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GRANDUC MINES, LIMITED (N.P.L.)

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SUMMARY REPORT

SULPHURETS CREEK PROJECT - 1976

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PART I. GENERAL INFORMATION

A. Summary

During 1976 work on the Sulphurets Creek property included the following activities:

1) Guiding 11 visitors in four parties to examine the property.
2) 296 soil samples (888 analyses).
3) 91 rock geochemical samples (455 analyses).
4) 34 rock assay samples (98 assays).
5) Discovery of gold in situ in two locations.
6) Staking 19 units in 4 claims in two areas.
7) Trenching two gold zones and one copper zone.
8) Further work on the arsenopyrite occurrence.

B. Objectives

The objectives of the 1976 field program at Sulphurets Creek were:

1) Completion of sampling and detailed prospecting of the northeastmost portion of the Tedray claim block, specifically the extension of the anomalous area indicated by 1975 bedrock geochemical sampling.
2) Extension of the sampling grid southeast of the main Tedray claim block to provide better coverage near Brucejack Lake where anomalous gold and silver values had been indicated and where lead and zinc values predominate over copper values.
3) Further work on the Bornite Zone located immediately south of the snout of Sulphurets Glacier to better determine the characteristice of this poorly exposed mineral zone.
4) Guiding representatives of various senior mining companies around the property.

The above objectives were achieved. The further objective of finding a joint venture partner to assist in financing the major expenditures that

will be required to demonstrate the merits of the Sulphurets Creek property was not achieved.

C. Expenditures

1976 field expenditures were:

a) Salaries, payroll costs	$21,263.
b) Transportation - truck, helicopter, etc.	4,667.
c) Camp costs, tools, explosives, storage, communications	4,362.
d) Analyses and assays	2,964.
	$33,256.

1976 office expenditures related to exploration were:

a) Salaries, payroll costs, including secretarial and drafting	$14,181.
b) Office costs	3,326.
c) Claim fees, rentals	3,005.
	$20,512.

Total expenditures 1976	$53,768.
Total expenditures 1960 to date	$336,634.

Expenditures totalling $14,070 were applied, or will be applied as assessment work to the various claims.

D. Claims Status

Assuming that all assessment work is accepted, the current situation with respect to claims is as follows:

Claim Name		Record No.	No. of Units	Anniversary date	Expiry year	Excess values carr'd fwd Work	Rental
Tedray	1	153	2	August 26	1980		
	2	154	1		1980		
	3	155	3		1981		
	4	156	5		1980		
	5	157	10		1979		10
	6	158	15		1980		10
	7	159	2		1982		
	8	160	1		1980		
	9	161	9		1980	900	
	10	162	3		1979	300	
	11	163	4		1980	400	
	12	164	15		1979	1500	
	13	165	8		1983		
Grace		152	6		1980		
Ed	1	150	2		1979	200	
	2	151	1		1979	100	
Iron Cap	1	315	2	September 7	1980		
	2	316	1		1980		
	3	317	2		1980		
Red River		314	14	September 15	1981	1600	

Total number of modified grid system claims - 20

Total number of modified grid system claim units - 106

Figure 1976 - 1 illustrates the present claim configuration. For purposes of discussion and future planning it is logical to separate the recently-staked Red River claim with gold-silver potential from the main portion of the Sulphurets Creek property which has primarily copper-molybdenum potential. The Red River claim should not automatically form part of any future agreement involving the Sulphurets Creek property but could be offered as a separate situation following further examination by GML crews.

E. Logistics

Work was done by Erik Ostensoe and Ed Kruchkowski, geologists, and Chris Hrkac, helper, in the periods August 1 to September 3, 1976. Helicopter support was provided by a Bell Model 206 Jet Ranger machine stationed at Stewart and ably piloted by Gary Thomsen. Analytical and assay work was by Chemex Labs Limited of North Vancouver.

Three campsites were occupied during the 1976 work: North of Mitchell Glacier, northwest of Brucejack Lake, and near the Bornite Zone at the snout of Sulphurets Glacier. A two-man geological party from Cominco occupied the former Phelps Dodge campsite south of Mitchell Glacier and a four-man geological party from Cities Service Minerals occupied the Main Copper Zone campsite. A two-man party from Utah Mines Limited overnighted at the placer miners' camp at Mitchell Creek. The placer camp was inactive, at least during the period that the GML crew was in the area.

PART II. GEOLOGY AND GEOCHEMISTRY

A. Introduction

Work during 1976 was carried out in three parts of the Sulphurets Creek project area:

1) North of Mitchell Glacier.
2) Brucejack Lake area.
3) Bornite Zone.

Results obtained from this work are discussed in the following sections of this report.

B. Iron Cap area

A tent camp was set up on the north side of Mitchell Glacier at elevation 1260 metres as a base from which to expand the rock geochemical survey grid. The 1975 work had revealed a significant anomalous zone, named the Iron Cap zone, that was open to the northeast. Before commencement of work three claims (Iron Cap 1 - 2 units, Iron Cap 2 - 1 unit, Iron Cap 3 - 2 units) were staked to protect this northeastern extension. In contrast to other anomalies, such as at the Main Copper Zone, the Iron Cap zone had indications of anomalous quantities not only of copper and molybdenum but also of lead and silver.

The Iron Cap zone lies north of Mitchell Glacier between elevations 1200 m. and 2000 m. It consists of a moderately steep, strongly gossan-stained slope of which the upper two-thirds is almost total outcrop and the lower portion is morainal and talus debris with five to ten percent outcrop. It is surmounted by a small tongue of stagnant ice, the remnant of a former glacier that may have merged with Mitchell Glacier in recent time. To the north of the claims a permanent ice field extends for several miles. To the west the Iron Cap zone either is obscured by grass and talus or does not persist (the latter case is suggested by the geochemistry). To the east there

is a 300 m. wide grassy slope between the easternmost exposures of the zone and the trace of the Brucejack Fault. Outcrops are sparcely distributed and are weathered but the geochemical response is feeble. Topography, geological observations and geochemical patterns suggest that a fault, having a gentle northwesterly dip and easterly strike, passes obliquely across the lower part of the slope; this may be the continuation of a similar fault that is exposed near Mitchell Glacier about 1 kilometre west of the Iron Cap zone. Figure 1976 - 2 is an up-dating of previous geology maps with new data shown for the northeasternmost part of the area.

In addition to the iron gossaning of the Iron Cap slope, several prominent malachite/azurite stains are present. The largest of these covers an area of perhaps 100 square metres. Although minor amounts of copper sulphide mineralization are present throughout the area the stains appear to be unrelated to any abnormal amounts of nearby copper mineralization. Further work is required.

Many small veinlets of a "grey copper" mineral, likely a tetrahedrite, are present in this area and several occurrences of galena-sphalerite in carbonate-rich shear zones and in sheared carbonate beds were also known from previous work. A sample of the latter material from a small zone close to Mitchell Glacier, when sampled in 1972, assayed: 499 - 10.8% lead; 13.5% zinc, 5.86 oz/ton silver and 0.039 oz/ton gold. Blocks of white vein quartz,from various sources both remote and close by, litter the Iron Cap slopes and cirques but prior to the 1976 work all were thought to be barren of valuable metals.

As a result of the 1975 geochemical analyses, attention during 1976 was particularly directed to all the above noted possible sources of high metal values and the rock geochemical sampling grid was extended north to the edge of permanent ice and east to Brucejack Fault. 56 rock samples were gathered, from which 280 geochemical

analyses were obtained. Figures 1976-3 (copper), -4 (molybdenum), -5 (lead), -6 (silver) and -7 (gold) are similar to illustrations in previous summary reports but include the results of the Iron Cap area rock geochemical sampling.

Four sites were trenched using a cobra drill, hand tools and dynamite. The locations of the trenches and assays obtained from samples taken from the trenches are shown on the accompanying map, Figure 1976 -8 Mineral Occurrence and Sample Location Map. Short descriptions follow:

1) Carbonate-galena-sphalerite-chalcopyrite lenses between the campsite and Mitchell Glacier. Two rock cuts totalled 7 metres in length. Two samples were assayed with the following results:
12854 - 2.4 m. - 0.45% lead, 1.10 oz/ton silver, 0.088 oz/ton gold.
12859 - 3 m. - 0.12% copper, 0.41% lead, 0.95 oz/ton silver, 0.032 oz/ton gold.

2) Similar to above but north of and 75 metres higher in elevation: Two rock cuts totalled 9 metres in length, two samples were assayed with the following results:
12860 - 4.2 m. - 0.35% copper, 1.10% lead, 1.48% zinc, 0.70 oz/ton silver 0.026 oz/ton gold, less than 0.001% molybdenum.
12861 - selected high grade pieces - 10.2% lead, 12.0% zinc, 3.23 oz/ton silver, 0.030 oz/ton gold.

3) A strong quartz vein that is exposed intermittently over a 700 metre strike length and vertical extent of 400 metres with widths from one-half to three metres. This mineral area was trenched and pitted at several sites. The following assays were obtained from six samples:
12852 - grab sample - 12% lead, 4.2% zinc, 779.95 oz/ton silver, 84.830 oz/ton gold, 0.088% cadmium
12853 - grab sample - 3.2 m. south of 12852 - 0.17% copper, 0.66% lead, 0.55% zinc, 13.24 oz/ton silver, 2.720 oz/ton gold, 0.002% molybdenum, 0.005% cadmium.
12855 - chip sample- 22 m. northeast of rock geochem site 1133 - 5 m. wide - .02% Cu, 1.86 oz/t silver, .068 oz/t gold
12856 - chip sample - continuous with above - 3.9 m. wide - .04% Cu, 4.12 oz/t silver, 0.340 oz/t gold

12862 - vein - 0.6 m. wide - 0.57% lead, 1.34% zinc, 13.32 oz/ton silver, 1.308 oz/ton gold.

12865 - vein - 0.6 m. wide in a 10 m. wide quartz vein zone - 0.15% lead, 0.27% zinc, 71.75 oz/ton silver 7.216 oz/ton gold.

4) Zone recently exposed on the upper slope by melting ice containing cube pyrite and disseminated chalcopyrite in a matrix of altered intrusive rock:

12863 - 4.65 m. 0.52% copper, 0.001% molybdenum

12864 - 3.75 m. 0.43% copper, 0.002% molybdenum

At sites 1 and 2 the carbonate-galena-sphalerite occurrences are persistent but weak. No further work is planned at the present time.

The long quartz vein or veins of site 3 contain minor amounts of visible gold. As noted above, assays of samples without visible gold contained very significant contents of both gold and silver. These values, coupled with the known lateral and vertical extent of the veins and the presence of other as yet unsampled veins, justify, even demand, further work. This work should include detailed mapping of the various veins from the top of the talus where it was first located to the edge of the permanent ice at high elevation. The veins will have to be drilled and blasted at regular intervals as a means of evaluating the distribution of valuable constituents. Other quartz veins in the vicinity also require testing and sampling. The cover of iron oxides virtually precludes evaluation by normal prospecting methods.

The chalcopyrite-pyrite zone (No. 4 above) that was trenched and sampled in 1976 is not particularly exciting but illustrates the type of material that is masked by the iron staining. Additional attention should be directed to the distribution of the host formation.

The superficial malchite/azurite coatings have not been adequately explained but because they occur close to and in small streams that emanate from the overlying ice, it is possible that they are a water-borne expression of a copper deposit that exists beneath the ice. Such a deposit could be primary, similar to the trenched material, or could be secondarily enriched. The latter situation would be particularly attractive because secondarily enriched zones are characteristically higher grade and contain chalcocite, Cu_2S, a premium quality product due to its high copper content (80%). The presence of a nearby, topographically higher, unconformity, possibly of erosional origin, between the Unuk River and Salmon River formations heightens the possibility of enrichment having occurred. No obviously enriched material has been found in place but chalcocite-bearing cobbles have been found in rubble and talus below the ice cap. Drilling may be required to find the source.

C. Brucejack Lake Area

The Brucejack Lake area is beyond the limits of the original Sulphurets Creek Project area. Work was directed there because of the history of reports of precious metals -

1) 1959-gold-silver reported between Brucejack Lake and Sulphurets Glacier by S. W. Barclay while working for GML. Ten claims staked. Mapped in 1960. Claims dropped.
2) Electrum found near Hanging Glacier in 1961. Specimen without obvious electrum assayed 12 oz per ton gold and 333 oz per ton silver.
3) High silver assays obtained from grab samples taken in vicinity of Hanging Glacier by S. W. Barclay in August 1964. Large number of claims staked by GML. Silver Ridge Mining Company Limited also staked many claims. Barite-sphalerite-galena-ruby silver lenses were trenched and sampled by GML but no continuity was demonstrated. Prospecting and soil survey carried out by Silver Ridge.

4) 1968 - plane table mapping near Hanging Glacier failed to indicate any geological control of mineralization.
5) 1974 - arsenopyrite vein found south of Hanging Glacier by Erik Ostensoe. Small exposure. Grab sample assayed several ounces per ton of both gold and silver.
6) 1975 - trenching on arsenopyrite vein failed to develop any worthwhile dimensions. Vein is leached and obscured by overburden. Rock geochemical grid expanded south of Hanging Glacier. Mapping found numerous lead and zinc occurrences though none with significant dimensions. Two strongly anomalous rock geochemical samples - one on the grid (number 1105) and one located approximately one kilometre west of Brucejack Lake (number 1106) were taken during the 1975 work and were largely responsible for our continuing the search for precious metals in the south eastern portion of the Sulphurets Creek project area.

The combination of the above noted reports of precious metals, the fact that the geology in this southeastern area is different from that of the main Sulphurets Creek alteration zone area, and proximity to Brucejack Fault, a major structure, determined that the continued search for precious metal occurrences was justified. The outlines of the Red River claim and the main geological features of the area are shown on Figure 1976 - 9. The geology shown on Figure 1976 - 9 is derived from large scale reconnaissance mapping by E. W. Grove, B.C. Ministry of Mines and Petroleum Resources.

During the period August 14 to September 1, 1976 native gold was found in two areas by Ed Kruchkowski by prospecting and these sites were trenched. Also the site of 1975 rock geochemical sample number 1106 was trenched. These locations are shown on Figures 1976 - 10, 11 and 12. A grid of 296 soil samples was established in the area, the Red River claim (14 units) was staked and 21 rock geochemical samples were taken south of the southwest end of Brucejack Lake. Further

trenching and hydraulic sluicing was carried out on the arsenopyrite vein that was found in 1974 and first trenched in 1975. Soil samples were analysed for silver (Figure 1976 - 10) gold (Figure 1976 - 11) and arsenic (Figure 1976 - 12). Rock geochemical samples were analysed for copper, molybdenum, lead, silver and gold (Figures 1976 - 13 to 17).

Trenching the native gold occurrences did not reveal strongly mineralized structures. A black metallic sulphide, either argentite or stephanite, is present with gold and it seems likely that electrum or gold is closely tied up with this black mineral. The gold is probably released by near-surface and surface weathering processes and then is redeposited by electrochemical processes. Similar mineral associations are present in several localities in the Stewart - Tide Lake - Mitchell Creek and Tom Mackay Lake areas.

The following assays were obtained from samples taken from various sites on the Red River claim:

12866 - grab sample-arsenopyrite-bearing quartz stringer 20 cm. X 1.6 m. 600 m. W of Brucejack Lake
2.50 oz/ton silver, 0.726 oz/ton gold

12867 - grab sample-quartz vein with minor pyrite, arsenopyrite (?) vicinity of rock geochem sample 1106
0.66 oz/ton silver, 0.020 oz/ton gold

12868 - grab sample-pyritic sericite schist adjoining north side of sample 12867
0.42 oz/ton silver, 0.064 oz/ton gold

12869 - grab sample of quartz-galena-sphalerite-pyrite-tetrahedrite (?), near sample 12867, not in place
0.35% lead, 0.61% zinc, 10.18 oz/ton silver, 0.058 oz/ton gold

12870 - grab sample - 0.3 m. X 10 m. exposed occurrence of quartz-galena-sphalerite - 15 m. N of Red River ID Post 5S
3.06% lead, 2.26% zinc, 1.82 oz/ton silver, 0.202 oz/ton gold

12871 - 0.5 m. chip sample of sericite schist with pyrite and quartz stockwork - 15 m. S of field location of Tedray 12 - ID Post 5E 3S
0.16 oz/ton silver, 0.068 oz/ton gold

12872 - 0.5 m. chip sample of vuggy quartz vein with some pyrite and chlorite - same location as 12871
0.30 oz/ton silver, 0.012 oz/ton gold

12873 - grab sample - quartz-pyrite-tetrahedrite (?) vein located 75 m. north of rock geochem sample 1022
7.82 oz/ton silver, 0.360 oz/ton gold

12874 - selected grab sample - small quartz vein with galena-sphalerite - 10S on L 22 E of soil sampling grid
1.06% lead, 3.36% zinc, 19.39 oz/ton silver, 0.212 oz/ton gold

12875 - grab sample - massive galena-sphalerite 100 m. S 40° W of rock geochem sample 1105
16.8% lead, 33.6% zinc, 19.85 oz/ton silver, 2.552 oz/ton gold

12876 - grab sample of quartz-pyrite vein 15 m. W of rock geochem sample 1184
0.73 oz/ton silver, 0.056 oz/ton gold

12877 - grab sample of pyrite-sericite schist - vicinity of rock geochem sample 1106, same location as 12867, 12868, 12869
1.66 oz/ton silver, 0.066 oz/ton gold

12878 - grab sample - quartz-pyrite-argentite (?) or stephanite (?), same location as 12877
11.36 oz/ton silver, 13.560 oz/ton gold

12879 - grab sample - similar to and located 7 m. N of 12878
27.97 oz/ton silver, 1.332 oz/ton gold

12880 - selected pieces of arsenopyrite-rich material from the arsenopyrite vein near 1975 campsite on Tedray 12 claim
3.69 oz/ton silver, 1.592 oz/ton gold.

The geology of the Red River claim area is dominated by the Brucejack Fault, a major north-south striking nearly vertical structure which has placed rocks of the Lower Jurassic age Unuk River formation west of and in conjunction with rocks of the Middle Jurassic age Betty Creek formation which are extensive to the east. The Fault itself is not known to be mineralized but many linear features which emanate from the Fault are strongly sericitized and pyritized and it appears that some of these secondary structures are mineralized. The country rocks west of the Fault are mainly arenaceous sedimentary rocks: sandstones, argillites and greywacke. Some more massive rock types, apparently of volcanic origin, perhaps tuffs and andesite flows, are also present. The 296 sample soil survey covered the gold occurrence area, the Brucejack Fault zone and approximately 40 hectares (100 acres) of nearby

terrain. Although the area has been glaciated, moderately well developed soils consisting of sand, rock fragments and humus are present. Samples of the "B" horizon, a distinctive reddish granular layer found from six to ten centimetres below surface were analysed for gold, silver and arsenic.

The soil survey was a reasonably effective means of checking the mineral potential of that portion of the area close to the gold occurrences. Where comparison of bedrock with soil geochemical analyses was possible the values for gold were similar in magnitude. The distribution of anomalous metal values in soils with respect to the Brucejack Fault and related sheared zones strongly supports our belief that there has been mobilization of metal-bearing fluids into the sheared zones.

Geologically the area west of Brucejack Fault is at the top of the Unuk River formation and the present erosional surface may be close to the Middle Jurassic or older erosional unconformity that evidently exists in a similar geologic position north of Mitchell Glacier. Prospecting and geochemical information indicate that the area immediately west of the Brucjack Fault has abnormal precious metals content. Detailed prospecting and further soil sampling may result in further discoveries of subtle mineralized zones.

A very limited rock geochemical survey of a gossaned area immediately southwest of the outlet of Brucejack Lake was designed to check the metal content of the dark-coloured siliceous fine-grained rock, particularly the associated sheared portions. These are sedimentary rocks of volcanic origin although some black shales, sandstones, cherts and possibly tuff beds are present. Alteration in the area is strong though patchy and consists of sericite and chlorite with much pyrite and an abundance of quartz veining. Rock geochemical results were not statistically significant due to the small number of samples but metal values are sufficiently high to justify a more thorough

investigation including further rock sampling and detailed prospecting. The rock type is one that frequently contains anomalous amounts of metals and the environment is a particularly favourable one in which to conduct a search for massive sulphide type ore zones.

D. Bornite Zone

The Bornite Zone, located in the southwestern portion of the Sulphurets Creek project area, is of continuing interest because it offers the possibility of developing a significant quantity of mineralized material containing greater quantities of copper than are presently known elsewhere in the area. Working from a camp at the snout of Sulphurets Glacier, we were able to relocate the Bornite Zone and to prospect and sample it by means of bedrock trenches. We did not prove much concerning its size because its possible extensions are hidden by moraines and forest soils. The following assays were obtained:

12881 - 4.5 m. chip sample - 1.86% copper
12882 - adjoining the above - a 3.6 m. chip sample - 0.90% copper
12883 - 30 m. south of the above - a 6 m. chip sample - 0.68% copper
12884 - composite of the above three samples - 0.080 oz per ton gold.

The mineralization occurs in a granitic host rock, approximately quartz diorite, with disseminations and veinlets of pyrite, bornite and chalcopyrite. Some chalcocite is present, doubtlessly of secondary origin. Values indicated by trenching are sufficiently high to warrant a modest drilling program when funds become available.

E. Molybdenite South of Mitchell Glacier

The molybdenite-bearing area located north of the former Phelps Dodge camp close to the south side of Mitchell Glacier, was re-visited and 14 rock geochemical samples were taken. Molybdenite is widespread in the area and many of the rock geochem samples contained unusually large amounts. Copper values are also anomalous and can be correlated with occurrences of small amounts of chalcopyrite disseminated in strongly sheared quartz-sericite schist and chlorite-pyrite schist. Gold values are uniformly anomalous without any exceptionally high values. Much of the area sampled in 1976 has been exposed recently by glacial retreat.

PART III. JOINT VENTURE PARTNERS

Financing of exploration and development work required to prove the existence of substantial mineral deposits is increasingly difficult for all but the largest companies or their affiliates. Historically, exploration money has come from profitable mining ventures as a necessary part of the cost of perpetuating a mining enterprise, or from newly-pooled venture capital. At the present time equity financing as a source of exploration funds appears to be diminishing. In part this is due to relatively new tax measures that reduce the funds available to individuals and corporations and which in part have lead to a growing awareness on the part of the investing public that financing high risk enterprises seldom yields a satisfactory return on investment. Despite these admitted present difficulties, the Sulphurets Creek project claims have attractive potential and are fully deserving of further expenditures. This positive conclusion is based on an assessment of investigations completed up to the present and recognition that only superficial work has been done in the very large area.

Because the sole source of revenue for GML is the Granduc mine, and because most of foreseeable revenues are committed to repayment of company debt and interest, it appears that the exploration money required to continue the Sulphurets Creek project as suggested in Summary Report, 1975 is unlikely to be available in the near future. The options available to GML include the following:

1) Shelve the Sulphurets Creek project
2) Raise money by share issue
3) Locate a suitable joint venture partner
4) Continue small scale annual programs of work that slowly add to the picture.

Option 1, shelving the Sulphurets Creek project, is attractive to the extent that only minimal further cash outlays would be required

for several years, but such a course would perpetuate the uncertainties regarding the merit of the property, would preclude the possibility of creating a valuable asset and would defer the ultimate realization of the value of the property. Option 2, issuance of treasury shares in return for funds is virtually impossible due to the current status of the Company. Creation of a new company with GML as the vendor of the Sulphurets Creek property and with public underwriting solely on the basis of work to be done at Sulphurets Creek might be possible. Option 3, working with a joint venture partner, is thought to be a suitable means of financing further work on the property. It is assumed that the incoming joint venture partner would contribute some mineral exploration expertise plus a substantial sum of money, comparable to that which has already been spent by GML. The money would be spent on exploration of the Sulphurets Creek Project claims, in return for which the incoming partner would earn a large equity, perhaps 50%, in the Project. Thereafter, the two companies would share equally in further expenditures or would have their respective interests reduced and/or enhanced in porportion to their contributions. Option 4, continuation of low budget annual field programs, precludes any substantial programs such as geophysical surveys or diamond drill testing and perpetuates the status quo. It has the obvious virtue of enabling GML to retain 100% interest in any developments.

As a matter of policy the preferred joint venture partner would probably be a large Canadian mining company but this was not a prerequisite in our search. In 1975 we approached several companies of whom ASARCO and Cominco sent geologists into the field. During 1976 the property was examined by representatives of Cominco, Texasgulf, Utah Mines and Cities Service Minerals Limited. Imperial Oil, Minerals Division, declined to make an examination during 1976 but may do so during 1977. Acquitaine Canada received our data late in 1976 and will make an examination during 1977 field season.

The reaction of visitors to the property has been mixed. Many were favourably impressed by the property and its geology but were strongly negatively influenced by its remote and difficult location and by the appearance that the grade of ore zones likely to be found may be in the range of 0.5% copper. No firm proposals for work during the 1977 season have been received. Clearly the reluctance to become involved is in part the result of the present scarcity of risk and development money, the bleak state of the North American copper industry and the complete lack of any indication that development of the northwestern part of British Columbia is imminent, and in part the physical and economic challenges presented by the Project itself.

Our search for a joint venture partner continues. A number of diamond drill holes directed to the best portions of our various major copper-molybdenum target areas, if successful in further demonstrating the possible presence of large zones, would greatly facilitate consumating a joint venture arrangement. Such a program was outlined in Summary Report - 1975 and is included herewith (Appendix 1) without substantial revision. At the present time our knowledge of the gold/silver occurrences is too meagre to permit much discussion.

APPENDICES

APPENDIX 1

Recommendations for Further Work

(Part IV of Summary Report - Sulphurets Creek Project - 1975)

PART IV RECOMMENDATIONS FOR FURTHER WORK

1. Introduction

The Sulphurets Creek Project rock geochemical sampling program identified several areas that have strongly anomalous patterns of metal distribution. In each case the geochemical data is reinforced by favorable geology and the presence of copper sulfide minerals. Each of the areas may contain an orebody and further work is required to demonstrate their merits. Portions of the Sulphurets Creek area that had previously appeared to have good potential were shown by geochemistry to lack unusually high metal values and will have low priority for further expenditures.

Each area of immediate interest will require further surface work and diamond drilling. They (see Figure 1975 - 15) are designated as follows:

Area 1 - Main Copper Zone - located on upper south slope of Sulphurets - Mitchell Creek Ridge.

Area 2 - Kirkham Zone - a possible continuation of Main Copper Zone, located on lower portion of north facing slope of Sulphurets - Mitchell Creek Ridge.

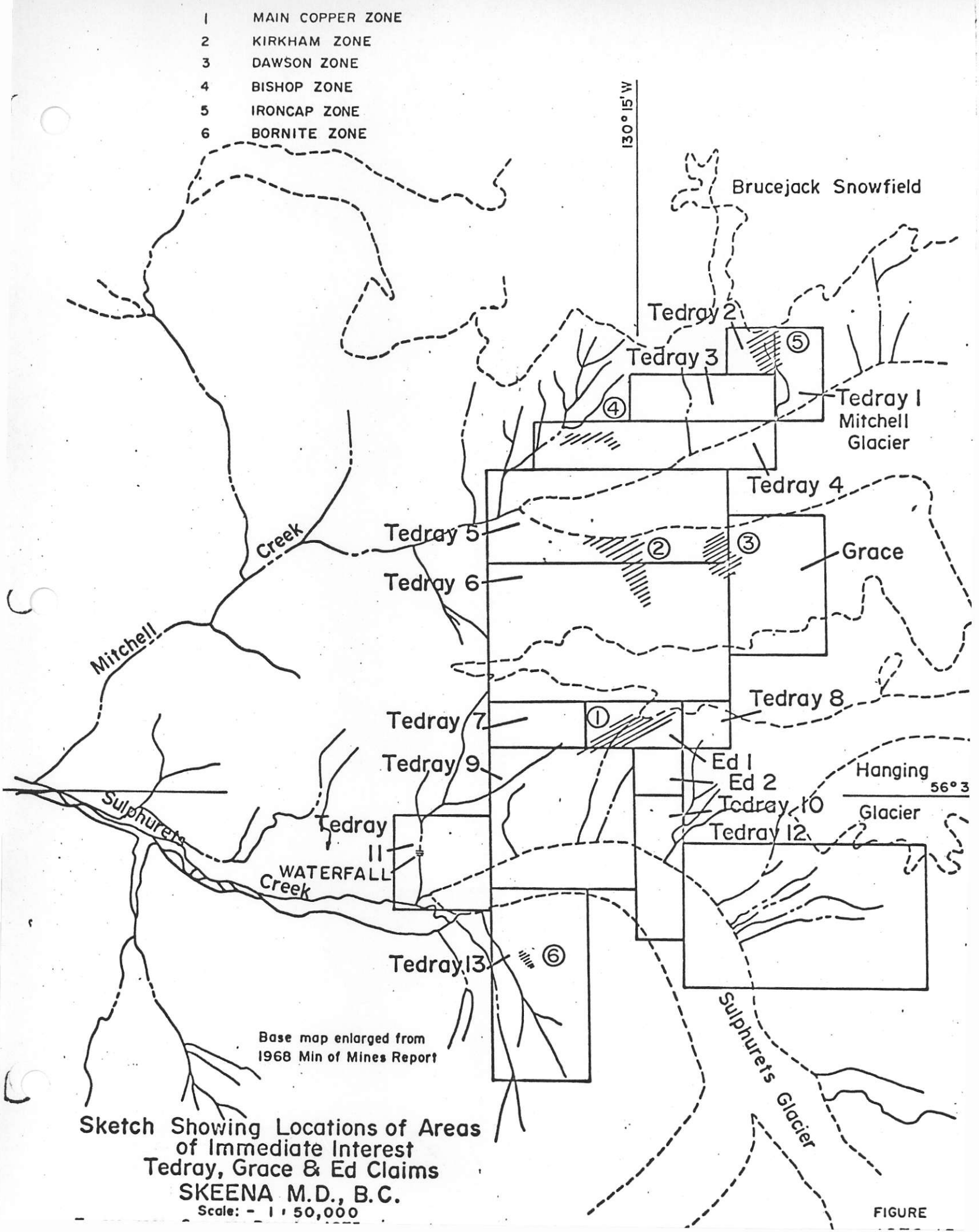
Area 3 - Dawson Zone - 3000 feet east of Area 2.

Area 4 - Bishop Zone - one half mile north of lower part of Mitchell Glacier.

Area 5 - Iron Cap Zone - north of Mitchell Glacier, near permanent snowfield.

Area 6 - Bornite Zone - south of Sulphurets Glacier, very poorly defined.

Area 7 Brucejack Lake - (Red River) Area ?



Sketch Showing Locations of Areas of Immediate Interest
Tedray, Grace & Ed Claims
SKEENA M.D., B.C.
Scale: - 1 : 50,000

FIGURE

In addition to the designated areas, several prospecting possibilities were indicated and should receive attention while work on the primary target areas is in progress. Concomitantly, the merits of all other mineral zones in the vicinity of Sulphurets Creek should be reviewed to determine whether they would be materially enhanced by possible future developments on the GML property and hence should be tied up now.

The following sections of this report offer recommendations for further work on each of the main areas of interest. The minimum cost of the first phase of such work in each area is likely to be $. 25,000; the maximum, several hundred thousand dollars.

The Main Copper Zone is selected as the No. 1 area for further work because of the good results already obtained by drilling and trenching. It has large strike length, potentially a large down dip extension and good logistics relative to other areas. Areas 2, 4 and 5 require some detailed mapping prior to commencement of drilling. Area 6 has few outcrops and a mineral assemblage that is apparently unique in the Sulphurets area.

AREA 1 Main Copper Zone

In the Main Copper Zone, copper mineralization occurs in the hanging wall and footwall of the Sulphurets Fault over an east-west distance of 8000 feet in syenite, trachyte, andesite and arenite. Molybdenite and gold are important constituents. Previous work included mapping, packsack drilling and two diamond drill holes in the period 1960 - 1962, four diamond drill holes in 1968 and trenching, rock geochemical surveys and mapping in 1974 and 1975.

Best copper values occur in a broad zone of strongly sheared quartz sericite schist (silicified arenite). This zone has been drilled and trenched over a horizontal distance of 1200 feet. The minimum potential strike length is 3000 feet with further extensions obscured by snow to the northeast and by talus and steep terrain to the southwest. Dip of the zone appears to be 35° to 50° northwesterly but surface expressions of the zone are limited by the Sulphurets Fault and the mineral zone may extend a very long distance in the northwesterly direction. Thickness of the zone has not been determined but is indicated to be at least 90 feet. — ore grade?

The first stage of further work on the Main Copper Zone should include four 900 foot drill holes inclined - 70° southeast and spaced 400 feet apart, to extend present data to from 400 to 600 feet below surface. If the mineral zone is confirmed by this drilling, possibilities of a very sizeable ore deposit will emerge. If results of this limited amount of drilling were negative then the possibility of locating a significant deposit by further work would be greatly reduced.

AREA 2 Kirkham Zone

The Kirkham Zone is located about 3/4 of a mile north of the Main Copper Zone. It is on the north-facing slope of the Sulphurets - Mitchell Creek Ridge in an area of steep terrain, severe weather conditions and complex geology. Except in canyons and areas of recent glacial scouring, bedrock is obscured by moraines and grassy slopes. The area of high metal content coincides with an area of brecciated intrusive rocks and the trace of the Sulphurets Fault Zone. The actual fault plane has not been precisely

identified. Several high angle or vertical north-striking faults are also present and add to the difficulty of reconstructing the geology.

Copper mineralization is present in most outcrops and malachite staining is spectacularly present in several areas of rocks and boulders on the lower slopes. Pyrite is ubiquitous and fine grained magnetite is prominent in a small area near the permanent snowfield. Rocks that were field identified as of intrusive origin were later identified in microscope studies as altered arenites - indicative of the types of geological problems encountered.

A copper orebody with minor molybdenite, silver and gold may be present in the Kirkham Zone. Diamond drilling is required, firstly to help define the geologic units and structures and secondly to give more continuous and reliable assay data than can be obtained from surface work. The possibility that the Main Copper Zone is the south end of the same mineralization structure continuous with the Kirkham Zone and penetrating the width of the Sulphurets - Mitchell Creek Ridge would also be investigated.

Three holes totalling 1800 feet in length are proposed for the initial drilling test of the Kirkham zone. These holes would be collared at 800 foot intervals along the upper plate of the assumed Sulphurets Fault and would penetrate the Fault but likely would not reach the schistose rocks exposed in outcrops near Mitchell Glacier. Core recovery in the Fault is likely to be poor.

AREA 3 Dawson Zone

The Dawson Zone is a sharply defined area strongly anomalous in copper, lead and silver with peripheral molybdenum, located 3000 feet east of the Kirkham zone. The expression of this zone is vaguely a circle with a diameter of approximately 1500 feet. A bedrock sample that may not be representative of the entire zone assayed 0.87% Cu, <0.001% Mo, 0.02 oz/ton Au and 0.44 oz/ton Ag. Due to favorable conditions the initial drilling of this zone would be readily accomplished. Two holes, each 400 feet in length, are proposed.

It must be noted that the boundary between the GML and Dawson-Ross properties in this area has not been defined (see Figure 1975 - 1 (a)). Some boundary determination would be required prior to commencement of work. This would likely involve delays of unknown duration and moderate costs in legal fees and legal surveys.

AREA 4 Bishop Zone

The Bishop Zone lies north of the lower portion of Mitchell Glacier between elevations 3500 and 5000 feet. It trends northeasterly and has strike length of 3600 feet, width of 1600 feet. The zone anomalous in copper appears to be peripheral to syenite and granite occurrences. The accompanying rock is strongly foliated quartz sericite schist. Copper sulfides are present in the majority of outcrops. Initial drilling would attempt to sample the schistose rocks overlying the intrusive rocks. Two holes are proposed, both are a maximum 1000 feet in length from elevations 4500 feet and 4300 feet and directed easterly at 50°. Because the underlying intrusive rocks, syenitic and granitic, are virtually barren of copper mineralization, the drill holes would be stopped when those rock types were encountered.

AREA 5 Iron Cap Zone

The Iron Cap Zone is situated at high elevation, i.e. above 4500 feet, on the same slope as, but one half mile northeast of, the Bishop Zone. Rocks are foliated quartz sericite schist with abundant pyrite but only minor amounts of chalcopyrite. Geochemical analyses suggest the presence of significant quantities of copper, silver, lead and molybdenum. Some leaching of near surface sulfides may have occurred.

The Mo appears to occur adjacent to the south of the Cu, Ag, Pb. This area had been prospected in some detail prior to the rock geochemical survey and had been written-off as having little potential. Very fine grained sulfides may occur with the abundant pyrite or some enrichment may have occurred in the form of unfamiliar secondary minerals. The area appears to extend northerly beneath the Treaty Glacier and its dimensions might be very large. The remainder of the exposed portion requires mapping, rock geochemical sampling and possibly trenching prior to a modest diamond drill test. Drilling is likely to require either two long holes or several short holes.

AREA 6 Bornite Zone

The Bornite Zone is situated between elevations 3000 and 3500 feet on the slope immediately south of the lower part of Sulphurets Glacier. Exposures consist of small outcroppings of what is apparently a dyke or small diorite intrusion that contains bornite and pyrrhotite in an area of heavy dirt, moss and forest cover. No work has been done to determine the dimensions of the mineralized material. Rock geochemical analyses are anomalous in copper and gold and suggest a probable minimum strike length of 1000 feet. Survey data of all types is incomplete.

Work on the Bornite Zone is in a very preliminary state and should be carried on somewhat differently from work on the larger zones. Mapping, soil sampling, trenching and possibly geophysical surveys are required.

8. Other Exploration Work

The 1974 - 1975 rock geochemical and mapping project revealed several areas that do not qualify as priority targets for further work but nonethe less are deserving of further investigations. Notable among these are:

a) The area adjacent to the north side of the sharp bend in Sulphurets Glacier. Rocks in the area are moderately anomalous in copper and gold. Outcroppings are heavily pyritic and are strongly weathered resulting in low pH conditions and the probability that copper minerals have been leached from the near-surface rocks. The area is particularly difficult to work but requires detailed prospecting.

b) The Waterfall area in the extreme western portion of the claims did not respond to the rock geochemical sampling technique but trench samples gave good indications. The occurrence of numerous stringers of massive chalcopyrite is interesting and further prospecting is required.

c) The arsenopyrite vein found in the southeastern portion of the claims did not respond to trenching and now appears to be merely a small lens in a fault or shear controlled quartz vein. Spectacular gold values obtained in 1974 from initial sampling probably represent enrichment. The continuation of the zone should be sought by a small amount of EM type surveying. Vegetation sampling might reveal other arsenopyrite occurrences.

d] Also in the southeastern part of the claims, a number of lead zinc occurrences were located. Together with similar occurrences below the Hanging Glacier they suggest possibilities for locating worthwhile lead-zinc-silver mineral zones. To date no such zones have been found but the search should be extended to the south and southeast with particular attention being directed to areas recently exposed by the retreat of the various glaciers.

e) Several areas north of Mitchell Glacier that have characteristics similar to the main Sulphurets Zone of alteration should be prospected and rock sampled.

9. Possible Costs of Further Work

As discussed in the previous section, work is required in six specific parts of the Sulphurets Creek Project area. Further work is also required elsewhere but the objectives are not as clearly defined and the next stage of such work is likely to be of minimal cost.

Recommended first stage drilling is projected as follows:

1.	Main Copper Zone	- 4 d.d.h., each 900 ft in length	- 3600 ft
2.	Kirkham Zone	- 3 d.d.h., each 600 ft in length	- 1800 ft
3.	Dawson Zone	- 2 d.d.h., each 400 ft in length	- 800 ft
4.	Bishop Zone	- 2 d.d.h., each 1000 ft in length	- 2000 ft
	Total drilling	11 holes Totalling	8200 ft

A 1976 direct drilling cost of $20/foot is assumed. This figure should include all contractor's charges: i.e. drilling, casing, supplies consumed, cookery, etcetera. Additional charges will include:

transportation of crews and equipment to and from a marshalling area, airlift of fuel and equipment to the property and daily helicopter service while drilling is in progress, demobilization of equipment, cost of fuel, cost of suitable camp and camp equipment, assay costs, costs of labor required for freighting, camp and drill site preparation and core processing, costs of surveying, geological control and project supervision. Two and one-half to three months time will be required.

Direct drilling cost	8200 feet at $20/foot		$164,000.
Transportation	truck and waterborne	6,000.	
	helicopter-mob. & demob.	25,000.	
	" -daily service	50,000.	81,000.
All fuel costs			3,500.
Camp and equipment			7,000.
Assaying			12,500.
Labor			10,800.
Geologist			10,800.
Project Supervisor			15,000.
Estimated costs			$304,600.
Plus 15% contingency			45,700.
Total			$350,300.

Estimated 1976 cost per foot $42.68

APPENDIX 2

Geochemical Analyses

Mitchell Glacier and Southwest of Brucejack Lake.

Copper, Molybdenum, Lead, Silver, Gold.

Oct 11/76
EC

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CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 38702

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Vancouver, B.C.

INVOICE NO. 18580

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ATTN: Rock Geochem

SAMPLE NO. :	PPM Copper	PPM Molybdenum	PPM Lead	PPM Silver	PPB Gold
1107	500	9	16	1.5	110
1108	131	5	28	3.5	250
1109	14	<1	30	1.0	380
1110	13	<1	16	<0.5	240
1111	134	<1	10	1.5	240
1112	74	<1	6	0.5	70
1113	58	<1	26	<0.5	340
1114	165	9	12	1.5	200
1115	562	6	20	0.5	360
1116	1120	76	34	2.0	380
1117	1520	10	28	6.0	300
1118	800	26	6	6.5	270
1119	157	<1	12	<0.5	70
1120	54	<1	14	<0.5	90
1121	134	<1	8	<0.5	110
1122	1080	198	10	3.0	80
1123	31	2	10	0.5	70
1124	30	<1	12	2.0	100
1125	54	<1	38	2.5	280
1126	100	<1	12	0.5	60
1127	33	<1	12	0.5	15
1128	170	<1	6	<0.5	<15
1129	46	<1	6	0.5	830
1130	21	<1	10	1.5	450
1131	235	134	26	11	640
1132	18	5	18	<0.5	120
1133	31	5	10	2.5	100
1134	>4000	124	16	9.0	190
1135	3370	9	250	3.0	240
1136	248	>500	12	2.5	100
1137	840	20	8	<0.5	70
1138	2440	20	482	6.0	110
1139	318	4	120	3.5	30
1140	355	3	20	<0.5	580
1141	106	10	24	7.0	250
1142	126	15	12	<0.5	950
1143	7	<1	30	0.5	630
1144	34	<1	30	5.0	70
1145	42	<1	18	<0.5	1600
1146	3170	5	14	5.5	1100
	106	9	96		

CTA MEMBER CANADIAN TESTING ASSOCIATION

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ATTN:

SAMPLE NO. :	PPM Copper	PPM Molybdenum	PPM Lead	PPM Silver	PPB Gold
1147	156	4	34	1.5	50
1148	203	26	24	0.5	200
1149	136	2	10	1.5	480
1150	30	2	66	2.5	60
1151	94	14	88	4.5	900
1152	14	22	14	0.5	250
1153	12	< 1	8	<0.5	330
1154	10	< 1	10	<0.5	210
1155	18	< 1	18	1.0	200
1156	6	< 1	16	0.5	150
1157	84	1	14	1.0	750
1158	51	154	16	1.5	210
1159	262	10	117	5.0	350
1160	241	< 1	12	4.5	220
1161	14	4	74	2.0	150
1162	1760	1	22	0.5	210
1163	562	64	18	1.5	850
1164	82	2	14	1.5	400
1165	170	76	6	<0.5	430
1166	124	330	6	0.5	400
1167	129	78	10	0.5	420
1168	50	2	8	<0.5	170
1169	840	132	8	4.0	550
1170	200	80	6	1.0	380
1171	241	118	4	0.5	370
1172	840	260	8	2.5	600
1173	1000	98	16	1.5	130
1174	2610	>500	8	2.5	1000
1175	960	>500	18	0.5	460
1176	1720	10	8	1.5	340
1177	110	6	6	6.0	630
1178	16	< 1	24	5.5	1700
1179	26	< 1	50	6.0	480
1180	7	< 1	4	2.5	250
1181	13	< 1	52	8.5	120
1182	20	< 1	10	7.5	470
1183	31	< 1	10	1.5	60
1184	8	< 1	34	2.0	30
1185	4	< 1	50	2.5	60
1186	4	< 1	14	<0.5	30
Std.	102	8	94		

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SAMPLE NO. :	PPM Copper	PPM Molybdenum	PPM Lead	PPM Silver	PPB Gold
1187	7	< 1	24	2.5	250
1188	22	1	22	4.5	250
1189	46	< 1	12	3.5	90
1190	12	< 1	14	1.5	120
1191	76	< 1	20	2.0	190
1192	7	1	28	10	>8000
1193	7	1	42	5.0	780
1194	31	2	88	11	730
1195	8	1	10	0.5	160
1196	4	3	42	5.0	80
1197	31	1	22	7.0	530

	Oz/Ton Gold
1192	0.806

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CERTIFIED BY: Vic Pomeroy

APPENDIX 3

Soil Sample Analyses - Red River Claims

Silver, Gold, Arsenic.

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ATTN:

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SAMPLE NO. :	PPM Silver	PPM Arsenic	PPB Gold
BL 00	8.5	> 500	450
1E	1.5	400	70
2	1.5	400	205
3	2.5	410	720
4	1.0	25	50
5	1.0	130	50
6	2.0	300	50
7	2.0	80	15
8	2.5	280	60
9	1.5	200	135
10	0.5	240	30
11	2.0	80	15
12	1.5	400	50
13	<0.5	400	30
14	3.5	> 500	60
16	1.5	75	<15
17	1.0	100	30
18	1.0	300	70
19	3.0	130	15
20	1.5	85	50
21	2.5	120	<15
24	1.5	60	<15
25	0.5	100	15
26	1.5	60	<15
27	0.5	85	15
28	2.5	55	30
29+20	3.0	50	70
30	3.5	80	100
31	6.0	80	60
33	4.0	65	<15
34	3.5	75	15
BL 35E	2.5	40	<15
O 30W 1N	6.0	400	240
L1E 1N	0.5	300	30
2N	1.5	> 500	425
L1E 1S	< 0.5	500	110
L2E 1N	7.5	> 500	710
2	< 0.5	65	15
3	< 0.5	200	<15
L2E 4N	< 0.5	70	<15
Std.	1	27	

CTA MEMBER CANADIAN TESTING ASSOCIATION

CERTIFIED BY:

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CERTIFICATE NO. 38837

INVOICE NO. 18581

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ANALYSED Oct. 15/76

TO: Granduc Mines Ltd.,
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ATTN:

SAMPLE NO.		PPM Silver	PPM Arsenic	PPB Gold
L2E	1+30S	0.5	110	< 15
L2E	2S	0.5	100	15
L3E	1N	0.5	150	60
	2	3.0	>500	950
	3	<0.5	460	15
	4	0.5	60	< 15
	5N	<0.5	80	< 15
	1+35S	0.5	>500	30
L3E	2S	3.0	280	70
L4E	1N	4.0	>500	340
	2	<0.5	400	30
	3	0.5	310	< 15
	4	<0.5	150	15
	5N	<0.5	150	680
	2S	5.0	>500	780
L4E	3S	<0.5	110	50
L5E	2N	7.0	>500	1225
	3	<0.5	95	60
	4	<0.5	75	< 15
	5N	<0.5	70	< 15
	2S	<0.5	110	85
	3	<0.5	270	60
L5E	4S	1.5	290	100
L6E	1N	0.5	>500	250
	2	4.5	>500	375
	3+40	1.0	>500	30
	4	5.0	400	250
	5N	<0.5	120	135
	2S	2.0	100	100
	3	<0.5	95	145
	4	4.0	100	280
L6E	5S	3.0	260	60
L7E	1N	0.5	420	167
	2	0.5	420	30
	3	<0.5	75	15
	4N	3.0	300	85
	2S	2.0	300	60
	3	2.0	100	60
	4	<0.5	110	60
L7E	5S	8.5	110	60
Std.			23	

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RECEIVED Oct. 11/76

ATTN:

ANALYSED Oct. 15/76

SAMPLE NO. :		PPM Silver	PPM Arsenic	PPB Gold
L8E	1N	< 0.5	140	15
	2	< 0.5	75	15
	3N	< 0.5	25	15
	1S	0.5	55	250
	2	2.0	300	15
	3	1.0	220	60
	4	0.5	100	85
	5	2.0	90	110
L8E	6S	< 0.5	200	30
L9E	1N	< 0.5	430	15
	2	< 0.5	80	15
	3N	< 0.5	75	15
	1S	2.5	140	30
	2	1.5	390	110
	3+45	< 0.5	80	30
	4	1.5	250	70
	5	1.0	100	30
L9E	6S	0.5	450	30
L10E	1N	< 0.5	> 500	85
	2	< 0.5	310	30
	3N	< 0.5	50	15
	1+20S	2.0	> 500	50
	2	3.0	150	70
	3+40	1.5	350	60
	4	3.0	180	100
	5	< 0.5	440	30
L10E	6S	3.0	80	85
L10+30E	7S	1.0	240	60
L11E	2N	< 0.5	410	50
	3	< 0.5	40	30
	4N	< 0.5	20	< 15
	1S	2.5	110	110
	2	2.5	120	30
	3	2.5	95	60
	4	< 0.5	100	30
	5	3.5	65	70
	6	1.5	110	205
	7	6.0	90	85
L11E	8S	4.0	130	50
L12E	3N	< 0.5	110	15
Std.			38	

CTA MEMBER CANADIAN TESTING ASSOCIATION

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CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 38839

INVOICE NO. 18581

RECEIVED Oct. 11/76

ANALYSED Oct. 15/76

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2009 - 1177 W. Hastings,
Vancouver, B. C.

ATTN:

SAMPLE NO. :		PPM Silver	PPM Arsenic	PPB Gold
L12E	4N	< 0.5	60	< 15
	1S	1.0	140	50
	2	8.0	18	30
	3	3.5	75	50
	5	2.0	90	30
L12E	6S	2.5	100	60
L13E	1S	18	> 500	70
	2	4.5	330	60
	3	0.5	35	50
	4+25	0.5	390	100
	5	5.0	100	135
	6	3.0	100	30
L13E	8S	< 0.5	110	15
L14E	1S	< 0.5	95	450
	2	2.5	280	60
	3	1.0	260	60
	4	0.5	75	30
	5	2.5	80	30
	6	3.5	360	85
	7	< 0.5	110	< 15
	8	< 0.5	140	< 15
L14E	9S	< 0.5	220	100
L15E	1S	1.5	300	15
	2+20	0.5	80	< 15
	3	< 0.5	260	15
	4	1.0	100	15
	5	2.5	150	30
	6	< 0.5	240	70
	7	< 0.5	240	15
	8	< 0.5	90	30
	9	4.0	75	60
L15E	10S	< 0.5	12	50
L16E	2N	< 0.5	65	30
	3N	< 0.5	160	100
	1S	< 0.5	80	15
	2	2.0	60	< 15
	3+10	4.5	75	50
	4	5.5	36	110
	5	2.0	380	85
L16E	6+30S	1.5	140	120
Std.			38	

CTA MEMBER CANADIAN TESTING ASSOCIATION

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TO: Granduc Mines Ltd.,
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ATTN:

SAMPLE NO. :		PPM Silver	PPM Arsenic	PPB Gold
L16E	7S	0.5	100	30
	8	3.5	100	15
	9	1.0	100	15
L16E	10S	2.5	140	30
L17E	1N	< 0.5	100	30
	2N	< 0.5	95	30
	1S	2.5	95	30
	2	< 0.5	80	15
	3	1.5	80	30
	5	0.5	110	60
	5+80	< 0.5	280	< 15
	7	3.0	90	50
	8	2.5	75	30
	9	< 0.5	140	< 15
L17E	10S	0.5	110	30
L18E	1N	< 0.5	130	30
	2N	1.5	100	15
	1S	1.0	43	30
	2	1.5	85	60
	3	1.5	40	< 15
	4	0.5	>500	30
	5	< 0.5	400	50
	6	< 0.5	300	110
	8	< 0.5	140	30
	9	< 0.5	200	110
L18E	10S	< 0.5	300	15
L19E	1N	< 0.5	250	30
	1S	6.5	35	205
	2	1.5	100	15
	3	3.5	50	<15
	4	1.5	55	<15
	5	1.0	300	60
	6	1.0	65	15
	7	2.5	65	<15
	8	0.5	30	<15
	9+15	4.5	460	190
L19E	10S	1.5	110	50
L20E	1S	1.0	220	30
	2	2.5	40	<15
L20E	3S	2.5	60	30
	Std.			

CTA MEMBER CANADIAN TESTING ASSOCIATION

CERTIFIED BY: ...

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: 985-0648
AREA CODE: 604
TELEX: 043-52597

CHEMEX LABS LTD.

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 38841

INVOICE NO. 18611

RECEIVED Oct. 11/76

ANALYSED Oct. 18/76

TO: Granduc Mines Ltd.,
2009 - 1177 W. Hastings,
Vancouver, B. C.

ATTN:

SAMPLE NO. :	PPM Silver	PPM Arsenic	PPB Gold
L20E 4+10S	1.5	110	110
5	2.0	120	< 15
6	1.5	140	30
7	0.5	95	15
8	3.0	120	135
9	2.0	340	230
L20E 10S	0.5	280	110
L21E 1S	2.0	65	30
2	1.0	11	< 15
L21 3S	8.0	100	85
6	2.0	90	30
7	0.5	75	50
8	0.5	30	30
9	1.0	350	145
L21E10S	< 0.5	150	30
L22E 1S	2.0	110	60
2	4.5	150	425
L22E3S	2.0	165	120
L22+20E 4S	5.5	30	< 15
L22E 5	2.5	200	70
6	1.0	110	30
7	< 0.5	100	< 15
8	< 0.5	400	1925
9	5.0	100	15
L22E10S	1.5	110	50
L23E 2+10S	3.5	>500	145
3	2.5	130	30
4	1.0	90	15
5	5.0	220	145
6	5.0	300	167
7	1.5	490	205
8	4.0	380	145
9	3.0	250	85
L23E 10S	1.0	130	30
L24E 3S	2.0	150	400
4	3.0	270	280
5	1.5	120	180
6	3.0	>500	30
7	0.5	160	60
L24E 8+30S	< 0.5	100	< 15
Std.		25	

CTA MEMBER CANADIAN TESTING ASSOCIATION

CERTIFIED BY: .....

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CANADA V7J 2C1
TELEPHONE: 985-0648
AREA CODE: 604
TELEX: 043-52597

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CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 38842

INVOICE NO. 18611

RECEIVED Oct. 11/76

ANALYSED Oct. 18/76

TO: Granduc Mines Ltd.,
2009 - 1177 W. Hastings,
Vancouver, B. C.

ATTN:

SAMPLE NO. :	PPM Silver	PPM Arsenic	PPB Gold
L24E 9S	2.0	40	50
L24E 10S	1.5	300	280
L25E 3+30S	1.5	290	325
4	4.0	400	85
5	9.0	220	< 15
6	2.0	120	135
7	2.0	130	50
8	3.0	120	30
9	3.5	>500	180
L25E 10S	< 0.5	120	15
L26E 4S	3.0	220	110
5+40	12	> 500	580
6	0.5	180	50
.6E 7S	2.0	480	60
L27E 1S	1.5	80	15
2	2.5	90	15
4	4.0	190	122
5	3.5	200	110
6	1.5	>500	110
7	1.5	>500	145
L26E 9	2.5	380	755
L26E 10	3.0	170	60
L27E 10+30S	0.5	110	15
L28E 1S	4.0	90	30
2	5.5	80	30
3	2.0	150	70
5+80S	3.0	190	350
8	0.5	380	155
9	1.0	190	135
L28E 10S	2.5	420	265
L29E 1S	4.0	90	15
2	6.0	90	50
3	4.5	80	205
6	3.5	390	860
7	3.5	400	375
8	0.5	270	30
9	1.5	400	230
L29E 10S	7.5	>500	1590
.30E 9S	5.0	>500	690
L31E 9S	4.5	>500	743
Std.		30	

CTA MEMBER CANADIAN TESTING ASSOCIATION

CERTIFIED BY: .....

CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
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TELEPHONE: 985-0648
AREA CODE: 604
TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 38843
INVOICE NO. 18611
RECEIVED Oct. 11/76
ANALYSED Oct. 18/76

TO: Granduc Mines Ltd.,
2009 - 1177 W. Hastings
Vancouver. B. C.

ATTN:

SAMPLE NO. :		PPM Silver	PPM Arsenic	PPB Gold
L34E	1S	1.0	220	85
	2	0.5	160	30
	3	1.5	90	15
	4	1.5	140	60
	5	0.5	110	100
	6	4.5	330	110
	8	0.5	>500	85
L34E	9S	3.5	>500	217
L35E	1S	0.5	190	30
	2	3.0	>500	100
	3	1.0	160	50
	4	1.5	150	30
	5	2.0	200	30
	6	1.5	170	30
	7	24	>500	1310
L35E	8S	14	>500	1680

CTA MEMBER CANADIAN TESTING ASSOCIATION

CERTIFIED BY: .....

APPENDIX 4

Bedrock Sample Assays

Mitchell Glacier, Red River Claim and Bornite Zone.

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CERTIFICATE OF ASSAY

CERTIFICATE NO. 31768

INVOICE NO. 18281

RECEIVED Sept. 13/76

ANALYSED Sept. 17/76

TO: Granduc Mines Ltd.,
2009 - 1177 W. Hastings
Vancouver, B.C.

ATTN:

SAMPLE NO. :	% Copper	% Lead	% Zinc	Oz/Ton Silver	Oz/Ton Gold	% Molybdenum	% Cadmium
12851	0.87			1.12	0.018	0.004	
12852		12.0	4.22	779.95	84.830		0.088
12853	0.17	0.66	0.55	13.24	2.720	0.002	0.005
12854		0.45		1.10	0.088		
12866				2,50	0.726		
12867				0.66	0.020		
12868				0,42	0.064		
12869		0.35	0.61	10.18	0.058		
12870		3.06	2.26	1.82	0.202		
12871				0.16	0.068		
12872				0.30	0.012		
12873				7.82	0.360		
12874		1.06	3.36	19.39	0.212		
12875		16.8	33.6	19.85	2.552		
12876				0.73	0.056		
12877				1.66	0.066		
12878				11.36	13.560		
12879				27.97	1.332		
12880				3.69	1.592		
12881	1.86						
12882	0.90						
12883	0.68						
12884- Composite of 12881,12882 & 12883					0.080		

CTA MEMBER CANADIAN TESTING ASSOCIATION

REGISTERED ASSAYER, PROVINCE OF BRITISH COLUMBIA

CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE 985-0648
AREA CODE 604
TELEX 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ASSAY

CERTIFICATE NO. 31697

INVOICE NO. 18081

RECEIVED Aug. 25/76

ANALYSED Sept. 2/76

TO: Granduc Mines Ltd.
2009 - 1177 W. Hastings St.
Vancouver, B.C.

ATTN:

SAMPLE NO. :	% Copper	% Molybdenum	% Lead	% Zinc	Oz/Ton Silver	Oz/Ton Gold
12855	0.02				1.86	0.068
12856	0.04				4.12	0.340
12857					2.82	0.184
12858	0.79				10.18	0.122
12859	0.12		0.41		0.95	0.032
12860	0.35	<0.001	1.10	1.48	0.70	0.026
12861			10.2	12.0	3.23	0.030
12862			0.57	1.34	13.32	1.308
12863	0.52	0.001				
12864	0.43	0.002				
12865			0.15	0.27	71.75	7.216

CTA MEMBER CANADIAN TESTING ASSOCIATION

REGISTERED ASSAYER, PROVINCE OF BRITISH COLUMBIA