Soil Chemistry for Remediation of Salt-Affected Soils

Course Description:

Salt is a common soil contaminant encountered in Western Canada. Saline water is often extracted from deep geologic formations in conjunction with oil and gas, and may have been introduced to the environment from historical practices or from spills and leaks. Once in the soil, salt is a persistent contaminant of concern and is highly mobile in porewater and groundwater. The resulting salt plume may be laterally extensive and deep, compared with other contaminants of concern related to oil and gas operations in Western Canada.

The chemical nature of salt and its interaction with soil particles is important to understand when designing an assessment or remediation programs for these salt plumes. This course will cover fundamental soil chemistry and physics related to salt-affected soils, as well as the mechanisms for salt transport. This course will review the Salt Contamination Remediation and Assessment Guidelines (SCARG) and the Assessing Drilling Waste Disposal Areas Guidelines, and will discuss assessment procedures and remediation options for salt-affected soils.

Instructor:

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Sarah Katvala has over 10 years of experience working with salt-impacted soils and groundwater, with particular emphasis on the assessment and remediation of extensive salt plumes. She currently works as an environmental scientist with the Assessment, Remediation and Reclamation team at Matrix Solutions. Prior to working in the environmental consulting industry, Mrs. Katvala conducted soils, groundwater and surface water research at the University of Calgary and the University of Waterloo. Her research experience includes the assessment and remediation of salt-impacted peat soils, and the use of stable isotopes to quantify winter and summer precipitation contributions to river water flows.