

MEMO TO: GRAEME MILLER
FROM: STEVE COLLINS
SUBJECT: TUMBLING DICE MAGNETIC DATA.

Ground magnetic data from the Tumbling Dice prospect were examined to determine the relationship between mapped geology and magnetic responses. In particular, the data were searched for cross structures which may control gold emplacement and for the stratigraphic relationships between magnetic anomalies at the Tumbling Dice and Cowbell prospects.

The data were examined in a variety of forms. Particularly useful is the Filtered Residual map which clearly shows continuity in a number of the observed magnetic trends. This data presentation removes broad deeper sources from the data leaving only responses from near surface. Continuity of near surface sources south of Tumbling Dice is very apparent in this presentation. However, crossing the main anomaly line at approximately 11300E/14250N is a very subtle response trending approximately 45 deg. grid. The subtlety of this response is such that it would normally be disregarded. In this case however, examination of the airborne magnetic contour map revealed that such a cross structure would pass between Moline and Fourth mine pits and on to Hercules, suggesting a possible link between this and gold emplacement. Along this same trend at approximately 11700E/14500N is a large anomaly in the airborne data. Due to the unavailability of the airborne data in numerical form and the complexity of the anomalies around this point, and the fact that the anomaly is of the same order of size as the flight line spacing, it is difficult to get an accurate interpretation of the source of this response. Rule of thumb examination of the contour map suggests a depth of burial of approximately 50 metres although this will not be accurate due to the errors associated with the flight line separation (100 and 200 metres). This is somewhat deeper than surrounding anomalies which appear to be at or very near surface. It is recommended that the ground magnetic coverage be extended along the trend between Tumbling Dice and Moline in order to get a more accurate interpretation of this anomaly and to attempt to verify or disprove the existence of a significant cross structure.

Overlaying of the ground magnetics and the airborne data indicates that the location of the airborne data relative to the grid as drafted on the supplied map may be inaccurate by about 100 metres. In the area of Tumbling Dice it appears that the plotted air magnetic contours are approximately 50 metres grid north and 75 metres grid east of their true locations. This error may have arisen either in the contractors flight line recovery or in the location of the drafted base map relative to AMG or Lat./Long. graticules.

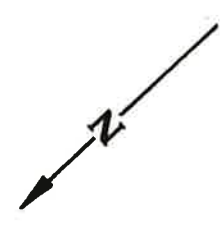
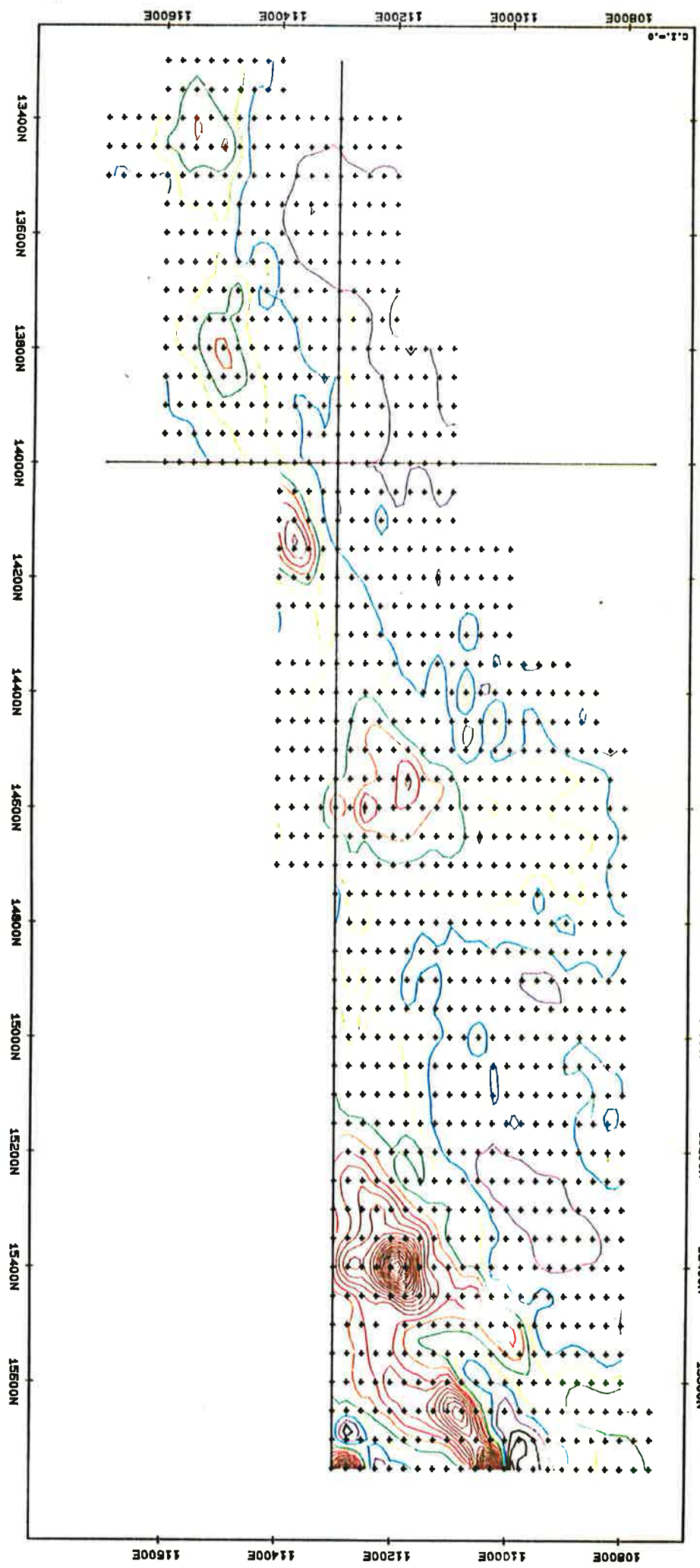
Filtered residual and sun angle images of the ground magnetic data suggest that the continuous trend of near surface magnetic responses extends in a grid north westerly trend across the surveyed area. This is difficult to reconcile with the geology as mapped. It is not clear whether the geological interpretation is

incorrect or whether the near subsurface geology is different to that seen at surface or whether the perceived trends in the magnetic data are imaginary. The latter of these seems the most likely. The trend of the near surface magnetic responses follows a creek. It may be that the creek follows a lithological horizon, or that magnetic material has been washed down the creek leaving the magnetic anomaly as observed.

The trend directions of magnetic anomalies at the Tumbling Dice and Cowbell prospects strongly suggest that the sources of these anomalies lie in different stratigraphic horizons. It is possible that these are in the same horizon and that this has been displaced by faulting but in general the magnetics suggest that there are different strata.

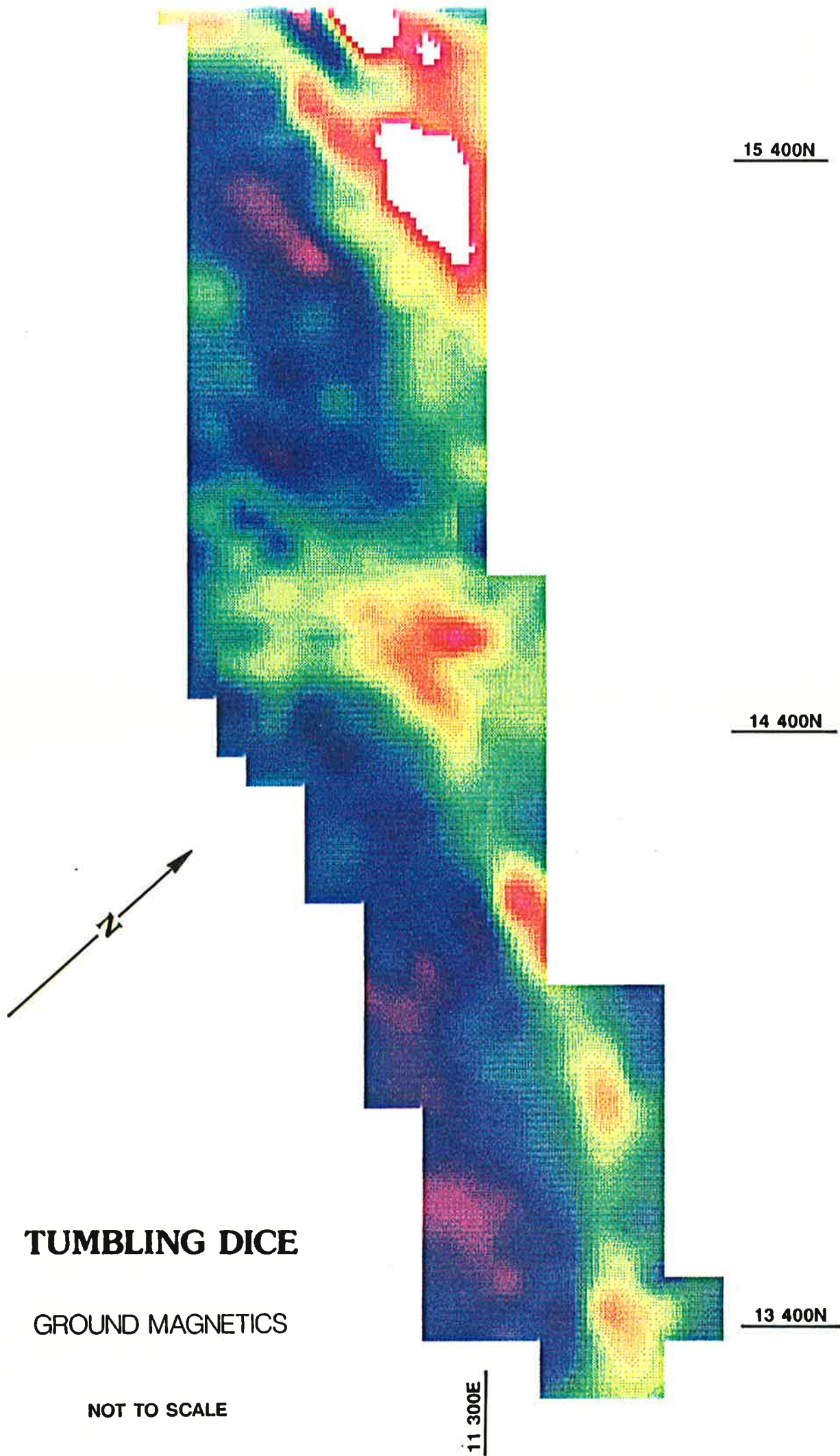
It is recommended that the ground grid be extended grid east of Tumbling Dice to cover the observed airborne magnetic response and to check for cross structures. Further attempts should be made to obtain the airborne data on magnetic tape in order to more deeply examine stratigraphic relationships in this area.

Tumbling Dice Prospect Ground Map Add 47000
 Scale 5000.0 Ground Map - N.S.M.
 13400N 13600N 13800N 14000N 14200N 14400N 14600N 14800N 15000N 15200N 15400N 15600N



TUMBLING DICE GROUND MAGNETICS

SCALE 1:10 000

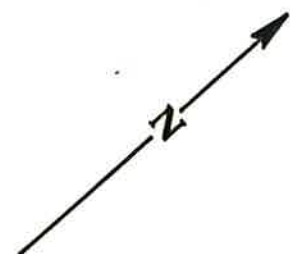


15 400N

14 400N

13 400N

11 300E



TUMBLING DICE

GROUND MAGNETICS
SUN ANGLE SHADOW

NOT TO SCALE

15 400N

14 400N

13 400N

11 300E



TUMBLING DICE

GROUND MAGNETICS
FILTERED RESIDUAL ENHANCED

NOT TO SCALE

