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*Session: Environmental Impacts of Hydraulic Fracturing,
ISR U Mining, and Alternative Energy Production: Oral Presentations*
Monday, November 3, 1:20 PM - 1:40 PM
Long Beach Convention Center, Room 202B

Human Health Risk Evaluation for Hydraulic Fracturing Fluid Additives

Studies to understand potential effects of hydraulic fracturing on human health and the environment are currently being done at the state and federal levels; however, none have included a human health risk assessment. We have undertaken a human health risk evaluation, specifically focusing on potential risks to drinking water in basins underlain by shale and other tight oil- and gas- bearing formations. Potential risks are evaluated for accidental surface spills and their impact on surface water or groundwater and potential leakage from the target formation upward through bedrock and into an overlying drinking water aquifer. Our approach uses a probabilistic (Monte Carlo) framework to assess the likelihood of releases and chemical transport. This analysis considers a broad range of environmental settings (*e.g.*, soil thickness/permeability, distance to drinking water wells, accidental spill volumes), thus providing some much-needed perspective on the overall likelihood of the migration scenarios and associated risks.