

Appendix G Independent Project Review of Quest Storage Component

NOTE: In support of the selection of the CO₂ storage area of interest for the Quest CCS Project, an independent project review was completed. The executive summary of this review is presented here as part of the Quest CCS Project environmental assessment.



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Independent Project Review (IPR) of
Storage Component of the Shell QUEST
Carbon Capture and Storage Project

Draft Report

Shell Canada Energy

2010-9343

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Executive Summary

The current report represents the conclusions of an independent project review (IPR) of the storage component of the QUEST Carbon Capture and Storage (CCS) project. The IPR was managed and facilitated by DNV, and performed by a DNV contracted expert panel (Panel). The overall objective of the IPR was to prepare an independent assessment of the suitability of the targeted storage site for sequestration of 1.2 Megatons (Mt) CO₂ per annum for a minimum of 10 years, with possible extension of the injection period to a total of 25 years. The review was performed Sept.-Nov. 2010.

Extensive work has been performed by QUEST to identify, select and characterize a site suitable for geological storage of the required volumes of CO₂ for the CCS project. The Panel agrees that ample evidence has been provided to demonstrate that the selected site is naturally suited for geological storage of CO₂. The results of site characterization give confidence in the following statements:

There is sufficient pore space for the required 27 Mt of CO₂.

Injectivity can be sustained for the planned duration of CO₂ injection operations, i.e., 25 years.

Any migration of injected or displaced reservoir fluid out of the containment complex is extremely unlikely.

DNV and the Panel further agree that a risk and uncertainty management framework appropriate for the storage site is in place. In particular, the risk management framework should ensure that any signs of migration of injected or displaced reservoir fluid out of the containment complex are detected sufficiently early to allow corrective actions to be implemented before adverse impacts can occur.

The risk assessment activities have been carried out in a very comprehensive and systematic manner. In the opinion of DNV, particularly two elements represent pioneering work within risk management: The systematic way that identification and management of uncertainty is integrated with the risk assessment, and the development of a risk-based Monitoring, Measurement and Verification (MMV) plan that may set a precedent for design of MMV programs for CCS projects world-wide.