

## Coal-Bed Methane Development – Baseline Water Well Testing Program

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Data acquired by the Government of Alberta as part of the baseline water well testing program was assessed to investigate the state of natural gas in groundwater. The BWWT program requires specific data collection by operators when completing wells above the base of groundwater protection for production of natural gas in coal beds (CBM). Planar point pattern analysis was used to assess spatial clustering and potential point source occurrences for different types of gas (i.e. biogenic, thermogenic, mixed). Regression analysis was used to investigate potential association between gas concentration and proximity to existing oil and gas wells. Using ensemble learning methodologies, particularly random forest, explores what factors may be influencing the presence and concentration of methane gas in groundwater.

### Guy Bayegnak

Guy Bayegnak is a professional hydrogeologist, with over 13 years of experience in physical and contaminant hydrogeology. Guy is also a certified data analyst. Early in his career, Guy worked for a poverty relief organization, in rural hydraulics in Cameroon, then as an intern at Centre national de recherche sur les sites et les sols pollués (CNRSSP) in France, where he studied the fate of metals in a heavily polluted site: Obi. Mr. Bayegnak subsequently moved to Edmonton Canada and worked as an environmental consultant for three years, prior to joining the Provincial Government of Alberta, initially as a regional hydrogeologist and subsequently as a groundwater policy specialist. Guy Bayegnak is currently the senior hydrogeologist at Alberta Environmental Monitoring Evaluation and Reporting Agency (AEMERA). Guy Bayegnak is also a published author with 3 published novels: “*Coeur de lionne* (2011)”, “*Le placncher se derobe*” finalist of the Prix des lecteurs de Radio-Canada 2013, “and *Le merle bleu* (2016)”.

