

ENVIRONMENTAL NEWS

OCTOBER 15, 2003

INSIDE THIS ISSUE:

BROWNFIELDS 1

APPLE ORCHARD CONTAMINATION 1

SELECTING A CONSULTANT 2

INNOVATIONS 3

MTBE 3

EPA TANK PROGRAM 3

BOTTLED WATER INDUSTRY 4

SPECIAL POINTS OF INTEREST:

- NC has over 30,000 petroleum release incidents
- MTBE releases can migrate rapidly in groundwater
- Arsenic contaminated soil at NC apple orchard estimated to cost \$15.4 million to clean up

TERRAQUEST ASSISTS LOCAL DEVELOPER IN BROWNFIELDS PROJECT IN CARRBORO, NC

TerraQuest is working with a local commercial real estate developer and the North Carolina Division of Waste Management – Superfund Section Special Remediation Branch (NCDWM-Brownfields Program) to develop a Brownfields project for a property in Carrboro, NC.

A "Brownfields site" is an abandoned, idled, or underused property where the threat of environmental contamination has hindered its redevelopment. Under this "Brownfields agreement," TerraQuest, the developer, and the NCDWM-Brownfields Program will determine the necessary cleanup and land management actions to make the property safe for reuse.

In return for their assessment and cleanup efforts (if any), the developer will receive liability protection from the onsite contamination. This liability protection will make it possible for the

developer to acquire otherwise unobtainable loans for the project. Environmental liability limitations will be clearly defined in the Brownfields agreement. The goal of the Brownfields agreement is to allow the underused property to have a productive use rather than building in a greenspace or undeveloped area and contributing to urban sprawl.

To qualify for a Brownfields agreement, the definition of a prospective developer is "any person who desires to either buy or sell a Brownfields property for the purpose of developing or redeveloping that Brownfields property and who did not cause or contribute to the contamination at the Brownfields property. (Brownfields Property Reuse Act of 1997 [NCGS 130A310.30 et seq.])"

If you have any questions about the North Carolina Brownfields program and want to determine if a prospective property is eligi-

ble, please contact Jonathan Grubbs.



Source: US EPA

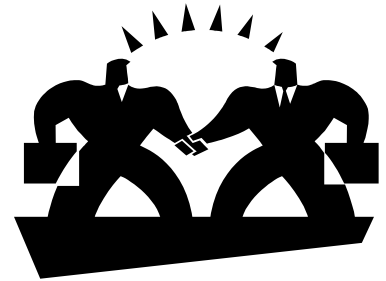
Example of a Brownfields site

APPLE ORCHARD CONTAMINATION

The U.S. Environmental Protection Agency (EPA) is supervising one of the largest cleanup projects in North Carolina's history. The 400-acre Barber Orchard community in Haywood County, NC is contaminated with arsenic from 80 years of pesticide application. Approximately one foot of arsenic-laced topsoil will

be removed for treatment and replaced with uncontaminated soil. The EPA has already spent \$4 million on the project and estimates the total cost will be as much as \$15.4 million. Work is scheduled to begin by the fall of 2004. A subdivision currently sits on the old orchard and several potable wells have

already shown pesticide contamination. Arsenic levels in several of the wells are 20 times the safe drinking water level. (*Business in North Carolina*)



SELECTING AN ENVIRONMENTAL CONSULTANT

How do you select an environmental consultant? Do you look in the yellow pages, do you get referrals, or do you look for the two-piece suit and good sales pitch? The North Carolina Division of Waste Management (NCDWM) has prepared a guide to help with the selection of an environmental consultant. Key points for selecting an environmental consultant are 1) experience

and training, 2) cost, 3) insurance, and 4) references.

EXPERIENCE AND TRAINING

1) Does the company have experience in performing the necessary investigation and remediation? TerraQuest personnel have over 15 years of experience and network with many environmental specialists.

in the use of field instruments and have access to vapor-monitoring equipment? TerraQuest personnel are well trained in the use of various types of field equipment. TerraQuest recently upgraded its vapor monitoring equipment with two Thermo Electron Innova series monitors. (cont. below)

2) Is the company trained

3) Does the company have experience in the design and installation of monitoring and remediation wells? TerraQuest has a NC licensed driller on staff and has installed more than 1,000 wells.

has installed and operated soil and groundwater remediation systems in various geologic settings in North Carolina. Remediation at several sites has been completed and site closure achieved.

and 2) cheaper is not always better. TerraQuest has found that many consultants that perform projects cheaply often have low reimbursement rates for Trust Fund work. This results in additional cost to you.

4) Has the company installed and operated remediation systems that efficiently remediated sites? TerraQuest

COST

The best advice regarding costs is 1) if it sounds too good to be true, it probably is,

(cont. below)

“it it sounds too good to be true, it probably is”.

REFERENCES

Does the consultant have a good reputation with State agencies? Has the consultant completed similar jobs for other companies? Is the consultant properly licensed?

clients and regulators to achieve cost effective solutions for environmental problems. TerraQuest is licensed with the NC Board for Licensing of Geologist and the NC Board for Licensing of Water Well Contractors.

ant is properly insured. If you need a copy of our certificate of insurance, please contact Jill Ballentine.

TerraQuest has an excellent reputation with regulatory agencies and works with the

In addition to the aforementioned key points, you should make sure that your consult-

INNOVATIONS IN SITE CHARACTERIZATION

In July, Jonathan Grubbs, P.G. and Ryan Kerins successfully completed a course in innovations in site characterization and field-based technologies presented by the U.S. Environmental Protection Agency (EPA). The training course was held in Pennsylvania.

One of the key focus areas was the use of a triad based approach to streamline site clean-ups. The triad ap-

proach involves systematic project planning, dynamic work plan strategy, and real time measurements technology. What does this mean for the client? It means faster, cheaper, and better site characterization. In the triad approach, a systematic work plan is developed for a site to identify what types of tests to perform, where the tests should be performed, and what the goals for the project

are. Real time measurements are used in the field to evaluate the data and determine if additional testing is required. The dynamic work plan approach involves evaluating the field data while it is being collected to minimize additional site mobilizations. TerraQuest is currently reviewing in-house procedures for assessments so that more cost-effective methods can be utilized.



Air stripper (background) and granular activated carbon canisters (foreground) for removing MTBE.

METHYL TERT-BUTYL ETHER (MTBE)

MTBE is currently the most commonly used ether oxygenate due to its high octane properties and availability. The commercial use of fuel oxygenates in the U.S. began in 1979 following the phase-out of leaded gasoline. In 1981, the U.S. EPA approved the use of MTBE in gasoline as an octane booster at levels up to 10% by volume. In some areas, oxygenates have been used at higher levels to

reduce vehicle emissions.

Some common characteristics of MTBE and fuel oxygenates are that they have a strong affinity for groundwater. The solubility of MTBE is 25–300 times higher than the solubility of common gasoline constituents such as benzene, toluene, ethylbenzene, and xylenes. Dissolved-phase oxygenates are relatively mobile and persis-

tent. They have a strong affinity for groundwater and will also pass through soil rather quickly. Other physical and chemical properties of MTBE make it very difficult to remediate. Due to its low vapor pressure, it is not as easily removed in an air stripper as other gasoline constituents. In some cases, carbon polishing is also required to meet discharge requirements.

“MTBE releases can migrate rapidly in groundwater.”

U.S. EPA UNDERGROUND STORAGE TANK PROGRAM

The 1988 U.S. EPA regulations set minimum standards for new USTs and for existing USTs. By 1998, all USTs were required to meet certain standards regarding spills, overfills, and corrosion protection.

When the program began, the EPA estimated that there were 2.2 million USTs in op-

eration nationwide. The number of abandoned USTs is unknown. As of September 30, 2002, the EPA estimated that there were 697,966 active USTs at 269,000 sites. Approximately 673,000 of the tanks contain petroleum and approximately 1,525,402 tanks have been closed since the inception of

the program. As of October 2002, the EPA estimates there have been 422,000 petroleum releases. North Carolina currently has over 30,000 release incidents.

While risk-based actions have substantially reduced the cleanup requirements for tanks, it will take years to address all of the sites.



www.terraquestpc.com

**TERRAQUEST ENVIRONMENTAL
CONSULTANTS, P.C.**

401 W. Weaver Street
Carrboro, NC 27510

Phone: 919-932-1590

Fax: 919-932-1594

Email: mjbrown@terraquestpc.com



**YOUR SOURCE FOR ENVIRONMENTAL
SOLUTIONS.**

BOTTLED WATER CAN CONTRIBUTE TO CONTAMINATION

According to a report from the National Groundwater Association, bottled water producers sold more than \$7.7 billion worth of water last year. That was an increase of 12.5% over 2001 revenues. The average consumer in 2002 drank 21 gallons of bottled water.

The National Resource Defense Council estimates that bottled water is 240 times to 10,000 times more expensive than tap water. It is interesting to note that the International Bottled Water Association reports that ap-

proximately 25% of bottled water production is from a tap water source. With the attractive profits and ever-growing demand for bottled water, there is a concern that significant groundwater withdrawals by bottlers could further deplete aquifer resources and contribute to the migration of contaminants.

Production wells in developed areas may be impacted by contaminants from surrounding industries such as dry cleaners, gas stations, and factories. Even in low development areas, produc-

tion wells can be impacted by local agricultural activities. Overapplication of pesticides and runoff and infiltration of nitrate contaminated water from animal waste lagoons are significant sources of contamination in low development areas.

It is ironic that the bottled water industry may be contributing to the further migration of contaminants when many people drink bottled water because they question the quality of their tap water.

TerraQuest Environmental Consultants, P.C. is a full service environmental consulting firm located in Carrboro, NC. We specialize in the assessment and remediation of various types of facilities.

If you have questions regarding our services, please feel free to contact us at (919) 932-1590 or visit our website at www.terraquestpc.com



Cherokee, NC bottled water