## CAPELLA RESOURCES LTD.

## GEOCHEMICAL ASSESSMENT REPORT

for the

TERRA, AURA II \& LUNA 1-4
MINERAL CLAIMS

Nicola Mining Division

Sookochoff Consultants Inc.
Laurence Sookochoff, P.Eng

## GEOLOGIRESMOSTORIVEY BRANCH ASSESSMENT EEPORT



# Geological \& Geophysical Assessment Report for the Terra, Aura II \& Luna 1-4 Mineral Claims 

## Table of Contents

page
Introduction ..... 1.
Summary ..... 1.
Property ..... 2.
Location and Access ..... 4.
Physiography ..... 4.
Water and Power ..... 4.
History ..... 4.
Geology ..... 5.
Mineralization ..... 7.
Results of Previous Exploration on the S Claim Group Ground ..... 8.
2002 Geochemical Survey ..... 9.
Conclusions ..... 10.
Statement of Costs ..... 11.
Selected References ..... 12.
Certificate ..... 14.
Illustrations
Figure 1 Location, Claim \& Claim Map ..... 3.
Figure 2 Regional Geology after page 5 .
Figure 3 Geochemical Survey - As after page 8 .
Figure 4 Geochemical Survey - Cu ..... after page 8.
Figure 5 Aeromag Map after page 9 .

## Appendices

Appendix I Assay Certificates

# Geological \& Geophysical Assessment Report for the <br> Terra, Aura II \& Luna 1-4 <br> Mineral Claims 

## Introduction

A localized geochemical survey was completed on S 4-7 mineral claims for assessment work to be applied to the Terra, the Aura II \& the Luna 1-4 mineral claims for one year. The purpose of the survey was to locate potential mineral zones and to acquire additional exploratory data to establish correlative information to the results of the VLF-EM, magnetometer and geological information acquired from exploration completed on the same area in September and October 2002 and reported on in a Geological and Geophysical Assessment Report by the writer dated January 15, 2003.

Information for this report was obtained from sources as cited under Selected References, from the results of soil sample analyses of soil samples taken, and submitted for analysis to Acme Analytical Laboratories of Vancouver by employees of Pro Group Geological Ltd., and from work the writer has performed on ground held by the present claim group since 1980.

## Summary

The S Claim Group is located four km southeast of the formerly productive Stump Lake Camp where production from mineralized quartz veins from the Stump Lake Camp reportedly amounted to 77,605 tons averaging a recovered grade of $0.109 \mathrm{oz} \mathrm{Au} /$ ton, 3.26 oz $\mathrm{Ag} /$ ton, $1.42 \% \mathrm{~Pb}$ and $0.24 \% \mathrm{Zn}$. The mineralized quartz veins, which are hosted by shear zones within greenstones of the Nicola volcanics, were explored to a depth of 275 meters and along a strike length of 600 meters and are of irregular width with an alteration zone of up to " 15 feet wide".

On the S claim group ground, exploration work in 1985 on the former CIG 100 claim delineated a northeasterly trending zone of anomalous gold values in the northwest sector of the property where pits and trenches expose barren to lightly mineralized quartz veins. In addition an isolated 420 ppb gold geochem value in the south-central portion of the claim was determined.

## Summary (cont'd)

The S claim group, underlain by the Nicola volcanics, has been intermittently explored since 1985 resulting in the delineation of two indicated northeasterly trending structural zones of anomalous gold values where pits and trenches expose barren to lightly mineralized quartz veins and mineralized quartz vein float material from the Pit Zone assayed up to 1.158 oz $\mathrm{Au} / \mathrm{t}$ and $55.42 \mathrm{oz} \mathrm{Ag} / \mathrm{t}$. The Pit Zone was located from the excavation of pits on a correlative Ronka VLF-EM-soil geochemistry anomaly at the northeastern end of the 200 metre long anomaly. Trenching over additional local VLF-EM and soil geochemical surveys exposed bedrock with minor mineralization. Samples of wall-rock with low or moderate carbonate and/or ankerite and/or silica alteration ranged from background to 39 ppb Au .

Structural analyses on the property indicate other northeasterly trending structures in addition to the two intermittent ring structures in the unexplored southern portion of the property.

From 1987 to 2002 localized exploration work has been carried out intermittently on the Zone II showing with a target zone defined for test by diamond drilling. A permit has been received for the diamond drilling.

In 2002 VLF-EM, magnetometer and geological surveys were completed over the same area as the current exploration program.

As a result of the current exploration program, a 350 metre east west copper anomalous zone included within an open-ended sub-anomalous zone and a sub anomalous arsenic zone correlating with the anomalous copper zone correlate with a 2000 delineated magnetometer low indicated structure.

## Property

The property, designated as the S Claim Group, consists of a contiguous twenty-two located two-post mineral claims and four twenty unit grid claim blocks. Particulars are as follows:

## Claim Name

| S 1-S 7 | $334586-334592$ |
| :--- | :---: |
| HK 1 | 360143 |
| HK 2-HK 3 | $360144-360145$ |
| HK 4-HK6 | $382522-382524$ |
| HK 7 | 360149 |
| HK 8 | 382525 |
| HK 9- HK 11 | $360151-360153$ |
| Luna 1 - Luna 4 | $360967-360970$ |
| HAKA (20 units) | 360160 |
| AURA II (20 units) | 391464 |
| TERRA (20 units) | 360966 |
| TONY (20 units) | 362590 |

## Expiry Date

March 28, 2003
November 10, 2003
November 10, 2003
November 17, 2003
October 18, 2003
November 17, 2003
October 18, 2003
December 8, 2003
October 17, 2003
December 122003
December 10, 2003
May 6, 2003


Figure 1. Location, Claim \& Index Map. (Claim Map is Ministry of Energy, Mines \& Petroleum Resources Map M092I039)

## Location and Access

The property is located in southwestern British Columbia, forty km northwest of Merritt, northwest of Peter Hope Lake and within five km of Mineral Hill, where production from the Stump Lake Mining Camp occurred.

Access is from the Merritt-Kamloops Highway No. 5 to within three km of the property. A secondary road, the Peter Hope Lake road, junctions off to the east within three km south of Stump Lake and provides access to the property.

## Physiography

The property is situated at the western edge of the Douglas Plateau, which is within the physiographic area designated as the Interior Plateau of British Columbia. Gentle to moderate slopes prevail with relief in the order of some 200 meters from Peter Hope Creek Valley.

## Water and Power

Sufficient water for all phases of the exploration program could be available from Peter Hope Lake northeast to Peter Hope Lake in the southwest. In addition to tributaries of Peter Hope Creek, other watercourses are indicated draining the property.

## History

The history of the immediate area stems from the mineral deposits at Mineral Hill located some six km west of the northwestern portion of the S Claim Group. Mineralization at Mineral Hill was discovered in 1882 with exploration and shaft development on the Joshua, Tribal Cain, King William Enterprise and Planet claims prior to 1890.

Exploration and development on Mineral Hill was sporadic to 1929 when a mill was built and operated to 1931. From 1939 to 1942, when operations were suspended, some mine development occurred in addition to the rebuilding of the mill. Since 1942 limited exploration was carried out on the various properties of the area.

Production from the Stump Lake camp during the period from 1916 to 1944 and from the Enterprise, King William, Tribal Cain and Joshua Veins is reported as 77,605 tons of ore mined yielding 8,494 ounces of gold, 252,939 ounces of silver, 40,822 pounds of copper, $2,206,555$ pounds of lead and 367,869 pounds of zinc or a recovered grade of 0.109 oz $\mathrm{Au} /$ ton, $3.26 \mathrm{oz} \mathrm{Ag} /$ ton, $0.026 \% \mathrm{Cu}, 1.42 \% \mathrm{~Pb}$ and $0.24 \% \mathrm{Zn}$. Other properties in closer proximity to the S Claim Group on which exploration was completed include the Mary Reynolds and the Azela within one km east and north.

The Mary Reynolds or the Jean Group was one of the early claims staked in the Stump Lake area and produced a small amount of gold-silver ore. The workings include a " 96 foot" deep shaft with a " 240 foot" long adit level in addition to numerous other workings exploring a vein system with general characteristics similar to the other Stump Lake deposits.

## History (cont'd)

The Azela is within the Johannesburg camp situated "about 16,000 feet" southeast of the Enterprise Mine and within 100 meters west of the S Claim Group. The main showing is a shaft reportedly " 78 feet" deep with open cuts and other workings within the claim. Previous exploration work on the ground included that of Aarn Exploration and Development Co. Ltd. when " 250 feet" of trenches and two "miles" of road were completed.

On the S claim group ground, Times Square Energy and Resources Ltd. (name subsequently changed to New Hombre Resources Ltd.) completed localized geological, geophysical and geochemical surveys on the CIG 100 Claim, which is presently, in part, the S claim group. In 1987, New Hombre Resources Ltd. completed a soil geochemical survey, a VLF-EM survey, a magnetometer survey, a geological survey, and the digging of three test pits (S-1, S-2 \& S-3) to examine the soil profile of the southeast gold anomaly.

In 1990, a fracture density study was completed on the CIG 100 claim. The Cig 100 claim was allowed to expire in 1992.

From 1992 to 1995 the CIG 100 ground was originally covered in part by the Spud claim group and subsequently by the WJA claim group. The only work completed prior to the expiration of the WJA claims in 1995.was some trenching.

The S claim group was staked in 1995 followed by the completion of a localized geochemical survey over the Pit Zone (Figure 1) area. From 1996 to 1999 localized geochemical, geophysical and geological surveys, including trenching, were completed over Zone II located within the S claims. During this period additional contiguous claims to the original seven S claims were staked.

In 1999 and 2000 most of the claims were subjected to a GPS survey to establish accurate location.

In $2001 \& 2002$, localized exploration programs were completed on the property.

## Geology

The regional geology of the area as mapped by W.E. Cockfield and published as map 886 A in G.S.C. Memoir 249 (1947) indicates that the Stump Lake area is underlain by an assemblage of Upper Triassic volcanic flows, pyroclastics and sedimentary units termed the Nicola Group.

In a northerly trending contact with the Nicola the Carboniferous and Permean Cache Creek Group is indicated as occurring at Plateau Lake five km east of the S Claim Group. The Cache Creek rocks are shown to rarely outcrop as windows within the Nicola.

In a later geological map published by the GSC from the geological mapping completed by Monger (1980-82) and McMillan (1969-75 and 77-80) of the B.C. Ministry of Energy, Mines and Resources with supplemental information, the location of the Cache Creek rocks is shown as the Nicola Group.


Figure 2

## Geology (cont'd)

The Nicola Group consists of argillite, siltstone, volcanic sandstone and local intercalated tuff. The formation to the west of the contact and underlying the S Claim Group is the results of which is the subject of this report indicated as consisting of predominantly volcanics with interbedded argillite. The volcanics consist of augite porphyry and augite-plagioclase porphyry, volcaniclastic breccias and tuff.

Quilchena-Stump Lake fault system defining in part the eastern limit of the Nicola batholith with the Nicola Group. The fault trends through the northeastern portion of Stump Lake, centrally through the Stump Lake camp and two km west of the S Claim Group. The major northwest trending Cherry Creek Fault 20 km north of Stump Lake truncates the Quilchena In the Stump Lake area and specifically within the area of Mineral Hill where the major development and production was carried out the rocks consist of greenstone of the Nicola Group. The greenstone is an andesitic rock usually fine grained; locally it is coarser-grained and is dioritic to diabasic in texture. Occasional bands of tuff and breccia are included in the formation. The tuff is extremely fine-grained, banded and the breccia contains andesitic fragments up to 10 cm in diameter similar in composition to the matrix.

The greenstones strike $40^{\circ}$ to $60^{\circ}$ east and dip nearly vertical in the vicinity of the workings. Porphyritic to fine-grained hornblende-andesitic dykes, up to two and one-half meters wide occur in the area. Quartz filled fractures and shear zones strike northerly and dip easterly.

On the Enterprise quartz vein system, stoping was primarily carried out below the 150 -foot level with a shaft to the " 900 foot" level. The vein is commonly under two feet wide and strikes from $350^{\circ}$ and $015^{\circ}$ and dips easterly from $40^{\circ}$ to $80^{\circ}$ with considerable pinching and swelling.

The King William vein does not differ greatly from the Enterprise vein off which it forms a branch however it does reach a width of "nine feet". It joins the Enterprise vein at lower

A shaft develops the Joshua mine to a depth of 755 feet on the dip with the 320 -foot drift level continued for " 2,160 feet" from the portal to intersect the Joshua vein. The vein follows a fracture and shear zone striking nearly north and dipping $60^{\circ}$ east. Below the 400 foot level the dip is stated to be towards the west.

The Planet shaft is about "2,800 feet" southwest of the Enterprise workings. The vein strikes $10^{\circ}$ east and dips steeply easterly and is composed of a band of quartz "eight to 18 inches" wide.

At the Azela the occurrence consists of a shear zone six to eight feet wide striking north $015^{\circ}$ east and dipping $55^{\circ}$ south. Two pits show a vein zone striking north $40^{\circ}$ west with a steep northeast dip. In one pit the zone is "three feet" wide with " 14 inches" of heavily oxidized country rock carrying bunches of quartz. The cuts show only scanty sulphides.

## Geology (cont'd)

The Mary Reynolds vein zones strike northeast and dip steeply southwest to northwest. The veins have been traced over " 900 feet" by cuts and drill holes. The zones range up to "six feet" wide and carry veins and stringers of quartz mineralized with pyrite, chalcopyrite, galena, zinc blende and tetrahedrite. A fracture zone up to "five feet" wide with stringers of quartz and calcite strikes north $40^{\circ} \mathrm{E}$ and dips $85^{\circ}$ southeast.

On the S claim group ground, Vollo (1983) states that from air photo interpretation and field examination the flows of the Nicola volcanic rocks strike about $\mathrm{N} 20^{\circ} \mathrm{E}$ and dip steeply. In addition minor zones of acid rocks; quartz veining and quartz carbonate alteration were noted.

Kuran (1985) states that the S claim group ground is underlain by volcanic rocks which "vary from dark green biotite-hornblende porphyritic flows to pale green, pitted weathering, porphyritic flows with biotite and hornblende phenocrysts altered to chlorite. Two main directions of jointing in the volcanics strike north-northeast to north-northwest and dip vertically."
J. Paxton (1987) reports that the chloritized hornblende-biotite porphyry appears to be an epidotized facies of dark green biotite-hornblende. In addition several zones of pyroclastic breccia were noted. At several locations quartz vein float was also noted.

The trenches that were excavated in the 1998 exploration program revealed typical greenstone with a minor degree of quartz-carbonate stringers and flooding. Sampling of the bedrock exposed by the trenches was warranted.

## Mineralization

Mineralization on Mineral Hill of the Stump Lake camp is essentially associated with quartz veins, which occur as quartz fillings in shear and fracture zones. The principal quartz veins strike from north $45^{\circ}$ west to north $25^{\circ}$ east and dip between $45^{\circ}$ easterly and vertical.

The quartz is white and vitreous and is mineralized irregularly with sulphides, which include pyrite, galena, sphalerite, tetrahedrite, chalcopyrite and bornite. The sulphides occur in segregations, thin searns and disseminations that make up usually a low proportion of the veins. Gold and silver values are proportional to the amount of sulphides in any one vein.

From results of previous exploration on the $S$ claim group ground, mineralization is reported to consist of variable sulphides within quartz veins. Samples of wall rock with low to moderate carbonate and/or ankerite and/or silica alteration ranged from background to 39 ppb Au . The quartz vein samples ranged from background values in gold to 1650 ppb Au in Trench II of Zone I to $0.690 \mathrm{oz} \mathrm{Au} /$ ton and $14.64 \mathrm{oz} \mathrm{Ag} /$ ton at Zone II. The higher-grade gold values were contained in quartz float with light to moderate degrees of pyrite, chalcopyrite and argentite occurring as blebs, pockets and clusters.

## Results of Previous Exploration on the S Claim Group Ground

Exploration work in 1985 on portions of the S Claim Group ground delineated a northeasterly trending zone of anomalous gold values in the northwest sector of the property where pits and trenches expose barren to lightly mineralized quartz veins. In addition an isolated 420 ppb gold geochem value in the south-central portion of the claim was determined.

The 1987 exploration program completed by New Hombre Resources Ltd. confirmed the 300 by 400 meter sub-anomalous gold zone (Zone I) in the northwest sector of the property with no additional significant results. However, detailed exploration in the south-central single station gold value of 1985 resulted in the delineation of a 200 by 40 meter subanomalous gold zone (Zone II) with soil geochem values of up to 1089 ppb Au .

Three test pits were dug to a maximum depth of 75 cm in order to examine the soil profile of the southeast gold anomaly $(4+00 \mathrm{~S}, 7+25 \mathrm{~W})$. Pit S-2 is located along the perimeter of a gold soil geochemical anomaly between values of 144 ppb Au and 781 ppb Au. Pit S-1 is located to the west within an area of 17 ppb Au and one ppb Au. Pit S-3 is located near a soil value of 310 ppb Au .

Samples from pit S-2 at $3+85 \mathrm{~S}, 7+35 \mathrm{~W}$ returned anomalous gold values of up to 1520 ppb Au with increasing values to a depth of 50 cm . The lowest value of 230 ppb Au was from the bottom of the pit. Samples from pits S-1 and S-3 are shallower and returned values of up to 39 ppb Au occurring at the bottom of S-3. Samples of mineralized quartz vein float material in the pit areas assayed up to $0.690 \mathrm{Au} /$ ton and $18.22 \mathrm{oz} \mathrm{Au} /$ ton.

The exploration program also delineated a series of magnetometer lows correlating with a northeast trending electromagnetic (EM) anomaly which correlates in part to a geochem anomaly and the mineralized quartz vein float material.

The Ronka VLF EM-16 survey completed over the soil gold anomalies of Zone II defined a 350 metre anomaly which bifurcates to the northeast and correlates in part with soil geochem anomalous/sub-anomalous values in gold, a VLF-EM anomaly, and two local magnetometer lows.

The 1996 soil geochemical survey was localized and centred on one of the three pits (Pit Zone) that were excavated in the 1987 exploration program. A five by 40 metre grid was established with samples picked up at five metre intervals along two east-west grid lines spaced five metres apart and centred on Pit S-3, one of the three 1988 pits. Eight of the 18 samples, all clustered west of line 5 W and the pit where the high-grade quartz float ( 1.158 $\mathrm{oz} \mathrm{Au} / t)$ was obtained, returned over 400 ppb gold. The central four soil samples ranged from 57 ppb gold to 238 ppb gold and the eastern portion ranging from seven ppb gold to 34 ppb gold. The arsenic values are in a correlative value ratio to the Au values with the copper, lead and zinc values indicating a similar ratio.



## Results of Previous Exploration on the S Claim Group Ground (cont'd)

A 1998 trenching program to determine the source of the high-grade gold-silver float material that was obtained from the shallow pits on Zone II was not successful in reaching bedrock

The 1998 trenching program consisted of two trenches peripheral and to the south of the Zone Il showings. The trenches, up to 1.25 metres in depth, exposed greenstone containing occasional stringers and fracture fillings of barren quartz-carbonate.

The 1999 VLF-EM survey to the south of Zone II indicated a weak anomaly; possibly indicating a structure paralleling the Zone II gold bearing structure to the west.

The 2000 lineament array analysis on the adjoining Luna 3 \& 4, and the Jackpot $1 \& 2$ claims, indicated two fault sets trending at $025^{\circ}$ to $050^{\circ}$ and $305^{\circ}$ to $325^{\circ}$ as a conjugate fault system. A northerly trending fault set was also indicated which is related to the dominant $025^{\circ}$ to $050^{\circ}$ set as ladder structures.

The 2000 lineament array analysis on the Tony claim indicated a major northeasterly trending structure in the southwestern sector.

The 2002 exploration program on the S4-S7 mineral claims indicated two weak northeasterly trending VLF-EM anomalies.

The results of a 2002 exploration program on the S1-S4 mineral claims indicated an enechelon VLF-EM anomaly co-incident with the 1985 Ronka anomaly. A potential correlative mineralized zone was also indicated (Sookochoff, 2002).

The 2002 geophysical/geological program on the S4-7 mineral claims located an indicated 400 metre open ended structure correlating in part with a zone of limonitic unmineralized quartz/carbonate float similar to the mineralized material of the Pit Zone. In addition, two bird's eye magnetic lows and intrusive breccia occur peripheral to the indicated structure.

## 2002 Geochemical Survey

A 400 metre base line at $225^{\circ}$ was established with 0S OE at approximate UTM 690239E 5577715 N . Perpendicular 400 metre grid lines were established at 50 metre intervals extending easterly from the base line.

Samples were selected from the B horizon of the brown to brownish-grey sandy-silted forest soil at a depth of commonly 30 centimetres. The soil was placed in a brown wet-strength paper bag with the grid coordinates marked thereon and a flagged grid station was placed at the sample site A total of 132 samples were taken.
The samples were delivered to Acme Laboratories of Vancouver, B.C. for analysis. The analysis procedure is to first thoroughly dry the sample. Then a .500 gram sample is digested with 3 ml . of 2:2:2 $\mathrm{HCL}-\mathrm{HNo} 3-\mathrm{H} 2 \mathrm{O}$ at $95^{\circ}$ for one hour and is diluted to 10 mls of water. The sample is then analyzed by ICP ES for 30 elements. The sample results are attached as Appendix I.


## 2002 Geochemical Survey (cont'd)

Only two elements, copper and arsenic, were plotted the determination of anomalous areas that may indicate sub-surface mineralization. A Surfer computer program was utilized to create the map and contour the mineral values. The contoured results are shown on Figures 2 $\& 3$.

The results of the survey indicated a low order copper anomaly extending west along grid line 150 S for 350 metres to the west of 200 E with values as high as 214 ppm Cu . The enclosing east-west sub anomalous zone was predominantly along Line 150 S and is open ended dipping down to 200 S .

The arsenic contoured map showed a correlative, low order anomaly to the 350 metre anomalous copper zone. An open ended anomalous arsenic zone occurs at the southeast corner sub correlating to a sub-anomalous copper zone.

## Conclusions

Geologically, based on sparse outcrop in the area, the copper-arsenic anomaly correlates in part with an indicated intrusive breccia. The intrusive breccia outcrops in two local areas 150 S 250 E and 100 S 150 E as mapped in 2002 (Sookochoff, 2003). With the correlative magnetic low and the intrusive breccia indications are for a potential east-west mineral zone associated with the intrusive breccia. The magnetometer low could be an indication of the destruction of magnetite by the intrusive breccia or by volatile mineralizing fluids and/or gases.

The unmineralized float material located at 250 S 250 E , which resembles the material hosting significant gold/silver values at the Pit zone, could have sourced from the indicated structure at 150 S and carried southward by glacial creep. The structure thus could host mineral bearing quartz/carbonate veins.

Additional exploration in the area would be required to determine the cause of the geochemical and geophysical (Sookochoff, 2003) anomalies


## S Claim Group Statement of Costs

The fieldwork for the Terra ,Aura \& Luna 1-4 mineral claims of the S Claim group assessment was carried out between October 15 and December 12, 2002 to the value as follows:

Soil Survey: (contracted) $\quad \$ 2,500.00$
Results \& maps compilation $\quad 650.00$
Assay costs 1,301.94
Report, xerox, \& printing $\quad 1,000.00$

## Selected References

Cockfield, W.E. - Geology and Mineral Deposits of Nicola Map Area, Memoir 249, G.S.C. 1961.
B.C. Minister of Mines Report-1936 p D14-D23

Geological Survey of Canada -Bedrock Geology of Ashcroft (92I) map area, Open File 980

Kuran, V. - Assessment Report on the CIG 100 claim for Time Square Energy Resources Ltd. April 27, 1986. AR 14785.

Paxton, J. - Notes on the Geology of the CIG 100 claim, July 18, 1987
Notes on the Geology of the CIG 100 claim, September 14, 1987.
Rayner, G.H. - A Report on the Stump Lake Property for Celebrity Energy Corporation, April 14, 1983.

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Sookochoff, L. - Geophysical, Geochemical \& Geological Assessment Report for the Tony Mineral Claim for Capella Resources Ltd. July 15, 2002.

Sookochoff, L. - Geological \& Geophysical Assessment Report for the Terra Mineral Claim. March 26, 2002.

Sookochoff, L. - Geological \& Geophysical (Mag; VLF-EM) Assessment Report for the Haka, HA 1-11 Mineral Claims. January 15,2003.

Vollo, N.B. - Report on the CIG 100 claim for Times Square Energy Resources Ltd., 1984.

## Certificate

I, Laurence Sookochoff, of the City of Vancouver, in the Province of British Columbia, do hereby certify:

That I am a Consulting Geologist and principal of Sookochoff Consultants Inc. with offices at 604-1176 Burnaby Street, Vancouver, BC V6E 1P1.

I, Laurence Sookochoff, further certify that:

1) I am a graduate of the University of British Columbia (1966) and hold a B.Sc. degree in Geology.
2) I have been practicing my profession for the past thirty-seven years.
3) I am registered and in good standing with the Association of Professional Engineers and Geoscientists of British Columbia.
4) The information for this report is based on information as itemized in the Selected Reference section of this report and from work the writer has completed on the S claim group ground since 1980.


Laurence Soiokochoff, P. Eng.

Vancouver, BC
February 15, 2003

## Appendix I

## ASSAY CERTIFICATES

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SAMPLE\# | $\begin{array}{r} \text { Mo } \\ \text { ppom } \end{array}$ | $\begin{array}{r} \mathrm{Cu} \\ \mathrm{ppm} \end{array}$ | $\begin{array}{r} \mathrm{Pb} \\ \mathrm{ppm} \\ \hline \end{array}$ | $\begin{array}{r} \mathbf{2 n} \\ \mathrm{pp} \text { n } \end{array}$ | $\begin{array}{r} \text { Ag } \\ \text { pprn } \end{array}$ | $\begin{gathered} \mathrm{Ni} \\ \mathrm{ppm} \end{gathered}$ | $\begin{array}{r} \mathrm{Co} \\ \mathrm{ppmin} \end{array}$ | $\begin{array}{rr} \text { Mn } & \mathrm{Fe} \\ \text { ppon } & \% \\ \hline \end{array}$ | $\begin{aligned} & \text { As } \\ & \text { ppm } \end{aligned}$ | $\begin{array}{r} \mathrm{U} \\ \mathrm{ppm} \end{array}$ | $\begin{array}{r} \mathrm{Au} \\ \mathrm{pppn} \end{array}$ | $\begin{array}{r} \text { Th } \\ \mathrm{ppm} \end{array}$ | $\begin{gathered} \mathrm{Sr} \\ \mathrm{ppm} \end{gathered}$ | $\begin{array}{r} \mathrm{cd} \\ \mathrm{ppm} \end{array}$ | $\begin{array}{r} \mathrm{sb} \\ \mathrm{ppm} \end{array}$ | $\begin{array}{r} 8 i \\ \text { pprn } \end{array}$ | $\begin{array}{r} V \\ \text { ppm } \end{array}$ | $\begin{gathered} \mathrm{Ca} \\ \% \end{gathered}$ | $\begin{aligned} & \hline P \\ & \% \end{aligned}$ | La <br> ppin | $\begin{gathered} \mathrm{Cr} \\ \mathrm{ppom} \end{gathered}$ | $\underset{\%}{\mathrm{Mg}}$ | $\begin{array}{r} \mathrm{Ba} \\ \mathrm{ppm} \\ \hline \end{array}$ | $\begin{array}{r} \mathrm{Ti} \\ \% \\ \hline \end{array}$ | $\begin{array}{r} \mathbf{B} \\ \mathrm{ppm} \\ \hline \end{array}$ | $\begin{gathered} \mathrm{Al} \\ \% \end{gathered}$ | $\begin{gathered} \mathrm{Na} \\ \% \end{gathered}$ | $\begin{aligned} & K \\ & \% \end{aligned}$ | $\begin{array}{r} \mathrm{W} \\ \mathrm{ppm} \end{array}$ |
| G-1 | 2 | 3 | <3 | 45 | <. 3 | 5 | 4 | 6072.15 | $<2$ | $<8$ | $<2$ | 4 | 103 | <. 5 | <3 | $<3$ | 45 | . 67 | . 082 | 11 | 16 | .60 | 273 | . 16 | 3 | 1.26 | . 18 | . 81 | 2 |
| O+00S O+00E | 1 | 20 | <3 | 44 | <. 3 | 13 | 8 | 4122.00 | 5 | $<8$ | <2 | $<2$ | 27 | <. 5 | $<3$ | <3 | 46 | . 26 | . 050 | 5 | 34 | .41 | 122 | . 11 | 3 | 1.40 | . 02 | . 23 | $<2$ |
| 0+00S 0+25E | 1 | 23 | 7 | 49 | <. 3 | 13 | 8 | 3821.95 | 4 | $<8$ | <2 | 2 | 26 | <. 5 | $<3$ | <3 | 47 | . 29 | . 054 | 6 | 32 | . 37 | 126 | . 11 | 3 | 1.38 | . 02 | . 26 | <2 |
| 0+00S O+50E | 1 | 26 | 7 | 46 | <. 3 | 16 | 9 | 7542.06 | 7 | $<8$ | $<2$ | $<2$ | 38 | <. 5 | <3 | <3 | 50 | . 42 | . 044 | 7 | 35 | . 44 | 167 | . 11 | 4 | 1.35 | . 03 | . 27 | <2 |
| O+00S O+75E | 1 | 23 | $<3$ | 51 | <. 3 | 14 | 9 | 6652.08 | 7 | $<8$ | <2 | <2 | 34 | <. 5 | $<3$ | $<3$ | 49 | . 42 | . 033 | 6 | 34 | . 46 | 196 | . 12 | 4 | 1.46 | . 03 | . 31 | <2 |
| 0+00S 1+00E | 1 | 23 | 5 | 46 | <. 3 | 15 | 9 | 4832.19 | 4 | $<8$ | $<2$ | <2 | 29 | <. 5 | $<3$ | $<3$ | 47 | . 35 | . 035 | 7 | 37 | . 45 | 163 | . 12 | 4 | 1.75 | . 03 | . 28 | $<2$ |
| 0+00s 1+25E | 1 | 30 | 4 | 56 | <. 3 | 20 | 11 | 8192.38 | 5 | $<8$ | $<2$ | <2 | 40 | <. 5 | $<3$ | $<3$ | 57 | . 48 | . 029 | 10 | 41 | . 52 | 200 | . 14 | 4 | 1.53 | . 03 | . 30 | $<2$ |
| $0+005 i+505$ | $-1$ | 63 | <3 | 83 | <. 3 | 52 | 17 | 12043.07 | $<2$ | $<8$ | $<2$ | $<2$ | 39 | $<.5$ | <3 | <3 | 59 | -73 | = 035 | 7 | 101 | 1.04 | 218 | .10 | 5 | 2.08 | . 02 | . 46 | <2 |
| 0+00S 1+75E | 1 | 27 | 3 | 67 | $<.3$ | 16 | 9 | 8052.06 | 6 | $<8$ | <2 | $<2$ | 29 | $<.5$ | $<3$ | $<3$ | 43 | . 37 | . 043 | 6 | 38 | . 50 | 208 | . 10 | 4 | 1.80 | . 02 | . 31 | $<2$ |
| 0+COS 2+00E | 1 | 60 | <3 | 63 | $<.3$ | 14 | 11 | 7362.49 | 7 | <8 | $<2$ | <2 | 26 | $<.5$ | <3 | $<3$ | 48 | . 30 | . 049 | 6 | 34 | . 51 | 184 | . 09 | 3 | 1.93 | . 02 | . 26 | $<2$ |
| 0+00s 2+25E | 1 | 98 | <3 | 107 | <. 3 | 21 | 18 | 8973.39 | 9 | $<8$ | $<2$ | $<2$ | 33 | $<.5$ | 4 | $<3$ | 72 | . 44 | . 069 | 6 | 55 | . 88 | 212 | . 11 | 5 | 2.46 | . 02 | . 29 | $<2$ |
| 0+00S $2+50 \mathrm{E}$ | 1 | 73 | $<3$ | 86 | <. 3 | 18 | 12 | 5522.95 | 13 | $<8$ | $<2$ | $<2$ | 33 | $<.5$ | 3 | $<3$ | 61 | . 41 | . 067 | 6 | 37 | .61 | 188 | . 10 | 5 | 2.09 | . 02 | . 35 | <2 |
| 0+00s 2+75E | 1 | 92 | <3 | 83 | <. 3 | 22 | 14 | 5233.47 | 15 | $<8$ | <2 | <2 | 36 | <. 5 | $<3$ | $<3$ | 73 | . 45 | . 080 | 8 | 46 | . 76 | 208 | . 11 | 5 | 2.35 | . 02 | . 41 | <2 |
| 0+00s 3+00E | 1 | 85 | <3 | 85 | <. 3 | 22 | 13 | 5703.24 | 11 | $<8$ | $<2$ | <2 | 35 | $<.5$ | <3 | $<3$ | 67 | . 43 | . 078 | 7 | 42 | . 70 | 202 | . 11 | 5 | 2.25 | . 02 | . 39 | $<2$ |
| 0+00s 3+25E | 1 | 80 | <3 | 86 | $<.3$ | 20 | 13 | 5833.19 | 11 | $<8$ | <2 | $<2$ | 35 | <. 5 | <3 | $<3$ | 66 | . 43 | . 077 | 7 | 42 | . 67 | 195 | .10 | 4 | 2.19 | . 02 | . 37 | <2 |
| 0+00S 3+50E | 1 | 143 | $<3$ | 79 | $<.3$ | 24 | 17 | 6573.76 | 14 | $<8$ | $<2$ | $<2$ | 49 | $<.5$ | $<3$ | <3 | 75 | . 78 | . 121 | 6 | 62 | 1.07 | 185 | . 11 | 8 | 2.13 | . 02 | . 58 | $<2$ |
| 0+00s 3+75E | $<1$ | 164 | <3 | 75 | <. 3 | 24 | 19 | 6513.91 | 15 | $<8$ | $<2$ | <2 | 52 | <. 5 | $<3$ | $<3$ | 81 | . 99 | . 132 | 6 | 66 | 1.18 | 179 | .11 | 8 | 2.11 | . 02 | . 77 | $<2$ |
| 0+00s 4+00E | $<1$ | 48 | $<3$ | 89 | <. 3 | 15 | 11 | 8442.42 | 7 | <8 | <2 | <2 | 26 | <. 5 | $<3$ | $<3$ | 44 | . 30 | . 059 | 6 | 30 | . 48 | 200 | . 09 | 5 | 1.89 | . 03 | . 32 | <2 |
| 1+00S 0+00E | 1 | 28 | 4 | 47 | <. 3 | 16 | 10 | 6822.06 | 6 | $<8$ | $<2$ | <2 | 41 | < .5 | $<3$ | $<3$ | 45 | . 55 | . 065 | 7 | 42 | . 55 | 158 | . 10 | 5 | 1.30 | . 03 | . 43 | $<2$ |
| $1+00$ S 0+25E | $<1$ | 32 | 6 | 49 | <. 3 | 16 | 11 | 8892.18 | 4 | $<8$ | $<2$ | 2 | 47 | $<.5$ | $<3$ | $<3$ | 47 | . 60 | . 054 | 6 | 44 | . 65 | 191 | . 10 | 4 | 1.43 | . 03 | . 41 | <2 |
| 1+00S O+50E | , | 19 | 5 | 42 | $<.3$ | 12 | 8 | 5781.64 | 2 | $<8$ | $<2$ | <2 | 48 | $<.5$ | $<3$ | $<3$ | 37 | . 53 | . 050 | 6 | 28 | . 44 | 140 | . 09 | 4 | 1.13 | . 03 | . 35 | $<2$ |
| $1+0050+75 \mathrm{E}$ | 1 | 25 | 6 | 37 | <. 3 | 15 | 9 | 5452.06 | 6 | $<8$ | $<2$ | $<2$ | 33 | < 5 | $<3$ | <3 | 47 | . 36 | . 056 | 6 | 37 | . 50 | 139 | . 11 | 3 | 1.38 | . 03 | . 38 | <2 |
| 1+00S 1+25E | 1 | 21 | 6 | 47 | <. 3 | 11 | 7 | 6471.82 | 4 | <8 | $<2$ | <2 | 50 | <. 5 | $<3$ | $<3$ | 44 | . 55 | . 043 | 5 | 30 | . 39 | 139 | . 10 | 3 | 1.21 | . 03 | . 26 | <2 |
| 1+00S 1+50E | 1 | 167 | $<3$ | 128 | < 3 | 22 | 22 | 11903.48 | 9 | $<8$ | <2 | <2 | 33 | <. 5 | $<3$ | $<3$ | 91 | . 56 | . 151 | 5 | 74 | 1.23 | 218 | . 14 | $<3$ | 2.41 | . 02 | . 15 | $<2$ |
| RE $1+00 \mathrm{~S} 1+50 \mathrm{E}$ | 1 | 172 | <3 | 131 | <. 3 | 24 | 23 | 12343.58 | 8 | $<8$ | $<2$ | <2 | 33 | <. 5 | 3 | <3 | 96 | . 59 | . 154 | 5 | 77 | 1.27 | 224 | . 15 | 3 | 2.50 | . 02 | . 15 | $<2$ |
| 1+00s 1+75E | 1 | 14 | 4 | 45 | < 3 | 11 | 6 | 5011.65 | 3 | $<8$ | $<2$ | $<2$ | 22 | $<.5$ | $<3$ | 4 | 37 | . 23 | . 050 | 3 | 26 | . 29 | 116 | . 10 | $<3$ | 1.30 | . 02 | . 22 | $<2$ |
| 1+00S 2+00E | 1 | 14 | <3 | 44 | <. 3 | 10 | 6 | 4061.72 | 4 | $<8$ | <2 | 2 | 23 | <. 5 | $<3$ | $<3$ | 39 | . 23 | . 040 | 4 | 27 | . 31 | 111 | . 11 | 3 | 1.38 | . 03 | . 22 | $<2$ |
| $1+0052+25 E$ | 1 | 27 | $<3$ | 44 | $<.3$ | 16 | 9 | 5372.21 | 7 | $<8$ | $<2$ | 2 | 33 | < 5 | $<3$ | $<3$ | 51 | . 38 | . 035 | 8 | 42 | . 48 | 137 | . 13 | $<3$ | 1.37 | . 03 | . 27 | $<2$ |
| $1+00 \mathrm{~S} 2+50 \mathrm{E}$ | 1 | 29 | 3 | 46 | <. 3 | 17 | 10 | 6082.24 | 6 | $<8$ | $<2$ | $<2$ | 36 | < 5 | $<3$ | $<3$ | 51 | . 42 | . 035 | 8 | 42 | . 49 | 148 | . 11 | $<3$ | 1.40 | . 04 | . 28 | <2 |
| $1+00 \mathrm{~S} 2+75 \mathrm{E}$ | 1 | 38 | $<3$ | 63 | <. 3 | 20 | 10 | 7732.43 | 4 | $<8$ | $<2$ | 2 | 34 | <. 5 | <3 | $<3$ | 51 | . 44 | . 026 | 8 | 46 | . 54 | 184 | . 12 | <3 | 1.60 | . 02 | .39 | <2 |
| 1+00S 3+00E | 1 | 39 | 4 | 66 | < 3 | 19 | 11 | 8652.47 | 5 | $<8$ | <2 | 2 | 36 | <. 5 | $<3$ | $<3$ | 51 | . 46 | . 029 | 7 | 47 | . 56 | 195 | . 13 | 3 | 1.64 | . 03 | . 40 | $<2$ |
| 1+00s 3+25E | 1 | 44 | $<3$ | 83 | <. 3 | 17 | 12 | 9212.55 | 3 | $<8$ | $<2$ | 2 | 30 | <. 5 | $<3$ | $<3$ | 56 | . 38 | . 040 | 6 | 63 | . 72 | 222 | . 14 | $<3$ | 1.97 | . 02 | . 48 | $<2$ |
| 1+00S 3+50E | 1 | 45 | <3 | 80 | . 3 | 17 | 12 | 9372.50 | 4 | $<8$ | <2 | $<2$ | 30 | <. 5 | $<3$ | <3 | 55 | . 39 | . 040 | 6 | 63 | . 70 | 227 | . 13 | 3 | 1.95 | . 03 | . 43 | $<2$ |
| $1+00$ S $3+75 \mathrm{E}$ | 1 | 81 | <3 | 100 | <. 3 | 16 | 15 | 12072.91 | 8 | $<8$ | <2 | $<2$ | 42 | <. 5 | $<3$ | $<3$ | 56 | . 63 | . 067 | 6 | 43 | . 69 | 258 | . 09 | 4 | 1.98 | . 02 | . 39 | <2 |
| $1+0054+00 E$ | 1 | 168 | $<3$ | 85 | <. 3 | 23 | 20 | 8973.44 | 12 | $<8$ | $<2$ | 2 | 53 | $<.5$ | $<3$ | $<3$ | 72 | 1.01 | . 109 | 7 | 53 | . 95 | 178 | . 09 | 5 | 1.98 | . 02 | . 45 | $<2$ |
| STANDARD DS4 | 7 | 122 | 33 | 157 | .4 | 33 | 12 | 7933.13 | 22 | 10 | $<2$ | 4 | 27 | 4.8 | 5 | 5 | 75 | . 53 | . 091 | 17 | 167 | . 58 | 145 | . 08 | $<3$ | 1.74 | . 03 | .17 | 3 |

GROUP 1D - 0.50 GM SAMPLE LEACHED WITH 3 ML 2-2-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR, DILUTED TO 10 ML, ANALYSED BY ICP-ES.
UPPER LIMITS - AG, AU, HG, $W=100 \mathrm{PPM}$; MO, $C O, C D, S B, B I, T H, U \& B=2,000 P P M ; C U, P B, Z N, N I, M N, A S, V, L A, C R=10,000 P P M$.

- SAMPLE TYPE: SOIL SS80 60C Samoles beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

SIGNED BY. ............. TOYE, C.LEONG, J. WANG; CERTIFIED B.C. ASSAYERS All results are considered the confidential property of the client. Acme assumes the liabilities for actual cost of the analysis only.


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[^2]
[^0]:    Sample type: SOIL SS80 60C. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

[^1]:    Sample type: SOIL SS80 60C. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

[^2]:    Sample type: SOIL SS8060C. Samples beginning_RE' are Reruns and 'RRE', are Reject Reruns.

