

Shale Well Sampler READ ME file:

Alaska Department of Natural Resources, Division of Oil and Gas

The contents of this directory include public domain well data for a small subset of wells from the central North Slope state lands that may be useful for considering the region's source-reservoired oil resource ("shale oil") potential. The primary source rocks of interest include the Late Triassic Shublik Formation, the Early Jurassic lower Kingak Shale, and the Early to Late Cretaceous Hue Shale, which here includes the Gamma Ray Zone (GRZ).

The sampler data are available for free download from this Division of Oil and Gas web page, and include the following:

- a location map in .pdf format showing the location of the sampler wells
- a spreadsheet with measured depth picks in the sampler wells at the top and base of the three key oil-prone source rock intervals and comments referring to key well test data,
- a standard suite of well logs in .las format,
- well deviation surveys,
- well history files – scanned pages of the complete well history file for each well in Adobe Acrobat format; these files contain test information for several of the wells included in the sampler, and
- a slide presentation summarizing North Slope shale oil resource potential. This presentation was delivered by Division of Oil and Gas geologist P.L. Decker at the September 15, 2011 presentation to the Alaska Geological Society.

There are a few technical considerations that should be kept in mind when reviewing the well data.

- There are very few wells in the central North Slope state lands that penetrate all the Shublik and lower Kingak source rock intervals at oil window thermal maturity as mapped by Peters and others (2006 – reference below). Of the wells in this sampler data set, those authors place only the Itkillik River Unit 1 well in the Shublik Formation oil window.
- Three of the wells (West Kuparuk State 3-11-11, Gull Island State 1, and Colville 1) were selected because they document the potential for unstimulated oil flow from the Shublik Formation. These wells are situated high on the Barrow Arch, north of the main oil window for the Shublik Formation, and the oil recovered on test is thus inferred to be migrated rather than in-situ hydrocarbon.
- The Kemik Unit 1 well yielded dry natural gas on production test from the Shublik Formation in an anticlinal closure in the foothills of the Brooks Range. Both this well and the Bush Federal 1 well are situated deeper in the Colville basin, south of the oil window as mapped by Peters and others (2006).
- Additional analytical data is available for these and many other wells from the Alaska Geological Materials Center here: http://www.dggs.alaska.gov/index.php?menu_link=gmc&link=gmc_inventory

Reference Cited: Peters, K.E., Magoon, L.B., Bird, K.J., Valin, Z.C., and Keller, M.A., 2006, North Slope Alaska: source rock distribution, richness, thermal maturity, and petroleum charge: American Association of Petroleum Geologists Bulletin, v. 90, p. 261-292.