BIOGEOCHEMICAL
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 and Hart 1-6 (17 units)
LOCATION:	The L Claim Group is situated on Hart Ridge, 12 km southeast of Clinton, B.C. Lat. 51°00'; Long. 121°30'; N.T.S: 92-I-13E & 14W and 92-P-3W & 4-E
OWNER:	M. S. Morrison
OPERATOR:	M. S. Morrison
DATE STARTED:	May 3, 1999
DATE COMPLETED:	May 5, 1999

Kelowna, B.C.

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ILLUSTRATIONS

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 17 mineral claims, covers a succession of Permian 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 & 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.

Recent geophysical surveys (ground magnetometer and VLF-EM) conducted by the writer (Morrison, 1992, 95-97) on the L Claim Group have met with less than favourable results in tracing the quartz-carbonate replacement zones across the property due to the thick cover of drift.

The drift contains (2-5%) quartz and quartz-carbonate vein material and an experimental biogeochemical survey (using Douglas fir trees as a sample medium) was conducted in 1998 in an attempt to trace the vein material to its source.

The survey successfully outlined biogeochemical patterns which suggest that a concentration of vein material does occur in the drift, and that a possible source area lies at some distance to the northwest.

This year the biogeochemical survey was extended another 900 metres to the northwest and the results of the survey indicate a possible bedrock source of the vein material.

A trenching program is recommended in the vicinity of this year's biogeochemical anomalies to test the bedrock for quartz and quartz-carbonate veining.

L CLAIM GROUP	
LOCATION MAP Clinton Area Kamloops & Clinton Mining Divisions, B.C.	
Drawn by: M.M.	N.T.S. 92-I-13E&14W, 92-P-3W&4E
JULY 1999	Figure No. 1

INTRODUCTION

This report, written for government assessment work requirements, discusses the results of a biogeochemical survey conducted over portions of the L 3 and Hart 1, 3 & 5 mineral claims of the L Claim Group by the writer during May, 1999.

The L Claim Group is comprised of 17 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, 1½ 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 16 years, and the property now extends 4 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. (The 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.

There is considerable (2 to 5%) quartz vein and quartz-carbonate material within the till, and in 1998 an experimental biogeochemical survey was conducted over portions of the L 1-4 mineral claims in alignment with the two known carbonate replacement zones. It was thought that the roots of trees deriving nutrients from the till might also absorb elements characteristic of the vein material. The Douglas fir which is the predominant species on the property was chosen for the survey and the deadwood twigs from these trees were selected as the sample medium.

The 1998 survey was a success in that four elements believed to be associated with the vein material (i.e. silver, lead, cadmium and iron) yielded semi-coincident contour patterns that appear to represent a concentration of vein material within the till. The patterns indicate a source location from somewhere "up-glacier" to the northwest.

This year's biogeochemical survey was extended for 900 metres to the northwest of the 1998 survey in an attempt to locate the bedrock source of the quartz and quartz-carbonate vein material.

Ten elements have been selected from the Certificate of Analysis (Appendix C) for plotting and contouring on Maps L-99-1 to 5 which accompany this report.

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. 51°00'; Long. 121°30'; N.T.S. Maps 92-I-13E & 14W and 92-P-3W & 4E).

Access to the L 1-8 and Hart 1-6 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

N

SCALE 1:50,000

Area covered by 1999 survey

CLINTON MINING DIVISION

KAMLOOPS MINING DIVISION

HART 1-6 MINERAL CLAIMS

51° 00'

PDH 73-8

Area of 1998 Survey

PDH 73-7 SHOWING

Highway 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

Legal Claim Posts

1 .5 0 1 2 kilometres

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, 92-P-3W&4E
July 1999	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.

The climate is moderate with winter temperatures seldom below -30° C and summer temperatures rarely above 35° C. Spring and autumn temperatures are often a comfortable 20 to 25° C.

CLAIM STATUS

The L Claim Group is comprised of 17, 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 on the 17 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 11/2000
J3	1	May 11/82	217045	Kamloops	May 11/2000
J4	1	May 11/82	217046	Kamloops	May 11/2000
L1	1	May 12/94	325709	Kamloops	May 12/2000
L2	1	May 12/94	325710	Kamloops	May 12/2000
L3	1	May 12/94	325711	Kamloops	May 12/2000
L4	1	May 12/94	325712	Kamloops	May 12/2000
L5	1	May 14/94	325713	Kamloops	May 14/2000
L6	1	May 14/94	325714	Kamloops	May 14/2000
L7	1	May 14/94	325715	Kamloops	May 14/2000
L8	1	May 14/95	325716	Kamloops	May 14/2000
Hart 1	1	May 6/98	362417	Clinton	May 6/2000
Hart 2	1	May 6/98	362418	Clinton	May 6/2000
Hart 3	1	May 6/98	362419	Clinton	May 6/2000
Hart 4	1	May 6/98	362420	Clinton	May 6/2000
Hart 5	1	May 6/98	362421	Clinton	May 6/2000
Hart 6	1	May 6/98	362422	Clinton	May 6/2000

* **Note:** The new Expiry Dates are 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. In 1997, the 1996 VLF-EM ground survey was repeated using the stronger Seattle signal station (Morrison, 1997).

The L 9-14 mineral claims were allowed to expire March 29, 1997 and this ground was restaked by the writer with the Hart 1-6 mineral claims, May 6, 1998.

An experimental biogeochemical survey was conducted over portions of the L 1-4 mineral claims by the writer in 1998 (Morrison, 1998).

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 graphic. The argillite is highly foliated and erodes easily. Limestone is know 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.

PROPERTY GEOLOGY (continued)

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 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 metres 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.

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.

BIOGEOCHEMICAL SURVEY 1999

Grid

The Location Line of the Hart 1-6 mineral claims, which runs at a bearing of 330 degrees was used as a Baseline for this year's survey. Ten short flagged grid lines at 100 metre intervals were established to the northeast of the Baseline and two short grid lines were extended to the southwest of the Baseline from the 1998 grid as illustrated on Maps L-99-1 to 5. The 74 sample sites of this year's survey are also indicated on these Maps.

Sampling

Deadwood twigs of Douglas fir proved to be a successful sample medium in 1998, and this material was used again in this year's survey area. Several deadwood branches were cut from 3 to 5 trees near each sample site and then the ½ to 1 cm diameter twigs of these branches were cut into 10 cm lengths and placed in plastic "kitchen catcher" garbage bags with identification tags. Approximately 200 grams of twigs were collected for each sample.

Trees of equal size were used wherever possible, and a size of 20 cm in diameter was the most common in the survey area. Where trees of a different size were used, a notebook comment was recorded for the station.

The deadwood twigs were used in place of "livewood" or bark, because the writer has had success in using this sample medium on several other properties in Southern British Columbia.

In all, 74 samples were collected and shipped to Acme Analytical Laboratories in Vancouver for standard ICP analyses of 30 elements. The laboratory procedures are listed in Appendix C along with the results.

BIOGEOCHEMICAL SURVEY 1999 (continued)

Results

The data from this year's survey has been studied in detail with respect to:

(a) the sample material collected,

(b) last year's survey results, and

(c) the concentration and distribution of each element in relationship to others in the survey area (i.e. correlation).

The Effects of Using Different Sample Material

As stated earlier, the sample material was selected from Douglas fir trees of approximately 20 cm in diameter, wherever possible. However, at some sample sites, the preferred tree size was not available and either trees of larger than normal size (30 to 40 cm) or smaller than normal size (5-10 cm) were selected for sample material and a notebook entry was recorded.

The concentrations of the 30 elements analyzed have been reviewed with respect to the off-sized samples listed in the notebook, and out of the 30 elements only lead and iron show a variation with respect to tree size and even then only occasionally. There is an increase in lead and iron values in some of the large tree samples, while some of the small tree samples yielded less lead and iron. The most notable example occurs on L34N at 17+50W and 17+75W where the samples were from small trees (5-10 cm) and the lead and iron values are distinctly low.

In all cases, with the exception of one, deadwood twigs were used as the sample medium. The one "livewood" sample yielded decidedly lower than average values for most of the 30 elements.

BIOGEOCHEMICAL SURVEY 1999 (continued)

Results (continued)

The concentration of certain elements in deadwood twigs might be explained by the fact that the branches die slowly, and as they die, the movement of fluids through the wood tissue gets restricted. It would seem that in this dying phase some elements are deposited at a greater rate than they are removed.

Comparison of 1998 and 1999 Surveys

The 1998 experimental biogeochemical survey, conducted to the south of this year's survey area, worked well at outlining areas with concentrations of silver, cadmium, lead and iron. Because of the 1998 success, an effort was made to conduct this year's survey with materials and methods as near as possible to those used in last year's survey. In spite of this duplication of procedures, there are several notable differences in the data obtained from each survey.

This year's values for nickel, cobalt, chrome, arsenic, antimony, lanthanum, titanium, boron, phosphorous, aluminum, potassium and tungsten are all generally higher than those values from the 1998 survey, and this is particulary true in samples collected from L35N to L40N. Magnesium values are also generally higher in this year's samples, but in the survey area to the south of L35N. Cadmium values in this year's samples are significantly lower than those in last year's samples, however.

The significance of the differences, between the results of the 1998 and 1999 surveys, will be covered under the title Discussion.

BIOGEOCHEMICAL SURVEY 1999 (continued)

The Concentration, Distribution and Correlation of Elements

Silver was chosen as the key element in the review of this year's data. Silver is universally considered as a good pathfinder element for locating gold mineralization when conducting soil or rock geochemical surveys, and the same may be true for at least some biogeochemical surveys. Last year's survey indicated that the Douglas fir has an affinity for silver and this year's survey added further proof of this affinity. Several of this year's samples contain greater than 3.0 ppm (parts per million) silver and one sample contains 6.5 ppm silver.

A comprehensive review of all 30 elements analyzed showed that 9 yielded concentrations that were somewhat correlative with the higher silver values. These 9 elements, plus silver, have been plotted as pair groups on five maps (L-99-1 to 5) accompanying this report.

The pair combinations are silver-lead, copper-molybdenum, iron-sodium, antimony-vanadium and nickel-zinc. In most cases there is a good correlation between the elements in each pair group (with the nickel-zinc pair group being an exception).

In general, there are two sets of elements that correlate well. Lead, copper and molybdenum show a good correlation with silver, while sodium, antimony, vanadium and nickel display a zoned relationship with iron. Zinc lies in an area immediately peripheral to both group of elements.

The values of all 10 elements have been contoured on the five maps. There is not enough data to be treated statistically, so a value has been chosen for contouring each element that nicely separates the grouping of higher values from those of lower values. The contour line in each case, therefore, outlines zones of elevated concentrations. In some cases, a line has been drawn across the maps joining the peak values of the elements illustrated. The line which often falls near the centre of the contour outline is called the "core of peak values" on the maps.

BIOGEOCHEMICAL SURVEY 1999 (continued)

The Concentration, Distribution and Correlation of Elements (continued)

Each element selected for plotting on the five maps will be discussed under the titles that follow.

Silver (Map L-99-1)

The 3.0 ppm silver value that was used for outlining zones of concentrated silver in the 1998 survey area was used again on this year's Map L-99-1.

Two 25 to 50 metre wide zones of elevated silver values (up to 6.5 ppm) occur over a length of 600 metres between L31+50N and L38+00N on the southwestern sides of the Hart 3 & 5 mineral claims. Another two small zones are outlined on the northeastern side of the L 3 mineral claim on Map L-99-1.

Lead (Map L-99-1)

The lead values in this year's survey area are generally higher than those in last year's survey area to the south, but the 140 ppm value used for outlining lead concentrations on last year's map was used again this year.

The 140 ppm lead contour entirely encircles the elevated silver values from L35N to the north and extends beyond the silver zone to the edge of the survey area at L40N. This 500 metre long zone of elevated lead values is 50 to 80 metres wide. The "core of peak values" within this zone is entirely coincident with the core of peak values for silver on Map L-99-1.

BIOGEOCHEMICAL SURVEY 1999 (continued)

The Concentration, Distribution and Correlation of Elements (continued)

Lead (Map L-99-1) (continued)

Between L31+50N and L35N there is no significant lead associated with the higher silver values, but on L26&27N on the L 3 mineral claim, there is a correlation between the higher lead and silver values again (see Discussion).

Copper (Map L-99-2)

Elevated copper values have been outlined with the 260 ppm contour on Map L-99-2. A 10 to 75 metre wide zone of elevated copper values covers the silver zone from L35N to L38N. The copper zone is much like the lead zone, just described, but slightly smaller. The "core of peak values" for copper is entirely coincident with the core of peak values for lead and silver.

Between L31+50N and L35N, the elevated copper values are spotty, but like lead, there is a good correlation between the higher copper and higher silver values on L26N and L27N.

Molybdenum (Map L-99-2)

Molybdenum contoured at the 9 ppm value on Map L-99-2 yields an outline that is very close to matching the copper outline north of L35N just described. The molybdenum zone is slightly smaller, but the "core of peak values" is entirely coincident with the core of peak values for copper, lead and silver.

In general, the molybdenum values are low on the property and south of L35N they are erratic.

BIOGEOCHEMICAL SURVEY 1999 (continued)

The Concentration, Distribution and Correlation of Elements (continued)

Iron (Map L-99-3)

The iron values are generally higher in this year's survey area than in last year's and a value of 1.50% iron was chosen to outline areas with elevated iron concentrations.

A 40 to 80 metre wide zone of elevated iron values extends 600 metres from L34N to the north edge of the survey area at L40N on Map L-99-3. The iron zone, in part, overlies the silver and lead zones, but generally lies 25 metres further to the southwest. The "core of peak iron values" lies 10 to 70 metres to the southwest of the core of peak values for the 4 elements previously described.

South of L34N, the iron values display no distinct patterns.

Sodium (Map L-99-3)

The 0.12% value for sodium has been selected for contouring on Map L-99-3. A very narrow zone (10 to 50 metres wide) of elevated sodium values extends 500 metres from L35N to 40N and, for the most part, lies within the centre of the elevated iron zone just described.

Antimony (Map L-99-4)

The antimony values in this year's survey area are low (up to 13 ppm), but greater than those of last year's survey (3-5 ppm). The 10 ppm value was selected for contouring on Map L-99-4 and two zones of elevated values up to 50 metres wide lie within the general zone of elevated iron (north of L34N) described earlier. Like iron, the zone of elevated antimony values lies up to 25 metres southwest of the elevated silver zone.

BIOGEOCHEMICAL SURVEY 1999 (continued)

The Concentration, Distribution and Correlation of Elements (continued)

Vanadium (Map L-99-4)

The 40 ppm contour line for Vanadium on Map L-99-4 outlines two zones that correlate very well with the elevated antimony values just described. The "core of peak values" for vanadium entirely correlates with the core of peak values for iron.

Vanadium exhibits no significant patterns south of L35N.

Nickel (Map L-99-5)

The 45 ppm contour line for nickel on Map L-99-5 outlines a zone of elevated values that correlates very well with the zone of elevated iron values described earlier. Like iron and vanadium, nickel displays no significant patterns south of L35N.

Zinc (Map L-99-5)

Zinc has been contoured at 1400 ppm on Map L-99-5 and all of the zinc values over 1400 ppm lie peripheral to the zone of elevated iron described earlier. There is a distinct negative correlation between elevated zinc and elevated iron values in the survey area.

Other Elements

Although cadmium, arsenic and manganese values were all plotted on maps for last year's survey, none of these elements produced contoured patterns consistent with the 10 elements described above. As for the other 17 elements listed in Appendix C, none yielded data that appears to be of any use in this year's survey area.

DISCUSSION

A review of the foregoing results suggest that a biogeochemical anomaly extends from L35N to L40N between 17+00W and 18+25W. The anomaly consists of a central zone of elevated iron, nickel and vanadium values with elevated silver, lead, copper and molybdenum values lying 25 metres to the northeast and elevated antimony values lying 25 metres to the southwest. Elevated sodium values occur as a distinct core within the anomaly, while elevated zinc values lie peripheral to the central iron zone.

The zoned anomaly suggests that a valid bedrock source for many of the economic elements may lie at shallow depth on this portion of the property.

It is thought that the erratic biogeochemical patterns lying between L35N and L31+50N are a result of deepening drift on this portion of the property and that the few elevated numbers for some of the elements recorded in this area represent scattered vein material within the drift.

The distinct biogeochemical patterns for elevated silver, cadmium, iron and lead values that lie between L31N and L25N (1998 survey area) probably represent the emergence of vein material to the surface 500 to 1000 metres down glacier from the source area.

In summary, the biogeochemical results suggest a source area for quartz and quartz-carbonate vein material from L35N to L40N; a zone of drift mixing and burial from L35N to L31N; and a zone of emergence of quartz and quartz-carbonate vein material in the drift between L31N and L25N, 500 to 1000 metres down-glacier from the bedrock source area.

By design, the surveys of the past two years align with the Highway and PDH 73-3 quartz-carbonate replacement zones (see Property Geology) and it is very probable that the anomalous area lying between L35 and L40N represents another such zone.

DISCUSSION (continued)

If such a zone is represented by the biogeochemical anomaly, then it is important to discover if it is gold-bearing and, to this end, a trenching program is recommended between L35N and L40N.

Specifically, trenching should be done along the "core of peak values" for iron illustrated on Map L-99-3 and along the core of peak values for silver illustrated on Map L-99-1. The target areas are very accessible and lie in a light forest just off of the dirt logging road illustrated on the maps. A small excavator could be used for the program.

Any quartz or quartz-carbonate vein material exposed by the trenching should be assayed for gold and silver values.

CONCLUSIONS and RECOMMENDATIONS

This year's biogeochemical survey conducted on portions of the Hart 3 & 5 and L 3 mineral claims has yielded results that indicate a possible bedrock source for the quartz and quartz-carbonate vein material found in drift to the southeast.

A zoned area, approximately 600 metres long and 70 metres wide, with elevated values for several elements extends across the southwestern sides of the Hart 3 & 5 mineral claims. Elevated values for silver, lead, copper, molybdenum, iron, sodium, antimony, vanadium nickel and zinc all occur in the area (see Results). All of these elements are considered to be consistent with those that would be associated with quartz and quartz-carbonate veining such as that which occurs at the Highway Showing and in the glacial drift near L25N (see Property Geology).

Both the 1998 & 99 surveys have yielded biogeochemical anomalies that align with the two known quartz-carbonate replacement zones on the property (i.e. the Highway and PDH 73-7 Zones).

A series of excavator trenches is recommended to test the biogeochemical anomaly between L35N and L40N (see Discussion). All quartz and quartz-carbonate vein material should be analyzed for gold and silver.

The sites recommended for trenching are very accessible.

July 20, 1999
Kelowna, B.C.

Murray Morrison, B.Sc.

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* Assessment Reports on file with the Ministry of Employment and Investment of British Columbia

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 thirty years.

3. During the past thirty 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 thirty years.

5. I conducted the Biogeochemical survey on the L 3 and Hart 1, 3 & 5 mineral claims.

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

July 20, 1999
Kelowna, B.C.

Murray Morrison - B.Sc.

APPENDIX B

STATEMENT OF EXPENDITURES ON THE L CLAIM GROUP

Statement of Expenditures in connection with a Biogeochemical Survey carried out on the L Claim Group, located 12 km southeast of Clinton, B.C. (N.T.S. Maps 92-I-13E & 14W and 92-P-3W & 4E) for the year 1999.

BIOGEOCHEMICAL SURVEY (1850 metres)

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 @ $73.00/day	219.
Flagging, belt chain thread, and sample bags		15.
	Sub-total	$1,359.

ASSAYING COSTS

74 biogeochemical samples analyzed for 30 elements by ICP	74 @ $11.29 each	$ 835.
Bus express samples to lab		20.
	Sub-total	$ 855.

REPORT PREPARATION COSTS

M. Morrison, geologist	1½ days @ $300.00/day	$ 450.
Drafting		37.
Typing		87.
Copying Reports		26.
	Sub-total	$600.
	Grand Total	**$2,814.**

I hereby certify that the preceding statement is a true statement of monies expended in connection with the Biogeochemical Survey carried out May 3 - 5, 1999.

July 20, 1999
Kelowna, B.C.

Murray Morrison, - Geologist

ACME ANALYTICAL LABORATORIES LTD.

852 East Hastings,, Vancouver, B.C., CANADA V6A 1R6
Phone: (604) 253-3158 Fax: (604) 253-1716
Our GST # 100035377 RT

MORRISON, M.S.
684 Balsam Road
Kelowna, BC
V1W 1B9

Inv.#: **9901911**
Date: Jul 8 1999

QTY	ASSAY	PRICE	AMOUNT
74	30 ELEMENT ICP ANALYSIS @	6.60	488.40
74	ASHING UP TO 0.5 kg WET VEGETATION AT 475 DEG. C @	3.95	292.30
	GST Taxable		780.70
	7.00% GST		54.65
	CAD $		**835.35**

Samples submitted by M.MORRISON

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Please pay last amount shown. Return one copy of this invoice with payment.
TERMS: Net two weeks. 1.5 % per month charged on overdue accounts.

[COPY 2]

APPENDIX C

Certificate of Analysis

ACME ANAL . L LABORATORIES LTD. 852 E. HASTINGS ST. V. . ER BC V6A 1R6 PHONE(604)253-3158 FAX(604. 716
(ISO 9002 Accredited Co.)

GEOCHEMICAL ANALYSIS CERTIFICATE

Morrison, M.S. File # 9901911 Page 1

684 Balsam Road, Kelowna BC V1W 1B9 Submitted by: M.MORRISON

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Ash gm	Sample gm
L40N 18+25W	11	311	215	1003	1.6	52	14	5595	2.20	225	<8	<2	<2	640	8.8	9	<3	38	9.31	2.158	6	53	2.54	373	.06	240	1.18	.22	7.25	2	2.4	193
L40N 18+00W	5	201	89	1074	1.6	22	5	3549	.79	130	<8	<2	<2	1252	13.6	8	<3	15	22.15	1.028	3	23	1.77	641	.03	264	.51	.09	5.36	<2	4.4	192
L40N 17+75W	5	185	82	1028	1.5	22	4	2474	.76	220	<8	<2	<2	1409	7.0	9	<3	15	23.14	.793	2	23	1.87	592	.02	205	.54	.06	2.24	<2	3.9	201
L40N 17+50W	7	229	144	937	2.3	40	8	2991	1.39	373	<8	<2	<2	1029	16.1	8	<3	27	19.03	1.016	5	32	1.50	450	.04	155	.88	.08	2.98	2	2.6	158
L40N 17+25W	7	229	168	1033	1.8	39	10	3192	1.57	286	<8	<2	<2	1073	6.8	9	<3	30	17.42	.999	6	35	1.69	457	.05	160	.96	.10	3.46	2	3.5	196
L40N 17+00W	7	246	123	1516	2.5	36	10	4438	1.44	490	<8	<2	<2	1205	8.0	8	<3	28	19.45	1.042	6	39	2.10	568	.05	231	.93	.13	3.92	2	2.9	200
L39N 18+25W	7	227	125	1446	1.4	33	8	6657	1.01	826	<8	<2	<2	1322	16.8	10	<3	19	21.55	1.143	4	31	1.80	561	.03	277	.66	.11	4.26	3	2.4	177
L39N 18+00W	7	243	163	1078	2.8	36	9	4445	1.36	390	<8	<2	<2	1167	7.4	8	<3	27	20.29	.976	5	33	1.38	536	.04	183	.85	.09	2.44	<2	2.6	198
L39N 17+75W	7	229	149	1064	2.2	42	10	4886	1.60	655	<8	<2	<2	958	13.4	9	<3	30	18.60	.969	6	37	1.54	624	.05	194	1.00	.11	3.02	2	3.5	194
L39N 17+50W	5	165	105	882	1.3	60	17	3387	2.87	529	<8	<2	<2	734	5.3	10	<3	52	11.05	.615	11	57	1.59	400	.10	154	1.69	.12	2.40	4	4.3	201
L39N 17+25W	10	312	213	1219	2.5	62	14	4417	2.61	1166	<8	<2	<2	788	9.3	13	<3	47	12.04	1.504	7	58	1.93	373	.06	220	1.49	.14	4.01	5	1.7	189
RE L39N 17+25W	11	311	210	1225	2.5	62	14	4448	2.61	1167	<8	<2	<2	795	9.5	12	<3	46	12.21	1.498	8	58	1.94	363	.06	220	1.49	.14	4.02	4	-	-
L39N 17+00W	5	167	94	1394	1.3	24	6	4056	.84	835	<8	<2	<2	1333	13.6	10	<3	16	22.19	.927	3	29	1.89	553	.02	259	.61	.10	4.42	3	3.1	186
L38N 18+25W	8	271	150	1386	2.8	43	10	6177	1.35	910	<8	<2	<2	1106	10.5	9	<3	26	19.49	1.244	5	39	1.85	560	.04	210	.94	.09	4.00	2	2.6	196
L38N 18+00W	4	157	75	1680	1.9	22	6	5632	.89	138	<8	<2	<2	1617	13.6	9	<3	16	22.93	.864	3	31	1.73	560	.03	272	.59	.06	3.00	3	3.3	193
L38N 17+75W	2	114	25	1860	1.3	20	5	5835	.70	89	<8	<2	<2	1176	7.1	8	<3	13	23.32	1.213	3	27	2.35	691	.03	307	.51	.04	5.93	3	3.1	201
L38N 17+50W	8	248	142	1052	2.0	45	11	2810	2.03	248	<8	<2	<2	880	9.8	7	<3	38	16.74	1.024	7	47	1.42	434	.06	215	1.23	.13	3.48	<2	3.1	192
L38N 17+25W	9	286	189	1358	4.0	52	11	7251	1.80	311	<8	<2	<2	1343	15.3	10	<3	34	17.70	1.111	6	45	1.64	491	.06	204	1.11	.10	3.16	2	2.2	191
L38N 17+00W	5	180	88	1654	3.2	22	5	5548	.63	216	<8	<2	<2	1628	8.9	9	<3	12	24.28	.783	3	31	1.74	554	.02	264	.49	.06	3.20	2	2.6	180
L37N 18+25W	8	251	150	1573	1.8	40	10	4411	1.52	450	<8	<2	<2	1110	6.7	9	<3	29	18.81	1.198	6	39	1.77	444	.05	202	1.02	.11	3.72	2	2.9	185
L37N 18+00W	6	187	117	794	1.6	60	16	2849	2.85	377	<8	<2	<2	716	6.9	11	<3	50	11.15	.720	10	57	1.62	374	.09	130	1.65	.11	2.43	4	4.2	176
L37N 17+75W	8	265	184	1024	1.7	59	15	4989	2.70	329	<8	<2	<2	785	8.0	12	<3	48	11.96	1.165	9	56	1.55	295	.07	157	1.58	.13	3.29	5	3.0	198
L37N 17+50W	9	283	154	1249	2.3	49	11	4564	1.83	767	<8	<2	<2	1120	15.0	9	<3	34	16.87	1.150	7	43	1.53	507	.05	214	1.14	.10	3.33	2	2.1	178
L37N 17+25W	9	267	161	1753	2.6	48	9	7201	1.29	373	<8	<2	<2	1317	13.4	9	<3	25	20.10	1.174	5	37	1.97	498	.04	215	.85	.08	3.43	2	2.6	182
L37N 17+00W	10	312	212	1665	3.8	46	9	4879	1.65	724	<8	<2	<2	1225	14.1	10	<3	31	18.56	1.322	6	43	1.51	508	.04	252	1.04	.10	3.55	3	1.5	173
L36N 18+25W	5	200	86	1139	1.3	31	7	3482	1.01	764	<8	<2	<2	1482	6.8	9	<3	19	21.89	1.021	3	30	1.70	470	.03	209	.73	.08	3.08	2	2.8	154
L36N 18+00W	4	146	63	1213	1.4	46	12	3018	2.15	670	<8	<2	<2	1147	8.8	10	<3	37	15.15	.711	8	47	1.70	402	.07	164	1.33	.07	1.78	4	3.2	145
L36N 17+75W	10	301	207	1236	3.6	59	14	5094	2.46	1173	<8	<2	2	992	15.5	13	<3	43	13.23	1.220	9	55	1.58	329	.07	208	1.46	.13	3.09	5	1.7	184
L36N 17+50W	14	356	310	1303	6.5	78	17	4157	3.02	381	<8	<2	<2	928	15.1	12	<3	52	9.83	1.575	10	69	1.67	222	.06	161	1.63	.11	3.40	6	.8	110
L36N 17+25W	11	312	189	1528	4.7	48	11	5262	1.78	215	<8	<2	<2	1067	15.6	9	<3	31	16.84	1.625	6	46	1.89	322	.04	302	1.01	.15	4.62	2	1.4	167
L36N 17+00W	7	190	121	1371	1.8	35	7	5347	.97	247	<8	<2	<2	1185	23.8	6	<3	18	22.20	.970	4	29	1.30	454	.03	185	.64	.07	2.83	<2	3.2	175
L35N 18+25W	8	196	137	862	2.9	67	17	3148	3.00	214	<8	<2	<2	742	15.5	12	<3	51	10.42	1.149	11	61	1.96	273	.07	158	1.69	.10	3.47	4	4.3	197
L35N 18+00W	10	255	154	1039	2.7	58	14	4039	2.40	472	<8	<2	<2	943	9.6	11	<3	41	13.73	1.273	8	51	1.82	306	.06	223	1.39	.14	4.07	<2	2.2	186
L35N 17+75W	9	245	157	994	2.1	41	10	3833	1.79	457	<8	<2	<2	977	10.1	7	<3	31	16.66	1.399	6	43	1.65	413	.05	237	1.04	.14	4.69	<2	2.6	170
L35N 17+50W	6	201	111	1082	1.9	31	7	3886	.97	189	<8	<2	<2	1120	6.9	6	<3	18	21.86	.899	4	29	1.33	457	.03	215	.64	.13	3.34	2	3.1	182
STANDARD C3	26	67	36	175	6.3	37	12	781	3.54	58	25	<2	19	31	23.5	22	24	82	.61	.089	19	170	.62	145	.10	24	1.80	.05	.16	20	-	-
STANDARD G-2	2	3	5	43	<.3	7	4	538	2.15	<2	<8	<2	5	89	<.2	<3	<3	41	.72	.093	8	78	.62	232	.15	7	1.05	.14	.49	2	-	-

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 2-2-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.
THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND MASSIVE SULFIDE AND LIMITED FOR NA K AND AL.
- SAMPLE TYPE: VEGETATION Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

DATE RECEIVED: JUN 24 1999 DATE REPORT MAILED: July 8/99 SIGNED BY: D. TOYE, C.LEONG, J. WANG; CERTIFIED B.C. ASSAYERS

Data FA

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Ash gm	Sample gm
L35N 17+25W	8	214	120	1429	2.0	33	7	3863	1.36	293	<8	<2	<2	943	10.7	6	<3	23	19.39	1.210	4	37	1.33	330	.03	178	.78	.10	3.82	<2	3.0	189
L35N 17+00W	9	263	151	1158	2.1	44	9	5287	1.52	724	<8	<2	<2	1268	13.2	8	<3	28	19.37	1.052	5	37	1.50	505	.04	199	.96	.11	2.97	<2	2.6	191
L34N 18+25W	7	279	112	1538	2.8	35	8	3878	1.11	295	<8	<2	<2	1218	9.9	9	<3	20	21.25	1.203	1	36	1.86	297	.03	283	.70	.09	4.18	<2	2.3	185
L34N 18+00W	6	223	110	1363	3.5	30	8	3468	1.12	365	<8	<2	<2	1268	10.5	8	<3	20	21.42	1.187	<1	33	1.99	281	.02	239	.73	.07	2.89	<2	2.6	192
L34N 17+75W	2	130	41	2390	2.9	20	6	9444	.38	111	<8	<2	<2	1584	11.5	6	<3	7	22.57	.800	<1	35	3.06	440	.01	445	.38	.04	4.22	<2	1.4	129
L34N 17+50W	3	161	51	1865	2.2	23	7	9455	.53	199	<8	<2	<2	1484	7.8	9	<3	9	22.03	.984	<1	30	2.43	407	.01	369	.45	.04	4.06	<2	2.2	168
L34N 17+25W	12	351	206	1275	4.3	55	13	4399	2.32	1603	<8	<2	<2	929	8.6	11	<3	40	12.06	1.644	6	57	2.02	404	.05	251	1.28	.20	5.70	2	1.3	170
L34N 17+00W	7	231	135	1089	2.4	36	7	4031	1.31	132	<8	<2	<2	1203	9.6	6	<3	24	19.81	.832	4	33	1.33	293	.03	180	.79	.07	1.54	<2	2.1	193
L33N 18+25W	6	215	108	1553	1.8	27	7	3355	.96	140	<8	<2	<2	1541	8.6	8	<3	18	23.10	1.053	<1	31	1.67	301	.02	236	.61	.07	3.39	<2	2.8	188
RE L33N 18+25W	6	220	100	1578	1.8	27	7	3422	.97	140	<8	<2	<2	1561	8.6	8	<3	17	23.25	1.062	<1	32	1.69	309	.02	241	.62	.07	3.45	<2	-	-
L33N 18+00W	9	306	127	1621	3.9	35	9	5428	1.28	371	<8	<2	<2	1701	9.7	8	<3	24	21.72	1.107	<1	44	2.19	442	.03	318	.82	.11	3.52	<2	1.5	176
L33N 17+75W	5	217	101	1493	2.9	28	7	5560	.82	101	<8	<2	<2	1189	20.2	8	<3	16	23.56	1.167	<1	30	2.03	332	.02	294	.58	.10	4.57	<2	2.7	193
L33N 17+50W	5	164	70	1239	1.8	19	4	2728	.71	49	<8	<2	<2	1504	5.5	6	<3	13	23.26	.934	<1	25	1.66	397	.02	231	.50	.06	3.79	<2	3.7	182
L33N 17+25W	4	190	62	1322	1.2	22	4	4238	.60	237	<8	<2	<2	1662	10.8	9	<3	12	24.50	.957	<1	26	1.99	310	.02	211	.47	.04	1.11	<2	2.4	189
L33N 17+00W	7	236	126	1944	3.4	42	9	6055	1.25	354	<8	<2	<2	1191	24.7	8	<3	23	20.68	1.062	3	39	1.81	439	.03	216	.88	.10	3.35	<2	2.8	198
L32N 18+25W	6	220	80	1455	1.9	25	5	2107	.78	171	<8	<2	<2	1372	6.1	8	<3	15	22.52	1.044	<1	29	1.98	343	.02	239	.52	.07	2.99	<2	3.2	195
L32N 18+00W	7	275	120	1333	3.3	35	8	4542	1.16	742	<8	<2	<2	1118	8.8	10	<3	22	20.78	1.233	2	36	2.04	521	.03	330	.76	.13	4.41	<2	2.0	190
L32N 17+75W	7	275	95	1255	3.2	33	7	3784	.97	681	<8	<2	<2	1223	17.9	8	<3	18	22.49	1.277	<1	30	2.11	435	.02	293	.74	.10	4.56	<2	3.1	191
L32N 17+50W	4	219	81	1633	3.1	22	5	4720	.70	819	<8	<2	<2	1313	18.4	7	<3	14	24.51	.888	<1	29	2.20	324	.02	221	.50	.05	1.33	<2	2.8	194
L32N 17+25W	6	259	106	1637	1.7	32	6	4752	.94	990	<8	<2	<2	1649	21.9	9	<3	18	23.24	1.109	<1	34	2.17	358	.02	222	.69	.07	1.97	<2	2.3	178
L32N 17+00W	5	207	65	1729	2.3	21	5	4110	.66	1083	<8	<2	<2	1503	7.3	10	<3	12	23.97	.991	<1	30	2.19	357	.01	256	.52	.06	2.87	<2	2.1	173
L31+50N 18+25W	8	254	133	1952	2.1	41	8	6590	1.43	1622	<8	<2	<2	1320	14.8	10	<3	26	19.06	1.092	5	44	2.19	406	.03	192	.95	.09	2.79	2	2.1	143
L31+50N 18+00W	5	193	83	1350	3.1	29	6	2822	.69	321	<8	<2	<2	1189	11.1	8	<3	13	23.92	.898	<1	27	1.54	372	.02	257	.45	.12	4.41	<2	2.5	190
L31+50N 17+75W	7	222	104	1531	1.5	30	6	3420	.92	273	<8	<2	<2	1348	11.4	7	<3	16	21.30	1.155	<1	31	2.25	307	.02	250	.58	.06	3.55	<2	2.7	193
L31+50N 17+50W	6	244	136	1355	2.1	37	8	3604	1.05	523	<8	<2	<2	1265	9.2	7	<3	20	21.64	.974	<1	33	1.84	364	.02	216	.66	.10	3.35	<2	2.5	197
L31+50N 17+25W	7	248	119	1337	1.2	34	6	3110	1.01	313	<8	<2	<2	1369	12.2	6	<3	18	19.38	1.255	4	34	2.60	376	.02	285	.64	.08	5.55	<2	2.2	174
L31+50N 17+00W	3	186	13	1777	1.1	15	3	4221	.24	202	<8	<2	<2	1512	8.6	7	<3	4	22.22	1.775	<1	27	2.38	488	<.01	376	.37	.03	9.48	<2	2.5	190
L27N 20+00W	13	389	252	1396	5.5	61	13	3983	2.41	1629	<8	<2	<2	1077	7.1	11	<3	43	14.00	1.672	7	66	2.36	381	.04	312	1.35	.20	4.53	4	1.1	195
L27N 19+75W	10	335	231	1318	5.2	61	12	4200	1.96	277	<8	<2	<2	1114	22.1	9	<3	35	17.94	1.351	6	49	1.85	255	.04	214	1.13	.13	2.99	<2	1.7	193
L27N 19+50W	8	306	171	1422	2.6	46	8	5790	1.43	462	<8	<2	<2	1203	17.0	8	<3	26	20.30	1.007	4	40	1.83	286	.03	175	.87	.07	1.84	<2	2.1	191
L27N 19+25W	8	272	133	1573	2.7	43	8	5431	1.08	360	<8	<2	<2	1149	18.0	8	<3	19	21.63	.892	<1	34	2.02	349	.02	204	.69	.08	2.02	<2	2.1	194
L27N 19+00W	6	221	96	1228	2.7	35	5	5491	.77	263	<8	<2	<2	1195	26.6	8	<3	14	23.79	.817	<1	25	1.55	345	.02	163	.53	.07	1.36	<2	3.2	193
L27N 18+75W	9	277	170	1539	4.6	46	9	4355	1.46	259	<8	<2	<2	1101	18.0	7	3	27	20.78	1.075	3	42	1.46	320	.03	197	.88	.12	2.74	<2	2.1	195
L27N 18+50W	11	304	167	1537	3.6	47	10	4704	1.52	1120	<8	<2	<2	1133	26.1	9	<3	28	19.54	1.157	5	42	1.73	309	.03	216	.91	.13	2.98	<2	1.9	187
STANDARD C3	26	66	36	165	6.3	37	12	781	3.57	57	24	3	19	31	23.5	23	25	82	.62	.094	19	170	.64	150	.09	17	1.74	.05	.16	20	-	-
STANDARD G-2	2	3	<3	39	<.3	8	4	514	2.05	2	<8	<2	3	82	<.2	<3	<3	38	.68	.092	7	70	.60	224	.13	<3	.91	.11	.48	2	-	-

Sample type: VEGETATION. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

Data ___ FA ___

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Ash gm	Sample gm
L26N 20+00W	9	297	176	1448	5.3	52	9	4597	1.49	173	<8	<2	<2	1109	19.0	8	<3	26	18.31	1.062	4	44	2.29	234	.04	223	.90	.13	2.44	<2	1.9	192
L26N 19+75W	9	321	194	1286	5.7	56	10	3878	1.88	101	<8	<2	<2	989	18.5	8	<3	34	18.31	.920	6	47	1.64	265	.05	164	1.14	.11	1.73	2	2.4	187
L26N 19+50W	6	278	155	971	1.7	44	7	3840	1.19	290	<8	<2	<2	1276	39.7	7	<3	21	20.81	1.010	4	31	1.72	207	.03	179	.78	.06	1.26	<2	2.6	188
L26N 19+25W	4	232	77	1541	4.0	35	5	8062	.55	254	<8	<2	<2	1279	39.1	9	<3	10	23.50	.782	2	28	2.12	218	.02	218	.47	.04	1.12	<2	1.9	191
L26N 19+00W	4	222	86	1447	2.6	34	5	6858	.67	328	<8	<2	<2	1297	30.8	8	<3	13	22.41	.786	2	27	2.15	237	.02	195	.61	.04	.80	<2	2.8	194
RE L26N 19+00W	5	228	83	1482	2.7	34	5	6974	.68	337	<8	<2	<2	1324	30.8	9	<3	13	22.88	.805	2	27	2.18	237	.02	200	.62	.04	.82	<2	-	-
L26N 18+75W	5	211	75	1644	2.5	27	5	4384	.62	334	<8	<2	<2	1375	29.1	9	<3	12	24.35	.659	2	29	1.70	297	.02	225	.51	.08	1.30	<2	2.7	193
L26N 18+50W	6	229	114	973	2.1	38	6	3172	1.09	321	<8	<2	<2	1101	20.8	4	<3	21	22.33	.682	3	29	1.09	362	.03	125	.75	.06	1.03	<2	3.3	182
STANDARD C3	26	65	40	165	6.0	37	12	781	3.47	56	25	<2	19	29	23.5	22	24	82	.60	.087	19	170	.62	143	.10	19	1.79	.04	.15	15	-	-
STANDARD G-2	2	2	9	42	<.3	7	4	556	2.15	<2	<8	<2	4	87	<.2	<3	<3	42	.71	.094	8	77	.62	236	.15	<3	1.05	.13	.49	2	-	-

Sample type: VEGETATION. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

Data ✓ FA ___

HART 2 M.C.

HART 1 M.C.

HART 4 M.C.

HART 3 M.C.

HART 5 M.C.

HART

L3 MINERAL CLAIM

L4 MINERAL CLAIM

BASELINE 18+25W

F.P.

I.P.

road

3 km to Highway 97

PDH 73-8

200 metres south to I.P.

23°00' magnetic declination

Claim Posts tied-in with Compass and Belt Chain

Sample Medium = Douglas fir

4.3 2.4
206 135

silver in parts per million

lead in parts per million

contour interval = 3 ppm silver

contour interval = 140 ppm lead

silver and lead core of peak values

This map is to accompany a 1999 Biogeochemical Assessment Report by M.S. Morrison.

M. S. Morrison

MINERAL TITLES BRANCH

25,962

0m 50m 100 metres

Scale 1:2500

L CLAIM GROUP

Clinton Area

BIOGEOCHEMICAL SURVEY
SILVER and LEAD
HART 3&5 and L3 M.C.s

Kamloops & Clinton Mining Divisions, B.C.

Drawn by: M.M.	N.T.S. 92-I-13E&14W, 92-P-3W&4E
July 1999	MAP L-99-1

HART 2 M.C.

HART 1 M.C.

HART 4 M.C.

HART 3 M.C.

HART 6 M.C.

HART 5 M.C.

L3 MINERAL CLAIM

L4 MINERAL CLAIM

BASELINE 18+25W

dirt road

3 km to Highway 97

200 metres south to I.P.

PDH 73-8

F.P.

I.P.

23°00' magnetic declination

Claim Posts tied-in with Compass and Belt Chain

Sample Medium = Douglas fir

molybdenum in parts per million

copper in parts per million

contour interval = 260 ppm copper

contour interval = 9 ppm molybdenum

copper and molybdenum core of peak values

This map is to accompany a 1999 Biogeochemical Assessment Report by M.S. Morrison.

M.S. Morrison

25,962

0m 50m 100 metres

Scale 1:2500

L CLAIM GROUP

Clinton Area

BIOGEOCHEMICAL SURVEY
COPPER & MOLYBDENUM
HART 3&5 and L3 M.C.s

Kamloops & Clinton Mining Divisions, B.C.

Drawn by: M.M.	N.T.S. 92-I-13E&14W, 92-P-3W&4E
July 1999	MAP L-99-2

HART 2 M.C.

HART 1 M.C.

HART 4 M.C.

HART 3 M.C.

HART 6 M.C.

HART 5 M.C.

L3 MINERAL CLAIM

L4 MINERAL CLAIM

BASELINE 18+25W

F.P.

I.P.

dirt road

3 km to Highway 97

200 metres south to I.P.

PDH 73-8

23°00' magnetic declination

Claim Posts tied-in with Compass and Belt Chain

Sample Medium = Douglas fir

iron in per cent

sodium in per cent

contour interval = 1.5% iron

contour interval = 0.12% sodium

iron core of peak values

This map is to accompany a 1999 Biogeochemical Assessment Report by M.S. Morrison.

GEOLOGICAL SURVEY BRANCH
ASSESSMENT REPORT

25,962

0m 50m 100 metres

Scale 1:2500

L CLAIM GROUP
Clinton Area

BIOGEOCHEMICAL SURVEY
IRON and SODIUM
HART 3&5 and L3 M.C.s
Kamloops & Clinton Mining Divisions, B.C.

Drawn by: M.M.	N.T.S. 92-I-13E&14W, 92-P-3W&4E
July 1999	**MAP L-99-3**

HART 2 M.C.

HART 1 M.C.

HART 4 M.C.

HART 3 M.C.

HART 6 M.C.

HART 5 M.C.

L3 MINERAL CLAIM

L4 MINERAL CLAIM

BASELINE 18+25W

F.P. I.P.

23°00' magnetic declination

CLAIM POSTS WERE TIED IN TO GRID WITH COMPASS AND BELT CHAIN

Sample Medium = Douglas fir

antimony in parts per million

vanadium in parts per million

contour interval = 10 ppm antimony

contour interval = 40 ppm vanadium

antimony core of peak values

dirt road

3 km to Highway 97

200 metres south to I.P.

PDH 73-8

This map is to accompany a 1999 Biogeochemical Assessment Report by M.S. Morrison.

M.S. Morrison

GEOLOGICAL SURVEY BRANCH
ASSESSMENT REPORT

25,962

0m 50m 100 metres

Scale 1:2500

L CLAIM GROUP
Clinton Area

BIOGEOCHEMICAL SURVEY
ANTIMONY & VANADIUM
HART 3 &5 and L3 M.C.s

Kamloops & Clinton Mining Divisions, B.C.

Drawn by: M.M.	N.T.S. 92-I-13E&14W, 92-P-3W&4E
July 1999	MAP L-99-4

HART 2 M.C.

HART 1 M.C.

HART 4 M.C.

HART 3 M.C.

HART 6 M.C.

HART 5 M.C.

L3 MINERAL CLAIM

L4 MINERAL CLAIM

BASELINE 18+25W

F.P. I.P.

40+00N
39+00N
38+00N
37+00N
36+00N
35+00N
34+00N
33+00N
32+00N
31+00N
30+00N
29+00N
28+00N
27+00N
26+00N

23+00W
22+00W
21+00W
20+00W
19+00W
18+00W
17+00W
16+00W
15+00W
14+00W

dirt road

3 km to Highway 97

200 metres south to I.P.

PDH 73-8

23°00' magnetic declination

CLAIM POSTS TIED IN TO GRID WITH A COMPASS AND BELT CHAIN

Sample Medium = Douglas fir

1275 1089
55 36 zinc in parts per million
nickel in parts per million

contour interval = 45 ppm nickel

contour interval = 1400 ppm zinc

nickel core of peak values

This map is to accompany a 1999 Biogeochemical Assessment Report by M.S. Morrison.

M.S. Morrison

ASSESSMENT REPORT

25,962

0m 50m 100 metres

Scale 1:2500

L CLAIM GROUP

Clinton Area

BIOGEOCHEMICAL SURVEY
NICKEL and ZINC
HART 3&5 and L3 M.C.s

Kamloops & Clinton Mining Divisions, B.C.

Drawn by: M.M.	N.T.S. 92-I-13E&14W, 92-P-3W&4E
July 1999	MAP L-99-5