18	2.89	5.71	6.24	7.31	7.72	10.22	11.40
25	5.31	2.15	4.22	1.17	2.56	3.15	5.73	6.30	7.37	7.66	10.29	11.33
26	5.41	2.34	4.35	1.16	2.82	3.39	5.78	6.33	7.41	7.67	10.34	11.28
27	5.48	2.57	4.45	1.25	3.12	3.61	5.81	6.37	7.47	7.71	10.38	11.32
28	5.55	2.80	4.56	1.49	3.34	3.81	5.83	6.37	7.52	7.81	10.42	11.36
29	5.61	3.10	4.65	1.34	---	3.94	5.84	6.25	7.57	7.94	10.47	11.37
30	5.67	3.35	4.61	1.20	---	4.04	5.87	6.24	7.62	8.10	10.52	11.38
31	5.74	---	3.33	1.49	---	4.13	---	6.30	---	8.27	10.61	---

WTR YR 1990 MEAN 5.50 HIGH .91 LOW 11.48

## GROUND WATER LEVELS

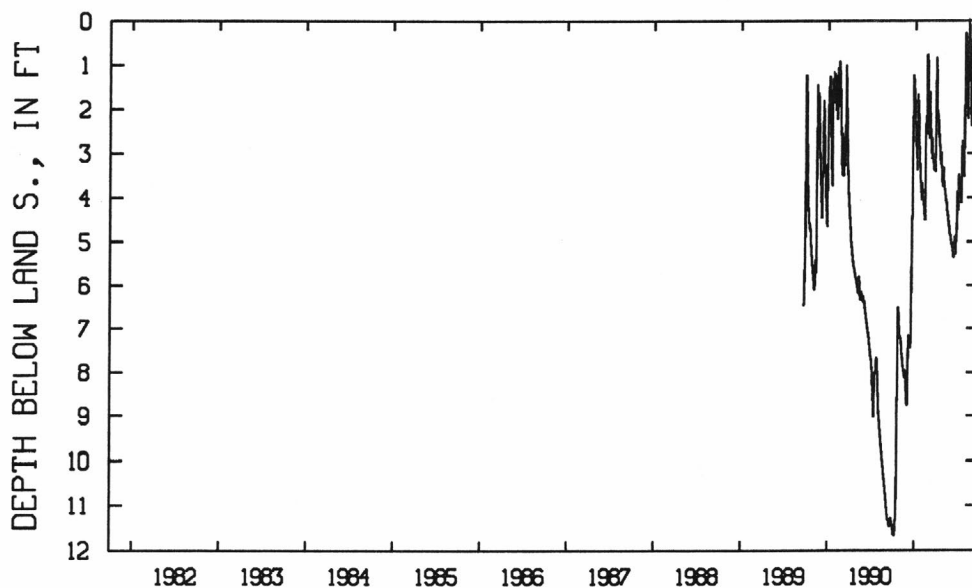
## CHEROKEE COUNTY--Continued

351121083545002. Local number, NC-192.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11.42	7.15	8.75	2.08	3.83	2.67	1.22	3.38	4.95	4.28	.26	.14
2	11.48	7.19	8.73	2.27	3.92	1.67	1.60	3.56	5.02	4.26	.36	.42
3	11.52	7.26	8.60	2.33	3.99	1.60	1.98	3.69	5.06	3.47	.65	.77
4	11.54	7.28	7.80	2.45	4.06	1.86	2.30	3.77	5.03	3.53	.98	1.12
5	11.59	7.29	7.33	2.71	4.10	2.10	2.01	3.82	5.07	3.58	1.36	1.47
6	11.61	7.46	7.16	2.91	4.13	2.22	2.11	3.80	5.11	3.66	1.71	1.73
7	11.65	7.54	7.16	2.96	4.19	2.41	2.44	3.87	5.14	3.74	1.97	1.92
8	11.68	7.60	7.21	3.03	4.27	2.48	2.58	3.93	5.17	3.80	2.16	2.13
9	11.67	7.57	7.28	3.24	4.35	2.67	2.34	3.97	5.21	3.83	1.69	2.32
10	11.67	7.62	7.27	3.39	4.41	2.90	2.24	4.00	5.27	3.91	1.87	2.47
11	11.66	7.79	7.32	2.34	4.47	3.05	2.54	4.07	5.31	3.99	2.22	2.59
12	11.57	7.80	7.37	1.66	4.51	3.13	2.69	4.10	5.35	4.04	.64	2.73
13	11.47	7.85	7.40	1.77	4.22	2.65	2.74	4.09	5.35	4.06	.04	2.84
14	11.38	7.92	7.45	1.95	2.36	2.70	2.81	4.15	5.31	4.12	-.04	2.67
15	11.32	7.97	7.34	2.08	2.30	2.94	2.92	4.22	4.88	3.91	-.03	2.62
16	11.25	7.97	7.27	2.12	2.58	3.14	3.05	4.29	4.90	2.83	.08	2.86
17	11.19	8.04	7.04	2.51	2.56	3.23	3.16	4.33	5.00	2.86	.33	3.03
18	10.01	8.08	5.65	2.76	1.26	3.01	3.25	4.36	5.12	2.71	.62	3.15
19	8.67	8.09	4.65	2.91	.86	3.11	3.01	4.42	5.20	2.84	.94	3.22
20	8.58	8.14	4.53	2.94	.77	3.26	2.97	4.45	5.25	2.97	1.21	3.33
21	8.65	7.99	4.35	3.17	.78	3.35	3.16	4.51	5.28	3.06	1.65	3.42
22	8.31	7.94	4.31	3.40	.86	3.40	3.30	4.56	5.10	3.18	1.91	3.53
23	6.51	7.94	2.61	3.54	1.00	3.18	3.42	4.62	4.70	3.28	2.12	3.61
24	6.50	8.10	1.22	3.62	1.30	3.07	3.54	4.65	4.64	3.38	2.27	3.67
25	6.60	8.25	1.24	3.74	1.65	3.22	3.67	4.70	4.73	3.45	2.38	3.63
26	6.75	8.36	1.39	3.82	2.01	3.35	3.75	4.77	4.27	3.53	1.06	3.67
27	6.89	8.48	1.57	3.88	2.35	3.42	3.74	4.82	3.85	2.88	.45	3.80
28	6.96	8.56	1.48	3.95	2.59	2.84	3.68	4.84	3.97	.42	.73	3.90
29	7.07	8.69	1.65	4.05	---	1.57	3.59	4.84	4.08	.27	.69	3.99
30	7.17	8.76	1.93	3.89	---	.83	3.32	4.86	4.22	.50	-.06	4.05
31	7.15	---	1.80	3.66	---	.94	---	4.90	---	.55	-.04	---

WTR YR 1991 MEAN 4.20 HIGH -.06 LOW 11.68



351121083545002 NC-192 (R-102,P2) AMERICAN THREAD CO. NR MARBLE  
MEAN DAILY DEPTH BELOW LAND S. (FT)

## GROUND-WATER LEVELS

## COLUMBUS COUNTY

**342508078360802.** Local number, NC-179; DEHNR Carver Moore Research Station well AA39v2.

LOCATION.--Lat 34°25'08", long 78°36'08", Hydrologic Unit 03040206, 6.7 mi north of Hallsboro, east of Secondary Road 1001 at abandoned school on Secondary Road 1724. Owner: DEHNR (North Carolina Department of Environment, Health, and Natural Resources).

AQUIFER.--Lower Cape Fear aquifer of Late Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation well, drilled to 506 ft, diameter 4 in., cased to 496 ft, screened interval from 496 to 506 ft.

INSTRUMENTATION.--Measured periodically with steel tape.

DATUM.--Land-surface datum is 105.53 ft above National Geodetic Vertical Datum of 1929 (levels by DEHNR).

Measuring point: Top of instrument shelf, 2.10 ft above land-surface datum.

REMARKS.--Well is part of areal-effects network.

PERIOD OF RECORD.--September 1975 to current year. Continuous record January 1987 to November 1990. Records from September 1975 to April 1986 are unpublished and available in the files of the Groundwater Section, DEHNR.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 39.11 ft below land-surface datum, July 20, 1976; lowest water level recorded, 44.53 ft below land-surface datum, Oct. 7 and 8, 1990.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	44.46	44.22	---	---	---	---	---	---	---	---	---	---
10	44.48	44.14	---	---	---	---	---	---	---	---	---	---
15	44.16	---	---	---	---	---	---	---	---	---	---	---
20	44.28	---	---	---	---	---	---	---	---	---	---	---
25	44.09	---	---	---	---	---	---	---	---	---	---	---
EOM	44.27	---	---	---	---	---	---	---	---	---	---	---

WTR YR 1991 MEAN 44.28 HIGH 44.09 OCT 25 LOW 44.52 OCT 7

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 14	44.34	MAR 13	44.10	APR 12	44.30	MAY 24	44.32	JUL 10	44.39	AUG 22	44.15
JAN 10	44.40										

## CRAVEN COUNTY

**351049077175501.** Local number, NC-44.

LOCATION.--Lat 35°10'49", long 77°17'55", Hydrologic Unit 03020202, 1.4 mi southeast of Cove City on Secondary Road 1005. Owner: City of New Bern.

AQUIFER.--Black Creek and upper Cape Fear aquifers of Late Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation well, drilled to 854 ft, diameter 2 in., cased to 705 ft and from 715 to 781 ft and 786 to 828 ft, screened intervals from 705 to 715 ft, 781 to 786 ft, and 828 to 833 ft.

INSTRUMENTATION.--Beginning July 1988, measured every eight weeks with chalked tape by USGS personnel.

DATUM.--Land-surface datum is 36.73 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of instrument shelf, 2.06 ft above land-surface datum.

REMARKS.--Water levels affected by pumping at nearby City of New Bern well field. Well is part of local-effects network.

PERIOD OF RECORD.--March 1965 to current year. Continuous record from March 1965 to June 1988.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 6.01 ft below land-surface datum, Aug. 25 and 26, 1965; lowest water level recorded, 129.03 ft below land-surface datum, May 29, 1991.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 3	128.10	JAN 9	123.94	APR 11	124.82	MAY 29	129.03	JUL 10	128.56	AUG 20	126.24
NOV 16	125.89	MAR 4	122.09								

## CRAVEN COUNTY--Continued

**351019077184103.** Local number, NC-167; DEHNR Cove City Research Station well R23x3.  
 LOCATION.--Lat 35°10'19", long 77°18'41", Hydrologic Unit 03020202, 1 mi southeast of Cove City, 0.6 mi east of Secondary Road 1001 on Secondary Road 1232. Owner: DEHNR (North Carolina Department of Environment, Health, and Natural Resources).  
 AQUIFER.--Lower Cape Fear aquifer of Late Cretaceous age.  
 WELL CHARACTERISTICS.--Drilled observation well, drilled to 1,000 ft, diameter 4 in., cased to 990 ft, screened interval from 990 to 1,000 ft.  
 INSTRUMENTATION.--Measured periodically with steel tape.  
 DATUM.--Land-surface datum is 46 ft above National Geodetic Vertical Datum of 1929 (from topographic map).  
 Measuring point: Top of instrument shelf, 2.24 ft above land-surface datum.  
 REMARKS.--Well is part of areal-effects network.  
 PERIOD OF RECORD.--July 1985 to current year. Continuous record July 1985 to November 1990.  
 EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 50.29 ft below land-surface datum, Sept. 27, 1985; lowest water level recorded, 65.91 ft below land-surface datum, Aug. 20, 1991.

 DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	64.05	64.16	---	---	---	---	---	---	---	---	---	---
10	64.08	64.04	---	---	---	---	---	---	---	---	---	---
15	64.04	64.26	---	---	---	---	---	---	---	---	---	---
20	64.16	---	---	---	---	---	---	---	---	---	---	---
25	64.05	---	---	---	---	---	---	---	---	---	---	---
EOM	64.17	---	---	---	---	---	---	---	---	---	---	---

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 16	64.27	MAR 4	64.60	APR 11	65.25	MAY 29	65.48	JUL 10	65.90	AUG 20	65.91
JAN 9	64.64										

**350816077101810.** Local number, NC-170; DEHNR Clarks Research Station well S22j10.  
 LOCATION.--Lat 35°08'16", long 77°10'18", Hydrologic Unit 03020202, 0.8 mi southwest of Clarks, south of U.S. Highway 70 on Secondary Road 1225 at North Carolina Department of Transportation Rest Area.  
 Owner: DEHNR (North Carolina Department of Environment, Health, and Natural Resources).  
 AQUIFER.--Black Creek aquifer of Late Cretaceous age.  
 WELL CHARACTERISTICS.--Drilled observation well, drilled to 730 ft, diameter 4 in., cased to 716 ft, screened interval from 716 to 726 ft.  
 INSTRUMENTATION.--Measured periodically with steel tape.  
 DATUM.--Land-surface datum is 28.64 ft above National Geodetic Vertical Datum of 1929 (levels by DEHNR).  
 Measuring point: Top of instrument shelf, 1.70 ft above land-surface datum.  
 REMARKS.--Well is part of areal-effects network.  
 PERIOD OF RECORD.--July 1979 to current year. Continuous record April 1984 to November 1990. Records July 1979 to November 1983 are unpublished and available in the files of the Groundwater Section, DEHNR.  
 EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 25.14 ft below land-surface datum, July 18, 1979; lowest water level recorded, 53.53 ft below land-surface datum, Aug. 19, 1991.

 DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	51.21	51.30	---	---	---	---	---	---	---	---	---	---
10	51.25	51.17	---	---	---	---	---	---	---	---	---	---
15	51.29	---	---	---	---	---	---	---	---	---	---	---
20	51.44	---	---	---	---	---	---	---	---	---	---	---
25	51.20	---	---	---	---	---	---	---	---	---	---	---
EOM	51.37	---	---	---	---	---	---	---	---	---	---	---

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JAN 9	51.92	MAR 4	51.88	APR 11	52.48	MAY 29	53.03	JUL 10	53.45	AUG 19	53.53

## GROUND-WATER LEVELS

## DAVIE COUNTY

355359080331701, Local number, NC-142.

LOCATION.--Lat 35°53'59", long 80°33'17", Hydrologic Unit 03040102, 0.5 mi northeast of Mocksville on U.S. Highway 158 at B. C. Brocks Community Center. Owner: U.S. Geological Survey.

AQUIFER.--Unconfined weathered granite of Paleozoic age.

WELL CHARACTERISTICS.--Drilled observation well, drilled to 30.8 ft, diameter 6 in., cased to 30.8 ft, open end, backfilled with gravel from 20 to 30.8 ft.

INSTRUMENTATION.--Digital recorder with 60-minute punch interval.

DATUM.--Land-surface datum is 835 ft above National Geodetic Vertical Datum of 1929 (from topographic map).

Measuring point: Top of casing, 1.0 ft above land-surface datum.

REMARKS.--In October 1982, well replaced nearby NC-110. Well is part of terrane-effects network.

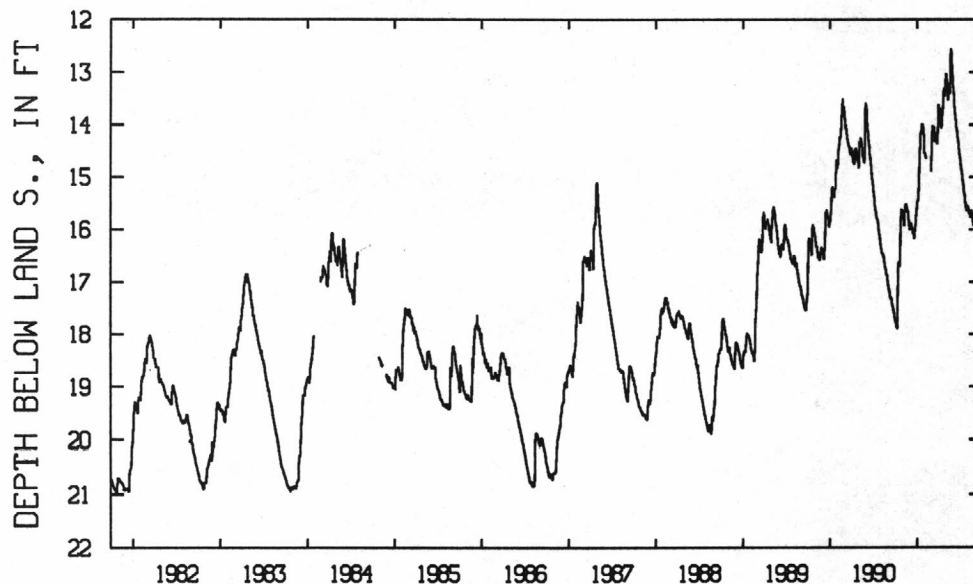
PERIOD OF RECORD.--October 1981 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 12.56 ft below land-surface datum, May 22 and 23, 1991; lowest water level recorded, 20.98 ft below land-surface datum, Oct. 24, 25, and 26, 1981.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17.75	15.67	16.00	15.56	14.55	14.89	13.62	13.04	13.27	14.66	15.56	15.82
2	17.76	15.69	15.99	15.48	14.54	14.75	13.63	13.02	13.34	14.73	15.57	15.90
3	17.78	15.70	15.93	15.47	14.54	14.53	13.68	13.04	13.37	14.77	15.57	15.90
4	17.78	15.70	15.91	15.47	14.55	14.25	13.69	13.08	13.43	14.80	15.61	15.87
5	17.81	15.70	15.95	15.46	14.58	14.18	13.68	13.13	13.54	14.82	15.67	15.90
6	17.83	15.81	15.89	15.42	14.61	14.02	13.69	13.16	13.65	14.87	15.69	15.96
7	17.86	15.86	15.88	15.38	14.61	14.02	13.74	13.30	13.69	14.91	15.69	16.00
8	17.88	15.93	15.89	15.26	14.63	14.07	13.79	13.37	13.70	14.94	15.69	16.03
9	17.89	15.91	15.96	15.14	14.65	14.06	13.82	13.39	13.78	14.96	15.69	16.05
10	17.89	15.67	15.95	15.10	---	14.07	13.87	13.47	13.84	15.00	15.71	16.06
11	17.57	15.63	15.98	14.83	---	14.08	14.00	13.53	13.86	15.06	15.76	16.06
12	17.23	15.54	15.98	14.50	---	14.08	14.06	13.51	13.90	15.10	15.77	16.10
13	16.81	15.54	15.98	14.49	---	14.03	14.06	13.30	13.97	15.12	15.76	16.12
14	16.69	15.56	16.08	14.42	---	14.08	14.02	13.22	14.03	15.16	15.73	16.13
15	16.64	15.55	16.05	14.35	---	14.24	13.99	13.21	14.06	15.24	15.65	16.16
16	16.65	15.52	16.06	14.16	---	14.33	13.91	13.30	14.08	15.29	15.64	16.18
17	16.64	15.54	16.10	14.17	---	14.30	13.76	13.34	14.12	15.30	15.64	16.19
18	16.60	15.57	16.04	14.17	---	14.15	13.71	13.41	14.17	15.32	15.65	16.21
19	16.66	15.58	16.12	14.12	---	14.16	13.73	13.40	14.23	15.34	15.67	16.21
20	16.69	15.63	16.17	14.00	---	14.21	13.61	13.08	14.25	15.42	15.71	16.22
21	16.69	15.67	16.13	13.99	---	14.21	13.43	12.76	14.26	15.46	15.79	16.23
22	16.63	15.66	16.09	14.01	---	14.22	13.34	12.61	14.29	15.50	15.83	16.24
23	16.11	15.62	16.04	13.99	---	14.22	13.32	12.56	14.37	15.52	15.87	16.24
24	15.93	15.67	16.00	13.98	---	14.23	13.30	12.61	14.45	15.55	15.90	16.23
25	15.83	15.72	15.96	14.05	---	14.36	13.36	12.67	14.46	15.60	15.92	16.21
26	15.70	15.79	15.91	14.04	---	14.37	13.37	12.76	14.49	15.64	15.94	16.21
27	15.66	15.84	15.87	14.04	---	14.36	13.37	12.87	14.54	15.65	15.94	16.29
28	15.61	15.84	15.76	14.08	---	14.35	13.42	12.94	14.57	15.62	15.91	16.34
29	15.64	15.91	15.70	14.20	---	14.14	13.46	13.03	14.59	15.55	15.79	16.37
30	15.64	16.00	15.65	14.18	---	13.82	13.18	13.09	14.62	15.54	15.76	16.36
31	15.64	---	15.62	14.41	---	13.71	---	13.20	---	15.54	15.76	---

WTR YR 1991 MEAN 15.00 HIGH 12.56 LOW 17.89



355359080331701 DV-25 (NC-142) MOCKSVILLE  
MEAN DAILY DEPTH BELOW LAND S. (FT)

## DUPLIN COUNTY

**345051078012101.** Local number, NC-174; DEHNR Rose Hill Research Station well V32v1.

LOCATION.--Lat 34°50'51", long 78°01'21", Hydrologic Unit 03030007, 1.5 mi north of Rose Hill at Rose Hill-Magnolia Elementary School, east of U.S. Highway 117 on Secondary Road 1911. Owner: DEHNR (North Carolina Department of Environment, Health, and Natural Resources).

AQUIFER.--Pee Dee aquifer of Late Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation well, drilled to 98 ft, diameter 4 in., cased to 83 ft, screened interval from 83 to 98 ft.

INSTRUMENTATION.--Digital recorder with 60-minute punch interval.

DATUM.--Land-surface datum is 85.89 ft above National Geodetic Vertical Datum of 1929 (levels by DEHNR).

Measuring point: Top of instrument shelf, 1.75 ft above land-surface datum.

REMARKS.--Well is part of areal-effects network.

PERIOD OF RECORD.--March 1982 to current year. Continuous record began January 1987. Records from March 1982 to December 1986 are unpublished and available in the files of the Groundwater Section, DEHNR.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 14.30 ft below land-surface datum, Mar. 31, 1987; lowest water level recorded, 19.93 ft below land-surface datum, Aug. 4 and 5, 1990.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	18.49	16.81	16.94	16.61	15.26	14.64	15.00	15.58	16.71	18.64	16.47	15.96
10	18.61	16.60	16.49	16.44	15.21	14.89	15.17	15.92	17.13	17.83	16.43	16.16
15	18.31	16.40	16.84	16.06	15.24	14.95	15.17	16.37	17.67	18.11	16.37	16.27
20	18.49	16.58	16.90	15.57	15.35	15.02	15.20	16.17	18.10	17.42	16.46	16.45
25	17.87	16.95	16.65	15.55	15.15	15.22	15.28	16.16	18.13	17.92	16.14	16.00
EOM	16.77	16.96	16.51	15.16	15.33	14.93	15.33	16.48	18.19	16.92	15.69	15.85

WTR YR 1991 MEAN 16.41 HIGH 14.59 MAR 4 LOW 18.64 JUL 5

**344922077484706.** Local number, NC-176; DEHNR Chinquapin Research Station well W29d6.

LOCATION.--Lat 34°49'22", long 77°48'47", Hydrologic Unit 03030007, 0.3 mi south of Chinquapin on State Highway 50 at Chinquapin Elementary School. Owner: DEHNR (North Carolina Department of Environment, Health, and Natural Resources).

AQUIFER.--Black Creek aquifer of Late Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation well, drilled to 822 ft, diameter 2.5 in., cased to 460 ft, screened interval from 460 to 470 ft, cemented from 486 to 822 ft.

INSTRUMENTATION.--Measured periodically with steel tape.

DATUM.--Land-surface datum is 42.60 ft above National Geodetic Vertical Datum of 1929 (levels by DEHNR).

Measuring point: Top of instrument shelf, 5.30 ft above land-surface datum.

REMARKS.--Well is part of areal-effects network.

PERIOD OF RECORD.--July 1980 to current year. Continuous record July 1986 to November 1990. Records from July 1980 to July 1986 are unpublished and available in the files of the Groundwater Section, DEHNR.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 2.76 ft above land-surface datum, July 17, 1980; lowest water level recorded, 22.12 ft below land-surface datum, Jul. 11, 1991.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	20.31	20.36	---	---	---	---	---	---	---	---	---	---
10	20.36	20.24	---	---	---	---	---	---	---	---	---	---
15	20.41	---	---	---	---	---	---	---	---	---	---	---
20	20.51	---	---	---	---	---	---	---	---	---	---	---
25	20.34	---	---	---	---	---	---	---	---	---	---	---
EOM	20.36	---	---	---	---	---	---	---	---	---	---	---

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JAN 9	20.74	MAR 12	20.80	APR 11	21.32	MAY 20	21.70	JUL 11	22.12	AUG 19	21.99

## GROUND-WATER LEVELS

## GATES COUNTY

**362646076361405.** Local number, NC-149; DEHNR Sunbury Research Station well C15s5.

LOCATION.--Lat 36°26'46", long 76°36'14", Hydrologic Unit 03010203, in northeast section of Sunbury, east of State Highway 32 on Secondary Road 1338. Owner: DEHNR (North Carolina Department of Environment, Health, and Natural Resources).

AQUIFER.--Upper Cape Fear aquifer of Late Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation well, drilled to 570 ft, diameter 4 in., cased to 555 ft, screened interval from 555 to 565 ft.

INSTRUMENTATION.--Measured periodically with steel tape.

DATUM.--Land-surface datum is 37.44 ft above National Geodetic Vertical Datum of 1929 (levels by DEHNR).

Measuring point: Top of instrument shelf, 3.58 ft above land-surface datum - revised from 3.04 ft above land-surface datum, October 1987.

REMARKS.--Well is part of areal-effects network.

PERIOD OF RECORD.--October 1967 to current year. Continuous record November 1986 to November 1990. Records

from October 1967 to September 1986 are unpublished and available in the files of the Groundwater Section, DEHNR.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 13.37 ft below land-surface datum, Dec. 30, 1968; lowest water level recorded, 27.83 ft below land-surface datum, Oct. 16 and 17, 1990.

REVISIONS.--Water-level mean values and extremes for period of record published in Water Resources Data, North Carolina, NC-87-1, should be adjusted by -0.54 ft.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	27.65	27.65	---	---	---	---	---	---	---	---	---	---
10	27.71	27.62	---	---	---	---	---	---	---	---	---	---
15	27.73	---	---	---	---	---	---	---	---	---	---	---
20	27.78	---	---	---	---	---	---	---	---	---	---	---
25	27.56	---	---	---	---	---	---	---	---	---	---	---
EOM	27.65	---	---	---	---	---	---	---	---	---	---	---

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JAN 9	27.36	MAR 5	27.23	APR 16	27.33	JUN 12	27.81	AUG 5	27.70

## HAYWOOD COUNTY

352315082484401. Local number, NC-40.

LOCATION.--Lat 35°23'15", long 82°48'44", Hydrologic Unit 06010106, 2 mi south of Cruso on U.S. Highway 276 at

Camp Hope. Owner: Champion International Corporation.

AQUIFER.--Unconfined saprolite derived from muscovite-biotite gneiss of Precambrian age.

WELL CHARACTERISTICS.--Dug observation well, depth 18.5 ft, diameter 12 in., cased to 18.5 ft, open end, backfilled with gravel from 4 to 18.5 ft.

INSTRUMENTATION.--Digital recorder with 60-minute punch interval.

DATUM.--Land-surface datum is 3,148.26 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1.00 ft above land-surface datum.

REMARKS.--Well is part of climatic-effects network.

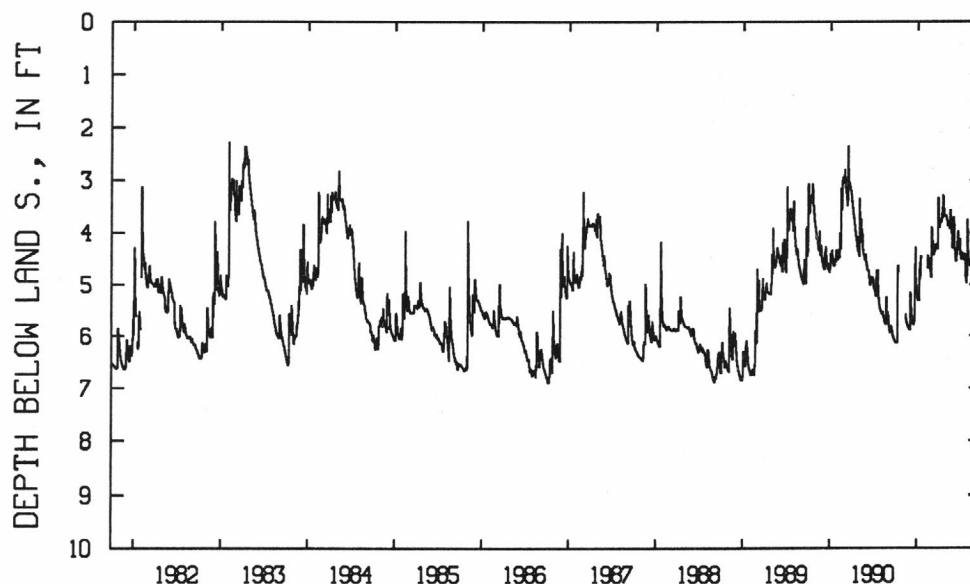
PERIOD OF RECORD.--December 1955 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 1.24 ft below land-surface datum, Mar. 12, 1977; lowest water level recorded, 6.90 ft below land-surface datum, Oct. 7, 8, and 9, 1986.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.11	---	5.88	5.20	---	4.79	3.78	3.68	3.70	4.49	4.35	4.59
2	6.12	---	5.89	5.25	---	3.89	3.85	3.70	3.83	4.50	4.41	4.64
3	6.13	---	5.59	5.28	---	4.05	3.89	3.71	3.74	4.46	4.49	4.70
4	6.13	---	5.15	5.30	---	3.92	3.90	3.74	3.94	4.52	4.54	4.74
5	6.11	---	5.29	5.31	---	4.17	3.84	3.77	4.17	4.48	4.55	4.75
6	6.13	---	5.38	5.31	---	4.29	3.80	3.76	4.29	4.43	4.58	4.76
7	6.14	---	5.46	5.31	---	4.37	3.81	3.81	4.37	4.39	4.62	4.78
8	6.13	---	5.54	5.31	---	4.43	3.81	3.87	4.44	4.40	4.65	4.84
9	6.13	---	5.58	5.29	---	4.44	3.80	3.88	4.49	4.40	4.65	4.88
10	6.10	---	5.63	5.27	---	4.43	3.79	3.85	4.53	4.44	4.65	4.89
11	5.90	---	5.68	4.70	---	4.42	3.79	3.88	4.56	4.50	4.66	4.91
12	4.63	---	5.71	4.57	4.69	4.41	3.79	3.84	4.54	4.50	4.52	4.98
13	---	---	5.73	4.72	4.68	4.37	3.72	3.81	4.51	4.50	4.50	5.06
14	---	5.58	5.75	4.79	4.44	4.35	3.69	3.91	4.50	4.51	4.56	5.08
15	---	5.63	5.77	4.84	4.49	4.34	3.52	3.93	4.30	4.52	4.57	5.01
16	---	5.68	5.78	4.45	4.58	4.34	3.60	3.85	4.23	4.53	4.65	4.96
17	---	5.71	5.78	---	4.66	4.32	3.66	3.82	4.17	4.50	4.70	4.93
18	---	5.73	5.78	---	4.59	4.24	3.72	3.75	4.28	4.41	4.73	4.90
19	---	5.76	5.73	---	4.56	4.22	3.28	3.57	4.28	4.42	4.75	4.91
20	---	5.78	5.72	---	4.51	4.23	3.37	3.64	3.97	4.45	4.79	4.91
21	---	5.79	5.69	---	4.53	4.24	3.48	3.73	4.15	4.72	4.83	4.92
22	---	5.80	5.66	---	4.61	4.25	3.55	3.82	4.26	4.85	4.86	4.94
23	---	5.81	4.77	---	4.68	4.26	3.60	3.89	4.32	4.89	4.89	4.96
24	---	5.82	4.28	---	4.72	4.27	3.64	3.97	4.34	4.92	4.91	4.96
25	---	5.83	4.73	---	4.74	4.29	3.68	4.11	4.27	4.94	4.94	4.94
26	---	5.84	4.98	---	4.78	4.30	3.69	4.27	4.19	4.97	4.03	4.94
27	---	5.85	5.12	---	4.83	4.31	3.68	4.30	4.13	4.84	4.20	4.97
28	---	5.86	5.00	---	4.86	4.32	3.68	4.16	4.12	3.75	4.49	4.99
29	---	5.87	5.06	---	---	3.33	3.67	4.04	4.20	3.79	4.65	5.01
30	---	5.87	5.16	---	---	3.35	3.67	3.75	4.34	4.09	4.55	5.02
31	---	---	5.18	---	---	3.65	---	3.81	---	4.25	4.60	---

WTR YR 1991 MEAN 4.61 HIGH 3.28 LOW 6.14



352315082484401 HW-47 (NC-40) CHAMPION  
MEAN DAILY DEPTH BELOW LAND S. (FT)

362845077005501. Local number, NC-55.

AQUIFER.--Lower Cape Fear of Late Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation well, depth 340 ft. diameter 2 in. screen depth unknown.

INSTRUMENTATION.--Measured annually with steel tape

DATUM.--Land-surface datum is 28.40 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of instrument shelf, 2.79 ft above land-surface datum(since December 1975).

REMARKS.--Well is part of areal-effects network.

PERIOD OF RECORD.--December 1965 to current year. Annual measurements begin in October 1990.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 48.36 ft below land-surface datum, May 30 and 31, 1966;  
lowest recorded, 106.59 ft below land-surface datum, October 2, 1990.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

[illegible]

363026077001906. Local number, NC-155; DEHNR Como Research Station well B20u6.

LOCATION.--Lat 36°30'26", long 77°00'19", Hydrologic Unit 03010203, 0.5 mi northeast of Como, northwest of U.S. Highway 258 on Secondary Road 1316. Owner: DEHNR (North Carolina Department of Environment, Health, and Natural Resources).

AQUIFER.--Lower Cape Fear aquifer of Late Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation well, drilled to 818 ft., diameter 4 in., cased to 560 ft., screened interval from 560 to 570 ft., cemented from 575 to 818 ft.

INSTRUMENTATION.--Measured periodically with steel tape.

DATUM.--Land-surface datum is 68.83 ft above National Geodetic Vertical Datum of 1929 (levels by DEHNR).

Measuring point: Top of instrument shelf, 3.00 ft above land-surface datum.

REMARKS.--Areal-effects well.

PERIOD OF RECORD.--September 1981 to current year. Records from September 1981 to October 1986 are unpublished and available in the files of the Groundwater Section, DEHNR.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 143.04 ft below land-surface datum, Feb. 9, 1983;  
lowest water level recorded, 157.29 ft below land-surface datum, June 12, 1991.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE		WATER LEVEL	DATE		WATER LEVEL	DATE		WATER LEVEL	DATE		WATER LEVEL	DATE		WATER LEVEL
OCT 2		155.87	JAN 9		156.59	MAR 5		156.90	APR 16		157.17	JUN 12		157.29
NOV 13		156.05										AUG 5		157.28

## HYDE COUNTY

**352527076123103.** Local number, NC-159; DEHNR Hydeland Research Station well O10w3.

LOCATION.--Lat 35°25'27", long 76°12'31", Hydrologic Unit 03020105, 0.7 mi east of Secondary Road 1121 on Secondary Road 1122. Owner: DEHNR (North Carolina Department of Environment, Health, and Natural Resources).

AQUIFER.--Castle Hayne aquifer of Oligocene and Eocene age.

WELL CHARACTERISTICS.--Drilled observation well, drilled to 700 ft, diameter 6 in., cased to 640 ft, open hole to 700 ft.

INSTRUMENTATION.--Measured periodically with steel tape.

DATUM.--Land-surface datum is 3.17 ft above National Geodetic Vertical Datum of 1929 (levels by DEHNR).

Measuring point: Top of instrument shelf, 1.58 ft above land-surface datum - revised from 1.83 ft above land-surface datum, October 1987.

REMARKS.--Well is part of areal-effects network.

PERIOD OF RECORD.--April 1975 to current year. Continuous record November 1986 to November 1990. Records from April 1975 to July 1986 are unpublished and available in the files of the Groundwater Section, DEHNR.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 0.79 ft above land-surface datum, July 17, 1975; lowest water level recorded, 1.14 ft below land-surface datum, Sept. 14, 1982.

REVISIONS.--Water-level mean values and extremes for period of record published in Water Resources Data, North Carolina, NC-87-1, should be adjusted by +0.25 ft.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	.17	-.06	---	---	---	---	---	---	---	---	---	---
10	.17	-.25	---	---	---	---	---	---	---	---	---	---
15	.14	.23	---	---	---	---	---	---	---	---	---	---
20	.28	---	---	---	---	---	---	---	---	---	---	---
25	-.09	---	---	---	---	---	---	---	---	---	---	---
EOM	.08	---	---	---	---	---	---	---	---	---	---	---

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JAN 17	-.06	MAR 1	.31	APR 12	.63	MAY 31	.29	JUL 12	.17	AUG 23	.24

## JONES COUNTY

**345809077301404.** Local number, NC-172; DEHNR Comfort Research Station well U26j4.

LOCATION.--Lat 34°58'09", long 77°30'14", Hydrologic Unit 03020204, 2.5 mi south of Comfort at North Carolina Division of Forest Resources Fire Tower on Secondary Road 1003. Owner: DEHNR (North Carolina Department of Environment, Health, and Natural Resources).

AQUIFER.--Black Creek aquifer of Late Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation well, drilled to 545 ft, diameter 6 in., cased to 506 ft and from 516 to 535 ft, screened intervals from 506 to 516 ft and 535 to 545 ft.

INSTRUMENTATION.--Measured periodically with steel tape.

DATUM.--Land-surface datum is 68 ft above National Geodetic Vertical Datum of 1929 (from topographic map).

Measuring point: Top of instrument shelf, 1.40 ft above land-surface datum.

REMARKS.--Well is part of areal-effects network.

PERIOD OF RECORD.--March 1980 to current year. Continuous record October 1983 to December 1987. Records from March 1980 to September 1983 are unpublished and available in the files of the Groundwater Section, DEHNR.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 67.56 ft below land-surface datum, Mar. 18, 1980; lowest water level recorded, 154.42 ft below land-surface datum, Aug. 19, 1991.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 3	148.52	JAN 9	148.63	APR 11	150.62	MAY 29	150.97	JUL 10	153.34	AUG 19	154.42
NOV 15	149.14	MAR 4	148.87								

## GROUND-WATER LEVELS

## JONES COUNTY

345809077301408. Local number, NC-173; DEHNR Comfort Research Station well U26j8.

LOCATION.--Lat 34°58'09", long 77°30'14", Hydrologic Unit 03020204, 2.5 mi south of Comfort at North Carolina Division of Forest Resources Fire Tower on Secondary Road 1003. Owner: DEHNR (North Carolina Department of Environment, Health, and Natural Resources).

AQUIFER.--Surficial aquifer of post-Miocene age.

WELL CHARACTERISTICS.--Drilled observation well, drilled to 15 ft, diameter 4 in., cased to 5 ft, screened interval from 5 to 15 ft.

INSTRUMENTATION.--Digital recorder with 60-minute punch interval.

DATUM.--Land-surface datum is 68 ft above National Geodetic Vertical Datum of 1929 (from topographic map).

Measuring point: Top of collar on casing, 2.35 ft above land-surface datum.

REMARKS.--Well is part of climatic-effects network.

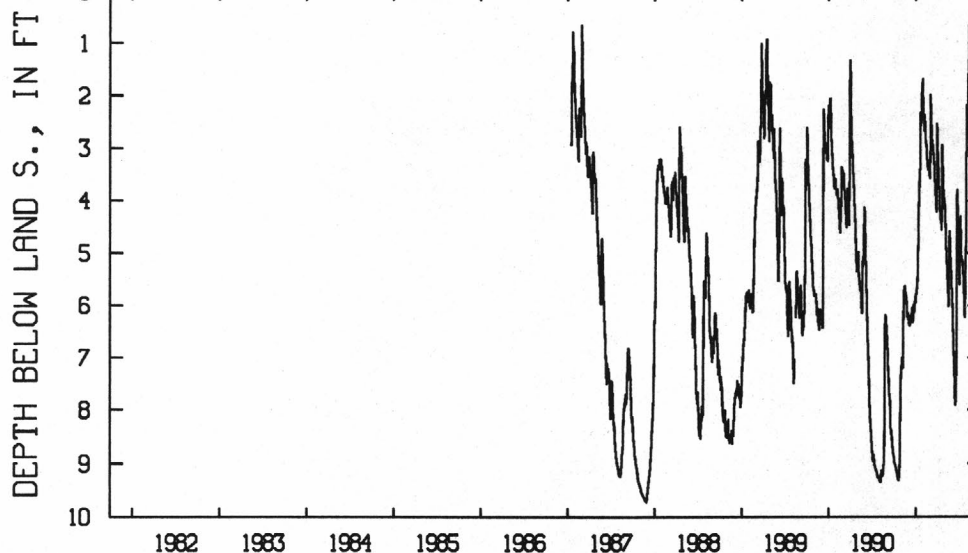
PERIOD OF RECORD.--January 1987 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 0.34 ft below land-surface datum, Aug. 14, 1991; lowest water level recorded, 9.72 ft below land-surface datum, Nov. 27 and 28, 1987.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.86	7.25	6.24	5.95	2.06	3.57	2.66	3.95	5.67	5.39	3.21	3.20
2	8.90	7.18	6.20	5.81	2.21	3.41	2.85	3.95	5.71	5.45	2.98	3.12
3	8.95	7.13	6.21	5.77	2.33	2.86	3.03	4.16	5.86	5.60	2.17	3.31
4	8.98	7.07	6.24	5.75	2.47	1.97	3.16	4.31	6.05	5.60	2.44	3.47
5	8.99	6.98	6.39	5.69	2.59	2.18	3.27	4.41	6.29	4.83	2.72	3.65
6	9.01	7.10	6.34	5.65	2.68	2.30	3.37	4.54	6.42	4.34	2.82	3.58
7	9.02	7.15	6.36	5.61	2.53	2.46	3.53	4.75	6.55	4.30	2.82	2.57
8	9.04	7.21	6.30	5.53	2.36	2.62	3.66	4.91	6.67	4.49	2.30	2.75
9	9.06	7.10	6.32	5.30	2.49	2.71	3.77	4.98	6.90	4.73	2.27	3.01
10	9.08	6.37	6.22	5.10	2.64	2.81	3.91	5.04	7.08	4.95	1.31	3.21
11	9.10	5.94	6.29	4.87	2.77	2.94	4.13	5.21	7.22	5.06	1.57	3.41
12	9.12	5.74	6.24	4.53	2.90	3.05	4.26	5.33	7.35	5.16	1.49	3.62
13	9.13	5.71	6.18	4.15	2.92	3.05	4.33	5.44	7.55	5.09	.84	3.79
14	9.15	5.71	6.31	3.98	2.91	2.93	4.37	5.53	7.72	5.13	.64	3.96
15	9.18	5.67	6.16	3.92	3.03	3.00	4.31	5.64	7.82	5.23	.65	4.14
16	9.21	5.62	6.12	3.72	3.16	3.13	4.36	5.73	7.91	5.15	1.12	4.30
17	9.24	5.62	6.14	3.44	3.20	3.20	4.43	5.83	7.84	5.21	1.48	4.46
18	9.25	5.73	6.04	3.39	3.25	3.21	4.50	6.02	7.49	5.33	1.42	4.60
19	9.29	5.77	6.24	3.40	3.30	3.35	4.56	5.99	7.50	5.36	1.67	4.74
20	9.30	5.86	6.33	2.62	3.36	3.49	4.08	5.62	7.23	5.51	1.98	4.88
21	9.30	5.92	6.14	2.32	3.42	3.61	3.12	4.92	6.26	5.66	2.23	5.02
22	9.32	5.89	6.04	2.49	3.40	3.71	2.93	4.58	4.06	5.78	2.45	5.17
23	9.23	5.80	5.97	2.58	3.40	3.78	3.04	4.62	3.78	5.96	2.59	5.24
24	9.16	5.97	6.02	2.53	3.36	3.89	3.21	4.72	3.89	6.13	2.66	5.30
25	9.10	6.12	6.15	1.93	3.34	4.03	3.46	4.82	4.10	6.23	2.62	5.36
26	8.99	6.22	6.08	2.03	3.36	4.12	3.61	5.01	4.27	6.21	2.70	5.42
27	8.61	6.22	6.02	2.20	3.46	4.18	3.75	5.13	4.47	5.87	2.52	5.48
28	8.17	6.15	5.94	2.00	3.53	4.22	3.89	5.21	4.67	5.56	2.31	5.59
29	7.79	6.13	5.90	1.90	---	4.17	4.03	5.28	4.91	5.20	2.60	5.69
30	7.52	6.28	5.83	1.67	---	2.64	4.16	5.39	5.17	4.84	2.86	5.78
31	7.33	---	5.91	1.72	---	2.53	---	5.56	---	3.84	3.06	---

WTR YR 1991 MEAN 4.84 HIGH .64 LOW 9.32



345809077301408 JO-035 (NC-173)COMFORT 8  
MEAN DAILY DEPTH BELOW LAND S. (FT)

## JONES COUNTY

**345809077301405.** Local number, NC-187; DEHNR Comfort Research Station well U26j5.  
 LOCATION.--Lat 34°58'09", long 77°30'14", Hydrologic Unit 03020204, 2.5 mi south of Comfort at North Carolina Division of Forest Resources Fire Tower on Secondary Road 1003. Owner: DEHNR (North Carolina Department of Environment, Health, and Natural Resources).  
 AQUIFER.--Pee Dee aquifer of Late Cretaceous age.  
 WELL CHARACTERISTICS.--Drilled observation well, drilled to 284 ft, diameter 4 in., cased to 274 ft, screened interval from 274 to 284 ft.  
 INSTRUMENTATION.--Measured periodically with steel tape.  
 DATUM.--Land-surface datum is 68 ft above National Geodetic Vertical Datum of 1929 (from topographic map).  
 Measuring point: Top of instrument shelf, 1.3 ft above land-surface datum.  
 REMARKS.--Well is part of areal-effects network.  
 PERIOD OF RECORD.--July 1980 to current year. Continuous record July 1986 to November 1990. Records from July 1980 to June 1986 are unpublished and available in the files of the Groundwater Section, DEHNR.  
 EXTREMES FOR PERIOD OF RECORD.--Highest water level, 21.53 ft below land-surface datum, October 29, 1980; lowest, 37.90 ft below land-surface datum, August 19, 1991.

 DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	36.92	36.86	---	---	---	---	---	---	---	---	---	---
10	36.93	36.72	---	---	---	---	---	---	---	---	---	---
15	36.96	37.00	---	---	---	---	---	---	---	---	---	---
20	37.13	---	---	---	---	---	---	---	---	---	---	---
25	36.79	---	---	---	---	---	---	---	---	---	---	---
EOM	36.94	---	---	---	---	---	---	---	---	---	---	---

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JAN 9	37.08	MAR 4	37.12	APR 11	37.69	MAY 29	37.82	JUL 10	37.89	AUG 19	37.90

## LENOIR COUNTY

**351600077381001.** Local number, NC-128.  
 LOCATION.--Lat 35°15'59", long 77°37'52", Hydrologic Unit 03020202, on west edge of Kinston at intersection of U.S. Highways 70 and 258 Bypass and U.S. Highways 70 and 258 Business. Owner: City of Kinston.  
 AQUIFER.--Black Creek aquifer of Late Cretaceous age.  
 WELL CHARACTERISTICS.--Drilled observation well, depth 300 ft, diameter 10 in., cased to 160 ft, screened intervals unknown.  
 INSTRUMENTATION.--Digital recorder with 30-minute punch interval.  
 DATUM.--Land-surface datum is 33.5 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of instrument shelf, 2.10 ft above land-surface datum.  
 REMARKS.--Well is part of local-effects network.  
 PERIOD OF RECORD.--September 1968 to current year.  
 EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 34.83 ft below land-surface datum, Dec. 30, 1968; lowest water level recorded, 96.96 ft below land-surface datum, Sept. 28, 1991.

 DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	92.35	91.86	91.77	90.49	89.31	87.73	87.37	88.52	---	---	91.69	94.90
10	92.83	91.22	91.11	90.65	88.66	87.23	88.19	89.61	---	---	94.18	95.61
15	91.54	91.51	90.87	89.86	88.47	87.42	88.20	89.59	---	92.25	94.23	96.16
20	92.14	91.13	90.85	89.30	88.69	87.07	88.64	89.08	---	92.35	93.54	96.78
25	93.22	90.53	90.11	89.66	88.79	87.85	88.64	89.57	---	93.84	93.59	96.33
EOM	93.32	91.07	90.24	89.00	89.35	86.96	87.43	89.69	---	93.77	94.06	96.72

WTR YR 1991 MEAN 90.88 HIGH 86.43 APR 2 LOW 96.89 SEP 28

**351937077284201.** Local number, NC-185; DEHNR Graingers Research Station well Q25d12.  
 LOCATION.--Lat 35°19'37", long 77°28'42", Hydrologic Unit 03020202, 1.6 mi northeast of Graingers on State Highway 11 at E. I. du Pont de Nemours and Company's Kinston Plant. Owner: DEHNR (North Carolina Department of Environment, Health, and Natural Resources).  
 AQUIFER.--Pee Dee aquifer of Late Cretaceous age.  
 WELL CHARACTERISTICS.--Drilled observation well, drilled to 134 ft, diameter 4 in., cased to 124 ft, screened interval from 124 to 134 ft.  
 INSTRUMENTATION.--Digital recorder with 60-minute punch interval.  
 DATUM.--Land-surface datum is 66 ft above National Geodetic Vertical Datum of 1929 (from topographic map).  
 Measuring point: Top of instrument shelf, 3.1 ft above land-surface datum.  
 REMARKS.--Well is part of areal-effects network.  
 PERIOD OF RECORD.--December 1985 to current year.  
 EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 54.09 ft below land-surface datum, Dec. 18, 1985; lowest, 60.61 ft below land-surface datum, July 31, 1987.

 DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	58.40	58.08	57.42	56.93	55.63	55.78	54.89	56.13	56.65	56.69	57.25	57.41
10	58.44	57.95	57.30	56.63	55.72	55.55	54.84	56.55	56.83	56.72	57.11	57.68
15	58.36	---	57.50	56.18	55.75	55.36	55.26	56.58	57.21	57.10	57.37	57.92
20	58.53	57.39	57.61	55.78	---	55.36	55.46	56.93	57.09	57.54	57.37	58.17
25	58.23	57.36	57.20	55.49	55.85	55.40	55.47	56.58	56.60	58.01	57.61	57.97
EOM	58.09	57.41	57.50	55.24	55.99	55.32	55.77	56.55	56.65	58.03	57.38	57.78

WTR YR 1991 MEAN 56.83 HIGH 54.79 APR 8 LOW 58.53 OCT 20

## GROUND-WATER LEVELS

## LENOIR COUNTY--Continued

**351609077370605.** Local number, NC-186; DEHNR Kinston Yard Research Station well Q27r5.  
 LOCATION.--Lat 35°16'09", long 77°37'06", Hydrologic Unit 03020202, on west edge of Kinston on U.S. Highways 70 and 258 Business at DEHNR Supply Yard. Owner: DEHNR (North Carolina Department of Environment, Health, and Natural Resources).

AQUIFER.--Upper Cape Fear aquifer of Late Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation well, drilled to 520 ft, diameter 6 in., cased to 480 ft, screened interval from 480 to 490 ft.

INSTRUMENTATION.--Measured periodically with steel tape.

DATUM.--Land-surface datum is 44.03 ft above National Geodetic Vertical Datum of 1929 (levels by DEHNR).

Measuring point: Top of instrument shelf, 1.85 ft above land-surface datum.

REMARKS.--Well is part of areal-effects network.

PERIOD OF RECORD.--August 1974 to current year. Continuous record August 1983 to November 1990. Records from August 1974 to July 1983 are unpublished and available in the files of the Groundwater Section, DEHNR.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 68.78 ft below land-surface datum, Aug. 12, 1974; lowest water level recorded, 105.43 ft below land-surface datum, Aug. 20, 1991.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	103.01	102.84	---	---	---	---	---	---	---	---	---	---
10	103.01	102.68	---	---	---	---	---	---	---	---	---	---
15	102.82	103.19	---	---	---	---	---	---	---	---	---	---
20	102.86	---	---	---	---	---	---	---	---	---	---	---
25	102.68	---	---	---	---	---	---	---	---	---	---	---
EOM	103.11	---	---	---	---	---	---	---	---	---	---	---

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JAN 14	101.30	MAR 7	100.96	APR 11	100.77	MAY 29	102.11	JUL 11	104.37	AUG 20	105.43

## MECKLENBURG COUNTY

**350126080503903.** Local number, Me-250.

LOCATION.--Lat 35°01'26", long 80°50'39", Hydrologic Unit 03050103, near Pineville. Owner: U.S. Geological Survey.

AQUIFER.--Unconfined saprolite derived from felsic metavolcanic rock.

WELL CHARACTERISTICS.--Drilled observation well, diameter 4 in., depth 26.0 ft, cased 21.0 ft, screened 21.0 to 26.0 ft below land-surface datum. Sand packed from 21.0 to 26.0 ft.

INSTRUMENTATION.--Digital recorder with 60-minute punch interval.

DATUM.--Elevation of land-surface datum is 688.6 ft above National Geodetic Vertical Datum of 1929.

Measuring point: Top of casing, 1.20 ft above land-surface datum.

REMARKS.--Well is part of the Charlotte-Mecklenburg urban hydrology study, U.S. Hwy 521 well B1-A.

PERIOD OF RECORD.--December 1984 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 10.89 ft below land-surface datum, May 14, 1991; lowest water level recorded, 24.38 ft below land-surface datum Nov. 19 and 20, 1986.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	22.48	19.31	18.62	18.49	15.67	14.54	12.55	11.45	12.66	15.55	16.76	15.45
10	22.64	18.87	18.58	18.05	15.46	13.77	11.67	11.34	13.15	16.02	15.82	15.86
15	22.01	18.78	18.62	17.09	15.49	13.68	11.49	11.06	13.61	16.55	14.99	16.29
20	21.57	18.55	18.79	16.41	15.56	13.23	11.54	11.43	14.11	16.99	14.72	16.74
25	20.14	18.49	18.73	16.46	15.38	13.15	11.47	11.55	14.63	17.39	14.78	17.07
EOM	19.83	18.61	18.58	16.16	15.43	12.85	11.49	12.08	15.05	17.32	15.05	17.47

WTR YR 1991 MEAN 15.91 HIGH 10.94 MAY 14 LOW 22.64 OCT 10

**351023080542703.** Local number, Me-251.

LOCATION.--Lat 35°10'23", long 80°54'27", Hydrologic Unit 03050103, at York Road landfill, at Charlotte. Owner: U.S. Geological Survey.

AQUIFER.--Unconfined saprolite derived from metamorphosed quartz diorite.

WELL CHARACTERISTICS.--Drilled observation well, diameter 4 in., depth 25.0 ft, cased to 20.0 ft, screened from 20.0 to 25.0 ft. Sand packed from 20.0 to 25.0 ft.

INSTRUMENTATION.--Digital recorder with 60-minute punch interval.

DATUM.--Elevation of land-surface datum is 612 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 0.50 ft above land-surface datum.

REMARKS.--Well is part of the Charlotte-Mecklenburg urban hydrology study, York Road landfill well YRW-B.

PERIOD OF RECORD.--October 1984 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 13.40 ft below land-surface datum, Feb. 19, 1990; lowest water level recorded, 16.49 ft below land-surface datum, Oct. 7, 1986.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	15.81	14.74	14.75	14.71	14.25	13.69	13.87	14.00	14.04	14.79	14.90	15.13
10	15.77	14.40	14.82	14.30	14.25	13.92	13.80	13.95	14.28	14.85	14.76	15.26
15	14.96	14.70	14.85	14.18	14.34	13.92	13.91	13.90	14.37	15.01	14.51	15.29
20	14.94	14.78	14.85	14.09	14.29	13.91	13.91	13.87	14.45	14.90	14.87	15.40
25	14.45	14.83	14.69	14.15	14.20	14.04	13.89	14.02	14.57	15.07	15.02	15.36
EOM	14.64	14.83	14.58	14.12	14.33	13.75	13.84	14.13	14.67	14.87	15.01	15.37

WTR YR 1991 MEAN 14.51 HIGH 13.53 MAR 4 LOW 15.83 OCT 6

## MECKLENBURG COUNTY--Continued

**351331080411603.** Local number, Me-252.

LOCATION.--Lat 35°13'31" long 80°41'16", Hydrologic Unit 03050103, at Harrisburg Road landfill, near Mint Hill. Owner: U.S. Geological Survey.

AQUIFER.--Unconfined saprolite derived from metamorphosed quartz diorite.

WELL CHARACTERISTICS.--Drilled observation well, diameter 4 in., depth 32.2 ft, cased 27.2 ft, screened from 27.2 to 32.2 ft. Sand packed from 27.2 to 32.2 ft. Land surface and, thus, well depth was changed in 1990. See datum corrections and remarks below.

INSTRUMENTATION.--Digital recorder with 60-minute punch interval through July 9, 1990 and Dec. 11 to present. Periodic measurements with chalked tape were made during interruption of continuous record.

DATUM.--Land-surface datum is 758.25 ft above National Geodetic Vertical Datum of 1929 through July 9, 1990, 773.6 ft from Dec. 11, 1990, to present. Measuring point: Top of casing, 1.50 ft above land-surface datum through July 9, 1990, 1.40 ft from Dec. 11, 1990, to present.

REMARKS.--Well is part of the Charlotte-Mecklenburg urban hydrology study, Harrisburg Road landfill well HBW 2101-A. Continuous record was interrupted July 9, 1990, when recorder was removed for landfill operations. Continuous record resumed Dec. 11, 1990. The land-surface datum has been changed as the landfill has been filled. Use extremes for period of record with care, noting datum changes as described above.

PERIOD OF RECORD.--November 1984 to current year.  
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 16.80 ft below land-surface datum, May 10, 1990; lowest water level recorded, 44.50 ft below land-surface datum, Dec. 20, 1990.DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	---	---	---	44.44	44.06	43.77	43.16	42.37	41.94	41.93	42.46	42.95
10	---	---	---	44.43	43.90	43.67	42.93	42.30	41.91	41.98	42.47	43.10
15	---	---	44.29	44.26	43.85	43.64	42.82	42.15	41.85	42.15	42.62	43.20
20	---	---	44.46	44.03	43.90	43.49	42.69	42.17	41.89	42.18	42.66	43.34
25	---	---	44.46	44.25	43.75	43.38	42.68	42.02	41.97	42.22	42.85	43.23
EOM	---	---	44.34	44.19	43.85	43.39	42.50	41.89	41.86	42.34	42.85	43.57

WTR YR 1991 MEAN 43.04 HIGH 41.81 JUN 16 LOW 44.47 JAN 1

**351333080405501.** Local number, Me-253.

LOCATION.--Lat 35°13'33" long 80°40'55", Hydrologic Unit 03050103, at Harrisburg Road landfill, near Mint Hill.

Owner: U.S. Geological Survey.

AQUIFER.--Unconfined saprolite derived from metamorphosed quartz diorite.

WELL CHARACTERISTICS.--Drilled observation well, diameter 4 in., depth 32 ft, cased to 22 ft, screened from 22 to 32 ft, Dec. 18, 1985. Sand packed from 22 to 32 ft. Land surface and, thus, well depth has changed several times since 1985. See datum corrections and remarks below.

INSTRUMENTATION.--Digital recorder with 60-minute punch interval.

DATUM.--Elevation of land-surface datum is 740 ft above National Geodetic Vertical Datum of 1929, Dec. 18, 1985, to Sept. 29, 1986; 745 ft, Sept. 30, 1986, to Dec. 19, 1986; 755 ft, from Dec. 20, 1986, to Apr. 21, 1988; 760 ft, from Apr. 22, 1988, to present. Land-surface elevation determined by levels Mar. 20, 1990, by Mecklenburg County. Measuring point to land-surface datum was -4.4 ft from Dec. 18, 1985, to Sept. 28, 1986; -3.2 ft from Sept. 29, 1986, to Dec. 19, 1986; 0.0 ft from Dec. 20, 1986, to Apr. 21, 1988; -3.4 ft from Apr. 22, 1988, to Dec. 10, 1990; -2.2 ft from Dec. 11, 1990, to current water year. Finished grade completed about Sept. 30, 1988.

REMARKS.--Well is part of the Charlotte-Mecklenburg urban hydrology study, Harrisburg Road landfill well HBW 2201. The land-surface datum has been changed as the landfill has been filled. Use extremes for period of record with care, noting datum changes as described above.

PERIOD OF RECORD.--December 1985 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 7.28 ft below land-surface datum, Mar. 21, 1986; lowest water level recorded, 32.96 ft below land-surface datum Feb. 16 and 17, 1989.

REVISIONS.--The elevation of land-surface datum published in the Water Resources Data, North Carolina, NC-87-1 has been revised to 745 ft above National Geodetic Vertical Datum of 1929.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	30.78	31.12	31.12	31.04	30.54	30.11	29.48	28.89	28.59	28.75	29.44	29.90
10	30.90	31.06	31.10	31.01	30.39	30.02	29.31	28.84	28.63	28.84	29.45	30.00
15	30.99	31.22	31.07	30.88	30.32	29.96	29.21	28.71	28.61	29.01	29.57	30.07
20	31.10	31.16	31.13	30.71	30.30	29.82	29.08	28.75	28.66	29.08	29.62	30.20
25	31.09	31.12	31.10	30.78	30.16	29.74	29.11	28.62	28.75	29.16	29.76	30.19
EOM	31.20	31.20	31.04	30.69	30.21	29.70	28.96	28.55	28.69	29.31	29.81	30.40

WTR YR 1991 MEAN 29.97 HIGH 28.51 JUN 4 LOW 31.22 NOV 15

**351327080404401.** Local number, Me-254.

LOCATION.--Lat 35°13'27" long 80°40'44", Hydrologic Unit 03050103, at Harrisburg Road landfill, near Mint Hill.

Owner: U.S. Geological Survey.

AQUIFER.--Unconfined saprolite derived from metamorphosed quartz diorite.

WELL CHARACTERISTICS.--Drilled observation well, diameter 4 in., depth 56 ft, cased 35.0 ft, screened from 35.0 to 55.0 ft. Sand packed from 35 to 55 ft.

INSTRUMENTATION.--Digital recorder with 60-minute punch interval.

DATUM.--Elevation of land-surface datum is 768.0 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 1.20 ft above land-surface datum.

REMARKS.--Well is part of the Charlotte-Mecklenburg urban hydrology study, Harrisburg Road landfill well HBW 2301.

PERIOD OF RECORD.--January 1986 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 13.99 ft below land-surface datum, Apr. 5, 1990; lowest water level recorded, 24.37 ft below land-surface datum, Nov. 10, 11, and 12, 1986.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	23.43	19.51	19.17	18.34	16.48	15.32	14.14	14.37	15.55	16.99	18.23	18.65
10	23.57	19.39	18.89	17.72	16.43	14.92	14.16	14.47	15.94	17.20	18.19	18.92
15	22.03	19.08	18.96	16.94	16.43	14.75	14.36	14.55	16.29	17.54	18.17	19.18
20	21.68	19.13	19.09	16.51	16.60	14.57	14.46	14.82	16.57	17.79	17.86	19.46
25	20.27	19.26	18.51	16.49	16.25	14.59	14.18	14.95	16.49	18.05	18.17	19.63
EOM	19.58	19.43	18.31	16.48	16.18	14.33	14.28	15.20	16.69	18.23	18.38	19.89

WTR YR 1991 MEAN 17.39 HIGH 14.10 APR 6 LOW 23.60 OCT 9

## GROUND-WATER LEVELS

## MECKLENBURG COUNTY--Continued

**350639080405401.** Local Number, Me-255

LOCATION.--Lat 35°06'39", long 80°40'54", Hydrologic Unit 35050103, near Matthews. Owner: U.S. Geological Survey.  
 ACQUIFER.--Unconfined saprolite derived from metavolcanic rock.

WELL CHARACTERISTICS.--Drilled observation well, diameter 4 in., construction depth 33.8 ft, measured depth 1988 33.18 ft. Cased to 28.8 ft, screened from 28.8 to 33.8 ft. Sand packed from 28.8 to 33.8 ft.

INSTRUMENTATION.--Digital recorder with 60-minute punch interval.

DATUM.--Elevation of land-surface datum is 730 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing 3.2 ft above land-surface datum.

REMARKS.--Well is part of Charlotte-Mecklenburg Urban Hydrology study, Ridge Road landfill well No. 1. Due to increase of mud in well bottom, dry depth since August 1988 is 33.18 ft below land surface datum.

PERIOD OF RECORD.--September 1985 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water-level recorded, 19.09 ft below land-surface datum, Mar. 29, 1991; lowest water level recorded, 33.53 ft below land-surface datum, Nov. 3-14, 1986. Well was dry (water level below 33.18 ft), from August 27, 1988, to January 19, 1989.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	31.45	27.89	26.92	26.04	23.48	21.84	19.83	19.38	21.51	23.89	25.98	26.76
10	31.45	27.55	26.76	25.63	23.23	21.63	19.61	19.67	21.91	24.26	26.17	26.92
15	30.10	27.43	26.63	24.99	23.13	21.35	19.40	19.94	22.34	24.69	26.32	27.15
20	30.11	27.23	26.55	24.54	23.01	21.00	19.33	20.35	22.75	25.01	26.37	27.40
25	28.48	27.10	26.38	24.24	22.85	20.76	19.31	20.65	23.16	25.34	26.50	27.54
EOM	28.23	27.06	26.18	23.85	22.85	20.16	19.24	21.06	23.49	25.72	26.60	27.85

WTR YR 1991 MEAN 24.47 HIGH 19.20 APR 28 LOW 31.59 OCT 9

**351003080544201.** Local Number Me-256.

LOCATION.--Lat. 35°10'03", long 80°54'42", Hydrologic Unit 03050103, near Charlotte. Owner: U.S. Geological Survey.

AQUIFER.--Unconfined saprolite derived from intrusive granite.

WELL CHARACTERISTICS.--Drilled observation well, diameter 3 in., depth 24.5 ft, cased to 19.5 ft, screened from 19.5 to 24.5 ft. Sand packed from 19.5 to 24.5 ft.

INSTRUMENTATION.--Digital recorder with 60-minute punch interval.

DATUM.--Elevation of land-surface datum is 584 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 1.70 ft above land-surface datum.

REMARKS.--Well is part of the Charlotte-Mecklenburg urban hydrology study, York Road landfill well YRW-6.

PERIOD OF RECORD.--June 27, 1986, to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 0.93 ft below land-surface datum, Aug. 14 and 15, 1991; lowest water level recorded, 8.49 ft below land-surface datum, Sept. 4 and 5, 1987.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	6.81	6.30	5.24	5.53	5.87	3.73	5.47	5.98	5.90	6.99	6.76	7.02
10	6.16	3.53	5.84	4.38	5.81	4.76	3.35	5.93	6.27	7.20	5.05	7.17
15	5.52	6.02	6.28	4.86	5.95	4.67	4.65	5.85	6.40	7.51	3.03	7.26
20	5.64	6.17	5.64	3.07	5.31	5.20	4.49	4.46	6.47	7.31	6.64	7.27
25	4.42	6.58	5.21	4.21	5.20	5.84	5.79	6.08	6.68	7.53	6.73	6.30
EOM	5.80	5.70	3.47	3.48	5.93	4.63	3.63	6.25	6.78	6.75	6.85	7.18

WTR YR 1991 MEAN 5.72 HIGH 2.07 JAN 12 LOW 8.01 OCT 1

**352422080560303.** Local Number Me-257.

LOCATION.--Lat 35°24'22", long 80°56'03", Hydrologic Unit 03050101, near Huntersville. Owner: U.S. Geological Survey.

AQUIFER.--Weathered granite of Paleozoic age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 4 in., depth 23.0 ft below land-surface datum, PVC casing to 20.5 ft with slotted well screen from 10.5 to 20.5 ft below land-surface datum. Sand filled around well screen, with clay above.

INSTRUMENTATION.--Digital recorder with 60-minute punch interval.

DATUM.--Elevation of land-surface datum is 734 ft above National Geodetic Vertical Datum of 1929, from topographic map. Measuring point: Top of casing, 1.40 ft above land-surface datum.

REMARKS.--Well constructed to determine ground-water level at proposed Stephens Road landfill site, SRW-N15A.

PERIOD OF RECORD.--February 1985 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 3.10 ft below land-surface datum, Feb. 23, 1990; lowest water level recorded, 14.70 ft below land-surface datum Oct. 10, 1990.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	14.59	10.90	10.40	---	---	5.57	6.05	5.07	7.71	9.82	12.02	12.15
10	14.67	9.72	10.43	---	---	6.02	4.58	5.54	8.22	10.24	11.64	12.36
15	12.26	10.40	10.52	---	7.70	6.27	5.41	5.94	8.72	10.78	11.08	12.56
20	12.24	10.52	10.16	---	7.84	5.96	5.08	6.33	8.93	11.02	11.17	12.78
25	10.26	10.65	9.32	---	7.73	6.50	5.04	6.63	9.10	11.41	11.62	12.87
EOM	10.76	10.80	9.20	---	7.86	5.25	4.08	7.21	9.39	11.73	11.86	12.99

WTR YR 1991 MEAN 9.32 HIGH 3.68 APR 22 LOW 14.68 OCT 9

## MECKLENBURG COUNTY--Continued

351730080524203. Local number, NC-146.

LOCATION.--Lat 35°19'16", long 80°52'39". Hydrologic Unit 03050101, 6 mi south of Huntersville in Hornets Nest

Park. Owner: U.S. Geological Survey.

AQUIFER.--Unconfined saprolite derived from metamorphosed quartz diorite.

WELL CHARACTERISTICS.--Drilled observation well, depth 17.1 ft, diameter 4 in., cased to 12.1 ft, screened interval from 12.1 to 17.1 ft, sand packed from 12.1 to 17.1 ft.

INSTRUMENTATION.--Digital recorder with 60-minute punch interval.

DATUM.--Land-surface datum is 730 ft above National Geodetic Vertical Datum of 1929, from topographic map.

Measuring point: Top of casing, 1.90 ft above land-surface datum.

REMARKS.--Well is part of climatic-effects network.

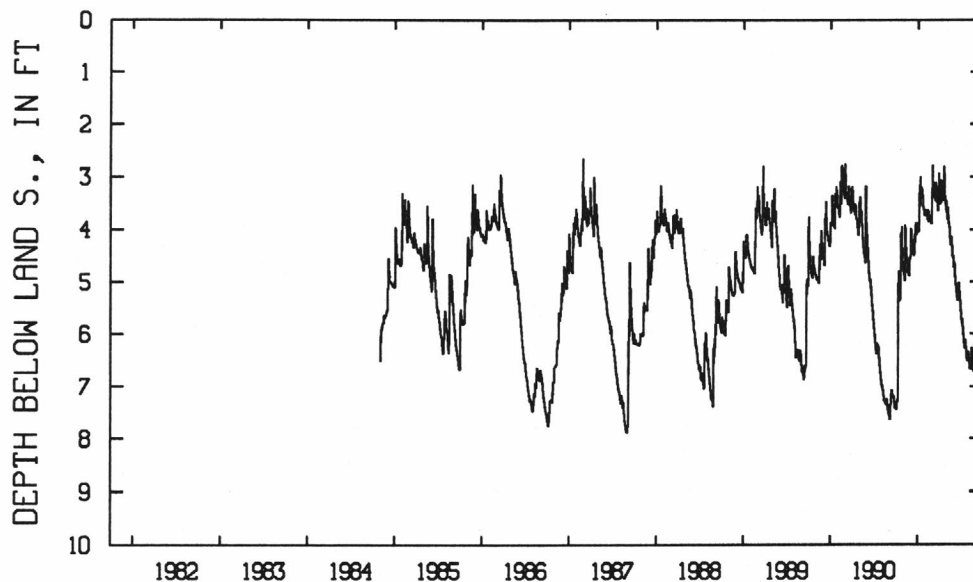
PERIOD OF RECORD.--November 1984 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 2.40 ft below land-surface datum, Feb. 16, 1990; lowest water level recorded, 7.91 ft below land-surface datum, Sept. 2 and 3, 1987.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.42	4.72	4.52	3.96	3.71	3.88	3.26	3.45	4.72	5.59	6.40	6.31
2	7.41	4.78	4.53	3.98	3.69	3.52	3.36	3.58	4.65	5.66	6.38	6.35
3	7.44	4.82	4.47	4.05	3.68	3.05	3.46	3.67	4.63	5.71	6.34	6.41
4	7.44	4.83	3.98	4.02	3.70	2.79	3.51	3.76	4.70	5.76	6.49	6.43
5	7.29	4.84	4.09	4.03	3.72	3.14	3.50	3.81	4.81	5.79	6.59	6.49
6	7.29	4.91	4.14	4.03	3.74	3.22	3.43	3.58	4.88	5.71	6.66	6.56
7	7.30	4.94	4.21	3.60	3.63	3.19	3.48	3.64	4.93	5.78	6.64	6.59
8	7.29	4.98	4.24	3.31	3.65	3.21	3.50	3.74	4.98	5.84	6.61	6.63
9	7.30	4.90	4.29	3.45	3.68	3.10	3.06	3.79	5.04	5.88	6.60	6.68
10	7.22	3.92	4.31	3.58	3.71	3.21	3.14	3.82	5.09	5.95	6.64	6.72
11	5.84	4.14	4.37	3.17	3.77	3.30	3.31	3.89	5.15	6.00	6.65	6.76
12	5.15	4.24	4.39	3.01	3.82	3.33	3.42	3.92	5.19	6.05	6.67	6.83
13	4.79	4.34	4.40	3.31	3.76	3.24	3.46	3.93	5.23	6.10	6.57	6.85
14	4.97	4.44	4.48	3.47	3.63	3.22	3.46	3.99	5.30	6.18	6.47	6.85
15	5.12	4.49	4.46	3.53	3.70	3.37	3.31	4.08	5.31	6.23	6.26	6.94
16	5.27	4.52	4.46	3.20	3.85	3.46	3.18	4.17	5.35	6.27	6.31	7.00
17	5.36	4.56	4.50	3.35	3.83	3.46	3.29	4.22	5.33	6.20	6.35	---
18	5.32	4.60	4.45	3.47	3.84	3.12	3.38	4.29	5.08	6.15	6.40	---
19	5.21	4.64	4.32	3.51	3.82	3.12	3.37	4.27	5.09	6.11	6.47	---
20	5.28	4.76	4.33	3.24	3.81	3.26	3.16	4.16	5.04	6.13	6.55	---
21	5.33	4.83	3.94	3.31	3.79	3.33	2.81	4.13	5.04	6.19	6.63	---
22	5.26	4.80	3.94	3.46	3.76	3.39	2.96	4.17	5.01	6.29	6.67	---
23	4.07	4.75	3.94	3.52	3.78	3.43	3.15	4.24	5.05	6.36	6.69	---
24	4.38	4.80	3.87	3.56	3.77	3.48	3.27	4.30	5.15	6.43	6.71	---
25	4.25	4.83	3.96	3.59	3.74	3.58	3.43	4.37	5.19	6.47	6.43	---
26	3.94	4.86	4.04	3.61	3.78	3.63	3.48	4.44	5.26	6.51	6.36	6.42
27	4.26	4.89	4.10	3.62	3.86	3.64	3.50	4.52	5.30	6.48	6.31	6.48
28	4.37	4.86	3.97	3.64	3.89	3.62	3.53	4.55	5.38	6.44	6.21	6.52
29	4.49	4.56	3.98	3.73	---	3.31	3.62	4.50	5.44	6.34	6.18	6.56
30	4.58	4.52	3.89	3.68	---	2.93	3.48	4.56	5.52	6.33	6.19	6.58
31	4.64	---	3.87	3.61	---	3.21	---	4.64	---	6.35	6.24	---

WTR YR 1991 MEAN 4.70 HIGH 2.79 LOW 7.44



351730080524203 NC-146 HORNETS NEST PARK NR CHARLOTTE  
MEAN DAILY DEPTH BELOW LAND S. (FT)

## GROUND-WATER LEVELS

## NEW HANOVER COUNTY

**341000077524201.** Local number, NC-20.

LOCATION.--Lat 34°09'53", long 77°52'48", Hydrologic Unit 03030001, southeast of Wilmington, 1 mi west of Secondary Road 1492 on Secondary Road 1516. Owner: Walter J. Hodder.

AQUIFER.--Castle Hayne aquifer of Oligocene and Eocene age.

WELL CHARACTERISTICS.--Drilled observation well, drilled to 173 ft, diameter 3 in., cased and screened intervals unknown; measured depth 169 ft, September 1973.

INSTRUMENTATION.--Measured periodically with steel tape.

DATUM.--Land-surface datum is 21 ft above National Geodetic Vertical Datum of 1929 (from topographic map).

Measuring point: Top of instrument shelf, 1.85 ft above land-surface datum (since March 11, 1976).

REMARKS.--Well is part of areal-effects network.

PERIOD OF RECORD.--November 1963 to current year. USGS continuous record from December 1964 to November 1980.

EXTREMES FOR PERIOD OF RECORD.--Highest recorded water level, 9.42 ft below land-surface datum, June 10, 1966; lowest water level recorded, 23.89 ft below land-surface datum, July 10, 1985.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 3	21.19	JAN 11	19.57	APR 11	19.98	MAY 23	19.81	JUL 11	22.73	AUG 21	18.45
NOV 14	17.71	MAR 13	18.17								

## ONSLOW COUNTY

**344425077272501.** Local number, NC-52.

LOCATION.--Lat 34°44'18", long 77°27'29", Hydrologic Unit 03030001, southwest of Jacksonville, 2 mi south of U.S. Highway 258, 0.25 mi east of U.S. Highway 17 at U.S. Marine Corps Camp Geiger. Owner: U.S. Marine Corps.

AQUIFER.--Castle Hayne aquifer of Oligocene and Eocene age.

WELL CHARACTERISTICS.--Drilled abandoned supply well, drilled to 70 ft, diameter 18 in., cased to 23 ft, open hole to 70 ft; measured depth 68 ft, January 1974.

INSTRUMENTATION.--Digital recorder with 60-minute punch interval.

DATUM.--Land-surface datum is 17.0 ft above National Geodetic Vertical Datum of 1929 (from topographic map). Measuring point: Top of instrument shelf, 1.90 ft above land-surface datum.

REMARKS.--Well is part of areal-effects network.

PERIOD OF RECORD.--January 1963 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 1.67 ft below land-surface datum, Sept. 14, 1984; lowest water level recorded, 10.44 ft below land-surface datum, Jan. 3, 1966.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	8.94	8.18	8.34	8.72	4.72	4.16	5.47	5.71	6.82	6.44	3.15	4.01
10	9.01	7.48	8.35	7.50	4.26	4.51	5.82	6.08	6.98	6.67	3.14	4.47
15	9.17	7.27	8.45	6.53	4.67	4.25	6.09	6.35	7.29	6.65	2.96	4.68
20	9.30	7.62	8.68	5.29	5.05	4.73	6.22	6.59	7.32	5.74	3.68	5.07
25	8.91	7.88	8.69	4.87	5.12	5.27	6.23	6.71	5.87	6.02	4.25	4.60
EOM	8.04	8.20	8.71	4.21	5.28	5.27	6.33	6.80	6.19	2.84	3.43	4.55

WTR YR 1991 MEAN 6.16 HIGH 2.55 AUG 3 LOW 9.30 OCT 20

**344525077254501.** Local number, NC-85

LOCATION.--Lat 34°45'25", long 77°25'45", Hydrologic Unit 03030001, in Jacksonville at electrical transformer substation, 0.15 mi north of U.S. Highway 17, and 0.4 mi east of New River. Owner: Carolina Power and Light Company.

AQUIFER.--Castle Hayne aquifer of Oligocene and Eocene age.

WELL CHARACTERISTICS.--Drilled observation well, drilled to 240 ft (reported), diameter 8 in., cased and screened intervals unknown; measured depth 103 ft, January 1974.

INSTRUMENTATION.--Digital recorder with 60-minute punch interval.

DATUM.--Land-surface datum is 20 ft above National Geodetic Vertical Datum of 1929 (from topographic map).

Measuring point: Top of instrument shelf, 3.20 ft above land-surface datum.

REMARKS.--Well is part of areal-effects network.

PERIOD OF RECORD.--January 1963 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 6.86 ft below land-surface datum, June 10, 1964; lowest water level recorded, 24.19 ft below land-surface datum, July 3, 1985.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	21.00	19.43	19.19	19.64	20.20	18.83	17.14	16.99	20.67	22.00	22.68	20.03
10	20.93	18.83	20.10	20.11	19.54	19.74	17.00	17.33	19.90	22.79	22.29	19.61
15	21.24	19.81	20.12	20.14	19.59	19.67	16.67	18.17	21.39	22.59	22.17	20.41
20	20.72	20.00	19.50	19.69	19.85	18.90	16.68	18.50	21.78	22.62	21.84	20.65
25	19.77	19.35	18.84	21.19	19.71	17.54	16.88	18.35	20.95	23.57	21.20	19.03
EOM	20.29	19.10	18.82	20.28	20.09	17.03	16.99	20.49	21.46	22.41	21.04	18.41

WTR YR 1991 MEAN 19.90 HIGH 16.67 APR 15 LOW 23.64 JUL 26

343641077290104. Local number, NC-188; DEHNR Dixon Tower Research Station well Y25q4.  
LOCATION.--Lat 34°36'41", long 77°29'01", Hydrologic Unit 03030001, 1.5 mi north of Dixon at North Carolina Division of Forest Resources Fire Tower on U.S. Highway 17. Owner: DEHNR (North Carolina Department of Environment, Health, and Natural Resources).  
AQUIFER.--Peedee aquifer of Late Cretaceous age.  
WELL CHARACTERISTICS.--Drilled observation well, drilled to 550 ft, diameter 4 in., cased to 524 ft, screened interval from 524 to 534 ft.  
INSTRUMENTATION.--Measured periodically with steel tape.  
DATUM.--Land-surface datum is 67.44 ft above National Geodetic Vertical Datum of 1929 (levels by DEHNR).  
Measuring point: Top of instrument shelf, 2.53 ft above land-surface datum.  
REMARKS.--Well is part of areal-effects network.  
PERIOD OF RECORD.--April 1982 to current year. Continuous record August 1986 to November 1990. Records from May 1983 to July 1986 are unpublished and available in the files of the Groundwater Section, DEHNR.  
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 38.86 ft below land-surface datum, May 12, 1983; lowest water level recorded, 40.55 ft below land-surface datum, Oct. 20 and 21, 1990.

[illegible]

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JAN 9	40.47	MAR 12	40.24	APR 11	40.36	MAY 23	40.25	JUL 11	40.39	AUG 21	40.11

**344837077291607.** Local number, NC-189; DEHNR Jacksonville 258 Well Field Research Station well W25f7. LOCATION.--Lat 34°48'37", long 77°29'16", Hydrologic Unit 03030001, 1.4 mi northeast of U.S. Highway 258 and State Highway 24 on Wells Road. Owner: DEHNR (North Carolina Department of Environment, Health, and Natural Resources). AQUIFER.--Black Creek aquifer of Late Cretaceous age. WELL CHARACTERISTICS.--Drilled observation well, drilled to 834 ft, diameter 4 in., cased to 824 ft, screened interval from 824 to 834 ft. INSTRUMENTATION.--Measured periodically with steel tape. DATUM.--Land-surface datum is 26.62 ft above National Geodetic Vertical Datum of 1929 (levels by DEHNR). Measuring point: Top of instrument shelf, 3.78 ft above land-surface datum. REMARKS.--Well is part of areal-effects network. PERIOD OF RECORD.--October 1986 to current year. EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 96.64 ft below land-surface datum, Oct. 15, 1986; lowest water level recorded, 139.31 ft below land-surface datum, Aug. 21, 1991.

[illegible]

## GROUND-WATER LEVELS

## ORANGE COUNTY

**355522079043001.** Local number, NC-126.

LOCATION.--Lat 35°55'22", long 79°04'30", Hydrologic Unit 03030002, in Chapel Hill, west of University of North Carolina campus, southeast of intersection of Cameron Avenue and Ransom Street. Owner: Chi Psi Fraternity.

AQUIFER.--Unconfined saprolite derived from granite of Paleozoic age.

WELL CHARACTERISTICS.--Dug observation well, depth 48 ft, diameter 36 in., lined with rock; measured depth 46.2 ft, August 1986.

INSTRUMENTATION.--Measured periodically with steel tape.

DATUM.--Land-surface datum is 511.50 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of shelf, 3.27 ft above land-surface datum (since July 21, 1981).

REMARKS.--Well is part of terrane-effects network.

PERIOD OF RECORD.--August 1938 to current year. USGS continuous record March 1965 to Sept. 1988.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 35.22 ft below land-surface datum, May 14, 1984; lowest water level recorded, dry, Oct. 11 to Dec. 31, 1940, and Oct. 13 to Jan. 24, 1989.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 3	41.90	JAN 3	42.90	APR 1	41.16	MAY 24	40.85	AUG 23	42.18	SEP 20	42.87
NOV 5	42.54	MAR 1	41.96								

## PAMLICO COUNTY

**350523076392206.** Local number, NC-169; DEHNR Whortonsville Research Station well S15y6.

LOCATION.--Lat 35°05'23", long 76°39'22", Hydrologic Unit 03020204, 3.4 mi east of Merritt on Secondary Road 1321, 0.5 mi northeast of intersection of Secondary Roads 1321 and 1322. Owner: DEHNR (North Carolina Department of Environment, Health, and Natural Resources).

AQUIFER.--Castle Hayne aquifer of Oligocene and Eocene age.

WELL CHARACTERISTICS.--Drilled observation well, drilled to 290 ft, diameter 4 in., cased to 223 ft and from 228 to 270 ft, screened intervals from 223 to 228 ft and 270 to 275 ft.

INSTRUMENTATION.--Measured periodically with steel tape.

DATUM.--Land-surface datum is 7.54 ft above National Geodetic Vertical Datum of 1929 (levels by DEHNR).

Measuring point: Top of instrument shelf, 2.53 ft above land-surface datum - revised from 2.64 ft above land-surface datum, October 1987.

REMARKS.--Well is part of areal-effects network.

PERIOD OF RECORD.--February 1978 to current year. Continuous record December 1986 to November 1990. Records

from February 1978 to November 1986 are unpublished and available in the files of the Groundwater Section, DEHNR.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 4.00 ft below land-surface datum, May 10, 1978;

lowest water level recorded, 7.69 ft below land-surface datum, Oct. 20, 21, 22, and 23, 1990.

REVISIONS.--Water-level mean values and extremes for period of record published in Water Resources Data, North Carolina, NC-87-1, should be adjusted by +0.11 ft.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	7.47	7.51	---	---	---	---	---	---	---	---	---	---
10	7.51	7.29	---	---	---	---	---	---	---	---	---	---
15	7.57	---	---	---	---	---	---	---	---	---	---	---
20	7.69	---	---	---	---	---	---	---	---	---	---	---
25	7.56	---	---	---	---	---	---	---	---	---	---	---
EOM	7.51	---	---	---	---	---	---	---	---	---	---	---

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JAN 15	6.15	FEB 27	5.15	APR 10	4.95	MAY 29	5.99	JUL 10	6.50	AUG 21	5.88

## PASQUOTANK COUNTY

361828076163401. Local number, NC-143.

LOCATION.--Lat 36°18'28", long 76°16'34", Hydrologic Unit 03010205, northwest of Elizabeth City, 1 mi west of Secondary Road 1307 on Secondary Road 1309. Owner: U.S. Geological Survey.

AQUIFER.--Surficial aquifer of post-Miocene age.

WELL CHARACTERISTICS.--Bored observation well, augered to 10.2 ft, diameter 3 in., cased to 5 ft, screened interval from 5.0 ft to 10.2 ft.

INSTRUMENTATION.--Digital recorder with 60-minute punch interval.

DATUM.--Land-surface datum is 13 ft above National Geodetic Vertical Datum of 1929 (from topographic map).

Measuring point: Top of casing, 2.35 ft above land-surface datum.

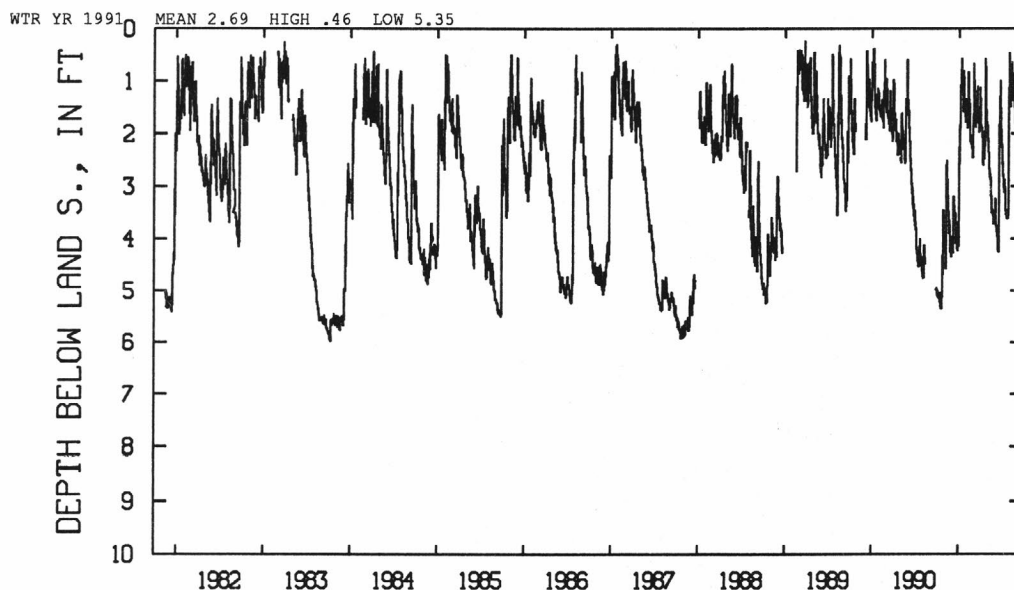
REMARKS.--In May 1984, well replaced nearby NC-86. Well is part of climatic-effects network. In September 1991, well was replaced by nearby NC-195.

PERIOD OF RECORD.--November 1981 to September 1991 (discontinued).

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 0.01 ft below land-surface datum, Jan. 22, 1987; lowest water level recorded, 6.00 ft below land-surface datum, Oct. 10, 1983.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.96	4.04	4.33	4.15	1.70	2.43	1.39	1.89	3.70	2.32	.68	2.38
2	5.02	4.17	4.24	3.05	1.71	1.97	1.64	2.02	3.40	2.45	.95	2.53
3	5.10	4.26	4.12	2.21	1.73	1.43	1.82	2.14	3.22	2.55	1.03	2.54
4	5.00	4.26	3.95	1.86	1.79	.65	1.88	2.28	3.28	2.67	.75	2.52
5	5.05	4.23	4.27	1.83	1.84	1.00	1.85	2.36	3.57	2.70	1.13	2.53
6	5.11	4.31	4.26	1.89	1.89	1.11	1.88	2.36	3.72	2.82	1.49	2.15
7	5.12	4.45	4.28	1.82	1.62	1.11	1.96	2.57	3.78	2.90	1.25	1.96
8	5.14	4.59	3.62	1.22	.82	1.47	2.05	2.68	3.76	2.95	.83	2.06
9	5.13	4.56	3.24	.78	.82	1.59	2.07	2.70	3.86	3.07	.92	2.18
10	5.12	2.75	3.19	1.02	1.06	1.66	2.15	2.73	3.94	3.12	.63	2.25
11	5.15	2.52	3.43	1.00	1.31	1.79	2.49	2.84	3.96	2.87	.79	2.27
12	5.11	2.65	3.44	.56	1.57	1.88	2.61	2.76	3.96	2.92	1.08	2.43
13	5.04	2.88	3.37	.83	1.48	1.74	2.53	2.81	4.09	2.92	1.24	2.55
14	5.14	3.18	3.76	1.09	1.35	1.46	2.49	2.91	4.22	3.09	1.37	2.61
15	5.22	3.28	3.62	1.26	1.70	1.58	2.42	3.04	4.18	3.36	.85	2.77
16	5.31	3.21	3.59	.97	2.10	1.78	2.27	3.20	4.18	3.47	1.07	2.87
17	5.31	3.17	3.74	1.23	2.14	1.80	2.28	3.18	4.26	3.44	1.33	---
18	5.13	3.44	3.50	1.49	2.17	1.36	2.38	3.34	3.96	3.46	1.28	---
19	5.26	3.57	3.76	1.59	2.11	1.09	2.49	3.52	2.70	3.53	1.14	---
20	5.35	3.75	4.10	.89	2.04	1.45	1.72	3.48	1.78	3.61	1.21	---
21	5.34	3.90	3.92	.80	2.14	1.58	.57	3.44	1.88	3.61	1.00	---
22	5.28	3.84	3.83	1.21	2.03	1.62	.74	3.44	1.84	3.61	1.24	---
23	5.03	3.64	3.69	1.41	2.29	1.51	1.14	3.51	.98	3.62	1.50	---
24	4.96	3.83	3.71	1.50	2.24	1.59	1.37	3.56	1.31	3.61	1.68	---
25	4.91	4.02	4.13	1.59	2.19	1.88	1.68	3.56	1.52	3.60	1.78	---
26	3.96	4.21	4.20	1.64	2.21	1.98	1.77	3.66	1.69	3.51	1.83	---
27	3.49	4.28	4.23	1.69	2.39	1.89	1.82	3.72	1.86	3.55	1.92	---
28	3.45	4.23	4.02	1.68	2.47	1.90	1.79	3.66	1.97	3.31	2.02	---
29	3.69	4.13	4.01	1.78	---	1.88	1.77	3.51	2.04	1.68	2.10	---
30	3.85	4.35	3.83	1.60	---	1.12	1.84	3.51	2.15	1.07	2.15	---
31	3.90	---	3.96	1.33	---	1.22	---	3.56	---	.46	2.22	---



361828076163401 PK-140 (NC-143) ELIZABETH CITY  
MEAN DAILY DEPTH BELOW LAND S. (FT)

## GROUND-WATER LEVELS

## PASQUOTANK COUNTY--Continued

**362050076163705.** Local number, NC-150; DEHNR Elizabeth City Forest Service Research Station well D11v5.  
**LOCATION.**--Lat 36°20'50", long 76°16'37", Hydrologic Unit 03010205, 4 mi northwest of Elizabeth City at North Carolina Division of Forest Resources Maintenance Yard, west of U.S. Highways 17 and 158 on Secondary Road 1338. Owner: DEHNR (North Carolina Department of Environment, Health, and Natural Resources).  
**AQUIFER.**--Yorktown aquifer of Pliocene and Miocene age.  
**WELL CHARACTERISTICS.**--Drilled observation well, drilled to 500 ft, diameter 4 in., cased to 120 ft, screened interval from 120 to 130 ft, cemented from 130 to 500 ft.  
**INSTRUMENTATION.**--Digital recorder with 60-minute punch interval.  
**DATUM.**--Land-surface datum is 7.14 ft above National Geodetic Vertical Datum of 1929 (levels by DEHNR).  
 Measuring point: Top of instrument shelf, 3.48 ft above land-surface datum - revised from 3.13 ft above land-surface datum, October 1987.  
**REMARKS.**--Well is part of areal-effects network.  
**PERIOD OF RECORD.**--July 1975 to current year. Records from July 1975 to November 1986 are unpublished and available in the files of the Groundwater Section, DEHNR. U.S. Geological Survey continuous record began November 1986.  
**EXTREMES FOR PERIOD OF RECORD.**--Highest water level recorded, 3.22 ft below land-surface datum, June 26, 1979; lowest water level recorded, 8.32 ft below land-surface datum, Aug. 15, 1986.  
**REVISIONS.**--Water-level mean values and extremes for period of record published in Water Resources Data, North Carolina, NC-87-1, should be adjusted by -0.35 ft.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	7.52	7.67	7.35	7.10	6.60	6.37	5.34	5.18	6.24	6.79	7.42	6.35
10	7.62	7.50	7.32	6.99	6.42	6.26	5.14	5.24	6.32	7.10	7.02	6.30
15	7.77	7.58	7.30	6.86	6.40	6.16	5.14	5.34	6.57	7.42	6.75	6.32
20	7.92	7.49	7.30	6.57	6.53	5.98	5.09	5.57	6.70	7.66	6.55	6.43
25	7.79	7.45	7.20	6.67	6.44	5.80	5.20	5.66	6.82	7.92	6.47	6.25
COM	7.78	7.41	7.16	6.63	6.55	5.50	5.10	5.96	6.62	7.57	6.41	6.18

WTR YR 1991 MEAN 6.64 HIGH 4.94 APR 21 LOW 7.95 JUL 27

## PERQUIMANS COUNTY

**361744076274402.** Local number, NC-151; DEHNR Parkville Research Station well E13m2.  
**LOCATION.**--Lat 36°17'44", long 76°27'44", Hydrologic Unit 03010205, 3.5 mi west of Parkville, west of Secondary Road 1223 on logging road. Owner: DEHNR (North Carolina Department of Environment, Health, and Natural Resources).  
**AQUIFER.**--Lower Cape Fear aquifer of Late Cretaceous age.  
**WELL CHARACTERISTICS.**--Drilled observation well, drilled to 1,019 ft, diameter 4 in., cased to 1,009 ft, screened interval from 1,009 to 1,019 ft.  
**INSTRUMENTATION.**--Measured periodically with steel tape.  
**DATUM.**--Land-surface datum is 16.82 ft above National Geodetic Vertical Datum of 1929 (levels by DEHNR).  
 Measuring point: Top of instrument shelf, 3.02 ft above land-surface datum.  
**REMARKS.**--Well is part of areal-effects network.  
**PERIOD OF RECORD.**--December 1977 to current year. Continuous record November 1986 to September 1990. Records from December 1977 to July 1986 are unpublished and available in the files of the Groundwater Section, DEHNR.  
**EXTREMES FOR PERIOD OF RECORD.**--Highest water level recorded, 40.17 ft below land-surface datum, Dec. 7, 1977; lowest water level recorded, 60.00 ft below land-surface datum, June 12, 1991.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 13	59.19	JAN 9	59.31	MAR 5	59.33	APR 16	59.56	JUN 12	60.00	AUG 5	59.96

**361744076274403.** Local number, NC-152; DEHNR Parkville Research Station well E13m3.  
**LOCATION.**--Lat 36°17'44", long 76°27'44", Hydrologic Unit 03010205, 3.5 mi west of Parkville, west of Secondary Road 1223 on logging road. Owner: DEHNR (North Carolina Department of Environment, Health, and Natural Resources).  
**AQUIFER.**--Castle Hayne aquifer of Oligocene and Eocene age.  
**WELL CHARACTERISTICS.**--Drilled observation well, drilled to 351 ft, diameter 4 in., cased to 336 ft, open hole to 351 ft.  
**INSTRUMENTATION.**--Measured periodically with steel tape.  
**DATUM.**--Land-surface datum is 16.73 ft above National Geodetic Vertical Datum of 1929 (levels by DEHNR).  
 Measuring point: Top of instrument shelf, 3.00 ft above land-surface datum - revised from 3.49 ft above land-surface datum, October 1987.  
**REMARKS.**--Well is part of areal-effects network.  
**PERIOD OF RECORD.**--December 1977 to current year. Continuous record November 1986 to November 1990. Records from December 1977 to July 1986 are unpublished and available in the files of the Groundwater Section, DEHNR.  
**EXTREMES FOR PERIOD OF RECORD.**--Highest water level recorded, 6.46 ft below land-surface datum, Dec. 20, 1978; lowest water level recorded, 10.37 ft below land-surface datum, June 12, 1991.  
**REVISIONS.**--Water-level mean values and extremes for period of record published in Water Resources Data, North Carolina, NC-87-1, should be adjusted by +0.49 ft.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	9.71	9.62	---	---	---	---	---	---	---	---	---	---
10	9.74	9.47	---	---	---	---	---	---	---	---	---	---
15	9.74	---	---	---	---	---	---	---	---	---	---	---
20	9.84	---	---	---	---	---	---	---	---	---	---	---
25	9.56	---	---	---	---	---	---	---	---	---	---	---
COM	9.66	---	---	---	---	---	---	---	---	---	---	---

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JAN 9	9.65	MAR 5	9.69	APR 16	9.87	JUN 12	10.37	AUG 5	10.16

## PITT COUNTY

353219077153801. Local number, NC-160; USGS well PI-532.

LOCATION.--Lat 35°32'19", long 77°15'38", Hydrologic Unit 03020103, 2.7 mi southwest of Simpson in southeast corner of intersection of Secondary Roads 1755 and 1769. Owner: U.S. Geological Survey.

AQUIFER.--Surficial aquifer of post-Miocene age.

WELL CHARACTERISTICS.--Bored observation well, augered to 12 ft, diameter 6 in., cased to 5.9 ft, screened interval from 5.9 ft to 10.9 ft.

INSTRUMENTATION.--Digital recorder with 60-minute punch interval.

DATUM.--Land-surface datum is 56.27 ft above National Geodetic Vertical Datum of 1929 (levels by Soil Conservation Service). Measuring point: File cut on top of casing, 1.04 ft above land-surface datum.

REMARKS.--From December 1976 to April 1987, well was part of a study of the effects of channelization on hydrology of Chicod Creek watershed. It has been incorporated into the climatic-effects network.

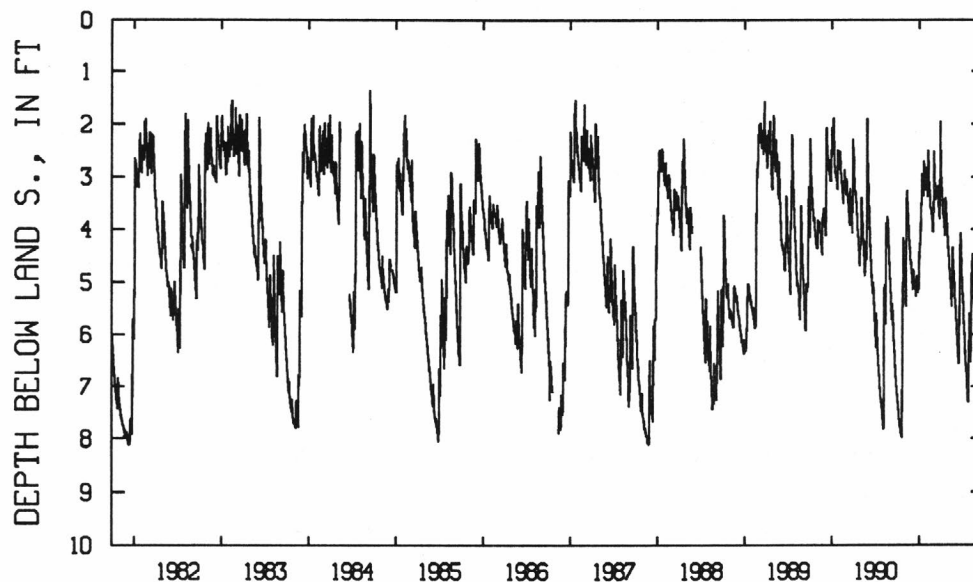
PERIOD OF RECORD.--December 1976 to current year. Prior to October 1986, published as local number, PI-532.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 1.05 ft below land-surface datum, Sept. 14, 1984; lowest water level recorded, 8.84 ft below land-surface datum, Nov. 6, 7, and 8, 1978.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.12	4.75	4.81	5.13	3.00	4.05	2.60	4.18	5.31	5.00	5.59	6.14
2	7.21	4.85	4.85	4.75	3.09	3.81	2.80	4.27	5.33	5.07	5.79	6.24
3	7.31	4.93	4.86	4.41	3.18	3.30	2.97	4.37	5.40	5.22	5.97	6.33
4	7.32	5.00	4.89	4.34	3.26	2.52	3.07	4.44	5.51	5.31	6.18	6.42
5	7.29	5.05	5.07	4.27	3.33	2.77	3.14	4.49	5.63	5.31	6.39	6.54
6	7.40	5.17	5.10	4.30	3.38	2.90	3.21	4.54	5.70	5.40	6.54	6.67
7	7.47	5.27	5.14	4.31	3.16	3.04	3.29	4.67	5.77	5.55	6.19	6.76
8	7.55	5.42	4.87	4.02	2.51	3.15	3.38	4.75	5.85	5.71	5.32	6.88
9	7.61	5.46	4.76	3.59	2.70	3.20	3.45	4.78	5.98	5.85	5.40	6.97
10	7.66	3.68	4.82	3.57	2.86	3.27	3.54	4.85	6.08	5.94	4.60	7.05
11	7.71	3.26	4.94	3.53	3.01	3.37	3.68	4.95	6.15	5.97	4.62	7.14
12	7.76	3.34	4.98	3.02	3.16	3.44	3.74	5.00	6.22	6.09	4.67	7.24
13	7.78	3.49	5.00	2.94	3.20	3.37	3.79	5.07	6.34	6.21	4.47	7.31
14	7.69	3.60	5.10	3.08	3.22	3.18	3.79	5.15	6.41	6.37	4.57	7.37
15	7.80	3.68	5.08	3.16	3.36	3.20	3.79	5.23	6.45	6.48	4.69	7.44
16	7.89	3.71	5.10	3.16	3.53	3.31	3.90	5.30	6.56	6.53	4.88	7.50
17	7.90	3.78	5.14	3.25	3.58	3.37	3.97	5.37	6.52	6.63	5.05	7.56
18	7.88	3.91	5.11	3.33	3.60	3.26	4.05	5.46	6.55	6.70	5.11	7.61
19	7.92	4.01	5.21	3.37	3.60	3.17	4.12	5.15	6.30	6.69	5.29	7.65
20	7.95	4.12	5.27	2.77	3.62	3.29	3.76	4.61	5.42	6.77	5.38	5.52
21	7.97	4.21	4.94	2.70	3.66	3.37	3.40	4.34	4.62	6.92	5.53	5.24
22	7.98	4.26	4.89	2.93	3.66	3.43	3.46	4.38	4.71	7.04	5.58	5.44
23	7.19	4.27	4.88	3.06	3.75	3.48	3.54	4.49	4.09	7.15	5.79	5.56
24	5.78	4.39	4.97	3.12	3.78	3.58	3.62	4.58	4.08	7.24	5.82	5.37
25	5.72	4.48	5.14	3.01	3.81	3.69	3.76	4.65	4.19	7.30	5.62	5.00
26	4.57	4.56	5.16	3.08	3.86	3.74	3.82	4.76	4.33	7.30	5.65	2.97
27	4.16	4.61	5.20	3.18	3.98	3.77	3.88	4.80	4.47	7.30	5.31	3.14
28	4.23	4.63	5.17	3.21	4.05	3.81	3.95	4.83	4.62	7.10	5.49	3.32
29	4.37	4.63	5.10	3.26	---	3.53	4.05	4.95	4.75	6.36	5.67	3.47
30	4.50	4.74	5.00	3.16	---	3.94	4.13	5.10	4.88	5.10	5.84	3.59
31	4.62	---	5.04	2.82	---	2.38	---	5.23	---	5.71	6.01	---

WTR YR 1991 MEAN 4.85 HIGH 1.94 LOW 7.98



353219077153801 PI-532 (NC-160) GALLOWAY  
MEAN DAILY DEPTH BELOW LAND S. (FT)

## GROUND-WATER LEVELS

## PITT COUNTY--Continued

**354457077215504.** Local number, NC-183; DEHNR Bethel Research Station well L24b4.  
 LOCATION.--Lat 35°44'57", long 77°21'55", Hydrologic Unit 03020103, 4.2 mi south of Bethel on U.S. Highway 13 and State Highway 11 at North Pitt High School. Owner: DEHNR (North Carolina Department of Environment, Health, and Natural Resources).  
 AQUIFER.--Upper Cape Fear aquifer of Late Cretaceous age.  
 WELL CHARACTERISTICS.--Drilled observation well, drilled to 370 ft, diameter 4 in., cased to 360 ft, screened interval from 360 to 370 ft.  
 INSTRUMENTATION.--Measured periodically with steel tape.  
 DATUM.--Land-surface datum is 55.31 ft above National Geodetic Vertical Datum of 1929 (levels by DEHNR).  
 Measuring point: Top of instrument shelf, 1.87 ft above land-surface datum.  
 REMARKS.--Well is part of areal-effects network.  
 PERIOD OF RECORD.--April 1980 to current year. Continuous record October 1983 to November 1990. Records from April 1980 to September 1983 are unpublished and available in the files of the Groundwater Section, DEHNR.  
 EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 56.33 ft below land-surface datum, Apr. 17, 1980; lowest water level recorded, 72.02 ft below land-surface datum, Aug. 21, 1991.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	70.37	70.53	---	---	---	---	---	---	---	---	---	---
10	70.43	70.45	---	---	---	---	---	---	---	---	---	---
15	70.46	---	---	---	---	---	---	---	---	---	---	---
20	70.58	---	---	---	---	---	---	---	---	---	---	---
25	70.44	---	---	---	---	---	---	---	---	---	---	---
EOB	70.55	---	---	---	---	---	---	---	---	---	---	---

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JAN 15	70.66	FEB 27	70.81	APR 10	70.88	MAY 29	71.27	JUL 10	71.91	AUG 21	72.02

**353146077193403.** Local number, NC-184; DEHNR Conley Research Station well N23p3.  
 LOCATION.--Lat 35°14'46", long 77°19'34", Hydrologic Unit 03020203, 6 mi southeast of Greenville, 0.2 mi west of State Highway 43 on Secondary Road 1711 at Conley High School. Owner: DEHNR (North Carolina Department of Environment, Health, and Natural Resources).  
 AQUIFER.--Peedee aquifer of Late Cretaceous age.  
 WELL CHARACTERISTICS.--Drilled observation well, drilled to 132 ft, diameter 4 in., cased to 122 ft, screened interval from 122 to 132 ft.  
 INSTRUMENTATION.--Digital recorder with 60-minute punch interval.  
 DATUM.--Land-surface datum is 69 ft above National Geodetic Vertical Datum of 1929 (from topographic map).  
 Measuring point: Top of instrument shelf, 3.63 ft above land-surface datum.  
 REMARKS.--Well is part of areal-effects network.  
 PERIOD OF RECORD.--June 1984 to current year.  
 EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 17.84 ft below land-surface datum, May 24, 1989; lowest water level recorded, 22.39 ft below land-surface datum, Dec. 18 and 19, 1987.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	21.70	21.62	20.86	20.58	19.57	19.19	18.86	19.01	19.86	20.20	20.62	20.48
10	21.83	21.33	20.77	20.46	19.34	19.23	18.75	19.17	20.25	20.27	20.52	20.61
15	21.94	21.39	20.77	20.28	19.21	19.10	18.74	19.26	20.37	20.42	20.46	20.72
20	22.11	21.17	20.79	19.96	19.30	19.03	18.71	19.35	20.39	20.49	20.34	20.75
25	21.91	20.99	20.79	19.93	19.23	18.99	18.88	19.40	20.38	20.64	20.40	20.63
EOB	21.87	20.95	20.61	19.63	19.35	18.86	18.90	19.53	20.29	20.58	20.35	20.64

WTR YR 1991 MEAN 20.20 HIGH 18.68 APR 21 LOW 22.13 OCT 21

## ROBERSON COUNTY

**343840078550009.** Local number, NC-177; DEHNR Littlefield School Research Station well Y42f9.

LOCATION.--Lat 34°38'40", long 78°55'00", Hydrologic Unit 03040203, 6 mi east of Lumberton on State Highway 41 at Littlefield School. Owner: DEHNR (North Carolina Department of Environment, Health, and Natural Resources).

AQUIFER.--Upper Cape Fear aquifer of Late Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation well, drilled to 468 ft, diameter 6 in., cased to 390 ft and from 395 to 429 ft and 434 to 444 ft, screened intervals from 390 to 395 ft, 429 to 434 ft, and 444 to 449 ft; measured depth 462 ft, December 1987.

INSTRUMENTATION.--Measured periodically with steel tape.

DATUM.--Land-surface datum is 142 ft above National Geodetic Vertical Datum of 1929 (from topographic map).

Measuring point: Top of instrument shelf, 1.4 ft above land-surface datum.

REMARKS.--Well is part of areal-effects network. Records prior to July 1985 are from Littlefield School Research Station well Y42f3 which was adjacent to and of similar construction to well Y42f9. Well Y42f3 was destroyed in September 1987.

PERIOD OF RECORD.--October 1970 to current year. Records for well Y42f3 from October 1970 to June 1985 are unpublished and available in the files of the Groundwater Section, DEHNR.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 76.40 ft below land-surface datum, Jan. 5, 1971; lowest water level recorded, 107.59 ft below land-surface datum, Aug. 20, 1991.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	106.77	106.55	---	---	---	---	---	---	---	---	---	---
10	106.75	106.54	---	---	---	---	---	---	---	---	---	---
15	106.67	---	---	---	---	---	---	---	---	---	---	---
20	106.72	---	---	---	---	---	---	---	---	---	---	---
25	106.60	---	---	---	---	---	---	---	---	---	---	---
EOM	106.70	---	---	---	---	---	---	---	---	---	---	---

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JAN 7	106.73	MAR 5	106.65	APR 9	106.77	MAY 21	107.14	JUL 11	107.57	AUG 20	107.59

## ROWAN COUNTY

**354057080362601.** Local number, NC-193; DEHNR well L63t1.

LOCATION.--Lat 35°40'57", long 80°36'26", Hydrologic Unit 03040102, 2.75 mi south of Barber, 0.75 mi south of Secondary Road 1526 on Piedmont Research Station road, 30 ft east of road. Owner: NCDA (North Carolina Department of Agriculture), Piedmont Research Station.

AQUIFER.--Unconfined alluvial silt.

WELL CHARACTERISTICS.--Drilled observation well, drilled to 24 ft, diameter 4 in., cased to 9 ft, screened interval from 9 to 19 ft, sand packed from 7.2 to 24 ft.

INSTRUMENTATION.--Digital recorder with 60-minute punch interval.

DATUM.--Land-surface datum is 678 ft above National Geodetic Vertical Datum of 1929 (from topographic map).

Measuring point: Two saw cuts in top of PVC casing, 3.30 ft above land-surface datum.

REMARKS.--U.S. Geological Survey continuous record began Nov. 11, 1989. Well is part of climatic-effects network.

PERIOD OF RECORD.--November 1989 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 5.06 ft below land-surface datum, Mar. 3, 1991; lowest water level recorded, 8.01 ft below land-surface datum, Oct. 9 and 10, 1990.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	6.63	6.10	5.93	5.82	5.69	5.96	5.85	6.45	7.02	7.55
2	---	6.75	6.61	6.14	5.96	5.84	5.74	5.97	5.89	6.47	7.05	7.57
3	---	6.78	6.65	6.18	6.01	5.47	5.81	5.55	5.89	6.50	7.08	7.60
4	---	6.80	6.65	6.20	5.68	5.42	5.84	5.47	5.92	6.52	7.10	7.63
5	---	6.80	6.65	6.22	5.61	5.57	5.89	5.27	5.98	6.53	7.13	7.64
6	---	6.79	6.67	6.05	5.71	5.66	5.92	5.49	6.01	6.57	7.09	7.66
7	---	6.79	6.71	5.96	5.80	5.76	5.91	5.46	6.03	6.60	7.08	7.69
8	---	6.77	6.49	5.70	5.90	5.78	5.94	5.55	6.06	6.62	7.11	7.72
9	---	6.76	6.17	5.71	5.92	5.78	5.95	5.62	6.08	6.64	7.12	7.73
10	---	6.80	6.16	5.85	5.56	5.81	5.90	5.52	6.10	6.66	7.13	7.73
11	---	6.81	6.06	5.94	5.44	5.83	5.91	5.58	6.13	6.68	7.14	7.75
12	---	6.83	5.91	6.06	5.61	5.85	5.98	5.66	6.17	6.70	7.16	7.75
13	---	6.84	5.72	6.19	5.72	5.86	6.00	5.69	6.19	6.70	7.19	7.74
14	---	6.83	5.87	6.21	5.80	5.87	5.97	5.75	6.19	6.68	7.21	7.71
15	---	6.79	5.97	6.23	5.85	5.89	5.48	5.79	6.17	6.67	7.24	7.72
16	---	6.38	6.13	6.27	5.61	5.89	5.42	5.80	6.07	6.70	7.26	7.76
17	---	6.38	6.21	6.28	5.37	5.84	5.54	5.82	6.11	6.72	7.28	7.79
18	---	6.49	6.26	6.29	5.55	5.77	5.71	5.88	6.13	6.73	7.28	7.81
19	---	6.57	6.28	6.32	5.34	5.80	5.77	5.90	6.16	6.74	7.30	7.82
20	---	6.56	6.34	6.31	5.42	5.85	5.79	5.90	6.21	6.75	7.32	7.83
21	---	6.62	6.37	5.93	5.55	5.89	5.78	5.92	6.23	6.76	7.34	7.85
22	---	6.64	6.44	5.92	5.49	5.89	5.82	5.94	6.25	6.78	7.34	7.84
23	---	6.30	6.45	6.02	5.33	5.91	5.84	5.98	6.26	6.80	7.34	7.86
24	---	6.33	6.46	6.08	5.48	5.93	5.87	6.01	6.30	6.82	7.36	7.88
25	---	6.38	6.46	5.58	5.67	5.95	5.89	6.02	6.34	6.84	7.38	7.90
26	---	6.43	6.49	5.51	5.74	5.95	5.90	6.00	6.36	6.86	7.39	7.91
27	---	6.50	6.52	5.71	5.73	5.97	5.92	6.02	6.36	6.88	7.40	7.94
28	---	6.52	6.53	5.82	5.76	5.98	5.93	5.88	6.39	6.90	7.43	7.95
29	---	6.58	6.53	5.85	---	5.95	5.93	5.52	6.41	6.93	7.45	7.96
30	---	6.60	6.52	5.85	---	5.88	5.94	5.62	6.43	6.96	7.48	7.97
31	---	---	6.43	5.89	---	5.73	---	5.77	---	6.99	7.52	---

WTR YR 1990 MEAN 6.36 HIGH 5.27 LOW 7.97

## GROUND WATER LEVELS

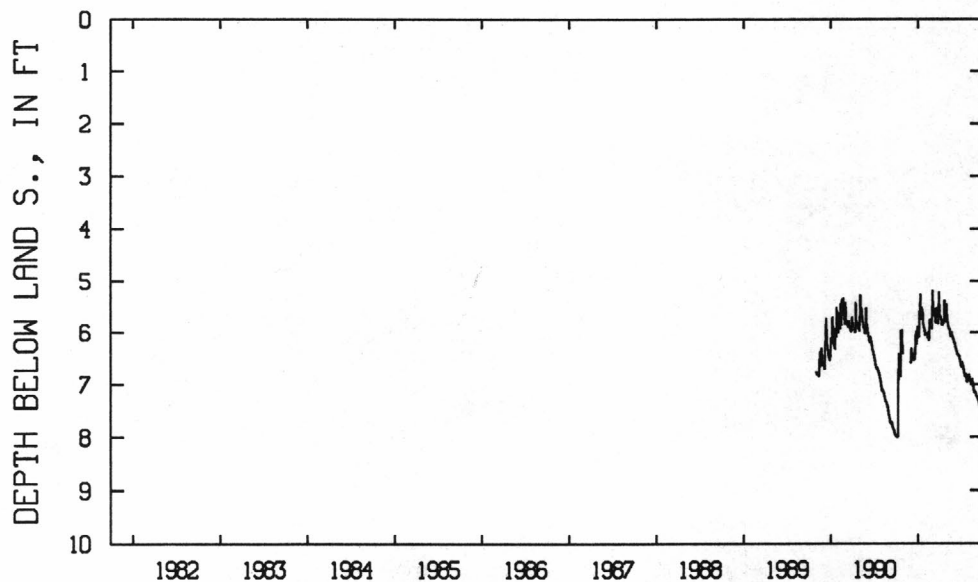
## ROWAN COUNTY--Continued

354057080362601. Local number, NC-193; DEHNR well L63t1.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.97	---	6.59	5.92	6.06	5.93	5.50	5.47	6.18	6.65	6.84	7.18
2	7.97	---	6.58	5.99	6.04	5.71	5.60	5.62	6.21	6.67	6.83	7.20
3	7.98	---	6.53	5.09	6.02	5.39	5.67	5.69	6.21	6.67	6.81	7.22
4	7.99	---	6.32	6.08	6.03	5.19	5.69	5.75	6.22	6.57	6.85	7.22
5	7.97	---	6.32	6.06	6.04	5.41	5.69	5.79	6.25	6.58	6.89	7.23
6	7.97	---	6.36	6.09	6.04	5.49	5.70	5.79	6.28	6.60	6.92	7.25
7	7.99	---	6.41	5.89	6.01	5.61	5.72	5.86	6.29	6.62	6.94	7.25
8	7.99	---	6.43	5.58	6.03	5.64	5.74	5.88	6.30	6.65	6.94	7.26
9	8.00	---	6.48	5.62	6.04	5.54	5.75	5.89	6.32	6.65	6.94	7.28
10	7.95	---	6.48	5.75	6.06	5.60	5.77	5.90	6.34	6.68	6.97	7.30
11	7.33	---	6.50	5.44	6.09	5.66	5.84	5.92	6.35	6.71	6.99	7.30
12	6.87	---	6.50	5.26	6.10	5.69	5.86	5.93	6.37	6.73	7.00	7.33
13	6.41	---	6.51	5.51	6.04	5.67	5.85	5.94	6.39	6.75	6.99	7.34
14	6.54	---	6.55	5.65	5.99	5.70	5.81	5.95	6.41	6.79	6.97	7.36
15	6.66	---	6.52	5.73	6.08	5.77	5.78	5.99	6.42	6.83	6.89	7.38
16	6.75	---	6.51	5.51	6.16	5.81	5.79	6.02	6.43	6.85	6.92	7.40
17	6.79	---	6.53	5.60	6.12	5.79	5.81	6.03	6.43	6.82	6.95	7.42
18	6.77	---	6.49	5.71	5.95	5.57	5.83	6.05	6.44	6.80	6.97	7.43
19	6.80	---	6.51	5.76	5.76	5.53	5.83	6.08	6.46	6.80	7.00	7.45
20	6.83	---	6.52	5.55	5.76	5.62	5.72	6.05	6.44	6.82	7.03	7.43
21	6.85	---	6.17	5.58	5.75	5.68	5.41	5.99	6.45	6.84	7.06	7.43
22	6.77	---	6.08	5.71	5.76	5.72	5.38	6.00	6.45	6.87	7.08	7.43
23	5.96	---	6.08	5.78	5.84	5.74	5.33	6.03	6.46	6.89	7.10	7.43
24	6.10	---	5.97	5.83	5.85	5.77	5.63	6.05	6.51	6.93	7.13	7.43
25	6.15	---	6.06	5.88	5.86	5.83	5.72	6.07	6.52	6.96	7.15	7.37
26	5.95	---	6.17	5.90	5.87	5.83	5.75	6.08	6.54	6.93	7.16	7.29
27	6.14	---	6.23	5.91	5.89	5.83	5.75	6.11	6.56	6.93	7.16	7.32
28	6.25	---	6.12	5.93	5.93	5.83	5.77	6.13	6.58	6.89	7.16	7.35
29	6.35	---	6.10	5.98	---	5.55	5.80	6.13	6.60	6.84	7.13	7.37
30	6.41	---	6.06	5.95	---	5.21	5.45	6.14	6.62	6.83	7.14	---
31	---	---	5.88	6.02	---	5.39	---	6.16	---	6.82	7.16	---

WTR YR 1991 MEAN 6.35 HIGH 5.19 LOW 8.00



354057080362601 NC-193 (L63,T1) PIEDMONT RS NR BARBER N.C.  
MEAN DAILY DEPTH BELOW LAND S. (FT)

## SCOTLAND COUNTY

345812079313401. Local number, NC-194.

LOCATION.--Lat 34°58'17", long 79°31'41", Hydrologic Unit 03040204, in Sandhills Game Management Area, 0.15 mi west of Secondary Road 1328, 3.4 mi east of Marston, 4.8 mi south of Hoffman, and 6.1 mi southwest of Silver Hill. Owner: U.S. Geological Survey.

AQUIFER.--Unconfined sand of post miocene age.

WELL CHARACTERISTICS.--Drilled observation well, depth 35.6 ft, diameter 4 in., cased to 30.5 ft, screened interval from 30.6 to 35.6 ft. Annular space filled with native clayey sand from 0 to 30 ft below land surface.

INSTRUMENTATION.--Digital recorder with 60-minute punch interval.

DATUM.--Land-surface datum is 433 ft above National Geodetic Vertical Datum of 1929, from topographic map.

Measuring point: Top of casing, 2.93 ft above land-surface datum.

REMARKS.--Well is part of Jordan Creek Acid Precipitation Study site, and serves as a terrain-effects well.

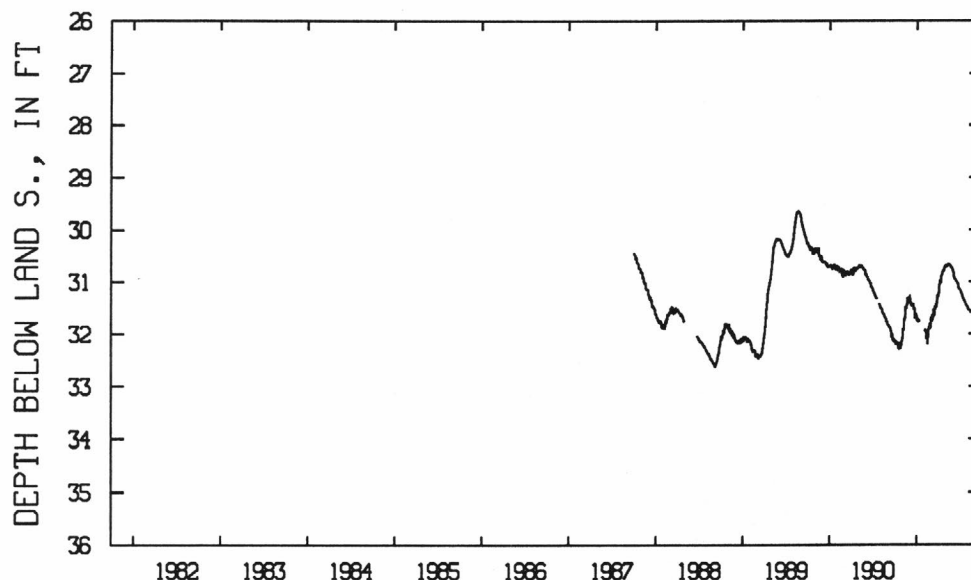
PERIOD OF RECORD.--September 1987 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 29.63 ft below land-surface datum, Aug. 23, 1989; lowest water level recorded, 32.63 ft below land-surface datum, Sept. 7, 1988.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32.13	32.14	31.38	31.70	---	31.78	31.25	30.69	30.79	31.16	31.48	31.43
2	32.16	32.12	31.32	31.69	31.93	31.70	31.27	30.71	30.80	31.16	31.48	31.44
3	32.17	32.05	31.26	31.74	31.93	31.68	31.26	30.72	30.81	31.17	31.50	31.43
4	32.14	31.98	31.30	31.74	31.94	31.68	31.18	30.72	30.83	31.18	31.52	31.40
5	32.17	31.90	31.37	31.75	31.95	31.76	31.10	30.69	30.88	31.19	31.53	31.38
6	32.20	31.94	31.35	31.73	31.95	31.67	31.06	30.67	30.91	31.21	31.54	31.36
7	32.18	31.92	31.40	31.71	31.92	31.64	31.04	30.69	30.92	31.22	31.54	31.34
8	32.17	31.91	31.39	31.76	31.95	31.73	31.01	30.71	30.93	31.23	31.54	31.34
9	32.18	31.78	31.45	31.76	31.96	31.69	30.98	30.70	30.94	31.25	31.54	31.34
10	32.17	31.71	31.41	31.77	31.99	31.69	30.97	30.68	30.96	31.25	31.54	31.32
11	32.16	31.74	31.46	31.73	32.07	31.66	31.01	30.67	30.96	31.27	31.55	31.29
12	32.16	31.67	31.45	31.76	32.09	31.62	31.02	30.67	30.96	31.29	31.55	31.29
13	32.17	31.71	31.43	---	31.96	31.54	30.96	30.66	30.97	31.30	31.56	31.28
14	32.18	31.68	31.48	---	31.94	31.53	30.90	30.66	30.98	31.32	31.56	31.27
15	32.22	31.60	31.44	---	32.05	31.64	30.88	30.67	30.98	31.34	31.57	31.27
16	32.26	31.48	31.45	---	32.19	31.64	30.87	30.67	30.99	31.33	31.58	31.26
17	32.23	31.48	31.47	---	32.06	31.55	30.86	30.67	31.00	31.34	31.59	31.26
18	32.18	31.51	31.41	---	32.00	31.48	30.84	30.68	31.01	31.35	31.57	31.25
19	32.29	31.49	31.50	---	31.94	31.48	30.83	30.69	31.02	31.36	31.57	31.25
20	32.29	31.48	31.53	---	31.92	31.53	30.81	30.69	31.02	31.37	31.57	31.27
21	32.23	31.45	31.51	---	31.91	31.50	30.79	30.69	31.03	31.38	31.59	31.30
22	32.18	31.38	31.51	---	31.87	31.46	30.80	30.69	31.04	31.39	31.58	31.31
23	32.17	31.31	31.50	---	31.86	31.44	30.79	30.70	31.06	31.40	31.57	31.29
24	32.19	31.38	31.58	---	31.84	31.43	30.77	30.71	31.09	31.41	31.56	31.26
25	32.18	31.40	31.68	---	31.81	31.49	30.79	30.71	31.11	31.42	31.54	31.23
26	32.28	31.40	31.71	---	31.84	31.44	30.77	30.73	31.12	31.43	31.53	31.27
27	32.28	31.38	31.69	---	31.90	31.35	30.73	30.73	31.13	31.44	31.51	31.33
28	32.18	31.29	31.66	---	31.86	31.30	30.72	30.74	31.14	31.45	31.48	31.38
29	32.23	31.31	31.64	---	---	31.26	30.71	30.75	31.14	31.45	31.47	31.39
30	32.20	31.41	31.61	---	---	31.28	30.70	30.76	31.15	31.46	31.46	31.37
31	32.13	---	31.66	---	---	31.30	---	30.78	---	31.48	31.44	---

WTR YR 1991 MEAN 31.43 HIGH 30.66 LOW 32.29



345812079313401 (NC-194) JORDAN CRK. NR. SILVER HILL N.C. GW SITE  
MEAN DAILY DEPTH BELOW LAND S. (FT)

## TRANSYLVANIA COUNTY

351808082374302. Local number, NC-144.

LOCATION.--Lat 35°18'08", long 82°37'43", Hydrologic Unit 06010105, at Blantyre, 0.25 mi northwest of U.S. Highway 64 on King Road (Secondary Road 1502). Owner: U.S. Geological Survey.

AQUIFER.--Unconfined saprolite derived from gneiss of Paleozoic age.

WELL CHARACTERISTICS.--Drilled observation well, drilled to 70 ft, diameter 4 in., cased to 58 ft, casing perforated from 15 to 58 ft, gravel packed from 5 to 58 ft, backfilled with gravel and saprolite from 58 to 70 ft.

INSTRUMENTATION.--Digital recorder with 60-minute punch interval.

DATUM.--Land-surface datum is 2,147.11 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 1.30 ft above land-surface datum.

REMARKS.--In September 1984, well replaced nearby NC-127. Well is part of terrane-effects network.

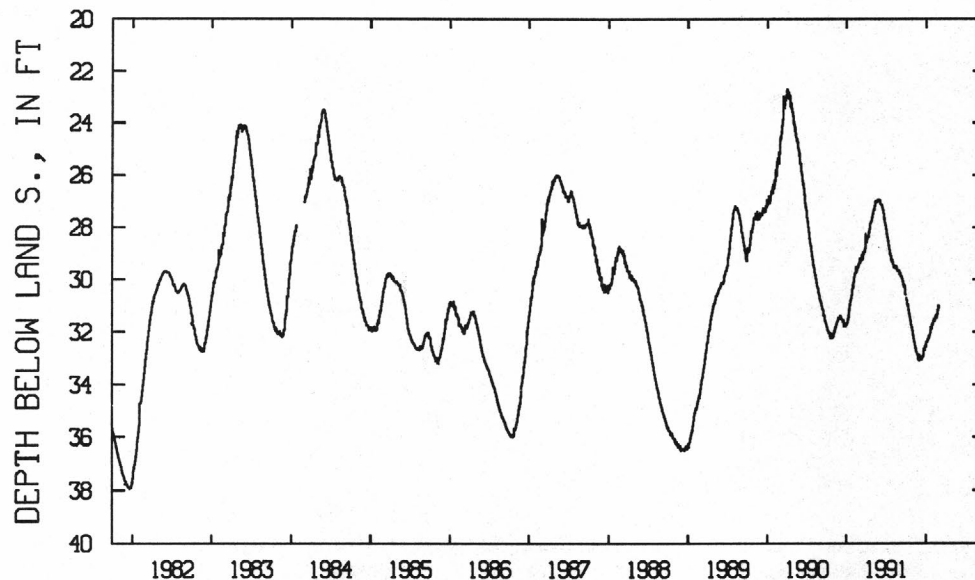
PERIOD OF RECORD.--October 1981 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 22.66 ft below land-surface datum, Apr. 10, 1990; lowest water level recorded, 37.95 ft below land-surface datum, Dec. 23 and 24, 1981.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31.73	32.16	31.47	31.73	30.27	29.35	28.49	27.47	26.97	28.00	29.36	29.73
2	31.79	32.14	31.44	31.65	30.14	29.27	28.53	27.49	26.97	28.05	29.37	29.80
3	31.85	32.10	31.37	31.65	30.06	29.17	28.57	27.41	26.97	28.09	29.41	29.76
4	31.82	32.02	31.43	31.65	29.99	29.32	28.54	27.38	26.97	28.16	29.42	29.71
5	31.91	31.93	31.48	31.61	29.93	29.37	28.46	27.34	27.07	28.23	29.48	29.75
6	31.93	32.02	31.42	31.55	29.87	29.22	28.43	27.29	27.13	28.31	29.54	29.83
7	31.97	31.99	31.44	31.50	29.81	29.28	28.42	27.37	27.14	28.35	29.54	29.85
8	31.97	31.97	31.47	31.53	29.80	29.30	28.37	27.31	27.11	28.38	29.49	29.87
9	31.97	31.86	31.53	31.48	29.75	29.26	28.33	27.23	27.15	28.40	29.45	29.89
10	31.96	31.78	31.49	31.44	29.71	29.26	28.34	27.20	27.16	28.45	29.50	29.88
11	32.04	31.88	31.52	31.24	29.72	29.21	28.39	27.16	27.14	28.51	29.57	29.87
12	31.98	31.80	31.52	31.13	29.69	29.13	28.37	27.08	27.15	28.56	29.56	29.92
13	31.97	31.79	31.52	31.20	29.53	29.03	28.25	27.02	27.21	28.60	29.54	29.95
14	32.03	31.79	31.62	31.16	29.50	29.11	28.18	27.02	27.24	28.68	29.53	29.98
15	32.10	31.74	31.56	31.07	29.64	29.21	28.11	27.06	27.25	28.79	29.56	30.04
16	32.16	31.65	31.60	30.92	29.74	29.21	28.14	27.07	27.26	28.84	29.58	30.06
17	32.15	31.62	31.61	30.99	29.64	29.10	28.05	27.03	27.30	28.84	29.55	30.07
18	32.03	31.62	31.53	30.94	29.62	28.94	27.99	27.04	27.36	28.86	29.50	30.10
19	32.19	31.60	31.72	30.81	29.56	29.04	27.95	27.06	27.43	28.94	29.50	30.14
20	32.23	31.61	31.79	30.72	29.55	29.04	27.86	27.04	27.47	29.02	29.55	30.20
21	32.19	31.59	31.72	30.75	29.53	28.99	27.80	27.01	27.48	29.05	29.62	30.27
22	32.09	31.52	31.72	30.72	29.46	28.97	27.80	26.99	27.51	29.07	29.62	30.29
23	32.06	31.44	31.67	30.66	29.50	28.91	27.80	26.98	27.60	29.08	29.65	30.29
24	32.10	31.49	31.72	30.62	29.47	28.90	27.80	26.97	27.74	29.12	29.68	30.29
25	32.09	31.50	31.76	30.59	29.40	28.95	27.81	26.95	27.76	29.20	29.67	30.21
26	32.22	31.51	31.78	30.48	29.43	28.90	27.73	26.97	27.80	29.27	29.67	30.36
27	32.24	31.49	31.77	30.40	29.45	28.81	27.63	26.99	27.86	29.31	29.66	30.47
28	32.18	31.45	31.73	30.34	29.45	28.78	27.61	27.01	27.90	29.22	29.67	30.55
29	32.21	31.49	31.73	30.34	---	28.24	27.59	26.97	27.91	29.23	29.68	30.58
30	32.19	31.51	31.66	30.20	---	28.26	27.56	26.94	27.94	29.25	29.65	30.58
31	32.17	---	31.74	30.30	---	28.47	---	26.96	---	29.31	29.66	---

WTR YR 1991 MEAN 29.68 HIGH 26.94 LOW 32.24



351808082374302 TR-65 (NC-144) BLANTYRE  
MEAN DAILY DEPTH BELOW LAND S. (FT)

## GROUND-WATER LEVELS

## TRANSYLVANIA COUNTY--Continued

351709082434101. Local number, NC-147

LOCATION.--Lat 35°17'09", long 82°43'41", Hydrologic Unit 06010105, 3.5 mi north of Brevard on U.S. Highway 276, 700 ft northwest of U.S. Forest Service Ranger Station in Pisgah National Forest. Owner: U.S. Geological Survey.

AQUIFER.--Unconfined alluvial sand.

WELL CHARACTERISTICS.--Drilled observation well, drilled to 25 ft, diameter 4 in., cased to 11.6 ft, screened interval from 11.6 to 21.6 ft; measured depth 22.9 ft, June 1985.

INSTRUMENTATION.--Digital recorder with 60-minute punch interval.

DATUM.--Land-surface datum is 2,176.70 ft above National Geodetic Vertical Datum of 1929. Measuring point: Top of casing, 2.24 ft above land-surface datum.

REMARKS.--Well is part of climatic-effects network.

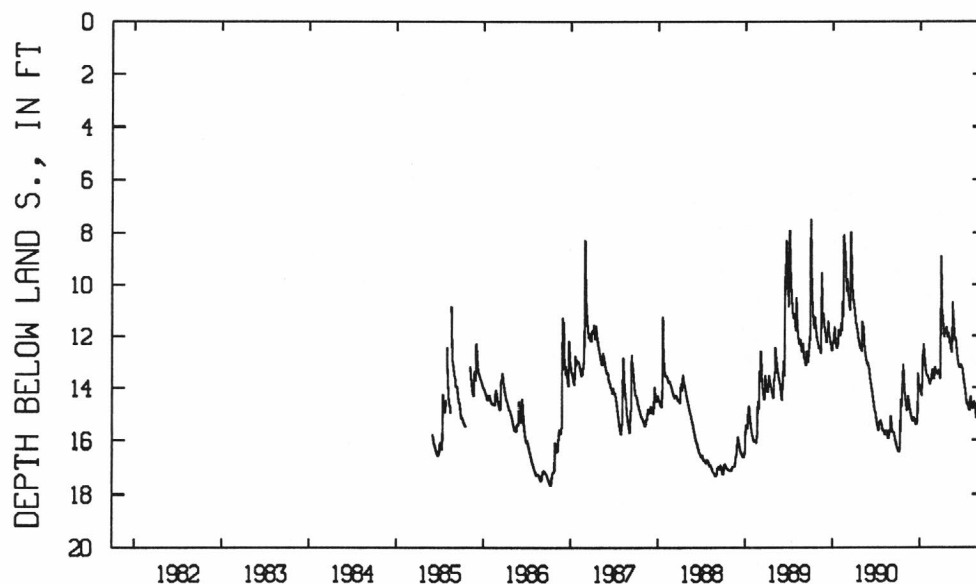
PERIOD OF RECORD.--June 1985 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 7.43 ft below land-surface datum, Oct. 2, 1989; lowest water level recorded, 17.66 ft below land-surface datum, Oct. 8 and 9, 1986.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16.32	14.35	15.24	13.96	13.54	13.65	9.88	11.89	12.16	13.51	14.34	14.71
2	16.34	14.44	15.26	13.99	13.53	13.58	10.45	11.95	12.28	13.59	14.35	14.78
3	16.37	14.53	15.28	14.05	13.53	13.41	10.89	12.07	12.40	13.66	14.45	14.80
4	16.39	14.61	15.23	14.10	13.55	13.26	11.19	12.18	12.53	13.75	14.58	14.84
5	16.39	14.67	15.19	14.15	13.58	13.21	11.31	12.25	12.64	13.81	14.67	14.90
6	16.39	14.73	15.14	14.18	13.62	13.20	11.21	12.27	12.73	13.88	14.70	14.89
7	16.41	14.79	15.13	14.22	13.64	13.24	11.30	12.29	12.80	13.96	14.74	14.83
8	16.40	14.85	15.13	14.26	13.68	13.33	11.45	12.30	12.86	14.02	14.77	14.80
9	16.34	14.88	15.16	14.28	13.73	13.36	11.58	12.30	12.93	14.07	14.79	14.82
10	16.30	14.65	15.18	14.30	13.76	13.35	11.71	12.47	13.01	14.15	14.80	14.87
11	16.21	14.46	15.21	13.86	13.80	13.35	11.86	12.53	13.06	14.23	14.77	14.92
12	16.61	14.34	15.25	12.78	13.85	13.36	11.99	12.57	13.11	14.32	14.74	15.01
13	14.59	14.32	15.28	12.74	13.86	13.36	12.05	12.59	13.15	14.40	14.65	15.10
14	14.43	14.36	15.33	12.89	13.76	13.36	11.95	12.63	13.21	14.49	14.61	15.17
15	14.50	14.42	15.34	13.05	13.67	13.42	11.87	12.66	13.19	14.55	14.54	15.24
16	14.63	14.48	15.36	12.67	13.67	13.47	11.81	12.21	13.19	14.62	14.51	15.30
17	14.76	14.55	15.38	12.32	13.66	13.49	11.83	10.69	13.19	14.63	14.56	15.33
18	14.56	14.62	15.39	12.42	13.65	13.44	11.90	10.84	13.23	14.57	14.64	15.31
19	13.86	14.69	15.39	12.57	13.56	13.35	11.90	11.11	13.17	14.58	14.69	15.12
20	13.83	14.75	15.36	12.69	13.47	13.32	11.68	11.19	13.13	14.63	14.78	14.93
21	13.99	14.82	15.28	12.81	13.35	13.32	11.67	11.30	13.11	14.68	14.86	14.84
22	14.11	14.86	15.18	12.94	13.29	13.37	11.67	11.43	13.12	14.69	14.94	14.81
23	13.39	14.89	14.97	13.04	13.31	13.42	11.68	11.57	13.16	14.73	15.02	14.92
24	13.09	14.96	13.63	13.13	13.36	13.47	11.73	11.71	13.21	14.79	15.11	15.03
25	13.27	15.02	13.43	13.22	13.40	13.54	11.87	11.85	13.23	14.82	15.17	15.02
26	13.50	15.07	13.58	13.29	13.46	13.59	11.97	11.98	13.24	14.85	15.04	15.02
27	13.71	15.11	13.75	13.35	13.54	13.62	12.04	12.09	13.24	14.86	14.77	15.06
28	13.86	15.14	13.88	13.39	13.61	13.64	12.04	12.16	13.27	14.73	14.62	15.11
29	14.01	15.18	13.91	13.47	---	11.80	12.03	12.13	13.36	14.56	14.55	15.16
30	14.13	15.21	13.90	13.50	---	8.90	11.96	12.07	13.44	14.46	14.55	15.21
31	14.24	---	13.93	13.51	---	9.30	---	12.07	---	14.37	14.61	---

WTR YR 1991 MEAN 13.77 HIGH 8.90 LOW 16.41



351709082434101 TR-66 (NC-147) PISGAH FOREST  
MEAN DAILY DEPTH BELOW LAND S. (FT)

## WASHINGTON COUNTY

**354351076260501.** Local number, NC-156; DEHNR Lake Phelps Research Station well L1311.

LOCATION.--Lat 35°43'51", long 76°26'05", Hydrologic Unit 03010205, on south shore of Lake Phelps, south of Secondary Road 1126 on Secondary Road 1183. Owner: DEHNR (North Carolina Department of Environment, Health, and Natural Resources).

AQUIFER.--Castle Hayne aquifer of Oligocene and Eocene age.

WELL CHARACTERISTICS.--Drilled observation well, drilled to 510 ft, diameter 6 in., cased to 390 ft, open hole to 510 ft.

INSTRUMENTATION.--Measured periodically with steel tape.

DATUM.--Land-surface datum is 16.15 ft above National Geodetic Vertical Datum of 1929 (levels by DEHNR).

Measuring point: Top of instrument shelf, 2.47 ft above land-surface datum - revised from 2.60 ft above land-surface datum, October 1987.

REMARKS.--Well is part of areal-effects network.

PERIOD OF RECORD.--August 1977 to current year. Continuous record November 1986 to November 1990. Records from August 1977 to September 1986 are unpublished and available in the files of the Groundwater Section, DEHNR.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 13.14 ft below land-surface datum, May 16, 1978; lowest water level recorded, 16.29 ft below land-surface datum, Oct. 14, 1988.

REVISIONS.--Water-level mean values and extremes for period of record published in Water Resources Data, North Carolina, NC-87-1, should be adjusted by +0.13 ft.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	15.95	15.59	---	---	---	---	---	---	---	---	---	---
10	15.89	15.35	---	---	---	---	---	---	---	---	---	---
15	15.85	15.73	---	---	---	---	---	---	---	---	---	---
20	16.01	---	---	---	---	---	---	---	---	---	---	---
25	15.65	---	---	---	---	---	---	---	---	---	---	---
EOM	15.81	---	---	---	---	---	---	---	---	---	---	---

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JAN 17	15.00	MAR 1	15.06	APR 12	14.96	MAY 31	14.87	JUL 12	15.76	AUG 23	15.83

**354351076260502.** Local number, NC-157; DEHNR Lake Phelps Research Station well L1312.

LOCATION.--Lat 35°43'51", long 76°26'05", Hydrologic Unit 03010205, on south shore of Lake Phelps, south of Secondary Road 1126 on Secondary Road 1183. Owner: DEHNR (North Carolina Department of Environment, Health, and Natural Resources).

AQUIFER.--Yorktown aquifer of Pliocene and Miocene age.

WELL CHARACTERISTICS.--Drilled observation well, drilled to 130 ft, diameter 4 in., cased to 110 ft, screened interval from 110 to 120 ft; measured depth 120.2 ft, October 1986.

INSTRUMENTATION.--Measured periodically with steel tape.

DATUM.--Land-surface datum is 16.35 ft above National Geodetic Vertical Datum of 1929 (levels by DEHNR).

Measuring point: Top of instrument shelf, 2.84 ft above land-surface datum - revised from 3.20 ft above land-surface datum, October 1987.

REMARKS.--Well is part of areal-effects network.

PERIOD OF RECORD.--October 1977 to current year. Continuous record November 1986 to November 1990. Records from October 1977 to July 1986 are unpublished and available in the files of the Groundwater Section, DEHNR.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 5.36 ft below land-surface datum, Feb. 20, 1984; lowest water level recorded, 9.35 ft below land-surface datum, Feb. 24, 1981.

REVISIONS.--Water-level mean values and extremes for period of record published in Water Resources Data, North Carolina, NC-87-1, should be adjusted by +0.36 ft.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	6.81	6.84	---	---	---	---	---	---	---	---	---	---
10	6.90	6.64	---	---	---	---	---	---	---	---	---	---
15	6.99	6.75	---	---	---	---	---	---	---	---	---	---
20	7.16	---	---	---	---	---	---	---	---	---	---	---
25	7.03	---	---	---	---	---	---	---	---	---	---	---
EOM	7.00	---	---	---	---	---	---	---	---	---	---	---

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JAN 17	6.27	MAR 1	6.41	APR 12	6.22	MAY 31	6.52	JUL 12	6.72	AUG 23	5.92

## WASHINGTON COUNTY--Continued

354418076463601. Local number, NC-158.

LOCATION.--Lat 35°44'18", long 76°46'36", Hydrologic Unit 03020104, 2.4 mi west of State Highway 32 on Secondary

Road 1101. Owner: U.S. Geological Survey.

AQUIFER.--Surficial aquifer of post-Miocene age.

WELL CHARACTERISTICS.--Drilled observation well, drilled to 15 ft, diameter 4 in., cased to 10 ft, screened interval from 10 to 15 ft.

INSTRUMENTATION.--Digital recorder with 60-minute punch interval.

DATUM.--Land-surface datum is 35 ft above National Geodetic Vertical Datum of 1929 (from topographic map).

Measuring point: Top of instrument shelf, 2.49 ft above land-surface datum.

REMARKS.--Well is part of climatic-effects network.

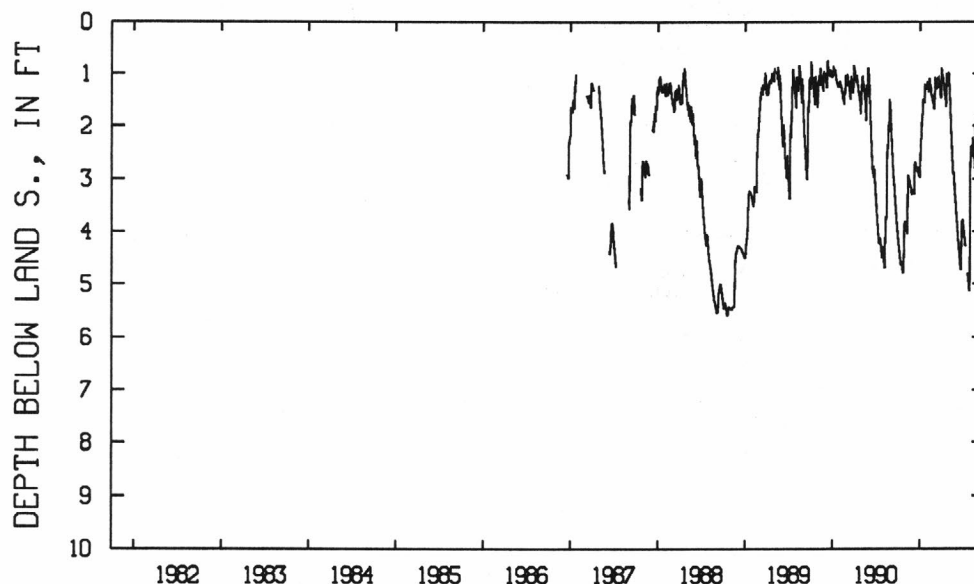
PERIOD OF RECORD.--December 1986 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 0.72 ft below land-surface datum, Dec. 9 and 10, 1989; lowest water level recorded, 5.60 ft below land-surface datum, Oct. 18 and 19, 1988.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.11	3.83	3.23	2.98	1.19	1.69	.93	1.07	3.64	3.94	2.41	2.31
2	4.16	3.85	3.23	2.85	1.24	1.56	.97	1.15	3.71	3.98	2.40	2.42
3	4.21	3.87	3.24	2.49	1.27	1.29	1.01	1.25	3.78	4.00	2.37	2.53
4	4.26	3.90	3.23	2.35	1.30	1.07	1.04	1.36	3.84	4.04	2.39	2.63
5	4.30	3.92	3.25	2.27	1.34	1.09	1.07	1.45	3.91	4.08	2.47	2.74
6	4.34	3.94	3.27	2.24	1.36	1.14	1.08	1.54	3.98	4.13	2.58	2.83
7	4.39	3.98	3.29	2.22	1.33	1.16	1.11	1.67	4.04	4.18	2.57	2.55
8	4.44	4.01	3.18	2.01	1.12	1.19	1.15	1.81	4.10	4.23	2.22	2.53
9	4.48	4.05	2.85	1.80	1.09	1.20	1.19	1.95	4.17	4.28	2.25	2.65
10	4.53	3.69	2.72	1.79	1.14	1.22	1.23	2.05	4.23	---	2.33	2.77
11	4.57	3.08	2.69	1.80	1.18	1.26	1.30	2.16	4.29	---	2.43	2.87
12	4.62	2.95	2.59	1.59	1.23	1.30	1.36	2.26	4.35	---	2.54	2.97
13	4.65	2.94	2.70	1.49	1.26	1.30	1.27	2.36	4.40	---	2.53	3.06
14	4.62	2.96	2.74	1.51	1.25	1.10	1.41	2.46	4.46	---	2.59	3.13
15	4.57	2.99	2.77	1.54	1.29	1.09	1.42	2.55	4.52	---	2.63	3.21
16	4.57	3.00	2.77	1.52	1.36	1.15	1.45	2.65	4.58	---	2.70	3.28
17	4.60	3.00	2.80	1.48	1.41	1.19	1.51	2.73	4.63	---	2.80	3.36
18	4.64	3.02	2.81	1.53	1.43	1.17	1.57	2.82	4.69	4.80	2.81	3.43
19	4.68	3.06	2.82	1.57	1.44	1.05	1.64	2.91	4.72	4.83	2.60	3.41
20	4.73	3.09	2.86	1.38	1.45	1.08	1.45	2.93	4.73	4.87	2.05	3.41
21	4.76	3.13	2.87	1.20	1.48	1.14	1.03	2.87	4.50	4.91	1.81	3.39
22	4.79	3.15	2.81	1.24	1.51	1.18	1.00	2.91	4.35	4.96	1.85	3.44
23	4.78	3.15	2.78	1.28	1.54	1.18	1.04	2.91	4.21	5.00	1.92	3.50
24	4.62	3.17	2.78	1.31	1.57	1.22	1.08	3.10	3.88	5.05	1.91	3.55
25	4.54	3.21	2.85	1.24	1.57	1.33	1.14	3.17	3.81	5.10	1.92	3.55
26	4.37	3.25	2.90	1.24	1.59	1.39	1.20	3.25	3.81	5.13	1.95	3.41
27	4.02	3.28	2.94	1.28	1.62	1.44	1.25	3.32	3.79	4.97	1.74	3.28
28	3.87	3.30	2.95	1.29	1.66	1.47	1.19	3.38	3.79	3.74	1.81	3.31
29	3.82	3.30	2.95	1.29	---	1.47	.97	3.43	3.82	2.93	1.93	3.38
30	3.81	3.24	2.94	1.28	---	.99	1.00	3.49	3.87	2.67	2.05	3.45
31	3.82	---	2.94	1.15	---	.89	---	3.56	---	2.48	2.17	---

WTR YR 1991 MEAN 2.68 HIGH .89 LOW 5.13



354418076463601 WS- (NC-158) VN SWMP1  
MEAN DAILY DEPTH BELOW LAND S. (FT), ADR

## GROUND-WATER LEVELS

## WAYNE COUNTY

351849078163901. Local number, NC-148.

LOCATION.--Lat 35°18'49", long 78°16'39", Hydrologic Unit 03020201, 6 mi west of Grantham, 0.5 mi south of Johnston County line on Secondary Road 1009. Owner: U.S. Geological Survey.

AQUIFER.--Surficial aquifer of post-Miocene age.

WELL CHARACTERISTICS.--Bored observation well, augered to 10.4 ft, diameter 3 in., cased to 5.4 ft, screened interval from 5.4 to 10.4 ft.

INSTRUMENTATION.--Digital recorder with 60-minute punch interval.

DATUM.--Land-surface datum is 190 ft above National Geodetic Vertical Datum of 1929 (from topographic map).

Measuring point: File cut on top of casing, 1.80 ft above land-surface datum.

REMARKS.--Well is part of climatic-effects network.

PERIOD OF RECORD.--February 1980 to current year. Records for June 17 to Sept. 30, 1987, published in

Water Resources Data, North Carolina, NC-87-1, are unreliable and should not be used.

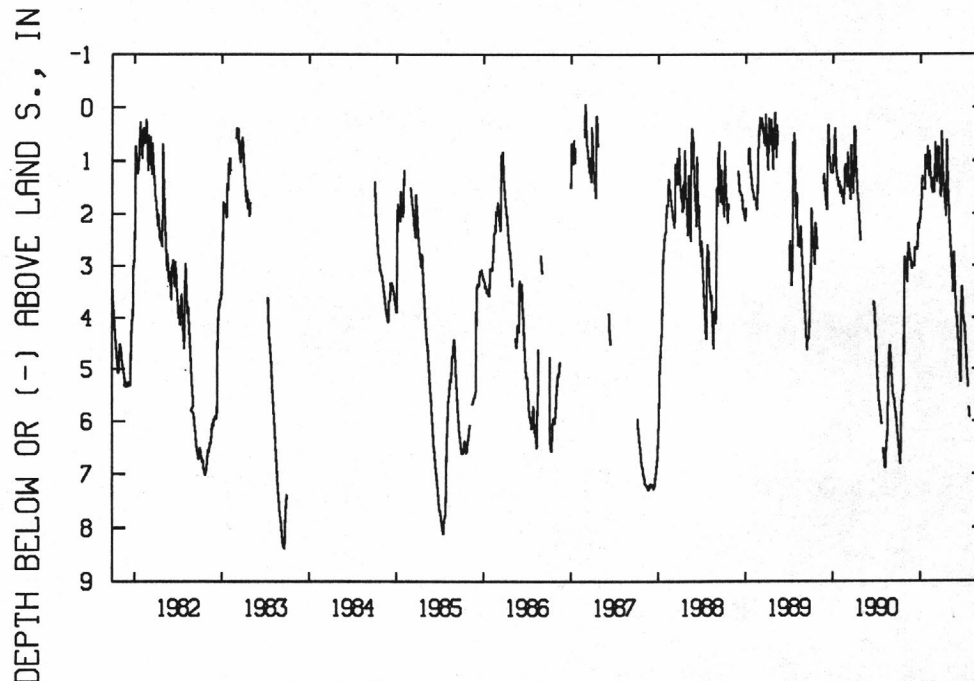
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 0.04 ft above land-surface datum, May 2, 1989; lowest water level recorded, 8.40 ft below land-surface datum, Sept. 19 and 20, 1983.

REVISED RECORD.--See PERIOD OF RECORD.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.33	2.94	2.95	2.12	.84	1.60	.67	1.95	3.90	4.05	---	2.06
2	6.39	3.00	2.95	2.02	.97	1.28	.83	2.07	3.98	4.07	---	2.16
3	6.44	3.05	2.95	1.88	1.06	.95	.97	2.20	4.01	4.08	---	2.28
4	6.50	3.10	2.95	1.80	1.15	.65	1.07	2.31	3.97	4.08	---	2.40
5	6.55	3.14	2.98	1.74	1.24	.80	1.15	2.40	4.06	4.10	---	2.52
6	6.61	3.18	3.00	1.74	1.30	.94	1.22	2.44	4.15	4.13	---	2.64
7	6.65	3.23	3.01	1.70	1.09	1.02	1.31	2.53	4.23	4.18	---	2.74
8	6.69	3.29	2.95	1.38	.81	1.15	1.40	2.63	4.31	4.25	---	2.83
9	6.74	3.32	2.71	1.29	.90	1.22	1.47	2.72	4.40	4.34	---	2.95
10	6.79	3.00	2.65	---	1.03	1.28	1.54	2.77	4.50	4.45	---	3.05
11	6.81	2.61	2.65	---	1.15	1.35	1.64	2.84	4.60	4.54	---	3.15
12	6.59	2.56	2.66	---	1.26	1.41	1.73	2.92	4.69	4.60	---	3.15
13	6.25	2.57	2.66	---	1.31	1.29	1.78	3.00	4.79	4.66	---	3.17
14	5.99	2.62	2.68	---	1.32	.74	1.80	3.07	4.88	4.79	---	3.27
15	5.83	2.65	2.69	---	1.38	.73	1.81	3.16	4.96	4.92	---	3.37
16	5.74	2.68	2.66	---	1.46	.92	1.86	3.25	5.04	4.99	---	3.46
17	5.66	2.71	2.66	---	1.51	1.05	1.94	3.32	5.12	5.04	---	3.55
18	5.59	2.74	2.65	1.50	1.54	.95	2.00	3.43	5.17	5.11	---	3.65
19	5.55	2.77	2.66	1.55	1.54	.74	2.05	3.51	5.23	5.19	---	3.75
20	5.51	2.81	2.70	1.13	1.55	.92	1.12	3.09	5.25	5.27	---	2.98
21	5.47	2.85	2.45	.90	1.58	1.11	.60	2.75	5.02	5.35	2.48	2.53
22	5.45	2.88	2.26	1.01	1.60	1.25	.75	2.74	3.97	---	2.57	2.62
23	5.41	2.89	2.20	1.11	1.61	1.34	.95	2.85	3.52	---	2.67	2.72
24	5.25	2.91	2.19	1.15	1.53	1.44	1.11	2.98	3.41	5.73	2.68	2.72
25	4.92	2.96	2.25	.89	1.32	1.54	1.31	3.10	3.41	5.78	2.23	2.38
26	3.99	3.01	2.26	.91	1.33	1.61	1.45	3.23	3.46	5.85	2.15	1.84
27	2.94	3.04	2.29	1.00	1.43	1.67	1.55	3.34	3.55	5.90	1.51	1.89
28	2.83	3.06	2.21	1.07	1.54	1.69	1.64	3.45	3.68	5.92	1.34	2.06
29	2.83	3.03	2.13	1.17	---	1.59	1.75	3.56	3.80	5.92	1.49	2.21
30	2.86	2.97	2.10	1.12	---	.45	1.85	3.68	3.93	---	1.70	2.35
31	2.90	---	2.08	.73	---	.51	---	3.80	---	---	1.90	---

WTR YR 1991 MEAN 2.82 HIGH .45 LOW 6.81



351849078163901 WA- (NC-148) GRANTHAM  
MEAN DAILY DEPTH BELOW LAND S. (FT)

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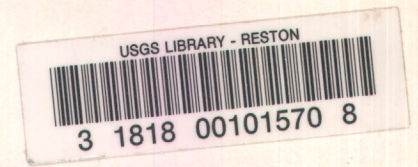
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## FACTORS FOR CONVERTING INCH-POUND UNITS TO INTERNATIONAL SYSTEM UNITS (SI)

The following factors may be used to convert the inch-pound units published herein to the International System of Units (SI).

Multiply inch-pound units	By	To obtain SI units
<i>Length</i>		
inches (in)	$2.54 \times 10^1$	millimeters (mm)
	$2.54 \times 10^{-2}$	meters (m)
feet (ft)	$3.048 \times 10^{-1}$	meters (m)
miles (mi)	$1.609 \times 10^0$	kilometers (km)
<i>Area</i>		
acres	$4.047 \times 10^3$	square meters (m <sup>2</sup> )
	$4.047 \times 10^{-1}$	square hectometers (hm <sup>2</sup> )
	$4.047 \times 10^{-3}$	square kilometers (km <sup>2</sup> )
square miles (mi <sup>2</sup> )	$2.590 \times 10^0$	square kilometers (km <sup>2</sup> )
<i>Volume</i>		
gallons (gal)	$3.785 \times 10^0$	liters (L)
	$3.785 \times 10^0$	cubic decimeters (dm <sup>3</sup> )
	$3.785 \times 10^{-3}$	cubic meters (m <sup>3</sup> )
million gallons	$3.785 \times 10^3$	cubic meters (m <sup>3</sup> )
	$3.785 \times 10^{-3}$	cubic hectometers (hm <sup>3</sup> )
cubic feet (ft <sup>3</sup> )	$2.832 \times 10^1$	cubic decimeters (dm <sup>3</sup> )
	$2.832 \times 10^{-2}$	cubic meters (m <sup>3</sup> )
cfs-days	$2.447 \times 10^3$	cubic meters (m <sup>3</sup> )
	$2.447 \times 10^{-3}$	cubic hectometers (hm <sup>3</sup> )
acre-feet (acre-ft)	$1.233 \times 10^3$	cubic meters (m <sup>3</sup> )
	$1.233 \times 10^{-3}$	cubic hectometers (hm <sup>3</sup> )
	$1.233 \times 10^{-6}$	cubic kilometers (km <sup>3</sup> )
<i>Flow</i>		
cubic feet per second (ft <sup>3</sup> /s)	$2.832 \times 10^1$	liters per second (L/s)
	$2.832 \times 10^1$	cubic decimeters per second (dm <sup>3</sup> /s)
	$2.832 \times 10^{-2}$	cubic meters per second (m <sup>3</sup> /s)
gallons per minute (gal/min)	$6.309 \times 10^{-2}$	liters per second (L/s)
	$6.309 \times 10^{-2}$	cubic decimeters per second (dm <sup>3</sup> /s)
	$6.309 \times 10^{-5}$	cubic meters per second (m <sup>3</sup> /s)
million gallons per day	$4.381 \times 10^1$	cubic decimeters per second (dm <sup>3</sup> /s)
	$4.381 \times 10^{-2}$	cubic meters per second (m <sup>3</sup> /s)
<i>Mass</i>		
tons (short)	$9.072 \times 10^{-1}$	megagrams (Mg) or metric tons



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