# BURGOYNE COPPER PROSPECT 

## CONFIDENTIAL OVERVIEW



SEPTEMBER, 1990

## 808 EXPLORATION SERVICES LTD.

## SUITE 1451

409 GRANVILLE STREET
VANCOUVER, B.C.
V6C 1T2

Telephone (604) 685-6477
Fax (604) 685-0147

# BURGOYNE COPPER PROSPECT 

## CONFIDENTIAL OVERVIEW

SEPTEMBER, 1990

808 EXPLORATION SERVICES LTD.<br>SUITE 1451<br>409 GRANVILLE STREET<br>VANCOUVER, B.C.<br>V6C 1T2

Telephone (604) 685-6477
Fax (604) 685-0147

## BURGOYNE COPPER PROSPECT OVERVIEW

## TABLE OF CONTENTS

PAGE
SECTION 1.0 SUMMARY ..... 1
SECTION 2.0 OVERVIEW ..... 2
SECTION 3.0 MAGNETIC ANOMALY PRELIMINARY INTERPRETATION ..... 6
SECTION 4.0 GEOPHYSICAL GEOCHEMICAL RESULT COMPARISON ..... 7
MAPS
DESCRIPTION ..... MAP
GENERAL LOCATION ..... 1
GEOLOGICAL CONCEPT ..... 2
GEOCHEMISTRY, COPPER IN SOIL (ppm) ..... 3
MAGNETOMETER SURVEY
TOTAL FIELD PLAN ..... 4
LINE 56, TOTAL FIELD MAGNETIC PROFILE ..... 5
VLF-EM SURVEY FRASER FILTERED CONTOUR MAP ..... 6

## APPENDIX

| APPENDIX I MAGNETIC ANOMALY PROFILES |  |
| :--- | :--- |
|  | COPPER IN SOILS PROFILE |

## BURGOYNE COPPER PROSPECT

## SECTION 1.0 SUMMARY

A total field ground magnetometer survey carried out in June 1990 over the central portion of a large and extremely anomalous copper in soils anomaly found in 1969 has defined a magnetic anomaly with probable average dimension of 500 feet ( 152 m ) by 1,540 feet ( 470 m ). This anomaly is flanked by lower amplitude anomalies on both east and west sides.

The main anomaly could represent an underlying volume of material with high magnetic susceptibility of the order of 38 million tons or more should its depth dimension be at least 500 feet ( 150 m ), exclusive of the magnetic anomalies located on its flanks.

Limited trenching of the highly altered bedrock in the target area, in 1969, showed chalcopyrite minerals in association with scattered magnetite and oxides of iron. The best section of mineralization in the oxidized zone more than 240 feet wide assayed $0.73 \% \mathrm{Cu}$ across 35 feet. The unoxidized zone well below the surface should contain higher copper grades.

No testing for precious metals or other potentially economic minerals in association with the copper was ever carried out.

The geophysical results show a significant body of magnetic minerals subcropping the area and probably persisting to depth, hence a magnetic-chalcopyrite relationship continuing to depth portends the probability of a large body of copper mineralization.

Three large copper in soils anomalies were delineated on this property, in 1969, with the following dimensions:

Copper Anomaly Approximate Area
I
$2000 \mathrm{ft} x 1000 \mathrm{ft}$

II 1500 ft x 400 ft

III
$1000 \mathrm{ft} x 400 \mathrm{ft}$

The largest, Copper Anomaly $I$ has an average copper content of $760 \mathrm{ppm}(0.076 \%)$ in soils. Of further and of very meaningful significance is the fact that there appears to be a positive correspondence between profiles of anomalous magnetic susceptibility and anomalous copper in soils. Their corresponding relative amplitudes and wavelengths are for the most part identical, and includes the main magnetic anomaly and its subsidiary flanking magnetic anomalies all of which have a copper in soils association. Hence there is strong supporting evidence that the large body of subcropping anomalous susceptibility has a corresponding copper association. The property therefore warrants a drilling program to test for a probable economic copper orebody.

## SECIION 2.0 OVERVIEW

The Burgoyne copper Prospect is located approximately 12 miles south of Spences Bridge, British Columbia, in the Kamloops Mining Division.

The mineral claims covering the prospect are owned by J.M. Ashton.

A sequence of sedimentary rocks comprised of conglomerate, sandstone, mudstone, argillite, dolomite and limestone is overlain by the Lower Cretaceous Kingsvale Group comprised of basalt and andesite. This package of rocks dip about 45 degrees to the northeast and strike northerly to northwesterly. These rocks are believed to be intruded by Jurassic, Cretaceous, or even younger granodiorite, quartz diorite, and diorite, of the Mount Lytton Batholith.

The Mount Lytton Batholith may be contemporaneous with the Guichon Batholith which hosts the giant Highland Valley copper deposits located only 16 miles to the northeast.

A geochemical soil survey carried out in 1969 by Crest Laboratories (B.C.) Ltd. under the direction of Alfred A. Burgoyne, M.Sc. over part of the claim area, found a very large copper in soils anomaly with greater than 100 parts per million copper with dimensions of 5,000 feet by an average width of approximately 2,000 feet.

Within approximately one half of this area a series of higher order copper anomalies exceeding 400 parts per million copper are found with the largest having a dimension of about 2,000 feet long by 1,000 feet wide with a mean copper value of 760 parts per million. The dimension and strength of this geochemical expression is commensurate with the largest of the Highland Valley deposits.

To date very limited and shallow trenching of a small portion of the central part of the geochemical anomaly within altered sediments and volcanics, showed copper mineralization to be associated with epidote and iron
oxides, including hematite. This zone of oxidation assayed $0.21 \%$ copper across 244 feet within which a core zone assayed $0.73 \%$ copper across 35 feet of the more intensely oxidised portion.

The skarnification products present, epidote and hematite, suggest that the copper minerals encountered are what would be expected in the low temperature phase of a replacement type massive sulphide mineralizing event.

On strike and south of the area of the large copper anomaly can be found outcropping skarnification adjacent to re-crystallized limestones and dolomites, and limy sediments.

In June 1990 a total field magnetometer survey and a two station VLF-EM survey were carried out over the anomalous copper in soils area.

A significant magnetic anomaly with dimensions 620 feet by 1,540 feet with approximate maximum magnetic amplitude of 5,000 gammas was delineated. The magnetic anomaly has associated with it conductive zones around its margins found through the VLF-Em survey.

Geophysical survey Lines 54, 55 and 56 are thought to be near the vicinity of the copper geochemical survey Line 72 completed in 1969, however the only evidence to support this probability is the known relative location of the mineral claims as they existed in 1969 compared with the 1990 claim location.

The correspondence of these geophysical and geochemical characteristics is remarkable.

The magnetic anomaly is of great interest because it represents a large volume of magnetically susceptible material that could have the same apparent magneticcopper association throughout as is found in the surface trenches in which case there may be a large economic body of copper mineralization with the volume of high magnetic susceptibility.

What the relationship between the magnetic anomaly and conductive zones is at this time is not known. Only drill testing will provide this answer as well. One possibility is that the conductive zones represent pyrite within the wall rocks of a mineralized body as was the case at Craigmont.

To the north and east of the claims lies the Nicoamen River which is known for its placer gold. It is recorded that the discovery of gold by the Thompson River Indians as early as 1852 near the mouth of the Nicoamen River was the reason for initiating the great gold rush to the Fraser River which subsequently led to the rich gold fields of the Cariboo in 1858.

The magnetic anomaly and probable associated copper geochemical results give strong support to the thesis that a Craigmont style copper deposit may underly the surface of the Burgoyne Prospect. The nearby Craigmont replacement deposit contained 34 million metric tonnes of ore with an average grade of $2.09 \%$ copper.

Craigmont was discovered by drilling a high magnitude, 14,000 gamma maximum amplitude magnetic anomaly. The main ore zone comprised of three orebodies was 2,900 feet long by 1,500 feet high.

In Orebody 1 , at the east end mineralization was comprised of magnetite and chalcopyrite (magnetic anomaly) within actinolite skarn; whereas at the west end mineralization was predominately specularite and chalcopyrite (magnetic anomaly absent) and the centre section of this main orebody was a superimposition of the two ore types. Pyrite was generally confined to the wall rocks.

## SECTION 3.0 MAGNETIC ANOMALY, INTERPRETATION

Preliminary interpretation of the total field magnetic anomaly was made on the basis of two 'rules of thumb', namely:
a) The Half Width Rule.
b) Peters Rule.

Through a review of the three main magnetic profiles, the magnetic anomaly could integrally represent a vertical to steeply dipping slab like body with an average dimension of 500 feet ( 190 m ) in width by 1,540 feet $(470$ m) long. Total depth of this structure is presently indeterminate. The depth to the top of the body could range between 330 feet ( 100 m ) and 170 feet ( 52 m ), utilizing the Half Width Rule and Peters Rule respectively.

The general character of Line 56 suggests there is a magnetic apophysis from the main magnetic mass possibly dike like that projects to within 40 feet ( 12 m ) from the surface with an apparent width of 82 feet ( 25 m ).

The configuration of all profiles taken on Lines 54, 55 and 56 suggests that there may be three parallel magnetic bodies within this structural setting, or possibly all apophyses from the same main mineralized body.

A more detailed interpretation will be necessary following a re-survey of the area including the resurveying of Line 58 from which the data was rejected due to instrument malfunction.

A first order 'rule of thumb' volumetric estimate of the mass of magnetically susceptible material causing this anomaly is approximately 38 million tons. A continued copper association with depth, which is most apparent from a comparisons of the geophysical and geochemical data, could result in a significant mineral discovery on this property.

SECTION 4.0 GEOPHYSICAL - GEOCHEMICAL RESULT COMPARISON

Cross section profiles of Lines 54,55 and 56 of the magnetic anomaly found in the 1990 survey were compared with a copper in soils profile taken from Line 72 of the 1969 geochemical survey as Line 72 is believed to be located within or close to the area of the geophysical lines described. Although confirmation of the location of Line 72 has not been possible, the relative fit between geophysics and geochemistry is remarkable and in all likelihood this convergence can be supported through a re-survey of the copper in soils across the magnetic anomaly.

A geological model of one scenario that can be supported by the convergent magnetic and copper in soils anomalies is shown herewith as Map 2, Geological Model II.

The magnetic anomaly profile and copper in soils geochemical profile are shown in relative scale as they occur with a portended orebody which is yet to be drill proven.





NOTES:
2. values plotted to nearest 1000 canna's only.
. DATA ON MEST HALF OE LINE SBHOO N REJECTEO




## APPENDIX I

## MAGNETIC ANOMALY PROFILES

COPPER IN SOILS PROFILE



