# ASSESSMENT REPORT 

## DIAMOND DRILLING

MINERAL HILL PROPERTY

NTS 93 L 10 E

Omineca Mining Division
British Columbia

Latitude: $54^{\circ} 31^{\prime}$ North
Longitude: 1260 44' West
for

SOUTHERN CROSS GOLD INC.
2738 Westlake Givinue Coquitlam, BICSHSEMENTMRENPNT V3C 537
 ROBERTSON, WALLIS \& ASSOCIATES

708-1155 West Pender Street
Vancouver, B.C.
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April, 1988

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APR 271988
MR. \# $\$$
VANCOUVER, B.C.

## TABLE OF CONTENTS

Page
Introduction ..... 1
Location and Access ..... 1
Property ..... 3
Physiography, Climate, Vegetation ..... 5
Regional Geological Setting ..... 5
Property Geology and Mineralization ..... 8
Summary of Previous Exploration ..... 9
1987 Diamond Drill Program ..... 11
References ..... 16
LIST OF FIGURES

| Figure 1: | Location Map | 2 |
| :--- | :--- | ---: |
| Figure 2: | Access and Claim Distribution | 4 |
| Figure 3: | Regional Geology | 6 |
| Figure 4: | Drill Location Key | 12 |
| Figure 5: | Location Map - Drill Holes 87-1, 2, 3 | in pocket |
| Figure 6: | Location Map - Drill Holes 87-4,5,6,7 | in pocket |
| Figure 7: | Location Map - Drill Hole 87-8 | 15 |

## LIST OF APPENDICES

Appendix I Diamond Drill Logs
Appendix II Analytical Results
Appendix III Statement of Expenditures Appendix IV Statement of Qualifications

## INTRODUCTION

The Mineral Hill property of Southern Cross Gold Inc. is located close to Highway 16 between Houston and Smithers in the Omineca Mining Division. The property consists of 58 claim units and 2-post mineral claims and has a long history of exploration beginning prior to 1914. Exploration in the 1960's and 1970's was directed at porphyry-style molybdenum and copper mineralization. More recently, the principal exploration target has shifted to vein or breccia-hosted precious metal mineralization.

During 1987, Southern Cross Gold Inc. completed eight diamond drill holes (NQ core) on the Mineral Hill claim (record number 206), totalling 521.8 metres. Three holes were drilled in the North, or Quartz Breccia Zone, four holes were drilled in the South, or Alaskite Zone and one hole was drilled below an old trench west of the Alaskite Zone.

## LOCATION AND ACCESS

The Mineral Hill property is located approximately 14 kilometres north of Houston in north-central British Columbia, and 1 kilometre east of Highway 16 between Houston and Smithers. Geographic coordinates are $54^{\circ} 31^{\prime}$ North Latitude and $126^{\circ} 44^{\prime}$ West Longitude. Access to the area drilled in 1987 is via Highway 16 from Smithers ( 45 kilometres) or from Houston (20 kilometres). Smithers has daily jet service to Vancouver and is the regional centre for supplies, services and provincial government offices (mine recorder, district geologist and mine inspector). From Highway 16, a gravel road leads through property owned by G. Murphy to the Mineral Hill claims via the north end of Fishpan Lake (Figure 2). Within the property a network of roads and trails extends to all zones explored over the past 30 years; many of these trails are only accessible with four-wheel drive vehicles.

# LOCATION MAP 

KILOMETRES

Robertson, Wallis \& Associates

The nor thern CN Rail line follows the Bulkley River a few kilometres west of the property; a B.C. Hydro transmission line and a natural gas pipeline parallel the highway.

## PROPERTY

The Mineral Hill property consists of seven Modified Grid mineral claims (a total of 54 units) and four 2-post mineral claims shown on claim sheet 93 L 10 E in the Omineca Mining Division (Figure 2). These claims are owned jointly by L.B. Warren and P.J. Huber, and are subject to an option agreement with Southern Cross Gold Inc.

| Claim Name | Units | Record Number |
| :--- | ---: | :---: |
| Mineral Hill |  |  |
| Mineral Hill A | 2 | 206 |
| Mineral Hill B | 2 | 397 |
| Mineral Hill D | 2 | 398 |
| Mineral Hill E | 4 | 1642 |
| Mineral Hill F | 12 | 1643 |
| Mineral Hill G | 16 | 5215 |
| Pete 1 | 1 | 5216 |
| Pete 2 | 1 | 4956 |
| Pete 3 | 1 | 4955 |
| Pete 4 | 1 | 4953 |
|  |  | 4954 |

All holes drilled in 1987 are located within the Mineral Hill claim.


## PHYSIOGRAPHY, CLIMATE, VEGETATION

The Mineral Hill claims are situated on the western slopes and upper plateau of Mineral Hill, a subsidiary ridge of the higher Grouse Mountain range immediately to the north (Figure 2). Elevations range from 2,500 feet ( 760 metres) to 4,500 feet ( 1370 metres) at the summit of Mineral Hill. The lower western slopes (location of the 1987 diamond drill program) are quite gentle with deciduous tree cover broken by open grassy meadows. The upper plateau of Mineral Hill is an area of low rolling hills and valleys with small lakes and swamps. Between 2,800-4,000 feet (850-1220 metres), steeper slopes with a thick cover of coniferous forest hinder access and visibility.

Rock outcrop on the property is limited by overburden cover, undergrowth and swamp. The principal drainages on the property should provide adequate water for drilling purposes throughout the field season. Climate is typical of lower elevations in west-central British Columbia; field work can be carried out from early May to late October.

## REGIONAL GEOLOGICAL SETTING

The property is situated within the Hazelton Trough of the Intermontane tectonic belt, an area underlain principally by Mesozoic volcanic and sedimentary rocks intruded by a variety of granitic rocks ranging in age from early Jurassic to Tertiary (Figure 3).

In the Smithers-Houston area, northwest trending lower Jurassic Hazelton Group subaerial to subaqueous red and green pyroclastic and flow rocks with intercalated sediments predominate. These are intruded by coeval Topley granitic rocks and by numerous granitic and lesser gabbroic stocks, dykes and plugs of late Cretaceous (Bulkley intrusives) and Tertiary age.


Structure of the region is dominated by nor thwest-striking fault structures along which vertical movement has been most prevalent.

A variety of mineral deposit types have been recognized in the general area, most common of which are polymetallic vein and replacement deposits ( $\mathrm{Cu}, \mathrm{Pb}, \mathrm{Zn}, \mathrm{Ag}, \mathrm{Mo}, \mathrm{Au}$ ) developed in Hazelton Group layered rocks commonly adjacent to younger granitic intrusions. The region is also well known for porphyry copper and molybdenum deposits of several styles and ages (Carter, 1981). Not as well defined are volcanogenic massive sulphide deposits, of which only a few have been recognized to date. Copper-zinc mineralization on Grouse Mountain 5 km north of Mineral Hill has massive sulphide affinities although cross-cutting relationships are evident.

Silver-copper mineralization at the Equity Silver Mine, located 40 km southeast of Houston consists of disseminated vein and breccia filling sulphide and sulfosalt mineralization, sub-concordant with host-rock stratigraphy contained in a well-developed alteration zone, possibly related to hydrothermal fluid circulation at a high level in a porphyry system. Mineralization has characteristics of both massive sulphide and replacement types of mineral deposit. Production commenced in the Southern Tail deposit in 1980 and totalled 4.3 million tonnes grading $135 \mathrm{~g} /$ tonne silver, $0.45 \%$ copper, $1.3 \mathrm{~g} /$ tonne gold by December 1982. Production from the Main Zone orebody began in late 1983 with ore reserves of 21.6 million tonnes grading $109 \mathrm{~g} /$ tonne silver, $0.35 \%$ copper and $0.85 \mathrm{~g} /$ tonne gold (Cyr, Pease and Schroeter, 1984).

## PROPERTY GEOLOGY AND MINERALIZATION

The Mineral Hill property is largely underlain by a northwest striking sequence of volcanic rocks of the Telkwa Formation (Hazelton Group) with lesser volumes of sedimentary rock probably belonging to the Upper Jurassic Bowser Lake Group. In the areas drilled in 1987 these rocks are strongly hornfelsed by a variety of intrusive rocks of late Cretaceous (Bulkley) age.

Volcanic rocks are predominantly andesitic flows and pyroclastics with lesser amounts of rhyolite and basalt. Sedimentary units include argillite, quartzite and greywacke with some limy varieties occurring locally. Gill and Myers (1984) reported a resistant trachytic flow unit with large feldspar laths capping low ridges on the upper plateau of Mineral Hill. This unit resembles Tertiary Goosly Lake volcanics elsewhere in the district.

Bodies of porphyritic quartz-monzonite ("quartz feldspar porphyry") and alaskite are the principal intrusive rocks occurring in the western part of the property. Further to the east on Mineral Hill are outcrops of medium grained diorite. Dykes of aplite and monzonite are present around the quartz-monzonite stock. These intrusions have produced a large area of hornfelsing (perhaps 2000 by 2500 metres) in the surrounding volcanic and sedimentary units. Hard fine-grained biotite hornfels is the most common type in the South (Alaskite) zone and green chlorite hornfels is more common in the North (Quartz Breccia) zone. Hornfelsing hardened the rocks surrounding the intrusions and made them brittle and hence more susceptible to the development of fracture and breccia zones.

Typical mineralization consists of pyrite, pyrrhotite, molybdenite and chalcopyrite with quartz, calcite, minor siderite or feldspar in fractured intrusive rocks or zones of quartz breccia in hornfels. Silver-bearing tetrahedrite with galena, sphalerite and chalcopyrite occurs within both the Alaskite and Quartz Breccia zones.

## SUMMARY OF PREVIOUS EXPLORATION

Initial work on Mineral Hill was carried out in 1914 or earlier when a 5 metre shaft was sunk on a narrow quartz vein containing silver, copper, lead and minor gold values. A number of other showings were explored in the 1920's by trenches, short adits and shallow shafts.

During the 1960's and 1970's, considerable exploration was carried out for large tonnage molybdenum-copper mineralization. In 1966 Cominco and Molymine Exploration Ltd. completed a large program of geological, geophysical and geochemical surveys, trenching and 15 diamond drill holes (2225 metres). In 1967, Molymine completed 102 percussion drill holes ( 2882 metres) and 13 diamond drill holes ( 1308 metres) (Sharp, 1968). In 1976, Granby Mining Corporation optioned the property and drilled 12 percussion holes ( 683 metres) in the Granby Zone, east of the North Zone. Granby completed seven percussion holes in 1978 (James, 1979) in the east edge of the quartz monzonite ( 575 metres) and three widely spaced diamond drill holes ( 902 metres) in the area of percussion drilling, in the Alaskite Zone and in the Breccia Zone. Control of Granby Mining passed to Noranda in 1979; they carried out programs of prospecting, geochemical and geophysical surveys in 1981, 1983 and 1984 (Gill and Myers, 1984).

In summary, molybdenite grades of $0.10 \% \mathrm{MoS}_{2}$ are associated with closely spaced quartz veining and fractures in the Alaskite Zone. Some larger quartz veins peripheral to this zone carrying silver-lead-zinc values were tested by early workings and some of the more recent exploration. Molybdenite mineralization in the eastern part of the quartz monzonite ("Granite Zone") generally grades less than $0.05 \% \mathrm{MoS}_{2}$. Low molybdenite values were also found in Granby's drill testing of a hornfels zone in the nor theast part of the Mineral Hill claim ("Granby Zone"; James, 1979). The Quartz Breccia Zone has approximate surface dimensions of 240 by 450
metres (Sharp, 1968) with grades of $0.05 \% \mathrm{MoS}_{2}$ indicated by extensive trenching and drilling.

Molymine's drilling in 1966-1967 indicated that a quartz vein system with sometimes significant silver values was present in the Quartz Breccia Zone. Diamond drill hole D-16 intersected a narrow vein grading 135.8 $\mathrm{g} /$ ton silver. Hole D-14 was the only hole completely analyzed for silver; values ranged from 0.06 to $3.7 \mathrm{oz} /$ ton. Hole D-20 included a 50 foot interval grading $1.2 \mathrm{oz} /$ ton silver. Hole D-16 is located approximately 300 metres southeast of holes D-14, D-20.

During 1985 the Mineral Hill property was optioned by Dafrey Resources who cleaned out and sampled some of the old trenches in the Quartz Breccia Zone and material from dumps at old workings on silver-bearing quartz veins elsewhere on the property. One sample by N.C. Carter, P.Eng. contained $659 \mathrm{oz} /$ ton silver and $0.29 \mathrm{oz} /$ ton gold in a narrow tetrahedrite vein exposed in a trench in the southeast portion of the Quartz Breccia Zone. Dafrey drilled 12 percussion holes in the Quartz Breccia and Alaskite Zones. At the same time, Lacana Mining Corporation compiled much of the earlier data on the property and assayed samples from the 1985 drilling, pulps from Molymine's and Granby's percussion drilling and core from the top 200 metres of Granby's G78-1 drill hole in the Quartz Breccia Zone. These analyses indicated an area of silver mineralization within the Quartz Breccia Zone grading around $2 \mathrm{oz} /$ ton silver, with dimensions of 10 by 30 by 250 metres; however, results from hole G78-1, drilled in the centre of this block, showed no significant silver values. Lacana's interest in the property expired in late 1985.

## 1987 DIAMOND DRILL PROGRAM

During 1987, the Dafrey option was transferred to Southern Cross Gold Inc. who diamond drilled 521.8 metres, NQ core size, in eight holes in July and August 1987. In October-November 1987, the writer surveyed these drill collars by tape and compass, in relation to trenches and old drill holes, and logged the drill core. Core is stored in Houston, B.C. at the home of Ed Westgarde. The diamond drill contractor was Coral Enterprises Ltd. of Morinville, Alberta. A summary of the 1987 drilling follows:

| Hole Number | Azimuth | Dip | Depth (m) | Zone |
| :---: | :---: | :---: | :---: | :---: |
| 87-A-1 | - | -900 | 107.9 | Quartz Breccia (North Zone) |
| 87-A-2 | $230^{\circ}$ | -600 | 106.7 | Quartz Breccia (North Zone) |
| 87-A-3 | $310^{\circ}$ | -600 | 58.8 | Quartz Breccia (North Zone) |
| 87-A-4 | 1800 | -600 | 50.0 | Alaskite (South Zone) |
| 87-A-5 | 1550 | -600 | 67.0 | Alaskite (South Zone) |
| 87-A-6 | 2000 | -600 | 64.9 | Alaskite (South Zone) |
| 87-A-7 | 0050 | -600 | 10.05 | Alaskite (South Zone) |
| 87-A-8 | $180^{\circ}$ | -600 | 56.4 | West of Alaskite Zone |

Note that DDH 87-A-7 was abandoned.

Figure 4 provides a key to zone locations. Drill hole locations are shown in Figures 5, 6, and 7. Drill logs are included as Appendix 1, together with sample intervals and analytical results. Drill logs include tables of core recovery and rock quality ( RQD ). Core recovery is expressed as the actual length of core recovered in an interval as a percentage of the interval length. RQD is used as a guide to ground conditions and is measured as the total length of pieces of core in an interval which are 4 inches ( 10 cm ; approximately two times the core diameter) or greater in length between natural fractures, expressed as percentage of the actual core recovered in the interval.

Eight samples of whole drill core were collected from holes 87-A-1 and A2, prior to logging, and assayed for gold and silver by Acme Analytical Laboratories in Vancouver. After core logging, 99 samples of split drill core were analyzed for gold, silver, copper, lead, zinc and molybdenum by Bondar-Clegg and Company Ltd. in North Vancouver. Analytical results are attached as Appendix 2.

All three holes drilled in the Quartz Breccia Zone (DDH 87-A-1, 2 and 3) intersected andesitic volcanic rocks and tuffs with variable amounts of brecciation, alteration and quartz veining. In $87-A-1$, the zone of alteration, breccia and veining extends from the base of overburden at 21 feet ( 6.4 metres) to 144.5 feet ( 44.0 metres); significant assays are:

| $79-80$ feet | $1.09 \mathrm{oz} /$ ton silver over 1 foot |
| :---: | :--- |
| $92-94$ feet | $6.91 \mathrm{oz} /$ ton silver over 2 feet |
| $130-131.5$ feet | $1.51 \mathrm{oz} /$ ton silver and $0.162 \mathrm{oz} /$ ton gold over 1.5 feet |

Hole 87-A-2 shows alteration, brecciation and quartz veining throughout, with greater intensity than in either $87-A-1$ or $87-A-3$. Significant results are:

| $246-255.5$ feet | $1.04 \mathrm{oz} /$ ton silver over 9.5 feet |
| :--- | :--- |
| $280-289$ feet | $1.02 \mathrm{oz} /$ ton silver over 9 feet |
| $316-320$ feet | $1 \mathrm{oz} /$ ton silver over 4 feet |
| $343.5-346$ feet | $0.71 \mathrm{oz} /$ ton silver and $0.015 \mathrm{oz} /$ ton gold over 2.5 feet |

In hole 87-A-3, core recovery is much lower (only 70\% overall). This hole is also in brecciated andesitic volcanic rocks throughout but with much less alteration or veining than in 87-A-2; there are no significant silver or gold assays. Brecciation is very clear-cut with little apparent movement of clasts, suggesting this hole may be drilled close to the edge of the zone of brecciation.

Drill holes $87-\mathrm{A}-4, \mathrm{~A}-5, \mathrm{~A}-6$ and A-7 are all drilled in the Alaskite or South Zone and intersected essentially similar rock types. DDH 87-A-7 was collared in hornfelsed andesites but the rock was badly broken giving poor core recovery; this hole was abandoned at the 10 metre depth. The other three holes intersected several sections of Alaskite separated by variable amounts of hornfelsed andesite. Hole 87-A-5 showed the most alteration, quartz veining and sulphide mineralization but none of these holes carried significant silver or gold values.

Drill hole 87-A-8 (Figure 7) was located several hundred metres west of the Alaskite Zone, collared to drill under an old trench located just east of where the access road crosses the stream flowing north out of Fishpan Lake. This hole intersected hornfelsed andesitic volcanic rocks with considerable hydrothermal alteration and some quartz veining with pyrite, pyrrhotite, chalcopyrite mineralization. Core recovery was very poor towards the bottom of this hole. Samples showed no significant silver or gold values. There are apparently no records of drilling in this area before so the extent of alteration in the core is of some geological interest.


## REFERENCES

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Geology, Smithers Map Area. Geological
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APPENDIX I

DIAMOND DRILL LOGS



| Principal <br> Unit | Sub-Unit | Description / Notes / Samples |
| :--- | :--- | :--- |

NOTE: 1 cm quartz, pink feldspar, molybdenite vein, $90^{\circ}$ to CA at 336.0.
305.6-308.7: Lost core.
354.0

END OF HOLE

## SAMPLES

| Sample \# | Interval (feet) | Au | Ag | Cu | Pb | Zn | Mo |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| - | 30.0-33.5 | $0.001 \mathrm{oz} / \mathrm{t}$ | $0.23 \mathrm{oz} / \mathrm{t}$ | - | - | - | - |
| 87 A1-01 | 39.0-43.0 | 65 | 5.6 | 97 | 61 | 100 | 155 |
| 87 A1-02 | 43.0-50.0 | 40 | 10.1 | 94 | 30 | 361 | 230 |
| 87 A1-03 | 50.0-55.5 | 10 | 3.3 | 88 | 24 | 124 | 400 |
| 87 A1-04 | 65.0-70.0 | 15 | 3.2 | 58 | 16 | 61 | 105 |
| 87 A1-05 | 70.0-74.0 | 5 | 2.1 | 120 | 25 | 63 | 140 |
| 87 Al-06 | 74.0-79.0 | 15 | 2.6 | 75 | 11 | 59 | 124 |
| - | 79.0-80.0 | $0.001 \mathrm{oz} / \mathrm{t}$ | $1.09 \mathrm{oz} / \mathrm{t}$ | - | - | - | - |
| 87 A1-07 | 80.0-83.0 | 10 | 5.5 | 107 | 475 | 2720 | 197 |
| $87 \mathrm{Al}-08$ | 83.0-89.0 | 25 | 5.3 | 79 | 34 | 90 | 325 |
| 87 A1-09 | 89.0-92.0 | 15 | 13.0 | 149 | 14 | 74 | 360 |
| - | 92.0-94.0 | $0.001 \mathrm{oz} / \mathrm{t}$ | $6.91 \mathrm{oz} / \mathrm{t}$ | - | - | - | - |
| 87 A1-10 | 94.0-98.2 | 10 | 1.3 | 84 | 6 | 42 | 340 |
| 87 A1-11 | 111.0-113.0 | 15 | 2.8 | 54 | 24 | 75 | 54 |
| 87 A1-12 | 113.0-120.0 | 15 | 1.3 | 36 | 69 | 207 | 235 |
| 87 A1-13 | 120.0-125.0 | 20 | 2.2 | 101 | 46 | 136 | 205 |
| 87 Al-14 | 125.0-130.0 | 50 | 2.0 | 111 | 19 | 83 | 215 |
| - | 130.0-131.5 | $0.162 \mathrm{oz} / \mathrm{t}$ | $1.51 \mathrm{oz} / \mathrm{t}$ | - | - | - | - |

All elements quoted in ppm except gold (ppb)
$\qquad$ 87-A-1
CORE RECOVERY/RỌD


CORE RECOVERY/RQD



| Hole No.: | DDH 87-A-2 |
| :---: | :---: |
| Project: | Mineral Hill |
| Code: |  |
| Location: | NTS 93 L 10 |

$\qquad$
$\qquad$
$\qquad$
Dip: $-60^{\circ}$

Horizontal advance: $\quad 175.5$ Vertical depth: 302.5 Acid test: None

| Principal <br> Unit <br> (feet) | Sub-Unit <br> (feet) | Description / Notes / Samples |
| :---: | :---: | :---: |

0-10.0
10.0-350.0

## OVERBURDEN: CASING REMOVED.

ANDESITE: STrongly altered, brecciated and quartz veined throughout most of the hole. Colour variable in shades of greygreen. Occasional grey-black sections are relatively unaltered and unveined; rest is quite strongly chloritized with some areas beige coloured from development of fine albite and/or sericite. Original textures often destroyed by alteration; some sections of crystal tuff, crystal lithic tuff and agglomerate are recognizable. Larger clasts have altered edges, fresher cores. All of hole is heavily veined by white quartz with lesser amounts of creamy feldspar and white or salmon pink calcite. Veins carry variable amounts of pyrite, chalcopyrite, tetrahedrite. All vein minerals tend to grow in large coarse-grained patches. Molybdenite is present locally, with quartz, pyrite and minor amounts of pink feldspar.

Several veins show several stages of filling with quartz earliest, followed by feldspar, and pink or white calcite as the last stage in the centre of the vein.

Veining is often extensive enough to constitute breccia zones; clasts frequently angular and tabular with high length to width ratios. Breccia appears matrix-supported on drill core scale, but many sections of altered andesite are probably large
clasts and overall the breccia is more likely clast-supported. Little apparent movement of clasts.

In comparison with DDH 87-A-3, this hole has stronger alteration of andesite, wider and more abundant quartz veining with coarsercrystallization of vein minerals (including sulphides). Feldspar and calcite are more abundant. Tetrahedrite is rare or absent in Hole 3. Brecciation is clear-cut in Hole 3, suggesting Hole 3 is closer to the edge of the breccia zone, with less alteration and movement of clasts.
34.5-37.5: Dark grey-green medium to fine grained equigranular intrusive rock (diorite?). Strong chloriteepidote alteration.
42.0-42.5: Abundant pyrite.
45.0: Minor molybdenite with quartz, pyrite, pink feldspar veining.
49.5: $\quad$ Smear of molybdenite on fracture surface.
54.5-56.0: Quartz breccia-90\% white quartz vein, less than $5 \%$ pyrite, minor fine-grained tetrahedrite.
58.5: Molybdenite with pyrite on fracture face parallel to CA.
64.0-66.0: Quartz breccia zone ( $70 \%$ quartz with over $5 \%$ pyrite). Fine-grained tetrahedrite (64.5-66.0). Molybdenite smear on fracture face at 65.0.
67.0-96.4: Abundant quartz veining. Strongly altered andesite tuff (chlorite-carbonate-albite-sericite). Locally strong brecciation. Occasional large blebs (1-2 cm) of pyrite, chalcopyrite, tetrahedrite in veins of white quartz and feldspar (e.g. at 70.5, 74.0, 92.8).
82.0-83.8: Lost core.
90.8-96.4: Occasional tiny grains of tetrahedrite,
100.5-103.0: Lost core, cave.
104.0-115.8: Dark fine-grained andesite(?) Almost no quartz veining or sulphides.
115.8-144.0: Pale grey and buff altered andesite with quartz veining and brecciation. Pink calcite and creamy feldspar common in wider quartz veins. Coarse blebs and cubes of pyrite common in veins; large patches of chalcopyrite sometimes present. Also lesser amounts of coarse tetrahedrite and smears of molybdenite.
127.5: Angular pyrite mass ( 4 cm wide).
128.5-129.0: Large pyrite cubes with chalcopyrite and minor tetrahedrite.
131.0: Coarse pyrite cubes, minor tetrahedrite. 136.0-136.5: Abundant pyrite. 140.0-141.5: Strong epidote as alteration of large andesite clast. At 141.5 quartz vein with pink calcite and large pyrite masses ( 3 cm ).

## Principal

Unit
Sub-Unit
Description / Notes / Samples
144.0-150.0: Grey-green andesite tuff. Abundant fine fracturing and fine calcite veinlets. Lower contact $25^{\circ}$ to CA.
150.0-166.0: Pale altered andesite with quartz veining and brecciation (similar to 115.8-144.0). Coarse pyrite and thin films of molybdenite; minor chalcopyrite and tetrahedrite.

All of section from 152.0-172.0 is broken by late shearing (post quartz veins) with high core loss and much broken core.

- 151.0-152.0: Pyrite, molybdenite, chalcopyrite with perhaps some fine tetrahedrite. 153.0: Similar sulphide mineralization.
166.0-172.0: Andesite crystal - lithic tuff. Badly broken. Shearing strongest at 168.0-170.0. Quartz and pink calcite veins sparse and overall sulphide content quite low.
172.0-222.0: Pale altered andesite with abundant quartz, feldspar, calcite veining and patchy sulphide mineralization, including a few large blebs of tetrahedrite.
186.3-188.0: Lost core.
207.5-208.0: Abundant pyrite, chalcopyrite and tetrahedrite.
214.5-215.8: Large tetrahedrite blebs with pyrite in quartz veins.
222.0-226.0: Dark medium-grained intrusive rock (diorite?)
with abundant secondary biotite, chlorite, as clasts in breccia. Only minor veining, primarily thin grey quartz-molybdenite veinlets.
228.0-231.0: Pyrite, chalcopyrite, fine tetrahedrite.
235.0-240.5: Pale grey-white banded siliceous unit (sheared then silicified?), banding at $30-50^{\circ}$ to CA. Quite high pyrite content as lenses and stringers parallel to banding.
240.5-242.5: Typical pale altered andesite with quartz veining, brecciation, abundant pyrite, some chalcopyrite, minor fine molybdenite, possibly tetrahedrite.
242.5-246.0: Dark blue-green biotite-chlorite altered andesite tuff. Only minor veining. Low sulphide content.
246.0-248.5: Typical pale andesite breccia with quartz-feldsparpyrite veining; some blebs of tetrahedrite to 5 mm .
248.5-249.3: Blue-green altered andesite tuff (biotite-chloriteepidote); upper contact $45^{\circ}$ to CA; lower contact $30^{\circ}$ to CA on quartz vein.

| Principal Unit | Sub-Unit |  | Description / Notes / Samples |
| :---: | :---: | :---: | :---: |
|  |  | 249.3-255.5: | Pale green altered andesite tuff; somewhat sheared, occasional patches of pyritetetrahedrite and pyrite-molybdenite. Note 5 cm area of massive pyrite with quartz at 255.3. Lower contact $45^{\circ}$ to CA. |
|  |  | 255.5-257.0: | White streaky banded siliceous unit (as 235.0240.5 ) with lenses and stringers of fine pyrite parallel to banding ( $40-50^{\circ}$ to CA ). |
|  |  | 257.0-277.0: | Typical pale altered, veined and brecciated andesite with abundant quartz veining and occasional large pyrite blebs as at $261.0,262.5,274.5$. |
|  |  | 277.0-280.0: | Pale streaky banded siliceous unit with fine pyrite lenses and stringers, as $235.0-240.5 \mathrm{etc}$. Contacts broken, banding $40^{\circ}$ to CA. |
|  |  | 280.0-300.8: | Typical paleveined, brecciated andesite. Feldspar more common in quartz veins here. Total sulphide content $2-3 \%$, mostly as pyrite. Coarse tetrahedrite at 280.4. Minor molybdenite. Strong feldsparepidote alteration in unmineralized andesite clasts at 289.5-291.0 and 297.0-298.0. Abundant pyrite with some tetrahedrite 292.0-293.0 and 296.5. 300.0: Coarse pyrite cubes with molybdenite in quartz feldspar vein at $20^{\circ}$ to CA. |
|  |  | 300.8-302.0: | St rong epidote-hematite alteration in andesite; minor pyrite. |
|  |  | 302.0-308.0: | Normal pale, veined and brecciated andesite. |
|  |  | 308.0-312.0: | Dark biotite-chlorite altered andesite with minor epidote. Very little fracturing or veining; minor pyrite only. |
|  |  | 312.0-340.0: | Typical pale altered brecciated andesite; feldspar and epidote much commoner, and overall sulphide content decreased. Coarse pyrite (with tetrahedrite) at $317.0-317.5$. Abundant epidote at 318.0 and 319.0. |
|  |  | 340.0-343.5: | Dark fractured andesite with strong alteration (feldspar, biotite and/or hornblende, chlorite, some epidote), minor quartz veining. Very low sulphide content. |
|  |  | 343.5-346.0: | Quartz vein zone; over $80 \%$ quartz, $3-4 \%$ pyrite in fine bands. Minor fine-grained tetrahedrite. |
|  |  | 346.0-350.0: | Pale altered andesite, some quartz veining with minor pyrite. Core badly broken. |
|  | 350.0 | END OF HOL |  |

## SAMPLES

| Sample \# | Interval (feet) | Au | Ag | Cu | Pb | Zn | Mo |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| - | 54.5-56.0 | $0.001 \mathrm{oz} / \mathrm{t}$ | $0.01 \mathrm{oz} / \mathrm{t}$ | - | - | - | - |
| - | 64.0-66.0 | $0.001 \mathrm{oz} / \mathrm{t}$ | $0.07 \mathrm{oz} / \mathrm{t}$ | - | - | - | - |
| 87 A2-01 | 67.0-73.0 | 30 | 1.8 | 905 | 38 | 154 | 168 |
| 87 A2-02 | 73.0-78.0 | 35 | 3.0 | 1850 | 33 | 236 | 89 |
| 87 A2-03 | 78.0-82.0 | 15 | 0.6 | 112 | 59 | 238 | 130 |
| 87 A2-04 | 83.8-87.0 | 15 | 2.1 | 240 | 35 | 192 | 125 |
| 87 A2-05 | 87.0-91.0 | 50 | 1.4 | 165 | 89 | 206 | 175 |
| 87 A2-06 | 91.0-96.4 | 35 | 1.7 | 170 | 260 | 88 | 245 |
| 87 A2-07 | 115.8-119.0 | 90 | 2.9 | 420 | 190 | 127 | 205 |
| 87 A2-08 | 119.0-123.0 | 60 | 4.6 | 1300 | 127 | 160 | 205 |
| 87 A2-09 | 123.0-129.0 | 150 | 2.2 | 610 | 142 | 124 | 155 |
| 87 A2-10 | 129.0-132.0 | 110 | 1.7 | 160 | 72 | 96 | 760 |
| 87 A2-11 | 132.0-136.0 | 100 | 2.5 | 215 | 86 | 130 | 305 |
| 87 A2-12 | 136.0-140.0 | 55 | 11.8 | 1200 | 24 | 328 | 105 |
| 87 A2-13 | 140.0-144.0 | 35 | 2.8 | 485 | 31 | 121 | 157 |
| 87 A2-14 | 150.0-155.0 | 35 | 2.8 | 765 | 162 | 131 | 315 |
| 87 A2-15 | 156.0-160.0 | 15 | 1.0 | 340 | 70 | 76 | 76 |
| 87 A2-16 | 160.0-163.0 | 5 | 2.2 | 330 | 110 | 346 | 47 |
| 87 A2-17 | 163.0-166.0 | 20 | 3.1 | 365 | 156 | 182 | 365 |
| 87 A2-18 | 172.0-178.0 | 190 | 3.0 | 1900 | 99 | 168 | 120 |
| 87 A2-19 | 180.0-186.3 | 75 | 6.9 | 1200 | 262 | 1170 | 455 |
| 87 A2-20 | 199.0-204.0 | 65 | 4.9 | 1650 | 15 | 255 | 88 |
| 87 A2-21 | 204.0-208.0 | 80 | 3.8 | 1350 | 12 | 228 | 355 |
| 87 A2-22 | 208.0-215.0 | 90 | 6.0 | 2300 | 9 | 367 | 320 |
| 87 A2-23 | 215.0-218.0 | 75 | 5.3 | 1800 | 10 | 312 | 112 |
| 87 A2-24 | 218.0-222.0 | 100 | 2.7 | 875 | 6 | 160 | 138 |
| - | 228.0-231.0 | $0.002 \mathrm{oz} / \mathrm{t}$ | $0.81 \mathrm{oz} / \mathrm{t}$ | - | - | - | - |
| 87 A2-25 | 235.0-240.5 | 5 | 0.2 | 58 | 4 | 28 | 755 |
| 87 A2-26 | 240.5-242.5 | 60 | 5.9 | 440 | 19 | 121 | 565 |
| 87 A2-27 | 246.0-248.5 | 80 | 18.1 | 1450 | 5 | 315 | 400 |
| 87 A2-28 | 249.3-255.5 | 110 | 47.5 | 2150 | 37 | 2430 | 1100 |
| 87 A2-29 | 255.5-257.0 | 5 | 0.5 | 22 | 18 | 37 | 21 |
| 87 A2-30 | 257.0-260.0 | 60 | 5.2 | 340 | 4 | 141 | 36 |
| 87 A2-31 | 260.0-264.0 | 50 | 6.7 | 350 | $<2$ | 87 | 220 |
| 87 A2-32 | 277.0-280.0 | 20 | 0.5 | 17 | 5 | 23 | 60 |
| 87 A2-33 | 280.0-282.0 | 170 | 45.2 | 2700 | 3 | 549 | 118 |
| 87 A2-34 | 282.0-289.0 | 90 | 32.4 | 980 | 13 | 271 | 86 |
| 87 A2-35 | 292.0-297.0 | 80 | 20.2 | 1000 | 10 | 288 | 65 |
| 87 A2-36 | 297.0-300.8 | 130 | 5.9 | 240 | 9 | 115 | 390 |
| 87 A2-37 | 302.0-308.0 | 150 | 9.1 | 285 | 11 | 153 | 510 |
| 87 A2-38 | 316.0-320.0 | 140 | 34.2 | 880 | 14 | 225 | 87 |
| - | 343.5-346.0 | $0.015 \mathrm{oz} / \mathrm{t}$ | $0.71 \mathrm{oz} / \mathrm{t}$ | - | - | - | - |

All elements quoted in ppm except gold (ppb).
$\qquad$ 87-A-2
CORE RECOVERY/RQ̣D

| Box <br> No. | $\underset{(\text { feet })}{\text { From ..... To }}$ | $\begin{gathered} \text { Run } \\ \text { (feet) } \end{gathered}$ |  | Interval <br> (feet) | Core Recovered |  | RQD |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | feet | \% | feet | \% |
| 1 | $10-39$ | 10 | - 13 |  | 3 | 3.0 | 100 | 2.0 | 67 |
|  |  | 13 | - 14 | 1 | 0.7 | 70 | - | - |
|  |  | 14 | - 23 | 9 | 1.4 | 15 | - | - |
|  |  | 23 | - 33 | 10 | 4.4 | 44 | 1.2 | 27 |
|  |  | 33 | - 36 | 3 | 2.4 | 80 | 1.2 | 50 |
| 2 | $39-56.25$ | 36 | - 42 | 6 | 4.3 | 72 | 1.1 | 26 |
|  |  | 42 | - 49 | 7 | 6.3 | 90 | 3.2 | 51 |
|  |  | 49 | - 53 | 4 | 2.6 | 65 | 1.2 | 46 |
| 3 | 56.25-73.6 | 53 | - 58 | 5 | 4.5 | 90 | * | * |
|  |  | 58 | - 66 | 8 | 7.1 | 89 | * | * |
|  |  | 66 | - 67 | 1 | 0.8 | 80 | - | - |
|  |  | 67 | - 73 | 6 | 5.4 | 90 | 3.7 | 68 |
| 4 | $73.6-93.4$ | 73 | - 82 | 9 | 8.5 | 94 | 2.9 | 34 |
|  |  | 82 | - 91 | 9 | 7.2 | 80 | 4.2 | 58 |
| 5 | 93.4 - 112.5 | 91 | - 100 | 9 | 8.8 | 98 | 4.7 | 53 |
|  |  | 100 | - 103 | 3 | 0.5 | 17 | - | - |
|  |  | 103 | - 107 | 4 | 3.8 | 95 | 0.9 | 24 |
|  |  | 107 | - 109 | 2 | 1.6 | 80 | - | - |
| 6 | 112.5 - 129 | 109 |  | 4 | 3.7 | 92 | 0.9 | 24 |
|  |  | 113 | - 115 | 2 | 1.7 | 85 | 0.4 | 23 |
|  |  | 115 | - 123 | 8 | 7.7 | 96 | 3.7 | 48 |
|  |  | 123 | - 129 | 6 | 5.3 | 88 | 2.0 | 38 |
| 7 | $129-144.3$ | 129 | - 132 | 3 | 1.7 | 57 | - | - |
|  |  | 132 | - 136 | 4 | 3.0 | 75 | - | - |
|  |  | 136 | - 140 | 4 | 4.0 | 100 | 1.3 | 32 |
|  |  | 140 | - 144 | 4 | 3.4 | 85 | 2.0 | 59 |
| 8 | 144.3-163 | 144 | - 150 | 6 | 5.1 | 85 | 1.2 | 23 |
|  |  | 150 | - 155 | 5 | 3.8 | 76 | 1.0 | 26 |
|  |  | 155 | - 156 | 1 | 0.6 | 60 | - | - |
|  |  | 156 | - 160 | 4 | 0.7 | 17 | - | - |
|  |  | 160 | - 163 | 3 | 1.6 | 53 | - | - |
| 9 | $163-179.2$ | 163 | - 167 | 4 | 3.4 | 85 |  |  |
|  |  | 167 | - 170 | 3 | 2.3 | 77 | - | - |
|  |  | 170 | - 178 | 8 | 7.8 | 91 | 4.2 | 58 |
| 10 | 179.2-197.6 | 178 | - 188 | 10 | 8.3 | 83 | 3.8 | 46 |
|  |  | 188 | - 190 | 2 | 1.7 | 85 | - | - |
|  |  | 190 | - 191 | 1 | 0.5 | 50 | - | - |
|  |  | 191 | - 196 | 5 | 3.2 | 64 | 1.0 | 31 |
| 11 | 197.6-215.7 |  |  | 3 | 2.0 |  | 0.4 | 20 |
|  |  | 199 | - 208 | 9 | 9.0 | 100 | 3.5 | 39 |
|  |  | 208 | - 215 | 7 | 6.0 | 86 | 4.2 | 70 |
| 12 | $215.7-234.2$ | 215 | - 222 | 4 | 7.0 | 100 | 5.3 | 76 |
|  |  | 222 | - 226 | 4 | 2.7 | 67 | 1.2 | 44 |
|  |  | 226 | - 233 | 7 | 6.6 | 94 | * | * |
| 13 | 234.2 - 252.3 | 233 | - 243 | 10 | 9.4 | 94 | 5.9 | 63 |
|  |  | 243 | - 249 | 6 | 5.3 | 88 | 1.3 | 24 |
| 14 | 252.3 - 269 | 249 | - 257 | 8 | 6.3 | 79 | 1.3 | 21 |
|  |  | 257 | - 260 | 3 | 2.8 | 93 | - | - |
|  |  | 260 | - 264 | 4 | 2.8 | 70 | - | - |
|  |  | 264 | - 265 | 1 | 0.3 | 30 | - | - |
| 15 | $269-287.2$ | 265 | - 273 | 8 | 6.3 | 79 | 2.0 | 32 |
|  |  | 273 | - 282 | 9 | 7.8 | 87 | 4.9 | 63 |

## CORE RECOVERY/RODD


DIAMOND DRILL LOG Page 1 of 2


Hole No.: $\quad$ DDH 87-A-3
Project: Mineral Hill
Code:
Location: NTS 93 L10

Principal
Unit (feet)

Sub-Unit
(feet)

0-33.0
33.0-193.0

## OVERBURDEN: CASING REMOVED.

BRECCIATED ANDESITE: Grey-green to dark-green colour; strongly chloritized throughout. Fine-grained but original textures largely destroyed by alteration. Probably not hornfelsed(?) Occasional short sections with abundant small tabular plagioclase phenocrysts were originally porphyritic andesite or andesite crystal tuff; some definite areas of crystallithic tuff and volcanic agglomerate or volcanic breccia. Alteration produces abundant chlorite (often well crystallized and coarse) and lesser amounts of carbonate in rock matrix and in veins (white and pink calcite, some ankerite(?), feldspar (as white patches to 2 cm in, or close to, quartz veins) and probably some sericite. Entire section is brecciated, with little clast movement, largely matrix-supported (white vein quartz matrix). Clasts mostly few cm to few feet in size; smaller clasts are angular, tabular, length to width ratiooften 20:1. Many clasts aligned near-perpendicular to CA. Pyrite is commonest sulphide, usually as coarse blebs and patches in quartz veins, often with chalcopyrite. Molybdenite is less common; often at selvedges of quartz veins, or at clast margins and as thin films on fracture faces.

Extensive core loss and broken core throughout - overall core recovery $70 \%$.

| Principal <br> Unit | Sub-Unit |  |
| :--- | :--- | :--- |
| Description / Notes / Samples |  |  |

## SAMPLES

| Sample \# | Interval (feet) | Au | Ag | $\underline{\mathrm{Cu}}$ | Pb | Zn | Mo |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 87 A3-01 | 53.0-55.0 | 10 | 0.4 | 125 | 11 | 76 | 265 |
| 87 A3-02 | 77.0-82.0 | 5 | 0.3 | 104 | 2 | 98 | 150 |
| 87 A3-03 | 108.0-113.0 | 5 | 15.1 | 505 | 28 | 152 | 140 |
| 87 A3-04 | 113.0-120.0 | 60 | 3.8 | 154 | 142 | 75 | 198 |
| 87 A3-05 | 138.0-141.0 | 10 | 1.7 | 139 | 3 | 65 | 310 |
| 87 A3-06 | 141.0-146.0 | 10 | 0.4 | 76 | 9 | 67 | 300 |
| 87 A3-07 | 146.0-151.0 | 10 | 0.4 | 92 | 2 | 62 | 365 |
| 87 A3-08 | 151.0-156.0 | 5 | 0.6 | 106 | 3 | 65 | 127 |
| 87 A3-09 | 162.0-166.0 | 5 | 0.3 | 54 | 6 | 70 | 2650 |

All elements quoted in ppm except gold (ppb).
$\qquad$
CORE RECOVERY/RQ̣D


|  | DIAMOND DR | 10 O |  | Page 1 |
| :---: | :---: | :---: | :---: | :---: |
| Company: | SOUTHERN CROSS GOLD MINES INC. | Hole No.: |  | DH 87-A-4 |
| Drilling Co.: | : CORAL ENTERPRISES LTD. | Project: | Mineral | Hill |
| Started: | 8 August 1987 | Code: |  |  |
| Completed: | 9 August 1987 | Location: | NTS 93 L | 10 |
| Grid Co-ordinates: |  |  |  |  |
| Elevation: |  |  |  |  |
| Azimuth: | $180^{\circ}$ |  |  |  |
| Depth: | $164^{\prime}(50 \mathrm{~m})$ | Dip: | $-60^{\circ}$ |  |
| Core size: | NQ | Horizontal | advance: | 82.0 |
| Logged by: | R. Robertson (November 1987) | Vertical d | th: | 142.4 |
|  |  | Acid test: |  | None |


| Principal Unit (feet) | $\begin{gathered} \text { Sub-Unit } \\ (\mathrm{feet}) \\ \hline \end{gathered}$ | Description / Notes / Samples |  |
| :---: | :---: | :---: | :---: |
| 0-8.0 |  | OVERBURDEN: CASING REMOVED. |  |
| 8.0-85.7 |  | "ALASKITE": Pale grey, medium-grained, moderately porphyritic with fine-grained siliceous matrix. Small tabular plagioclase phenocrysts commonly altered tochalky white clay. Tiny biotite phenocrysts commonly altered to chlorite or pyrite. Abundant fracturing and quartz veining with pyrite, lesser amounts of pyrrhotite. Molybdenite sparse, in quartz veins, as thin films in fractures and local disseminations. Thin ( $1 \mathrm{~mm}-1 \mathrm{~cm}$ ) black veinlets with tiny breccia clasts are siliceous. Occasional veinlets of white calcite. |  |
|  |  | 54.5-55.2: | Abundant coarse pyrite in open fractures at $45^{\circ}$ and $80^{\circ}$ to CA. <br> Quartz vein at $30^{\circ}$ to CA with $2.5 \%$ sulphides as coarse grains of pyrite, pyrrhotite and minor chalcopyrite. |
|  |  | 63.0-64.4: | Common thin fractures contain pyrite and pyrrhotite. |
|  |  | 64.4-66.5: | Breccia - abundant dark breccia veins and zones in fractured, altered Alaskite. Upper contact has fragments of dark breccia (angular; 2 mm to 1 cm ) cemented by clear chalcedony. Dark veins siliceous may contain tourmaline. Sulphide content low. |


| Principal <br> Unit |
| :--- |

66.5-69.0: Sharp contact ( $70^{\circ}$ to $C A$ ) from breccia to fractured, silicified Alaskite. Thin dark veinlets decreasing by 68.0. Coarse patches of pyrite, pyrrhotite, chalcopyrite in white quartz veins (68.0-69.0).
69.0-70.0: Lost core.
71.0-72.5: Common thin white quartz veins with coarse blebs of pyrite and pyrrhotite.
73.8-77.6: White quartz veins (to 8 cm ) carry coarse patches of pyrite, pyrrhotite, chalcopyrite (veins $30-45$ to CA) Thin ankerite and calcite veinlets.
85.7-90.2
90.2-101.0
101.0-155.5
155.5-164.0

META-ANDESITE: Dark Grey, very fine-grained, very siliceous, fractured (with network of thin ladder veins of calcite and quartz). Pyrite common as small blebs around larger quartz veins. Occasional small grains of brown sphalerite at vein margins.
"ALASKITE": As previous descriptions. Altered pale grey with fine-grained siliceous matrix, feldspar phenocrysts altered to soft white clay. Most fractures $20-45^{\circ}$ to CA. Occasional milky white quartz veins with patches of pyrrhotite and pyrite. Most pyrite in thin stringers and fracture fillings without quartz. Overall sulphide content relatively low. Upper contact $50^{\circ}$ to CA (complicated by quartz veins); lower contact $55^{\circ}$ to CA .

META-ANDESITE: Grey-brown to grey-green colour, as described above. Hornfelsed abundant barren quartz veinlets ( $1-2 \mathrm{~mm}$ ) and less frequent milky quartz veins ( $5 \mathrm{~mm}-5 \mathrm{~cm}$ ) with pyrite and/or pyrrhotite. Also common thin calcite veinlets. Pyrite also in thin stringers and patches without quartz. Pyrite commonly associated with zones of chloritic alteration.
143.0-144.0: Brecciated zone with frequent quartz and calcite veinlets.
"ALASKITE": Strongly altered. Similar to previous descriptions but paler. Grey-white colour. Tabular feldspar phenocrysts altered to soft chalky white clay. Tiny mafic phenocrysts altered to chlorite or pyrite. Matrix white, softer, less siliceous than other Alaskite intersections. Thin grey and white quartz veins (rarely to 5 cm ) carry pyrite (occasional pyrrhotite) with chlorite, sericite, some carbonate. Thin dark grey-green hairline fractures (chlorite?). Upper contact $20^{\circ}$ to CA.

| Principal <br> Unit |
| :--- |

161.0-161.3: Abundant coarse pyrite with quartz veining, $25^{\circ}$ to CA.
163.0-164.0: Rubble, high core loss.
164.0

END OF HOLE; stopped in cave.

## SAMPLES

| Sample \# | Interval (feet) | Au | Ag | Cu | Pb | Zn | Mo |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 87 A4-01 | 54.5-55.2 | 30 | 3.5 | 2650 | 12 | 43 | 435 |
| 87 A4-02 | 63.0-64.4 | 15 | 0.7 | 355 | 5 | 34 | 137 |
| 87 A4-03 | 64.4-66.5 | 20 | 0.7 | 261 | 16 | 83 | 113 |
| 87 A4-04 | 66.5-68.0 | 5 | 0.4 | 390 | 4 | 33 | 220 |
| 87 A4-05 | 68.0-69.0 | 25 | 0.7 | 660 | 4 | 20 | 290 |
| 87 A4-06 | 73.8-77.6 | 15 | 0.5 | 675 | $<2$ | 22 | 615 |

All elements quoted in ppm except gold (ppb).

CORE RECOVERY/RQD

| Box No. | $\underset{\text { (feet) }}{\text { From } . . . . \text { To }}$ |  | $\underset{(\text { feet })}{\text { Run }}$ |  | Interval (feet) | Core Recovered |  | RQD |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | feet | \% |  | feet | \% |
| 1 | 8 | - 26.2 |  |  | 8 | - 12 | 4 | 2.6 | 65 | - | - |
|  |  |  | 12 | - 16 | 4 | 3.0 | 75 | 0.9 | 30 |
|  |  |  | 16 | - 23 | 7 | 6.7 | 96 | 4.0 | 60 |
| 2 | 26.2 | - 44.2 | 23 | - 28 | 5 | 4.0 | 80 | 1.3 | 32 |
|  |  |  | 28 | - 31 | 3 | 2.6 | 87 | 1.6 | 61 |
|  |  |  | 31 | - 35 | 4 | 4.0 | 100 | 2.7 | 67 |
|  |  |  | 35 | - 43 | 8 | 6.9 | 86 | 3.5 | 51 |
| 3 | 44.2 | - 62.4 | 43 | - 51 | 8 | 7.6 | 95 | 3.2 | 42 |
|  |  |  | 51 | - 60 | 9 | 8.7 | 97 | 3.7 | 42 |
| 4 | 62.4 | - 81.3 | 60 | - 70 | 10 | 8.5 | 85 | 3.2 | 38 |
|  |  |  | 70 | - 80 | 10 | 10.0 | 100 | 5.7 | 57 |
| 5 | 81.3 | - 100.2 | 80 | - 88 | 8 | 7.6 | 95 | 5.6 | 74 |
|  |  |  | 88 | - 95 | 7 | 6.8 | 97 | 3.5 | 51 |
|  |  |  | 95 | - 98 | 3 | 2.2 | 73 | 1.2 | 55 |
| 6 | 100.2-117.2 |  | 98 | - 103 | 5 | 5.0 | 100 | 2.9 | 58 |
|  |  |  | 103 | - 109 | 6 | 5.3 | 88 | 2.4 | 45 |
|  |  |  | 109 | - 113 | 4 | 4.0 | 100 | 1.1 | 27 |
| 7 | 117.2 - 136.2 |  | 113 | - 120 | 7 | 6.7 | 96 | 3.9 | 58 |
|  |  |  | 120 | - 123 | 3 | 2.6 | 87 | 1.3 | 50 |
|  |  |  | 123 | - 126 | 3 | 2.1 | 70 | - | - |
|  |  |  | 126 | - 127 | 1 | 0.5 | 50 | - | - |
|  |  |  | 127 | - 132 | 5 | 4.6 | 92 | 2.5 | 54 |
|  |  |  | 132 | - 142 | 10 | 10.0 | 100 | 6.2 | 62 |
| 8 | $136.2-153.2$ |  | 142 | - 151 | 9 | 9.0 | 100 | 3.4 | 38 |
|  |  |  | 151 | - 156 | 5 | 5.0 | 100 | 1.7 | 34 |
| 9 | 153.2-164 |  | 156 | - 163 | 7 | 7.0 | 100 | 2.2 | 31 |
|  |  |  | $163-164$ <br> END OF HOLE |  | 1 | 0.5 | 50 | - | - |
|  |  |  | END OF HOLE |  |  |  |  |  |  |
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| Principal Unit | Sub-Unit | Description / Notes / Samples |  |
| :---: | :---: | :---: | :---: |
|  |  | 64.6-68.0: | Lost core. |
|  |  | 70.0-72.0: | Zone of strong silicification with several 2-4 cm quartz veins and narrow Alaskite dyke (71.0-71.5) at $50^{\circ}$ to CA . |
|  |  | 72.8-76.5: | St rong silicification, abundant thin quartz veins, some coarse patches of pyrite and pyrrhotite, abundant disseminated pyrite, chalcopyrite stringers and disseminations. |
|  |  | 78.3-79.5: | Alaskite dyke; both contacts 5 cm zones of quartz veins and silicification. Upper contact $55^{\circ}$ to CA. Lower contact irregular. |
|  |  | 82.2-84.0: | Alaskite dyke. Highly siliceous. Common finely disseminated molybdenite. Contacts $55-60^{\circ}$ to CA. |
|  |  | 84.8-86.0: | Heavy quartz veining with coarse patches of pyrrhotite. |
|  |  | 87.0-92.4: | Silicified zone with abundant quartz veinlets. Disseminated pyrite in silicified areas. Larger veins at $20^{\circ}$ to CA. |
|  |  | 92.4-93.5: | Stronger quartz veining and silicification at contact to Alaskite. Coarse pyrite, chalcopyrite, abundant fine molybdenite, thin ankerite veinlets. |
| 93.5-100.0 |  | "ALASKITE": As described for 2-58.7 interval. |  |
|  |  | 93.5-95.5: | Contact zone to hornfelsed andesite. Contact parallel to CA. Thin ankerite veins along contact. Hairline fractures and thin molybdenite and quartz veinlets brecciate Alaskite. |
| 100.0-112.0 |  | META-ANDESITE: Grey-brown to grey-green, fine-grained hornfelsed andesite with strong silicification and extensive thin quartz veins with pyrite, pyrrhotite and minor molybdenite. |  |
|  |  | 106.0-106.7: Alaskite dyke. <br> 108.7-112.0: Dark grey silicified zone. Texture obliterated. Patchy white clay and ankerite veinlets. Locally abundant disseminated sulphides (mostly pyrite). |  |
|  |  |  |  |
| 112.0-216.2 |  | "ALASKIT <br> strong alt destroyed and highly pyrrhotite hairline ve commonly | : As previous descriptions. Extensive areas of ation (quartz-sericite) where original texture and rock becomes pale grey-green, very fine-grained iliceous. Common thin quartz veins carry pyrite, Molybdenite often extensively disseminated or as lets. Thin ankerite veinlets. Thin quartz veinlets ave sericite envelopes. |


| Principal Unit | Sub-Unit | Description / Notes / Samples |  |
| :---: | :---: | :---: | :---: |
|  |  | 117.7-123.3: | Fine-grained pale grey-green zone of sericite alteration. |
|  |  | 130.0-138.0: | Sericite alteration zone. |
|  |  | 143.0-153.3: | Breccia zone. Upper part is area of strong quartz veining parallel to CA with abundant pyrite in coarse grained patches (with molybdenite), becoming brecciated (both vein and Alaskite) with little sign of clast movement. Black material in hairline fractures in breccia; some molybdenite and some manganese staining. Lower section shows dark hairline fractures in sericite altered Alaskite. |
|  |  | 156.8-157.0: | Coarse pyrite cubes (to 2 cm ) in envelope of pink altered feldspars. |
|  |  | 160.5-162.0: | Green and black chloritic material on fracture surfaces at $10^{\circ}$ and $30^{\circ}$ to CA. Minor pyrite, molybdenite, sphalerite. |
|  |  | 166.0-171.3: | Breccia. Angular and rounded clasts ( 1 mm to several cm ) of strongly altered Alaskite (quartz and sericite) in matrix-supported breccia with calcite cement . Calcite breccia 166.0-169.2. Sharp contact at 169.2 at $50^{\circ}$ to CA to dark grey breccia; highly siliceous, abundant sericite, chlorite in matrix. Contact at 171.3. |
|  |  | 171.3-177.9: | Altered greenish Alaskite. Well fractured. Common thin grey quartz veinlets. Sericite-chlorite alteration. Occasional wider quartz veins ( $1-3 \mathrm{~cm}$ ) and patches with molybdenite. Around 173.0 - veins to 1 cm of coarse white calcite crystals crosscut white and grey quartz veins. |
| 216.2-220.0 |  | META-AND amounts of faces. | ESITE: As described above. Locally silicified. Minor coarse pyrite in quartz veinlets and on fracture |
| 220.0 |  | END OF HOL |  |

## SAMPLES

| Sample \# | Interval (feet) | Au | Ag | Cu | Pb | Zn | Mo |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 87 A5-01 | 24.0-28.0 | $<5$ | 0.4 | 495 | 2 | 20 | 1950 |
| 87 A5-02 | 72.8-76.5 | 15 | 0.7 | 1500 | $<2$ | 131 | 1350 |
| 87 A5-03 | 84.8-86.0 | $<5$ | 0.4 | 640 | $<2$ | 38 | 1800 |
| 87 A5-04 | 87.0-90.4 | 20 | 0.4 | 1050 | $<2$ | 61 | 435 |
| 87 A5-05 | 90.4-93.5 | 15 | 0.6 | 890 | 4 | 51 | 730 |
| 87 A5-06 | 93.5-95.5 | $<5$ | 0.9 | 580 | 33 | 183 | 1000 |
| 87 A5-07 | 108.7-112.0 | $<5$ | 0.5 | 590 | 35 | 177 | 230 |
| 87. A5-08 | 117.7-123.3 | $<5$ | 0.3 | 355 | 2 | 20 | 640 |
| 87 A5-09 | 143.0-147.5 | 5 | 0.6 | 805 | 4 | 35 | 690 |
| 87 A5-10 | 147.5-153.3 | 10 | 0.7 | 405 | 46 | 154 | 1400 |
| 87 A5-11 | 160.5-162.0 | 5 | 1.8 | 295 | 1160 | 3040 | 520 |
| 87 A5-12 | 166.0-169.2 | 10 | 0.4 | 225 | 50 | 156 | 320 |
| 87 A5-13 | 169.2-171.3 | 40 | 0.7 | 225 | 45 | 53 | 700 |
| 87 A5-14 | 171.3-177.9 | 30 | 0.7 | 270 | 21 | 31 | 410 |

All elements quoted in ppm except gold (ppb).

CORE RECOVERY/RQ̣D



Page $\_^{2}$ of 3

| Principal <br> Unit Sub-Unit | Description / Notes / Samples |
| :---: | :---: | :---: |

111.2-118.7
118.7-151.5
151.5-176.5
176.5-194.0
52.3-54.3: Several wide veins of milky white quartz (at $30-50^{\circ}$ to CA ) with coarse blebs of pyrrhotite; pyrite and molybdenite in fine veinlets.
93.5-94.3: Milky quartz vein at $50^{\circ}$ to CA with pyrite, pyrrhotite, molybdenite.

ALTERED META-ANDESITE: Hornfelsed andesite with veining (as above) altered to pale grey-green (sericite, calcite) especially from 112.0-114.0; thin calcite and ankerite veinlets here and small patches of white clay.
"ALASKITE": Pale grey, medium-grained porphyritic with small tabular plagioclase phenocrysts (altered chalky white), minor fine biotite and hornblende in fine-grained siliceous matrix. Abundant thin grey and white quartz veins, usually with molybdenite films or disseminations. Larger veins have coarse pyrite and pyrrhotite blebs. Occasional narrow ( $1-2 \mathrm{~mm}$ ) white chalcedony veinlets and similar ankerite veinlets. Molybdenite also coats fracture surfaces (without quartz veining) and some quartz-molybdenite veins cut earlier quartz-pyrite-pyrrhotite veins. Local coarse sericite-chlorite selvedges to pyrite-pyrrhotite veins. Strongest quartz-sulphide vein zones at:
121.0-123.0
125.0-127.0
138.7-139.8
142.5-144.0

META ANDESITE: Grey-brown/green colour. Hornfelsed. Similar to upper part of hole. Locally strong quartz-pyrite veining but veining rarer than at top of hole. Pyrite quite common as coarse blebs in veins and as patches in chloritealtered andesite (e.g. at 157.0). Very little pyrrhotite or molybdenite. Occasional thin ( 1 mm ) calcite veinlets. Several small areas of pink-brown garnet with pyrite in areas of chlorite alteration.

Stronger alteration (167.0-171.0) with clay-calcite alteration and thin calcite and/or ankerite veinlets.

Note: Quartz-pyrite vein parallel to CA at 176.0.
"ALASKITE": Generally similar to 118.7-151.5. Stronger silicification and fracturing with dark chlorite and pyrite on fracture surfaces. Pyrite common but molybdenite scarce. Much brokencore and lost core.

| Principal <br> Unit | Sub-Unit |
| :--- | :--- |$\quad$| Description / Notes / Samples |
| :--- |

## SAMPLES

| Sample \# | Interval (feet) | Au | Ag | Cu | Pb | Zn | Mo |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 87 A6-01 | 18.3-19.5 | 25 | 0.7 | 1500 | $<2$ | 114 | 275 |
| 87 A6-02 | 44.7-47.5 | 10 | 0.3 | 845 | <2 | 82 | 2550 |
| 87 A6-03 | 52.3-54.3 | 15 | 0.3 | 700 | $<2$ | 50 | 1550 |
| 87 A6-04 | 121.0-123.0 | 10 | 0.9 | 690 | 3 | 16 | 245 |
| 87 A6-05 | 125.0-127.8 | 5 | 0.6 | 670 | 2 | 16 | 194 |
| 87 A6-06 | 138.5-139.8 | 5 | 0.3 | 415 | 3 | 31 | 2450 |
| 87 A6-07 | 142.0-147.0 | $<5$ | 0.3 | 515 | $<2$ | 26 | 1500 |
| 87 A6-08 | 157.0-158.3 | 10 | 0.2 | 540 | $<2$ | 99 | 197 |
| 87 A6-09 | 167.0-172.0 | 15 | 0.2 | 610 | 2 | 84 | 179 |
| 87 A6-10 | 176.5-183.0 | 10 | 0.1 | 445 | $<2$ | 51 | 345 |
| 87 A6-11 | 199.0-201.5 | 10 | 0.2 | 515 | $<2$ | 40 | 570 |

All elements quoted in ppm except gold (ppb).

CORE RECOVERY/RQ̣D

| $\begin{aligned} & \text { Box } \\ & \text { No. } \end{aligned}$ | $\underset{\text { (feet) }}{\text { From ..... }} \text { To }$ | $\begin{gathered} \text { Run } \\ (\mathrm{feet}) \end{gathered}$ | Interval (feet) | Core Recovered |  | RQD |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | feet | \% | feet | \% |
| 1 | $6-21$ | $6-13$ | 7 | 4.5 | 64 | 1.2 | 27 |
|  |  | $13-21$ | 8 | 5.6 | 70 | 2.6 | 46 |
| 2 | $21-43$ | $21-31$ | 10 | 10.0 | 100 | 4.4 | 44 |
|  |  | $31-41$ | 10 | 10.0 | 100 | 6.0 | 60 |
| 3 | $43-61.5$ | $41-51$ | 10 | 9.8 | 98 | 6.2 | 63 |
|  |  | $51-61$ | 10 | 9.7 | 97 | 6.0 | 62 |
| 4 | 61.5 - 79 | $61-67$ | 6 | 4.6 | 77 | 1.3 | 28 |
|  |  | $67-73$ | 6 | 6.0 | 100 | 2.8 | 47 |
| 5 | $79-96.5$ | $73-83$ | 10 | 9.6 | 96 | 4.8 | 50 |
|  |  | $83-91$ | 8 | 7.3 | 91 | 5.5 | 75 |
|  |  | $91-93$ | 2 | 1.7 | 85 | 0 | 0 |
| 6 | $96.5-113.5$ | $93-102$ | 9 | 8.6 | 95 | 5.0 | 58 |
|  |  | 102-108 | 6 | 5.8 | 97 | 3.9 | 67 |
|  |  | 108 - 114 | 6 | 5.5 | 92 | 3.2 | 58 |
| 7 | 113.5-131 | $114-123$ | 9 | 8.7 | 97 | 5.5 | 63 |
|  |  | $123-131$ | 8 | 7.8 | 97 | 3.5 | 45 |
| 8 | $131-148.7$ | $131-135$ | 4 | 3.7 | 92 | 0 | 0 |
|  |  | $135-143$ | 8 | 8.0 | 100 | 4.7 | 59 |
|  |  | $143-152$ | 9 | 9.0 | 100 | 4.6 | 51 |
| 9 | 148.7-165.5 | $152-157$ | 5 | 5.0 | 100 | 2.0 | 40 |
|  |  | $157-163$ | 6 | 5.7 | 95 | 3.6 | 63 |
|  |  | 163-169 | 6 | 5.5 | 92 | 3.6 | 65 |
| 10 | 165.5-185.5 | 169 - 172 | 3 | 2.7 | 90 | 0 | 0 |
|  |  | 172-178 | 6 | 4.7 | 78 | 3.2 | 68 |
|  |  | $178-183$ | 5 | 1.6 | 32 | 0 | 0 |
|  |  | 183-187 | 4 | 1.8 | 45 |  |  |
| 11 | 185.5-204 | 187-190 |  | 2.0 | 67 | 0.5 | 25 |
|  |  | $190-193$ | 3 | 1.2 | 40 | 0 | 0 |
|  |  | 193 - 195 | 2 | 1.0 | 50 | 0 | 0 |
|  |  | 195 - 199 | 4 | 4.0 | 100 | 0.6 | 15 |
| 12 | $204-213$ | 199-206 | 7 | 5.7 | 81 | 4.3 | 75 |
|  |  | 206-213 | 7 | 4.6 | 66 | 1.4 | 30 |
|  |  | END OF HOLE |  |  |  |  |  |
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## SAMPLES

| Sample \# | Interval (feet) | Notes | Au | Ag | Cu | Pb | $\underline{\mathrm{Zn}}$ | Mo |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 87 A7-01 | 18.0-25.0 | 0.51 core only | $<5$ | 0.2 | 430 | $<2$ | 29 | 1450 |

All elements quoted in ppm except gold (ppb).

CORE RECOVERY/RQ̣D


| Company: | SOUTHERN CROSS GOLD MINES INC. |
| :---: | :---: |
| Drilling Co.: CORAL ENTERPRISES LTD. |  |
| Started: | 14 August 1987 |
| Completed: | 15 August 1987 |
| Grid Co-ordinates: |  |
| Elevation: |  |
| Azimuth: | $180^{\circ}$ |
| Depth: | $185{ }^{\prime}$ (56.4 m) |
| Core size: | NQ |
| Logged by: | R. Robertson (October 1987) |

Hole No.: DDH 87-A-8 Project: Mineral Hill

Code:
Location: NTS 93 L 10
$\qquad$
$\qquad$
Dip: $\quad-60^{3}$
Horizontal advance: 92.5

Vertical depth: 160.1 Acid test: None


Principal Unit (feet)
$\underset{(f \text { feet })}{\text { Sub-Unit }}$
Description / Notes / Samples

0-30.0
30.0-185.0

## OVERBURDEN: CASING REMOVED.

META-ANDESITE: Dark grey-brown to grey-green colour,
fine-grained. Hornfelsed; purple brown colour from development of fine biotite. Extensive hydrothermal alteration and quartz veining; green colouration from secondary chlorite. Areas of strongest alteration are paler grey-green with abundant sericite and silica in rock matrix and occasional thin calcite and/or ankerite veinlets. Locally heavy pyrite, as coarse blebs, associated with quartz veining and areas of chlorite alteration.
33.7-37.0: Abundant thin quartz veins and coarse pyrite (pyrite marginal to quartz).
84.5-93.0: Thin quartz and/or calcite veinlets. Moderate sericite alteration, minor pyrite, thin breccia zone at 92.0. Much core lost ( $4.8^{1}$ missing).
93.0-94.0: Rusty silicified zone with large patches of quartz and calcite, abundant pyrite, pyrrhotite, chalcopyrite. Upper contact at narrow quartz vein $45^{\circ}$ to CA.
103.0-104.0: Lost core - cave.

| Principal <br> Unit | Sub-Unit |
| :--- | :--- |

## SAMPLES

| Sample \# | Interval (feet) | Au | Ag | Cu | Pb | Zn | Mo |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 87 A8-01 | 33.0-37.0 | 5 | 0.3 | 400 | $<2$ | 105 | 14 |
| 87 A8-02 | 83.0-85.0 | $<5$ | $<0.1$ | 171 | <2 | 104 | 11 |
| 87 A8-03 | 85.0-93.0 | $<5$ | 0.2 | 435 | $<2$ | 110 | 7 |
| 87 A8-04 | 93.0-94.0 | $<5$ | 2.6 | 4900 | $<2$ | 44 | 24 |
| 87 A8-05 | 121.0-127.0 | $<5$ | 0.1 | 139 | $<2$ | 51 | 10 |
| 87 A8-06 | 133.0-135.8 | $<5$ | $<0.1$ | 118 | < 2 | 69 | 9 |

All elements quoted in ppm except gold (ppb).

CORE RECOVERY/RQPD


## APPENDIX II

ANALYTICAL RESULTS


BONDAR-CLEGG

| SAMPLE | EIEMENI | Cu | Fb | 81 | Mo | Ag | As | Hg | Au 30 l |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| NUMBER | UNIIS | PPM | $P P M$ | PPM | Hin | PPM | 9PM | PP\% | PPA |
| D2 87-A1-01 |  | 97 | 61 | 1011 | 155 | 5.6 |  |  | 65 |
| O2 87-A1-02 |  | 94 | 30 | 361 | 230 | 10.1 |  |  | 40 |
| D2 87-A1-03 |  | 88 | 24 | 124 | 4011 | 3.3 |  |  | 14 |
| D2 87-A1-04 |  | 58 | 16 | 61 | 145 | 3.2 |  |  | 1.5 |
| D2 87-A1-05 |  | 170 | 75 | 63 | 14] | 7.1 |  |  | ' |
| D2 87-A1-06 |  | 15 | 11 | 59 | 124 | 2.6 |  |  | 15 |
| D2 87-A1-07 |  | 107 | 415 | 2720 | 197 | 5.5 |  |  | 10 |
| D2 87-A1-08 |  | 79 | 34 | 90 | 325 | 5.3 |  |  | 25 |
| D2 87-A1-09 |  | 149 | 14 | 74 | 360 | 13.0 |  |  | 15 |
| D2 87-A1-10 |  | 84 | 6 | 42 | 340 | 1.3 |  |  | 10 |
| 02 87-A1-11 |  | 54 | 24 | 75 | 54 | 2.8 |  |  | 15 |
| D2 87-A1-12 |  | 36 | 69 | 207 | 235 | 1.3 |  |  | 15 |
| D2 87-n1-13 |  | 101 | 46 | 136 | 2115 | 7.7 |  |  | 213 |
| D2 87-A1-14 |  | 111 | 19 | 83 | 215 | 7.11 |  |  | 510 |
| D2 87-n7-01 |  | 905 | 38 | 154 | 168 | 1.8 |  |  | 30 |
| D2 87-A2-02 |  | 18511 | 33 | 236 | 89 | 3.0 |  |  | 35 |
| D2 87-A2-03 |  | 112 | 59 | 238 | 130 | 0.6 |  |  | 15 |
| D2 87-A2-04 |  | 240 | 35 | 192 | 125 | 2.1 |  |  | 15 |
| D2 87-A2-05 |  | 165 | 89 | 206 | 175 | 1.4 |  |  | 50 |
| D2 87-A2-06 |  | 170 | 260 | 88 | 245 | 1.7 |  |  | 35 |
| D2 87-A2-07 |  | 420 | 1911 | 121 | 205 | 2.9 |  |  | 911 |
| D2 87-A2-08 |  | 13110 | 171 | 1611 | 205 | 4.6 |  |  | 611 |
| 02 87-A2-09 |  | 6.10 | 147 | 174 | 155 | 2.2 |  |  | 150 |
| D2. 87-A2-10 |  | 1611 | 12 | 96 | 16.11 | 1.7 |  |  | 110 |
| D2 87-A2-11 |  | 215 | 86 | 130 | 305 | 2.5 |  |  | 100 |
| 02 87-A2-12 |  | 121111 | 24 | 328 | 1115 | 11.8 |  |  | 55 |
| D2 87-A2-13 |  | 485 | 31 | 171 | 157 | 2.8 |  |  | 35 |
| 02 87-A2-14 |  | 765 | 162 | 131 | 31.5 | 2.8 |  |  | 35 |
| D2 87-A2-15 |  | 340 | 10 | 16 | 16 | 1.0 |  |  | 1.5 |
| D2 87-n2-16 |  | 330 | 110 | 346 | 47 | 2.2 |  |  | 5 |




| - | SAMPLE | ELEMENT | Cu | Pb | 2 n | Mo | Ag | As | Hg | Au 309 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | NUMBER | UNITS | PPM | PPM | PPM | PPM | PPM | PPM | PPB | PPB |
| $\underline{4}$ | 02 87-A5-04 |  | 1050 | $<2$ | 61 | 435 | 0.4 |  |  | 20 |
|  | D2 87-A5-05 |  | 890 | 4 | 51 | 730 | 0.6 |  |  | 15 |
|  | D2 87-A5-06 |  | 580 | 33 | 183 | 1000 | 0.9 |  |  | < 5 |
|  | D2 87-A5-07 |  | 590 | 35 | 177 | 230 | 0.5 |  |  | < |
| - | 02 87-A5-08 |  | 355 | 2 | 20 | 640 | 0.3 |  |  | <5 |
|  | D2 87-A5-09 |  | 815 | 4 | 35 | 690 | 0.6 |  |  |  |
|  | 02 87-A5-10 |  | 405 | 46 | 154 | 1400 | 0.7 |  |  | 10 |
|  | D2 87-A5-11 |  | 295 | 1160 | 3040 | 520 | 1.8 |  |  | 5 |
|  | D2 87-A5-12 |  | 225 | 50 | 156 | 320 | 0.4 |  |  | 10 |
|  | D2 87-A5-13 |  | 225 | 45 | 53 | 700 | 0.7 |  |  | 40 |
|  | D2 87-A5-14 |  | 270 | 21 | 31 | 410 | 0.7 |  |  | 30 |
|  | 02 87-A6-01 |  | 1500 | <2 | 114 | 275 | 0.7 |  |  | 25 |
| $\pm$ | D2 87-46-02 |  | 845 | <2 | 82 | 2550 | 0.3 |  |  | 10 |
|  | D2 87-A6-03 |  | 740 | <2 | 50 | 1550 | 0.3 |  |  | 15 |
|  | D2 87-46-04 |  | 690 | 3 | 16 | 245 | 0.9 |  |  | 10 |
| $\pm$ | D2 87-A6-05 |  | 670 | 2 | 16 | 194 | 0.6 |  |  | 5 |
|  | D2 87-A6-06 |  | 415 | 3 | 31 | 2450 | 0.3 |  |  | 5 |
|  | 02 87-46-07 |  | 515 | <2 | 26 | 1500 | 0.3 |  |  | < 5 |
| $\pm$ | D2 87-A6-08 |  | 540 | <2 | 99 | 197 | 0.2 |  |  | 10 |
|  | 02 87-46-09 |  | 610 | 2 | 84 | 179 | 0.2 |  |  | 15 |
|  | D2 87-A6-10 |  | 445 | <2 | 51 | 345 | 0.1 |  |  | 10 |
|  | 02 87-A6-11 |  | 515 | <2 | 40 | 570 | 0.2 |  |  | 10 |
|  | D2 87-A7-01 |  | 430 | <2 | 29 | 1450 | 0.2 |  |  | < 5 |
|  | D2 87-A8-01 |  | 4110 | <2 | 145 | 14 | 0.3 |  |  | 5 |
| $\pm$ | 02 87-48-02 |  | 171 | <2 | 104 | 11 | <0.1 |  |  | <5 |
|  | D2 87-A8-03 |  | 435 | <2 | 110 | 7 | 0.2 |  |  | < 5 |
| $\square$ | 02 87-48-04 |  | 4900 | <2 | 44 | 24 | 2.6 |  |  | < 5 |
|  | D2 87-A8-05 |  | 139 | <2 | 51 | 10 | 0.1 |  |  | < 5 |
|  | 02 87-48-06 |  | 118 | <2 | 69 | 9 | <0.1 |  |  | <5 |

REPORT: 127-9828 ( COMPIFIF )

CIIENT: ROBFRTSON HALII IS: arisocinIE:
PROJECT: NONE GIUEN

REFFRFNCE INFO: SHEEI ORUFR $120111 \rightarrow 22 h$

SMAIIITE BY: ROBFRTSON
UAIF PRINIFI: 8-DFC. 87


## APPENDIX III

## STATEMENT OF EXPENDITURES

## STATEMENT OF EXPENDITURES

Invoices from Coral Enterprises Ltd. P.O. Box 1048<br>Morinville, Alberta TOG 1P0

## Invoice 006:

July 27 - August 6, 1987
Mobilization of drill rig to site $\quad \$ 15,000.00$
22 man days at $\$ 75.00$ per day $\quad 1,485.00$
Spotting drill holes 750.00
703 ft . NQ drilling (DDH 1,2) at $\$ 44.70 / \mathrm{foot} \quad 31,424.10$

Invoice 007:
August 7 - August 15, 1987
18 man days at $\$ 75.00$ perday
$1,008 \mathrm{ft}$. NQ drilling (DDH 3,4,5,6,7,8) at $\$ 44.70 / \mathrm{ft}$.

| $\$ 1,350.00$ |
| ---: |
| $45,067.60$ |
| 750.00 |
|  |
| $\$, 000.00$ |
| $\$ 52,157.60$ |

TOTAL
$\$ 100,816.70$

## APPENDIX IV

## STATEMENT OF QUALIFICATIONS

## STATEMENT OF QUALIFICATIONS

I, RONALD C.R. ROBERTSON, of the City of Whitehorse, Yukon Territory, hereby certify that:

1. I am a self-employed consulting geologist with business address at P.O. Box 5474, Whitehorse, Yukon Territory.
2. I obtained a Bachelor of Science degree with First Class Honours in Geology from the University of Aberdeen, Scotland, in 1970 and subsequently carried out graduate studies at McMaster University, Hamilton, Ontario, and at Queen's University, Kingston, Ontario.
3. I am a Fellow of the Geological Association of Canada (\#4858) and a member of the Prospector's and Developer's Association, the Yukon Chamber of Mines and the Canadian Institute of Mining and Metallurgy.
4. I have been engaged in mineral exploration for seventeen (17) years, of which nine (9) have been on mineral exploration programs in the Yukon Territory, British Columbia and Alaska.

Signed at Vancouver, B.C., this 26 day of Apr , 1988.

Ronald C.R. Robertson, F.G.A.C.




