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Progress Report on the Geological, Geochemical and Geophysical Surveys on LACY AND STOKES CLAIM GROUPS in Nanaimo and Alberni Mining Divisions, B.C.

for

LODE RESOURCE CORPORATION
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by

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Location: NTS 92F/7
49° 18' North/124° 45' West
3-8 km NE of Port Alberni
Vancouver Island, British Columbia

Subject: Results of 1986 - 1987 Field Program and Recommendations for Additional Exploration

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SUMMARY

The 9 claims of Lacy and Stokes Claim Groups (Esary 1, Lacy 1-4, and Stokes 1-4), totalling 110 units (27.5 km^2) cover the northernmost end of the Paleozoic Cowichan Lake - Horne Lake Uplift area. This uplift, the largest of the 3 major uplifts on the Vancouver Island, comprises of Sicker Group volcanic and sedimentary rocks. The other two uplifts are the Buttle Lake Uplift (which contains the Western Mines Buttle Lake ore bodies), and Nanoose Uplift near Nanaimo. The Cowichan-Horne Lake Uplift, which extends from Horne Lake to Salt Spring Island, also contains a number of past producing mines, mainly in Mount Sicker area, and in China Creek - Mount McQuillan area south of Port Alberni. Typically, the ore bodies are the massive volcanogenic sulphide type, which may carry considerable gold and silver. In Mt. McQuillan - China Creek area vein type deposits of gold and silver, associated with copper-lead-zinc, are also common and some were past producers.

Although no economic deposits of either type have so far been found in the above claim groups area, several taconite type iron showings plus some magnetic anomalies were known here previously. There were also some geochemical Total Heavy Metal (Cu + Pb + Zn), anomalies located in the 1960's by Gunnex, and a few small copper occurrences on the property. Limestones, cherty sediments, argillite and volcanics of Sicker Group correlated by Muller (of G.S.C.) with Buttle Lake, Myra and Nitinat Formations, are found in the area of the claim groups.

Since the claims were considered to cover a mineralogically favourable area, a Phase I exploration program, comprising of prospecting and mapping, geochemistry and geophysics, was carried out during the winter 1986-1987 over the major part of the claims area. The results are the subject of this report.

Briefly, a number of geochemical soil anomalies, consisting of precious and base metals, and other associated or "pathfinder" metals, form several, distinct, NW to NNW trending geochemically anomalous zones, following the strike of regional geology. A narrow but persistent gold soil anomaly can be traced for some 5 km in NNW direction across the survey grid on the claims, with Au values up to 415 ppb. There are also several silver anomalies following a similar regional trend.

Geophysical surveys, VLF-EM and ground magnetics, also reveal a number of similarly trending anomalies, or zones consisting of several, closely parallel anomalies. Some of these are associated with geochemical soil anomalies, while others appear to be associated with fault zones (VLF and mag.) or mafic bodies (mag.).

Some massive sulphide type pyrite was observed and sampled in the railway cuts, associated with gabbroic rocks; samples taken here assayed up to 0.46 ounces/ton gold.

It is concluded that the claims warrant more exploration, both for base and precious metals, and a follow-up program is recommended. Work would consist of completing the survey coverage over the entire claim group area, then doing more detailed work in favorable selected areas, followed by trenching and drilling where warranted. A 3-phase proposed exploration program, with a total budget of $ 392,000 is included (of which $ 236,000 is for 2,000 metres of diamond drilling).

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LODE RESOURCE CORPORATION

GENERAL LOCATION MAP
LACY AND STOKES GROUPS

NANAIMO AND ALBERNI MINING DIVISIONS

Scale: 1 : 7 500 000	By: J. S.
Date: OCTOBER, 1986.	Figure 1

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1. INTRODUCTION

This report was prepared at the request of Mr. T.F. Schorn, president of Lode Resource Corporation, to evaluate and describe the results of a reconnaissance type geological-geochemical-geophysical survey carried out during December, 1986, to February, 1987, on the Lacy-Stokes claim groups NE of Port Alberni, Vancouver Island, B.C. The field work was done by Ashworth Explorations Limited on behalf of Lode Resource Corporation, owner of the property. The report also briefly describes the regional geology, the past and recent exploration activity in the general area, and it outlines a further exploration program. A previous preliminary geological report on Lacy and Stokes claim group, by the author (Leanela, 1955) also summarizes the results of earlier work done in the property area.

These 9 contiguous claims were staked in early 1984 to cover a geologically favourable area underlain by Sicker Group volcanics and sediments. They also contain several exhalative type taconite (iron, with local manganese) occurrences, two airborne magnetic anomalies and two small copper showings, some of which were prospected during the 1960's by Gunnex Limited. Use is made of the information gathered by this author, and others, during the various 1962-1966 exploration programs in the area. The property geology was initially mapped by the author in early 1965, and in greater detail by Mr. Alan Hill during the winter of 1986-1987 program.

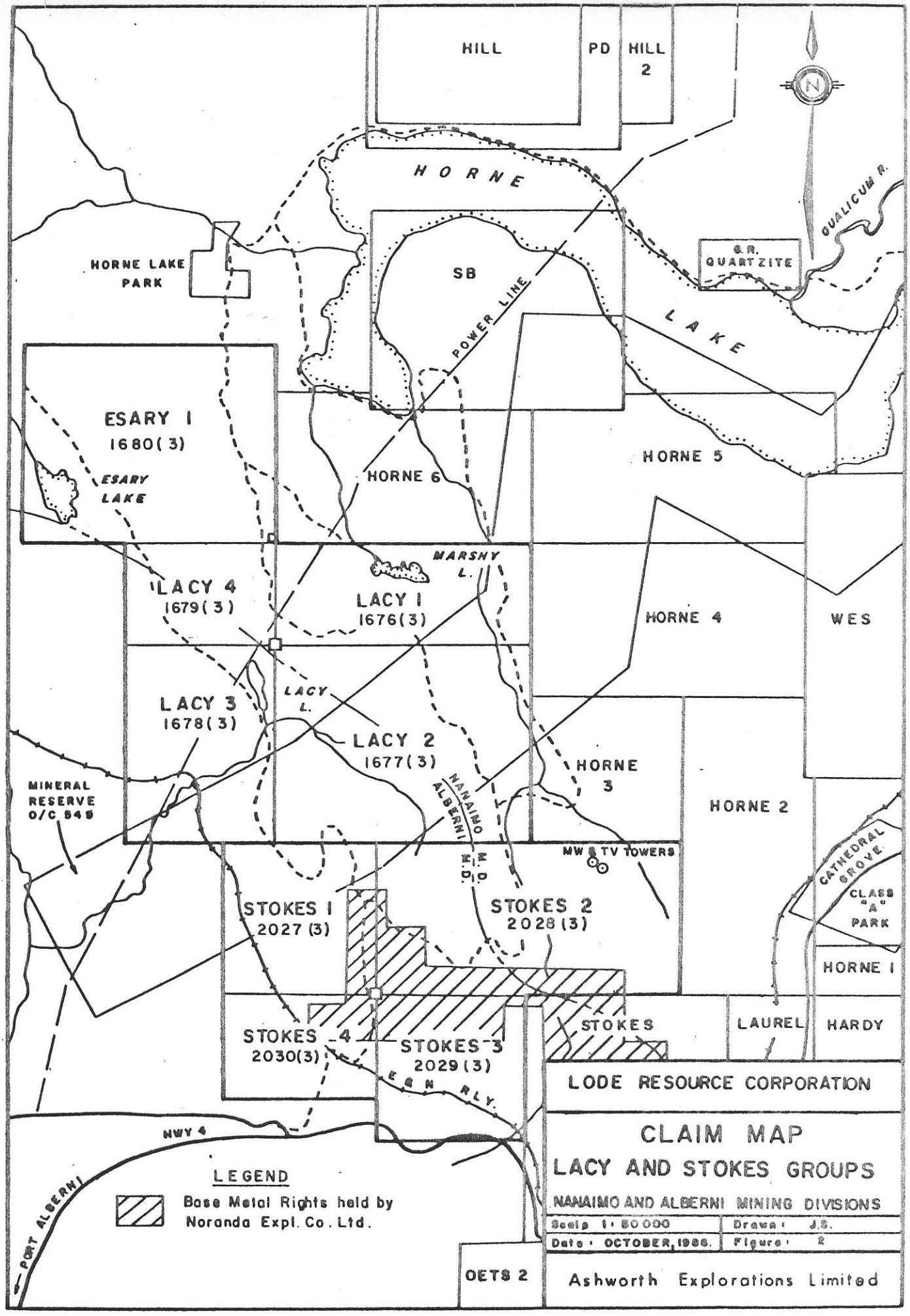
A line-grid was cut on the property in February, 1986, to fill assessment work requirements, but no surveys were then carried out. This grid forms the control of the work carried out here; it consists of 7.2 km base-line running at azimuth 330 degrees true through the property, and about 67 line-kms of cross-lines.

2. PROPERTY

The Lacy and Stokes Claim Groups consist of following 9 contiguous claims:

Name	Record #	Units	Date Recorded
Lacy Group:			
Lacy 1	1676 (3)	10	March 25, 1984
Lacy 2	1677 (3)	20	March 25, 1984
Lacy 3	1678 (3)	12	March 25, 1984
Lacy 4	1679 (3)	6	March 25, 1984
Esary 1	1680 (3)	20	March 24, 1984
Stokes Group:			
Stokes 1	2027 (3)	9	March 25, 1984
Stokes 2	2028 (3)	18	March 25, 1984
Stokes 3	2029 (3)	9	March 25, 1984
Stokes 4	2030 (3)	6	March 25, 1984

Total: 110 Units = 2,750 hectares = 27.5 km^2


HILL
PD
HILL 2
HORNE
QUALICUM R.
G.R. QUARTZITE
HORNE LAKE PARK
SB
POWER LINE
LAKE
ESARY 1
1680(3)
ESARY LAKE
HORNE 6
HORNE 5
MARSHY L.
LACY 4
1679(3)
LACY 1
1676(3)
HORNE 4
WES
LACY 3
1678(3)
LACY L.
LACY 2
1677(3)
HORNE 3
HORNE 2
MINERAL RESERVE O/C 849
NANAIMO ALBERNI M.D.
MW & TV TOWERS
CATHEDRAL GROVE
CLASS "A" PARK
STOKES 1
2027(3)
STOKES 2
2028(3)
HORNE 1
STOKES
LAUREL
HARDY
STOKES 4
2030(3)
STOKES 3
2029(3)
E & N RLY.
NWY 4
PORT ALBERNI
LEGEND
Base Metal Rights held by Noranda Expl. Co. Ltd.
OETS 2
LODE RESOURCE CORPORATION
CLAIM MAP
LACY AND STOKES GROUPS
NANAIMO AND ALBERNI MINING DIVISIONS
Scale 1:50000
Drawn: J.S.
Date: OCTOBER, 1986.
Figure: 2
Ashworth Explorations Limited

All claims are adjoining and the groups straddle the boundary between Nanaimo and Alberni Mining Divisions (see Figure 2).

Lacy 1 is wholly in Nanaimo M.D.; Stokes 1, 3, and 4, and Lacy 3 are in Alberni M.D.; while Lacy 2 and 4, and Stokes 2 are on both sides of the boundary, Esary 1 is mostly in Nanaimo M.D.

These claims were staked during March, 1984, by Mr. Brent Schorn on behalf of Mrs. Mary Chatfield of Calgary, Alberta. They were sold to Lode Resource Corporation, the present owner, on August 23, 1985. They were grouped as Lacy and Stokes Group (see table above) on March 24, 1986.

Parts of Stokes 1 - 4 claims lie within an area where Noranda Explorations Co. Ltd. has base metal rights under option from MacMillan Bloedel Ltd. (see Figure 2).

The right-of-way for the proposed Vancouver Island Natural Gas Pipeline crosses the Lacy/Stokes property imposing certain conditions on the claim owners, but not disallowing exploration and mining activities (Order-in-Council 549), (see Figure 2).

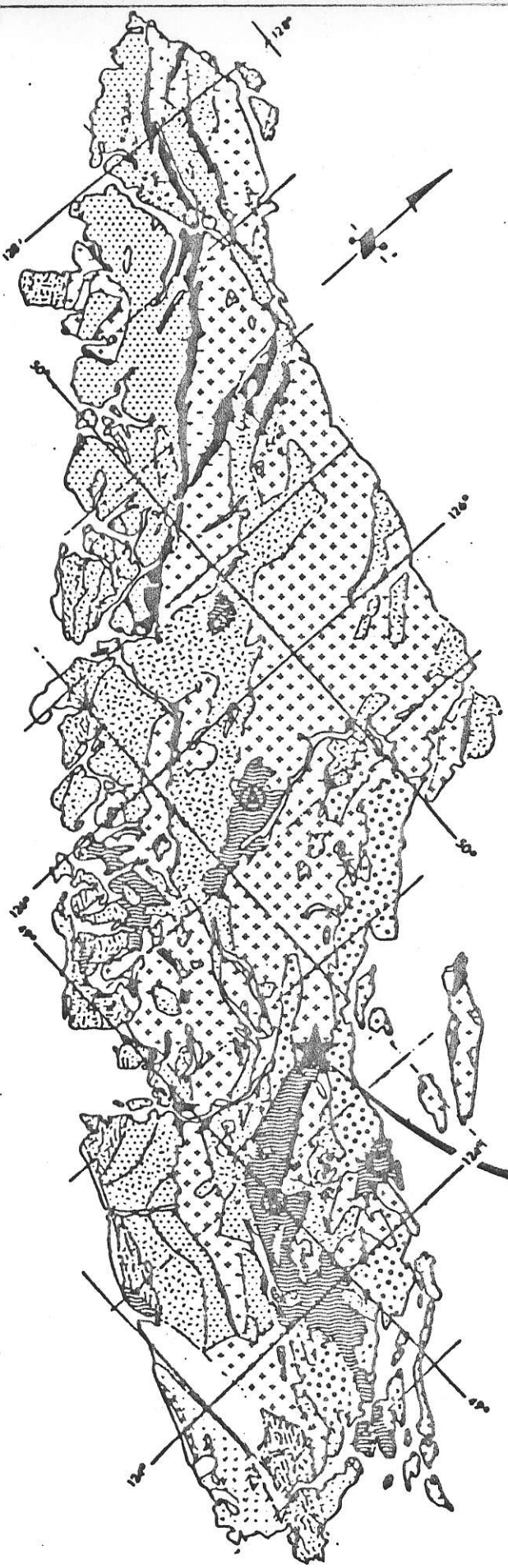
3. LOCATION AND ACCESS

The area covered by Lacy and Stokes Claim Groups is situated between west end of Horne Lake and the Alberni Highway, within 3 - 8 km NE of Port Alberni and within similar distance west of Cameron Lake. CPR railway line passes through the southern end of the property.

The present access is via a gravel road which starts from the highway about 3/4 km east of Timberlodge Motel, crosses the railway track, and then branches in several directions on the property. The main access route crosses a powerline just north of Lacy Lake, connecting with the gravel highway along the north shore of Horne Lake; however, during the 1984 visit this alternate access from the north could not be used since the bridge across Qualicum River was out. Similarly, a third access road, crossing the railway track west of Bostock was also blocked by ditches and felled timber. The present condition of these two alternate access routes is not known to the writer. Many new roads are not shown on the present topographic maps. The use of 4-W-D vehicles is recommended, due to some steep hills with loose boulders and gravel.

4. PHYSIOGRAPHY

The claims are located in a rather hilly, forest covered terrain, where the relief ranges from 200 metres elevation in the Alberni Valley to about 550 metres above mean sea level (MSL), but being in the 300 - 450 metre range generally. About a 200m high escarpment trending SE and related to the Cameron River Fault System to the south, runs through the SW part of property; the CPR track descends along the flank of this escarpment into Alberni valley after crossing the mid-island divide (Beaufort Range) between Cameron and Horne Lakes.



Geological sketch map of Vancouver Island.

LEGEND

	CARMANAH GROUP	MIDDLE TERTIARY
	CATFACE INTRUSIONS	EARLY TO MIDDLE TERTIARY
	METCHOSIN VOLCANICS	EARLY TERTIARY
	NANAIMO GROUP	LATE CRETACEOUS
	QUEEN CHARLOTTE GROUP KYUQUOT GROUP	LATE JURASSIC TO EARLY CRETACEOUS
	LEECH RIVER FORMATION PACIFIC RIM COMPLEX	
	ISLAND INTRUSIONS	EARLY AND (?) MIDDLE JURASSIC
	BONANZA GROUP	EARLY JURASSIC
	VANCOUVER GROUP	
	PARSON BAY FORMATION QUATSINO FORMATION	LATE AND (?) MIDDLE TRIASSIC
	KARMUTSEN FORMATION	
	SICKER GROUP	PALEOZOIC
	METAMORPHIC COMPLEXES	JURASSIC AND OLDER

A — BUTTLE LAKE UPLIFT
B — COWICHAN-HORNE LAKE UPLIFT
C — NANOOSE UPLIFT

Geology from Muller, GSC, 1980.

LACY and STOKES CLAIM GROUPS

0 20 40 MILES

LODE RESOURCE CORPORATION

REGIONAL GEOLOGY
LACY AND STOKES GROUPS
NANAIMO AND ALBERNI MINING DIVISIONS

Scale	Drawn J.S.
Date : OCTOBER, 1986.	Figure : 3

Ashworth Explorations Limited

Numerous other off-shoot and branch faults of the Cameron System, mostly trending NNW on the property, give the terrain a blocky, chopped-up appearance, with many locally steep-sided hills or ridges separated by gullies, several small lakes and swampy areas.

The area is generally densely forested. Most of the forest cover is of sizable second growth fir, hemlock and cedar, partly logged off, with old or new logging slash. Some of the "bush" is quite thick for traversing, with heavy chest-high underbrush.

Outcrops are exposed along ridges and in some roadcuts; in the lower parts they tend to be covered by underbrush. The numerous faults are generally buried under soil cover, stream sediments and swamps; a number of these can only be interpreted from airphotos.

5. REGIONAL GEOLOGY

The Lacy-Stokes Claim Groups were staked to cover the northernmost end of the geologically favourable Cowichan - Horne Lake Uplift area of the Paleozoic Sicker Group volcanic and sedimentary sequence (see Muller, 1971, 1977 and 1980). Since this uplift area has become the focus of much exploration and mining activity on Vancouver Island by numerous companies during the past decade or two, it may be worthwhile to elucidate some points of the economic aspects of Vancouver Island geology here.

Regionally, the claims are located at the north end of one of the three main geologically most favourable and economically most promising areas on the Island. These areas consist of three uplifted Middle - Paleozoic volcanic - arc centres, namely (1) the Buttle Lake Uplift (which contains the Westmin's Buttle Lake massive sulphide deposits) to the north, (2) the smaller Nanoose Uplift, north of Nanaimo, and (3) the Cowichan - Horne Lake Uplift, in the south part of the Island. The latter one is the largest, being some 130 km long (from Horne Lake to Salt Spring Island) and 15-25 km wide, and containing the past base metal and gold producers in Mount Sicker and Mount McQuillan - China Creek areas. All are underlain by Sicker Group volcanics and associated sedimentary rocks, mostly of Devonian Age.

These Sicker Group rocks, consisting of the entire Paleozoic sequence on the Island, appear to be a remnant of the Middle-Paleozoic island arc formed on the oceanic crust or possibly along the continental margin. They are now buried under the Mesozoic cover, except where they have become exposed in the above three major (and some smaller) uplift areas. These structural culminations, containing the host-rocks of exhalite type polymetallic deposits, are at present of prime interest in mining exploration on the Island. While the massive sulphides are close to or at the volcanic vents (eg. at Buttle Lake), the precious metal bearing quartz veins, such as those in Mount McQuillan area south of Port Alberni, appear to be more distal and originating over a longer time span, being related to various intrusive events.

The Sicker Group is the oldest rock unit on Vancouver Island and is equivalent to part of the Cache Creek Group on B.C. Mainland. The Sicker rocks are exposed in northerly and NW trending uplifted zones (or large horsts) formed prior to the late Cretaceous.

The lower and thicker part of the Sicker Group, occurring mostly east of the property, is mainly composed of greenstones derived from volcanic breccias and tuffs of intermediate composition. Generally, they occur in gently plunging NW trending open folds of regional extent, but locally they are isoclinally folded and converted to chloritic and sericitic schists. The upper part of the Sicker Group (occuring in the central part of the property) consists largely of graywacke, argillite and minor conglomerate overlain by limestone and chert. The limestone near Buttle Lake and Horne Lake can be up to 1000 feet thick (Carson, 1973).

The Triassic volcanics of the Vancouver Group, the Karmutsen Formation, overlie the Sicker Group uncomformably. In the Horne Lake area they are in fault-contact with Sicker Group, forming the boundaries of the uplifted area; they are found along the northern and western margins of the property

The batholithic rocks (Island intrusions) are absent on the property.

6. HISTORY AND PREVIOUS WORK

During the 1960's, Gunnex Limited, in partnership with Canadian Pacific Oil and Gas (CPOG), carried out various regional and detail surveys, mostly for base metals, on the E & N Railway Land Grant on Vancouver Island. As part of that program, the area south of Horne Lake, centered on the present Lacy-Stokes claims, was geologically mapped on 1":¼ mile scale by the author during 1964-1966. Several taconite showings and airborne magnetic anomalies in the claim groups areas were also examined and described.

Subsequent regional mapping of Vancouver Island in 1970's by G.S.C. (Muller, 1971 - 1980) on a more general scale has resulted in revision of the Sicker Group nomenclature in the Cowichan-Horne Lake Uplift area, based on comparison with similar Sicker Group rocks in Buttle Lake area and elsewhere.

A geochemical regional sampling program by Gunnex Ltd. in 1960's for Total Heavy Metals (THM), mostly along roads, outlined several moderately anomalous areas, extending in a roughly outlined belt about 3.5 km long and up to 2.5 km wide, toward SE from the south end of Lacy lake. This larger anomalous area contains a number of clusters and "spot highs" of medium to high range values. To authors knowledge, these had not been followed-up so far.

Most and highest of these geochemical anomalies occurred in the south half of Lacy 2 claim, extending into adjoining Lacy 3 and Stokes 2 claims.

A helicopter-borne magnetometer survey was carried out in 1962 by Hunting Survey Corporation Limited for Department of Natural Resources of the C.P. Railway Company (in Calgary), prior to the 1960's joint partnership program with Gunnex Limited on the E & N Railway Land Grant, between latitudes 40° N and 40° 20' N. The purpose of this survey was to locate magnetite bodies of economic size and grade and to assist in (preliminary) geological mapping of the Land Grant area. Only deposits containing high concentrations of magnetite would be detectable. The results of this survey are shown now on the G.S.C. aeromagnetic map 5323G, the Port Alberni sheet (see References).

Among a number of magnetic anomalies detected by this survey, and later examined on the ground by Gunnex staff, two are located in Lacy and Stokes Claim Groups area.

The author also spent several days during September, 1984, doing reconnaissance geochemical sampling and prospecting on the Lacy-Stokes claims.

7. WINTER 1986 - 1987 PROGRAM

7.1 SCOPE AND PURPOSE

During December 10-21, 1986, January 7-12, February 4-14 and 24-27, 1987, a crew consisting of two geologists and four geotechnicians carried out a reconnaissance type geological-geochemical-geophysical survey over about 60% of the Lacy-Stokes claims area. The purpose of this program was:

a) To test by a "grassroots" survey most of the claims area for its mineral potential and to delineate the areas of "favourable" geology, i.e. Sicker Group rocks and particularly the areas underlain by Myra Formation.

b) At the same time, relocate, sample and re-examine several of the previously known taconite ("iron formation")—manganese and small Cu-Ag showings, as well as the aeromagnetic and geochemical "total heavy metal" anomalies found in 1960's (Laanela, 1965 - 1966, 1986).

7.2 METHODS AND PROCEDURES

A 7.2 km long base-line, at azimuth 330° extending diagonally through the property and paralleling the regional geological strike, had been laid out earlier in 1986 as a basis for the control-grid.

300 metre interval cross-lines were run from this base line by hip-chain and compass, across the regional strike.

Additional crosslines, at 100 metre line intervals were run on the South part of the grid, mainly on Stokes 3 and 4 grid, for more detailed surveys. A small 25 metre line interval grid was run in this area over a pyritic massive sulphide showing just north of the railway track, on Stokes 3 claim.

Total cross-lines cut were about 67 line-km, with about 29 km on the Lacy Group and 38 km on the Stokes Group.

A total of 1,625 B-horizon soil samples were collected along all grid lines, using 50 metre sample intervals in most parts of the grid, and 25 metre intervals in detailed grid areas; 572 samples were taken on Lacy Group and 1,053 on Stokes Group. The same grid was also used for control of geological mapping and prospecting; mapping covered a total of about 16 km^2, of which 9 km^2 were on Lacy Group and 7 km^2 on Stokes Group.

VLF-EM and magnetic surveys were also run along these lines at 25 metre station intervals. Instruments used were VLF-2 EM receiver (tuned to Seattle, Washington, transmitter at 24.8 KHz) and Scintrex MP-2 proton precession magnetometer, respectively. In both cases, reliable readings could not be taken close to the power line due to strong interference from it. Only the in-phase readings were taken during the VLF-EM survey. In total 62.3 line-km of magnetic and 64.8 line-km of VLF-EM surveys were run. (Breakdown of line-km for Lacy and Stokes Groups were 24.5 and 37.8 line-km of mag and 27 and 37.8 line-km of VLF-EM, respectively.

All soil samples were placed in marked Kraft-paper bags, field dried and then shipped to Acme Analytical Laboratories at 852 Hastings Street, Vancouver. There the soil samples were dried and sieved to -80 mesh size, then analyzed by Induced Coupled Plasma (ICP) method for a package of 30 elements. These elements included gold, silver, most of the common base metals (eg. Cu, Pb, Zn, etc.), various rock forming metals and a number of trace elements (see lab data sheets in Appendix for further details).

Sixteen of these elements, Ag, Cu, Pb, Zn, As, Cd, Sb, Bi, Au, Mo, Ni, Mn, Ba, Cr, Co and W, were plotted on four 1:5,000 scale maps. Similarly, the VLF-EM and the magnetic survey results, along with geological mapping, were plotted on separate 1:5,000 scale sheets.

To evaluate any geochemical anomalies present, frequency distribution histograms, based on lab data, were prepared for each of these elements and plotted on appropriate geochemical maps. Statistical parameters, including "mean" and "standard deviation", to indicate background, threshold and various anomalous categories were also calculated for these 16 elements and are shown on appropriate histogram - graphs. Values higher than "mean plus two standard deviations" were taken, by convention, as "anomalous" and are underlined on maps; an attempt was made to contour these anomalous values (unless these were very scattered and low) for each particular element to outline "areas of interest".

However, considering the large number of elements analysed for and the number of maps involved, this method of outlining the anomalous areas can be found to be somewhat confusing. First, the wide scattering of anomalous values for any particular element, and second, the lack of good correlation between anomalous samples of different elements makes selection of the "areas of interest" difficult.

Hence, to facilitate interpretation of the large variety and number of geochemical anomalies, additional maps were prepared, based on the significance "ratings" of combined anomalies. These maps are discussed in next chapter, under "Discussion of Combined Geochemical Anomalies".

The VLF-EM data (in-phase-readings only), were plotted as profiles on 1:5,000 scale maps; the more detailed grid area to the south was plotted also on 1:2,500 scale. Conductor axes are indicated by "cross-overs".

The mag survey data was plotted as profiles on 1:5,000 scale. Profiling was chosen, rather than contouring, due to lack of diurnal corrections, — which would be needed is data is to be contoured across adjoining lines. No separate base station was used, and it was not expedient in difficult-to-traverse terrain to use the one instrument also to take base readings at sufficiently close time intervals.

Property geology was mapped on 1:5,000 scale, except for the more detailed grid area to the south which was mapped on 1:2,500 scale, similar to mag survey.

8. RESULTS

8.1. GEOLOGICAL MAPPING AND PROSPECTING

The property was mapped by Alan Hill, B.Sc. and L. Scroggins, B.Sc. (Hon.) at a scale of 1:5,000 (except for the "detail grid area" which was mapped at 1:2,500). The following is from the field report by Mr. Hill.

8.1.1. Property Geology

(See Maps 1-A, 1-B and 2)

The claims are underlain predominantly by northwest trending volcanic-volcaniclastic-sedimentary rocks of the Paleozoic Sicker Group, except for the margins of the property where the younger mafic volcanics of the Vancouver Group and sediments of the Nanaimo Group occur. The Sicker Group rocks form a "jigsaw puzzle" of fault blocks and display a very complex stratigraphy with numerous intercalations and rapid lateral facies changes. The rocks are commonly schistose in the vicinity of faults with associated carbonatization and silicification. Elsewhere they are relatively fresh with internal textures and fossils preserved. The stratigraphic nomenclature devised by the G.S.C. (Muller, 1980) was found to be inadequate for mapping at this scale, so a strictly lithological format was adopted. Attempts have been made, however, to place each lithological unit within Muller's succession. The units are described in roughly ascending order.

Unit 1 (oldest?) consists of basaltic to andesitic volcanic and volcaniclastic rocks which occur along the easternmost side of the property, and as a few thin members higher up in the sequence. Pillowed flow textures are common along with quartz and calcite filled amygdules and plagioclase/hornblende porphyritic textures. Clastic rocks are subordinate and range from fine tuffs and reworked tuffs, to coarse agglomeratic and pillow breccia horizons. Lenses of jasper-magnetite iron formation are present in two locations within this unit. The larger occurence is known as the Cameron Lake Iron Showing and is discussed separately later in this report. Related to Muller's scheme this unit probably represents the uppermost Nitinat Formation.

Unit 2 on the property is the most widespread and also the most complex, displaying discontinuous individual lithologic units, and the most widespread facies changes. Lithologies include massive volcaniclastic "melange" containing clasts and blocks (up to 1m) of all types of volcanic rocks and chert in a poorly sorted wacke-like matrix. This grades laterally into thickly bedded mafic to intermediate lapilli tuff, chert, and chert breccia (containing rip-up clasts). Chemical sedimentary rocks are subordinate and include grey to green chert and lenses of pale red jasperoidal and manganiferous chert (especially north of Lacy Lake). Hematization has locally affected Unit 2, and to a lesser degree Unit 1, imparting to the rocks a streaky and patchy maroon coloured tinge. This alteration is believed to be diagenetic and unrelated to later faulting and fluid movement.

Unit 3 consists of agglomeratic rhyolite flows and felsic tuff, and is relatively uncommon on the property, occuring in the southeast as a single lense up to 150 metres thick. It is quartz and feldspar porphyritic, with minor sericitic tuffaceous beds, and contains numerous white pegmatitic quartz patches and veins. Agglomeratic phases contain clasts 5-15 em in size, which are sub-rounded and display partially resorbed margins within a fine grained siliceous matrix. Finely disseminated pyrite is present in the matrix and in the clasts.

Unit 4 consists of a very distinctive white to green rhythmically laminated cherty tuff which occurs as lenses and interbeds mainly within Unit 2, and possibly as a lateral equivalent of Unit 3.

Unit 5 comprises dacitic to andesitic flows which underlie a large area in the southern portion of the map-area. These flows are plagioclase and hornblende porphyritic, with phenocrysts up to 5 mm. Minor tuffaceous, cherty, and fragmental beds are also present. Units 2 through 5 correlate with the main body of the Myra Formation of Muller's succession.

Unit 6 is comprised of distinctive calcareous sediments consisting predominantly of thickly bedded crinoidal limestone, with lesser dark grey to black chert and argillite. Minor chloritic tuffaceous material is also present locally, as are weakly jasperoidal chert beds near the (?) paraconformable contact with overlying Vancouver Group volcanics. This unit correlates with the Buttle Lake Formation, and also occurs as lenses within the Myra Formation. Caves, sinkholes and underground streams were encountered while mapping the limy members of this unit. Also, in the vicinity of diabase-gabbro intrusions contact metamorphism has converted the limestone to a cream-coloured marble, which has been quarried economically in the past on the property.

Unit 7 includes diabase and gabbro intrusions which are restricted to Units 2 through 6. The intrusions occur as dyke swarms, sills, and large bodies, and possibly are coeval with Vancouver Group-Karmutsen Formation volcanism. Muller (1980) included these diabase-gabbro intrusions in his "Sediment-Sill Unit" which is an informal division transitional between the Myra and Buttle Lake Formations. On the Lacy-Stokes property these intrusions are common at approximately this stratigraphic level, but also occur lower in Unit 2 as dyke swarms. These dykes display slightly elevated background base and precious metal levels, along with a distinctive high magnetic signature due to the presence of accessory sulphides and magnetite. The large gabbroic intrusion cut by the railway tracks in the south part of the property contains small pod-like bodies and seams of pyrite in the face of a blasted rock-cut. Grab samples here assayed up to 0.46 oz/ton gold, and are described as the "main or railway showing" in a following section.

Unit 8 consists of prominently outcropping massive basaltic flows, along with lesser andesite and intrusive equivalents. This unit correlates with the Triassic Vancouver Group (Karmutsen Fm.) and occupies the northern and western margins of the property.

Unit 9 (youngest) is composed of the Cretaceous Nanaimo Group sediments consisting of mainly soft-weathering conglomerate, shale and greywacke, occupying the low-lying areas at the southernmost edge of the property.

8.1.2 Mineralization

Main "Railway" Showing

Located adjacent to the railway tracks between lines 7 + 00 S and 8 + 00 S, this showing contains coarse grained massive pyrite in seams and pods over an area 10 m x 7 m on a vertical rock-cut face. (There is no evidence of sulphide mineralization or alteration in original outcrop surfaces on top of the rock-cut.)

Individual sulphide pods are contorted and irregular in shape, up to about 10 cm x 100 cm x 50 cm in size, and do not express consistent strike direction or lineations, but rather suggest a complex infolding within the enclosing rocks. Grab samples, ranging from 25 - 80% pyrite assayed 14,900 ppb, 6320 ppb, 3580 ppb in gold (or 0.46, 0.19, and 0.11 ounces/ton gold). Host rock consists of fine to medium grained, multiphase, diabase-gabbro intrusions which are often magnetic in hand specimen due to primary accessory magnetite and pyrrhotite. This body of intrusive rock effectively explains the airborne magnetic anomaly detected here by Gunnex Ltd. in the 1960's (Laanela, 1965-66 and 1986).

Alteration in the rocks is subtle, and not far-reaching and involves bleaching and the development of sericite adjacent to tiny quartz-carbonate-epidote veinlets. These veinlets are common throughout the host rock, but are most concentrated in the immediate vicinity of the pyrite pods. Malachite staining was found associated with these veinlets 10 metres east of the showing, where a grab sample assayed 1993 ppm copper and 25 ppb gold. A suite of three grab samples from the main showing were also analysed for Pt and Pd but returned only background levels.

East Track Showing

This showing is about 50 m east of the point where the railways tracks cross the base line. Minor quartz veining and silicification is present within foliated dacite. Some of these veinlets are rusty and contain fine disseminations and blebs of pyrite. Sample LS86-43 contained 5% pyrite, 25% quartz and assayed 2320 ppb gold (0.07 ounces/ton Au). These veinlets occur within a zone 2 to 3 metres wide.

Old Cu-Ag Showings

These two small copper-stained pits (about 1 m x 1 m size) occur 130 m apart in silicified volcanics near the east end of the line 12 + 00 N, on the west shoulder of the road. The host rocks are porphyritic andesite (?), now somewhat bleached and cut by numerous quartz veinlets containing trace chalcopyrite, bornite, azurite and pyrite mineralization.

Past sampling, (Laanela, 1986), returned assays up to 2.22 oz/ton silver and 0.25 oz/ton silver respectively from the southern and northern pits. Sampling in this program returned only one notable sample assaying 0.50 oz/ton silver and 543 ppm copper from the southern pit. The systems of quartz veinlets controlling this mineralization appear to die out quickly, within a few metres of each blast pit.

Cameron Lake Iron Showing

This showing is well described in previous reports by Laanela (1965-66 and 1986). It was relocated in a low-lying area now overgrown by thick "salal" underbrush at grid co-ordinates 9+00 S/1600 E. The showing consists of multiple contorted and crackle-brecciated jasper lenses ranging in thickness up to 3 metres, and exposed over a strike length of about 250 metres. The lenses are hosted by basaltic volcanics which display pillowed flow textures nearby. Magnetite seams 2-3 cm thick are present within the dark red jasper and are highly contorted. Crackle brecciation is expressed by angular open space infillings of white quartz which uncommonly contains traces of pyrite. Sampling of this material returned background base and precious metal values (samples No. LS86 - 1A and 1B). However, a similar 2 m thick lense of jasper was discovered at the east end of line 9 + 00 N. Here quartz veinlets containing pyrite and malachite were noted and sample LS86 - 62 assayed 1217 ppm copper.

The Cameron Lake Iron showing and surrounding area was examined between 1963 - 1966 by Gunnex Ltd. personnel. An airborne magnetic anomaly occurs 300 metres west of the showing, in an area of little outcrop. This area was carefully prospected during this season's program, but the anomaly was not explained. Schistose and pyritic samples were collected between the showing and the airborne anomaly, but returned low values in all metals. The intensity of the airborne magnetic anomaly, however, suggests that buried lenses of magnetite-jasper iron formation may be responsible.

Lacy Lake Iron - Manganese Showings

These large lenses (up to 50 m thick) of pale jasperoidal chert were also previously examined by Gunnex in the 1960's. They differ markedly from the Cameron Lake Iron Showing in their notable lack of magnetite, and the paler pink to brick red colour of the jasperoidal chert. The manganese mineral pyrolusite was also identified locally, and in sample LS86 - 30 which assayed 4981 ppm Mn. Sulphides were not observed in these showings which, when sampled returned background levels in base and precious metals.

Notes on Manganese (by Alan Hill, B.Sc.)

- The high Mn values (up to 18,862 ppm!) in soils encountered sporadically may be attributable to the glacial dispersion of supergene enriched oxidized layer which once overlayed the Lacy Lake (or other?) Fe-Mn rich chert.

- Manganese has been mined at Hill 60 near Cowichan Lake. J.T. Fyles (1955) describes these upwardly enriched profiles in B.C.D.M. literature. These "laterites" are typically small and have been disturbed by glaciation.

8.2 GEOCHEMICAL SOIL SURVEY

8.2.1. Chalcophile Elements: Ag, Cu, Pb, Zn, As, Cd, Sb and Bi)

(See Maps 3-A and -B, and 4-A and -B)

Chalcophile elements have an affinity for sulphur, hence they tend to be concentrated in sulphide minerals; they form covalent bonds with sulphur.

The two sets of maps show individual analytical values for each of the 8 metals, along with distribution histograms. Statistical parameters for each element were calculated. On the maps, all values of "mean plus two standard deviations" or higher, which are normally taken as "anomalous", are underlined. Following is a description of individual elements and their anomalies.

Silver

Silver values of 0.4 ppm or higher are taken as anomalous. Aside from numerous "spot highs" scattered throughout the grid area, there are several noticeable anomalous zones, particularly south and SE of Lacy Lake, trending roughly NNW, parallel to regional geologic strike. The values range from 0.1 to 2.0 ppm Ag, with background in the 0.1 - 0.2 ppm range. Locally, there is some correlation between silver, zinc, copper and lead, and also with gold and some other elements. Silver has medium mobility in oxydizing environment.

TABLE: ROCK SAMPLING HIGHLIGHTS

(See geology maps for locations)

Sample #	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Au ppb	Description
LS86-09	38	30	141	.5	86	quartz vein sample, 5% py.
LS86-14	409	24	101	.8	395	25% pyrite in small shear zone.
LS86-15	20	3	10	.1	81	10% coarse pyrite in 4 cm quartz vein; float sample along tracks.
LS86-16	1,993	5	62	.2	25	Malachite stained quartz vein and slickenside material; Main Showing.
LS86-17	21	15	13	.7	6,320	coarse, massive pyrite from 10 cm seam, Main Showing (0.19 oz/t gold).
LS86-18	39	5	65	.1	38	chloritic host rock, Main Showing.
LS86-20	64	6	32	.9	14,900	weathered, sericitic, 25% pyrite from cliff face, Main Showing (0.46 oz/t gold).
LS86-21	93	4	81	.1	29	trace py & magnetite in gabbro, corresponds to soil sample anomaly.
LS86-22	201	4	100	.1	54	0.3 m wide carbonated-filled shear.
LS86-23	77	6	58	.2	87	diabasic rock, 5% diss. po, quartz, and epidote veinlets, Main Showing.
LS86-25	42	7	59	.4	4,750	5 cm pyrite seam in float sample.
LS86-30	11	10	34	.1	22	4,981 ppm Manganese in pale jasper, Lacy Lake Showings.
LS87-33	543	64	157	16.2	3	trace py, cpy in silicified andesite (?), old Cu-Ag Showing (0.50 oz/t silver).
LS87-43	127	5	42	.3	2,320	5% py diss. in silicified dacite, East Track Showing (0.07 oz/t gold).
LS87-44	53	13	56	.1	520	silicified gabbro with quartz stringers, 10% py & po; Main Showing.
LS87-45	22	7	19	.1	3,580	80% pyrite from 1 m x 0.5 m x 0.1 m pod (0.11 oz/t gold); Main Showing.
LS86-62	1,217	6	79	.2	16	trace pyrite & malachite in quartz veinlets, adjacent to jasper lense.
LS86-65	600	28	984	.3	1	trace py, po in diabase dyke.
LS86-68	1,585	58	2,818	4.1	430	carbonatized shear 10 cm wide, 30% pyrite
LS87-78	11	5	3	.3	215	quartz vein float, trace sulphides.
LS87-80	35	2	89	.1	131	3% diss. pyrite in dacitic tuff.

Two of the most anomalous zones of silver are:

- just south of Lacy Lake, dimensions some 1300 metres long (and open northwards, toward the lake) and up to 200 - 300 metres wide; this zone has good correlation with gold anomalies also.

- starting a kilometer SE of Lacy Lake, then trending (intermittently) from Line 24N to Line 9S, over a total distance of about 3.5 km. This anomaly is generally quite narrow, usually consisting of one sample per line (i.e. less than 50 metres). A 2.0 ppm Ag value occurs on Line 18N, where the anomaly is about 3 sample intervals, i.e. 150 metres, wide.

Copper

Copper values range from 1 - 284 ppm, with the background in the 20 - 70 range and values of 100 ppm and higher taken as anomalous. Copper anomalies are less extensive than silver; the best copper anomalies are associated with silver anomalies (see above) both south and SE of Lacy Lake. A significant copper anomaly, with a NW strike, length of about 400 metres, occurs along the railway track on the common boundary of Stokes 3 and 4 claims, where it is apparently associated with ultra-basic rocks and pyritic sulphide showings. Another copper anomaly occurs just SE of Esary Lake.

Copper has medium mobility in oxydizing environment.

Lead

Lead values range from 2 - 112 ppm, with the background in the 4 - 14 ppm range and values of 20 ppm or higher taken as anomalous. Its anomalies tend to be largely "spot highs", having some correlation with copper and zinc.

Lead has low mobility, a property which is useful in pin-pointing sources of Pb - Ag anomalies in geochemical prospecting.

Zinc

Zinc tends to be quite closely associated with silver; its values range from 14 to 564 ppm. Background is in the 40 - 140 ppm range, and values higher than 175 ppm can be considered as anomalous. The three best anomalous zones for zinc are:

- associated with the silver anomaly south of Lacy Lake;

- associated with silver and copper anomalies SE of Lacy Lake, in the centre of Lacy 2 claim;

- a cluster of small zinc anomalies associated with copper, silver and lead, SE of Esary Lake.

Arsenic

Arsenic has a distinctly positively skewed (logarithmic) distribution, with a range of 2 - 1169 ppm. Although the largest proportion of samples are in the "low" 1 - 4 ppm range, the calculated "mean" value (using the 30 ppm "cut-off") is 7 ppm, with the "standard deviation" of about 6 ppm As. The samples above 18 ppm (7% of samples) are considered as anomalous. The 30 ppm cut-off, at 97.5 percentile, was used to avoid statistical bias if including many high anomalous values to calculate "mean" and other parameters.

The largest and strongest As anomalies occur on the north part of the grid, on the Lacy Group of claims, particularly between Esary and Lacy Lakes and SE of Lacy Lake. The tend to be associated with anomalies of antimony and zinc, and more locally, with silver, copper and some other metals.

Arsenic has a medium mobility and is generally considered to be a good "pathfinder" element for vein type Au - Ag deposits as well as for complex (Au - Ag - Cu - Pb - Zn - Co) sulphide ores.

Antimony

Similar to As, Sb anomalies are mostly found in the northern part of the property, on the 7 lines between Lacy and Esary Lakes, where it is closely associated with As. Some also occur SE and just south of Lacy Lake.

The range for Sb is 2 - 221 ppm, with 91% of these in the 1 - 4 ppm "background" range. Using the 12 ppm "cut-off" (at about 95 percentile) to avoid bias caused by obviously high anomalous values, the "mean was calculated as 2.2 and the "standard deviation" as 1 ppm. Hence the samples above the 4 ppm Sb values can be considered as anomalous.

Antimony, along with bismuth (see below), has a low geochemical mobility under most conditions. Similar to arsenic, it is indicative of low temperature and complex sulphide mineralization, and of hydrothermal sulphide ores in general.

Bismuth

Bi has a total range of only 2 - 9 ppm, with 95% of samples in the 2 - 3 ppm "background" range. Values of 4 ppm or higher are considered to be anomalous.

The anomalies of bismuth tend to be small, low in intensity, somewhat scattered throughout the grid area. There is only limited local correlation with Ag, As, Sb and base metals.

Bi has low mobility in most conditions, and similar to As and Sb, can be used as a "pathfinder"; its significance here appears to be limited.

Cadmium

Cd here has a total range of only 1 - 4 ppm, and it is geochemically not significant. Map shows a few small or "spot" anomalies on south half of the grid, contoured at 2 ppm Cd. The few anomalies present here tend to correlate with Zn, also, to lesser extent, with Ag, Mn and base metals.

In general, Cd has medium mobility under most conditions and is mostly associated with hydrothermal sulphide ores, particularly complex sulphides and base metals. Usually, it is found with Zn in sphalerite. In ore deposits the Cd:Zn ratio is indicative of mineral zoning, tending to increase with distance from the vein, while depleted relative to Zn in vein material.

8.2.2. Siderophile Elements: Au, Mo, Co, and Ni
(See Maps 5-A and 5-B)

Siderophile elements, which also include Fe, P and platinum group elements, are those having primarily an affinity for iron; they are concentrated in Earth's core. They normally prefer the metallic bond characteristics of metals and do not tend to form compounds with oxygen or sulphur, thus explaining why gold and platinum group metals commonly occur as native metals.

Gold

Aside from a number of small and "spot" anomalies present throughout the grid area, gold also forms a rather distinctly outlined NNW trending narrow anomalous zone which extends from the south boundary of the property (Line 14S on Stokes 3 claim) to east of Lacy Lake (Line 36N on Lacy 4 claim). This anomalous zone, or rather, a trend which often zig-zags and branches, has a total length of some 5 km, but for most part is only one-sample-width wide, i.e. 50 metres or less as defined by sample intervals.

The range of gold values in soils is from 1 to 415 ppb, with the background in the 1 - 2 ppb range; the "threshold" value is about 5 - 6 ppb, while the value of 9 ppb Au or higher is taken as anomalous.

The highest gold values, some in hundreds of ppb, occur in the detailed grid area (100 metre interval lines sampled at each 25 metres), on the west part of Stokes 3 claim and in the SW corner of Stokes 2 claim. The Au anomalies here, although part of the abovementioned trend, appear to be more irregularly shaped, perhaps due to more detailed sampling pattern here. A comparison with geology indicates that anomalies are associated with the mafic rocks (diabase and gabbro), also locally with some quartz veins and massive pyritic sulphide occurrences, such as in the "detail grid" area north of the railway track.

Gold shows some local correlation with silver just south of Lacy Lake.

Molybdenum

No significant Mo anomalies occur in the sampled grid area. The possible exemption is an anomalous area, some 300 metres across, on Lines 21 and 24 North, about 1.5 km SE of Lacy Lake, where Mo is also associated with silver, base metals and arsenic anomalies.

The range for "moly" is only 1 - 14 ppm, with a background of 1 ppm, and 3 ppm taken as anomalous.

Cobalt and Nickel

Both Co and Ni (along with Cr) are closely associated here and form similar anomalies. Two main anomalous trends here occur east of Esary Lake, north of Lacy Lake, on Lacy 4 and Esary claims. Other, small anomalous zones occur in the central parts of Stokes 1 and Stokes 3 claims, with some "spot highs" elsewhere on the grid.

Co, Ni (and Cr) are associated with ultrabasic rocks and can be used as pathfinders for platinum group metals (PGM). Since no soil samples so far have been analyzed here for Pt or Pd, it is suggested the samples high in Co-Ni-Cr be re-analyzed for these two PGM elements, particularly if they are already also "high" in other precious or base metals.

Ranges for Co and Ni are 1 - 65 and 1 - 565 ppm respectively. Respective background ranges are 5 - 20 and 10 - 50 ppm, while the above 27 ppm Co and 61 ppm Ni values can be taken as anomalous.

8.2.3. Lithophile Elements: Mn, Ba, Cr, W, Sr and La
(See Maps 6-A and 6-B)

This group includes a number of other elements, analyzed here, but not shown on the map, eg. Sr, La (a Rare Earth Element), rock-forming metals K-Na-Ca-Al-Mg, actinide series (U, Th), and others. These elements are concentrated in Earth's Crust and have an affinity for silicates. They tend to ionize easily and tend to form, or be associated with silicate minerals in which ionic bonding is found.

Manganese and Barium

Both Mn and Ba tend to be closely associated in several anomalous zones on the property, particularly in the areas east of, and between the Lacy and Esary Lakes. Both, particularly Mn, also are associated with Ag, base metals, Sr, Cd, As, and more locally other metals (including Au).

The respective total ranges for Mn and Ba are 37 - 18,826 and 6 - 643 ppm, with their respective backgrounds in the 100 - 800 and 20 - 100 ppm ranges. Both distribution curves are logarithmic, showing strong positive "skewness", indicative of presence of anomalies. The values of about 2500 ppm Mn and 200 ppm Ba, or higher are taken as anomalous.

Mn and Ba both have low to very low mobility. Mn anomalies are of interest because they tend to form extensive haloes beyond and around ore deposits; hence Mn is useful as a "pathfiner" for buried mineral deposits. Ba is also found with Pb-Zn-Cd base metals deposits (as barite in gangue); more generally, it tends to be enriched in early formed potassium minerals, hence it is associated with granites.

Chromium

Cr anomalies occur as "spot highs" throughout the grid area, but the larger and more pronounced ones occur near the north and south ends of the grid.

To the north, centered on Lacy 4 claim, are several Cr anomalies closely associated with Ba, Mn, and other elements. To the south, two Cr anomalies are centered on Stokes 3 claim, where there is some local correlation with Mn and Ba, and possibly with mafic rocks.

Total range for Cr is 2 - 820 ppm, and values above 100 ppm are taken as anomalous. Cr, as a general rule, has a plutonic association with ultramafic rocks; its mobility is very low to immobile. It tends to "travel" as detrital grains, and hence is a good "pathfiner" for PGM (Pt, Pd), along with Ni and Co (see 8.2.2., above). Cr is strongly lithophile in Earth's crust, but may occasionally act as a chalcophile.

Tungsten

W is not a significant contributor to the geochemical anomalies here, except for a few "spot highs" along east part of Line 9 south, near and at the Cameron Lake Iron Showing (see 8.1.2., above). The total range for W here is 1 - 11 ppm, with 92% of samples in the 1 ppm "background"; values of 2 ppm or higher are taken as anomalous.

Tungsten has a plutonic association with certain granites, along with Sn, Mo, Ba, Be and Zn. Its mobility is very low to immobile.

Other Elements

Two other lithophile elements, Strontium and Lanthanum, although not shown on the geochemical maps separately, are included in later calculations of combined anomalies.

Strontium has a range of 1 - 160 ppm, a "mean" of 18 ppm and "standard deviation" of 12 ppm; values above 42 ppm Sr as taken as anomalous. Locally, it is correlated here with Mn and Ba.

Lanthanum is a Rare Earth Element (REE), in a series of 15 elements within the larger lithophile group. La is one of the best known RE elements, usually found in monazite, a RE phosphate found in pegmatites and granitic rocks. RE elements have low to very low mobility, i.e. they do not "travel" far from the source.

Here, the range for La is 2 - 66 ppm, with a 6 ppm "mean" and 4 ppm "standard deviation". Values above 15 ppm are taken as anomalous. La occurs here associated with other geochemical anomalies SE of Esary Lake and in the Lacy Lake area.

8.2.4. Discussion of Combined Geochemical Anomalies

The foregoing description of geochemical survey results covered a wide range of elements and a profusion of often low to moderate anomalies of these elements in soil. Some of these elements correlate well with each other, while in other cases correlation occurs locally only. However, there appear to be a number of NW to NNW trending zones along which these miscellaneous anomalies tend to occur.

Taking each anomaly individually, often only limited sense can be made of its significance or importance, particularly in view of trying to outline some definite anomalous zones that may indicate "hidden" mineralization and, hence, may warrant further follow-up work.

In the following discussion, the anomalous values of ore-forming metals and associated trace or "pathfinder" elements have been grouped on basis of their geochemical affinity. The "anomaly ratings" were totalled for each sample (giving a "rating" of 1 to each "mean plus two standard deviations" value), then contoured. The resulting maps show well defined zones or trends, which can be further correlated (including geophysical anomalies) in order to select targest for follow-up work.

Chalcophile Elements (Maps 7-A and 7-B)

In this group all "above threshold" (mean plus standard deviation) and anomalous (mean plus 2 standard deviations and higher) values of Ag, Cu, Pb, Zn, As, Sb, Bi and Cd have been combined. In effect, each soilsample is being rated, although only the ratings of 3 and above, chosen statistically, have been contoured as significant.

A number of rather well to strongly defined anomalous zones can be outlined, mainly in the northern part of the grid (on Lacy Group). On the southern part of the grid (Stokes Group), including the "detail grid" area, the anomalies are smaller and spotty.

The anomalies tend to be elongated, having a general NW - NNW trend, similar to regional geological strike, implying stratigraphic and/or structural control. The geological units (see 8.1.1., above, and Maps 1-A and 1-B) underlying the most anomalous area, are Unit 6, mostly Buttle Lake Formation (limestone with some chert and argyllite plus minor tuff and pale jasper), and Unit 2, lower part of Myra Formation (mainly bedded mafic to intermediate volcaniclastics and tuff).

Lithophile and Siderophile Elements (Maps 8-A and 8-B)

The maps show two sets of anomalies of combined lithophile and siderophile elements:

Set I combines "above threshold" and anomalous values of Mn, Ba, Sr, W, Au and Mo, similar to combining the chalcophile elements, above. The resulting anomalies are more restricted in extent than the chalcophile element anomalies, but also having a similar regional NW trend. The ratings of 3 and above are considered to be significant and were contoured.

Most of the anomalies occur in Lacy Lake vicinity on the four Lacy claims. Several also occur in west half of Stokes 2 claim and on the detail grid area toward south. Gold is often a strong contributor to these anomalies.

Set II combines similar values for Ni, Co and Cr. The purpose of this grouping was to outline anomalous areas that could possibly be underlain by mafic to ultramafic rocks. It is suggested that soilsamples from these anomalous areas, particularly where other coincident anomalies also occur, be tested for Platinum Group elements (Pt, Pd).

The combined Ni + Co + Cr anomalies occur in several areas, but the most significant ones are SE of Esary Lake and north of Lacy Lake, where they are associated with other elements. Other larger anomalies are in the center of Lacy 2 claim and on the Stokes 3 claim. There is no particularly good correlation with mafic rocks (Unit 7 on geology maps), except locally.

Combined Anomalies of 18 Elements (Maps 12-A and 12-B)

On these two maps, the combined ratings of all 18 elements discussed previously have been combined. these elements are: Ag, Cu, Pb, Zn, As, Sb, Bi, Cd, Au, Mo, Ni, Co, Mn, Ba, Cr, W, Sr and La. The rating of 6 here is considered as significant and the values above it are contoured. The main purpose of these maps is to provide guidance in selecting areas for more detailed follow-up surveys, geophysics and prospecting (see under "Recommendations"). The anomalies here are too numerous to be described individually, but several larger NW trending belts of anomalous zones can be indicated, eg.:

a) A belt of strongly anomalous zone just south of Esary Lake, extending SE toward west side of Lacy Lake, and probably crossing the unsampled gap there; from the south end of Lacy Lake it intermittently extends, by branching, to Stokes 1, 2, and 3 claims. It thus spans the entire 7.2 km length of the grid-survey area.

b) Similar belt of anomalous zones, subparallel to the one described above and several hundred metres east of it, running from L57N to L33N; it actually consists of several parallel to subparallel elongated anomalies up to 2 - 2.4 km long.

c) A large, rather disctinct NW trending anomaly near the center of Lacy 2 claim, at least 1.5 km long and up to several hundred metres wide.

8.3 GEOPHYSICAL SURVEYS

8.3.1. VLF-EM Survey
(See Maps 9-A, 9-B and 10)

VLF-EM survey was run by taking the in-phase (dip angle) readings only, using the Seattle transmitter. The lack of out-of-phase readings considerably restricts the interpretation of significance of the conductive anomalies. Strong interference from the high-tension powerlines crossing the property, which varied according to atmospheric conditions, as well as the railway tracks, also restricted the information, particularly in some critically anomalous areas associated with massive pyritic sulphide occurrences on Stokes 3 claim.

Notwithstanding these shortcomings of the EM survey, a number of NW to NNW trending, generally parallel to sub-parallel EM conductive zones are present throughout the grid area. They tend to follow the regional geological strike (NW to NNW); several well defined "crossovers" appear to be associated with fault zones, according to geology maps. Similarly, the conductive zones run generally parallel to sub-parallel with the anomalous geochemical trends, although not always coinciding.

Of particular interest are the EM conductive zones close to or closely parallel to the geochemically anomalous zones in the following areas:

1. An about 0.5 km wide belt extending from Lacy Lake for about 2.5 - 3 km SSE in west half of Stokes 2 claim. It contains at least 3 sub-parallel EM conductors associated with Au and Ag geochemical anomalies, plus a zone of combined other geochemical anomalies [including antimony, strontium, manganese, barium, lanthanum (a Rare Earth Element), and others].

2. On Lines 9N to 18N at the centre and in the SE quadrant of Lacy 2 claim: two conductive zones converge with a geochemically anomalous belt also containing anomalous silver and some gold values.

3. Another large belt centered east of Esary Lake and on Lacy 4 claim; of a number of EM conductors present, at least 3 appear to be associated with faults. Some small Au-Ag anomalies are present, as well a number of combined anomalies of other elements (mainly Sb, Mn, Ba and La). However, the correlation between EM and geochemical anomalies is not as noticeable as in the first example.

For better interpretation of the EM conductors at least some lines should be rerun by taking both in-phase and out-of-phase VLF readings, particularly in the abovementioned 3 areas. Fraser-filtering of the present data, particularly in the 3 blocks or areas discussed above, may also give new insights. Eventually some other, more advanced EM survey methods may have to be considered.

8.3.2 Magnetic Survey

(See Maps 11-A and 11-B)

The readings of the ground magnetic survey, which was run with a proton precession magnetometer, were plotted as profiles because no diurnal corrections were made to allow correlations to be made between adjoining lines. As in the VLF-EM survey, there was strong interference from the powerline and railway tracks on the southern part of the property, hence any readings taken close to these sources of disturbances should be ignored.

The following observation can be made:

There are a large number of mainly NNW trending positive and negative anomalous zones, which, in most cases, tend to run fairly parallel over long distances.

These anomalous zones have the same regional strike as the geology, and geochemical and VLF-EM anomalies.

In some cases there is good to strong correlation between geochemical (eg. Au, Ag, et al), VLF-EM, and magnetic anomalies. Some more interesting examples are:

1. The anomalous zone trending SSE of Lacy Lake, particularly on Lines 12N to 24N (1.2 km strike length), where there is close correlation between magnetic, EM and geochemical anomalies, including gold and silver. Both EM and magnetic anomalies also appear to follow a fault zone in this area.

2. Area SE of Esary Lake where there is some correlation with the VLF-EM anomalies discussed previously, and some soil anomalies. This generally anomalous zone extends toward west side of Lacy Lake, and may in fact connect with the above-mentioned zone extending SSE of Lacy Lake (see Item 1 above); there is a gap in present survey coverage.

There appear to be numerous other, more local correlations between EM and magnetic anomalies, such as in the detail grid area toward south.

9. CONCLUSIONS

The Lacy-Stokes claim groups area appears to have very good potential for hosting both vein-type precious metals and volcanogenic-exhalative massive sulphide type base metal deposits. This opinion is based on the following:

1. Most of the claims area is underlain by geologically favourable Sicker Group rocks, particularly Myra Formation, which is host to a number of mines, both old and new, on Vancouver Island.

2. The presence of chert and taconite "iron formation" rocks on the property indicates a particularly favourable geological environment for exhalative type deposits.

3. A number of geochemical soil anomalies, following the regional NW to NNW trending geological strike, occur on the property. A narrow but persistent gold anomaly extends across most of the grid area surveyed so far over a distance of 5 km. It is attended locally by silver and other metal anomalies, and also by VLF-EM conductors and magnetic anomalies. There are also several other significant silver anomalies.

4. There are also a number of VLF-EM conductors and magnetic anomalies, some of which are coinciding and also associated with geochemical anomalies, and following a general NW-NNW regional strike, similar to geology.

5. Pyritic massive sulphides have been observed just north of the railway track, on southern part of the property. More work has to be done in the detail grid area here to determine the significance of this occurrence.

6. The more "promising" anomalous zones toward north are so far been outlined by reconnaissance type survey lines at 300 metre (nearly 1000 feet) intervals, and at 50 metre (some 150 feet) sample spacings. Hence the details are lacking for the most anomalous areas. Additional surveys (geochemical, geophysical, mapping and prospecting) are still required in selected areas, using at least 100 metre, or even closer (50 or 25 metres?) control line intervals, with 25 to 10 metre stations or sample site spacings. Also, some anomalies and/or anomalous zones are still "open", particularly toward north of Esary Lake; south of Esary Lake, toward west side of Lacy Lake, there is a gap in the coverage in area that appears to be anomalous.

7. At present, there are no known economic precious or base metal deposits found on the property.

10. RECOMMENDATIONS

(See Maps 13-A and -B)

The "grassroots" type reconnaissance surveys (Phase I) covered only about 60% of the property area; the northern part, particularly the Esary 1, and Lacy 1 and 3 claims have yet to be adequately covered. At the same time, parts of the southernmost claims appear to be sufficiently well covered for reconnaissance survey purposes. Hence the programs recommended below cover both the additional "grassroots" work required, to test all of the property, as well as the "follow-up" work needed to explore the anomalous zones that have been discovered so far.

10.1 Completion of Phase I (Phase I-B)

1) Complete the reconnaissance type coverage (at 300 metre line intervals) of the remainder of the property, particularly north and south of Esary Lake, and east and west of Lacy Lake. The work would involve soil sampling (using 300 x 50 metre spacing) and VLF-EM and magnetic surveys. Out-of-phase EM readings should be taken also during the VLF survey. Use airphotos to interpret structures, such as the numerous fault zones present on the property.

2) Complete geophysical survey and mapping on lines at both sides of Lacy Lake.

3) After adding the new data to complete and update the present maps, re-evaluate all data and select favorable areas for "follow-up" work. Areas to be considered are the anomalous zones already discussed above, particularly those combining gold-silver anomalies, EM conductors and magnetic anomalies.

10.2 Phase II

1) Seven areas (Blocks "A" to "G") have already been outlined on Maps 13-A and 13-B; these contain anomalies that warrant "follow-up" work. Others are likely to be added to these once all of the Phase I work is completed and evaluated. The initial evaluation of each "block" should consist of a quick check of terrain and topography, and how this may affect the anomalies (eg. are the geochemical anomalies related to organic-rich swamps or stream valleys?)

2) In the areas selected for "follow-up" work, lay out additional lines of 100 metre (or locally at 50 metre) intervals, which should be soil sampled at 25 metre spacings, or closer where warranted. A VLF-EM survey should be run at 10 - 25 metre station intervals, taking both in-phase and out-of-phase readings. In-phase data should also be Fraser-filtered using several different station intervals (eg. from 10 to 50 metres), in order to differentiate between the local and regional effects. A mag survey should be run using similar station intervals (using smaller intervals in strongly anomalous areas, and all readings should be corrected for diurnal variations (using a base station); data should be contoured on maps. Consider also an S.P. Survey (run a test survey first).

4) The areas selected for "follow-up" work should also be mapped in greater detail, and prospected. All outcrops should be checked, and if necessary, sampled for assay. All data should be plotted at a 1:2,000 or 1:2,500 scale, or on 1:1,000 scale if more detail is required.

5) After all data from the above surveys is evaluated fully, a program of trenching and more advanced geophysical methods (EM, IP) has to be considered for more limited, most anomalous or most favourable areas, eventually followed by drilling of selected targets.

10.3 Phase III

This phase would be contingent on the positive results from all previous work. Essentially, if and where warranted, it would consist of diamond drilling, with possibly some additional trenching and geophysics preceeding the drilling to assist to lay out the drill holes.

11. BUDGET

11.1 Phase I-B

(Estimated 6 persons x 12 days in field; about 30 km of lines @ 300 m line intervals to be added to grid, surveyed and sampled.)

Project Geologists @ $ 275 x 12 days	$ 3,300	
Field Geologist @ $ 225 x 12 days	2,700	
4 Geotechnicians @ $ 190/each x 12 days	9,120	
		$ 15,120
Two 4-W-D truck rentals @ $ 90 x 12 days	$ 2,160	
Room & Board @ $ 60 x 75 man-days	4,500	
Communications @ $ 20 x 12 days	240	
VLF-EM & Mag rental @ $ 120 x 12 days	1,440	
Field Supplies	800	
Mob/Demob	800	
		9,940
Geochemical Analyses & Assays say 600 samples @ $ 15/each	$ 9,000	
		9,000
Administration & Management @ $ 400 x 3 days	$ 1,200	
Consulting & Supervision @ $ 400 x 4 days	1,600	
Reporting & Data Compilation @ $ 275 x 8 days	2,200	
Drafting, typing, copying, etc.	1,500	
		6,500
Sub-total		$ 40,560
Contingency & Miscellaneous (15% of above)		6,084
TOTAL FOR PHASE I-B		$ 46,644

(Say 47,000)

11.2 Phase II

(Estimated 6 persons x 20 days in field. About 50 km of lines @ 100 m line intervals, in Blocks "A" to "G", to be added to grid, and surveyed and sampled at 25 m stations. Budget and scheduling are subject to revision, depending on results of Phase I-B field program.)

Project Geologist @ $ 275 x 20 days	$ 5,500	
Field Geologist @ $ 225 x 20 days	4,500	
4 Geotechnicians @ $ 190/each x 20 days	15,200	
		$ 25,200
Two 4-W-D truck rentals @ $ 90 x 20 days	$ 3,600	
Room & Board @ $ 60 x 125 man-days	7,500	
Communications @ $ 20 x 20 days	400	
VLF-EM & Mag rental @ $ 120 x 20 days	2,400	
Field Supplies	1,000	
Mob/Demob (Ashex)	1,000	
		15,900
Geochemical Analyses and Assays, say 2,000 samples @ $ 15/each	$ 30,000	
Backhoe @ $ 150/hour x 10 days/8 hrs. (contractor)	12,000	
Backhoe Mob/Demob	1,000	
		43,000
Administration & Management @ $ 400 x 6 days	$ 2,400	
Consulting and Supervision @ $ 400 x 8 days	3,200	
Reporting and Data Compilation @ $ 275 x 10 days	2,750	
Drafting, typing, copying, etc.	2,000	
		10,350
Sub-total		$ 94,450
Contingency & Miscellaneous (15% of above)		14,168
TOTAL FOR PHASE II		$ 108,618
		(Say 109,000)

11.3 Phase III

(Estimated 2,000 metres of Diamond Drilling/1 month.

This budget is contingent on the results of completion of Phases I and II and hence subject to revision.

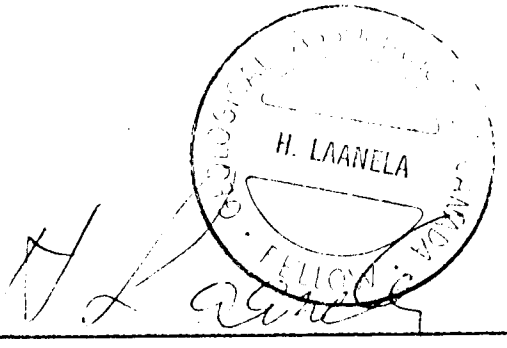
Project Geologist @ $ 275 x 30 days	$ 8,250	
Geotechnician @ $ 190 x 30 days	5,700	
		$ 13,950
4-W-D Truck rental @ $ 190 x 30 days	2,700	
Room & Board @ $ 60 x 65 man-days	3,900	
Communications @ $ 20 x 30 days	600	
Field Supplies	800	
Mob/Demob	400	
		8,400
Diamond Drilling @ $ 80/metre x 2,000 metres	160,000	
Drill Mob/Demob	2,000	
		162,000
Core Assays, say 600 samples @ $ 15	9,000	
		9,000
Administration & Management @ $ 400 x 6 days	$ 2,400	
Consulting & Supervision @ $ 400 x 10 days	4,000	
Reporting & Data Compilation @ $ 275 x 12 days	3,300	
Drafting, typing, copying, etc.	2,000	
		11,700
Sub-total		$ 205,050
Contingency & Miscellaneous (15% of above)		30,758
TOTAL FOR PHASE III		$ 235,808
		(Say 236,000)

11.4 Total Proposed Budget

Phase I-B	$ 47,000
Phase II	109,000
Phase III	236,000
TOTAL	$ 392,000

Respectfully Submitted by:

Ashworth Explorations Limited



Hugo Laanela, F.G.A.C.
Consulting Geologist

June 26, 1987
Vancouver, B.C.

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Vancouver Group

Sicker Group

Unmapped

Overburden

ESARY LAKE

LACY LAKE

MARSHY LAKE

L 57 N

L 42 N

L 27 N

L 12 N

L 0+00

L 9 S

L 15 S

10+00 E

20+00 E

25+00 E

0+00

B.L 0+00 (330°)

Fe showing

Lacy Lake Fe-Mn Showing
Mn, Fe
4981 ppm Mn

no geophysics

Old Cu-Ag showing
0·50 oz/ton Ag, 543 ppm Cu

massive py
450 ppb Au, 1585 ppm Cu
2218 ppm Zn

diss pyrite
131 ppb Au

Cameron Lake Iron showing
1217 ppm Cu, 395 ppb Au

float;
0·14 oz/ton Au

3% pyrite
131 ppb Au

East Track showing
Au, Fe
5% diss py
0·07oz/ton Au

Railway showing Au, Fe, Cu
0·46oz/ton Au, 0·19 oz/ton Au,
0·11 oz/ton Au
massive pyrite, pyrhotite, malachite

HWY 4

N

inches
0 1 2
0 1 2 3 4 5
centimetres

This reference scale bar has been added to the original image. It will therefore print at the same scale as the image, therefore it can be used as a reference for the original size.

0 200 400 600 800 1000 metres

LEGEND

- Location of showing
- 1960's airborne magnetic anomaly
- Combined siderphile (Au, Mn, Ba, Sr, W, Mo) element and chalcophile (Ag, Cu, Pb, Zn, As, Sb, Bi, Cd) element soil anomalies
- Siderphile element (Au, Mo, Co, Ni) soil anomaly
- Chalcophile element (Ag, Cu, Pb, Zn, As, Cd, Sb, Bi) soil anomaly.
- Strong VLF conductor
- Magnetic "high" axis.
- Major fault
- Boundary of Sicker Group
- Property boundary
- Claim post
- Flagged grid
- Road
- Creek
- Railway

Topographic contour interval 100 metres.

LODE RESOURCE CORPORATION

LACY & STOKES CLAIM GROUP

ALBERNI AND NANAIMO MINING DIVISIONS

COMPILATION MAP

Scale 1:20,000	By: Drawn - J.S.
Date: JULY 1987	Map

Ashworth Explorations Limited