Field Tour #1 - Fitting in with pretreatment: Design review and installation inspections field tour

Ben Kane
Trish Angoli, Christine Nitt

Why are people going to the expense of an innovative septic system?
The answer is simple: in the coastal areas where people buy land by the square footage not by the acre or ½ acre, you get more bang for your buck!

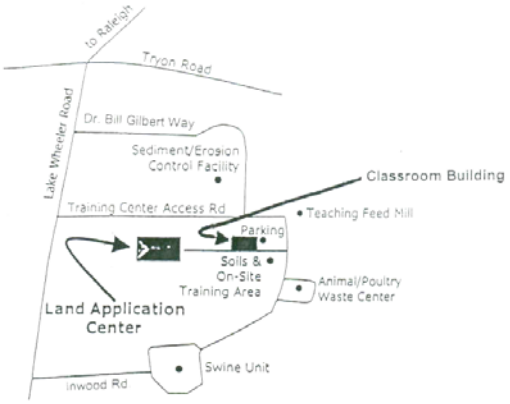
The soil profiles are great; >48" swc with sandy soils. However, when the house takes up 2/3 of the lot, a swimming pool is a "must have", and a putting green is the new "extra", the space left for sewage treatment is very limited.

With pre-treatment systems, however, the initial system and the repair area take up as much space as the just an initial system without pre-treatment.

Innovative systems actually mean more work for the Environmental Health Specialists , engineers, and the installers. The installation inspections are very time consuming: most systems involve 5-6 site visits, starting with the pre-construction conference and ending with a final start –up. To help with all the steps involved, Carteret county has devised check lists for these inspections

Brief Biography:
Ben Kane Environmental Health SpecialistProgram Specialist
Christine Nitt Environmental Health Specialist Large Systems and Innovative Systems
Carteret County Health Department
Trish Angoli State Engineer DENR

NCSU Lake Wheeler Training Facility



Directions from Raleigh's Beltline (I-40/440):

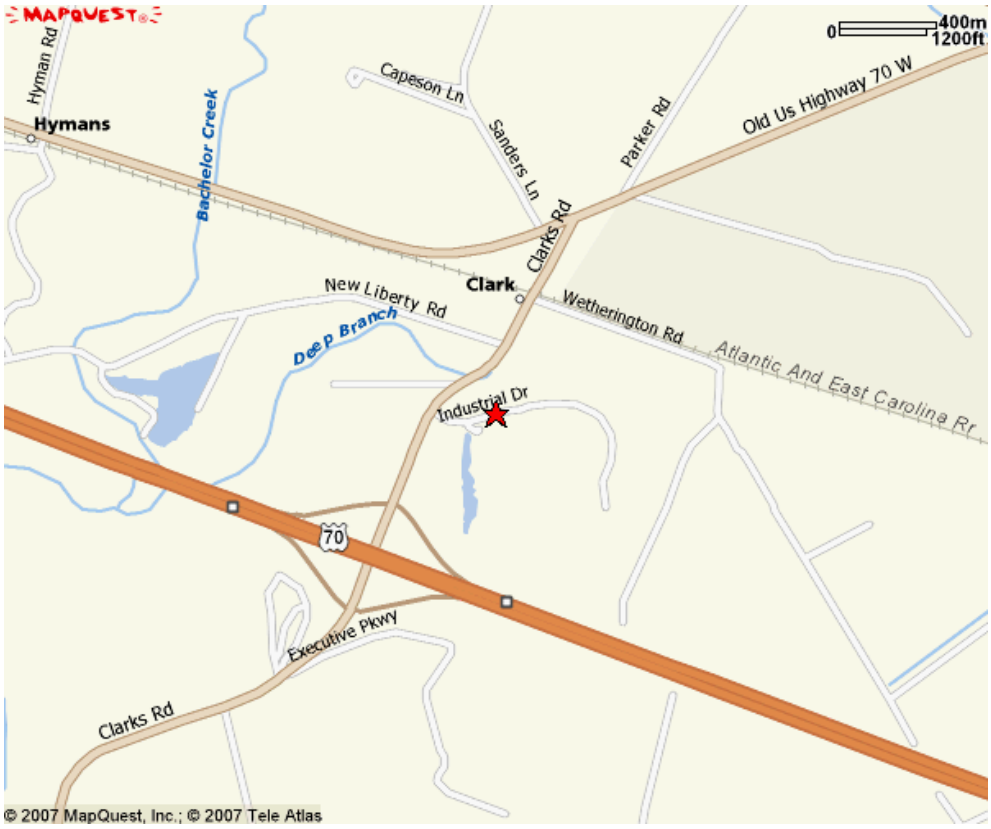
Exit at Lake Wheeler Road. Go south on Lake Wheeler Road (away from downtown Raleigh) for approximately 1 mile. Continue on Lake Wheeler Road through the traffic light at Tryon Road. Turn left at the second gravel road (approximately ½ mile from intersection of Tryon and Lake Wheeler).

Field Tour #2 - How to get the word out: Public education programs and materials workshop

Charlie Humphrey
Diana Rashash, Todd Kraft

Septic systems are used by approximately 4 million people in NC to treat and dispose of human wastewater. Most environmental professionals agree that if septic systems are properly sited, designed, installed and maintained they can be effective and economical means of wastewater treatment and disposal. The siting, design, and installation of systems are performed by various professionals, leaving homeowners with the task of septic system maintenance. While most systems require little maintenance, many people lack a basic understanding of how septic systems work and the maintenance recommendations and requirements. Systems that are not maintained will not perform as designed, and can be public and environmental health hazards. This field session will highlight programs and efforts by NC Cooperative Extension and the Town of Nags Head to provide citizens with important septic system information. There will also be an overview of upcoming regulations pertaining to septic system installers and real estate septic system inspectors.

Brief Biography:
Charles Humphrey and Dr. Diana Rashash are NC Cooperative Extension Area Environmental Agents that work in Eastern, NC. Todd Kraft is the Water Quality Coordinator in the Town of Nags Head, NC.



Field Tour #3: The Ten Commandments of Design

Dr. Mike Hoover
Darren Cecil, Drew Morgan and Kathy Morris (invited)

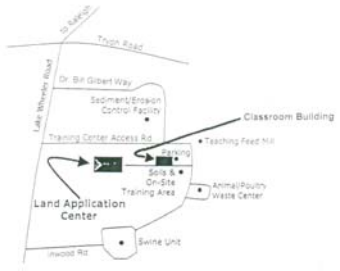
This workshop and field tour focuses upon design of on-site wastewater systems and specifically ten design steps of value for designing any system. These ten design steps (called \"The Ten Commandments of Design\") will be introduced. In addition, students will work through selected design examples to demonstrate the utilization of these design steps.

These basic \"Ten Commandments of Design\" are:
1: Determine initial project concept and design flow
2: Assess soil and site conditions
3: Locate and size the drain field
4: Select the distribution technology
5: Select the pretreatment technology
6: Design the pretreatment technology details
7: Design the distribution network details and layout the system
8: Design the pump/siphon and control system
9: Design any other needed site modifications
10: Prepare drawings and plans, specifications, and/or permit

Brief Biography:

Mike is Professor of Soil Science at NC State University and Extension Soils Specialist for North Carolina Cooperative Extension. He has 32 years experience working in the on-site wastewater field having started as an SEO (Sewage Enforcement Officer) in Pennsylvania in 1975 and getting all three of his degrees from Penn State. From there he served for a year as Visiting Assistant Professor of Civil Engineering at the University of Cincinnati and joined the NCSU faculty in 1983. Mike serves as Chair of the NSF International Wastewater Technology Joint Committee and is on the NSF Council of Public Heath Consultants (CPHC). He has served in the past as Program Chair of the ASABE National On-Site Wastewater Conference, Chair of the Consortium of Institutes for Decentralized Wastewater Treatment and President of the NC Soil Science Society.

NCSU Lake Wheeler Training Facility



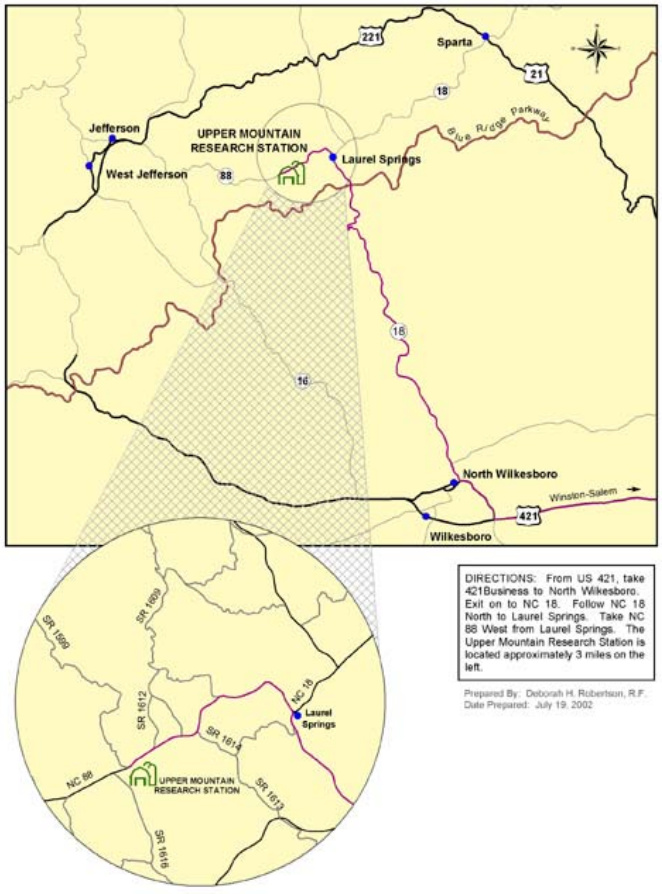
Directions from Raleigh's Beltline (I-40/440):

Exit at Lake Wheeler Road. Go south on Lake Wheeler Road (away from downtown Raleigh) for approximately 1 mile. Continue on Lake Wheeler Road through the traffic light at Tryon Road. Turn left at the second gravel road (approximately ½ mile from intersection of Tryon and Lake Wheeler).

Field Tour #4 - Mountain soils field tour: Properties, distribution and suitability for on-site systems

Alan McKinney
Joe Lynn

Understand soil/site evaluation and on-site system design on mountain sites. Participants will be asked to evaluate soils for percent rock, saprolite suitability, and slope stability. Learn to connect the soil, topography and landscape position to the LTAR and system design. Participants should wear appropriate clothes to be in the field all day.



Field Tour #5 - Piedmont slate belt soils field tour: Properties, distribution and suitability for on-site systems

Scott Greene
David Lindbo, Alan Clapp

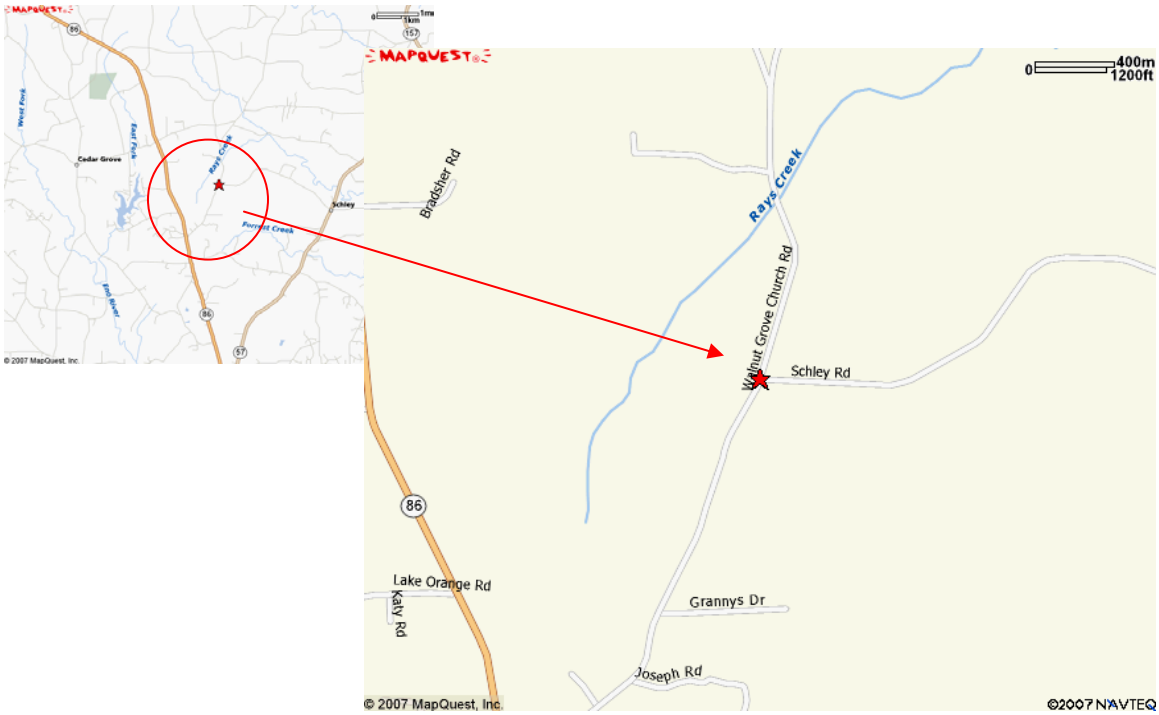
Learn the ins and outs of evaluating slate belt soils/saprolites. Participants will perform hands on evaluations of the soil/saprolite and make determinations as to the soils suitability by using the existing NC on-site wastewater rules. Most evaluations will be performed in backhoe pits.

Participants shall wear appropriate field clothing for the day.

Directions to Field Tour #5

Take I40 or I85 to Hillsborough, NC. Take Exit 261 if on I40 or Exit 164 if on I85. Go north through Hillsborough cross Highway 70 and proceed North approximately 4 miles to Walnut Grove Church Road (SR 1001)and turn right. There will be a country store on right before the turn. The site is on the right about 1.25 miles on right at 4909 Walnut Grove Church Road just past the intersection of Schley Road. There is a large NC Ag. Extension sign adjacent to property.

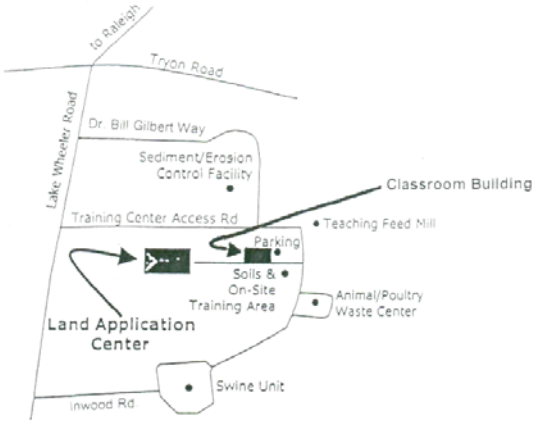
Phone Contacts if you get lost.
Alan Clapp: 919-215-5527
David Lindbo: 919-610-4462



Field Tour #6 - Pretreatment systems and their implementation: Implications of new state rules

Dr. Bob Uebler
Steven Berkowitz

NCSU Lake Wheeler Training Facility



Directions from Raleigh's Beltline (I-40/440):

Exit at Lake Wheeler Road. Go south on Lake Wheeler Road (away from downtown Raleigh) for approximately 1 mile. Continue on Lake Wheeler Roac through the traffic light at Tryon Road. Turn left at the second gravel road (approximately ½ mile from intersection of Tryon and Lake Wheeler).

Title: Field Tour #7 - Field Inspection Demonstration for Installers & EHSs

Joe West
Hank Sowers

Abstract Text:

A hands-on review of the onsite inspection and installation process for the septic installer and environmental health specialist.

Review of the Onsite Inspection Process, Question & Answer Discussion

Onsite Field Work: Inspections of actual drain fields

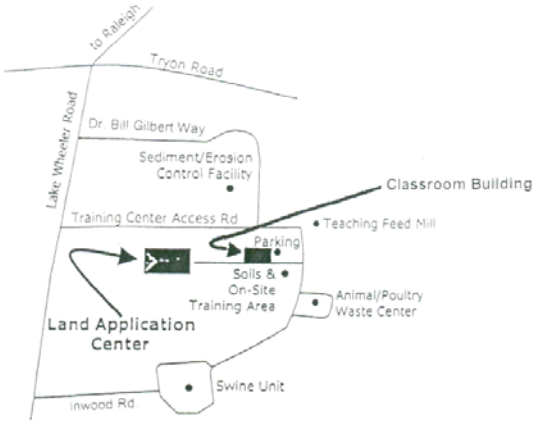
Inspectors vs. Installers

Final Review

Brief Biography:
Joe is an environmental health specialist with the Harnett County Health Department.

Hank is an environmental health specialist with Davidson County.

NCSU Lake Wheeler Training Facility



Directions from Raleigh's Beltline (I-40/440):

Exit at Lake Wheeler Road. Go south on Lake Wheeler Road (away from downtown Raleigh) for approximately 1 mile. Continue on Lake Wheeler Roac through the traffic light at Tryon Road. Turn left at the second gravel road (approximately ½ mile from intersection of Tryon and Lake Wheeler).