

NEUSE RIVER BASIN REGIONAL COUNCIL

Wayne Center
208 W. Chestnut Street, Goldsboro, NC
(919) 731-1520

OCTOBER 31, 1997

9:00 am Executive Session	Executive Committee
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AGENDA

9:30	Call to Order & Welcome	Chairman Bill Ritchie
9:35	Self-Introductions	All
9:40	Acceptance of Minutes from August 22nd meeting	Chairman Ritchie
9:50	Report on the September 25th Regional Councils "Kick-off" Meeting held in Plymouth, NC	Vice-Chairman Costlow
10:00	Initiatives of the Office of Environmental Education in the Neuse River Basin	Lisa Tolley Office of Env. Education
10:15	Historical & Geological Formation of Subsurface Aquifers in NC's Coastal Plain	Dr. Stanley Riggs East Carolina University
10:45	Groundwater Management in NC's Central Coastal Plain	Nat Wilson NC Division of Water Resources
11:15	BREAK	
11:30	Discussion/Vote on Resolution titled: <u>Rate of Withdrawal of Aquifer Waters in NC</u>	Chairman Ritchie
11:45	Discussion/Vote on Resolution titled: <u>Review to Provide Modernization of Existing Obsolete and Inadequate Sewerage Treatment Facilities</u>	Chairman Ritchie
12:00	Discussion/Vote on Resolution titled: <u>Requesting Action to Properly Dispose of Large Fish Kills</u>	Chairman Ritchie
12:15	New Business: 1- Appointment of NRBRC members to the pending Coordinating Council 2- Quarterly Report 3- Nonpoint Source Teams 4- NC Rivers Assessment Program 5- <i>Imp. Comm. + Coord. mWR issues Resolution</i>	Chairman Ritchie and Vice-Chairman Costlow
12:35	Open Discussion	
12:45	Adjourn	

MINUTES

Neuse River Basin Regional Council October 31, 1997

The Neuse River Regional Council met in Goldsboro on October 31, 1997. In attendance were the following:

Bill Ritchie	*Lisa Tolley
Caroline Parker	*Betty Blades
Terry Rolan	*Sam Holton
Joe Hughes	Margaret Holton
E.T. Iseley	*Nat Wilson
*Joan Giordano	*Cat Shrier
*Guy Stefanski	Sondra Riggs
*Stan Riggs	John Cooke
*Bill Harper	Martin Lebo
*John Dove	*Marion Smith
*Alan Clark	Jim Cummings
Bruce Whitfield	Rick Dove
Norman Ricks	Charles Pittman
*Chester Lowder	

Mrs. Whitfield was unable to attend.

*Denotes visitor or staff.

Chairman Ritchie called the meeting to order. The minutes were approved as received. He introduced Lisa Tolley and Betty Blades from the Office of Environmental Education. Ms. Tolley made a presentation highlighting the initiatives of this office in the Neuse River Basin, especially those initiatives targeted toward adults. Rick Dove thanked the Office of Environmental Education for their work which he feels has been very helpful.

Chairman Ritchie introduced Dr. Stanley Riggs of East Carolina University who made a very informative presentation on the Historical and Geological Formation of Subsurface Aquifers in N.C.'s Central Coastal Plain. This was followed by Nat Wilson and Cat Shrier of NCDWR who made a presentation on Groundwater Management in N.C.'s Central Coastal Plain.

Mr. Ritchie read the draft resolution titled "Rate of Withdrawal of Aquifer Waters in N.C." Mr. Roland moved we add Pee Dee, Black Creek, and Upper Cape Fear aquifers to the draft. Motion seconded by Mrs. Holton, and subsequently passed. The entire resolution with additions then passed.

Mr. Ritchie read the resolution entitled "Review to Provide Modernization of Existing Obsolete and Inadequate Sewerage Treatment Facilities." Mr. Isley moved its adoption, Rick Dove seconded the motion. Mr. Roland questioned the need for the resolution. Mr. Roland moved to table this resolution until our next scheduled meeting. Mr.

Pittman seconded this motion which then passed. Mr. Roland then moved we have a speaker on this subject. Mr. Hughes seconded this motion which then passed.

Chairman Ritchie read the motion entitled "A Resolution by the Neuse River Basin Regional Council Requesting Action to Properly Dispose of Large Fish Kills." Rick Dove moved the adoption of this resolution. Norman Ricks seconded the motion. It was suggested that the phrase "a smaller number of attacks" be deleted, and that "such as" be inserted between "waterways" and the word "by." After both of these changes the motion passed.

Under new business Mr. Ritchie read a draft resolution requesting that The Secretary of NCDENR provide all River Basin Regional Councils with an organizational chart which identifies all State bodies responsible for issues relating to water quality. The resolution also calls for additional specific information relative to responsibilities and relationships. Discussion followed as to whether the resolution will get all information desired. The draft resolution will be discussed at our next regularly scheduled meeting.

Mrs. Holton gave a legislative update and distributed copies of her report concerning HB 515 and Budget Bill S 352.

Mr. Ritchie announced we will all receive copies of our revised by laws. The revisions are due to changes in the executive order. He also reminded the members that they need to make quarterly reports to their various appointing bodies. He explained that we need to appoint our three representatives to the Basin Coordinating Council.

The executive committee will meet in November. The full council will not meet again until January 30th.

Caroline Parker
Secretary

John D. Costlow

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Beaufort, N.C. 28516

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DRAFT

RESOLUTION: RATE OF WITHDRAWAL OF AQUIFER WATERS IN N.C.

WHEREAS, development throughout North Carolina over the past two decades has resulted in significant increases in population, industry, agriculture, and tourism; and

WHEREAS, virtually all of these expanded developments have increased the demand for and use of potable water from both surface and subsurface sources (aquifers); and

WHEREAS, significant and documented contamination of surface waters throughout North Carolina have necessitated increased dependence and utilization of potable water taken from the relatively uncontaminated subsurface waters (aquifers); and

WHEREAS, the increased utilization of subsurface potable waters has resulted in a withdrawal rate which is estimated to exceed the rate by which the waters within the subsurface aquifers are being replaced; and

WHEREAS, It has been demonstrated that a reduction in volume (pressure) within the subsurface (aquifer) waters within coastal areas can result in the intrusion of salt water into the aquifer; and

WHEREAS, any significant reduction of volume and/or intrusion of salt water into subsurface waters (aquifers) would result in its unsuitability for virtually all societal uses;

NOW, THEREFORE, It is:

RESOLVED, that the Neuse River Basin Regional Council requests the Office of the Governor charge the N.C. Board of Science and Technology, or any other qualified body within North Carolina, to conduct a study of the rate at which the potable waters of the subsurface aquifers within North Carolina are being depleted and, with special reference to the Castle Haynes Aquifer, determine the degree to which this reduction in level/pressure poses the threat of salt water intrusion in the coastal areas.

FURTHER RESOLVED, that if the findings of the proposed study indicate that the continuing and expanded dependence upon the aquifers as sources of potable water throughout North Carolina will result in reducing the future availability of these waters, regulatory measures be instituted to prevent further reduction, especially in coastal areas in which it can be demonstrated that such reduction will result in salt water intrusion into the Castle Haynes Aquifer.

John D. Costlow

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DRAFT

**RESOLUTION: REVIEW TO PROVIDE MODERNIZATION OF EXISTING
OBSOLETE AND INADEQUATE SEWERAGE TREATMENT FACILITIES**

WHEREAS, development throughout North Carolina over the past two decades has resulted in significant increases in population, industry, agriculture, and tourism; and

WHEREAS, many of these increases have resulted in significant increases in the generation of sewerage, both human and that derived from large animal factories; and

WHEREAS, inadequate and obsolete treatment facilities, combined with technical problems and such natural disasters as floods and hurricanes, have resulted in the accidental discharge of untreated human and other animal sewerage into wetlands, tributaries and major rivers throughout North Carolina; and

WHEREAS, direct discharges of untreated human and other animal wastes into the public trust waters of North Carolina have been demonstrated to contribute to excessive nutrients, as well as potentially hazardous materials which constitute a threat to human health as well as natural, renewal resources including fisheries; and

WHEREAS, scientific evidence indicates that the presence of excessive nutrients resulting from the direct discharge of untreated sewerage from all animal sources contributes to both noxious algal blooms and the proliferation of the uni-cellular organism identified as *Pfiesteria*; and

WHEREAS, *Pfiesteria* has been demonstrated to constitute a threat to human health as well as both estuarine and marine fisheries; and,

WHEREAS, consideration needs to be given immediately to the replacement of existing inadequate and obsolete sewerage treatment facilities with systems which will utilize the most modern concepts and technology available in the interest of reducing the discharge of excessive nutrients and materials hazardous to human health,

NOW, THEREFORE, It is:

RESOLVED, that the Neuse River Basin Regional Council requests the Office of the Governor charge the N.C. Board of Science and Technology, or any other qualified body within North Carolina, to conduct a review of new and innovative sewerage treatment facilities and provide recommendations as to specific facilities which are deemed appropriate for both treatment of human sewerage and the treatment of the wastes generated from large, animal factories.

DRAFT

A RESOLUTION BY THE NEUSE RIVER BASIN ADVISORY COUNCIL REQUESTING ACTION TO PROPERLY DISPOSE OF LARGE FISH KILLS

Whereas; the Neuse River has been plagued and continues to be plagued by problems of nutrient pollution, algal blooms, fish kills and pfiesteria out breaks, and

Whereas; considerable action has been taken towards reducing the amounts of nitrogen and phosphorous being poured into our rivers and streams, the pollution generated by large fish kills has received no such attention, and

Whereas: each year thousands and thousands of fish are killed due to a lack of oxygen in the water and a smaller number by attacks of the organism pfiesteria; and

Whereas; these small fish, which were once caught for fertilizer, decay and deposit tons of nitrogen pollution in the river where they die , and

Whereas; the State Department of Transportation cleans up and disposes of tons of road kill each year, no counterpart exists for the state's public waterways, be it therefore

Resolved by The Neuse River Basin Advisory Council that it request that the State of North Carolina address its responsibility for the clean up of its navigable waterways by contracting with fisherman to pick up these fish kills for disposal in a safe and environmentally sound manner. Such action would send a clear message that the state is truly concerned about the condition of its waterways and the health of its citizens.

THE CLEAN WATER RESPONSIBILITY ACT/ENVIRONMENTALLY SOUND POLICY ACT was pushed by Reps. Richard Morgan, R-Moore, and Cindy Watson, R-Duplin and Sens. Marc Basnight, D-Dare, and Beverly Purdue, D-Craven, and was signed into law by Gov. Jim Hunt on Aug. 27, 1997. Key points include: a two-year moratorium on issuance of permits for new or expanded swine operations; provides that counties may adopt zoning regulations that govern large swine farms of 2400 or more hogs effective March 1, 1997; mandates that NCSU report on animal operations odor control technology by Sept. 1, 1998.

- * Provides for priority ranking of applications for loans and grants from the Clean Water Revolving Loan and Grant Fund.
- * Limits existing wastewater discharges greater than 500,000 gal. per day into nutrient sensitive waters of 5.5 mgs. per liter of Nitrogen. New dischargers must meet limit regardless of size.
- * Limits existing dischargers greater than 500,000 gpd into nutrient sensitive waters where phosphorus is the nutrient of concern of 2 mg. per liter of phosphorus. New dischargers must meet limit regardless of size.
- * Provides that the EMC shall develop a statewide stormwater control plan to protect surface waters where stormwater is a major polluter. Mandates that the Department of Transportation "work diligently" with the NC Division of Water Quality(DWQ) to develop, by Oct. 1, 1997. an NPDES stormwater permit to cover all its programs.
- * Mandates that the EMC prioritize impaired waters and develop Total Maximum Daily Loads (TMDLs) for polluters of impaired waters in accordance with federal law.
- * Mandates that the EMC shall develop and implement basinwide water management plans for each of the 17 major river basins in the state.
- * Amends laws governing of swine operations, including prohibition of construction of animal waste management systems in 100 year floodplains, and requires siting 500 ft. from any well supplying drinking water.

OTHER LEGISLATION:

under the Budget Bill S352

Most agencies dealing with Health Services are transferred to a new Department of Health and Human Services (DHHS). All agencies dealing with environment and natural resources are transferred to a new Department of Environment and Natural Resources(DENR). A Division of Environmental Health is created within DENR and all the functions of the former division of the same name are transferred to it, including wastewater and public water supply. On-site wastewater and drinking water programs MAY NOT be merged into the Division of Water Quality, and the Environmental Review Commission is to study appropriate responsibilities relating to various water programs. Radiation Protection is transferred from Human Resources to a new Division of Radiation Protection in DENR. A new Division of Waste Management is created to carry out the responsibilities of the former Solid Waste Management Section of the Division of Health Services. The N.C. National Park, Parkway and Forest Development Council is transferred to DENR from the Dept. of Commerce. DENR and the Office of State Budget and Management is to study whether DENR should be split into two departments, one dealing with natural resources and one dealing with environmental protection and regulation.

Water Resources Research Institute News

Public Hearing
Neuse River
Nutrient Sensitive Waters
Management Strategy
October 7, 1997 (Tuesday), 7:00 P.M.

New Bern
Craven County Courthouse
302 Broad Street

Raleigh
State Highway Building Auditorium
11 South Wilmington Street

Help is needed to make comments to strengthen Neuse water quality protections!

The state legislature has taken important initial steps to improve water quality protections on the Neuse River. The laws will only be as strong as the eventual rules and regulations. The Environmental Management Commission, the State's top environmental rule maker, will hold public hearings to help shape the rules governing the Neuse in its Nutrient Sensitive Waters Management Strategy. The goal of the Strategy is to reduce by 30 percent the 1991-1995 average annual load of nitrogen from point and nonpoint sources to the River.

The Neuse River Nutrient Sensitive Waters Strategy must:

1) **REQUIRE AGRICULTURE TO REDUCE RUNOFF BY ADOPTION OF BEST MANAGEMENT PRACTICES (BMPs):** Agricultural pollution accounts for a very large portion of the River's problems. We recommend Option Two as listed in the proposed Strategy. It calls for implementing a range of BMPs that provide buffers between farmlands and waterways. Buffers are known to be among the most effective filters of water running off farms.

Option One should not be adopted. It would create an unproven, complex county based program which is heavily bureaucratic and requires elaborate accounting and significant funding. If funding could be found to implement this option- those funds would come at the expense of programs that directly reduce pollutants into our rivers.

2) **SET LOAD LIMITS FOR POLLUTANTS:** Huge loads of pollutants from wastewater plants, farms, livestock operations, golf courses and urban runoff artificially stimulate the overgrowth of microorganisms responsible for the River's water quality problems. The proposed rules would TRY to reduce pollutant loads by 30%. The Strategy should mandate a 30% reduction. Scientist state the reduction needs to be at least 50%. In fact, the federal Clean Water Act tells states they must set a load limit for nutrients.

3) **REDUCE POLLUTION FROM STORM WATER RUNOFF:** Stormwater runoff is a significant contributor of nutrients in the Neuse. The Strategy must address stormwater issues to be successful. The Strategy must:

- a) add guarantees for the proper operation and maintenance of stormwater facilities;
- b) reenforce and aid in the implementation of the Clean Water Responsibility Act by requiring that the quality of the stormwater comply with state water quality standards;
- c) apply stormwater provisions to the entire basin. Lenoir County is not included in the stormwater strategy. Pamlico, Craven, and Carteret Counties are also not included in the Strategy's list. These rapidly growing coastal counties have stormwater rules that currently focus on fecal coliform. The Strategy's rules must be redesigned to result in a reduction in nutrients contributed directly to the Neuse via stormwater runoff.

Verbal comments should also be submitted in writing at the hearing.

Written comments may be submitted until November 14, 1997 to:

Lin Xu
DENR/Division of Water Quality
Planning Branch
PO Box 29535
Raleigh, NC 27626-0535

Note

For additional questions, please call Laura Lynch, Program Associate
at the North Carolina Coastal Federation (800) 232-6210.

DRAFT

RESOLUTION: Improved Communication and Coordination on Water Quality Issues in NC

WHEREAS: Information on issues of water quality in coastal surface waters was developed during the Albemarle-Pamlico Estuarine Study (APES) and the subsequent Comprehensive Conservation and Management Plan (CCMP); and

WHEREAS: Recommendations within the CCMP were jointly accepted by Governor James Hunt and the US Environmental Protection Agency in November of 1994; and

WHEREAS: Executive Order #75 issued by Governor James Hunt in March of 1995 called for the formation of five River Basin Councils and a Coordinating Council in keeping with the CCMP recommendations; and

WHEREAS: The first of these Councils, the Neuse River Basin Regional Council, was formed in November of 1995 and has worked toward the objectives contained within the CCMP; and

WHEREAS: The remaining four River Basin Councils were organized in Plymouth, September 25, 1997 to continue implementation of the provisions within the CCMP; and

WHEREAS: A number of additional teams and programs have subsequently been initiated within the NC Department of Environment and Natural Resources (NCDENR) to expand on agency and citizen involvement in issues relating to water quality throughout NC;

NOW, THEREFORE, it is:

RESOLVED: The Secretary of the NC Department of Environment and Natural Resources is requested to provide for all River Basin Regional Councils an organizational chart which identified all State bodies responsible for issues relating to water quality.

FURTHER RESOLVED: The organizational chart shall provide names of contacts for each body involved in water quality issues, the focus of their responsibility, and the extent and manner by which they are to communicate and coordinate their activities with other State bodies, including the established River Basin Regional Councils and the Coordinating Council which is to be organized.

Central Coastal Plain Fact Sheet

Background: The Central Coastal Plain (CCP) region of North Carolina includes all or portions of nine counties (Greene, Pitt, Lenoir, Craven, Jones, Onslow, Pender, Wayne, and Duplin). This area has shown marked ground water level drops since the mid-1900s as ground water use has increased dramatically. The rapid lowering of water levels is particularly obvious in the Cretaceous¹ aged aquifers known as the Upper Cape Fear, the Black Creek, and the Peedee. The United States Geological Survey's (USGS) studies for the Regional Aquifer Systems Analysis (RASA) work began in 1978, when the USGS analyzed the aquifer framework and ground water flow in the eastern coastal plain of the United States from New Jersey southward through Georgia.

A cooperative agreement between local governments, USGS, and North Carolina Department of Environment and Natural Resources (NCDENR) funded a more detailed CCP study because of the disturbing water level trends. This CCP study evolved from the RASA work and involved defining the hydrogeological framework of the aquifers, recording historical withdrawals (until 1986) from the ground water system, and modeling the ground water flow through that system.

The ground water model operation was transferred to NCDENR, Division of Water Resources (DWR) in April 1990, after the USGS published their results. The Division published *Central Coastal Plain Ground Water Model Interim Report* in April 1993 which documented the latest model results and discussed uses and limitations of the ground water model. Results of model runs from 1987 to 2010 show the cumulative effect of ground water pumping from the many users in the CCP area and mimic the formation of the existing cones of depression that will continue to grow in depth and scope due to withdrawals from the Cretaceous aquifers.

Present Day: The Division is in the midst of updating the data base of water levels and monitoring wells to track changes to the aquifer system. DWR currently has resources to monitor about 5% of the available wells in the NCDENR well network. However, the available data show the trend of water level declines in this portion of the State, particularly in the area between Kinston, New Bern, and Jacksonville where rates of drawdown can exceed eight feet per year. Water level declines and lack of planning and management efforts have several costly impacts:

- The decline in water levels increase maintenance and energy costs for every system no matter the size;
- Municipalities and other users have found it necessary to install new wells and develop new water sources as water levels have dropped and well interference conflicts have developed;
- Damage to aquifer storage capacity and reduced well yields may result from lowering water levels below the tops of these aquifers (de-watering);
- Water systems with wells near the freshwater-saltwater interface have experienced increased salinity resulting in saltwater treatment requirements or well abandonment; and
- Land subsidence may become an issue as up to eight inches of decline has been observed near Kinston and New Bern between 1935 and 1979. Land subsidence may indicate a reduction in the storage capacity of the aquifer system.

The planned Global Transpark will increase future water supply demands in this region and has stressed the importance of understanding and managing a critical and finite resource. DWR is working closely with many water users to interpret the available hydrogeological data and provide technical and planning assistance.

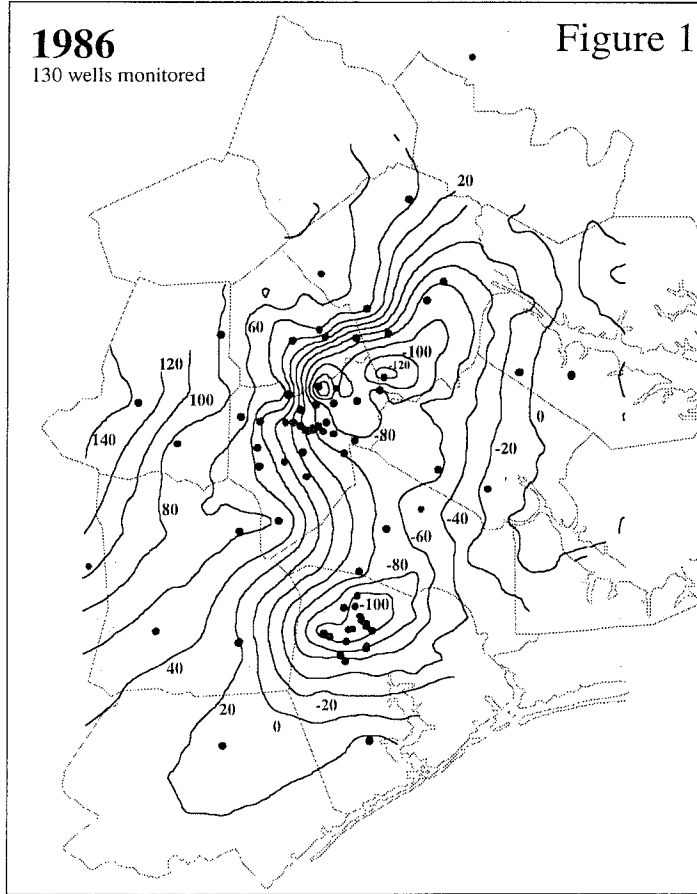
Future Plans: DWR's approach to this situation is to adjust our monitoring well network to more accurately assess the drawdown concerns, gather data from all water users, create a hydrogeological framework of the aquifer system, and develop a computer model for management purposes. If the situation calls for regulation of water use, the Water Use Act will be implemented. In 1998 a complete investigation of water use and aquifer framework mapping and modeling will begin. Until then the following efforts will keep the Environmental Management Commission and general public knowledgeable about this area of concern and how State government might manage it:

- continued monitoring of ground water levels
- chloride sampling of wells near the freshwater-saltwater interface and time-domain electromagnetic surveying across that interface to determine location
- collaborative efforts with the NC Geodetic Survey to determine the extent of land subsidence since 1979
- encouragement of cooperative planning and management efforts at the local and regional levels
- provision of technical assistance on effective use of ground water resources and avoidance of water use conflicts
- review and possible rewrite of the Water Use Act of 1967

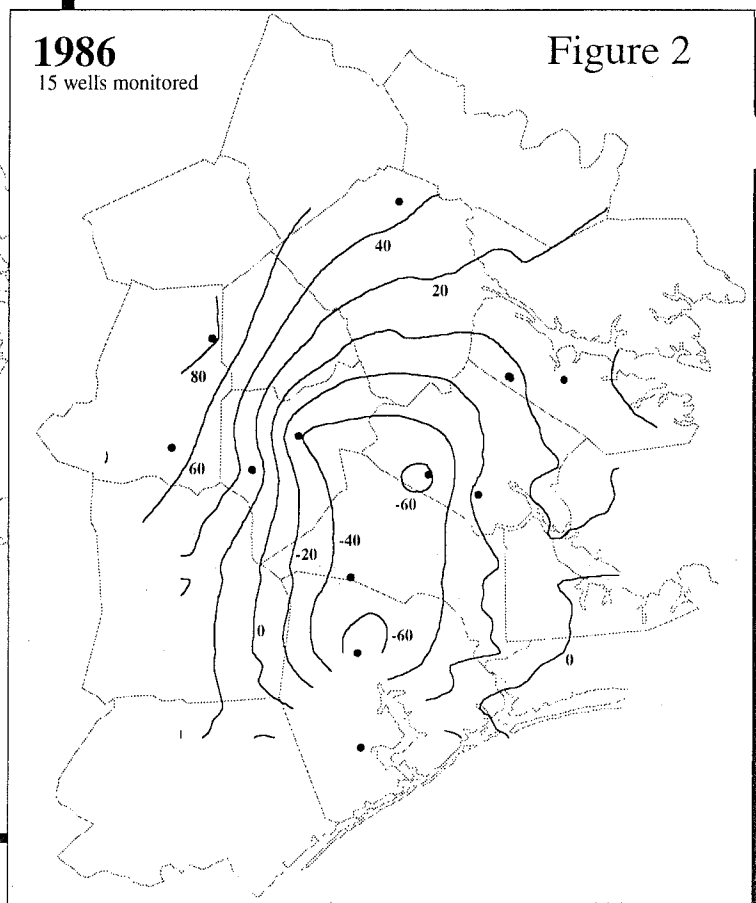
¹Cretaceous is a period in the geologic time scale which refers to sediments deposited between about 144 and 66 million years before present.

1986

130 wells monitored

Figure 1**1986**

15 wells monitored

Figure 2

Potentiometric Surface maps of the Black Creek Aquifer

(USGS and NCDENR data -- contours delineate altitudes of the potentiometric surface, datum equals mean sea level)

The 1986 potentiometric surface map in Figure 1 was produced from 130 monitoring wells located throughout the coastal plain (but concentrated in the central coastal plain area). Figure 2 is the potentiometric surface map based on 1994 data. Fifteen wells were monitored that year. If only those fifteen wells were monitored in 1986 then the potentiometric surface map for 1986 would look like Figure 2.

If we continue to collect data from 15 or fewer wells, then our abilities to judge the effects of pumping stresses and to advise ground water users about current and future conditions are significantly reduced.

A comprehensive well monitoring program using and maintaining the wells that are already available in the NCDENR Well Network is a key component to any ground water management and planning effort in that it: 1) tells us where ground water resources are; 2) allows us to track changes in ground water levels as they occur; and 3) enables us to locate problem areas and water use conflicts before water shortages and other costly damage develops.

1994

15 wells monitored

Figure 3