BC Geological Survey Assessment Report 30945

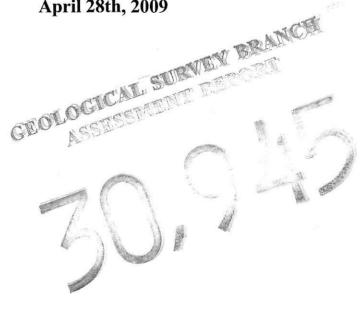
**Copper Mountain Project Dot Fraction Mineral Claim Princeton, British Columbia** NTS Map Sheet 92H/7E Latitude 49° 20'N; Longitude 120° 31'W

## Prepared for Copper Mountain Mining Corp.

by

## **Peter Holbek & Richard Joyes**

April 28th, 2009



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## ASSESSMENT REPORT TITLE PAGE AND SUMMARY

TITLE OF REPORT: Drilling Report Copper Mountain Project

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YEAR OF WORK: 2008 PROPERTY NAME: Copper Mountain/Similco Mine CLAIM NAME(S) (on which work was done): Dot Fraction

#### COMMODITIES SOUGHT: Cu, Au, Ag

MINERAL INVENTORY MINFILE NUMBER(S), IF KNOWN:

MINING DIVISION: Kamloops NTS / BCGS: 92H/7E LATITUDE: 49° 20' 34" LONGITUDE: 120° 31' 47" (at centre of work) UTM Zone: 10 EASTING: 679421 NORTHING: 5468498

OWNER(S): Copper Mountain Mining Corp (Similco Mines Ltd)

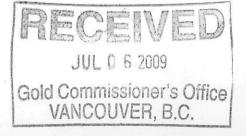
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REPORT KEYWORDS (lithology, age, stratigraphy, structure, alteration, mineralization, size and attitude. **Do not use abbreviations or codes**) **Nicola Group Volcanic Rocks, Lower Jurassic, Cu-Au Alkalic Poprhyry, Potassic, Sodic.** 

REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS:



| TYPE OF WORK IN<br>THIS REPORT            | EXTENT OF WORK<br>(in metric units)                          | ON WHICH CLAIMS | PROJECT COSTS<br>APPORTIONED<br>(incl. support) |  |
|---|--|-----------------|---|--|
| GEOLOGICAL (scale, area)                  |  |                 |   |  |
| Ground, mapping                           |  |                 | _   |  |
| Photo interpretation                      |  |                 |   |  |
| GEOPHYSICAL (line-kilometres)             |  |                 |   |  |
| Ground                                    |  |                 |   |  |
| Magnetic                                  |  |                 |   |  |
| Electromagnetic                           |  |                 |   |  |
| Induced Polarization                      | ······   |                 |   |  |
| Radiometric                               |  |                 |   |  |
| Seismic                                   |  |                 |   |  |
| Other                                     |  |                 |   |  |
| Airborne                                  |  |                 |   |  |
| GEOCHEMICAL (number of samp               | les analysed for)  |                 |   |  |
| Soil                                      |  |                 | ·<br>   |  |
| Silt                                      |  |                 |   |  |
| Rock                                      |  |                 |   |  |
| Other                                     |  |                 |   |  |
| DRILLING (total metres, number of<br>Core | f holes, size, storage location)<br>1 Hole @<br>310m<br>deep | Dot Fraction    | \$56,998  |  |
| Non-core                                  |  |                 | <u> </u>  |  |
| RELATED TECHNICAL                         |  |                 |   |  |
| Sampling / Assaying                       |  |                 |   |  |
| Petrographic                              |  |                 |   |  |
| Mineralographic                           |  |                 |   |  |
| Metallurgic                               |  |                 |   |  |
| PROSPECTING (scale/area)                  |  |                 |   |  |
| PREPATORY / PHYSICAL                      |  |                 |   |  |
| Line/grid (km)                            |  |                 |   |  |
| Topo/Photogrammetric (sca                 | ale, area)   |                 |   |  |
| Legal Surveys (scale, area)               | :<br>  |                 |   |  |
| Road, local access (km)/tra               | ìl   |                 |   |  |
| Trench (number/metres)                    |  | i<br>           |   |  |
| Underground development                   | (metres)   |                 |   |  |
| Other                                     |  | TOTAL           | \$56.009  |  |
|   |  | TOTAL<br>COST   | \$56,998  |  |

Page 2 of 2

## **Executive Summary**

The Copper Mountain project is located 20 kilometres south of the town of Princeton, near Highway 3, in southern British Columbia. The Copper Mountain project includes the Similco Mine site where mining began in 1923 and up to 1996 had produced 1.74 billion pounds of copper. A 100% interest in the project was acquired by Copper Mountain Mining Corp through a purchase agreement with Compliance Energy.

Mineral deposits on Copper Mountain have a long history of exploration and mining dating back to the first claims which were staked in 1882. Granby Consolidated Mining, Smelting and Power Company (Granby) began underground mining in 1923 and by 1957, had extracted 31.5 million tonnes grading 1.08% Cu with minor silver (approx 5 g/t) and gold (0.23 g/t) from a series of deposits located in what would later become the Pit 1 and Pit 3 areas. More modern exploration and mining began in 1966 when Newmont Mining Corporation of Canada optioned claims on the west side of the Similkameen River and discovered the Ingerbelle deposit. Newmont purchased all of Granby's claims and data on Copper Mountain, primarily to obtain space for a tailings facility (Smelter Lake). Open pit mining began on the Ingerbelle deposit in 1972. In 1979, Newmont began developing reserves on the east, or Copper Mountain, side of the river and installed a crusher and conveyer system to move ore across the river to the mill adjacent to the Ingerbelle Pit. Production commenced from Pit 2 in 1980 and from Pit 3 in 1983. Mining in the Ingerbelle pit ceased in 1981 and Pit 2 was completed in 1985.

Newmont sold the entire Copper Mountain property to Cassiar Mining Corporation (later to become Princeton Mining Corp.) in 1988 as part of a corporate re-organization. Princeton operated the property as Similco Mines Ltd. from that time through to the end of 1996 with minor shut-downs during periods of low copper prices. Similco's production initially came from Pit 3 and Pit 1, followed by the newly discovered Virginia Pit in 1991 and low grade stock piles from Pit 2 and Ingerbelle in later years. A significant reserve base remained in place at the time of shut down.

Existing historical resources in the project area include resources in the bottoms and sides of the Pit 2, Pit 3, and Ingerbelle deposits as well as material remaining in the Virginia deposit. Additionally, exploration drilling from 1992 to 1996 defined approximately 30 million tonnes of inferred resources in the Alabama area.

In late 2006, Copper Mountain Mining Corp. (CMMC) was formed with the purpose of exploring the Copper Mountain area and re-establishing production. CMMC completed the purchase of Similco Mines Ltd., initiated a large drilling program and went public in late June, 2007. From January, 2007 to November, 2008 approximately 106,000 metres of drilling has been completed on the property. Initial drilling was to verify historical data, infill within widely spaced drill-holes in the historical resources and expand mineralization around and between the existing open pits. The first phases of drilling were successful and the company completed a new independent, NI 43-101 compliant resource estimate and Preliminary Economic Assessment.

In the fall of 2007 a deep-penetration Titan 24 IP and CSMAT geophysical survey was completed. Results of this survey indicate that very large chargeability anomalies extend to depths in excess of 1000m below areas of known mineralization, in addition to a number of new near-surface anomalies. Some of these targets were drill tested in 2008 and the remainder will be tested in the 2009 program. Continued drilling success has helped build a strong platform enabling the company to complete its Feasibility Study in July 2008 as it advances towards production.

One drill-hole totaling 310 metres (1,017 feet) was drilled into the Dot Fraction on the Alabama Ridge to test for any mineralization between the Alabama Zone and the Orinoco Zone on the east-west trending Alabama Ridge. The hole was drilled on an orientation of 258 degrees with a dip of -45. The area was not historically drill tested however previous structural mapping highlighted the potential for discovery of new shallow mineralization at a fault intersection between the two zones. Additionally, the proximity to the nearby high-chargeability Orinoco anomaly to the west further warranted exploration as part of CMMC's strategy to test both near-pit and peripheral IP (Titan 24) anomalies. The drillhole intersected two zones of mineralization; a low grade intersect of 48 feet grading 0.19% Cu, 0.58 gpt Ag and 0.09 gpt Au from 342 feet to 390 feet downhole; and a higher grade intersect of 95 feet grading 0.45% Cu, 0.66 gpt Ag and 0.22 gpt Au from 487 feet to 582 feet downhole. Both mineralized zones are hosted by a feldspar-porphyry (LH2B), part of the Lost Horse Intrusive Complex, which is, inturn, overlain by Tertiary Volcanic rocks of the Princeton Group. The unconformity between the Princeton Group rocks and the Lost Horse Intusives is sharp, and it appears that the volcanic rocks were deposited on relatively fresh, exposed intrusive rocks. Based on the results, follow-up drilling is recommended.

| Executive Summary   | ii |
|---|----|
| 1. Introduction   | 1  |
| 1.1 Property Description and Location                                       | 1  |
| 1.2 Accessibility, Climate, Local Resources, Infrastructure, & Physiography | 2  |
| 1.3 History   | 4  |
| 1.3.1 Project area, Exploration and Mining History                          | 4  |
| 1.3.2 Recent Production History   | 5  |
| 1.3.3 Exploration History   | 5  |
| 1.4 Current Work  |    |
| 2. GEOLOGY AND MINERALIZATION   |    |
| 2.1 Regional Geology  | 9  |
| 2.2 Property Geology  |    |
| 2.2.1 Stratigraphy  |    |
| 2.2.2 Intrusive Rocks   |    |
| 2.2.3 Structure   | 13 |
| 2.3 Deposit Type  | 13 |
| 2.4 Mineralization and Alteration   |    |
| 2.4.1 Mineralization  | 15 |
| 2.4.2 Alteration  | 16 |
| 3. Diamond Drill Program  | 20 |
| 3.1 Introduction  | 20 |
| 3.2 Description of Program and Sampling Methods                             |    |
| 3.3 Results   |    |
| 4.0 Conclusions and Recommendations   | 26 |
| 4.1 Conclusions   | 26 |
| 4.1 Recommendations   | 26 |
| References  | 27 |

## Table of Contents

## List of Figures

| Figure 1.1 Location Map  | 1  |
|--|----|
| Figure 1.2 Claim Map   | 3  |
| Figure 1.3 Generalized Geology, Open Pits and Dot Fraction claim           | 8  |
| Figure 2.1 Regional Geology  | 10 |
| Figure 2.2 Property Geology with Pit outlines                              | 11 |
| Figure 2.3 Geology and Primary Structures                                  | 13 |
| Figure 2.4 Fracture controlled magnetite-cu veins                          | 18 |
| Figure 2.5 Fracture intersection model for Copper Mountain Mineralizaztion |    |
| Figure 3.1 Alabama Ridge Resource Blocks, Drillholes and Structures        | 21 |
| Figure 3.2 Cross section of drill hole showing analytical results          | 23 |
| Figure 3.3 Mineralization in drillcore from CM08WC-08                      | 25 |
|  |    |

· · · ---

## List of Tables

| Table 1.1 Mineral Claim Information            | 2  |
|--|----|
| Table 1.2 Similco Recent Production Statistics | .5 |
| Table 3.1 Summary of drill collar data2        | 1  |

## Certificates

| Statement of Expenditures   | 29 |
|-----------------------------|----|
| Statement of Qualifications |    |

## Appendices

| Appendix I Analytical data | 32 |
|----------------------------|----|
| Appendix II Drill logs     |    |

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## 1. Introduction

## 1.1 Property Description and Location

The mineral deposits of the Copper Mountain area are situated 15 km south of Princeton, British Columbia and 180 km east of Vancouver (Lat. 49 20' N; Long. 120 31' W). The NTS map sheet is 92H/7E, (Fig. 1.1). The property consists of 127 Crown granted mineral claims, 155 located mineral claims and 15 mining leases covering an area of 6,702.1 hectares or 67 square kilometres. Claims are shown in Figure 1.2 and listed in Appendix I. Approximately 30% of the claims, primarily in the northwestern property area, are subject to certain production royalties. Copper Mountain Mining Corp. owns the claims through the purchase of Similco Mines Ltd. from Compliance Energy Corporation.

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The claims straddle the Similkameen River with the Ingerbelle deposit on the west side of the river and the Copper Mountain deposits on the east side of the river. The Ingerbelle side of the property is immediately adjacent to the Hope-Princeton Highway (No. 3) and has numerous roads from previous mining activity. The original mill complex is located on the Ingerbelle side and was connected to the Copper Mountain side by a conveyer system. Much of the milling equipment has been removed and there are plans to use mill buildings for other purposes such as a wood waste power plant. Currently, the northwestern part of the Ingerbelle area is being used as a washing area for coal mined from nearby Tulameen Mountain by Compliance Energy. Access to the Copper Mountain area is via a 26 km paved road from the town of Princeton.



Figure 1.1 Property Location Plan

A significant part of the existing rock dumps at the mine site have been reclaimed. Envirogreen, a soil remediation company is spreading remediated sewage on the rock dumps which helps to provide a top soil for the establishment of various forms of plant life. Some of the reclaimed rock dumps are currently

being used for grazing cattleA \$3 million reclamation bond is attached to the property and this bond is reported to be sufficient to cover current environmental liabilities.

**Table 1.1: Mineral Claim Information** 

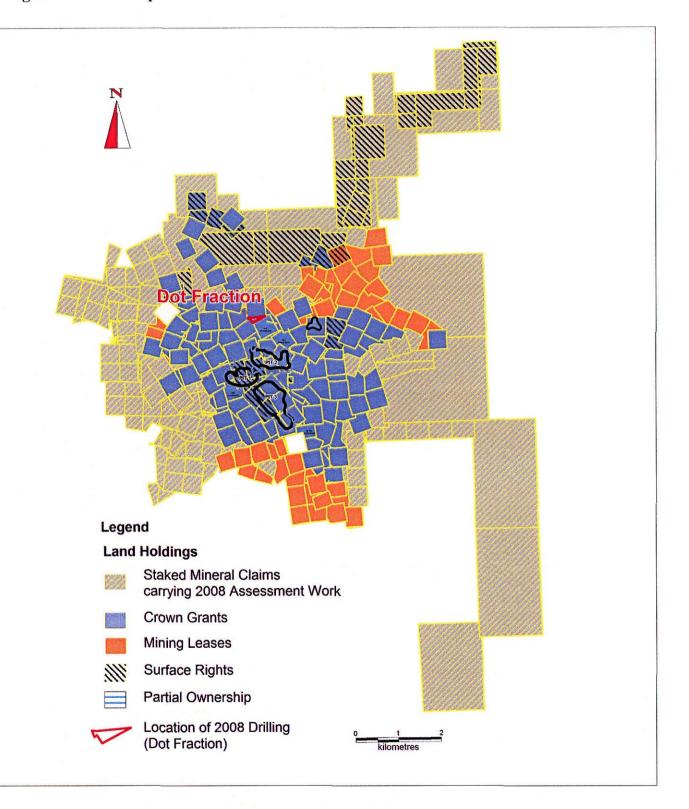
|  | Tenure # | Туре    | Claim Name   | Area (ha) |
|--|----------|---------|--------------|-----------|
|  | 248640   | Mineral | Dot Fraction | 2.4       |

# 1.2 Accessibility, Climate, Local Resources, Infrastructure, & Physiography

- Almost all of the property area is accessible by highways, paved access road and local gravel roads remaining from previous mining activity. Topography is gentle to moderate over most of the plateau area of Copper Mountain, where elevations range from 1,050 m to 1,300 m, but becomes rugged in the Similkameen River Canyon. The elevation of the river is approximately 770 m and the canyon walls are steep.
- The Copper Mountain area has a relatively dry climate, typical of the southern interior of British Columbia. Summers are typically warm and dry whereas the winters are cool with minor precipitation. Most of the precipitation during the winter months falls as snow with total snow fall of approximately 200 cm resulting in accumulated (compacted) snow depths of approximately 60-70 cm on the ground. Weather data from the mine-site has been collected from 1966 through to 1996. Temperatures range from an average annual high of 35°C and the average annual low of -29.5°C, with the annual mean temperature being 6 degrees. Total annual precipitation varies widely, ranging from a low of 253 mm to a high of 790 mm with the average being 400 mm. The bio-geoclimatic zones for the area are Ponderosa Pine Bunch grass at the lower elevations, transitioning into Lodgepole Pine forests at the higher elevations.
  - The town of Princeton has a population of approximately 3,000 and has a diversified economy driven by ranching, forestry and tourism, although during the mine operation, Similco Mines was the predominate employer in the area. The town has services typical for its size, however the general proximity of Vancouver, 267 km to the west, allows many services to be obtained there.

#### Figure 1.2 Claim map

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## 1.3 History

## 1.3.1 Project area, Exploration and Mining History

Initial exploration at Copper Mountain dates back to 1884. A number of attempts at initiating production were made during the period from 1892 to 1922 but were unsuccessful. In 1923, Granby Consolidated Mining, Smelting and Power Company (Granby) acquired the property, built a milling facility in Allenby adjacent to Princeton (Fig. 6.1) and extracted 31.5 million tonnes of ore with a grade of 1.08% copper, primarily from underground excavations, in, and below, what are now the Pit 1 and Pit 3 areas, during the periods from 1925 to 1930 and 1937 to 1957. Ore was transported from an adit on the east wall of the Similkameen River canyon along a rail line to the concentrator in the town of Allenby, adjacent to the town of Princeton. Mining operations were suspended in 1957, partly due to low metal prices and partly due to transportation charges on the ore by the owners of the rail line.

Modern exploration activity began in 1966 when Newmont Mining Corporation of Canada (Newmont) optioned claims opposite the historical Granby Mine on the west side of the Similkameen River. Newmont carried out geological mapping, soil sampling and geophysics which resulting in bulldozer trenching delineating a significant mineralized zone. Subsequent drilling defined sufficient resources to contemplate production. During this same time, Granby was drilling off open-pit reserves on Copper Mountain. In late 1967, Newmont purchased Granby's entire mining interest in the district, including a much needed tailings impoundment area (Smelter Lake), for US\$8M and 750,000 Newmont shares (trading price at the time was approximately \$4/share). Newmont continued exploration including an underground bulk sample from the Ingerbelle deposit. Production commenced from the Ingerbelle deposit in 1972. The predicted reserve at start-up was 67 million tons grading 0.55% Cu (and approximately 0.2 g/t gold). Actual mined grades were significantly less than the predicted grades and to change the strip ratio and reduce unit costs the cut-off grade was lowered to 0.2% Cu from 0.3% Cu and the mill was expanded from 13,600 T/day to 20,000 T/day.

In 1979, development of mineable reserves on the Copper Mountain side of the project commenced with the installation of a new primary crusher and conveyer system. The conveyer system was 2.1 km long, extending from the rotary cone crusher near Pit 1, along the east side of the Similkameen River for 1.4 km and then across the Similkameen canyon to the milling facility. Initial production on the Copper Mountain side was from Pit 2 with additional production from Pit 3 in 1983. Mining of Pit 2 ceased in 1985.

Newmont sold its Copper Mountain assets as part of a corporate re-structuring to reduce debt incurred by a US\$33 dividend/share paid out by Newmont in order to counter a takeover attempt by a junk bond syndicate headed by T. Boone Pickens. The entire property was sold to Cassiar Mining Corporation (later to become Princeton Mining Corp. (PMC)) in 1988 for US\$10 million and operated under the name Similco Mines Ltd. Similco continued mining from Pits 3 and 1 and later added a small tonnage from the Virginia Pit.

In November of 1993, Similco was shut-down to low metal prices and placed on a care and maintenance. Improving copper price, combined with a favourable US-Canadian dollar exchange rate, allowed the mine to re-open in August 1994. In conjunction with the re-opening a significant exploration effort was made to delineate additional deposits on the property. A property scale airborne magnetometer, electro-magnetic and radiometric survey was flown and followed up with mine scale

geological mapping, ground geophysics and diamond drilling. Drilling was initially focused on the Alabama zone where a large area of mineralization was identified and then shifted to extending mineralization to the east and at depth in the Ingerbelle deposit. In 1995, Similco returned to the Ingerbelle deposit, exploration having defined additional reserves at depth to the east of the deposit. The mine was closed down in late 1996 due to falling metal prices and a shortage of high grade-low strip reserves.

## 1.3.2 Recent Production History

Recent history of open pit mining at Copper Mountain was a battle against fluctuating and falling copper prices and rising costs. Due to the size of existing mining equipment and the relative costs associated with that equipment there was little leeway to increase the stripping ratio and maintain profitability when copper prices were below US\$1.00/lb. Consequently, mine planning was driven by stripping requirements as well as grades, metallurgical characteristics and waste haulage costs. Recent production statistics are given in table 6.1. The mine closed down in late 1993 and stayed on a "care and maintenance" basis until copper prices improved in mid 1994. A lack of low strip ratio reserves, rising production costs and necessary capital expenditures resulted in the mine closing down in November of 1996.

|                                | 1996*  | 1995   | 1994** | 1993*** | 1992    |
|--------------------------------|--------|--------|--------|---------|---------|
| Ore Milled (tons x 1000)       | 7,154  | 8,958  | 3,034  | 7,416   | 8,132   |
| Waste Mined (tons x 1000)      | 4,811  | 7,955  | -      | 6,553   | 8,828   |
| Head Grade (Cu %)              | 0.331  | 0.270  | 0.265  | 0.450   | 0.450   |
| Recovery                       | 85.9%  | 77.9%  | 77.2%  | 77.8%   | 77.2%   |
| Copper Produced (lbs x 1000)   | 40,630 | 37,694 | 12,269 | 51,991  | 56,667  |
| Gold Produced (ozs)            | 29,422 | 23,682 | 7,392  | 14,181  | 16,039  |
| Silver Produced (oze)          | 85,943 | 95,565 | 32,829 | 370,129 | 314,490 |
| Number of Employees (Dec 31)   | 35     | 287    | 198    | 32      | 274     |
| Average Copper Price (US\$/lb) | 1.09   | 1.38   | 1.11   | 0.92    | 1.07    |

#### Table 1.2 Similco: Recent Production Statistics

\*10.5 months production; \*\*4.5 months production; \*\*\*11 months production

## 1.3.3 Exploration History

There is little documentation of the early exploration history on the property and most of this information must be inferred. Evidence of early workings such as trenches and adits indicate that early prospecting (1900-1940's) must have been fairly significant. By the mid 1950's Granby Mining was using diamond drilling in addition to percussion drilling for exploration. In the course of their exploration and production drilling, Granby located most known zones of mineralization with the possible exception of the Virginia and Alabama but did not define significant resources in all locations. Most of Granby's exploration took place along the Copper Mountain fault where grades were sufficient to support underground mining. Exploration was also conducted on the Voigt zone but this deposit was never developed, probably due to lower copper grades than those along the contact fault (the relatively

high gold grades would not have been that significant at the time). Due to the high diamond drilling costs relative to underground development costs during Granby's time, early drilling success was generally followed by underground development and underground drilling. The Wolf tunnel approximately 1 km southeast of the Oriole Zone is an example of this. A beneficial aspect of Granby's approach to later operators was that many of the underground drill holes were flat which allows for more accurate resource estimations of the predominately vertically oriented veins and fractures which control a majority of the mineralization.

Although Granby developed some small areas of open pit ore at a number of locations during the later stages of the mine life, their equipment was ill-suited for efficient open pit mining and a majority of their exploration was directed towards development of underground resources.

Newmont Mining Corp., initiated exploration on claims on the western side of the Similkameen River and were ultimately successful at delineating the Ingerbelle deposit. Following acquisition of Granby's Copper Mountain property, Newmont applied the same exploration techniques that had been successful in discovering the Ingerbelle deposit, namely Induced Polarization geophysical surveys and extensive diamond drilling. Newmont's IP surveys covered a significant part of the area east of the Copper Mountain fault between Pits 1 and 3 and resulted in focused exploration in the Pit 2 area. Most of Newmont's drilling on Copper Mountain was in the Pit 1 and Pit 2 areas. Newmont determined that the most effective method of drilling was to drill vertical drill holes, a practice that was debated at the time and still is. On one hand, vertical drilling does eliminate the problem of which direction to drill in -adifficult task in most of the mineralized areas due to two or more directions of vein and fracture hosted mineralization, on the other hand, vertical drilling commonly resulted in overestimating resource grades (by up to 25%, although this is known only in retrospect). In theory, angle drilling should provide better grade estimates provided that the holes are oriented approximately perpendicular to the main trend of mineralization. In areas with two or more significant directions angle drilling becomes problematic and it is probable that at least two directions of drilling are required. At present there is insufficient exploration and mining data to determine the effectiveness of angle drilling for estimating recoverable grades. Newmont did carry out a small exploration drilling program on the Voigt zone and here they used angle drilling.

Similco Mines carried out diamond drill programs during the periods of 1989-1991 and from 1993 to 1997. The early drill programs were located in the area extending from the eastern end of Pit 2 to the northeast through the Mill Zone across the Lost Horse Gulch and into the eastern end of the Alabama Zone. All holes encountered some mineralization with the most success coming from what would become the Virginia deposit. Although angle drilling was used for resource definition within the Virginia deposit, the orientation of the two fences of holes was parallel to the primary host structures which resulted in a modest overestimation of grades.

In 1993, a regional airborne electromagnetic (EM), magnetic (Mag) and radiometric (RM) survey was flown over the camp. The magnetic part of the survey was effective in mapping major lithological units and structures (see figure 7.4). The EM and RM parts of the survey appeared to have limited effectiveness, although this data may be of use in future geological compilations. The main limitation of the EM part of the survey is the limited size and conductivity of the individual mineralized structures within a mineralized zone. The effectiveness of RM part of the survey was constrained by the variable overburden and vegetative cover within the survey area. The regional airborne survey was followed up by deep a penetration IP survey (and inversion) along the northern edge of the Lost Horse Gulch. This survey indicated variable zones of chargeability which increased with depth below the Alabama ridge area. Follow-up drilling yielded favourable results, with an inferred resource being estimated for the Alabama area (29 Mt grading 0.35% Cu and 0.17 g/t Au) by the mine operators. The resource remains

open to the west and at depth. The mineralization is also open to the north but thickening cover of Tertiary volcanic rock precludes development of open pit mineralization in the northerly direction.

Drilling in the Ingerbelle area in 1994 and 1995 defined additional resources extending easterly, and at depth from the Ingerbelle deposit; the 'low-strip' part of these newly defined resources were mined through 1996. A significant drill program was undertaken in late 1996 and early 1997 to see if additional resources could be defined in the areas surrounding Pit 2 and Pit 3. Results of this drill program are not documented, presumably due to mine closure, and will require careful investigation prior to instigating further exploration on the property.

## 1.4 Current Work

A major diamond drilling program designed to verify and expand resources at the project area was initiated in January, 2007 and has been carried out continuously since then. The 2008 exploration program consisted predominately of diamond drilling with a planned program of 50,000 m with the threefold purpose of converting inferred resources to the measured and indicated categories, defining additional resources in and around the proposed super-pit, and to test a number of the Titan 24 chargeability anomalies. During the course of this work, a single drillhole was completed on the Dot Fraction mineral claim located north of Pit 2 on the east-west trending Alabama Ridge.

The drillhole was logged and any core with copper mineralization was split by diamond saw and sent for assay to Pioneer Laboratories of Vancouver. Analytical work consisted of low-level copper analysis by atomic absorbtion methods followed by assays for copper, gold and silver where the initial copper values were greater than 1000 ppm.

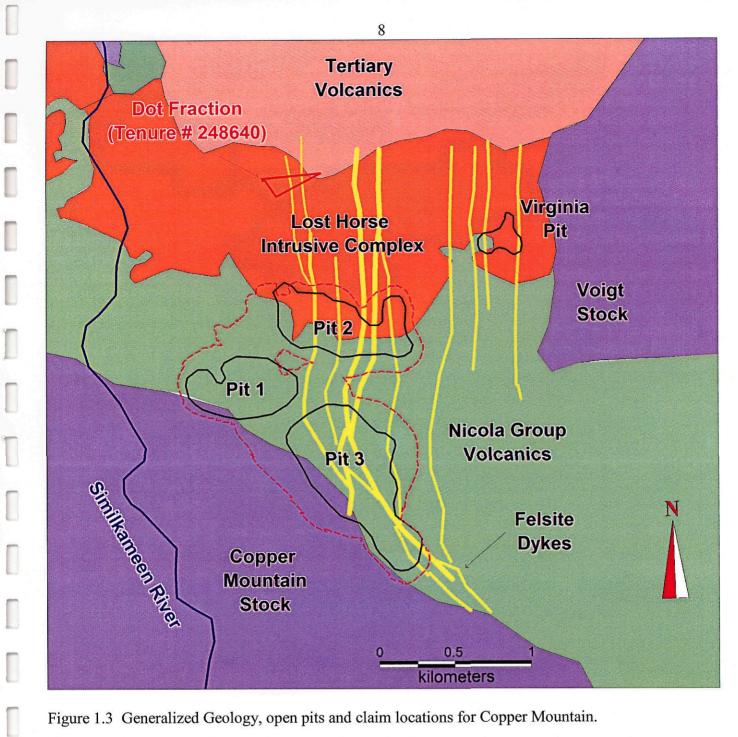


Figure 1.3 Generalized Geology, open pits and claim locations for Copper Mountain.

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## 2. GEOLOGY AND MINERALIZATION

## 2.1 Regional Geology

The Copper Mountain alkalic porphyry copper-gold camp is part of a northerly trending Mesozoic tectonostratigraphic terrane termed Quesnellia, composed of a volcanic arc with overlying sedimentary sequences, all of which were built on top of a deformed, oceanic sedimentary-volcanic complex (Harper Ranch and Okanogan sub-terranes). Quesnellia was formed off-shore to the southwest of continental North America and accreted, with other terranes, onto North America in late Mesozoic times (Monger et al., 1992). The principle rock formation of Quesnellia is the Late Triassic Nicola Group, a
predominately subaqueous island-arc assemblage composed of volcanic and lesser sedimentary rocks that have been intruded by early Jurassic alkalic, calc-alkalic and zoned mafic (Alaska-type) plutons and batholiths (Preto, 1977; 1979).

The Nicola Group rocks have a stratigraphic thickness of approximately 7.5 km and form a 25 km wide band that extends from the Canada-U.S. border north to beyond Kamloops Lake. This band has been divided into four lithologic assemblages that are commonly bounded by sub-parallel fault systems (Monger, 1989). The 'western belt' is a steeply dipping, east-facing assemblage of sub-aqueous felsic to mafic rocks of calc-alkaline affinity that grade upwards into volcaniclastic rocks.

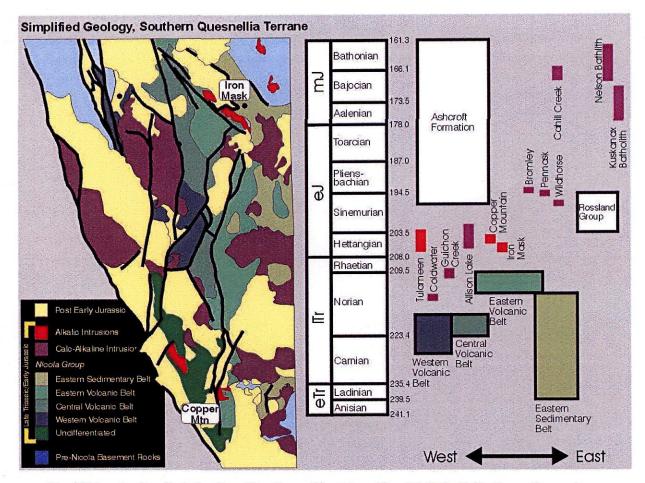
## 2.2 Property Geology

The Copper Mountain alkalic porphyry copper-gold camp occurs in the 'eastern volcanic belt' of the Nicola Group (Monger, 1989). These volcanic strata are intruded by a suite of early Jurassic alkalic dykes, sills, irregular plugs and zoned plutons of the Copper Mountain suite (Woodsworth et al., 1992), but other than local contact effects and alteration associated with mineralization, the stratified rocks are relatively fresh having undergone only lower greenschist metamorphism.

## 2.2.1 Stratigraphy

A stratigraphic sequence of volcanic and sedimentary rocks has not been defined for the Nicola Group within the Copper Mountain area, however, the Group includes: 1) massive and rarely pillowed mafic and intermediate flows and flow breccia; 2) coarse volcanic breccia with rounded clasts (agglomerate), sometimes containing hornblende-phyric monzodiorite clasts; 3) felsic and intermediate water-lain tuff (greywacke) and lapilli-tuff; 4) volcanic siltstone, sandstone, conglomerate and minor limestone. These rocks are exposed in a northwesterly trending belt, approximately 1100 m wide and 4300 m long, sandwiched between various intrusive phases (Fig. 7.1). Bedding orientation is variable suggesting block faulting with rotation and/or possibly some folding.

FIGURE 2.1



Simplified regional geological setting of the Copper Mountain and Iron Mask alkalic Cu-Au porphyry systems. The Nicola Group forms the principal component of the Quesnel tectonostratigraphic terrane in southern and central British Columbia, and hosts all known occurrences of alkalic Cu-Au porphyry mineralization including, to the north, Rayfield River, Mount Polley, Mount Milligan and deposits associated with the Hogem Batholith.

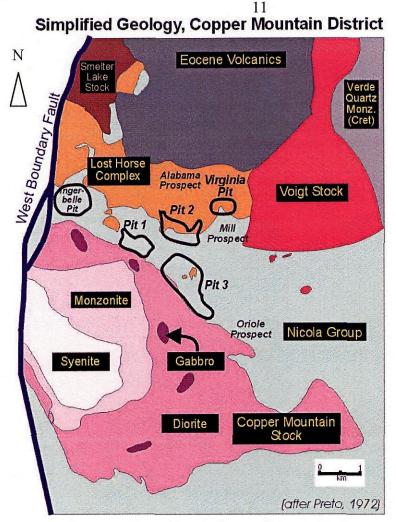


Figure 2.2 Copper Mountain Geology with pit outlines.

Four predominant rock types are observed in the open pits and commonly form a major proportion of the economic mineralization. However, hydrothermal alteration and thermal contact effects from a number of intrusive phases obscures finer lithological details and contact relationships between the units is often not clear or difficult to interpret. In decreasing order of abundance the units are:

- Coarse-grained agglomerates which are poorly sorted, sub-rounded and with varying abundance of clasts ranging from clast supported to matrix supported. Matrix is fine-grained, weakly porphyritic andesite, whereas clasts can be similar to the matrix, or consist of hornblende-phyric monzodiorite (commonly with aligned phenocrysts) and rare black mudstone. This unit is observed in all of the open pits.
- 2) Fine-grained, aphyric to sparsely plagioclase-porphyritic andesite flows of dark green to black colour. The plagioclase phenocrysts are zoned from calcic to sodic (rims). This unit is also observed in all of the pits.
- 3) Thinly bedded felsic tuffaceous epiclastic to sedimentary rocks. The most distinctive unit is a series of colour banded siliceous ash tuffs or chert.
- 4) Clast supported breccia with a medium grey mudstone matrix and clasts of sedimentary rocks from #3 above. This unit is interpreted to be a slump breccia and has only been observed in Pit 2 and the Virginia Pit, suggesting a limited depositional environment.

#### 2.2.2 Intrusive Rocks

The Copper Mountain Stock (CMS) dominates the property in terms of size and exposure. The stock is concentrically zoned from a diorite margin with local gabbroic zones, through monzonite to a syenite core. The core is non-magnetic (as illustrated by the airborne magnetic data image of Figure 7.3), leucocratic, and locally pegmatite-textured. The zonation is believed to indicate a normal fractionation process as opposed to multiple intrusions (Montgomery, 1968). The CMS does not host significant mineralization, although minor zones of copper sulphide minerals occur in the core area and within shear zones in the outer phases. The south wall of Pit 3 cuts into the outer margin of the CMS and here one can observe mineralized veins within the volcanic rocks extending for a few metres into the diorite before pinching out.

The Voigt and Smelter Lake stocks occur on the north edge of the Nicola Group volcanic rocks. These stocks are smaller than the CMS and do not exhibit any visible zonation, however, magnetic data indicate that the core of the Voigt Stock had lower magnetic susceptibility than the outer part,
suggesting that it may be cryptically zoned. Both the Voigt and Smelter Lake stocks are petrologically similar to the diorite phase of the CMS, being equigranular, to sub-porphyritic, fine to medium grained monzodiorites.

Immediately to the north of the Nicola Group rocks, is an area of dykes, sills and irregular plugs known as the Lost Horse Intrusive Complex (LHIC; Montgomery, 1968; Preto, 1972). The LHIC is a multiphase suite of diorite, monzonite, and syenite which intrude the Nicola volcanic rocks, and are, for the most part, younger than the CMS, Smelter Lake and Voigt stocks, as indicated by cross-cutting relationships and the presence of monzodiorite clasts within dykes of the LHIC. Within the area mapped as LHIC (Fig. 7.2) only about one half is actually intrusive, the rest being composed of screens and blocks of altered volcanic rocks, as indicated by exploration drilling in the Alabama area. The great variety of petrologically distinct intrusions which form the complex have been subdivided into four groups: LH1g, LH1b, LH2 and LH3 (Stanley, et al, 1996). LH1 intrusions are pre-mineral and are similar to the Voigt stock but lack the poikilitic K-spar and biotite. LH2 intrusions range in composition from monzonite to syenite, although the later composition may actually be a product of alteration, are mineralized and typically display a strong alignment. LH3 intrusions are leucocratic, very fine-grained, monzonite to syenite in composition and cross-cut mineralization.

To the northeast of the Copper Mountain camp is a large stock of calc-alkalic quartz-monzonite and granodiorite known as the Verde Creek stock. This stock is Cretaceous age and cuts the Voigt stock on its northern margin.

The youngest intrusions in the camp occur as a series of north trending, vertical dykes of probable Eocene age. These dykes are most prominent in the eastern part of the camp and are well exposed in Pit 2 where a number cross the pit. The dykes are pale pink to yellow and consist of flow-banded, quartzfeldspar (+/- hornblende) porphyry 'felsite.' Dark green to black aphyric mafic dykes also occur but are subordinate to the felsic variety. Both types are interpreted to be feeders to Princeton Group volcanic rocks, that along with sedimentary rocks, filled extensional grabens during Eocene time (Monger, et al., 1992). Princeton Group volcanic rocks overlie the LHIC on the north side of the Alabama zone.

#### 2.2.3 Structure

Structure has a great deal of significance to exploration as faults and fractures control both the location of mineral deposits and the distribution of mineralization within the deposits. Faults, along the north edge of the CMS (Copper Mtn fault) and south edges of the LHIC and Voigt Stock, control the location of the Oriole prospect, Pit 1 and Pit 3 deposits, the Ingerbelle deposit and the Pit 2 deposit. Another structure, approximately parallel to the south edge of the LHIC, is inferred to run through the Voigt zone, the Virginia deposit, the Alabama deposit and Orinoco prospect. Within Pit 3, the three cone shaped "high-grade" deposits (>1% copper) mined by underground methods are situated at the intersection of northeast trending faults with the Copper Mountain fault (Farhni, 1951). Within the deposits a high proportion of the mineralization is controlled by multidirectional, but predominately vertical, fractures.

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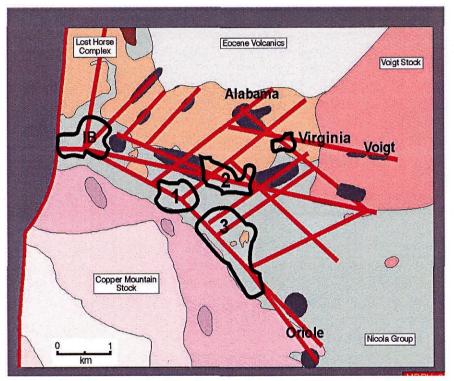


Figure 2.3. Geology of the Copper Mountain Camp showing the known and inferred major structures within the camp. Existing open pits are outlined in black, whereas the mineralized zones are shown in dark grey. The southernmost structure, the Copper Mountain fault is the most significant with the northeast trending structures being the next most significant in terms of controlling mineralization.

## 2.3 Deposit Type

The deposits of the Copper Mountain area are most commonly classified as porphyry copper (+/gold) of the alkalic type. Porphyry deposits can be defined as large, low-grade, epigenetic, hypogene copper (plus associated metals) deposits that can be mined by bulk mining methods. Further description would also include disseminated and stockwork-vein hosted mineralization within or associated with acid igneous rocks usually with porphyritic textures. In terms of process of formation, porphyry copper deposits share a number of significant characteristics, of which the most important is that they are the result of igneous activity (although this characteristic is not demonstrable in all deposits). The causative igneous rocks generally range from diorite to granite with granodiorite and quartz monzonite being the most common. Supergene enrichment is an important feature in many porphyry districts around the world but is a relatively rare phenomenon in the mostly glaciated northern cordillera. Porphyry deposits have been subdivided into a variety of subtypes with porphyry copper and copper-molybdenum deposits of the calc-alkalic suite; porphyry copper deposits of the alkalic suite; and porphyry molybdenum deposits of the calc-alkalic suite being the three commonly accepted subtypes for British Columbia (1976, CIM Spec. Vol. 15).

The most common porphyry copper deposits, those of the calc-alkalic type, generally have a zonal alteration sequence. The inner part of the porphyry system may be characterized by potassic alteration which is distinguished by the mineral assemblage of muscovite-biotite-potassium feldspar, or at least two of the three with new (or secondary) biotite and K-feldspar being the key minerals. Moving outwards, an assemblage of quartz-muscovite (phyllic alteration) is common followed by argillic alteration which is defined by the presence of clay minerals such as illite, montmorillonite or kaolinite, usually with abundant quartz. The outer alteration zone is termed propyllic alteration which is typified by the presence of chlorite, epidote, and calcite. Variations and local complexities to this alteration sequence are normal. Sulphide mineralization within typical porphyry systems include, in general order of abundance; pyrite, chalcopyrite, bornite, molybdenite, and minor sphalerite. Sulphide mineralogy may also display zonal variations within the hydrothermal system.

Alkalic porphyry deposits (Barr, et.al., 1976) are quite distinct from the more common calcalkalic genre and represent an important subclass of deposits. The alkalic deposits of British Columbia are spatially and genetically associated with the Upper Triassic Nicola-Takla-Stuhini volcanic assemblages and co-magmatic plutons. The plutons have similar chemistry to their volcanic host rocks and are commonly emplaced along regional scale, linear structures and are typically small and complex. The alkalic mineral deposits occur in zones of intense faulting, fracturing, brecciation, and hydrothermal alteration. Hypogene sulphide minerals which formed contemporaneously with the hydrothermal alteration of host rocks include pyrite, chalcopyrite, bornite, chalcocite and pyrrhotite in decreasing order of abundance. Molybdenite may be present in trace amounts but gold and silver are usually economically significant. Compared to the calc-alkaline deposits, porphyry deposits of the alkaline suite commonly grade into pyrometosomatic or skarn-like deposits and the alteration assemblages are not sequentially zoned as they are in the calc-alkalic suite.

The alkalic porphyry classification for Copper Mountian is reasonable as the copper-gold-silver deposits are bulk mineable deposits with grades typical of porphyry copper deposits, mineralization is associated with complex intrusive activity localized along a regional structure, and locally the alteration and mineralization appears skarn-like . However, the Copper Mountain deposits do display some unusual alteration and structural characteristics which do not fit particularly well into the porphyry copper model. Some of these features are similar to features of the Iron-oxide Copper-Gold (IOCG) model, and this model should be considered when looking at exploration methodologies for mineralization within the Copper Mountain district. The features of Copper Mountain mineralization that show similarities to Iron-Oxide deposits include the strong structural control on mineralization, an association of copper-gold mineralization with magnetite veins, pervasive sodic and potassic alteration, and an abundance of carbonate and calc-silicate minerals associated with mineralization.

The strong structural control on mineralization has significant implications for the orientation of drill holes as results can be extremely variable depending upon drill-hole orientation; zones of strong mineralization can be missed by incorrectly oriented drilling or grades can be overestimated by drilling along mineralized structures. The low amount of pyrite (relative to calc-alkalic porphyry systems) combined with an abundance of carbonate generally results in limited or no gossans associated with surface exposures of mineralization thereby making visual detection much more difficult.

## 2.4 Mineralization and Alteration

## 2.4.1 Mineralization

Mining at Copper Mountain from 1925 through to 1996 has produced approximately 1.7 billion pounds of copper, 9 million ounces of silver and 700,000 ounces of gold from both underground and open pit mining. Significant resources are still present at the property and potential for discovery and definition of additional resources is favourable. The mineralizing system at Copper Mountain is classified as an 'alkalic porphyry' system, and while this is the most appropriate classification, Copper Mountain mineralization and alteration has some unique or 'non-standard' characteristics.

As a broad simplification, mineralization at Copper Mountain consists of structurally controlled, multi-directional veins and vein stockworks. Preto (1972) subdivided the mineralization into four types, which have been slightly modified as follows: 1) disseminated and stockwork chalcopyrite, bornite, chalcocite and pyrite in altered Nicola and LHIC rocks; 2) hematite-magnetite-chalcopyrite replacements and/or veins; 3) bornite-chalcocite-chalcopyrite associated with pegmatite type veins and 4) magnetite breccias. Each mineralization type can be found in all pit areas, but each pit is unique with respect to the relative quantities and character of mineralization type. The alteration that is associated with each mineralization type has some degree of variation as well. Each pit area also has distinctive Cu:Ag:Au ratios (Figure 2.5) which may reflect the relative abundance of mineralization/alteration type or zonation caused by a camp scale thermal regime.

Pit 3 was excavated in the area of the Granby underground workings and hosted the largest amount of mineralization. Descriptions of this mineralization (Fahrni, 1951) combined with underground stope plans indicate that much of the underground mineralization occurred as large, downward pointing, cone shaped stockwork vein and breccia zones centered on fault intersections. Dimensions of the cones were approximately 100-180 m in diameter, near their tops, at or near surface, with a vertical extent of approximately 350 m. Originally referred to as "bornite ore", remnants of this material found in collapsed material while open-pit mining were observed to contain considerable quantities of hypogene chalcocite. Veins, veinlets and disseminated sulphide mineralization surrounded the breccia cones and provided most of the mineralization subsequently mined by open-pit. The chalcopyrite to bornite ratio within the pit area is variable but is approximately 2:1 and the amount of copper sulphides is greater than the amount of iron sulphides (pyrite). In contrast to Pit 3, the Ingerbelle deposit has chalcopyrite as the dominant copper species and may have contained more disseminated mineralization. The Ingerbelle deposit is centered on the intersection of at least two major structures, both of which appear to contain some massive to semi-massive sulphide veins at depth (as indicated by both historical drill holes and more recent exploration drilling in 1994). Geologically, the Ingerbelle pit area is significantly complex, being cut by three phases of dykes, only two of which are associated with mineralization, and all of which are superimposed on pre-existing, and overlapping mineralization and alteration. A significant magnetite breccia body, since mined out, occurred within the Ingerbelle Pit area and remnant pieces indicate angular to rounded, potassically altered fragments supported in a magnetite matrix. Dyke-like appendages of the magnetite breccia are locally visible in the pit walls. Scapolite fills many late stage fractures which can be observed in the southern wall of the pit.

The Virginia deposit is formed by two parallel, west-northwesterly trending magnetite sulphide veins of 3 to 7 m in thickness. The veins are sub-continuous and surrounded by disseminated and fracture controlled chalcopyrite in potassically altered volcanic, sedimentary and intrusive rocks of the LHIC. Along the strike of the veins, to the east is the Voigt zone where historical drilling (circa 1940's) intersected grades between 1 and 7 g/t gold and 0.5 to 1.5% copper over variable but relatively narrow widths within a magnetite rich vein-type structure. The Alabama deposit is unmined but was defined by drilling during the mid 1990's. Mineralization within the Alabama deposit is disseminated along structurally controlled zones that trend east-north-easterly and this deposit is unique in that it contains significantly more mineralized intrusive rocks than observed in any of the other pits (which is generally very little).

The Pit 2 area is similar to the Ingerbelle pit in geological complexity. A more pronounced structural control is evident with chalcopyrite mineralization occurring in east and northeast trending veins, vein stockworks and fracture fillings. Some disseminated mineralization is present peripheral to syenite dykes of the LHIC and in a magnetite breccia that occupied the north central part of the pit area. Very little bornite occurs within Pit 2 and that which does occur is located in the south-west corner of the pit, closest to Pit 3.

## 2.4.2 Alteration

A large variety of alteration types, commonly overlapping, occur throughout the Copper Mountain Camp. Alteration can be classified according to its occurrence: either pervasive or structurally controlled, and its predominant mineral assemblage. The typical alteration assemblages associated with porphyry copper models (eg: Lowell and Guilbert, 1970) propylltic, phyllic, argillic, advanced argillic and potassic, and their zonal or spatial organization around a central intrusion are not present at Copper Mountain.

The earliest alteration assemblage at Copper Mountain is a hornfels produced within the volcanic rocks adjacent to the Copper Mountain Stock. The hornfels appears to affect only the intermediate to mafic volcanic flow and pyroclastic rocks while the sedimentary rocks are relatively unscathed. The hornfels is a dark purple-gray to black, hard, very fine-grained assemblage of diopside or biotite, plagioclase and magnetite, +/- other opaque oxide minerals (Preto, 1972). Volcanic fragments and matrix commonly react slightly differently to the

hornfelsing event resulting in visually enhanced fragmental textures in some locations and virtually obscuring primary textures in other locations. The hornfelsed rocks seldom occur more than 700 m beyond the margin of the CMS. A spatial relationship between mineralization and hornfelsing was proposed by Farhni (1951), who suggested that the increased brittleness of the hornfels was more susceptible to fracturing and mineralization. Alternatively, or coincidently, it may be that the fine-grained magnetite of the hornfels was quite reactive with the mineralizing fluids providing an iron source to form sulphide minerals.

Sodium metasomatism, or pervasive albitic alteration, appears to be pre-mineralization and occurs as a pervasive albite-epidote hornfels. In addition to albitization of feldspars and conversion of ferro-magnesium minerals to epidote (+/- diopside and chlorite), magnetite and opaque minerals are destroyed. This process results in 'bleaching' of the original rock and reduction in grain size, forming a pale gray or greenish gray, very competent rock with complete destruction of primary textures. Indeed, much of the rock affected by Na-metasomatism was originally mapped as intrusive due to its fine-grained leucocratic appearance. However, detailed mapping within the open-pits indicates that Na-metasomatism affects all rock types to varing degrees. Trace amounts of pyrite maybe present within this alteration. Na-metasomatism is most pronounced along, and to the northeast of the Copper Mountain fault, and adjacent, or peripheral to, the hornfelsed rocks.

Pervasive potassium alteration is extensive throughout the district but tends to be outbound (northeast) of the previous alteration types, although it may locally overlap or crosscut both pervasive sodic alteration and hornfels. Potassic alteration replaces primary plagioclase with potassium feldspar and replaces ferro-magnesian minerals with biotite, epidote, calcite, chlorite and magnetite; typically producing rocks with a moderate to strong orange to pink colouration. Destruction of primary lithological textures occurs where the alteration is intense. Potassic alteration appears to be partly an outward zonation to the previous alteration types as well as being spatially associated with certain phases (LH2) of the Lost Horse Intrusive complex. Potassic alteration is temporally related to sulphide mineralization.

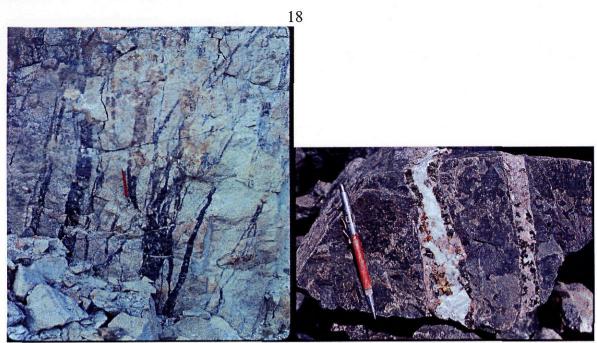
Numerous veins, vein envelopes and fracture-filling mineral assemblages and textures cross-cut, or occur within the pervasive alteration types (these vein types are listed in detail in Stanley et al. (1985)) but the more prominent ones are described below.

Magnetite veins: with or without copper sulphide minerals, of variable size from fine fracture filling to vein stockworks to sheeted vein swarms to 3-4m thick veins. These veins are not abundant in Pit 3 area but are significant in Pit 2 and comprise much of the ore within areas north of Pit2 and east of Ingerbelle.

"Pegmatite veins": coarse grained potassium feldspar, biotite, epidote and calcite (+/albite, apatite, garnet, and quartz) these veins are distinctive and occur with, or without, sulphide minerals. The veins are of variable size (up to 2 m thick), of variable orientation, and occur in dilatant zones throughout the camp.

Potassium feldspar veins: these veins range in thickness from 1 mm to 1 m and are generally barren; filling fractures within dilatant zones across the camp.

Chlorite veins: these veins are fine, 1-10mm, discontinuous, late and occur throughout the camp.



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Figure 2.4a Above, shows vertical magnetite-chalcopyrite veinlets in north wall of Pit 2. Plate 2.4b Right, shows pegmatite type vein of coarse grained calcite, K-feldspar, biotite and chalcopyrite, from Pit 2 south wall.

Late stage scapolite fracture filling is common in the Ingerbelle deposit but is rare elsewhere in the Copper Mountain area. The presence of the "pegmatite veins" and local calc-silicate alteration assemblages can give local areas the appearance of skarn formation, however the initial calcic minerals are themselves an alteration product and no carbonate rocks have been recognized within the local stratigraphy.

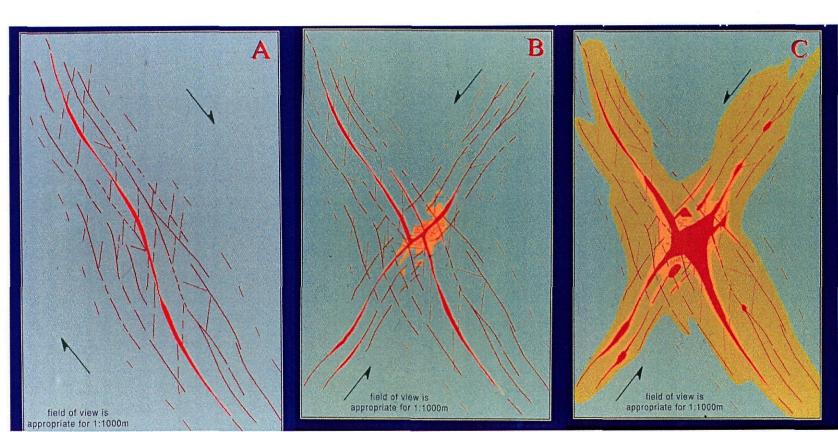


Figure 2.5 Fracture intersection model for mineralizatizationAn example of the spatial distribution of grade (mineralization) relative to single (A) and intersecting structures (B) and development of breccia pipes with continued fluid flow at structural intersections (C). Red is equivalent to semi-massive to massive sulphide mineralization whereas the yellow and pale yellow denotes disseminated sulphide mineralization

## 3. Diamond Drill Program

#### 3.1 Introduction

A total of 1,017 feet (310 m) of NQ core diamond drilling in a single drill-hole was completed between August 20<sup>th</sup> and August 26<sup>th</sup>, 2008 on the Dot Fraction claim of the Copper Mountain property. The purpose of this program was to test for any mineralization between the Alabama Zone and the Orinoco Zone on the east-west trending Alabama Ridge north of Pit 2. The area was not historically drill tested and previous structural mapping highlighted the potential for discovery of new shallow mineralization at a fault intersection between the two zones. Additionally, the proximity to the nearby high-chargeability IP Orinoco anomaly to the west further warranted exploration as part of CMMC's strategy to test both near-pit and peripheral Titan 24 anomalies.

#### 3.2 Description of Program and Sampling Methods

The drill hole was designed to test a corridor (1500' x 800') of previously non tested ground between the Alabama and Orinoco Zones. The area has little outcrop and is dominantly hosted by the Lost Horse Intrusive Complex which is overlain by Tertiary Volcanic rocks of the Princeton Group. Historical structural mapping suggests a northnorth east trending fault strikes through the claim area and likely intersects the mineralized Alabama trend proximal to the Dot Fraction mineral claim. Historically, the strongest mineralization at Copper Mountain is generally focused at multiple fault intersections as evident in the current pits as well as the Alabama zone.

Drill holes at Copper Mountain are typically drilled on an azimuth of 045°, 135°, 225° or 315° with a dip of - 45 degrees so as to intersect the vertical mineralization at as shallow an angle as possible. Drill hole CM08WC-08 (the subject of this report) was drilled at an azimuth of 258 and a dip of - 45. The hole was designed to be drilled in this westerly direction to intersect the fault roughly perpendicular to its North/North-East trend (018). The dip was maintained at - 45 degrees to maximize true width of the zone and to intersect the fault at as shallow an angle as possible assuming it was vertical. Collar data for the drill hole is summarized in Table 3.1. Drill core is stored at the core farm, (UTM: 5467173N; 680339E) located adjacent to the truck shop on the Copper Mountain Mine site.

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|-----------|----------|-----------|--------|---------|-----|-------|
| CM08WC-08 | 679568   | 5468538   | 4064   | 258     | -45 | 1017  |

Samples are taken whenever mineralization is observed or intense alteration without visible mineralization. Samples are taken over 5-10 foot lengths with 'shoulder' samples at the start and end of mineralized intervals. Sample locations are marked during the core logging process and sample tags are inserted into the boxes at the appropriate locations. The core is photographed and then moved to the sawing room for cutting. Samples are cut with a diamond saw and placed in plastic bags which are sealed and then placed in rice bags for shipment to the assay laboratory. Samples are transported from the exploration site to Princeton by company employees and from Princeton to Pioneer Labs in Vancouver by a commercial trucking company. The use of commercial standards, blanks and duplicate assays is employed to maintain quality control. A standard or a blank sample are inserted into the sample stream every 25 samples. A total of 7 different standards are used which are inserted in random order. During various times of the drilling program approximately 5% of the sample pulps are collected and sent to a different lab for comparison purposes. More information on the QA/QC program and the results thereof are available in technical reports recently filed on SEDAR.

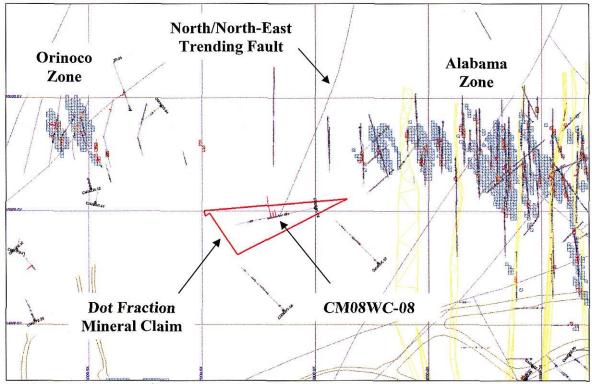
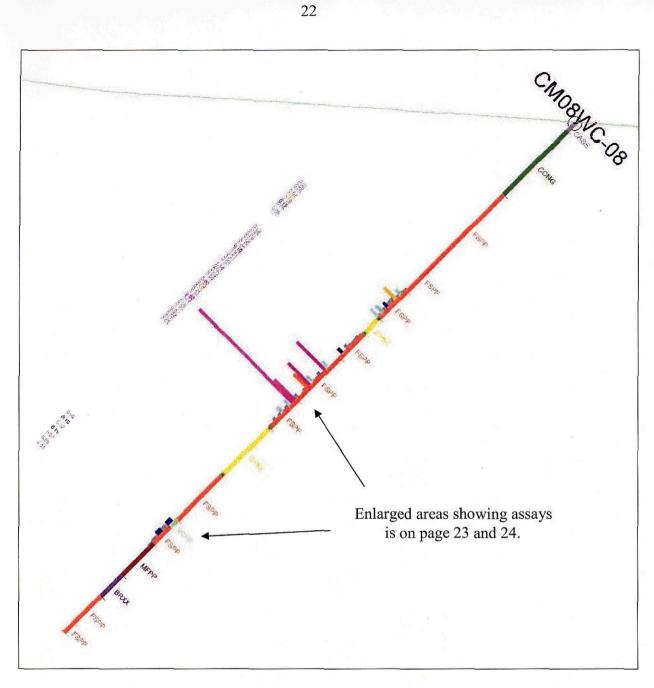


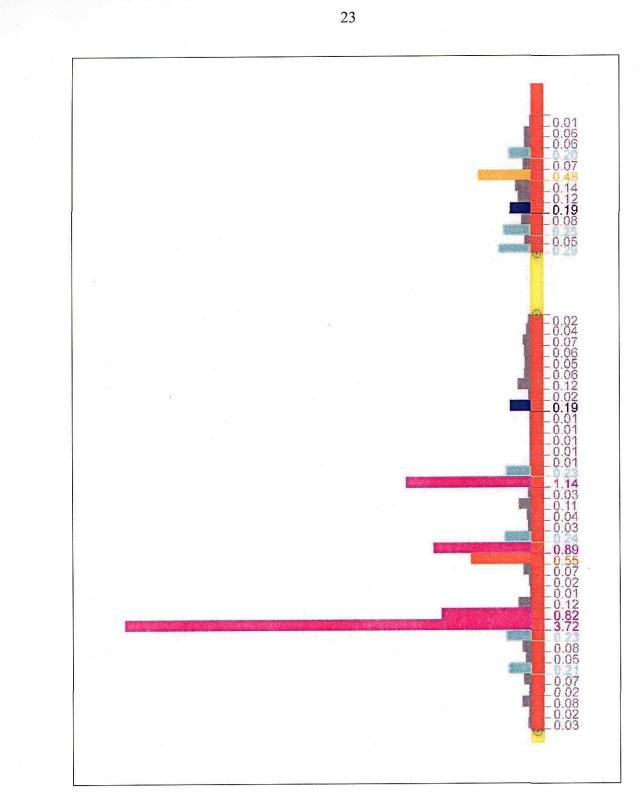
Figure 3.1 Plan map of the east-west trending Alabama Ridge showing both Orinoco (western zone) and Alabama (eastern zone), drillholes, structural lineaments (grey), resource blocks (cyan), late felsite dykes (yellow) and the outline of the Dot Fraction (red).

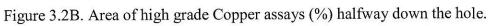


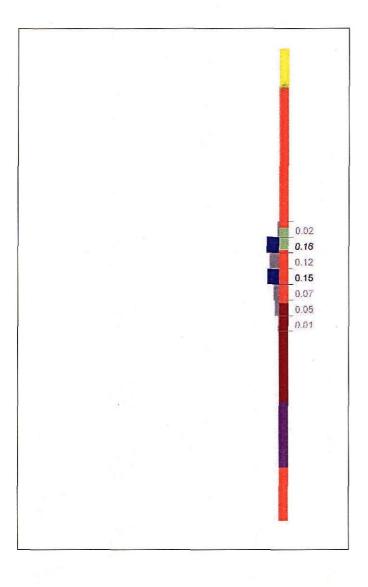
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Figure 3.2A Cross section showing copper assay results as histograms and down-hole lithologies for drill hole CM08WC-08. (See enlarged areas on page 23 and 24)







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Figure 3.2C. Low grade Copper assays (%) at depth.

#### 3.3 Results

The results of drillhole CM08WC-08 are displayed on Figure 3.2 The hole intersected two relatively patchy zones of mineralization both hosted within Lost Horse Intrusive rocks. Two late-stage felsite dykes cut through the intrusive rocks and likely exploited the previously existing fault (or structural corridor) that historical mapping defined. The two zones of mineralization are; a low grade intersect of 48 feet grading 0.19% Cu, 0.58 gpt Ag and 0.09 gpt Au from 342 feet to 390 feet downhole; and a higher grade intersect of 95 feet grading 0.45% Cu, 0.66 gpt Ag and 0.22 gpt Au from 487 feet to 582 feet downhole. Within the higher-grade zone mineralization occurs as both semi-massive chalcopyrite veins as well as interspersed veinlets and disseminations (See figure3.3). Alteration is dominantly localized potassic in the form of vein selvages with minor sericite, hematite and chlorite also evident. The rock is strongly fractured where mineralization exists, very typical of mineralization seen in Pits 2 and 3 where intense ground fracturing has occurred.

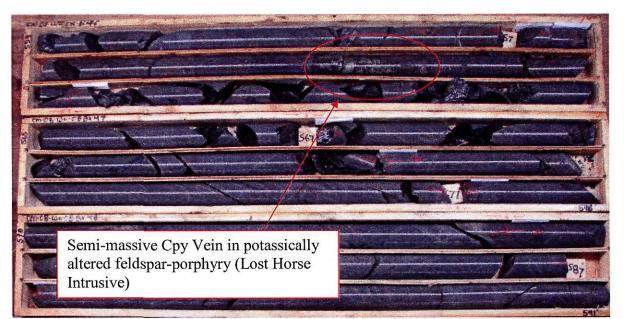


Figure 3.3 Diamond drillcore from CM08WC-08 showing mineralization (inset), potassic alteration (pinkish bands) and the semi-broken nature of the host rock.

## 4.0 Conclusions and Recommendations

#### 4.1 Conclusions

Drill core and analytical results indicates that favourable potassic alteration and host rocks (Lost Horse Intrusive) with localized weak to moderate mineralization occur in the drilled area. However, the narrow and patchy nature of mineralization combined with lack of additional drilling prevents a reasonable assessment of grade or tonnage potential for this area. It is also difficult to ascertain the exact nature and orientation of the fault through this area at depth with only one drill hole and therefore, another hole would need to be drilled to gain a better understanding of both the mineral and structural trends. The mineralization is likely related more to the North/north-east trending fault than the eastwest trending Alabama trend as it is slightly offset from the trend and is a localized vein system that has exploited the fault structure. The favourable north-northeast geology and alteration in the area does merit further testing.

#### 4.1 Recommendations

Drill testing of the area indicates that the Lost Horse Intrusive rocks between the Orinoco and Alabama deposits along the east-west trending Alabama ridge host favourable geology, alteration and structural domains for porphyry copper mineralization. Further drilling in the form of larger step-outs will need to be performed before a solid interpretation can be produced. A review of surface mapping in the area would also be beneficial in further defining the structural orientation of faults/lineaments and helping to build a more comprehensive outcrop map.

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# Statement of Expenditures

| Item                       | Description                  | Days/Units | Rate/Unit Cost | Total       |
|----------------------------|------------------------------|------------|----------------|-------------|
| Drilling                   | CM08WC-08 (1017 ft)          |            |                | \$48,407.45 |
|                            |                              |            |                |             |
| Core Cutting               | Stephen Yee (4 shifts)       | 4          | \$180.00       | \$720.00    |
| Vehicle Fuel               | 2 x vehicles for supervision |            |                | \$100.00    |
| Drill and                  | 6 days @ 450L/Day            | 2700       | \$0.89         | \$2,403.00  |
| Dozer fuel                 |                              |            |                |             |
| Core Boxes                 | Supplied by CMMC             | 57         | \$10.00        | \$570.00    |
|                            |                              |            | -              |             |
| Assaying                   | 81 samples total. 58         |            |                | \$1,022.55  |
|                            | Geochems, 23 assays          |            |                |             |
| Shipping                   | Via Clark Freight to         | 1          | \$700.00       | \$700.00    |
|                            | Richmond                     |            |                |             |
| Geologists                 | Mark Rein (Supervision)      | 3          | \$375.00       | \$1,125.00  |
| Jesse Halle (Core Logging) |                              | 2          | \$375.00       | \$750.00    |
|                            |                              | ] ]        |                |             |
| Supervision                | Richard Joyes (Drillhole     | 3          | \$400          | \$1,200.00  |
| and Report                 | layout and Final Report)     |            |                |             |
|                            |                              |            |                |             |
| Total                      |                              |            |                | \$56,998.00 |

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#### **Certificate of Qualifications**

I, Peter M. Holbek with a business address of 550 – 800 West Pender Street, Vancouver, British Columbia, V6C 2V6, do hereby certify that:

- I am a professional geologist registered under the <u>Professional Engineers and</u> <u>Geoscientists Act</u> of the Province of British Columbia and a member in good standing with the Association of Professional Engineers and Geoscientists of British Columbia.
- 2. I am a graduate of The University of British Columbia with a B.Sc. in geology 1980 and an M.Sc. in geology, 1988.
- 3. I have practiced my profession continuously since 1980.
- 4. I am Vice President, Exploration for Copper Mountain Mining Corp. having a business address as given above.
- 5. I supervised the work program on the Copper Mountain (Similco) property, and prepared this report.

Peter Holbek, M.Sc., P.Geo. M. HOLBEK ARITISH OLUMBI

#### **Certificate of Qualifications**

I, Richard J. Joyes with a business address of 550-800 West Pender Street, Vancouver, British Columbia, V6C 2V6, do hereby certify that:

- 1. I am a geologist and a member in good standing with the association of Professional Engineers and Geoscientists of British Columbia.
- 2. I am a graduate of The University of Tasmania with a B.Sc in geology 2000
- 3. I have practiced my profession continuously since 2000.
- 4. I am an Exploration Geologist for Copper Mountain Mining Corp. having a business address as given above,
- 5. I assisted in supervising the work program and assisted in compiling this report.

Richard Joyes B.Sc Geo

# APPENDIX I: ANALYTICAL DATA

| HOLE-ID   | FROM | TO  | INTERVAL | SAMPLE NO | CU%_FINAL | AG_GMT | AU_GMT |
|-----------|------|-----|----------|-----------|-----------|--------|--------|
| CM08WC-08 | 327  | 332 | 5        | 135614    | 0.01      |        |        |
| CM08WC-08 | 332  | 337 | 5        | 135615    | 0.06      |        |        |
| CM08WC-08 | 337  | 342 | 5        | 135616    | 0.06      |        |        |
| CM08WC-08 | 342  | 347 | 5        | 135617    | 0.2       | 0.5    | 0.21   |
| CM08WC-08 | 347  | 352 | 5        | 135618    | 0.07      |        |        |
| CM08WC-08 | 352  | 357 | 5        | 135619    | 0.48      | 1.1    | 0.2    |
| CM08WC-08 | 357  | 362 | 5        | 135620    | 0.14      | 0.5    | 0.08   |
| CM08WC-08 | 362  | 367 | 5        | 135621    | 0.12      | 0.4    | 0.07   |
| CM08WC-08 | 367  | 372 | 5        | 135623    | 0.19      | 0.6    | 0.08   |
| CM08WC-08 | 372  | 377 | 5        | 135624    | 0.08      |        |        |
| CM08WC-08 | 377  | 382 | 5        | 135625    | 0.25      | 0.9    | 0.12   |
| CM08WC-08 | 382  | 386 | 4        | 135626    | 0.05      |        |        |
| CM08WC-08 | 386  | 390 | 4        | 135627    | 0.29      | 2      | 0.13   |
| CM08WC-08 | 418  | 422 | 4        | 135628    | 0.02      |        |        |
| CM08WC-08 | 422  | 427 | 5        | 135629    | 0.04      |        |        |
| CM08WC-08 | 427  | 432 | 5        | 135630    | 0.07      |        |        |
| CM08WC-08 | 432  | 437 | 5        | 135631    | 0.06      |        |        |
| CM08WC-08 | 437  | 442 | 5        | 135632    | 0.05      |        |        |
| CM08WC-08 | 442  | 447 | 5        | 135633    | 0.06      |        |        |
| CM08WC-08 | 447  | 452 | 5        | 135634    | 0.12      | 0.4    | 0.1    |
| CM08WC-08 | 452  | 457 | 5        | 135635    | 0.02      |        |        |
| CM08WC-08 | 457  | 462 | 5        | 135636    | 0.19      | 0.5    | 0.11   |
| CM08WC-08 | 462  | 467 | 5        | 135637    | 0.01      |        |        |
| CM08WC-08 | 467  | 472 | 5        | 135638    | 0.01      |        |        |
| CM08WC-08 | 472  | 477 | 5        | 135639    | 0.01      |        |        |
| CM08WC-08 | 477  | 482 | 5        | 135640    | 0.01      |        |        |
| CM08WC-08 | 482  | 487 | 5        | 135641    | 0.01      |        |        |
| CM08WC-08 | 487  | 492 | 5        | 135642    | 0.23      | 0.5    | 0.05   |
| CM08WC-08 | 492  | 497 | 5        | 135643    | 1.14      | 2      | 0.64   |
| CM08WC-08 | 497  | 502 | 5        | 135644    | 0.03      |        |        |
| CM08WC-08 | 502  | 507 | 5        | 135645    | 0.11      | 0.4    | 0.04   |
| CM08WC-08 | 507  | 512 | 5        | 135647    | 0.04      |        |        |
| CM08WC-08 | 512  | 517 | 5        | 135648    | 0.03      |        |        |
| CM08WC-08 | 517  | 522 | 5        | 135649    | 0.24      | 0.5    | 0.08   |
| CM08WC-08 | 522  | 527 | 5        | 135650    | 0.89      | 1.6    | 0.42   |
| CM08WC-08 | 527  | 532 | 5        | 135651    | 0.55      | 1      | 0.3    |
| CM08WC-08 | 532  | 537 | 5        | 135652    | 0.07      |        |        |
| CM08WC-08 | 537  | 542 | 5        | 135653    | 0.02      |        |        |

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| CM08WC-08 | 542             | 547     | 5           | 135654 | 0.01        |     |      |
|-----------|-----------------|---------|-------------|--------|-------------|-----|------|
| CM08WC-08 | 547 552 5       |         | 5           | 135655 | 0.12        | 0.4 | 0.11 |
| CM08WC-08 | 552             | 2 557 5 |             | 135656 | 135656 0.82 |     | 0.42 |
| CM08WC-08 | 557             | 562     | 5           | 135657 | 3.72        | 3.5 | 1.93 |
| CM08WC-08 | 562             | 567     | 5           | 135659 | 0.23        | 0.5 | 0.1  |
| CM08WC-08 | VC-08 567 572 5 |         | 135660 0.08 |        |             |     |      |
| CM08WC-08 | 572             | 577     | 5           | 135661 | 0.05        |     |      |
| CM08WC-08 | 577             | 582     | 5           | 135662 | 0.21        | 0.7 | 0.08 |
| CM08WC-08 | 582             | 587     | 5           | 135663 | 0.07        |     |      |
| CM08WC-08 | 587             | 592     | 5           | 135664 | 0.02        |     |      |
| CM08WC-08 | 592             | 597     | 5           | 135665 | 0.08        |     |      |
| CM08WC-08 | 597             | 602     | 5           | 135666 | 0.02        |     |      |
| CM08WC-08 | 602             | 607     | 5           | 135667 | 0.03        |     |      |
| CM08WC-08 | 787             | 797     | 10          | 135668 | 0.02        |     |      |
| CM08WC-08 | 797             | 807     | 10          | 135669 | 0.16        | 0.7 | 0.09 |
| CM08WC-08 | 807             | 817     | 10          | 135670 | 0.12        | 0.4 | 0.07 |
| CM08WC-08 | 817             | 827     | 10          | 135671 | 0.15        | 0.5 | 0.08 |
| CM08WC-08 | 827             | 837     | 10          | 135672 | 0.07        |     |      |
| CM08WC-08 | 837             | 847     | 10          | 135673 | 0.05        |     |      |
| CM08WC-08 | 847             | 857     | 10          | 135674 | 0.01        |     |      |

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#### Pioneer Laboratories Inc.

Drill core sample preparation and analytical procedures for Copper Mountain Mining Corp.

#### Sample Preparation Procedure

- 1. Samples are lined according to numerical sequence.
- 2. Samples are dried at 60 degrees Celsius.
- 3. The dried samples are crushed, then splitted with a riffle splitter. 250 gram of the split sample is pulverized for analysis. The residual crushed sample is retained in the original bag and returned to the client.

#### Analytical Procedure

Samples are geochemical analyzed for Cu as follow:

0.500 gm sample is digested with 3 ml of aqua regia, diluted to 10 ml with water and Cu content is determined by atomic absorption spectrometer. Samples with Cu greater than 1000 ppm are assayed for Cu, Ag and Au.

#### <u>Assay Procedure</u>

Cu, Ag Assay: 1.000 gm sample is digested with 50 ml of aqua regia, diluted to 100 ml with water. Cu, Ag content is determined by atomic absorption spectrometer. Au Assay: 20 gram sample is digested with 60 ml of aqua regia, diluted to 150 ml with water. Gold in solution is concentrated with MIBK. Au content in MIBK is determined by atomic absorption spectrometer or graphite furnace AA.

Bag of split drill core -----> crush and split. 250 gm of the split is pulverized. Analytical sequence: Sample is first geochem for Cu. Content greater than 1000 ppm Cu is analyzed for Cu, Ag, Au. APPENDIX II: DRILL LOGS

| Diamond Drill Log |      | CM08WC-08 |       |     | Logged by J.Halle |             |                       |                                    |  |
|-------------------|------|-----------|-------|-----|-------------------|-------------|-----------------------|------------------------------------|--|
| Flag              | From | То        | Recov | RQD | Lithology         | Colour      | Alteration            | Mineralization                     | Comments   |
|                   | 0    | 15        |       |     | CASE              |             |                       |                                    |  |
|                   | 15   | 141       | 95    | 40  | CONG              | Grey        |                       | Local<br>Sulphides in<br>clasts    | Princeton Group – Conglomerate, various sizes, rounded clasts of known & unknown mine rock types (dyke, FSPP, volv,coal etc), Mod Fe oxides on fracture surfaces   |
|                   | 141  | 275       | 99    | 80  | FSPP              | Red-Brown   | Pervasive<br>Hematite | 0.5% Py blebs                      | Post-minz feldspar porphyry intrusive (LH2B). Py as disseminated blebs/veinlets throughout. Mod Fe Oxides on open fracture surfaces.   |
|                   | 275  | 335       | 95    | 80  | FSPP              | Grey-Brown  | Hem+-K-spar           | Trace Cpy<br>blebs with Dior       | Mixing Zone/interaction zone between above feldspar porphyry and dioritic intrusive. Local chilled margins and fingers of diorite intrude FSPP.  |
| MIN               | 335  | 390       | 99    | 90  | FSPP              | Grey        | K-spar+- Epidote      | CPy veinlets<br>and blebs 0.5      | Bi-Mag-Plag rich Dioritic intrusive, Cpy as blebs/veinlets with kspar veinlets, locally broken up, k-alt intensity increasing towards sharp lower contact with mine dyke.  |
| DYK               | 390  | 418       | 99    | 90  | DYKE              | Light-Brown |                       | CPy blebs with                     | Chlorite –rich Tertiary dyke   |
|                   | 418  | 467       | 95    | 70  | FSPP              | Grey-Brown  | Hem/Mag staining      | k-spar/Ep<br>veins<br>Cpy blebs in | Back into locally feldspar phenocrystic dioritic intrusive with trace cpy blebs associated with kspar veinlets. Hem/Mag staining increasing with depth. Locally feldspar-phyric, dioritic intrusive, decreasing minz and locally sericite altn+- |
| MIN               | 467  | 552       | 95    | 60  | FSPP              | Grey-Brown  | Local Sericite        | fresher zones                      | hem/chl altn. Broken up +- trace gouge in fault zones.   |

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| Diamond Drill Log CM |      | CM08WC-08        |       | Logged by J.Halle |           |             | Tests @ 157ft, 447 ft, 787 ft and 1017 ft   |  |  |
|----------------------|------|------------------|-------|-------------------|-----------|-------------|---|--|--|
| Flag                 | From | То               | Recov | RQD               | Lithology | Colour      | Alteration                                  | Mineralization                                 | Comments   |
| MIN                  | 552  | 608              | 99    | 95                | FSPP      | Grey-Brown  | K-spar vein altn<br>Spots +- Mag-Ep         | Semi-massive<br>Cpy blebs+ mag<br>zones (0.5%) | Minor feldspar porphyritic diorite, more competent and mineralized and less altered than unit above. Mag-Ep throughout often with large Cpy blebs.   |
| DYK                  | 608  | 702              | 95    | 80                | DYKE      | Brown-Cream |   |  | Faulted from 610 – 628 ft.   |
|                      | 702  | 791              | 99    | 75                | FSPP      | Grey-Brown  | Local sericite/<br>chlorite altn            | Trace Cpy blebs<br>(0.1%)                      | Dioritic and locally fx porphyritic intrusive. Local kspar/hem rich fingers in sharp contacts.Local K-Ep-Cl rich veinlets (low angles) +- tr cpy blebs.  |
|                      | 791  | 805              | 95    | 70                | VCFR      | Grey-Green  | Patchy k-spar and vein carbonate            | Trace cpy blebs                                | Broken up vfg fragmental and brecciated volcanic with x-cutting carb veinlets throughout. Locally tuffaceous(?) towards lower contact. Sharp lower with FSPP.  |
| MIN                  | 805  | 839              | 99    | 90                | FSPP      | Grey-Brown  | Potassic altn with<br>Patchy albitic altn   |  | Dioritc (CMS) looking feldspar porphyry intrusive. Cp as ds blebs and local veinlets.<br>Patchy veinstyle potassic altn increasing with depth and minor albitic patches.                               |
| FLTZ                 | 839  | 902              | 95    | 70                | MFPP      | Dark-Grey   | Locally unaltered/<br>Reduced(?)            |  | Hem/Kspar rich mafic porphyry. Faulted and broken +- gouge of chl/sericite.  |
|                      | 902  | 944              | 99    | 85                | BRXX      | Grey-Green  | Fault related sercite<br>+- local chl/kspar | Tr Cpy bleb                                    | Faulted and sericite altered intrusive breccias. Local minor breccias within (volcanic looking locally). Tr cpy blebs, Solid fspp intrusive 920' – 927'. Mafic rich 935'-944'                          |
|                      | 944  | <sup>.</sup> 998 | 99    | 80                | FSPP      | Grey        | Increasing hem/<br>Mag+-k-spar w<br>depth   | Py blebs (0.1%)                                | Locally dioritic feldspar porphyry intrusive with increasing hem/mag +-kspar altn with depth. Sericite altn intense @ 989 followed by gougy fault zone 992' – 998'                                     |
| EOH                  | 998  | 1017             | 99    | 75                | MFPP      | Red-Brown   | Local chi/kspar/<br>hem +ep veins           | Py blebs (0.1%)                                | Mafic rich fg intrusive with sericte altered phenocrysts throughout. Local chl-<br>pot/hem-ep veins, carb veinlets throughout. Hem/k rich mafic porohyritic intrusive +-<br>syenite(?) as seen at 839' |



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