

Interpretation Report
on
Ground Magnetometer Survey
Mike Lunge Option
Boston Township
Larder Lake Mining Division
Province of Ontario

INTRODUCTION

Nine claims, owned by Mike Lunge, lying in northwestern Boston Township, Larder Lake Mining Division, were optioned by the Dominion Gulf Company. The claim group has been thoroughly prospected over a long period of time, particularly following the discovery of gold in the nearby Kirkland Lake camp. Rock types which have been identified in the area are syenite and basic lavas. An aeromagnetic map of the area, published by the Geological Survey of Canada, indicated that the claim group straddled a magnetic anomaly of high intensity, which appeared to lie near the syenite-lava contact. It was believed that these conditions justified further work on the claim group, and accordingly the Dominion Gulf Company took an option on the Lunge block.

Since most of the surface exposures had been examined previously with little success, it was believed that a geophysical survey might reveal unknown structure in those areas covered by overburden. A magnetic anomaly was known to exist from the aeromagnetic survey of the area, so a ground magnetometer survey was proposed in order to define the magnetic anomaly zone. It was expected that this survey would outline in detail the known magnetic anomaly, and indicate any large scale folding or faulting present in the area.

An Askania Schmidt type magnetic balance, having a sensitivity of about 24 gammas per scale division, was used in the survey. Readings were taken on picket lines 400 feet apart, using a station interval of 100 feet. In highly anomalous areas, where steep magnetic gradients were encountered, intermediate stations were added. In all, a total of 554 stations were observed on 9.4 miles of picket line.

The magnetic data were observed and reduced by a Dominion Gulf Company magnetometer crew, and then transmitted to the Toronto office of the Dominion Gulf Company for further processing and interpretation. The basic data, together with isomagnetic contours and interpretation are presented on a map at a scale of 1 inch equals 200 feet, accompanying this report.

INTERPRETATION

The ground magnetometer anomalies indicate a wide range of magnetic intensities in the claim group. The magnetic base level appears to be about 2,500 gammas. Positive anomalies in excess of 30,000 gammas are quite common, while three negative anomalies, less than minus 2,000 gammas, were recorded. The highly anomalous values are confined to a magnetic anomaly band trending roughly east-west across the southern half of the claim group.

From the geological map of the Kirkland Lake area published by the Ontario Department of Mines in 1923, it would appear that the anomalous horizon occurs in the basaltic lavas, close to the syenite contact. The trend of the anomalous zone appears to reflect the syenite contact very faithfully, suggesting that the basaltic lavas have been highly altered by the syenite, and a contact metamorphic aureole formed in the basaltic lavas. However, a geological reconnaissance of the area by a Dominion Gulf Company geologist provided data which suggests quite a different interpretation.

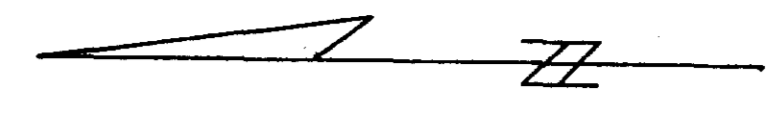
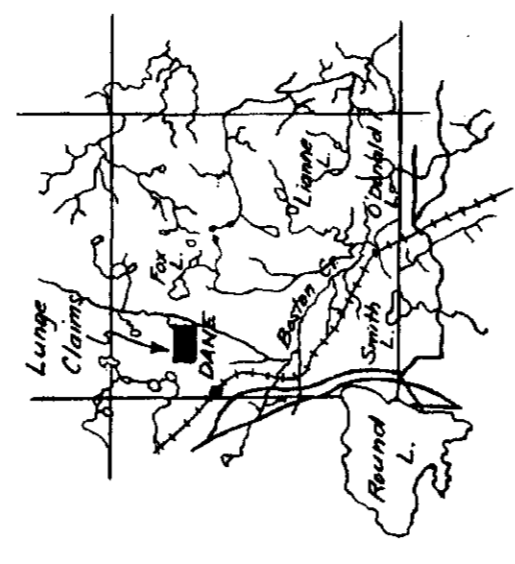
The two southeasternmost magnetic anomalies were found to be due to iron formation in a volcanic gneiss. The magnetic anomaly immediately north of the two iron formation anomalies could be correlated with a persistent zone of basic magnetic syenite. Mention is made of large inclusions of metamorphosed volcanics found to lie in the syenite. It therefore seems highly probable that the central and western anomaly zones represent partially digested remnants of iron formation within the syenite intrusive.

No outstanding evidence of folding is indicated by the magnetic data, although gentle warping in the enclosed remnants of the iron formation suggests that some early folding (pre syenite) might have taken place in the vicinity of the claim group. The Long Lake fault, known to have a movement of east-side north, in Lebel Township, immediately to the north, strikes southward into the claim group, following a topographic lineament. This fault probably causes the disconnection between the southeastern and central anomaly zones. However, from the magnetic data, it would appear that the fault movement within the confines of the claim group was opposite in direction to that known in Lebel Township. This complicating factor can perhaps be explained as a result of the syenite intrusive coupled with the fault movement.

Since the area appears to be devoid of major structural controls, other than the Long Lake fault, which is post-mineralization and therefore of little economic interest, it would appear that chances of finding a commercial ore body on this claim group are not good. It is therefore recommended that no further work on the property be initiated by the Dominion Gulf Company at this time.



J. H. Ratcliffe.



LEGEND
 CONTACT ———
 FAULT ———

DOMINION GULF COMPANY
 GROUND MAGNETOMETER SURVEY
MIKE LUNGE OPTION
 BOSTON TWP ONTARIO
 Scale: 1" = 200'
 CONTOUR INTERVAL = 1000 GAMMAS

