



Constraining the Age and Magnitude of Uplift in the Northern National Petroleum Reserve in Alaska (NPRA) - Apatite Fission-Track Analysis of Samples From

By David W Houseknecht, Kenneth J Bird, Paul O Sullivan

Bibliography, United States, 2013. Paperback. Book Condition: New. 246 x 189 mm. Language: English . Brand New Book ***** Print on Demand *****.A broad, post-mid-Cretaceous uplift is defined in the northern National Petroleum Reserve in Alaska (NPRA) by regional truncation of Cretaceous strata, thermal maturity patterns, and amounts of exhumation estimated from sonic logs. Apatite fission-track (AFT) analysis of samples from three wells (South Meade No. 1, Topagoruk No. 1, and Ikpikpuk No. 1) across the eastern flank of the uplift indicates Tertiary cooling followed by Quaternary heating. Results from all three wells indicate that cooling, presumably caused by uplift and erosion, started about 75-65 Ma (latest Cretaceous-earliest Tertiary) and continued through the Tertiary Period. Data from South Meade indicate more rapid cooling after about 35-15 Ma (latest Eocene-middle Miocene) followed by a significant increase in subsurface temperature during the Quaternary, probably the result of increased heat flow. Data from Topagoruk and Ikpikpuk include subtle evidence of accelerated cooling starting in the latest Eocene-middle Miocene and possible evidence of increased temperature during the Quaternary. Subsurface temperature perturbations related to the insulating effect of permafrost may have been responsible for the Quaternary temperature increase at Topagoruk and Ikpikpuk and may have...



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