July 25, 2021

Happy Cat Property

UAV Magnetic Interpretation

Integrated Geophysics Corporation

It has been established that gold deposits can be correlated to volcanic unconformities which are indicative to a rock's magnetite content. Variation (volume and structure) in the content would exhibit a magnetic anomaly signature from which a configuration can be derived. The magnetic trends/markers mapped correlate with the volcanic conformities which are sediment/igneous interfaces.

Black Mammoth Metals contracted MWH Geo-Surveys ("MWH"), Reno, Nevada to conduct a UAV aeromagnetic survey to delineate the volcanism. Subsequently, Integrated Geophysics Corporation ("IGC"), Houston, Texas to processed and interpret approximately 58.3 Line-Kilometers of data.

The new aeromagnetic survey data indicates that the volume and extent of the volcanism in the area is extensive. The intrusive structures are 2-dimensional such as dykes and 3-dimensional such a plug. These type of volcanic unconformity, sediment/igneous interfaces, are significant to generate the additional shearing in the faults which could increase the prospective of gold deposits.

A colored -contoured Total Magnetic Intensity Field Map covering the current Happy Cat acreage is shown on Figure 1. The amplitude range is 49623 to 49802 nT. Red is the maximum amplitude; green is the minimum.
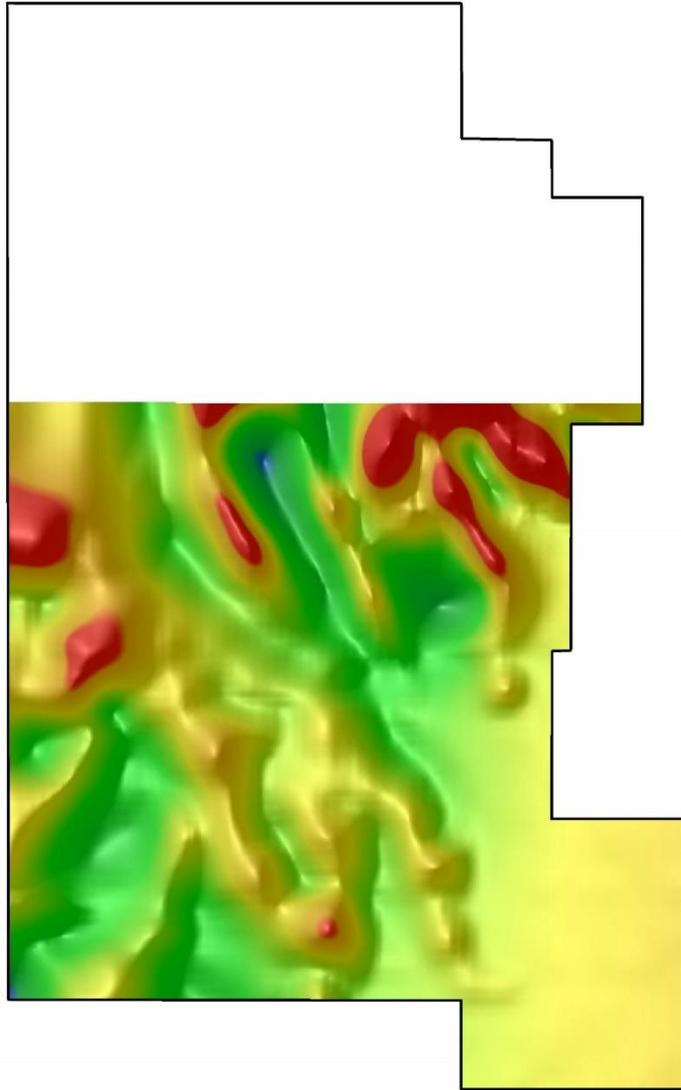
Figure 1 Color-contoured Happy Cat Total Magnetic Intensity Field (TMI) Map. Amplitude range is 49623 to 49802 nT.

The UAV aeromagnetic covering the Happy Cat acreage and its correlation with current discovered gold volume have started to develop prospective leads. This has led Black Mammoth Metals to expand the aeromagnetic survey data to cover their area of interest to the north. The composite map shown on Figure 2 is the Reduction-to-Magnetic Pole Map overlaid with the locations of two 2D structural model locations and the current gold discoveries. The dashed blue lineation posted indicate some of the trends associated to volcanic unconformities in the area.
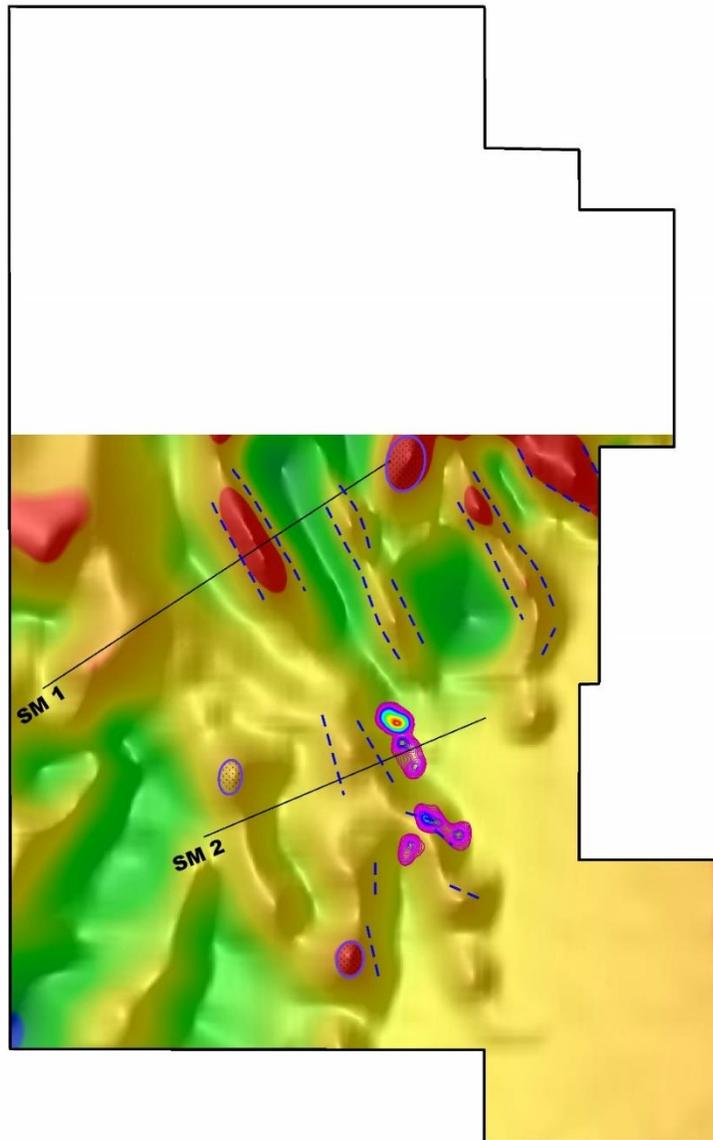
Figure 2 The Reduction-to-Magnetic Pole Field is shown colored overlaid with 2D structural model locations and geologic features.

The geology of an area can be modeled by representing lithologic layers as equi-susceptibility (k) layers and/or blocks. Where high susceptibility contrasts exist in nature, the model may correspond closely to those geologic formations. The 2D structural model is a quantitative representation of a resultant magnetic effect due to the structural configuration and susceptibility (magnetite content) contrast. Susceptibility contrast is the magnetite difference between two rocks or geologic bodies.
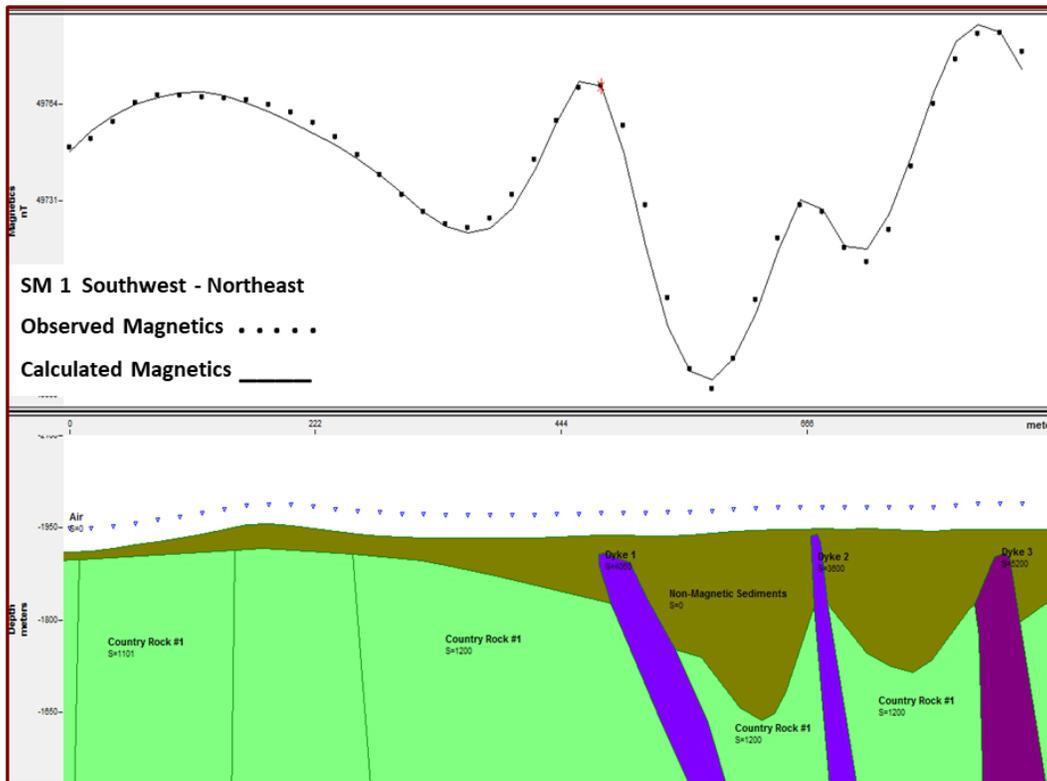
Figure 3 Structural Model 1 (SM1) The UAV flight elevation is noted as blue-triangles hovering over the topography. This a sediment/volcanic (igneous) interface contrast model. Volcanic uniformity are boundaries between sediments (green & brown), the dykes(purple) and the plugs (dk red).
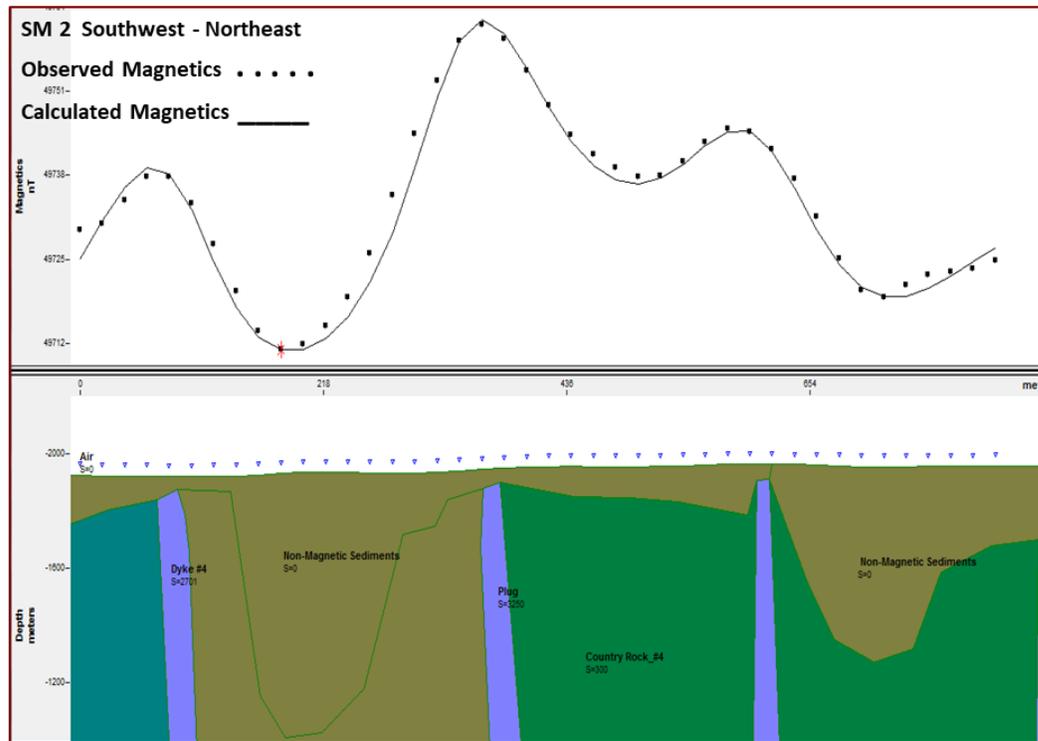
Figure 4 2D Structural Model 2 (SM2) The observed TMI profile is shown as a dotted profile. The calculated magnetic effect of the geologic configuration is shown as solid black line. The UAV flight elevation is noted as blue-triangles hovering over the topography. Volcanic uniformity are boundaries between sediments (green & brown) and the dykes/plugs (purple).

IGC interpret two 2D structural models based on the UAV aeromagnetic data with the objective to estimate the depth and illustrate the configuration of the structures associated to a volcanic conformity. These structural models are sediment/volcanic (igneous) interface contrast models. The selection of model traverse was based on the optimum direction for best depth results. The SM 1 profile as shown on Figure 3 traverses from southwest to northeast targeting the high amplitude related anomalies. The SM 2 profile as shown on Figure 4 traverses southwest to northeast targeting the western and central area lower frequency (board) anomalies. The next step in the exploration scheme is to substantiate by surface work the occurrence of gold deposits along the volcanic boundaries delineated by the interpretation of the UAV aeromagnetics data.