

In Situ Salt Remediation - Carbon and Cost Benefits of Treating Soil in Place

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The choices for remediating salt contaminated soil arising from produced water spills associated with oil and gas activities are limited. Often, excavating contaminated soil and placing it into a landfill facility is the only option. Depending on location and the amount of contamination, this is not always practical or economically viable. Disposal also transfers the liability to another location without eliminating it. This presentation will review some of the options available for in situ remediation of salts in soil, including phytoremediation and electrokinetics. Data will be presented looking at the effectiveness of bacteria in facilitating plant growth and uptake of sodium and chloride into the plant tissues, allowing for plants to be used as a sustainable and low cost option for long term salt management. The economics of using various methods to treat soil in situ at large scale will be discussed. In addition, the presentation will examine the potential to offset carbon emissions associated with remediation activities when using phytoremediation as a treatment option.

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Elizabeth Murray is a senior scientist with Earthmaster Environmental Strategies in Calgary, Alberta. She is a graduate of Lakehead University in Thunder Bay, Ontario and Queen's University in Kingston, Ontario. She has a Ph.D. in human genetics and she has worked for more than 20 years in medical related research and in plant based biotechnology, developing biologics as treatments for human diseases. Elizabeth has worked in environmental sciences for over 9 years and plays a lead role in the analysis and reporting of phytoremediation research and results. She also manages the research and development of Earthmaster's PEPSystems® technologies.