ITRC Optimizing *In Situ* Remediation Performance and Injection Strategies

WHAT IS ITRC?

The Interstate Technology Regulatory Council (ITRC) is a state-led, public-private coalition dedicated to reducing barriers to the use of innovative environmental technologies. ITRC represents over 900 individuals across 50 states, working to produce guidance and training on innovative environmental solutions. Bringing together teams of state and federal regulators along with private, academic, and stakeholder experts, ITRC broadens and deepens technical knowledge and reduces barriers to the use of environmental technologies and processes. Since 1995, the collective success of this coalition has generated huge benefits to the environment, inspired new technical innovations, and saved hundreds of millions of dollars.

ITRC is a program of the Environmental Research Institute of the States (ERIS), managed by the Environmental Council of the States (ECOS). This partnership is based on a commitment to protect and improve human health and the environment across the U.S.

ABOUT *IN SITU* REMEDIATION

In situ remediation technologies have advanced to mainstream acceptance and offer a competitive advantage over many forms of *ex situ* treatment of soil and groundwater. Developing a detailed site-specific strategy is absolutely critical to the success of such *in situ* remedies. These strategies include conducting a thorough site characterization that will allow development of a detailed Conceptual Site Model (CSM) to guide critical analysis of subsurface features and improving remediation effectiveness. In the interest of developing expedited solutions, many past *in situ* remediation projects have been executed based on an incomplete understanding of the hydrogeology, geology, and contaminant distribution and mass. Some of these sites have undergone multiple rounds of *in situ* injections but have not advanced to closure. Better strategies and minimum design standards are required to decrease uncertainty and improve remedy

effectiveness. This project will develop guidance to help optimize remedial outcomes with in situ remedial strategies.

THE *IN SITU* REMEDIATION PERFORMANCE AND INJECTION PROJECT

The ITRC team will begin this project in 2018. They will develop an interactive Technical Regulatory Guidance and associated online training as a comprehensive resource for *in situ* remediation. This project is expected to take up to three years to prepare the guidance, respond to external review, finalize the web based guidance, and prepare the web based training.

To concisely summarize the issues surrounding the topic, the team will create a guidance document on optimizing remediation performance and developing effective strategies. The document will discuss risks and limitations on these technologies , and how to address them to improve remedial success. Examples of issues that will be discussed include:

- Ineffective treatment caused by a misunderstanding or incomplete understanding of the hydrogeology, geology, source area, and contaminant mass and distribution;
- Ineffective treatment caused by a misapplication of a technology;
- The potential for contamination mobilization as a result of injection;
- Inaccurate interpretation of remedy results due to inappropriate monitoring program design; and
- Possible uncontrolled migration of injection materials to new exposure pathways.

GENERAL PROJECT SCHEDULE

There will be monthly conference calls to review and finalize the final online guidance. The document will be sent to ITRC members for external review in January 2020 and will be publicly available in August 2020.

JOIN THE TEAM!

The Optimizing *In Situ* Remediation Performance and Injection Strategies project will begin January 2018! By joining the team, you will help write the guidance document and develop training. To join, visit http://itrcweb.org/Membership/TeamRegistration.

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