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***Natural Gas Exploration in Washington State: High Risk, No Reward – Yet!***

The current target area for natural gas exploration in Washington is the Columbia Basin in the south-central part of the state. The basin is characterized by a thick sequence of Miocene flood basalts of the Columbia River Basalt Group. The basalts are believed to be underlain by Paleogene fluvial and lacustrine sedimentary rocks. The basalts reach a maximum thickness of about 15,000 feet in the center of the basin. The underlying sediments may range in thickness from 4,000 to 20,000 feet in thickness.

Information from the few holes that have penetrated the basalt support the belief that natural gas exists below the basalt. However, limited structural and stratigraphic information, and the difficulty of interpreting geophysical data, leave us with more questions than answers. Surface structure may not be the best indicator of the sub-basalt structural highs, and the porosities in the few drill holes are less than ideal. Other challenges include drilling problems in the basalt section, possible zones of high pressure water, a very complex permitting environment, and an almost complete lack of a petroleum industry infrastructure.

A past, and probably future, target for natural gas in Washington is the coal beds in western Washington. Washington has one operating surface coal mine at Centralia. Coal was mined underground at numerous locations in western Washington in the past. Several episodes of exploration for coal bed methane have occurred in the past decade or so. None have resulted in production. Challenges, in addition to some of those mentioned above, include large amounts of water, difficult permitting of underground injection of produced water, probable inability of surface disposal of produced water, structural complexity of the coal beds, arsenic content of some of the coals, and the greater population density in western Washington.