Project Area Environment

The project area is situated within the Barrier Island Sequence District of the Coastal Plain Province. Specifically, the area is located in south-central portion of Charlton County in southeast Georgia. The Barrier Island Sequence District was created by the advance and retreat of Pleistocene sea levels forming six discrete shoreline deposit complexes that occur parallel to the present coastline in a step-like progression of decreasing elevations towards the sea. The project is situated within the Wicomico shoreline deposit complex (relief varies between 50 and 75 feet). The Wicomico shoreline includes an abnormally large barrier island referred to as Trail Ridge. This large barrier island obstructed the drainage of an enormous salt marsh, and in doing so, is thought to have helped create what is now known as the Okefenokee Swamp. The western boundary of the Barrier Island Sequence District, which borders the Okefenokee Basin District, lies at the western base of Trail Ridge (Clark and Zisa 1976; Hodler and Schretter 1986; Seabrook 2017).

The project area is situated within a rural setting and is primarily utilized for pine cultivation and hunting. The area consists of a pine flatwoods environment that is characterized by low, flat topography; relatively poorly drained, acidic, sandy soil; and open woodlands dominated by pines with an extensive shrub layer that typically includes palmetto, gallberry, fetterbush, wax myrtle, dwarf live oak, tarflower, and blueberries. Elevations within the project area typically range between 170 and 175 ft above mean sea level (AMSL), though lower elevations (155-160 ft AMSL) occur in the southwestern corner of the area. Vegetation in forested portions of the property typically consists of stands of planted pines varying in age and interspersed with undergrowth comprised of palmetto, brush, briars, and patches of grass. Along drainages and wetlands, both cypress and pine are common. At the time of this investigation, large sections of pine forest had recently been logged, plowed, and replanted in pine. Along with pine saplings, new growth in these areas included grass, palmetto, and brush. Notable disturbances observed within the project area were associated with silviculture activities and road construction with repeated episodes of pine cultivation representing the most significant impact.

The flat topography, soils, and seasonal precipitation significantly influence hydrology of the pine flatwoods. During the rainy season, standing water is common and lasts for various periods of time due to poorly drained soils and the low, flat topography. During times of little precipitation, droughty conditions can occur due to evaporation of water from upper soil layers and the inability of water to move upward through impermeable hardpan from lower horizons. The project area contains several small drainages typically associated with large wetland areas, which cover a large percentage of the area. Waters within the project area drain either west into the Okefenokee Swamp or east into Boone Creek or Mims Creek. The Okefenokee is drained by the Suwannee River and the St. Marys River. St. Marys River, which empties into the Atlantic Ocean, drains the portion of the swamp that lies nearest the project. Both Boone Creek and Mims Creek also flow into the St. Marys River.

Soils encountered during the field investigation consisted of deep sands, which were formed in sandy marine deposits. Shovel tests typically exposed three strata with the bottom zone comprised of a spodic horizon that frequently coincided with the water table (Figure 7). A review of the Web Soil Survey (2019) identified five soil types within the project area. For information on these soil types, refer to Table 1.