



Integrated Site Closure Based on Natural Attenuation

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Understanding the fate and transport of environmental releases opens up new site closure strategies beyond remediation to generic (Tier 1) or even site-specific (Tier 2) guidelines/standards. Integration of fate and transport modelling, natural source zone depletion, and receptor probability analysis as well as a strong understanding of site objectives can be utilized to understand the stability of a plume and expected time for plume to attenuate, the potential future extent of impacts, and the potential for future adverse effects.

Available models for prediction of source depletion are evaluated with example comparisons of mass loss to field literature data. Case studies will be presented in multiple settings illustrating the use of these approaches within a standardized framework and available tools to not only minimize the need for remediation, but to reduce or eliminate the need for active monitoring and transition sites to a passive control or no further action state.

The immediate benefits available through application of this approach includes accelerating redevelopment of properties and maximizing commercial use; redeployment of spend from further assessment to remediation / environmental protection and streamlining /reducing regulatory review and resubmissions.

Ian Mitchell

Ian Mitchell has degrees in ecology, environmental engineering and toxicology, and over 25 years of experience focused on risk assessment, environmental guideline development and complex contaminated site management. In addition to conducting numerous sitespecific risk assessments for sites across Canada, he was involved in the development of the Alberta Tier 1 and Tier 2 guidelines and has authored or contributed to risk assessment guidance and environmental guidelines for CCME, Health Canada, and Environment Canada, as well as provincial guidance in Alberta, Saskatchewan and BC. In his current role as Millennium's VP of Technology and Business Services he is focused on integrating new technologies and approaches into environmental consulting as well as leading applied research.

Ilan Hers

Dr. Ilan Hers, as Principal and Founder of Hers Environmental Consulting, Inc., has over 30 years experience in soil vapour intrusion characterization and mitigation, assessment and management of LNAPL impacted sites, and assessment of natural attenuation and biodegradation including monitored natural attenuation and natural source zone depletion. Dr. Hers has a deep knowledge of soil vapour intrusion and has assisted clients worldwide throughout his career in developing guidance, models and methods. He has published over 25 technical papers and guidance documents on vapour intrusion. He has outstanding experience in assessment of natural attenuation of chemicals and management of LNAPL contamination and has supported private and public clients in development of guidance and protocols in these areas. He has conducted numerous applied R&D projects and supported developed of guidance worldwide for regulatory agencies in Canada, US, UK and Israel, for organizations such as American Petroleum Institute and Electric Power Research Institute, and oil and gas clients. Dr. Hers holds a Ph.D. from the University of British Columbia, has served as lecturer at UBC, and is on the Board of Directors for the Science Advisory Board for Contaminated Sites in British Columbia.