United States Department of the Interior
Geological Survey

Codicil to The Geophysical Expression of Selected Mineral Deposit Models

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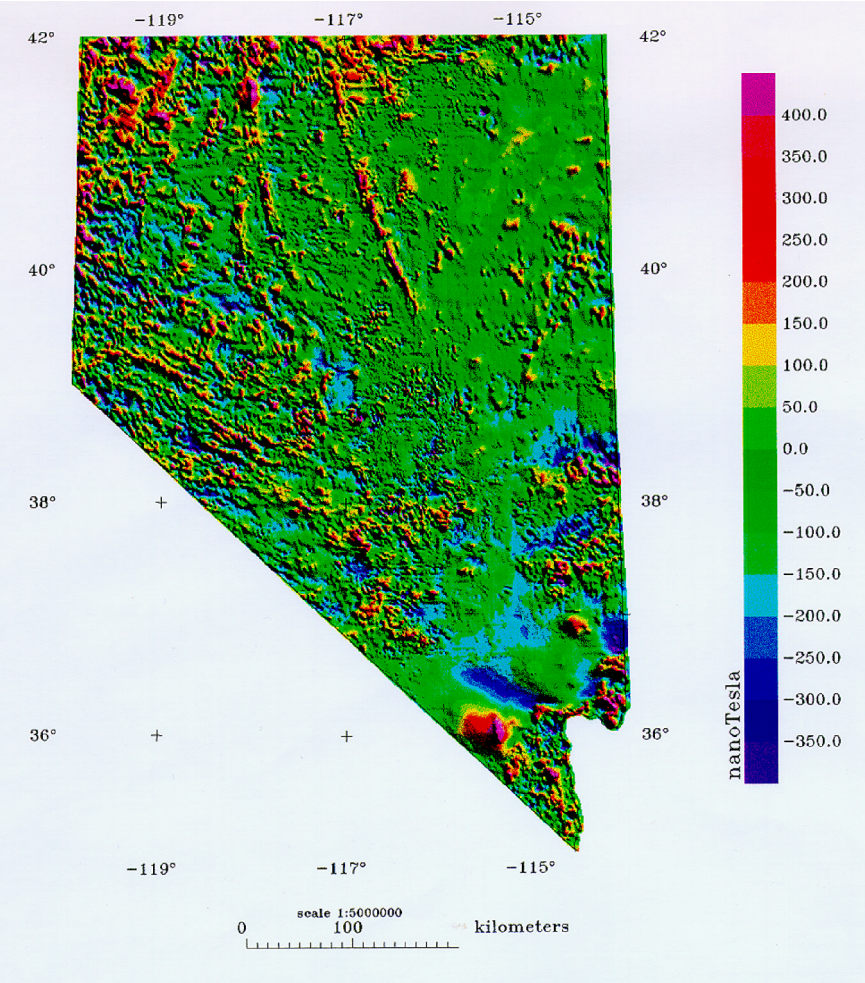

This report is preliminary and has not been reviewed for conformity with U.S. Geological Survey stratigraphic nomenclature. Any use of trade names is for descriptive purposes only and does not imply endorsement by the USGS.

Cover: Airborne Geophysical Data: Total Intensity Magnetic Anomaly Map of Nevada. Compiled from different surveys with the removal of appropriate geomagnetic reference fields, and given analytical continuation to a common surface of 1,000 ft above ground. Data are contoured at 50 nanoTesla intervals, illuminated from the NE.

The analysis of magnetic data often aids geologic investigations of the upper crust. In particular, Precambrian crystalline rocks and igneous rocks generally have sufficient magnetic minerals (mostly magnetite) to cause variations in the Earth's magnetic field. Sedimentary rocks, however, are generally nonmagnetic and have little or no effect on the Earth's magnetic field. Thus a magnetic anomaly map "sees through" the sedimentary-rock cover and conveys information on lithologic contrasts and structural trends related to Precambrian crystalline basement and to igneous bodies.

The magnetic anomaly map compiled here provides a synoptic view of major anomalies and contributes to understanding the tectonic development of Nevada. A reference geomagnetic field, which approximates the time-varying core of the Earth's field, has been subtracted from the magnetic data. The resulting residual total intensity map exhibits contour patterns related to crustal sources shallower than the Curie point geotherm (that portion of the crust in which the rocks are cool enough to possess magnetic properties).

Hildenbrand, T.G., and Kucks, R.P., 1988, Total intensity magnetic anomaly map of Nevada: Nevada Bureau of Mines and Geology Map 93A.