

MINERAL RESOURCES BRANCH

ASSESSMENT REPORT

6717

NO. \_\_\_\_\_

COMINCO LTD.

EXPLORATION

NTS: 92I/9W

WESTERN DISTRICT

April 12, 1978

ASSESSMENT REPORT

GEOLOGICAL AND ROCK GEOCHEMICAL WORK ON THE LARK PROPERTY

(CLAIMS 1-4)

SEPARATION LAKE AREA, KAMLOOPS M.D.

LATITUDE: 50°34.5'N

LONGITUDE: 120°18'W

REPORT BY:

M.J. OSATENKO

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### ATTACHMENTS

1. Plate 1 - Location of Lark Property (1:50,000)
2. Plate 2 - Compilation of geology, soil and rock geochemistry (1:6,000)

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SEPARATION LAKE AREA, KAMLOOPS M.D.

SUMMARY

The Lark Property is located 10 km south of Kamloops, B.C. and adjoins Cominco's And Property to the north. It was staked in May of 1977 to cover two copper showings and a number of apparently untested copper soil anomalies from previous workers.

The property is underlain by diorites and monzonites of the favourable Cherry Creek phase of the Iron Mask batholith. Copper mineralization occurs in two areas in chloritized and K-feldspathized diorites and monzonites and consists of chalcopyrite, malachite with minor chalcocite and native copper. The best grade of mineralization is in two old drill holes in the vicinity of Greymask shaft (67 m of 0.15% copper (0.015 oz/ton Au and 0.3 oz/ton Ag) and 55 m of 0.16% copper).

A compilation of copper soil geochemical data from Pinnacle Mines shows six areas of anomalous copper in soils (greater than 150 ppm) most of which have not been tested.

It is recommended to cover the area with an IP survey.

INTRODUCTION

The Lark Property (7 units) was staked in May 1977 to protect two copper showings and a number of untested copper soil geochem anomalies from previous workers. It adjoins Cominco's And Group to the north and is contiguous.

Mapping was done by B.G. Ames from July 4 to 6th, 1977 supervised by M.J. Osatenko. The geological and rock geochemical data as well as a compilation of a previous copper soil geochemical survey are presented at a scale of 1:6,000. Mapping control was from a blow-up of a 1:15,800 air photograph.

LOCATION AND ACCESS

The property is situated about 5 km south-southwest of Knutsford, B.C. and 10 km south of Kamloops, B.C. (plate 1). Highway 5 passes through the eastern part of the property with access to all parts of the property

by private roads off this highway. Permission must be obtained from Ernie Haughton and Frank Shannon for use of these roads.

### TOPOGRAPHY AND VEGETATION

The surface of the property is that of rolling ranchland of low to moderate relief, well glaciated with rounded hills. Elevations range from 885 to 975 m. Approximately 90% of the area is open savannah with the rest scrub poplar. Some areas are actively cultivated. Good supplies of water for drilling are provided by a number of small ponds and lakes.

### PROPERTY AND OWNERSHIP

The Lark Property (Kamloops Mining Division) is 100% owned by Cominco and consists of the following claims (7 units):

<u>Claim</u>	<u>Record Number</u>	<u>Number of Units</u>	<u>Date Recorded</u>
Lark 1	865	2	June 15, 1977
Lark 2	866	1	June 15, 1977
Lark 3	867	2	June 15, 1977
Lark 4	868	2	June 15, 1977

### PREVIOUS WORK

The area of the property has been subjected to sporadic exploration since 1950 with primary attention given to the area between the Joker adit and Separation Lake. In 1955 Commercial Minerals Ltd. drilled some 1,680 m of diamond drilling and did bulldozer stripping in the vicinity of the Joker adit. Several sections of +1% copper were encountered, however, work was terminated for unknown reasons (data available from B.C.D.M. in Victoria filed under 92I/9W). In late 1966 Pinnacle Mines Ltd. acquired the property and conducted magnetic and IP surveys over the Joker adit portion of the property (Assessment Report 965). During the months of July and August 1968 this company also did a soil geochemical survey for copper (Assessment Report 1746). Follow up work included 975 m of diamond drilling in late 1968 or early 1969, the results of which are unavailable.

### GEOLOGY

The Lark Property is located towards the southeastern end of the Upper Triassic, alkaline Iron Mask batholith (see plate 2).

Iron Mask rocks on the property belong to the Cherry Creek phase as defined by Northcote (1974). They are typically fine to medium grained diorites and monzonites that are characterized by ragged biotite. Typically the diorites contain 80% plagioclase and 20% mafics (biotite, augite and magnetite) while the monzonites have 75% plagioclase, 10% K-feldspar and 15% mafics (biotite, augite and magnetite). Most outcrops are unaltered but some show moderate pervasive to fracture-controlled epidote and chlorite alteration. Overlying the Iron Mask rocks unconformably are the Miocene or earlier Kamloops group volcanic rocks which in this area are flat-lying, vesicular basalt flows, perhaps 50 m thick.

## STRUCTURE

An evaluation of the regional structures on the property is hampered by lack of outcrops, however, the two faults shown on plate 2 are reasonable guesses and are taken from Northcote's Map 26. Trends of these postulated faults are  $045^{\circ}$  and  $352^{\circ}$ .

## MINERALIZATION

Copper mineralization occurs in two poorly exposed areas (plate 2). The first is located about 1050 m west-southwest of the Joker adit and consists of a 4 m deep shaft showing K-feldspathized and chloritized monzonitic to dioritic rocks with minor pyrite, chalcopyrite and chalcocite along fractures and as disseminations. A 3 m chip sample across the west wall returned 2300 ppm copper. This showing is of limited extent in a north-south direction as barren outcrops occur 15 m to the north and 30 m to the south. The second area of copper mineralization on the property is the Greymask shaft, about 640 m north-northwest of the Joker adit. Here chalcopyrite, pyrite and magnetite are reported in chloritized diorites. This area was not seen owing to confusion over the exact location of the shaft. Another caved shaft 300 m to the south was originally thought to be the Greymask shaft. Two diamond drill holes, 15 and 30 m to the southwest of the Greymask shaft, are reported to have intersected 67 m of 0.15% copper, 0.015 oz/ton Au and 0.3 oz/ton Ag and 55 m of 0.16% copper respectively.

## GEOCHEMISTRY

Thirty-two rock chip samples of Cherry Creek diorites and monzonites were collected and analyzed for copper (aqua regia extraction followed by atomic absorption analysis). Previous work on our And group to the south suggested a value of greater than 50 ppm is anomalous for the type of rock found on the property. As can be seen in plate 2 the only areas of significant anomaly are at the Joker adit (22,550 ppm/3 m) and at the shaft 1050 m to the west-southwest of this showing (2300 ppm/3 m).

The copper soil geochemical data from the Pinnacle Mines work in 1968 were examined. Six drift covered areas of anomalous copper in soils (greater than 150 ppm) were defined and are of sufficient size to be of interest (plate 2).

## CONCLUSIONS

1. The Lark Property occurs over the favourable Cherry Creek phase of diorites and monzonites that are known to host significant copper deposits elsewhere in the Iron Mask batholith (i.e. Afton).
2. Two copper showings occur on or near the property in chloritized and K-feldspathized diorites and monzonites. Pyrite, chalcopyrite and chalcocite are the principal sulphides in the Joker adit area with some native copper recognized in the Commercial Minerals drilling in 1955.
3. Six areas of anomalous copper in soils (greater than 150 ppm) have been defined on the property by previous workers.

REFERENCES

1. Northcote, K.E., 1974, Preliminary map of the west half of the Iron Mask batholith, B.C. Ministry of Mines and Petroleum Resources.
2. Northcote, K.E., 1977, Geology of the Iron Mask batholith, B.C. Ministry of Mines and Petroleum Resources Preliminary map 26.

Report by: Muzum Osatenko  
M.D. Osatenko  
Project Geologist

Endorsed by: D.W. Heddle  
D.W. Heddle, P. Eng.  
Assistant Manager

Approved for  
Release by: D.W. Heddle for G. Harden  
G. Harden  
Manager, Western District

MJO/pcd

APPENDIX "A"

STATEMENT OF EXPENDITURES FOR GEOLOGICAL AND ROCK GEOCHEMICAL WORK  
ON THE LARK MINERAL CLAIMS

GEOLOGY

Salaries

M.J. Osatenko - July 4th, 1977 (\$155/day)	\$155.
Report writing and drafting, 1 day at \$155/day	155.
B.G. Ames - July 4 - July 6th, 1977 (3 days at \$70/day)	210.

Domicile

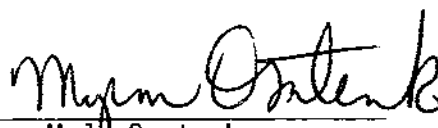
Accommodation (4 man days @ \$30/day, July 4 - July 6th, 1977)	120.
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TRANSPORTATION

Truck for 3 days plus gas (July 4 - July 6, 1977)	80.
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ASSAYS

32 rocks at \$3.50/sample (Cu)	112.
	<u>\$832.</u>

  
M.J. Osatenko  
Project Geologist

A P P E N D I X "B"

IN THE MATTER OF THE

B.C. MINERAL ACT

AND

IN THE MATTER OF A GEOLOGICAL AND ROCK GEOCHEMICAL PROGRAM

CARRIED OUT ON THE LARK 1-4 MINERAL CLAIMS

Located in the Kamloops Mining Division

of the Province of British Columbia

More Particularly N.T.S. 92I/9W

A F F I D A V I T

I, MYRON J. OSATENKO OF THE CITY OF VANCOUVER IN THE PROVINCE OF BRITISH COLUMBIA, MAKE OATH AND SAY:

1. THAT I AM EMPLOYED AS A PROJECT GEOLOGIST BY COMINCO LTD. AND AS SUCH HAVE A PERSONAL KNOWLEDGE OF THE FACTS TO WHICH I HEREINAFTER DEPOSE;
2. THAT ANNEXED HERETO AND MARKED AS "EXHIBIT A" TO THIS MY AFFIDAVIT IS A TRUE COPY OF EXPENDITURES OF A GEOLOGICAL AND ROCK GEOCHEMICAL PROGRAM CARRIED OUT ON THE LARK 1-4 MINERAL CLAIMS;
3. THAT THE SAID EXPENDITURES WERE INCURRED BETWEEN THE FOURTH DAY OF JULY 1977 AND THE 6th DAY OF JULY 1977 FOR THE PURPOSE OF MINERAL EXPLORATION ON THE ABOVE NOTED CLAIMS.

  
MYRON J. OSATENKO



A P P E N D I X "C"

COMINCO LTD.

EXPLORATION

WESTERN DISTRICT

STATEMENT OF QUALIFICATIONS

I, MYRON J. OSATENKO, OF THE CITY OF VANCOUVER, BRITISH COLUMBIA,  
HEREBY CERTIFY:

1. THAT I AM A GEOLOGIST, RESIDING AT 6437 - 116th STREET DELTA,  
BRITISH COLUMBIA WITH A BUSINESS ADDRESS AT 700-409 GRANVILLE  
STREET, VANCOUVER, BRITISH COLUMBIA.
2. THAT I GRADUATED WITH B.SC. AND M.SC. DEGREES IN GEOLOGY FROM  
THE UNIVERSTIY OF BRITISH COLUMBIA IN 1965 AND 1967 RESPECTIVELY.
3. THAT I HAVE PRACTISED GEOLOGY WITH COMINCO LTD. FROM 1967 TO  
PRESENT.

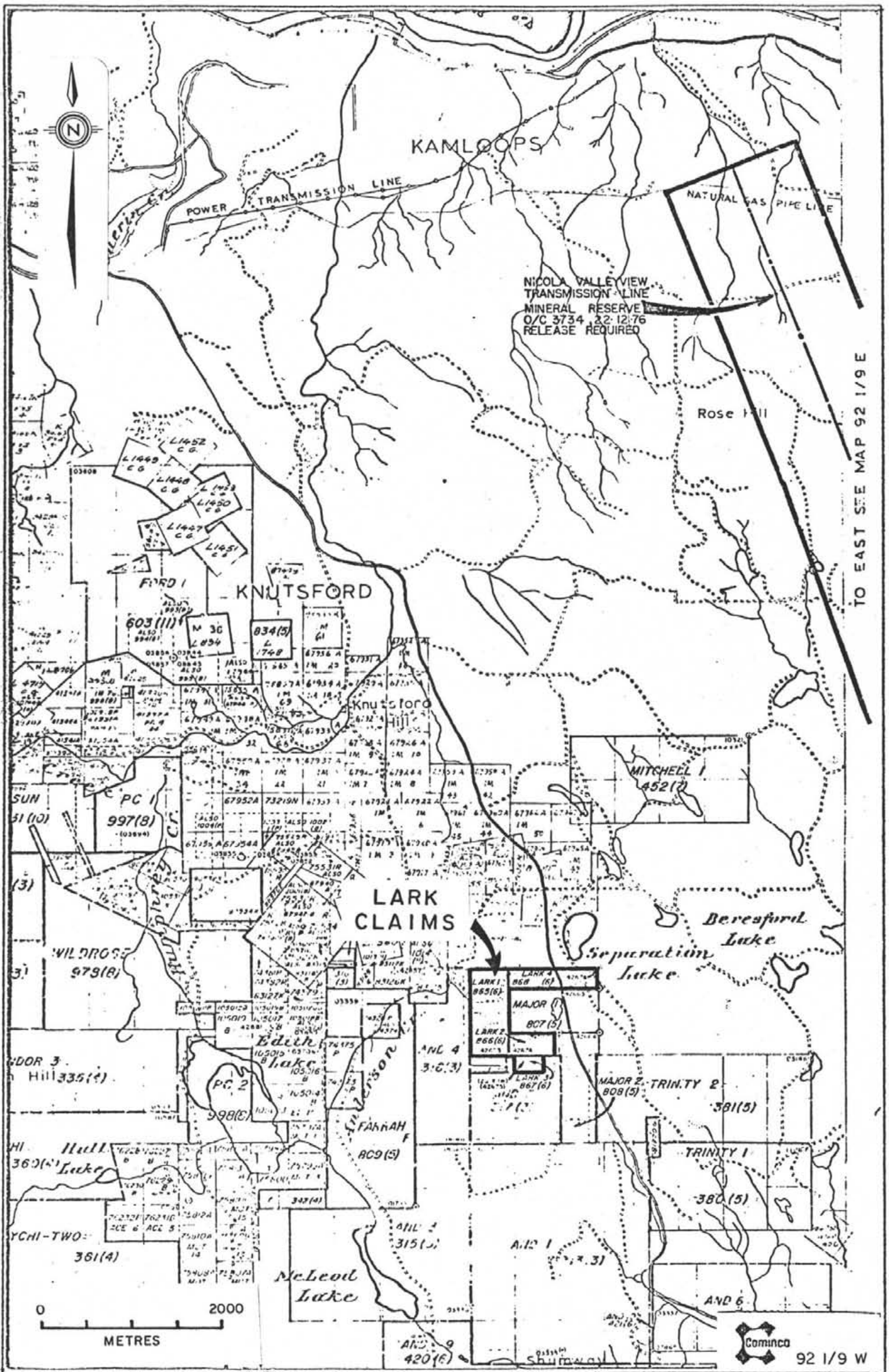
DATED THIS 13th day of April 1978 at Vancouver, British Columbia.

SIGNED

  
Myron J. Osatenko, M. Sc.

APPENDIX "D"

<u>Sample Number</u>	<u>Cu (ppm)</u>	<u>Sample Number</u>	<u>Cu (ppm)</u>
A-77-182	29	A-77-198	1250
A-77-183	9	A-77-199	55
A-77-184	30	A-77-200	23
A-77-185	83	A-77-201	190
A-77-186	15	A-77-202	50
A-77-187	18	A-77-203	20
A-77-189	10	A-77-204	29
A-77-190	17	A-77-205	4
A-77-191	28	A-77-206	31
A-77-193	2300	A-77-207	11
A-77-194	12	A-77-209	21
A-77-195	17	A-77-210	32
A-77-196	24	A-77-211	13
A-77-197	154, 165, 16000, 69000, 48800, 1100	A-77-213	11



Drawn by:		Traced by:	
Revised by	Date	Revised by	Date

LOCATION MAP  
LARK CLAIMS  
AND PROPERTY

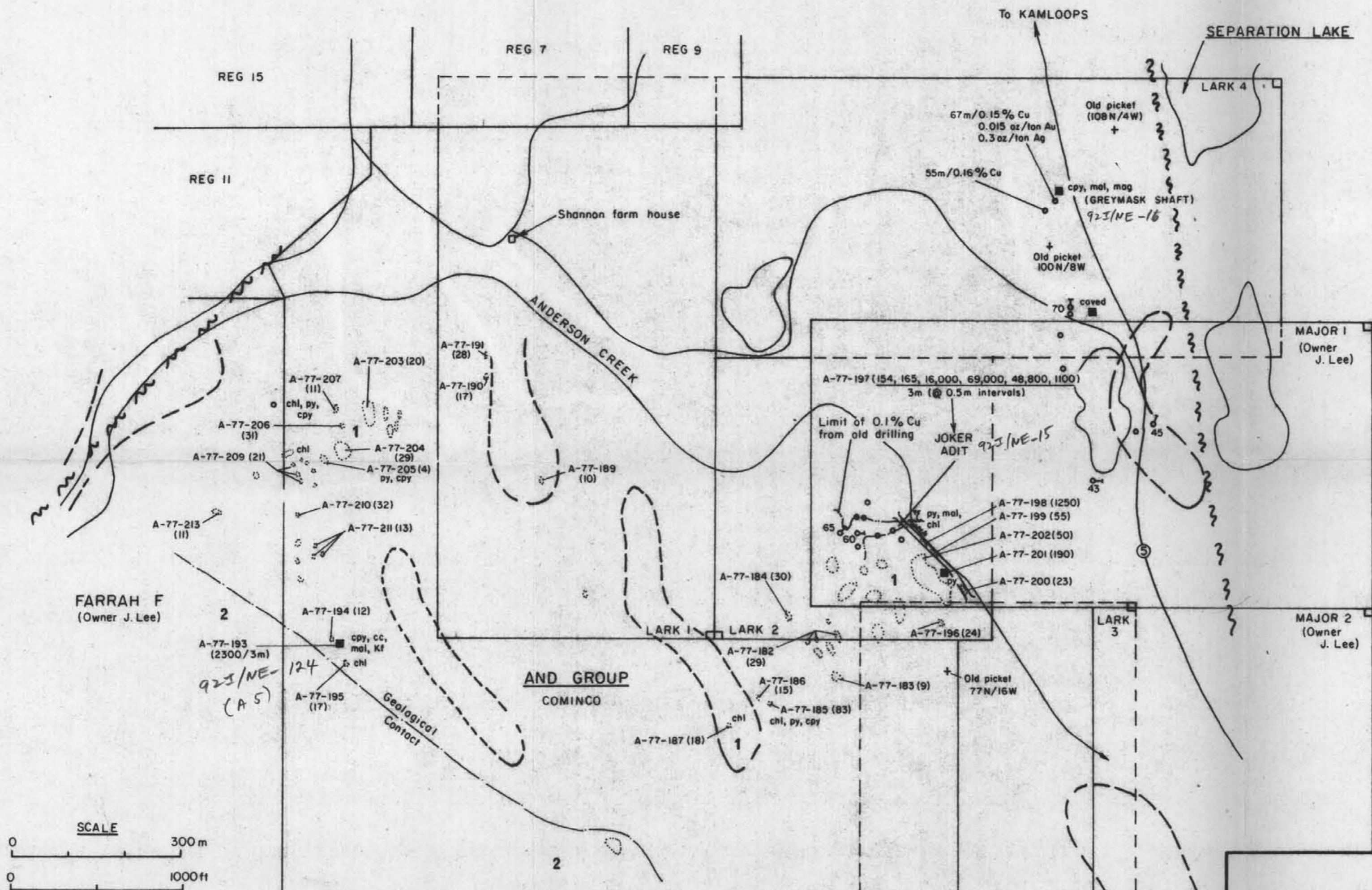
6717

Scale: 1: 50,000      Date: MARCH, 1978      Plate: 1

**LEGEND**

- MIOCENE or EARLIER  
KAMLOOPS GROUP
- 2** Flat lying vesicular basalt flows
- TRIASSIC
- 1** IRON MASK BATHOLITH - Cherry Creek Phase  
Diorite and monzonite
- Shaft or pit
- Old drill hole
- Outcrop
- A-77-193 (2300) Sample number (Cu ppm in rock)
- py Pyrite  
cpy Chalcopyrite  
cc Chalcocite  
mog Magnetite  
Kf Secondary K-feldspar  
chl Chlorite

*M. Gantank*



**LARK PROPERTY** 92 1/9 W

Drawn by: MJO	Traced by: <i>R.M.</i>
Revised by: _____	Revised by: _____
Date: _____	Date: _____

COMPILATION MAP  
GEOLOGY, SOIL and ROCK GEOCHEMISTRY

Scale: 1:6000      Date: MARCH, 1978      Plate: 2