Shallow Gas Resource

Twenty percent of the world’s discovered natural gas reserves are of biogenic origin. Biogenic gas is generated by anaerobic bacteria through the decomposition of organic matter in shale, to a maximum burial temperature of 75°C. The methanogenesis process requires a minimum of 0.5 percent TOC, hence the huge volume of Upper Cretaceous shales underlying the western plains represent effective source rocks for biogenic gas generation.

Estimated undiscovered gas reserves within the study area are 4.5 TCF of gas-in-place. Virtually all of this gas occurs at depths of less than 1,000 meters in sand and siltstone reservoirs within the Montana and Colorado Groups. This study, Shallow Gas in the Western Plains, was conducted to capitalize on the highly favorable economic outlook for shallow gas.

Study Products

The products noted below are for the four major Upper Cretaceous gas reservoirs:

- Belly River Formation
- Milk River Formation
- Medicine Hat Formation
- Second White Specks Formation

and their U.S. stratigraphic equivalents. The report includes a discussion of biogenic source rocks, gas generation, gas chemistry and gas occurrences (shows and production). In addition we provide spatial analysis of potential gas accumulations, trap mechanisms and reserves potential.

- Potentiometric Surface Maps
- Pressure versus Elevation Graphs
- DST Recovery and Pool Outline Maps
- Structure Contour Maps
- Trap-Map Play Fairway Maps
- Detailed Technical Report
This Study

Rakhit Petroleum Consulting Ltd. is pleased to introduce a unique hydrodynamics based analysis of the shallow gas resource in the western plains of Canada and the United States. It has been recognized for some time that giant gas accumulations such as the Medicine Hat and Milk River gas fields are trapped under hydrodynamic conditions.

On a pressure versus elevation graph, this type of gas trap creates the typical Deep Basin style water over gas signature. This study focuses on recognizing the trapping mechanism and the hydrodynamic signature of the shallow gas hydrodynamic trap. Combining spatial analysis of pressure versus elevation graphs with gas migration modelling, the study identifies exploration fairways with trap styles ranging from pure hydrodynamic to structure dominated. The study provides a thorough evaluation of the reserves potential and forms a solid foundation for detailed exploration work.