K₂O Grades of the Mountrail Member of the Prairie Formation
Kenmare 100K Sheet, North Dakota

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This series of maps of the Kenmare 100K Sheet was based on
public data from 70 wells performed by the North Dakota Industrial
Commission - Department of Mineral Resources, Oil & Gas
Division. The Mountrail Member was identified on the
basis of gamma-ray logging, and these data were modified
using the PETRA (ver. 3.9.13) geological software. The contour lines were
computer-generated based on well-control data only, with minimal
adjustments made by the author. Areas with a geological anomaly
may not be necessarily portrayed. The potash member thickness
to each well and the outputs contours generated from these, were
modified from Kruger (2014).

All calculations were based on gamma-ray log measurements
acquired in API units taken at six-inch increments throughout the
potash-bearing portion of the log. Corrections for barrel size
and drilling mud weight as well as corrections of the barium
precipitation were made using the grade-thickness method
modified from Kruger (2014).

When a potash member displayed multiple gamma-ray log peaks
separated by troughs representing salt or insolubles such as clay or
anhydrite, the potash intervals at the upper or lower boundaries of
subpeaks were averaged. When a potash member displayed multiple
peaks separated by an interbed of halite, the two potash-rich beds underlying a thin potash-containing zone
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The volume of potash from the Mountrail Member represented by
this chart is approximately 987,000 acre feet.

Legend

Thickness (ft)

Scale 1:100,000

References:


Crain, E.R., and Anderson, W.B., 1966, Quantitative log evaluation of the
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Krug, N.O., 2014, The Mountrail Member of the Prairie Formation in North

Velten, P.H., 2007, Evaluation of potash pools with gamma ray logs: U.S.