GEOPHYSICAL

ASSESSMENT REPORT

on the

L CLAIM GROUP

CLINTON AREA

KAMLOOPS AND CLINTON MINING DIVISIONS

by

MURRAY S. MORRISON, B.Sc.

CLAIMS:	L 1-8, J 2-4 (11 units)
LOCATION:	The L Claim Group is situated on Hart Ridge, 12 km southeast of Clinton, B.C. Lat. 50°59'; Long. 120°29'; N.T.S.: 92-I-13E & 14W
OWNER:	M. S. Morrison
OPERATOR:	M. S. Morrison
DATE STARTED:	May 5, 1997
DATE COMPLETED:	May 7, 1997

Kelowna, B.C.

July 31, 1997

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SUMMARY

The L Claim Group, owned by the writer, is located on Hart Ridge, immediately north of Highway 97, 23 km northwest of Cache Creek, B.C. The property, comprised of 11 mineral claims, covers a succession of Premian Age Cache Creek Group metasediments that strike northerly and dip moderately to steeply west.

Immediately north of the highway a large (700 metre by 50 metre) interbed of mafic tuff has been selectively replaced by quartz, carbonate and mariposite. Locally, the replacement zone has been disrupted by faulting and mended with late quartz, ankerite and dolomite veinlets. The rock contains anomalous values of arsenic (up to 1155 parts per million) and antimony (up to 16 ppm).

Two kilometres northwest of the Highway Showing a drill hole drilled by Cordilleran Engineering on the Paw/Ranger mineral claims of Peyto Oil Ltd. in 1973 returned 15 grams of gold per ton from a 3 metre intersection of quartz-carbonate replaced rock. A program of follow-up drilling conducted by Cordilleran Engineering in 1974 failed to locate the gold-bearing quartz-carbonate unit in three widely-spaced drill holes drilled between the 1973 discovery hole and the Highway Showing.

A review of the 1973 and 74 data by the writer in 1985 suggested that the 1974 follow-up drill holes may have all been drilled too far to the east to intercept the gold-bearing unit. In February of 1985 a VLF-EM 16 survey was conducted by the writer in an attempt to trace graphitic argillite units of the Cache Creek Group across the drift covered property in the vicinity of the previous drilling.

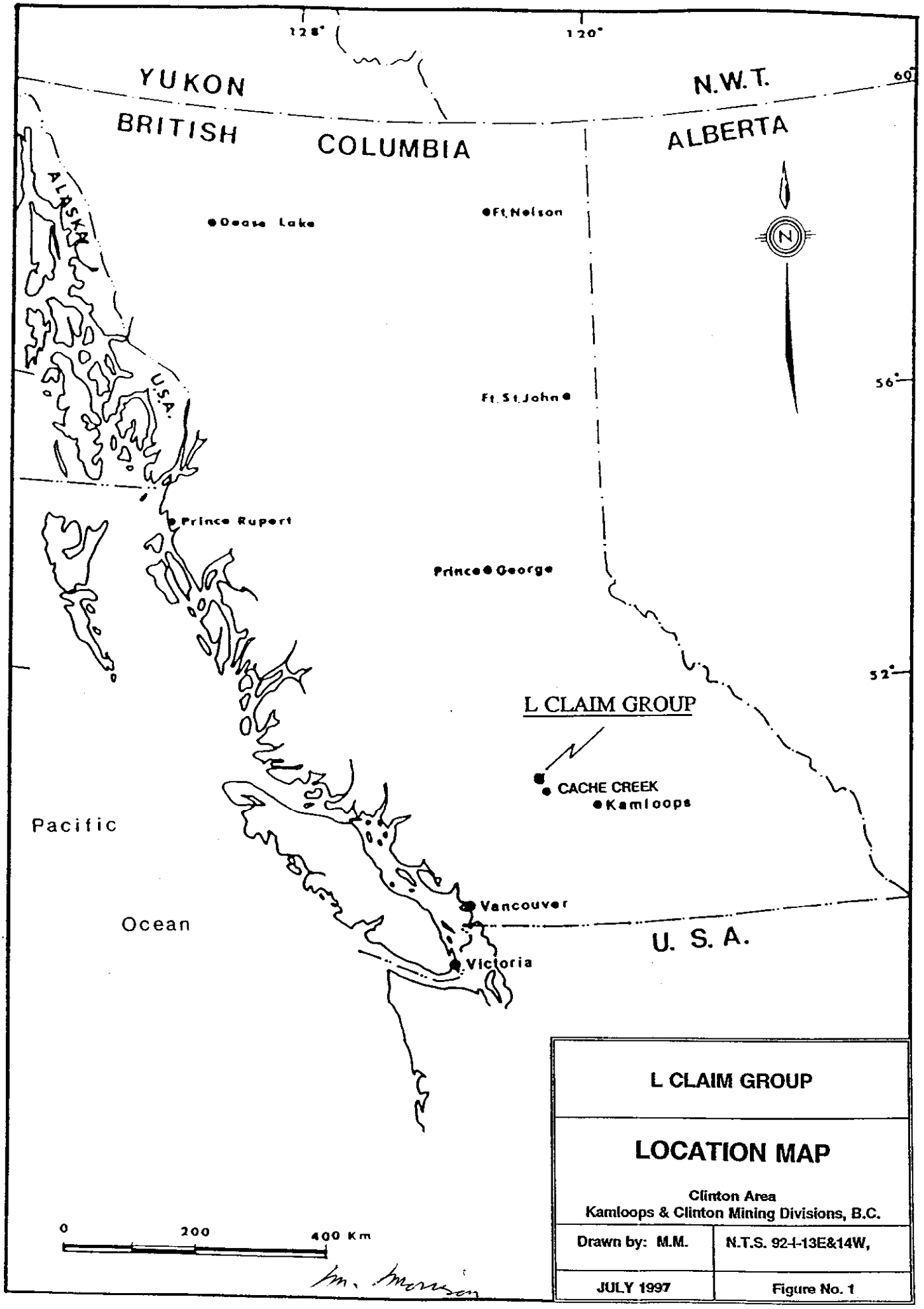
Later in 1985, Esso Minerals optioned the property to conduct a diamond drilling program in the immediate vicinity of the 1973 gold discovery (Percussion Drill Hole 73-7). A total of 186.5 metres were drilled in three vertical diamond drill holes and one of the drill holes, DDH 85-1, of 68.3 metres length, "twinned" PDH 73-7.

SUMMARY continued

The twinned drill hole, DDH 85-1, returned 430 parts per billion gold over 2.4 metres from 44.8 to 47.2 metres (presumably the same zone intercepted in PDH 73-7). The core recoveries were not good (35%) for DDH 85-1 and no sludge was collected for assaying, and therefore, the test was not conclusive in this writer's opinion. The other two diamond drill holes, DDH 85-2&3, were drilled 50 metres northwest and 50 metres southeast of DDH 85-1, respectively. These two drill holes returned negligible amounts of gold and Esso Minerals terminated their option.

A thorough study of a VLF-EM survey conducted this year over the L1-4 mineral claims in the vicinity of 1973 drill holes PDH 73-7 & 8 reveals that the VLF-EM survey is ineffective in defining bedrock conductors on this portion of the property where the overburden is known to be deep. It is also suggested that some of the VLF-EM conductors mapped in earlier surveys may not represent graphitic argillite beds of the Cache Creek Group underlying Hart Ridge at all as previously thought.

Further geological data observed this year also suggests that the Cache Creek Group may be gently folded to the northeast on top of the Hart Ridge and that the northwest strike and moderate southwest dip mapped at the Highway Showing may not be consistent to the north. In other words, the geometry of the Cache Creek Group may not be as straightforward as previously thought and the new geometry and stratigraphy will have to be determined in order to accurately trace the PDH 73-7 gold-bearing carbonate replacement zone across the property. To this end, a series of low-cost inclined Reverse Circulation Percussion drill holes have been recommended in the vicinity of old drill holes PDH 73-7 & 8 on Hart Ridge.



L CLAIM GROUP	
LOCATION MAP Clinton Area Kamloops & Clinton Mining Divisions, B.C.	
Drawn by: M.M.	N.T.S. 92-I-13E&14W,
JULY 1997	Figure No. 1

INTRODUCTION

This report, written for government assessment work requirements, discusses the results of a ground VLF-EM survey conducted over portions of the L 1-4 mineral claims by the writer during May, 1997.

The L Claim Group is comprised of 11 contiguous 2-post mineral claims owned by the writer, M. Morrison, of Kelowna, B.C.

The property, located 23 km northwest of Cache Creek, B.C., covers a gossanous zone that is clearly visible on bluffs north of Highway #97, 1 1/2 km west of the Loon Lake road junction. The original mineral claims were staked in 1982 to cover the gossanous zone. Further mineral claims have been added to the north over the past 13 years, and the property now extends 3 km north of the highway to the top of Hart Ridge.

The gossanous zone near the highway (called the Highway Showing throughout this report) is largely comprised of weathered ankerite. Ankerite, quartz and mariposite replace highly disrupted tuffaceous beds of Permian Age Cache Creek Group rocks at this showing. Similarly replaced rocks were discovered below deep overburden 2 km to the northwest during a 1973 percussion drilling program conducted by Cordilleran Engineering. This second zone returned an impressive assay of 15 g/tonne gold over 3 metres during the 1973 program (Sanguinetti, 1974).

Cordilleran Engineering speculated that the two ankeritic zones might be connected and in 1974 they drilled three percussion drill holes between the two zones. The gold horizon was not found, however, and the property was allowed to lapse. (This writer believes that the 1974 drilling may have been conducted slightly too far to the east to intercept the ankeritic gold zone).

INTRODUCTION continued

In 1985, Esso Minerals "twinned" the successful 1973 percussion drill hole with a diamond drill hole. The 1985 hole returned only 430 parts per billion gold from the same interval that had yielded gold in 1973, but core recovery was poor and no sludge was collected. The test was inconclusive in the writer's opinion.

There remains an intriguing gold target on the property that has not been fully explored, and the heavy cover of till (15 to 30 metres deep) has greatly hampered exploration efforts to date. A ground magnetometer survey over a portion of the property conducted by the writer in 1992 proved to be of little value (Morrison, 1992). However, a ground VLF-EM survey carried out by the writer in 1985 over the southern portion of the property did outline several moderately strong conductors. In 1985, it was interpreted that the conductors might represent graphitic argillite beds of the Cache Creek Group, and therefore outline the strike of subcrop geology. It was recognized that if the subcrop geology was represented by the trend of the conductors then the strike direction of the ankeritic gold zone might also be defined (Morrison, 1985).

The success of the 1985 VLF-EM survey prompted the decision to extend the survey on to the L 9-14 mineral claims to the northwest in 1995 (these mineral claims expired in early 1997).

In 1996 a VLF-EM program was carried out in the vicinity of the 1985 diamond drill holes where VLF-EM conductors had been identified (Morrison, 1985). It was hoped that with a more closely spaced grid (50 x 25 metres) that the trace of the conductors could be better defined.

The strong Seattle VLF signal station was not available during the period of the 1996 survey so the Annapolis, Maryland VLF signal was used for the survey. However, the results of the 1996 survey indicated that the weak VLF signal was not effective in penetrating the heavy overburden on the property, and a decision was made to repeat the survey this year making use of the much stronger Seattle VLF signal. This years' survey was also expanded to the northwest border of the property.

INTRODUCTION continued

Much of the background information of this report has been repeated from the 1995 & 1996 Assessment Reports filed with the government. However, Figures 3 & 4, accompanying this report, illustrate the new data obtained during this year's survey. Figure 3 shows the Dip Angle and Field Strength data, while Figure 4, represents the VLF-EM data in a Fraser Filtered contoured format.

LOCATION AND ACCESS

The L Claim Group lies immediately north of Highway 97, 23 km northwest of Cache Creek, or 15 km southeast of Clinton, B.C. (Lat. 50°59'; Long. 121°29'; N.T.S. Maps 92-I-13E & 14W).

Access to the L 1-8 mineral claims is via a dirt logging road which leaves Highway 97 at a Tourist Rest Area 3.8 km west of the Loon Lake road turn-off (please see Figure 2).

CLINTON 5 KM

121° 30'

HIGHWAY 97

LOON LAKE ROAD

SCALE 1:50,000

CLINTON MINING DIVISION

KAMLOOPS MINING DIVISION

51° 00'

PDH 73-8

Area covered by 1997 survey

PDH 73-7 SHOWING

Hwy Rest Area

L 1 - 8 MINERAL CLAIMS

J 2 - 4 MINERAL CLAIMS

HIGHWAY SHOWING

HIGHWAY 97

CACHE CREEK 15 KM

MAGGIE DEPOSIT

200 Million Tons

0.23% Copper

0.029% Molybdenum

ACCESS ROADS

KEY CLAIM POSTS

1 .5 0 1 2 KM

Scale 1:50,000

L CLAIM GROUP

CLAIMS AND ACCESS

Clinton Area
Kamloops & Clinton Mining Divisions, B.C.

Drawn by: M.M.	**N.T.S. 92-I-13E&14W,**
JULY 1997	**Figure No. 2**

PHYSICAL FEATURES AND CLIMATE

The L Claim Group straddles the southern end of Hart Ridge - a spur of land that separates the Bonaparte River Valley on the east from the valley of Maiden Creek on the southwest.

The upland surface of Hart Ridge is covered with deep glacial drift and most of the rock exposures on the L Claim Group are restricted to the flanks of the ridge adjacent the two main valleys.

The L Claim Group lies near the northern end of the Cache Creek - Ashcroft desert. The sagebrush of the Bonaparte River Valley at 580 metres elevation gives way to a forest of Douglas Fir along Highway 97 as it climbs away from the valley towards Clinton. The L property lying just north of the highway is forested with Douglas Fir. (The mean elevation of the property is 900 metres above sea level).

The Douglas fir has been selectively logged from portions of the property. Elsewhere, a severe caterpillar infestation of several years ago has killed half of the forest. Some of the dead forest still stands, but much of it has fallen in recent years to rot on the forest floor.

The property receives approximately 40 cm of precipitation annually. Winter snow generally covers the property from early November until mid-March and can reach up to 70 cm in depth.

CLAIM STATUS

The L Claim Group is comprised of 11, 2-post mineral claims all staked and owned by the writer, M. Morrison of Kelowna, B.C. The Claim Group straddles the boundary of the Clinton and Kamloops Mining Divisions. Particulars of the 11 mineral claims are listed below:

CLAIM NAME	UNITS	DATE OF RECORD	TENURE NUMBER	MINING DIVISION	EXPIRY* DATE
J2	1	May 11/82	217044	Kamloops	May 11/98
J3	1	May 11/82	217045	Kamloops	May 11/98
J4	1	May 11/82	217046	Kamloops	May 11/98
L1	1	May 12/94	325709	Kamloops	May 12/99
L2	1	May 12/94	325710	Kamloops	May 12/99
L3	1	May 12/94	325711	Kamloops	May 12/99
L4	1	May 12/94	325712	Kamloops	May 12/99
L5	1	May 14/94	325713	Kamloops	May 14/98
L6	1	May 14/94	325714	Kamloops	May 14/98
L7	1	May 14/94	325715	Kamloops	May 14/98
L8	1	May 14/95	325716	Kamloops	May 14/98

Note: the new Expiry Date is based on the acceptance of this report for Assessment Work Credits.

HISTORY

The discovery of the Maggie Mine copper-molybdenum porphyry deposit by Bethlehem Copper Corporation in 1970, 15 km northwest of Cache Creek, B.C., sparked a staking rush that extended for several kilometres north and south of the discovery. The southern spur of Hart Ridge, now covered by the L Claim Group was covered during the Maggie staking rush by the Ranger and Paw mineral claims owned by Calgary-based Peyto Oil Ltd.

The large Ranger-Paw property, consisting of 159, 2-post mineral claims, was explored for its porphyry copper-molybdenum potential from 1970 until 1973 in the wake of the Maggie discovery. Exploration surveys included: geological mapping, geochemical soil sampling (for copper and molybdenum only), magnetometer surveying and induced polarization surveying carried out under the direction of Cordilleran Engineering and others. The geochemical results were negligible, but in 1973, fifteen percussion drill holes were drilled to test several of the induced polarization survey anomalies. No significant copper-molybdenum mineralization was discovered, but percussion drill hole 73-7 did intercept 3 metres of 15 grams of gold per tonne from 42.7 to 45.7 metres. The gold occurred with pyritic, quartz-carbonate material.

In 1974 the original 159 claim property was reduced to 17 claims (covering much of the same country that is now covered by the L Claim Group). Four widely separated percussion drill holes were drilled in an attempt to extend the gold zone discovered in PDH 73-7. No gold was found and the property was allowed to lapse (Sanguinetti, 1974).

The ground remained open until 1982 when the J 1-4 mineral claims were staked by the writer. A prospecting survey, accompanied by some lithogeochemical sampling, was carried out on the J 1-4 mineral claims in 1983 (Morrison, 1983). In 1984 the J 5 mineral claim was added to the property.

HISTORY continued

A VLF-EM ground survey was conducted over the central portion of the J 5 mineral claim in early 1985 (Morrison, 1985) and later the same year Esso Minerals drilled 3 diamond drill holes, totalling 186.5 metres, in the vicinity of PDH-73-7 (with one of the diamond drill holes "twinning" the 1973 drill hole). The best intercept was only 430 parts per billion gold over 2.4 metres from the "twinned" drill hole. Core recoveries were poor and no sludge was collected, but the drill test was considered negative by Esso Minerals and they returned the property to the writer (Melnyk, 1985).

A ground magnetometer survey was conducted over the central portion of the J 5 mineral claim by the writer in 1992. The magnetic character of the property, however, proved to be weak.

The J 5 mineral claim subsequently lapsed and the L 1-14 mineral claims were staked by the writer in 1994 & 95 to cover some of the area previously covered by the J 5 mineral claim.

In 1995, a VLF-EM ground survey was conducted on the L 9-14 mineral claims northwest of the 1985 survey, and in 1996 a detailed VLF-EM ground survey was conducted over portions of the L 1-4 mineral claims.

The L 9-14 mineral claims were allowed to expire March 29, 1997.

REGIONAL GEOLOGY

The Geological Survey of Canada, 1"=4 mile scale geological maps, 1010A - Ashcroft Area and 1278A - Bonaparte Area by Duffell and McTaggart (1952) and Campbell and Tipper (1971), respectively, outline a 10 by 75 km belt of Permian Cache Creek Group rock which is centred at Cache Creek and extends south to Martel and north to Clinton. The sedimentary and volcanic rocks of the Cache Creek Group are highly faulted and generally disrupted throughout much of the belt, and they are locally intruded by small bodies of ultrabasic intrusions which are serpentinized.

The L Claim Group, located near the northern end of the belt, covers highly disrupted Cache Creek Group sediments and meta-volcanics 7 km northwest of the well-known Maggie copper-molybdenum deposit.

The Maggie deposit, with published reserves of 200 million Tons of 0.23% copper and 0.029% molybdenum, is associated with an elongate Tertiary intrusive of biotite-quartz monzonite porphyry which strikes 143 degrees and intrudes the Cache Creek Group rocks.

The quartz-carbonate replacement zone at the L Claim Group Highway Showing strikes 150 degrees; semi-conformable with the general shearing/bedding in the district.

PROPERTY GEOLOGY

The L Claim Group is believed to be underlain by a succession of Permian Cache Creek Group sedimentary rocks which include interbedded pyroclastic rocks. The general bedding appears to strike at 150 degrees and dip 60 to 70 degrees southwest although on the bluffs north of Highway 97 (on the J 2-4 mineral claims) the rocks are locally warped, drag-folded and generally dislocated by strong faulting and a wide range of bedding attitudes are displayed.

The dominant rock unit north of the highway is a black, thin-bedded argillite which is sometimes cherty and often graphitic. The argillite is highly foliated and erodes easily. Limestone is known to be interbedded with the argillites and at grid 26+50N, 17+65W (1992 survey) a mass of limestone 30 metres thick is exposed.

Dacitic to andesitic tuff is locally interbedded with the argillites also, and at the Highway Showing these tuffs have been selectively replaced with quartz, carbonate and mariposite.

The main carbonate replacement zone north of the highway was traced for 700 metres during a 1983 prospecting program (Morrison, 1983). The central part of the lense-shaped zone has been particularly disrupted by drag-folding and over a distance of a few metres the original rock is brecciated and entirely replaced with ankerite/dolomite (65%), quartz (30%) and mariposite (5%). A sample of this rock was found to contain 1155 parts per million arsenic in 1983.

Two kilometres northwest of the Highway Showing a second quartz-carbonate replacement zone was found within Cache Creek Group argillites at a depth of 42.7 metres in a percussion drill hole drilled in 1973. PDH 73-7, drilled by Cordilleran Engineering, returned 15 grams of gold per tonne from the 3 metre quartz-carbonate zone.

Attempts by Cordilleran Engineering to trace the PDH 73-7 gold-bearing replacement zone back towards the Highway Showing with a series of three widely spaced drill holes along Hart Ridge in 1974 failed. The 1974 drill program was hampered by overburden and this

PROPERTY GEOLOGY continued

writer believes that the follow-up drill holes were all drilled too far to the east of the projected strike of the replacement zone. The 1974 drill holes intercepted interbedded argillites and cherts of the Cache Creek Group.

Another drill hole of the 1973 program, PDH 73-8, located 435 meters northwest of PDH 73-7, returned an average of 23 parts per billion gold over the 76 metre bedrock interval of the drill hole. None of the 1974 follow-up drilling was conducted in the vicinity of PDH 73-8 by Cordilleran Engineering.

The thick cover of drift continues to impede exploration on the central portion of the property. Geology can be mapped on the flanks of Hart Ridge, but due to the high degree of faulting cannot with any certainty be projected to the centre of the property. For example, a large outcrop of Limestone mapped at grid 26+50N, 17+65W has a 010/vertical foliation, and a chloritic argillite observed at grid 30+50N, 17+25W has a 015 to 020/80NW foliation. These attitudes are at odds with the general northwest strike and southwest dip at the Highway Showing.

An attempt to geophysically trace the Cache Creek Group geology across the drift covered J 5 mineral claim was made in 1985 by the writer (Morrison, 1985). A VLF-EM survey was carried out to trace conductive graphitic argillite units. The survey did identify several conductors crossing the property at 150 to 160 degrees - a direction that was thought to represent the strike of the underlying Cache Creek Group rocks. The apparent success of the 1985 survey prompted the decision to conduct further VLF-EM surveys in 1995, 1996 & 1997.

Mapping on the bluffs north of Highway 97 reveals that late northeast and northwest transverse faults offset beds of the Cache Creek Group a few metres here and there across the property.

Badly broken, thin-bedded, sandstones and grits of Jurassic (?) Age are in fault contact with Cache Creek Group rocks on the western side of the L Claim Group.

VLF-EM SURVEY - 1997

Grid

The L 1-4 mineral claim's Location Line at a bearing of 330 degrees was used again this year as a Baseline for the survey grid. Sixteen grid lines, spaced 50 metres apart, running perpendicular to the Baseline for 75 to 125 metres to the northeast and for 175 to 275 metres to the southwest were used for the survey as illustrated on Figures 3 & 4. Ten of these lines were established in 1996 and reflagged this year, while the six new lines were added to expand the survey to the northwest property boundary.

In all 5.5 km of grid line were flagged across the property and stations for the VLF-EM survey were marked at 25 metre intervals. A Topolite belt chain and a Silva ranger compass were used to establish the grid lines in conjunction with the survey. The grid coordinates of the 1985 VLF-EM survey were used for this year's detailed survey.

Program

The VLF (very low frequency) exploration method makes use of high-powered electromagnetic transmissions broadcast by naval radio communication stations distributed around the world. These transmissions induce electric currents in conductive bodies. The induced current produces secondary magnetic fields which can be detected by measuring deviations in the normal VLF fields. VLF-EM instruments are designed to detect these deviations.

A Sabre, Model 27, VLF-EM instrument was used to conduct the survey over 5.5 km of grid on the L property. The Seattle, Washington, VLF signal (24.8 kHz) was received from a direction of 180 degrees, azimuth, and was used for the entire survey.

In-Phase Tilt Angle readings were taken facing a direction of 180 degrees at each survey station. East tilts were recorded as positive (+) and West tilts were recorded as negative (-). Field Strength readings were also recorded at each survey station with the instrument facing 270 degrees, azimuth, perpendicular to the Signal Station.

VLF-EM SURVEY - 1997 continued

Program continued

Field Strength readings were taken along the Baseline and all grid station readings were then corrected for diurnal variation using the Base Stations along the Baseline in much the same manner as is used for magnetometer surveys. The corrected Field Strength values have been contoured on Figure 3, which also displays the In-Phase Tilt Angles.

The In-Phase Tilt Angle values have been Fraser Filtered and contoured on Figure 4. The Fraser Filtering of VLF-EM data has had widespread use for several years, and a full explanation of the technique is given in the geophysical paper by Peterson and Ronka that is listed with the references at the end of this report.

The Fraser filtering technique may be briefly summarized as follows: by means of simple mathematical operations the tilt data can be transformed into contourable form, and the effects of noise and topography can be filtered from data. By averaging pairs of stations and taking differences between pairs separated by the appropriate distance, values may be plotted and contoured in plan that transform cross-overs into peaks, and a low-pass smoothing mathematical operator reduces noise.

VLF-EM SURVEY - 1997 continued

Results

Field Strength Data

The variation in field Strength values measured across the survey area is minimal with the readings recorded ranging only from 44 to 73 as illustrated on Figure 3. The contoured values also display no well defined conductors. The low values largely coincide with depressions and ravines on the property, while the higher values occur on or near ridge tops. The highest Field Strength values do correlate with portions of some of the axes of conductors that are illustrated on Figure 4.

For example:

- the Field Strength reading of 73 on L29+00 N at 17+25W coincides with a segment of Conductor W,
- the Field Strength values of 72 on L27+50N at 19+75W coincides with a portion of Conductor V, and
- the Field Strength value of 71 on L22+50N at 19+25W coincides with a segment of Conductor X.

VLF-EM SURVEY - 1997 continued

Results

Fraser Filtered In-Phase Data

The axes of four conductors (V,W,X and Y) have been identified on Figure 4. All four axes coincide with the moraines which cross the property, and only one small segment of Conductor W is thought to represent a bedrock conductor. The specifics of each conductor are given below:

Conductor V is a moderate strength conductor which extends 450 metres at an average trend of 160 degrees from L28+00N, 19+70W to L23+50N, 20+75W. The conductor is entirely coincident with the shoulder or crest of a broad morainal ridge, and possibly does not represent bedrock conditions at all.

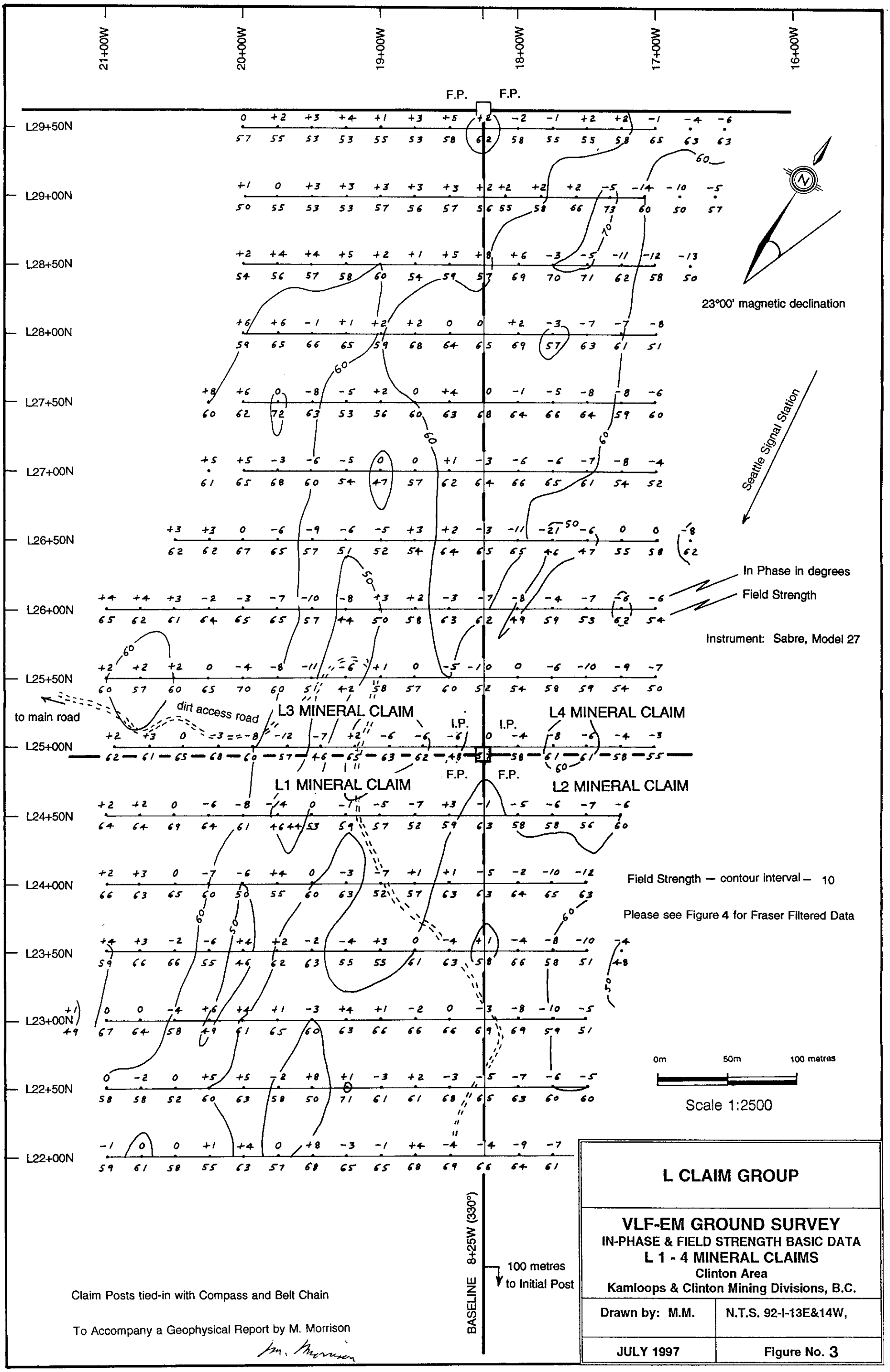
Conductor W is also a moderate strength conductor which extends 700 metres at an average trend of 170° degrees from L29+50N, 17+00W to L23+00N, 19+90W. Conductor W, like Conductor V, is in large part coincident with the top or shoulders of a large moraine. One exception occurs on L26+50N at 18+10W where the VLF-EM instrument dips distinctly in a direction at odds with the topography, and a bedrock conductor is indicated. A large limestone outcrop occurs at grid station 17+75W just to the east of Conductor W, and it is thought that this segment of Conductor W could represent graphitic argillites in contact with the limestone.

Conductor X is a weak conductor which extends 400 metres due south from L25+50N, 17+65W to L22+00N 19+40W. This conductor, like the others, is coincident with the crest or east shoulder of a moraine. Conductor X crosses the property near DDH85-2, but due to the depth of overburden in the area (30 metres) it is not thought to represent the graphitic argillites that were encountered in the drill hole.

VLF-EM SURVEY - 1997 continued

Results continued

Conductor Y is a moderate strength conductor which extends 250 metres at an average 160 degrees from L24+50N, 17+90W to L22+00N, 18+50W. This conductor is also coincident with the crest or east shoulder of a moraine. Conductor Y crosses the property near DDH 85-3, but as mentioned above, it is thought that the depth of overburden in the area has restricted the VLF-EM instrument from identifying the graphitic argillites that were encountered in the drill hole.



L CLAIM GROUP

VLF-EM GROUND SURVEY

IN-PHASE & FIELD STRENGTH BASIC DATA

L 1 - 4 MINERAL CLAIMS

Clinton Area

Kamloops & Clinton Mining Divisions, B.C.

Drawn by: M.M.	N.T.S. 92-I-13E&14W,
JULY 1997	Figure No. 3

21+00W 20+00W 19+00W 18+00W 17+00W 16+00W

L29+50N
L29+00N
L28+50N
L28+00N
L27+50N
L27+00N
L26+50N
L26+00N
L25+50N
L25+00N
L24+50N
L24+00N
L23+50N
L23+00N
L22+50N
L22+00N

F.P. F.P.

PDH 73-8

W

V

W

V

X

Y

DDH 85-2

PDH 73-7

DDH 85-1

DDH 85-3

dirt access road

to main road

L3 MINERAL CLAIM

L4 MINERAL CLAIM

L1 MINERAL CLAIM

L2 MINERAL CLAIM

I.P. I.P.

F.P. F.P.

BASELINE 8+25W (330°)

100 metres to Initial Post

23°00' magnetic declination

Seattle Signal Station

Instrument: Sabre, Model 27

Axis of Conductor

Fraser Filter contour interval — 10

Please see Figure 3 for Basic In-Phase and Field Strength Data

0m 50m 100 metres

Scale 1:2500

Claim Posts tied-in with Compass and Belt Chain

To Accompany a Geophysical Report by M. Morrison

L CLAIM GROUP

VLF-EM GROUND SURVEY
FRASER FILTERED DATA

L 1 - 4 MINERAL CLAIMS

Clinton Area

Kamloops & Clinton Mining Divisions, B.C.

Drawn by: M.M.	N.T.S. 92-I-13E&14W,
JULY 1997	Figure No. 4

DISCUSSION

All four of the VLF-EM conductors identified during this year's survey (Conductors V, W, X and Y on Figure 4) trend in a southeast to south direction (160 to 180°) conformable with the glacial features (moraines and intermorainal valleys) on the property.

It appears that the Fraser Filtering of the data has not eliminated the effects of topography on the survey and that the conductors on Figure 4 for the most part trace only surficial geological features.

In fact, the four conductors are all coincident with the crests or shoulders of the main morainal ridges crossing the survey area. One exception occurs on L26+50N near 18+00W where the VLF-EM readings suggest that a valid bedrock conductor is represented (see Results).

A thorough analysis of this year's survey data suggests that the interpretation of the VLF-EM survey data of previous years (i.e. 1985, 1995 & 1996) should be questioned. The deep overburden on Hart Ridge appears to render the VLF-EM instrument ineffective in outlining bedrock conductors and some of the earlier conductors mapped across the property may not be bedrock conductors. In particular, Conductor G which was thought to represent the footwall graphitic argillite of the gold intercept of drill hole PDH 73-7 (Morrision, 1985, 1995 & 1996) may not represent a bedrock conductor at all. Conductors X and Y of this year's survey represent the northern extension of Conductor G of the 1985 survey, and as mentioned previously, Conductors X and Y, in large part, coincide with morainal ridges.

The trend of the Cache Creek Group rocks underlying Hart Ridge is also in question after this year's discovery of a small outcrop of chloritic argillite at grid 30+50N, 17+25W. The attitude of this outcrop is 015 to 020 / 80NW, an attitude that is close to that of some limestone (010/vertical) that was mapped at grid 26+50N, 17+65W, 500 metres to the south, but an attitude at odds with the Cache Creek Group rocks at the Highway Showing, 3 km to the south, which is 150/40 to 50SW.

DISCUSSION continued

The attitudes of the two isolated outcrop (argillite and limestone) on Hart Ridge may simply represent local drag folding, but if not, they suggest that the Cache Creek Group rocks underlying Hart Ridge are gently folded from a strike of northwest at the Highway Showing to a strike of northeast at grid 30+50N, 3 km north.

Previous exploration work on Hart Ridge was guided by the assumption that the Cache Creek Group rocks extended northwest from the Highway Showing with a more or less consistent northwest strike and southwest dip. Now it appears that the geometry may not be so simple and that large scale folding may have to be taken into account in projecting the Highway Showing carbonate replacement zone northwest to the PDH 73-7 gold intercept and to points beyond.

The heavy cover of overburden on Hart Ridge continues to frustrate exploration efforts. Neither the magnetometer data of the 1992 survey, nor the VLF-EM data of the 1985, 1995, 1996 & 1997 surveys have provided distinct targets for further exploration.

The property is still considered prospective for gold deposits that are associated with carbonate replacement zones within the Cache Creek Group rocks. The Highway Showing replacement zone is sizeable, but lacking in gold (although arsenic yielded a high value of 1155 parts per million), whereas the PDH 73-7 carbonate replacement intercept is small, but contained significant gold (15 g/tonne over 3 metres). The two replacement zones are thought to be genetically related and it is considered possible that somewhere along the trend between the two showings, or to the north beyond PDH 73-7, that there could be a replacement zone that is both sizeable and gold-bearing.

It should not be overlooked that drill hole PDH 73-8, located 435 metres northwest of PDH 73-7, returned an average of 23 parts per billion gold over the 76 metre bedrock interval of the hole. Although low 23 parts per billion gold is considered significant.

As mentioned earlier in this report the diamond drill "twinning" of PDH 73-7 by Esso Minerals in 1985 with DDH 85-1 yielded inconclusive results in this writer's opinion due to

DISCUSSION continued

poor core recoveries and no sampling of the sludge material. The hole should be drilled again with a Reverse Circulation Percussion Drill to obtain a complete and sizeable sample for testing.

Also, if the new geometry of the Cache Creek Group underlying Hart Ridge is considered and the rocks strike northeast and dip steeply (as mentioned earlier) then diamond drill holes DDH 85-2 and DDH 85-3 of the Esso Minerals drill program were drilled above and below the carbonate replacement zone of PDH 73-7, respectively, and the zone was missed entirely by each hole.

A series of inclined Reverse Circulation Percussion drill holes are recommended to be drilled in the vicinity of the 1973 drill holes PDH 73-7 and 73-8 in an attempt to locate the gold-bearing carbonate replacement zone. The new geometry of the Cache Creek Group rocks underlying Hart Ridge should be considered and every effort should be made to discover marker horizons (tuff beds, etc.) in order to determine the stratigraphy of the Cache Creek Group on this portion of the property.

The drilling program should be commenced in the vicinity of PDH 73-8 where the overburden is relatively shallow (15 metres). Once the stratigraphy of the Cache Creek Group has been determined the drill can be moved to the PDH 73-7 region where the overburden is deeper (30 metres) and the drilling more costly.

CONCLUSIONS AND RECOMMENDATIONS

This year's VLF-EM ground survey over portions of the L 1-4 mineral claims using the strong Seattle, Washington, VLF signal covered much of the same area that was covered during last year's survey using the weaker Annapolis, Maryland signal.

Although four linear conductors were identified this year only one segment of one of them is thought to represent a bedrock conductor. Elsewhere, the conductors are all coincident with morainal ridges. The results of this year's survey, therefore, emphasize the difficulty in receiving VLF-EM readings that represent bedrock on a property that is known to be covered with such deep overburden and they bring into question the validity of the conductors outlined during previous surveys (Morrision, 1985, 1995 & 1996). Many of the previously defined conductors that were thought to represent graphitic argillite units within the Cache Creek Group sequence of rock may not represent bedrock conductors at all (see Discussion).

There was also some evidence discovered this year that suggests that the Cache Creek Group may not cross Hart Ridge with the same consistent northwest strike and moderate southwest dip that was mapped at the Highway Showing and that a new geometry may have to be considered for tracing the Highway Carbonate Replacement Zone to the north (see Discussion).

The carbonate replacement zones on the property remain the best exploration targets for gold and an understanding of the new geometry of the Cache Creek Group underlying Hart Ridge may go a long way in aiding efforts to trace out the gold-bearing replacement zone intercepted in 1973 in drill hole PDH 73-7.

A program of Reverse Circulation drilling is recommended on top of Hart Ridge, first, to determine the geometry of the Cache Creek Group, and second, to find extensions of the gold-bearing carbonate replacement zone intercepted in drill hole PDH 73-7. The drill program should commence in the vicinity of drill hole PDH 73-8 where the overburden is known to be relatively shallow (15 metres) and expanded south to the vicinity of drill hole PDH 73-7 where the overburden is known to be deep (30 metres) only once the Cache Creek Group stratigraphy is known (see Discussion).

CONCLUSIONS AND RECOMMENDATIONS continued

All drill chips obtained from carbonate replacement zones should be analyzed for gold, silver, mercury, antimony and arsenic.

The proposed target area is readily accessible.

July 31, 1997
Kelowna, B.C.

Murray Morrison, B.Sc.

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G.S.C. = Geological Survey of Canada.

APPENDIX A

STATEMENT OF QUALIFICATIONS

I, Murray Morrison, of the City of Kelowna, in the Province of British Columbia, do hereby state that:

1. I graduated from the University of British Columbia in 1969 with a B.Sc. Degree in Geology.

2. I have been working in all phases of mining exploration in Canada for the past twenty-eight years.

3. During the past twenty-eight years, I have intermittently held responsible positions as a geologist with various mineral exploration companies in Canada.

4. I have conducted several geological, geochemical, and geophysical surveys on mineral properties in Southern British Columbia during the past twenty-eight years.

5. I conducted the VLF-EM survey on the L 1-4 mineral claims.

6. I own a 100% interest in the J 2-4 and L 1-8 mineral claims.

July 31, 1997
Kelowna, B.C.

Murray Morrison - B.Sc.

APPENDIX B

STATEMENT OF EXPENDITURES - ON THE L CLAIM GROUP

Statement of Expenditures in connection with a VLF-EM Survey carried out on the L Claim Group, located 12 km southeast of Clinton, B.C. (N.T.S. Maps 92-I-13E & 14W) for the year 1997.

VLF-EM SURVEY (5.5 km)

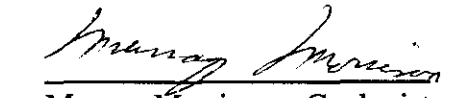
M. Morrison, geologist	3 days @ $300.00/day	$ 900
Truck, 4 x 4 (including gasoline and insurance)	3 days @ $75.00/day	225
Meals and Lodging	3 days @ $75.00/day	225
Flagging and belt chain thread		20
VLF-EM instrument rental	3 days @ $25.00/day	75
	Sub-total:	$ 1,445

REPORT PREPARATION COSTS

M. Morrison, geologist (Fraser Filter calculations; plotting and contouring results; analyzing data and writing report)	1 day @ $300.00/day	$ 300
Drafting		53
Typing		83
Copying reports		20
	Sub-total:	$ 456
	Grand Total:	$ 1,901

I hereby certify that the preceding statement is a true statement of monies expended in connection with the VLF-EM Survey carried out May 5-7, 1997.

July 31, 1997
Kelowna, B.C.



Murray Morrison - Geologist