

SOIL AND PLANT SCIENCE DIVISION

Technical Soil Services

Northeast Region



Northeast Regional Office

Ground Penetrating Radar Use in Technical Soil Services

Purpose

Recently, Alan Moore (ground penetrating radar (GPR) operator) and David Harper (State Soil Scientist, Virginia) spent the week of March 27 on the campus of Sweet Briar College in Sweet Briar, Virginia, explaining the benefits and limitations of GPR to students.

Key Outcomes

GPR can be used successfully to help with Technical Soil Services (TSS) requests, and the TSS request from Sweet Briar College provided an opportunity for Alan and David to discuss GPR and to demonstrate the use of GPR in the field. A few students in the Engineering Department were working on a senior project that consisted of mapping and cataloging the potable water infrastructure on campus. During the week, Alan and David increased the students understanding of GPR and its use for locating potable water infrastructure, and they helped students locate the major water lines on campus.



Figure 1. Alan Moore (GPR operator) and Dr. Bender (Professor of Engineering) operating the GPR in search of a ductile water line.

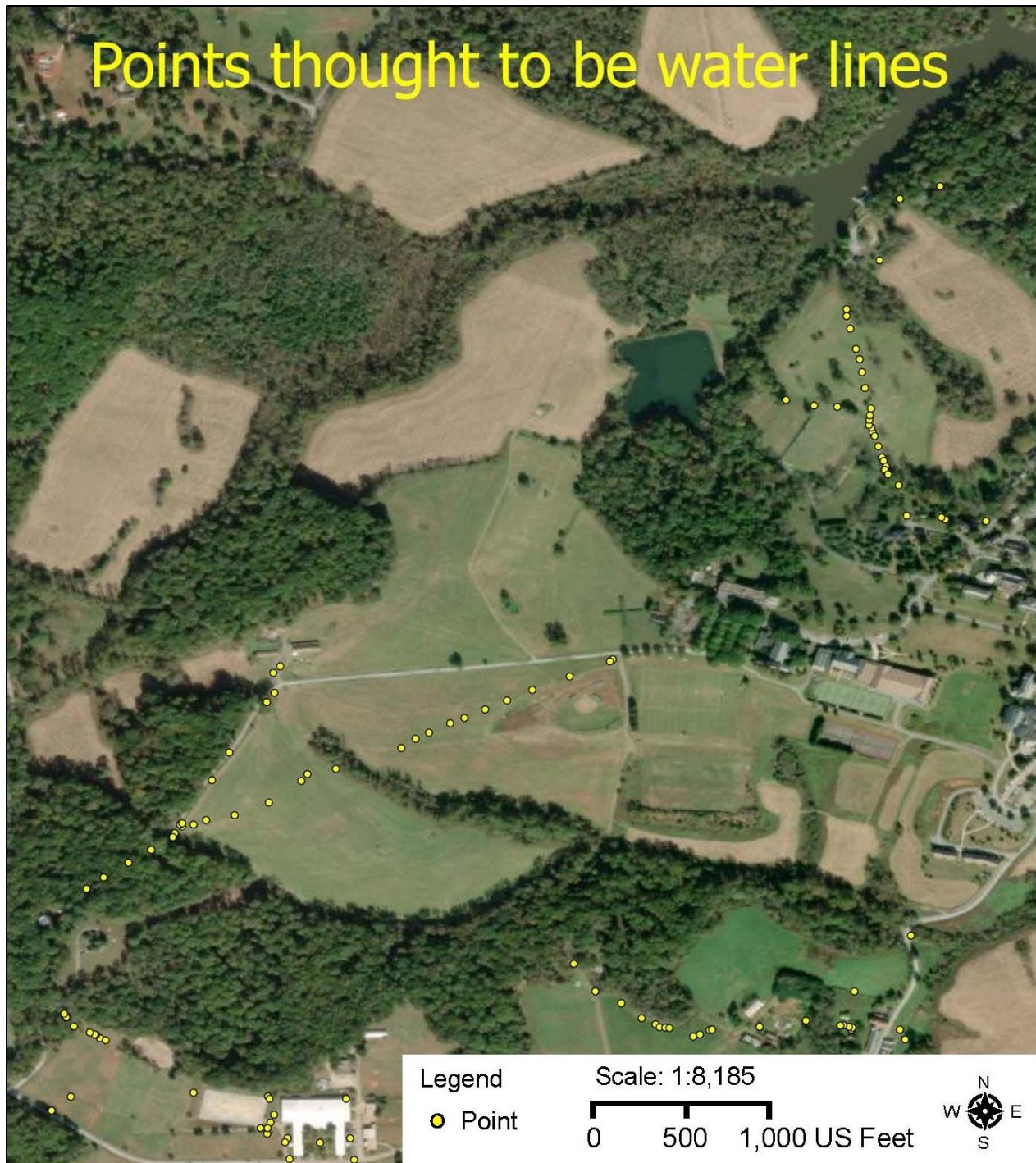


Figure 2. The map above displays the results of the GPR survey. The yellow points displayed on the map are areas where the water lines and associated infrastructure are located.



Figure 3. One of the students helping operate the GPR.

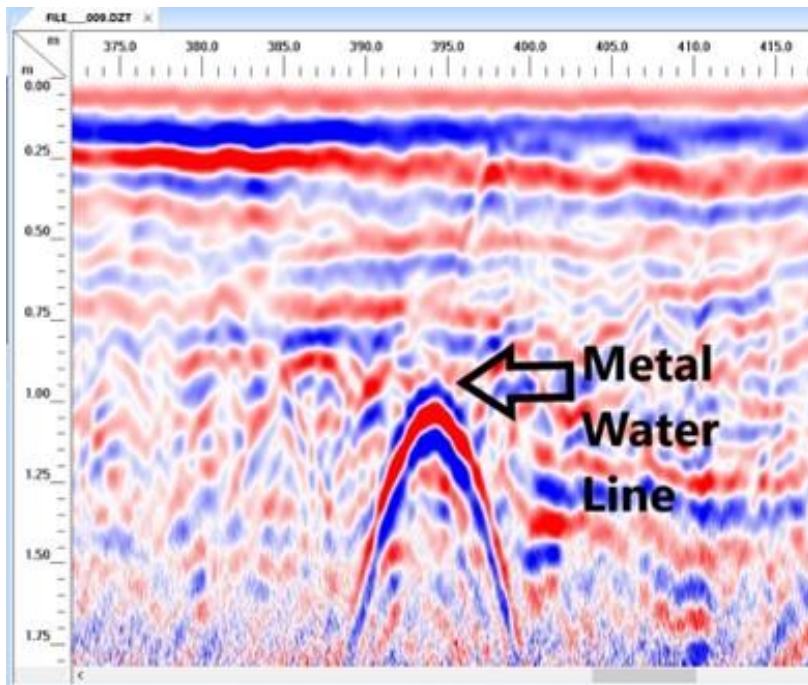


Figure 4. Example of a radar record displaying a hyperbolic feature, verified by ground-truth observations to be a ductile iron water line.