# PROPERTY / PROJECT

# **AUTHOR**

Name:

**HEARNE HILL** 

Peter L. Ogryzlo

NTS:

93M

Claims:

Hearne 1, Hearne 2

Acreage:

750 Ha.

Commodities:

Cu, Au, Ag.

### **HISTORY:**

Past Exploration
Techniques

By Whom

Amount

Турс

1967

Tro-Buttle, Texas Gulf Geochemistry

Teo. Buttle

Tro-Buttle (Peter Bland)

100 meters

Bulldozer

trenching

Texas Gulf

12 holes

Diamond drilling

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1942 meters 11 holes

Diamond drilling

1324 meters

1991

1989-1990

Chapman

Noranda

7 holes

Diamond drilling

1 hole assayed

#### **GEOLOGY:**

Regional: Tertiary (50 Ma) biotite feldspar porphyry plugs and stocks of the Babine Igneous Suite were emplaced along major faults in a transtensional continental magmatic arc. Two orebodies (Bell and Granisle) and numerous subeconomic deposits (Morrison and Hearne among others) occur as porphyry copper deposits temporally and spatially associated with the Babine Igneous Suite intrusions. The Babine Igneous suite is a high-K calc-alkaline suite, but has an alkaline trace element signature.

Local: The Hearne Hill deposit is exposed along the scarp of the Morrison fault. The Morrison fault is a major discontinuity separating older Hazelton Group marine volcanics in the uplands from younger Bowser Group sediments in the lowlands. Dikes of Eocene biotite feldspar porphyry (BFP) intrude Hazelton Group volcanics and sediments.

### Alteration / Ore Forming Minerals

- 1. Stockwork: Chalcopyrite, pyrite, and molybdenite occur as fracture fillings, disseminations, and in stockwork quartz vehalets in Eocene biotite feldspar purphyry and in Huzelton veicanics. Host rocks exhibit hydrothermal biotite and quartz sericite alteration.
- 2. Collapse breccia: Chalcopyrite, pyrite, and dolomite partially plug porosity between angular clasts in a collapse breccia.

#### **CURRENT EXPLORATION / RESEARCH**

1989-1992

## i.) Geology

The Hearne Hill breccia pipe appears to have a maximum vertical extent of 70 meters, below which the pipe is replaced by an intrusion of intensely altered quartz - biotite - feldspar porphyry (QBFP). Fluid inclusion studies indicate that the Hearne Hill stockwork formed from highly saline fluids at temperatures of 300° to >600° C at a minimum depth of 1.5 to 3.0 km, and that the breccia pipe formed from dilute (5 % salinity) fluids at temperatures around 160° C and a minimum depth of 100 meters. A proposed explanation for the differences in depth of formation is that the breccia pipe formed after the deposit had been truncated by the Morrison fault, but before hydrothermal activity had caused. It is possible that Hearne Hill represents the roots of the nearby Morrison deposit in the valley 2 km to the northwest.

## ii) Geochemistry

Whole rock geochemistry of the Babine Igheous Suite reveals that the suite is a High - K calc - alkaline magmatic suite. However, immobile trace element patterns, particularly Nb/Y ratios, suggest an alkaline parental magma for the Babine intrusions.

Detailed trace element geochemistry of the breccia pipe indicates that copper has been effectively leached from the footwall of the pipe and redeposited against the hangingwall.

iii. Geophysics: N/A

iv. Sampling

Diamond drilling to date has yielded 1256 samples.

Six diamond drill holes have intersected the breccia pipe. The two best intersections are:

H89-1

22.9 meters at 2.75% Cu

H91-2

50.0 meters at 2.30% Cu.

True width is approximately 15 meters.

Diamond drilling outside the breccia pipe has confirmed an average grade for the Hearne Hill stockwork between 0.10% Cu and 0.20% Cu.

## **RESERVES:**

A reserve estimate is inappropriate at the present level of information: Indicated plus inferred resources are typical of Babine PCD's.

Stockwork deposit - estimated from 24 diamond drill holes to a depth of approximately 100 meters:

Indicated plus inferred resources:

60 x 10<sup>6</sup> tonnes @ 0.16% Cu, 0.1 g/t Au, including:

16 x 106 tonnes @ 0.32% Cu, 0.1 g/t Au at 0.20 %

Cu cut off.

Breccia deposit:

Indicated resource:

Contained within the stockwork estimate is a drill indicated

resource of:

143,000 tonnes @ 1.74% Cu, 0.9 g/t Au.

COSTS:

Recent Exploration Costs:

Diamond Drilling (1990):

\$70.00 per meter, all inclusive.



