ITRC Training Helps Regulators Achieve Project Goals

Training courses offered by the Interstate Technology and Regulatory Council (ITRC) have been instrumental in helping state environmental agencies evaluate sites contaminated with Light Non-Aqueous Phase Liquids (LNAPLs) and determine the best cleanup approach.

LNAPL Training

LNAPLs are a group of contaminants that are typically petroleum-based and lighter than water. They are often difficult to adequately assess and remediate. Over the past few decades, LNAPL remedial technologies have evolved from conventional pumping or hydraulic recovery systems to a variety of innovative, aggressive, and experimental technologies. To assist regulators and environmental managers in assessing the extent of LNAPL contamination and identifying the best-suited remedial solutions, ITRC offers LNAPL classroom and Internet-based training courses.

"I thought the class was one of the best I have ever attended. It presented a fundamental shift in our view of LNAPLs in the subsurface and promises to change the way we approach solutions for cleanup. Thank you for bringing this class to us."

Randy Carlson,
Kansas Department of Health & Environment

The LNAPL training courses are based on the ITRC technical and regulatory guidance document, *Evaluating LNAPL Remedial Technologies for Achieving Project Goals*. Instructors are internationally-recognized experts from a variety of sectors. The training courses were developed to appeal to state regulators, consultants, and contaminated site owners alike. A sound understanding of LNAPLs is necessary to effectively characterize and assess conditions and risks, as well as evaluate remedial solutions. The ITRC LNAPL training courses highlight remedial technologies, provide a framework for setting goals, and correct common misperceptions.

Informed Decisions

LNAPL-contaminated sites can be difficult to characterize, and ITRC provides tools to properly characterize and remediate contamination. The ITRC training courses help regulators identify LNAPL risks and set proper remedial objectives and performance metrics. Classroom training course attendee Nick Swiger, an environmental engineer at the Michigan Department of Environmental Quality (DEQ), stated that the training helps put everyone on the same page, allowing more informed site decisions. "Better site decisions should result in money being better spent," explains Swiger.

At Michigan DEQ, ITRC resources are helping project managers make site decisions at leaking underground storage tank facilities, as well as at larger sites where the evaluation process outlined in the ITRC training courses is being closely followed. Swiger says the biggest benefit of the ITRC classroom training course is correcting the misperception that the presence of LNAPLs at a site always creates unacceptable risk.

ITRC LNAPL training courses:

Two-day classroom training

Light Non-Aqueous Phase Liquids: Science, Management, and Technology

LNAPL Internet-based training

Part 1: An Improved Understanding of LNAPL Behavior in the Subsurface - State of Science vs. State of Practice

Part 2: LNAPL Characterization and Recoverability - Improved Analysis - Do you know where the LNAPL is and can you recover it?

Part 3: Evaluating LNAPL Remedial Technologies for Achieving Project Goals

Benefits of ITRC training courses on LNAPLs:

- Explain how LNAPLs behave in the subsurface and examine what controls their behavior
- Provide tools to develop conceptual site models
- Address LNAPL characterization and recoverability
- Present methods to identify appropriate and achievable remedial objectives
- Evaluate a variety of remedial options and offer a technical framework for selection

Harmonizing Approaches

Regulatory drivers can present challenges to site cleanup, and ITRC LNAPL materials are helping states streamline remedial technology selection and gain regulatory approval. These materials have prompted state regulatory agencies to change the way they handle LNAPL-contaminated sites. Many state regulatory agencies have updated their guidance documents, and some are even incorporating ITRC concepts and language.

For example, the information presented in the ITRC training courses led to a new way of considering LNAPLs at contaminated sites in Minnesota. Paul Stock, Minnesota Pollution Control Agency (PCA), explains that he and a dozen other staff attended the ITRC Internet-based LNAPL training course in 2009. "It was the day the world changed...we immediately set about changing our policies and guidance, including renaming it," said Stock.

The Minnesota PCA relied heavily on ITRC LNAPL materials as a primary resource while developing its *LNAPL Management Strategy*. Staff are currently working to update the strategy based on concepts and terminology presented by ITRC during the classroom-based training course.

"The updates to our guidance mainly have to do with the better understanding of LNAPL hydraulic behavior and setting standards for LNAPL recovery to the maximum extent practicable," explains Stock. Hydrologic conditions can have a profound effect on LNAPL behavior and an understanding of these conditions is necessary.

The LNAPL training courses are examples of the many courses developed by ITRC to accelerate use of science-based solutions to achieve project goals. For more information on LNAPL training courses and guidance documents, as well as other ITRC resources, visit www.itrcweb.org. All ITRC guidance documents and Internet-based training courses are available for free.

Reducing Costs

Applying concepts from the ITRC LNAPL training courses helps to proactively identify the appropriate remediation technology and thereby avoid unnecessary costs and delays. For instance, the training curriculum was used to support a risk management decision at a transportation facility in Blaine, MN, resulting in savings of approximately $500,000.

At another Minnesota site, the conceptual understanding of LNAPL risks gained from the ITRC training courses was used to determine the type of risk present and identify the best remediation options. Applying this information, the project team decided that site objectives could be met using a relatively inexpensive hydraulic recovery method, avoiding a previously planned and more expensive complete LNAPL excavation.

Combining technologies is a key concept in ITRC guidance documents and training courses. In Utah, soil vapor extraction was coupled with innovative electrical resistance heating technologies at a LNAPL remediation site. Using this approach, more than 1,300 gallons of gasoline were successfully removed in 10 months (Utah Department of Environmental Quality Photo).