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**GEOLOGICAL ASSESSMENT REPORT**

on the

**MADISON CLAIM GROUP**

**FILMED**

**Slocan Mining Division**

**NTS 82F/14E**

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

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**October 15, 1993  
Vancouver, B.C.**

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Consulting Geologist**

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# Geological Assessment Report

on the

Madison Claim Group

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## Introduction

This geological report on the Madison Claim Group hereinafter referred to as the subject property is primarily based on a joint/fracture study. The purpose of the study was to determine the dominant indicated structural trend on the subject property as a possible correlative structure and/or trend to the productive Ruth-Hope Lode to the southwest.

The report was prepared as part of the assessment work requirements to work the writer completed on the subject property during the period of July 06, 1993 to July 15, 1993

## Summary

The subject property is comprised of five reverted crown grants located within one of the former major production areas of silver-lead-zinc ores. The Silvana Mine, located at Sandon derived silver ore primarily from the Ruth-Hope Lode which extends some 1,500 metres southwesterly from near Sandon. Operations at the Silvana project were recently suspended.

The subject property is located within one kilometre north of the Silvana project and covers ground from which 20 tons of ore was shipped in 1898 with two tons reportedly shipped in 1911. The subject property reportedly cover two lodes; each of which is opened up by three adits. One of the adits which has been located returned assays of dump grab samples up to 60.10 oz silver per ton. A grab sample from a one metre wide vein exposed at the portal returned an assay of 11.30 oz Ag/ton and 0.376 oz Au/ton.

A 1984 soil geochemical program delineated an anomalous area in the northeastern sector of the subject property from which one soil sample returned 118.8 ppm Ag.

The conclusions derived from the the 1993 joint/fracture study indicate that the dominant joint direction on the subject property generally correlates with the direction of the productive Ruth-Hope Lode.

### Property

The subject property is comprised of five contiguously reverted crown grants. Particulars are as follows.

<u>Claim Name</u>	<u>Record No.</u>	<u>Lot No.</u>	<u>Expiry Date*</u>
Argenta	4052	1412	July 15, 1994
Great Eastern	4049	2289	July 15, 1994
Madison	4050	1411	July 15, 1994
L.D. Fraction	4051	1749	July 15, 1994
Legal Tender	4051	1759	July 15, 1994

\* Upon the approval of one years assessment work applied July 15, 1993 for which this report forms a part thereof.

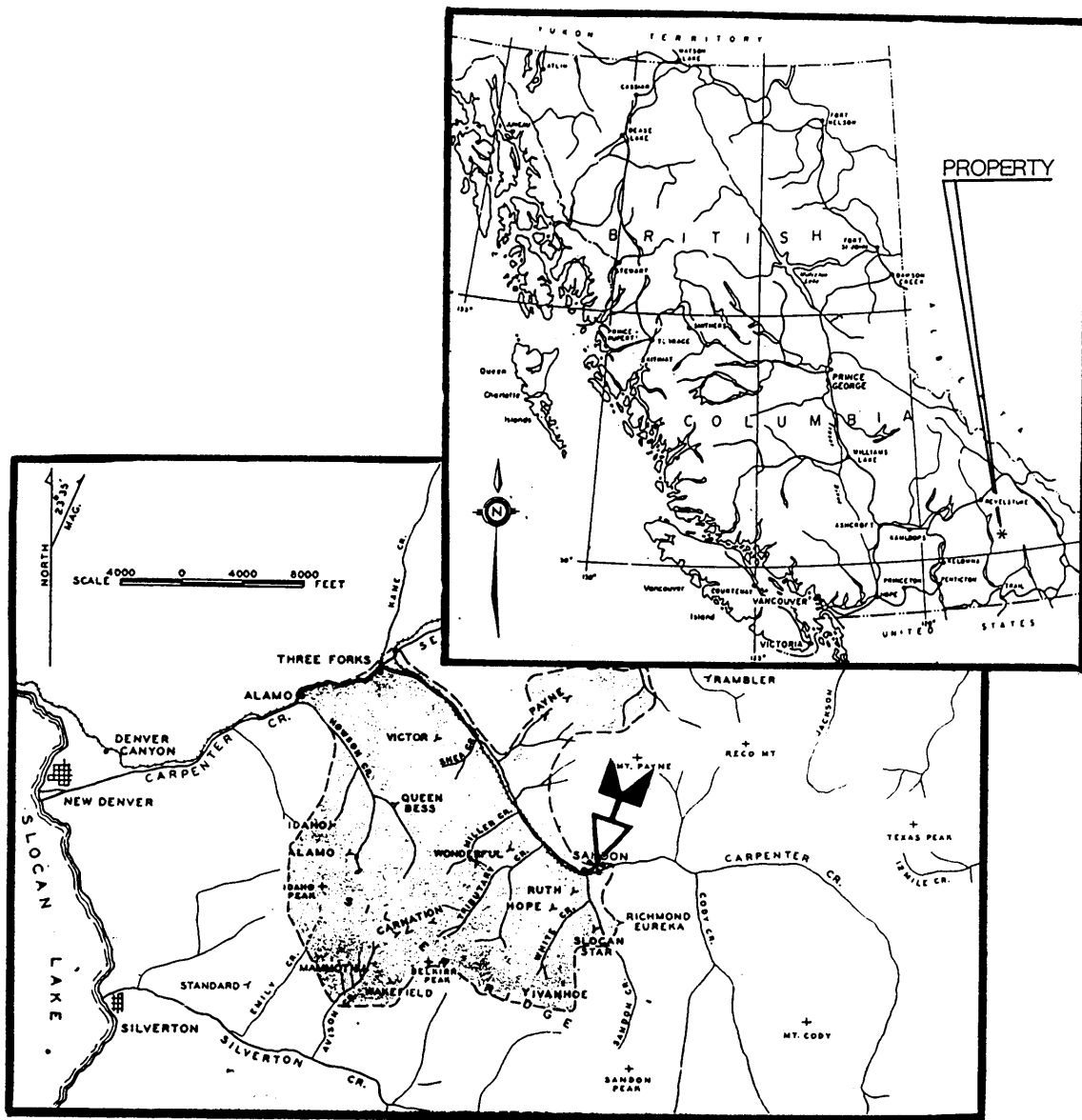


Figure 1. Location Map. (Base Map after Hedley)

### Location, Physiography and Access

The subject property is located one kilometre northeast of Sandon, B.C. and within 500 metres north of Carpenter Creek on the south facing slopes of Mount Payne. The former producing Silvana mine is within one km south of the subject property with the concentrator located at Sandon. The Hallmac property is one km to the northwest.

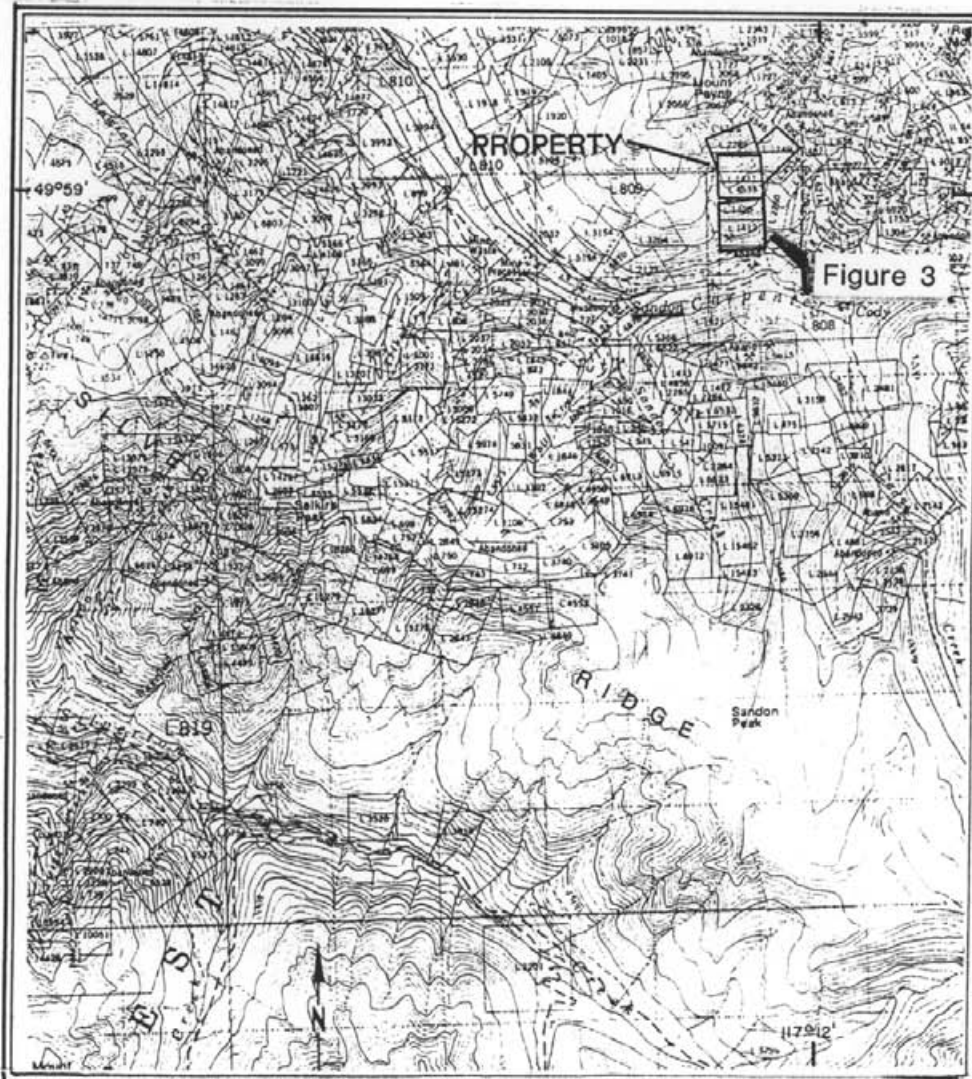


Figure 2. Claim and Index Map showing the Madison Claim Group Property

Base Map: Ministry of Energy, Mines and Petroleum Resources Map 82E14E

Steep forested slopes prevail on the subject property with elevations of up to 1,980 meters at the northern boundary from 1,210 meters in the south along the Carpenter Creek valley.

Access is provided by gravelled secondary road from Sandon for one km eastward passing within 200 metres of the lower claim boundary. A poor secondary pack trail road extends northeastward to the workings and to the northern limits of the subject property.

## Climate

The Sandon area is within a relatively heavy snowfall belt in that the subject property may be snow free for only seven months of the year. The six km paved Highway 31 portion east from New Denver to the Three Forks junction and the gravelled portion for six km southward to Sandon is maintained year round, providing year - round access to the subject property.

## Transportation and Supplies

The highway from Three Forks to Trail, a distance of 125 km is paved and maintained throughout the year. Most supplies could be purchased in New Denver or Trail. Castlegar, 32 km north of Trail is served daily by commercial airline from Vancouver.

## History

The historic Sandon Area of the Slocan Mining Camp was the centre for production of silver-lead-zinc ores and contributed half the entire output of silver and lead in the Slocan Mining Division. Exploration and mining commenced in the 1890's with the height of the activity lasting into the 1920's. With the oncoming depression period, production gradually subsided in relation to a declining metal market to where only sporadic production was recorded.

The Silvana property was the only substantial continuous producer in the area for many years to its recent suspension of operations. Mining was primarily from the Ruth-Hope lodes with the workings extending from near Sandon some 1,500 metres southwesterly.

The history of the Madison claim group is reported by Cairnes (1935) as:

"The only recorded production, amounting to 20 tons, was made in 1898. Three tons are also reported to have been shipped to Trail in 1911."

A diamond drill hole reportedly completed on the Argenta adit area in the 1970's reportedly returned a core assay of 30 ounces silver over three metres (10 feet).

To the best information of the writer, in June of 1984 a geochemical and geological survey was done on the subject claim group. The results of the geochemical survey indicated one prime multi-element geochemical anomaly in the northern portion of the subject property. Substantial soil geochemical silver values of up to 118.8 ppm, with lead values of up to 9,382 ppm, zinc values of up to 4,351, and arsenic values of up to 746 ppm are correlative over a 500 metre line interval. Other significant localized anomalous geochemical values were obtained from the subject property.

In 1988, 1989 and 1992 some physical work was completed on the subject property.

## Regional Geology

The dominant rocks of the Sandon area are of the Slocan sediments of Triassic age which include argillite, quartzites and limestones and every admixture of these as well as some tuff. They are characteristically nonslaty and have been subjected only locally to thermal metamorphism. There has been only local silicification, particularly of limestone.

The sediments have been invaded by granitic dykes and by small stock like masses closely related to the intrusion of the Nelson batholith. Other intrusive rocks, which are considered to be related to but somewhat younger than the main intrusion of the Nelson batholith, occur as dykes, sills and stock-like bodies and are widespread throughout the whole district.

Most of the intrusives are locally termed porphyries with some classified as a "birds-eye" porphyry. Well developed porphyritic texture however is not characteristic of the dykes and sills. Many intrusive sheets are sill-like and follow the bedding more on strike than on dip.

Structurally, the regional northwesterly trending recumbent Slocan fold is a composite structure of complex asymmetrical and overturned folds which are in part buckled and/or folded. From a central zone of no plunge from the Silverton area, northeasterly to north of Sandon and to Retallack, the plunge is northeasterly to the north and southeasterly to the south.

A northeasterly trending belt of slate designated as the Payne slate belt extends from the vicinity of Cody, two km east of Sandon, across Mount Payne to Three Forks, is interpreted in part as a shear zone along which adjustment took place.

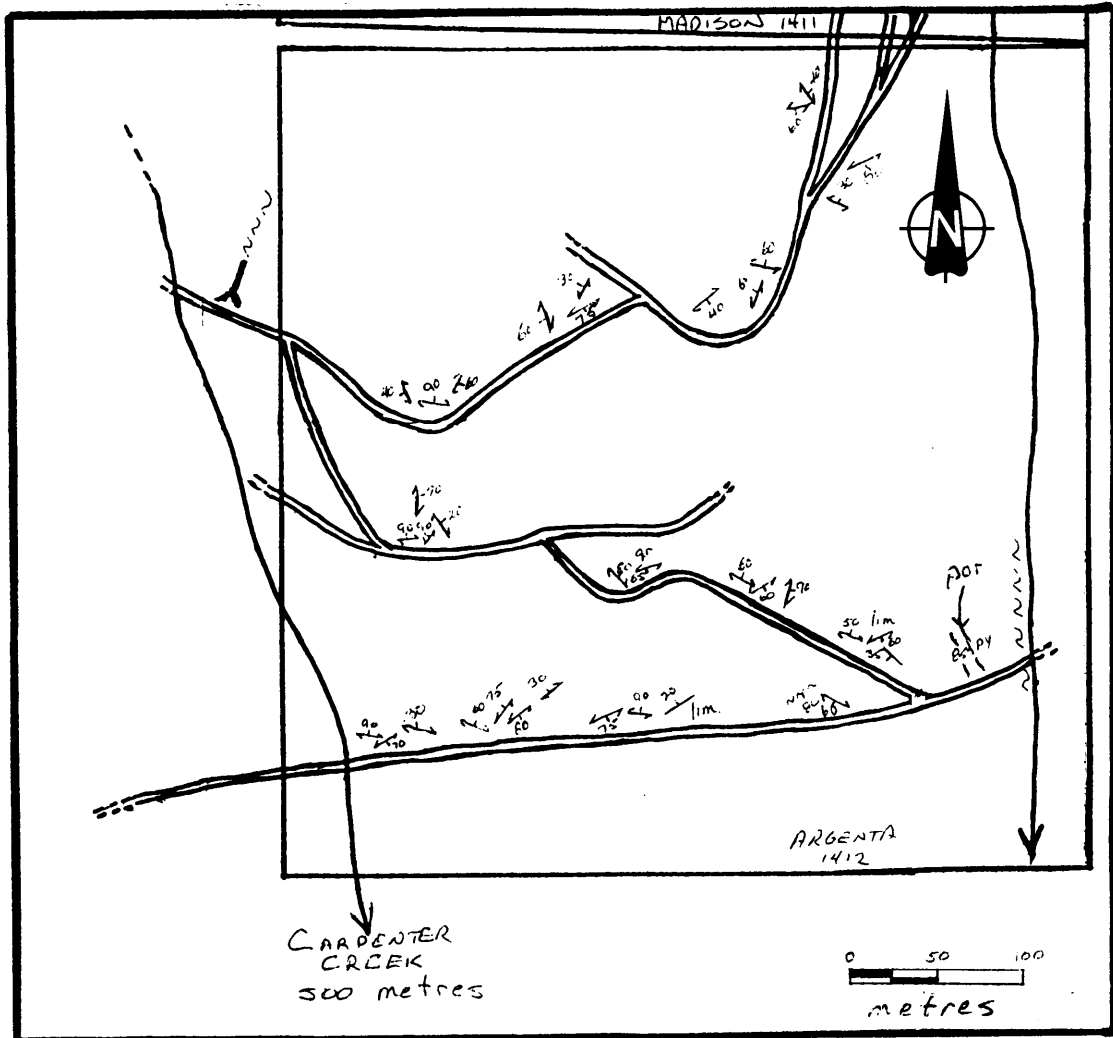
Lodes or structures known to be mineralized include the Payne Lode which crosses the ridge extending northwestward from Mount Payne and dips steeply to the southeast. The lode crosses a variety of rocks which are all somewhat slaty. The slate is best developed on the Carpenter Creek slope.

The Payne mine, on a portion of the Payne Lode, is developed by seven adits to a depth below the outcrop of 442 metres. The main oreshoot averaged 300 metres long with a maximum length of 380 metres. The Lode is reported to have carried a paystreak of 2.5 cm to 2.4 metres of galena and averaging ten to 15 cm. Bands of siderite and sphalerite make up the remainder of the lode filling. Production from the Payne Mine amounted to some five million ounces of silver, 50 million pounds of lead and two million pounds of zinc.

Property Geology

Cairnes (1935) describes the workings on the Madison Group as:

"The old workings develop two lodes known as the "Argenta" and "Madison," respectively. These are parallel, about 400 feet apart, and strike north 35 degrees respectively. Each is opened up by three adits. The northwesterly or Argenta lode carried dry ore."



LEGEND

- |       |                    |                |
|-------|--------------------|----------------|
| Road  | Joint/Cleavage     | Py - Pyrite    |
| Creek | Fault              | Lim - Limonite |
| Adit  | Bedding            | Por - Porphyry |
|       | Geological Contact |                |

Figure 3. Map of the Argenta claim of the Madison Claim Group showing the joints mapped in the study.



The geology as described by J. Robins, B.Sc., geologist, from the geological mapping program completed in 1984, is reported on as follows:

"The four claims are almost entirely underlain by sedimentary rocks, predominantly shales and graphitic phyllites with minor horizons of quartzites. The rocks generally strike NW/SE and are commonly folded. Intruding the sediments are porphyry dykes which may contain large white feldspar phenocrysts or a combination of smaller biotite and feldspar phenocrysts. Two distinct fault/shear zones are evident on the subject property. These tend to strike approximately NNE/SSW and are roughly subvertical. The old adit on the Argenta claim follows one of these faults along a graphitic shear zone."

#### Mineralization

The mineralization on the subject property is described by Robins (1984) as primarily disseminated pyrite in minor (<1%) amounts, generally occurring along the bedding planes of the shales and phyllites. In one location on the Argenta claim some semi massive Pb, Zn, Ag was found along an old road cut from which a sample returned an assay of 60.19 oz Ag/ton and 27.24 % Zn.

A grab sample taken in 1989 by the writer from a one metre wide quartz bearing structure exposed at the portal returned an assay of 1.31% Zn, 10.10 oz Ag/ton and 0.337 oz Au/ton. A re-assay of the sample returned 11.30 oz Ag/ton and 0.376 oz Au/ton. A sample from a quartz barren section of the structure returned 0.11 oz Ag/ton and 0.001 oz Au/ton.

#### 1993 Exploration Program

The 1993 exploration program consisted of the accumulation of predominantly joint orientation data as an aid in the determination of the potential for the "crosscutting" lodes on the subject property.

Marshak et al (1988) state that many joint surfaces display plumose structure which develops as a consequence of local variations in fracture propagation velocity and in the stress field, and as a consequence of inhomogenities in the rock.

Due to the irregularities of the joint sets in these conditions the plume axis of the joint pattern should be established. The dominant joint direction, or the plume axis, could be the primary stress relief plane for formation of the focal crosscutting lodes.

The quantity method was utilized in the mapping procedure and the domain was the Argenta claim - the nearest area to the northeast extension of the productive Ruth-Hope Lode.

The Argenta claim was also selected for the study because of the rock exposures in the road cuts. Thirty six joint/fracture readings were taken and subsequently plotted on a Rose Diagram as shown in Figure 4.

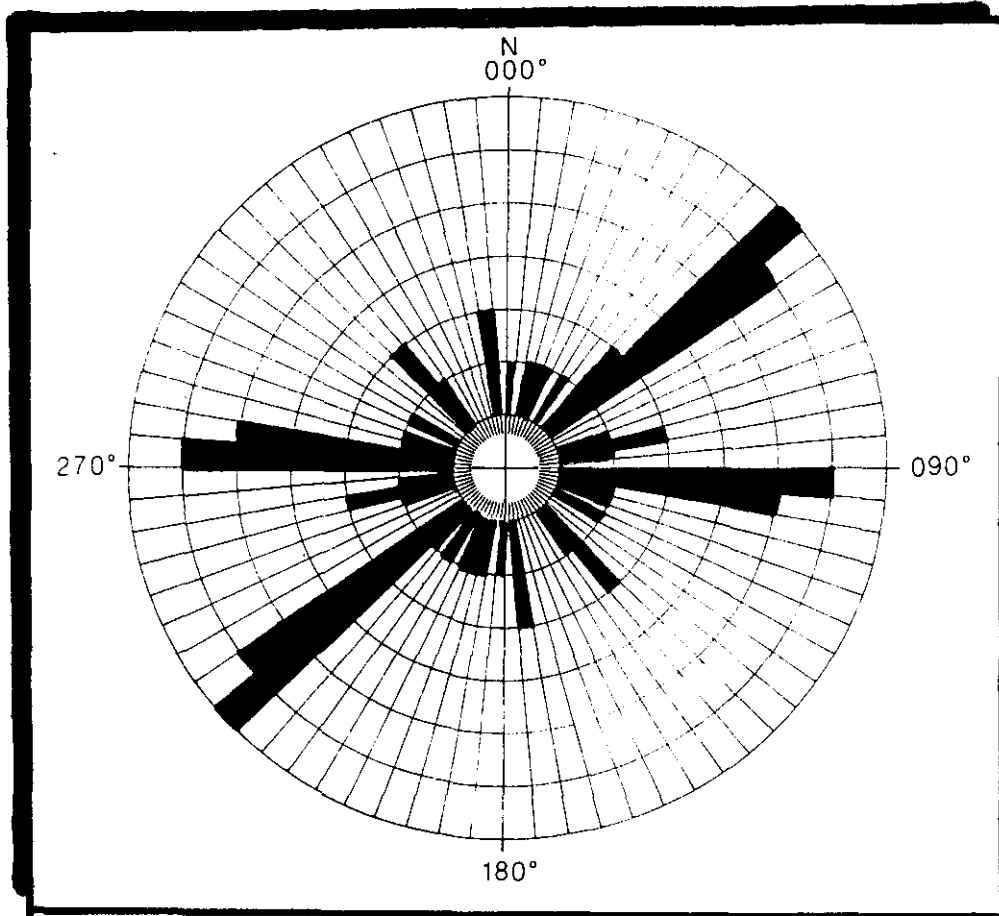


Figure 4. Rose Diagram showing the dominant joint direction on the Argenta Claim of the Madison Claim Group.

The class interval on the Rose Diagram is represented by a 5° interval with the maximum in a single class interval, or to the limits of the Rose Diagram, at five. The results indicate the dominant joint direction at 45° to 55° with a second order set at 90° to 100°.

### Conclusions

The dominant joint directions could have been initially developed as a result of folding, or could have resulted in that "...in a regionally developed set of joints some joints became faults of minor displacement, and that increasing movements were channelled along others. It can never be determined whether or not the larger crosscutting faults initially followed actual joint fractures,..." (Hedley, 1952).

If the dominant joints relate to faults developed along initial joint cleavage, the northeasterly joint direction generally correlates to the direction of the shear hosting the mineralization in the adit as indicated on Figure 3 and relates to the direction of the lode hosting the Ruth - Hope mineral deposits to the southwest across Carpenter Creek. These lodes and structures are the productive crosscutting faults of the area.

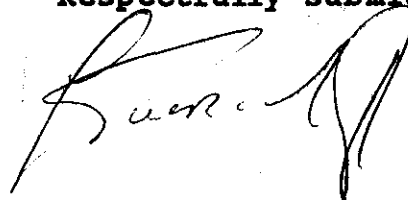
There is a minor indication to the major tangential fault system of the Cody - Mount Payne structure that hosts the significant Payne mineral deposits in addition to the parallelling Carpenter Creek structure.

It is thus concluded that the subject property covers potential lodes-one of which could be northeasterly extension of the Ruth-Hope lode.

### Recommendations

Additional detailed geological mapping should be completed on the subject property to locate potential lode systems. The mapping should be focussed on determining the lode potential of three areas: the adit zone; the porphyry zone in the eastern swithback area; and the delineated soil anomalous zone in the northeastern sector of the subject property.

Respectfully submitted,



Laurence Sookochoff, P.Eng.

October 15, 1993  
Vancouver, B.C.

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**Certificate**

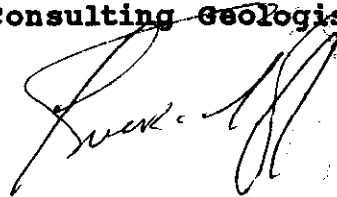
I, Laurence Sookochoff, of the city of Vancouver, in the Province of British Columbia, do hereby certify:

That I am a Consulting Geologist with offices at 1027-510 West Hastings St., Vancouver, B.C. V6B 1L8

I further certify that:

1. I am a graduate of the University of British Columbia (1966) and hold a B.Sc. degree in Geology.
2. I have been practising my profession for the past twenty-seven years.
3. I am registered with the Association of Professional Engineers of British Columbia.
4. Information for the accompanying report was obtained from sources cited under Bibliography and from work the writer performed on the Madison claim group.

Laurence Sookochoff, P.Eng.  
Consulting Geologist



October 15, 1993  
Vancouver, B.C.

Madison Claim Group  
Statement of Costs

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The field work on the Madison Claim Group was carried out from July 06, 1993 to July 15, 1993 to the value as follows:

Geological

Laurence Sookochoff, P. Eng. 2 days @ \$550.	\$ 1,100.00
Car rental: 3 days @ \$70.00 plus gas & km	325.00
Room & board: 3 man days @ \$125.00	375.00
Report, xerox, printing & compilation	<u>500.00</u>
	\$ <u>2,300.00</u>