FIELD STATION LOCATIONS AND MAGNETIC SUSCEPTIBILITY DATA COLLECTED IN 2022 FOR THE MOUNT HARPER PROJECT, EAGLE, BIG DELTA, AND MOUNT HAYES QUADRANGLES, ALASKA

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Raw Data File 2023-6

2023
STATE OF ALASKA
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

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Suggested citation:
Gavel, M.M., Twelker, Evan, Wypych, Alicja, Naibert, T.J., Newberry, R.J., Szumigala, D.J., Wildland, A.D., Barrera, M.L., Blackwell, N.J., Fessenden, S.N., Harvey, D.A., and Muller, I.P., 2023, Field station locations and magnetic susceptibility data collected in 2022 for the Mount Harper project, Eagle, Big Delta, and Mount Hayes quadrangles, Alaska: Alaska Division of Geological & Geophysical Surveys Raw Data File 2023-6, 3 p.
https://doi.org/10.14509/30963 .

FIELD STATION LOCATIONS AND MAGNETIC SUSCEPTIBILITY DATA COLLECTED IN 2022 FOR THE MOUNT HARPER PROJECT, EAGLE, BIG DELTA, AND MOUNT HAYES QUADRANGLES, ALASKA

Michelle M. Gavel[1], Evan Twelker[1], Alicja Wypych[1], Travis J. Naibert[1], Rainer J. Newberry[1], David J. Szumigala[1], Alec D. Wildland[1], Michael L. Barrera[1], Noel J. Blackwell[1], Serena N. Fessenden[1], David A. Harvey[1], Isabella P. Muller[1]

INTRODUCTION

During the 2022 field season, geologists from the Alaska Division of Geological & Geophysical Surveys (DGGS) conducted 1:100,000-scale bedrock geologic mapping of ~2,600 mi^2 (~6,700 km^2) within the Eagle, Big Delta, and Mount Hayes quadrangles. The field area for the Mount Harper project covers an area from 50-60 miles northwest of Delta Junction, Alaska, and extends eastward into the Eagle Quadrangle 40–50 miles west of Chicken, Alaska. The project area is of current and historical interest for potential mineral resource development, including quartz vein gold (Au) mineralization, placer Au deposits, granite-hosted tin mineralization, and intrusion-related porphyry copper (Cu)-Au deposits. Mineral sites in and around the Mount Harper project area include Healy, the Pogo gold mine, Lucky 13, Eagle, and others. Portions of the field area were mapped at 1:250,000 and 1:63,360 scales by the U.S. Geological Survey (USGS) in the 1960s and1980s prior to the modern understanding of Yukon-Tanana Upland (YTU) metamorphic terranes and airborne geophysical surveys (Foster and others, 1977, 1972; Nokleberg and others, 2015; Weber and others, 1978) and more recently the Big Delta B-1 Quadrangle was mapped at 1:63,360-scale by Day and others (2007). The purpose of the Mount Harper project is to produce more accurate, detailed, and modern geologic maps and supporting datasets that will promote mineral resource exploration in eastern Interior Alaska.

This report provides locations, field descriptions of rocks, and magnetic susceptibility measurements from rock outcrops and/or hand samples throughout the project area (fig. 1). The data associated with this report are available in digital format as a comma-separated value (CSV) file. All files can be downloaded from the DGGS website https://doi.org/10.14509/30963.

DOCUMENTATION OF METHODS

Location data for field stations were collected using GPS-enabled tablets or smartphones running the ESRI Field Maps app; the devices have a reported locational error between 10 and 12 m. Data were merged into an ArcGIS geodatabase. Latitude and longitude are reported in the WGS84 datum.

Field rock descriptions are composed of observations and interpretations made by project geologists in the field or in the field office. They may not be updated to reflect further observations, geochemical data, microscopic investigation, or other information. Field rock descriptions in this data file have not been reviewed for technical content and should be considered preliminary.

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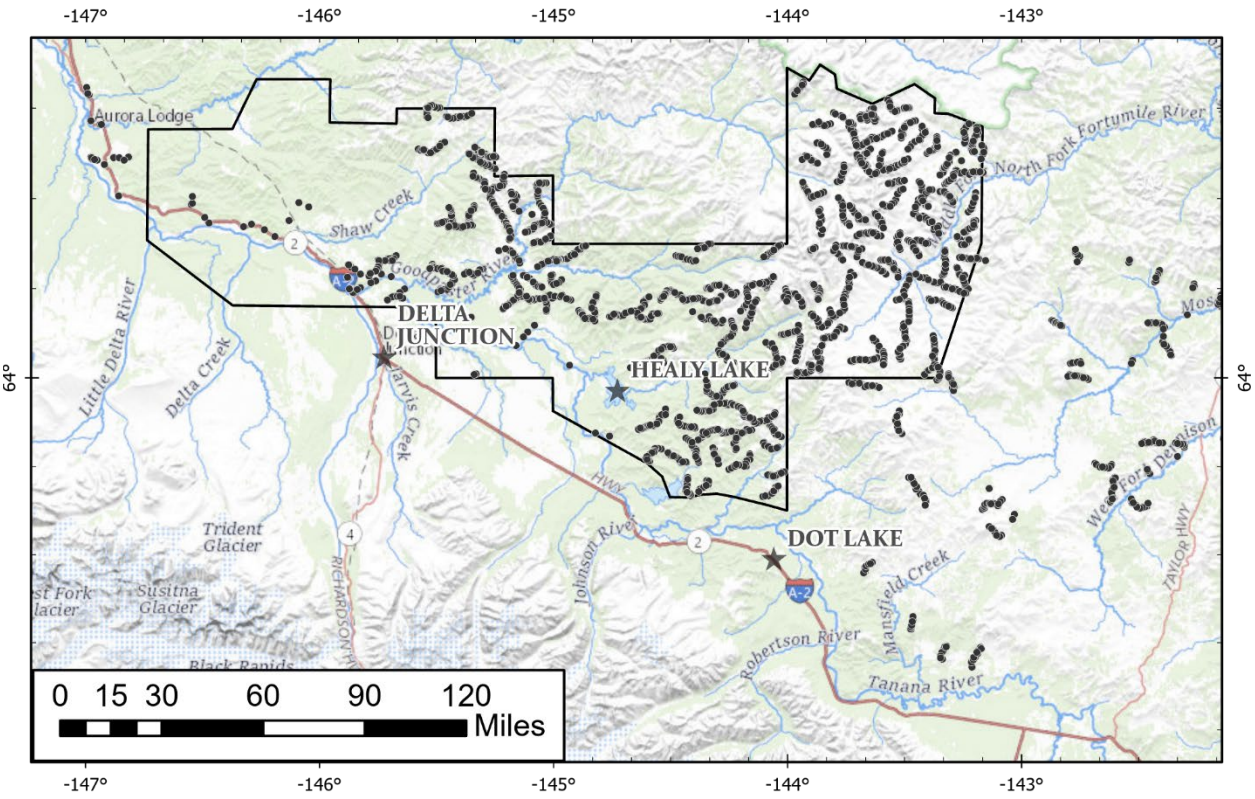

Figure 1. Field station locations (black points) in the 2022 Mount Harper project area (black outline).

Magnetic susceptibility measurements were collected using Terraplus KT-10 model handheld magnetic susceptibility meters. The KT-10 meters have a maximum sensitivity of 1 x 10^{-6} Système International (SI) units on smooth surfaces and a measurable susceptibility range between 0.001 x 10^{-3} and 1,999.99 x 10^{-3} SI. The values reported here are for individual measurements performed on representative surfaces of the sampled rock outcrops and/or hand samples. Up to 12 magnetic susceptibility readings were recorded at each field station. Efforts were made to avoid atmospheric effects by measuring multiple sides of outcrops and/or hand samples whenever possible. Where rock samples had been intensely weathered or sample material was not large enough to cover the coil of the KT-10 meter, magnetic susceptibility was not measured. These stations are presented with zero measurements for completeness.

ACKNOWLEDGEMENTS

The DGGS Mount Harper project is funded by State of Alaska General Funds and the U.S. Geological Survey's Earth Mapping Resources Initiative under Cooperative Agreement Number G22AC00288.

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