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M 490
M 481

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King
m490

Vancouver, B. C.
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SUBJECT: The applicability of airborne VLF electromagnetic and Magnetic surveys for the Queen Charlotte Island properties.

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An assessment has been made of the applicability of airborne VLF electromagnetic and magnetic surveys to the Queen Charlotte gold prospects, in particular Marie (M485), King (M490) and Courte Riley (M481). This assessment was possible because portions of these properties had been covered by a survey of this kind by UMEX (assessment report 7265). The following remarks must be prefaced by the comment that the UMEX survey was flown using a very coarse 1/2 mile line spacing which will make unit boundary locations inaccurate by at least 1/2 mile and conductor correlation line to line tentative at best. A small portion of the survey, not near the Chevron properties, was flown at 1/4 mile line spacing which gave the opportunity to consider the effect of line spacing on the results.

These types of surveys are flown primarily to assist in geological mapping in this area. A VLF survey will primarily delineate weakly conductive structural features, such as faults, and secondarily, will outline areas of different geology provided there is sufficient contrast in the electrical properties of the various lithologies. A magnetic survey in this environment will do the reverse: primarily outline lithologies and secondarily outline structural features such as faults.

An interpretation of the UMEX survey results is shown on the attached three maps. Map 1 shows the interpreted VLF results. It has been possible to interpret the trace of several approximately NW-SE trending conductors (which may represent fault zones). These features have been interrupted in at least four places and displaced laterally. These interruptions have been interpreted to be caused by NNE trending faults. One of these features cuts both the King and Marie properties. It is also possible to see two different units within the survey area, a resistive unit to the east and a more conductive unit to the west. There are also indications of there being a subdivision within the more conductive unit as there are areas where there are a series of conductors and areas where there are none. This subdivision may represent units 1 and 2 seen on the magnetics.

The interpretation of the magnetic results is shown on Map 2. There appears to be least three different lithologies present within the survey area: a basic volcanic unit, an intermediate to basic volcanic unit and a magnetically quiet unit (designated "acidic rock"). The very approximate boundaries of these zones are shown on Map 2. A tentative identification of these units is Tertiary volcanics, Jurassic volcanics and Cretaceous sediments respectively. This lithological definition was made by separating units by their magnetic pattern and amplitude. It was not possible to define the NNE faults interpreted from the VLF data because of the coarse line spacing and because the line direction (N-S) was too close to the NNE direction.

When the two sets of data are overlain (see Map 3) a broad sort of agreement can be seen between the two data sets. They both show the boundaries of the eastern unit to lie in approximately the same place. In addition the VLF areas showing NW-SE conductors seem to correlate with the basic volcanic unit (#1) shown on the magnetic results.

The effects of line spacing can be seen in the area to the NE of the Marie property where the line spacing was changed to 1/4 mile (see Map 3). In this area unit boundaries and conductor locations were much easier to define because of the closer line spacing.

In conclusion, it can be seen from an examination of the reconnaissance VLF and magnetic survey flown by UMEX that these surveys are capable of the following in the area around the Marie, King and Courte properties:

- delineation of the areas underlain by Tertiary volcanics, Jurassic volcanics and Cretaceous sediments.
- outlining the trace of major regional NNE faults.
- defining conductors which may represent faulting NW-SE.

It is proposed that a similar type of survey be flown over the Marie, King and Courte properties but with a much closer line spacing (100 metres) so as to provide accurate locations. This survey should also be flown in two directions, N-S and E-W, to define the features which run perpendicular to each flight direction. A detailed proposal for this survey with a cost estimate is being prepared.

Additionally, consideration should be given to flying a similar type of survey over the Buckhorn, Security and Aero properties for the same reasons as explained above.

A survey, such as recommended above, does not eliminate the necessity for ground VLF and magnetic surveys. The airborne survey would define geology and structure in a regional sense (which cannot be done on the ground) and the ground surveys would locate the airborne features exactly.

NOTE: It should be remembered that detailed conclusions cannot be drawn from the UMEX survey (or the maps enclosed) because of the coarse line spacing.

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Attach: