

A MAGNETOMETER SURVEY OF THE KEENE DOME,  
MCKENZIE COUNTY, NORTH DAKOTA

by

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## DIGEST

In April, 1951, Amerada Petroleum Corporation discovered oil on the Nesson anticline in northwestern North Dakota. Subsequently, oil was also discovered on the Keene dome to the south. This increased economic impetus led to an enlarged interest in the geology of these areas.

Dr. Wilson M. Laird, North Dakota State Geologist, suggested that a magnetometer survey of the Keene dome coupled with a similar survey, conducted by the North Dakota Geological Survey on the Nesson anticline to the north, would add materially to the knowledge of the region. Upon this suggestion, the following problem was formulated:

The problem is to attempt to determine the cause of deformation of the sediments of the Keene dome by means of a magnetometer survey coupled with existing geologic knowledge.

The magnetometer survey was conducted during August and part of September, 1954. The data were



gathered with a Ruska, Type V, vertical intensity magnetometer and corrections made for variations in latitude, longitude, and time. These corrected values were put on a base map and isogamma contours drawn.

The magnetometer data were interpreted by Peters' method and these results integrated with the known geology. This information led to the conclusions:

1. The Keene dome was probably formed by a vertically faulted basement.

2. The Keene dome is structurally separate from the Nesson anticline, Beaver Lodge field.