

The materials of the formation consist of calcareous marls, fossiliferous limestones, and fine-grained, siliceous sandstones. The maximum thickness of the formation is thought to be about 140 or 150 feet. The formation rests unconformably upon Upper Cretaceous strata belonging to the Peedee formation. The strata dip slightly to the southeast. To the southward the formation is believed to pass unconformably beneath the Castle Hayne formation of the Eocene, and is believed to have been encountered in well borings in New Hanover County. To the northeast it passes unconformably beneath Miocene strata. Over much of the area the formation is covered by thin, surficial Pleistocene deposits.

Inexhaustible supplies are available from the porous, sandy strata intercalated within the limestones, and probably also to some extent from solution channels and caverns within the limestones themselves. These horizons have been tapped at Jacksonville in Onslow County, at Trenton in Jones County, at New Bern in Craven County, at Washington in Beaufort County, and to a limited extent at intermediate points.

In quality the Trent waters are, with very few exceptions, hard to a greater or lesser degree, due to the presence of calcium carbonate in solution. In places the hardness is not excessive. Elsewhere it becomes so excessive as to render the waters unpalatable, and unfit for laundry, boiler, and manufacturing purposes unless subjected to special chemical treatment. Iron salts are present in many of the waters and in some cases the amount is excessive. Unfortunately, over much of this area, including parts where some of the larger towns are situated, as at Jacksonville, Trenton, New Bern, and Washington, no other source of potable artesian waters is available, for by deeper drilling horizons of water high in sodium chloride (common salt) would in all probability be encountered. It remains, therefore, for the people to make the best use possible of this water, which though rendered objectionable in places by its lime content, is nevertheless obtainable in unlimited quantities. It is possible and practicable by proper chemical treatment to remove a large percentage of the calcium and iron salts, and thus to render the water much more satisfactory than in its natural state. Under the head of the separate counties the detailed water conditions of local areas have been discussed elsewhere in this report.

The area in which potable waters may be obtained from Eocene strata, including both the Trent and the younger Castle Hayne formation, is shown on the map (Plate XXXV).