There are many different methods available for performing forensic soil analysis. These methods can range from highly-expensive to reasonably-priced. Finding the method that provides the best information at the least expense can help to improve analysis success while minimizing costs. This study examines how different protocols or reagents can affect the testing results of three common soil analysis methods: Fourier transform infrared spectroscopy (FTIR), soil density gradient, and soil conductivity. FTIR uses the energy that is absorbed by a molecule to characterize its functional groups. Density gradient assays use layered solutions of increasing densities to sort the components of soil samples into visible profiles that can be compared. Conductivity is another property that can help to distinguish soils, and also may determine the rate at which forensic evidence buried in a soil will degrade or decompose. In this project, varied protocols for each of these three methods are compared for soil samples from several locations in West-Central Illinois.