886717

SUMMARY REPORT ON

THE HOT SPRING PROPERTY SLOQUET CREEK AREA HARRISON LAKE REGION NEW WESTMINSTER MINING DIVISION BRITISH COLUMBIA

122°21'W / 49°45'N NTS 92G/16W, 92G/9W

FOR

MOUNT HOPE RESOURCES LTD.

12719-24A Ave. White Rock, B.C. V4A 9H8 Phone: 535-2164, Fax: 535-6353

BY

W. B. LENNAN GREENSTONE ENTERPRISES LTD. 876 Lynnwood Ave., Port Coquitlam, B.C. V3B 5W6

December 16, 1996

SUMMARY

- The Shearer-Angus Joint Venture has located 90 units, in 7 modified grid claims, which cover a precious and base metal prospect in the Sloquet Creek area of the south-western British Columbia. The property is situated 95 kilometres north-east of Vancouver and is accessible by logging road from either Pemberton or Harrison Mills.
- 2) Cominco Ltd staked the ground in 1944 and again in 1979 (now covered by the Hot Spring claims) and discovered several moderate to high base-metal soil anomalies. The anomalous zones received only limited follow-up evaluation.
- 3) Aranlee Resources Ltd. carried out a program of geological mapping and geochemical sampling in 1987. This program was successful in extending the largest and most intense soil anomalies located by the previous operators. A grab sample of altered volcanics exposed on the south side of Simpson Creek returned 2560 ppb gold (McClaren and Hill, 1987)
- 4) The property is underlain by a sequence of pyritic, felsic tuff and coarse fragmental rocks capped by ferruginous chert which totals more than 400 m thick. This lithological assemblage is correlative with the Gambier Group hosting the Britannia Copper Deposits, suggesting a favourable environment for exhalative massive sulphide deposits and related precious metal enriched stockworks and breccias. The Britannia Deposits are located 70 km to the west of the Hot Spring Claims (Payne et. al. 1980).
- 5) The area is characterised by north-westerly trending Tertiary age faults associated with gold mineralization. The Doctors Point and the RN gold deposit at the south-end of Harrison Lake are the most important nearby gold zones.
- 6) Follow-up geochemical and geological investigations were carried out in 1988 on the anomalous zones, as well as checking the more eastern and largely untested areas of the claims (Shearer, 1988). Two new showings containing galena and sphalerite mineralization were discovered. The 1988 work located soil anomalies that carried up to 180 ppb Au and 15.5 ppm Ag. Rock chip samples returned values up to 0.238 oz/ton gold and 15.73 oz/ton silver.
- 7) One of the most important mineralized area found in 1988, called Dan's Showing, is hosted by very altered cherty tuffite. This zone outcrops over a horizontal area of 55 metres by 35 metres and is covered on all sides. Vertically it is exposed through a height of 25 metres on the steep hillside. Hand trenching gave values of up to 0.238 oz/ton Au over 1 metre and 0.174 oz/ton over 2 metres. In a different area, one part of a trench gave 8 metres averaging 0.052 oz/ton Au. Narrow galena-sphalerite fault zones give up to 15 oz/ton Ag and 25% combined Pb/Zn over 1 metre (Shearer, 1988).
- 8) Aranlee optioned the property to Noranda in 1989. Work in 1990 consisted of 7 NQ diamond Drillholes totalling 1251.9 metres of drilling on the southridge part of the Property. Hole NQ90-2 collared at 30+012N and 30+886E intersected 119m averaging 584 ppb Au. NQ90-4 intersected 615 ppb Au over 66.0 metres (Wilson, 1991). Only on hole (NQ90-7) tested the possible down dip extension of the mineralized zone but encountered an up faulted block of lower andesite. Airborne geophysics and follow-up soil geochemistry were also completed (Wilson and Wong, 1990).

- 9) After reviewing the Expenditures and work programs on the property (Appendix I), a conservative value of the property is \$333,715.00 based on the cost of work conducted since 1990.
- 10) A large low-grade gold-bearing hydrothermal system is hosted by highly altered felsic volcanics on the Hot Spring Property. Anomalous values in gold in rock and soil have been found concentrated on the southridge area, and other zones throughout the Property. A systematic exploration program of geological mapping, excavator trenching, geochemistry and contingent diamond drill program is recommended at a cost of: Phase I, \$40,000, Phase II of \$300,000 and Phase III of \$220,000 for a total of \$560,000.

Respectfully submitted,

W. B. Lennan, B.Sc., P.Geo.

P I

INTRODUCTION

This report has been commissioned by J. T. Shearer of Mount Hope Resources Ltd. to summarize all available data on the Hot Spring Mineral Claims and propose an exploration program to further assess the base and precious metal potential of the property. A large amount of previous work has been carried out in the past by various operators.

The large volcanogenic copper-gold deposits of the Britannia Camp which produced 55 million tons grading 1.1% Copper and 0.02 oz/ton gold (Payne et al, 1980) are hosted in Gambier group rocks 70 km directly west of the Hot Spring Property. The Hot Spring area is underlain by altered volcanics and metasediments of the Gambier Group.

The claim area has been explored for precious metal (MacKay, 1944) and base metal potential (Wojdak, 1980a), since the early 1940's. Detailed panning during 1944 demonstrated that Sloquet Creek contains plentiful coarse, angular placer gold and that 75% of the placer gold can be traced to Simpson Creek (Mackay, 1944). Stream sediment, soil and rock sampling led to the discovery of several gold, lead, copper and zinc soil anomalies by Cominco (Freeze, A. C., 1986). A field program by Aranlee Resources Ltd. conducted in 1987 relocated those anomalies and was successful in extending the most intense anomaly previously located by Cominco Ltd. Prospecting in 1988 discovered two new important pyrite-sphalerite alteration zones high in gold values south of the previous work on Southridge. Subsequent trenching in November 1988 on this showing south of North Sloquet Creek (Dan's Showing) revealed an extensive area carrying important gold values (up to 0.276 oz/ton) in a wide area extending over 1000 metres to the east. Detailed mapping and sampling suggests a possible stratabound nature to the mineralization. Limited shallow diamond drilling conducted in 1990 by Noranda intersected 119m averaging 584 ppb gold in Hole NO90-2 and NO90-4 averaged 615 ppb gold over 66m., demonstrating that the zone enriched in gold is between 70 to 100 metres in true thickness. Only one hole tested the possible downdip extension of this low-grade mineralized zone but an up faulted section of the lower andesite was encountered in this hole.

Gold mineralization may also be related to Tertiary age major faulting along the Harrison Lake Fracture Zone similar to the RN gold deposit at the south end of Harrison Lake and Doctors Point.







EXPLORATION HISTORY

Exploration activity within the immediate area has been conducted intermittently since the mid 1940's. North of Sloquet Creek in the Fire Lake Area, small scale gold production occurred in the 1920's and 1930's.

In 1944, the area was staked by prospectors working for Cominco Ltd. (MacKay, J. M., 1944). Their attention was focused towards this area after obtaining good gold indications from pannings of Sloquet Creek gravels. Over 75% of the gold was determined to be from gossanous cliffs in the Simpson Creek area. Prospecting in this area produced a chip sample of pyrite, galena and sphalerite bearing tuff that contained 0.16 oz/ton gold over six feet (1.8 metres) and also yielded a float rock sample containing quartz-sulphide stringers which assayed 0.94 oz/ton gold (MacKay, J. M., 1944). No further work was done at that time.

In 1975, the CL claim was located in the area north of Simpson Creek and was geologically mapped and sampled by Mr. M. McClaren. This work was performed for the Cyprus Anvil Corporation during 1976. The purpose of the exploration program was to assess the massive sulphide potential of the area. A pencil manuscript map at a scale of 1:1200 was constructed and was also used in the 1988 program.

In 1979, Cominco Ltd. staked the SLO claim group in the area now occupied by the Hot Spring claim group. Silt samples from this area gave anomalous precious and base metal values (Wojdak, P. J., 1980a). Cominco Ltd. completed a soil sampling survey in 1981 and located several precious and base metal soil anomalies. The best developed anomaly yielded values of up to 488 ppm Cu, 3600 ppm Pb, 3300 ppm Zn and extended 500 metres in length being open towards the west (Wojdak, P. J., 1980b).

In 1985, Cominco Ltd. attempted chip sampling traverses across a portion of cliffs located above and to the south of the best developed soil anomaly on the south side of Simpson Creek. This program employed experienced rock climbers and had a duration of three days. Thirty-five rock chip samples were collected; at least eight samples were anomalous in either copper, lead or zinc. Fourteen samples yielded silver values exceeding 7 ppm. Five samples yielded gold values exceeding 100 ppb. Best results were received from sample S-85-3 (155 ppm Cu, 12800 ppm Pb, 8440 ppm Zn, 162 ppm Ag, 392 ppb Au) and S857 (244 ppm Cu, 1186 ppm Pb, 578 ppm Zn, 17.6 ppm Ag, and 856 ppb Au)(Freeze, A. C., 1986).

The SLO claim group was allowed to lapse in October 1986. The area was partially restaked as the Quet 1 and 2 mineral claims on May, 1987 by W. Chase. Aranlee Resources Ltd. optioned the Quet 1 and 2 mineral claims in October, 1987 and staked the contiguous Quet 3 and 4 mineral claims in November, 1987. A small exploration program was conducted during November of 1987 by Aranlee Resources. This work confirmed the presence of the Cominco soil anomalies and extended some of the more significant ones (McClaren and Hill, 1987). In 1988, follow-up sampling, prospecting and geological mapping was completed. Cobra drilling and blasting was used to trench the most promising showings (Shearer, 1988).

The claim situation was complicated with overlaps in the area since some previous claims were removed from the Government maps while they were still in good standing.



REGIONAL GEOLOGY

The earliest reported geological mapping of the North Harrison Lake areas was of the Vancouver North Map Area by J. E. Armstrong and J. A. Roddick of the G.S.C. Memoir 335 Vancouver North, Coquitlam, and Pitt Lake Map Areas, B.C., (Figure 4). More recent mappings by J. M. Journeay, L. Csontos and J.V.G. Lynch from 1988 to 1989 have detailed the geology of North Harrison Lake area which includes the Quet Property. A recently published Open File (O.F. #2203) by the B.C. Department of Mines summarizes the results of that mapping, (Figure 5).

The Coast Belt of Southern British Columbia records a complex history of deformation, metamorphism and igneous activity that can be linked, in part, to progressive shortening and transcurrent displacements along the continental margin of North America since Early Cretaceous time that may be associated with eastward subduction of oceanic lithosphere.

Gambier Group rocks underlie the Hot Spring property and occupy an island arc setting. Included are the Peninsula Formation, a basal, fining upward sedimentary sequence of subaqueous autoclastic and epiclastic rocks which are mainly intermediate in composition (Roddick, J. A., 1965). These rocks are correlative on a lithological basis with the Gambier Group that lies 40 air miles (70 kilometres) to the west of the Hot Spring property. The argillaceous middle member along Harrison Lake is equivalent to the Britannia Formation of the Gambier Group (Roddick, J. A., 1965, pg. 42). The Britannia Formation hosts the Britannia Mine, a copper-zinc-gold felsic volcanogenic massive sulphide deposit of the Kuroko-type (55 million tons grading 1.1% Cu, 0.65% Zn, 0.2 oz/ton Ag and 0.02 oz/ton Au) (Payne et. al., 1980).

Two phases of the thrusting related to Late Cretaceous oblique convergence along the continental margin and Tertiary Aged dextral and normal dip-slip faulting are the major structural events. Metamorphism to greenschist grade or lower has also occurred within the Gambier Group rocks. The metamorphic grade of the Gambier Group rocks seldom exceeds lower greenschist facies, except in the vicinity of intrusions, where migmatization occurs.

The Harrison Lake Shear Zone is recognized (Journeay, 1989) to be an important structure in localizing economic gold deposits within Southwest British Columbia. This gold belt, which includes the Hot Spring property is associated primarily with brittle fault systems along the western margin of the Shear zone, and is offset to the north by younger NE-striking transcurrent faults. These NE-striking transcurrent faults may also be important structures in controlling the emplacement of epizonal Late Tertiary plutons and in tapping associated hydrothermal systems. These transcurrent faults may be providing the necessary structural control for localizing economic concentrations of both base and precious metals within the region.



1_

PROPERTY GEOLOGY and MINERALIZATION

The geology of the central portion of the Hot Spring property is shown on Figure 6. The area is predominantly underlain by a mixed assemblage of felsic tuffaceous and fragmental rocks which display evidence of explosive felsic volcanism and contain clasts of laminated pyrite. These rocks interfinger with andesite flows and dykes.

Past geological mapping at the scales of 1:1,000 for the detailed grid and 1:2,500 for the reconnaissance grid was completed on the area referred to as the "Southridge Zone". The following is a summary of the lithological units noted during the course of prospecting and mapping.

Unit 6: Biotite-Hornblende Diorite

An unaltered, medium to fine grained, equigranular rock containing 10-15% biotitehornblende crystals, 57-80% plagioclase crystals and 10% quartz crystals. The rock has a light grey salt and pepper appearance and often has xenoliths of andesite near it's contacts.

This intrusive is seen extensively in the southwest of the Southridge map area (Figure 8) together with a small stock mapped in the area 31+100E to 31+400E from 29+600N to 29+800N. Airborne magnetometer surveying shows a larger near surface component to the stock than that mapped on surface.

Unit 5A: Andesite Dykes/Sills?

A dark green to greenish black rock, variably porphyritic with feldspar phenocrysts, massive, undifferentiated with extensive chlorite alteration and lesser epidote alteration. The dykes cut all lithologies (except diorite) at a north to north-west direction with gradational to sharp contacts.

Pyrite is ubiquitous, occurring as fine disseminations from 1 to 15%, and often coats fracture surfaces. The rock is moderately to strongly magnetic.

At some locations it is suggested that these andesites (or intermediate tuffs) are conformable to bedding and may be sills. This unit is seen commonly throughout the property.

Unit 5B is thought to belong to the Peninsula Formation and consists of andesitic flows and tuffs. It occurs east of L31+500E and forms the easterly extent of the ridge between the North Sloquet and Sloquet Creek.

Unit 4: Dacitic to Andesitic Lapilli (Nodular) Tuffs

A dark grey to brown matrix of secondary biotite with subangular to subrounded 1 mm to 1 cm fragments (nodules) of light green (felsic) fine grained fragments. This unit is partly pervasively silicified and has been shown in petrographic studies to be altered by potassium feldspar.

This unit is common along the northern border of the detailed grid over a slope distance of 300m.



Unit 3: Siliceous Felsic Tuff

A light blue grey, fine grained to very fine grained highly silicified and massive rock. The rock appears to have been bleached and weathered surfaces have a distinctive yellow-brown gossanous appearance due to oxidation of finely disseminated pyrite.

This unit is often mineralized with sphalerite \pm galena and lesser chalcopyrite and produced the bulk of the gold and silver rock sample anomalies during Aranlee's 1989 field program. It is situated immediately south of Unit 4 in an east-west band on the detailed grid and occurs over a slope distance of 200m.

A similar lithological unit occurs on the south facing slope of Southridge which may, in part, be the down-dip extension of Unit 3. It occurs over a much wider slope distance, however, and a steepening dip would be required to account for the additional area of the outcrop. The unit is fairly massive and dip measurements can not be made. More detailed mapping from closer spaced lines would be necessary to more fully understand the geometry of Unit 3.

Unit 2: Siliceous (Sugary Textured) Felsic Tuff

A white, fine to medium grained sugary textured, very siliceous felsic tuff. As with Unit 3, into which this unit is gradational, the protolith is not clear but is thought to be a dacite or rhyolite. Quartz eyes have not been recognized in hand specimens. Silicification has obliterated most original texture and the unit appears as a massive, non-bedded volcanic. Ghosted white tuff fragments (feldspar?) are sometimes observed.

A distinctive red (hematite?) colouration on weathered surfaces is common within this unit. The pyrite content is very low (<<1%) and the rock appears to have been bleached.

This unit outcrops in an east-west band south of Unit 3 just on the south facing slope from the ridge forming the topographic high on the detailed and reconnaissance grids.

Unit 1: Boulder Conglomerate

Well rounded granitic boulders occur within a (matrix supported) dark green, chloritized andesitic matrix. This unit is only seen on the reconnaissance grid on the east and north-east sides and likely represents a lower portion of the Peninsula Formation within the gridded area.

Alteration

The volcanic package consisting of Units 2, 3 and 4 display the strongest alteration of all rocks mapped. Unit 5 displays strong orthoclase alteration while Unit 3 contains both orthoclase and silica alteration. The silicification becomes stronger and orthoclase weaker towards the south (up stratigraphy) until in Unit 2 the rock is totally silicified and most of original textures destroyed. Silicification, as with orthoclase alteration, is pervasive with gradational contacts.

The origin of the alteration may, in part, be related to the intrusion of the Coast Plutonic diorites with the gradational change from one alteration type to the next related to the contact aureoles. Other volcanics on the property do show minor to moderate silicification but nowhere near the intensity of Unit 2, 3 and 4.





5

· a

1

2

3

· 0

0

Π

P

00

METRES

STRUCTURE

The volcano-sedimentary sequence has been metamorphosed to biotite metamorphic grade with variable development of a tectonic fabric. Where recognizable, bedding is sub-parallel to or shallower than the fabric, dipping at 30-50° to the SSW or SSE. There is no evidence of major fold repetition within the area.

Late-stage faulting is important, probably largely of post-plutonic, Tertiary age. Gold mineralization elsewhere in the Harrison Lake Area is related to this Tertiary Event. A major dextral northeast-trending fault controls the orientation of Sloquet Creek and cuts the nose of the ridge between North Sloquet and Simpson Creeks. Hot springs in Sloquet Creek are related to this fault. Several sub-Parallel northeast to north-trending faults may control the line of snow chutes to the west. One such structure exposed by trenching near 30+125N and 30+305E is strongly altered and mineralized. Several southwest dipping structures have also been recognized in the area and bear a close relationship to mineralized zones.

The Southridge Zone west of Line 31+500E is underlain by an east-west striking, moderately south dipping sequence of intermediate to felsic volcanic tuffs to lapilli tuffs. These volcanics have been pervasively silicified and orthoclase altered and are cut by numerous andesitic porphyry dykes trending north to northwest. Steeply dipping North-South trending faults have displaced some lithologies by a few tens of metres. A blue-grey silicified felsic tuff unit (Unit 3) has been shown by past surveys to contain sphalerite-galena showings. Present mapping assigns the gold showings to this unit and defines it to be the most potentially economic horizon on the Southridge.

East of Line 31+500E and separated by a major north - south gulley is a massive andesitic flow/tuff unit which is underlain by a boulder conglomerate. No structural measurements were recovered from these units. This area represents a significant faulted uplift within the Gambier Group with subsequent erosion of the Brokenback Hill Formation and exposing the underlying Peninsula Formation. These rocks are not as altered as those west of Line 31+500E indicating the uplift and erosion to be a late stage event. No mineralization except minor pyrite was seen within this package of rocks.

TRENCHING

Mineralization and Lithogeochemistry

A high proportion of the volcanic rocks in the claim area are pyritic with common low level enrichment in base and precious metals. The property geology indicates major potential for volcanogenic massive sulphide or stockwork base metal-gold mineralization (comparable to some of the zones at the Britannia Mine) and for structurally controlled mesothermal or epithermal gold mineralization related to the Late Cretaceous or Tertiary structures.

Exploration by Cominco and Aranlee prior to 1989 identified widespread base and precious metal enrichment in the pyritic felsic volcanics on the ridge between Simpson and North Sloquet Creeks. Several sphalerite-galena showings were located on this ridge and north of Simpson Creek, some with significant gold values (max. 392 ppb Au). Higher gold values in Dan's Showing south of North Sloquet Creek focused follow-up work in this area. This led in 1989 and 1990 to the outlining of an extensive, discontinuous, mineralized zone extending at least 1.5 km east-west along strike and up to 100m across strike. This area is referred to as the North Sloquet Creek Prospect.

North Sloquet Creek Project, Figure 8

Dan's Showing (30+000N + 30+050E)

Five trenches were blasted across the showing in 1988. This zone outcrops over a horizontal area of 55 by 35 metres and is covered on all sides. Vertically it is exposed through a height of 25 metres on the steep hillside. Hand trenching gave values of up to 0.238 oz/ton Au over 1m (0.174 oz/ton over 2m). In a different area one part of a trench gave 8 metres averaging 0.052 oz/ton Au. Narrow galena-sphalerite fault zones give up to 15 oz/ton Ag and 25% combined Pb/Zn over 1 metre (Shearer, 1988). The host rock is Unit 3a altered rhyolitic tuff cut by an intense millimetre scale quartz veining network. Sulfides occur as disseminations and within veins, averaging 5-10% but with local zones of up to 40-60% sulfide. The richest mineralization occurs in a shallow (35°) south-dipping 0.2 to 1m breccia zone.

The extent of the mineralized area is uncertain. Disseminated sphalerite-galena mineralization occurs in outcrop along strike to the east for 130m, with grab samples assaying up to 3.37 g/t (0.098 oz/ton). Mineralized float occurs 150m west of the showing, where outcrop is absent. Exposure is also absent downhill to the north. To the south, the zone passes up into unmineralized andesite.

The evidence suggests a primary stratabound metal enrichment concentrated into later structurally controlled zones. The disposition of higher grade samples within the trenched area may reflect a 150-160° mineralized zone strike related to 140-150° shear zones exposed in the trenches. The relative importance of structural and stratigraphic controls requires additional investigation.

Lower Zone (30+100N + 30+035E)

The 'Lower Showing' lies 100m north-northwest and downhill from Dan's Showing. Abundant pyrite, galena and sphalerite occur as disseminations and in irregular massive zones and veins in silicified dacitic tuff. Grab samples assay up to 1.26 g/t Au (0.037 oz/ton). A strike of 160-170° would link the zone with Dan's Showing through intervening soil anomalies (up to 155 ppb Au).

Prospecting along strike to the east from the lower showing has established an extensive stratabound zone (250 x 50m) of variably silicified tuffs with widespread pyrite-galena-sphalerite mineralization, concentrated in northwest-trending shear zones. Grab samples assay up to 0.7 g/t Au (0.02 oz/ton).

The Lower Zone continues east into the 350 E showing and probably continues along strike through the 600 E, 900 E, 1150 E and 1400 E Showings (below).

350 E Showing (30+125N + 30+350E)

Excavator trenching of a northwest-trending Au soil anomaly (to a maximum of 420 ppb Au) revealed a fault zone of intensely sericitic and argillic altered pyritic tuff at least 13m across. Maximum gold values in 1 metre channel samples were 0.068 g/t (0.002 oz/ton). This passes east into 9m of silicified tuff with up to 30% pyrite-chalcopyrite-sphalerite. Maximum 1 metre channel sample assays from the zone were 0.48 g/t Au (0.014 oz/ton), 26.7 g/t Ag (0.78 oz/ton), 1.04% Cu, 1.35% Zn and 0.14% Pb, A 4m zone assayed at 0.39 oz/ton Au, 18.3 g/t Ag, 0.62% Cu, 0.64% Zn, 0.11% Pb.

A 30 metre section of variably silicified sphalerite-bearing pyritic tuffs was exposed east of this Cu-Zn zone. This mineralization represents the eastward extension of the Lower Zone, with up to 20 metres dextral offset across the fault. Maximum values from 1 metre channel samples were 0.206 g/t Au (0.006 oz/ton) with 22.7 g/t Ag (0.66 oz/ton) and 2.0% Zn.

600 E Showing (30+170N + 30+600E)

This showing occurs on the eastward extension of the Lower Zone and marks the start of richer gold mineralization within the zone. Grab samples of pyrite-galena-sphalerite mineralization in silicified dacitic tuffs assay up to 4.2 g/t Au (0.122 oz/ton). Recent channel sampling across the zone indicated 7 metres assaying 2.4 g/t Au (0.07 oz/ton) with 2 metres at 4.56 g/t (0.134 oz/ton). Trenching is required to establish the continuity of the mineralization.

900 E Showing (30+110N + 30+905E)

The main mineralized zone at 900 E is 3-5m across and exposed over 15m of strike at about 145° az. It contains abundant (10-40%) pyrite, galena and sphalerite, disseminated within quartz vein networks hosted by silicified dacitic tuff. Mineralization is extensive but its continuity is uncertain due to deep oxidation and leaching.

Twelve grab samples from the 15 x 20 metre outcrop area average 2.45 g/t Au (0.071 oz/ton) and 33.16 g/t Ag (0.967 oz/ton). The maximum assay was 6..88 g/t Au (0.201 oz/ton) with 68 g/t Ag (1.983 oz/ton) and more than 1% Pb. Limited channel samples have been taken across the main zone. The best intersections were 1 metre at 6.38 a/t Au (0.186 oz/ton) and 2 metres at 2.76 g/t Au (0.805 oz/ton). Eight samples across the zone average 2.74 g/t Au (0.080 oz/ton) and 60.7 g/t Ag (1.769 oz/ton), excluding samples of an unmineralized 0.5m andesitic dyke cutting the zone.

The area is presently inaccessible to the excavator so that blast trenching and channel sampling are required to establish continuity and grade mineralization. The outcrop is deeply leached and grades may increase in fresh rock as was the case at Dan's Showing.

Exposure is absent along strike from the main zone. Its projected extension to the northwest is marked by a strong topographic break in craggy outcrops to the southwest. These comprise variably silicified pyritic tuff with common galena-sphalerite mineralization, forming part of the stratabound Lower Zone extending west to the 600 E Showing. Preliminary grab samples assay up to 2.9 g/t Au (0.08 oz/ton). Continuity of mineralization is difficult to establish due to deep oxidation and leaching. None of this area is accessible to tracked excavator and will be further explored by hand trenching, channel sampling and drilling.

1300 - 1500 E Showing Figure 9 (30+150N and 31+300E to 31+500E)

Mineralization in the eastern grid area was discovered as a follow-up to highly anomalous soil geochemistry on the 30+000N line from 30+750E to 31+500E. Chip samples from sub-outcrop at 31+500E assayed 3840 ppb Au. Follow-up prospecting revealed pyritic silicified tuff with extensive sphalerite-galena. Mineralization in the vicinity at 1100 and 1400E returned values of 4.35 g/t (0.127 oz/ton) and 12.59 g/t (0.367 oz/ton) Au. Five grab samples from the 20 x 30m outcrop area at 1400E averaged 5.71 g/t (0.149 oz/ton) Au.

A tote road was constructed to the ridge top at 31+400E by tracked excavator and the area between 31+100E and 31+500E was trenched at this level. In total, 550m of trenching was completed with channel chip samples taken at 1 m intervals (in most cases). The trenching successfully delineated an apparently northeast trending zone, 40 m x 150 m, of intensely silicified pyritized rhyolitic tuff breccia with pervasive quartz veinlet flooding and alteration and disseminated and veinlet sphalerite-galena. Assay results (Table 2, Figure 9) were in the general range 0.02 to 0.1 oz/ton Au, 0.1 - 2 oz/ton Ag and 0.01 - 1% Pb and Zn through the zone.

The western and southern extensions of this mineralized area were not accessible to the excavator and will require blast trenching. Grab samples from the area west of 1300 E have assayed up to 12.07 g/t (0.352 oz/ton) Au with broad coincident soil geochemical anomalies.

A trench was dug further west on the ridge between 30+750E and 30+920E south of the main mineralized zone (900 E Showing), along the soil anomaly on the 30+000N line (up to a maximum of 750 ppb Au). This exposed a continuous zone of silicified pyritized tuffs with local minor sphalerite-galena. Grab samples assay up to 0.82 g/t (0.024 oz/ton) Au with chip samples up to 0.48 g/t (0.014 oz/ton) Au over 3 metres.

Controls on Mineralization in the Sloquet Area

Exploration to date has established an apparently stratabound zone of gold and base metal mineralization in intensely altered volcanic rocks south of North Sloquet Creek. North to northwest-trending structures within the zone are associated with higher grade mineralization. Some of these structures are obviously late, such as the fault zone at 350 E, but some may be significantly earlier and could be synvolcanic.

The mineralization observed to date is not volcanogenic-exhalative but is of replacement stockwork type. If the mineralization is related to submarine volcanism, the observed enrichment may be peripheral to higher grade massive sulphide zones which may be amenable to geophysical detection. Recent soil and lithogeochemistry show increasing gold enrichment east of the 900 E Showing, indicating a higher grade section of the stratabound zone.

TABLE 2								
31 + 300 to 31 + 500 E Showing Au/Ag Trench Intersections								
Trench	Intersection							
T2	19m	@	0.046 oz/ton (1.57g/t) Au					
	• · ·		1.132 oz/ton (38.8 g/t) Ag					
t e s			includes: $6m$ at 0.096 oz/ton (3.29 g/t) Au					
			2.48 oz/ton (85.35 g/t) Ag					
Т3	12m	@	0.023 oz/ton (0.78 g/t) Au					
			0.257 oz/ton (8.80 g/t) Ag					
	19m	@	0.039 oz/ton (1.33 g/t) Au					
			0.543 oz/ton (18.30 g/t) Ag					
			includes: $4m$ at 0.065 oz/ton (2.2 g/t) Au					
			0.541 oz/ton (18.56 g/t) Ag					
T4	7 m	@	0.016 oz/ton (0.54 g/t) Au					
			0.629 oz/ton (21.56 g/t) Ag					
Т5	20 m	@	0.063 oz/ton (2.16 g/t) Au					
			2.31 oz/ton (79.18 g/t) Ag					
			includes: $5m$ at $0.106 \text{ oz/ton} (3.63 \text{ g/t}) \text{ Au}$					
			3.430 oz/ton (116.5 g/t) Ag					
T6	20m	@	0.029 oz/ton (0.99 g/t) Au					
			1.37 oz/ton (46.96 g/t) Ag					
			includes: 13m @ 0.035 oz/ton (1.2 g/t) Au					
			1.37 oz/ton (46.96 g/t) Ag					
Γ7	15 m -	@	0.032 oz/ton (1.09 g/t) Au					
			1.9 oz/ton (65.1 g/t) Ag					
T8	Grab samples		0.092 oz/ton (3.15 g/t) Au) over					
			6.57 oz/ton (225.2 g/t) Ag) 90 cm					
			0.142 oz/ton (4.867 g/t) Au) over					
			13.4 oz/ton (459.3 g/t) Ag) 75 cm					
			0.230 oz/ton (7.88 g/t) Au) over					
			8.96 oz/ton (307.4 g/t) Ag) 65 cm					
T9	7 m	@	0.061 oz/ton (2.09 g/t) Au					
			3.207 oz/ton (45.9 g/t) Ag					
T10	Grab sample		0.048 oz/ton (7.88 g/t) Au					
	-		1.34 oz/ton (45.9 g/t) Ag					
T11	4m	@	0.026 oz/ton (0.891 g/t) Au					
		-	1.632 oz/ton (55.94 g/t) Ag					

The Hot Spring Property

İ

1

4

DIAMOND DRILLING

TABLE 3										
Drill Hole Co-ordinates										
DDH#	Latitude	Departure	Elevation	Azimuth	Dip	Total Length (m)				
NQ90-1	30+335N	31+083E	746 m	360°	-85°	160.6				
NQ90-2	30+012N	30+886E	950 m	360°	-45°	218.2				
NQ90-3	30+038N	31+101E	882 m	360°	-50°	276.5				
NQ90-4	30+106N	31+400E	833 m	360°	-52°	133.2				
NQ90-5	29+971N	30+809E	970 m	360°	-60°	215.2				
NQ90-6	30+010N	30+884E	950 m	-	-90°	54.0				
NQ90-7	30+013N	30+889E	950 m	-	-90°	194.2				
-					Total	1251.9				

Table 3 lists the drill collar co-ordinates and final hole depths.

Drill collar locations and surface projections are shown on Figure 8 and 9.

<u>NQ90-1:</u>

DDH NQ90-1 was drilled from the access road at 30+335N on Section 31+100E (Figure 8). The target was a combined I.P. and Zn-Au soil geochemical anomaly. No outcrop had been mapped in this area.

The drill hole intersected a sequence of intermediate lapilli (nodular) tuffs crosscut by several large andesitic dykes. The lapilli tuffs are highly pyritic (5 - 12%) and correlate well with the I.P. responses. The soil geochemical anomaly could not be explained by results of NQ90-1 hence a larger downslope dispersion pattern than previously believed is suggested, with the source of the anomalous Zn-Au response uphill of NQ90-1.

NO90-2

DDH NQ90-2 was drilled from the spine of Southridge at 30+012N on Section 30+900E (Figure 8 and 10) to test rock and soil geochemical anomalies coincident with I.P. highs. It intersected a sequence of highly siliceous, felsic, tuffs cross-cut by numerous andesitic dykes and an andesitic nodular tuff (Figure 10). Alteration is intense, pervasive silicification and is common to all holes. Mineralization consists of disseminated pyrite throughout and sphalerite and galena contained within pervasive quartz and veinlet zones. Au and Ag values are generally coincident with the Zn and Pb. Highest values (in separate samples) were 5.06% Zn over 1.5m, 0.92% Pb over 1.5m, 131.0 g Ag over 1.5m and 3.6 g Au over 1.5m. The best sustained intersection was 839 ppb Au over 57.7m within a 119m section averaging 584 ppb Au. The hole was stopped short of it's planned depth due to continuous losses of downhole water pressure and a broken bit at the bottom of the hole (Wilson, 1991).

<u>NQ90-3</u>

DDH NQ90-3 was also drilled from the spine of Southridge at 30+038N on Section 31+100E (Figure 8). It tested coincident soil and rock geochemical anomalies with I.P. chargeability highs. It was extended to test a second I.P. anomaly with coincident Pb-Zn soil geochemical highs.







.

The drill hole intersected a sequence of siliceous felsic tiffs, andesitic dykes and "upper" andesitic nodular tuffs. The drill hole bottomed in andesitic lapilli (nodular) tuff not seen in NQ90-2.

Mineralization in this hole is principally sphalerite-galena in pervasive quartz and vein zones seen mainly at the top of the hole. Best results in a single sample ran 2.32% Zn, 0.41% Pb, 0.47% Cu, 46.2 g Ag and 2.25 g Au over 1.5m. The best sustained intersection was 776 ppb Au over 25.2m.

The target I.P. anomalies were explained by this hole as was the upper soil and rock geochemical anomaly. The lower soil anomaly centred on 30+325N was not explained by drilling and is now thought to be caused by down slope movement.

NQ90-4

DDH NQ90-4 was drilled at 30+106N on Section 31+400E (Figure 9) from the widest part of the Southridge spine under the 31+500E trenched area to test highly anomalous trench rock results in the 1989 work program. Also tested was a coincident I.P. chargeability zone flanking the area of known mineralization.

The drill hole intersected similar lithology to Holes NQ90-2 and 3 with a siliceous felsic tuff intruded by andesitic dykes and interbedded with an andesitic lapilli (nodular) tuff. Sphalerite and galena are present from trace to 1% over 1.5m lengths occurring mainly within quartz flood/veinlet zones, especially from 78.3m to 91.2m. Gold values are associated with the quartz zones as are silver values. Best results for individual elements are 2.65% Zn over 0.3m, 0.45% Pb over 0.3m, 0.25% Cu over 0.3m, 161.8 g Ag over 0.3m (Zn, Pb, Cu and Ag from same sample) and 1.55 g Au over 1.5m. The best sustained result for gold was 615 ppb Au over 66 m.

All I.P. and geochemical targets were explained by this hole, however, the stratigraphic similarities in Holes NQ90-2, 3 and 4 indicate that a second lesser mineralized horizon would have been potentially intersected by an extension of NQ90-4 to 200 m depth.

<u>NQ90-5</u>

DDH NQ90-5 was drilled at 29+971N on Section 30+800N (Figure 8), to undercut anomalous soil geochemistry on strike with a favourable intersection in NQ90-2. No I.P. surveying was completed on this section.

The drill hole intersected uphole sections of fine grained siliceous felsic tuffs which were finer grained than in NQ90-2. Below are sections of siliceous, felsic tuff cross-cut by post mineral andesitic dykes and interbedded with an andesitic lapilli (nodular) tuff.

Pyrite is ubiquitous from 1 to 5% and sphalerite (± galena) is present in quartz vein and flood zones from trace to 3% over sample widths to 1.5m. Best results for individual elements (in separate samples) are 1.83% Zn over 1.5m, 0.83% Pb over 1.5m, 0.17% Cu over 1.5m, 22.1 g Ag over 1.5m and 870 ppb Au over 1.5m. The best sustained Au results are 343 ppb Au over 13.5m.

The mineralized zone in NQ90-5 is weak in comparison to NQ90-2 but does occur at the same physical (downdip) location as Hole #2. By comparing Au results in these two holes it is apparent that the potential mineralized horizon should continue in NQ90-5 to approximately 245m down hole, another 30m beyond the present end of hole.

<u>NQ90-6</u>

DDH NQ90-6 was drilled vertically beneath NQ90-2 at 30+010N on Section 30+900E (Figure 8 and 10) to test the downdip extension of Hole #2's mineralized horizon. The hole was abandoned at 54 m after a fault zone at 34 m caused excessive squeezing on the rods. Several attempts to wash the hole were unsuccessful and two bits were destroyed trying to re-penetrate the fault zone.

The hole was drilled along the contact of siliceous felsic tuffs with a near vertically dipping andesite dyke. No mineralization was encountered throughout it's length.

<u>NQ90-7</u>

DDH NQ90-7 was a re-drill of NQ90-6 at 30+013N on Section 30+900E (Figure 8 and 10) in an attempt to penetrate the fault zone in order to test NQ90-2's downdip extension of mineralization. Although the fault zone was intersected no problems were encountered coring through it.

The drill hole intersected similar lithology as the top of NQ90-2, of siliceous, felsic tuff down as far as 105m. At 105m a quartz-carbonate fracture fault zone separates felsic lithology from andesitic lapilli (nodular) tuff just above the anticipated intersection of the mineralized horizon. No mineralization was found and it is felt that a block of the basal tuff was faulted in, disrupting the mineralized sequence (Figure 10).

The hole was terminated once the projected downdip extension of the mineralized horizon had been penetrated. In other holes the mineralized horizon cross-cut several lithologies (except andesite dykes) hence it was anticipated that the horizon would be cored in Hole #7. A fault disruption is therefore suspected for the absence of the expected mineralization.

Drill Summary

Drill hole NQ90-4, 3, 2 and 5 (east to west) showed similar stratigraphic sequences of silicified felsic tuffs of probable dacitic to rhyolitic origin, interbedded with and floored by an andesitic lapilli (nodular) tuff. All rocks are cut by numerous andesitic dykes. A few intervals of andesitic tuff are recognized but it is not a common rock type. All rocks are moderately to highly silicified, and fracturing/faulting is relatively common. Frequent open spaces not easily evident in drill core was noted due to downhole losses of water pressure during drilling. All significant mineralization is found in these four holes.

Drill hole NQ90-1 tested down-stratigraphy from Holes #2 to 5 and found andesitic lapilli (nodular) tuffs with large andesitic dyke intervals. No economic mineralization was encountered. Drill holes NQ90-6 and 7 tested downdip of Hole #2 and cored a top section of felsic tuffs and a faulted in section of nodular tuffs which displaces the expected mineralized horizon.

The diamond drill program tested downdip projections of coincident soil geochemical anomalies/mineralized outcrop exposures and I.P. chargeability anomalies between Sections 30+800E and 31+400E. The best Au results were obtained in Holes NQ90-2 (839 ppb Au over 57.5m), NQ90-3 (776 ppb Au over 25.2m) and NQ90-4 (615 ppb Au over 66m) on Sections 30+900E, 31+100E and 31+400E respectively. Gold mineralized zones, recognized by the presence of sphalerite and galena, are found within quartz flooded and veined drill core. This quartz alteration is seen in both siliceous felsic tuffs and andesitic lapilli (nodular) tuffs but is not seen in the numerous andesitic dykes. The mineralization is not diminished by the extensive, pervasive silicification hence is felt to be contemporaneous with or post silicic alteration, and pre-volcanic dyking. The source area of the mineralization, however, was not discovered in drill core.

Mineralization was thought by Wilson (1991) to be related to hydrothermal activity associated with the igneous intrusions. His model envisioned circulating hydrothermal fluids peripheral to igneous bodies producing pervasive silica \pm potassium feldspar alteration. Additional silica infusion caused quartz veinlets and quarts flood zones to form specific zones which are more common within the felsic tuffs. Numerous fracture zones were noted in drill core which may be related to mineralization although no specific relations could be drawn from this initial drill program. Future drilling should concentrate on structural logging of the core.

Drill targeting of north to northwest trending structural zones is also recommended to ascertain if smaller zones of higher grade mineralization exists within these major plumbing systems. These structural zones may be a late stage feature. Correlating the relative timing of these features should be a priority in future geological mapping.

CONCLUSIONS AND RECOMMENDATIONS

Work to date has resulted in several areas being discovered with gold values greater than 2 g/t (0.06 oz/ton) over significant widths. Grades and continuity of mineralization increase toward the eastern grid area on the Southridge part of the property. Diamond drilling indicates that the true thickness of the gold enriched altered volcanics is up to 100 metres in thickness.

Base metal mineralization with significant gold grades occurs throughout the stratabound Lower Zone from 30+600E to 31+500E and from 50 to 100 metres across strike. The continuity of mineralization is yet to be outlined but there are strong indications of a persistent mineralized area carrying potentially economic gold grades. The extension of the zone south of 29+700N has not been investigated to date but there are deeply oxidized outcrops of silicified tuffs at least as far as 29+650N. The 30°S dip of the stratabound zone projects southward down the south slope of the ridge to Sloquet Creek close to the topographic surface.

Given the extent of the mineralized zone on surface (up to 70,000 square metres from 30+600E to 31+500E) there is major potential for establishment of a high tonnage, low grade gold deposit. The steepness of the terrain and the deep oxidation and leaching widespread in surface outcrops mean that surface trenching is difficult over much of the area and the extent and grade of the zone will only be established by drilling. The limited diamond drilling conducted in 1990 intersected low-grade mineralization over true thicknesses of up to 100 metres. However, only one hole (#7) tested the potential down dip extent of this major mineralized zone and it intersected a fault block of lower andesite

The rest of the claim area also holds considerable untested potential. In particular, several mineralized showings in Simpson Creek remain to be followed up by trenching and diamond drilling.

An airborne magnetometer and HLEM survey flown over the entire property showed the Southridge Zone to be a highly resistive rock package containing two highly magnetic areas representing the eastern edge of the Pemberton Diorite and a nearby related stock. The airborne magnetometer survey further showed the magnetic intrusives to be more extensive than ground mapping indicated, perhaps due to a thin veneer of volcanic rock with intrusive rock below. The airborne survey further indicated that zones of low resistivity, roughly correlatable with creek beds are present over much of the property. There are some locations though where low resistive zones are not directly related to known creeks and these areas should be followed up further with prospecting, geological mapping and sampling and I.P. geophysics.

A geological mapping project on one portion of the property, the Southridge Zone, indicated the area to be a moderately south dipping package of silicified, felsic, fine to lapilli tuffs, overlying intermediate lapilli tuffs. Au, Ag, Zn and Pb mineralization is seen to be confined to the blue-grey, silicified felsic tuffs. Soil geochemical surveying further indicated this unit to be the most anomalous unit geochemically while I.P. geophysics demonstrated that the unit has a high sulfide background but does not generate the highest I.P. responses.

The Hot Spring Property

The Southridge Zone represents a prime drilling target and was tested in 1990 by seven short holes on sections between L30+800E and L31+400E. Hole NQ90-1 was collared too low in the sequence to test the mineralized horizon. Hole NQ90-4 intersected 615 ppb Au over 66 metres and NQ90-2 returned a 57.7 metre interval averaging 839 ppb Au. The drilling campaign by Noranda did not adequately test the western targets that were identified.

After additional trenching and geological mapping to the west of 30+800E, additional drilling may be required to adequately test the area around Dan's Showing and the Lower Showing. Additional drilling is required to test the possible down dip extension of the thick mineralized package identified by the shallow 1990 drilling. There is the possibility of higher grader mineralization down dip which is presently untested.

Three soil geochemically anomalous areas, the J.A.D.S., Danbus and Northridge Zones should be followed up with additional ground surveys including detailed geological mapping, rock sampling and I.P. geophysics.

Ground HLEM geophysical surveying was seen to be an ineffective exploration tool and should be avoided in other parts of the property.

Additional detailed geological mapping and trenching are warranted before further drilling is undertaken to continue exploring this promising prospect. As access is opened by new logging roads along South Sloquet Creek scheduled for early 1997, the J.A.D.S. and Danbus gold-in-soil anomalies should be mapped and trenched. A three phase budget for future exploration is recommended in the next section for a total of \$560,000.00.

After reviewing the total expenditures to date and all the work programs, as outlined in Appendix I, I would conservatively value the property for the purposes of the Alberta Stock Exchange at \$333,715.00 based on the cost of work conducted on the property since 1990.

Respectfully submitted,

W. B. Lennan, B.Sc., P.Geo.

REFERENCES

- Freeze, A. C. (1986) 1985 Geological and Geochemical Report on the Slo 1 and Slo 2 Mineral Claim, Assessment Report #14,771.
- Journeay, J. M., (1989) Late Mesozoic and Cenozoic Fault Systems of the Southern Coast Belt; Implications for Cu-Au-Ag mineralization in the Harrison Lake Region.
- Journeay, J. M., Csontos, L. and Lynch, J. V. G., (1990) Geology of the Harrison Lake Area, Geological Survey Branch, British Columbia Dept. of Mines, Open File 2203.
- MacKay, J. M. (1944) Prospecting Report on the Sloquet and Fire Creeks, Consolidated Mining and Smelting Co. of Canada Ltd., 6 pp. unpublished report for Cominco Ltd.
- McClaren, M., and Hill, A. R. (1987) Geological and Geochemical Report on the Quet Property, private report for Aranlee Resources, 15 pp., November 20, 1987.
- Payne, J. G., Bratt, J. A., Stone, B. G. (1980) Deformed Mesozoic Volcanogenic Cu-Zn Sulphide Deposits in the Britannia District, British Columbia, in Economic Geology, Vol. 75, 1980, pp. 700-721.
- Ray, G. E. (1986) Gold associated with a Regionally Developed Mid-Tertiary Plutonic Event in the Harrison Lake Area, Southwestern British Columbia. Ministry of Energy Mines & Petroleum Res.; Geological Fieldwork and Current Research, 1986, Paper 1986-1.
- Ray, G. E. and Coombs, S. (1985) Harrison lake Project (91 H/5, 12; 92 G/9), B.C. Ministry of Energy Mines & Petroleum Res.; Geological Fieldwork and Current Research, 1985, Paper 1985-1.
- Reynolds, N. and O'Keefe, N., (1989A) Summary Report on the Quet Claims, Private report for Aranlee Resources Ltd. November 20, 1989, 16 pp.
- Reynolds, N. and O'Keefe, N., (1989B) Geological, Geochemical and Geophysical Assessment Report on the Quet Claims. December 6, 1989, 16 pp.
- Roddick, J. A. (1965) Vancouver North, Coquitlam, and Pitt Lake Map-areas, British Columbia, Geological Survey of Canada, Memoir 335.
- Sharp, R. J. (1981) Slo Project Month End Report, unpublished report for Cominco Ltd.
- Shearer, J. T. (1988) Geological, Prospecting and Geochemical Assessment Report on the Quet Property. Report for Aranlee Resources Ltd. April 10, 1988.
- Shearer, J. T. (1996) Geological and Prospecting Report on the Hot Spring Property Report for the Shearer-Angus Joint Venture, August 1, 1996, 20 pp.
- Shearer, J. T., Reynolds, N., and O'Keefe, N., (1990) Geological, Geochemical and Geophysical Assessment Report on the Quet Claims, Harrison Lake Area, 40 pp. Private report for Aranlee Resources Ltd., January 10, 1990.

Wilson, R., (1991) - Report on Diamond Drilling on the Quet Claims, Report for Noranda Exploration Co., Assessment Report 20,983, 18 pp. February 19, 1991.

Wilson, R. and Wong, T., (1990) - Report on Geology, Geochemistry, Geophysics on the Quet Claims. Private report for Noranda Exploration Co., September 15, 1990, 22 pp.

Wilson, R. and Wong, T., (1990) - Drill Logs NQ90 1 - 7, October 15, 1990, 16 pp.

- Wojdak, P. J., (1979) Slo Property Exploration Proposal, 3 pp., Cominco Ltd.
- Wojdak, P. J. (1980a) Fire Lake Recce 1979 Termination Report Cominco Ltd., unpublished report for Cominco Ltd.
- Wojdak, P. J. (1980b) Geochemical Report Slo Claims, Cominco Ltd., unpublished report for Cominco Ltd. January 15, 1981.