**GROUND-WATER RESOURCES OF CHOWAN COUNTY, NORTH CAROLINA**

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**INTRODUCTION**

Chowan County is located in the northeastern part of the Coastal Plain province of North Carolina and includes an area of about 300 square miles (see map below).

**GROUND WATER**

All aquifers between land surface and the upper part of the Black Creek Formation contain fresh water at all parts of the area and can be divided into five aquifers (Fig. 1). These five aquifers are composed of permeable sand, silt, and fine clays and will increase water readily to wells. The aquifers are separated by clay beds, which vary in thickness from a few feet to about 200 feet.

**AQUIFER A**

Composed of sand, gravel, and sandstone, this aquifer is generally unconfined and unconsolidated. It contains fresh water and is the main source of water for domestic, industrial, and agricultural uses. The upper part of this aquifer is covered by a layer of clay, which acts as a barrier to the flow of water. The clay layer is generally 10 to 20 feet thick and is composed of fine to medium sand and clay. The thickness of this layer varies from place to place, but it is generally about 15 feet thick in the central part of the county. The groundwater in this aquifer is generally of good quality and is suitable for all uses.

**AQUIFER B**

Composed of sand, gravel, and sandstone, this aquifer is generally unconfined and unconsolidated. It contains fresh water and is the main source of water for domestic, industrial, and agricultural uses. The upper part of this aquifer is covered by a layer of clay, which acts as a barrier to the flow of water. The clay layer is generally 10 to 20 feet thick and is composed of fine to medium sand and clay. The thickness of this layer varies from place to place, but it is generally about 15 feet thick in the central part of the county. The groundwater in this aquifer is generally of good quality and is suitable for all uses.

**AQUIFER C**

Composed of sand, gravel, and sandstone, this aquifer is generally unconfined and unconsolidated. It contains fresh water and is the main source of water for domestic, industrial, and agricultural uses. The upper part of this aquifer is covered by a layer of clay, which acts as a barrier to the flow of water. The clay layer is generally 10 to 20 feet thick and is composed of fine to medium sand and clay. The thickness of this layer varies from place to place, but it is generally about 15 feet thick in the central part of the county. The groundwater in this aquifer is generally of good quality and is suitable for all uses.

**AQUIFER D**

Composed of sand, gravel, and sandstone, this aquifer is generally unconfined and unconsolidated. It contains fresh water and is the main source of water for domestic, industrial, and agricultural uses. The upper part of this aquifer is covered by a layer of clay, which acts as a barrier to the flow of water. The clay layer is generally 10 to 20 feet thick and is composed of fine to medium sand and clay. The thickness of this layer varies from place to place, but it is generally about 15 feet thick in the central part of the county. The groundwater in this aquifer is generally of good quality and is suitable for all uses.

**AQUIFER E**

Composed of sand, gravel, and sandstone, this aquifer is generally unconfined and unconsolidated. It contains fresh water and is the main source of water for domestic, industrial, and agricultural uses. The upper part of this aquifer is covered by a layer of clay, which acts as a barrier to the flow of water. The clay layer is generally 10 to 20 feet thick and is composed of fine to medium sand and clay. The thickness of this layer varies from place to place, but it is generally about 15 feet thick in the central part of the county. The groundwater in this aquifer is generally of good quality and is suitable for all uses.

**MAPS SHOWING AQUIFER CHARACTERISTICS AND AREAS OF RECHARGE TO AND DISCHARGE FROM THE ZONE OF SATURATION**

- **MAPS SHOWING CHLORIDE CONTENT OF GROUND WATER AND PHEZOMETRIC CONTOURS OF THE AQUIFERS**

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**EXPLANATION**

Map showing location of Chowan County, geologic formations, and streams in the area.

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**HYDROLOGIC INVESTIGATIONS**

- **ATLAS HA-292**

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**DEPARTMENT OF THE INTERIOR**

UNITED STATES GEOLOGICAL SURVEY

PREPARED IN COOPERATION WITH THE

CHOWAN COUNTY BOARD OF COMMISSIONERS

AND THE

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