

off

GEOLOGICAL AND GEOCHEMICAL REPORT

on the

MOLLY GIBSON PROPERTY

LONG. 118°07'W., LAT. 49°10'N.

N.T.S. 82-E-1E

GREENWOOD MINING DIVISION

BRITISH COLUMBIA

by

M. FOX, B.Sc., F.G.A.C.

CALGARY, ALBERTA

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

11,989

C E R T I F I C A T E

I, the undersigned, of the City of Calgary in the Province of Alberta,
do hereby certify that:

1. I am a Consulting Geologist with an office at 120 Hawkwood Hill N.W.,
Calgary, Alberta.
2. I am a graduate of the University of British Columbia with a B.Sc.
in Geology (1974);
3. I have worked in the field of mineral exploration since 1965;
4. I am a member in good standing of the Association of Professional
Engineers, Geologists and Geophysicists of Alberta.

Respectfully submitted,



Michael Fox, P.Géol.

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INTRODUCTIONProperty, Location, Ownership

The Molly Gibson property consists of the following mineral claims:

<u>Claim Name</u>	<u>Record No.</u>	<u>Date of Record</u>
Moly Gibson 1	3143	July 29, 1982
Moly Gibson 2	3144	" " "
PV 1	3145	" " "

The property is situated astride McRae Creek approximately 6 km south of Paulson, B.C. in NTS map-area 82-E-1E in the Greenwood Mining Division. The Grand Forks-Nelson highway crosses the claims area about 1km south of the claim group. A 4 x 4 trail leads from the highway up a steep ascent to the vicinity of the underground workings on the claims.

The claims are owned by H. Hoehn of Grand Forks, B.C.

1983 Program

Work carried out at the property during 1983 was a preliminary evaluation and consisted of underground and surface rock sampling and reconnaissance geological traverses. A total of 15 rock samples were collected of which 12 were analyzed for Au, Ag, and 9 of the 12 samples were additionally analyzed for As, Sb, Hg, Cu, Pb, Zn, Ba, and W. Geological traverses confirmed the geologic setting described by earlier workers. However, no geologic map was prepared from the 1983 work.

Physiography

The claims are located within the southern part of the Cassiar-Columbia Mountains physiographic province. Topography in the vicinity of the claims is extremely rugged with precipitous cliffs present along both sides of McRae Creek. From the valley floor of the creek to the environs of the adits there is more than 2700' (823m) of relief over a distance of 1 km. To the north, in the basin drained by Mollie Creek, the relief is less extreme, although still quite pronounced. The area has been entirely glaciated with ice movement towards the southeast during the last period of glaciation. On the "plateau" north of McRae Creek, overburden cover is not great, although there is a fairly uniform mantle of glacial deposits.

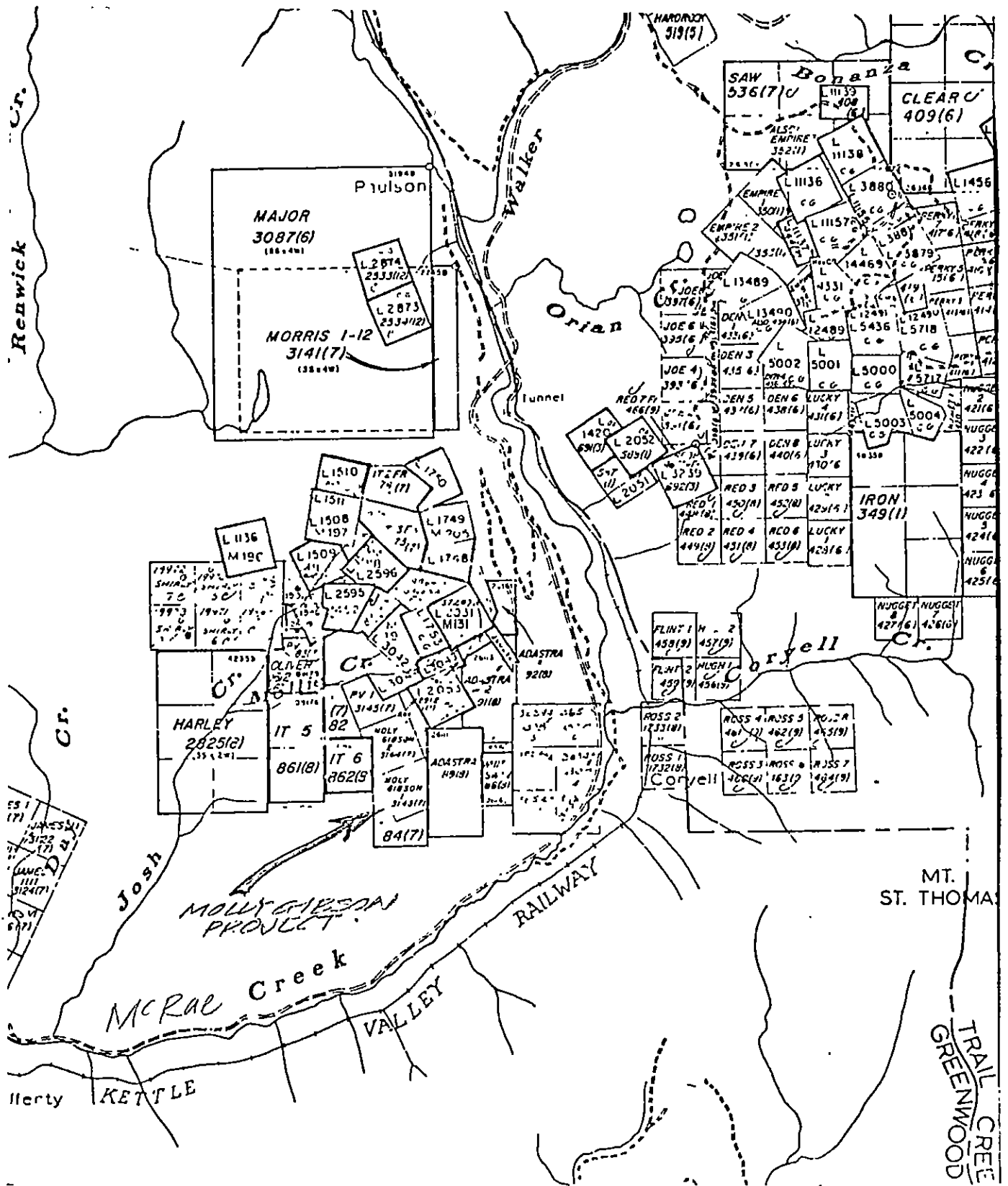
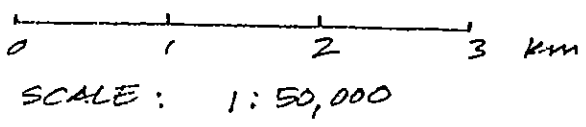


FIGURE 2.
CLAIMS LOCATION MAP
N.T.S. 82-E-1



History

The Molly Gibson prospect has had a history of sporadic development and exploration dating back to about the beginning of this century. Production from the deposit took place as early as 1908, when a few tons of ore running about 1 oz/ton Au were "rawhided" two miles to Coryell.

Development work carried out to date has exposed a mineralized zone some 2100' in length (640m) and 8' to 25' in width (2.44 to 7.62m). Workings consist of a number of open cuts, a 75' (22.9m) deep inclined shaft connected at the bottom with a 260' (79.27m) long crosscut tunnel, and several short adits. Throughout its history, the prospect has been controlled by relatively small operators who have carried out sporadic attempts to 'high grade' the near surface massive sulphide zones within the limestone host. The property has apparently never been explored systematically by modern geochemical and geophysical techniques, nor by diamond drilling. Earlier surface work was confined to intermittent areas of outcrop along the trend of the mineralized zone, and at best, was "hit and miss".

GEOLOGY

Regional and Property Geology

Rocks underlying the property are comprised of Mt. Roberts Group sediments and greenstones (Anarchist Group equivalents) of probable Pennsylvanian to Permian age, intruded by phases of the Jurassic Nelson batholith and the Tertiary Coryell batholith.

The rocks in the vicinity of the workings consist of a conformable series of limestones, argillites, and greenstones altered to silicified limy sediments, crystalline limestone and greenstone. The greenstones are greatest in areal extent. In detail, the rocks may be separated into biotite schist irregularly replaced by calc-silicates, crystalline limestone, and andesitic sills. The biotite schist (originally a limy, argillaceous sediment) now consists of biotite, calcite, original cherty silica, secondary coarser-grained quartz, actinolite, diopside, orthoclase, anorthite, feldspar, and very minor amounts of sillimanite and scapolite. The rocks have been subjected to an earlier stage of regional metamorphism, developing the biotite schist, and a later episode of contact metamorphism, developing the calc-silicate assemblage. The limestone horizon has been extensively replaced by silica and sulphides and was referred to by some writers as a "jasperoid wall" (MMAR, 1918) or a "jasperoid" (MMAR, 1919) and is in the order of 200' (61m) in thickness. The greenstones consist of an older fine-grained phase composed of feldspar and hornblende altered to chlorite, which underlies the limestone, and a younger, coarser-grained, sometimes porphyritic phase composed of a fine-grained groundmass of biotite, orthoclase, and anorthite, with chloritic amphibole phenocrysts pseudomorphous after the original pyroxene phenocrysts. This latter greenstone crosscuts the older greenstone in a series of narrow dykes, and forms a number of sills intercalated with the limestone, and conformable with the biotite schist.

The above described rocks strike from north to N20W, and dips range from 45° to 75° easterly. South of the area of the workings they are intruded by a body of Jurassic-Cretaceous biotite monzonite which forms part of the Okanagan-Nelson batholith. All of the rocks at the property are intruded by Tertiary syenite and pulaskite dykes of the Coryell intrusions.

Economic Geology

Values in Au and Ag to date have been found mainly in the massive sulphide and sulphide stringer zones of pyrite and pyrrhotite which constitute part of the

metasomatic assemblage replacing the limestone. The actual character of the limestone varies considerably within the sulphide zone, but most commonly consists of patches of pinkish chert or jasper, calcite, hydrothermal quartz, and sulphides. This very hard and flinty rock presented considerable difficulties and impeded the progress of underground development (all done by hand steel methods); it has locally been called a jasperoid, "...relating it to the jasperoid of the Phoenix camp, from which it differs, however, in having less jasper and containing disseminated pyrrhotite." (MMAR, 1936).

The sulphides occur as a series of lenses discontinuously distributed along the jasperoidal and silicified limestone horizon for a distance of 1600' (500m) southwards to the top of the cliffs overlooking McRae Creek. This same zone has been recognized an additional 500' (152m) to the north at the Singer adit.

All shipments of ore from the property have averaged in excess of 1 oz/ton Au. Of 310 tons (281 tonnes) produced to date, a total of 330 oz Au and 140 oz Ag has been extracted. A sample taken across a 6' (2m) sulphide lens near the collar of the incline shaft returned assays of 1.40 oz/ton Au and 0.30 oz/ton Ag (MMAR, 1933). Values in the shaft, across 8' (2.44m) of sulphides, were reported to average \$14/ton (\$20.67/oz), and 2 oz/ton Ag.

GEOCHEMISTRY

Geochemical sampling consisted of the collection of 6 chip samples from underground workings in the main adit^(see figure 3.) and 9 carefully selected 'grab' samples from the dump, chosen to provide a suite of specimens representative of the altered and mineralized rocks at the property.

Of the 15 samples, three from the underground workings were assayed for Au and Ag, and the 9 samples collected from the dump were geochemically analyzed for Au, Ag, As, Sb, Hg, Cu, Pb, Zn, Ba, and W. The Au and Ag analyses were performed by a combined fire assay and atomic absorption technique. The other elements were analyzed by appropriate specific colorimetric, gravimetric, and atomic absorption techniques. All analyses were performed by Terramin Research Labs Ltd. of Calgary, Alberta.

Several very high Au analyses were obtained, ranging from 13,600 ppb to 41,600 ppb (equivalent to grades of 0.437 oz/ton and 1.338 oz/ton). Assayed values ranged up to 0.204 oz/ton Au and determined that Au accompanies heavy sulphide concentrations in greenstone as well as the altered limestone. These results provided definite confirmation of the earlier-reported high Au values. In addition, samples returning high values in Au showed a good correlation with elevated Cu and Ba *Pb and Zn values. This metallic association reinforces the possibility that the ore horizons at the prospect may be of volcanic affinity as opposed to a simple skarn.

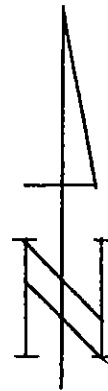
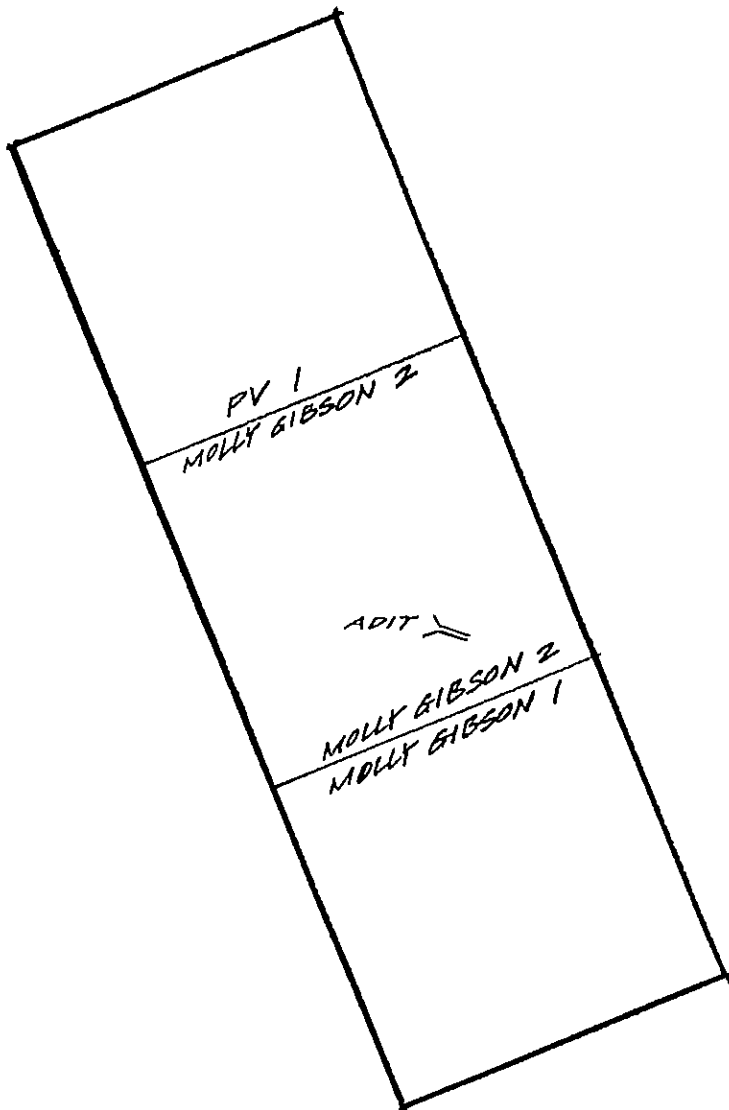
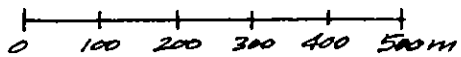


FIGURE 3A.
LOCATION OF "PURCELL" ADIT
SCALE 1:10,000



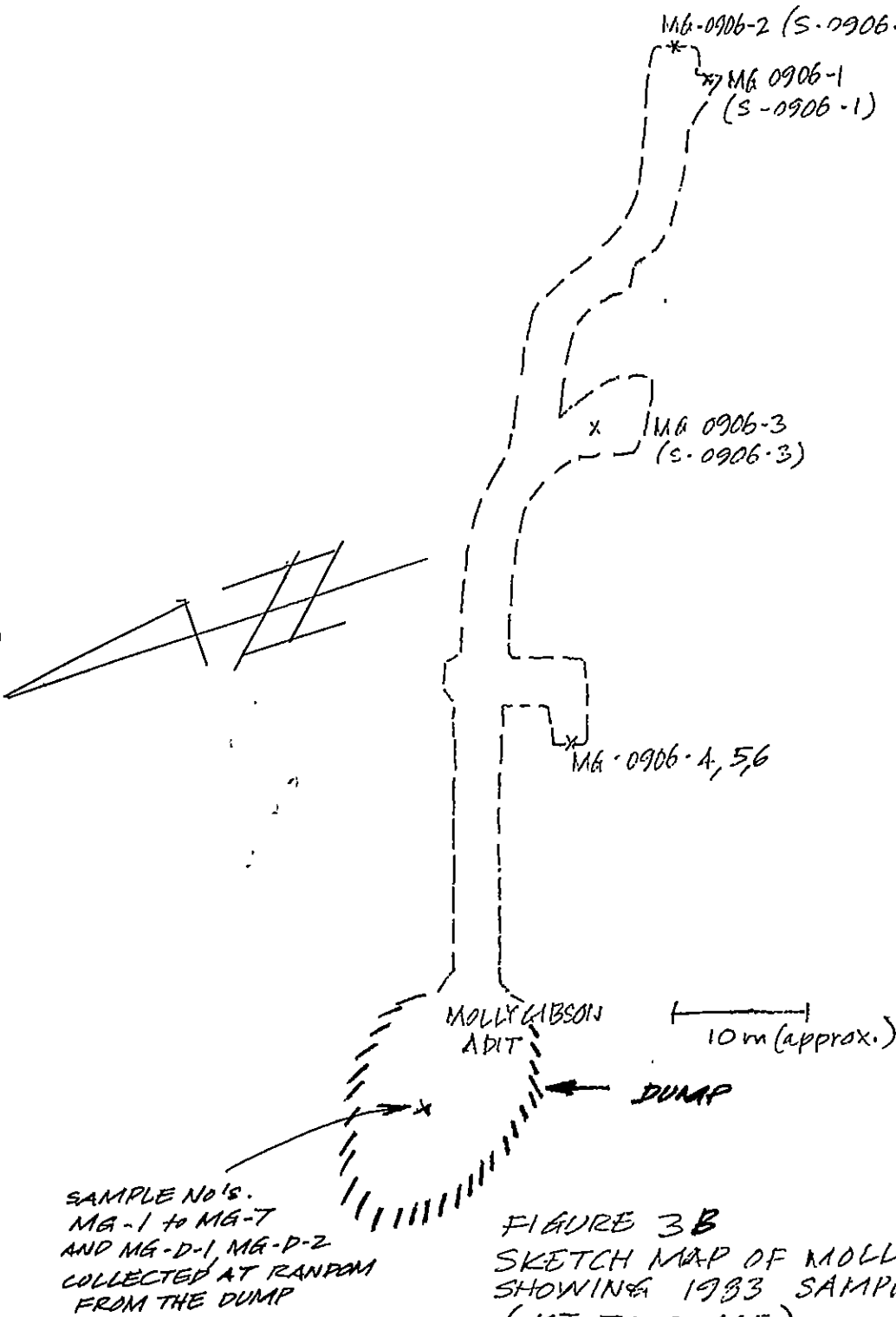


FIGURE 3B
 SKETCH MAP OF MOLLY GIBSON ADIT
 SHOWING 1983 SAMPLE LOCATIONS
 (NOT TO SCALE)
 (ALSO KNOWN AS "PURCELL" ADIT)

CONCLUSIONS

Concentrations of pyrite and pyrrhotite form 8' to 25' wide zones of massive sulphides and stringers carrying economic values of Au and Ag within a metasomatically replaced 2100' long and up to 200' wide zone of jasperoidal and silicified limestone.

The prospect has produced to date, by hand steel methods, a recorded total of 310 tons of ore which yielded 330 oz of Au and 140 oz of Ag. Earlier development has been sporadic and the prospect has never been explored systematically by modern geophysical and geochemical methods.

The property geology bears numerous similarities to both the Phoenix and Hedley mining camps, including the same (i.e. correlatable) host rocks, and skarn associated auriferous sulphide mineralization. Although the genetic relationship of the sulphide mineralization to the formation of the skarn seems fairly certain, the position of the sulphide zone at the interface of volcanic and sedimentary rocks also suggests the possibility of a stratabound synvolcanic or volcanogenic origin. This concept is supported by the metallic association of high Au, Cu, and Ba values.

The geologic setting is extremely favorable for the development of very substantial tonnages of sulphide mineralization within the *skarn* zone, which remains virtually unexplored down dip.

The mineralized zone appears to be particularly amenable to further exploration by a combination of magnetic, electromagnetic and gravity geophysical techniques, which should delineate any 'blind' ore zones along strike or down dip.

Overburden depths are generally shallow, and a combination of soil and rock geochemistry would be an appropriate and complimentary exploration approach.

STATEMENT OF COSTS

Professional Services	2 days @ 300	\$ 600.00
Travel Expenses		162.33
Assays		28.65
Miscellaneous: Tel, post, courier, xerox, etc.		<u>122.41</u>
	TOTAL	<u>\$ 913.39</u>

APPENDIX I

Assays and Geochemical Analyses



TERRAMIN RESEARCH LABS LTD.

ANALYTICAL REPORT

Job # 83-187

Mike Fox

Date July 25, 1983

Client Project

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Sample No.	Au oz/ton	Ag oz/ton
S - 0906 - 1	0.204	0.044
2	0.006	0.023
3	0.014	0.027



TERRAMIN RESEARCH LABS LTD.

ANALYTICAL REPORT

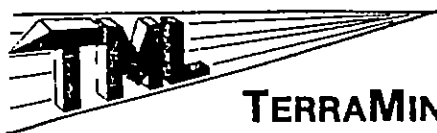
Job #

Date Sept.30, 1983

Client Project

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Sample No.	Au ppb	Ag ppb	As ppm	Sb ppm	Hg ppb
MG - 1	48	220	0.8	0.2	-5
2	41600	13400	1.2	0.8	-5
3	13600	2080	5.7	0.6	-5
4	144	290	0.5	0.2	5
5	20	230	-0.2	0.8	-5
6	6	130	0.5	0.2	5
7	2	20	0.8	0.2	5
MG-D-1	3860	660	3.1	0.2	-5
2	9900	1010	4.0	0.4	-5
PN - 1	1310	20	1070.	26.	24600
2	9200	70	2090.	103.	61600
3	2620	30	2210	41.	34300



TERRAMIN RESEARCH LABS LTD.

ANALYTICAL REPORT

Job #

Date

Client Project

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Sample No.	Cu ppm	Pb ppm	Zn ppm	Ba ppm	W ppm
MG - 1	270	6	55	1200	3
2	5100	109	140	1330	5
3	710	3	101	800	2
4	65	5	6	10	-1
5	57	8	270	580	1
6	40	28	79	250	-1
7	22	9	64	210	2
MG-D-1	166	8	54	680	1
2	400	5	53	810	3
PN - 1	9	4	85	140	40
2	27	1	37	210	119
3	9	1	.108	260	53

Note: Minus sign indicates less than figure given.

APPENDIX II

PETROGRAPHIC DESCRIPTIONS

- S-0906-1: semi-massive and massive aggregates of pyrite in a silicified greenstone(?) host, some malachite staining
- S-0906-2 massive pyrrhotite
- S-0906-3 silicified greenstone carrying abundant (10-15%) disseminated pyrite, narrow (2mm) fractures filled with white quartz
- S-0906-4 silicified greenstone(?), dark green, fine-grained siliceous rock carrying 3-5% pyrite
- S-0906-5 similar to S-0906-4
- S-0906-6 similar to S-0906-4
- MG-1 sheared greenstone or chloritized sheared metasediments
- MG-2 siliceous greenstone, 15-20% disseminated pyrite/pyrrhotite
- MG-3 similar to MG-2
- MG-4 silicified limestone
- MG-5 slightly silicified limey sediments
- MG-6 weathered, leucocratic limestone
- MG-7 recrystallized limestone
- MG-D-1 siliceous fractured greenstone, 5-10% disseminated pyrite
- MG-D-2 similar to MG-D-1