2016 ITRC Teams

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LNAPL Update - NEW

Leads: Erik Gessert (erik.gessert@state.co.us) and Randy Chapman (randy.chapman@deq.virginia.gov)
Project: Since 2007, ITRC has been a national leader in producing technical and regulatory guidance documents and training courses focused on the assessment and remediation of light non-aqueous phase liquids (LNAPL) contaminated sites. With the advancement of science and lessons learned, the curriculum of the classroom training course has reached a point such that there is more new science presented than what was captured in the original ITRC LNAPL documents. The project team proposes to develop a comprehensive up-to-date web-based guidance document that captures relevant historic information for the assessment and management of LNAPL contaminated sites as well as lessons learned and will also incorporate cutting edge new science developed in recent years. This information based on the science of LNAPL, LNAPL Conceptual Site Model (CSM) development, transmissivity, and natural source zone depletion will form the basis of a comprehensive, one-stop LNAPL guidance document and online training that will serve ITRC's target users to support improved decision making at LNAPL sites and support states in basing regulatory guidance on the state of the science.

Evaluation of Innovative Methane Detection Technologies - NEW beginning Spring, 2016

Leads: Lisa Dorman (ldorman@pa.gov) and Timothy Taylor (timothya.taylor@state.co.us)
Project: This new ITRC remediation plus team will produce a web-based Technical and Regulatory Guidance document establishing a national consensus for evaluating the effectiveness of methane-detection and characterization technologies. The team will evaluate state-of-the-art methane detection technologies and will also assess regulatory barriers that might hinder the use of a standardized evaluation methodology. The final team scope will be determined by the team at their first meeting in April.

Quality Considerations for Multiple Aspects of Munitions Response Sites - NEW

Leads: Roman Racca (roman.racca@dtsc.ca.gov) and William Harmon (harmonw@michigan.gov)
Project: ITRC recently completed the Technical and Regulatory guidance document titled "Geophysical Classification for Munitions Response Sites" (GCMR-2). The document and companion internet-based training rely heavily on the Project Planning and Quality Assurance components of Geophysical Classification, using state of the art advanced sensor technology. Information in the previous ITRC documents "Geophysical Prove-outs for Munitions Response Projects" (UXO-3) and "Quality Considerations for Munitions Response Projects" (UXO-5) will not be applicable in the transition of geophysical classification technology. Technological advancements in geophysical detections systems, and process improvements in geophysical surveys, have rendered UXO-3 and components of UXO-5 outdated or obsolete. The team will produce a separate document which will update the ITRC UXO-3 and UXO-5 documents to reflect technical and procedural advances. The document will provide guidance to regulators concerning the process and integration of Quality Control/Quality Assurance programs to support geophysical classification objectives. The guidance will empower regulators and stakeholders to quickly assess the quality of work performed, thereby minimizing rework, speeding up munition cleanup projects, and reducing their cost. The primary deliverables will be 1) an updated technical and regulatory guidance document, and 2) revised internet-based training.

TPH Risk Evaluation at Petroleum-Contaminated Sites - NEW

Leads: Thomas Booze (Thomas.Booze@dtsc.ca.gov) and Mike Kwiecinski (mike.kwiecinski@state.co.us)
Project: ITRC will review, update, and develop guidance on methods and procedures used for evaluating risk and establishing cleanup requirements at TPH contaminated sites. A lot of this information has been published by states and other entities over the past 20 years (e.g., TPH carbon range chemistry and toxicity, methods to develop weighted toxicity factors and screening levels for different fuel types, models and approaches to develop screening levels for direct exposure, vapor intrusion, drinking water and aquatic toxicity, gross contamination, etc.). The ITRC document will primarily be a compilation of this existing information presented in an easy-to-use manner for

regulators and consultants. This document will also incorporate updated TPH information currently being collected by the American Petroleum Institute (API). A comprehensive state guidance document based on making scientific, risk-based decisions at petroleum-contaminated sites will be developed by the team.

Stormwater BMP Performance Verification Team- NEW

Leads: Rebecca Higgins (Rebecca.Higgins@state.mn.us) and Diana Messina (dcmessina@waterboards.ca.gov)
Project: The goal of this project is to identify best methods for evaluating the pollution-reduction capabilities and verifying the performance of stormwater best management practices (BMPs) for Clean Water Act compliance purposes (to see full project proposal, click here). Facing a diversity of stormwater management laws, regulations and other mandates, regulators have no national consensus on how best to determine the pollution-reduction capabilities of Best Management Practices (BMPs) that reduce the flow of stormwater and associated pollutants into the nation's waterbodies. In addition to ensuring appropriate design and effectiveness, regulators must ensure that stormwater practices are properly installed, maintained and reducing pollution loading over their lifetime. Federal and state environmental regulators, DoD installations, agricultural entities, other large land owners, municipalities, builders, businesses, and a host of stakeholders share a strong interest to develop and implement such a consensus. ITRC will assemble a team of experts who could produce a variety of products, including a technical/regulatory guidance document, case studies, a compendium, and/or an Internet-based training course.

Bioavailability in Contaminated Soil

Leads: Claudio Sorrentino (Claudio.Sorrentino@dtsc.ca.gov) and Kathryn Durant (Kathryn.Durant@state.de.us)
Project: Research has shown that the potential risk and hazard associated with contaminants in soil are often less than if the contaminant is directly provided to organisms. Contaminants may be tightly bound to soil or sequestered within particles, greatly reducing the potential uptake by people (and other receptors) that are exposed to the soil. Consequently, if soil bioavailability is not considered, the remediation could be larger than necessary to achieve the desired level of protection. Lack of understanding, high cost of *in vivo* (whole organism) testing and the uncertainty associated with *in vitro* (test tube) assays are among the most common reasons why relative bioavailability is not considered. In the last decade, the cost of *in vitro* assays has decreased and their correlation to *in vivo* studies has improved. This team will bring together the leaders in soil bioavailability testing for inorganic (e.g., arsenic, lead) and organic contaminants (e.g., polycyclic aromatic hydrocarbons) to develop consensus-based regulatory and technical guidance on soil bioavailability. The goal of the project is to help regulators and practitioners select and properly use site-specific bioavailability testing, understand the pros and cons of different *in vivo* and *in vitro* methods, and determine which method is most appropriate for site conditions. An Internet-based training course will also be developed.

Characterization and Remediation in Fractured Rock

Leads: Naji Akladiss (naji.n.akladiss@maine.gov) and Michael Smith (michael.b.smith@state.vt.us)
Project: Many challenging remediation sites have contamination present in fractured and weathered crystalline and sedimentary bedrock. Characterizing and conducting environmental remediation in fractured bedrock is difficult because fate and transport is complex, especially as compared to the better understood fate and transport in typical soil and groundwater systems. The goal of this project is to provide technical and regulatory guidance and internet-based training for regulators, the regulated community, remediation practitioners, and other stakeholders that will aid in the selection of appropriate characterization tools and techniques (e.g., geologic, hydraulic, and chemical) and remediation technologies to remediate common and emerging contaminants in fractured bedrock.

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Geostatistics for Remediation Optimization

Leads: Ning-Wu Chang (nchang@dtsc.ca.gov) and Harold Templin (htemplin@idem.in.gov)

Project: Geostatistics include different methods that can be used to understand and interpret spatial and temporal environmental data. These methods are often used to estimate correlations and redundancy between sampling locations and events, as well as to identify areas and periods of high statistical uncertainty in a groundwater-monitoring network over time. Geostatistical approaches may be used in environmental project optimization, including reviewing site characterization data and groundwater or soil remediation performance data. Optimization can improve performance, increase monitoring efficiency, and justify contaminated site decisions. Geostatistics are often more informative for optimization than simple, deterministic decision flow charts that may not adequately account for complex site conditions. This project will develop a web-based guidance document and Internet-based training course on geostatistics to help state regulators and project managers, who will benefit by understanding and implementing geostatistical approaches for making better decisions at environmental projects across all project-life-cycle stages.

Long Term Contaminant Management Using Institutional Controls

Leads: Nick Swiger (swigern@michigan.gov) and Patricia Coppolino (Patricia.Coppolino@state.vt.us)

Project: At many contaminated sites, even those with active remediation, institutional controls (ICs) are used with the intention of minimizing the potential for human or ecological exposure to contaminants. Typically, ICs provide control over the use of the property and are aimed at protecting the integrity of a cleanup remedy. As more contaminated sites are managed using ICs, there is a need for a comprehensive guide on selecting, implementing, monitoring, and maintaining ICs at contaminated properties to ensure the ICs remain protective. This project will also address the advantages and limitations of various ICs, as well as identify critical success factors for an IC program. A web-based guidance document and associated Internet-based training course are planned.

Remediation Management of Complex Sites

Leads: Carl Spreng (carl.spreng@state.co.us) and John Price (john.price@ecy.wa.gov)

Project: Achieving restoration goals by applying conventional remediation approaches has been difficult at many contaminated sites. For example, remediation of groundwater to a condition allowing for unlimited use and unrestricted exposure remains a significant challenge at some sites. A variety of existing approaches can be applied at these challenging sites and a guidance describing the elements, tools, and options for successful remediation at complex sites is needed. Success at complex sites may ultimately depend on being able to integrate multiple remediation approaches, risk management strategies, and long-term monitoring and management. This project will produce a guidance document that provides a technical foundation for predictive analyses, for progressive remedy implementation, and for defining and achieving a successful remediation strategy at complex sites. Case studies will be included to help define complex sites. This document, along with an associated Internet-based training course, will help regulators and site managers develop protective approaches that have a strong scientific and technical foundation.