



Soil Sterilant Program: Industry Applications

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Soil sterilants are non-selective residual herbicides that render the treated soil unfit for plant growth for relatively long periods of time. Sterilants were commonly used in Alberta from the 1960s to late 1990s for non-selective vegetation control on oil and gas wells, gas processing plants, rights-of-way, railways, sawmills, pulp mills, and electrical utility sites. Despite not being used for nearly 30 years, concentrations of sterilants are commonly encountered above remediation guidelines, with bromacil and tebuthiuron being the most common sterilants found in Alberta. The application patterns, mobility, persistence, and low-level remediation guidelines pose significant challenges in identifying and delineating, managing, and remediating sterilant impacted sites.

As industrial sites near the end of their life cycle in Alberta, these challenges become a barrier in remediation of sterilant impacted sites to reduce their associated liability. The Soil Sterilants Program (SSP) was initiated in 2019 to develop proven technical and cost-effective strategies for the management of sterilant-impacted sites. After 12 projects over 5- years, the SSP addressed the challenges of identification and delineation, risk assessment and management, and remediation of sterilant-impacted sites.

This session will discuss how the findings from the SSP can be used in real-world industry applications to improve and standardize risk assessment approaches, provide Alberta-specific input data for conceptual site models and site-specific risk objectives, validate and implement new remediation options, and establish best management practices for identification and delineation of sterilant impacted sites. Knowledge gaps remain in these areas, requiring further study, validation and optimization at field/ operational scales, and testing on sites from a variety of Alberta conditions and areas for broad applicability.

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