

3.1.1 Alluvium: Muck

A 0.6 to 1.0-meter thick stratum of muck occurs as the surface unit at Right Lane borings B5-A and B6-B. We did not encounter the unit at any other boring location. The elevation of the base of the Alluvium: Muck unit ranges from 57.63 to 57.72 meters MSL.

3.1.2 Alluvium: Silt and Clay

A 0.5 to 3.6-meter thick stratum of very soft to very stiff, dry to saturated, fine sandy silt and clay (A-4/A-6/A-7-5) with wood fragments and roots occurs as the surface unit across much of the floodplain and below thin surface deposits of alluvial sand at borings B3-A LL, B4-A RL, and B7-A RL. The elevation of the base of the Alluvium: Silt and Clay unit ranges from 55.42 to 58.14 meters MSL. The Alluvium: Silt and Clay unit was not encountered in borings B1-A LL, B2-B RL, and B3-B RL.

3.1.3 Alluvium: Sand and Gravel

The Alluvium: Sand and Gravel material unit consists of very loose to dense, dry to saturated, silty, fine to coarse sand and gravel (A-3/A-2-4/A-1-a/A-1-b). It occurs below alluvial silt and clay across much of the floodplain except where it occurs as the surface unit in Left Lane borings B1-A and B3-A and Right Lane borings B2-B, B3-B, B4-A, and B7-A. The Alluvium: Sand and Gravel unit ranges from 0.5 to 3.4-meters thick. It occurs as the surface unit in the main channel of White Oak Creek. A thin stratum of alluvial sand occurs at Left Lane End Bent 2. The elevation of the base of the Alluvium: Sand and Gravel unit ranges from 54.05 to 57.39 meters MSL in borings B5-B RL and B1-B RL, respectively. The base of the unit is a major unconformity between Alluvium and Residual Piedmont soil and rock.

3.1.4 Residual: Silt and Clay

The Residual: Silt and Clay material unit underlies Alluvium and consists of medium stiff to hard, dry to saturated, locally fine to coarse sandy, silt and clay (A-4/A-5/A-6/A-7-5) and typically displays relict rock fabric. The thickness of the Residual: Silt and Clay unit is variable and is laterally discontinuous across the site. Residual silt and clay is typical of the weathering of granite, gneiss and diabase. The unit's lower boundary, where encountered, ranges from 46.38 to 59.12 meters MSL in borings B3-B RL and EB2-A LL, respectively.

3.1.5 Residual: Sand and Gravel

The Residual: Sand and Gravel material unit underlies Alluvium and consists of loose to very dense, moist to saturated, locally clayey, silty, fine to coarse sand and gravel (A-3/A-2-4/A-2-5/A-1-b) with relict rock fabric. It is laterally discontinuous across the site. The elevation of the unit's lower boundary, where encountered, ranges from 46.40 to 57.17 meters MSL in borings B4-B RL and EB2-B RL, respectively. Lenses of residual sand occur locally within the Soft and Hard Weathered Rock and Hard Rock profiles

3.1.6 Residual: Soft and Hard Weathered Rock: Granite, Gneiss and Diabase

The Residual: Soft and Hard Weathered Rock: Granite, Gneiss and Diabase material unit underlies the Residual: Silt and Clay and the Residual: Sand and Gravel units. The elevation of the weathered rock unit's lower boundary, where encountered, ranges from 44.67 to 51.19 meters MSL in borings B5-A RL and B7-A LL, respectively.

3.1.7 Residual: Hard Rock: Granite, Gneiss and Diabase

We encountered Hard Rock consisting of fine- to coarse-grained, moderately weathered to fresh, extremely fractured to sound, moderately hard to very hard, granite, gneiss and diabase underlying Soft and Hard Weathered Rock. Hard rock extends to the deepest elevation encountered at the site, elevation 39.75 meters MSL, in boring B7-B RL. Hard Rock: Gneiss was encountered in boring B6-A LL. Hard Rock: Diabase was encountered in borings EB1-Aa LL and EB1-Ab LL.

4.0 GROUNDWATER

The piezometric groundwater surface, as indicated by 24-hour groundwater levels, is consistent across the floodplain, approximately at elevation 58 meters MSL. The groundwater elevations are consistent with the water surface of White Oak Creek measured at elevation 58.26 m MSL on September 21, 2001. The piezometric groundwater surface rises in elevation with topography away from the floodplain as indicated by 24-hour groundwater levels in end bent borings. The exception is boring EB1-Aa LL, in which we measured an anomalously low 24-hour groundwater reading.