

**Speakers:** Danny Kingham, Senior Hydrogeologist, and Travis McGuire, Principal Engineer, GSI Environmental Inc.

**Topic:** Environmental Testing and Monitoring at Carbon Capture and Sequestration Sites

**Description:** Global commitments toward net-zero emissions and new incentives for carbon sequestration in the form of federal tax credits (Section 45Q) or California Low Carbon Fuel Standard (LCFS) credits are driving the rapid development of geologic carbon capture and sequestration (CCS) projects. To obtain permits for these projects and receive these credits, proactive monitoring is required to address three criteria: conformance with the proposed injection plan, containment of the gas within the injection zone, and identification of environmental effects. Through detailed site characterization and environmental monitoring, including a robust baseline dataset, a reliable monitoring network, and an understanding of gas migration from deep strata, the operator of CCS projects can reliably detect and attribute anomalous carbon dioxide levels to natural variation versus a leak from the storage reservoir. This presentation will provide an overview of the environmental monitoring considerations and regulatory requirements for geologic CCS projects.

**Bios:**



Ms. Kingham is a Senior Hydrogeologist with GSI and a registered Professional Geoscientist with 17 years of professional experience. Ms. Kingham is actively involved in issues related to carbon capture and sequestration, including application of federal and state guidelines on environmental monitoring and verification programs. She has managed large litigation projects regarding environmental impacts related to oil and gas operations, emerging contaminants, chemical and manufacturing facilities, landfills, pipelines, and air emissions throughout the US and abroad. Ms. Kingham is an expert in site investigations for residential and commercial/industrial properties, including chemical manufacturing plants and oil and gas facilities, under various state and federal regulatory programs.



Mr. McGuire is a Vice President and Principal Engineer with GSI and a licensed Professional Engineer with 20 years of professional experience. Relative to carbon capture and sequestration, his experience includes Underground Injection Control permitting of injection wells under the Railroad Commission of Texas and the Texas Commission on Environmental Quality, as well as design of environmental testing and monitoring plans. Mr. McGuire has also led numerous investigations of environmental media for purposes of source attribution and he has led engineering design of mitigation and gas relief systems in response to subsurface gas impacts.