

# DNR's independent study of oil potential in Coastal Plain supports federal estimates

## ANWR

The Alaska Department of Natural Resources recently released an independent study of the oil and gas potential of the Arctic National Wildlife Refuge's Coastal Plain that supports a widely held view among petroleum experts that the area has the highest oil and gas potential of any unexplored onshore area in North America.

The state study supports estimates by federal and oil industry geoscientists that all the key geologic elements necessary for the formation and accumulation of oil and gas are present beneath the 1.5-million-acre Coastal Plain and that there is a possibility that the plain has unusually large accumulations of oil, according to state officials.

DNR geophysicist James Hansen, one of the co-authors of the report, said the state study concludes that the Coastal Plain could have at least as much oil in place as the reservoirs underlying Prudhoe Bay, the largest oil discovery to date on the North American continent.

Scientists estimate that Prudhoe Bay initially contained at least 26.5 billion barrels of oil, and the state study concludes that there is a 5 percent probability that the Coastal Plain contains at least 26.5 billion barrels of oil.

A draft federal report on management alternatives for the refuge recently released for public comment includes an estimate that there is a 5 percent probability that the Coastal Plain contains at least 29.4 billion barrels of oil.

Hansen and James Eason, director of the DNR Division of Oil and Gas,

said that these estimates are very important because it is the potential for confirming large reserves of oil — even in the face of low probabilities — that encourages oil companies to explore frontier areas.

"Since the probability of finding a commercial discovery in any frontier area is usually small, generally no greater than one in 20 wells, oil companies normally proceed only when there is a chance of finding a lot of oil," Eason said.

"And it is good to remember when you're looking at these pre-exploration probabilities that prior to drilling the discovery well at Prudhoe Bay, some industry officials estimated that there was only about a 2 percent chance of finding as much as 2 billion barrels of oil," Eason said. "I personally know of no one who thought there was a chance of finding the vast amount of oil that was actually found there."

Hansen said that while in close agreement with the recently released federal appraisal on the possibility of extremely large amounts of oil in the Coastal Plain, state geoscientists were generally more conservative than their federal counterparts in their selection of the geologic characteristics, such as reservoir thickness, used to arrive at the final estimates.

As a result, he said, at some probability levels, the difference between state and federal estimates is considerably greater than at the 5 percent probability level.

Hansen said that differences in the estimates in the federal and state studies were inevitable.

"Estimating oil and gas potential necessarily involves professional judgment, even when you have substantial amounts of data to analyze," he said. "And in this case the amount of data available on the Coastal Plain is quite limited."

State estimates of in-place oil ranged from at least 80 million barrels — 95 percent probability — to at least 26.5 billion barrels — 5 percent probability.

The Coastal Plain has been closed to oil and gas leasing since Congress enacted the Alaska National Interest Lands Conservation Act in 1980. Congress is expected to address the question of whether oil and gas development should be allowed in the Coastal Plain this year.

The state appraisal — "Resource Appraisal Simulation for Petroleum in the Arctic National Wildlife Refuge, Alaska" — may be obtained at DNR offices in Anchorage, Fairbanks and Juneau.