



## “Environmental Innovation in the Offshore”

**Abstract:** Dr. John Walker, Stantec Consulting

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### *Modelling Gas Dispersion and Dissolution During Undersea Blowouts*

*(Dr. John Walker & Dr. Jan Haeissig)*

The complexities of modelling the dispersion of natural gas from undersea blowouts are discussed. Given sufficient water depth, a large release will undergo physical and phase changes, that may include ice formation at the release point, hydrate formation, a jet region with entrainment and momentum-driven motion in the direction of the initial release, a transition to the surface in the water column, and eventually a release to the atmosphere. Dispersion in the atmosphere is well understood, but the path from the well to the atmosphere is complex. Our work will provide modelling tools that permit more accurate modelling, and will help to optimize conservative components of the assessment that are used to compensate for uncertainty. The research is being conducted by a partnership between Stantec and Dr. Jan Haelssig of Dalhousie University to address challenges using Computational Fluid Dynamics (CFD). Funded by a grant from Encana’s Deep Panuke Education & Training and R&D Fund, the team is using CFD to develop models of the physical behavior and phase changes during the underwater portion of the release of gases in a blowout scenario.