

WHITE MOUNTAINS AIRBORNE MAGNETIC AND RADIOMETRIC GEOPHYSICAL SURVEY

Emond, A.M., and MPX Geophysics LTD

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ABSTRACT

The White Mountains airborne magnetic and radiometric geophysical survey covers parts of the Livengood, Circle, and Fairbanks quadrangles 25 kilometers north of Fairbanks, Alaska (fig. 1). Magnetic and radiometric data were collected with a fixed-wing aircraft June 30 to August 22, 2021 by MPX Geophysics LTD. A total of 36,933 line kilometers were collected covering 13,423 square kilometers. The magnetometer was mounted to a rear-facing fixed boom (“tail stinger”). The radiometric crystals were located in the cabin of the aircraft. The White Mountains survey was flown with a line spacing of 400 meters (m) and a mean ground clearance of 270 m.

PURPOSE

The data from the White Mountains airborne magnetic and radiometric geophysical survey will be used for improving the understanding of the geology and mineral potential, promoting resource exploration, and be a part of the continuous regional magnetic data coverage of the Yukon Tanana Uplands.

SURVEY OVERVIEW DESCRIPTION

This document provides an overview of the survey and includes text and figures of select primary and derivative products of this survey. A table of digital data packages available for download is provided to assist users in data selection. For reference, a catalog of the available maps is presented in reduced resolution. Please consult the metadata, project report, and digital data packages for more information and data.

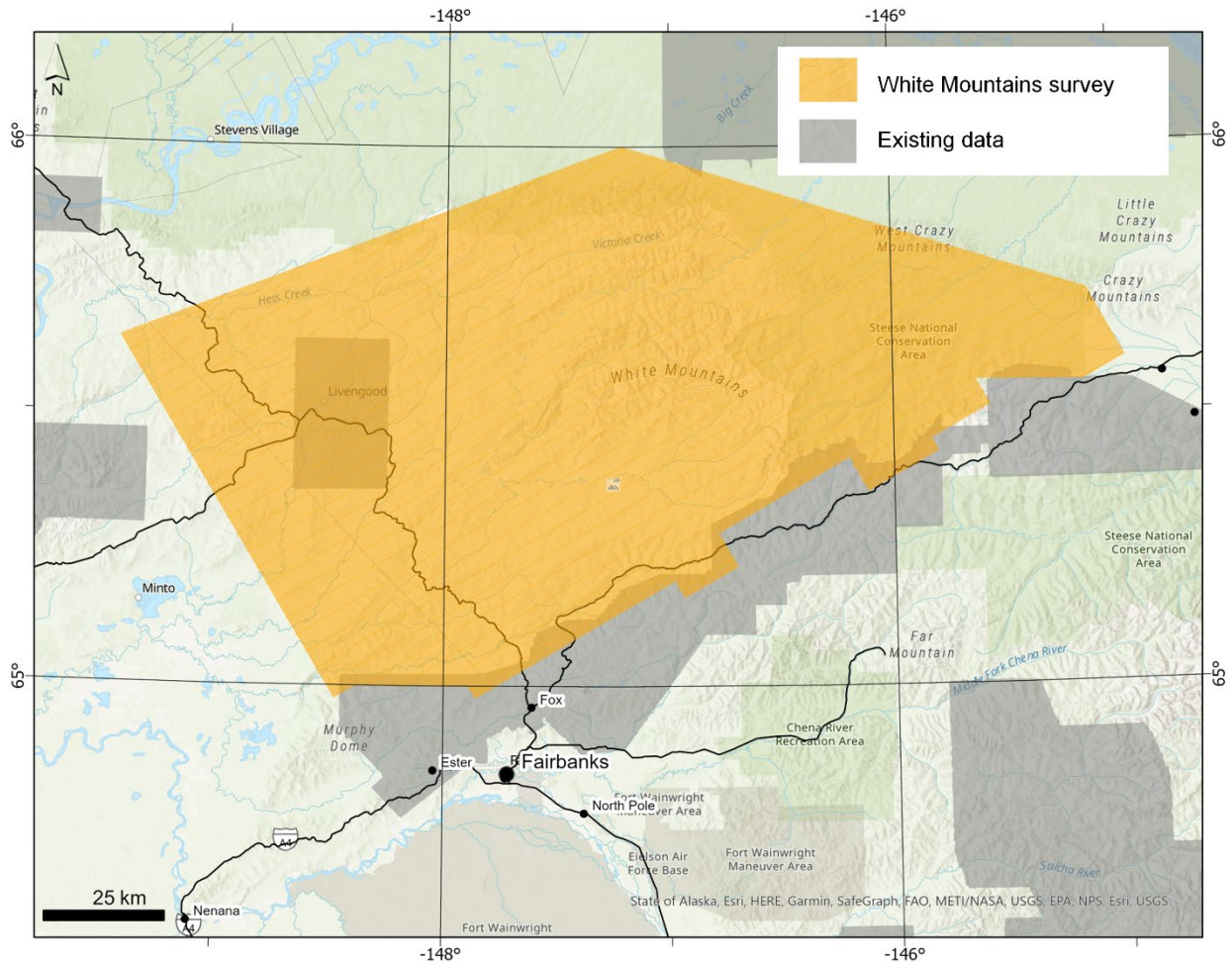
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AVAILABLE DATA

Data Type	Provider	Description
ascii_data	contractor	ASCII format line data, other ASCII data
databases_geosoft	contractor	Geosoft format database of final line data, other Geosoft format databases
documents	contractor	Project report
grids_ermapper	contractor	Geographically registered gridded data, ER Mapper ERS format
grids_geosoft	contractor	Geosoft-format gridded data
images_registered	contractor	RGB GeoTiff format images of gridded data
kmz	contractor	keyhole markup language (kml) kmz archive files of project data. Viewable in Google Earth and other compatible programs
maps_pdf_format	contractor	Printable and geographically registered maps in pdf format. Compatible with mobile device navigation and desktop mapping applications
maps_geosoft_format	contractor	maps as Geosoft packed map files
maps_jpg_format	contractor	Printable maps jpg format
photos_flightpath	contractor	Survey flight path downward facing photos with GPS location in exif data
vector_data	contractor	Line path and survey boundary in ESRI shapefile (SHP) format



Top. White Mountains survey location map with major roads, towns, and 1:250,000-scale USGS quadrangle boundaries. Prior DGGs surveys shown in gray. **Right.** White Mountains airborne geophysical survey location shown in interior Alaska with relevant 1:250,000-scale quadrangles.



Table 1. Copies of the following maps are included at the end of this booklet. The low-resolution, page-size maps included in this booklet are intended to be used as a search tool and are not the final product. Large-scale, full-resolution versions of each map are available to download on this publication's citation page: <https://doi.org/10.14509/30756>. All maps have a USGS topographic map basemap.

Flown flight path

Magnetic Data

Residual Magnetic Intensity in nT

Calculated analytic signal of the residual magnetic field in nT/m

Computed 1st vertical derivative of the residual magnetic field in nT/m

Radiometric Data

Total Air Absorbed Dose Rate in nGy/h

Equivalent concentration of Potassium (K) as percent K

Equivalent concentration of Thorium (Th) in ppm

Equivalent concentration of Uranium (U) in ppm

Uranium Thorium Ratio

Potassium Thorium Ratio

Ternary Grid: percent K - equivalent U - equivalent Th