

883822

→ Hearne Hill

**PROPERTY / PROJECT**

Name: HEARNE HILL  
 NTS: 93M  
 Claims: Hearne 1, Hearne 2  
 Acreage: 750 Ha.  
 Commodities: Cu, Au, Ag.

**AUTHOR**

Peter L. Ogryzlo

Collapse Bx.

**HISTORY:**

| Past Exploration Techniques | By Whom                  | Amount                    | Type                |
|-----------------------------|--------------------------|---------------------------|---------------------|
| 1967                        | Tro-Buttle, Texas Gulf   |                           | Geochemistry        |
|                             | Tro-Buttle (Peter Bland) | 100 meters                | Bulldozer trenching |
|                             | Texas Gulf               | 12 holes<br>1942 meters   | Diamond drilling    |
| 1989-1990                   | Noranda                  | 11 holes<br>1324 meters   | Diamond drilling    |
| 1991                        | Chapman                  | 7 holes<br>1 hole assayed | Diamond drilling    |

**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 veinlets in Eocene biotite feldspar porphyry and in Hazelton volcanics. 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 ceased. 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 Igneous 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 10<sup>6</sup> 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:

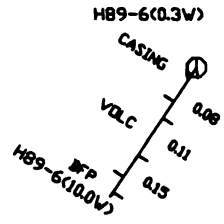
Recent Exploration Costs:

Diamond Drilling (1990):

\$70.00 per meter, all inclusive.

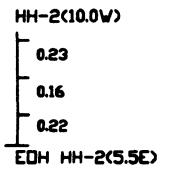
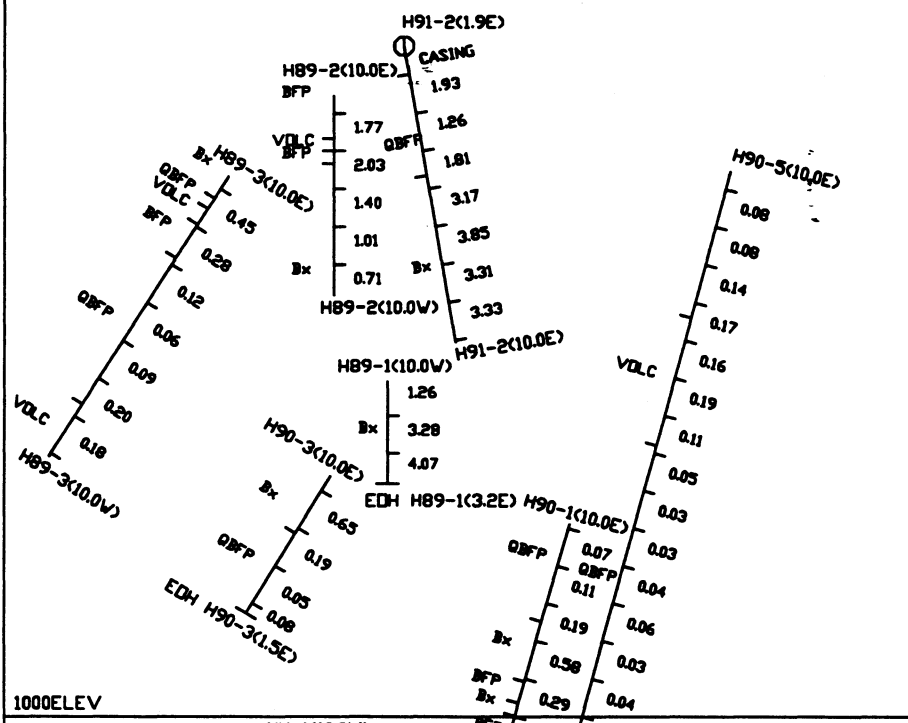
**LEGEND**

- EOCENE: Babine** eous Suite  
**QBFP** Biotite Feldspar Porphyry with intense sericite pyrite alteration. White, massive.  
**Bx** Collapse Breccio. Angular clasts cemented with chalcopyrite, pyrite and dolomite.  
**BBFP** Biotite Feldspar Porphyry, biotite alteration.  
**BFP** Biotite Feldspar Porphyry, undivided.
- JURASSIC: Telkwa** Formation, Kotsine Facies (Sinemurian)  
**VDLC** Marine volcanics, grey andesite, grey andesite breccia, lapilli tuff, buff felsic tuff, possibly some diorite.  
**SEDS** Greywacke, grit, siltstone, shale.



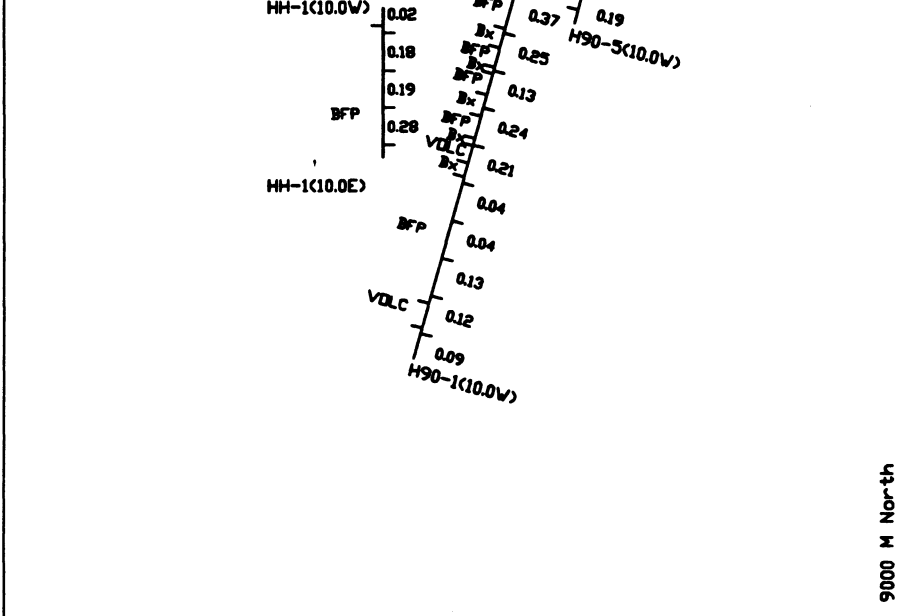
1100ELEV

1100ELEV



1000ELEV

1000ELEV



9000 M North

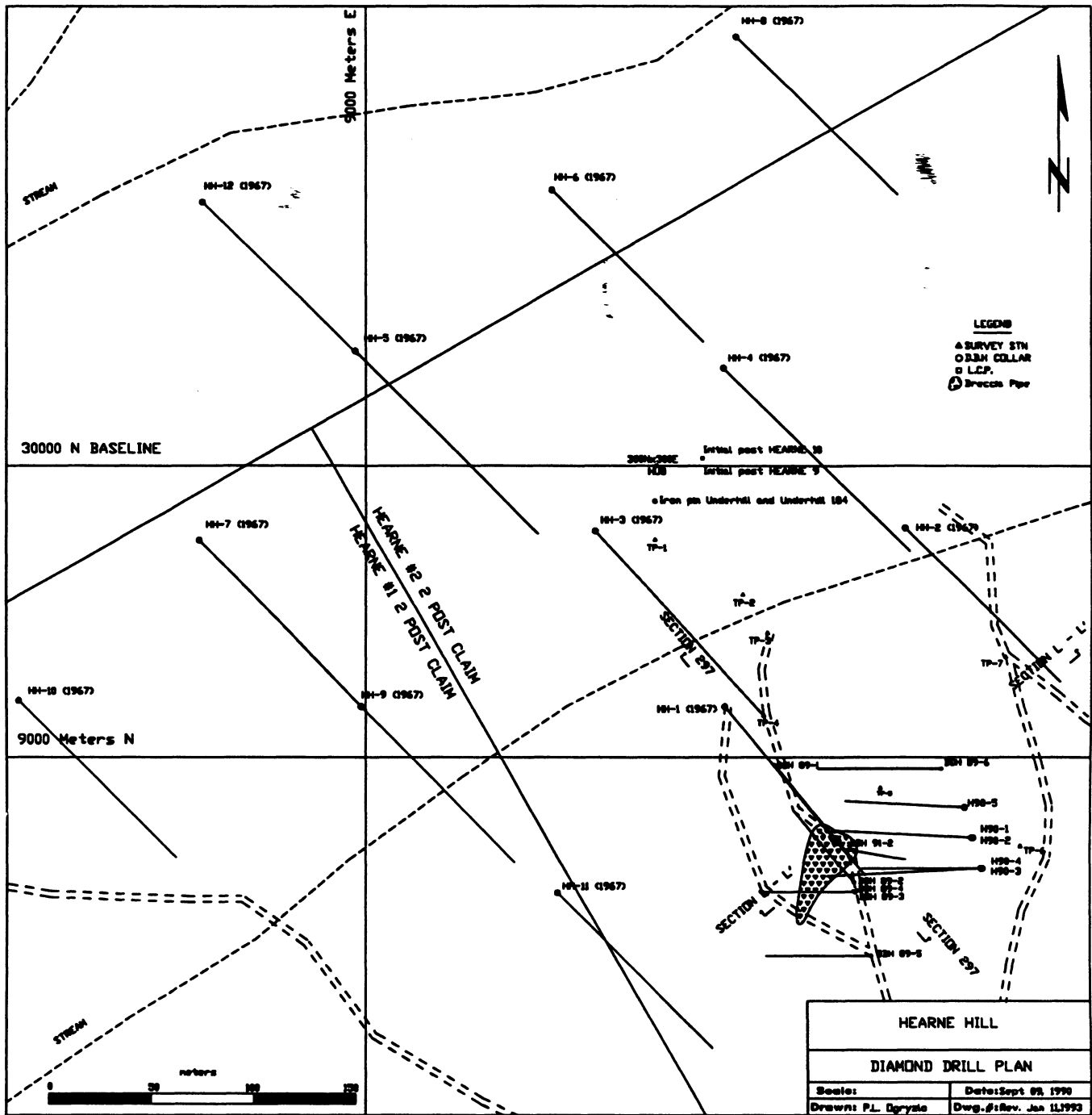
900ELEV

900ELEV

HEARNE HILL  
 LONGITUDINAL SECTION L - L'  
 SECTION LOOKING N 40 W  
 COPPER COMPOSITES OVER 5 METERS

SCALE: 1:1000M  
 13 JAN 1993

P.L. Dgryzlo Scale 1cm = 10m



**LEGEND**  
 ▲ SURVEY STN  
 ○ ODBM COLLAR  
 □ L.C.P.  
 ⊗ Breccia Pkg

HEARNE HILL

DIAMOND DRILL PLAN

|                    |                          |
|--------------------|--------------------------|
| Scale:             | Date: Sept 08, 1990      |
| Drawn: P.L. Dgryse | Dwg.#: Rev. Jan 11, 1993 |