

**United States  
Department of  
Agriculture**

**Natural  
Resources  
Conservation  
Service**

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**Subject:** Activities related to Wes Tuttle

**Date:** 28 June 2002

**To:** Dr. Robert Ahrens  
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During the period of 24 to 27 June 2002, I was in to Wilkesboro, NC for the purpose of assisting Wes Tuttle. The following is a summary of my activities and observations during this period.

**Geophysical Equipment:**

The following geophysical equipment has been transferred to Rick Jones custody:

GPRante

- 1) One Subsurface Interface Radar (RIR) System-3000 digital control unit (serial # 2318).
- 2) One model 5106, 200 MHz antenna (serial # 2479).
- 3) .One model 50400, 400 MHz antenna (serial # 57)
- 4) Two 7.5-m antenna control cables.
- 5) One Personal carrying harness for SIR-3000.
- 6) One FGSDR-3000 GPS data logger (serial # 134).
- 7) One RADAN 6 software package (serial # 2949) with interactive 3D analysis module.

EMI

- 1) One EM31 meter (serial # 9315002; AG0002518477).

**Computer Equipment:**

I delivered the following computer equipment to Wes Tuttle:

- 1) One Gateway Tower with Pentium II. Model G6-400.
- 2) One NOKIA 447L Monitor.
- 3) One Gateway keyboard.
- 4) One HP DeskJet 3500 portable printer.

In addition, during this period, Wes Tuttle received a Dell laptop computer that was delivered by FedEx from Kristi Hawks. Coincidentally, at the time of my visit, the states' IT specialist was working in the Wilkesboro office and was able to install additional software, and test and connect Wes's computer systems.

**Training:**

Training was provided on setting up and conducting EMI surveys with the GEM300 sensor and the EM38 (DLM) meter with the Omni data logger. Field training was completed at three separate sites in Wilkes County. Data were collected in the station-to-station and in the continuous modes at each site. Data were processed using the GEM300, EM38W, and the Magmap2000 software programs. All data were filed as an Excel worksheet file and transferred into Surfer8 as a "dat" file. Two-dimensional contour plots of the EMI data were constructed using Surfer software.

Training was intense and covered a number of field and survey problems. Processing of data was complicated by the array of newly acquired hardware and software. In my opinion, what I presented (the procedures, tools, software programs) in this brief 2.5-day training period was intimidating if not overwhelming. Although much was thrown at Wes, he remained enthusiastic and eager to learn. He appears up to the tasks.

I recommended that in the ensuing month, Wes conduct field studies to better familiarize himself with the equipment and the software. These studies can be conducted in Wilkes County. I have charged him with becoming proficient in all facets of EMI surveys conducted with the GEM300 sensor and the EM38 meter. I asked Wes, as part of his training and becoming familiar with the equipment, to collect information on the EMI responses that are measured over different Piedmont soils and lithologies. This information will be valuable in assessing the use of EMI within this region. Within the Piedmont differences in clay content and mineralogy should be

**Office Space:**

Wes's office is located on the second floor of the Federal Building in Wilkesboro, NC. He has his own office, but presently shares a phone line with Roy Mathais (soil scientist). His office space is adequate, but with the geophysical equipment I brought, has become crowded. To get to Wes's office in the Federal Building, one must navigate through a labyrinth of hallways from the basement to an elevator or stairwell. This will be difficult with heavy and bulky GPR and EMI equipment.

A court is located just outside Wes's office. When this court is in session, it will be impossible to move freely into an out of the second floor of the Federal Building without excessive security inspection delays that will be compounded by a large number of people in the building. I can not even imagine the difficulties he may have moving the EMI and GPR equipment through these secure spaces.

Both storage (for the equipment) and office spaces are available in the basement. I recommend that Wes's office and equipment storage spaces be eventually moved into the basement.

**Other Activities:**

We took my vehicle to a welding shop in North Wilkesboro and showed the interior shelving mounts to a welder. The welder measured and made a sketch of the shelving. Once a Suburban can be order for Wes, shelving will need to be installed to accommodate the EMI and GPR equipment.

With kind regards,

Jim Doolittle  
Research Soil Scientist