

83-#144-11272  
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Prospecting Report  
on the  
J #1-4 Mineral Claims  
Cache Creek Area  
KAMLOOPS MINING DIVISION  
by  
Murray Morrison, B.Sc.

Claims: J 1-4 ( 2-post claims.)  
Location: The J #1-4 mineral claims lie  
21 km northwest of Cache Creek,  
B.C.  
Lat. 50° 58' 30"; Long. 121° 28' 30".  
N.T.S. 92-I-14  
Owner: Murray Morrison  
Operator: Murray Morrison  
Date Started: March 30, 1983  
Date Completed: March 31, 1983

Kelowna, B.C.

**GEOLOGICAL BRANCH**  
ASSESSMENT REPORT  
May 1, 1983

11,272

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## SUMMARY

The J #1-4, 2-post, mineral claims located on Highway 97, 21 km north of Cache Creek, B.C. were staked by the writer May 1, 1982 to cover a 700 by 50 metre carbonate altered zone in Cache Creek Group rocks.

On March 30-31, 1983 the carbonate altered zone was prospected, and 11 rock samples were collected for geochemical analyses.

Analyses for 31 elements showed that one sample had anomalous gold ( 2 parts per million ), and that several samples had elevated levels of arsenic, antimony, strontium, nickel and chromium.

Further rock sampling is recommended to confirm the presence of anomalous gold on the property.

## INTRODUCTION

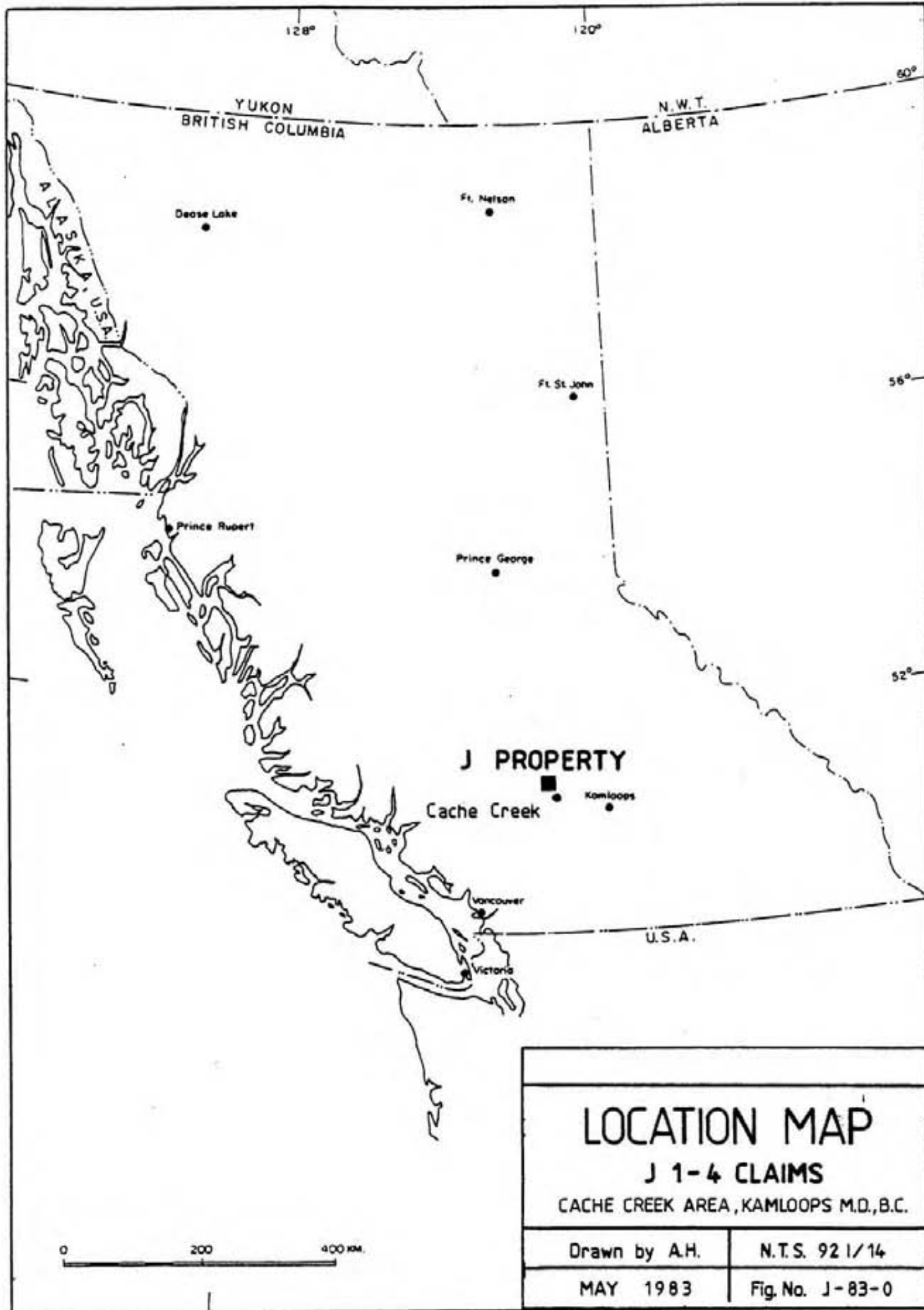
The J #1-4, 2-post, mineral claims are located on Highway 97 21 km north of Cache Creek, B.C. The claims were staked May 1, 1982 to cover a gossan zone seen running up the steep hillside north of the highway. On March 30-31, 1983 the writer prospected the gossan zone and collected 11 rock samples for geochemical analyses. The samples were tested for 31 elements including the economic elements gold and silver, and the epithermal indicator elements antimony, arsenic and mercury. The results of the prospecting and sampling program are discussed within the text of this report, while the sample sites and the values of selected elements are shown on Map J-83-2.

## LOCATION, ACCESS, TOPOGRAPHY AND VEGETATION

The J #1-4 claims are located on Highway #97, 21 km northwest of Cache Creek, B.C.

(Lat. 50°58'30"; Long. 121°28'30"; N.T.S. 92-I-14).

The claims lie 7 km northwest of the Maggie copper-molybdenum deposit owned by Cominco Ltd., or 1 km west of the Loon Lake road turnoff from Highway 97.



# LOCATION MAP

## J 1-4 CLAIMS

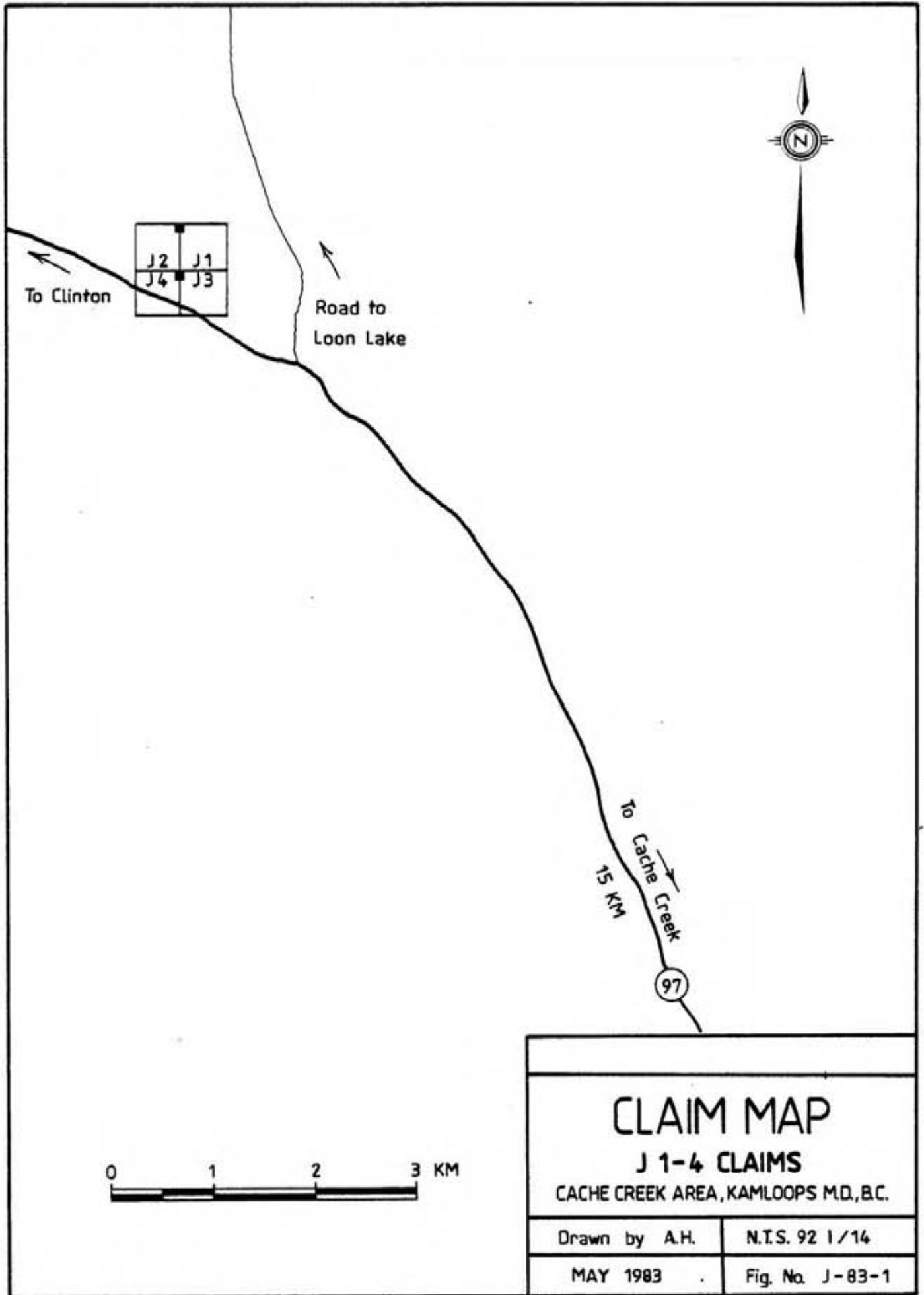
CACHE CREEK AREA, KAMLOOPS M.D., B.C.

Drawn by A.H.

N.T.S. 92 1/14

MAY 1983

Fig. No. J-83-0



LOCATION, ACCESS, TOPOGRAPHY AND VEGETATION, Cont.

The claims cover a steep southern slope rising to the 880 metre elevation from the highway at 600 metres. The property has a light forest cover of Douglas fir and pine.

CLAIM STATUS

The J #1-4, 2-post mineral claims were staked by the writer May 1, 1982, and were recorded May 11, 1982 in the Kamloops Mining Division. Record Numbers for the 4 claims are 4022 - 4025. The claims are 100% owned by M. Morrison of Kelowna, B.C.

HISTORY

The discovery of the Maggie copper-molybdenum deposit in 1970 by Bethlehem Copper Corporation sparked a staking rush over the Cache Creek Group of rocks for several kilometres north and south of the discovery. Ground presently covered by the J #1-4 mineral claims was partially covered by the S#13&14 claims of Bethlehem. It appears that Bethlehem did no drilling on their S#13&14 claims and allowed them to expire.

An adit driven 4 metres in on faulted carbonate altered rock near the northeast corner of the J#4 claim is believed to be several years old.

REGIONAL GEOLOGY

G.S.C. Maps 1010A by Duffell and McTaggart and 1278A by Campbell and Tipper show a 75 by 10 km belt of Permian, Cache Creek Group sedimentary and volcanic rocks centred at Cache Creek, B.C., and running south to Martel and north to Clinton. The rocks are highly faulted and disturbed over much of the belt. The J#1-4 mineral claims cover one such highly faulted and disturbed area located 7 km northwest of the well-known Maggie copper-molybdenum deposit. The mineralization at the

REGIONAL GEOLOGY, Cont.

Maggie deposit is associated with an elongate Tertiary intrusive of biotite-quartz monzonite prophyry striking N37°W. It is possible that the carbonate altered zone striking N30°W on the J#1-4 claims is closely related to the regional faulting that played a part in the emplacement of the Maggie Tertiary intrusive.

1983 PROSPECTING AND SAMPLING PROGRAM

A baseline of 900 metres was measured out along the strike (N30°W) of the main carbonate altered zone on the J#1-4 mineral claims. Measured traverses were made from the baseline for mapping and sampling purposes. A Silva Ranger compass and Topolite belt chain were used for measuring.

Prospecting and sampling was concentrated on the main carbonate altered zone. A total of 11 rock samples were collected for geochemical analyses. All samples were shipped to Acme Analytical Laboratories Ltd. in Vancouver for analyses. The samples were crushed to -80 mesh, and in each case a 0.500 gram sample was digested with Aqua Regia at 90°C for 1 hour. The samples were diluted to 10 ml with water and analyzed by the inductively coupled argon plasma (ICP) method. In total, 30 elements were quantitatively determined and these are listed in Appendix "B". In the case of mercury, analysis was by flameless atomic absorption of a 0.500 gram sample, and the results are given in parts per billion (ppb).

A description of each sample collected is given in Appendix "A", and the contents of the selected elements, gold, silver, arsenic, antimony, strontium, nickel and chromium are listed at the sample sites on Map J-83-2 in parts per million.



DISCUSSION OF THE 1983 PROSPECTING AND SAMPLING PROGRAM

A 700 by 50 metre rusty zone of carbonate alteration crosses the J#1-4 claims in a N30°W direction. The dip of the zone appears (from a distance) to be 50 degrees southwest. The zone itself is too highly disturbed to obtain an accurate attitude locally. The carbonate alteration appears to be stratibound, and seems to be restricted to banded, quartz-sericite-chlorite schist which most probably was derived from dacitic tuff. The 50 metre wide tuff belt is both overlain and underlain by black argillite. The argillites are locally graphitic and highly disturbed. Grey to black chert bands up to 60 cm are found interbedded with the argillite and equal up to 20% of the total rock. Dacitic tuff is also interbedded with the argillites to the northeast of the main carbonate zone and can equal up to 10% of the rock.

The carbonate altered schist is highly fractured in places. Ankerite and dolomite veining equals from 5 to 60%, quartz veining equals 5 to 30% and mariposite equals 0.1 to 2% in the highly altered rock. Cross-cutting ankerite or quartz veins have widths up to 15 cm.

The 4-metre adit near the northeast corner of the J-4 claim was driven into some of the most altered and faulted rock on the property.

The northeast side of the main carbonate altered zone appears to be marked by a graphitic argillite zone that might be coincident with a N30°W striking fault.

Geochemically the samples with the most ankerite, dolomite, and quartz veining, and the most mariposite contained the most arsenic (up to 1155 ppm), antimony (16 ppm), strontium (831 ppm), nickel (602 ppm), and chromium (239 ppm). Only sample J-10 contained gold (2 ppm) at the parts per million level. The nickel (602 ppm) and chromium (214 ppm) contents were notably high in this sample. Mercury was noticeably low (10 to 180 ppb) in most samples. Sample J-11 composed of graphitic argillite did have high mercury (750 ppb), but contained very little of the other "indicator elements."



CONCLUSIONS AND RECOMMENDATIONS

The carbonate alteration that has taken place on the J property appears to have favored the banded dacitic tuffs that were regionally metamorphosed to quartz-sericite-chlorite schists. The alteration is believed to have been caused by the invading of hydrothermal solutions into a rock that was well fractured by faulting. Pervasive alteration was accompanied by veining of ankerite, dolomite and quartz. Mariposite was also deposited. "Gold indicator elements" such as arsenic, antimony, nickel and chromium invaded the rock with the solutions. Mercury, if present originally, has apparently travelled beyond the geology now exposed. Anomalous gold of 2 parts per million was analyzed in sample J-10.

It is believed that the carbonate alteration zone on the J-claims was caused by ascending hydrothermal solutions that structurally and chemically favoured the quartz-sericite-chlorite schist unit. It is felt that the present erosion surface is at an intermediate level in an epithermal system, and that gold or silver mineralization in economic quantities may exist at not too great a depth. It is suggested that further rock sampling be carried out over the carbonate altered zone to try to confirm the presence of anomalous gold. The gold content should be measured in parts per billion. This could be done with fire assays, and atomic absorption analysis. The "gold indicator elements" arsenic, antimony, strontium, nickel, and chromium have shown some worth in the original sampling, and these elements should also be analyzed in any new samples.

Should further surface sampling confirm the presence of gold on the J-claims then drilling into the carbonate altered zone should be considered to test the epithermal geochemical model.

May 1, 1983

  
Murray Morrison, B.Sc.

REFERENCES

Campbell, R.B. and Tipper, H.W. Geology of Bonaparte Lake Map-Area, British Columbia. G.S.C. Memoir 363, 1971.

Duffell, S. and McTaggart, K.C. Ashcroft Map-Area, British Columbia, G.S.C. Memoir 262, 1952.

Miller, D.C. Maggie. Porphyry Deposits of the Canadian Cordillera, C.I.M. Special Volume 15, pp. 329-335, 1976

APPENDIX A

Description of Samples Collected From  
the J 1-4 Mineral Claims  
for Geochemical Analyses.

(Please see Map J-83-2 for Locations and Values.)

- J-01 sample was collected from a 1 metre test pit blasted in quartz vein material several years ago. The sample was made up of white quartz with 2% ankerite and a trace of pyrite.
- J-02 was made up of faulted, grey cherty rock cut by 10% quartz veinlets.
- J-03 was selected from vein material containing 90% quartz, 10% ankerite, and a trace of mariposite and pyrite. The vein material, equalling 10% of the total rock, cut through quartz-chlorite-sericite schist.
- J-04 was selected from vein material containing 80% quartz, 20% ankerite, and a trace of mariposite. The vein material occurs as 1 metre wide bands within quartz-chlorite-sericite schist.
- J-05 was selected from vein material containing 60% quartz and 40% ankerite cutting quartz-chlorite-sericite schist in the area of an old 1 metre cut into the rock face.
- J-06 was collected as a chip sample from  $\frac{1}{2}$  metre intervals along the walls of an old 4 metre long adit. Rock within the adit was intensely fractured, and made up of 65% ankerite and 30% quartz, and 3% mariposite.
- J-07 was a selected sample from the face of the aforementioned adit. The sample was made up of 65% ankerite, 30% quartz, and 3% mariposite.
- J-08 was selected from a poorly exposed outcrop. The sample was made up of 50% quartz, 50% ankerite and 1% mariposite.
- J-09 was selected from cherty and maripositic material in an area where argillite, chert, and quartz chlorite schist were all together in a highly faulted area.

ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS, VANCOUVER B.C. PH:253-3158 TELEX:04-53124

ICP GEOCHEMICAL ANALYSIS

A .500 GRAM SAMPLE IS DIGESTED WITH 3 ML OF 3:1:3 HCL TO HNO3 TO H2O AT 90 DEG.C. FOR 1 HOUR. THE SAMPLE IS DILUTED TO 10 MLS WITH WATER.  
 THIS LEACH IS PARTIAL FOR: Ca, P, Mg, Al, Ti, La, Na, K, W, Ba, Si, Sr, Cr AND B. Au DETECTION 3 ppm.  
 HG\* ANALYSIS BY FLAMELESS AA FROM .500 GRAM SAMPLE. SAMPLE TYPE - ROCK CHIPS

DATE RECEIVED APRIL 7 1983 DATE REPORTS MAILED Apr 15/83 ASSAYER D. Joffe DEAN TOYE, CERTIFIED B.C. ASSAYER

SELCO INC. FILE # B3-035B

Submitted by M. Morrison

PAGE # 1

SAMPLE #	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg*
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	I	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	I	I	ppm	ppm	I	ppm	I	ppm	I	I	I	ppm	ppm
J-01	1	18	2	16	.2	7	3	419	1.09	3	2	ND	2	125	1	4	2	11	3.38	.02	2	7	1.68	342	.01	4	.11	.02	.06	2	70
J-02	1	36	8	60	.1	23	6	435	2.01	2	2	ND	2	16	1	2	2	37	.37	.03	10	28	.71	48	.01	3	.68	.04	.04	2	30
J-03	1	23	4	9	.1	24	3	805	1.29	7	2	ND	2	384	1	6	2	8	4.78	.05	3	26	2.58	97	.01	3	.11	.01	.02	2	10
J-04	1	9	2	25	.3	68	7	781	2.59	151	2	ND	2	525	1	8	2	23	7.48	.37	2	74	3.79	111	.01	4	.16	.02	.05	2	30
J-05	1	54	3	25	.3	74	9	532	2.76	90	2	ND	2	518	1	7	2	26	6.47	.01	2	51	4.48	117	.01	3	.16	.03	.05	2	180
J-06	2	5	5	28	.2	136	10	629	2.70	271	2	ND	2	605	1	11	2	19	3.96	.01	2	76	5.41	75	.01	3	.11	.02	.04	2	50
J-07	2	5	4	42	.2	374	25	579	3.75	1155	2	ND	2	587	2	16	2	15	2.88	.01	2	133	9.70	98	.01	2	.10	.02	.05	2	10
J-08	1	1	3	41	.4	217	17	834	4.12	355	2	ND	2	831	2	9	2	29	5.68	.01	2	239	6.97	61	.01	3	.35	.01	.02	2	10
J-09	1	24	2	23	.1	40	5	479	1.56	41	2	ND	2	350	1	6	2	14	3.24	.03	2	159	2.63	77	.01	2	.19	.01	.03	2	50
J-10	2	8	3	13	.6	602	32	3380	1.78	63	2	2	2	240	1	7	4	8	10.36	.01	2	214	4.92	196	.01	2	.09	.02	.03	2	10
J-11	21	25	19	67	.3	19	4	116	4.28	23	2	ND	3	21	1	2	2	18	.28	.05	2	9	.26	211	.01	9	.40	.05	.48	2	750
STD A-1	1	30	37	183	.3	31	11	920	2.86	8	2	ND	2	32	1	2	2	52	.55	.10	6	69	.71	286	.08	7	1.93	.02	.19	2	50

APPENDIX B

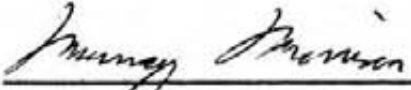
APPENDIX C

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 fourteen years.
3. During the past fourteen years, I have intermittently held responsible positions as a geologist with various mineral exploration companies in Canada.
4. Over the past twelve years, I have examined many mineral properties within the Kamloops Mining Division.
5. I personally carried out the prospecting and sampling program outlined in this report.
6. I own full title to the J #1-4 mineral claims described in this report.

May 1, 1983  
Kelowna, B.C.

  
\_\_\_\_\_  
Murray Morrison, B. Sc.

APPENDIX D

STATEMENT OF EXPENDITURES ON THE J #1-4 MINERAL CLAIMS.

Statement of Expenditures in connection with the Prospecting Program carried out on the J #1-4 mineral claims, N.T.S. 92-I-14, Cache Creek Area, B.C. for the year 1983.

FIELDWORK COSTS

Prospector (geologist)	2 days @ \$150/day	\$	300.
Assistant	2 days @ 75/day		150.
Truck (4x4, incl. gasoline)	2 days @ 55/day		110.
Meals ( 2 men )	2 days @ 40/day		80.
Lodging ( 2 men )	2 days @ 37/day		74.

LABORATORY COSTS

11 rock geochem samples @ \$11/sample		\$	121.
ICP Analyses for 30 elements, plus Hg by AA.			


REPORT PREPARATION

Prospector (geologist)	1 day @ \$150/day		150.
Drafting	½ day @ 100/day		50.
Typing - 11 pages	@ . 3/page		33.
Copying maps and reports for filing (two copies)			20.

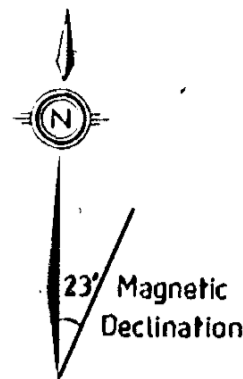
TOTAL: \$ 1,088.

I hereby certify that the above statement is a true statement of monies expended in connection with the prospecting program carried out March 30-31, 1983.

May 1, 1983

  
Murray Morrison - Geologist

J No. 2 I.P. I.P. J No. 1



- GEOLOGICAL LEGEND -

PERMIAN

CACHE CREEK GROUP

- 1 Argillite, black, fine grained
  - 1a - carbonaceous, highly fractured, black argillite
  - 1b - black argillite with 10 to 20% chert beds 4 to 15 cm
- 2 Cherty argillite
- 3 Quartz-sericite-chlorite schist (interbedded dacite tuff)
  - 3a - carbonate altered quartz-sericite-chlorite schist, ankerite and dolomite veins 5 to 60%, quartz veins 5 to 30%, mariposite 0.1 to 2%
  - 3b - dark coloured schist (andesitic tuff)

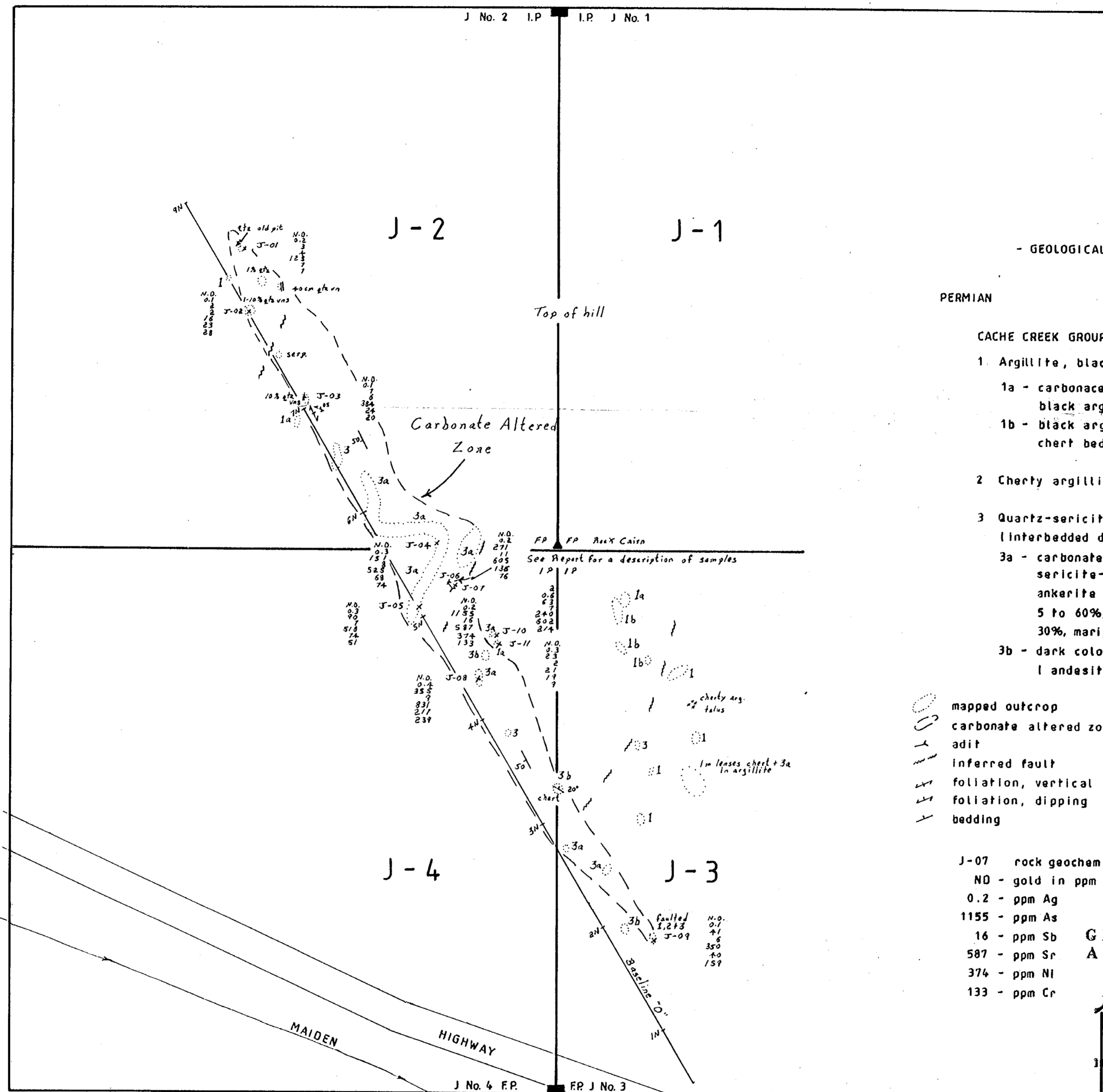
- mapped outcrop
- carbonate altered zone
- adit
- inferred fault
- foliation, vertical
- foliation, dipping
- bedding
- arg - argillite
- carb - carbonaceous
- qtz - quartz
- vns - veins

- J-07 rock geochem sample site
- NO - gold in ppm not determineable
- 0.2 - ppm Ag
- 1155 - ppm As
- 16 - ppm Sb
- 587 - ppm Sr
- 374 - ppm Ni
- 133 - ppm Cr

GEOLOGICAL BRANCH ASSESSMENT REPORT

11,272

*Murray Morrison*



<b>J 1-4 CLAIMS</b>		
ASHCROFT AREA, KAMLOOPS M.O., B.C.		
<b>PROSPECTING AND SAMPLING MAP</b>		
<b>J 1-4 MINERAL CLAIMS</b>		
Drawn by M.M.	May 1983	N.T.S. 92 1/14
Drafted by A.H.	Scale 1:2500	Map J-83-2