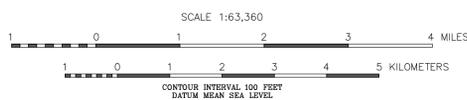
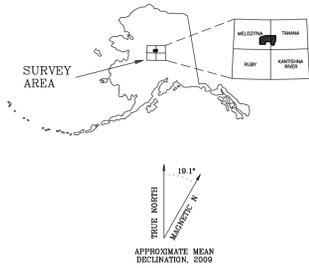


Base from U.S. Geological Survey Meozitna A-1, 1971; A-2, 1973; B-1, 1978; B-2, 1997; Quadrangles, Alaska.



# ANALYTIC SIGNAL OF THE MORAN SURVEY AREA, SOUTH-CENTRAL MELOZITNA MINING DISTRICT, CENTRAL ALASKA

PARTS OF MELOZITNA and TANANA QUADRANGLES

by  
**Laurel E. Burns, Fugro Airborne Surveys Corp., and Stevens Exploration Management Corp.**  
2010

**DESCRIPTIVE NOTES**

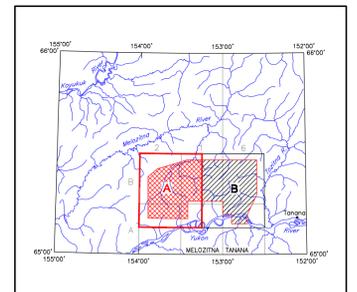
The geophysical data were acquired with a DIGHEM<sup>®</sup> Electromagnetic (EM) system, Radiation Solutions RS-500 gamma-ray spectrometer and a Fugro D1344 magnetometer with a Scintrex CS3 cesium sensor. The EM and magnetic sensors were flown at a height of 100 feet. The gamma-ray spectrometer was flown at a height of 200 feet. In addition the survey recorded data from radar and laser altimeters, GPS navigation system, 50/60 Hz monitors and video camera. Flights were performed with an AS-350-B3 Squirrel helicopter at a mean terrain clearance of 200 feet along N-S (0°) survey flight lines with a spacing of a quarter of a mile. Tie lines were flown perpendicular to the flight lines at intervals of approximately 3 miles.

A Novatel OEM4-G2L Global Positioning System was used for navigation. The helicopter position was derived every 0.5 seconds using post-flight differential positioning to a relative accuracy of better than 5m. Flight path positions were projected onto the Clarke 1866 (UTM zone 5) spheroid, 1927 North American datum using a central meridian (CM) of 153° 0' north constant of 0 and an east constant of 500,000. Positional accuracy of the presented data is better than 10m with respect to the UTM grid.

**ANALYTIC SIGNAL**

Analytic signal is the total amplitude of all directions of magnetic gradient calculated from the sum of the squares of the three orthogonal gradients. Mapped highs in the calculated analytic signal of magnetic parameter locate the anomalous source body edges and corners (e.g., contacts, fault/shear zones, etc.). Analytic signal maxima are located directly over faults and contacts, regardless of structural dip, and independently of the direction of the induced and/or remanent magnetizations.

**LOCATION INDEX**



**SURVEY HISTORY**

This map has been compiled and drawn under contract between the State of Alaska, Department of Natural Resources, Division of Geological & Geophysical Surveys (DGGs), and Stevens Exploration Management Corp. Airborne geophysical data for the area were acquired and processed by Fugro Airborne Surveys Corp. in 2009 and 2010. The project was funded by the Alaska State Legislature as part of the Alaska Airborne Geological & Geophysical Mineral Inventory Program.

All data and maps produced to date from this survey are available in digital format on DVD for a nominal fee through DGGs, 3354 College Road, Fairbanks, Alaska, 99709-3707, and are downloadable for free from the DGGs website ([www.dggs.dnr.state.ak.us/pubs](http://www.dggs.dnr.state.ak.us/pubs)). Maps are also available on paper through the DGGs office, and are viewable online at the website in Adobe Acrobat .PDF file format.