

LOG NO:	RD.
ACTION:	APR 01 1993
FILE NO:	

**REPORT ON THE
1992 EXPLORATION PROGRAM
ON THE
SPECTRUM PROJECT**

(Spectrum and Hawk Properties)

Liard Mining Division
N.T.S.: 104G/9W, 10E

Latitude: 57° 41' North
Longitude: 130° 29' West

RECEIVED
MAR 30 1993
Gold Commissioner's Office
VANCOUVER, B.C.

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

22,838

For

**COLUMBIA GOLD MINES LTD.
1500 - 675 West Hastings Street
Vancouver, B.C. V6B 1N2
Canada**

By

**George Norman, P.Geol.
Norman Geological**

November, 1992

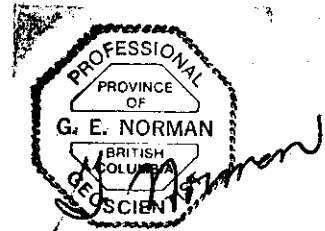


TABLE OF CONTENTS

	<u>Page</u>
1.0 SUMMARY AND CONCLUSIONS.....	1
2.0 INTRODUCTION.....	3
2.1 Location and Access.....	3
2.2 Claim Status.....	3
2.3 History.....	7
2.4 1992 Exploration Program.....	8
3.0 REGIONAL SETTING.....	10
4.0 PROPERTY GEOLOGY.....	12
5.0 MINERALIZATION.....	17
5.1 East Creek Zone.....	17
5.2 500 Colour Zone.....	18
6.0 DIAMOND DRILLING.....	19
6.1 East Creek Zone.....	19
6.2 500 Colour Zone.....	21
7.0 PROSPECTING PROGRAM.....	24
8.0 SUMMARY OF 1992 EXPLORATION EXPENDITURES.....	25
9.0 PROPOSED 1993 EXPLORATION PROGRAM.....	26
10.0 PROPOSED 1993 BUDGET.....	27
11.0 STATEMENT OF QUALIFICATIONS.....	32

LIST OF PLATES

<u>No.</u>	<u>Plate</u>	<u>Page</u>
1	Location Map Spectrum Property.....	4
2	Claim Map.....	6
3	Stikine Arch Gold District.....	9
4	Idealized Model, Stikine Arch.....	11
5	Gold Mineralization, Spectrum Property.....	13
6	East Creek, Cross Section DDH 92-87.....	33
7	East Creek, Cross Section DDH 92-88.....	34
8	East Creek, Cross Section DDH 92-89.....	35
9	500 Colour Zone, Geology, Drill Holes, Gold Zones, Sample Locations and Results.....	36
10	Area North of Porphyry - QC Zones, Geology, Sample Locations and Results.....	37

LIST OF FIGURES

(In Pockets)

<u>Figure No.</u>	<u>Title</u>	<u>Scale</u>
1	Hawk Property, Compilation Map	1:2,000
2	Spectrum Project, Geology, Drill Holes and Gold Zones	1:2,000
3	Spectrum Project, Compilation Map, High Grade Gold Zones with Drill Hole Assays	1:2,000
4	Cross Section 9700N: DDH 8, 9, 92-90	1: 500
5	Cross Section 9640N: DDH 5, 6, 7, 28, 89-35, 92-91	1: 500
6	Cross Section 9775N: DDH 92-92	1: 500
7	500 Colour Zone: Longitudinal Projection 9700E	1: 500

LIST OF TABLES

<u>No.</u>	<u>Table</u>	<u>Page</u>
I.	Status of Minerals Claims, Spectrum Property.....	5
II.	Table of Geological Formations.....	15
III.	Summary of 1992 Drill Hole Technical Data.....	20
IV.	Summary of 1992 Spectrum Drill Results.....	22
V.	Proposed Drilling Spectrum Property.....	25

LIST OF APPENDICES

APPENDIX I	1992 Drill Hole Logs and Sample Ledgers
APPENDIX II	1992 List of Analytical Results, Min-En Labs
APPENDIX III	Min-En Analytical Techniques

1.0 SUMMARY AND CONCLUSIONS

The Spectrum Project Area consisting of 125 claim units (3,125 ha.) that comprise the Spectrum and Hawk properties is located in the North Iskut District of the Stikine Arch Region in northwestern British Columbia. The claims lie 25 km east of the Stewart-Cassiar Highway approximately 32 km west-southwest of the village of Iskut and 12 km north of a nearby forestry access road.

The claims cover a large concentric zoned potassic to propylitic alteration zone within felsic to intermediate volcanics that is associated with monzonite intrusives and a large gold mineralizing system. Zones of gold mineralization and related gold soil geochemical anomalies occur within an area measuring 1.5 km by 3.0 km.

Columbia Gold Mines, through an option agreement with the Northair Group of Companies may earn a 100 percent interest in the claims.

Columbia Gold Mines Ltd. operated and funded the 1992 Exploration Program expending a total of \$348,130 during the period January 1 to October 31, 1992, of which \$149,521 was expended on the Hawk Property with the balance of \$198,609 spent on the Spectrum Property.

Columbia acquired the Property by option in 1990 and undertook a program of trenching and drilling that resulted in the discovery of several high grade gold zones. The 1990 program focused on outlining gold mineralization in the north-south trending, steeply dipping, parallel QC and Porphyry Zones located along the eastern margin of a monzonite intrusive.

The 1991 exploration program at Spectrum saw completion of 3992 meters of drilling in 24 holes on the QC and Porphyry Zones as well as targetting surveys over areas of outlying mineralization. The 1991 program was directed to close-spaced reserve definition drilling along a 200 meter strike length within the northern portion of the 800 meter long QC and Porphyry Gold Zones.

Preliminary geological reserve calculations in 1991 were completed on an "in-house" basis as well as by an independent engineering firm. Columbia geologists have calculated a geological reserve totalling 614,700 tonnes grading 12.3 g/t gold using a 5.0 g/t gold cut-off. High grade undiluted reserves calculated by Orcan Mineral Associates, with a 10 g/t gold cut-off, total 274,900 tonnes at an average grade of 15.77 g/t gold. Good potential exists for delineation of additional reserves within the presently defined geological limits of the QC and Porphyry Zones.

The 1992 Spectrum Project Exploration Program saw the completion of 6 holes in 710 meters of NQ 2 diamond drilling on the East Creek Zone located on the Hawk claims and 500 Colour Zones during the period of July - August. The Porphyry, QC and 33 Zones were not drill tested in 1992.

The East Creek Zone, located 1500 meters along trend and north of the Porphyry-QC, had not been drilled before this season. The zone consists of a siliceous steeply dipping shear zone hosting gold values associated with massive pyrite, chalcopyrite, sphalerite and arsenopyrite mineralization. A chip sample taken across the zone in 1991 assayed 38.18 g/t gold over 4.8 meters. Gold mineralization in the East Creek Zone appears to be located within high grade massive sulphide zones along its strike length. The zone has vein-like characteristics and is believed to represent peripheral mineralization to the main Porphyry-QC gold system. The initial hole of a 3 hole program, Hole No. 92-87, was successful in the intersection of a high grade gold bearing sulphide rich zone that assayed 34.45 g/t gold over 2.5 meters. Two additional holes intersected the East Creek mineralized zone along strike to the northwest that contained low gold values. The zone is open to depth and to the southwest.

Three holes (92-90, 91, 92) were drilled within the 500 Colour Zone to test extensions to depth of previously drilled gold mineralization grading to 29.4 g/t gold over 5.8 meters. The three holes intersected widespread low grade gold and copper mineralization with assays ranging from 0.3 to 0.7 g/t gold and 0.12% to 0.18% copper. All three holes intersected the zone of intense alteration and quartz veining but did not report any significant gold values.

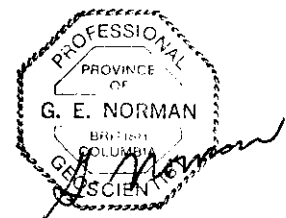
Limited prospecting in the northern portion of the Spectrum Grid located several sulphide rich veins that contained anomalous gold values within and near the monzonite contact. The northern extension of the monzonite contact and sub-parallel Porphyry and QC Gold Zones were not located within the heavily wooded overburden covered terrain.

In summary, the Spectrum Project hosts a large gold mineralizing system that contains at least three distinct gold zones with partially outlined reserves along with several other indicated gold zones that require drill testing.

A 1993 exploration program of continued reserve definition drilling is recommended which will focus on the Porphyry, QC, 33 and East Creek Zones.

Respectfully submitted

G. E. Norman
G. E. Norman, P. Geo.



2.0 INTRODUCTION

The 1992 Spectrum Project Exploration Program focused on exploratory drill testing of the East Creek showings on the Hawk Claims and follow-up drill testing of the 500 Colour Zone on the Red Dog 2 claim.

The 1992 program was funded and operated by Columbia Gold Mines Ltd. The field program was conducted during the period July through mid-August.

2.1 Location and Access

The Spectrum property lies between Nuttlude Lake and Mount Edziza, approximately 32 km west-southwest of the village of Iskut, on NTS map sheets 104G/9W and 10E. The claim block is centered at latitude 57°, 41'N, and longitude 130°, 29'W (Plate 1).

Vancouver Island Helicopters based at Bob Quinn Lake provided a helicopter for movement of equipment and personnel during the course of the program. The camp was mobilized from the Black Sheep Motel located 4 km south of the village of Iskut. The diamond drill was mobilized from Nuttlude Lake where it was stored over the winter. Additional drill equipment and supplies were mobilized from a logging landing adjacent to Highway 37 near the south end of Kinaskan Lake approximately 30 km southeast of the Property.

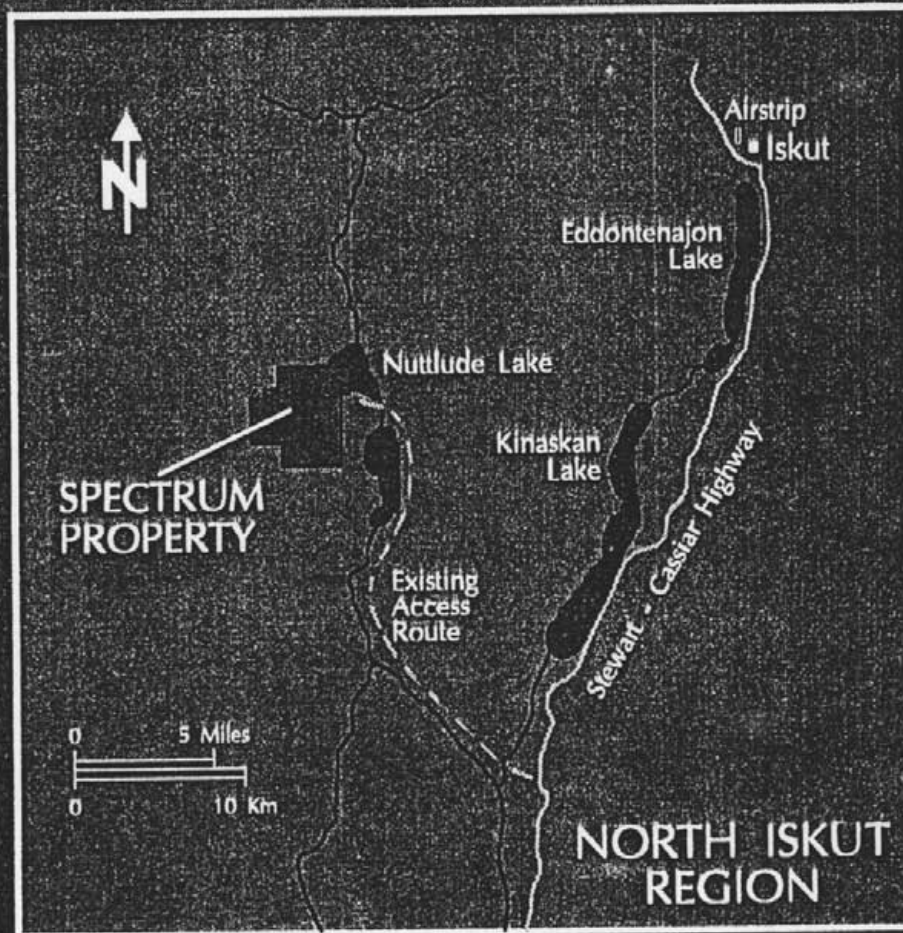
With the completion of the Willow Creek forest access road to Mowdade Lake and ultimately to the southeast corner of Kakiddi Lake, existing road access will be approximately 10 km southwest of the central area of the Spectrum Project.

2.2 Claim Status

The Spectrum property is composed of nine mineral claims containing 125 claim units located in the Mount Edziza Recreational Area, Liard Mining Division (Plate 2).

The present status of the claims is presented in Table 1:

SPECTRUM PROPERTY



STIKINE ARCH
GOLD DISTRICT

Stewart

■ Prince Rupert

British
Columbia

■ Vancouver

COLUMBIA GOLD MINES LTD.

TABLE 1
MINERAL CLAIMS STATUS - SPECTRUM PROJECT

CLAIM NAME	RECORD NUMBER	NO. OF UNITS	RECORD YEAR	EXPIRY DATE	OWNERSHIP*
<u>SPECTRUM PROPERTY</u>					
Red Dog 1	53	2	1975	Sept. 30, 1999	1
Red Dog 2	116	15	1976	April 9, 2000	1
Red Dog 3	2040	10	1981	Aug. 6, 2000	2
Red Dog 4	2041	8	1981	July 7, 1999	2
Pink	724	20	1978	Oct. 31, 2000	2
Red	725	20	1978	Oct. 31, 1999	2
Camp	784	12	1979	April 9, 2000	2

HAWK PROPERTY

Hawk 1	532	18	1978	Feb. 21, 2000	3
Hawk 2	533	20	1978	Feb. 21, 2000	3

Total Units 125

* NOTE: Registered Ownership

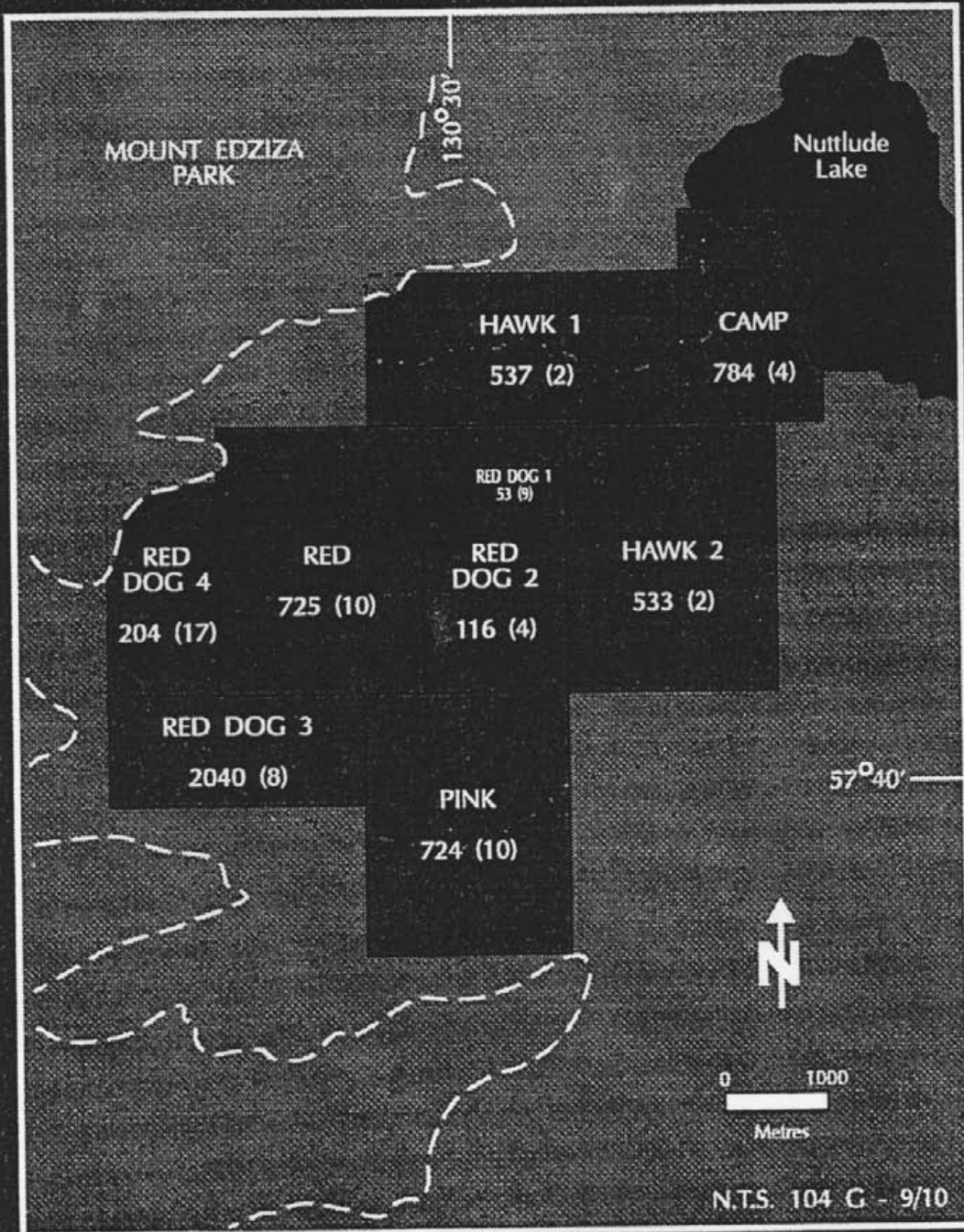
1 - 70.0% Norcal Resources Ltd.
30.0% International Northair Mines Ltd.

2 - 73.3% Norcal Resources Ltd.
26.7% International Northair Mines Ltd.

3 - 50% Newhawk Gold Mines Ltd.
50% International Northair Mines Ltd.

Columbia has the right to earn a 100 percent interest in the Spectrum property subject to a capped 3% net smelter return royalty.

SPECTRUM PROPERTY CLAIM MAP



COLUMBIA GOLD MINES LTD.

2.3 History

Spartan Explorations staked the original Spectrum claims in 1969 to cover a "Porphyry-Type" copper occurrence located southwest of Nuttlude Lake. Geological, geophysical and geochemical surveys were carried out in 1970 by Mitsui Mining and Smelting Company Ltd. Imperial Oil Limited acquired an option on the property in 1971 and completed additional geological, geophysical and geochemical surveys followed by 463 meters of BQ drilling in four holes in 1973. This program outlined zones of low grade copper in both monzonite and adjacent potassic altered volcanics with copper grades of 0.16 percent copper over 77 meters. Gold was not assayed. The Spectrum claims were then allowed to lapse.

The Racicot Syndicate staked the Red Dog claims in 1975 and 1978 and optioned the property to Canex Placer who subsequently relinquished their option. Consolidated Silver Ridge Mines Ltd. (now Norcal Resources Ltd., part of the Northair Group) optioned the property in 1977. The Pink and Red claims were added to the property in 1978 after completion of additional geological mapping and geochemical work. The Camp claim was staked in 1979 to cover a trailer campsite and airstrip on the west side of Nuttlude Lake. More prospecting, mapping and soil sampling was carried out in 1979 followed by construction of a four wheel-drive road from the camp to the central area of interest on the property. By the end of 1979 a total of 3,232 meters in 28 holes were completed by workers on the Spectrum Property.

Mineralization on the Hawk claims (adjacent and to the north of Spectrum) was first evaluated in 1957 when Torbit Silver Mines conducted exploration on a vein on the north side of Hawk Creek. Shawinigan Mining and Smelting Company Ltd. restaked the property and undertook a preliminary x-ray drilling program in 1967. Newhawk Mines Ltd. (Northair Group) staked the Hawk claims in 1978 and conducted a program of geological mapping and soil sampling. A four-wheel drive road was completed from the camp to a portal site at the 1280 meter level and a 2.0 meter by 2.6 meter exploration drift was advanced 73 meters along the main Hawk vein. An additional 240 meters of drift and cross-cut and 430 meters of drilling in nine underground drill holes was completed in 1980.

Cominco optioned the Spectrum and Hawk Claims from the Northair Group of Companies in 1984 and conducted soil sampling, ground magnetic and VLF surveys using a picket grid for control. Further work was done in the 1988-1989 season when Cominco drilled 1199 meters in ten holes and undertook limited geological mapping and rock chip sampling on gold zones within the Spectrum Property.

Moongold Resources Inc. by way of an option agreement completed a short program of rock and soil sampling and magnetic, VLF and resistivity surveys on the Hawk 1 claim between 1987 and 1989.

Columbia Gold Mines Ltd. optioned the Red Dog claim group from Norcal Resources Ltd. and Northair Mines Ltd. in April 1990 and the Hawk claims from Newhawk Gold Mines Ltd. and Northair Mines Ltd. in August 1990. A two phase program of trenching and drilling was undertaken by Columbia in 1990 that resulted in the discovery and delineation of additional gold zones on the Properties. Work involved prospecting, hand trenching and rock chip and soil sampling followed by 20 BQ drill holes totalling 2363 meters.

The 1991 exploration program by Columbia in joint venture with Eurus Resource Corp. focused on reserve definition drilling within the northern portion of the QC and Porphyry gold zones. Drill holes were collared at 25 meter step-outs on both zones in order to establish both lateral and vertical continuity. Two exploratory drill holes tested the Boundary Zone on the Hawk Property. A total of 3992 meters were drilled in 1991, bringing the total number of holes drilled on the Spectrum project to 86 for a cumulative 11,250 meters drilled.

Geological reserves were calculated using varying parameters for gold cut-off grades and block dimensions by both Columbia and Orcan Mineral Associates.

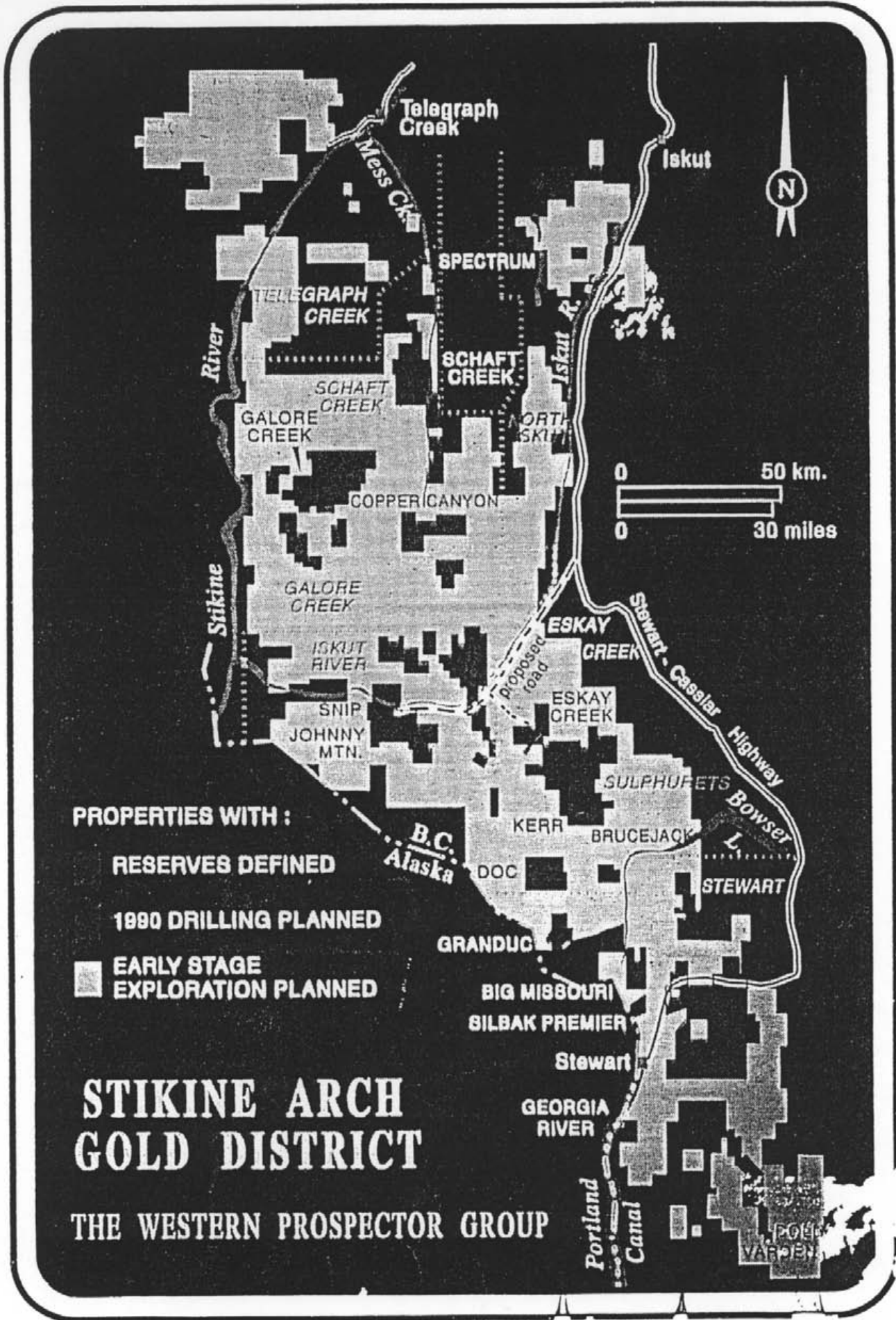
A drill indicated geological reserve within the tested portion of the Porphyry, QC and 500 Colour Zones was calculated by Columbia at 614,700 tonnes averaging 12.34 g/t using a 3.4 g/t gold cut-off. Using a 10 g/t cut-off, Columbia calculated a reserve of 289,600 tonnes grading 18.65 g/t gold. An independent engineering firm, Orcan Mineral Associates, calculated a drill indicated reserve of 504,800 tonnes grading 9.6 g/t gold using a 5.0 g/t gold cut-off. Using a 10 g/t gold cut-off they calculate a reserve of 274,900 tonnes with a grade of 15.89 g/t gold.

2.4 1992 Exploration Program

A total of 6 drill holes in 710.3 meters were completed on the Spectrum Property during July and August. Three holes in 323.9 meters tested the East Creek Zone and three holes in 386.5 meters were drilled into the 500 Colour Zone. No drilling was carried out at the Porphyry and QC Zones.

The total number of holes drilled on the Spectrum Project is now 92 for a cumulative 11,960 meters drilled.

A small program of prospecting and sampling was carried out northeast of the Porphyry and QC Zones at the completion of the drill program to examine areas of anomalous gold and copper soil geochemistry for possible extensions of the above gold zones.



3.0 REGIONAL SETTING

The Spectrum Property occurs in the North Iskut District within the Stikine Arch of northwestern British Columbia. (Refer to Plate 3).

Gold and precious metal bearing base metal deposits occur within a northwest trending, elongate belt of Paleozoic and Lower Mesozoic volcanic, plutonic and sedimentary rocks of the Stikine Terrane. This belt is bounded by the Coast Plutonic Complex to the west and the overlapping Jurassic Bowser Basin sedimentary rocks to the east. The volcanic successions formed near an active continental margin characterized by four episodes of arc volcanism in Devonian, Permian, Upper Triassic and Lower Jurassic time.

The Stikine Terrane consists of a base of Upper Paleozoic sediments and two volcanic episodes of andesite to basaltic composition. Overlying this sequence is a thick assemblage of andesite to basalt flows with minor intercalated sediments of the Upper Triassic Stuhini Group. Lower Jurassic Hazelton Group basic to acidic volcanics and associated synvolcanic alkaline intrusions provided the large mineralizing system in the region. The northwest trending island arc system contains an elongate trend of volcanic centres.

Sediments of Mid to Upper Jurassic Bowser Group unconformably overlie Hazelton Group rocks and are restricted to a fault bounded Back Arc Basin. Exploration activity has been focused on this 300 km long belt stretching northwest from Stewart to Telegraph Creek, now termed the Stikine Region.

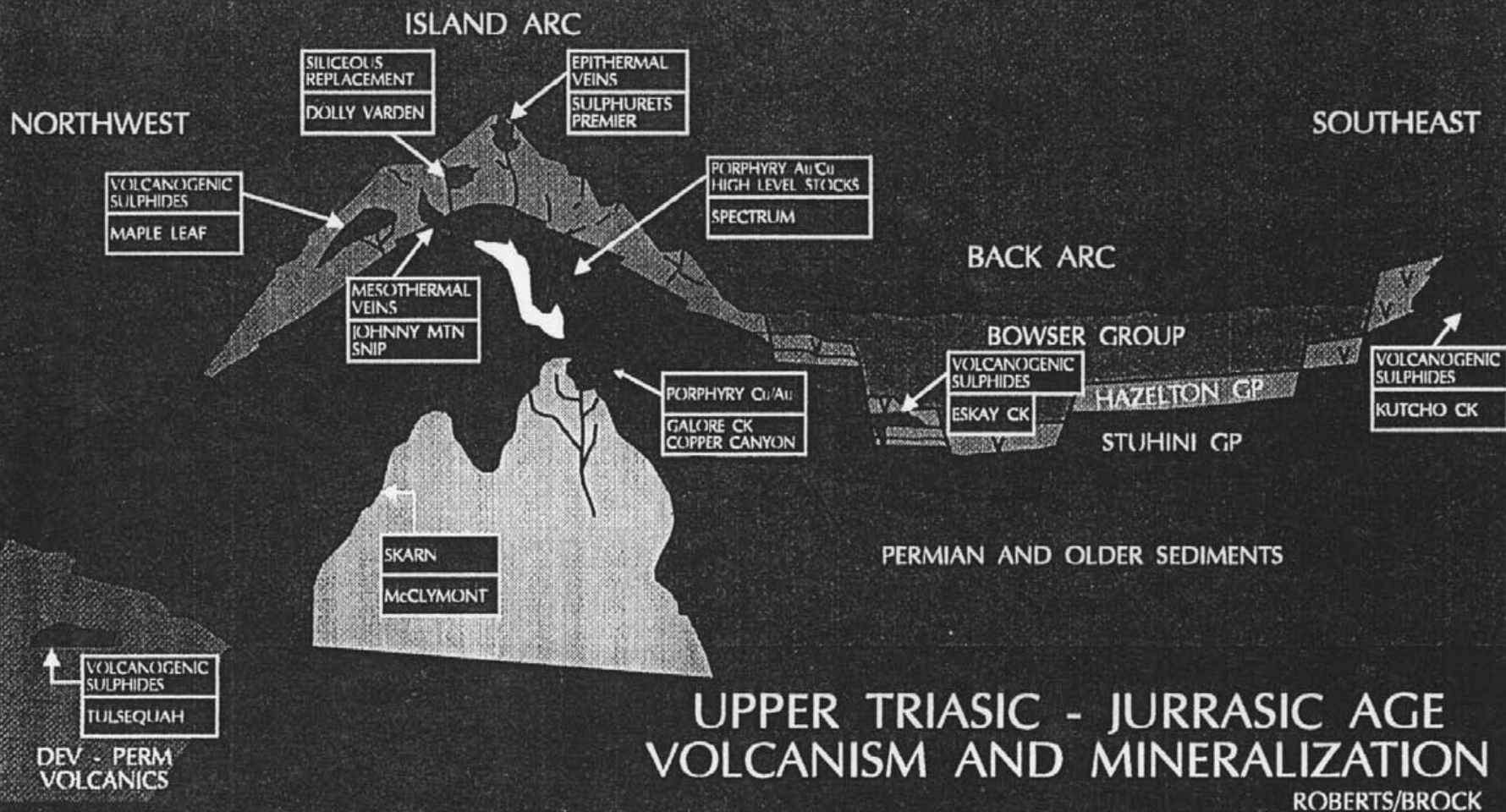
Gold and gold-bearing base metal mineralization is associated with the Lower Jurassic volcanic centres. Many of the gold deposits are spatially associated with synvolcanic Lower Jurassic hypabyssal alkaline intrusions. Different styles of mineralization in the belt occur at varying stratigraphic intervals. Lead isotope studies show that the mineral deposits are co-genetic. Porphyry and skarn Cu-Au deposits are typically found at the lowest stratigraphic levels in mid-Paleozoic to mid Triassic rocks. The Triassic sedimentary and volcanic rocks host mesothermal Au veins. Overlying Lower Jurassic volcanic and volcanoclastic rocks host volcanogenic sulphide systems as well as epithermal Ag-Au deposits.

Based on age dates, lead isotope studies and field relationships, the gold and gold-bearing base metal deposits of the Stikine Arch formed during a major metallogenic epoch approximately 190 million years ago. This coincided with widespread Lower Jurassic volcanism and associated hypabyssal alkaline plutonism. The characteristics of this metallogenic epoch has provided the Stikine Region with potential for discovery of several types of deposits. (Refer to Plate 4).

Gold enriched Porphyry mineralization is often associated with upper level synvolcanic alkalic stocks. Mineralization is commonly hosted in both the stocks and surrounding host rocks.

The Spectrum Project covers a large alteration system hosting gold and gold-copper mineralization in both alkalic intrusives and felsic volcanics.

IDEALIZED MODEL FOR FORMATION OF MINERAL DEPOSITS STIKINE REGION NORTHWESTERN B.C.



-11-

4.0 PROPERTY GEOLOGY

The Spectrum Property is centered on a large, conspicuous, colour anomaly that is partially covered by Pleistocene Edziza basalts. The alteration and pyritization of the Stuhini volcanic package is likely caused by a buried intrusive complex with an exposed high level elongate north-south-trending monzonite body and a large number of related dykes (Plate 5). Initial interest in the property was sparked by the "Porphyry Copper Style" copper-gold mineralization in and adjacent to the monzonite and its related dykes.

The claims cover a 2 by 4 km alteration zone in intermediate to felsic volcanics that grades from potassic in the central portion to propylitic in the peripheral portions. The potassic alteration measures 1 km by 1 km and is partially covered by younger basalt cover. A system of northerly trending monzonite to monzodiorite stocks and dykes is largely restricted to the zone of potassic alteration. The alteration assemblages are similar to zones occurring within the uppermost portion of a "porphyry copper" system.

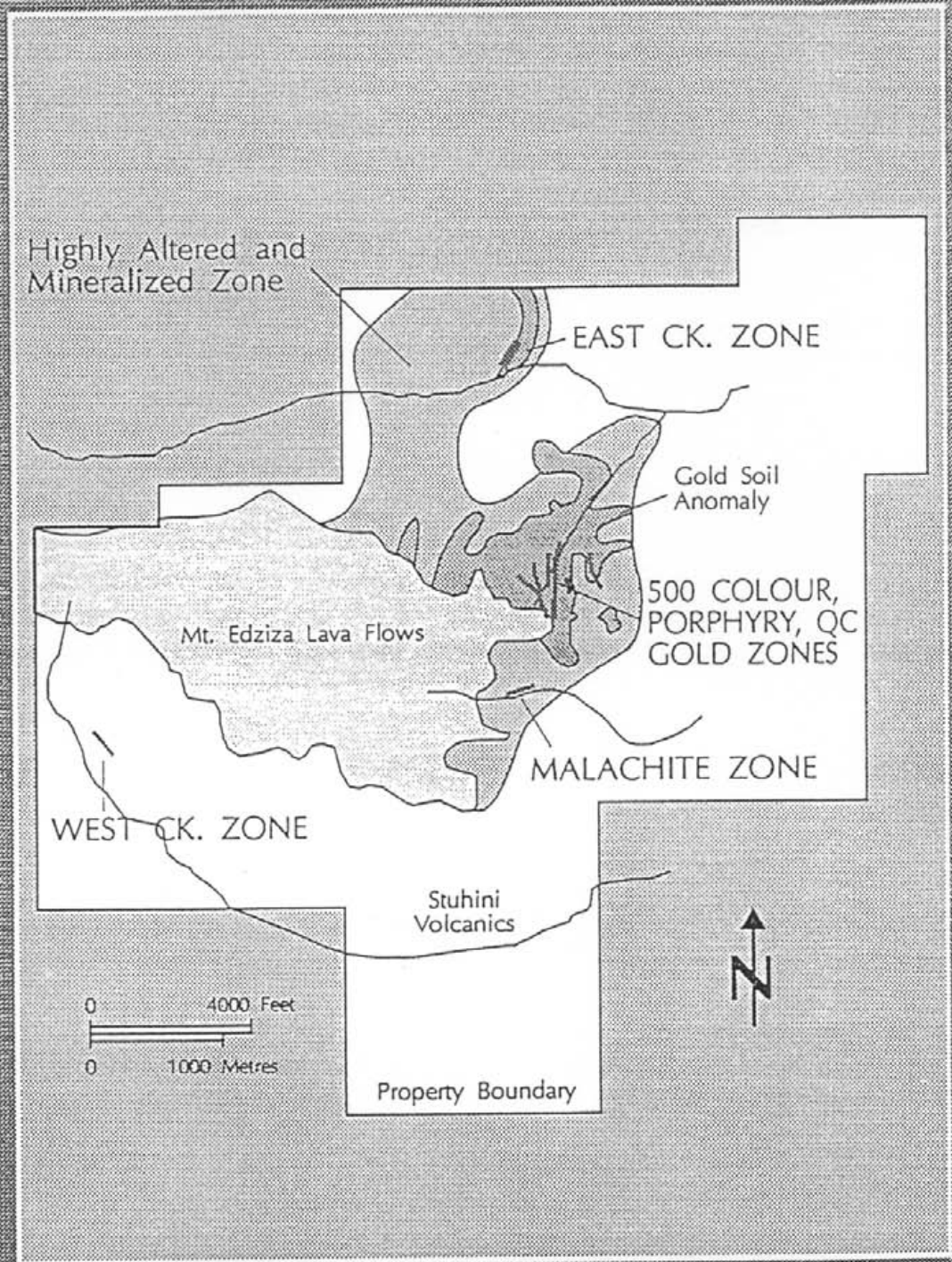
Weathering patterns of both alteration types are distinct and easily recognizable. Propylitic altered volcanics weather a dark orange-red due to the assemblage of pyrite, minor pyrrhotite along with chlorite and epidote. This is in contrast to the bright yellow-orange colour produced by the quartz, sercite, K-feldspar, pyrite assemblage associated with potassic alteration.

Gold mineralization is associated with structurally controlled zones of silicification in close proximity to monzonite dykes. Low grade disseminated and fracture controlled copper-gold mineralization is hosted within altered monzonite.

The Property is underlain by a succession of fine to coarse-grained felsic to intermediate pyroclastics and flows with minor sedimentary interbeds that belong to the Upper Triassic Stuhini Group. The volcanic units are cut by Jurassic to Cretaceous monzonite intrusives stocks and related dykes. Basalt flows and related pyroclastic rocks of the Pleistocene and Upper Tertiary Mount Edziza/Spectrum Range volcanic complexes blanket much of the area around the Spectrum Property. All successions have been gently folded along east-west axes, and cut by north-south, northwest-southwest, and northeast-southwest trending faults.

The monzonite is mapped as an irregular north-south trending dyke up to 100 meters wide that have been traced for over 1500 meters along strike. This monzonite body has a steep westward dip with a concave eastern contact. Prior shallow drilling that intersected the near surface eastern contact erroneously indicated a moderate westerly dipping contact. The dyke is mineralized in zones of structural weakness along the eastern contact. To the west, the main dyke is flanked by a complex dyke swarm which hosts gold mineralization in the 500 Colour Zone. Additional dykes swarms, with associated gold mineralization occur on the Spectrum project.

SPECTRUM PROPERTY



COLUMBIA GOLD MINES LTD.

The monzonite is generally pink to grey, equigranular to porphyritic, with approximately 5-10% quartz, 20% K-feldspar, 60% plagioclase, 6% biotite and hornblende, 2% accessory minerals and 2% pyrite with minor chalcopryrite. Alteration minerals include K-feldspar, biotite, sercite, near the centre of the dyke, changing outward to a propylitic assemblage of chlorite, epidote with minor sercite and carbonate. Composition of the dyke varies with several zones of grandiorite, granite and quartz monzodiorite being identified.

Volcanic rocks adjacent to the monzonite are composed of crystal and ash tuffs with interbedded lapilli tuffs and coarse fragmentals. Consistent identification of the volcanic rock types is hampered by an overprint of contact metamorphic and subsequent alteration events. Fine grained volcanic rocks have been altered to a dense, red-brown, biotitic hornfels. The red-brown biotitic unit has been called a "crystal tuff" because of the fine relict crystals often seen in core. Beige coloured ash tuffs adjacent to the monzonite are K-feldspar altered as determined from etching and staining of drill core. Fine-grained pinkish-grey to greenish-grey ash tuffs are variably siliceous. There remains some question as to whether silica in some of the ash tuffs is primary or an alteration feature. See Table of Geological Formations on page 15 for an overview of volcanic units noted in surface mapping and in drill holes.

Both the volcanic units and intrusive stocks have been altered. The elongate 2 x 4 km zone of propylitic alteration consists of chlorite, epidote accompanied by disseminated and fracture controlled pyrite with chlorite selvages. Potassic and argillic alteration occurs as a central core within the propylitic zone and consists of an assemblage of quartz, K-feldspar, sercite and pyrite. Zones of intensive potassic alteration appear to be structurally controlled and occur along monzonite-volcanic contacts. Silicification varies from a pervasive alteration of coarse fragmental units to fracture selvages in some of the finer grained tuffaceous units. Silicification, accompanied by gold mineralization, is localized in a series of north-south-trending, subvertical zones separated by non-silicified brittle fractured rocks.

"Brittle fracture zones" have been noted in drill core and consist of strongly fractured sections that are difficult to diamond core with some variable clay gouge showing breccia textures. Fracture controlled pyrite, chlorite and epidote are the most common alteration minerals. Minor silicification was noted in several brittle fracture zones, but it is not a significant alteration feature. It is important to note that the brittle fracture zones provide bounding limits of gold mineralization and silicification.

TABLE 2

TABLE OF GEOLOGICAL FORMATIONS

LITHOLOGIC UNITS

UPPER TERTIARY - RECENT EDZIZA FORMATION

BT Basalt flows and dykes

UPPER TRIASSIC - CRETACEOUS

M Monzonite, Monzodiorite

UPPER TRIASSIC STUHINI GROUP

VL Latite to dacite flows and tuffs,
Undifferentiated overlying sediments

FLOWS

AN - andesite

FP - feldspar

RD - rhyodacite

DC - dacite

LA - latite

TUFFS

AT - ash

AX - mixed ash
and crystal

CT - cherty

DT - dacite

LT - volcanoclastic

PT - lapilli

RH - rhyolite

RT - rhyodacite

X - crystal

SEDIMENTS

SLT - siltstone

SST - sandstone

LST - limestone

CHT - chert

(Cont'd)

TABLE 2

STRUCTURAL PREPARATION AND ALTERATION



- Brittle fracture zone



- silicification

B - brecciated
BX - breccia
FT - fault zone

b - secondary biotite
c - chloritization
e - epidote
k - secondary k-spar
s - silicification

MINERALIZATION



- Gold zones (accompanied by silicification)



- Grade blocks (geological reserve >10.0 g/T gold)

SYMBOLS

ca - calcite veins
q - quartz veins
qc - quartz carbonate
veins

asp - arsenopyrite
cp - chalcopyrite
mg - magnetite

vz - vein zone
ms - massive sulphides

po - pyrrhotite
py - pyrite
sp - sphalerite

5.0 MINERALIZATION

High grade gold zones along with disseminated low-grade gold-copper mineralization are associated with an extensive alteration system in Stuhini Group volcanic units. Exploration during 1991 focused on the eastern portion of the potassic altered zone where both high grade and low grade gold zones occur within and adjacent to monzonite intrusives. Exploration during 1992 concentrated on two gold zones peripheral to the QC-Porphyry mineralization. The 500 Colour Zone, a splay off the above main zone, and the East Creek Zone located 1500 meters to the north of the Porphyry-QC Zones, were both tested by three shallow drill holes.

The large gold mineralized system as defined by 1.0 km square gold soil anomaly occurs within both the potassic and propylitic altered volcanics within which:

Two styles of gold mineralization have been outlined:

- 1) northerly trending, steeply dipping, structurally controlled, high grade gold zones are hosted within silicified units and are spatially associated with monzonite dykes. Structures with the best gold grades and continuity occur within the potassic alteration zone.
- 2) disseminated and fracture controlled pyrite, chalcopyrite along with low grade gold values occur in potassic to propylitic altered monzonite and adjacent volcanic units. Both surface samples and drill holes have outlined wide zones grading to 0.22% copper and 3.43 g/t gold over 54 meters.

Exploration programs operated by Columbia in 1990 and 1991 concentrated on developing reserves within the high grade gold zones. This work has led to the discovery and drill definition of the steeply dipping and northerly trending QC, Porphyry and 500 Colour Zones which contain visible gold, pyrite and minor base metal values.

The reader is referred to the 1991 Spectrum Report for a detailed description and reserve calculations of the Porphyry and QC Zones.

The 1992 Exploration Program concentrated on drill testing the East Creek Zone and the 500 Colour Zone.

5.1 East Creek Showing, Hawk Property

Prior exploration located a number of gold-arsenopyrite-sphalerite bearing veins within propylitic altered intermediate volcanics on the Hawk Property. One of these veins which had been traced over a 200 meter strike length on surface was explored from underground during the period 1979-1980. Continuity of the vein between surface and the underground level was established but high gold values were restricted to narrow widths averaging 0.3 meters.

Prospecting within an area near the mouth of East Creek that contained a gold occurrence originally found by Moongold Resources in 1989, resulted in the the discovery of the East Creek Gold Zone. Gold mineralization is hosted in a strong 015 degree trending steeply dipping siliceous shear zone that contains zones of massive pyrite, chalcopyrite sphalerite and arsenopyrite. A chip sample taken across the zone in 1991 assayed 58.46 g/t gold over 2.6 meters (Figure 1).

The shear zone averages over 5 meters in width and can be traced to the northeast across East Creek where Moongold obtained values of 7.9 g/t gold over 1.9 meters (V. Chukov, 1989). Columbia re-sampled the Moongold showing in 1991 and obtained similar results with values of 12.9 g/t gold over 1.6 meters. The East Creek Gold Zone appears to extend southward across Hawk Creek into a tree covered gossaneous area where a single soil sampling line outlined anomalous values to 1250 ppb Au. Approximately 400 meters to the northeast of the original showing, sampling of similar mineralization yielded 11.6 g/t gold over 2.5 meters.

5.2 500 Colour Zone

Gold mineralization within the 500 Colour Zone is associated with a stockwork of quartz veins and veinlets which contain sphalerite, galena and chalcopyrite. Fine arsenopyrite was noted in thin seams adjacent to veins in DDH 79-5. No visible gold was noted in core. The mineralization is spatially related to the margins of westerly dipping monzonite dykes.

The southern extension of the 500 Colour Zone is covered by talus of the Mount Edziza Formation thus making surface prospecting very difficult. Several exposures of fault bounded limonitic rock within the north extension of this zone where sampled and yielded anomolous gold and copper values. Refer to Plate 9 on page 36 for sample locations and Appendix I for a list and description of sample results.

6.0 DIAMOND DRILLING

The 1992 Exploration Program on the Spectrum Project concentrated on drill testing the East Creek and 500 Colour Zones. A total of 710.3 meters in 6 diamond drill holes were completed in 1992 bringing the cumulative total completed on the property to 11,960 meters in 92 holes. See Table III for a summary of the 1992 drill hole technical data.

The 1992 drilling was contracted to J.T. Thomas Drilling Ltd. of Smithers, B.C., who supplied a Longyear Super 38 drill. The program utilized NQ-2 equipment to produce a larger sample. The drill was mobilized from Nuttlude Lake on July 15 where it was stored over the 1991-1992 winter. Drilling commenced with 92-87 on July 15 and was terminated on August 2 with the completion of hole 92-92.

The average penetration rate for the 18 day period was 39.5 meters per day. Drill sites were again prepared by Tim Carlson Blasting of Smithers, B.C. Water for drilling the 500 Colour Zone and camp was obtained via a pumping station located on a tributary of Hawk Creek directly above the old Cominco campsite. Water for the East Creek drilling was obtained from East Creek.

Drill moves were undertaken utilizing a Hughes 500D helicopter supplied by Vancouver Island Helicopters based at Bob Quinn Lake.

All core is stored, as in the past, at the core shack located at grid co-ordinates 9968N and 9960E. Core from the entire length of all holes except 92-89 was split and analyzed for gold and copper. Samples were shipped via Bandstra Transport to Min-En's Smithers lab where samples were pulverized and split. The pulps were then shipped to Min-En's Vancouver lab for analyses; the coarse rejects are stored in Smithers.

Drill intersections geologically recognized as gold zones, but not containing visible gold were analyzed by standard assay techniques. As no visible free gold was noted in geologic logging, metallic assaying was not undertaken. All remaining core outside the gold zones was analyzed by rock geochemical methods.

See Appendix III for a description of analytical techniques.

6.1 East Creek Zone

Three diamond drill holes (92-87, 88, 89) were completed within the East Creek Zone to test a siliceous, steeply dipping shear zone that contains lenses of massive pyrite, chalcopyrite, sphalerite and arsenopyrite. A chip taken across the zone in 1991 assayed 58.46 g/t gold over 2.6 meters. See Figure 1 for drill hole locations and Plates 6, 7 and 8 for Drill Sections.

TABLE III
1992 SPECTRUM PROJECT
DRILL HOLE TECHNICAL DATA

D.D. Hole	Zone	Northing (M)	Easting (M)	Elev. (M)	Az (Degrees)	Dip (Degrees)	Rec. (%)	Total Length (M)	Horz. Proj. (M)	Vert. Proj. (M)
92-87	East Creek	11,612	9,395	1,158	121	- 72	88.7	103.94	32.1	98.9
92-88	" "	11,612	9,395	1,158	67	- 72	81.6	120.7	37.3	114.8
92-89	" "	11,683	9,409	1,181	111	- 50	69.4	<u>99.2</u>	63.8	76.0
						Sub-Total		323.84		
92-90	500 Colour	9,704	9,638	1,646.5	95	- 50	48.1	129.84	83.5	99.5
92-91	" "	9,654	9,666	1,664	90	- 58	67.8	131.37	69.2	111.4
92-92	" "	9,576	9,684	1,712	90	- 55	78.3	<u>125.27</u>	71.9	102.6
						Sub-Total		<u>386.48</u>		
						TOTAL		710.32		

The holes were designed to test the zone at approximately 30 meters below surface along 80 meters of strike length.

Lithologic drill logs and geochemical/assay results are presented in Appendix I. Drill hole technical data is summarized in Table III. A summary of the assay results are shown in Table IV.

The first hole testing the East Creek Zone, 92-87, intersected a massive sulphide zone from 45.6 to 48.1 m containing massive pyrrhotite-chalcopyrite-sphalerite mineralization from 45.6 to 46.5 m and massive pyrite-arsenopyrite-chalcopyrite-sphalerite from 46.5 to 48.1 m. The overall zone averaged 34.45 g/t gold and .5% copper over 2.5 meters. The angle of the vein to the core axis was approximately 10 degrees.

The zone intersected in 92-87 is very similar in character to that observed at surface but was intersected approximately 30 - 40 meters further uphole than anticipated giving the overall zone an average dip of 45°, compared to the near vertical zone observed at surface. Refer to the cross section of drill hole 92-87 on Plate 6.

Diamond drill holes 92-88 and 92-89 intersected the zone 30 m and 80 m respectively to the northeast of hole 92-87. Both holes intersected the zone but yielded low gold grades associated with narrow quartz-arsenopyrite veining. The average dip of zone varied from 55 degrees to 65 degrees.

As observed on surface this zone has a tendency to change dip drastically from near vertical to 50° over a short distance. Shear zones observed in the area appear to be offset along low angle bedding planes to produce a staircase effect.

6.2 500 Colour Zone

The 1992 drilling program on the 500 Colour Zone tested 130 meters of strike length between grid lines 9576N and 9740N with a cumulative footage of 386.5 meters in three holes. Refer to detailed geologic logs and assays in Appendix I, Table III for detailed hole technical data and Figures 4, 5 and 6 for drill hole sections.

All three holes intersected the zone but contained only low grade gold and copper values. Gold grades average from 0.3 to 1.69 g/t gold and copper values range from 0.12 to 0.25% copper. The gold zone intersected at the monzonite-volcanic contact consisted of intense K-feldspar and biotite alteration accompanied by quartz and quartz-carbonate veining. The intense alteration associated with this zone caused a decrease in the drilling penetration rate. Core recovery varied from 48.1% to 78.3%.

TABLE IV
SUMMARY OF 1992 SPECTRUM PROJECT DRILL RESULTS

<u>D.D. Hole #</u>	<u>Zone</u>	<u>From</u> <u>(m)</u>	<u>To</u> <u>(m)</u>	<u>Width</u> <u>(m)</u>	<u>Cu</u> <u>(%)</u>	<u>Au</u> <u>(g/t)</u>	<u>From</u> <u>(ft)</u>	<u>To</u> <u>(ft)</u>	<u>Width</u> <u>(ft)</u>	<u>Au</u> <u>(oz/t)</u>
92-87	East Creek	45.6	48.1	2.5	0.5	34.45	149.6	157.8	8.2	1.0
92-88	East Creek	50.6	50.8	0.2	0.04	2.58	166.0	166.7	0.7	0.08
92-89	NO SIGNIFICANT RESULTS									
92-90	500 Colour	65.0	106.98	41.98	0.12	0.37	213.3	351.0	137.7	0.011
	500 Colour	65.0	129.84	64.84	0.12	0.31	213.3	426.0	212.7	0.009
92-91	500 Colour	57.61	87.0	29.39	0.17	0.78	189.0	96.4	285.4	0.023
	500 Colour	76.0	82.5	6.5	0.25	1.54	249.3	270.7	21.3	0.045
	500 Colour	57.61	131.37	73.76	0.13	0.48	189.0	431.0	242.0	0.014
92-92	500 Colour	29.10	33.6	4.5	0.05	1.69	95.5	110.2	14.8	0.049
	500 Colour	78.5	125.27	46.77	0.18	0.68	257.5	411.0	153.5	0.02

The zone in hole 92-90 contained gold values ranging from .027 to .966 g/t and copper values from 30 to 2400 PPM. DDH 92-91 intersected 6.5 meters within the interval, 76.0 to 81.5 meters that averaged 1.54 g/t within the projected gold zone. Hole 92-91 pierced the zone 25 meters downdip of hole 79-5 which averaged 29.40 g/t gold over 5.8 meters. The above intercept contained similar mineralogy to that of DDH 79-5 with chalcopyrite, sphalerite and very fine arsenopyrite. Traces of molybdenum were also noted in some quartz veins. Drill hole 92-91 contained low gold and copper values throughout with an average of .48 g/t gold and .13% copper over 73.76 meters.

DDH 92-92 intersected weak gold and copper values throughout its length. An oxidized feldspar, hornblende porphyry unit from 29.10 m to 33.6 m contained elevated gold values averaging 1.69 g/t gold and .046% copper associated with coarse disseminated chalcopyrite, malachite and tennorite mineralization. Gold and copper values are found within a thick section of monzonite and minor biotite altered tuff from 78.5 m to 125.27 m, an interval of 46.8 m that averages 0.68 g/t gold and .18% copper. Gold mineralization is associated with quartz and quartz-carbonate veinlets containing pyrite as well as chalcopyrite mineralization associated with pervasive K-feldspar alteration.

7.0 PROSPECTING

A short program of prospecting was undertaken within the target area of the projected northern extension of the Porphyry and QC Zones. The area is heavily wooded with poor rock exposure. Outcrop locations and surface sampling results are presented on Plate 10.

Prospecting within the heavily wooded area to the north failed to locate the monzonite dyke beyond station 10,530N, 10,040E although hornfelsed volcanics at grid coordinates 10,830N and 10,160E suggest the presence of intrusive activity. The 1984 Ground Magnetic Survey conducted by Cominco suggests the 2000 gamma contour line which roughly outlines the monzonite to the south traverses northerly through this area.

A white felsic-siliceous intrusive with associated limonitic breccia was located at 11,180N, 9,930E suggesting the presence of intrusive activity within the northern portion of the prospected area. This whitish intrusive was also noted as thin dykes crosscutting the monzonite at several other locations on the property. Gold values within the breccia and felsic intrusive are very weak ranging from 11 to 18 ppb Au.

Narrow arsenopyrite veins found within the monzonite dyke contained low grade gold values to 5.7 g/t Au.

8.0 Summary of 1992 Exploration Expenditures

SPECTRUM AND HAWK PROPERTIES
 (SPECTRUM PROJECT)
 FOR THE PERIOD JANUARY 1 TO OCTOBER 31, 1992

EXPLORATION FUNCTION	SPECTRUM PROPERTY	HAWK PROPERTY	TOTAL SPECTRUM PROJECT
ANALYSIS - ASSAYS	\$11,951.75	\$10,394.46	\$22,346.21
ACCOMODATION	2,637.44	639.32	3,276.76
CONSULTING - GEOLOGICAL	7,959.43	9,937.50	17,896.93
DRAFTING, MAPS & PRINTS	1,122.77	78.24	1,201.01
EXPEDITING	1,258.47	822.33	2,080.80
DRILLING	32,894.40	28,000.20	60,894.60
EQUIPMENT - LEASE/RENTALS	318.00	318.00	636.00
EQUIPMENT - CONSUMABLES	1,976.02	1,091.02	3,067.04
FUEL	5,220.93	4,621.79	9,842.72
PROPERTY ACQ & OPTION PYMNTS	51,439.00	20,000.00	71,439.00
SALARY & WAGES	26,574.57	12,854.39	39,428.96
TRANSPORTATION - AIRLINES	1,715.43	983.05	2,698.48
TRANSPORTATION - HELICOPTER	30,007.65	41,279.83	71,287.48
TRANSPORTATION - VEHICLE	2,249.44	1,495.66	3,745.10
TRANSPORTATION - FREIGHT	809.56	325.60	1,135.16
TRENCHING & ROADS	5,700.00	3,787.50	9,487.50
MISCELLANEOUS - INDIRECT	1,395.78	1,117.50	2,513.28
PROJECT MANAGEMENT FEES	13,379.17	11,774.64	25,153.81
	-----	-----	-----
	\$198,609.81	\$149,521.03	\$348,130.84
	=====	=====	=====

9.0 PROPOSED 1993 EXPLORATION PROGRAM

The 1992 exploration program focussed on drill testing two gold zones peripheral to the Porphyry-QC gold deposits. It is recommended that the 1993 exploration program on the Spectrum Project be directed to continuation of reserve expansion. It is proposed that ongoing exploration be designed towards reserve definition drilling with the Porphyry, QC and 33 Zones as originally outlined in Section 12.0 of "Report on the 1991 Exploration Program - Spectrum Project". Please refer to page 91 of the 1991 report for a description of the proposed program and Table 9 on page 63 for a summary of proposed hole locations along with proposed depths and drill target sumations.

A brief summary of the proposed drilling is presented in Table V

TABLE V

<u>Gold Zone</u>	<u>Number of Drill Holes</u>	<u>Cumulative Footage (Meters)</u>
Porphyry/QC	14	2900
33 Zone	3	300
East Creek	<u>3</u>	<u>600</u>
Proposed 1993 Drilling Program	20	3800

9.1 Porphyry-QC

The drilling program should focus toward reserve expansion within the QC and Porphyry Zones with the completion of 17 holes to advance the target of approximately 1,300,000 tonnes into the reserve category to add to the existing reserve base of 614,700 tonnes grading 12.3 g/t gold. Please refer to the 1991 Report for detailed descriptions and illustrations of the proposed drill holes.

9.2 33 Zone

The northeast trending 33 Zone with surface sampling grading to 9.25 g/t gold over 6.3 meters has been tested with one drill hole that intersected the zone near the collar that assayed 11.0 g/t gold along 8.8 meters. Three additional holes are proposed to test strike and depth continuity.

9.3 East Creek Zone

Further drilling on the East Creek Zone is required to test the continuity and grade of the gold bearing sulphide rich zone intersected in 92-87 that assayed 34.4 g/t gold over 2.5 meters. The zone is open down dip and to the southwest and will require approximately 600 meters of NQ diamond drilling in 3 holes to test continuity of mineralization. Refer to Figure 1 for proposed hole locations.

NO.	DESCRIPTION	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	TOTAL
900	ANALYSIS - GEOCHEMICAL													0
	200 @ \$13.00/SAMPLE													0
	TOTAL ANALYSIS - GEOCHEMICAL	0	0	0	0	0	0	0	0	0	0	0	0	0
902	ANALYSIS - ASSAYS (\$15.26/M)													0
	CORE 1400 @ \$14.00/SAMPLE						10,000	9,600						19,600
	CORE 800 @ \$20.00/SAMPLE						8,000	8,000						16,000
	CORE 400 @ \$30.00/SAMPLE						6,000	6,000						12,000
	TOTAL ANALYSIS - ASSAYS	0	0	0	0	0	24,000	23,600	0	0	0	0	0	47,600
906	ACCOMMODATION													0
	HOTEL, MEALS, ETC					2,000	2,000	2,000						6,000
	CAMP COSTS @ \$800/DAY						22,000	23,000						45,000
	CAMP - MOB/DEMOB					5,000			5,000					10,000
	TOTAL ACCOMMODATION	0	0	0	0	7,000	24,000	25,000	5,000	0	0	0	0	61,000
908	CONSULTING - ENVIRONMENTAL													0
	TOTAL CONSULTING - ENVIRONMENTAL	0	0	0	0	0	0	0	0	0	0	0	0	0
910	CONSULTING - GEOLOGICAL													0
	GEOLOGIST - @ \$250/DAY					2,500	7,500	7,500	5,000					22,500
	INDEPENDENT RESERVE CALCULATION								5,000					5,000
	ECONOMIC STUDY									10,000				10,000
	TOTAL CONSULTING - GEOLOGICAL	0	0	0	0	2,500	7,500	7,500	10,000	10,000	0	0	0	37,500
914	CONSULTING - METALLURGICAL													0
	BENCH TESTS - 10 @ \$500/TEST								5,000					5,000
	TOTAL CONSULTING - METALLURGICAL	0	0	0	0	0	0	0	5,000	0	0	0	0	5,000
915	CONSULTING - LEGAL													0
	TOTAL CONSULTING - LEGAL	0	0	0	0	0	0	0	0	0	0	0	0	0

NO.	DESCRIPTION	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	TOTAL
916	DRAFTING, MAPS, PRINTS													0
	COMPUTERIZATION						5,000		3,000					0
	DRAFTING - 330 HRS @ \$30/HR		200	300	1,000	1,000	1,000	1,000	1,000	1,000	500			8,000
	PRINTS, COPYING	200	200	200	200	400	400	500	500	200	200			7,000
	TOTAL DRAFTING, MAPS, PRINTS	200	400	500	1,200	1,400	6,400	1,500	4,500	1,200	700	0	0	3,000
														18,000
918	EXPEDITING													0
	TELEPHONE/FAX (LONG DISTANCE)	100	100	100	200	400	1,500	1,500	500	200	200	200	100	0
	EXPEDITING SERVICES						1,000	1,000						5,100
	TOTAL EXPEDITING	100	100	100	200	400	2,500	2,500	500	200	200	200	100	2,000
														7,100
930	DRILLING													0
	3800 M @ \$88/M						160,000	174,400						0
	TOTAL DRILLING	0	0	0	0	0	160,000	174,400	0	0	0	0	0	334,400
														334,400
934	EQUIPMENT - LEASE/RENTALS													0
	SPERRY SUM						2,000	2,000						0
	RADIOS - 4 @ \$150/MO						600	600	300					4,000
	MISCELLANEOUS						500	500	300					1,500
	TOTAL EQUIPMENT - LEASE/RENTALS	0	0	0	0	0	3,100	3,100	600	0	0	0	0	1,300
														6,800
935	EQUIPMENT - CONSUMABLES													0
	EXPLOSIVES						2,000	2,000						0
	BAGS, FLAGGING, ETC					1,000	1,000	1,000						4,000
	DIAMOND SAW, GEAR, ETC						5,000							3,000
	TOTAL EQUIPMENT - CONSUMABLES	0	0	0	0	1,000	8,000	3,000	0	0	0	0	0	5,000
														12,000
936	EQUIPMENT - CAPITAL													0
														0
	TOTAL EQUIPMENT - CAPITAL	0	0	0	0	0	0	0	0	0	0	0	0	0
														0
938	FUEL													0
	CAMP					500	2,500	1,500						0
	DRILL						4,000	3,000						4,500
	VEHICLE					300	300	300	300					7,000
	TOTAL FUEL	0	0	0	0	800	6,800	4,800	300	0	0	0	0	1,200
														12,700

NO.	DESCRIPTION	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	TOTAL
940	PROPERTY ACQUISITION & OPTION PAYMENTS													0
	SPECTRUM - 70								82,000					82,000
	SPECTRUM - 30				21,000				21,000					42,000
	HAWK - 70								30,000					30,000
	HAWK - 30				10,000				10,000					20,000
	TOTAL PROPERTY ACQ & OPTION PYMTS	0	0	0	31,000	0	0	0	143,000	0	0	0	0	174,000
941	PROPERTY ADVANCE ROYALTY													0
	TOTAL PROPERTY ADVANCE ROYALTY	0	0	0	0	0	0	0	0	0	0	0	0	0
944	PROPERTY MAINTENANCE													0
	125 UNITS @ \$10/UNIT X 2 YR	2,500												2,500
	TOTAL PROPERTY MAINTENANCE	2,500	0	0	0	0	0	0	0	0	0	0	0	2,500
946	SALARIES AND WAGES													0
	JS BROCK	2,000	2,000	2,000	2,000	2,000	3,000	3,000	2,000	2,000	2,000	2,000	2,000	26,000
	WJ ROBERTS	2,000	2,000	2,000	2,000	2,000	3,000	3,000	2,000	2,000	2,000	2,000	2,000	26,000
	1 FIELD ASSISTANT (\$150/DAY)					1,500	3,000	3,000	1,500					9,000
	TOTAL SALARIES AND WAGES	4,000	4,000	4,000	4,000	5,500	9,000	9,000	5,500	4,000	4,000	4,000	4,000	61,000
947	CASUAL SALARY & WAGES													0
	TOTAL CASUAL SALARY & WAGES	0	0	0	0	0	0	0	0	0	0	0	0	0
948	SURVEYS - GEOCHEMICAL													0
	TOTAL SURVEYS - GEOCHEMICAL	0	0	0	0	0	0	0	0	0	0	0	0	0
950	SURVEYS - GEOPHYSICAL													0
	TOTAL SURVEYS - GEOPHYSICAL	0	0	0	0	0	0	0	0	0	0	0	0	0

NO.	DESCRIPTION	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	TOTAL
954	SURVEYS - CONTROL							3,000						3,000
	TOTAL SURVEYS - CONTROL	0	0	0	0	0	0	3,000	0	0	0	0	0	3,000
960	SURVEYS - LINECUTTING													0
	TOTAL SURVEYS - LINECUTTING	0	0	0	0	0	0	0	0	0	0	0	0	0
964	SURVEYS - OTHER													0
	TOTAL SURVEYS - OTHER	0	0	0	0	0	0	0	0	0	0	0	0	0
968	TRANSPORTATION - AIRLINES													0
	10 TRIPS VCR - ISKUT @ \$800/TRIP					2,000	4,000	2,000						8,000
	TOTAL TRANSPORTATION - AIRLINES	0	0	0	0	2,000	4,000	2,000	0	0	0	0	0	8,000
970	TRANSPORTATION - FIXED WING													0
	CHARTER AIRCRAFT						2,000	2,000						4,000
	TOTAL TRANSPORTATION - FIXED WING	0	0	0	0	0	2,000	2,000	0	0	0	0	0	4,000
978	TRANSPORTATION - HELICOPTER													0
	180 HRS @ \$650/HR					10,000	50,000	57,000						117,000
	15 HRS @ \$1800/HR							27,000						27,000
	TOTAL TRANSPORTATION - HELICOPTER	0	0	0	0	10,000	50,000	84,000	0	0	0	0	0	144,000
980	TRANSPORTATION - VEHICLE													0
	REPAIRS, MAINTENANCE						500	500	500					1,500
	RENTAL						1,000	1,000	500					2,500
	TOTAL TRANSPORTATION - VEHICLE	0	0	0	0	0	1,500	1,500	1,000	0	0	0	0	4,000

NO.	DESCRIPTION	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	TOTAL
982	TRANSPORTATION - FREIGHT													0
	EST 15,000 LB @ \$.40/LB					500	2,500	2,500						5,500
	TOTAL TRANSPORTATION - FREIGHT	0	0	0	0	500	2,500	2,500	0	0	0	0	0	5,500
984	TRENCHING AND ROADS													0
	DRILL PAD CONST - 1 MAN @ \$300/D X 60 D					3,000	9,000	6,000						18,000
	TOTAL TRENCHING AND ROADS	0	0	0	0	3,000	9,000	6,000	0	0	0	0	0	18,000
994	MISCELLANEOUS - INDIRECT													0
	TOTAL MISCELLANEOUS - INDIRECT	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL EXPENSES BEFORE MANAGEMENT FEE	6,800	4,500	4,600	36,400	34,100	320,300	355,400	175,400	15,400	4,900	4,200	4,100	966,100
998	PROJECT MANAGEMENT FEE @ 10%	430	450	460	540	3,410	32,030	35,540	3,240	1,540	490	420	410	78,960
	TOTAL 1993 PROPOSED EXPENDITURES	7,230	4,950	5,060	36,940	37,510	352,330	390,940	178,640	16,940	5,390	4,620	4,510	1,045,060

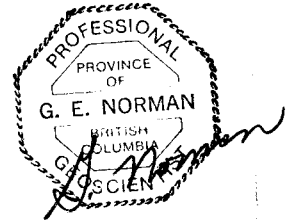
11.0 STATEMENT OF QUALIFICATIONS

I, George E. Norman of 12252 North Park Crescent, Surrey, B.C. certify that:

1. I am a graduate of the University of Alberta with a B.Sc. in Honours Geology, 1973.
2. I am a self-employed geologist d.b.a. Norman Geological.
3. I am a registered Professional Geoscientist with the Association of Professional Engineers and Geoscientists of B.C. and a Professional Geologist with the Association of Professional Engineers, Geologists and Geophysicists of Alberta (APEGGA) as well as a Fellow with the Geological Association of Canada (FGAC).
4. I have actively practised my profession as a geologist for the past 19 years.
5. I have personally supervised the fieldwork on the Spectrum Property for Columbia Gold Mines Ltd. between July 6 and August 14, 1992 under the supervision of Wayne J. Roberts, Vice-President Exploration.

G. Norman

George Norman, P.Geol., P.Geo.



elev.
1159 m

DDH 92-87
Elev. ~ 1158 m
Bearing 121° AZ
Dip -72°

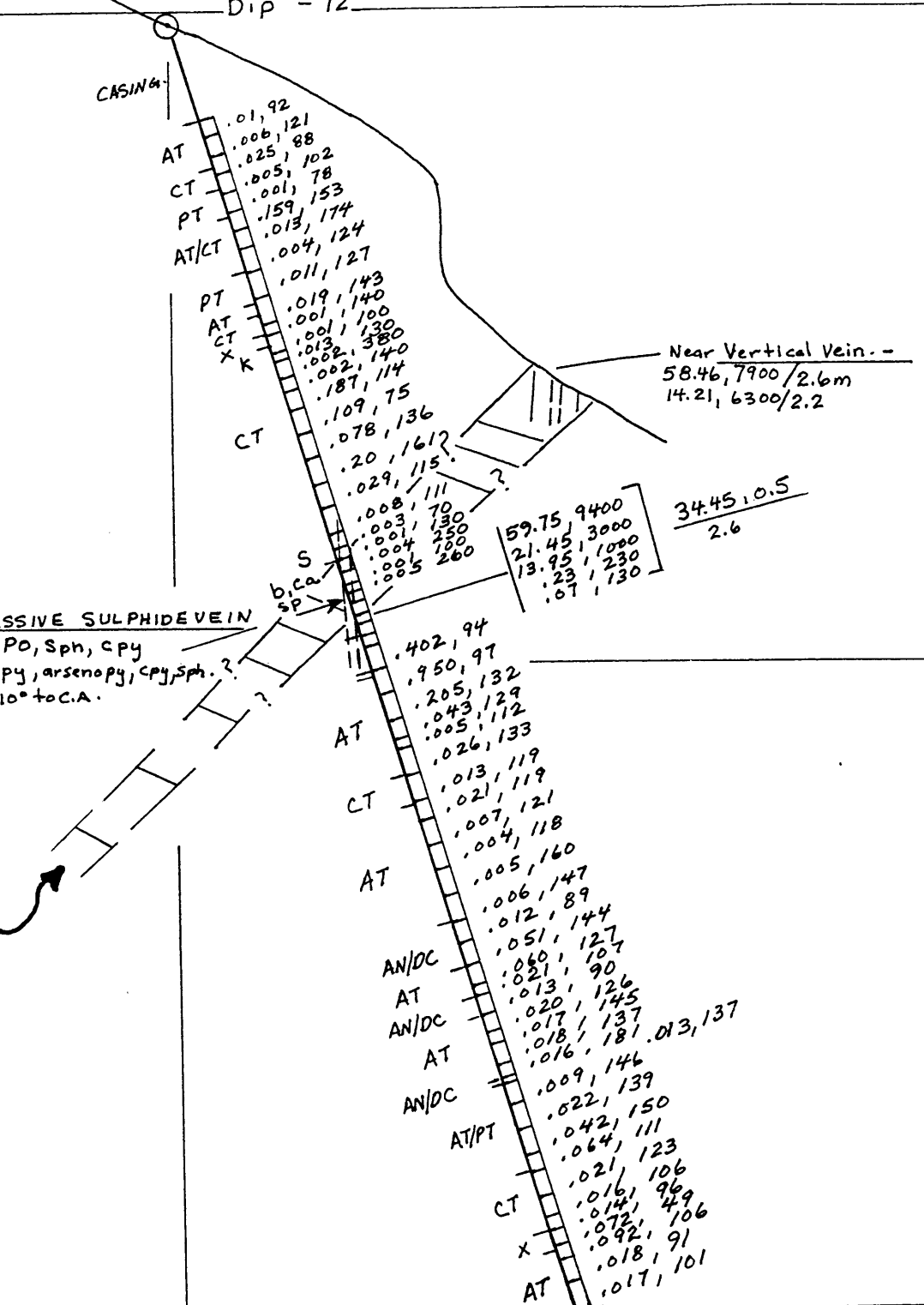
1109 m

EAST CREEK ZONE

1059 m

9395 E

103.94 m



LEGEND

MINERALIZATION ~

- Gold zones (accompanied by silicification)
- Grade blocks (geological reserve >10.0 g/T gold)
- Metal values; g/T gold, ppm copper
- Weighted averages; g/T gold, %Cu interval in metres

- ca - calcite veins
- q - quartz veins
- qc - quartz carbonate veins
- vz - vein zone
- ms - massive sulphides
- asp - arsenopyrite
- cp - chalcopyrite
- mg - magnetite
- po - pyrrhotite
- py - pyrite
- sp - sphalerite

Pyrite noted if >5%
Other minerals noted if >1%

ADDITIONAL SYMBOLS ~

- Brittle fracture zone
- Silicification
- Monzonite intrusive

LITHOLOGIC UNITS ~

- UPPER TERTIARY - RECENT EDZIZA FORMATION
- BT - Basalt flows and dykes
- UPPER TRIASSIC - CEETACEOUS ?
- M - Monzonite intrusive
- UPPER TRIASSIC STUHINI GROUP
- Latite to dacite flows and tuffs, undifferentiated overlying sediments

- VL - undifferentiated overlying sediments
- FLOWS -
- AN - andesite
- DC - dacite
- FP - feldspar
- LA - latite
- RD - rhyodacite

- TUFFS -
- AT - ash
- AX - mixed ash and crystal, etc
- CT - cherty
- DT - dacite
- LT - Volcanoclastic
- PT - lapilli
- RH - rhyolite
- RT - rhyodacite
- X - crystal

- SEDIMENTS -
- SLT - siltstone
- SST - sandstone
- LST - limestone
- CHT - chert

- MISCELLANEOUS -
- > - brecciated
- BX - breccia
- FT - fault zone
- NA - not assayed

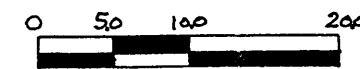
ALTERATION ~

- b - secondary biotite
- c - chloritization
- e - epidote
- k - secondary k-spar
- S - silicification

COLUMBIA GOLD MINES LTD.
15th Floor, 575 W. Hastings Street, Vancouver, B.C., Canada V6B 1N2
Facsimile (604) 687-2419 - Telephone (604) 687-4901

SPECTRUM PROPERTY

EAST CREEK-HAWKCLAIMS
CROSS SECTION DDH92-87



Scale 1:500
meters

LIARD MINING DIVISION P.C.
Geology by: G.E. Norman NTS:104&19W10E Plate No
Drawn by: as above Scale: 1:500
Date: Sept. 1992 6

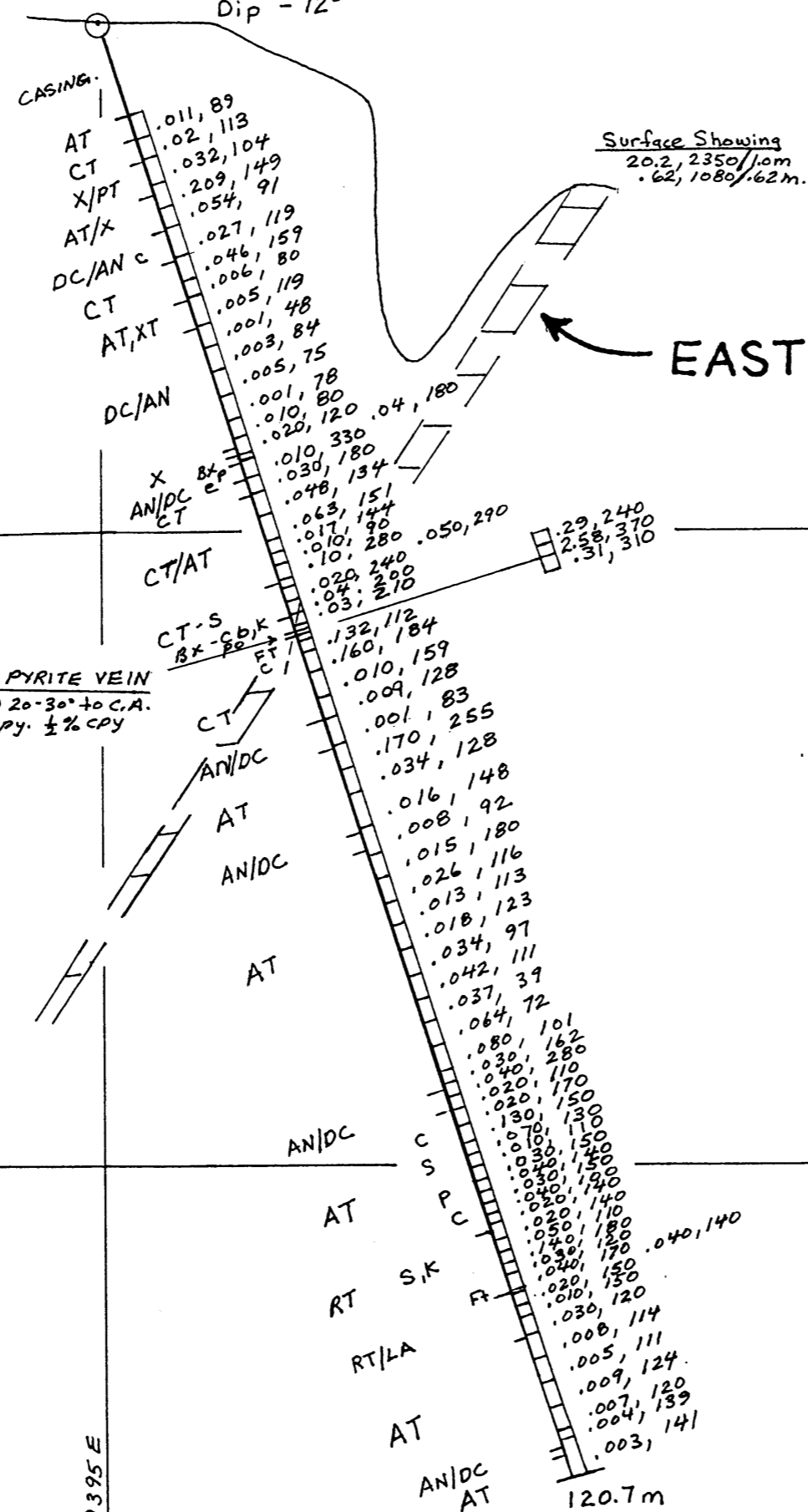
elev. 1168 m

DDH-92-88

Elev. ~ 1158 m.

Bearing 067° Az

Dip - 72°



1118 m

1068 m

9395 E

EAST CREEK ZONE

LEGEND

MINERALIZATION ~

- Gold zones (accompanied by silicification)
- Grade blocks (geological reserve >12.0 g/T gold)
- Metal values; g/T gold, ppm copper
- Weighted averages, $\frac{g/T \text{ gold}}{\text{interval in metres}}$

- ca - calcite veins
 - q - quartz veins
 - qc - quartz carbonate veins
 - asp - arsenopyrite
 - cp - chalcopyrite
 - mg - magnetite
 - vz - vein zone
 - ms - massive sulphides
 - po - pyrrhotite
 - py - pyrite
 - sp - sphalerite
- Pyrite noted if >5%
Other minerals noted if >1%

ADDITIONAL SYMBOLS ~

- Brittle fracture zone
- Silicification
- Monzonite intrusive

LITHOLOGIC UNITS ~

- UPPER TERTIARY - RECENT EDZIZA FORMATION
 - Basalt flows and dykes
 - UPPER TRIASSIC - CEETACEOUS ?
 - Monzonite intrusive
 - UPPER TRIASSIC STUHINI GROUP
 - Latite to dacite flows and tuffs, undifferentiated overlying sediments
- FLAWS -
- AN - andesite
 - DC - dacite
 - FP - feldspar
 - ED - rhyodacite
 - LA - latite
- TUFFS -
- AT - ash
 - AX - mixed ash and crystal, etc
 - CT - cherty
 - DT - dacite
 - LT - volcanoclastic
 - PT - lapilli
 - RH - rhyolite
 - RT - rhyodacite
 - X - crystal
- SEDIMENTS -
- SLT - siltstone
 - SST - sandstone
 - LST - limestone
 - CHT - chert
- MISCELLANEOUS -
- > - brecciated
 - BX - breccia
 - FT - fault zone
 - NA - not assayed

ALTERATION ~

- b - secondary biotite
- c - chloritization
- e - epidote
- k - secondary k-spar
- s - silicification
- cb - carbonate

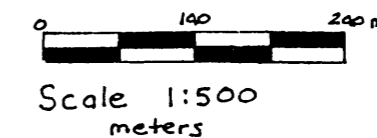
COLUMBIA GOLD MINES LTD.

15th Floor, 575 W. Hastings Street, Vancouver, B.C., Canada V6B 1N2
Facsimile (604) 687-2419 - Telephone (604) 687-4951

SPECTRUM PROPERTY

EAST CREEK - HAWK CLAIMS

CROSS SECTION DDH92-88



LIARD MINING DIVISION P.C.
Geology by: G.E. Norman NTS: 104 G/9 W 10 E P/06 N6.
Drawn by: as above Scale: 1:500
Date: Sept 1992

elev.
1200 m

DDH 92-89
Elev. ~ 1181 m
Bearing 111° AZ
Dip -50°

Surface Showing
Projected 20 m to NNE

EAST CREEK ZONE

1150 m

Arsenopyrite vein
3 cm vein - 80% arsenopy.
20% carb. at 25° to C.A.

1100 m

9409E

99.2 m

LEGEND

MINERALIZATION ~

- [Symbol] Gold zones (accompanied by silicification)
- [Symbol] Grade blocks (geological reserve >12.0 g/T gold)
- [Symbol] Metal values; g/T gold, ppm copper
- [Symbol] Weighted averages; $\frac{a/T \text{ gold}}{\text{interval in metres}}$

ca - calcite veins vz - vein zone
q - quartz veins ms - massive sulphides
qc - quartz carbonate veins

asp - arsenopyrite po - pyrrhotite
cp - chalcopyrite py - pyrite
mg - magnetite sp - sphalerite

Pyrite noted if >5%
Other minerals noted if >1%

ADDITIONAL SYMBOLS ~

- [Symbol] Brittle fracture zone
- [Symbol] Silicification
- [Symbol] Monzonite intrusive

LITHOLOGIC UNITS ~

UPPER TERTIARY - RECENT EDZIZA FORMATION
[BT] - Basalt flows and dykes
UPPER TRIASSIC - CRETACEOUS ?
[M] - Monzonite intrusive
UPPER TRIASSIC STUHINI GROUP
[VL] - Latite to dacite flows and tuffs, undifferentiated overlying sediments

FLOWS -

AN - andesite FP - feldspar RD - rhyodacite
DC - dacite LA - latite

TUFFS -

AT - ash PT - lapilli
AX - mixed ash and crystal, etc RH - rhyolite
CT - cherty ET - rhyodacite
DT - dacite X - crystal
LT - volcanoclastic

SEDIMENTS -

SLT - siltstone LST - limestone
SST - sandstone CHT - chert

MISCELLANEOUS -

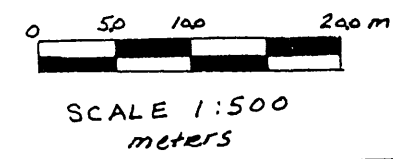
--b - brecciated FT - fault zone
BX - breccia NA - not assayed

ALTERATION ~

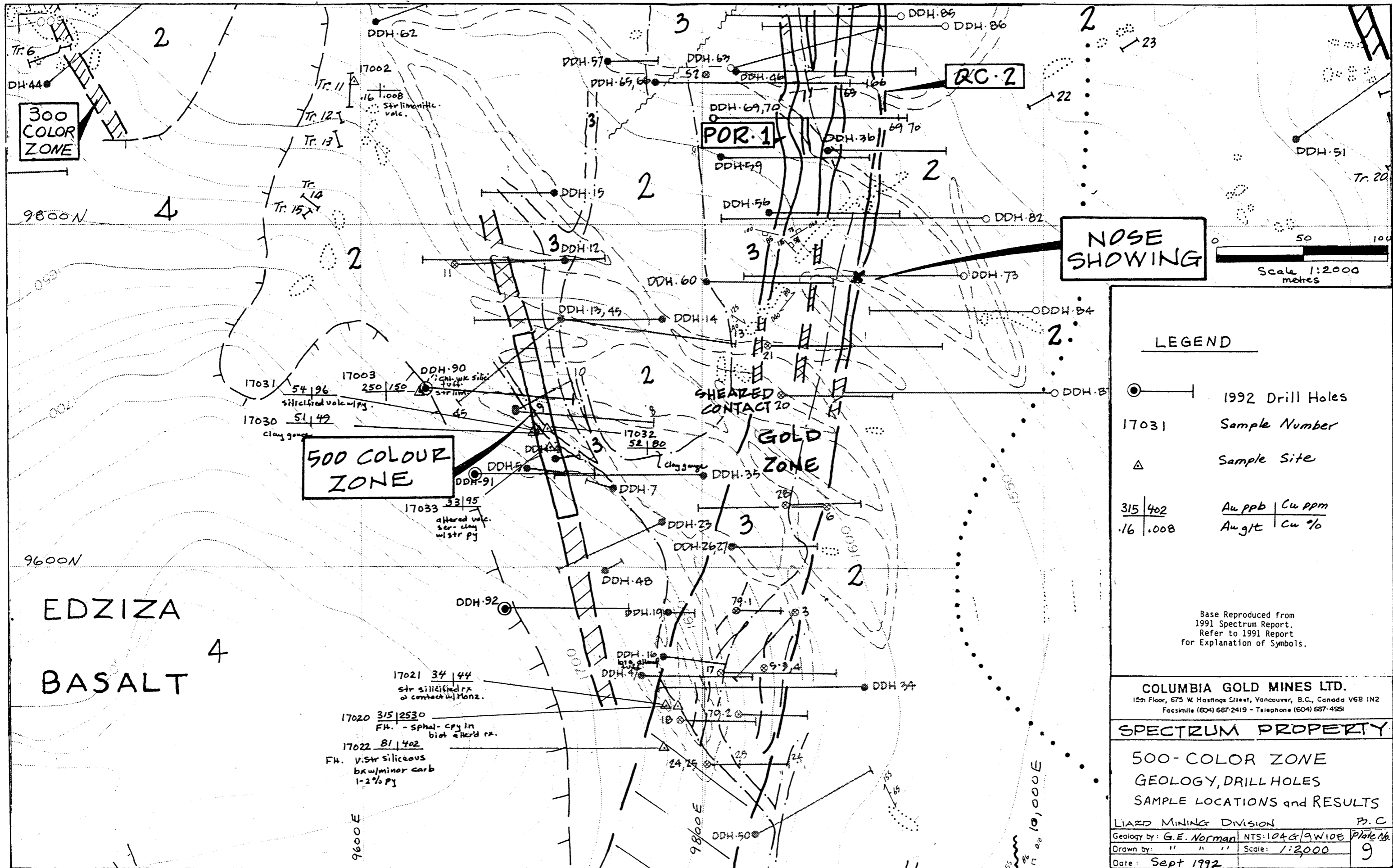
b - secondary biotite k - secondary k.sp.ars
c - chloritization s - silicification
e - epidote

COLUMBIA GOLD MINES LTD.
15th Floor, 675 W. Hastings Street, Vancouver, B.C., Canada V6B 1N2
Facsimile (604) 687-2419 - Telephone (604) 687-4951

SPECTRUM PROPERTY
EAST CREEK-HAWK CLAIMS
CROSS SECTION DDH92-89



LIARD MINING DIVISION P. C.
Geology by: G.E. Norman NTS: 104 G/9W10E Plate No.
Drawn by: as above Scale: 1:500 8
Date: Sept 1992



LEGEND

- | — 1992 Drill Holes
 - 17031 Sample Number
 - △ Sample Site
- | | | | |
|-----|------|--------|--------|
| 315 | 402 | Au ppb | Cu ppm |
| .16 | .008 | Au g/t | Cu % |

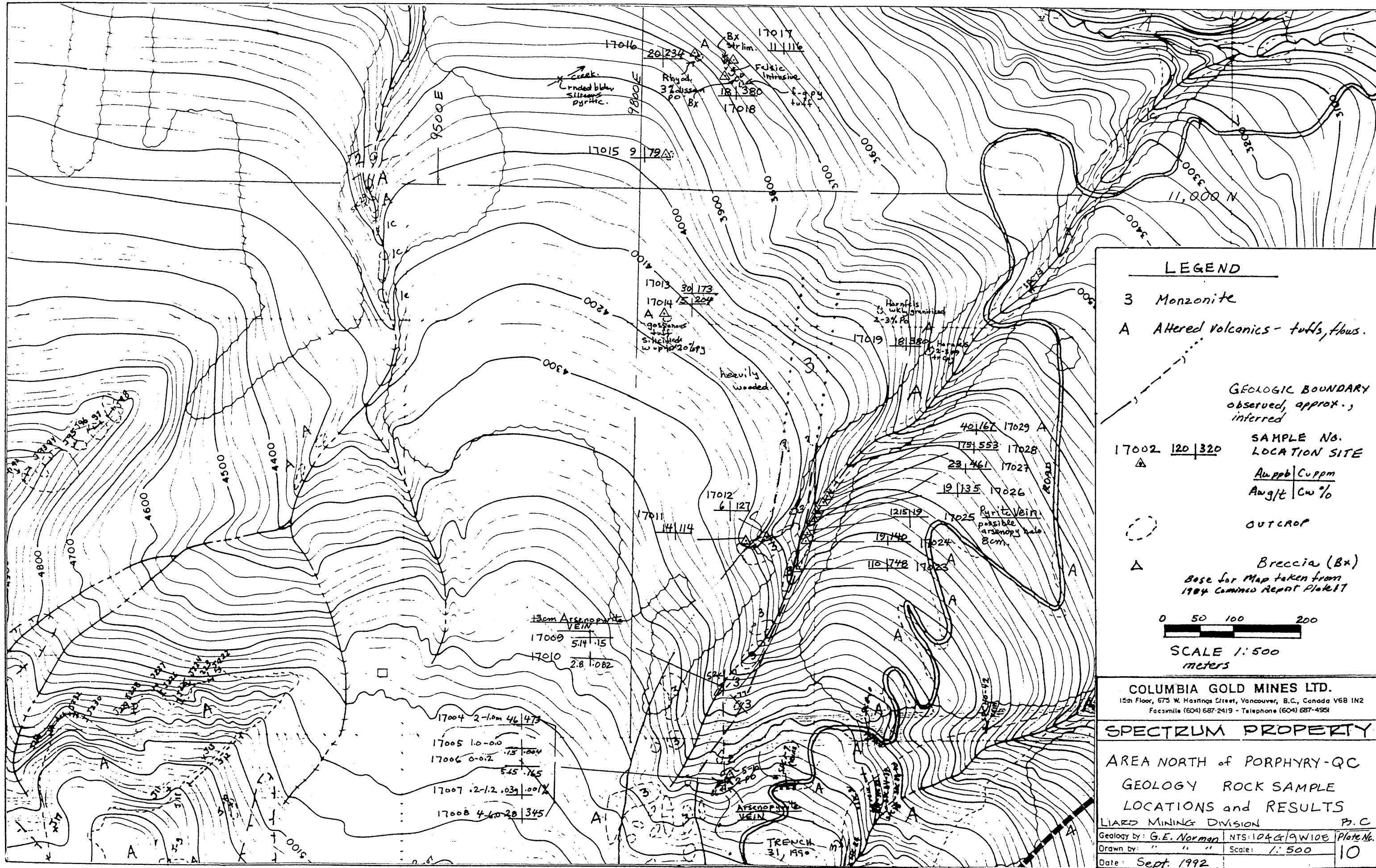
Base Reproduced from
1991 Spectrum Report.
Refer to 1991 Report
for Explanation of Symbols.

COLUMBIA GOLD MINES LTD.
15th Floor, 675 W. Hastings Street, Vancouver, B.C., Canada V6B 1N2
Facsimile (604) 687-2419 - Telephone (604) 687-4951

SPECTRUM PROPERTY

500-COLOR ZONE
GEOLOGY, DRILL HOLES
SAMPLE LOCATIONS and RESULTS

LIARD MINING DIVISION		P.C.
Geology by: G.E. Norman	NTS: 104G/9W10E	Plate No.
Drawn by: " " "	Scale: 1:2000	9
Date: Sept 1992		

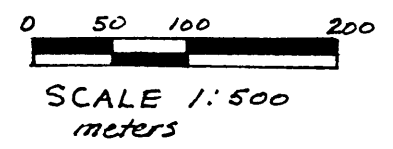


LEGEND

- 3 Monzonite
 - A Altered volcanics - tuffs, flows.
- GEOLOGIC BOUNDARY
 observed, approx.,
 inferred

SAMPLE NO.	LOCATION SITE	Au ppb	Cu ppm	Ag g/t	Cu %
17002	120 320				
17013	30 173				
17014	5 204				
17019	18 380				
17025	19 135				
17026	19 135				
17027	23 461				
17028	175 553				
17029	40 167				
17033	110 748				
17034	19 140				
17035	12 519				
17036	14 114				
17037	6 127				
17038	14 114				
17039	5 14				
17040	2.8 1.082				
17041	5.14 .15				
17042	2.8 .082				
17043	2-1.0m 46 473				
17044	1.0-.00				
17045	0-0.2	.15	.004		
17046	2-1.2	0.39	.001%		
17047	4-6.0	20	345		

- OUTCROP
- Breccia (Bx)
Base for Map taken from
1984 Comined Report Plate 17



COLUMBIA GOLD MINES LTD.
 15th Floor, 675 W. Hastings Street, Vancouver, B.C., Canada V6B 1N2
 Facsimile (604) 687-2419 - Telephone (604) 687-4951

SPECTRUM PROPERTY

AREA NORTH of PORPHYRY-QC
 GEOLOGY ROCK SAMPLE
 LOCATIONS and RESULTS

LIARD MINING DIVISION P.C.
 Geology by: G.E. Norman NTS: 104G/9W10E Plate No.
 Drawn by: " " " Scale: 1:500 10
 Date: Sept. 1992

APPENDIX I

1992 DRILL HOLE LOGS AND SAMPLE LEDGERS

COLUMBIA GOLD MINES LTD. SPECTRUM PROPERTY

 DRILL HOLE No. 92-87

LITHOLOGIC LOG

 PAGE 1 of 7

FROM	TO	UNIT CODE	LITHOLOGY	ALTERATION								MINERALIZATION						ZON	
				SI	QV	SE	CY	CH	EP	CB	KF	PY	CP	AS	PO	VG	MG		
0	7.62		<u>CASING</u>																
7.62	11.4	AT	<u>DACITIC ASH TUFF</u> Fine gr'd H grey - grey blk, mod fr'd w. wk lim on fr's w 15-35%, v. wk carb as fr'fills, minor Po on fr							L1									L1/2
11.4	13.1	CT	<u>CHERTY TUFF</u> Med-H grey v. fine laminated cherty tuff, lam. w 55-60° to c.a. wkly fr'd w 70° to c.a. v. wk lim on fr. odd carb fr. fill 25° to c.a. - odd lamin is chl.							WK	L1								
13.1	15.4	PT	<u>DACITIC LAPILLI TUFF</u> Med-dr grey fragmental volcanoclastic w/ frag from 1-3mm - frag as str chl. - upto 20% by volc. minor fr. cherty beds. < 1% carb. fr'fills. Rock is mod str calcareous. (alter'n? or indigeneous?)								L5								
15.4	19.65	AT/CT	<u>DACITIC ASH TUFF / CHERTY TUFF</u> H grey fine gr'd ash tuff. w/ short sections of cherty tuff laminated w 60° to c.a. w/ upto 1% v. fine dissem Po.																1%
19.65	22.34	PT.	<u>DACITIC LAPILLI TUFF</u> Cherty lapilli frag. ~ 1-4mm - ~20%, short sec. of chty tuff w 20.4-20.6. wk fr py! po < 1% wk carb odd area w chl. (25%)								WK	L5		L1					L1

DIAMOND DRILL LEDGER

DDH No. 92-87

ASSAY TAG No.	SAMPLE INTERVAL Metres Feet	SAMPLE LENGTH Metres Feet	g/7 Au	ppb Ag	% Cu	ppm Cu	DESCRIPTION
17051	7.62 9.0	1.38 1.5		10		92	Dacitic Ash tuft.
52	9.0 10.5	1.5 1.5		6		121	" " "
53	10.5 12.0	1.5 1.5		25		88	" " " / Cherty Tuft.
54	12.0 13.5	1.5 1.5		5		102	Cherty tuft / Dacitic Lapilli tuft.
55	13.5 15.0	1.5 1.5		1		78	" " "
56	15.0 16.5	1.5 1.5		159		153	Dacitic Lapilli tuft / Cherty tuft.
57	16.5 18.0	1.5 1.5		13		174	" " " "
58	18.0 20.0	1.5 1.5		4		124	" " " " / Dac. Lapilli tuft.
59	20.0 22.0	2.0 2.0		11		127	Dacitic Lapilli tuft.
17060	22.0 24.0	2.0 2.0		19		143	" " " / ASH tuft / Cherty tuft
61	24.0 25.0	1.0 1.0	.001		.014		Cherty tuft / Crystal tuft
62	25 26.4	1.4 1.4	.001		.010		Crystal tuft / Cherty tuft
63	26.4 27.1	0.7 0.7	.013		.013		Cherty tuft - Ksp alterd. < 18 py - 5-10 whit carb.
64	27.1 28.5	1.4 1.4	.002		.038		" " -
65	28.5 29.5	1.0 1.0	.002		.014		" " - w/ breccia zone 4cm. wide.
66	29.5 31.0	1.5 1.5		187		114	" "
67	31.0 33.0	2.0 2.0		109		75	" "
68	33.0 35.0	2.0 2.0		78		136	" "
17069	35.0 37.0	2.0 2.0		200		161	" "

DIAMOND DRILL LEDGER

DDH No. 92-81

ASSAY TAG No.	SAMPLE INTERVAL <u>Metres</u> Feet	SAMPLE LENGTH <u>Metres</u> Feet	oz/T Au	Ppb Ag	% Cu	ppm Cu	DESCRIPTION	
17070	37.0	39.0	2.0			29	115	Cherty Tuff.
17071	39.0	41.0	2.0			8	111	" "
72	41.0	42.25	1.25			.003	.007	" "
73	42.25	43.12	1.13			.001	.013	" " - strong perov. silica sharpinae
74	43.12	44.0	0.88			.004	.025	" " in carb filling - 10-15% lt pink tinge (Esp)
75	44.0	45.0	1.0			.001	.010	Altered Zone - str carb (15-30%) ; mod-str
76	45.0	45.5	0.6			.005	.026	silica as well as locally strong ser-bio to 20% ; some wispy brn sphalerite.
77	45.5	46.5	1.0	59.75		1.743	0.94	Massive Sulphide zone - 45.6-46.5 Massive py w/ 5% cry, 1-2% sphal. vein like cut c.a. 2-10%
78	46.5	47.5	1.0	21.45		0.626	21.45	46.5-48.1 Massive py - arsenopy w/
79	47.5	48.1	0.6	8.32 0.15 = 34.45		0.407	13.95	40-90% py ; 5-20% arseno, 1-3% cry /-5.
17080	48.1	49.1	1.0			.007	0.23	Dacitic Ash Tuff.
81	49.1	50.1	1.0			.002	.07	Cherty Tuff.
82	50.1	52.0	1.9				402	" " / ANY6D. Andesite / Dacite Fl.
83	52.0	54.0	2.0				950	Dacitic Ash Tuff / Lapilli Tuff.
84	54.0	56.0	2.0				205	" " " "
85	56.0	57.5	1.5				43	" " " "
17086	57.5	58.25	0.75				5	" " " "

DIAMOND DRILL LEDGER

DDH No. 92-87

ASSAY TAG No.	SAMPLE Interval Metres Feet	SAMPLE Interval Metres Feet	SAMPLE Length Metres Feet	ozt Au	Ppb Ag	Cu	Ppm Cu	DESCRIPTION
17087	58.25	60.45	2.20		26		133	Dacitic - Andesitic Ash Tuff/Lapilli Tuff.
88	60.45	62.6	1.95		13		119	Cherty Tuff.
89	62.6	64.0	1.4		21		119	Dacitic/Andesitic Ash Tuff
17090	64.0	66.0	2.0		7		121	" " " "
91	66.0	68.0	2.0		4		118	" " " "
92	68.0	70.0	2.0		5		160	" " " "
93	70.0	72.3	2.3		6		147	" " " "
94	72.3	74.0	1.7		12		89	Amyd. Andesitic / Dacite Flow
95	74.0	75.7	1.7		51		144	" " " "
96	75.7	77.4	1.7		60		127	ASH TUFF (and/dacite)
97	77.4	78.03	0.63		21		107	" " " "
98	78.03	79.84	1.81		13		90	Amyd. And / Dacite Flow
99	79.84	81.0	1.16		20		126	Dacitic Ash Tuff.
17100	81.0	82.0	1.0		17		145	" " " "
101	82.0	83.75	1.75		18		137	" " " "
102	83.75	84.75	1.0		16		181	" " " "
103	84.75	85.2	0.45		13		137	Amyd. Dacitic - And. Flow.
104	85.2	87.0	1.8		9		146	" " " "
105	87.0	89.0	2.0		22		139	" " " "
17106	89.0	91.0	2.0		42		150	" " " "

COLUMBIA GOLD MINES LTD. SPECTRUM PROPERTY

 DRILL HOLE No. 92-88

LITHOLOGIC LOG

 PAGE 1 of

FROM	TO	UNIT CODE	LITHOLOGY	ALTERATION								MINERALIZATION						ZONE
				SI	QV	SE	CY	CH	EP	CB	KF	QC	PY	CP	AS	PO	VG	
0	7.62		<u>CASING</u>															
7.62	9.69	AT	<u>DACITIC ASH TUFF</u> Med gray-greenish fine gr'd. dacitic ash tuff w/ minor lapilli fragments to 1cm. - strongly fr'd (broken to 8.85, 8.85-9.69 med fr'd @ 85° to C.A. upper 1.2m med-lim. on fr's, short section at 8.65-8.85 somewhat cherty. - No carboning															Mo
9.69	11.45	CT TUFF	<u>CHERTY TUFF</u> well laminated. med-H gray cherty tuff, lamina @ 70° to C.A. minor ash tuff @ 10.06-10.73 Qtz-carb! carb vults - fr'fills @ 10! 5' to C.A. one Qtz-carb @ 10.87 @ 10° ~ 1.5m w/ brecciation.							ZI	ZI							
11.45	14.3	X/PT TUFF	<u>CRYSTAL/LAPILLI TUFF</u> Coarse grained augite/hb crystal tuff w/ 10-15% augite xls - irregular to subhedral, w/ fragments up to 2cm in f-g tuffaceous matrix. some lithic fragments. Rock is med fr'd @ 70° w/ wk carb fr'dillings @ 15! 25° to C.A. Augite Xts are med-str chloritized.							mac	wk							
14.3	17.05	AT/X TUFF	<u>DACITIC ASH TUFF / CRYSTAL TUFF</u> Lt grey w/ greenish tinge f-g med chl tuff w/ minor hb/augite Xts Fault @ 14.68 - 2cm gouge @ 90° to C.A. @ C vein @ 16.36 @ 50° to C.A. (1.5cm thick)								ZI							

COLUMBIA GOLD MINES LTD.

SPECTRUM PROPERTY

 DRILL HOLE No. 92-88

LITHOLOGIC LOG

 PAGE 2 of

FROM	TO	UNIT CODE	LITHOLOGY	ALTERATION							MINERALIZATION						ZONE	
				SI	QV	SE	CY	CH	EP	CB	KF	PY	CP	AS	PO	VG		MG
14.3	17.05	AT/X T	<u>DACITIC ASH TUFF / CRYSTAL TUFF CONT'D</u> Some <i>actinolite siliceous</i> - approaching <i>cherty</i> tuff w/ thin beds of <i>cherty</i> tuff from 16.2-17.0. w/ bedding @ 70° to C.A.							21								
		Cont'd. TUFF																
17.05	19.51	DC/AN FLOW	<u>AMYGDALOIDAL HORNBLENDE / AUGITE DACITE / ANDESITE FLOW.</u> Med grey w/ greenish tinge, 10-15% augite/hb Xt's in a fine grid chl matrix, w 5% calc. amyd., w/ carb infilling at 30° to C.A.					med		22								
19.51	22.8	CT	<u>CHERTY TUFF</u> Massive to w/ky bedded (w 80°) <i>cherty</i> tuff. beds of med-dk grey; H-med grn. -mod-strongly siliceous, mod. fr'd w 55° to C.A. w 20.4-20.5 py. fr' filling w 25° to C.A.							21			21					
22.8	25.07	AT X TUFF.	<u>ASH TUFF / CRYSTAL TUFF</u> Med grey w/ greenish tinge, med-fine grid tuff w/ pers. chlorite minor short sections w/ white 2/mm fsp Xt's to 0.2mm, 1/2 carb (white) fr' fills w 24.0 carb unw/ cpy.							21								Fr
25.07	35.3		<u>AUGITE-HORNBLENDE DACITE / ANDESITE FLOW</u> Lt gry - greenish hornblende porphyritic andesite-dact. flow. - 10-15% hb Xt's augite up to 1/2 cm. - Massive unit w/ minor calc amyd.							21	21		21					

COLUMBIA GOLD MINES LTD. SPECTRUM PROPERTY

 DRILL HOLE No. 92-88

LITHOLOGIC LOG

 PAGE 3 of

FROM	TO	UNIT CODE	LITHOLOGY	ALTERATION								MINERALIZATION						ZONE		
				SI	QV	SE	CY	CH	EP	CB	KF	PY	CP	AS	PO	VG	MG			
25.07	35.3		<u>AUGITE/HORNBLENDE DACITE - ANDESITE FLOW</u> Cord'd. - wk ly. - med fr'd at 60° to C.A. - wk fi' fills of wht carb, - matrix is perv. chloritized, odd 1-2 cm frag. - lower contact w/ 5% py. (over 1 m.). - wk dissem ep. alteration throughout,							4	4									
35.3	35.95	X,	<u>CRYSTAL TUFF / LAPILLI TUFF</u> Gray black rock w/ scattered .5 cm lt grn wispy fragments, 1/2% dissem Po,																4 1/2	
35.95	36.25	BX	<u>BRECCIA.</u> Strongly carbonated altered matrix and fragments with odd siliceous frag, matrix w/ 5-10% fine py. Upper contact at 35°, lower contact w/ 45°. Fragments ~60% to 4cm.																5 to 10	X
36.25	37.82		<u>AMYGDALOIDAL ANDESITE/DACITE FLOW</u> med-grey black volcanic w/ dk mafics, strly amygdaloidal at 37.3. Silicified w/ wk Ksp 1/2 ~ 3% dissem py at 36.25 - 36.65 - near contact w/ above bx.																med to str. Hocl wk up to 3	

COLUMBIA GOLD MINES LTD.

SPECTRUM PROPERTY

 DRILL HOLE No. 92-88

LITHOLOGIC LOG

 PAGE 4 of

FROM	TO	UNIT CODE	LITHOLOGY	ALTERATION								MINERALIZATION						ZONE
				SI	QV	SE	CY	CH	EP	CB	KF	PY	CP	AS	PO	VG	MG	
37.82	39.0		<p style="text-align: center;"><u>CHERTY TUFF</u></p> <p>Lt greenish grey massive to well laminated. w/ bedding @ 80° to C.A. - well bedded near top of section becoming massive @ 37.8 and well bedded again @ 39.9 to 43.9. Po on fr. w/ chl @ 38.7, section 39.01-37.9 mod fr'd w/ chl on fr and odd fr w/ po/py. minor carb w/ fr's. The well bedded sections are more cherty.</p>					WK	L/									
39.0	46.3		<p style="text-align: center;"><u>CHERTY TUFF / DACITIC-AND. ASH TUFF</u></p> <p>Cherty tuffas above w/ f-g massive chlorite ash tuff beds @ 44.08 - 44.73, 45.48 - 46.3. Cherty beds Lt greenish grey w/ 1-5cm beds. Som carbon at 45.5 @ 30° to C.A., partially ch'l vns w/ po (trace cpy at 41.45 - 41.7, 3% py on fr @ 42.0 - 42.1)</p>									up to 3 locally.		up to 5 locally.				
46.3	49.07		<p style="text-align: center;"><u>CHERTY TUFF ? (SILICEOUS RX).</u></p> <p>V. strongly siliceous rock. banded in part - probably cherty tuff w/ perov. silica & Ksp - has pinkish hue. (Ksp) Noticeable increase in carbonate fr' filling are 5-10% but up to 30 with 1-5% py on fr fills to 48.9 increasing to 5-10% from 48.9 to 49.07</p>	str						~ 5% to 10% up to 30		1-5		L/				X
49.07	50.6	BX	<p style="text-align: center;"><u>PHREATIC BRECCIA.</u></p> <p>Crackled rock w/ phreatic bx fragments up to 2cm. - angular siliceous pinkish fragments in a matrix of carbonate 30° 1-3-10% py.</p>	str						str 20%	WK	5 to 10						X

COLUMBIA GOLD MINES LTD. SPECTRUM PROPERTY

 DRILL HOLE No. 92-88

LITHOLOGIC LOG

 PAGE 7 of

FROM	TO	UNIT CODE	LITHOLOGY	ALTERATION							MINERALIZATION						ZONE						
				SI	QV	SE	CY	CH	EP	CB	KF			PY	CP	AS		PO	VG	MG			
90.3	100.1	AT	<u>ASH TUFF</u>	wk				MS str	<1								2% upto 10				X		
			90.3 - 91.67 - wkly silicified. f-g wkly laminated ash tuff w/ up to 10% fine dissem; vn. py. conc ~ 2%, w/ 70.9. lam. carbon (w/ some bx) w/ 35° to C.A., chl as h/lk dr fill - cracked w/ chl. infilling																				
			91.67 - 96.03 Strongly silicified rx w/ v.wk pinkish hue (wk Ksp) - Rock is cracked w/ infilling of chl ~ 10% (20-40% to chl) carb dr fills/vns @ 25° to C.A., w/ 2-5% sugor text dissem; dr fill py. Thin breccia zone assoc. w/ fr. eg 94.34 @ 25° to C.A.	str				10 str	<1	v wk								2% 5					
			96.03 - 96.55 Mod-wk siliceous w/ 10-15% dissem py. - massive str chloritic rx - pervasive; in clats.	wk and				str										10 to 15					
			96.55 - 96.59 Fault - gray clay gouge @ 85° to C.A. 4cm.																				
			96.59 - 97.87 Mod-str siliceous rx v. similar to 91.67 - 96.03 w/ 3-5% dr; vein py.																3 to 5				
			97.87 - 100.1 dk grey green. chloritic tuff w/ 5% dissem py																5				
			<u>SILICEOUS ROCK (RHYODACITE?)</u>																				
100.1	105.36		99.67 - 105.36 v-str. silicified rx. H-med grey to 102.8. from 102.8 to 105.36. rock has a pinkish hue (Ksp). Rock is cracked w/ wk chl infilling (LS%) w/ 5 to 10% dr fills. - py at 20° with staining - Rock appears in part to be amygdaloidal @ 103.0 - 104.0 possible - Rhyodacite?	v str				LS										5 to 10.					

SPECTRUM

Property

DRILL - SAMPLE LEDGER - DDH-92-88

ASSAY TAG No.	SAMPLE INTERVAL		SAMPLE LENGTH		oz/T Au	ppb Au	% Cu	ppm Cu	DESCRIPTION
	Metres	Feet	Metres	Feet					
17115	7.62	9.69	2.07			11	89	Dacitic Tuff	
16	9.69	11.45	1.76			20	113	Cherty tuff	
17	11.45	13.5	2.05			32	104	Crystal / Lapilli Tuff.	
18	13.5	15.5	2.0			209	149	Crystal / Ash / Lapilli Tuff.	
19	15.5	17.05	1.55			54	91	Ash / Crystal Tuff.	
17120	17.05	19.51	2.46			27	119	Amygdaloidal And / Dac. Flow	
21	19.51	21.5	1.99			46	159	Cherty Tuff.	
22	21.5	22.8	1.3			6	80	" "	
23	22.8	25.07	2.27			5	119	Ash Tuff / Crystal Tuff.	
24	25.07	27.0	1.93			1	48	And / Dac. Flow	
25	27.0	29.0	2.0			3	84	" " "	
26	29.0	31.0	2.0			5	75	" " "	
27	31.0	33.0	2.0			1	78	" " "	
28	33.0	34.5	1.5		.001	375 .01	.008	" " "	
29	34.5	35.95	1.5		.001	.02	.012	" " " Crystal Tuff / Lapilli Tuff.	
17130	35.95	36.25	0.30		.001	.04	.018	Breccia	
31	36.25	37.82	1.57		.001	.01	.033	Amygd. And / dac. Flow	
32	37.82	39.0	1.12		.001	.03	.018	Cherty Tuff.	
33	39.0	41.0	2.0			48	134	Cherty Tuff / Dac / and Ash tuff	
17134	41.0	43.0	2.0			63	151	" " " "	

SPECTRUM. Property

DRILL SAMPLE LEDGER DDN-92-88

SAY TAG No.	SAMPLE INTERVAL Metres	Feet	SAMPLE LENGTH Metres	Feet	oz/T Au	PPB Ag	% Cu	PPM Cu	DESCRIPTION
7135	43.0	44.0	1.0			17		144	Cherty Tuff / dac / and ASH TUFF
36	44.0	45.0	1.0		.001	.01	.009		" " " "
37	45.0	46.3	1.3		.003	.1	.028		" " " "
38	46.3	47.0	0.7		.001	.05	.029		Cherty Tuff. ? Siliceous Rx
39	47.0	48.0	1.0		.001	.02	.024		" " "
17140	48.0	49.07	1.07		.001	.04	.020		" " "
41	49.07	50.0	0.93		.001	.03	.021		" " "
42	50.0	50.6	0.6		.008	.29	.024		Phreatic Breccia
43	50.6	50.8	0.2		.075	2.58	.037		Arsenopyrite Vein - 4cm v. at 20-30° to C.A.W. 5-10% py 5% cpy, 10% Carb halve of 2% Pb.
44	50.8	51.21	0.41		.009	.34	.031		Fault zone
45	51.21	52.21	1.0			132		112	Ash Tuff.
46	52.21	54.0	1.79			160		184	Cherty Tuff.
47	54.0	56.0	2.0			10		159	" "
48	56.0	57.9	1.91			9		128	" "
49	57.9	60.1	2.19			1		83	And / dac. Flow.
17150	60.1	62.0	1.90			170		255	Ash Tuff.
51	62.0	64.0	2.0			34		128	" "
52	64.0	66.85	2.85			16		148	" "

SPECTRUM Property

DRILL SAMPLE LEDGER DDH-92-88

DAY TAG No.	SAMPLE INTERVAL Metres	INTERVAL Feet	SAMPLE LENGTH Metres	LENGTH Feet	OZ/T Au	PPb Au	% Cu	PPM Cu	DESCRIPTION
17/53	66.85	69.10	2.95			8		92	Amyg. And/Doc Flow
54	69.10	71.0	2.0			15		180	And/Doc Tutt
55	71.0	73.0	2.0			26		116	
56	73.0	75.0	2.0			13		113	
57	75.0	77.0	2.0			18		123	
58	77.0	79.0	2.0			34		97	
59	79.0	81.0	2.0			42		111	
17/60	81.0	83.0	2.0			37		39	
61	83.0	85.0	2.0			64		72	
62	85.0	87.0	2.0			80		101	
63	87.0	89.0	1.0			30		162	
64	89.0	89.15	1.15		.001	916 .04	.028		
65	89.15	90.3	1.15		.001	.02	.011		Amyg. Doc/And Flow
66	90.3	91.67	1.37		.001	.02	.017		Ash Tutt. - w/ky silicified, up to 10% py.
67	91.67	93.0	1.33		.004	.13	.015		" " - Strong silicified, crackled
68	93.0	94.0	1.0		.002	.07	.013		" " - clt infilling 2-5% sugary py.
69	94.0	95.0	1.0		.001	.01	.011		" " " "
71 70	95.0	96.03	1.03		.001	.03	.015		" " " "
71	96.03	97.0	0.97		.001	.04	.014		" " - med siliceous - 10-15%
									" " - disseminated py. - str chloritic

JUL 29 '92 10:31
 0123 DEASE UK. EXPED.
 TEL 604-771-3458
 P. 5

SPECTRUM. Property

DRILL SAMPLE LEDGER DD

ASSAY TAG No.	SAMPLE INTERVAL		SAMPLE LENGTH		oz Au	ppb Ag	%	ppm Cu
	Metres	Feet	Metres	Feet				
17172	97.0	98.0	1.0		.001	34 .03	.015	
73	98.0	99.0	1.0		.001	.04	.010	
74	99.0	99.67	0.67		.001	.02	.014	
75	99.67	101.0	1.33		.001	.02	.014	
76	101.0	102.0	1.0		.001	.05	.011	
77	102.0	103.0	1.0		.004	.14	.018	
78	103.0	104.0	1.0		.001	.03	.012	
79	104.0	105.36	1.36		.001	.04	.017	
80	105.36	105.46	0.10		.001	.04	.014	
81	105.46	106.5	1.04		.001	.02	.015	
82	106.5	107.5	1.0		.001	.01	.015	
83	107.5	108.9	1.4		.001	.03	.012	
84	108.9	111.0	1.1			8		114
85	111.0	113.0	2.0			5		111
86	113.0	115.0	2.0			9		124
87	115.0	117.0	2.0			7		120
88	117.0	117.96	.96			4		139
17189	117.96	120.7	2.74			3		141
					End of hole 120.7			

DIAMOND DRILL LEDGER

DDH No. 92-88

ASSAY TAG No.	SAMPLE INTERVAL		SAMPLE LENGTH		Au	Ag	Cu	DESCRIPTION
	Metres	Feet	Metres	Feet				
17115	7.62	9.69	2.07				Dacitic Ash Tuff.	
" 16	9.69	11.45	1.76				Cherty Tuff	
" 17	11.45	13.5	2.05				Crystal / Lapilli Tuff.	
" 18	13.5	15.5	2.0				Dacitic Ash Tuff / Crystal Tuff.	
" 19	15.5	17.05	1.55				" " "	
17120	17.05	19.51	2.46				Amyd. Dacite / Andesite Flow	
" 21	19.51	21.5	1.99				Cherty Tuff.	
" 22	21.5	22.8	1.3				" "	
" 23	22.8	25.07	2.27				Ash Tuff / Crystal tuff.	
" 24	25.07	27.0	1.93				Dacite / And. Flow	
" 25	27.0	29.0	2.0				" " "	
" 26	29.0	31.0	2.0				" " "	
" 27	31.0	33.0	2.0				" " "	
" 28	33.0	34.5	1.5				" " "	
" 29	34.5	35.95	1.45				" " "	
" 30	35.95	36.25	0.3				Crystal Tuff / Lapilli tuff / Breccia	
" 31	36.25	37.82	1.57				Amyd. And / Dacite Flow	
" 32	37.82	39.0	1.18				Cherty Tuff. / Dac / And Ash Tuff.	
" 33	39.0	41.0	2.0				" " " "	
17134	41.0	43.0	2.0				" " " "	

DIAMOND DRILL LEDGER

DDH No. 92-88

ASSAY TAG No.	SAMPLE INTERVAL Metres	INTERVAL Feet	SAMPLE LENGTH Metres	LENGTH Feet	Au	Ag	Cu	DESCRIPTION
17135	43.0	44.0	1.0					Cherty Tuff / Pac. sand. tuff
36	44.0	45.0	1.0					" " "
37	45.0	46.3	1.3					" " "
38	46.3	47.0	0.7					Cherty Tuff.?
39	47.0	48.0	1.0					V. strongly siliceous rx - w/ pinkish (ksp) hue - increase increase in carb. infilling - 5-10%, 1-5% py ash fills increasing to 5-10 at 48.9-49.07.
17140	48.0	49.07	1.07					" " "
17141	49.07	50.0	.93					Phreatic Breccia - 3-10% py, 20 carb. in mat.
42	50.0	50.6	0.6					Arseno pyrite Vein { - w/ 20-30% C.A., 80% arseno, 5-10% py 1/2 cpy
43	50.6	50.8	0.2					Fault zone. { 10% carb
44	50.8	51.21	0.41					Ash Tuff
45	51.21	52.21	1.0					Cherty Tuff.
46	52.21	54.0	1.79					" "
47	54.0	56.0	2.0					" "
48	56.0	57.91	1.91					" "
49	57.91	60.1	2.19					And / Pac. Flow
50	60.1	62.0	1.90					Ash Tuff.
51	62.0	64.0	2.0					

P. 2
TEL 604-771-3458
0123 DEASE LK. EXPED.
Jul. 31 '92 16:30

SPECTRUM

Property

DRILL SAMPLE LEDGER 92-89

SSAY TAG No.	SAMPLE INTERVAL		SAMPLE LENGTH		Au	Au _{ppb} Ag	Au _{gt}	Au _{oz/t}	DESCRIPTION
	Metres	Feet	Metres	Feet					
17190	6.10	6.55	0.45			19	.019		Ash Tuff
91	6.55	7.99	1.44				.01	.001	Crowded Feldspar Porphyry
92	7.99	8.23	0.24				.03	.001	Altered Rock - str broken poor recovery - str carb & silicified w/ 10% sugar text py
93	8.23	12.5	4.27				.06	.002	Rhyodacite?
94	12.5	15.5	3.0				.02	.001	- rubbly oxidized 5.5% recovery
95	15.5	18.29	2.79			10			
96	18.29	20.0	1.71			13			Ltg sig siliceous in 1-3L. alumina py
97	20.0	22.0	2.0			11			str cracked infilled w/ chlorite minerals
98	22.0	24.0	2.0			43			carbonate
99	24.0	25.6	1.6			33			" " " "
17200	32.3	33.5	1.2				.01	.001	Amygd. Andesite/dacite Flow.
201	33.5	34.67	1.17			8			" " " "
02	34.67	35.5	0.83				.02	.001	Cherty Tuff/Clud. w/ bands of py. up to 10%.
03	35.5	36.12	0.62				.02	.001	" " " "
04	36.12	37.0	0.88				.01	.001	Amygd. And./Dac Flow
05	37.0	38.0	1.0				.01	.001	" " " "
06	38.0	40.54	2.54			5			" " " "
07	40.54	41.5	0.96				.08	.002	Cherty Tuff

SPECTRUM

Property

DRILL SAMPLE LEDGER 92-89

SSAY TAG No.	SAMPLE INTERVAL		SAMPLE LENGTH		Au PRG. %	Au 3/t	Au 02/t	DESCRIPTION
	Metres	Feet	Metres	Feet				
17208	41.5	42.05	0.55			.04	.001	Cherty Tuff
09	42.05	42.50	0.53		25	.		Amalg. And/Dac. Flow
17210	42.50	43.50	1.0			.31	.009	Breccia - carb matrix
11	43.50	44.12	0.54			.12	.004	And/Dac. Flow
12	44.12	44.56	0.44			.63	.018	Arsenopyrite vein - at 25% C.A. - ~ 80% arsenic 20% carb
13	44.56	45.9	1.34			.08	.002	Amalg. And/Dac. Flow
14	45.9	46.7	1.0			0.10	.003	Rhyodacite
15	46.9	48.2	1.3			0.11	.003	" "
16	48.2	50.05	1.85		50			Breccia - similar to above
17	50.05	51.6	1.55		56			Cherty Tuff
18	51.6	53.6	2.0		35			Dacite/Rhyodacite
19	53.6	55.0	1.4		23			" " "
17220	55.0	57.0	2.0		62			Cherty Tuff.
21	57.0	59.0	2.0		91			" "
22	59.0	61.0	2.0		39			" "
23	61.0	63.0	2.0		61			" " / And/Dac Flow
24	63.0	65.0	2.0		27			Cherty Tuff
25	65.0	67.7	2.7		165			" "
26	89.0	91.0	2.0		20			" "

SPECTRUM

Property

DRILL SAMPLE LEDGER 92-89

ESSAY TAG No.	SAMPLE INTERVAL		SAMPLE LENGTH		Au	Au ppb	Au g/t	Au oz/t	DESCRIPTION
	Metres	Feet	Metres	Feet					
17227	91.0	93.0	2.0			12			Cherty Tuff.
28	93.0	94.6	1.6				.87	.025	" "
29	94.6	95.6	1.0				.06	.002	" "
17230	95.6	96.05	0.45				.03	.001	Tuff. - str chloritic - 5% chert
31	96.05	96.2	0.15				.14	.004	Silicified Rock ~ 3% chert
32	96.2	97.2	1.0				.01	.001	Amyd. Andesite
33	97.2	98.2	1.0				.01	.001	" "
17234	98.2	99.2	1.0			4			" "
					End of hole. 99.2				

P. 4
TEL 684-771-3458
0123 DEASE LK. EXPED.
Jul. 31 '92 16:32

COLUMBIA GOLD MINES LTD. SPECTRUM PROPERTY

 DRILL HOLE No. 92-90

LITHOLOGIC LOG

 PAGE 1 of 8

FROM	TO	UNIT CODE	LITHOLOGY	ALTERATION								MINERALIZATION						ZONE		
				SI	QV	SE	CY	CH	EP	CB	KF	PY	CP	AS	PO	VG	MG		LM	
0	15.24		Casing. Note: drill was set up on clay altered bedrx.																	
15.24	22.25	AH, Tuff.	<u>ALTERED TUFF</u> 15.24 - 19.10 Pale greenish (waxy), f-g rock. mod-rsw. silica altered; mod-str clay altered w/ wk sericite. Rock is somewhat pitted, containing ~ 5-10% fine dissemin py. Rock is str fr'd (crackled w/ str limonite on fr's. 19.10 - 22.25 Somewhat darker color. with stronger clay altera - wk silica; wk sericite again w/ ~ 5-10% py finely dissemin. Section - 20.12 - 22.25 is strongly broken with only 24% recovery.	M to S.		wk	str							5 to 10					str	
22.25	25.76	AT	<u>ASH TUFF</u> Med green f-g tuff str chloritic w/ ave 3-5% dissemin py (up to 10%) w/minor dissemin cop (< 1% Rock is crackled w/ wht carb infilling 5%; mod-wk lim. on fr's					str	5%						3 to 10	hing				
25.76	26.47	ALT. TUFF	<u>ALTERED TUFF?</u> Lt grey bleached rock. w/ str wht-pink carb vining - rock - is mod-str silicified. w/ ~ 10% fine py. - some clay gouge (1.5cm) } part. clay altera. - Strongly broken rock.	M to str			Md							10						

COLUMBIA GOLD MINES LTD. SPECTRUM PROPERTY

 DRILL HOLE No. 92-90

LITHOLOGIC LOG

 PAGE 2 of 8

FROM	TO	UNIT CODE	LITHOLOGY	ALTERATION								MINERALIZATION						ZONE					
				SI	QV	SE	CY	CH	EP	CB	KF			PY	CP	AS	PO		VG	MG			
26.47	31.09		<p style="text-align: center;"><u>ASH TUFF.</u></p> <p>Dark grayish green f-g rock w/ str perm. cll w/ 10-15% dr & dissemin py - str dr'ol. @ 28.85 - rose colored - gypsum or dolom.</p>						v str								10 75						
31.0	34.8		<p style="text-align: center;"><u>SILICIFIED TUFF</u></p> <p>Lt gry str perm. silicified rock w/ wk pink- ish tinge (Ksp) w/ ~ 5% dissemin dr py</p>	v str				wk clay			wk.						5						X
34.8	38.05		<p style="text-align: center;"><u>ALTERED ROCK.</u></p> <p>Lt-med grey strongly altered rock w/ str perm. clay & med silica altered matrix crackled, flooded w/ qtz-carb & drilling & vnts. with up to 10-15 fine dissemin dr py. - wk traces of. con with qtz-carb vning. Rock appears to be fragmental w/ dk more strongly clay altered fragments (upto cm eg at 35.7 m)</p>	M str				str									10 10 15	tr					
			<p style="text-align: center;"><u>FAULT ZONE</u></p> <p>Basically the hole is series of fault zones from 38.85 - 46.32 with strongly broken rock & gouge zones throughout - Very hard to drill.</p>																				
38.05	45.		<p style="text-align: center;"><u>FAULT- GOUGE - BROKEN ROCK.</u></p> <p>Med grey clay gouge strongly clay alter broken rx. - some fibrous gouge - some w/ ~ 3% dissemin. py</p>						v str								3						

COLUMBIA GOLD MINES LTD. SPECTRUM PROPERTY

 DRILL HOLE No. 92-90

LITHOLOGIC LOG

 PAGE 6 of 8

FROM	TO	UNIT CODE	LITHOLOGY	ALTERATION								MINERALIZATION						ZONE							
				SI	QV	SE	CY	CH	EP	CB	KF	PY	CP	AS	PO	VG	MG								
83.52	91.74		ALTERED TUFF/LAPILLI TUFF (HORNFELS) CONT'D.	M				M	SI	M							5								
(Conn'd)					uk			SE		to							10								
			87.17- 91.74 - dk gray f-g rock w/ silic-ksp altered fragments, siliceous - lt gray green w/ ep. - ksp-dk. - cut by py vnls. from 89.0-89.4. - locally med-str carbonate stock work. - Strong chlorite altering up to 5% ep blebs, py - 5-10% dissem. (but up to 15%) minor qtz vnls - fault @ 91.7-																						
91.74	96.4		TUFF	M	uk						M. uk						2	uk							
			Blk f-g -aphan. rx, med-str siliceous weaker py than above (2-3%) Cracked w/ carb infilling cut by qtz vns up to 4mm cut by 2 small monzonite dykelets @ 94.0-94.20 95.5-95.7 @ 20° str clay altered w/ some ksp alter in pink carb vned. Fault at 94.4-94.7 - gauge @ 50' to C.A. Lower corrected faulted from 95.7-96.32. gauge @ 20' to C.A. uk dissem cpy throughout.															3	uk	1					
96.4	99.73		RHYODACITE	Str	uk					uk	M						5	Tr							
			Pinkish brn siliceous rx (peru. ksp altered) w/ str heavy py vnls (2mm) cut by odd qtz vn. dissem blebs of ep ~ 5%. odd dr w/ cpy paint (w 99.06) traces @ 99.6, 5-10% py on dissem, vnls								SE	S.						to	to						

DIAMOND DRILL LEDGER

DDH No. 92-90

ASSAY TAG No.	SAMPLE Metres	INTERVAL Feet	SAMPLE Metres	LENGTH Feet	Ppb AU	oz/t Ag	PPM Cu	% Cu	DESCRIPTION
17235	15.24	17.0	1.76		55		123		Altered Tuff - perv. silica - clay 5-10% py.
17236	17.0	18.0	1.0		106		279		
" 37	18.0	19.0	1.0		51		143		
" 38	19.0	20.0	1.0		19		97		- somewhat more clay altered
" 39	20.0	21.34	1.34		27		132		wk silica! vesicite
17240	21.34	22.25	0.91		34		75		↓ 5-10% py
" 41	22.25	24.0	1.75		180		131		ASH TUFF - str chl - 3-5% py
" 42	24.0	25.76	1.76		175/t	.005		.015	" " "
" 43	25.76	26.47	0.71		132		276		Altered Tuff - 10% fine py, strongly broken w/ wht - pink carbonizing - thin rose gypsum/dol. - str chl - 10-15% py.
" 44	26.47	28.5	2.03		859		157		ASH Tuff
" 45	28.5	30.0	1.5		432		204		" " " "
" 46	30.0	31.09	1.09		71		176		" " " "
" 47	31.09	32.0	0.91		650		211		SILICIFIED Rock - 10-15% py trace scry
" 48	32.0	33.0	1.0		44		114		" " "
" 49	33.0	34.0	1.0		59		96		" " "
17250	34.0	34.8	0.8		910		54		" " "
" 51	34.8	36.0	1.2		60		103		Altered Rock - mod silica 10-15% py - str perv. clay, tr cap
" 52	36.0	37.0	1.0		27		117		" " "
" 53	37.0	38.05	1.05		19		18		" " "
54	38.05	39.0	0.95		02		30		Fault Gange - broken - clay gange

003

J. T. Thomas Ltd.

0847 5030

14:30

08/05/02

DIAMOND DRILL LEDGER

DDH No. 92-90

ISSAY TAG No.	SAMPLE Metres	INTERVAL Feet	SAMPLE LENGTH Metres	LENGTH Feet	ppb Au	Ag	ppm Cu	DESCRIPTION
17255	39.0	40.0	1.0		26		89	Fault - ^{2-5% py} Gouge - broken rock (with silica)
56	40.0	40.84	0.84		14		61	" " " "
57	40.84	42.37	1.53		13		49	" " " "
58	42.37	43.59	1.22		258		96	" " " "
59	43.59	44.20	0.61		372		170	" " " "
17260	44.20	45.40	1.20		148		285	" " " "
61	45.40	46.33	0.93		180		416	Altered Tuff - gray blue rock
62	46.33	47.55	1.22		82		329	- bio - sil. altered, CPy @ 48.4%
63	47.55	49.99	2.44		891		1360	strongly faulted,
64	49.99	51.51	1.52		434		1205	" " " "
65	51.51	52.4	0.89		594		1120	" " " "
66	52.4	53.64	1.24		276		707	Altered Rock - strongly carbonated
								rx w/ wht pinkish carb ~ 5% py
67	53.64	54.86	1.22		355		1145	MONZONITE - clay altered, bio
68	54.86	56.39	1.53		966		1120	secondary, 3% py, traces cpy
69	56.39	57.61	1.22		264		732	
17270	57.61	59.13	1.52		356		696	
71	59.13	60.35	1.22		395		785	
72	60.35	62.0	1.65		257		721	
17273	62.0	64.31	2.31		220		746	

J. T. Thomas Ltd.

8847 5038

14:31

08/05/92

2005

DIAMOND DRILL LEDGER

DDH No. 92-90

ASSAY TAG No.	SAMPLE INTERVAL		SAMPLE LENGTH		ppb Au	oz/t Ag	ppm Cu	g/ Cu	DESCRIPTION
	Metres	Feet	Metres	Feet					
17274	64.31	65.0	0.69		348		588		<u>Ksp-silica Altered Rx</u>
75	65.0	67.36	2.36		590		1140		<u>Altered Rx - Hornfels Tuft?</u>
76	67.36	68.88	1.52		638		1070		-bluish rx w/ 10-15% py, Ksp altam
77	68.88	70.41	1.53		451		1170		wk locally, -strongly bikeyed por
78	70.41	71.93	1.52		341		1045		recovery, mod-str siliceous.
79	71.93	74.07	2.14		267		1160		" " "
17280	74.07	75.90	1.83		789		1385		<u>Altered Tuft</u> - prev. ep-silica
81	75.90	77.55	1.65		790		1780		wk Ksp, cut by qtz-carbonat ^t
									& pink carb units, 10-15% py.
82	77.55	77.70	0.16		178		834	←	Grey - qtz un-2cm @ 30°:
83	77.70	78.94	1.24		.23 't.	.007	.082		as above
84	78.94	79.10	0.16		926		2400	←	Galena, sphal, cpy - freibergite? un- 1.5cm @ 60%
85	79.10	80.27	1.17		345		1210		
86	80.27	81.69	1.42		279		1090		
87	81.69	82.60	0.91		145		937		
88	82.60	83.52	0.92		186		726		
89	83.52	85.65	2.13		378		942		<u>Altered tuft. / Lapilli tuft.</u>
17290	85.65	87.48	1.83		221		781		- grey gran biot rich.
91	87.48	88.70	1.22		169		730		10% py, some, some qz un.

J. T. Thomas Ltd.

8847 5038

14:31

08/05/92

ASSAY TAG No.	SAMPLE INTERVAL		SAMPLE LENGTH		Au	Ag	Cu	DESCRIPTION
	Metres	Feet	Metres	Feet				
7292	88.70	90.22	1.52		394		813	Altered Tuff / Lapilli tuff cont'd.
93	90.22	91.74	1.52		283		845	- dk grey rock w/ siliceous sp & bedding.
94	91.74	93.57	1.83		200		798	- strong chl. alteration w/ 5% ep blebs 5-10% py., minor qtz incls.
95	93.57	95.10	1.53		392		2040	TUFF w/ py 2-3%, cracked w/ carb in filling cut by monz. dykelets, wk dissemin. cpy.
96	95.10	96.4	1.3		447		1940	Rhyodacite
97	96.4	97.84	1.44		204		1110	5-10% py, pink siliceous rx, wk cpy dr " " "
98	97.84	99.06	1.22		144		771	" " "
99	99.06	99.73	0.67		164		1020	" " "
17300	99.73	100.89	1.16		205		1215	Silicified - Hornfels Tuff.
01	100.89	101.96	1.07		564		3670	- 5-10% dissemin. & fr py, strong. cpy strong - 101.2 - 101.6 ~ 5% cpy.
	101.96	102.63	0.67		498		2430	MONZONITE
03	102.63	103.63	1.0		346		1190	~ 15% bio some s second, 5% dissemin py & cpy up to 1%, cut by qtz on stock work.
04	103.63	105.16	1.53		318		1420	Hornfels - chloritic Tuff
05	105.16	106.63	1.47		299		1300	w/ biot / chl. blk - med greenish rx,
06	106.63	106.98	.35		364		1295	relatively siliceous ~ 10% py, trace to 1% py.

007

DIAMOND DRILL LEDGER

DDH No. 92-90

ASSAY TAG No.	SAMPLE INTERVAL Metres	INTERVAL Feet	SAMPLE LENGTH Metres	LENGTH Feet	Au	Ag	Cu	DESCRIPTION
17307	106.98	108.2	1.22		230		1280	Hornfels-chloritic Tuff.
08	108.2	110.03	1.83		168		854	as
09	110.03	111.30	1.27		262		851	
17310	111.30	112.17	0.87		315		1715	
11	112.17	113.39	1.22		210		800	
12	113.39	114.60	1.21		213		1050	
13	114.60	115.82	1.22		331		1180	
14	115.82	117.2	1.38		183		1295	
15	117.2	118.26	1.06		154		977	Tuff
16	118.26	119.79	1.53		143		1050	117.20-121.3 - str chloritic w/ep!
17	119.79	120.70	0.91		116		1185	~5% fr py.
18	120.70	122.22	1.52		305		1290	121.31-125.27 - str chloritic w/ 10-15%
19	122.22	124.36	2.14		95		857	dissem fr py cov of 121.3-122.22. w/
20	124.36	126.0	1.64		153		846	hem on fr's.
21	126.0	128.0	2.0		257		1240	125.27-126.8. - more siliceous w/ and-str
								ep. ~3% py. hem fr's
17322	128.0	129.84	1.84		209		1035	126.8-129.84 - str chl, 1-2% py.
								End of hole 129.84.

J. T. Thomas Ltd.

647 5030

14:33

08/05/82

COLUMBIA GOLD MINES LTD. SPECTRUM PROPERTY

 DRILL HOLE No. 92-91

LITHOLOGIC LOG

 PAGE 1 of 7

FROM	TO	UNIT CODE	LITHOLOGY	ALTERATION							MINERALIZATION						ZONE						
				SI	QV	SE	CY	CH	EP	CB	KF	PY	CP	AS	PO	VG		MG					
0	18.59		<u>OVERBURDEN</u> Blders of straggly and amygdaloidal basalt - Mt Ediza Volc.																				
18.59	20.2		<u>FAULT.</u> Gray clay gouge, w/ fragments of siliceous rx, 4.5 cm rounded frag of massive brecciated py w/ some ksp adhering.																				massive py frag.
20.2	30.0		<u>SILICEOUS RX (Rhyolite - Silicified Tuff)</u> lt gray v. str siliceous aphan - v-d-g rx. Rx contains 10-15% fine gr'd dissem py. At 23.5-24.5 - possible amys; fine ksp? Mod-wkly chloritic 28.2-29.0. - w/wk pow. clay; sericite altera Faulted 29.87-30.0	V str		wk																	10 to 15.
30.0	36.58		<u>SILICIFIED RX</u> v-str. silicified and clay altered rx - textures completely destroyed w/ 5% fine dissem py. - section 35.05 to 36.58 - more silica less clay - Rock is lt gray & whitish in more stronger clay altered section. Section 30.0 - 32.95 Faulted.	V str																			5%
36.58	44.8		<u>CHLORITIC - SILICEOUS TUFF</u> Fine gr'd siliceous rx mod-sil. Chloritic locally w/ str dissem. py - 10-15%, some wk bedding w/	M str																			10 to 15.

COLUMBIA GOLD MINES LTD. SPECTRUM PROPERTY

 DRILL HOLE No. 92-91

LITHOLOGIC LOG

 PAGE 4 of 7

FROM	TO	UNIT CODE	LITHOLOGY	ALTERATION							MINERALIZATION						ZONE		
				SI	QV	SE	CY	CH	EP	CB	KF	Bio	PY	CP	AS	PO		VG	MG
72.6	79.10		<u>MONZONITE CONT'D</u>																
	<i>Cont'd</i>		76.05 - 79.10 med grd monz, med-str altered by qtz, qtz carb - py + cpy. w/str Ksp haloes. cpy with qtz-carb vns as w/ as in micro dls w ~ 70-80° possibly some v-line assembly. w/ cpy in some fr system. dissem traces of Sphal at 76.8. cpy up to 3% locally. Traces of Mn dissem. in qtz vns ~ 50° (are cut by micro dling.) biot. appears to be secondary in part w/ line aggregates, - * bnd of Torn w/ 25% py - ser - qtz w 77.72 Fault 77.4 - 77.72 w/ str clay gauge	M		str					str		1-2 to 3%	Tr					Tr
79.10	92.32		<u>BIOTITE ALTERED RX.</u>																
			79.10 - 81.38 Blk f-g - aphen. biotite rich rock w/str py dissem. ~ 10%, v. str vnts at contact w/ monz. 20% py (2mm vnts). Traces dissem cpy 81.5. - str broken & faulted rx. 80.6 - 80.9 - gouge w/ str carb. 81.38 - 86.56 similar to above w/ areas of local pinkish coloration (Ksp) w/ minor ex. bleb. - py ~ 15-20% dissem., cut by wht - pink carb vnts fr dills. - sheared & str faulted w 50° to c.a. Gauge zones - 82.5 - 82.8, 84.43 - 85.10 w 20% c.a. as fine fr dills - str in gouge zones. 86.5 - 91.44 similar to above w/ 10-15% dissem, fine hll fr dills w/ str carb & dilling (wht & pink) Tr cpy at 86.3 dissem, local Ksp w/ ex. sheared w 50° to c.a. v. str carb 89.3 - 91 sheared flow dills - 88.4 - 88.7 in n-brn bands - 87 - waxy alteration	uk							M, uk str		10 fr						
													10 to 15						
													10 to 15						

DIAMOND DRILL LEDGER

DDH No. 92-91

DAY TAG No.	SAMPLE INTERVAL		SAMPLE LENGTH		ppb Au	oz/t Ag	ppm Cu	% Cu	DESCRIPTION
	Metres	Feet	Metres	Feet					
17323	18.59	20.2	1.61		589				Fault
24	20.2	21.7	1.5		155				Siliceous R. (Rhyolite - Silicified Tuff)
25	21.7	23.0	1.3		92				- v. str siliceous, 10-15% py, med chl
26	23.0	24.5	1.5		39				" " " "
27	24.5	26.0	1.5		101				" " "
28	26.0	27.5	1.5		115				" " "
29	27.5	29.0	1.5		54				" " "
17330	29.0	30.0	1.0		95				Faulted 29.87-30.0
31	30.0	31.5	1.5		41				SILICIFIED R. -
32	31.5	33.0	1.5			1002	.005		silicified 1/2 clay altered - text. destroyed. 5% fine py.
33	33.0	34.5	1.5		14				Faulted 30.0 - 32.95.
34	34.5	35.5	1.0		21				" " " "
35	35.5	36.58	1.08		68				" " " "
36	36.58	38.0	1.42		47				Chlorite - Siliceous Tuff.
37	38.0	39.5	1.5		67				- 10-15% py dissemin, siliceous med-str chl.
38	39.5	41.0	1.5		51				" " " "
39	41.0	42.8	1.8		41				" " " "
17340	42.8	44.8	2.0		24				" " " "
41	44.8	46.0	1.2		26				Rhyolite / Rhyodacite
17342	46.0	47.5	1.5		42				str siliceous R. w/ iron sep, 5-10% cherty.

PAGE 04

UITH-BOB GUINN LK FAX 604-237-3011

DIAMOND DRILL LEDGER

DDH No. 92-91

PAGE 05

VIH-BOB GUINN LK FAX 604-237-3011

DAY TAG No.	SAMPLE INTERVAL		SAMPLE LENGTH		Au	Ag	Cu	DESCRIPTION
	Metres	Feet	Metres	Feet				
17343	47.5	49.0	1.5		24		169	<u>Rhyolite / Rhyodacite cont'd.</u> ↓
4	49.0	51.36	2.36		62		164	
5	51.36	51.56	0.2		121		120	
6	51.56	52.73	1.17		89		96	
7	52.73	53.64	0.91		393		430	
8	53.64	57.61	3.97	(10.3% recovery)	53		403	
9	omit	(V. poor recovery)						
17350	omit	(no omitted samples)						
1	57.61	59.0	1.39		625		2240	
2	59.0	59.74	0.74		620		1860	
3	59.74	61.57	1.83		649		2040	up ~ 2-3 diam. 1 in py ± 1-1.5% of diam. var.
4	61.57	62.18	0.61		513		1790	↓
5	62.18	64.31	2.13		342		1810	
6	64.31	65.23	0.92		462		731	<u>Biotite Altered R.</u>
7	65.23	66.5	1.27		240		1250	
8	66.5	67.8	1.3		285		2090	
9	67.8	67.97	0.17		534		1140	blk coloration due to mix. of bro-clay-sar, 10-15% Fault gouge 67.8-67.97.
17360	67.97	69.49	1.52		461		1215	as above up 15% py, minor hem.
1	69.49	70.41	0.92		431		1105	" " "
2	70.41	71.93	1.52		349		1380	" " "

355
323

32

DIAMOND DRILL LEDGER

DDH No. 92-91

PAGE 06

VIH-BOB GUINN LK FAX 604-237-3011

DAY TAG No.	SAMPLE INTERVAL		SAMPLE LENGTH		Au	Ag	PPM Cu	% Cu	DESCRIPTION
	metres	Feet	metres	Feet					
17363	71.93	72.6	0.67		213		1825		<u>Biotite Altered R.</u> Cont'd
64	72.6	74.0	1.4		933		1680		<u>Monzonite</u> .
65	74.0	75.0	1.0		771		1110		qtz vns w/ Ksp holes, minor cpy in vns
66	75.0	76.0	1.0		765		1430		§ decom. From 76.05 - 76.10 Main.
67	76.0	77.0	1.0				.035	.424	qtz vns, trace of Sphal @ 76.0 - cpy.
68	77.0	78.0	1.0				.061	.163	upto 3% locally - 7cm band of cpy (25%) - see
69	78.0	79.10	1.10				.025	.239	qtz at 77.72.
17370	79.10	80.47	1.37				.058	.241	<u>Biotite Altered R.</u>
71	80.47	81.5	1.03				.053	.240	Trace of decom cpy, py 110% up to
72	81.5	82.5	1.0		1225		2010		20% at contact w/ monzonite
73	82.5	84.0	1.5		867		1390		
74	84.0	85.5	1.5		851		1720		
75	85.5	87.0	1.5		877		1045		
76	87.0	88.5	1.5		437		879		
77	88.5	90.0	1.5		238		607		
78	90.0	91.0	1.0		151		563		
79	91.0	92.32	1.32		401		1085		91.44 - 92.35 - str pink carb
17380	92.32	93.5	1.18		136		572		<u>Tuff</u>
81	93.5	95.0	1.5		136		536		w/altering of biotite alter from monzonite to
82	95.0	96.5	1.5		115		513		halos on carb-qtz units, Tr cpy, 13.5 decom py.

370
355
370
323
114 = 45

DIAMOND DRILL LEDGER

DDH No. 92-91

AY TAG No.	SAMPLE INTERVAL		SAMPLE LENGTH		Au	Ag	Cu	DESCRIPTION
	Metres	Feet	Metres	Feet				
17403	126.5	128.0	1.5		570		1145	<u>Biotite Rich Rx (Horakob).</u>
04	128.0	129.0	1.0		196		720	↓
05	129.0	130.3	1.3		269		1105	
17406	130.3	131.37	1.07		266		1735	<u>Mistake - ground core - some silice.</u>
								frag: ksp altered frag w/ cpq; up 5
								10% py.
								End of hole 131.37.

406
323
83

24 02
-2

DIAMOND DRILL LEDGER

DDH No. 92-91

PAGE 07

VIH-BOB GUINN LK FAX 604-237-3011

DAY TAG No.	SAMPLE INTERVAL		SAMPLE LENGTH		Alum	Ag	Cu	DESCRIPTION
	Metres	Feet	Metres	Feet				
17383	96.5	98.0	1.5		59		414	Tuff cont'd.
84	98.5	99.5	1.5		81		420	
85	99.5	101.8	2.3		113		323	Rhyodacite.
86	101.8	103.33	1.53		114		412	3-5% diam py. - str fr' w/ py: chl.
87	103.33	104.6	1.27		241		543	
88	104.6	105.6	1.0		201		1095	Altered R.
89	105.6	107.0	1.4		287		1365	5-10% py. 1+ brn - Heavy str clay altered. w/ minor calcite
17390	107.0	108.5	1.5		224		1070	<u>5. HORITE - EPIDOTE - BIOTITE ALTERED R. (Hornbl)</u>
91	108.5	110.0	1.5		234		1285	10% diam {str py.
92	110.0	111.5	1.5		307		1050	
93	111.5	113.08	1.58		282		1155	
94	113.08	114.5	1.42		164		1115	
95	114.5	116.0	1.5		185		910	
96	116.0	117.5	1.5		272		1270	
97	117.5	119.0	1.5		180		1055	
98	119.0	120.5	1.5		368		1040	
99	120.5	122.0	1.5		346		1720	<u>Biotite Rich Rock (Hornbl)</u>
17400	122.0	123.5	1.5		291		930	
01	123.5	125.0	1.5		431		1135	
02	125.0	126.5	1.5		308		1725	

COLUMBIA GOLD MINES LTD. SPECTRUM PROPERTY

 DRILL HOLE No. 92-92

LITHOLOGIC LOG

 PAGE 1 of 10

FROM	TO	UNIT CODE	LITHOLOGY	ALTERATION								MINERALIZATION						ZONE	
				SI	QV	SE	CY	CH	EP	CB	KF	h ₂ O	PY	CP	AS	PO	VG		MG
0	15.24		CASING																
15.24	16.5		TUFF lt. gry-grn w/ brownish tinge locally f-g tuff (possible f-g rawnked tuff) w/ minor to 3-5% dissem py. med chl - cracked infilled w/ ~5% wht carb mod fr'd w/ 50% C.A.					M.		5%				Minor to 3-5%					
16.5	17.37		FAULT ZONE 16.5-17.22 broken rock. relative siliceous frag. & volcanoclastic fragments w/ ~5% dissem py 17.22-17.37 str lim. gouge											5%					
17.37	17.90		RHYODALITE Lt orange colored (to pinkish) (Ksp?) rhy - relatively siliceous w/ ~10% $\leq 1\text{mm}$ whitish fsp x lts. Rock is wky crackled w/ py & ep stringers & ep alter'n of fine fsp. - Total py ~ 5% dissem; fr fills lower contact irregular @ 70° to C.A. ~ w/ 5% fr 'fills' vults w/ wht carb.	M.				wk	wk	5%	?	?	5%						
17.90	19.35		TUFF/LAPILLI TUFF Dark greyish green str chloritic fragmental & f-g rock. Chloritic fragments to 7mm w/ ~3% dissem py. w/ ~5-10% wht carbons and fr fills.					str		5			3						

DIAMOND DRILL LEDGER

DDH No. 92-92

DAY TAG No.	SAMPLE INTERVAL		SAMPLE LENGTH		ppb	g/t	Cu	% Cu	DESCRIPTION
	Metres	Feet	Metres	Feet	Au	Au			
17407	15.24	16.5	1.26		684		102		0-15.24 <u>Casing</u> 15.24-16.5 - <u>TUFF</u> - 3-5% dissemin. py., mod. cl.
08	16.5	17.37	0.87		524		26		16.5-17.37 - <u>FAULT zone</u>
09	17.37	17.90	0.53		121		144		17.37-17.90 <u>Rhyodacite</u> - 5% py, py lep stamp.
17410	17.90	19.35	1.45		90		233		17.90-19.35 <u>Tuff/Lapilli Tuff</u> - 3% dissemin. py.
11	19.35	20.42	1.07		179		6		19.35-20.42 <u>Chert</u> - pink coloration - less. 3-5%
12	20.42	21.2	0.78		116		9		20.42-21.2 <u>Tuff</u> 1-2% py.
13	21.2	22.7	0.5		197		6		21.2-26.21 <u>Fault zone</u> - limonitic gouge
14	22.7	23.7	1.0		40		3		
15	23.7	25.0	1.3		64		11		
16	25.0	26.21	1.21		34		7		
17	26.21	26.80	0.59		15		6		26.21-26.80 <u>Tuff</u> 1-2% py. few cl.
18	26.80	27.13	0.33		45		23		26.80-27.13 <u>Volcanoclastic</u>
19	27.13	28.65	1.52		122		16		27.13-28.65 <u>Feldspar Hornblende Porphyry</u>
17420	28.65	29.10	0.45		239		146		28.65-29.10 <u>Volcanic Conglomerate</u>
21	29.10	30.5	1.4			1.18		.107	29.10-33.60 <u>Feldspar Hornblende Porphyry</u>
22	30.5	32.0	1.5			2.73		.014	w/ dissemin. py. from. 1 to 5%.
23	32.0	33.60	1.6			1.16		.024	- trace - w/ mal., mod tenorites
24	33.60	35.0	1.4		265		20		33.60-42.06 <u>Volcanoclastic</u>
25	35.0	36.50	1.5		263		68		2-3% dissemin. py., limonite fr's,
17426	36.50	38.0	1.5		298		35		

DIAMOND DRILL LEDGER

DDH No. 92-92

DAY TAG No.	SAMPLE INTERVAL		SAMPLE LENGTH		PPB	g/t	PPM	%	DESCRIPTION
	Metres	Feet	Metres	Feet	Au	Au	Cu.	Cu	
17427	38.0	39.5	1.5		392		22		<u>Volcanoclastic</u> Cont'd
28	39.5	41.0	1.5		243		10		
29	41.0	42.25	1.25			0.74		0.031	42.06-42.25 + <u>Lapilli Tuff.</u>
17430	42.25	43.25	1.0			0.35		0.070	42.25-44.2 <u>Volcanoclastic</u>
31	43.25	44.5	1.25			0.44		0.043	w/ 5-10% dissem py. fr. minor cpy; mal.
32	44.5	46.0	1.5			0.44		0.015	44.2-49.68 <u>Cherty Tuff.</u>
33	46.0	47.0	1.0			0.18		0.021	-3-5% dissem py. trace dissem cpy.
34	47.0	48.0	1.0			0.20		0.012	" " "
35	48.0	49.0	1.0			0.32		0.032	" " "
36	49.0	49.68	0.68			0.26		0.038	" " "
37	49.68	51.0	0.32		174		416		49.68-51.0 <u>Cherty Lapilli Tuff.</u> 3-5 py fr cpy
38	51.0	52.12	1.12		107		145		51.0-52.06 <u>Cherty Tuff.</u> 1-2 py.
39	52.12	53.5	1.38		150		159		52.06-52.12 <u>Fault.</u>
17440	53.5	55.0	1.5		147		148		52.12-61.5 <u>Cherty-Siliceous Tuff</u>
41	55.0	56.5	1.5		104		291		10-20% py, strgly siliceous, wkly chloritad.
42	56.5	58.0	1.5		195		266		" " "
43	58.0	59.5	1.5		87		127		" " "
44	59.5	61.5	2.0		122		201		" " "
45	61.5	62.7	1.2		112		202		61.5-62.7 <u>Biotite-Clay Altered Tuff.</u> 10% py.
46	62.7	63.4	0.7		465		138		62.7-63.4 <u>Conge/Biotite Altered Rock.</u> - 5% py.

446
12.20.20

SPECTR

SURFACE SAMPLES Property

SAMPLE LEDGER

SAY TAG No.	SAMPLE INTERVAL		SAMPLE LENGTH		ppb Au	Ag	ppm Cu	DESCRIPTION
	Metres	Feet	Metres	Feet				
17001	bldn sample				63		111	East Creek Area - ~ Hawk Cairns. Siliceous fuff, str lim. bldn up to 2% dissemin py. 500 Color - 28.5m @ 54.5° from 90-62
17002	grab.				.16g		.008%	Trench 11 - possible some arseno - str limonite. surface sample at 92-90 drill site.
17003	0	2.0	2.0		250		150	str lim. w/ 5-10% py - fuff of chl. w/ silica. Porph. & E. Ext. 107m @ 85.5° from 91-78
17004	2.0	1.0	1.0		46		473	20-1m. E of arsenopy. vn. chl - fuff w/ carb. brills. - silicified w/ 10% dissemin py., .5% dissemin cpy.
17005	1.0	0.0	1.0		.15g		.004%	1.0-0.0m. as per 17004.
17006	0	0.2	0.2		5.65		.165	ARSENOPYRITE VEIN 7cm arsenopyrite vn. @ 172°/86° W. ^{hand. win} - 30cm in ^{active.}
17007	0	1.0	1.0m.		.03		.001	0-1.0 m. west of vein - grey blk rx w/ qtz stringers ~ 10% dissemin py
17008	4.0	6.m.	20m		28		345	4-6.0 m. west of vein - gouge - clay limonite. Traverse from 91-78 - 240m @ 35.5° in main creek.
17009	0	.13m	.13m.		5.14		.150	13cm Arsenopyrite vn @ 105°/52° W cuts Monz. Same vn as 17009, other side of creek. down ~ 2m. from 1.
17010	0	1.0	1.0m.		2.80		.082	1m sample across vn. Continue above traverse - 160 m at 35.5° from main creek.
17011	0	2.0	2.0		14		114	str clay altered limonite rx (volc?) ^{down creek trib} 170-195m. from top From 0-47.8 - 49.8. str limon. - chl. rx at contact w/ Monzonite.
17012	0	2.0	2.0		6		127	PROSPECT Au/Cu Geochem Anomalies. L 10775N 9827E - outcrop - silicified. gossorous. Volcanic rx w/ pinkish tinge. round mound - moss covered. as above.
17014	grab.				15		204	- str. pyritic subcrop. w/ ~ 20% py. 54m North of 11,000N 9850E, rubble O.C.
17015	grab.				9		79	limonite - f-g - siliceous rx. 46m E of 11,200N 9850E
17016	grab.				20		234	- f-g siliceous rx w/ ~ 3% dissemin po. - Rhyodacite? 75m E of 11,200N 9850E - outcrop.
17017	grab.				7		29	limonite - breccia near felsic intrusive. 49m at 147° from above location.
17018	grab.				11		116	- pyritic felsic intrusive. 21m @ 190° from 40m E of 10,800N, 10,200E
17019	grab				18		380	Hornfels. Volc. w/ 3% py & tr cpy

DIAMOND DRILL LEDGER

DDH No. 92-92

DAY TAG No.	SAMPLE INTERVAL		SAMPLE LENGTH		ppb	g/t	ppm	%	DESCRIPTION
	Metres	Feet	Metres	Feet	Au	Au	Cu	Cu	
17427	38.0	39.5	1.5		392		22		<u>Volcanoclastic</u> Cont'd
28	39.5	41.0	1.5		243		10		
29	41.0	42.25	1.25			0.74	0.031		42.06-42.25 + <u>Lapilli Tuff.</u>
17430	42.25	43.25	1.0			0.35	0.070		42.25-44.2 <u>Volcanoclastic</u>
31	43.25	44.5	1.25			0.44	0.043		w/ 5-10% dissem py, Tr-Munro CPY; mal.
32	44.5	46.0	1.5			0.44	0.015		44.2-49.68 <u>Cherty Tuff.</u>
33	46.0	47.0	1.0			0.18	0.021		-3-5% dissem py. traces dissem CPY.
34	47.0	48.0	1.0			0.20	0.012		" " "
35	48.0	49.0	1.0			0.32	0.032		" " "
36	49.0	49.68	0.68			0.26	0.038		" " "
37	49.68	51.0	0.32		174		416		49.68-51.0 <u>Cherty Lapilli Tuff.</u> 3-5 py, Tr CPY
38	51.0	52.12	1.12		107		145		51.0-52.06 <u>Cherty Tuff.</u> 1-2 py,
39	52.12	53.5	1.38		150		159		52.06-52.12 <u>Fault</u>
17440	53.5	55.0	1.5		147		148		52.12-61.5 <u>Cherty-Siliceous Tuff</u>
41	55.0	56.5	1.5		104		291		10-20% py, strgly siliceous, w/ky chloritad.
42	56.5	58.0	1.5		195		266		" " "
43	58.0	59.5	1.5		87		127		" " "
44	59.5	61.5	2.0		122		201		" " "
45	61.5	62.7	1.2		112		202		61.5-62.7 <u>Biotite-Clay Altered Tuff.</u> 10% py
46	62.7	63.4	0.7		465		138		62.7-63.4 <u>Gougeon / Biotite Altered Rock.</u> - 5% py.

DIAMOND DRILL LEDGER

DDH No. 92-92

DRILL TAG No.	SAMPLE Metres	INTERVAL Feet	SAMPLE Metres	LENGTH Feet	ppb Au	g/t A	PPM Cu	% Cu	DESCRIPTION
17447	63.4	64.92	1.52		103		288		63.4-67.36 <u>Rhyodacite</u>
48	64.92	66.45	1.53		77		246		- 3-5% py, pinkish possible Ksp altered.
49	66.45	67.37	0.92		174		390		
17450	67.36	71.93	4.57	V. poor	195 Recovery.		144		67.36-74.2 <u>Fault Zone</u>
51	71.93	74.2	2.27	V. poor	209 Recovery.		496		volcanoclastic frag & Ksp altered. Siliceous frag.
52	74.2	75.5	1.3		215		407		74.2-79.0 <u>Monzonite</u>
53	75.5	77.0	1.5		320		872		wkly dissemin. cpy, to 78.03.
54	77.0	78.5	1.5		285		749		mod. - str chloritized & clay altered w/ gougy interbeds
55	78.5	79.0	0.5		504		1085		79.0 m.
56	79.0	80.5	1.5		496		2610		79.0-84.1 <u>Biotite Altered. Crystall. Tuff.</u>
57	80.5	81.5	1.0			.49		0.253	cpy is wkly dissemin w/ carb units. - r.kis
58	81.5	82.5	1.0		631		3270		str broken & faulted. From 81.38-84.2 Increase
59	82.5	83.5	1.0			.77		.446	in cpy from .5 to 3% cpy. minor sphalerite & carb.
17460	83.5	84.1	0.6			.56		.393	qtz un. @ 82.75, dissemin MoS ₂ at 82.95
61	84.1	85.5	1.4			.67		.098	84.1-99.8 <u>Monzonite</u>
62	85.5	87.0	1.5			.64		.12	- perm. chl. - clay altered, Ksp altered -
63	87.0	88.0	1.0		692		1440		of mineral fsp & halos. qtz un. ± py ± cpy.
64	88.0	89.0	1.0		415		1180		Some good cpy w/ some. qtz un. @ 94.0-94.3.
65	89.0	90.0	1.0		962		3560		MoS ₂ in qtz. un. & dissemin.
66	90.0	91.0	1.0		729		2065		@ 88.7 carb un bx

DIAMOND DRILL LEDGER

DDH No. 92-92

DAY TAG No.	SAMPLE INTERVAL		SAMPLE LENGTH		PPB (Au)	g/t A	PPM (Cu)	% Cu	DESCRIPTION
	Metres	Feet	Metres	Feet					
17467	91.0	92.0	1.0		875		1270		84.1-99.8. <u>Monzonite Cont'd.</u>
68	92.0	93.0	1.0		918		1940		
69	93.0	94.0	1.0		734		1180		
17470	94.0	95.0	1.0		1150		1930		
71	95.0	96.0	1.0		720		1790		
72	96.0	97.0	1.0		940		1035		
73	97.0	98.0	1.0			0.78		0.124	
74	98.0	99.0	1.0			0.62		0.124	
75	99.0	99.8	0.8			0.84		0.131	
76	99.8	101.47	1.67			0.81		0.534	99.8 - 101.47 <u>Biotite Altered Tuff</u>
77	101.47	103.0	1.			0.69		0.148	Fault cont. w/ monz & 35% calc. blk f-g biotite
78	103.0	104.0	1.0			0.42		0.133	rich rock w/ 3% v. fine dissemin cpy. 1-2% py
79	104.0	105.0	1.0			0.67		0.307	101.47 - 125.27. <u>Monzonite:</u>
17480	105.0	106.0	1.0			0.60		0.176	101.47 - 103.0 - 1-2% py. 1.1% cpy.
81	106.0	107.0	1.0			0.57		0.136	103.0 - 108.1 mod-str med. carb, qtz-carb w/
82	107.0	108.0	1.0			0.77		0.094	.1 - .5% cpy. traces of grey mineral arseno?
83	108.0	109.0	1.0			0.58		0.146	
84	109.0	110.0	1.0		632		1585		108.0 - 113.5 w/ 1 - tr cpy, traces monz
85	110.0	111.0	1.0		613		1500		1-2% dissemin py. - interlocking
17486	111.0	112.0	1.0		465		1195		Ksp alkali.

APPENDIX II

1992 LIST OF ANALYTICAL RESULTS, MIN-EN LABS



MIN-EN LABORATORIES
(DIVISION OF ASSAYERS CORP.)

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
FAX (604) 980-9621

SMITHERS LAB.:
3176 TATLOW ROAD
SMITHERS, B.C. CANADA V0J 2N0
TELEPHONE (604) 847-3004
FAX (604) 847-3005

Geochemical Analysis Certificate

2S-0192-RG1

Company: **COLUMBIA GOLD MINES LTD.**
Project: **SPECTRUM**
Attn: **WAYNE ROBERTS**

Date: **AUG-01-92**
Copy 1. **COLUMBIA GOLD, VANCOUVER, B.C.**

We hereby certify the following Geochemical Analysis of 24 CORE samples submitted JUL-27-92 by GEORGE NORMAN.

Sample Number	AU PPB	CU PPM
17051	10	92
17052	6	121
17053	25	88
17054	5	102
17055	1	78
17056	159	153
17057	13	174
17058	4	124
17059	11	127
17060	19	143
17066	187	114
17067	109	75
17068	78	136
17069	200	161
17070	29	115
17071	8	111
17082	402	94
17083	950	97
17084	205	132
17085	43	129
17086	5	112
17087	26	133
17088	13	119
17089	21	119

Certified by _____

MIN-EN LABORATORIES



MIN-EN
LABORATORIES
 (DIVISION OF ASSAYERS CORP.)

ANALYTICAL CHEMISTRY GENERAL ENVIRONMENTAL

VANCOUVER OFFICE:
 705 WEST 15TH STREET
 NORTH VANCOUVER, B.C. CANADA V7M 1T2
 TELEPHONE (604) 980-5814 OR (604) 988-4524
 FAX (604) 980-9621

SMITHERS LAB.:
 3176 TATLOW ROAD
 SMITHERS, B.C. CANADA V0J 2N0
 TELEPHONE (604) 847-3004
 FAX (604) 847-3005

Assay Certificate

2S-0192-RA1

Company: **COLUMBIA GOLD MINES LTD.**
 Project: **SPECTRUM**
 Attn: **WAYNE ROBERTS**

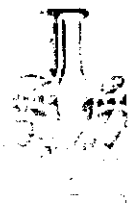
Date: **AUG-01-92**
 Copy 1. COLUMBIA GOLD, VANCOUVER, B.C.

We hereby certify the following Assay of 15 CORE samples submitted JUL-27-92 by GEORGE NORMAN.

Sample Number	AU g/tonne	AU oz/ton	CU %
17061	.02	.001	.014
17062	.01	.001	.010
17063	.45	.013	.013
17064	.06	.002	.038
17065	.07	.002	.014
17072	.11	.003	.007
17073	.01	.001	.013
17074	.12	.004	.025
17075	.05	.001	.010
17076	.16	.005	.026
17077	59.75	1.743	.940
17078	21.45	.626	.300
17079	13.95	.407	.105
17080	.23	.007	.023
17081	.07	.002	.013

Certified by _____

MIN-EN LABORATORIES



**MIN
• EN
LABORATORIES**
(DIVISION OF ASSAYERS CORP.)

SPECIALISTS IN METALLURGICAL ANALYSIS

VANCOUVER OFFICE:

705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
FAX (604) 980-9621

SMITHERS LAB.:

3176 TATLOW ROAD
SMITHERS, B.C. CANADA V0J 2N0
TELEPHONE (604) 847-3004
FAX (604) 847-3005

Geochemical Analysis Certificate

2S-0192-RG2

Company: **COLUMBIA GOLD MINES LTD.**
Project: **SPECTRUM**
Attn: **WAYNE ROBERTS**

Date: **AUG-01-92**
Copy 1. **COLUMBIA GOLD, VANCOUVER, B.C.**

We hereby certify the following Geochemical Analysis of 24 CORE samples submitted JUL-27-92 by **GEORGE NORMAN**.

Sample Number	AU PPB	CU PPM
17090	7	121
17091	4	118
17092	5	160
17093	6	147
17094	12	89
17095	51	144
17096	60	127
17097	21	107
17098	13	90
17099	20	126
17100	17	145
17101	18	137
17102	16	181
17103	13	137
17104	9	146
17105	22	139
17106	42	150
17107	64	111
17108	21	123
17109	16	106
17110	14	96
17111	72	49
17112	92	106
17113	18	91

Certified by _____

MIN-EN LABORATORIES



**MIN
• EN
LABORATORIES**
(DIVISION OF ASSAYERS CORP.)

VANCOUVER OFFICE:

705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
FAX (604) 980-9621

SMITHERS LAB.:

3176 TATLOW ROAD
SMITHERS, B.C. CANADA V0J 2N0
TELEPHONE (604) 847-3004
FAX (604) 847-3005

Geochemical Analysis Certificate

2S-0192-RG3

Company: **COLUMBIA GOLD MINES LTD.**
Project: **SPECTRUM**
Attn: **WAYNE ROBERTS**

Date: **AUG-01-92**

Copy 1. COLUMBIA GOLD, VANCOUVER, B.C.

We hereby certify the following Geochemical Analysis of 1 CORE samples submitted JUL-27-92 by GEORGE NORMAN.

Sample Number	AU PPB	CU PPM
17114	17	101

Certified by _____

MIN-EN LABORATORIES



MIN-EN LABORATORIES
(DIVISION OF ASSAYERS CORP.)

SPECIALISTS IN MINERAL ENVIRONMENTS
1000 WEST 15TH STREET VANCOUVER, B.C. V6M 1T2

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
FAX (604) 980-9621

SMITHERS LAB.:
3176 TATLOW ROAD
SMITHERS, B.C. CANADA V0J 2N0
TELEPHONE (604) 847-3004
FAX (604) 847-3005

Geochemical Analysis Certificate

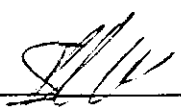
2S-0206-RG1

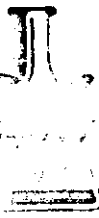
Company: **COLUMBIA GOLD MINES LTD**
Project: **SPECTRUM**
Attn: **WAYNE ROBERTS**

Date: **AUG-07-92**
Copy 1. COLUMBIA GOLD MINES, VANCOUVER, B.C.

We hereby certify the following Geochemical Analysis of 24 CORE samples submitted JUL-31-92 by W. ROBERTS.

Sample Number	AU-FIRE PPB	CU PPM
17115	11	89
17116	20	113
17117	32	104
17118	209	149
17119	54	91
17120	27	119
17121	46	159
17122	6	80
17123	5	119
17124	1	48
17125	3	84
17126	5	75
17127	1	78
17133	48	134
17134	63	151
17135	17	144
17145	132	112
17146	160	184
17147	10	159
17148	9	128
17149	1	83
17150	170	255
17151	34	128
17152	16	148

Certified by 
MIN-EN LABORATORIES



**MIN
• EN
LABORATORIES**
(DIVISION OF ASSAYERS CORP.)

SPECIALISTS IN MINERAL ENVIRONMENTS
ANALYSIS • ASSAYERS • METALLURGY • GEOCHEMISTRY

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
FAX (604) 980-9621

SMITHERS LAB.:
3176 TATLOW ROAD
SMITHERS, B.C. CANADA V0J 2N0
TELEPHONE (604) 847-3004
FAX (604) 847-3005

Geochemical Analysis Certificate

2S-0206-RG2

Company: **COLUMBIA GOLD MINES LTD**
Project: **SPECTRUM**
Attn: **WAYNE ROBERTS**

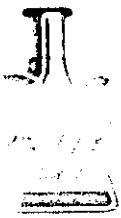
Date: **AUG-07-92**
Copy 1. COLUMBIA GOLD MINES, VANCOUVER, B.C.

We hereby certify the following Geochemical Analysis of 17 CORE samples submitted JUL-31-92 by W. ROBERTS.

Sample Number	AU-FIRE PPB	CU PPM
17153	8	92
17154	15	180
17155	26	116
17156	13	113
17157	18	123
17158	34	97
17159	42	111
17160	37	39
17161	64	72
17162	80	101
17163	30	162
17184	8	114
17185	5	111
17186	9	124
17187	7	120
17188	4	139
17189	3	141

Certified by _____

MIN-EN LABORATORIES



MIN-EN LABORATORIES
(DIVISION OF ASSAYERS CORP.)

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • MICROCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
FAX (604) 980-9621

SMITHERS LAB.:
3176 TATLOW ROAD
SMITHERS, B.C. CANADA V0J 2N0
TELEPHONE (604) 847-3004
FAX (604) 847-3005

Assay Certificate

2S-0206-RA1

Company: **COLUMBIA GOLD MINES LTD**
Project: **SPECTRUM**
Attn: **WAYNE ROBERTS**

Date: **AUG-07-92**
Copy 1. COLUMBIA GOLD MINES, VANCOUVER, B.C.

We hereby certify the following Assay of 24 CORE samples submitted JUL-31-92 by W. ROBERTS.

Sample Number	AU-FIRE g/tonne	AU-FIRE oz/ton	CU %
17128	.01	.001	.008
17129	.02	.001	.012
17130	.04	.001	.018
17131	.01	.001	.033
17132	.03	.001	.018
17136	.01	.001	.009
17137	.10	.003	.028
17138	.05	.001	.029
17139	.02	.001	.024
17140	.04	.001	.020
17141	.03	.001	.021
17142	.29	.008	.024
17143	2.58	.075	.037
17144	.31	.009	.031
17164	.04	.001	.028
17165	.02	.001	.011
17166	.02	.001	.017
17167	.13	.004	.015
17168	.07	.002	.013
17169	.01	.001	.011
17170	.03	.001	.015
17171	.04	.001	.014
17172	.03	.001	.015
17173	.04	.001	.010

Certified by 
MIN-EN LABORATORIES



**MIN
• EN
LABORATORIES**
(DIVISION OF ASSAYERS CORP.)

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
FAX (604) 980-9621

SMITHERS LAB.:
3176 TATLOW ROAD
SMITHERS, B.C. CANADA V0J 2N0
TELEPHONE (604) 847-3004
FAX (604) 847-3005

Geochemical Analysis Certificate


2S-0262-RG1

Company: **COLUMBIA GOLD MINES LTD.**
Project: **SPECTRUM**
Attn: **WAYNE ROBERTS/GEORGE NORMAN**

Date: **AUG-25-92**
Copy 1. COLUMBIA GOLD MINES, VANCOUVER, B.C.

We hereby certify the following Geochemical Analysis of 22 CORE samples submitted AUG-18-92 by G. NORMAN.

Sample Number	AU-FIRE PPB
17190	19
17195	10
17196	13
17197	11
17198	43
17199	33
17201	8
17206	5
17209	25
17216	50
17217	56
17218	35
17219	23
17220	62
17221	91
17222	39
17223	61
17224	27
17225	165
17226	20
17227	12
17234	4

Certified by 

MIN-EN LABORATORIES



**MIN
• EN
LABORATORIES**
(DIVISION OF ASSAYERS CORP.)

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
FAX (604) 980-9621

SMITHERS LAB.:
3176 TATLOW ROAD
SMITHERS, B.C. CANADA V0J 2N0
TELEPHONE (604) 847-3004
FAX (604) 847-3005

Assay Certificate

2S-0262-RA1

Company: **COLUMBIA GOLD MINES LTD.**
Project: **SPECTRUM**
Attn: **WAYNE ROBERTS/GEORGE NORMAN**

Date: **AUG-25-92**
Copy 1. COLUMBIA GOLD MINES, VANCOUVER, B.C.

We hereby certify the following Assay of 23 CORE samples submitted AUG-18-92 by G. NORMAN.

Sample Number	AU-FIRE g/tonne	AU-FIRE oz/ton
17191	.01	.001
17192	.03	.001
17193	.06	.002
17194	.02	.001
17200	.01	.001
17202	.02	.001
17203	.02	.001
17204	.01	.001
17205	.01	.001
17207	.08	.002
17208	.04	.001
17210	.31	.009
17211	.12	.004
17212	.63	.018
17213	.08	.002
17214	.10	.003
17215	.11	.003
17228	.87	.025
17229	.06	.002
17230	.03	.001
17231	.14	.004
17232	.01	.001
17233	.01	.001

Certified by 

MIN-EN LABORATORIES



**MIN
• EN
LABORATORIES**
(DIVISION OF ASSAYERS CORP.)

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
FAX (604) 980-9621

SMITHERS LAB.:
3176 TATLOW ROAD
SMITHERS, B.C. CANADA V0J 2N0
TELEPHONE (604) 847-3004
FAX (604) 847-3005

Geochemical Analysis Certificate

2S-0234-RG1

Company: **COLUMBIA GOLD MINES LTD.**
Project: **SPECTRUM**
Attn: **WAYNE ROBERTS / GEORGE NORMAN**

Date: **AUG-17-92**
Copy 1. **COLUMBIA GOLD MINES., VANCOUVER, B.C.**

We hereby certify the following Geochemical Analysis of 24 CORE samples submitted AUG-07-92 by G. NORMAN.

Sample Number	AU-FIRE PPB	CU PPM
17235	55	123
17236	106	279
17237	51	143
17238	19	97
17239	27	132
17240	34	75
17241	180	131
17243	132	276
17244	859	157
17245	432	204
17246	71	176
17247	650	211
17248	44	114
17249	57	96
17250	910	54
17251	60	103
17252	27	117
17253	19	18
17254	42	30
17255	26	89
17256	14	61
17257	13	49
17258	258	96
17259	372	170

Certified by 
MIN-EN LABORATORIES



**MIN
• EN
LABORATORIES**
(DIVISION OF ASSAYERS CORP.)

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
FAX (604) 980-9821

SMITHERS LAB.:
3176 TATLOW ROAD
SMITHERS, B.C. CANADA V0J 2N0
TELEPHONE (604) 847-3004
FAX (604) 847-3005

Assay Certificate

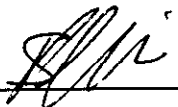
2S-0234-RA1

Company: **COLUMBIA GOLD MINES LTD.**
Project: **SPECTRUM**
Attn: **WAYNE ROBERTS / GEORGE NORMAN**

Date: **AUG-15-92**
Copy 1. COLUMBIA GOLD MINES., VANCOUVER, B.C.

We hereby certify the following Assay of 2 CORE samples submitted AUG-07-92 by G. NORMAN.

Sample Number	AU-FIRE g/tonne	AU-FIRE oz/ton	CU PPM
17242	.17	.005	.015
17283	.23	.007	.082

Certified by 
MIN-EN LABORATORIES



**MIN
• EN
LABORATORIES**
(DIVISION OF ASSAYERS CORP.)

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
FAX (604) 980-9621

SMITHERS LAB.:
3176 TATLOW ROAD
SMITHERS, B.C. CANADA V0J 2N0
TELEPHONE (604) 847-3004
FAX (604) 847-3005

Geochemical Analysis Certificate

2S-0234-RG2

Company: **COLUMBIA GOLD MINES LTD.**
Project: **SPECTRUM**
Attn: **WAYNE ROBERTS / GEORGE NORMAN**

Date: **AUG-15-92**
Copy 1. **COLUMBIA GOLD MINES., VANCOUVER, B.C.**

We hereby certify the following Geochemical Analysis of 24 CORE samples submitted AUG-07-92 by G. NORMAN.

Sample Number	AU-FIRE PPB	CU PPM
17260	148	235
17261	180	416
17262	82	329
17263	891	1360
17264	434	1205
17265	594	1120
17266	276	707
17267	355	1145
17268	966	1120
17269	264	732
17270	356	696
17271	395	785
17272	257	721
17273	220	746
17274	348	588
17275	590	1140
17276	638	1070
17277	451	1170
17278	341	1045
17279	267	1100
17280	789	1385
17281	790	1780
17282	178	834
17284	926	2400

Certified by _____

MIN-EN LABORATORIES



MIN-EN LABORATORIES
(DIVISION OF ASSAYERS CORP.)

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
FAX (604) 980-9621

SMITHERS LAB.:
3176 TATLOW ROAD
SMITHERS, B.C. CANADA V0J 2N0
TELEPHONE (604) 847-3004
FAX (604) 847-3005

Geochemical Analysis Certificate

2S-0234-RG3

Company: **COLUMBIA GOLD MINES LTD.**
Project: **SPECTRUM**
Attn: **WAYNE ROBERTS / GEORGE NORMAN**

Date: **AUG-15-92**
Copy 1. COLUMBIA GOLD MINES., VANCOUVER, B.C.

We hereby certify the following Geochemical Analysis of 24 CORE samples submitted AUG-07-92 by G. NORMAN.

Sample Number	AU-FIRE PPB	CU PPM
17285	345	1210
17286	279	1090
17287	145	937
17288	186	726
17289	378	942
17290	221	781
17291	169	730
17292	394	813
17293	283	845
17294	200	798
17295	392	2040
17296	447	1940
17297	204	1110
17298	144	771
17299	164	1020
17300	205	1215
17301	564	3670
17302	498	2430
17303	346	1190
17304	318	1420
17305	299	1300
17306	364	1295
17307	230	1280
17308	168	854

Certified by 
MIN-EN LABORATORIES



**MIN
• EN
LABORATORIES**
(DIVISION OF ASSAYERS CORP.)

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
FAX (604) 980-9621

SMITHERS LAB.:
3176 TATLOW ROAD
SMITHERS, B.C. CANADA V0J 2N0
TELEPHONE (604) 847-3004
FAX (604) 847-3005

Geochemical Analysis Certificate

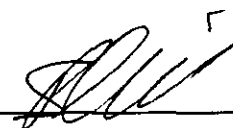
2S-0234-RG4

Company: **COLUMBIA GOLD MINES LTD.**
Project: **SPECTRUM**
Attn: **WAYNE ROBERTS / GEORGE NORMAN**

Date: **AUG-15-92**
Copy 1. **COLUMBIA GOLD MINES., VANCOUVER, B.C.**

We hereby certify the following Geochemical Analysis of 14 CORE samples submitted AUG-07-92 by G. NORMAN.

Sample Number	AU-FIRE PPB	CU PPM
17309	262	831
17310	315	1715
17311	210	800
17312	213	1050
17313	331	1180
17314	183	1295
17315	154	977
17316	143	1050
17317	116	1185
17318	305	1290
17319	95	857
17320	153	846
17321	207	1240
17322	209	1035

Certified by 
MIN-EN LABORATORIES



MIN-EN LABORATORIES
 (DIVISION OF ASSAYERS CORP.)

SPECIALISTS IN MINERAL ENVIRONMENTS
 CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
 705 WEST 15TH STREET
 NORTH VANCOUVER, B.C. CANADA V7M 1T2
 TELEPHONE (604) 980-5814 OR (604) 988-4524
 FAX (604) 980-9621

SMITHERS LAB.:
 3176 TATLOW ROAD
 SMITHERS, B.C. CANADA V0J 2N0
 TELEPHONE (604) 847-3004
 FAX (604) 847-3005

Assay Certificate

2S-0238-RA1

Company: **COLUMBIA GOLD MINES LTD.**
 Project: **SPECTRUM**
 Attn: **WAYNE ROBERTS**

Date: **AUG-18-92**
 Copy 1. COLUMBIA GOLD MINES LTD., VANCOUVER, B

We hereby certify the following Assay of 6 CORE samples submitted AUG-10-92 by W. ROBERTS.

Sample Number	AU-FIRE g/tonne	AU-FIRE oz/ton	CU %
17332	.06	.002	.005
17367	1.20	.035	.424
17368	2.08	.061	.163
17369	.86	.025	.239
17370	1.99	.058	.241
17371	1.80	.053	.240

Certified by 
 MIN-EN LABORATORIES



**MIN
• EN
LABORATORIES**
(DIVISION OF ASSAYERS CORP.)

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
FAX (604) 980-9621

SMITHERS LAB.:
3176 TATLOW ROAD
SMITHERS, B.C. CANADA V0J 2N0
TELEPHONE (604) 847-3004
FAX (604) 847-3005

Geochemical Analysis Certificate

2S-0238-RG1

Company: **COLUMBIA GOLD MINES LTD.**
Project: **SPECTRUM**
Attn: **WAYNE ROBERTS**

Date: **AUG-17-92**
Copy 1. COLUMBIA GOLD MINES LTD., VANCOUVER, B

We hereby certify the following Geochemical Analysis of 24 ROCK samples submitted AUG-10-92 by W. ROBERTS.

Sample Number	AU-FIRE PPB	CU PPM
17323	589	158
17324	155	143
17325	92	120
17326	39	32
17327	101	150
17328	115	178
17329	54	202
17330	95	172
17331	41	52
17333	14	41
17334	21	32
17335	68	76
17336	47	42
17337	67	230
17338	51	230
17339	41	201
17340	24	148
17341	26	73
17342	42	131
17343	24	169
17344	62	164
17345	121	120
17346	89	96
17347	393	430

Certified by 

MIN-EN LABORATORIES



MIN-EN LABORATORIES
(DIVISION OF ASSAYERS CORP.)

SPECIALISTS IN MINERAL ENVIRONMENTS

VANCOUVER OFFICE:

705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
FAX (604) 980-9621

SMITHERS LAB.:

3176 TATLOW ROAD
SMITHERS, B.C. CANADA V0J 2N0
TELEPHONE (604) 847-3004
FAX (604) 847-3005

Geochemical Analysis Certificate

2S-0238-RG2

Company: **COLUMBIA GOLD MINES LTD.**
Project: **SPECTRUM**
Attn: **WAYNE ROBERTS**

Date: **AUG-17-92**
Copy 1. COLUMBIA GOLD MINES LTD., VANCOUVER, B

We hereby certify the following Geochemical Analysis of 24 CORE samples submitted AUG-10-92 by W. ROBERTS.

Sample Number	AU-FIRE PPB	CU PPM
17348	53	403
17351	625	2240
17352	620	1560
17353	649	2040
17354	573	1790
17355	342	1810
17356	462	731
17357	240	1250
17358	285	2090
17359	534	1140
17360	461	1215
17361	431	1105
17362	349	1380
17363	213	1825
17364	933	1630
17365	771	1110
17366	765	1430
17372	1225	2010
17373	867	1390
17374	851	1720
17375	877	1045
17376	437	879
17377	238	607
17378	151	563

Certified by _____

MIN-EN LABORATORIES



**MIN
• EN
LABORATORIES**
(DIVISION OF ASSAYERS CORP.)

SPECIALISTS IN MINERAL ENVIRONMENTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
FAX (604) 980-9621

SMITHERS LAB.:
3176 TATLOW ROAD
SMITHERS, B.C. CANADA V0J 2N0
TELEPHONE (604) 947-2004
FAX (604) 947-3008

Geochemical Analysis Certificate

2S-0238-RG3

Company: **COLUMBIA GOLD MINES LTD.**
Project: **SPECTRUM**
Att: **WAYNE ROBERTS**

Date: **AUG-17-92**
Copy 1. COLUMBIA GOLD MINES LTD., VANCOUVER, B

We hereby certify the following Geochemical Analysis of 24 CORE samples submitted AUG-10-92 by W. ROBERTS.

Sample Number	AU-FIRE PPB	CU PPM
17379	401	1085
17380	136	572
17381	136	536
17382	115	513
17383	59	414
17384	81	420
17385	113	323
17386	114	412
17387	241	543
17388	201	1095
17389	287	1365
17390	224	1070
17391	234	1285
17392	307	1050
17393	282	1155
17394	164	1115
17395	185	910
17396	272	1270
17397	180	1055
17398	368	1040
17399	346	1720
17400	291	930
17401	431	1135
17402	308	1725

Certified by _____ 

MIN-EN LABORATORIES



**MIN
• EN
LABORATORIES**
(DIVISION OF ASSAYERS CORP.)

SPECIALISTS IN MINERAL ENVIRONMENTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
FAX (604) 980-9621

SMITHERS LAB.:
3176 TATLOW ROAD
SMITHERS, B.C. CANADA V0J 2N0
TELEPHONE (604) 847-3004
FAX (604) 847-3005

Geochemical Analysis Certificate

2S-0238-RG4

Company: **COLUMBIA GOLD MINES LTD.**
Project: **SPECTRUM**
Attn: **WAYNE ROBERTS**

Date: **AUG-17-92**
Copy 1. **COLUMBIA GOLD MINES LTD., VANCOUVER, B**

We hereby certify the following Geochemical Analysis of 4 CORE samples submitted AUG-10-92 by W. ROBERTS.

Sample Number	AU-FIRE PPB	CU PPM
17403	570	1145
17404	196	720
17405	269	1105
17406	266	1735

Certified by _____ 

MIN-EN LABORATORIES



**MIN
• EN
LABORATORIES**
(DIVISION OF ASSAYERS CORP.)

SPECIALISTS IN MINERAL ENVIRONMENTS

VANCOUVER OFFICE:

705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
FAX (604) 980-9621

SMITHERS LAB.:

3176 TATLOW ROAD
SMITHERS, B.C. CANADA V0J 2N0
TELEPHONE (604) 847-3004
FAX (604) 847-3005

Geochemical Analysis Certificate

25-0251-RG1

Company: **COLUMBIA GOLD MINES LTD.**
Project: **SPECTRUM**
Att: **WAYNE ROBERTS / GEORGE NORMAN**

Date: **AUG-20-92**
Copy 1. **COLUMBIA GOLD MINES LTD., SMITHERS, B.C.**

We hereby certify the following Geochemical Analysis of 24 CORE samples submitted AUG-12-92 by W. ROBERTS.

Sample Number	AU-FIRE PPB	CU PPM
17407	684	102
17408	524	26
17409	121	144
17410	90	233
17411	179	6
17412	116	9
17413	197	6
17414	40	3
17415	64	11
17416	34	7
17417	15	6
17418	45	23
17419	122	16
17420	239	146
17424	265	20
17425	263	68
17426	298	35
17427	392	22
17428	243	10
17437	174	416
17438	107	145
17439	150	159
17440	147	148
17441	104	291

Certified by _____

MIN-EN LABORATORIES



MIN-EN LABORATORIES
 (DIVISION OF ASSAYERS CORP.)

SPECIALISTS IN MINERAL ENVIRONMENTS

VANCOUVER OFFICE:
 705 WEST 15TH STREET
 NORTH VANCOUVER, B.C. CANADA V7M 1T2
 TELEPHONE (604) 980-5814 OR (604) 986-4524
 FAX (604) 980-9621

SMITHERS LAB.:
 3176 TATLOW ROAD
 SMITHERS, B.C. CANADA V0J 2N0
 TELEPHONE (604) 847-3004
 FAX (604) 847-3005

Geochemical Analysis Certificate

2S-0251-RG2

Company: **COLUMBIA GOLD MINES LTD.**
 Project: **SPECTRUM**
 Attn: **WAYNE ROBERTS / GEORGE NORMAN**

Date: **AUG-20-92**
 Copy 1. **COLUMBIA GOLD MINES LTD., SMITHERS, B.C.**

We hereby certify the following Geochemical Analysis of 24 CORE samples submitted AUG-12-92 by W. ROBERTS.

Sample Number	AU-FIRE PPB	CU PPM
17442	195	266
17443	87	127
17444	122	201
17445	112	202
17446	465	138
17447	103	288
17448	77	246
17449	174	390
17450	195	144
17451	209	496
17452	215	407
17453	320	872
17454	285	749
17455	504	1085
17456	496	2610
17458	631	3270
17463	692	1440
17464	415	1180
17465	962	3560
17466	729	2065
17467	875	1270
17468	918	1940
17469	734	1180
17470	1150	1930

Certified by _____

MIN-EN LABORATORIES



MIN-EN LABORATORIES
 (DIVISION OF ASSAYERS CORP.)

SPECIALISTS IN MINERAL ENVIRONMENTS

VANCOUVER OFFICE:

705 WEST 15TH STREET
 NORTH VANCOUVER, B.C. CANADA V7M 1T2
 TELEPHONE (604) 980-5614 OR (604) 988-4524
 FAX (604) 980-9621

SMITHERS LAB.:

3176 TATLOW ROAD
 SMITHERS, B.C. CANADA V0J 2N0
 TELEPHONE (604) 847-3004
 FAX (604) 847-3005

Geochemical Analysis Certificate

2S-0251-RG3

Company: **COLUMBIA GOLD MINES LTD.**
 Project: **SPECTRUM**
 Attn: **WAYNE ROBERTS / GEORGE NORMAN**

Date: **AUG-20-92**

Copy 1. COLUMBIA GOLD MINES LTD., SMITHERS, B.C.

We hereby certify the following Geochemical Analysis of 18 CORE samples submitted AUG-12-92 by W. ROBERTS.

Sample Number	AU-FIRE PPB	CU PPM
17471	720	1790
17472	940	1035
17484	632	1585
17485	613	1500
17486	465	1195
17487	292	1110
17488	409	1340
17489	607	728
17490	710	1405
17491	857	2025
17492	572	1340
17493	482	1420
17494	707	772
17495	554	1075
17496	516	1160
17497	1130	1540
17498	698	1900
17499	1075	1450

Certified by _____

MIN-EN LABORATORIES



MIN-EN LABORATORIES
(DIVISION OF ASSAYERS CORP.)

SPECIALISTS IN MINERAL ENVIRONMENTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
FAX (604) 980-9621

SMITHERS LAB.:
3176 TATLOW ROAD
SMITHERS, B.C. CANADA V0J 2N0
TELEPHONE (604) 847-3004
FAX (604) 847-3005

Assay Certificate

2S-0251-RA1

Company: **COLUMBIA GOLD MINES LTD.**
Project: **SPECTRUM**
Attn: **WAYNE ROBERTS / GEORGE NORMAN**

Date: **AUG-20-92**
Copy 1. **COLUMBIA GOLD MINES LTD., SMITHERS, B.C.**

We hereby certify the following Assay of 24 CORE samples submitted AUG-12-92 by W. ROBERTS.

Sample Number	AU-FIRE g/tonne	AU-FIRE oz/ton	CU %
17421	1.18	.034	.107
17422	2.73	.080	.014
17423	1.16	.034	.024
17429	.74	.022	.031
17430	.35	.010	.070
17431	.44	.013	.043
17432	.44	.013	.015
17433	.18	.005	.021
17434	.20	.006	.012
17435	.32	.009	.032
17436	.26	.008	.038
17457	.49	.014	.253
17459	.77	.022	.446
17460	.56	.016	.393
17461	.67	.020	.098
17462	.64	.019	.120
17473	.78	.023	.124
17474	.62	.018	.124
17475	.84	.025	.131
17476	.81	.024	.534
17477	.69	.020	.148
17478	.42	.012	.133
17479	.67	.020	.307
17480	.60	.018	.176

Certified by _____

MIN-EN LABORATORIES



MIN-EN LABORATORIES
 (DIVISION OF ASSAYERS CORP.)

SPECIALISTS IN MINERAL ENVIRONMENTS

VANCOUVER OFFICE:

705 WEST 15TH STREET
 NORTH VANCOUVER, B.C. CANADA V7M 1T2
 TELEPHONE (604) 980-5814 OR (604) 988-4524
 FAX (604) 980-9621

SMITHERS LAB.:

3176 TATLOW ROAD
 SMITHERS, B.C. CANADA V0J 2N0
 TELEPHONE (604) 847-3004
 FAX (604) 847-3005

Assay Certificate

2S-0251-RA2

Company: COLUMBIA GOLD MINES LTD.
 Project: SPECTRUM
 Attn: WAYNE ROBERTS / GEORGE NORMAN

Date: AUG-20-92

Copy 1. COLUMBIA GOLD MINES LTD., SMITHERS, B.C.

We hereby certify the following Assay of 3 CORE samples submitted AUG-12-92 by W. ROBERTS.

Sample Number	AU-FIRE g/tonne	AU-FIRE oz/ton	CU %
17481	.57	.017	.136
17482	.77	.022	.094
17483	.58	.017	.146

Certified by _____

MIN-EN LABORATORIES



MIN-EN LABORATORIES
(DIVISION OF ASSAYERS CORP.)

SPECIALISTS IN MINERAL ENVIRONMENTS

For LAINC

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
FAX (604) 980-9621

SMITHERS LAB.:
3176 TATLOW ROAD
SMITHERS, B.C. CANADA V0J 2N0
TELEPHONE (604) 847-3004
FAX (604) 847-3005

Geochemical Analysis Certificate

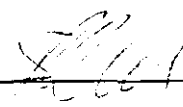
2S-0258-RG1

Company: **COLUMBIA GOLD MINES LTD.**
Project: **SPECTRUM**
Attn: **WAYNE ROBERTS**

Date: **AUG-25-92**
Copy 1. COLUMBIA GOLD MINES LTD, VANCOUVER, BC

We hereby certify the following Geochemical Analysis of 24 FIELD CHIP samples submitted AUG-17-92 by GEORGE NORMAN.

Sample Number	AU-FIRE PPB	CU PPM
<i>Hank Subsite</i> 17001	63	111
17003	250	150
17004	46	473
17008	28	345
17011	14	114
17012	6	127
17013	30	173
17014	15	204
17015	9	79
17016	20	334
17017	7	29
<i>Spectra Subsite</i> 17018	11	116
17019	18	380
17020	315	2530
17021	34	411
17022	81	402
17023	110	748
17024	19	140
17025	1215	19
17026	19	135
17027	23	461
17028	175	553
17029	40	167
17030	51	49

Certified by 
MIN-EN LABORATORIES



MIN-EN LABORATORIES
(DIVISION OF ASSAYERS CORP.)

SPECIALISTS IN MINERAL ENVIRONMENTS

VANCOUVER OFFICE:

705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
FAX (604) 980-9621

SMITHERS LAB.:

3176 TATLOW ROAD
SMITHERS, B.C. CANADA V0J 2N0
TELEPHONE (604) 847-3004
FAX (604) 847-3005

Assay Certificate

2S-0258-RA1

Company: **COLUMBIA GOLD MINES LTD.**
Project: **SPECTRUM**
Attn: **WAYNE ROBERTS**

Date: **AUG-27-92**
Copy 1. COLUMBIA GOLD MINES LTD, VANCOUVER, BC

We hereby certify the following Assay of 15 FIELD CHIP samples submitted AUG-17-92 by GEORGE NORMAN.

Sample Number	AU-FIRE g/tonne	AU-FIRE oz/ton	AG g/tonne	AG oz/ton	CU %	PB %	ZN %	
Spectrum Surface 17002	.16	.005			.008			
	17005	.15	.004		.055			
	17006	5.65	.165		.126			
	17007	.03	.001		.041			
	17009	5.14	.150		.194			
17010	2.80	.082			.116			
Pas-Property 17034	18.30	.534	99.0	2.89	.073	3.29	3.21	
	17035	1.85	.054	47.0	1.37	.048	5.54	.04
	17036	1.78	.052	7.4	.22	.024	.19	.04
	17042	39.55	1.154	86.9	2.53	.075	3.67	2.37
	17043	.71	.021	4.0	.12	.028	.08	.06
	17044	.18	.005	9.1	.27	.134	.97	.04
	17045	2.83	.083	9.2	.27	.106	.19	.02
17046	12.65	.369	43.4	1.27	.166	2.25	3.41	
17047	11.95	.349	60.5	1.76	.125	5.49	5.08	

Certified by _____

MIN-EN LABORATORIES



**MIN
• EN
LABORATORIES**
(DIVISION OF ASSAYERS CORP.)

SPECIALISTS IN MINERAL ENVIRONMENTS

VANCOUVER OFFICE:

705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
FAX (604) 980-9621

SMITHERS LAB.:

3176 TATLOW ROAD
SMITHERS, B.C. CANADA V0J 2N0
TELEPHONE (604) 847-3004
FAX (604) 847-3005

Geochemical Analysis Certificate

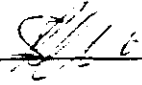
2S-0258-RG2

Company: **COLUMBIA GOLD MINES LTD.**
Project: **SPECTRUM**
Attn: **WAYNE ROBERTS**

Date: **AUG-25-92**
Copy 1. **COLUMBIA GOLD MINES LTD, VANCOUVER, BC**

We hereby certify the following Geochemical Analysis of 15 FIELD CHIP samples submitted AUG-17-92 by GEORGE NORMAN.

Sample Number	AU-FIRE PPB	CU PPM
<i>Spectrum</i> 17031	54	96
17032	52	80
17033	53	95
17037	44	408
17038	114	57
17039	369	381
17040	363	98
17041	483	586
17048	367	235
17049	1260	11
<i>Pass</i> 17050	1630	1830
17501	823	57
17502	73	43
17503	450	3
17504	105	121

Certified by 
MIN-EN LABORATORIES

APPENDIX III

MIN-EN ANALYTICAL TECHNIQUES

**MINERAL
• ENVIRONMENTS
LABORATORIES**

Division of Assayers Corp. Ltd.

GOLD ASSAY PROCEDURE:

Samples are dried @ 95 C and when dry are crushed on a jaw crusher. The 1/4 inch output of the jaw crusher is put through a secondary roll crusher to reduce it to - 1/8 inch. The whole sample is then riffled on a Jones Riffle down to a statistically representative 300 - 400 gram sub-sample (in accordance with Gy's statistical rules). This sub-sample is then pulverized on a ring pulverizer to 95% minus 120 mesh, rolled and bagged for analysis. The remaining reject from the Jones Riffle is bagged and stored.

Samples are fire assayed using one assay ton sample weight. The samples are fluxed, a silver inquart added and mixed. The assays are fused in batches of 24 assays along with a natural standard and a blank. This batch of 26 assays is carried through the whole procedure as a set. After cupellation the precious metal beads are transferred into new glassware, dissolved, diluted to volume and mixed.

These aqua regia solutions are analyzed on an atomic absorption spectrometer using a suitable standard set. The natural standard fused along with this set must be within 3 standard deviations of its known or the whole set is re-assayed. Likewise the blank must be less than 0.015 g/tonne.

OFFICE AND LABORATORIES
705 WEST FIFTEENTH STREET NORTH VANCOUVER, B.C.
CANADA V7M 1T2

PHONE: (604) 980-5814 (604) 988-4524
TELEX: VIA USA 7601067
FAX: (604) 980-9621

FIRE GOLD GEOCHEMICAL ANALYSIS
BY: MIN-EN LABORATORIES LTD.

GEOCHEMICAL SAMPLES FOR FIRE GOLD PROCESSED BY MIN-EN LABORATORIES LTD., AT 705 WEST 15TH STREET, NORTH VANCOUVER LABORATORY EMPLOYING THE FOLLOWING PROCEDURES.

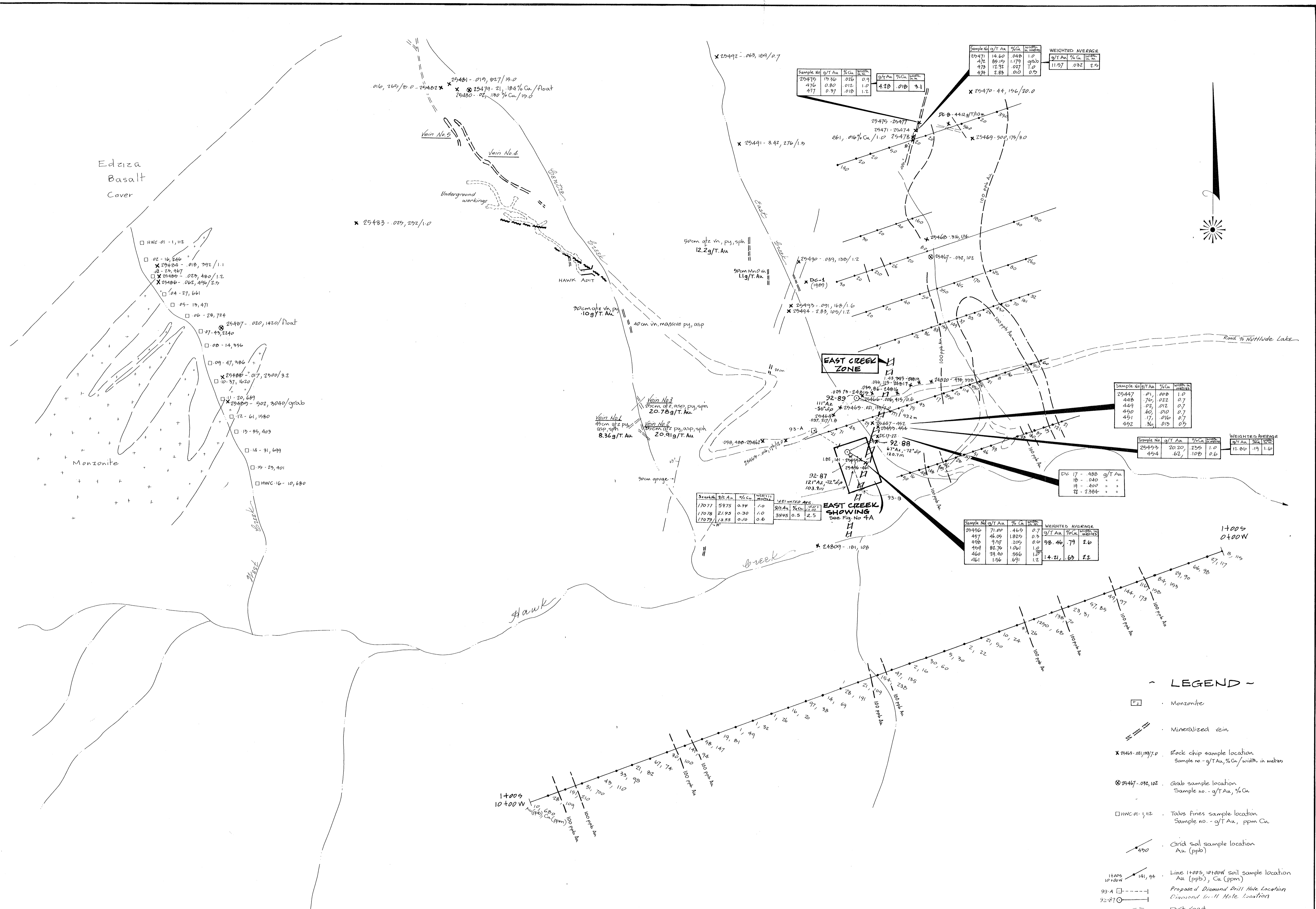
AFTER DRYING THE SAMPLES AT 95 DEGREES CENTRIGRADE SOIL AND STREAM SEDIMENT SAMPLES ARE SCREENED BY 80 MESH SIEVE TO OBTAIN THE MINUS 80 MESH FRACTION FOR ANALYSIS. THE ROCK SAMPLES ARE CRUSHED AND PULVERIZED BY CERAMIC PLATED PULVERIZER.

A SUITABLE SAMPLE WEIGHT 15.00 OR 30.00 GRAMS ARE FIRE ASSAYED PRECONCENTRATED.

AFTER PRETREATMENTS THE SAMPLES ARE DIGESTED WITH AQUA REGIA SOLUTION, AND AFTER DIGESTION THE SAMPLES ARE TAKEN UP WITH 25% HCL TO SUITABLE VOLUME.

FURTHER OXIDATION AND TREATMENT OF AT LEAST 75% OF THE ORIGINAL SAMPLE SOLUTIONS ARE MADE SUITABLE FOR EXTRACTION OF GOLD WITH METHYL ISO-BUTYL KETONE.

WITH A SET OF SUITABLE STANDARD SOLUTION GOLD IS ANALYSED BY ATOMIC ABSORPTION INSTRUMENTS. THE OBTAINED DETECTION LIMIT IS 1 PPB.



Edziza
Basalt
Cover

Monzonite

EAST CREEK
ZONE

EAST CREEK
SHOWING
See Fig. No 4A

- HWC 01 - 1, 112
- 02 - 16, 246
- ⊗ 29484 - 018, 292 / 1.1
- ⊗ 29487 - 023, 480 / 1.2
- ⊗ 29486 - 062, 496 / 2.5
- 04 - 27, 661
- 05 - 13, 471
- 06 - 28, 724
- ⊗ 29487 - 020, 1420 / float
- 07 - 43, 2140
- 08 - 14, 356
- 09 - 47, 386
- ⊗ 29488 - 017, 2300 / 3.2
- 10 - 37, 4620
- 11 - 20, 689
- ⊗ 29489 - 502, 3040 / grab
- 12 - 61, 1580
- 13 - 35, 403
- 14 - 31, 699
- 15 - 23, 401
- HWC 16 - 10, 680

Sample No.	g/T Au	% Cu	width m	WEIGHTED AVERAGE
17077	59.75	0.74	1.0	9.2 Au, 0.74 Cu
17078	21.95	0.30	1.0	3.8 Au, 0.30 Cu
17079	13.75	0.10	0.6	8.4 Au, 0.10 Cu

Sample No.	g/T Au	% Cu	width m	WEIGHTED AVERAGE
29496	71.00	0.46	0.7	58.46 Au, 0.79 Cu
457	46.05	1.02	0.3	14.21 Au, 0.62 Cu
498	9.57	2.05	0.6	
109	82.75	1.06	1.0	
460	24.40	0.56	1.0	
461	1.86	0.67	1.2	

Sample No.	g/T Au	% Cu	width m	WEIGHTED AVERAGE
25447	0.1	0.08	1.0	12.86 Au, 0.19 Cu
448	7.6	0.22	0.7	
449	0.2	0.12	0.7	
450	6.0	0.10	0.7	
451	1.7	0.16	0.7	
452	3.6	0.13	0.5	

Sample No.	g/T Au	% Cu	width m	WEIGHTED AVERAGE
25493	20.20	2.55	1.0	12.86 Au, 0.19 Cu
454	0.62	1.08	0.6	

Sample No.	g/T Au	% Cu	width m	WEIGHTED AVERAGE
DC 17	0.488			
18	0.040			
19	0.400			
22	2.384			

LEGEND

- Monzonite
- ▬ Mineralized vein
- ⊗ 25485-021/197.0 Back chip sample location
Sample no. - g/T Au, % Cu / width in metres
- ⊗ 25467-032.102 Grab sample location
Sample no. - g/T Au, % Cu
- HWC 01-112 Talus fines sample location
Sample no. - g/T Au, ppm Cu
- ⊗ 490 Grid soil sample location
Au (ppb)
- ⊗ 141, 94 Line 1005, 10100W soil sample location
Au (ppb), Cu (ppm)
- ⊗ 93-A Proposed Diamond Drill Hole Location
- ⊗ 92-87 Diamond Dr. Hole Location
- Dirt road
- Creek

Scale 1:2000

GEOLOGICAL BRANCH
ASSESSMENT REPORT

22,838

COLUMBIA GOLD MINES LTD.

SPECTRUM PROJECT

HAWK PROPERTY
COMPILATION MAP

Geology by: K. Konkin Consulting NTS: 104 G / 9W / 10E Figure No. 1
 Drawn by: C. Hutchinson Scale: 1:2000
 Date: Updated Sep '92 by G.E.M. LIAISON M.D.

POTASSIC ALTERED VOLCANICS

PROPYLITIC ALTERED VOLCANICS

MT. EDZIZA 4 BASALT

PROPYLITIC ALTERED VOLCANICS

GEOLOGICAL BRANCH ASSESSMENT REPORT

22,838

Scale 1:2000

LEGEND

- UPPER TERTIARY - Recent: Edziza
- 4 Basalt flows and dykes
- UPPER TRIASSIC - Cretaceous?
- 3 Monzonite intrusive
- UPPER TRIASSIC
- 2 Latite to dacite flows and tuffs
- Siltstone, chert, greywacke, (volcaniclastic) limestone
- Gold Zone, Defined
- Gold zone, Projected
- Geologic contact
- Outcrop location
- Fault
- Foliation with strike and dip
- Bedding or contact with strike and dip
- Fault with dip
- Joints with strike and dip
- Trench location
- Road
- Diamond Drill Hole location 1992
- Diamond Drill Hole location 1991
- Diamond Drill Hole location prior 1991
- Diamond Drill Hole unsurveyed

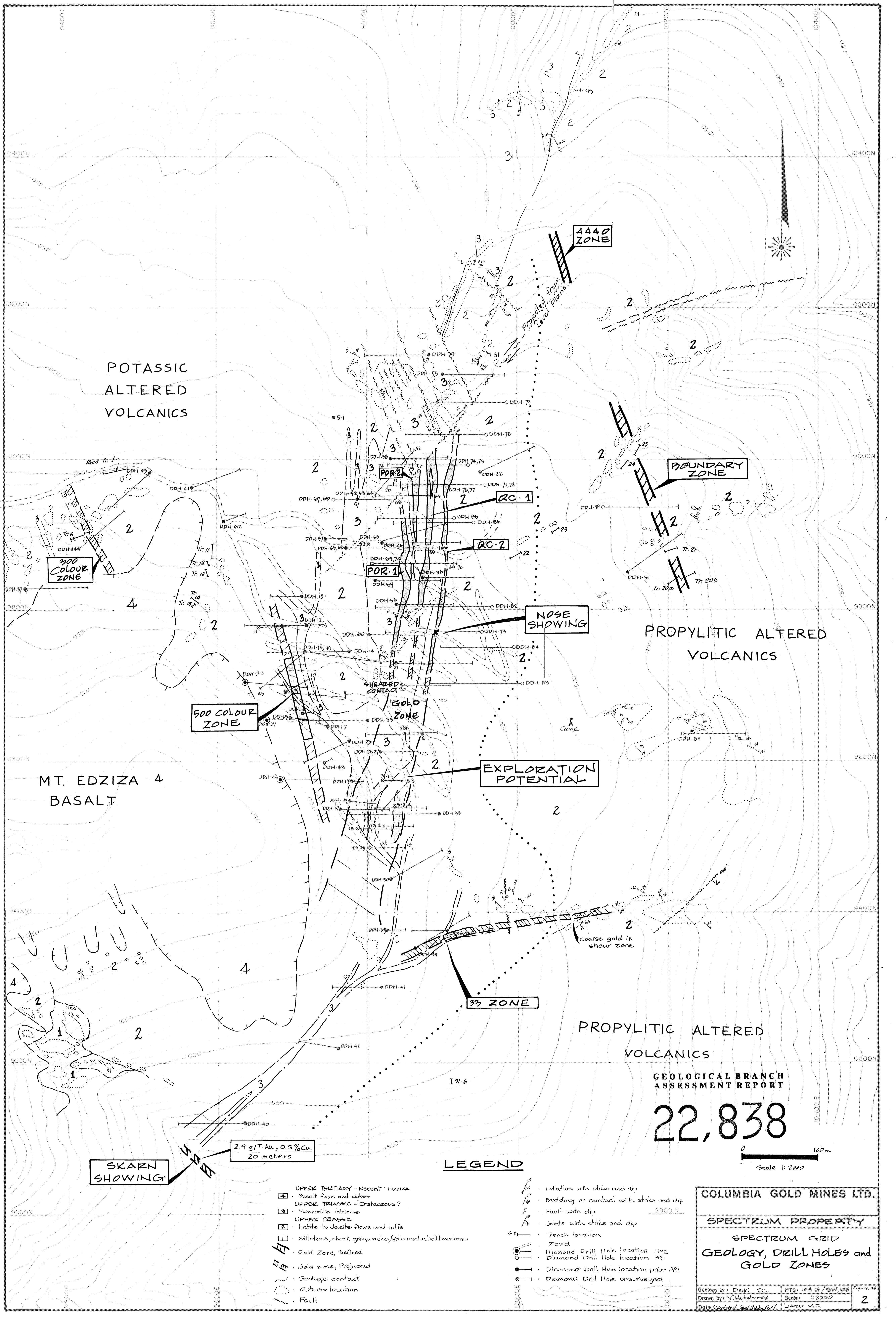
COLUMBIA GOLD MINES LTD.

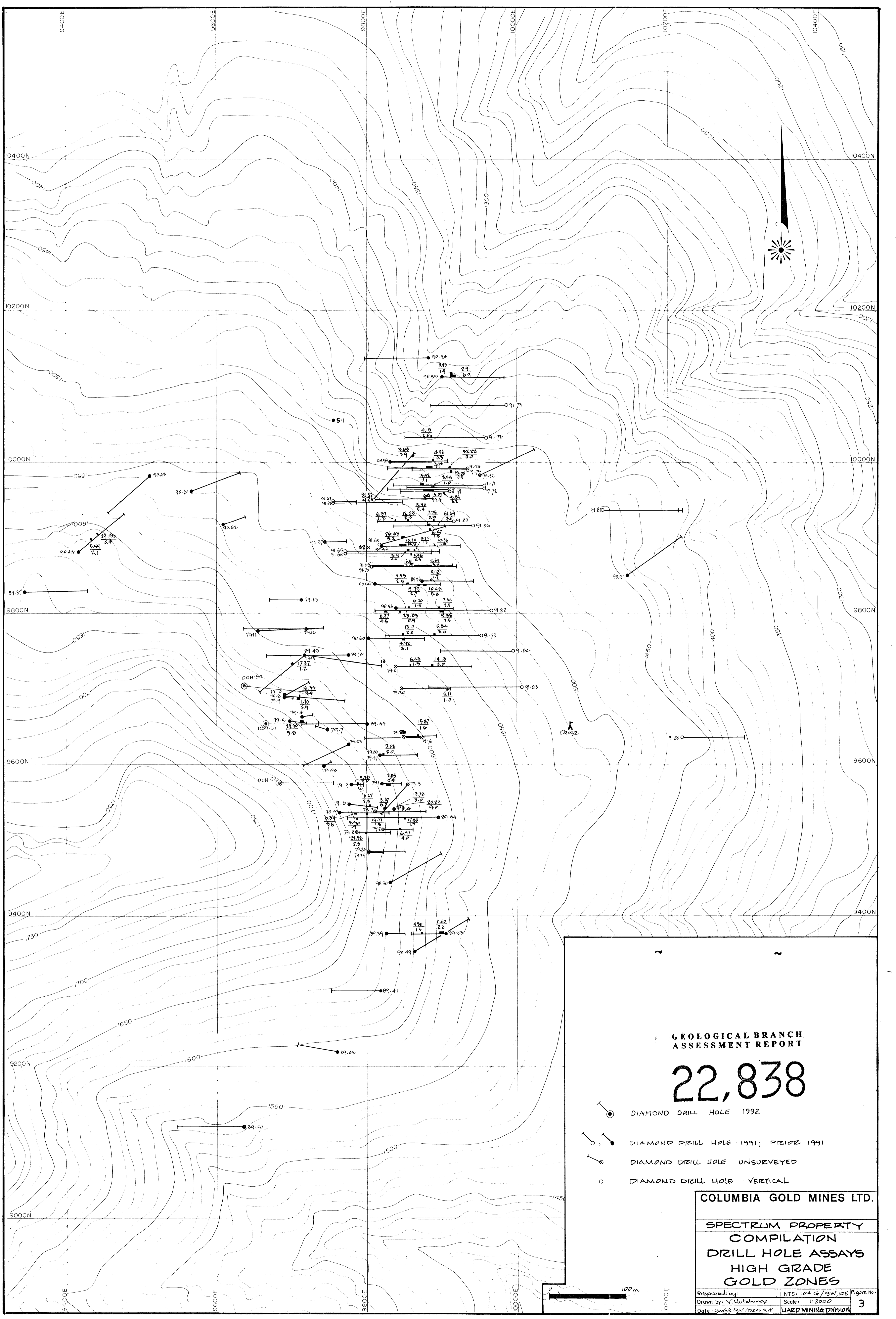
SPECTRUM PROPERTY

SPECTRUM GRID

GEOLOGY, DRILL HOLES and GOLD ZONES

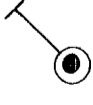
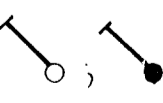
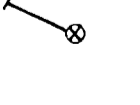

Geology by: DBK, SC NTS: 104 G / 9W, 10B Figure 16
 Drawn by: V. Hutchings Scale: 1:2000
 Date Updated: Sep 74 by G.N. LIVED M.D. 2





GEOLOGICAL BRANCH
ASSESSMENT REPORT

22,838

-  DIAMOND DRILL HOLE 1992
-  DIAMOND DRILL HOLE 1991; PRIOR 1991
-  DIAMOND DRILL HOLE UNSURVEYED
-  DIAMOND DRILL HOLE VERTICAL

COLUMBIA GOLD MINES LTD.

SPECTRUM PROPERTY
COMPILATION
DRILL HOLE ASSAYS
HIGH GRADE
GOLD ZONES

Prepared by:	NTS: 1:24 G/W, 1:106	Figure No.:
Drawn by: V. Hutchings	Scale: 1:2000	3
Date: Update Sept. 1992 to N.	LIASZ MINING DIVISION	



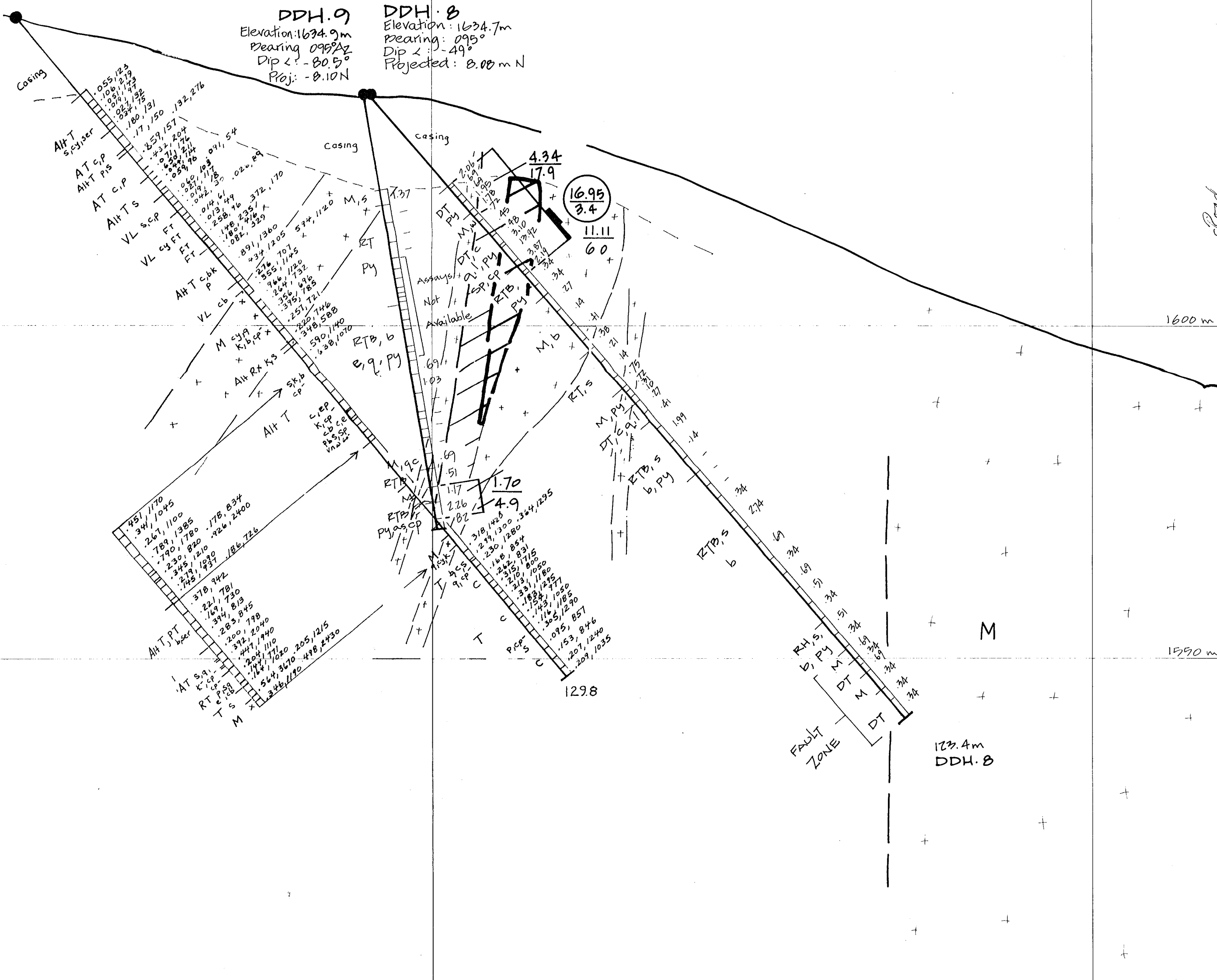
W

E

DDH-92-90
 Elevation: 1646.5
 Bearing: 090° Az
 Dip: -50°
 Proj: 4.0 m S

DDH-9
 Elevation: 1634.9 m
 Bearing: 090° Az
 Dip: -50.5°
 Proj: 0.10 N

DDH-8
 Elevation: 1634.7 m
 Bearing: 095°
 Dip: -49°
 Projected: 0.00 m N



LEGEND

LITHOLOGIC UNITS ~

- UPPER TERTIARY - RECENT EPIZIA FORMATION
- [BT] - Basalt flows and dykes
- UPPER TRIASSIC - CRETACEOUS
- [M] - Monzonite intrusive
- UPPER TRIASSIC STUHINI GROUP
- [VL] - Latite to dacite flows and tuffs, undifferentiated overlying sediments.
- FLAWS -
- AN - andesite FP - feldspar RD - rhyodacite
- DC - dacite LA - latite
- TUFFS -
- AT - ash PT - lapilli
- AX - mixed ash and crystal tuff
- RH - rhyolite
- CT - cherty ET - rhyodacite
- DT - dacite X - crystal
- LT - volcanoclastic
- SEDIMENTS -
- SST - sandstone LST - limestone
- SST - sandstone CHT - chert
- MISCELLANEOUS -
- > - brecciated FT - fault zone
- BR - breccia NA - not assayed

ALTERATION ~

- b - secondary biotite
- c - chloritization
- e - epidote
- ser - sericite
- k - secondary k-spar
- s - silicification
- cy - clay
- co - carbonate

MINERALIZATION ~

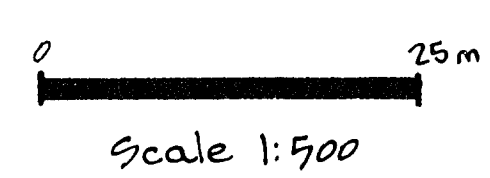
- [] - Gold zones (accompanied by silicification)
- [] - Grade blocks (geological reserve >100 g/t gold)
- [] - Metal values; g/t gold, ppm copper
- [] - Weighted averages; g/t gold interval in metres
- ca - calcite veins
- q - quartz veins
- qc - quartz carbonate veins
- asp - arsenopyrite
- cp - chalcopyrite
- mg - magnetite
- py - pyrite
- sp - sphalerite
- po - pyrrhotite
- py - pyrite
- sp - sphalerite
- Pyrite noted if >5%
- Other minerals noted if >1%

ADDITIONAL SYMBOLS ~

- [] - Brittle fracture zone
- [] - Silicification
- [] - Monzonite intrusive

GEOLOGICAL BRANCH ASSESSMENT REPORT

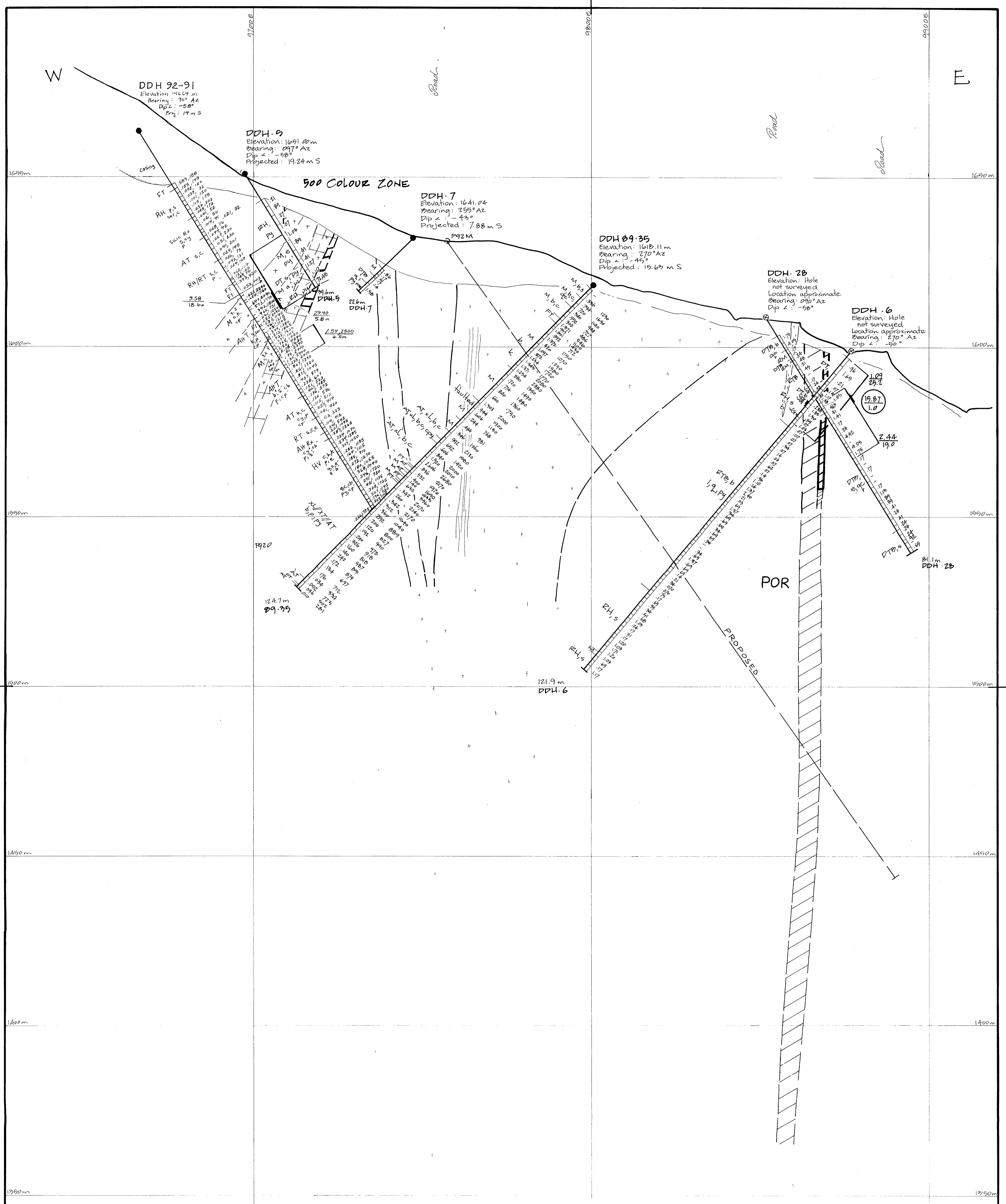
22,838



COLUMBIA GOLD MINES LTD.

SPECTRUM PROPERTY
 WEST HALF
 CROSS SECTION 9700N
 DDH 8, 9, 92-90

Geology by: D. Kilby	NTS: 104 G/GW, 10E	Figure No:
Drawn by: V. Hutchings	Scale: 1:500	4
Date: updated Sept. 1992 by G.N.	L.L.A.R.D. M.D.	



LEGEND

LITHOLOGIC UNITS ~

- UPPER TERTIARY - RECENT EDZIZA FORMATION
- UPPER TRIASSIC - CRETACEOUS
- UPPER TRIASSIC STUHNI GROUP
- Latite to dacite flows and tuffs, undifferentiated overlying sediments
- FLAWS -
- AN - andesite FP - feldspar ED - rhyodacite
- DC - dacite LA - latite
- TUFFS -
- AT - ash PT - lapilli
- AX - mixed ash and crystallet RH - rhyolite
- CT - cherty RT - rhyodacite
- DT - dacite X - crystal
- LT - Volcanoclastic
- SEDIMENTS -
- SLT - siltstone LST - limestone
- EST - sandstone CHT - chert
- MISCELLANEOUS -
- BR - brecciated FT - fault zone
- BX - breccia NA - not assayed

ALTERATION ~

- b - secondary biotite k - secondary k-spar
- c - chloritization s - silicification
- e - epidote

MINERALIZATION ~

- Gold zones (accompanied by silicification)
- Grade blocks (geological reserve >100 g/T gold)
- Metal values; g/T gold, ppm copper
- Weighted averages; g/T gold interval in metres

- ca - calcite veins vz - vein zone
- q - quartz veins ms - massive sulphides
- qc - quartz carbonate veins

- asp - arsenopyrite po - pyrrhotite
- cp - chalcopyrite py - pyrite
- mg - magnetite sp - sphalerite

Pyrite noted if >5%
Other minerals noted if >1%

ADDITIONAL SYMBOLS ~

- Brittle fracture zone
- Silicification
- Monzonite intrusive

GEOLOGICAL BRANCH ASSESSMENT REPORT

22,838

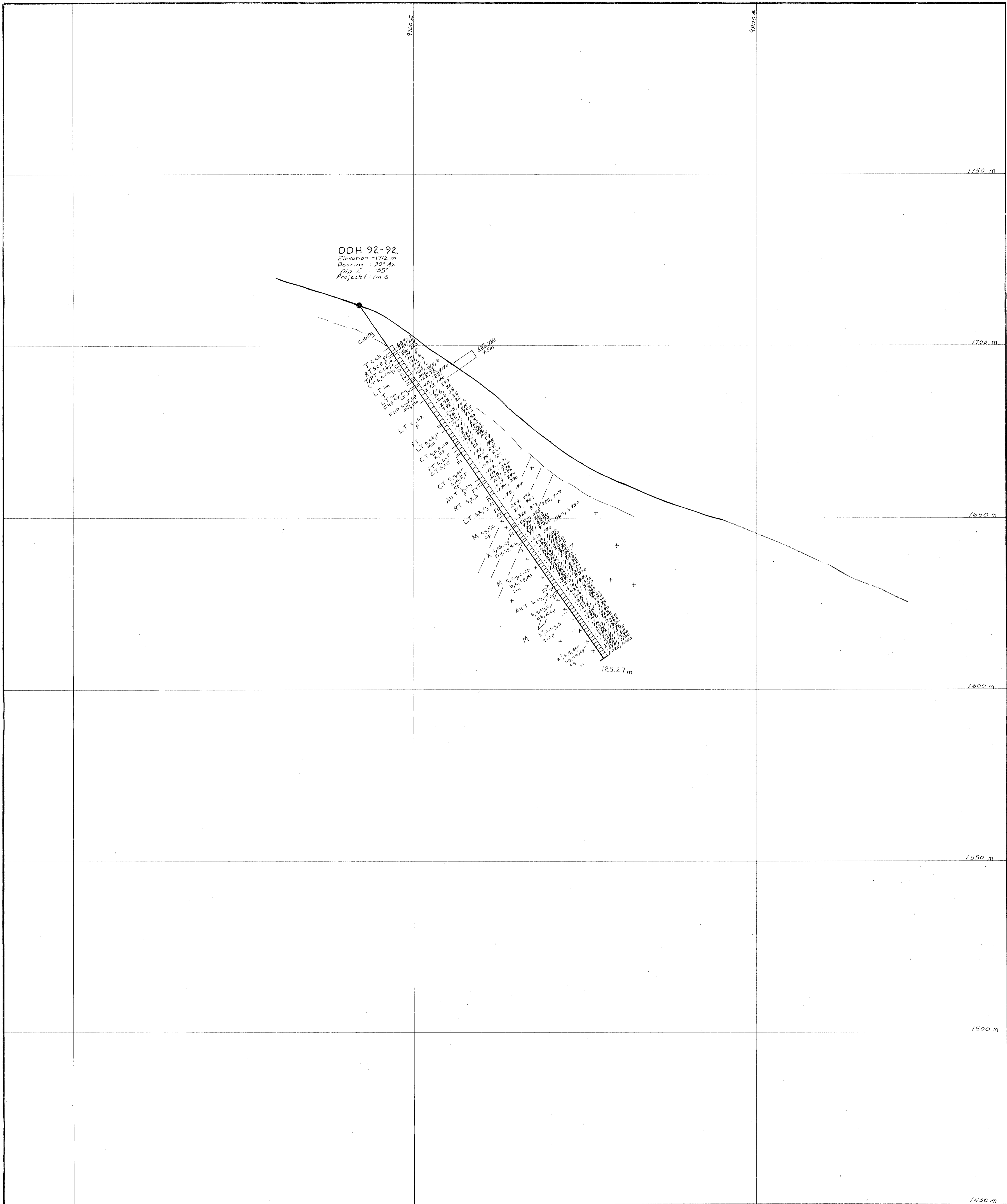
Scale 1:900

COLUMBIA GOLD MINES LTD.

SPECTRUM PROPERTY

CROSS SECTION 9640N
DDH 5, 6, 7
DDH 28, DDH 89.35
DDH 92-91

Geology by: Dan Kilby NTS: 104 G/9W, 10E Figure No. 5
Drawn by: V. Hutchings Scale: 1:900
Date: Updated 30/1/1992 by GW LIAED M.D.



DDH 92-92
 Elevation: 1712 m
 Bearing: 90° AZ
 Dip: -55°
 Projected: m S

LEGEND

LITHOLOGIC UNITS ~

- UPPER TERTIARY - RECENT EDZIZA FORMATION
- [BT] - Basalt flows and dikes
- UPPER TRIASSIC - CRETACEOUS ?
- [M] - Monzonite intrusive
- UPPER TRIASSIC - STUHINI GROUP
- [VL] - Latite to dacite flows and tuffs, undifferentiated overlying sediments
- FLOWS -
- AN - andesite FP - feldspar ED - rhyodacite
- DS - dacite LA - latite
- TUFFS -
- AT - ash
- AX - mixed ash and crystal, etc
- CT - cherty
- DT - dacite
- LT - volcanoclastic
- SEDIMENTS -
- SLT - siltstone
- SST - sandstone
- MISCELLANEOUS -
- B - brecciated
- bx - breccia
- PT - lapilli
- RH - rhyolite
- RT - rhyodacite
- X - crystal
- LST - limestone
- CHT - chert
- FT - fault zone
- NA - not assayed

ALTERATION ~

- b - secondary biotite
- c - chloritization
- e - epidote
- k - secondary k-spar
- s - silicification

MINERALIZATION ~

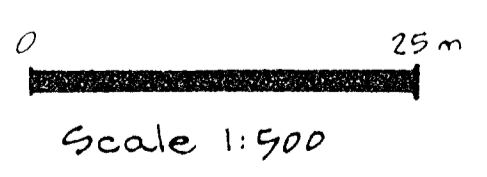
- [Hatched] - Gold zones (accompanied by silicification)
- [Stippled] - Grade blocks (geological reserve >120 g/t gold)
- [Box with numbers] - Metal values, g/t gold, ppm copper
- [Box with numbers] - Weighted averages, g/t gold interval in metres
- ca - calcite veins
- q - quartz veins
- qc - quartz carbonate veins
- asp - arsenopyrite
- cp - chalcopirite
- mg - magnetite
- py - pyrrhotite
- py - pyrite
- sp - sphalerite
- vz - vein zone
- ms - massive sulphides
- Pyrite noted if >5%
- Other minerals noted if >1%

ADDITIONAL SYMBOLS ~

- [Box with numbers] - Brittle fracture zone
- [Box with numbers] - Silicification
- [Box with numbers] - Monzonite intrusive

GEOLOGICAL BRANCH ASSESSMENT REPORT

22,838

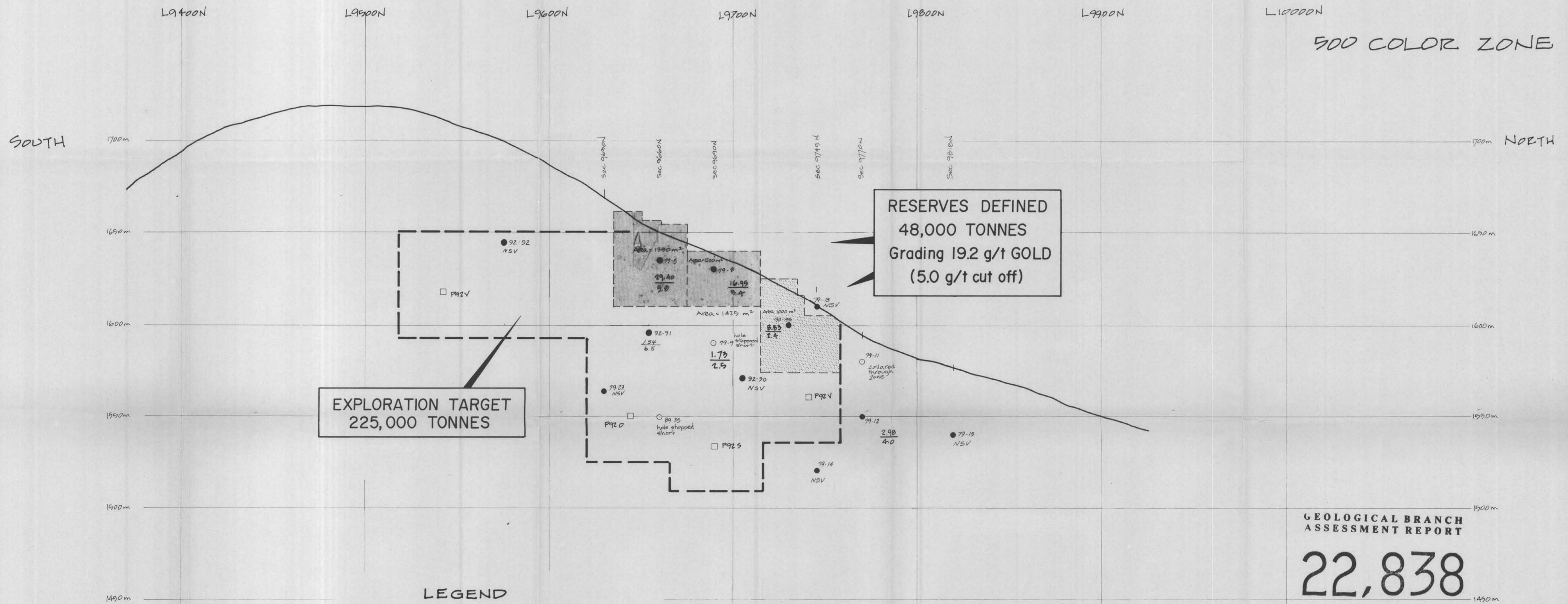


COLUMBIA GOLD MINES LTD.

SPECTRUM PROPERTY

CROSS SECTION 9575 N
 DDH: 92-92

Geology by: G.E. Norman	NTS: 124 G/9W/10E	Figure No:
Drawn by: JS above	Scale: 1:500	6
Date: Sept. 1992	LIARD M.D.	



**EXPLORATION TARGET
225,000 TONNES**

**RESERVES DEFINED
48,000 TONNES
Grading 19.2 g/t GOLD
(5.0 g/t cut off)**

LEGEND

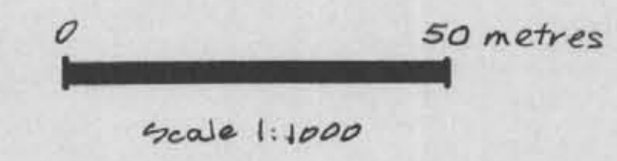
- 91-86 · Pierce point of drill hole
- 91-84 · Projected pierce point of hole that stopped short
- P92A · Pierce point of proposed 1992 drill holes

52.22
7.0 GOLD ASSAY (g/T Au)
 INTERVAL (metres)

<p>RESERVES DEFINED 48,000 TONNES GRADING 19.2 g/T GOLD (5.0 g/T CUT-OFF)</p>	<p>■ Reserve blocks grading > 10g/T Au</p>
<p>EXPLORATION TARGET 225,000 TONNES</p>	<p>□ EXPLORATION TARGET, 1992 PHASE I PROGRAM</p>

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

22,838



COLUMBIA GOLD MINES LTD.
SPECTRUM PROPERTY
500 COLOUR ZONE
LONGITUDINAL PROJECTION
9700E

Data by:	NTS: 104 G / SW 10E	Figure No.:
Drawn by: V. Hutchings	Scale: 1:1000	7
Date: Updated Sept '92 by G.R.N.	LIAPD M.P.	