

'85-260-13638
5/86

OPHIR MINERAL CLAIM

93L/10, Lat. $54^{\circ}42'$ N, Long. $126^{\circ}34'$ W
Omineca Mining Division
British Columbia

PROSPECTING REPORT

OWNER: A. L'ORSA

OPERATOR: FREEMONT GOLD CORP.

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

13,638 ✓

by

Anthony L'Orsa, M.Sc., F.G.A.C.
Smithers, B.C. 12 March 1985

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SUMMARY

Four days were spent doing a geological and geochemical reconnaissance of the 15-unit Ophir mineral claim located near the southeastern base of Dome Mountain. The claim is forested and covered by till, and outcrops are rare.

Small amounts of pyrite and chalcopyrite were found in disseminations and fracture fillings in felsic pyroclastic rocks, and very finely disseminated galena(?) was discovered in volcanic sandstone. The rocks apparently belong to the Nilkitkwa Formation of the Hazelton Group. Diabase occurrences on the claim are probably Tertiary in age.

Thirty-one silt and soil samples were analysed for Au, Ag, As, Cu, Pb and Zn. Several modest anomalies were discovered and more work is recommended.

INTRODUCTION

Four days were spent prospecting the Ophir mineral claim during July, 1984. Prospecting traverses were run at approximately 250 m intervals on west-striking lines across the claim, using chain and compass or pace and compass, and aerial photographs for control. The accompanying maps are based upon a photo mosaic prepared by Triathlon Mapping Corp., Burnaby, B.C. Rocks collected on the traverses were examined with a Wild M7 stereo microscope.

Several major exploration companies conducted helicopter-supported reconnaissance programs in the area in the 1960's, a time when there were no useable roads and logging had not yet started. The remains of an exploration camp dating from those days was found near the centre of the claim.

LOCATION AND ACCESS

The Ophir claim lies near the southeastern base of Dome Mountain. The claim is centred at approximately $54^{\circ}42'$ N latitude and $126^{\circ}34'$ W longitude (Map 93L/10), about 38 km southeast of Smithers, the railway (CNR), paved highway, gas pipeline and main electricity transmission system.

Excellent summer access is provided by the Deception Lake logging road which crosses the claim and by logging clear-cuts in the eastern and extreme southern sectors of the claim. The Chapman Lake Forest Road passes 1.5 km northeast of the claim and is open all year.

The claim is generally free of snow from early June until late October. However, substantial snowfalls can occur as early as September.

PHYSIOGRAPHY

The area is one of low relief, cut by the shallow valley of Guess Creek. The average elevation of the claim is approximately 1 040 m. Guess Creek and two tributary creeks cross the claim and carry sufficient water for exploration and mining purposes.

Balsam fir, spruce and lodgepole pine cover most of the claim. However, there are several natural meadows and swamps, and parts of the eastern and southern claim areas have been logged. More than 99% of the claim is obscured by overburden comprising mostly till with local swamp deposits, and sand and gravel along Guess Creek.

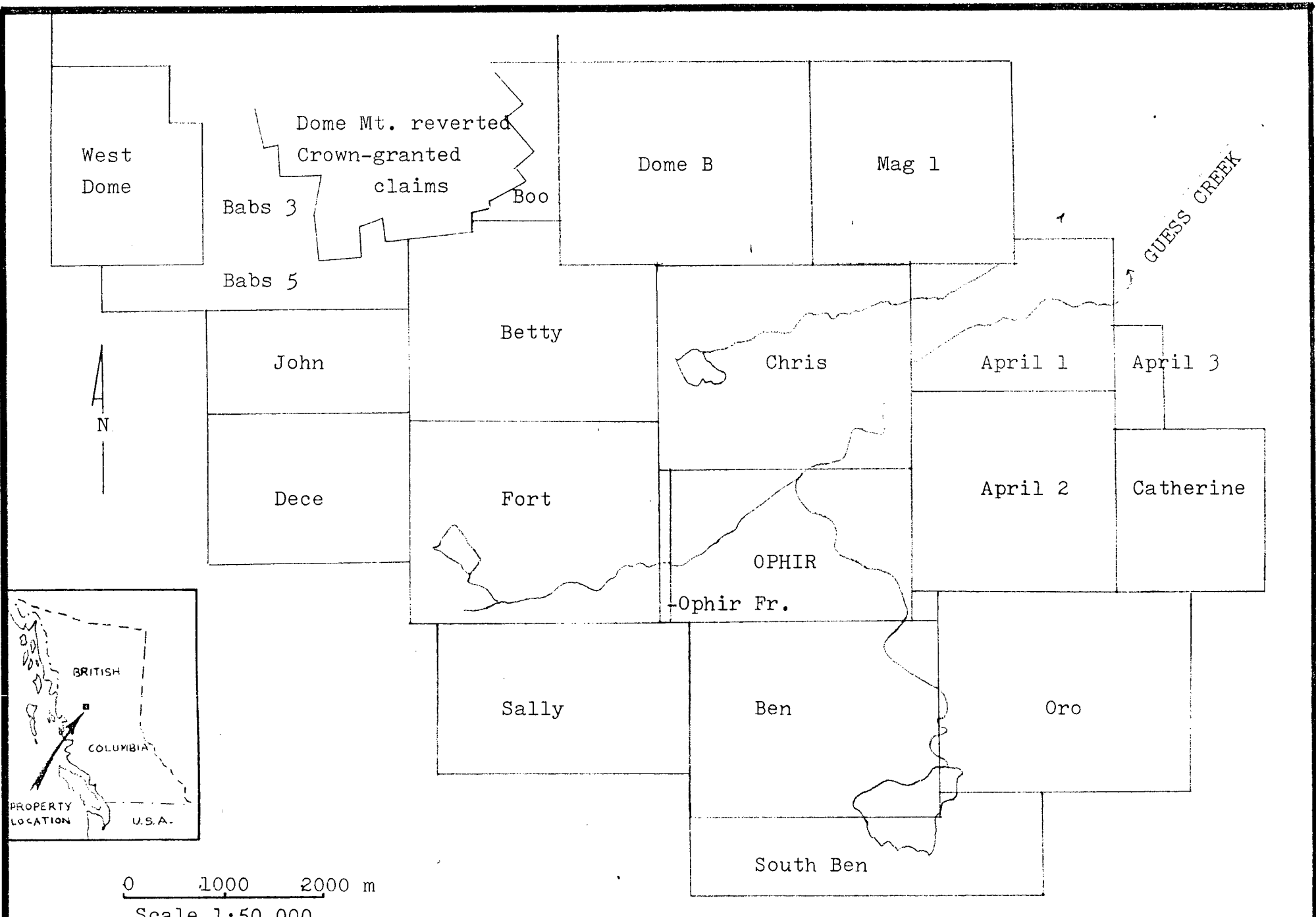


Fig.1

Southern Dome Mt. Area

CLAIMS SKETCH MAP

Based upon Government claims map 93L/10E. Locations approximate.

CLAIM AND OWNERSHIP

The Ophir mineral claim comprises 15 units, record number 6174. I recorded the claim in my name on 7 May 1984 and optioned the claim on 31 August 1984 to Freemont Gold Corp., 600 - 1285 West Pender St., Vancouver, B.C.

I have seen no evidence of previous staking in the claim area.

GEOLOGICAL SETTING

The rocks exposed in the general area of Dome Mountain range from upper Paleozoic limestone and chert at Fulton Lake, through Mesozoic island arc volcanic and sedimentary rocks of the Hazelton Group and epiclastic rocks that were deposited in a successor basin (Tipper, 1976) to Tertiary basalts 3 km east of the Ophir claim.

Almost all the rocks in the area of the claim are believed to belong to the Hazelton Group. These rocks include part of the Babine shelf facies, which is a broad transition zone between an extensive Lower Jurassic subaerial volcanic complex to the west and marine deposits of the same age to the east (Tipper and Richards, 1976). Andesitic volcanoclastics appear to predominate in the general vicinity, but there are also several occurrences of felsic volcanic rocks near and within the claim. The sedimentary rocks comprise a variety of epiclastic rocks with local limestone and chert. At least some of these rocks were deposited under shallow marine conditions, judging from the associated fossils. The bedded rocks generally strike to the northwest.

The rocks of the Hazelton Group are intruded by a few stocks and dykes or sills that range in composition from granitoid to

diabase and that range in age from Late Triassic to Tertiary.

There are many steep normal faults in the area as well as several thrust faults that moved in a northeasterly direction (Tipper, 1976).

Mineral deposits in the general area include numerous exposures of gold, silver and base metals in shear zones on Dome Mountain in a zone extending from about 4.5 to 8 km northwest of the claim (Myers, 1985), the Del Santo volcanogenic massive sulphide-oxide prospect about 7 km southwest of the claim (Price, 1978), and several occurrences of base and precious metals in felsic volcanic rocks on claims adjacent to or very near the Ophir claim (L'Orsa, prospecting notes).

GEOLOGY OF CLAIM

The recent geological map of the area (Tipper, 1976) shows the claim covered by Quaternary alluvium. A thrust fault from the west is shown to terminate on the claim, against the major fault followed by Deep and Guess Creeks. As shown on the accompanying map (fig. 2), I have found four small areas of outcrops on the claim.

In the eastern part of the claim two outcrops about 500 m apart display similar lithologies, common to both is a medium-grained, dark grey-green volcanic sandstone containing a few belemnoids. Very approximately 10% of the sand grains are red. Samples from the northern outcrop carry approximately 5% very fine-grained disseminated pyrite and a few rounded pyrite grains. Two samples of volcanic sandstone collected from the road outcrop contain less than 0.5% very fine-grained disseminated galena(?). Rocks at this locality also include minor amounts of chert and limestone.

In the southwestern quadrant of the claim there are outcrops on a small hill of a fine to medium-grained, medium dark green-grey intrusion that is probably diabase. The mafic minerals are chloritized, calcite is locally common as fracture fillings and disseminations, and red hematite(?) alteration is present. The rock also contains approximately 5% disseminated magnetite and less than 0.5% disseminated pyrite.

On the northern bank of Guess Creek, near the central western boundary of the claim, there is another cluster of small outcrops. The rocks here are mostly light grey, brown weathering, medium-grained felsic tuffs. Some of the rocks contain clear quartz "eyes" about 1 mm in diameter. A 7 mm long chloritized and pyritized lithic fragment was noted. The felsic tuffs carry generally less than 3% disseminated and fracture filling pyrite with small amounts of chalcopyrite. Quartz, carbonate and chloritic veinlets are present and their distribution indicates multiple phases of fracturing.. Minor chlorite was found in the rock matrix and interstitial iron-bearing carbonate alteration appears to be ubiquitous.

Direct current plasma-atomic emission spectroscopy analyses of two grab samples of pyrite-bearing felsic tuff by Bondar-Clegg & Co., Ltd. yielded the following in parts per million:

	<u>Au</u>	<u>Ag</u>	<u>Cu</u>	<u>Mn</u>	<u>Zn</u>	<u>As</u>	<u>Pb</u>	<u>Sb</u>	<u>Te</u>	<u>W</u>	<u>Bi</u>
0-1	0.015	*0.5	*5	1000	75	5	30	*5	*10	*10	2
0-2	0.001	*0.5	45	700	60	*5	20	*5	*10	*10	*2

* less than

A small outcrop of diabase was also found on Guess Creek among the rocks described above. The diabase is generally fine-grained and medium grey in colour. The rock is chloritized, exhibits minor brown carbonate alteration and carries less than

LCP

GUESS CREEK

CLEAR CUT

Felsic tuff
Light grey, weathering brown.
Local quartz phenocrysts.
Mi.py & chalcopy in diss. & fractures.
Carbonatized, locally silicified.
Diabase dyke(?)

ROAD

Diabase(?), med. dk green-grey.
Plagioclase laths about 1 mm.
Magnetite; diss., up to 5%.
Pyrite; diss., less than 0.5%.
Red hematite(?) alteration.
Local calcite.

Volcanic sandstone, dk. grey-green.
• Medium-grained.
Few belemnoids.
Pyrite; diss. & grains, up to 5%

Volcanic sandstone, dk. grey-green.
Medium-grained. Very mi. pyrite.
Few belemnoids.
Galena(?); diss., very fine-grained,
less than 0.5%. Local.
Few, small, drusy quartz veins.
Limestone & chert, minor, brown-grey.
White calcite frac. fill. fluoresce
pink.



0 100 200 300 400 500 m

OPHIR MINERAL CLAIM	
Preliminary Map	
Scale 1:10 000	A.L'Orsa 1984

Fig. 2

0.1% disseminated, fine-grained pyrite. Veinlets of chlorite-quartz-calcite-pyrite are present. The sample I collected of this diabase is lighter in colour than the occurrence to the southwest and contains no obvious magnetite.

GEOCHEMISTRY

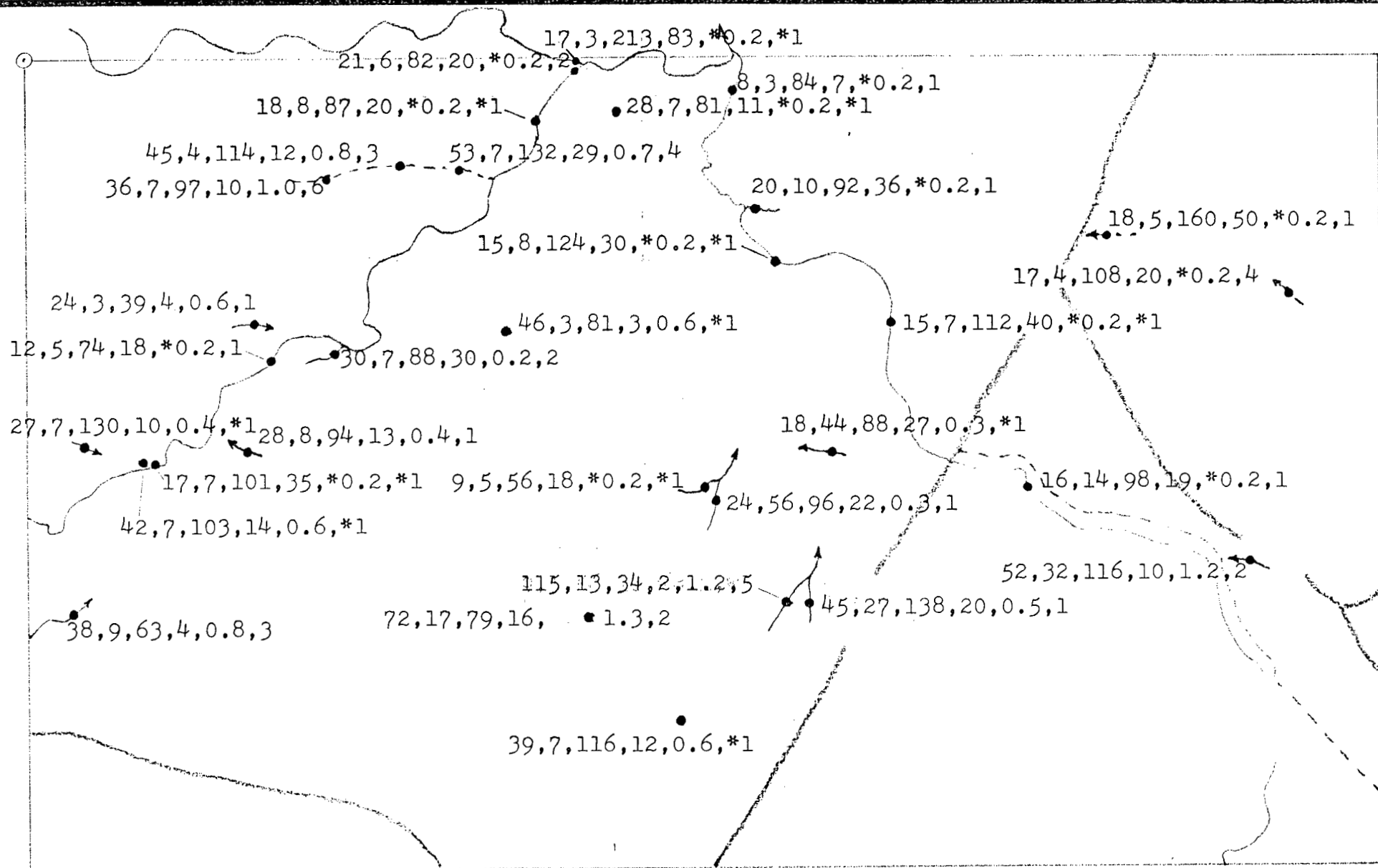
Thirty-one silt and soil samples in drainages were collected on the claim. The samples were analysed for "total" Au, Ag, As, Cu, Pb, and Zn by Bondar-Clegg & Co., Ltd., North Vancouver, B.C., and the results are plotted on figure 3. A summary of the analytical methods used for these samples is given in an appendix to this report.

Using the limited geochemical data presently available (73 samples) from the Ophir and adjacent claims, I have tentatively established the following local thresholds in ppm at about the arithmetic mean plus two standard deviations: Cu 55, Pb 12, Zn 160, As 50 and Ag 0.6. Most of the Au analyses were made on undersized samples and thus may be regarded with some reservations. Based upon experience in the general area, I consider the Au threshold to be about 20 ppb.

CONCLUSIONS

The occurrence of sulphide-bearing felsic pyroclastic rocks on the claim and on adjacent claims suggests the Ophir claim covers a good geological environment for the occurrence of volcanogenic ore deposits. In addition, the claim is close to, and generally on strike with, the dominant trend of the gold veins on Dome Mountain.

Preliminary reconnaissance geochemical results indicate two areas of special interest:



● Sample site: Cu, Pb, Zn, As, Ag, Au
 Au in ppb
 Others in ppm
 * Less than



0 100 200 300 400 500 m

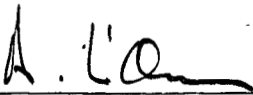
OPHIR MINERAL CLAIM	
GEOCHEMISTRY	
Scale 1:10 000	A.L'Orsa 1984

Fig. 3

1. The northwestern quadrant of the claim where several samples are weakly anomalous for silver and a small creek is anomalous for zinc and arsenic.
2. The southcentral claim area where anomalous concentrations of copper, lead and silver were found at several sample sites. In addition, there are several single-sample anomalies that should be investigated and there are huge gaps in the exploration coverage because of overburden and lack of drainage. More geochemical work should be done.

The presence of belemnoids suggests that the volcanic sandstone on the claim may be part of the upper section of the Nilkitkwa Formation of the Hazelton Group, i.e. Toarcian in age, and the red clasts in the volcanic sandstone suggest that either the Red Tuff Member of the Nilkitkwa Formation or the Telkwa Formation provided a source for some of the sand. The first conclusion is reinforced by the occurrence of a very probably Toarcian fossil assemblage on the nearby Fort mineral claim (L'Orsa, prospecting notes). It is likely that the felsic volcanic rocks also belong to the Nilkitkwa Formation.

The diabase stock(?) and dyke probably represent feeders for Tertiary volcanism.


Anthony L'Orsa, Geologist

REFERENCES

- Myers, D.E., 1985, Preliminary report on 1984 work on ... Dome Mountain (and) Mount McKendrick: Unpublished report for Noranda Exploration Company, Ltd., 63 p.
- Price, B., 1978, Geological and geophysical report, Delsanto 1-6 ... claims: Assessment Report 07286, Victoria, B.C.
- Tipper, H.W., 1976, Smithers map-area, British Columbia: Geol. Survey of Canada, O.F. 351.
- Tipper, H.W., and Richards, T.A., 1976, Jurassic stratigraphy and history of north-central British Columbia: Geol. Survey of Canada, Bull. 270, 73 p.

ITEMIZED COST STATEMENT

FIELD WORK:

A. L'Orsa, geologist, 4 days @ \$350/day \$1400.00
17, 18, 22 and 23 July 1984

REPORT:

A. L'Orsa, 3 days @ \$350/day 1050.00
Typing and copying 92.00

TRANSPORTATION:

Truck, 4 days @ \$35/day 140.00
1177.6 km @ \$0.16/km 188.42

ACCOMMODATION AND BOARD:

4 days @ \$50/day 200.00

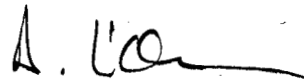
ANALYSES:

31 silt and soil samples @ \$16.25/sample 503.75
2 rock samples @ \$21.50/sample 43.00

FIELD SUPPLIES:

40.00

\$3657.17

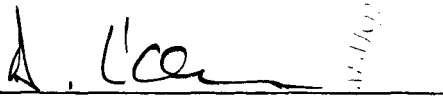


Anthony L'Orsa, Geologist

CERTIFICATE

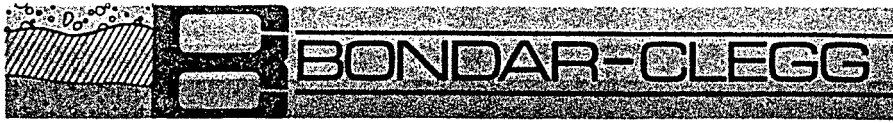
I, Anthony T. L'Orsa, of Smithers, British Columbia, hereby certify that:

1. I am a geologist with business address at Box 23, R.R. 2, Adams Road, Smithers, B.C. V0J 2N0.
2. I am a graduate of Tulane University, New Orleans, La., U.S.A. with the degrees of B.Sc. (1961) and M.Sc. (1964) in geology.
3. I have practised my profession in mineral exploration since 1962 in western Canada, Australia and Mexico.
4. I am a Fellow in good standing of the Geological Association of Canada and a member of the Society for Geology Applied to Mineral Deposits.
5. I worked on the Ophir claim in July 1984.


Anthony L'Orsa, Geologist

APPENDIX

Summary of Analytical Methods



OPHIR 1984

REPORT: 124-2713

FROM: MR. BEN QUELLETTE
DATE: 07-SEP-84 PROJECT: OPHIR

SUBMITTED BY: A. L'ORSA

ORDER	ELEMENT	LOWER DETECTION LIMIT	EXTRACTION	METHOD	SIZE FRACTION	SAMPLE TYPE	SAMPLE PREPARATIONS
01	Cu	1 PPM	HNO3-HCL HOT EXTR	Atomic Absorption	-80	VARIOUS SAMPLE T	DRY, SEIVE -80
02	Pb	2 PPM	HNO3-HCL HOT EXTR	Atomic Absorption	-80		
03	Zn	1 PPM	HNO3-HCL HOT EXTR	Atomic Absorption	-80		
04	Ag	2 PPM	HNO3-HCL HOT EXTR	Atomic Absorption	-80		
05	As	2 PPM	NITRIC PERCHLOR DIG	Colourimetric	-80		
06	Au	1 PPB	AQUA REGIA	FA-CR	-80		

REPORT COPIES TO: MR. BEN QUELLETTE
MR. A. L'ORSA

INVOICE TO: MR. BEN QUELLETTE