

## Section Description

G-G' is a strike-oriented section that traverses the uppermost part of the Coastal Plain along the Fall Line. Originating at a core hole in western Aiken County, the section runs in a northeasterly direction passing through Lexington, Richland, Sumter, Lee, and Darlington Counties, terminating at a water well in Marlboro County near the SC-NC border. Seven core holes and two water wells were used to construct the section. One inch on the vertical scale is equivalent to 200 feet of depth. The distance, in miles, between two adjacent wells is provided on the section.

Moving from west to east along the section line, the first three wells on the section are located at C-well cluster sites. These sites were funded by the U.S. Department of Energy and drilled by the South Carolina Water Resources Commission (SCWRC) in the late 1980s and early 1990s. Each of the C-well sites—there are a total of eight—has a continuous core drilled to bedrock, geophysical logs, and up to 10 monitoring wells. Information from the sites was used to delineate and map the hydrogeologic units around the outside perimeter of the Savannah River Site (SRS) in South Carolina, and wells were constructed in each major aquifer to determine vertical hydraulic gradients and to establish a permanent observational well network ([SCDNR Open-File Report 1](#)). The first well on the section is **AIK-902**. This is a core hole drilled at the C-1 well-cluster site, which is in western Aiken County near the Town of Jackson. Upon reaching bedrock, the core hole was backfilled and completed as a monitoring well in the McQueen Branch aquifer. In addition to this well, there are three other wells at the site, all of which are monitored by the South Carolina Department of Natural Resources (SCDNR). The next well on the section is **AIK-817**, which is the core hole at the C-2 well-cluster site ([SCWRC Open-File Report 23](#)). Established in 1987, this was the first C-well site that was drilled. Located in western Aiken County near the Town of New Ellenton, the core hole was drilled to bedrock, backfilled, and completed as a monitoring well in the McQueen Branch aquifer. Four other wells were drilled at the site, all of which are monitored by SCDNR. Continuing northeast along the section line, well **AIK-826** is a core hole at the C-3 well-cluster site, which was drilled in 1988 at Aiken State Park ([SCWRC Open-File Report 28](#)). Like the other C-well sites, the core hole was drilled to bedrock, backfilled, and completed as a monitoring well in the McQueen Branch aquifer. Five other wells were drilled at the site, all currently monitored by SCDNR for water levels.

Continuing along the section line, well **LEX-844** is a core hole that was drilled to bedrock in 1997 by the U.S. Geological Survey (USGS) and SCDNR in the Town of Swansea in the southern part of Lexington County. Two wells were constructed at the site—a shallow well in the Gordon aquifer (LEX-846) and a deep well in the McQueen Branch aquifer (**LEX-844**). The shallow well was dry and was subsequently abandoned; the deep well is monitored by SCDNR for water levels. The next well on the section is core hole **RIC-585**, which was drilled by the USGS and SCDNR in 1996 at Horrell Hill Elementary School in central Richland County. After tagging bedrock, the borehole was backfilled and completed as a monitoring well in the McQueen Branch. The water level in the well is currently monitored by SCDNR. Well **SUM-328** is a public supply well drilled for the High Hills Rural Water Company. Completed in both the Crouch Branch and McQueen Branch aquifer, an aquifer test at the well produced a transmissivity of 15,000 ft<sup>2</sup>/d (feet squared per day) pumping at a rate of 708 gpm (gallons per minute).

Well **LEE-75** is a core hole drilled by the USGS and SCDNR in 1996 at Lee State Park in eastern Lee County. After reaching bedrock, the borehole was backfilled and completed as a monitoring well in the McQueen Branch aquifer. In 2012, SCDNR returned to the site and constructed three additional monitoring wells, one in the upper part of the McQueen Branch aquifer and two in the Crouch Branch aquifer. Water levels of all wells at the site are currently monitored by SCDNR. A pumping test was made of the Crouch Branch aquifer, which resulted in a transmissivity of 4,500 ft<sup>2</sup>/d pumping at a rate of 200 gpm.

Continuing to the northeast, well **DAR-228** is a core hole drilled by the USGS in 1990 for a groundwater availability study of the region ([USGS Open-File 9458](#)). A monitoring well was completed at the site in the McQueen Branch aquifer and is currently being monitored for water levels by the SCDNR. The last well on the section, **MLB-182**, is an abandoned test hole drilled in 1991 for the Wallace Water Company in northern Marlboro County.

Hydrogeology by Joseph A. Gellici, SCDNR  
Section G-G':v01:April 2021