CREAM SILVER MINES LTD.

GEOLOGICAL AND GEOCHEMICAL REPORT ON THE BUTTLE LAKE PROPERTY ALBERNI MINING DIVISION NTS 92F/12E, 5E

BY LINDA DANDY, B.Sc., F.G.A.C.

JANUARY 1988

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LOCATION:

49030'N LATITUDE - 125033'W LONGITUDE

OPERATOR:

CREAM SILVER MINES LTD.

OWNER:

CREAM SILVER MINES LTD.

CONSULTANT:

ARCHEAN ENGINEERING LTD.

PROJECT GEOLOGIST: LINDA DANDY, B.Sc., MARK MANAGEMENT LTD.

CREAM SILVER MINES LTD. GEOLOGICAL AND GEOCHEMICAL REPORT ON THE BUTTLE LAKE PROPERTY ALBERNI MINING DIVISION

SUMMARY

Cream Silver Mines Ltd. Buttle Lake property consists of 99 mineral claims in current good standing in the Alberni Mining Division of Vancouver Island, British Columbia. The mineral claims adjoin those of Westmin Resources Ltd. near the south end of Buttle Lake and access into the area is by road from Campbell River. The southern Cream Silver claims are most easily accessed by helicopter.

The initial mineral claims of the current Cream Silver property were located in 1964. Exploratory work to 1972 has included geological, geochemical and geophysical surveys over much of the property area and three diamond drill holes totalling 2,649 feet on one of the northern claims. Exploration work since 1973 has been prohibited, until March of this year, by an effective moratorium on work on mineral claims in Provincial Parks.

The Westmin Resources Ltd. property, immediately north of the Cream Silver claims, includes four known volcanogenic massive sulfide deposits of which two, the Lynx and Myra mines, have been in production for 20 years. Recent development of the H-W deposit (15.2 million tons grading 0.07 oz/ton gold, 1.1 oz/ton silver, 2.2% copper, 0.3% lead, and 5.3% zinc) has resulted in an increase in daily milling capacity to 4,000 tons. The Westmin deposits are hosted by four rhyolitic horizons within the lower and middle sections of the Myra Formation of the Paleozoic Sicker Group.

Available data pertaining to earlier work on the Cream Silver property suggests that the same volcanic stratigraphy as that hosting the Westmin deposits exists in the northern part of the claims area. In addition, massive sulfide float with values in gold, silver, copper, lead and zinc has been identified near the headwaters of Price Creek in the southeastern part of the property. A number of narrow vein type deposits with locally good gold and silver grades are known in the southern claims area.

In 1987, work done by Cream Silver Mines Ltd. included geological mapping at a scale of 1:2,500, and rock chip, soil and heavy mineral concentrate sampling. Geophysical surveys were conducted over the northern portion of the property by P.E. Walcott and Associates and will be included in a separate report.

The Cream Silver property is considered to be highly prospective for the discovery of Westmin type massive sulfide deposits. A thorough programme of exploration is warranted which is recommended to include preliminary diamond drilling, and additional ground geophysical, geological and geochemical surveys.

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CREAM SILVER MINES LTD. GEOLOGICAL AND GEOCHEMICAL REPORT ON THE BUTTLE LAKE PROPERTY

1. INTRODUCTION

The Buttle Lake Property is a precious and base metal prospect located in the Strathcona Recreation Area on central Vancouver Island, British Columbia (Figure 1). The claims were staked in the late 1960's and are adjacent to those of Westmin Resources Ltd.

The claims have been held in moratorium for the last 17 years since they were located within Strathcona Provincial Park within which mineral exploration was disallowed. In March 1987, the moratorium was lifted and the status of the area was reduced from Class A Park to Recreational status, which reopened the area to mineral exploration.

From 1964 to 1970, the company carried out exploration consisting of various geophysical surveys, geochemical surveys, geological mapping, trenching, sampling and limited diamond drilling. In 1971, Westmin Resources Ltd. optioned the claim group and conducted exploration consisting of an Induced Polarization survey and diamond drilling along the common boundary (ie. the north part of the claims at Thelwood Creek), geological mapping and prospecting of the claim group.

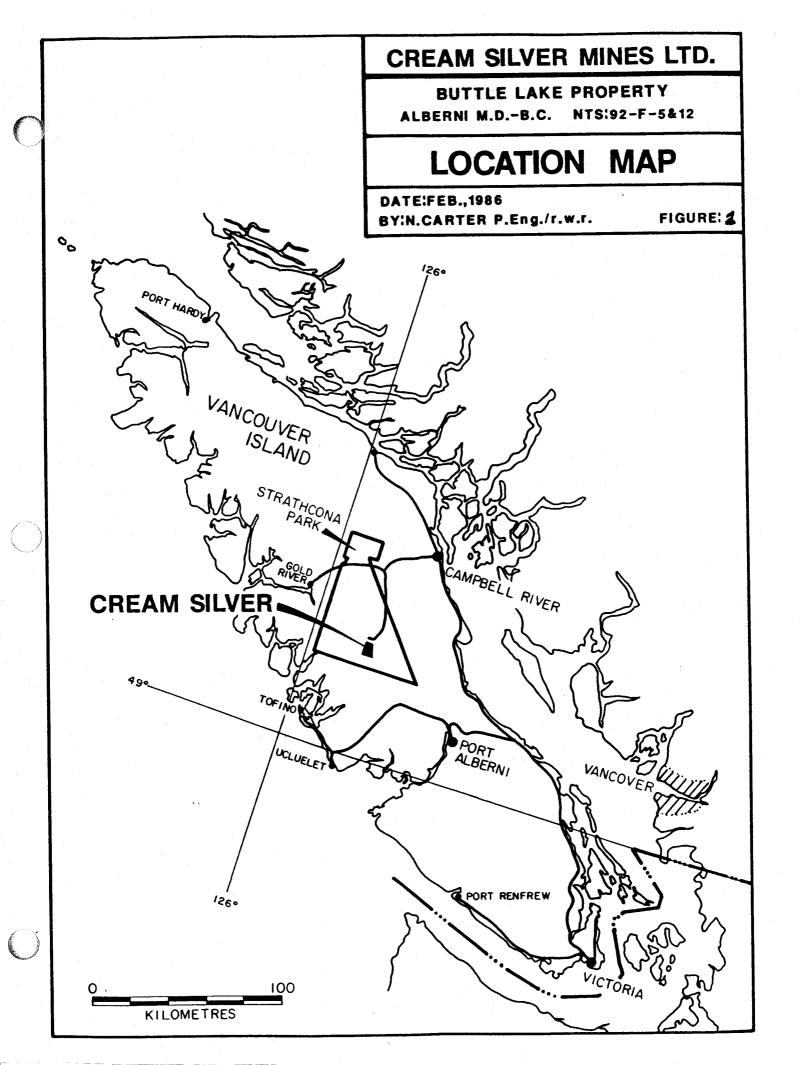
In 1987, a cut line grid was put in on the northern portion of the property. This grid was surveyed using Induced Polarization and Controlled Source Audio-Frequency Magneto-Tellurics (CSAMT) depending on the depth penetration required along each line. The geophysical surveys will be contained in a separate report to be submitted by P. E. Walcott and Associates of Vancouver, B.C. Where snow cover allowed, the property was mapped at a scale of 1:2,500. Rock chip, soil and heavy mineral sampling was carried out over areas of interesting geology.

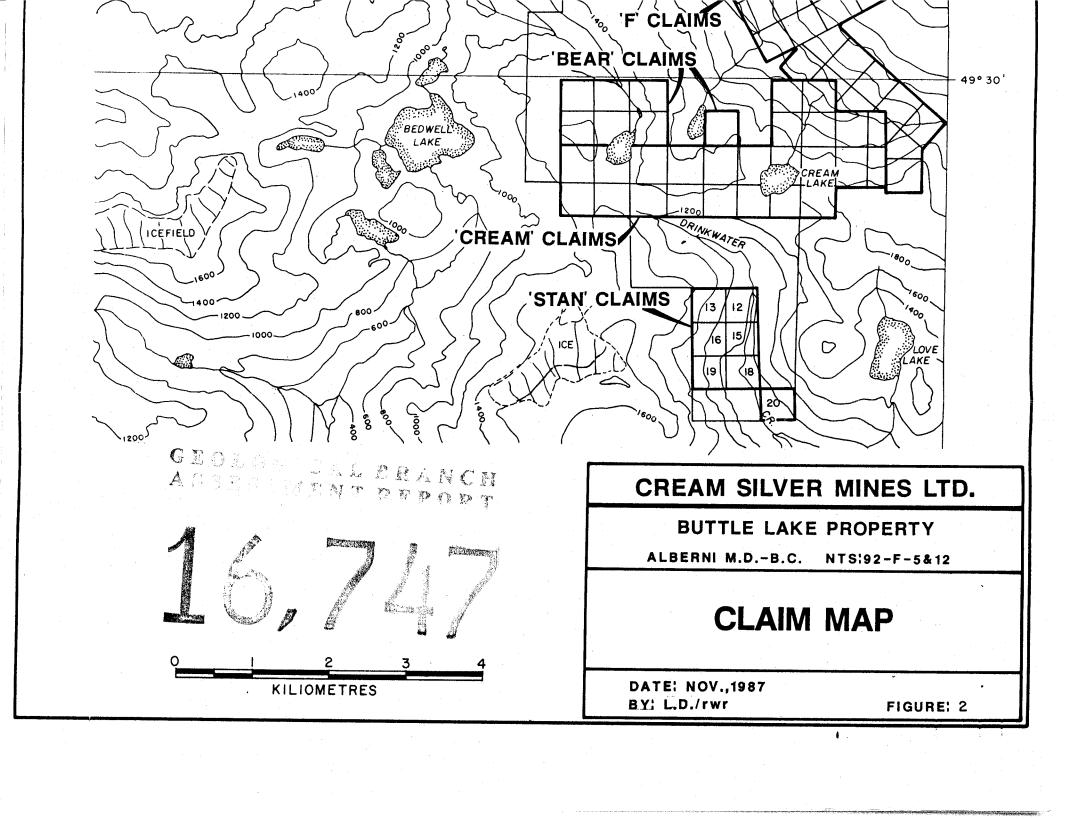
1.1 LOCATION AND ACCESS

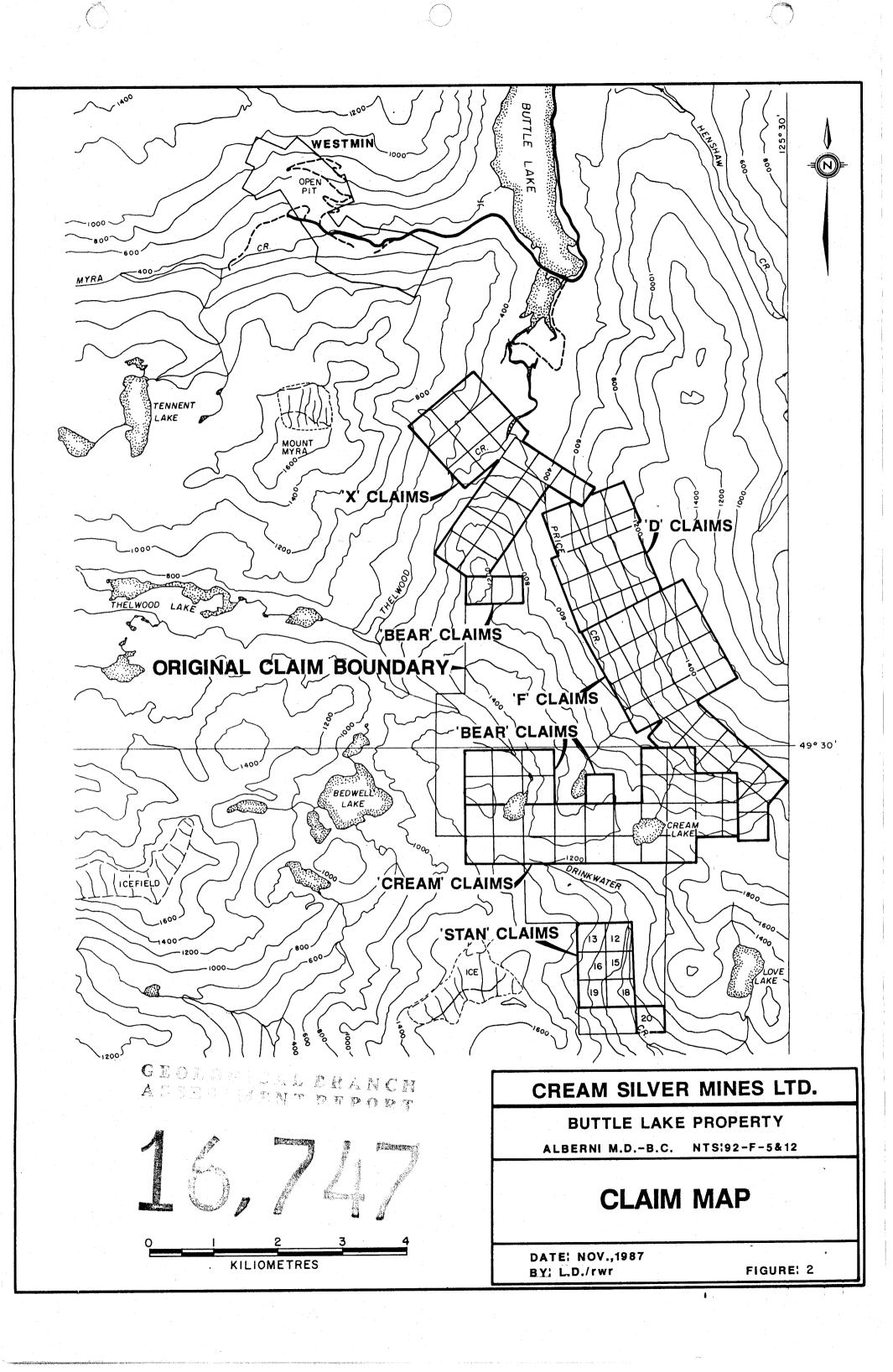
The property lies between Thelwood and Price Creeks, from 2 to 10 kilometres south of Buttle Lake in central Vancouver Island, British Columbia. The claims cover an area of approximately 25 km² which represents most of the drainage basins of Price, Thelwood, and Drinkwater Creeks. These creeks all drain westward or northward into Buttle Lake. Most of the property consists of steep sided mountain slopes with gently rolling plateau-like summits. Relief is on the order of 1700 metres (5600 feet). The geographic centre of the claim group is at 125°33' West Longitude and 49°30' North Latitude on NTS Mapsheets 92F/12E, 5E.

Access into the Buttle Lake area is by a 90 kilometre (55 mile) paved road linking the Westmin Resources' mine and mill complex with Campbell River and the Island Highway (B.C. No. 9). The lower Price Creek area, in the northern portion of the property, is partially accessible by way of old logging roads and a little used trail; this trail terminates at Cream Lake. The claims adjoining those of Westmin are located along the Thelwood Creek valley and are accessed by a gravelled road which runs from the south end of Buttle Lake to Jim Mitchell Lake. Preferably, access can be gained by helicopter from Campbell River, a distance of approximately 65 kilometres, to the centre of the claim group, or by fixed wing aircraft to Bedwell Lake, 1.5 kilometres west of the claims. From there they are reached by a foot trail which climbs approximately 300 metres to the centre of the claims.

The northeast corner, on which the most recent program was completed, is accessed from the south end of Buttle Lake by an old logging road for approximately 3 kilometres, and then by foot trail for a distance of 1.5 kilometres.







1.2 PHYSIOGRAPHY, VEGETATION AND CLIMATE

Topography in the area is rugged, with elevations varying from 450 to 1525 metres above sea level. The higher portion of the claims consists of rock outcrops or rubble. The lower part of the claims is covered by dense forest. In this section, outcrop is limited to creeks or areas of sudden change in slope. Slide areas are common along the western tributaries of Price Creek, covering large sections of the main valley with boulders and rock rubble. These sections are nearly impassible due to the thick growth of alders and brush.

The Cream Silver property includes an alpine area in the southern part of the claims holdings where elevations range from 1220 to 1525 metres (4000 to 5000 feet). Bedrock, felsenmeer and talus is abundant. Below 1220 metres (4000 feet) elevation, and particularly in the lower reaches of Price and Thelwood Creeks, dense forest cover of cedar, hemlock and fir and locally thick underbrush predominates.

The area has typical Coastal climate and higher areas are snow free 3 to 4 months of the year. At Buttle Lake, summer temperatures may reach into the low 30° C range, while winter lows seldom remain below zero for more than a few weeks.

1.3 CLAIM INFORMATION

Cream Silver's Buttle Lake Property is situated in the Alberni Mining Division, and consists of 99 full and fractional two post mineral claims adjacent to those held by Westmin Resources Ltd. Figure 2 shows the approximate boundaries of the claims. Claim information is listed in TABLE I.

TABLE I
CLAIM STATUS

CLAIM N	AME	RECORD NO.	ANNIVERSAR	Y DATE
CREAM	1- 2	11497-98		22
	3-12	9418-27		22
	3-14	10394-95	SEPTEMBER	
CREAM 1	5-18	11574-77	OCTOBER	12
CREAM 1	E-2E	11499-500	JULY	27
CREAM 3	E-6E	11570-73	OCTOBER	12
BEAR	2	10353	SEPTEMBER	23
BEAR	6	10357	SEPTEMBER	23
BEAR	8	10359	SEPTEMBER	23
BEAR 2	1-26	10372-77	SEPTEMBER	23
x 1 - x	20	15577-96	SEPTEMBER	17
F l - F	'16	15882-97	NOVEMBER	25
F17 - F	28	16846-57	MAY	22
D 1 - D	94	16271-74	JANUARY	27
D 6 - D	18	16276-88	JANUARY	27

1.4 HISTORY

Gold and silver bearing quartz veins in the vicinity of Cream Lake were first investigated in the 1930's. Mr. F.A. Lang located 12 claims in the area in 1964 and these and other claims staked in subsequent years came under the ownership of Cream Silver Mines Ltd. in 1966.

Exploratory work by Cream Silver Mines to 1970 included airborne and ground geophysics, soil geochemistry and detailed geological mapping, trenching and sampling of several precious and base metal structures in the alpine area west of Cream Lake. Three short holes were also diamond drilled. Soil geochemical surveys were conducted east and west of Price Creek in 1969 and 1970.

Western Mines Ltd. (now Westmin Resources Ltd.) entered into an agreement in 1971 to carry out further exploration on Cream Silver's 180 claims covering an area from Drinkwater Creek on the south to the junction of Price and Thelwood Creeks on the north. Geological mapping was undertaken over much of the claims area in 1971 and 1972

and additional soil geochemical surveys were completed in the lower Price Creek area. An Induced Polarization survey, carried out over an anomalous zinc in soils zone near the confluence of Price and Thelwood Creeks in the northern claims, indicated targets which were tested by three diamond drill holes totalling 807 metres (2,649 feet) in 1972 and 1973.

The British Columbia Government enacted legislation in early 1973 prohibiting the issuance of Park Use Permits for the purpose of carrying out exploration work on mineral claims in all classes of Provincial Parks. An Order-in-Council issued by the Government in April of 1974, and retroactive to March 1, 1973, placed a moratorium on assessment work requirements for claims in Provincial Parks until such time as "a Park Use Permit is issued or renewed or the mineral claims are otherwise disposed of." A recent (1986) Supreme Court of Canada decision overturned the B.C. Government's moratorium and has again allowed for the exploration and development of mineral claims in Parks.

1.5 WORK DONE BY CREAM SILVER MINES LTD. IN 1987

The following field work was completed on the Buttle Lake property by Cream Silver Mines Ltd. during the period May 4 to July 30, 1987:

- 1) Detailed geological mapping at a scale of 1:2,500 was carried out over most of the property.
- 2) Soil, rock chip and heavy mineral concentrate samples were taken over areas of favourable geology.
- 3) A grid totalling 32 line kilometres, with a base line of 4 kilometres was cut and chained.
- 4) Contract geophysical work was done by P. E. Walcott and Associates of Vancouver, B.C., and will be included as a separate report.

2. GEOLOGY

2.1 REGIONAL GEOLOGY

Vancouver Island makes up the southern part of the Insular Belt, the westernmost tectonic subdivision of the Canadian Cordillera. The southern Insular Belt is dominated by Paleozoic and Mesozoic volcanic-plutonic complexes overlain along the east coast of Vancouver Island by clastic sedimentary rocks of Cretaceous age.

Oldest rocks underlying Vancouver Island include the Paleozoic Sicker Group which is exposed in two principal uplifts in the central and southern parts of the Island - the area between Port Alberni and Duncan and the Buttle Lake area. Sicker Group comprises a 2135 to 3050 metre (7,000 to 10,000 foot) thickness of mafic to felsic volcanic rocks, intrusive equivalents and lesser sedimentary rocks which has been subdivided by Muller (1980) into three principal formations. These include the basal Nitinat Formation of pre-Devonian age which is exposed only in the Port Alberni-Duncan area and which consists of basaltic flows and flow breccias. Myra Formation of similar age overlies the Nitinat Formation and includes 915 to 1830 metres (3,000 to 6,000 feet) of intermediate to felsic volcaniclastic and lesser sedimentary rocks. Pennsylvanian to Permian limestones of the Buttle Lake Formation form the upper unit of the Sicker Group.

Much of the Sicker Group exposed in the Buttle Lake uplift is Myra Formation volcanic and lesser sedimentary rocks. Buttle Lake Formation limestones overly the Myra Formation and are exposed on the flanks of the structural uplift (Figure 3). The Sicker Group in the Buttle Lake area is overlain unconformably by late Triassic Karmutsen Formation basalts and is intruded by granitic rocks of the Island Intrusions.

The Myra Formation in this area has an apparent thickness of 1830 metres (6,000 feet). The lower and middle sections of the Formation host the Westmin massive sulfide deposits which have been well

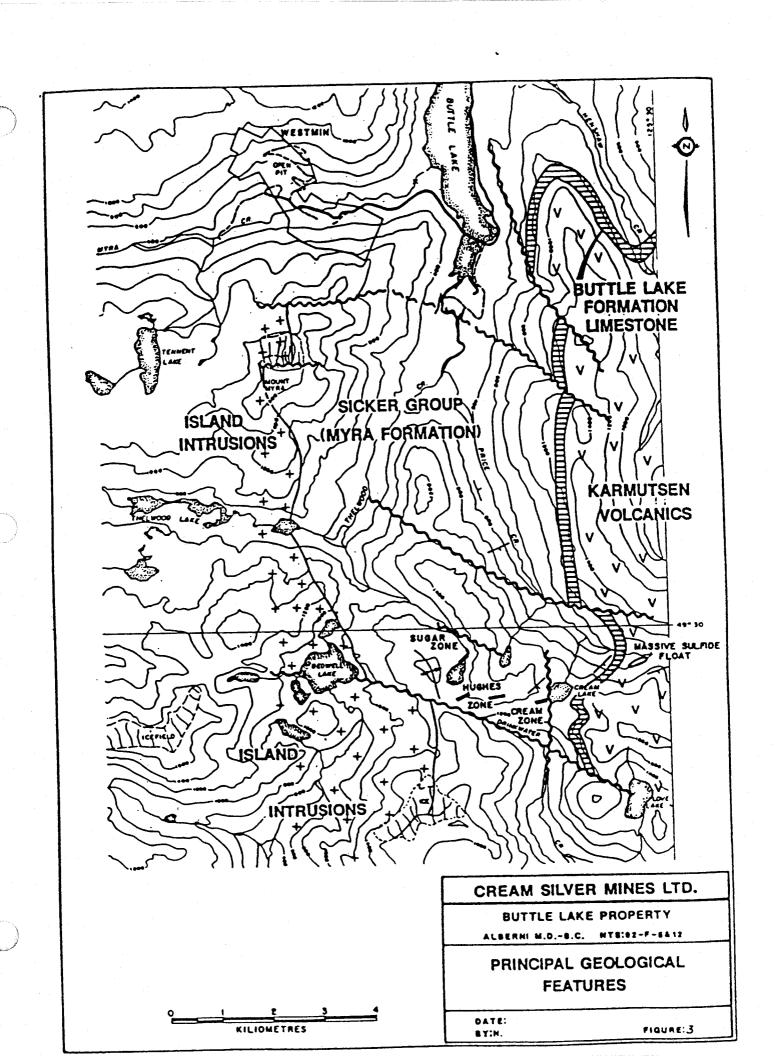
documented by Walker (1983a, b).

Sicker Group rocks of Vancouver Island host precious and base metal-bearing vein and fissure-filling deposits in the China Creek area east of Port Alberni and in the southern part of the Cream Silver property south of Buttle Lake. Polymetallic, volcanogenic massive sulfide deposits, examples of which include the Westmin deposits and the Mt. Sicker and Lara prospects near Duncan, represent the most significant mineral deposit type hosted by Sicker Group rocks, and more specifically the Myra Formation.

Production over the past 20 years from the Westmin Lynx and Myra Mines totals 5.7 million tons grading 0.06 oz/ton gold, 3.2 oz/ton silver, 1.5% copper, 1.1% lead and 7.6% zinc. Proven reserves at the Lynx, Myra and the partially developed Price zone are 0.75 million tons of similar grade, but most of the property reserves are contained in the H-W deposit from which production commenced in late 1985.

The H-W orebody, discovered in late 1979, is considered to be the most significant mineral discovery in the Canadian Cordillera in the last decade. Current reserves are 15.2 million tons grading 0.07 oz/ton gold, l.l oz/ton silver, 2.2% copper, 0.3% lead and 5.3% zinc. Production from this deposit has resulted in the expansion of daily milling capacity to 4,000 tons.

The Lynx, Myra, Price and H-W deposits are hosted by the lower and middle units of the Myra Formation, referred to by Walker (1983a, b) as the Mine Sequence. This is a 450 metre (1,500 foot) thick succession, underlain by andesitic volcanics and overlain by a distinctive sharp banded tuff unit. The Mine Sequence includes volcaniclastics, volcanic flows and lesser chemical sedimentary rocks and while lithologic units are discontinuous laterally, they have a distinct northwest trend. Mafic volcanic rocks predominate, but massive sulfide deposits are hosted by rhyolitic unit at the bottom, middle and top of the sequence.



The lowest rhyolitic unit hosts the H-W deposit and is predominantly clastic, ranging in thickness from several metres to more than 215 metres (700 feet). This is overlain by several hundred metres of andesitic flows, clastic rocks and chert. Sulfide fragments have been noted in this interval which is overlain by the middle rhyolite unit hosting the Lynx, Myra and Price deposits. This rhyolite unit has a known strike length of 5800 metres (19,000 feet) and attains a thickness of up to several hundred metres. Overlying this unit is a distinctive purple and green andesitic to basaltic sequence of flows and tuffs which also contains sulfide clasts and which has proven to be a useful stratigraphic marker horizon. Above this is the upper rhyolitic unit which hosts massive sulfides at the Lynx open pit and in a new zone 915 metres (3,000 feet) to the northwest.

Most rocks of the Mine Sequence have been intensely deformed and converted to chlorite and sericite schists particularly in proximity to mineralized zones. North and east trending faults are numerous and displace most rock units.

The Lynx, Myra and Price ore bodies are near the crest of a recumbent, northwest-trending anticline developed in the middle rhyolitic unit. These three deposits are in fact parts of one zone in which the Lynx and Myra mines are separated by erosion along Myra Creek valley. The Price is the southeast continuation of the Myra deposit which has been displaced by faulting 610 metres (2,000 feet) laterally and 305 metres (1,000 feet) vertically with the Price block up.

The Lynx, Myra and Price deposits consist of fine grained massive to banded sulfides which occur as lenses in which the principal minerals are pyrite, sphalerite, chalcopyrite, galena and barite. The H-W orebody, 245 metres (800 feet) stratigraphically lower and near the base of the lower rhyolitic unit, is a flat-lying lens-like body with thicknesses in its core of more than 30 metres. Massive sulfides average 65 weight percent pyrite as opposed to the Lynx-Myra-Price zones which average 15 weight percent. The H-W is laterally zoned from a cupriferous pyrite core to zinc, copper, lead-silver and

barite rich margins. Gold is uniformly distributed throughout the zone. Pyrite stringer zones underly the H-W and Lynx deposits.

2.2 PROPERTY GEOLOGY

Principal geological units of the Cream Silver property are shown on Figure 3. The claims cover the southern part of the Buttle Lake structural uplift in which Sicker Group rocks are bounded on the east and west by Karmutsen basic volcanics and Island granitic intrusions respectively.

Sicker Group rocks on the claims include felsic and intermediate flows, tuffs and agglomerates which are overlain by Buttle Lake limestones, lesser cherts and argillites in the eastern claims area. These are in turn overlain unconformably by Karmutsen basic volcanics. Granitic to dioritic dykes, related to the Island Intrusions, are numerous, particularly in the southern claims. Basic dykes are also present.

In the northern part of the claims area, between Price and Thelwood Creeks, Scott (1972a) refers to a 600 to 1400 metre (2,000 to 4,500 feet) succession which includes a basal 60 metre (200 feet) thick porphyritic rhyolite flow unit overlain by 300 metres (1,000 feet) of dacite lapilli tuff which is separated from a coarser clastic dacite by 90 metres (300 feet) of cherty bedded tuff. Up to 250 metres (800 feet) of crinoidal limestone of the Buttle Lake Formation overlies the coarse clastic dacite sequence east of Price Lake and Cream Lake. Both Wilbur (1971) and Scott (1972) refer to the basal part of the Karmutsen Formation (which overlies the Buttle Lake Formation unconformably) as being comprised of a 30 metres (100 feet) thickness of argillite and rhyolite, grading upward to typical pillow basalt with rhyolitic interbeds.

Detailed mapping carried out in 1987 outlined units of Sicker Group andesites and rhyolites, Buttle Lake Formation limestone, chert and argillite, and minor pillow basalts of the Karmutsen Formation.

Numerous dioritic and less abundant mafic dykes were found crosscutting the Sicker Group volcanic rocks. Snow cover in the southern portion of the claim block (where elevations are higher) made geologic interpretations difficult as only about 50% of the outcrops were exposed. In the northern claims, where the most significant geophysical anomalies were outlined, little rock exposure was present and most outcrops were obscured by dense undergrowth.

2.3 STRUCTURAL GEOLOGY

Stratification within the Myra Formation is predominantly northeast with moderate dips to the southeast. Graded bedding in some of the tuff units indicates the sequence is right way up (Scott, 1972). Moderately east plunging fold structures were noted in the upper Price Creek area by Wilbur (1971a). The dominant structural features of the claims area are west-northwest faults along which lateral displacements of a few thousand feet are evident. Vertical displacements are imperfectly known, but south sides of faults represent uplifted blocks.

Faulting and folding complicates stratigraphic relationships, but assuming that Scott's (1972) cherty bedded tuff unit is equivalent to Walker's (1983) sharp banded tuff unit which directly overlies the Sequence hosting the Westmin deposits, then the same stratigraphic section should be present on the Cream Silver claims, particularly in the area of lower Price Creek. Three vertical holes were drilled to depths of between 717 and 1052 feet by Western Mines Ltd. in 1972 and 1973 in the Thelwood Creek valley a short distance south of the outlet of Price Creek. These holes, drilled to test a zinc soil geochemical anomaly and and IP target, intersected a mixed sequence of rhyolite-dacite tuffs and breccias, rhyolite porphyry, and purple and green volcaniclastics. The latter are known to overlie the Lynx-Myra-Price rhyolite sequence at Westmin and in the Thelwood Creek area they may represent the southwest limb of the anticlinal structure extending southeasterly from the nearby Price zone.

Limited rock exposure due to dense vegetation and snow cover does not allow for a complete structural analysis at this time. Numerous bedding, dyking and fracture orientations were taken in the field and have been plotted on a stereonet of allow for better interpretation (see Appendix A).

In the field very little bedding was observed as most outcrops tended to be massive volcanics. The bedding orientations tend to centre around 065/35E (striking 065° and dipping 35° to the east). This trend was found throughout the property indicating the possibility of uniform bedding with very little minor folding.

Numerous fractures orientations were recorded from all rock types encountered. Although fracture directions are quite variable, three more prominent orientations have been observed at 035/10E, 115/65N and 060/65N.

Dykes, veins and contacts appear to have random orientations, indicating multiple events of deposition. One consistent feature of small dykes and veins is left lateral offsets along minor crosscutting fractures. These offsets could be indicative of regional fault offsets.

2.4 ECONOMIC GEOLOGY

Several styles of mineralization have been mapped in place and in float within the boundaries of the Cream Silver claims. Initial work on the property was directed to vein and fissure-filling deposits containing gold and silver values in the alpine area west of Cream Lake. Several zones were identified and all are related to east-northeast striking, steeply north dipping shear zones reflected by prominent lineaments. Sphalerite, galena, pyrite, pyrrhotite and arsenopyrite are the dominant sulfide minerals and these are contained in quartz, carbonate and siderite veins and fault gouge. Better silver grades are associated with tetrahedrite, pyrargyrite

and owyheeite (Holcapek, 1985) and gold values are directly related to arsenopyrite content (Selmser, 1967). The mineralized structures pinch and swell over strike lengths of between 250 and 1200 feet and range in width from inches to 3 feet. Wallrock alteration adjacent to the mineralized structures may extend outward for distances oof up to 20 feet and low gold and silver values have been reported from some of these alteration haloes. Gold and silver values are erratically distributed (Philp, 1968) and best values are in near surface oxidized zones.

Diamond drilling by Western Mines Ltd. in the Thelwood Creek valley indicated weak pyrite mineralization and isolated seams of chalcopyrite.

Significant mineralized float has been reported from an area south of the headwaters of Price Creek and 500 metres west of Price Lake. Pieces of float ranging in size from 1 cm to 75 cm (Wilbur, 1971) are found in the talus below a 200 metre cliff exposing the basal part of the Karmutsen Formation. Three varieties are present, including very fine grained chalcopyrite, pyrite and sphalerite in argillite, pyrite in a quartz-calcite breccia and fine grained sphalerite on dark grey rhyolite. Holcapek (1970, 1985) also reports 3 foot bands of massive pyrite and pyrrhotite in place in the cirque area around Price Lake and Wilbur (1971) noted pyrite, pyrrhotite and chalcopyrite in float in terminal moraines in the same general area.

3. GEOCHEMISTRY

3.1 ROCK CHIP SAMPLING

3.1.1 SAMPLING AND SAMPLE TREATMENT

A total of 11 grab samples were collected for assay from various rock types, quartz veins and mineralized float. Typically, the samples consisted of two or three fist-sized representative specimens, although, some areas of mineralization were systematically chip sampled. Sample sites were marked with blue flagging and the samples placed in labelled plastic bags. The samples were shipped to Chemex Labs Ltd. in North Vancouver where they were crushed to minus 35 mesh and fire assayed for gold and analysed for 32 additional elements by the ICP technique.

3.1.2 DISCUSSION OF RESULTS

TABLE II gives a brief location of the grab samples together with the assay results and sample numbers. Sample locations are plotted on geology maps (Figures 4 to 8). Assay results can be found in Appendix B.

The limited number of samples taken over the claims prevented the use of statistical methods to assess the results. Disappointing gold values were obtained, but silver and base metal values had near economic grades in some samples. Additional sampling is required to fully comprehend the significance of these results.

TABLE II

ROCK SAMPLE LOCATIONS AND RESULTS

SAMPLE	AU OZ/T	AG PPM	CU PPM	ZN PPM	PB PPM	CLAIM
LD01	L0.002	L0.2	94	12	2	x -9
LD02	L0.002	L0.2	11	17	8	x-2
BEAR 1	L0.002	L0.2	29	38	L2	BEAR 26
BEAR 2	L0.002	L0.2	8	6	10	BEAR 26
SHAKER 1	L0.002	L0.2	91	16	8	CREAM 10
CREAM 1	0.002	8.6	2160	331	6	CREAM 15
CREAM 2	L0.002	0.4	120	16	2	CREAM 4
CREAM 3	0.033	50.2	59	1275	1190	CREAM 4
PRICE 1	L0.002	0.4	84	11	12	CREAM 4E
PRICE 2	L0.002	L0.2	43	10	2	CREAM 6E
PRICE 3	0.014	60.0	3130	7480	2450	CREAM 6E

Note: L = less than

3.2 SOIL SAMPLING

3.2.1 SAMPLING AND SAMPLE TREATMENT

Soil samples were taken at 50 metre intervals along Thelwood Creek road across the length of the claims. A soil sample was taken from the Bear claim at the edge of an outcrop of rusty volcanic rocks. A total of 57 soil samples were taken. In all cases, the samples were collected from the 'B' horizon with the aid of a mattock. All samples were placed in labelled kraft envelopes and shipped to Chemex Labs Ltd. in North Vancouver for analysis.

In the laboratory, the samples were oven-dried at approximately 60°C and sifted through a minus 80 mesh sieve. The coarse fraction was discarded and the minus 80 fraction was analysed for gold plus 32 additional elements using the ICP technique.

3.2.2 DISCUSSION OF RESULTS

Sample locations can be found on Geology Maps Figure 4 to 8, and analysis of samples can be found in Appendix C. The limited number of samples taken over the claims prevented the use of statistical methods to assess the results. All samples gave disappointing precious and base metal results, indicating that soil sampling is not an effective exploration tool on the northern portion of the claims. In this area, the mineralized targets are thought to be at such a depth as to have no surface trace in the soils.

3.3 HEAVY MINERAL CONCENTRATE SAMPLING

3.3.1 SAMPLING AND SAMPLE PREPARATION

A total of 9 heavy mineral concentrate samples were collected along Price and Thelwood Creeks. The samples were obtained by initially sieving 25 to 50 kilograms of gravel through a 10 mesh screen. The coarse fraction was discarded and the remaining fine fraction panned down to yield a sample weighing approximately 0.5 kilograms. The samples were placed into labelled plastic sample bags and sent to Chemex Labs Ltd. in North Vancouver for analysis.

In the laboratory, the samples were further concentrated by heavy liquid separation (specific gravity of greater than 2.95) and magnetic mineral separation. The non-magnetic fraction was crushed to minus 100 mesh and analysed for gold by atomic absorption and 32 additional elements by the ICP technique.

3.3.2 DISCUSSION OF RESULTS

Sample locations are shown on the geology maps (Figures 4 to 8). Geochemistry results for the samples are included in Appendix D. The limited number of samples taken over the claims prevented the use of statistical methods to assess the results. All the samples contained disappointing values in precious and base metals.

4. CONCLUSIONS

Available data suggest that the volcanic stratigraphy which host the Westmin Resources ore deposits underlies the northern part of the Cream Silver claims area. This is based on lithologies intersected in three diamond drill holes in the Thelwood Creek valley, on the presence of a distinctive tuff unit which resembles a similar unit immediately overlying the mineralized horizons at Westmin, and the presence of mineralized float in an area with nearby unexplained copper and zinc geochemical anomalies in the lower Price Creek area. The origin and geological setting of this mineralization is not known.

Vein type mineralization west of Cream Lake includes some interesting gold and silver values, but these targets are considered secondary to the massive sulfide potential of the property.

In summary, the 1987 field work outlined the following conclusions:

- 1) The property is underlain by volcanic rocks of the Sicker Group, limestones and cherts of the Buttle Lake Formation, and minor basalts of the Karmutsen Formation. Numerous granitic to dioritic dykes of the Island Intrusions commonly cut the volcancic Sicker Group rocks.
- 2) Numerous dykes and veins were encountered with variable orientations. Bedding directions appear to be centred around 065/35E, and the majority of the fractures are 030/10E, 115/65N and 060/65N. Small scale left lateral offsets indicate that on a regional scale the rocks may also be faulted left laterally.
- 3) Rock chip samples were collected for assay from various rock types, quartz veins and mineralized float. More samples are needed to determine the significance of the results obtained.

- 4) Soil samples were taken from the northern portion of the property. All samples returned disappointing precious and base metal results, indicating that soil sampling may not be a good exploration tool in this area.
- 5) Heavy mineral concentrate samples were collected from Price and Thelwood Creeks. All samples returned disappointing precious and base metal values.
- 6) Geophysical surveys carried out on the northern portion of the property outlined several significant anomalies which warrant follow-up work. These anomalies will be located and described in a separate report to be written by P.E. Walcott and Associates (Geophysical Contractors).

Respectfully submitted,

Linda Dandy, B.Sc., Geology, Mark Management Ltd.

COSTS STATEMENT

CREAM SILVER MINES LTD.

BUTTLE LAKE TO 11 AUGUST 1987

GENERAL COSTS

FOOD & ACCOMMODATION: 4 persons, 75 man-days @ \$55.36/day FUEL: SUPPLIES & SUNDRY:	\$ 4,151.83 247.84 605.49	
HELICOPTER: Van. Island 206B, 5-22 July 26.7 H FERRY: TELEPHONE SERVICE: SHIPMENTS:	14,985.41 197.50 206.37 36.07	
CONSULTANT FEES: Archean Engineering Ltd. Adder Expl. & Dev. Ltd.	\$3,900.00 328.00	4,228.00
RENTALS: Gabriel 4WD Blazer 9-15 May 7 days @ \$50/day Gallant, 4WD Blazer 11-31 July 21 days @ \$50/day Ezekiel's Field Equipment 75 man-days @ \$6/day	\$600.00 450.00	
75 man-days @ \$6/day MAINTENANCE:	450.00	1,850.00 92.12
TOTAL GENERAL COSTS	\$26,600.63	
ST	AKING	
ALIONIS: HELICOPTER: Okanagan Hel. 18-20 Mar. 9.9 Hrs @	\$556.55	\$9,450.00 5,509.84
TOTAL STAKING COSTS	\$14,959.84	
WATER (ENVI	RONMENT) TESTS	
SALARIES & WAGES: 2 Pers., 4 man-days @ \$133.33/day BENEFITS: @ 20% CONSULTANT FEES: Hatfield GENERAL COSTS APPORTIONED:		\$ 533.34 106.66 2,985.00
GENERAL COSTS APPORTIONED: 4/75 X \$26,600.63 TOTAL WATER TESTS COSTS		\$5,043.70
	L SURVEY COSTS	
P.E. WALCOTT: I.P., CSAMT, MAG, & VLF-EM		\$96,657.43
ALIONIS: Line & Survey Assistance		35,237.37
TOTAL GEOPHYSICAL SURVEY COSTS	\$131,894.80	

GEOLOGICAL MAPPING COSTS

SALARIES & WAGES: 4 Pers., 64 man-days @ \$142.47/day BENEFITS: @ 20% DELTA AERIAL SURVEYS: 1:2500 Base Map	\$ 9,117.84 1,023.57 3,920.00
GENERAL COSTS APPORTIONED 64/75 X \$26,600.63	22,699.20
TOTAL GEOLOGICAL MAPPING COSTS	\$36,760.61
GEOCHEMICAL SURVEY COSTS	
SALARIES & WAGES: 3 Pers., 7 man-days @ \$124.17/day BENEFITS: @ 20% ASSAYS & ANALYSES-CHEMEX LABS:	\$ 869.2 <u>1</u> 173.85
56 Soils for Au & 32 elem ICP @ \$16 \$896.00 7 HMC for 31 elem ICP @ \$28.50 199.50	1,095.50
GENERAL COSTS APPORTIONED 7/75 X \$26,600.63	2,482.73
TOTAL GEOCHEMICAL SURVEY COSTS	\$ 4,621.29
COST SUMMARY	
STAKING WATER TESTS GEOPHYSICAL SURVEY GEOLOGICAL MAPPING GEOCHEMICAL SURVEYS	\$ 14,959.84 5,043.70 131,894.80 36,760.61 4,621.29
TOTAL COSTS:	\$193,280.24

REFERENCES

- BACON, W.R., (1975): A Report on Western Mines Limited Property, Buttle Lake Area, British Columbia; Engineer's Report.
- CARTER, N.C., (1986): Geological Report on the Cream, Bear, X, F, D, and Stan Mineral Claims, Buttle Lake Area, Vancouver Island, British Columbia, Engineer's Report.
- GONZALEZ, R.A., (1987): Geological and Geochemical Report on the Stan Mineral Claims, Alberni Mining Division, B.C.; Assessment Report.
- HINGS, D.L., (1966): Klyceptor Geophysical Survey, Cream and Bear Claims, Bedwell Lake Area, B.C., Assessment Report 826.
- HOLCAPEK, F., (1985): Summary Report on the Cream Silver Mines Property, Buttle Lake, Vancouver Island, British Columbia, Private Report for Cream Silver Mines Ltd.
- KONINGS, M., (1986): Geoterrex Geophysical Contractors, Airborne Geophysical Survey on the Cream, Bear, X, F, and D Claims, Vancouver Island, British Columbia.
- MULLER, J.E., (1980): The Paleozoic Sicker Group of Vancouver Island, British Columbia, Geological Survey of Canada Paper 79-30.
- PHILP, R.H.D., (1968): Report on the Cream Lake Property, Vancouver Island, British Columbia, Assessment Report 1884.
- SCOTT, G.M., (1972a): Report on Geological Mapping of the B.E.H. Claim Group, Assessment Report 3910.
- SCOTT, G.M., (1972b): Report on Geological Mapping of Part of the Eagle Group of Claims, Assessment Report 3911.
- SCOTT, G.M., (1972c): Report on Geological Mapping of Part of the Stan (Supplementary) Claim Group, Assessment Report 3912.
- SELMSER, C.B., (1967a): Geological Report-Cream and Bear Groups, Buttle Lake Area, B.C., Assessment Report 1563.
- SELMSER, C.B., (1967b): Geophysical Report Ground Magnetic and Electromagnetic Surveys, Cream and Bear Claims, Alberni Mining Division, B.C., Assessment Report 1564.
- WALKER, R.R., (1983a): Westmin Resources' Massive Sulfide Deposits in: GAC, MAC, CGU Field Trip Guidebook - Mineral Deposits of Vancouver Island by J. Fleming, R. Walker, and P. Wilton.

- WALKER, R.R., (1983b): Ore Deposits at the Myra Falls Minesite, Western Miner, May 1983.
- WILBUR, D.G., (1971a): Report on Geological Mapping of the Cross and Price Claims Upper Price Creek, Assessment Report 3241.
- WILBUR, D.G., (1971b): Report on Geological Mapping of the Northwest Part of the Stan Claim Group, Assessment Report 3242.
- WILBUR, D.G., (1971c): Report on Geochemical Survey of Part of the B.E.H. Claim Group, Assessment Report 3243.

STATEMENT OF QUALIFICATIONS

A. TROUP, P.ENG.

AC.	λn	DM	T	~
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1967	B.Sc. Geology	McMaster University, Ontario
1969	M.Sc. Geochemistry	McMaster University, Ontario
PRACTICAL		
1981 -	3605 Creery Ave. West Vancouver, B.C.	Consulting Geologist with Archean Engineering Ltd.
1977 - 1980	Geological Survey of Malaysia	Project Manager on a CIDA supported mineral exploration survey over peninsular Malaysia.
1969 - 1977	Rio Tinto Canadian Exploration Ltd. Vancouver, B.C.	Geologist involved in all aspects of mineral exploration in B.C., the Yukon and N.W.T.
1968	McMaster University Dept of Geology Hamilton, Ontario	M.Sc. thesis work. Reconnaissance mapping and geochemical study, Lake Shubenicadia area, Nova Scotia.
1967 (summer)	Canex Aerial Exploration Ltd. Toronto, Ontario	Geologist in charge of detailed mapping and reconnaissance geochemical programme in Gaspe, Quebec.
1966	McMaster University Dept. of Geology	Detailed and reconnaissance mapping in Northern Ontario.
1965 (summer)	International Nickel Co. of Canada Thompson, Manitoba	Detailed mapping in the Thompson area, Manitoba.
1964 (summer)	Geological Survey of Canada Ottawa, Ontario	Regional geochemical survey in the Keno Hill area, Yukon

STATEMENT OF QUALIFICATIONS

LINDA DANDY, B.Sc.

ACADEMIC

1981	B.Sc.	Geology	University of British Columbia
1987	F.G.A.	с.	Fellowship - Geological Association of Canada
PRACTI	CAL		
1981 -	Presen	t	Geologist with Mark Management Ltd., Hughes-Lang Group, Vancouver, B.C.
1986			gist - 12,000 foot diamond drill northwestern B.C.
1985		geochemical attrenching pro-	gist - geological mapping, nd geophysical surveys and backhoe grammes in northwestern and B.C., the Yukon, and northeastern
1984		geochemical s	gist - mapping, geophysical and urveys backhoe trenching and diamond rammes in northwestern B.C.
1983		(1:50,000, 1:	olved in geological mapping 10,000, and 1:1,000), geophysical and urveys in northern and central B.C.
1982		Geologist investigations	olved in geochemical and geophysical ntral B.C.
1981			olved in detailed mapping, nd geophysical surveys in central

APPENDIX A STEREONET PLOTS

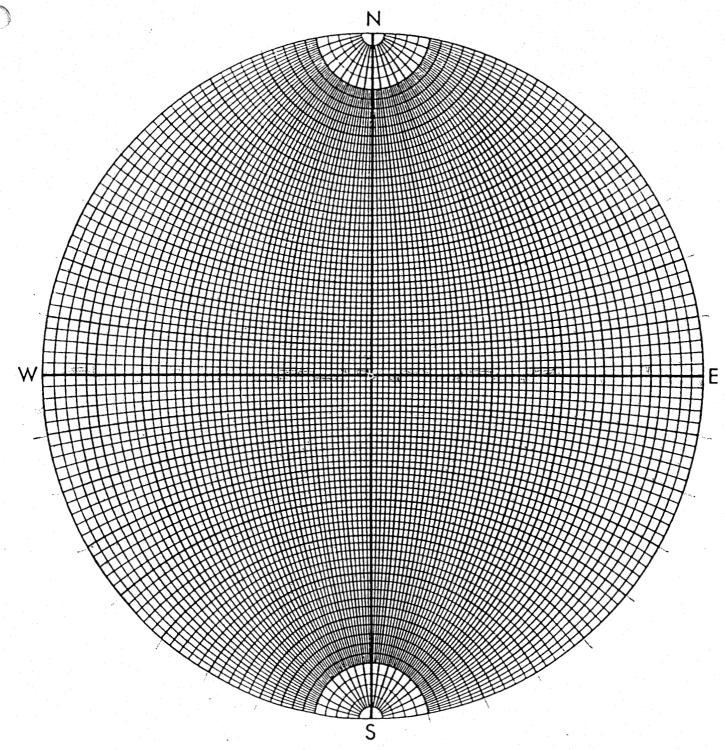


Fig. 11-3. The stereonet (Wulff net) drawn with 2-degree intervals.

BEDDING - POLES TO (CHERT BANDS)

BEDDING - POLES 10 (CHEPT BANDS IN PHOESITE TUFF) 7 4. 4 060/34/5

058/64118

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APPENDIX B RESULTS FROM ROCK SAMPLE ANALYSES



212 BROOKSBANK AVE., NORTH VANCOUVER, BRITISH COLUMBIA, CANADA V7J-2C1

PHONE (604) 984-0221

TO MARK MANAGEMENT LIMITED

/1900 - 999 W. HASTINGS ST. VANCOUVER, B.C. V6C 2W2

Project : CEM/BTL

Comments: ATTN: ART TROUP CC: LINDA DANDY

Page No. Tot. P

18-AUG-87 Invoice #: I-8719655 P.O. # : NONE

CERTIFICATE OF ANALYSIS A8719655

																		 			
SAMPLE DESCRIPTION	PRE		Au oz/T	A1 %	Ag ppm	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cđ ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	к %	La ppm	Mg %	Mn ppm
LD01 LD02 BEAR 1 BEAR 2 SHAKER 1	207 207 207	238 238 238	< 0.002 < 0.002 < 0.002 < 0.002 < 0.002	1.15 1.19 1.49 0.50 0.71	< 0.2 < 0.2 < 0.2	5 < 5 < 5 < 5 < 5	< 10 30 60 30 < 10	< 0.5 < 0.5 0.5 < 0.5 < 0.5	< 2 2 < 2 < 2 < 2 2	1.10 0.90 0.89 0.36 0.37		11 6 7 < 1 5	18 18 13 16 21	94 11 29 8 91	2.00 2.32 2.62 1.10 1.75	< 10 10 10 < 10 < 10	< 1 < 1 < 1 < 1 < 1	0.13 0.07	< 10 10 10 < 10 < 10	0.35 0.48 0.59 0.09 0.38	21 41 66 15 20
CREAM 1 CREAM 2 CREAM 3 SOUTH 1 SOUTH 2	207 207 207 207 207 207	238 238 238	0.002	1.63 1.27 0.85 1.39 0.92	8.6 0.4 50.2 2.2 3.4	35 < 5 68 50 55 1035	60 < 10 50 10 80	< 0.5 < 0.5 < 0.5 < 0.5 < 0.5	< 2 < 2 < 2 < 2 < 2	0.20 1.56 0.68 1.74 0.19	2.5 0.5 10.5 0.5 4.0	16 2 3 370 4	11 16 9 16 9	2160 120 59 1425 48	4.63 1.83 2.06 12.60 2.71	< 10 10 < 10 10 < 10	1 < 1 < 1 < 1 1	0.47 0.05	< 10 < 10 < 10 < 10 < 10	0.61 0.09 0.12 0.69 0.13	46 21 47 54 14
SOUTH 3 SOUTH 4 SOUTH 5 SOUTH 6 PRICE 1	207 207	238 238 238	0.044 < 0.002 < 0.002 < 0.002 < 0.002	1.07 1.87 1.94 0.67 1.72	25.0 0.8 0.4 < 0.2 0.4	185 35 35 25 10	60 140 220 170 80	< 0.5 < 0.5 0.5 0.5 0.5	2 < 2 < 2 < 2 < 2 < 2	0.04 0.80 2.05 0.59 0.16	0.5 < 0.5 < 0.5 1.0 < 0.5	5 5 10 76 30	6 14 32 21 9	141 47 38 53 84	5.00 2.30 2.68 5.20 4.84	< 10 10 10 < 10 < 10	< 1 < 1 < 1 < 1	0.41 0.42 0.05	< 10 < 10 10 < 10 < 10	0.05 0.55 0.68 0.16 0.24	4 38 25 14 12
PRICE 2 PRICE 3	207 207		< 0.002 0.014	2.13 0.04	< 0.2 60.0	10 510	140 40	0.5	< 2	0.12 3.66	< 0.5 64.5	38 20	18 7	43 3130	1.79 >15.00	< 10 20	< 1 < 1		< 10	0.29 0.24	3
												AAA A									



212 BROOKSBANK AVE., NORTH VANCOUVER, BRITISH COLUMBIA, CANADA V7J-2C1

PHONE (604) 984-0221

MARK MANAGEMENT LIMITED

1900 - 999 W. HASTINGS ST. VANCOUVER, B.C.

V6C 2W2 Project : CEM/BTL

Comments: ATTN: ART TROUP CC: LINDA DANDY

Page No.: 1-B Tot. F Date Invoice #: I-8719655 P.O. # : NONE

A8719655 CERTIFICATE OF ANALYSIS

SAMPLE DESCRIPTION	PREP			Ni ppm	P ppm	Pb ppm	Sb ppm	Se ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm	
LD01 LD02 BEAR 1 BEAR 2 SHAKER 1	207 2 207 2 207 2 207 2 207 2	38 1 38 < 1 38 1	0.13	12 7 6 6 13	< 10 280 380 20 20	2 8 < 2 10 8	< 5 < 5 < 5 < 5 < 5	< 10 < 10 < 10 < 10 < 10	89 27 41 38 24	0.13 0.11 0.14 0.02 0.08	< 10 10 < 10 < 10 < 10	< 10 < 10 < 10 < 10 < 10	15 33 46 7 37	< 5 < 5 < 5 < 5 < 5	12 17 38 6 16	
CREAM 1 CREAM 2 CREAM 3 SOUTH 1 SOUTH 2	207 2 207 2 207 2 207 2 207 2 207 2	38 < 1 38 < 1 38 < 1	0.01	6 7 4 24 5	30 110 170 260 140	6 2 1190 10 114	< 5 < 5 30 < 5 < 5	10 < 10 < 10 < 10 < 10	58	0.12 0.09 < 0.01 0.12 < 0.01	< 10 < 10 < 10 < 10 10	< 10 < 10 < 10 < 10 < 10	8 5 76 7 56 5	< 5 < 5 < 5 < 5 < 5	331 16 1275 37 728	
SOUTH 3 SOUTH 4 SOUTH 5 SOUTH 6 PRICE 1	207 2 207 2 207 2 207 2 207 2 207 2	38 < 1 38 :		6 5 21 8 15	140 330 6700 380 210	50 2 16 26 12	< 5 < 5 < 5 < 5 < 5	< 10 < 10 10 < 10 < 10	43 44 87	< 0.01 0.10 0.05 0.14 < 0.01	< 10 < 10 < 10 < 10 < 10	< 10 < 10 < 10 < 10 < 10	3 35 63 76 51	< 5 < 5 < 5 < 5	96 34 41 41 11	
PRICE 2 PRICE 3	207 2 207 2		1 0.19 1 < 0.01	13	3 30 < 10	2 2450	< 5 10	< 10 360		< 0.01 < 0.01	< 10 < 10	< 10 20	56 6	< 5 < 5	10 7480	
										•	All Control of the Co					
		1														

APPENDIX C
RESULTS FROM SOIL SAMPLE ANALYSES



Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
212 BROOKSBANK AVE., NORTH VANCOUVER,
BRITISH COLUMBIA, CANADA V7J-2C1

PHONE (604) 984-0221

CERTIFICATE OF ANALYSIS A871

TO MARK MANAGEMENT LIMITED

1900 - 999 W. HASTINGS ST. VANCOUVER, B.C. V6C 2W2

Project : BUTTLE/CEM

Comments: ATTN: ART TROUP CC: LINDA DANDY

Page No. :1-A

Tot. Pages: 2 Date : 22-MAY-87 Invoice #: I-8714759

P.O. # : NONE

SAMPLE DESCRIPTION	PREP	Au ppb FA-IAA	A1 %	Ag ppm	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Min ppon
R 0+00 R 0+50 R 1+00 R 1+50 R 2+00	203 238 203 238 203 238 203 238 203 238	< < <	3.37 3.72 2.93	< 0.2 < 0.2 < 0.2	< 5 < 5 < 5	70 60 70 60 90	< 0.5 < 0.5 < 0.5 < 0.5 < 0.5	< 2 < 2 < 2	0.68 0.95 0.74	2.0 1.5 < 0.5		0 6 9 6 9 6 9 6 9 8	4 4 3 66 9 36	4.11 3.88 3.00	< 10 < 10 < 10	0 < 1	0.10	10 10	0.91 0.85 0.37	614 637 390
R 2+50 R 3+00 R 3+50 R 5+50 R 7+00	203 238 203 238 203 238 203 238 203 238	< <	4.16 3.62 4.91	< 0.2 < 0.2 < 0.2	< 5 < 5 < 5	100 70 80	< 0.5 < 0.5 < 0.5	< 2 < 2 < 2	0.76 0.60 0.73	0.5 0.5 0.5	1	8 6	1 9 7 3 8 3	5.11 7 4.47 9 5.27	< 10 < 10 < 10	0 < 1	0.12	10 10 10	1.09 0.73 1.13	63 46 70
R 7+50 R 8+00 R 8+50 R 9+00 R 9+50	203 238 203 238 203 238 203 238 203 238	< < <	3.33 2.97 3.41	< 0.2 < 0.2 < 0.2	< 5 < 5 < 5	60 70	< 0.5	< 2 < 2 < 2	0.85 0.75 0.70	0.5 0.5 0.5		8 7	9 3: O 3:	3.96 4 4.04 4 4.24	< 10 < 10 < 10	0 < 1 0 < 1 0 < 1	0.09	10	0.75 0.50 0.80	59: 534 571
R 10+00 R 10+50 R 11+00 R 11+50 R 12+00	203 238 203 238 203 238 203 238 203 238	< <	2.19 3.81 3.21	< 0.2 < 0.2 < 0.2	< 5 < 5 < 5	30 60 90	< 0.5 < 0.5 < 0.5	< 2 < 2 < 2	0.70 0.70	< 0.5 0.5 0.5	2	7 7 5 9 2 6 8 9 3 6	9 1: 5 4 0 3	2 2.96 7 6.08 5 4.79	< 10 < 10 < 10	0 < 1			0.32 1.09 0.87	40 5 5 60
R 12+50 R 13+00 R 13+50 R 14+00 R 14+50	203 238 203 238 203 238 203 238 203 238	<	3.45 4.14 4.48	< 0.2 < 0.2 < 0.2	< 5 < 5	40	< 0.5 < 0.5 < 0.5	< 2 < 2 < 2	0.56 1.74 0.68	0.5 0.5 0.5	2	7 8	8 79 6 10 1 7	9 4.47 7 4.07 2 4.97	< 10 < 10 < 10	0 1 0 < 1	0.06 0.06 0.03 0.08 0.09	10 10 10	0.58 1.18 0.77	50 124 46
R 15+00 R 15+50 R 16+00 R 16+50 R 17+00	203 238 203 238 203 238 203 238 203 238	< < 10	3.12 3.76 3.19	< 0.2 < 0.2 < 0.2	20 < 5 < 5	160 100 70	< 0. < 0. < 0.	< 2 < 2	1.73	< 0.5 0.5 < 0.5	1 2 2	0 5 0 8 7 13 4 13	6 6 0 9 3 5	3 4.60 8 3.86	< 10 < 10 < 10	0 < 1	0.12	10 10	1.13 2.05 1.59	98 89 94
R 17+50 R 18+00 R 18+50 R 19+00 R 19+50	203 238 203 238 203 238 203 238 203 238	< < < < < < < < < < < < < < < < < < <	3.06 3.47	< 0.2		1 3 C	< 0. < 0. < 0.	< 2 < 2 < 2	0.74 0.69 1.61	< 0.5 < 0.5 0.5	2	5 8 5 4	5 5	6 4.62 8 5.41 5 5.01	< 10 < 10 < 10	0 < 1	0.09 0.07 0.17	10	0.73 0.48 1.56	53 49 87
20+00 R 20+50 R 21+00 R 21+50 R 22+00	203 238 203 238 203 238 203 238 203 238	10	4.16	< 0.2 < 0.2 < 0.2	15	90 80	< 0. < 0. < 0.	< 2	1.62	 < 0.5 < 0.5 < 0.5 	5 2 5 1 5 2	8 8 6 9 7 6	0 10 1 15 4 2 3 11 2 7	2 4.45 1 3.17 8 3.68	5 < 10 7 < 10 8 < 10	0 < 0	0.09	10	1.84 1.10 0.76	165 60 967



Analytical Chemists * Geochemists * Registered Assayers

212 BROOKSBANK AVE., NORTH VANCOUVER, BRITISH COLUMBIA, CANADA V7J-2C1

PHONE (604) 984-0221

CERTIFICATE OF ANALYSIS A8714759

TO MARK MANAGEMENT LIMITED

1900 - 999 W. HASTINGS ST. VANCOUVER, B.C. V6C 2W2

: 22-MAY-87 Date Invoice #: I-8714759 P.O. #: NONE

Page Now!: 1-B

Tot. Pages: 2

Project : BUTTLE/CEM

Comments: ATTN: ART TROUP CC: LINDA DANDY

SAMPLE DESCRIPTION	PREP	Mo ppm	Na %	Ni ppm	1	Pb ppm	Sb ppm	Se ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm			
TR 0+00 TR 0+50 TR 1+00 TR 1+50 TR 2+00	203 233 203 233 203 233 203 233 203 233	S < 1	0.03 0.04 0.04	1 1	3 700 5 690	16 12 8 < 2 < 2	< 5 < 5 < 5	< 10 < 10 < 10	91	0.23 0.24 0.18	< 10 < 10 < 10	< 10 < 10 < 10	102 108 95		72 80 48			
TR 2+50 TR 3+00 TR 3+50 TR 6+50 TR 7+00	203 233 203 233 203 233 203 233 203 233	8 < 1 8 < 1	0.04 1 0.03 1 0.04	1	8 280	< 2 < 2 < 2 < 2 8	< 5	< 10 < 10 < 10	70 58 70	0.30 0.28 0.31	< 10 < 10	< 10 < 10 < 10	220 125 136	5	70 56 92	5		
TR 7+50 TR 8+00 TR 8+50 TR 9+00 TR 9+50	203 233 203 233 203 233 203 233 203 233	8 < 8 <	1 0.04 1 0.03 1 0.03	1 1 1	9 490 1 1060 0 550 3 690 7 560	< 2 < 2 4 < 2 < 2	<	< 10 < 10 < 10	74	0.28 0.25 0.28	< 10 < 10 < 10	< 10 < 10 < 10	116 132 128	S < 1 S < 1	88 66 100	3 5		
TR 10+00 TR 10+50 TR 11+00 TR 11+50 TR 12+00	203 23 203 23 203 23 203 23 203 23	8 < 8 <	1 0.03 1 0.02 1 0.02	1 2	6 760 6 310 4 250 1 380 4 480	< 2 < 2 < 2	< : < :	< 10 < 10 < 10	66	0.27 0.36 0.29	< 10 < 10 < 10	< 10 < 10 < 10	13: 20: 15:	S < :	36 78 102) B 2		
TR 12+50 TR 13+00 TR 13+50 TR 14+00 TR 14+50	203 23 203 23 203 23 203 23 203 23	8	1 0.03 1 0.03 1 0.03	3	8 340 9 640 7 600 3 750 5 360	2	< < < < < < < < < < < < < < < < < < <	5 < 10 6 < 10	5° 12.	0.25 0.24 0.30	< 10 < 10 < 10	< 10 < 10 < 10	12: 14: 14:	5 < 5	5 63 5 40	8 6 6		
TR 15+00 TR 15+50 TR 16+00 TR 16+50 TR 17+00	203 23 203 23 203 23 203 23 203 23	8	1 0.04 1 0.03 1 0.03	1 4 3	5 790 4 590 9 390 0 410 1 280	< 2 < 2 < 2	<	5 < 10 5 < 10 6 < 10	9: 0 10: 11:	0.22 0.24 0.26	< 10 < 10 < 10	< 10 < 10 < 10 < 10	10- 12- 12:	4 6 < 2	5 83 5 72 5 6	8 2 6		
TR 17+50 TR 18+00 TR 18+50 TR 19+00 TR 19+50	203 23 203 23 203 23 203 23 203 23 203 23	8	1 0.02 1 0.03 1 0.06	1	1 530 3 600 8 900 9 520 1 530	< 2 < 2	< < < < < < < < < < < < < < < < < < <	< 10 5 < 10	8 6 9	0.21 0.39 4 0.2	< 10 < 10 < 10	0 < 10 0 < 10 0 < 10	94 163 94	4 < 8 < 6 <	5 100 5 60 5 9	0 0 2		
IR 20+00 IR 20+50 IR 21+00 IR 21+50 IR 22+00	203 23 203 23 203 23 203 23 203 23	8	1 0.02 1 0.03 1 0.03	1 1	5 640 7 660 7 410 0 2160 2 670	22	< <	s < 10	0 114 0 13 0 9	0.22 7 0.23 7 0.1	2 < 10 3 < 10 7 < 10	0 < 10 0 < 10 0 < 10	10: 0 10: 0 9:	2	5 9 5 7 5 13	6 4 0		



212 BROOKSBANK AVE., NORTH VANCOUVER, BRITISH COLUMBIA, CANADA V7J-2C1 PHONE (604) 984-0221

CERTIFICATE OF ANALYSIS A8714759

MARK MANAGEMENT LIMITED

1900 - 999 W. HASTINGS ST. VANCOUVER, B.C. V6C 2W2

Page 1:2-Tot. Pages: 2 Date : 22-MAY-87 Invoice #: I-8714759 P.O. # : NONE

Project : BUTTLE/CEM

Comments: ATTN: ART TROUP CC: LINDA DANDY

SAMPLE DESCRIPTION	PR I			A1 %	Ag ppm		Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm		Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Min ppm
R 22+50 R 23+00 R 23+50 R 24+00 R 24+50	203 203 203 203 203 203	238 238 238	< 5 < 5 < 5 < 5 20	2.97 2.18 2.93	< 0.2 < 0.2 < 0.2	< 5 < 5	1530 340 190	< 0.5 < 0.5 < 0.5	< 2	2 2.17 2 1.59 2 1.83	0.5	1	7 42 0 92 9 69	67 76 78	4.62 2.86 4.42	< 10 < 10 < 10	0 < 1 0 1 0 < 1	0.09 0.13 0.16	10 10 10	1.06 0.59 1.03	87 68 87
R 25+00 R 25+50 R 26+00 R 26+50 R 27+00	203 203 203	238	< 5 40 5 35 < 5	3.65 2.52 4.89	< 0.2 0.2 0.2	135 160 55	320 220 210	< 0.5 < 0.5 < 0.5	< 2 < 2 < 2	1.45	0.5 1.0 0.5	4 2	0 60 7 72 8 54	63 235 76	4.19 7.13 5.76	< 10 < 10 < 10	0 < 1	0.11 0.22 0.09	10 20 10	0.80 0.73 0.56	161 201 68
IR 27+50 IR 28+00 IR 28+50 IR 29+00 IR 29+50	203 203	238 238	5 5 5 5 5 5 5	5.31	0.2 0.2 < 0.2	10 2 35 2 < 5	40	< 0.5 < 0.5 < 0.5	< 2 < 2 < 2	0.80 0.22 0.82	0.5	10	4 45 0 68	98 97 100	7.16 4.09 4.67	< 10 < 10 < 10	0 < 1	0.05	10 10 10	0.27 0.27 1.33	56 16 61
IR 30+00	203	238	< 5	5.92	< 0.2	< 5	30	0.5	< 2	0.54	1.0	1	5 59	68	7.72	< 10	0 < 1	0.03	10	0.77	36
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Analytical Chemists * Geochemists * Registered Assayers 212 BROOKSBANK AVE., NORTH VANCOUVER, BRITISH COLUMBIA, CANADA V7J-2C1

PHONE (604) 984-0221

CERTIFICATE OF ANALYSIS A871-759

TO MARK MANAGEMENT LIMITED

1900 - 999 W. HASTINGS ST. VANCOUVER, B.C. V6C 2W2

Project : BUTTLE/CEM

Comments: ATTN: ART TROUP CC: LINDA DANDY

Page No. : 2-B

Tot. Pages: 2

: 22-MAY-87 Date Invoice #: I-8714759

P.O. # : NONE

SAMPLE DESCRIPTION	PRE			Na %	Ni ppm	P	Pb ppm	Sb ppm	Se ppm	Sr ppm	Ti %	Ti ppm	U ppm	ļ	W ppm	Zn ppm			
IR 22+50 IR 23+00 IR 23+50 IR 24+00 IR 24+50	203 203 203 203 203 203 203	238 238 238	< 1 < 1 < 1 < 1	0.04 0.03 0.05		2 1280 4 930 5 600 9 700 9 580	10	< 5 < 5 < 5	10 10	154 8:	0.35 0.23 0.29	< 10 < 10 < 10	< 10 < 10 < 10	57 55 101	< 5 < 5	116 90 90			
IR 25+00 IR 25+50 IR 26+00 IR 26+50 IR 27+00	203 2 203 2 203 2 203 2 203 2	238 238 238	2 1 7 < 1 < 1	0.03 0.02 0.02	1 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2 570	32	10	10 < 10 < 10	620	0.23 0.14 0.25	< 10 < 10 < 10	< 10 < 10 < 10	96 75 127	< 5 < 5 < 5	154 184 222			
IR 27+50 IR 28+00 IR 28+50 IR 29+00 IR 29+50	203 2 203 2 203 2 203 2 203 2	238 238 238	<pre>1</pre>	< 0.02 < 0.01 0.02	2 2	6 1380	22	< 5	5 10 5 40 5 30	54 10 4	0.35 0.13 0.22	< 10 < 10 < 10	< 10 < 10 < 10	179 64 118	< 5 < 5 < 5	192 60 108			
TR 30+00	203	238	< 1	0.01	1	7 2300) 2	< 5	< 10) 1:	0.45	< 10	< 10	235	< 5	86			
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Chemex Labs Ltd

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212 BROOKSBANK AVE., NORTH VANCOUVER, BRITISH COLUMBIA, CANADA V7J-2C1 PHONE (604) 984-0221 To: MARK MANAGEMENT LIMITED

1900 - 999 W. HASTINGS ST. VANCOUVER, B.C.

V6C 2W2

Project : CEM/BTL

Comments: ATTN: ART TROUP CC: LINDA DANDY

Page No.: 1-A Tot. Page 1

Date : 20-AUG-87 Invoice #: I-8719656 P.O. #: NONE

CERTIFICATE OF ANALYSIS A8719656

SAMPLE DESCRIPTION	PREP		Au ppb FA+AA	A1 %	Ag ppm	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	К %	La ppm	Mg %	Ma ppm
STAN 4 BEAR PICK-UP	201 2 201 2	38 38	< 5 < 5	3.10 3.09	< 0.2 < 0.2	15 10	100	0.5	< 2	0.43 0.98	< 0.5 < 0.5	10 14	24	49 76	2.63	10 10	< 1 < 1	0.19 0.10	10 10	0.94	346 47
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CERTIFICATION

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PHONE (604) 984-0221

MARK MANAGEMENT LIMITED

1900 - 999 W. HASTINGS ST. VANCOUVER, B.C.

V6C 2W2

Project : CEM/BTL

Comments: ATTN: ART TROUP CC: LINDA DANDY

Page No : 1-B Tot. 20-AUG-87 Invoice #: I-8719656 P.O. # : NONE

A8719656 CERTIFICATE OF ANALYSIS

STAN 4 201 238 <1 0.02 14 1400 22 <5 10 35 0.15 <10 <10 78 <5 61 81 81 81 81 81 81 81 81 81 81 81 81 81	SAMPLE DESCRIPTION	PREP CODE	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Se ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm	
	STAN 4 BEAR PICK-UP	201 238 201 238	< 1 < 1	0.02 0.01	14	1400 3160	22 26	< 5 < 5	10 < 10	35 34	0.15 0.32	< 10 < 10	< 10 < 10	78 161	< 5 < 5	61 59	
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APPENDIX D

RESULTS FROM HEAVY MINERAL CONCENTRATE ANALYSES



212 BROOKSBANK AVE., NORTH VANCOUVER, BRITISH COLUMBIA, CANADA V7J-2C1 PHONE (604) 984-0221

CERTIFICATE OF ANALYSIS

To : MARK MANAGEMENT LIMITED

1900 - 999 W. HASTINGS ST. VANCOUVER, B.C.

V6C 2W2

Project : BUTTLE/CEM

Comments: ATTN: ART TROUP CC: LINDA DANDY

Page No. :1-A Tot. Pages: 1

Date :27-MAY-87 Invoice #:I-8714758 P.O. #:NONE

SAMPLE DESCRIPTION	PREP CODE		A1 %	Ag ppm	As ppm	1	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm		Min ppm
MC PI MC P2 MC T1 MC T2 MC T3	213 23 213 23 213 23 213 23 213 23	38	3 . 12 5 3 . 02 5 3 . 70 5 3 . 19 0 3 . 02	0.2	1:	30	< 0.5 < 0.5 < 0.5 < 0.5	< 2 2 < 2	2.77 3.17 2.58	 < 0.5 < 0.5 < 0.5 	2 2 3	8 7: 3 5 2 5 6 5 0 6	8 116 7 47 9 46 5 69 2 74	5 5.34 7 4.52 6 4.8 5 5.00 4 5.24	2 10 3 10 5 < 10	0 1 0 1 0 < 1	0.01 0.03 0.04	< 10 < 10 < 10	1.36	6. 79 74
MC T4 MC T5	213 23 213 23	38 16 38 16	0 3.1:	3 O. 2 7 O. 4	2:	5 40 5 160				0.5		4 6 7 8	1 59 7 64	4.42 5.49	2 10		0.03	< 10 < 10	0.99 1.20	6. 7
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212 BROOKSBANK AVE., NORTH VANCOUVER, BRITISH COLUMBIA, CANADA V7J-2C1

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CERTIFICATE OF ANALYSIS

Page No.: 1-B Tot. Pages: 1

A871

Date : 27-MAY-87 Invoice #: I-8714758 Date P.O. # :NONE

1900 - 999 W. HASTINGS ST. VANCOUVER, B.C. V6C 2W2

Project : BUTTLE/CEM

To : MARK MANAGEMENT LIMITED

Comments: ATTN: ART TROUP CC: LINDA DANDY

HAC PI 213 238 < 1 0.00 37 170 4 5 10 143 0.36 < 10 < 10 167 < 5 48 HAC PI 213 238 < 0 0.01 15 40 6 10 167 < 5 48 HAC PI 213 238 < 0 0.01 15 40 0.01 15 40 0.40 0.45 < 10 < 10 167 < 5 48 HAC PI 213 238 < 0 0.01 15 40 0.01 15 0.25 < 0 0.00 13 450 0.02 13 400 0.45 < 10 < 10 167 < 5 48 HAC TI 213 238 < 1 0.02 13 450 10 235 0.35 < 10 < 10 141 5 5 52 HAC TI 213 238 < 1 0.02 13 450 10 5 < 10 212 0.34 < 10 < 10 141 5 5 58 HAC TI 213 238 < 1 0.02 13 450 10 235 0.35 < 10 < 10 141 5 5 58 HAC TI 213 238 < 1 0.02 26 560 28 < 5 10 237 0.33 < 10 < 10 152 10 76 HAC TI 213 238 < 1 0.02 26 560 28 < 5 10 281 0.34 < 10 < 10 173 < 5 84	SAMPLE DESCRIPTION	PREP	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	Sb	Se ppm	Sr ppm	Ti %	Ti ppm	1	V ppm	W ppm	Zn ppm			
ENC T4 ENC T5 213 238 1 0.02 26 560 28 5 10 281 0.34 6 10 173 5 84	HMC P2	213 238 213 238	V V V V	1 0.00 1 0.00 1 0.00 1 0.00	37 33 27 31 11 11 11 22 13	530 170 470 470 3 450		< : 3 10	5 < 10 5 10	9: 14: 0 246 0 23: 0 21:	3 0.62 3 0.36 0 0.45 5 0.35 2 0.36	2 < 10 5 < 10 5 < 10 5 < 10 4 < 10	< 10 < 10 < 10 < 10 < 10 < 10	199 161 191 141	7 < 5	5 64 5 43 5 5 5 5 5	R		
	HMC T4 HMC T5	213 238 213 238	<u> </u>	1 0.0	2 13	3 376		6 < 8 <	5 < 16	23 28	7 0.3 1 0.3	3 < 10 4 < 10	< 10 < 10	15:	3 <	5 8	6		
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212 BROOKSBANK AVE , NORTH VANCOUVER, BRITISH COLUMBIA, CANADA V7J-2C1

PHONE (604) 984-0221

To: MARK MANAGEMENT LIMITED

1900 - 999 W. HASTINGS ST. VANCOUVER, B.C.

V6C 2W2

Project : CEM/BTL

Comments: ATTN: ART TROUP CC: LINDA DANDY

Page No.: 1-A Tot. Fis: 1 : 20-AUG-87 Invoice # : I-8719657 P.O. # NONE

CERTIFICATE OF ANALYSIS A8719657

SAMPLE DESCRIPTION	PREI		Au ppb F AIA A	A1 %	Ag ppm	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	К %	La ppm	Mg %	Ma ppm
PRICE CREEK 1 PRICE CREEK 2 STAN 1 STAN 2 STAN 3	213 2 213 2 213 2 213 2 213 2	38 238 238	20 5 1900 1000 1150	3.17	< 0.2 < 0.2 0.8 < 0.2 0.8	15 20 80 35 35	120 820 590	< 0.5 < 0.5 < 0.5 < 0.5 < 0.5	< 2 < 2 < 2 < 2 < 2	2.62 2.84 4.03 2.95 4.35	< 0.5 < 0.5 < 0.5 0.5 0.5	27 29 42 29 26	73 70 104 70 124	131 165 226 110 120	4.73 5.55 6.78 4.41 5.24	< 10 < 10 20 10 20	< 1 < 1 < 1 < 1 < 1	0.02 0.02 0.07 0.05 0.07	< 10 < 10 < 10 < 10 < 10	1.54 1.61 1.12 1.24 1.10	62: 69: 96: 68: 98:
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212 BROOKSBANK AVE., NORTH VANCOUVER, BRITISH COLUMBIA, CANADA V7J-2C1

PHONE (604) 984-0221

TA: MARK MANAGEMENT LIMITED

1900 - 999 W. HASTINGS ST. VANCOUVER, B.C. V6C 2W2

Project : CEM/BTL Comments: ATTN: ART TROUP CC: LINDA DANDY

Page No.: 1-B Date : 20-AUG-87 Invoice #: 1-8719657 P.O. # : NONE

CERTIFICATE OF ANALYSIS A8719657

SAMPLE DESCRIPTION	PRE COD		Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Se ppm	Sr ppm	Ti %	Ti ppm	U ppm	V ppm	W ppm	Zn ppm			
PRICE CREEK 2 STAN 1 STAN 2	213 213 213 213 213 213	238 238 238	< 1 < 1 < 1 < 1 < 1	0.13 0.09 0.04 0.02 0.04	40 44 14 12 12	450 500 410 550 380	< 2 < 2 < 2 < 2 < 2 < 2 < 2 < 2	< 5 5 5 5	10 10 10 < 10 10	69 70 353 273 399	0.68 0.70 0.32 0.27 0.28	< 10 < 10 < 10 < 10 < 10	< 10 < 10 < 10 < 10 < 10	187 214 172 120 176	< 5 < 5 < 5 5 < 5	57 67 86 102 73			* 7
											ė,	19.43 19.43							

