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Alaska North Slope - The Resurgence of Exploration

The North Slope of Alaska has witnessed several exploration cycles since the initial success of the Prudhoe Bay and Kuparuk River discoveries in the late 1960's. Each subsequent phase of exploration has suffered from declining success rates, smaller discovered volumes, higher associated costs and increased environmental restrictions. Many of the larger and more obvious exploration opportunities have now been tested and attempts to identify subtle stratigraphic plays had until recently resulted in only limited success.

The North Slope is a foreland basin containing multiple world class source rocks. The hydrocarbon charge in many cases more than exceeds potential reservoir volumes. By comparison with other similar basins elsewhere in the world the opportunity for extensively developed stratigraphic potential should be significant. The main challenge now facing North Slope exploration teams therefore lies in the cost-effective identification of stratigraphic traps along the flanks of the foreland basin. Without a doubt the most leveraging technology to date has been access to high resolution 3D seismic and the associated ability to identify reservoir facies directly from seismic data. Initial successes especially within the shoreface systems of the Jurassic Kingak Formation and the deepwater sands of the Cretaceous Brookian interval have provided encouragement.

During the past few years many of the more highly prospective areas across the North Slope have now been covered by contiguous exploration 3D seismic. Several new and exciting play fairways have subsequently been recognized and initial drilling results are encouraging. Access to new exploration acreage has been possible through areawide lease sales on State lands and the resumption of leasing by the BLM in NPR-A. More cost effective drilling and development has enabled smaller target sizes to be considered.