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# **EXPLORATION REPORT**

of the

HIT/MISS PROPERTY

Geological Mapping, Trenching and Sampling, VLF-EM and Magnetometer Surveys, and Diamond Drilling Programme

> Missezula Mountain Area Similkameen Mining Division, B.C. NTS Ref 92H/10E

> > Latitude: 49°40'27" Longitude: 120°30'26"

> > For: Vanco Explorations Ltd.

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January, 1992

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22,084

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#### 1.0 INTRODUCTION

The HIT/MISS property is situated on the eastern flanks of Missezula Mountain, 25 kilometres north of Princeton, southwestern B.C.

A seven claim 65-unit group was originally staked by Canadian Nickel Company Limited (Canico) between 1981 and 1987, and is currently under option to Vanco Explorations Limited. Vanco also owns the adjacent SADIM property, a block of 88 mineral claim units, immediately north of the Canico option. The current claim grouping consists of the original 65-unit group, but includes another two claims for a total of 77 units.

Both properties are underlain by volcanic, sedimentary and intrusive rocks of the Triassic Age Nicola Group. The geological setting is similar to that hosting the porphyry copper gold deposits of the Quesnel Belt in the Quesnel-Cariboo area 200 miles to the north.

In 1985 Vanco found gold bearing quartz veins on the SADIM property. Since then, exploration consisting of geological, geochemical, and geophysical surveys, followed by trenching and diamond drilling has revealed a shear related quartz vein stockwork. In 1989, cat work by a logging company on the HIT 1 claim in the northern part of the Canico property exposed gold bearing quartz float and host rock similar to that on the SADIM claims 2,000 metres to the north.

In 1990, trenching by Vanco on the HIT 1 claim uncovered 340 metres of shear zone containing a gold bearing quartz vein system. A 110-metre length of the main quartz vein averaged 12.3 g/t (0.36 opt) au over 1.4 metres (4.6') (Westervelt/Watson, 1990).

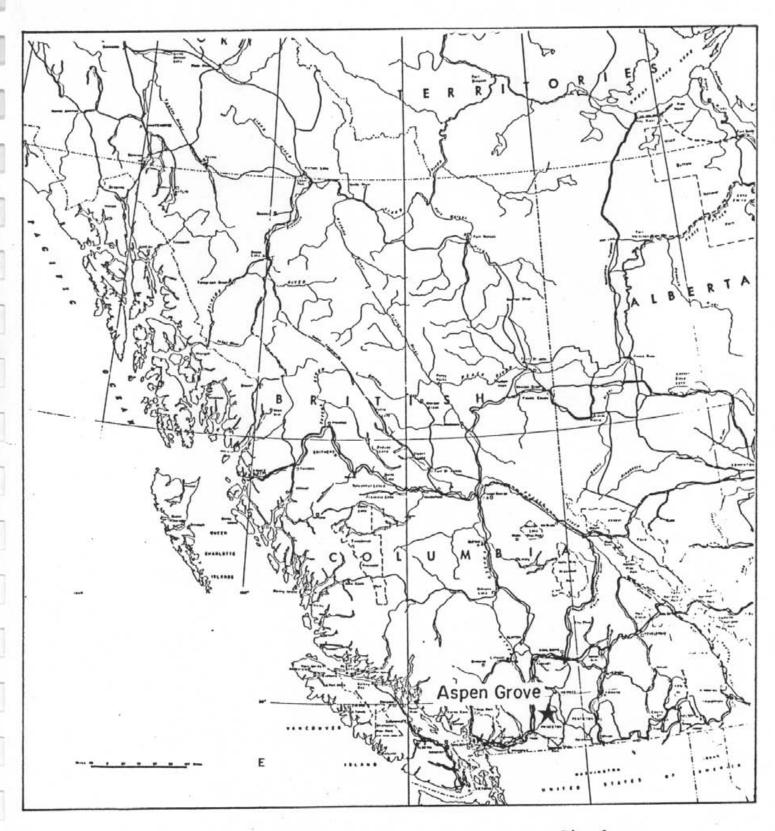


Fig. 1
VANCO EXPLORATIONS LTD.
ASPEN GROVE PROPERTY

During the period May 26 - October 8, 1991, Vanco carried out an exploration programme over the entire Canico property. Work consisted of trenching, geological mapping, prospecting, VLF-EM and magnetometer surveys and diamond drilling.

The results of the programme are summarised in this report.

### 2.0 LOCATION, ACCESS, AND PHYSIOGRAPHY

The HIT and MISS property is situated on the eastern flanks and summit of Missezula Mountain, 25 kilometres north of Princeton, in the Similkameen Mining Division of southwestern B.C. The centre of the property is at 49°40'27"N, 120°30'26"W. The NTS reference is 92H/10E (Figures 1 and 2).

The property is two kilometres east of the Princeton-Merritt Highway 5A. Access to the claims is by the Dillard-Ketchan Creek main logging road which branches east from the highway about 48 kilometres north of Princeton and 12 kilometres south of the village of Aspen Grove. The Ketchan Creek logging road crosses the claim block from north to south. Distance from Highway 5A to the property by this route is 19 kilometres.

An alternate route to the claims is by the logging road which branches off Highway 5A at a point 2.5 kilometres north of Allison Lake. This road climbs east for 5 kilometres to join the Ketchan Creek road at kilometre 15, 4 kilometres north of the HIT/MISS claims.

The B.C. Hydro power line is within a kilometre of the property western boundary.

Most of the property area has been logged by Weyerhauser and there is good access by way of branch logging roads to most parts of the property except for the steep east facing slopes above Summers Creek.

Elevations on the property range from 1,657 metres at the summit of Missezula Mountain to 945 metres on Summers Creek. Between these extremes of elevation, the greater part of the claim occupies the broad north trending ridge separating the deep fault valleys of Summers Creek to the east and Allison Creek to the west. Topography is typical of this part of the Thompson Plateau, reflecting the trends of a predominantly northerly structural trend, accentuated by glaciation; relatively gentle upland slopes are cut by deep, steep-sided north trending valleys. Bedrock exposure is largely a function of glaciation; generally outcrop is abundant on ridges and along the upper slopes of steep valleys, but lower slopes and valley bottoms bear a thick mantle of glacial overburden.

Away from the main north-south river valleys, drainage is generally weakly developed, and consists of ill-defined water courses. However, the northern part of the HIT 1 claim is cut by a deep east trending gulley which has been incised by a small but constantly flowing stream.

Much of the central and western part of the property has been clear-cut - only the eastern and northwestern areas of the claim group still retain a heavy cover of mixed conifers.

The HIT/MISS claims lie immediately north of the AXE property which contains a porphyry copper deposit of 57.5 million tons averaging 0.5% Cu in three zones. The AXE claims are currently held by Cominco.

Vanco's SADIM claims adjoin the HIT/MISS property to the north. The gold bearing quartz-vein stockwork on the SADIM property is within 500 metres of the HIT/MISS northern boundary.

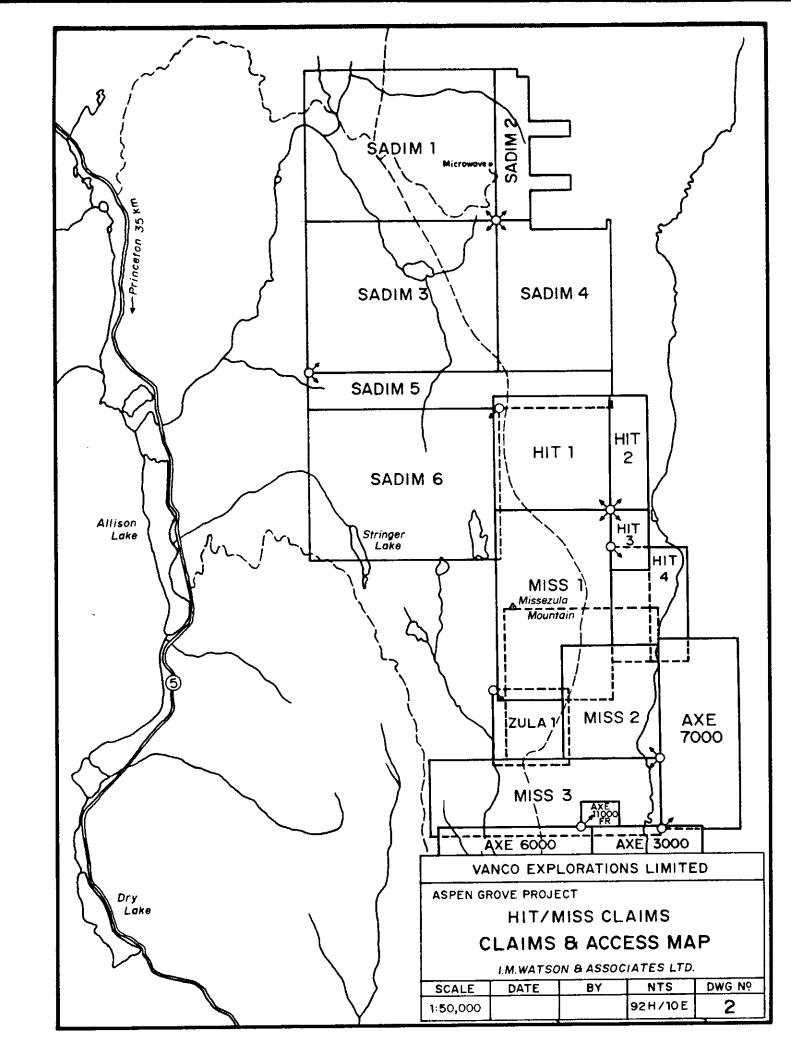
#### 3.0 CLAIMS

The HIT/MISS group consists of nine claims totalling 77 units, as follows (Figure 2):

Claim Name	No. of Units	Record No.	Date Staked	Date Recorded
MISS	15	1423	May 23, 1981	June 10, 1981
MISS 2	16	2821	February 5, 1987	March 9, 1987
MISS 3	12	2822	February 5, 1987	March 9, 1987
HIT 1	9	1489	July 31, 1981	August 5, 1981
HIT 2	3	1490	August 1, 1981	August 5, 1981
HIT 3	4	1491	August 1, 1981	August 5, 1981
HIT 4	6	2166	June 1, 1984	June 12, 1984
ZULA 1	4	3834	October 27, 1990	October 27, 1990
SADIM 5	8	2518	December 5, 1985	December 30, 1985

The MISS, MISS 2 and 3, and HIT 1-4 claims were originally staked by, or on behalf of, Canadian Nickel Company Ltd. and, during the period of the 1990 and 1991 exploration programmes, were under option to Vanco Explorations Ltd. by agreement dated March 25, 1990.

The ZULA 1 claim was staked on behalf of Vanco Explorations Ltd. in October 1990. The SADIM 5 claim was originally staked for Laramide Resources Ltd. and is currently owned by Vanco Explorations Ltd.



#### 4.0 HISTORY

The HIT/MISS claims occupy ground previously held, in part, by Texas Gulf Sulphur and Sheba Copper Mines Ltd.

In 1970 Texas Gulf carried out reconnaissance soil sampling and mapping in the course of evaluation of the BO prospect.

The northeastern area of the HIT 1 claim, formerly part of the MDA-CORB claims, was mapped and sampled by Sheba Copper Mines Ltd. (Saleken, 1972).

In 1981 Canico staked the HIT 1-3 and MISS claims, and carried out a programme of linecutting, prospecting, geological mapping, rock and soil geochemical sampling, and VLF-EM and magnetometer surveys (Peto, 1982).

During 1982, work was confined to two areas - the south part of the MISS claim and the western portion of the HIT 3 claim; and the east central part of the HIT 1 claim (Debicki 1982).

In 1983, Canico's exploration was restricted to the southern part of the property, where a new grid was established, and geological mapping and rock geochemistry surveys were carried out. In addition, a soil gas survey - gas chromatography for CO<sub>2</sub>, CS<sub>2</sub>, COS, H<sub>2</sub>S, and SO<sub>2</sub> - was completed (Clifton 1984), and studies involving X-ray diffraction and fluid inclusions were carried out (Booth 1983).

In June 1984, the HIT 4 claim was staked to cover ground which had fallen open following the expiry of a competitor's claim. During 1984 attention was again focused on the southern part of the MISS claim and western part of the HIT 3 claim. Work consisted of refurbishing grid lines, prospecting, geological mapping, rock sampling, and a 4,400-metre induced polarization geophysical survey (Debicki 1985).

In February 1987, Canico optioned the HIT/MISS property to First Western Platinum Corporation, and in May and June 1987, five diamond drill holes totalling 745 metres were completed. This work was carried out by Canico and funded by First Western Platinum Corporation. The holes were drilled on sections 1800S and 2000S on the MISS and MISS 2 claims, and were intended to test a strong alteration zone and adjoining quartz-siderite stockwork containing pyrite, chalcopyrite, sphalerite, and galena.

In March 1990, Vanco Explorations Ltd. concluded an agreement with Inco Limited and, in August 1990, embarked upon an exploration programme which included magnetometer and VLF-EM surveys, geological mapping, prospecting, trenching, and sampling (Westervelt, Watson, 1991).

In May 1991, based on the results of the 1990 programme, Vanco Explorations Ltd. commenced an exploration programme which is the subject of this report.

#### 5.0 SUMMARY OF WORK AUGUST - MAY TO OCTOBER 1991

#### 5.1 Summary

The 1991 Vanco exploration programme on the HIT/MISS property was completed during the period May 26 to October 8, 1991. The four/five person crew was based in Aspen Grove.

The programme was divided into two phases. The first phase consisted of grid preparation, prospecting, trenching/sampling, geological mapping, and VLF-EM and magnetometer surveys. The second phase consisted of diamond drilling.

The main objectives of the 1991 programme were to further explore the gold bearing shear zone (HIT Zone) identified in 1990 on the HIT 1 claim and to look for similar occurrences throughout the property.

# 5.2 Grid Preparation

Control for the geophysical and part of the geological/prospecting work over the central part of the property was established by extending the 1990 grid 2,000 metres to the south to cover the MISS 1 and 2 claims and part of HIT 4 (Figure 4).

As in 1990, the chain and compass flagged grid is oriented, spaced (line and station spacings of 100 metres and 25 metres, respectively) and numbered to be as closely coincident as possible with the original Canico grid, little of which survived recent logging.

## 5.3 Prospecting

A two-man crew carried out prospecting on the property, first on the north half as follow-up of geophysical anomalies delineated in 1990 and later, as new geophysical targets were defined, on the 1991 southern grid. Areas outside the grid were also prospected.

# 5.4 Geological Mapping

Mapping coverage was extended to include the southern half of the property. Control for mapping was provided by the Vanco grid, by 1:2,500 topographic base maps and by the B.C. government 1985 coloured air photos of the area (Figures 5a, b and c).

## 5.5 Trenching/Sampling

Trenching was carried out during the period June 13 - July 31, 1991. The machine employed initially was a Hitachi UH07-7 excavator. This was later replaced by a Hitachi EX 200LC. Both machines are owned by N.D. Houlind Ltd. of Merritt.

Work was focused initially on possible north and south strike extensions of the main HIT zone and later on parallel structures indicated by VLF-EM trends. Crosscutting trenches were used in the attempt to test the trends but, due to depth of overburden, bedrock was not always reached. Trenches failing to reach bedrock were immediately filled in and reclaimed.

Thirty-five trenches totalling 2,386.3 lineal metres were completed. Results of the trench mapping and sampling programmes are illustrated by the series of geological and assay plans (Figures 6-17).

The trenches that encountered bedrock were mapped and zones of veining and alteration were systematically sampled; continuous two-metre chip/panel samples were taken along trench walls. A total of 383 samples was collected. All were shipped to Acme Analytical Labs Ltd. in Vancouver for analysis by the

inductively coupled argon plasma method (ICP) for 5 elements (Cu, Pb, Zn, Ag, and As), and for gold by atomic absorption (AA).

#### 5.6 Geophysical Surveys

The VLF-EM/magnetometer survey was carried out by Delta Geoscience Ltd. of Delta, B.C. using the Scintrex IGS system configured as VLF-EM and magnetometer units. This system permits the VLF-EM and magnetometer surveys to be carried out simultaneously. A Scintrex MP3 magnetometer was used as a base station to record diurnal magnetic variation.

Control for the survey was provided by the grid established on the MISS, MISS 2 and HIT 4 claims. Readings were taken at 12.5-metre spacings. The Seattle transmitter was used for the VLF-EM survey. The EM and magnetometer data stored by the IGS instrument were downloaded to and processed by a Toshiba 3200 field computer, and then plotted by a Fujitsu printer plotter. In this way, survey printouts were available on a daily basis.

Survey results are plotted on Figures 18-21. Total magnetic field is shown in both profile and contour form. VLF-EM results are plotted in profile, and 'filtered' data is also shown as profiles and contour plan. The filtered values are obtained by applying the 'Fraser filter' formula  $[(M_3 + M_4) - (M_1 + M_2)]$  where  $M_{1-4}$  are any four consecutive data points which transforms 'noisy' data into more readily contourable values.

A total of 23 kilometres of survey (1,840 VLF-EM and magnetometer readings) was completed during the period June 6 - 11, 1991.

## 5.7 Diamond Drilling

Two NQ diamond drill holes representing a total of 185.93 metres (610 feet) were completed on the property by P.W. Drilling Ltd. of Barriere, B.C. during the period September 26 - October 8, 1991.

Holes 91-1 and 2 were drilled at -45° to the west to test for depth extensions of the main HIT Zone quartz vein exposed in the trenches. 91-1 was sited to intersect the vein below one of the best surface samples, and 91-2 tested the northern part of the vein (Figure 17).

Hole 91-1 became increasingly 'tight' after entering the alteration/shear zone at about 55 metres. Thereafter, the ground was extremely broken, gouge rich, and highly abrasive. At 95 metres, the hole had become too tight to proceed further. A change of mud and prolonged reaming resulted in a gain of only four metres, at which point the rods seized, and the hole was abandoned.

The drill intersected three quartz veins/gouge zones, all rather weakly pyritised, which assayed 600, 410, and 210 ppb Au (see log and sections, Figures 22a, b). None contained any visible galena, which characterises the better grade veins encountered by trenching on both the HIT and SADIM zones. There is no obvious projection/correlation of surface to drill hole intersections - if the deeper drill hole intersection is the same vein as that exposed in Trench #7, then it has been displaced or warped into a steeper plane.

The 'wallrock' alteration zones are weakly and erratically mineralised, and the gold content is considerably lower than that obtained from the alteration zone on surface.

Hole 91-2 intersected two narrow quartz veins at about 40 metres and 55 metres within an 18-metre shear/alteration zone (Figures 23a, b). Although the alteration zone widens at depth, it is considerably narrower than at 600N in Hole 91-1. The quartz veins are sparsely pyritised, and contain only 330 ppb Au and 39 ppb Au.

The drill holes indicate that the HIT Zone quartz veins weaken at depth, and that the ground conditions are so poor, especially in Hole 91-1, that mining would be a major problem if not completely impracticable.

Further drilling could not be justified, and the programme was therefore stopped on completion of drill hole 91-2.

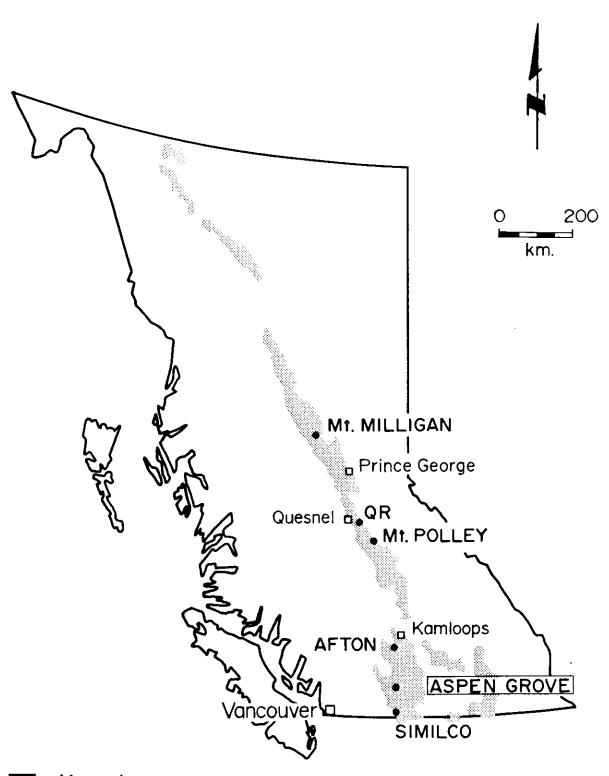
The core was selectively split and sampled. A total of 31 samples was taken and shipped to Acme Analytical Labs Ltd. in Vancouver for analysis by inductively coupled argon plasma method (ICP) for 30 elements, and for gold by atomic absorption (AA).

The split core is stored in covered racks at the Willow Heights Ranch, Aspen Grove, B.C.

#### 6.0 GEOLOGY

# 6.1 Regional

The property is underlain by Upper Triassic Nicola Group volcanic rocks which form the southern part of the island arc assemblages known as the Quesnellia



Mesozoic
Quesnellia Terrane

• Cu-Au deposits

VANCO EXPLORATIONS LTD.
SADIM PROPERTY

Au-Cu DEPOSITS in the

QUESNELLIA TERRANE, B.C.

May 1990

'Fig. 3

Terrane; most of B.C.'s porphyry copper-gold (and gold skarn) deposits occur within this major belt (Figure 3).

The volcanics of the Quesnel and Nicola Belts form a mixed alkaline and calcalkaline sequence of basalts and derived breccias, tuffs, and minor sediments.

The volcanic rocks are intruded by comagmatic alkaline plutons, ranging in composition from syenogabbro to alkaline syenite. The intrusions appear to be structure related and occur in belts along major lineaments and faults. They vary in size from plugs to small batholiths, and have been emplaced into the volcanic centres which produced the abundance of volcanic material (Barr et al, 1976).

In the Allison Lake-Missezula area, Preto (1979) delineated three assemblages - a Western Belt of easterly dipping calc-alkaline flows, pyroclastics and sediments; a Central Belt of alkaline and calc-alkaline volcanics and intrusions, and minor sediments; and an Eastern belt of westerly dipping volcanic sediments, tuffs and alkaline flows associated with small monzonite porphyry stocks. The belts are separated by north-striking faults.

Preto believes that the Central Belt of dominantly volcanic rocks originates from eruptive centres along the major fault system, and points out the greater concentrations of mineral deposits along the belt.

In the property area, the volcanics and sediments marginal to intrusions have been propylitically altered and locally host erratically distributed copper-pyrite zones. The Axe "porphyry copper" deposits, containing a resource of about 60 MMT averaging 0.5% copper, are located 2.4 kilometres south of the HIT/MISS property boundary.

#### 6.2 HIT and MISS Claims

The HIT and MISS claims lie immediately west of the Summers Creek Fault, which marks the eastern boundary of Preto's Central Belt.

Outcrop is relatively abundant on the higher ground on the western side and on the southeast portion of the claim group, above the steep slopes facing Summers Creek. Outcrop is also well-exposed along many access and skid roads created by logging activity.

The geological setting is shown on the 1:2,500 scale plans (Figures 5a, b, c). The property is underlain by northerly-striking, generally easterly-dipping intermediate to basic flows (1a), green and purple monolithic and polylithic breccias (1d, 1df) and tuffs (1e), and less abundant limestones (1f). Locally fossiliferous calcareous sandstone (1g) has been noted along the western boundary of the 1991 grid area and the south central portion of the property area.

A purple to maroon augite trachybasalt porphyry assigned the symbol "1h" occurs locally in the central portion of the 1991 grid area. A highly altered and sericitic unit seen in the vicinity of the main HIT mineralised zone and previously referred to as "rhyolite" (1r) is now thought to be an altered variety of trachybasalt porphyry (1h). This altered unit is seen extensively in trenches 91-33 (a-c) and 91-34.

Most of the central part of the 1991 grid area is underlain by rusty weathering, highly altered and mylonitised granodiorite/quartz diorite (4) described by Preto (1972) as a "sheared leucocratic, pyritic quartz porphyry".

The altered intrusive rocks extend more than 3,500 metres to the south from about line 202N and have a maximum east-west dimension of 800 metres in the middle of the 1991 grid. They thin abruptly to the south. Within and closely associated with the altered intrusive rocks are lenses and belts of comparatively fresh and undeformed diorite (4a), possibly the unaltered equivalent of the unit.

First prospecting impressions of the altered granodiorite were that it represented the southerly extension of the altered tuffs (1e carb) which host the HIT and SADIM zones. Subsequent detail mapping and thin section study revealed the nature of the rock, and also showed that the 'host' tuffs do not persist beyond about line 400 South. This 'cut off' is coincident with a strong east-west gulley, but there is no other evidence to indicate a structural break.

Irregular bodies of gabbroic to dioritic composition (5) intrude the volcanic rocks in the north and eastern part of the HIT 1 claim and have been mapped by Preto (1972) along the steep west slope of Summers Creek Valley.

In the southwestern corner of the map area, a small roughly circular stock of very coarsely crystalline pink-grey biotite diorite-monzonite forms a prominent shoulder on the upper west slope of Summers Creek. The rock is notably fresh and undeformed in comparison with the other diorites (4/5) on the property. According to Preto (1972), it is an Upper Cretaceous intrusion, designated as one of the "Summers Creek Stocks" (13b).

#### 6.3 Hit Zone

Trenching in 1990 exposed 340 metres of a major northerly trending gold bearing shear zone (HIT Zone).

The 1991 trenching programme attempted to find north and south extensions of the zone (Figure 17). This was frustrated by depth of overburden in both directions. To the north, the zone/quartz vein was exposed at the limit of the excavators reach in Trench 91-8, just 40 metres north of the most northerly 1990 trench. A sample of the vein material from this trench contained 22,800 ppb gold. Trenches north of this point failed to find bedrock.

To the south, Trench 91-13 cut the shear zone, but quartz content had diminished to insignificance.

The HIT Zone ranges from 30 metres at the north end of the exposure to slightly more than 100 metres at the south end. The north-northwesterly strike of the shearing is generally that of the volcanics, but to the north the fault trends more northerly and cuts across the rocks at a small angle, passing from tuffs into andesites. The dip of the structure is quite variable, and is generally steep easterly (about 70°) in the south, flattening slightly to the North (60°), but is overall steeper than that of the volcanics it cuts (Figures 17, 22a, 23a).

The fault zone has caused extensive fracturing, shearing, carbonatisation and pyritisation of the volcanics, particularly the tuffs (*Ie/Ie carb*) and trachybasalt (*Ih*). Fracturing has provided conduits for the development of quartz veining and stockworks. Veins range from hair fractures to two metres in thickness, and are most commonly concordant with the shearing. The strongest vein can be followed for the length of the structure, and is thickest and most heavily mineralised along and adjacent to an abrupt strong flexure, well exposed in trenches 1, 2, and 6 (Figure 17). Locally the quartz veins are offset and sheared by small displacement faults sub-parallel to nearly normal to the veins.

#### 6.4 Mineralisation

Three main types of mineralisation have been recognized on the property:

- 1. HIT-SADIM type gold-silver bearing quartz veins
- 2. Quartz veins with polymetallic sulphides
- 3. Copper showings, associated with shearing and propylitic alteration
- 1. The HIT-SADIM type of mineralisation is characterised by the shear hosted quartz veins 2,000 metres to the north on the SADIM property (Watson, 1987, 1988) and on the HIT 1 claim. Similar, smaller occurrences were found in 1991 on the SADIM 5 claim in Trenches 91-5, 6 and 7, immediately north of the HIT property boundary, and in Trenches 91-10 and 91-11, 100 metres east of the HIT Zone.

The HIT Zone quartz veins contain erratically disseminated sulphides - mainly pyrite with local concentrations of sphalerite, chalcopyrite and galena. Sulphide concentration is related to the vein size and density of fracturing of the host rocks. Trench sampling results show a close relationship between precious metal content, quartz veining and sulphide concentration. The presence of galena, in particular, is a good indication of elevated gold and silver content.

No visible gold has been noted to date. Thin and polished section examination of sulphide bearing vein quartz (Harris 1990) revealed sphalerite with pyrite, galena and chalcopyrite, but no native gold. These findings are similar to those from the SADIM claim (Harris

1987) where, however, lead and silver tellurides (altaite and hessite) were recognised in the vein material.

Thin sections of vein and host material indicate that the rocks have undergone numerous phases of cataclastic deformation followed by recrystallization. According to Harris, the sulphides appear to postdate the main period of deformation and recrystallization.

The narrow shear related quartz veins found by trenching VLF-EM targets just north of the HIT 1 boundary, and 100 metres east of the HIT Zone are too narrow and too low grade to be significant; samples from the former (Trenches 91-6, 7) contained 710 ppb and 440 ppb gold, and the latter (Trench 91-10) 210 ppb gold.

2. Prospecting in the southern part of the HIT-MISS property resulted in the discovery of angular sulphide bearing quartz float over a distance of 350 metres along a low NNE trending ridge. Subsequent trenching (Trenches 91-23, 24, 25) revealed at least four northerly trending, steeply east dipping veins/structures in diorite containing variable amounts of banded sulphides (mainly galena and sphalerite, with minor chalcopyrite and pyrite). Best assays obtained were 1,530 ppb gold, 7.4 opt silver, 1.66% lead, and 1.8% copper. Maximum width of vein is about 1.5 metres.

Unfortunately, the veins are badly chopped up by faulting, and are impersistent and lensoid.

A similar occurrence was found on the MISS 3 claim, south of the 1991 grid, and about 200 metres east of the Ketchan logging road at

kilometre 25.5. The single outcrop reveals a 2-metre wide quartz vein, striking north-westerly and dipping steeply west. The outcrop is sparsely mineralised, but float traced 25 metres to the south contains irregularly and finely disseminated sphalerite, galena and pyrite. The best assay from this material was 590 ppb gold and 5.7 opt silver with only weak lead and zinc values.

These quartz veins differ from the SADIM-HIT veins in form, mineralisation and host rock, reflecting a different environment and type of mineralisation. They also contain significantly less gold.

3. A few minor copper occurrences, usually associated with tight shear zones and propylitic alteration, have been found by prospecting in the central-southern part of the HIT-MISS claims (Figure 5b). Most of these occurrences occur in altered andesite or diorite. All are small, a few metres long and less than a metre wide, and contain disseminated chalcopyrite and pyrite associated with carbonate, chlorite and epidote.

Another isolated occurrence of a different type was found just west and south of the HIT Zone on line 400N. The access ramp along the slope to the west of the HIT Zone (Figure 5a) uncovered a series of narrow, irregular limestone-hosted mineralised shear zones. Small quartz-carbonate veins and stockworks associated with the northerly striking, steep shearing contained disseminated sulphides (pyrite, galena, chalcopyrite, chalcocite, and sphalerite) and secondary copper mineralisation (malachite and azurite). Assays from the zone are significantly anomalous in copper and zinc, but contain only slightly anomalous values for gold.

#### 7.0 GEOPHYSICAL SURVEYS

## 7.1 Magnetometer

Results of the survey are plotted in profile and contour form (Figures 18, 19).

The magnetics confirm the north-northwesterly general trend. Prominent and complex highs along the east and west flanks of the grid area correspond to outcrops of unit 1a andesite. The anomalies probably represent a combination of higher magnetic susceptibility and topographic effect.

The central part of the grid is an area of low magnetic relief with no prominent features or strong trends. This lack of relief if likely caused by the lower magnetic susceptibility of the altered tuffs, sediments and intrusions.

#### 7.2 VLF-EM

The VLF-EM results are shown in profile and contour form (Figures 20, 21). The filtered data shows that the strongest and most persistent anomalies correlate with northerly trending linear topographic lows. This is most evident along the central and eastern portion of the grid area where anomalies coincide with prominent benches and draws.

The 1991 trenching programme demonstrated that many of the anomalies are coincident with strong shear/gouge zones, but few of these contain quartz veins.

A series of less prominent, broken and isolated northeasterly trending anomalies appear in several locations on the grid. These appears to coincide with northeast striking fracture systems.

#### 8.0 SUMMARY OF RESULTS

- 1. The prime objectives of the 1991 exploration programme were to further investigate the HIT Zone, a gold bearing quartz vein system identified in 1990, and to explore the HIT/MISS property for similar occurrences.
- 2. Exploration of the HIT Zone by trenching to the north and south along strike was defeated by depth of overburden.

Drill holes 91-1 and 91-2 were directed to test the HIT Zone 50 metres below surface; the quartz veins weaken at depth, and the ground conditions are so poor, especially in Hole 91-1, that mining would be a major problem, if not impracticable. Continuity of the main vein at depth is also suspect. Further drilling of the zone could not be justified.

- 3. Follow-up trenching of VLF-EM anomalies resulted in the discovery of other shear hosted gold bearing quartz veins, similar to the HIT Zone, at the northern boundary of the HIT/MISS property, and in a parallel structure 100 metres east of the zone; the narrow widths, impersistence, and low gold contents of these veins do not merit further work.
- 4. Mapping shows that the favourable tuff unit (1e) which hosts the SADIM and HIT zones cannot be traced more than 500 metres south of the HIT Zone, and appears to be absent in the southern part of the property.
- 5. Prospecting resulted in the discovery of quartz-sulphide veins at two separate locations in the southern part of the HIT/MISS claims. The more northerly occurrence is immediately south of the Canico 1987 area of drilling, and the veins may be related to the weakly mineralised stockwork encountered by the Canico drill holes. The nature of the veins, their mode of occurrence and

contained mineralisation are different from those of the HIT/SADIM zones. Trenching, mapping and sampling has shown that they are too weakly mineralised and too impersistent to be of interest.

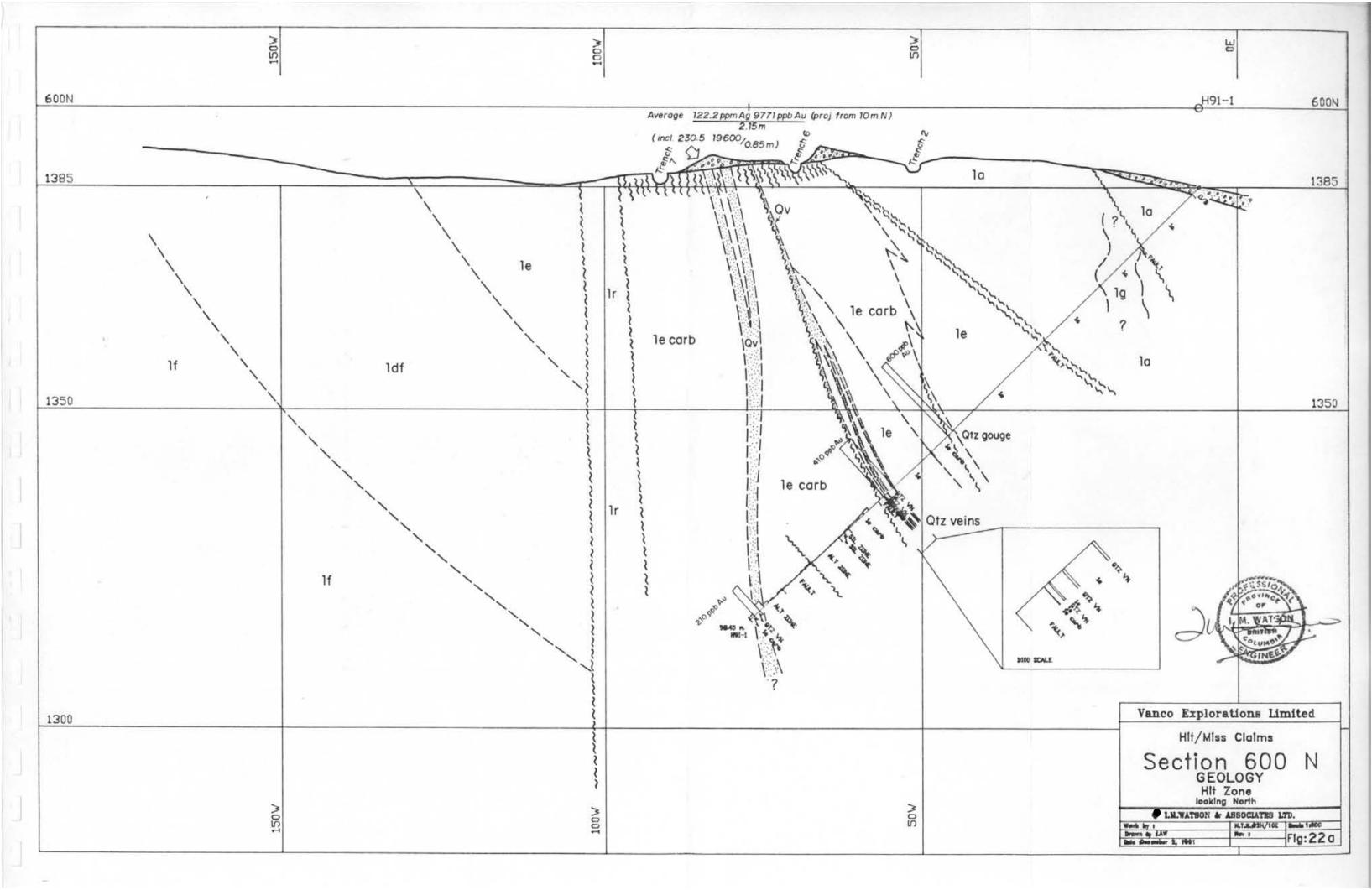
The more southerly occurrence is in an area of difficult access east of the Ketchan Road on the Miss 3 claim. Here again, the vein is too weakly mineralised to be of significance.

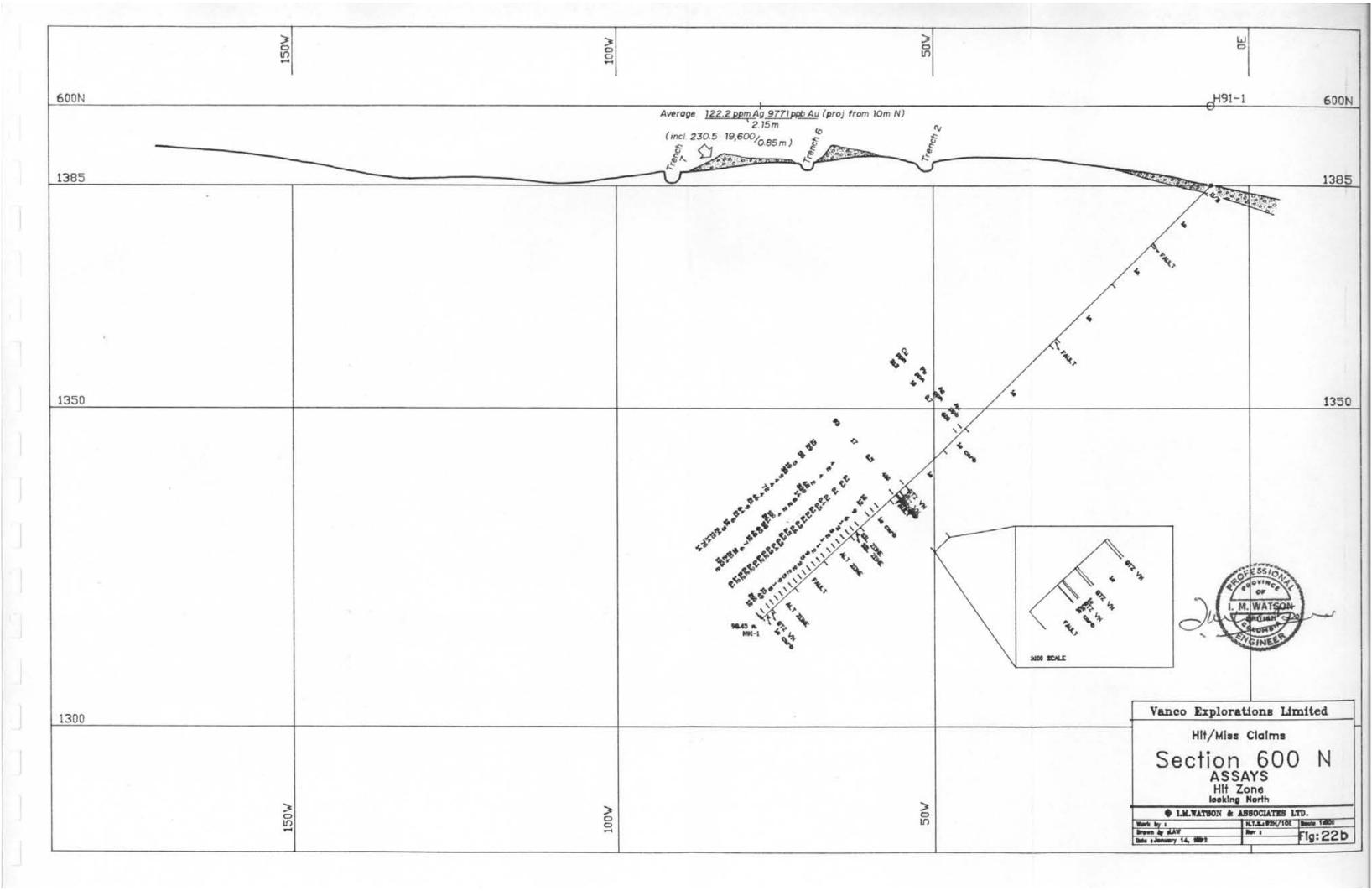
6. Result of the 1991 exploration programme do not justify further work on the HIT/MISS property.

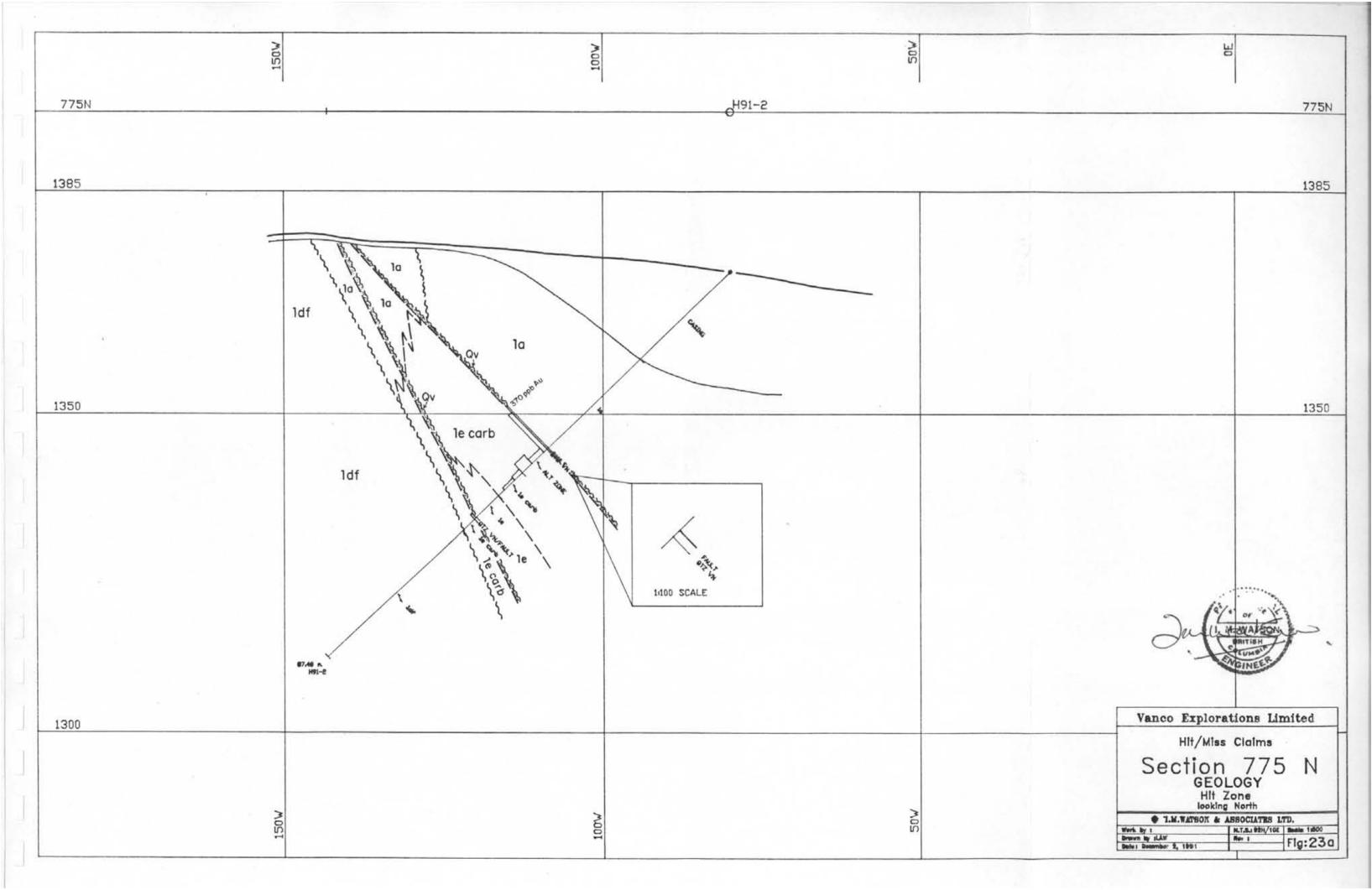
Respectfully submitted,

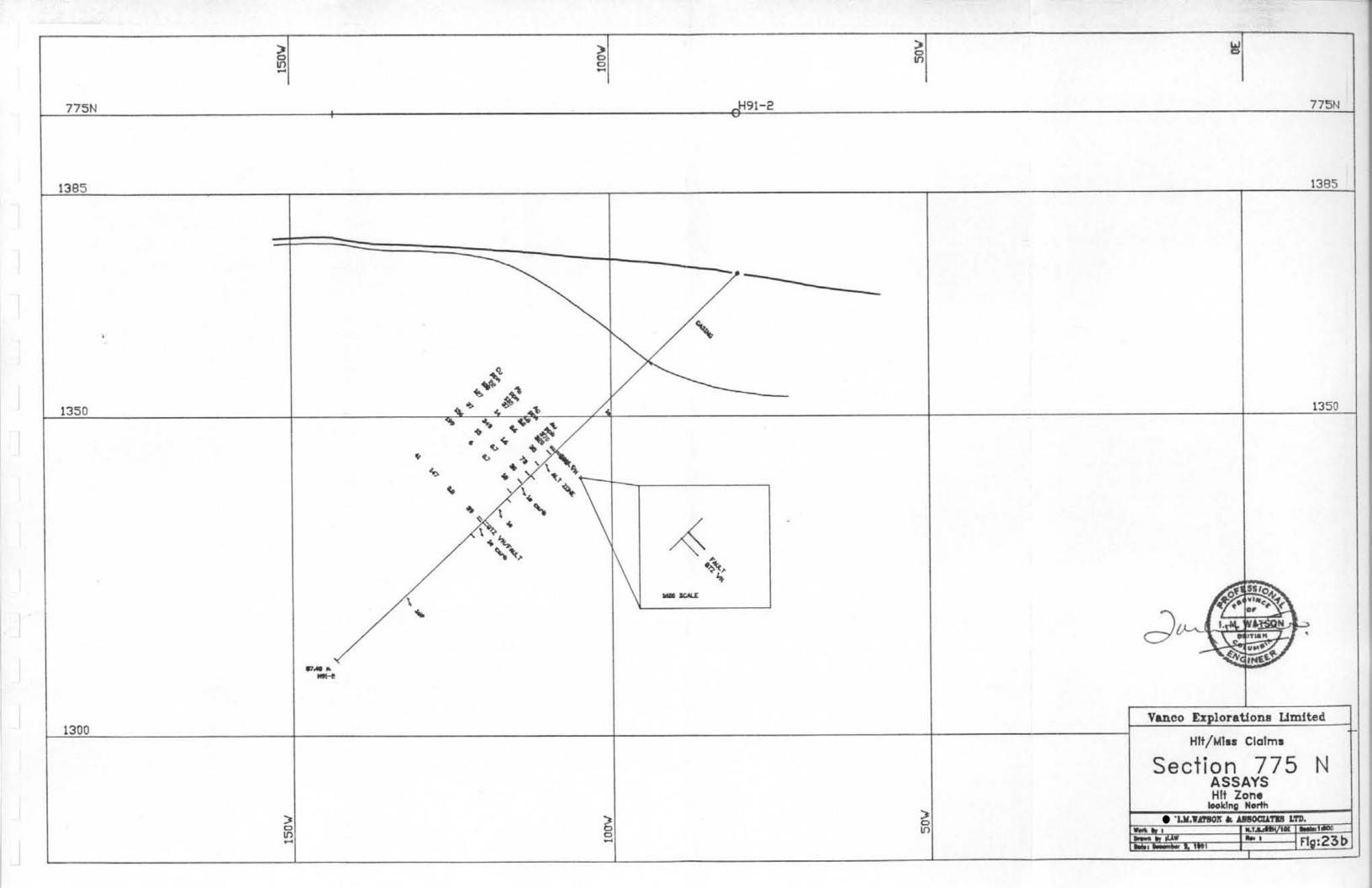
L.A. Westervelt, B.A.Sc.

I M. Warson P Eng









# 9.0 STATEMENT OF COSTS - HIT/MISS PROPERTY (May 27 - September 15, 1991)

# 1. Geological Mapping/Sampling

Salaries and Fees

L.A. Westervelt, Geologist (May 27-31; June 1-4, 17-30; July 1-12, 16-20, 22-26, 29-31; August 1,2,6,7,9; Sept. 5,6,12-15) 72 days @ \$225.00/day	\$ 16,200.00	
E. Birkett		
(June 14,17-22) 7 days @ \$163.00/day	1,141.00	
L. Kiss, Field Assistant/Prospector (June 20,22,25; July 5,8-12,15-20,22,23,26,29-31) 21 days @ \$200.00/day	4,200.00	
E. Saunders		
(June 17) 1 day @ \$160.00/day	160.00	
I. Saunders, Field Assistant/Prospector (June 20,22,25; July 2,3,5,8-12,15-20,23,25,26, 29-31; August 1,2,5,6)		
27 days @ \$195.00/day	5,265.00	\$ 26,966.00
Travel, Accommodation and Board*		2,860.00
Telephone, Freight, Mail*		606.25
Vehicle Rental (Toyota L/C) - 70 days @ \$55.00/day*		3,850.00
Fuel*		535.50
Supplies, Equipment*		422.08
Equipment Rental - Computer Plotter - 6.55 hours @ \$40.	262.00	
Reproduction/Maps		307.21
Drafting (D. Phillips Drafting Services)		2,525.00
Assays/Geochemical Analysis (Acme Analytical Labs) 383 rock samples @ \$16.40/sample*		6,281.67
Fees - I.M. Watson (Supervisor) (June 17-20; July 9-12, 15-20)		7 000 00
14 days @ \$500.00/day  Total Geological Manning/Sampling		7,000.00 \$ 51,615.71
Total Geological Mapping/Sampling		\$ <u>51,615.71</u>

<sup>\*</sup> Pro rated costs

## 2. Linecutting (May 27 - June 2)

I. Saunders (May 28-31; June 1-4) 8 days @ \$195.00/day	\$ 1,560.00	
L. Kiss (May 28-31; June 1-7,9,10) 7 days @ \$200.00/day	1,400.00	
E. Birkett (May 28-31; June 1-7,9,10) 13 days @ \$163.00/day	2,119.00	
E. Saunders (May 30-31; June 1-7,9,10) 11 days @ \$160.00/day	<u>1,760.00</u>	\$ 6,839.00
Travel, Accommodation and Board*		885.30
Telephone, Freight, Postage*		184.72
Vehicle Rental (Toyota L/C 4 x 4)* 13 days @ \$55.00/day		715.00
Fuel*		99.71
Supplies, Equipment*		1,044.43
Reproduction/Maps		105.45
Drafting - D.L. Phillips Drafting Services		75.00
Fees - I.M. Watson (June 7) 1 day @ \$500.00/day		500.00
Total Linecutting		\$ <u>10,448.61</u>

<sup>\*</sup> Pro rated costs

# 3. Geophysical VLF/EM/Magnetometer Survey Delta Geoscience (June 6-11, 1991)

\$ 5,383.17

#### Diamond Drilling

#### Salaries

I.	Saunders
----	----------

(October 1-8)

8.0 days @ \$195.00/day

1,560.00

E. Saunders

(October 7-8)

2.0 days @ \$160.00/day

320.00

I. Watson

(September 26-29; October 1,6)

6.0 days @ \$500.00/day

3,000.00 \$ 4,880.00

Accommodation, Board\*

363.20

Telephone, Freight\*

358.93

Vehicle Rental - 14 vehicle days @ \$55.00/day\*

770.00

Fuel\*

107.38

Equipment/Supplies\*

172.13

Reproductions

12.43

Assays - 31 Samples, Acme Analytical Labs (30 element ICP + Au/AA)

479.20

Diamond Drilling - P.W. Drilling Ltd. (186 m NQ core)

18,685.89

**Total Diamond Drilling** 

\$ <u>25,829.16</u>

#### SUMMARY OF COSTS

1.	Geological Mapping/Sampling	\$ 51,615.71
2.	Linecutting	10,448.61
3.	Geophysical Surveys	5,383.17
4.	Diamond Drilling	<u>25,829.16</u>
	•	

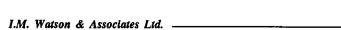
**TOTAL COSTS** 

\$ 93,276.75

Respectfully submitted,

Westervelt, B.A.Sc.

I.M. Watson, P.Eng.



<sup>\*</sup> Pro rated costs

# 10.0 CERTIFICATE OF QUALIFICATIONS

- I, Leslie Alexander Westervelt, of 226 6015 Tisdall Street, Vancouver, British Columbia, hereby certify that:
  - 1. I am a geological engineer.
  - 2. I am a graduate of the University of British Columbia (B.A.Sc., 1985).
  - 3. I have practised my profession continuously since graduation.
  - 4. I worked as a geologist on the HIT/MISS property during the period of May 27 to September 15, 1991.

January 27, 1992 Vancouver, B.C.

Leslie Westervelt, B.A.Sc.

## CERTIFICATE OF QUALIFICATIONS

- I, Ivor Moir Watson, of 584 East Braemar Road, North Vancouver, British Columbia, hereby certify that:
  - 1. I am a consulting geologist with offices at 904 675 West Hastings Street, Vancouver, B.C.
  - 2. I am a graduate of the University of St. Andrews, Scotland (B.Sc. Geology 1955).
  - 3. I have practised my profession continuously since graduation.
  - 4. I am a member in good standing of the Association of Professional Engineers of B.C.
  - 5. Work on the HIT/MISS Property was carried out between May 2 and October 5, 1991 by the following personnel working under my supervision during the periods noted:

L. Westervelt - Geologist May 27 to September 15, 1991

L. Kiss - Prospector May 28 to August 1, 1991

I. Saunders - Prospector May 28 to October 8, 1991

E. Saunders - Field Assistant May 30 to October 8, 1991

E. Birkett - Field Assistant May 28 to June 10, 1991

January 27, 1992 Vancouver, B.C.

I.M. Watson, B.Sc., P.En

#### 11.0 REFERENCES

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- Clifton, G., 1984. Discussion of Soil Gas Data, Miss Claims, British Columbia; Company Report.
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  - 1987. Trenching, Geological Mapping and Sampling, and Diamond Drilling Programmes on the SADIM Property, for Laramide Resources Ltd.
  - 1988. Reconnaissance Geochemical Rock Sampling, VLF-EM & Magnetometer Surveys, Trenching, Geological Mapping & Sampling, and Diamond Drilling Programmes on the SADIM Property for Laramide Resources Ltd.
  - 1991. Geological Mapping, Trenching and Sampling VLF-EM and Magnetometer Surveys on the HIT/MISS Property for Vanco Explorations Ltd.

# APPENDIX 1 DIAMOND DRILL LOGS

#### DIAMOND DRILL LOG

PROPERTY: HIT HOLE No.: H91-1

Collar Eastings: -6.00 Collar Northings: 600.00 Collar Elevation: 1385.00

Grid: HIT

HOLE STOPPED-RODS BINDING

Collar Inclination: -45.00

Grid Bearing: 270.00

Final Depth: 98.45 metres

NQ

CASING PULLED

Logged by: IMW/IS

Date: 27.9.91

Down-hole Survey: ACID DRILLED BY PW DRILLING STARTED 27.9.91; COMPLETE

ASSAYS

PROM TO LITHOLOGICAL DESCRIPTION

SAMPLE No. PROM TO WIDTH Cu ppm Pb ppm Ag ppm Au ppb

0 1.52 Casing

1.52 12.98 TUFF/LAPILLI TUFF/QUARTZO FELDSPATHIC GRIT(1e)
Pale blue grey weathering rusty brown sub-angular close packed
equiangular, quartz (blue), feldspar (pale grey)
clasts/frags., (approx. lam) coarsening down hole to approx.
1cm. Crude layering - elongation of irreg. felsic clasts.
More obv. over lower 3m approx. 75 deg./CA @ 11.58m black
argill. frags from 11.89m. Strongly fract., mainly slips
@ 70-80 deg./CA
2.59 - 3.81 - F. broken. limonite coated slip approx. 5

2.59 - 3.81 - F. broken, limonite coated slip approx. 5 deg./CA.

7.32 - 7.47 - Rusty slips approx. 20 deg./CA.

8.84 - 9.75 - Mainly broken. 10.67 - 10.97 - Ground core.

Mineralisation - occasional small py clusters, individual small xtals throughout.

12.98 13.41 PAULT ZONE

Rusty weathering earthy gouge - poor folt'n. & HW contact approx. 85 deg./CA.

13.41 22.10 ARGILLITE/TUFF (1g/1e)(approx. 70% rusty weath.)

Dom. black v.f.gr. finely banded\* pale creamy
grey at upper and lower contacts broken argillite beds and
frags. within pale grey green med. gr.; mass. tuff? {f.gr.

version of 1.52 - 12.98m above?). Bxt. contoured finely fract. and faulted (mini displ.'s in mm range, e.g. @ 18.29m. Gen. attitudes show low (s to core (10-20 deg./CA), but tight brittle folding/fold closures. Mod.-strongly fract. throughout, calcite healed. No predominant attitude within

50-80 deg. range.

\*In detail composed of ext. f., finely corrugated laminae, i/l with pale tuff?

Pyrite wkly, dissem, throughout.

13.66 - 13.72 - Rusty irreg. sup. approx. 45 deg./CA.

16.46 - 16.61 - Slip along undul. 'bedding' plane approx. parallel to CA.

#### DIAMOND DRILL LOG

PROPERTY: HIT HOLE No.: H91-1

ASSAYS LITHOLOGICAL DESCRIPTION SAMPLE No. PROM TO WIDTH Cuppm Pb ppm Ag ppm Au ppb PROM TO 17.22 - 17.37 - Rusty earthy gouge approx. 45 deg./CA. 17.77 - 17.86 - Rusty earthy gouge approx. 45 deg./CA. 18.53 - 18.65 - 2cm qtz. pods. Rusty irreg. fract./gouge approx. 70 deg./CA. - Barthy gouge, approx. 70 deg./CA irreg. 19.81 22.10 34.41 ANDESITE TUFFS/FLOWS (1a) Transitional contact to pale green f.gr., tuff 24.38 - 26.52 - To khaki green crse.gr. flow, textured flows/tuffs? 26.52 - 34.41 - Tuff as above. Wkly. mod. fract. to 29.87m - dom. f.fracts., slips @ 50-70 deg./CA, some calcite lined, intensifying to lower contact, with incr. calcite and rusty weath, occ.small py xtals. 34.41 35.81 PAULT ZONR Pale grey. Grey gouge cont. finely granulated. Vn. qtz., upper contact @ approx. 80 deg./CA. Dark ill-defined carbonaceous layers 34-41 - 34.75m. Wk. banding @ 34.90m @ 10 deg./CA irreg. 35.81 54.56 TUPF (le) POLYLITHIC Highly war, in texture & colour; dom. purple f.med. gr., locally crse. (35.81 - 40.23m). Polylithic chaotic texture to 40.23m, becoming crudely layered to 49.07m, more finely & clearly folt'd 49.07a ->. 35.81 - 38.56 - Bleached, carbonatised (pervasively & numerous blebs/vnlts. carb.) - rusty weath. along fracts. (50-70 deg./CA dom.). Practuring. Abund. f. qtz./carb. healed fracts.; generally chaotic but prom. 45 deg. & 60 deg./CA. Stronger e.g. 40.33m - 0.5cm earthy gouge approx. 60 deg./CA. 41.76 - lcm irreg. QV approx. 70 deg./CA. 42.15 - 42.25 - Rusty gouge/fract. approx. 70 deg./CA. 45.87 - 46.02 - Qtz. carb. healed approx. 45 deg./CA undul. 46.02 - 46.33 - Irreg. wavy veinlets approx. parallel to CA. 48.31 - 48.59 - Qtz. carb. Bx? zone f.w. rusty slips @ 70 deg./CA. 52.58 - 52.73 - Rusty gouge slips approx. 60 deg./CA. No vis. sulphides. 600 101630 54.76 55.78 1.02 313 0.7 54.56 59.41 ALTERATION ZONE (le carb.) Tuff sim, to above, but bleached. Mod.-strongly alt. (carb.

+ SiO2), v. var. depending on degree of alt. - related to

#### DIAMOND DRILL LOG

PROPERTY: HIT HOLE No.: H91-1

											1480
 PROM	 <b>T</b> 0	LITHOLOGICAL DESCRIPTION	SAMPLE No.	 From	T0	VIDTH	ASSAYS Cu ppm	Pb ppm	Ag ppm	 Au ppb	
		fract. (finely pervasive as above) & strong qtz. gouge shears @ 54.86-55.17m - QV + gouge + py approx. 85 deg./CA, and 58.83-59.19m (+ py).									
59.41	69.80	TUFF (1e) Polylithic grit, sim. to 35.81-54.56m as above, sl. coarser gr. Locally bleached along fract planes. Partic. 61.11-61.14m - gouge/ser. approx. 80 deg./CA. 61.33 - 61.66 - Gouge approx. 15 deg./CA. 61.97 - 62.58 - Strongly fract., shattered crude foltn., banding @ approx. 60 deg./CA. 67.36 -> - Alteration intensifying. Qtz. veins @ 67.67 - 67.76 - approx. 85 deg./CA (wk. py) 68.95 - 69.04 - approx. 75 deg./CA (wkmod. py) 69.56 - 69.62 - approx. 85 deg./CA (wkmod. py)									
69.80	77.39	ALTERATION ZONE (le carb)  Don. grey-pale grey green, rudimentary banding. Highly alt.  - mainly silicfct'n.  To 75.59, becoming v.f. indistinct downhole. Alt. related to large shear structures - as follows:  69.80 - 71.02 - Don. grey clay/ser. gouge approx. 80 deg./CA??  71.32 - 71.63 - Don. grey clay/ser. gouge.  72.24 - Fract. sheared.  75.47 - 75.71 - Shear gouge.  76.75 - 76.90 - Broken, sheared.	101631 101632 101633 101634	67.53 73.00 74.00 75.00	69.81 74.00 75.00 77.25	2.28 1.00 1.00 2.25	93 15 29 55	17 4 2 4	0.5 0.1 0.1 0.1	410 18 12 9	
77.39	78.33	SILICIFIED ZONE Pale grey v.f.gr., highly sil., nr. mass., wkly. folt'd, wkly. pyritised.	101635	77.25	78.33	1.08	5	2	0.1	6	
18.33	79.43	SILICIFIED ZONB Grey folt'd - 65-70 deg./CA, incl. black carbonaceous irreg. band @ approx. 50 deg./CA. Patchy wk. f. py.	101636	78.33	79.25	0.92	19	68	0.4	1	
19.43	85.19	ALTERATION ZONE  Similar to 69.80-77.39m above. Mod. fract. dom. @ 50-60 deg./CA, incl. strong shears/slips as follows:  80.1 - 80.28 - Broken gouge approx. 40 deg./CA.  80.31, 81.08, 81.38 - Slips @ approx. 45 deg./CA.  84.28 - 84.49 - Broken gouge.  84.49 - 85.19 - Intense shattering, fracturing.	101637 101638 101639 101640 101641	79.25 80.25 81.25 82.25 83.25	80.25 81.25 82.25 83.25 84.50	1.00 1.00 1.00 1.00 1.25	33 9 4 4 72	339 14 8 2 2	0.5 0.1 0.1 0.1 0.3	3 3 2 1	

### DIAMOND DRILL LOG

PROPERTY: HIT HOLE No.: H91-1

\_\_\_\_\_

							ASSAYS			
Prom	<b>T</b> 0	LITHOLOGICAL DESCRIPTION	SAMPLE No.	FROM	<b>T</b> 0	WIDTH	Cu pp∎	Pb ppm	Ag ppm	Au ppb
85.19	91.44	PAULT/SHBAR ZONE (SILICIFIED)	101642	84.50	85.50	1.00	4	4	0.6	2
		As above but broken core + gouge.	101643	85.50	86.50	1.00	46	100	0.5	9
		(Rods binding) Minor py.	101644	86.50	87.50	1.00	21	261	0.3	5
		(approx. 40% loss)	101645	87.50	88.50	1.00	9	58	0.3	3
		(approx	101646	88.50	89.50	1.00	64	65	0.4	2
			101647	89.50	90.50	1.00	21	48	0.3	2
01 44	96.35	ALTERATION ZONE	101648	90.50	91.50	1.00	6	12	0.2	5
31.99	30.33						12	16	0.2	<b>ا</b>
		Tuff?, highly alt. (SiO2, ser.), pale creamy green/maroon	101649	91.50	92.50	1.00		r 6		1
		alternating irreg. bands, int. sheared throughout.	101650	92.50	93.50	1.00	5	•	0.1	1
		Gouge - 92.96m, 95.10m, 95.77m, 96.01m.	107351	93.50	94.50	1.00	24	31	0.2	
		(Rods binding - changed mud @ 94.49m)	107352	94.50	95.50	1.00	15	20	0.2	15
			107353	95.50	96.35	0.85	14	24	0.2	49
96.35	97.54	QUARTZ VBIN Irreg. H.W. contact approx. 70-80 deg./CA	107354	96.35	97.53	1.18	70	193	1.2	210
		White, finely fract., wkly dissem. small patches py, poss.								
		ccp? - core mainly broken. Gouge - 97.38-97.44m. (70% rec.)								
		•								
97.54	98.45	TUFF (le carb)	107355	97.53	98.45	0.92	14	2	0.1	12
		Highly altered, shrd., pale buff, mottled purple. Crude folt'n approx. 75 deg./CA.								

98.45 BOH Hole stopped - rods binding.

#### DIAMOND DRILL LOG

PROPERTY: HIT HOLE No.: H91-2

Collar Eastings: -80.00 775.00 Collar Northings: Collar Elevation: 1372.34

Grid: HIT

CASING PULLED

Collar Inclination: -45.00

Grid Bearing: 270.00

Final Depth: 87.48 metres

STARTED 1.10.91; COMPLETED 5.10.91

Logged by: IMW Date: 8.10.91

Down-hole Survey: acid

PW DRILLING

PROM	<b>T</b> O	LITHOLOGICAL DESCRIPTION	SAMPLE No.	FROM	<b>T</b> 0	WIDTH	ASSAYS Cu ppm	Pb ppm	Ag ppm	Au ppb
0	19.66	Casing								
19.66	39.78	ANDESITE (la)  Pale khaki green, med. gr., locally coarsely por. (fels) F.  Mass; locally wkly-mod alt Bpidote as f. fract. filling networks or 'patchy' 'floodings' wkly fract fracts. gen. irreg. either tight carb. healed or open limonite lined - Dom. @ 20-30 deg./CA. & approx. 45 deg./CA - fracturing increases from 34.14 to end of sctn.; numerous rusty fract. 21.24 - Barthy chl. gouge - irreg. slip @ approx. 50 deg./CA. 24.69 - 24.99 - Irreg. limonitic slip approx. 11/CA. 27.07 - 27.43 - Irreg. limonitic slip approx. 11/CA. 30.45 - 30.57 - Broken (fracts @ approx. 20 deg./CA.) 32.77 - 33.01 - Broken, minor gouge. 34.44 - 35.05 - Broken. 35.42 - 36.12 - Broken + rusty & chloritic gouge approx. 11/CA. 38.71 - 39.78 - Incr. bleaching (alt) to end of sctn. 39.47 - 39.56 & 39.62 - 39.78 - Shears & gouge approx. 80 deg./CA.								
39.78	39.80	PAULT Grey gouge cont. small ang. qts. frags.								
39.80	40.08	QUARTZ VBIN Milk white, broken, rusty along fract. surfaces sparsely irreg. & patchy dissem. v.f. pyrite throughout.	107536	39.77	40.02	0.25	22	135	4.8	370
40.08	45.42	ALTERATION ZONE(le-carb)  Dom. pale grey siliceous, f.gr., cont. variable irreg. bands, patches, bleb & stringers white vn. qtz. Pale buff wispy bands/partings v.f. sericite. Banding more prom. where qtz. weakest, e.g., 40.84-42.06 & 42.37-43.28 approx. 75-80 deg./CA. Fracts/faults 40.42 - 40.45 - gouge approx. 75 deg./CA. 40.66 - 40.72 - Broken.  41.03 - 'Gougey' fracts. approx. 55 deg./CA. 41.67 - 41.76 - 'Gougey' fracts. approx. 70 deg./CA. 42.21 - 42.25 - 'Gougey' fracts. approx. 70 deg. & 45 deg./CA.	107357 107358 107359	40.02 40.74 43.28	40.74 43.28 45.41	0.72 2.54 2.13	108 127 37	37 14 349	3.0 0.6 1.6	320 35 73

#### DIAMOND DRILL LOG

PROPERTY: HIT HOLE No.: H91-2

PROM	<b>T</b> 0	LITHOLOGICAL DESCRIPTION	SAMPLE No.	PRON	<b>T</b> 0	WIDTH	ASSAYS Cu ppm	Pb ppm	Ag ppa	Au ppb	
		42.37 - 42.52 - Broken/cave? incl. qtz. frags.  ê approx. 43.59 - 3.4 cm gouge & qtz. frags.  43.59 - 45.42 - Broken core qtz. pbs approx. 30% rec.  N.B. Hole cemented ê 45.42 - poor rec. due to pebbly qtz.  - 6*(15cm) runs.  44.50 - 45.42 - Cement.  Mineralisation f. pyrite as streaks, blebs, along foltns & less abundantly in qts. segs.									
45.42	50.60	TUFF? (ALTERED GRBY-BUFF)(1e?) Sim. to above but decreasing qtz. content down hole - prob. qtz. ser. sch., finely folt'd @ 70 deg./CA. (46.02) - highly sheared throughout & containing strong shear zones @ 46.63-47.24 (65 deg./CA.), also 48.46-48.68, 48.92-49.99. Pyrite finely but strong dissem. along foltns (approx.10%). 45.42 - 45.72 - Wkly dissem. throughout rest of sctn.	107360 107361	45.41 47.09	47.09 49.37	1.68	156 199	15 6	0.7 0.7	30	
50.60	55.47	TUFF(le)  Dom. dk. red brown-purple & grey sericitic chaotically intermingled (through bxtn., fract.) highly alt., patchily silicified/carbonatised.  54.25 - 54.86 - Foltn. @ 65 deg./CA.									
55.47	55.93	QTZ. VBIM/PAULT (BY?) Grey clay gouge incl. angular qtz. frags., plus broken core - qtz. + grey pyritic tuff (sersch.).									
55.93	58.52	TUPF ALTERED (le-carb) + (ld ALT) Pale creamy buff - pale lime green, highly sericitised. Whly sil., carbonatised. Strongly sheared - transitional passage down hole into purple. Volc. bx/tuff (ld/ldf). Poorly folt'd. approx. 70 deg./CA. 56.85 - 57.00 - Shear zone, gouge shr'd. tuff.	107362	55.60	55.97	0.37	41	147	0.8	39	
58.52	87.48	VOLC. TUFF/BX (POLYLITHIC)(1df) Purple, red brown, coarsening down hole (clasts to 2 cm+). Purple, brown, grey (and.) & creamy buff (1st.) clasts, generally chaotic. Locally poorly developed sorting - (augments of long axes of clasts) e.g. @ 67.36 (approx. 80 deg./CA.) 70.1 (75 deg./CA.). Lower 2 m - finer gr. (grit) f. uniform. fracts mod fract./folt'd. 45 deg. & 70 deg./CA. dom. orientation. 65.23 - 66.14 - Modstrongly fract some with gouge dom. @ 70 deg./CA.									

DIAMOND DRILL LOG

PROPERTY: HIT HOLE No.: H91-2

Page 3

ASSAYS

PROM TO LITHOLOGICAL DESCRIPTION SAMPLE No. FROM TO WIDTH Cuppm Pb ppm Ag ppm Au ppb

66.75 - 66.90 - Gouge/shear approx. 80 deg./CA.

68.58 - 68.82 - Broken, gouge, slips @ approx. 75 deg./CA.

83.45 - 83.52 - Gouge zone.

83.76 - 84.43 - Shear zone approx. 70 deg./CA.

Note zones containing euhedral pale creamy green lath shaped xtals. up to 1 cm e.g., 66.75-67.06, 77.88-77.97, 79.98-80.16.

87.48 E.O.H. Casing pulled. Lost circulation @ 19.81-21.34.

Hole cemented @ 45.42 (broken, caving.)

# APPENDIX 2 GEOCHEMICAL ANALYTICAL REPORTS

852 E. HASTINGS ST. VANCOUVER B.C. V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716



# **GEOCHEMICAL ANALYSIS CERTIFICATE**

I.M. Watson & Assoc. Ltd. PROJECT HIT FILE # 91-1792 904 - 675 W. Hastings St., Vancouver BC V68 1N2



SAMPLE#	Cu	Pb	Zn	<b>λ</b> g	As	Au*	
	mqq	ppm	mqq	ppm	ppm	ppb	
G 3896	44	135	744	1.4	6	14	
G 3897	8	412	738	10.9	3	12	
G 3898	59	23	204	. 4	26	18	
G 3899	52	23	196	.3	30	27	
G 3900	2	76	36	1.4	12	30	
F 5840	5	7	76	.2	4	3	
F 5841	58	13	90	.1	10	5	
F 5842	5065	40	36	16.0	4	70	
F 5843	15	12	32	, .8	2	26	
F 5844	4585	364	29116√	6.0	78	220	
R 9162	114	393	250	1.8	41	54	
R 9163	153	1913	334	68.1 <sup>7</sup>	22	380	
R 9164	101	21	309	. 4	33	11	
R 9165	95	22	291	. 2	26	18	
R 9166	71	67	132	1.0	26	50	•
R 9167	36	15	73	. 6	27	3	
R 9168	44	24	245	.7	59	8	
R 9169	29	6	50	. 3	33	2	
R 9170	57	7	68	.1	41	2	
R 9171	18	5	25	.3	16	1	
R 9172	42	15	58	.6	39	5	
R 9173	39	5	47	.3	15	1	
R 9174	83	9	76	. 2	43	9	
R 9175	61	7	60	. 3	26	12	
R 9176	22	6	40	.3	22	2	
R 9177	42	3		.2	37	4	
E 12507	48	9		1.3	11	1	
E 12508	7	16	36	1.1	2	13	
E 12509	16	69	65	1.0	7	14	
E 12510	5	12		. 4	2	7	
E 12511	74	10		. 9	8	3	
E 16088	12	2	63	. 2	3	3 2 3 2	
E 16089	73	4	51	. 2	2	3	
E 16090	34	49	103	. 2	2	2	
STANDARD C/AU-R	64	41	124	7.1	39	460	

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HN03-H20 AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER. THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL. AU DETECTION LIMIT BY ICP IS 3 PPM. - SAMPLE TYPE: ROCK AU\* ANALYSIS BY ACID LEACH/AA FROM 10 GM SAMPLE.

DATE RECEIVED: JUN 17, 1991

DATE REPORT MAILED: June 20/91.

SIGNED BY .... D. TOYE, C. LEONG, J. WANG; CERTIFIED B.C. ASSAYERS

✓ ASSAY RECOMMENDED

852 E. HASTINGS ST. VANCOUVER B.C. PHONE (604) 253-3158 FAX (604) 253-1716

## GEOCHEMICAL ANALYSIS CERTIFICATE

I.M. Watson & Assoc. Ltd. PROJECT HIT FILE # 91-1967
904 - 675 W. Hastings St., Vancouver BC V6B 1N2 Attn: I.W. WATSON Page 1

SAMPLE#	Cu ppm	Pb ppm	Zn ppm	ppm Ag	As ppm	Au* ppb	
	Ppm	- PPm	- Ppm	- PPm	PP		
D 108551	97	255	433	.9	23	82	
D 108552	100	234	294	1.0	11	64	
D 108553	8	18	74	. 4	5	23	
D 108554	33	<b>7</b> 7	191	.6	4	8	
D 108555	100	509	595	1.8	40	25	
D 108556	105	480	517	.9	40	59	
D 108557	93	319	434	1.6	21	56	
D 108558	116	178	480	.6	33	81	
D 108559	46	23	167	. 1	8	15	
D 108560	38	24	86	.3	6	22	
D 108561	37	13	118	. 4	5	12	
D 108562	78	2	71	.1	2	3	
D 108563	60	13	95	.1	12	8	
D 108564	24	8	99	.1	2	6	
D 108565	80	2	76	.8	11	71	
D 108566	157	6	82	.3	4	19	
D 108567	116	10	87	1.3	26	71	
D 108568	107	10	61	.4	10	69	
D 108569	173	2	71	.3	5	83	
	1	3	96		2	7	
D 108570	129	3	90	.1	2	,	
D 108571	196	2	81	. 2	2	41	
D 108572	28	2	76	.1	2	7	
D 108572	20	158	135	.3	9	10	
D 108573	83	54	86	.5	3	13	
	1				3	29	
D 108575	77	91	111	.9	3	27	
D 108576	120	523	266	7.5	10	710	
D 108577	90	380	124	4.0	7	52	
D 108578	51	28	107	. 5	20	14	
D 108579	66	18	112	. 2	20	6	
D 108580	49	17	97	.8	23	6	
D 108581	33	3	61	.1	24	2	
D 108582	51	6	82	.5	38	2	
D 108583	38	29	61	.8	26	10	
D 108584	37	6	35	. 2	26	2	
D 108585	126	2	74	.1	3	6	
D 108586	139	2	70	.1	2	2	
STANDARD C/AU-R	58	36	133	6.7	39	490	

1CP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HN03-H20 AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER. THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL. AU DETECTION LIMIT BY ICP IS 3 PPM. AU\* ANALYSIS BY ACID LEACH/AA FROM 10 GM SAMPLE. - SAMPLE TYPE: ROCK

JUN 24 1991 DATE RECEIVED:

DATE REPORT MAILED:

.D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

I.M. Watson & Assoc. Ltd. PROJECT HIT FILE # 91-1967 Page 2

SAMPLE#	Cu ppm	Pb ppm	Zn ppm	ppm Ag	As ppm	Au* ppb	
D 108587	94	11	76	.6	6	14	
D 108588	94	5	88	.8	2	8	
D 108589	186	7	116	1.1	4	7	
D 108590	186	257	100	2.2	5	24	
D 108591	200	133	139	2.5	3	28	
D 108592	136	10	99	2.4	3	36	
D 108593	92	5	105	1.3	3	24	
D 108594	150	56	116	1.1	46	15	
D 108596	214	26	94	1.3	28	80	
D 108597	67	7	122	.2	36	210	
D 108598	56	12	97	.1	24	86	
D 108599	29	9	108	.1	19	8	
D 108600	93	6	101	.1	27	25	
D 108601	68	4	86	. 2	22	19	-
D 108633	91	3	105	.1	24	15	
D 108634	106	21	122	.5	53	27	
E 12512	63	971	485	9.2	- 32	440	
E 12513	70	38	111	.9	23	31	
E 12514	175	249	121	2.6	14	16	
E 12515	23	19	31	8.5	18	2730	
E 12516	18	36	60	7.0	16	93	
E 12517	16	49	42	1.9	15	15	
F 5845	143	2	20	.9	11	59	
G 3827	40	6	120	.2	11	9	
G 3828	32	2	23	. 2	5	í	
G 3829	48	7	38	.1	2	1	
STANDARD C/AU-R	57	43	133	7.2	40	470	· · · · · · · · · · · · · · · · · · ·

# I.M. Watson & Assoc. Ltd. PROJECT HIT FILE # 91-1967 Page 3

SAMPLE#	Cu ppm	Pb ppm	Zn ppm	Ag ppm	As ppm	Au* ppb	
G 3830	140	7	54	.5	5	18	
G 3831	19	2	60	.1	4	2	
G 3832	8775	2	187	3.8	4	25	
L 2594	176	5	78	. 2	9	8	
STANDARD C/AU-R	56	39	133	6.9	37	510	

ASSAY RECOMMENDED Cu 71%

852 E. HASTINGS ST. VANCOUVER B.C. V6A 1R6 PHONE (604) 253-3158 FAX (604) 253-1716

# **GEOCHEMICAL ANALYSIS CERTIFICATE**

I.M. Watson & Assoc. Ltd. PROJECT HIT FILE # 91-2156 Page 1 904 - 675 W. Hastings St., Vancouver BC V68 1N2

SAMPLE#	Cu	Pb	Zn	Ag	As	Au*	· · · · · · · · · · · · · · · · · · ·
- "	mqq	ppm	ppm	mqq	ppm	ppb	
	F F	1.5					
G 3833	4	10	6	.1	8	11	
G 3834	6	4	4	.1	. 8	5	
G 3835	39	2	26	.1	2	4	
E 12518	49	66	161	.7	30	10	
	737	273	1104	11.7	49	2	
E 12519	131	2/3	1104	TT • /	49	2	
E 12520	499	7912	6453	23.7	34	2	
E 12521	259	2945	7372	8.3	18		
						22	
D 108603	60	27	85	1.4	14		
D 108604	41	22	77	1.6	9	77	
D 108605	112	291	196	48.6	13	22,800	
D 108606	96	183	211	4.1	24	71	
D 108607	32	34	94	4.1	12	36	
D 108608	121	11	110	.7	:9	26	
	186				3	27	
D 108609		14	113	. 2			
D 108610	150	11	134	.1	7	8	
D 108611	164	21	216	.1	6	9	
D 108612	98	10	106	.2	13	1	
D 108613	180	42	124	.5	22	26	
D 108614	116	11	103	. 2	31	7	
D 108615	89	5	100	.1	25	3	
2 100013		•	200	• -		J	
D 108616	41	4	72		10	1	
D 108617	36	11	101	. 1	17		
D 108618	34	10	115	. 1	12	3	
D 108619	38	8	110	.1	22	2	
D 108620	25	6	92	.1	14	1	
D 108621	47	8	94	. 2	10	25	
D 108622	57	8	93	.3	8	7	
D 108635	21	512	138	17.2	2	1320	
D 108636	49	1532	180	57.5	4		
D 108637	81	1673	255	20.3	2	1830	
<i>D</i> 100037		10,3	200	20.3		1000	
D 108638	171	4131	688	79.1	2	8040	
STANDARD C/AU-R	56	39	131	6.8	38		

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HN03-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER. THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL. AU DETECTION LIMIT BY ICP IS 3 PPM. - SAMPLE TYPE: P1 ROCK P2 H.M. AU\* ANALYSIS BY ACID LEACH/AA FROM 10 GM SAMPLE.

DATE RECEIVED: JUN 28 1991

DATE REPORT MAILED:

SIGNED BY. .... D. TOYE, C. LEONG, J. WANG; CERTIFIED B.C. ASSAYERS



# I.M. Watson & Assoc. Ltd. PROJECT HIT FILE # 91-2156



SAMPLE#																		Ca P											.м.
	State	PPIII	bber	ppin	ppin.	bbru	ppii p	Palls	* bbii	bbm	ppm	ppn	ppm	ppm	ppin	ppm pp	ATL	X X	bbus bb	m »	ppm	- A	ppm		<u>*</u>	у БЫ	ppo	*	9m
F 5148	1	55	13	67	.5	22	18 5	38 9.9	90 3	6	ND	4	275	2.1	2	2 25	4 2.	.97 .060	11 6	4 .68	60	.39	5 1.	81	.08 .	.08 1	2	.63 2	.30

852 E. HASTINGS ST. VANCOUVER B.C. V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716



# **GEOCHEMICAL ANALYSIS CERTIFICATE**

44

I.M. Watson & Assoc. Ltd. PROJECT HIT FILE # 91-2217 904 - 675 W. Hastings St., Vancouver BC V6B 1N2

SAMPLE#	Cu ppm	Pb ppm	Zn ppm	Ag	As ppm	Au* ppb	
G 3837	27	386	332 /	2.7	2	12	
G 3838	107	14065	10435 ′	19.8	29	1320	
G 3839			-	24.1		1040	
G 3840	419	19292√	4725	184.0 ✓	140	360	
G 3841	873	4274	11731	39.9√	214	910	
G 3842	782	7925	12665√	34.8	61	67	
G 3843	3188	91531	10785√	39.0/	36	95	

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER. THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL. AU DETECTION LIMIT BY ICP IS 3 PPM. - SAMPLE TYPE: ROCK AU\* ANALYSIS BY ACID LEACH/AA FROM 10 GM SAMPLE.

DATE RECEIVED: JUL 2,1951

DATE REPORT MAILED: July 5/9

✓ ASSAY RECOMMENDED

852 M. HASTINGS ST. VANCOUVER B.C. V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716



# **GEOCHEMICAL ANALYSIS CERTIFICATE**

**TT** 

I.M. Watson & Assoc. Ltd. FILE # 91-2513
904 - 675 W. Hastings St., Vancouver BC V6B 1N2

 SAMPLE#	Cu	Pb	Zn	Ag As	Au*	
	ppm	ppm	ppm	ppm ppm	n ppb	
 G 3847	1274	11879		26.8 35	610	
G 3848	4682	9	61	.8 14	17	
G 3849	3571	4	20	2.1 2	23	
F 5849	783	31	437	9.6 163	17	
E 12528	140	3404	1179	12.4 29	71	
E 12529	425	7429	3261	19.7 29	1660	
E 12530	765	4336	5699	19.0 41	1560	
E 12531	1473	9556/	18651√	74.9/ 77	1050	
E 12532	193	9995/	6563	17.6 58	430	
E 12533	497	4997	4489	25.0 154	460	
E 12534	117	16696	527	30.7 25	1460	
E 12535	568	12097/	21908/	24.4 64	1240	
D 108721	1668	8364	19867/	26.1 46	420	
STANDARD C/AU-R	56	38	133	7.0 41	480	

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HN03-H20 AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER. THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL. AU DETECTION LIMIT BY ICP IS 3 PPM. - SAMPLE TYPE: ROCK AU\* ANALYSIS BY ACID LEACH/AA FROM 10 GM SAMPLE.

DATE RECEIVED: JUL 15, 1991

DATE REPORT MAILED: July 16/91

SIGNED BY ..... D. TOYE, C. LEONG, J. WANG; CERTIFIED B.C. ASSAYERS

ASSAY RECOMMENDED

852 E. EASTINGS ST. VANCOUVER B.C. V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716



# **GEOCHEMICAL ANALYSIS CERTIFICATE**

I.M. Watson & Assoc. Ltd. FILE # 91-2661 Page 1
904 - 675 W. Mastings St., Vancouver BC V68 1N2

44

SAMPLE#	Cu ppm	Pb ppm	Zn ppm	Ag ppm	As ppm	Au* ppb	SAMPLE lb	
D108639	18	5	124	. 1	3	2	17	
D108640	31	5	158	. 2	4	3	16	
D108641	41	12	155	.3	6	1	17	
D108642	28	6	233	.2	3	2	24	
D108643	21	3	177	.1	3	12	25	
STANDARD C/AU-R	61	38	132	7.2	42	480	-	

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER. THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL. AU DETECTION LIMIT BY ICP IS 3 PPM. - SAMPLE TYPE: ROCK AU\* ANALYSIS BY ACID LEACH/AA FROM 10 GM SAMPLE.

DATE RECEIVED:

JUL 18 1991

DATE REPORT MAILED: July 23/91

.D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS



I.M. Watson & Assoc. Ltd. FILE # 91-2661 Page 2

SAMPLE#	Cu ppm	Pb ppm	Zn ppm	bbw bbw ya ya	Au*	sample lb
D108644	68	4	316	.1 6	37	26
D108645	44	3	171	.1 3	40	26
D108646	21	3	121	.2 6	23	27
D108647	22	2	150	.1 2	37	25
D108648	23	4	142	.1 2	16	18
	1					
D108649	75	2	244	.1 2	7	17
D108650	39	2	215	.1 7	9	16
D108651	738	6	435	.1 25	9	17
D108652	1672	9	865	.3 346	10	18
D108653	1166	5	321	.8 147	9	15
D108654	255	10	504	.1 13	6	16
D108658	110	4	454	.1 5	8	17
D108659	214	13	231	.5 26	9	16
D108660	63	7	116	.2 4	1	17
D108661	53	6	152	.1 4	2	18
STANDARD C/AU-R	61	42	131	7.3 42	450	<del>-</del>

B52 E. HASTINGS ST. VANCOUVER B.C. V6A 1R6 PHONE (604) 253-3158 FAX (604) 253-1716

# **GEOCHEMICAL ANALYSIS CERTIFICATE**

I.M. Watson & Assoc. Ltd. PROJECT HIT FILE # 91-2662 Page 1
904 - 675 W. Hastings St., Vancouver 8C V68 1N2

<u> </u>	SAMPLE#	Cu	Pb	Zn	Ag	λs	Au* S	AMPLE	
		ppm	ppm	ppm	ppm	ppm	ppb	1b	
	G3836	12	3	48	.5	3	18	5	
•	G3844	2098	14	25	4.2	8	217	8	
	G3845	3303	6	54	3.3	2	11	6	
	G3846	18	2	6	.1	2	13	8	
l	F5846	10116	83	417	5.8	42	55	8	
	F5847	6416	50	493	3.0	37	30	7	
}	F5848	85	5	14	. 2	5	5	6	
	E12522	43	7	652	.1	2	4	9	
	E12523	55	2	63	.1	2	2	10	
	E12524	62	8	93	.1	5	2	11	
	E12525	354	7	43	1.7	149	22	12	
1	E12526	37	6,	95	.1	8	1	15	
1	E12527	1589	11746 <sup>√</sup>	16123√	58.2√	54	159	14	
	D108694	21	57	89	.3	9	14	20	
1	D108695	13	12	15	.3	8	15	21	
1	D108696	39	76	138	.5	7	8	15	
	D108700	53	9	140	.2	8	10	17	
	D108705	43	4	176	. 1	4	3	16	
	D108706	44	5	124	.1	7	5	18	
	D108709	37	8	116	. 2	3	7	20	
	D108713	23	7	123	.1	5	3	18	
•	D108714	85	91	261	2.8	48	27	15	
	D108715	6	134	14	8.8	33	87	17	
	D108716	11	403	32	13.6	32	95	18	
	D108717	22	134	93	4.2	47	82	18	
1	D108718	21	114	95	1.9	16	66	19	
1	D108719	62	154	278	1.2	17	21	17	
	D108719 D108720	110	1035	589	4.4	24	41	20	
	D108720 D108722	41	531	177	2.7	32	31	24	
	D108722 D108723	37	565	161	2.0	48	98	23	
	D108724	46	1751	174	10.1	41	198	26	
1	D108724 D108725	7	1751	174	2.6	15	147	25	
1	D108725 D108726	29	177	144	1.4	17	75	17	
		62	333	575	1.1	18	56	19	
1	D108727	77						18	
1	D108728	''	1120	625	2.4	68	114	10	
	D108729	62	1112	250	2.0	48	58	20	
	STANDARD C/AU-R	60	39	132	7.4		464	_	

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER. THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL. AU DETECTION LIMIT BY ICP IS 3 PPM. - SAMPLE TYPE: ROCK AU\* ANALYSIS BY ACID LEACH/AA FROM 10 GM SAMPLE.

DATE RECEIVED: JUL 18,1991

DATE REPORT MAILED:

SIGNED BY ..... D. TOYE, C. LEONG, J. WANG; CERTIFIED B.C. ASSAYERS

✓ ASSAY RECOMMENDED

I.M. Watson & Assoc. Ltd. PROJECT HIT FILE # 91-2662 Page 2

	SAMPLE#	Cu ppm	Pb ppm	Zn ppm	Ag ppm	As ppm	Au* ppb	SAMPLE 1b	
<u>~-</u>	D108730	76	621	191	2.7	135	156	19	
	D108730 D108740	6	21	80	.1	3	12	17	
	D108740 D108741	5	10	23	.1	All Allahara in a		17	
						4	4		
	D108742	14	18	99	.1	2	1 3	20	
	D108760	61	6	82	.1	3	3	17	
	D108761	9	6	92	.1	2	2	15	
	D108762	16	9	126	.2	2	2	17	
	D108763	10	3	128	. 1	2	2	13	
	D108764	23	10	133	.1	2	5	10	
	D108765	15	6	69	.1	2	1	17	
						ring H.T.			
	D108766	29	11	92	.1	2	3	14	
	D108767	29	18	151	. 2	3	4	15	
	D108768	36	14	162	. 2	2	4	13	
	D108771	21	5	35	.1	4	2	15	
	D108772	24	6	66	.1	5	5	16	
			_				_		
	D108775	30	9	16	. 2	4	2	14	
	D108776	32	7	34	.1	5	7	11	
	D108777	20	9	18	.1	3	4	10	
	D108778	34	6	30	.1	4	4	10	
	D108779	110	7	139	.1	6	13	11	
	2200.,,,		•		• •				
	STANDARD C/AU-R	60	41	133	6.9	42	470	_	

852 E. HASTINGS ST. VANCOUVER B.C. V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716



# **GEOCHEMICAL ANALYSIS CERTIFICATE**

44

I.M. Watson & Assoc. Ltd. PROJECT HIT FILE # 91-2719
904 - 675 W. Hastings St., Vancouver BC V68 1N2

J	SAMPLE#	Cu	Pb	Zn	Ag	As	Au*	SAMPLE
		$\mathbf{p}\mathbf{p}\mathbf{m}$	ppm	ppm	ppm	ppm	ppb	1b
	G 3045	27	14	81	.2	26	6	20
i	G 3046	17	139	186	9.0	11	230	16
	F 5149	11	9	102	. 2	2	11	9
İ	E 12596	39	12	89	. 4	23	16	10
	E 12597	55	37	141	1.3	50	30	14
	E 12598	13	76	115	2.6	8	41	13
	E 12599	85	104	107	2.3	15	17	8
1	E 12600	191	101	73	4.1	11	5	7
	STANDARD C/AU-R	63	37	132	7.2	42	490	•

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HN03-H20 AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER. THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL. AU DETECTION LIMIT BY ICP IS 3 PPM. - SAMPLE TYPE: ROCK AU\* ANALYSIS BY ACID LEACH/AA FROM 10 GM SAMPLE.

DATE RECEIVED: JUL 21 1991

DATE REPORT MAILED: July 24/91.

852 E. HASTINGS ST. VANCOUVER B.C. V6A 1R6 PHONE (604) 253-3158 FAX (604) 253-1716



# **GEOCHEMICAL ANALYSIS CERTIFICATE**

Watson & Assoc. Ltd. PROJECT HIT FILE # 91-2875 904 - 675 W. Hastings St., Vancouver BC V6B 1N2



	4.3						1977		
Si	AMPLE#		Cu	Pb	Zn	Ag	As	Au*	
			ppm	mqq	ppm	ppm	ppm	ppb	
E	12536		70	2	57	.3	15	9	
E	12537	ļ	54	11	78	.1	3	55	
D	108793		74	2	66	.1	4	1	
D	108794		56	2	68	.1	4	1 1	
D			69	2	80	.1	2	1	
D	108796		77	2	83	.1	12	1	
D	108797		60	4	81	.1	31	4	
D		(	65	3	90	.1	39	1	
D	108799		100	3	96	.1	43	1	
D	108800		86	3	105	. 2	53	8	
D	108801		126	7	105	. 4	46	4	
D	108802		73	16	118	.6	31	15	
D	108803	[	107	7	93	.3	45	15	
D	108804		81	3	85	.1	28	5	
D	108805		85	2	86	.1	22	1	
D	108806		77	3	76	.1	34	4	
D	108807	ļ	77	5	119	. 2	30	5 7	
D	108808	{	93	5	81	. 2	38	7	
D	108809		59	6	133	. 2	39	6	
D	108810		29	17	71	. 2	44	1	
D	108811		74	6	76	.1	39	1	
D	108812		121	2	80	.1	6	6	
S'	TANDARD	C/AU-R	62	36	134	7.4	41	490	

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HN03-H20 AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER. THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL. AU DETECTION LIMIT BY ICP IS 3 PPM. ASSAY RECOMMENDED FOR CU PB ZN AS > 1%, AG > 30 PPM & AU > 1000 PPB. - SAMPLE TYPE: ROCK AU\* ANALYSIS BY ACID LEACH/AA FROM 10 GM SAMPLE.

DATE RECEIVED:

DATE REPORT MAILED: July 31/91

D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

852 E. HASTINGS ST. VANCOUVER B.C. V6A 1R6 PHONE (604) 253-3158 FAX (604) 253-1716



# **GEOCHEMICAL ANALYSIS CERTIFICATE**



I.M. Watson & Assoc. Ltd. PROJECT HIT FILE # 91-2949
904 - 675 W. Hastings St., Vancouver 8C V68 1N2

				•		
	SAMPLE#	Cu	Pb	Zn	Ag As	Au*
		ppm	ppm	ppm	ppm ppm	ppb
<del></del>	D 108813	29	28	302	.1 2	4
	D 108814	23	5	139	.3 2	29
	D 108815	32	5	191	.7 2	42
	D 108816	26	6	193	.2 2	8
	D 108817	49	5	168	.5 2	81
	D 108818	10	8	361	1.2 2 1.7 2	75
	D 108819	33	5	216	1.7 2	270
	D 108820	133	4	103	.3 2	15
	D 108821	55	3	151		176
	D 108822	16	2	133	1.0 2 .1 2	9
	D 108823	230	6	267	.6 2	13
	D 108824	30	3	231	.2 2	3
	D 108825	1390	4	154	1.6 2	
	D 108826	30	2	116	.2 2	3
	D 108827	25	2	123	.1 2	8 3 1
	D 108828	9	3	113	.1 2	1
	D 108829	165	3	184	.7 2	3
	STANDARD C/AU-R	62	39	131	7.5 44	460

1CP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HN03-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER. THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL. AU DETECTION LIMIT BY ICP IS 3 PPM. ASSAY RECOMMENDED FOR ROCK AND CORE SAMPLES IF CU PB ZN AS > 1%, AG > 30 PPM & AU > 1000 PPB - SAMPLE TYPE: ROCK AU\* ANALYSIS BY ACID LEACH/AA FROM 10 GM SAMPLE.

DATE RECEIVED: JUL 29 1/991

DATE REPORT MAILED: Hug 1/91

BIGNED BY .... D. TOYE, C. LEONG, J. WANG; CERTIFIED B.C. ASSAYERS

852 B. HASTINGS ST. VANCOUVER B.C. V6A 1R6 PHONE (604) 253-3158 FAX (604) 253-1716

# **GEOCHEMICAL ANALYSIS CERTIFICATE**

I.M. Watson & Assoc. Ltd. PROJECT HIT FILE # 91-3133 Page 1
904 - 675 W. Hastings St., Vancouver BC V68 1N2

	SAMPLE#	Cu	Pb	Zn	Ag	Às		SAMPLE	
		ppm	ppm	ppm	ppm	ppm	ppb	lb	
	D 108830	58	11	277	.1	6	15	18	
I	D 108831	142	21	254	.6	12	15	18	
	D 108832	63	34	49	1.1	19	17	14	
i	D 108833	15	9	7	.1	5	5	18	
ļ	D 108834	72	6	27	. 2	18	8	18	
	D 108835	24	9	23	. 2	11	8	22	
İ	D 108836	16	8	8	. 2	4	4	12	
1	D 108837	88	10	241	1.2	38	20	14	
	D 108838	15	15	72	.1	33	7	13	
	D 108839	12	7	76	.1	25	9	15	
	D 108840	14	8	75	.1	22	8	17	
1	D 108841	18	6	77	.1	13	8	14	
	D 108842	12	10	85	.1	28	9	12	
•	D 108843	39	62	35	.8	14	4	12	
	D 108844	70	29	68	.9	19	3	18	
ı	D 108845	20	5	168	.1	15	2	18	
	D 108846	35	4	510	.1	8	3	15	
1	D 108847	21	9	454	.1	9	2	14	
	D 108848	21	32	305	.1	14	7	13	
	D 108849	15	13	197	. 2	16	6	12	
	D 108850	20	10	114	. 3	13	4	15	
ı	D 108851	17	6	83	. 2	7	4	13	
	D 108852	31	9	298	.1	4	3	15	
1	D 108853	23	9	89	.2	5	2	13	
1	D 108854	12	15	39	.1	6	3	15	
1	D 108855	33	26	109	.1	13	6	14	
1	D 108856	23	17	115	.1	13	7	12	
1	D 108857	44	53	193	.6	16	14	18	
İ		1			• 0				
1	D 108858	106	10	398	.2	6	10 2	14	
	D 108859	50	11	314	.1	4	2	18	
	D 108860	20	10	35	.1	19	7	14	
	D 108861	28	17	97	.1	41	12	16	
1	D 108862	45	9	125	.1	8	6	14	
	D 108863	16	17	132	.1	4	3	15	
	D 108864	83	34	261	.1	16	5	14	
	D 108865	28	12	107	.1	14	4	16	
ł	STANDARD C/AU-R	61	39	131	6.9	42	470		

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HN03-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER. THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL. AU DETECTION LIMIT BY ICP IS 3 PPM. ASSAY RECOMMENDED FOR ROCK AND CORE SAMPLES IF CU PB ZN AS > 1%, AG > 30 PPM & AU > 1000 PPB - SAMPLE TYPE: ROCK AU\* ANALYSIS BY ACID LEACH/AA FROM 10 GM SAMPLE.

DATE RECEIVED: AUG 2 1991

DATE REPORT MAILED: HW 8/91

BIGNED BY .... D. TOYE, C. LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

I.M. Watson & Assoc. Ltd. PROJECT HIT FILE # 91-3133 Page 2

SAMPLE#	Cu ppm	Pb ppm	Zn ppm	ppm Ag	As ppm	Au* ppb	SAMPLE 1b	
D 108866	27	53	226	.1	9	12	14	
D 108867	76	24	532	.8	7	8	12	
D 108868	79	40	406	1.0	11	8	18	•
D 108869	69	61	559	.8	13	6	13	
D 108870	301	215	982	1.3	55	14	14	
D 108871	28	12	152	.1	3	2	12	
D 108872	12	3	114	. 2	2	2	14	
D 108873	32	9	553	.9	2 5 6	1	14	
D 108874	21	4	178	. 2	6	4	14	
D 108875	97	2	80	.1	8	4	11	
D 108876	131	2	107	. 2	5	5	18	
D 108877	88	3	118	.1	5	6	14	
D 108878	57	2	128	.1	11	1	13	
D 108879	10	2	90	.1	2	1	14	
D 108880	81	2	91	.1	5	1	12	<b>,</b>
D 108881	507	5	29	.5	13	4	14	
D 108882	216	2	79	.1	7	1	14	
D 108883	60	2	114	.1	2	2	12	
D 108884	42	2	129	.1	3	4	14	Į
STANDARD C/		44	131	7.5	40	490	_	

852 E. HASTINGS ST. VANCOUVER B.C. V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716



# **GEOCHEMICAL ANALYSIS CERTIFICATE**

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I.M. Watson & Assoc. Ltd. PROJECT HIT FILE # 91-3148
904 - 675 W. Hastings St., Vancouver BC V68 1W2

SAMPLE#	Cu ppm	Pb ppm	Zn ppm	ppm ppm	Au* ppb	
R 9178 E 12540	2508 25	16 8	181 74	.8 2 .2 2	8 6	

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HN03-H20 AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER. THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL. AU DETECTION LIMIT BY ICP IS 3 PPM. ASSAY RECOMMENDED FOR ROCK AND CORE SAMPLES IF CU PB ZN AS > 1%, AG > 30 PPM & AU > 1000 PPB - SAMPLE TYPE: ROCK AU\* ANALYSIS BY ACID LEACH/AA FROM 10 GN SAMPLE.

DATE RECEIVED:

AUG 2 1991

DATE REPORT MAILED: Huy 12/91

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#### GEOCHEMICAL ANALYSIS CERTIFICATE

I.M. Watson & Assoc. Ltd. PROJECT HIT File # 91-4887 904 - 675 W. Hastings St., Vancouver BC V6B 1N2

SAMPLE#	oM mag	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V Ca ppm %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	₩ ppm	Au* Opb
			<del></del>										<u>-:</u>						400			4 3/					٥,	3/		
D 101632	1	15	4	94	• 1	2	10	986		- 4	5	ND	1	84	. 2	2	2	6 3.23		- (		1.26	41	.01	4	.63	.04	.24	1	18
D 101633	1	29	2	77	- 3	8	14	833		. 3	5	ND	1	90	.2	2	2	12 3.28		6	-	1.49	23	.01	4	.76	.03	.19	1	12
D 101634	2	55	4	69	. 1	7	15	1007		2	5	ND	1	62	.2	2	2	18 3.36		5		1.30	31	.01	2	.88	.03	.18	1	9
D 101635	2	5	2	53	- 1	5	2	553		2	5	ND	1	24	.2	2	2	1 1.30		6	10	.46	17	.01	7	.31	.03	-11	1	6
RE D 101640	1	4	2	68	-1	3	3	1164	1.15	2	5	ND	1	46	.2	2	2	1 1.35	.021	8	8	.57	21	.01	6	.40	.01	.16	1	1
D 101636	10	19	68	244	4	6	5	912	1.82	15	5	ND	1	26	2.3	2	2	3 1.24	.028	5	8	.52	25	.01	4	.44	.02	.16	1	1
D 101637	3	33	339	211	.5	4	3	1049	1.36	5	5	ND	1	24	1.3	2	2	2 1.06	024	8	7	.41	26	.01	7	.46	. 02	. 17	1	3
D 101638	2	9	14	150	.1	4	3	2286	2.07	2	5	ND	1	54	. 2	2	2	2 2.63	.020	6	10	1.00	21	.01	2	.38	.02	-15	1	3
D 101639	1	4	8	62	. 1	2		1296		. 2	5	ND	1	37	. 2	2	2	1 1.44	.022	10	7	.55	21	.01	7	.39	.02	. 14	1	2
D 101640	1	4	2	66	-1	3		1141		2	5	ND	1	44	.2	2	2	1 1.34	.020	8	7	.56	20	.01	5	.37	.01	. 15	1	1
D 101641	4	72	2	77	.3		11	1081	2 40	12	5	ND	1	48	.2	2	2	7 2.65	045	5	R	.93	26	.01	4	.43	.03	.16	1	1
_	2	12		39		4	' '	618		12	5	ND	1	37	.2	2	2	1 1.83		1	9	.46	22	.01	6	.39	.04	.12	1	ż
D 101642	_	/4	100	207	.6	7	2	835		7	5	ND	4	32	1.6	2	2	1 1.37		. 7	8	.51	16	.01	7	.26	.02	.11		9
D 101643	11	46		_	.5	4	-			. ,	5		1	35	1.7	2	2			7	10	.53	19	.01	5	.31	.02	.13	ż	5
D 101644	44	21	261	173	.3	6	2	746			_	ND	- 1			2	2	1 1.08 1 1.04		۷.	10	.60	21	.01	6	.36	.01	. 13	. 3	3
D 101645	11	9	58	102	.3	8	4	931	1.40	•	5	ND	ı	37	.6	2	4	1 1.04	.022	6	10	.60	21	.01	ū	.50	.01			3
D 101646	5	64	65	1048	.4	5	4	1736	1.56	6	5	ND	1	37	7.6	2	2	1 1.48		6	11	.87	15	.01	5	.26	.02	10	10	2
D 101647	5	21	48	408	.3	7		1019		. 3	5	ND	1	28	3.5	2	2	1 .91		5	10	.59	25	.01	5	.30	.02	-11	11	2
D 101648	1	6	12	97	2	5	-	1054		. 2	5	ND	1	43	.7	2	2	5 1.96		4	9	.85	17	.01	8	.41	.02	-11	. 1	5
D 101649	1	12	7	140	.2	4	8	1777	3.47	- 2	5	ND	1	46	.6	2	2	9 2.70		5		1.19	19	.01	5	.58	.04	.12	. 1	9
D 101650	1	5	6	135	1	4	9	1599	3.77	2	5	ND	1	42	.2	2	2	9 2.68	.063	5	9	1.15	18	.01	4	.53	.04	.11	1	1
D 107351	2	24	31	173	-2	3	8	1375	3.21	5	5	ND	1	41	.7	2	2	9 2.15	.060	3	7	.94	16	.01	5	-41	.03	.09	2	5
D 107352	1	15	20	220	.2	3		1721		3	6	ND	1	86	1.7	2	2	10 4.87	.034	. 2	3	1.88	223	.01	5	.33	.02	. 10	2	15
D 107353	1	14	24	152	2	3	9	1467	2.06	2	5	ND	1	99	1.5	2	2	5 4.20	.016	2	7	1.63	13	.01	4	.22	.01	.09	1	49
D 107355	1	14	ž	52	.1	7		947		. 4	5	ND	1	149	.2	3	2	34 4.94	.089	8	7	2.03	105	.01	6	.38	.02	.15	1	12
STANDARD C/AU-R	18	59	43	133	7.1	71		1044		42	18	7	35		18.0	16	18		.090	38	58		177	.09	33	1.90	.06	. 15	11	510

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HN03-H20 AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER. THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI 8 W AND LIMITED FOR NA K AND AL. AU DETECTION LIMIT BY ICP IS 3 PPM. ASSAY RECOMMENDED FOR ROCK AND CORE SAMPLES IF CU PB ZN AS > 1%, AG > 30 PPM & AU > 1000 PPB AU\* ANALYSIS BY ACID LEACH/AA FROM 10 GM SAMPLE. Samples beginning 'RE' are duplicate samples. - SAMPLE TYPE: CORE

OCT 3 1991 DATE REPORT MAILED: Out 7/91.

-17.

44

#### GEOCHEMICAL ANALYSIS CERTIFICATE

I.M. Watson & Assoc. Ltd. PROJECT HIT File # 91-4936 904 - 675 W. Hastings St., Vancouver BC V6B 1N2 2

SAMPLE#	Mo	Cu	Pb	Zn	Ag	Ní	Co	Mn	Fe	As	U	Au	Th	\$r	Cd	\$b	Bi	٧	Ca	P	La	Cr	Mg	Ba	Ti	В	Αl	Na	K		Au*
	bbu	ppm	ppm	ppm	ppm	ppm	bbu	bbu	- %	bbu	ppm	ppm	ppm	ppm	ppm	bbu	ppm	ppm		7.	ppm	ppm	7	ppm	76	ppm	74	7.	7.	bban	ppo
D 107356	8	22	135	300	4.8	11	3	224 1	.07	3	5	ND	1	14	17.5	2	2	4	.36	.008	2	12	.14	8	.01	2	.12	.01	.07	2	370
D 107357	22	108	37	59	3.0	18	13	399 2	.55	7	5	ND	1	40	3.3	2	2	7	1.11	.027	2	7	.44	15	.01	2	.24	.01	.17	. 2	320
RE D 107359	12	36	318	267	1.3	10	8	505 1	.88	8	5	ND	1	45	10.2	2	2	5	1.36	.030	2	24	.57	24	.01	5	.23	.01	.13	1	72
D 107358	7	127	14	72	.6	17	15	1203 3	.34	9	5	ND	1	126	1.8	3	2	11	4.62	.045	2	6	1.77	21	.01	3	.34	.01	.22	2	35
0 107359	13	37	349	290	1.6	11	9	521 1	.97	7	5	ND	1	47	11.2	2	2	6	1.45	.030	2	26	.60	19	.01	3	.24	.01	.13	2	73
D 107360	4	156	15	661	.7	12	17	1256 <b>3</b>	.92	11	5	ND	1	132	11.5	2	2	13	4.29	.068	2	7	1.80	23	.01	5	.55	.01	.21	1	30
D 107361	1	199	6	104	.7	15	22	1154 4	.55	9	5	ND	1	146	1.3	2	2	19	5.11	.077	4	5	2.55	199	.01	2	.43	.02	.22	2	18
D 107362	6	41	147	145	.8	10	10	1131 3	.34	12	5	ND	1	182	3.6	3	2	16	4.73	.066	2	4	1.71	33	.01	4	.31	.02	. 15	2	39
STANDARD C/AU-R	20	59	43	135	7.3	70	32	1110 4	.04	42	18	7	37	52	18.5	16	21	58	.49	.089	39	59	.88	178	-09	36	1.93	.06	. 15	11	490

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER. THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL. AU DETECTION LIMIT BY ICP IS 3 PPM. ASSAY RECOMMENDED FOR ROCK AND CORE SAMPLES IF CU PB ZN AS > 1%, AG > 30 PPM & AU > 1000 PPB
- SAMPLE TYPE: CORE AU\* ANALYSIS BY ACID LEACH/AA FROM 10 GM SAMPLE. Samples beginning 'RE' are duplicate samples.

DATE RECEIVED: 001 7 1991 DATE REPORT MAILED: Of 9/6