

# **PS Oil Types of the Alaskan North Slope — A Progress Report\***

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## **Abstract**

Oil typing on the North Slope of Alaska has been a challenge for geochemists for more than 25 years because many of the oil accumulations are mixtures of oil types, and for some of the source formations, more than one oil type has been generated because of organic facies variation. A further complication is that crude oil composition is influenced by non-genetic effects, such as thermal maturity of the source rock at the time of expulsion, and biodegradation and cracking of the oil after expulsion. Significant progress has been made in recent years with a growing number of oil samples - using newer analytical techniques and chemometric analysis.

This study reviews the geological and geochemical interpretations from previous North Slope studies and presents recently acquired geochemical data to better identify and distinguish end-member and mixed oil types. At least ten end-member oil types have been identified. Probable source formations for the oil types include the Carboniferous-Permian Lisburne Group (includes the Kuna Formation), Triassic Shublik Formation, Triassic-Jurassic Otuk Formation, Jurassic-Cretaceous Kingak Shale, Cretaceous Torok Formation, pebble shale unit, and Hue Shale (includes the gamma ray zone or GRZ), and the Tertiary Canning Formation. Recognition and mapping of oil types provide the basis for defining and mapping petroleum systems that incorporate the geologic framework, source rock distribution, burial history, and migration pathways

## Results

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