

approximately at two places near the coast, the first at Wilmington, where it was encountered at 720 feet, and at Fort Caswell, where it was reached at 1,140 feet.

The area over which potable waters may be obtained from horizons in the formation includes, in addition to the area of outcrop, a strip lying to the southeast of this belt, where the beds may be reached by drilling through the overlying Peedee ("Burches Ferry") and younger beds. (See map, Plate XXXIII.) It is not probable that potable waters can be found in the formation after it passes to greater depths than 400 feet beneath the surface, for at such depths highly saline waters are apt to be encountered.

The materials of the formation are variable in their character, both horizontally and vertically. For the most part, they consist of fine, laminated, micaceous sands and clays, nearly everywhere lignitic and pyritiferous. Wherever extensive outcrops occur it is observed that thick lenses of medium to fine, but as a rule loose sands, are present in some part of the exposure, and this feature is worthy of especial note as regards the importance of the formation as a water bearer, for it is these sand phases which serve as the principal reservoirs and channels for the circulating waters. Marine greensand and calcareous layers become interstratified with the shallower water phases in the upper part of the formation. The thickness of the formation reaches several hundred feet, perhaps 500 or 600, in the region of the Cape Fear Valley, but becomes thinner towards the northeast. It is important as a source of artesian supply throughout that portion of both its horizontal and vertical extent, which does not pass below the upper limit of the deeper, noncirculating salty waters, which, it is believed, will be reached at most places at depths of from 350 to 450 feet. The securing of a good supply of water, however, will depend upon whether or not the drill happens to penetrate a sand lens or layer which is of sufficient extent or which has connection with other sufficiently large similar lenses or layers to permit of a free circulation of the waters; and the amount of the supply will depend upon the freedom of this circulation—that is, upon the number and upon the communications existing between these porous sand phases. Experience has shown that inexhaustible supplies may be tapped at many places.

Along the northwestern part of the belt where this formation overlaps upon the Patuxent ("Cape Fear") formation the thickness is of course slight, and the drill may in many cases pass through the Black Creek formation without encountering a water horizon, and enter the underlying Patuxent ("Cape Fear") formation. As the beds thicken to the southeast, however, the chance for obtaining supplies increases.