DD-93

THE CALI CLAIMS

Yukon Territory

105H-10 & -15

Results of the 1976 Exploration Program

by

R. Kuehnbaum

Union Carbide Exploration Corporation
404-1112 W. Pender Street
Vancouver, B.C.
V6E 2S1

09118 I

Office Of The Supervising Mining Recorder
AUG 1 9 1977
WHITEHORSE
Yukon Territory

This report has been examined by the Geological Evaluation Unit and is recommended to the Commissioner to be considered as representation work in the amount of

$____________________

____
Resident Geologist or
Resident Mining Engineer

Considered as representation work under Section 53 (4) Yukon Quartz Mining Act.

____
Commissioner of Yukon Territory

Rec'd 11:40AM

V+
NNREB WHSE

IAND WTLK

28 SEPTEMBER 1977   11360

B R BAXTER
SMR
WHITEHORSE

RE YOUR YDR 234. ACCORDING TO OUR RECORDS ONLY ONE COPY FORWARDED. WE HAVE ONE COPY OF FILE.

V W JOHANSON
MINING RECORDER
WATSON LAKE DISTRICT

+
NNREB WHSE

IAND WTLK

DD-93

Government of Canada / Gouvernement du Canada

ROUND TRIP MEMORANDUM — NOTE ALLER RETOUR

FROM / DE: V.W. Johanson
Mining Recorder
Watson Lake, Y.T.

File No. (originator) — Dossier n° (source)

TO / À: B.R. Baxter
Supervising Mining Recorder
Whitehorse, Y.T.

Office Of The Supervising Mining Recorder
SEP - 1 1977
WHITEHORSE
Yukon Territory

File No. (addressee) — Dossier n° (destinataire)

M Fish
To Note
Does not need GEO
approval
as only DDH
accepted

Subject - Objet: Report on CALI claims.

1. In reply to memo from M. Fish, dated August 22, please be advised that the letter dated August 17, 1977 to the Regional Director was poorly worded. You will note that an addition had been added but was still not satisfactory. This office approved $13,900.00 as costs for Diamond Drilling which has been applied as assessment work. Costs indicated in the report are $18,158.11 which includes Geological information and which is for your information and filing only.

2. Sorry for not attaching copy of Expenditure statement. Am also attaching copy of letter previously forwarded to M. Phillips asking to have affidavit signed and notarized.

Signature: V.W. Johanson — Date: 29 August, 1977

Reply - Réponse

Ok THANKS,

[signature]

Signature — Date

ADRESSEE / DESTINATAIRE
Please add reply — Keep this copy and return No. 2 to originator.
Ajouter la réponse — Garder cet exemplaire et renvoyer le n° 2 à la source.

DD-93

THE CALI CLAIMS
Yukon Territory
105H-10 & -15
Results of the 1976 Exploration Program

SUMMARY

A preliminary study of the northern contact of the Frances Lake Batholith and Proterozoic to early Cambrian clastic and calcareous meta-sediments was carried out at the headwaters of Goat Creek in virtue of anomalous scheelite in the surrounding drainage. Surveys included the Hyland II and IV geophysical grids, regional geologic mapping and soil sampling, leading to the discovery in the southeast part of grid II of a small outcrop of gossaned pyrrhotite-rich skarn (the "Main Showing") bearing up to an estimated 1 percent scheelite in hand specimen. This was then followed up by trenching, further mapping, geophysics and the subsequent diamond drilling of six 'Winkie' holes totalling 1,074 feet. The target mineralized horizon co-inciding with the "Main Showing" has been traced by E-M and magnetic surveys for roughly 2,800 feet.

The generally northeastward dipping sequence of meta-sediments is comprised of mica-schists, a variety of calc-silicate rocks and recrystallized limestone. The area of interest lies at a gradational contact with the Frances Lake Batholith. Quartz monzonite forms irregular lens-like sills and cross-cutting bodies.

Scheelite is present in pyrrhotitic calc-silicate rocks but normally is minor in amount (less than 0.1 percent WO_3). Pyrrhotite-chalcopyrite-rich rocks are always scheelitiferous with grades of mineralization varying from 0.03% WO_3/0.02% Cu to 0.17% WO_3/0.26% Cu (the "Main Showing"). In the drill holes, similar mineralization was encountered. Sulphide-rich rock occurs in bands of usually a few feet and up to 8.7 feet in thickness. Grades are typically

DD 93

in the range of 0.1 to 0.2 percent WO_3. Enough sulphide-rich skarn has been recovered by diamond drilling to offer a satisfactory explanation of the geophysical response. No economic mineralization has been recovered. Because the main 400-foot zone of the most pronounced geophysical anomalism has been well-tested, extensions of it probably do not represent good targets. Further work would have to take the form of diamond dirlling which is unwarranted at the present time. Assessment work should be filed to maintain the property.

DD-93

Distribution:

J.S. Hollingsworth ←

c.c. C.N. Forster

M.L. Halladay

Dr. D.L. Mathias, Jr.

J.E. Rockingham/J. Straczek

J. Royall

DD-93

TABLE OF CONTENTS

TABLE OF CONTENTS (continued)

DD-93

1. INTRODUCTION

1.1 Location and Access

The property is situated in the Watson Lake Mining District at approximately 61°44'N latitude and 128°37'W longitude (105H-10 & -15) 20 miles west of the highway connecting Cantung to Watson Lake (Fig. 1). Access to the property is by helicopter.

The claims lie on the northern contact of the Frances Lake Batholith, about 40 miles to the north-northwest of the Susan Claims, and 10 miles to the east of the Tanya Claims (Alrae) tungsten showing.

1.2 Physical Setting

The topography of the Cali Claims, especially in the map-area, is very gentle. The area of interest is located in a saddle at the divide between drainage into Anderson Lake to the west and the Hyland River to the east. Vegetation is sparse and the low-to-moderate-grade slopes are covered with alpine grasses, lichen and stunted tree-line balsam. A small lake is situated at the divide and made an idyllic and easily accessible location for a camp-site. Because of the elevation (5,000 to 6,000 feet), however, the area was covered with snow until late June and mapping was not commenced until early July.

1.3 Previous Work and Background

In 1974, the area had been surveyed geophysically by D. Bowen and briefly inspected geologically. Results, however, were not encouraging because of instrumental and field method difficulties. The 1976 grid was commenced in virtue of high scheelite grain counts in streams of the surrounding drainage and in ignorance of the 1974 coverage (see Barclay, 1976). Early results, however,

DD-93

Figure I

UNION CARBIDE CANADA LIMITED
1112 WEST PENDER STREET, SUITE 404
VANCOUVER, BRITISH COLUMBIA. V6E 2S1 (604) 685 4726

SELWYN BASIN-TUNGSTEN BELT

AUTHOR(S) C.N. Forster	INTERPRETED BY:
SCALE: 1: 2,000,000 Miles	DRAFTED: N.G-B. Mapping (B.C.) Inc.
	CHECKED BY: FIG. 2
	REVISED

proved to be positive, leading -- in co-ordination with a soil geochemistry survey -- to the discovery of a new scheelite showing and the subsequent staking of the Cali Claims.

2. CLAIM STATUS

All thirty-two Cali Claims (Fig. 2) were located on July 4, 1976, and were recorded in Watson Lake at various times during the same month. The following table summarizes the pertinent data:

Claim No.	Grant No.	Locator	date recorded	valid until
1-8	YA00042-49	J.S. Hollingsworth	July 8, 1976	Aug. 7, 1976
9-16	YA00050-57	L. Hemmingson	July 12, 1976	Aug. 11,1976
17-24	YA00058-65	L. Sharpe	July 12, 1976	Aug. 11,1976
25-32	YA00184-91	R. Ridgway	July 16, 1976	Aug. 15,1976

3. THE 1976 PROGRAM

The 1976 field season's survey of the Cali Claims consisted of: reconnaissance and detailed geophysics (magnetics and electro-magnetics); detailed soil sampling; regional geologic mapping; detailed (1 inch = 200 feet) geologic mapping in the area of the "Main Showing"; minor trenching; and the completion of six Winkie diamond drill holes. Mapping control was established by compass-surveying the geophysical grid; because of the gentle slopes in the map-area, no vertical control was developed except in the geologic cross-sections. The maximum elevation change is about 250 feet in 1,300 feet, accounting for a horizontal error of approximately 2 percent.

4. REGIONAL GEOLOGY

The property is situated in the southern part of the Selwyn Fold

DD-93

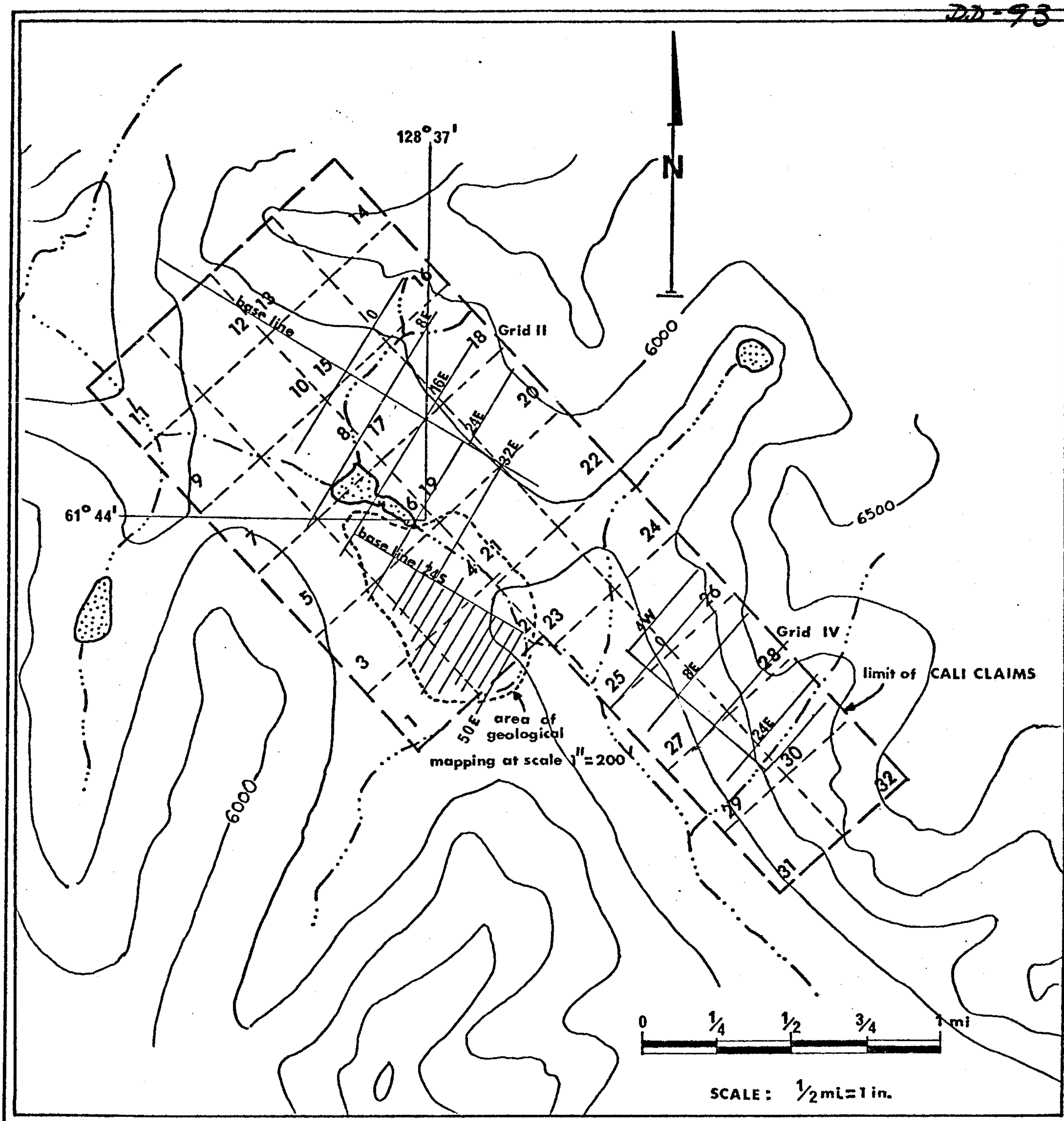


Figure 2.

Union Carbide Exploration Corporation

THE CALI CLAIMS

Yukon Territory
105H-10 & -15

showing geophysical grids and
area of detailed geological mapping

compiled by R. Kuehnbaum, October 1976

Belt, a subdivision of the eastern Cordillera and an important tungsten province containing two major tungsten-massive sulphide deposits, Cantung and Mactung. The Selwyn Mountains are built of relatively undeformed, dominantly clastic Proterozoic and Paleozoic sediments and meta-sediments, intruded during the Cretaceous by numerous acidic to intermediate plutons and batholiths.

5. RECONNAISSANCE MAPPING

Mapping of the area encompassed by, and surrounding the Cali Claims was done from 1 inch= 4,000 feet aerial photographs by R. Ridgway (Fig. 3). The moderately northeastward-dipping Proterozoic to early Cambrian (?) meta-sedimentary sequence is comprised of mica-schists and recrystallized, partly impure limestones. The main limestone band striking through the northern part of the Cali Claims has a maximum thickness of about 1,500 feet. The sequence is intruded by largely acidic rocks of the Frances Lake Batholith lying to the south. Normally the thick limestone is separated from the Batholith by schist, but Ridgway has observed quartz monzonite in contact with the limestone northwest of the Cali Claims; there is no associated skarn mineralization.

Of importance is a large, northeasterly-trending fault, readily observable from the air, cutting across the southern part of the property. The absolute sense of displacement is unknown, but Ridgway has mapped a 600-to-800-foot left-hand, horizontal component. Granite Creek, the surface expression of the fault, marks the division where the meta-sedimentary sequence containing the "Main Showing" has been truncated against the main mass of the Frances Lake Batholith (Fig. 3).

DD-93

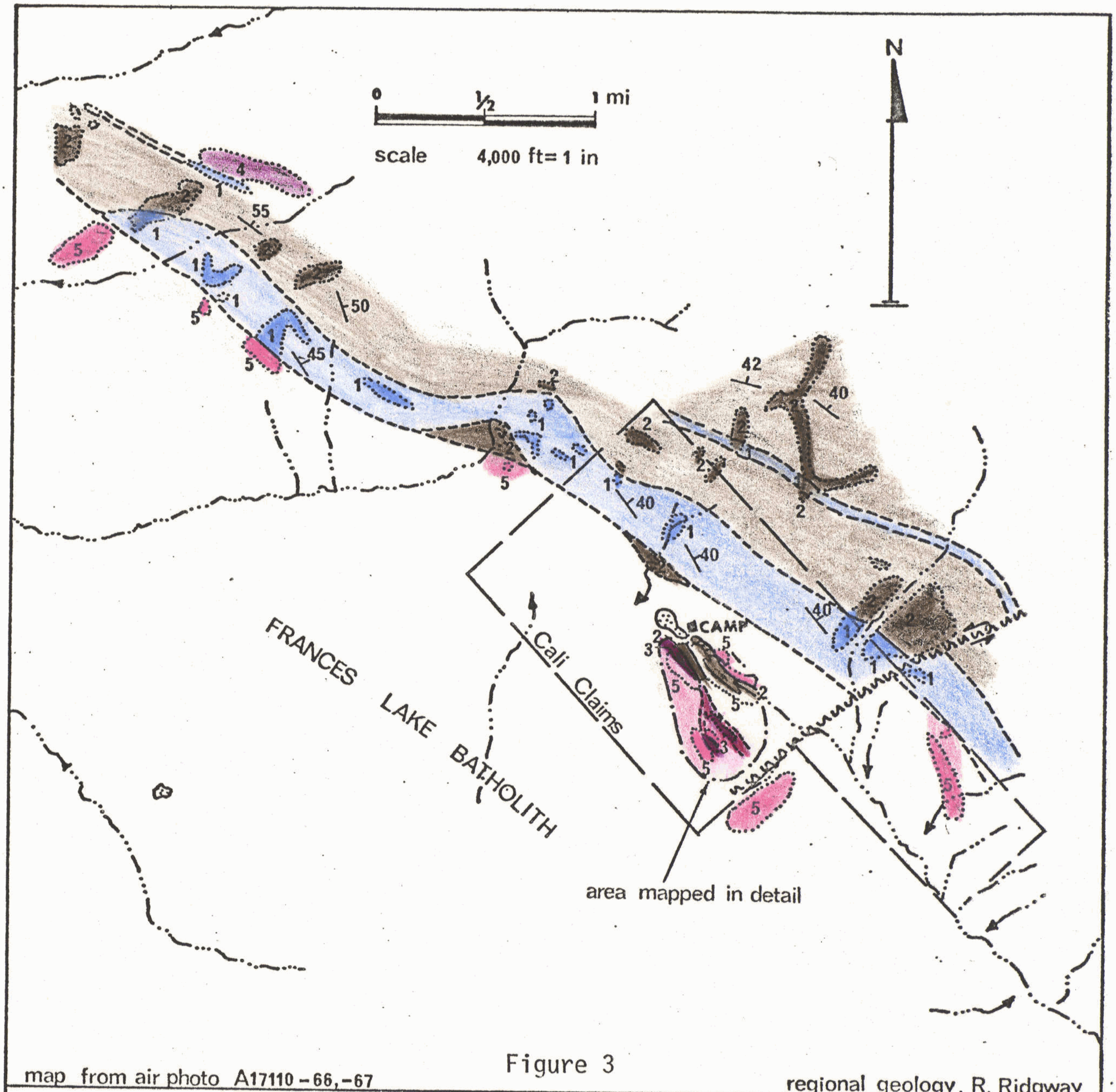


Figure 3

Union Carbide Exploration Corporation

Regional Geology in the Vicinity of the Cali Claims
Yukon Territory, 105H-10, -15

LEGEND

- 5 Quartz monzonite
- 4 Marbilized silty limestone
- 3 Calc-silicate hornfels, skarn
- 2 Biotite-muscovite-quartz-feldspar schist
- 1 Recrystallized limestone, silty limestone

KEY

- geologic boundary, defined, approx.
- strike/dip of bedding
- fault, with sense of movement

6. GEOLOGY OF THE "MAIN SHOWING" AREA

6.1 General

The geology of the "Main Showing" area of the Cali Claims is reproduced on Figure 4.

Included for ease of reference is Figure 5, a half-scale version of Figure 4 showing only the salient features.

The detailed map-area lies between lines 16E and 52E, in the vicinity of the south base line (24S); the maximum dimensions are 3,600 feet x 2,200 feet. All detailed geophysical and soil sampling surveys were done within this area.

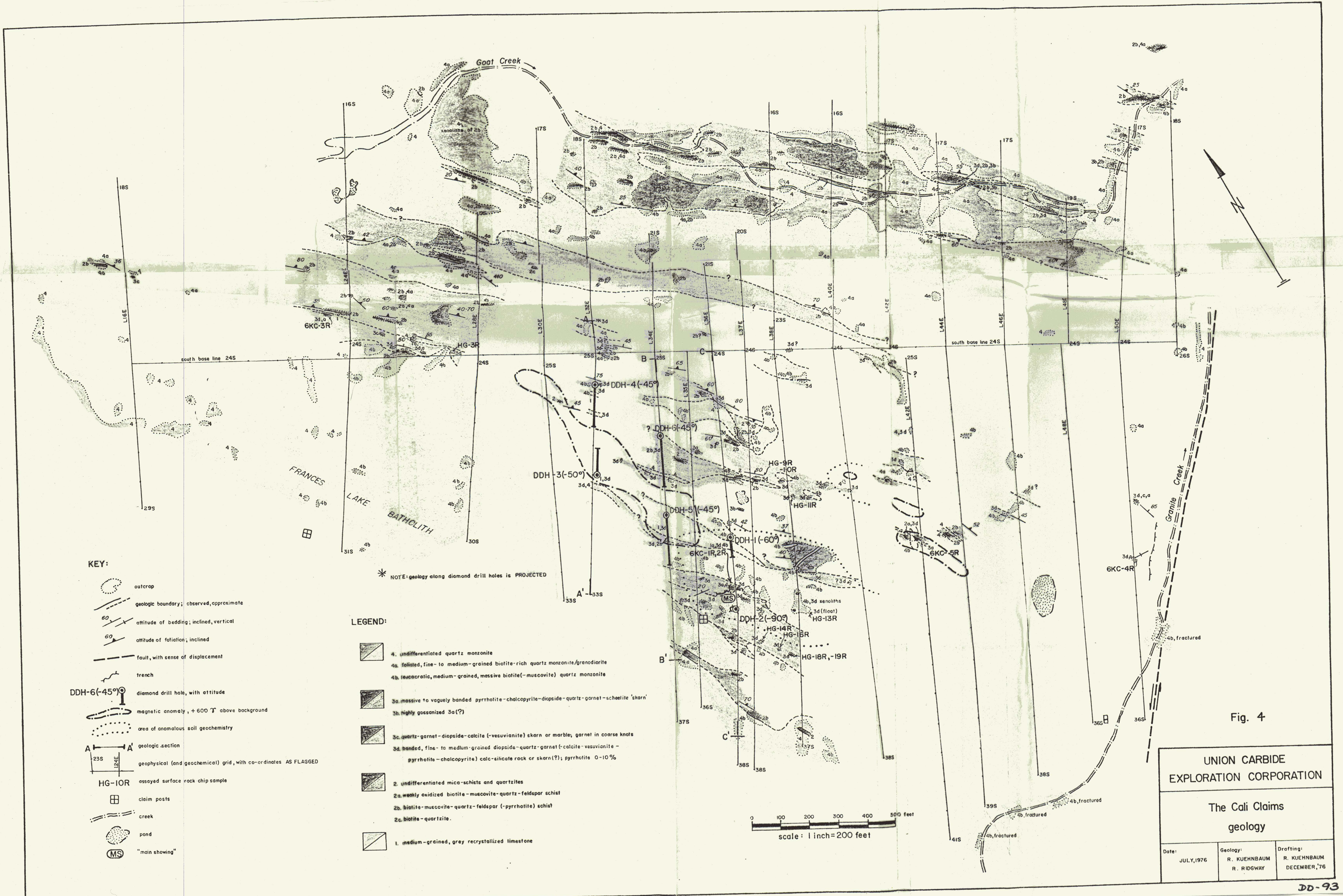
Exposure is generally moderate and is good in the vicinity of Goat Creek, line 24E, and between lines 34E and 38E from the baseline to 36S. As shown by drilling, the over-burden -- much of which consists of large boulders of quartz monzonite -- is thin. The ground between lines 28E and 34E, and east of line 42E is low and there is little exposure.

The geology of the diamond drill holes has been projected, where possible, to the surface on the basis of core-axis to bedding angles and known, near-by surface dips (Fig. 9). Some units that are not exposed have been plotted on the geologic maps (Figs. 4 and 5).

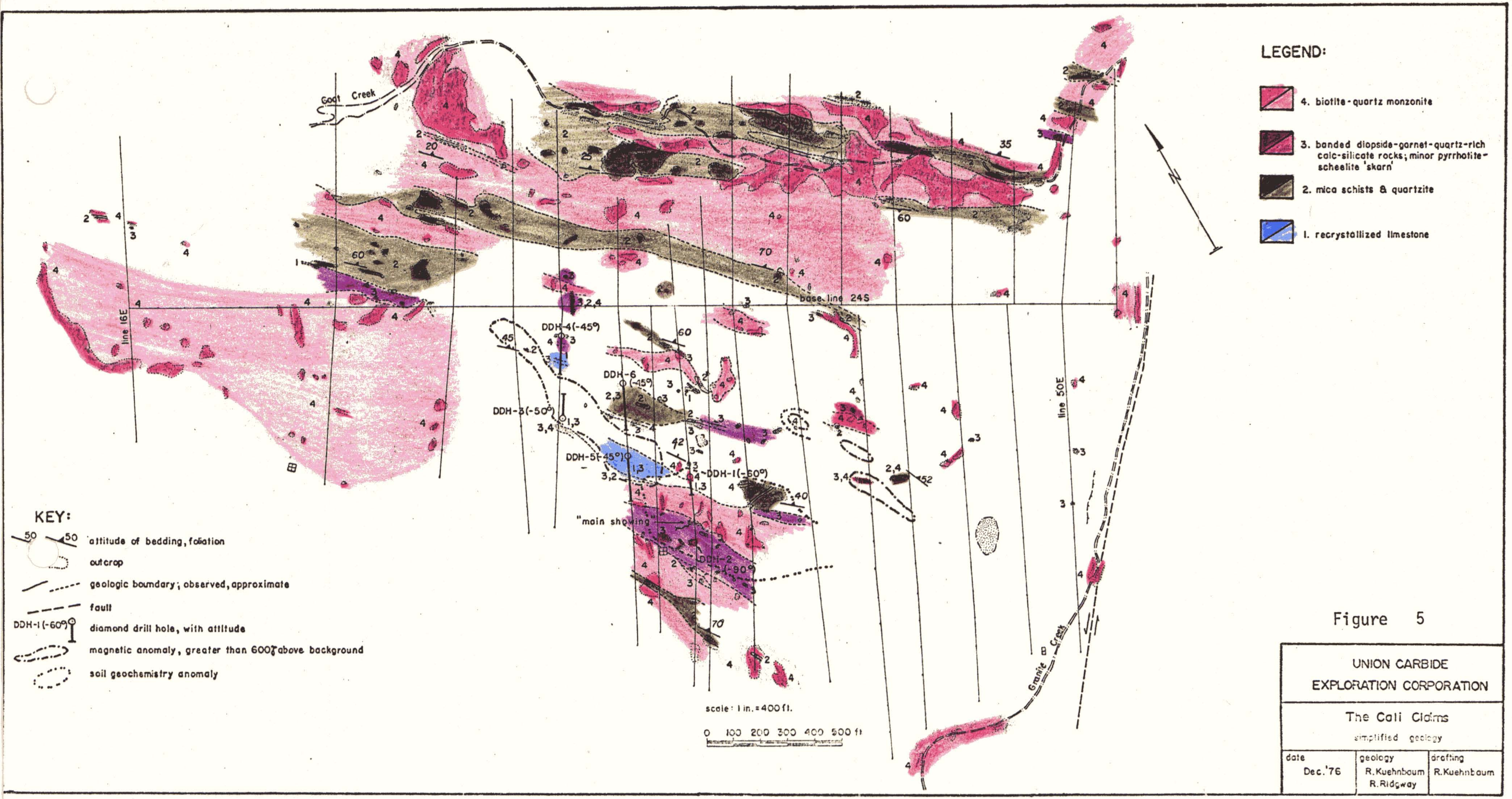
6.2 Meta-Sedimentary Rocks

6.2.1 Recrystallized Limestone

Limestones are very poorly exposed and in fact outcrop at only two localities (Fig. 4). In the drill holes, however, it is well-


Goat Creek
Granite Creek
FRANCES LAKE BATHOLITH
south base line 24S
DDH-1(-60°)
DDH-2(-90°)
DDH-3(-50°)
DDH-4(-45°)
DDH-5(-45°)
DDH-6(-45°)
scale: 1 inch=200 feet
0 100 200 300 400 500 feet
KEY:
outcrop
geologic boundary; observed, approximate
attitude of bedding; inclined, vertical
attitude of foliation; inclined
fault, with sense of displacement
trench
DDH-6(-45°) diamond drill hole, with attitude
magnetic anomaly, + 600 γ above background
area of anomalous soil geochemistry
A A' geologic section
23S L24E geophysical (and geochemical) grid, with co-ordinates AS FLAGGED
HG-10R assayed surface rock chip sample
claim posts
creek
pond
MS "main showing"
NOTE: geology along diamond drill holes is PROJECTED
LEGEND:
4. undifferentiated quartz monzonite
4a. foliated, fine- to medium-grained biotite-rich quartz monzonite/granodiorite
4b. leucocratic, medium-grained, massive biotite(-muscovite) quartz monzonite
3a. massive to vaguely banded pyrrhotite-chalcopyrite-diopside-quartz-garnet-scheelite 'skarn'
3b. highly gossanized 3a(?)
3c. quartz-garnet-diopside-calcite (-vesuvianite) skarn or marble; garnet in coarse knots
3d. banded, fine- to medium-grained diopside-quartz-garnet (-calcite-vesuvianite - pyrrhotite-chalcopyrite) calc-silicate rock or skarn(?); pyrrhotite 0-10%
2. undifferentiated mica-schists and quartzites
2a. weakly oxidized biotite-muscovite-quartz-feldspar schist
2b. biotite-muscovite-quartz-feldspar (-pyrrhotite) schist
2c. biotite-quartzite.
1. medium-grained, grey recrystallized limestone
Fig. 4
UNION CARBIDE
EXPLORATION CORPORATION
The Cali Claims
geology
Date: JULY, 1976
Geology: R. KUEHNBAUM R. RIDGWAY
Drafting: R. KUEHNBAUM DECEMBER, '76

DD-93


LEGEND:
4. biotite-quartz monzonite
3. banded diopside-garnet-quartz-rich calc-silicate rocks; minor pyrrhotite-scheelite 'skarn'
2. mica schists & quartzite
1. recrystallized limestone
KEY:
attitude of bedding, foliation
outcrop
geologic boundary; observed, approximate
fault
diamond drill hole, with attitude
magnetic anomaly, greater than 600γ above background
soil geochemistry anomaly
Goat Creek
Granite Creek
base line 24S
line 16E
line 50E
"main showing"
DDH-1(-60°)
DDH-2 (-90°)
DDH-3(-50°)
DDH-4(-45°)
DDH-5(-45°)
DDH-6 (-45°)
scale: 1 in.=400 ft.
0 100 200 300 400 500 ft
UNION CARBIDE
EXPLORATION CORPORATION
The Cali Claims
simplified geology
date Dec.'76
geology R.Kuehnbaum R.Ridgway
drafting R.Kuehnbaum
Figure 5

represented (see section 10; longest intersection of 26.5 feet in DDH-2) and has been plotted on Figures 4 and 5 by projection. There is an excellent correlation of a major limestone unit between drill holes DDH-1, DDH-5 and DDH-3. A second sequence of limestone was recovered from DDH-4.

The rock is generally medium-grained, banded and grey to whitish-grey in colour. Calc-silicate minerals include diopside, coarse garnet, phlogopite and (rarely) talc. Frequently, the silicates are abundant and form thin (1 to 2 inch) bands identical to the calc-silicate rocks described below. The degree of intercalation with these rocks can be intense.

Pyrrhotite -- as disseminated blebs or along bedding planes -- is a frequent accessary mineral but never comprises more than one percent of the rock.

6.2.2 Mica-Schists and Quartzites

Fine-to-medium-grained, greyish-brown biotite-muscovite-quartz-feldspar schist (2a,b) is the predominant bedrock type. Intercalations of calc-silicate rock are frequent (in drill core) and it is often interbedded -- on the scale of 5mm -- with quartzite. Limey schists containing diopside and garnet occur, and probably represent rocks gradational to calc-silicate.

Disseminated pyrrhotite and (rarely) pyrite are commonly present in the schists in amounts of up to 2 percent. Reddish, weathered varieties of 2b have had the sulphides oxidized and are mapped as unit 2a.

6.2.3 Calc-Silicate Rocks

Two types of calc-silicate rock occur. The more abundant is the diopside-quartz-garnet-(calcite-vesuvianite-pyrrhotite-chalcopyrite) calc-silicate rock or skarn (Fig. 4, unit 3d); its pale greenish colour and fine-grained, dense, siliceous nature are characteristic. Thin limestones and garnetiferous or diopsidic schist intercalations are minor. Sulphides (pyrrhotite and minor chalcopyrite) are ubiquitous and amount from traces to as much as 10 percent. Usually pyrrhotite is disseminated as fine blebs but it may also occur as a filling in thin (mm-sized) fractures. Rarely, sulphides may comprise as much as 25 percent of the rock in very thin bands (1 to 3 inches); in such zones, fluorite is an additional accessory mineral.

Unit 3c (Fig. 4) is a quartz-garnet-diopside-calcite(-vesuvianite) calc-silicate rock. Calcite varies in abundance from approximately 20 to 50 percent and the rock is occasionally indistinguishable from a limestone rich in silicate minerals. Characteristically red-brown garnet and/or vesuvianite from large 'knots' (aggregates of grains) up to several inches in diameter. Sulphides (pyrrhotite and rare chalcopyrite) are frequently present in traces disseminated throughout, and may amount to as much as 5 percent.

Although the calc-silicate rocks are generally barren of scheelite, both units 3c and 3d sporadically bear minor to trace quanitites in very irregularly distributed zones. The scheelite is fine-to-coarse-grained and disseminated. Chip sampling of surface exposures (for details see section 7) shows that the grade of surface mineralization in the calc-silicate rocks is generally less than 0.1 percent WO_3.

The origin of these rocks is problematic. Because of the moderately-to well-banded nature and conformable contacts of the calc-silicate rocks, it is felt that they are primarily the product of the regional metamorphism of 'dirty' (siliceous, dolomitic and/or marly) limestones. The presence of scheelite, however, suggests that the character of these rocks has been altered to some unknown degree by the intrusion of the quartz monzonites.

6.3 Sulphide-Rich 'Skarn' and Gossan

Although sulphide-rich skarn is not abundant at the surface, it is this unit which gave rise to the geophysical anomalism and subsequent interest in the Cali area. It is best represented at the "Main Showing" and in the diamond drill holes (see sections 7 and 10).

Generally the sulphides are semi-massive, representing about 30 to 50 percent of the rock. Calc-silicate minerals include diopside, quartz, garnet and (possibly) actinolite.

Pyrrhotite and chalcopyrite occur in pods, veinlets or disseminations but more commonly form pronounced bands, visible in even the more weathered exposures. Individual units of sulphide-rich skarn vary from a few inches to at least five feet in thickness. Scheelite is generally fine-to very fine-grained and is evenly disseminated. The "Main Showing" before trenching was capped by a thin gossan zone bearing little scheelite. Along Goat Creek in the eastern portion of the map-area (Fig. 4), two lense-like zones of gossan are exposed with calc-silicate rocks and schist. These are interpreted to represent weathered sulphide-rich skarn.

6.4 Intrusive Rocks

Two varieties of acidic intrusive rocks are recognizable on the surface. Unit 4a is a fine-to-medium-grained, foliated, biotite-quartz monzonite with a vague granular texture. The biotite (-muscovite) -quartz monzonite (4b) is distinguishable because of its medium grain size, massiveness and its relatively low mafic content. Although not visible on the surface, cross-cutting relationships of the two types are evident in drill core.

The intrusives rocks are occasionally altered, a feature visible in only drill core. The resultant rock is very hard, compact and greenish in colour because of silification, epidotization and (rarely) carbonatization; it is devoid of mafic minerals. This alteration, although occurring mostly in the massive quartz monzonite (4b), is also present in the foliated type (4a). Silicified zones show quite sharp contacts with the fresh rock and occasionally contain xenoliths of sulphide-bearing schist and sulphide-scheelite-bearing calc-silicate rock. In such cases, the altered intrusive may contain traces of disseminated pyrrhotite and scheelite.

The intrusives appear to have played only a minor role in the alteration of the country rocks. Some -- but not all -- of the sulphide-rich zones are situated on intrusive contacts and many limestone-intrusive boundaries are devoid of any type of skarn-ification. There is an apparent association of pyrrhotitic skarns, however, with both foliated and altered quartz monzonite.

The nature of intrusion can be seen on Figure 4. Sill-like zones and cross-cutting zones are mappable. The sills are often project-able down-dip into the drill-holes (see section 10 and Figure 9). It is noteable that the foliated quartz monzonite (4a) lies mostly in the eastern part of the map-area whereas closer to the margin of the main body of the Batholith, the massive variety (4b) is more abundant. The style of intrusion may be similar to that mapped by Ridgway at the Tanya Claims (Alrae Exploration), located 10 miles to the west of Cali. There, large blocks of schist, containing small lenses and bands of calc-silicate rock and scheelitiferous massive sulphides, are partly to completely surrounded by quartz monzonite.

6.5 Structure and Metamorphism

With very minor variations, the homoclinal sequence dips gently (20°) to steeply (70°) to the northeast. Structural complexities probably increase as the main body of the Batholith is approached.

Southwesterly dips are only known in a thin unit of schist engulfed in intrusive between lines 44E and 48E at 21S, and for a thin unit of limestone and schist between line 36E and 37E at 27S.

Folding is certain only at the blasted outcrop of the "Main Showing" (see section 7.1).

Faulting has been mapped only along Granite Creek in the southeast end of the map-area. The left-hand offset is in the order of 600 to 800 feet, truncating meta-sediments of the "Main Showing" area against the Frances Lake Batholith. The fault is clearly marked by the deep gorge of Granite Creek, fractured quartz monzonite (Fig. 4) and contorted meta-sediments. Other faulting, although not demonstrable, is suspected within the map-area (Fig. 4) since many units terminate rather abruptly.

The meta-sedimentary rocks have been altered by regional metamorphism of lower to middle amphibolite facies. Foliation and bedding are coplanar. The degree of contact metamorphic and metasomatic overprinting is unknown, although it is suspected that much of this type of alteration took place during an early phase of intrusion. This event (represented by the foliated quartz monzonite(4a) either took place syntectonically or the entire sequence has been remetamorphosed and subsequently intruded by a later quartz monzonite (4b). The early silification/epidotization of the foliated variety during skarnification and the emplacement of the younger quartz monzonite along previous zones of intrusion could explain the association of sulphide-rich skarn with foliated and/or silicified rock and the sharp contacts of the foliated and altered types with the younger (?) massive, fresh biotite-quartz monzonite.

7. SURFACE SCHEELITE MINERALIZATION AND SAMPLING RESULTS

7.1 General

Most known exposures of sulphide-rich skarn and many outcrops of pyrrhotite-scheelite-bearing calc-silicate rocks were bulk sampled. Assay values are disappointingly low. Samples referred to in the text are located on Figure 4.

7.2 The "Main Showing"

The discovery showing of the Cali Claims consisted -- before trenching -- of a small (25 feet x 10 feet), exposure of gossaned massive sulphides situated on line 36E (Fig. 4). The outcrop is marked by geophysical and strong geochemical anomalies (sections 8 and 9). Blasting and trenching were done for better observation and sampling.

The mineralized skarn consists of 50 percent banded to massive sulphides (pyrrhotite and chalcopyrite). Scheelite -- comprising up to an estimated 1 percent in hand speciments -- is fine-to-very-fine-grained and evenly disseminated. To the north, the unit is directly overlain by calc-silicate rocks with coarse garnet (3c).

A sketch of the trench is shown in Figure 9 on the vertical cross-section along line 36E through diamond drill holes DDH-1 and DDH-2. Sulphides were exposed to a depth of only 2 feet and the actual thickness of this band is unknown. This exposure evidently lies on the crest of an open fold with limbs dipping very gently to the northeast and southwest.

Bulk samples 6KC-1R and -2R were collected from two areas of the trench. Assays are as follows (Appendix B):

	oz/t Ag	%Cu	%Zn	$\%WO_3$
6KC-1R	0.02	0.24	<0.05	0.14
-2R	0.04	0.28	<0.05	0.19
mean	0.03	0.26	<0.05	0.17

7.3 Other Occurrences

7.3.1 Sulphide-Rich Skarn

Analyzed samples of sulphide-rich skarn and their outcrop descriptions are summarized below:

sample	description	oz/t Ag	%Cu	%Zn	$\%WO_3$
6KC-3R	2-ft. band in schist poorly exposed	0.04	0.02	<0.05	0.20
-4R	1-ft. band in calc-silicate rock (3d)	<0.02	0.13	<0.05	0.03
-5R	small pod in questionable outcrop of 3d	0.04	0.11	<0.05	0.06

7.3.2 Calc-Silicate Rocks

Ten exposures of calc-silicate rock were sampled. Generally, the scheelite is more coarse-grained than in the sulphide-rich rocks and is irregularly distributed. Descriptions and results are:

sample	description	oz/t Ag	%Cu	%Zn	$\%WO_3$
HG-3R	3d, pyrrhotitic, fine-grained scheelite	<0.02	0.04	<0.05	0.05
-8R	3c, garnet-rich	0.04	<0.01	0.05	0.05

sample	description	oz/t Ag	%Cu	%Zn	$\%WO_3$
HG-9R	3d, fine-grained very minor pyrrhotite	0.02	0.03	<0.05	0.06
-10R	3d, gossaned, sulphide-rich	0.12	0.03	<0.05	0.02
-11R	3d, no sulphides	0.04	0.01	<0.05	0.02
-13R	3d, trace sulphides float	0.02	0.06	<0.05	0.06
-14R	3d,c coarse scheelite pyrrhotite-rich	0.04	0.05	<0.05	0.30
-16R	3d, no sulphides	0.04	0.01	<0.05	0.14
-18R	3d, trace pyrrhotite	0.04	0.01	<0.05	0.02
-19R	3d, trace pyrrhotite	0.02	0.01	<0.05	0.07

8. SOIL SAMPLING

8.1 General

A systematic soil sampling survey was tied to the geophysical grid in order to evaluate the potential of covered mineralized horizons. In areas of anomalism additional samples were taken at 50-foot intervals and two additional lines (35E and 37E) cover the "Main Showing" area. Three hundred and sixty-five soil samples were split into two fractions for panning (scheelite grain determination) and geochemical analysis.

Complete tables of scheelite grain counts and Cu-Pb-Zn-Ag geochemistry are given in Appendix B. Figure 6 is a record of the sample locations.

8.2 Scheelite

In the area of the "Main Showing" scheelite grain counts are highly anomalous (Fig. 6) ranging to +1,000. This zone can be traced from line 35E to line 38E. East of line 38E, however, it is felt that high counts do not necessarily reflect mineralized bedrock since no definable pattern of anomalism emerges.

8.3 Silt Geochemistry

Figures 7 and 8 show the results of Pb-Zn and Cu-Ag geochemistry, respectively. Because of the generally irregular pattern of the metal distribution, results have only been roughly contoured. Several points, however, are noteworthy.

a. Major metal anomalism is restricted to the eastern part of the grid and ceases abruptly west of line 36E.

b. Cu and Ag are highly anomalous over the "Main Showing" but Zn is anomalous only slightly downhill.

c. The following anomalous zones may be significant:

- an east-west linear trend of moderate to high Cu-Zn (-Ag) values extending from the "Main Showing" to line 50E/33S.
- a zone of co-incident high Cu-Ag-Pb and weak Zn anomalism on line 36E/24-26S.
- The linear trend of high Zn and moderate Cu values extending from line 44E/27+50S to line 50E/30S.

8.4 Discussion

High scheelite grain counts in soils do not necessarily correspond with high metal values, possibly indicating that the Cali Claims are at least partly underlain by zones of base metal mineralization not associated with tungsten. Zinc is a base metal of little significance at the Cali Claims; soils and skarns contain relatively small amounts compared to other areas along the contact of the Frances Lake Batholith such as the Susan Claims (Kuehnbaum, 1976).

The area between lines 40E and 50E lies on relatively low, flat ground. A sharp elevation change, possibly reflecting down-faulting to the east, occurs roughly along line 38E and the cover in this area is probably considerably thicker than to the west. Therefore the geochemical pattern east of the "Main Showing" likely does not reflect bedrock conditions. Much, if not all of the glacial rubble in the low area may have been moved by glacial action from the region of the "Main Showing". Outcrop is scarce in this area and no positive conclusions can be made concerning the zones of anomalism indicated in section 8.3.

9. SUMMARY OF GEOPHYSICAL SURVEYS

A complete discussion of the results of the geophysical surveys of the entire Hyland II and IV grids (Fig. 2) is given by Barclay (1976) and Boniwell (1976). Only the pertinent information is summarized here.

Because of the reconnaissance nature of most of the past geophysical surveys, the positioning of the grid system has always been unavoidably somewhat inaccurate. All lines shown on Figures 4, 6, 7 and 8 are as surveyed by R. Ridgway and the stations have been located as on the ground. It is evident that many of the lines cross the base line 24S with as much as 100 feet in N-S error. In his discussion, however, Barclay has corrected the discrepancies and his station locations may be somewhat at variance with those on the Figures of this report.

Three major geophysical axes were located on the Cali Claims but two are accounted for as arising from pyrrhotitic schists (Barclay, 1976). The third, lying in the southeast part of grid II and encompassed by the present map-area, is the weakest but overlies the "Main Showing". Magnetic anomalism (150 - 3,000 gammas) has been traced from line 16E/18S to line 44E (2,800 feet) but is strongest between lines 30E and 44E (1,400 feet). Areas of 600 gammas or greater above background are shown on Figure 4, taken from Barclay's contour map. Although the "Main Showing" gives rise to a significant anomaly, it is noteworthy that the continuation to the west is considerably stronger. Small, strong anomalies also exist between lines 40E and 44E, definitely related to one or more mineralized horizons partly visible on the surface and separated from the horizon of which the "Main Showing" is a part. The largest of these anomalies directly overlies an exposed, poorly mineralized 2-foot band of sulphide-rich skarn (Fig. 4). Little correlation can be made between the magnetics and the soil sampling results (Figs. 4, 6, 7 and 8).

The target mineralized zone -- or zones -- have been traced by E-M methods as far west as line 0/13S. At line 32E the conductor splits into two sources. The south flank can be traced east to line 38E/34S and the north flank is defined weakly as far as line 46E/30 50S. West of line 30E, Barclay suggests that the conductor lies at a greater depth. On the basis of increased cable spacings, horizontal loop E-M data indicate that the north and south flanks of the conductor in the main anomalous zone may possess opposing dips and diverge with depth. The bifurcating nature of the conductor suggests that either a fault has displaced it roughly along line 32E (see section 6.5) or the horizon is folded into a westward-plunging anticline.

Grid II (Fig. 2) was run in the hope of finding a continuation of the main anomalous zone southeast of the Granite Creek fault. Most of the magnetic anomalism present there can be accounted for by pyrrhotite in schists (called shales by Boniwell). An area of overlapping magnetic and electromagnetic axes have been defined in the northeast corner of the grid, however, near the contact between quartz monzonite and limestone. An outcrop of garnetiferous calc-silicate rock and a single piece of scheelite-sulphide float were discovered (Boniwell, 1976) but the weak nature of the geophysical anomalies places a low priority on the grid.

10. DIAMOND DRILLING

10.1 General Comments

Six diamond drill holes totalling 1,073.7 feet were completed on the Cali Claims. Aside from minor mechanical troubles and extremely hard ground in some sections (the altered intrusive), few problems were encountered. The ground is unbroken and recovery approached 100 percent. The greatest depth attained was 248 feet -- excellent drilling for an inclined Winkie hole.

The collar positions and the projected horizontal lengths are given in Figure 4. Figure 9 shows vertical cross-sections along lines 32E, 34E and 36E. Drill records are presented in Appendix A. Because DDH-1 through DDH-5 were examined by the author and DDH-6 was logged by T. Liverton after the author had left the Yukon, there is doubt in regards to the correlation of the units of DDH-6 with the other five holes and the surface geology -- a result of two geologists giving two varying interpretations to the same rocks!

DDH-2 was drilled vertically in order to intersect the massive sulphide unit exposed slightly downhill at the "Main Showing" for an accurate estimate of thickness and grade of mineralization. DDH-1, -4, -5 and -6 were all collared with a grid-south bearing to intersect geophysically indicated northeastward dipping sulphide horizons. DDH-3 was drilled grid-north to test the suggestion from EM-17 profiles that the north and south flanks of the conductor in the main anomalous zone possess divergent dips.

10.2 Summary of Diamond Drill Hole Results

10.2.1 DDH-1

collar: 36+00E, 30+45S
bearing/inclination: grid south/-60°
depth: 138.5 feet
lithologies: mostly limestone and quartz monzonite (last 60 feet); minor calc-silicate rock and schist
mineralization: rare specks of scheelite in calc-silicate rock

10.2.2 DDH-2

collar: 35+90E, 32+72S
bearing/inclination: vertical
depth: 77.5 feet
lithologies: 0-39.5 limestone, schists and sulphide-bearing calc-silicate rock with very minor scheelite; 39.5-77.5 complex mixture of altered quartz monzonite, pyrrhotitic calc-silicate rocks and thin sulphide-rich skarns.
mineralization: 2.3 feet sulphide skarn - 0.17% WO_3, 0.16% Cu
6.4 feet sulphide skarn - 0.07% WO_3, 0.10% Cu

mineralization: total of 8.8 feet of calc-silicate assayed over entire hole averaging 0.05% WO_3, 0.05% Cu
minor sulphide-scheelite mineralization in altered intrusive

10.2.3 DDH-3

collar: 32+00E, 24+00S
bearing/inclination: grid-south/-45°
depth: 212.0 feet
lithologies: 0-145.5 complex mixture of calc-silicate rocks, limestone and quartz monzonite; 145.5-212.0 mixture of thin zones of sulphide skarn, calc-silicate rock, quartz monzonite and schist.
mineralization: 0-145.5 rare specks of scheelite in pyrrhotite-bearing calc-silicate rocks
145.5-212.0, 4 massive sulphide skarn bands adjacent to quartz monzonite, 1.2-3.8 feet in thickness (total 10.1 feet)
best grade 3.4 feet- 0.28% WO_3, 0.19% Cu
average of 10.1 feet- 0.15% WO_3, 0.13% Cu
best grade of calc-silicate rock - 7.2 feet, 0.03% WO_3, 0.07% Cu

10.2.4 DDH-4

collar: 32 00E, 25 00S
bearing/inclination: grid-south/-45°
depth: 212.0 feet
lithologies: 0-145.5 complex mixture of calc-silicate rocks, limestone and quartz monzonite; 145.5-212.0 mixture of thin zones of sulphide skarn, calc-silicate rock, quartz monzonite and schist

mineralization: 0-145.5 rare specks of scheelite in pyrrhotite-bearing calc-silicate rocks 145.5-212.0, 4 massive sulphide skarn bands adjacent to quartz monzonite, 1.2-3.8 feet in thickness (total 10.1 feet) best grade 3.4 feet- 0.28% WO_3, 0.19% Cu, average of 10.1 feet - 0.15%WO_3, 0.13% Cu best grade of calc-silicate rock - 7.2 feet, 0.03% WO_3, 0.07% Cu

10.2.5 DDH-5

collar: 36+00E, 30+20S
bearing/inclination: grid south/-45°
depth: 248.0 feet
lithologies: 0-87.5 limestone and minor calc-silicate rock and schist
87.5-248.0 mostly massive, foliated and silicified quartz monzonite with minor calc-silicate rock and schist

mineralization: very rare specks of fine- to coarse-grained scheelite in calc-silicate rocks

10.2.6 DDH-6

collar: 34+00E, 27+50S
bearing/inclination: grid south/-45°
depth: 246.7 feet
lithologies: 0-114.5 mostly schist with calc-silicate rocks
114.5-246.7 mostly calc-silicate rocks with minor altered quartz monzonite, schist and sulphide skarn
mineralization: 8.7 feet of pyrrhotite-rich skarn -- 0.09% WO_3, 0.11% Cu

10.3 Discussion

Three of the drill holes failed to intersect any scheelite mineralization in sulphide-rich skarn. The down-dip extension of the "Main Showing" massive sulphide body may have been displaced by the quartz monzonite represented in the lower 60 feet of DDH-1 (Fig. 9), or it may have lensed out. Although 8.7 feet of sulphides were recovered from DDH-6, there is no similar unit up-dip in DDH-5. DDH-2 intersected sulphide horizons but only at a depth considerably greater than expected by projecting the structure of the "Main Showing". From this information, it can be assumed that, although the sulphide horizons are comformable with the meta-sediments, they are probably lens-like in nature and discontinuous.

EM-17 profiles indicated a possible southward dip of a sulphide-bearing horizon but DDH-3 intersected the bedding at very shallow angles and ruled out that possibility. Erratically located pyrrhotitic lenses at varying depths could explain the apparent feature. Drill hole and surface information do not, however, preclude the possibility of a recumbent isoclinal fold.

Although the low grades of mineralization intersected are uninteresting, it is important that sufficient pyrrhotite-rich material is present to explain the geophysical results.

11. CONCLUSIONS AND RECOMMENDATIONS

From the 1976 exploration program on the Cali Claims it can be concluded that:

a. Significant scheelite mineralization is restricted to sulphide-rich rocks which show banding and are thought to form lenses comformable to the general bedding/foliation.

Irregular bodies of quartz monzonite cross-cut and form sill-like masses. The sulphides may or may not lie on intrusive contacts. In this sense, the style of mineralization is similar to the 'Covas-type'.

b. Low to moderate grades of tungsten mineralization occur in thin zones, as indicated by surface work and drilling.

c. The main zone of geophysical anomalism has been geologically well tested. Barclay has pointed out, however, that to the east and west the source of the E-M and magnetic anomalies may lie at a greater depth.

d. Two ages of intrustion are hypothesized -- the first, altered phase being largely responsible for the copper-tungsten mineralization.

Because further exploration of the Cali Claims would have to take the expensive form of diamond drilling, no further work by UCEX is warranted at the present time. This would extend to the entire Frances Lake contact.

Assessment records of the Cali Claims should, at a maximum cost of $800, be filed since the expenditures of drilling alone to date are sufficient to allow UCEX to maintain the property up to the allowed 5 years. This would require the submission of a minimum amount of data. In virtue of the copper mineralization, perhaps a partner could be attracted to continue exploration.

R. Kuehnbaum
February 7, 1977

REFERENCES

Barclay, W., 1976. Geophysics - Hyland Grid II, NTS 105H-10, 76 G#3. UCEX Int. Correspondence to J.S. Hollingworth, August 12, 1976

Bonniwell, A., 1976. Geophysics - Hyland Grid IV, NTS 105H-10. UCEX Int. Correspondence to J.S. Hollingsworth August 12, 1976

Kuehnbaum, R., 1977. The Susan Claims, Yukon Territory. 105H-8 Results of 1976 Exploration. Activities UCEX, Vancouver January 14, 1977

DD-93

APPENDIX A

DIAMOND DRILL RECORDS

Diamond Drill Hole 1. - Cali Claims

Location 36+00E ; 30+50S

Bearing / Inclination grid south , -60°   Core Size : AX   Logged by: R. Kuehnbaum

Footage	Graphic	Description / Remarks	Assay		
0 – 2.0		overburden			
2.0 – 4.0		granitized biotite-quartz-feldspar gneiss			
4.0 – 9.3		massive, medium-grained biotite-quartz monzonite ; in part reddish due to kaolinization of K-feldspar, especially near small fractures			
9.3 – 10.4		massive, greenish diopside-quartz-calcite marble ; minor 1-3mm pyrrhotite-filled fractures ; 0.2 ft ~ 35 % pyrrhotite with few specks scheelite (traces WO_3)			
10.4 – 12.9		banded garnet-vesuvianite-diopside-quartz calc-silicate / skarn ; garnet & vesuvianite in large knots, 1" x 0.5" ; minor (<0.1%) disseminated fine-grained pyrrhotite ; a few specks scheelite (traces WO_3) ∠ = 60°			
12.9 – 14.0		massive, medium-grained, grey biotite-quartz monzonite			
14.0 – 14.6		banded garnet-vesuvianite-diopside-quartz calc-silicate			
14.6 – 18.6		massive, medium-grained biotite-quartz monzonite			
18.6 – 20.2		biotite-quartz feldspar schist with minor limey (garnet-diopside) bands ; ± 2% pyrrhotite / pyrite ∠ = 70°			
20.2 – 20.9		vaguely banded garnet-vesuvianite-diopside-calcite calc-silicate ; a few specks scheelite (traces WO_3)			
20.9 – 22.1		biotite-quartz feldspar schist ; ± 1% disseminated, fine-grained scheelite ∠ = 70°			
22.1 – 33.8		medium-grained, grey recrystallized limestone with abundant intercalations of garnet-diopside-calcite marble pyrrhotite (< 0.1%) disseminated throughout marble and limestone, or in thin (1-2mm) veinlets rare specks fine- to medium-grained scheelite (traces WO_3) ∠@25.5 = 65°			
33.8 – 35.3		biotite-quartz-feldspar schist, in part diopsidic ; <1% disseminated pyrrhotite			
35.3 – 36.1		garnet-diopside-calcite marble / skarn ; traces pyrrhotite ; rare specks of scheelite (traces WO_3)			
36.1 – 38.1		biotite-quartz monzonite, in part epidotized ∠ of contact = 35° (~ ⊥ to bedding)			
38.1 – 41.1		banded, grey, medium-grained recrystallized limestone and garnet-diopside-calcite marble ; < 0.1% disseminated pyrrhotite ; rare specks scheelite (traces WO_3) ∠ bedding = 75° ; ∠ intrusive contact = 90° to bedding			
41.1 – 43.8		massive biotite-quartz monzonite and silicified, epidotized equivalent			
43.8 – 58.0		banded, grey, recrystallized limestone with (minor garnet-diopside-calcite marble ; irregular pods and veinlets of pyrrhotite (<0.1%) throughout ; garnet in coarse knots speck of scheelite seen only at lower contact (traces WO_3) ∠@52' = 65°			
58.0 – 59.7		epidotized, silicified, greenish medium-grained quartz monzonite			
59.7 – 61.4		green, diopsidic recrystallized limestone ; minor micaceous schist			
61.4 – 64.5		garnet-diopside-calcite marble / skarn (?)			
64.5 – 66.6		foliated diopside-quartz-garnet-biotite schist & massive skarn with irregular pyrrhotite pods ; rare specks of scheelite (traces WO_3)			
66.6 – 68.2		biotite-quartz-feldspar (-diopside-garnet) schist ; traces disseminated pyrrhotite ∠ = 60°			
68.2 – 74.1		massive to vaguely foliated, medium-grained, epidotized / silicified, greenish quartz monzonite ; some zones are relatively unaltered & bear biotite			
74.1 – 75.2		biotite-quartz-feldspar (-diopside) schist ; 0.5" QV and minor intrusive			
75.2 – 77.2		white quartz vein ; with inclusion of diopside schist bearing pyrrhotite and rare specks of scheelite (traces WO_3)			
77.2 – 138.5		generally massive, medium-grained, greenish (epidotized / silicified) quartz monzonite many unaltered sections are unaltered and are greyish and biotitic some red, euhedral garnet disseminated throughout, especially in altered rock.			

Diamond Drill Hole 2. Cali Claims

Location: 35+90E, 32+75S   Bearing / Inclination: vertical   Core Size: AX   logged by: R. Kuehnbaum

Footage	Graphic	Description / remarks	Assay Ag oz/ton	Cu %	WO_3 %	Zn %
0 – 2.5		broken rock; no recovery				
2.5 – 6.0		poor recovery (55%); banded, greenish, diopsidic calc-silicate rock, with some biotite; and garnet (in knots) - diopside - calcite skarn / marble - no scheelite				
6.0 – 10.6		biotite-quartz-feldspar schist with thin (5mm) quartzite bands; 2 (minor) 2" zones with ~5% disseminated pyrrhotite and traces scheelite. L@10' = 55°				
10.6 – 12.3		fine-grained, vaguely banded, green diopside-quartz calc-silicate; po and cp (±5%) as blebs or breccia fracture filling; fg-cg scheelite disseminated throughout (<0.1%)	0.04	0.05	0.03	<0.0
12.3 – 13.0		garnet-vesuvianite-calcite marble / skarn; coarse garnet knots; no scheelite				
13.0 – 39.5		medium-grained, grey, banded recrystallized limestone, minor phlogite and diopside. Some zones bear coarse diopside and/or garnet knots. Very minor (<<1%) pyrrhotite as blebs and along bedding planes. Zone from 22.6-24.1 contains coarse seams (parallel to bedding) and pods of massive pyrrhotite (~5%); this unit rich in phlogopite; no scheelite. L@16' = 60°, L@31' = 55°				
39.5 – 45.0 (41.5 – 43.2)		altered (epidotized) and fresh (biotitic) quartz monzonite with 'ghost' xenoliths of quartz, diopside, garnet, pyrrhotite and chalcopyrite (po+cp) = 15-20% in xen's. Xen's similar to material below. Scheelite (vfg → cg) disseminated throughout areas with sulphides; po & scheelite also disseminated in altered intrusive; split sample 41.5'-43.2' where xenoliths most abundant	0.06	0.08	0.02	<0.05
45.0 – 47.3		banded di-Q-gar calc-silicate / skarn with ±35% po+cp in massive bands, pods in veinlets, or disseminated; disseminated fine-grained scheelite concentrated in sulphide-rich zones (up to 1% WO_3); overall average < 0.3% WO_3.	0.04	0.16	0.17	<0.05
47.3 – 50.2 (48.9)		banded di-gar-Q-ct skarn with <0.1% disseminated po, traces scheelite; 48.9-50.2 some 1"-3" po-rich bands (20-25%) po over section and fine- to medium-grained disseminated scheelite (~0.1% WO_3). L=50°	0.06	0.08	0.03	<0.05
50.2 – 54.1		massive epidotized quartz monzonite with small xenoliths of biotite-muscovite-chlorite schist, and pyrrhotite-pyrite-rich calc-silicate bearing rare specks of scheelite (traces WO_3)				
54.1 – 56.5		fine-grained, banded di-ep-gar-Q-calcite-biotite calc-silicate / skarn with <1% disseminated po+py & rare specks scheelite (traces WO_3)				
56.5 – 58.5		di-ep-gar-Q-ct skarn with patches of py + po (±5%) and rare specks scheelite (traces WO_3); split sample	0.02	0.03	0.02	<0.05
58.5 – 64.9		massive to banded di-ep-gar-q-fp skarn with bands; banded zones rich in pyrrhotite and chalcopyrite (average 20% in section) scheelite irregularly disseminated, 0.1% WO_3 - 0.5% WO_3; split sample. L@64.9' = 48°	<0.02	0.10	0.07	<0.05
64.9 – 68.7		massive to very vaguely banded di-gar (in coarse 1" knots) - Q - calcite skarn with < 0.1% pyrrhotite disseminated and in veinlets; coarse-grained scheelite irregularly disseminated (up to 1% WO_3 over 3 in, average ± 0.1% WO_3)	<0.02	0.01	0.07	<0.05
68.7 – 77.5		massive, medium-grained biotite-quartz monzonite, in part epidotized (greenish)				

07

Diamond Drill Hole 3 - Cali Claims

Location: ~~35+00~~ 32+20 E ; 28+00 S (28+00S flagged) Bearing / Inclination : grid north / -50° Core Size : AX

Logged by : R. Kuehnbaum

Footage	Graphic	Description / Remarks	Assay Ag oz/ton	Assay Cu %	Assay WO_3 %	Assay Zn %
0–20.6		overburden : boulders of quartz monzonite				
20.6–30.1		massive to vaguely banded diopside - quartz - calcite (-garnet) skarn ; minor limestone ; pyrrhotite + pyrite (<0.1%) mostly as blebs ; 24.2 - 26.0 skarn is sulphide-rich (3% py+po ?), as blebs and small pods . rock mostly barren of scheelite but a few concentrations (<0.1% WO_3) over 0.1-0.2 ft. where sulphide-rich (overall traces WO_3) ∠@24' = 10° ; ∠@30.1' = 15°				
30.1–51.0		banded, medium-grained, grey recrystallized limestone with intercalations of banded diopside - calcite - garnet - pyrrhotite (-phlogopite) marble / skarn (?) ; garnet occasionally in coarse knots or bands ; pyrrhotite - <0.1% ; barren of scheelite. ∠@43' = 20° some very open (undulatory) folding				
51.0–61.4		variety of types of vaguely- to well- banded diopside - garnet - quartz - calcite calc-silicate (garnet may in coarse knots) ; also minor schistose (biotite- and/or talc-rich) zones ; many 1-5mm quartz veinlets ; pyrrhotite + pyrite (<1%) disseminated as blebs or in larger patches in veinlets ; very rare coarse-grained scheelite (traces WO_3) bedding contorted, but average 10°-17° - also ‖ core axis				
61.4–63.8		fine-grained, yellowish-green recrystallized limestone ; ≤1% pyrite in 5mm x 5mm patches ∠ = 25°, some folding				
63.8–80.6		principally grey, medium-grained, banded recrystallized limestone with thin siliceous intercalations bearing quartz, diopside, talc and phlogopite ; <1% pyrrhotite, finely disseminated or in blebs. bedding undulating ∠ = 0°-20°				
80.6–96.6		well-banded to banded diopside - calcite - garnet - quartz marble / skarn - very limey ; garnet occasionally in coarse knots (up to 0.1 x 0.2') ; minor micaceous zones. pyrrhotite (<1%) disseminated but elongated in bedding planes - rarely forms coarse (0.1' x 0.1') patches in quartz veinlets ; barren of scheelite. bedding contorted on a minor scale, but generally @ 20°-45°				
96.6–106.7		massive, medium-grained biotite - quartz monzonite (grey) in part epidotized (greenish)				
106.7–139.5		f.g., thinly-banded siliceous diopside - quartz - garnet - calcite calc-silicate / skarn - some garnets in coarse knots. pyrrhotite and very minor chalcopyrite + sphalerite disseminated throughout (fine-grained), but normally occurring in 0.1'-scale massive patches associated with veins of quartz and fluorite (purple) - sulphides also concentrated on bedding planes. Scheelite erratic, medium- to coarse-grained, rare specks (traces WO_3), up to 0.1% WO_3 over 0.2 ft. 127.7'-130.2' highest in disseminated sulphides (5-10%) and scheelite - split for assay. N.B. scheelite <u>not</u> associated with coarse sulphide pods. undulatory bedding ∠@112' = 5°, 125' = 35°, 137' = 5°				
127.7–130.2			<0.02	0.06	0.02	<0.05
139.5–151.0		biotite - diopside - garnet - quartz - feldspar (calcareous) schist ; and minor diopside - garnet - quartz - calcite calc-silicate / skarn ; rare specks of coarse-grained scheelite (traces WO_3) ; < 0.1% pyrrhotite. ∠ = 15°				

DDH-3

Diamond Drill Hole 4 · Cali Claims

Location : 32+00E ; 25+00S (26+00S flagged)   Bearing / Inclination : grid south / -45°   Core Size : AX
Examined by : R. Kuehnbaum

Footage	Graphic	Description / Remarks	Assay Ag oz/ton	Assay Cu %	Assay WO_3 %	Assay Zn %
		overburden : quartz monzonite boulders				
14.0		banded diopside-quartz-garnet-calcite marble/skarn with micaceous intercalations pyrrhotite disseminated throughout (<1%) ; very rare specks medium-grained scheelite (traces WO_3) ∠@18' = 70°				
20.8		biotite-quartz-feldspar (-diopside) schist ; minor grey recrystallized limestone and diopside-quartz-garnet-calcite marble with coarse garnet knots - no scheelite				
23.2		medium-grained, massive, silicified quartz monzonite ; xenoliths of biotite-quartz-feldspar schist and diopside-quartz-garnet-calcite skarn with garnet knots - no scheelite				
31.3		massive diopside-quartz-garnet-calcite skarn/marble ; coarse garnet knots / banded diopside-quartz-garnet-talc calc-silicate ; <1% pyrrhotite in coarse blebs ; very rare specks scheelite (traces WO_3) ∠@ 33.8 = 90°				
33.8		massive, medium-grained, silicified quartz monzonite < 0.1% fine-grained disseminated pyrrhotite				
37.0		siliceous, banded diopside-quartz-garnet-calcite calc-silicate/skarn ; minor thin zones rich in phlogopite + talc (?) or coarse-garnet knots ; fine-grained pyrrhotite (±1%) disseminated throughout, occasionally concentrated on bedding planes - one speck scheelite (trace WO_3) ∠@44.8 = 70°				
44.8		poorly banded, medium-grained recrystallized limestone with some thin (1"-2") silicated bands with talc, diopside, garnet ; pyrrhotite (<0.1%) disseminated or in coarse blebs - no scheelite.				
49.9		pale green, banded diopside-quartz-garnet-calcite (-phlogopite) calc-silicate/skarn ; pyrrhotite (<1%) as blebs and in small veinlets - no scheelite ∠@54.8 = 73°				
54.8		medium-grained, grey recrystallized limestone bearing very minor diopside, garnet, phlogopite and <1% disseminated pyrrhotite				
58.0		well-banded diopside-quartz-garnet-calcite (-feldspar ?- phlogopite) marble/skarn, thin limestone intercalations. pyrrhotite (±1%) disseminated or along bedding planes - po richer in siliceous zones - no scheelite ∠@69.5 = 65°				
69.5		medium-grained, banded, grey recrystallized limestone c̄ very minor garnet & diopside ; pyrrhotite (<0.1%) in irregular blebs or scattered along bedding planes ; 76.4-77.3 limestone brecciated with siliceous veinlets and rich in diopside and pyrrhotite (±2%) - a few specks coarse-grained scheelite (trace WO_3)				
85.1		foliated biotite-quartz monzonite with recrystallized limestone xenoliths - diopside, garnet and vesuvianite (in knots) developed over 0.5" at contacts ; q monzonite contains tremolitic veinlets				
88.0		medium-grained, grey, banded recrystallized limestone with very minor siliceous zones pyrrhotite (<0.1%) disseminated or concentrated in bedding planes some minor folding - but direction of dip constant ∠@ 104.5 = 70°				
104.5		intercalated diopside-quartz-garnet-calcite marble/skarn (with occasional coarse garnet knots) and biotite-garnet-quartz-feldspar schist pyrrhotite (<0.1% in marble) disseminated or in coarse blebs in siliceous zones a few grains of medium-grained scheelite (traces WO_3). ∠@117 = 75°				
117.9		vaguely to moderately foliated medium-grained quartz monzonite ; unaltered - biotitic ; altered (silicified) - no mafic phase bottom contact almost parallel to core axis				
145.5		pyrrhotite-chalcopyrite-diopside-garnet-vesuvianite-quartz-calcite skarn, banded ; also 0.2' of biotite-diopside-quartz-feldspar-po schist ; sulphide variable, 5% - 60% over 0.5' (average ± 40%-50%) ; scheelite medium- to coarse-grained, irregularly disseminated and concentrated in sulphide-rich rock (± 0.2% WO_3)	<0.02	0.13	0.04	<0.05
149.3		biotite-quartz-feldspar schist with thin intercalations of diopside-quartz-vesuvianite calc-silicate ; pyrrhotite (±2%) along foliation planes in schist, as coarse blebs in calc-silicate ∠@151' = 70°				
153.1		banded po-cp-di-q-gar-ct skarn ; po+cp ≈ 30% of rock ; fine- to coarse disseminated scheelite (<0.1% WO_3)	<0.02	0.13	0.02	<0.05
154.3		banded diopside-quartz-garnet-calcite skarn ; minor silicated limestone - some coarse garnet knots ; po (<0.1%) disseminated or in coarse blebs in siliceous zones - no scheelite				
158.7		slightly foliated biotite-quartz monzonite - 2 small (0.3') xenoliths (?) of diopside-garnet-quartz-calcite skarn ; no scheelite				
164.6		diopside-quartz-garnet-calcite calc-silicate/skarn, banded - some coarse garnet knots - no scheelite ∠@ 170' = 70°				
169.8		bi-Q monzonite ; f.g. pyrrhotite (<0.1%) in fractures				
170.4		di-Q-gar-ct marble/skarn, coarse garnet knots ; po+cp (av. ±5%), disseminated or banded - up to ±15% over 0.5'. 0.5' of Q monzonite with veinlets and patches of cp ; po ; scheelite disseminated, fine to coarse grained (<0.1% WO_3 ?)	0.03	0.10	0.03	<0.05
174.5		vaguely banded pyrrhotite-chalcop.-di-Q-gar-ct skarn and minor diop-Q-gar-po skarn (0.5'). 2 sulphide-rich zones (2.9') average ±50%-60% po+cp (40% over section). Scheelite, disseminated, concentrated with sulphides (±0.5% WO_3)	0.10	0.19	0.28	<0.05
177.9		foliated biotite-quartz monzonite				
182.9		di-Q-gar skarn c̄ ±10% po+cp ; also 182.9-183.8 massive sulphide rock (po-cp-di-q-gar skarn) with ±50% po+cp (average sulphides - 35%) ; scheelite (mg-cg) disseminated throughout but concentrated with sulphides (± 0.2-0.3% WO_3) ∠@ 184.6 = 58°	0.09	0.17	0.22	<0.05
184.6			<0.02	0.03	0.02	<0.05
187.7		di-q-gar-ct marble/skarn, poorly- to well-banded, some zones with coarse garnet knots - minor schistose (biotitic) intercalations ; up to 187.7, po disseminated in bands and coarse (1") patches with fine- to coarse-grained scheelite associated with sulphide-rich patches (<0.1% WO_3) ; 187.7-192.0 only specks of scheelite (trace WO_3) - split 184.6-187.7				
192.0		massive, medium-grained biotite-quartz monzonite.				
196.0		banded di-Q-gar-ct (-act ?) calc-silicate/skarn ; po (±2%) disseminated and in coarse patches - no scheelite				
198.4		slightly foliated biotite-quartz monzonite with some zones containing pyrrhotite blebs and fine-grained garnet - no scheelite				
212						

Location: 36+00 E, 30+20 S
Bearing / Inclination: -45°, grid south

Diamond Drill Hole 5 - Cali Claims

Core size: AX

logged by: R. Kuehnbaum

Footage	Graphic	Description / Remarks	Assay
		overburden: quartz monzonite boulders	
16.0		medium-grained, grey, banded recrystallized limestone 0.3 ft quartz monzonite dyke at 20' with coarse garnet knots in adjacent lst - no scheelite L@ 24.1 = 45°	
24.1		banded, green di-Q-gar-bi (-ct) calc-silicate with <0.1% pyrrhotite as coarse blebs & in fractures; 0.1-0.2 ft micaceous zone - no scheelite	
31.4		medium-grained, banded, grey recrystallized limestone, minor zones with coarse gar knots; v. minor pegmatite; <0.1% pyrrhotite disseminated throughout as fine blebs // bedding L@ 56.6 = 55°	
56.6		banded to massive di-Q-gar-bi calc-silicate with some coarse garnet knots; pyrrhotite (<0.1%) disseminated throughout & as blebs in Quartz-calcite veinlets. - no scheelite	
65.1		epidotized and (in part) carbonated massive to vaguely foliated, medium-grained greenish quartz monzonite; 2-10 mm calcite veinlets; <0.1% massive pyrrhotite blebs near upper / lower contacts	
68.6		banded, greenish di-q-gar-bi (-ct) calc-silicate and gar-vesuv.-di-ct calc-silicate with coarse garnet knots; minor lst.; pyrrhotite (traces) disseminated throughout as fine blebs, except at 68.6-69.1 where po-py veinlets = 5% 60°	
72.3		bi-q-fp-di (-gar) calc-silicate schist with ± 1% fine-grained disseminated pyrrhotite - no scheelite	
75.6		a) banded diopside-Q-gar-bi (-ct) calc-silicate b) garnet-di-ct calc-silicate with coarse garnet knots c) very minor calc-silicate schist (0.2 ft) disseminated blebs and veinlets (< 3mm) of po+py (<1%). - few specks of fine-grained scheelite (trace WO_3) over 1 ft interval L@ 85' = 65°	
81.5		massive, medium-grained, grey biotite-quartz monzonite and greenish epidotized / silicified quartz monzonite very minor 1-2 mm calcite veinlets	
126.0		a. banded di-q-gar-bi (-ct) calc-silicate with ± 1% po (+py) as fine- to medium disseminations and in veinlets b. gar-vesuv.-ct-q-di calc-silicate and marble L@ 134.4 = 48°	
134.4		gar-vesuv.-ct-q-di skarn with very coarse (4 in) garnet patches; thin quartz monzonite veinlet at bottom (0.2 ft)	
136.7		banded di-q-gar-bi (-ct) calc-silicate; ± 1% po+py as dissem. blebs and coarse (4 mm) veinlets along upper contact with Q monzonite veinlet - minor thin Q monzonite veinlets.	
		massive to vaguely foliated medium-grained, grey, biotite-quartz monzonite	
143.8		thinly intercalated (0.1 ft) biotite-Q-Fp-diopside calc-silicate schist and di-q (-gar) calc-silicate <0.1% fine-grained, disseminated pyrrhotite; minor injections of biotite-quartz monzonite L@ 152.8 = 57°	
152.8		banded di-q-gar-bi (-ct) calc-silicate with minor garnet knots & quartz veinlets; po (+py) disseminated throughout as blebs or in thin (1-2mm) calcite veinlets; 0.5 ft zone with few coarse grains of scheelite (trace WO_3)	
155.0		a) vaguely foliated medium-grained grey biotite-Q monzonite b) massive, silicified, epidotized and (in part) carbonated greenish quartz monzonite contacts between a) and b) sharp. coarse-grained (pegmatitic) varieties of b) bear diopside & red garnet & (rarely) coarse pyrite blebs	
248.0			

Diamond Drill Hole - 6 Cali Claims

Location : 34+00E , 27+50S

Bearing / Inclination : grid south , -45° Core Size : AX logged by : T. Liverton

Footage	Description / remarks	Assay Ag oz/ton	Assay Cu %	Assay Zn %	Assay WO_3 %
	overburden				
8.0	fine-grained (3-4 mm) quartz monzonite				
11.4	green calc-silicate / skarn c̄ 2cm garnet knots L = 75°				
12.9	biotite - quartz - hornfels with 2mm pyrrhotite veinlets @ 19° to banding				
20.5	white vein quartz with chlorite in 1 cm irregular masses				
21.5	biotite - quartz - feldspar schist				
23.0	calc-silicate / skarn				
	biotite - quartz - hornfels with very minor, thin calc-silicate bands (0.5 ft total) 2' zone showing kink folding; trace WO_3 (scheelite) over 1" at 40.5'				
48.7	quartz vein				
49.4	biotite - quartz - hornfels 59.3 cross-cutting pyrrhotite veinlets 76.0-76.7 calc-silicate / skarn 80.1-80.4 calc-silicate / skarn with 8mm pyrite band and pyrite-filled fracture 81.8-82.5 quartz vein				
101.7	calc-silicate / skarn? with sulphides (po + minor cp) associated with quartz in fractures ; 50% sulphide from 102.4 - 102.8 - originally logged as QMHF				
106.0	biotite - quartz - hornfels ∠@ 59.0 = 65° ∠@ 80 = 70°				
110.7	biotite - quartz - feldspar - calc-silicate schist with garnet ? (orig. logged as bi-rich QMHF with green calc-silicate)				
114.5	fine-grained (1-2mm) quartz monzonite				
135.8	variety of greenish calc-silicate rocks , with some garnet knots up to 1cm (originally logged as quartz-mica hornfels with green calc-silicate minerals) pyrrhotite in fractures at 154.3' and 166.3 to 1cm max. width ∠@150' = 57°				
183.8	brecciated quartz monzonite ; medium-grained (3mm) . Sericite - filled 0.5 mm fractures				
190.5	calc-silicate / skarn with garnet up to 5cm . (orig. logged as grey-green QMHF with green calc-silicate minerals)				
194.0	mica (biotite ?)-rich quartz - mica hornfels c̄ calc-silicate minerals and garnet knots				
205.3	quartz - mica hornfels with green calc-silicate minerals and garnet knots up to 5cm. also intercalated grey m.g. recrystallized limestone (??)				
231.2	diopside - quartz skarn / calc-silicate with 30%-50% massive to semi-massive pyrrhotite zones bearing 0.1 to 0.2 % scheelite , disseminated , irregular mg - fg.	0.05	0.11	<0.05	0.09
239.9	leucocratic chloritized , epidotized and silicified quartz monzonite				
246.7					

2093

APPENDIX B

SOIL SAMPLING, GEOCHEMISTRY AND DRILLING ASSAY RESULTS

THE CALI CLAIMS

Total scheelite grain counts from soils on the geophysical grid
-location shown on attached map

Sample	Counts	Sample	Counts	Sample	Counts	Sample	Counts
HG-1	15f-vf	HG-40	58-f-vf	HG-79	0	HG-118	1f
-2	5m27f	-41	+500	-80	0	-119	9f-vf
-3	+500	-42	+150	-81	0	-120	13f-vf
-4	+1000	-43	5m,100f-vf	-82	0	-121	3f
-5	6m,12f	-44	8m,10f	-83	5f	-122	4m,26f
-6	1m	-45	0	-84	4f	-123	5c,130m-f
-7	3m,2f	-46	41f-vf	-85	0	-124	+150
-8	1f	-47	11f-vf	-86	1f	-125	4m,60f
-9	4f	-48	4m,50f-vf	-87	0	-126	160m-vf
-10	1m4f	-49	1m,9f	-88	0	-127	+150
-11	0	-50	4m,40f	-89	1m,4f	-128	+250vc-vf
-12	1f	-51	9f-vf	-90	1m,7f	-129	+200c-f
-13	0	-52	1f	-91	1f	-130	2m,48f
-14	0	-53	30f-vf	-92	0	-131	+300
-15	0	-54	2m,3f	-95	0	-132	+130
-16	0	-55	11f-vf	-96	0	-133	19f-vf
-17	7f	-56	0	-97	0	-134	4m,8f
-18	0	-57	0	-98	6f	-135	1f
-19	22f-vf	-59	15f	-99	0	-136	4f
-20	0	-60	0	-100	0	-137	3f
-21	8f	-61	0	-101	0	-138	2f
-22	1f	-62	0	-102	3f	-140	0
-23	0	-63	0	-103	+400	-141	0
-24	1f	-64	0	-104	+500m-f	-142	1f
-25	1m	-65	0	-105	110f-vf	-143	0
-26	0	-66	0	-106	2m,33f-vf	-144	0
-27	0	-67	41f-vf	-107	20f-vf	-145	0
-28	0	-69	0	-108	84f-vf	-146	0
-29	0	-70	0	-109	14f	-147	0
-30	1c,2m,100f	-71	0	-110	8f	-148	0
-31	0	-72	1f	-111	0	-149	27f-vf
-32	0	-73	1f	-112	12f-vf	-150	0
-34	8f-vf	-74	0	-113	3f	-151	0
-35	5m,24f-vf	-75	4f	-114	24f-vf	-152	2f
-36	6m,20f	-76	1f	-115	0	-153	0
-38	2m,25f	-77	0	-116	0	-154	2f
-39	66f-vf	-78	1f	-117	3f	-155	1f

THE CALI CLAIMS

Total scheelite grain counts (continued)

Sample	Counts	Sample	Counts	Sample	Counts	Sample	Counts
HG-156	0	HG-193	56f-vf	HG-230	6c,28m-f	HG-267	125m-vf
-157	0	-194	0	-231	10f	-268	8vc, 100m-f
-158	0	-195	62f-vf	-232	9f	-269	54f-vf
-159	3f	-196	1m,6f	-233	9f	-270	5c,40m-vf
-160	2f	-197	+700	-234	0	-271	5vf
-161	150m-f	-198	+175	-235	2m	-272	120
-162	1f	-199	+300	-236	9f	-273	20f-vf
-163	5f	-200	+175	-237	+225	-274	0
-164	0	-201	44f-vf	-238	+200	-275	3f
-165	0	-202	1m,14f	-239	+350c-f	-276	4c,29m-f
-166	1m	-203	+150	-240	+500	-277	1c,6m,43f
-167	0	-204	1m,12f	-241	75m-f	-278	+1000vc-vf
-168	0	-205	6f	-242	3c,80m-f	-279	+175c-vf
-169	2f	-206	7f	-243	5m,19f	-280	50m-f
-170	3f	-207	12f-vf	-244	1c,5f	-281	30f
-171	16f-vf	-208	0	-245	11f	-282	2f
-172	110f-vf	-209	0	-246	8f	-283	4c,64m-vf
-173	+450	-210	0	-247	23f	-284	27m-vf
-174	12f-vf	-211	3f	-248	4c,28f	-285	50f-vf
-175	0	-212	1m,6f	-249	4f	-286	12f
-176	5f	-213	0	-250	8f	-287	4c,9f-vf
-177	2f	-214	6f	-251	6m,32f-vf	-288	0
-178	0	-215	0	-252	60m-f	-289	4f
-179	2m,5f	-216	24f-vf	-253	150	-290	3m
-180	0	-217	0	-254	8m,53f	-291	1m
-181	0	-218	2m,6f	-255	+175	-292	1c,8m-f
-182	0	-219	8f	-256	29f-vf	-293	+300m
-183	0	-220	1f	-257	+250	-294	54f
-184	0	-221	14f-vf	-258	125f	-295	+500
-185	0	-222	12f	-259	53m-vf	-296	6vc,75f
-186	6f	-223	0	-260	6f	-297	1vc,6c,150m-vf
-187	0	-224	6f	-261	+100	-298	18c,45m-f
-188	3f-vf	-225	5f-vf	-262	1c,6f	-299	2vf
-189	0	-226	1m,1f	-263	4f	-300	37m-vf
-190	3f	-227	2f	-264	1vf	-301	+150
-191	0	-228	26f	-265	0	-302	7f-vf
-192	14f-vf	-229	2f	-266	3c,2m,14f	-203	6f

THE CALI CLAIMS

Scheelite grain counts (continued)

Sample	Counts	Sample	Counts	Sample	Counts	Sample	Counts
HG-304	14f	HG-320	3f	HG-336	0	HG-352	24f
-305	0	-321	0	-337	0	-353	3f
-306	0	-322	1c,10m,55f	-338	85m-f	-354	0
-307	0	-323	15f	-339	2f	-355	1f
-308	3f	-324	17f	-340	65m-f	-356	1c,1m,15f
-309	2f	-325	9f	-341	0	-357	30f-vf
-310	0	-326	0	-342	0	-358	5f
-311	2f	-327	31f	-343	83f	-359	75m-f
-312	3f	-328	0	-344	16f	-360	5m,55f-vf
-313	1c,10f	-329	11f	-345	0	-361	175
-314	2f	-330	3f	-346	0	-362	6f
-315	0	-331	18f	-347	0	-363	7f
-316	1f	-332	7f	-348	2f	-364	3f
-317	2f	-333	74f	-349	85f	-365	0
-318	0	-334	0	-350	24f	-	
-319	12f	-335	5f	-351	1f		

f=fine, m=medium, c=coarse, v=very

i.e. 21c,3m,47f-vf: 21 coarse, 3 medium, 47 fine to very fine

BONDAR-CLEGG & COMPANY LTD.

DD-93

Geochemical Lab Report

No. 46-51

Page No. 2

SAMPLE NO.	Cu ppm	Pb ppm	Zn ppm	Ag ppm
HG - 3	164	34	41	1.1
4	282	37	10	2.0
5	168	39	48	0.6
6	12	29	62	0.5
7	30	24	80	0.7
10	100	54	73	1.1
11	3	19	30	0.3
12	3	22	35	0.3
13	2	24	24	0.4
14	3	24	29	0.5
15	4	20	30	0.4
16	8	36	49	0.5
18	2	4	2	0.2
19	49	31	52	1.0
20	38	37	63	1.0
21	21	32	60	0.5
22	3	27	40	0.4
23	3	12	19	0.2
24	4	24	32	0.3
25	14	32	36	0.6

SAMPLE NO.	Cu ppm	Pb ppm	Zn ppm	Ag ppm
HG - 26	18	16	12	0.4
27	39	75	87	1.1
28	3	20	33	0.3
29	2	17	32	0.3
31	2	21	24	0.6
32	2	24	29	0.4
34	7	13	19	0.3
35	3	21	21	0.3
36	7	21	20	0.2
38	11	32	48	0.3
39	68	21	37	0.6
40	12	28	36	0.5
41	56	35	74	0.7
42	71	34	48	0.8
43	36	33	54	0.7
44	114	37	82	0.7
45	11	36	29	0.7
46	18	28	34	0.5
47	5	18	20	0.3
49	11	23	35	0.4
50	40	30	56	0.8
51	19	32	84	0.9
52	10	24	32	0.5
53	40	27	45	0.8
54	65	30	49	0.9
55	19	26	33	0.5
56	15	38	35	0.3
57	12	38	36	0.4
59	30	37	59	0.5
60	9	24	43	0.6
61	10	24	30	0.5
62	12	23	40	0.5
63	3	14	28	0.2
64	3	17	24	0.3
65	11	27	42	0.6
66	4	12	13	0.3

Geochemical Lab Report

No. 46-51 Page No. 3

SAMPLE NO.	Cu ppm	Pb ppm	Zn ppm	Ag ppm	SAMPLE NO.	Cu ppm	Pb ppm	Zn ppm	Ag ppm
HG - 67	12	16	20	0.3	HG - 105	68	39	41	0.8
68	11	18	29	0.5	06	44	31	84	0.6
69	9	25	32	0.3	07	18	22	40	0.5
70	9	20	28	0.5	08	17	20	30	0.3
71	1	20	19	0.4	09	39	43	44	0.8
72	2	22	19	0.4	10	48	41	59	0.7
73	13	31	39	0.5	11	52	31	58	0.9
74	3	20	21	0.3	12	80	133	65	1.0
75	6	22	26	0.4	13	58	30	48	0.5
76	6	19	23	0.2	14	17	20	42	0.3
77	3	19	24	0.4	15	20	27	58	0.7
78	7	18	22	0.3	16	21	34	82	0.8
79	12	34	37	0.6	17	20	29	61	0.7
80	12	30	24	0.6	18	76	33	80	1.3
81	12	22	32	0.6	19	15	30	56	0.7
82	12	31	37	0.7	20	12	29	35	0.5
83	16	31	36	0.7	21	5	22	39	0.6
84	20	35	31	0.5	22	7	19	29	0.4
85	16	43	47	0.8	23	8	31	33	0.5
86	12	29	33	0.4	24	5	19	20	0.4
87	53	43	74	0.6	25	4	20	34	0.4
88	10	23	30	0.4	26	4	20	37	0.3
89	9	19	31	0.4	27	44	35	53	0.5
90	11	29	60	0.4	28	42	36	39	0.6
91	5	10	15	0.3	29	17	27	29	0.5
94	3	32	36	0.4	30	17	29	31	0.6
95	2	29	39	0.3	31	590	50	7	2.0
96	2	28	35	0.3	32	102	29	43	0.7
97	8	23	36	0.3	33	28	39	58	0.6
98	10	21	21	0.2	34	35	42	54	0.6
99	11	29	50	0.4	35	32	44	42	0.7
100	3	21	37	0.3	36	8	29	33	0.4
01	11	35	63	0.4	37	10	28	37	0.5
02	10	24	56	0.4	38	9	33	35	0.5
03	17	29	39	0.8					
04	162	29	18	0.9					

BONDAR-CLEGG & COMPANY LTD. DD-93
764 BELFAST ROAD, OTTAWA, ONTARIO, K1G 0Z5 PHONE: 237-3110

Files Coli

Geochemical Lab Report

Extraction: HNO_3-HCl
Method: A.A.
Fraction Used: -80 Soils

Report No.: 46-61
From: Union Carbide Canada Ltd.
Date: August 21, 1976

SAMPLE NO.	Cu ppm	Pb ppm	Zn ppm	Ag ppm	SAMPLE NO.	Cu ppm	Pb ppm	Zn ppm	Ag ppm
HG - 92	5	13	25	0.4	HG - 169	8	8	9	0.5
139	4	12	18	0.4	70	4	10	12	0.4
40	8	16	36	0.5	71	9	21	33	0.5
41	4	17	51	0.6	72	27	28	43	0.7
42	6	16	30	0.4	73	110	17	30	0.8
43	7	31	39	0.5	74	9	6	18	0.4
44	8	30	48	0.6	75	3	20	17	0.6
45	8	28	43	0.6	76	35	25	62	0.9
46	10	17	48	0.5	77	9	18	39	0.7
47	17	18	33	0.4	78	8	22	33	0.6
48	13	19	32	0.5	79	8	15	25	0.4
49	21	43	98	0.7	80	5	14	26	0.7
50	8	17	28	0.4	81	16	19	39	0.6
51	8	18	30	0.3	82	8	16	20	0.5
52	9	19	28	0.5	83	5	12	10	0.4
53	11	51	59	0.5	84	14	10	21	0.5
54	7	35	38	0.5	85	22	8	18	0.7
55	10	36	83	0.7	86	17	25	63	0.8
56	7	38	48	0.6	87	4	13	32	0.4
57	8	33	61	0.5	88	7	19	43	0.4
58	11	40	60	0.6	89	2	20	30	0.5
59	4	15	15	0.4	90	8	13	13	0.4
60	10	17	26	0.5	91	15	31	64	0.7
61	40	23	39	1.0	92	5	20	38	0.3
62	12	26	47	0.4	93	16	11	45	0.4
63	11	13	34	0.4	94	5	21	35	0.6
64	4	16	35	0.3	95	9	20	36	0.5
65	6	14	34	0.5	96	6	19	33	0.5
66	3	16	34	0.4	97	165	31	37	1.0
67	12	20	30	0.4	98	168	34	108	1.3
68	9	13	23	0.5	99	414	26	27	1.3

DD-93

Geochemical Lab Report

Report No. 46-61

Page No. 2

SAMPLE NO.	Cu ppm	Pb ppm	Zn ppm	Ag ppm	SAMPLE NO.	Cu ppm	Pb ppm	Zn ppm	Ag ppm
HG - 200	29	32	104	0.6	HG - 236	6	6	5	0.4
01	530	26	54	0.8	37	12	24	43	0.5
02	17	21	53	0.6	38	55	23	47	0.6
03	83	38	79	1.6	39	30	26	68	0.5
04	15	20	56	0.5	40	19	25	51	0.7
05	52	31	63	1.0	41	11	24	27	0.6
06	10	10	51	0.4	42	24	36	40	1.0
07	56	23	64	0.8	43	31	39	90	0.9
08	16	25	38	0.4	44	37	48	52	1.0
09	45	28	47	0.9	45	31	37	50	0.8
10	20	10	48	0.6	46	52	50	75	0.8
11	11	20	83	0.5	47	37	32	48	0.8
12	8	25	49	0.6	48	8	18	35	0.4
13	7	9	14	0.4	49	10	20	39	0.4
14	57	33	66	0.7	50	13	33	46	0.6
15	32	16	37	0.6	51	7	16	31	0.3
16	13	29	43	0.5	52	13	28	87	0.5
17	20	17	44	0.4	53	20	19	34	0.6
18	61	32	99	0.8	54	55	24	90	0.6
19	7	7	15	0.3	55	20	20	36	0.4
20	19	43	60	0.6	56	13	9	14	0.5
21	17	36	63	0.5	57	30	30	69	0.6
22	19	28	112	0.7	58	21	29	44	0.5
23	61	29	131	1.1	59	52	26	62	0.7
24	9	8	7	0.4	60	19	30	63	0.6
25	38	43	175	1.2	61	63	23	54	0.7
26	16	18	39	0.6	62	5	20	20	0.5
27	19	17	42	0.6	63	6	21	45	0.3
28	10	16	38	0.5	64	4	27	36	0.6
29	14	24	114	0.7	65	27	39	90	0.7
30	9	15	33	0.4	66	4	10	25	0.3
31	83	43	106	1.0	67	22	20	44	0.6
32	13	16	35	0.5	68	43	25	59	0.7
33	4	15	31	0.5	69	9	15	46	0.4
34	3	11	4	0.2	70	17	28	52	0.5
35	4	10	8	0.1	71	105	40	223	0.8

AMK

DD-93

Geochemical Lab Report

Report No. 46-61 Page No. 3

SAMPLE NO.	Cu ppm	Pb ppm	Zn ppm	Ag ppm	SAMPLE NO.	Cu ppm	Pb ppm	Zn ppm	Ag ppm
HG - 272	19	27	60	0.5	HG - 308	5	15	35	0.5
73	21	23	44	0.4	09	40	13	36	0.6
74	20	27	36	0.6	10	10	19	27	0.5
75	16	26	39	0.5	11	20	40	108	0.5
76	11	25	98	0.4	12	69	26	73	1.1
77	4	20	30	0.4	13	73	42	62	0.8
78	21	19	29	0.5	14	96	31	61	1.0
79	38	26	36	0.7	15	62	36	310	1.0
80	40	30	43	0.7	16	69	37	94	0.7
81	17	21	58	0.8	17	27	26	48	0.6
82	30	24	54	0.7	18	18	17	26	0.8
83	9	23	34	0.4	19	14	21	58	0.5
84	110	25	118	0.7	20	4	16	22	0.3
85	24	24	101	0.4	21	2	7	2	0.3
86	11	4	9	0.3	22	18	23	76	1.0
87	59	30	200	0.9	23	40	22	50	1.3
88	5	16	35	0.4	24	19	29	53	0.7
89	6	15	45	0.4	25	10	21	40	0.6
90	9	37	86	0.6	26	45	24	41	0.7
91	8	20	60	0.4	27	22	25	45	0.6
92	9	57	96	0.4	28	21	11	20	0.3
93	38	33	90	0.5	29	4	6	9	0.1
94	5	13	11	0.4	30	16	23	68	0.7
95	73	30	57	1.3	31	32	26	52	0.8
96	11	19	30	1.1	32	11	4	20	0.3
97	55	24	43	0.9	33	21	27	41	0.8
98	Not Received				34	46	31	100	1.0
99	34	21	50	0.8	35	69	41	169	0.9
300	52	12	44	0.5	36	18	21	53	0.4
01	26	23	59	0.8	37	16	32	67	0.7
02	39	11	43	0.6	38	Not Received			
03	27	24	130	0.5	39	9	15	32	0.4
04	18	16	33	0.5	40	10	16	39	0.3
05	11	23	48	0.7	41	20	20	37	0.6
06	10	27	50	0.9	42	21	16	11	1.1
07	10	30	53	0.7	43	25	21	70	0.6

dmk

BONDAR-CLEGG & COMPANY LTD.

DD-93

Geochemical Lab Report

Report No. 46-61

Page No. 4

SAMPLE NO.	Cu ppm	Pb ppm	Zn ppm	Ag ppm	SAMPLE NO.				
HG - 344	82	24	88	0.7					
45	36	38	74	0.9					
46	45	35	55	0.8					
47	64	21	57	0.7					
48	13	20	38	0.5					
49	17	16	41	0.6					
50	16	13	19	0.6					
51	48	14	48	0.6					
52	8	15	29	0.4					
53	38	31	57	0.8					
54	11	22	62	0.6					
✓ 55	6	38	44	0.5					
✓ 56	5	19	38	0.5					
✓ 57	9	27	21	0.8					
✓ 58	8	19	44	0.5					
✓ 59	12	24	55	0.5					
✓ 60	31	33	50	0.6					
✓ 61	90	34	72	0.8					
✓ 62	8	22	30	0.4					
✓ 63	22	23	46	0.7					
✓ 64	17	29	51	0.7					
✓ 65	16	27	85	0.6					

[signature]

To: U[illegible]ion Carbide

PAGE No. 1

404 - 1112 West Pender
Vancouver, B.C.

BONDAR-CLEGG & COMPANY LTD.

REPORT No A26 - 598

DATE: September 3, 1976

Samples submitted: August 26, 1976
Results completed: September 3, 197[illegible]

CERTIFICATE OF ASSAY

PROJECT: Yukon W

DD-93

I hereby certify that the following are the results of assays made by us upon the herein described ore samp[illegible]

MARKED	GOLD		SILVER	Cu	Zn	WO_3					TOTAL VA[illegible] PER TO[illegible] (2000 LB[illegible]
	Ounces per Ton	Value per Ton	Ounces per Ton	Percent	Percent	Percent	Percent	Percent	Percent	Percent	
3851 HG-3R			L 0.02	0.04	L 0.05	0.05					
3852 -8R			0.04	L 0.01	0.05	0.05					
3853 -9R			0.02	0.03	L 0.05	0.06					
3854 -10R			0.12	0.03	L 0.05	0.02					
3855 -11R			0.04	0.01	L 0.05	0.02					
3856 -13R			0.02	0.06	L 0.05	0.06					
3857 -14R			0.04	0.05	L 0.05	0.30					
3858 -16R			0.04	0.01	L 0.05	0.14					
3859 -18R			0.04	0.01	L 0.05	0.02					
3860 -19R			0.02	0.01	L 0.05	0.07					

L denotes 'Less than'
cc Mr. R. Kuehnbaum

Registered Assayer, Province of British Columbia

To: U[illegible]n Carbide Exploration Corp.
PAGE 1

BONDAR-C[illegible]GG & COMPANY LTD.

REPORT No [illegible]- 514
DATE: Aug. 18, 1976

404 - 1112 West Pender St.,
Vancouver, B.C.

CERTIFICATE OF ASSAY

Samples submitted: August 13, 1976
Results completed: August 18, 1976
DD-93

I hereby certify that the following are the results of assays made by us upon the herein described core and ore samples

MARKED	GOLD		SILVER	Cu	Zn	WO_3					TOTAL VALUE PER TON (2000 LBS.)
	Ounces per Ton	Value per Ton	Ounces per Ton	Percent	Percent	Percent	Percent	Percent	Percent	Percent	
CAL1 DDH-2 3453 10.6-12.3			0.04	0.05	L0.05	0.03					
3454 41.5-43.2			0.06	0.08	L0.05	0.02					
3455 45.0-47.3			0.04	0.16	L0.05	0.17					
3456 48.9-50.2			0.06	0.08	L0.05	0.03					
3457 56.5-58.5			0.02	0.03	L0.05	0.02					
3458 58.5-64.9			L0.02	0.10	L0.05	0.07					
3459 64.9-68.7			L0.02	0.01	L0.05	0.07					
DDH-3 3460 127.7-130.2			L0.02	0.06	L0.05	0.02					
DDH-4 3461 145.5-149.3			L0.02	0.13	L0.05	0.04					
3462 153.1-154.3			L0.02	0.13	L0.05	0.02					
3463 174.5-177.9			0.10	0.19	L0.05	0.28					
3464 170.4-174.5			0.03	0.10	L0.05	0.03					
3465 182.9-184.6			0.09	0.17	L0.05	0.22					
3466 184.6-187.7			L0.02	0.03	L0.05	0.02					
CAL1 6KC-1R 3467			0.02	0.24	L0.05	0.14					
6KC-2R 3468			0.04	0.28	L0.05	0.19					
6KC-3R 3469			0.04	0.02	L0.05	0.20					
6KC-4R 3470			L0.02	0.13	L0.05	0.03					
6KC-5R 3471			0.04	0.11	L0.05	0.06					

L denotes 'less than'
cc Mr. L. Bell

Registered Assayer, Province of British Columbia

To: Un[illegible] Carbide Corp.

PAGE 1

BONDAR-CL[illegible]G & COMPANY LTD.

REPORT No A26 - 768

DATE: [illegible]ber 4, 1976

404 - 1112 West Pender Street
Vancouver, B.C. V6E 2S1

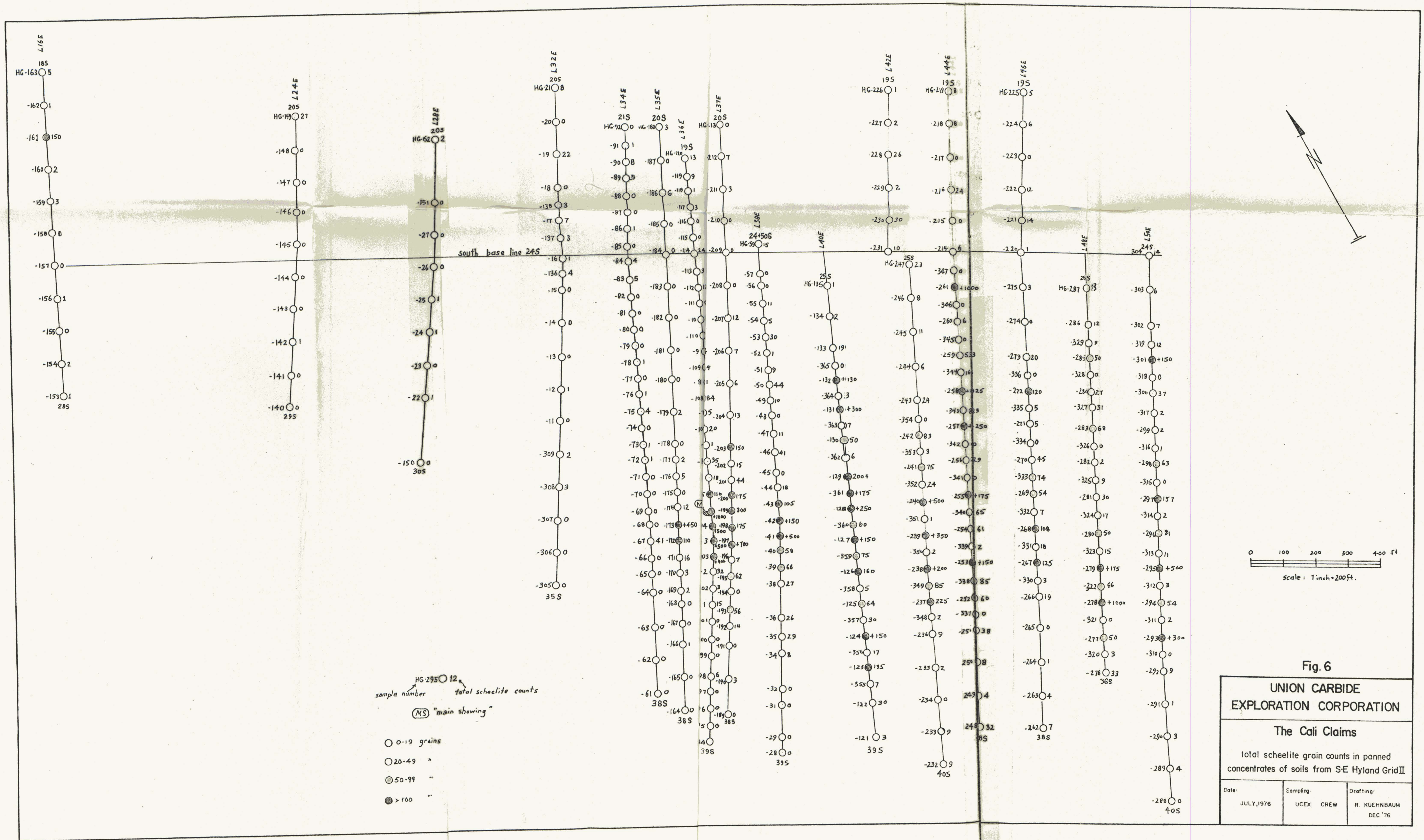
CERTIFICATE OF ASSAY

Samples submitted: Sept. 28/
Results completed: Oct. 4/
DD-93

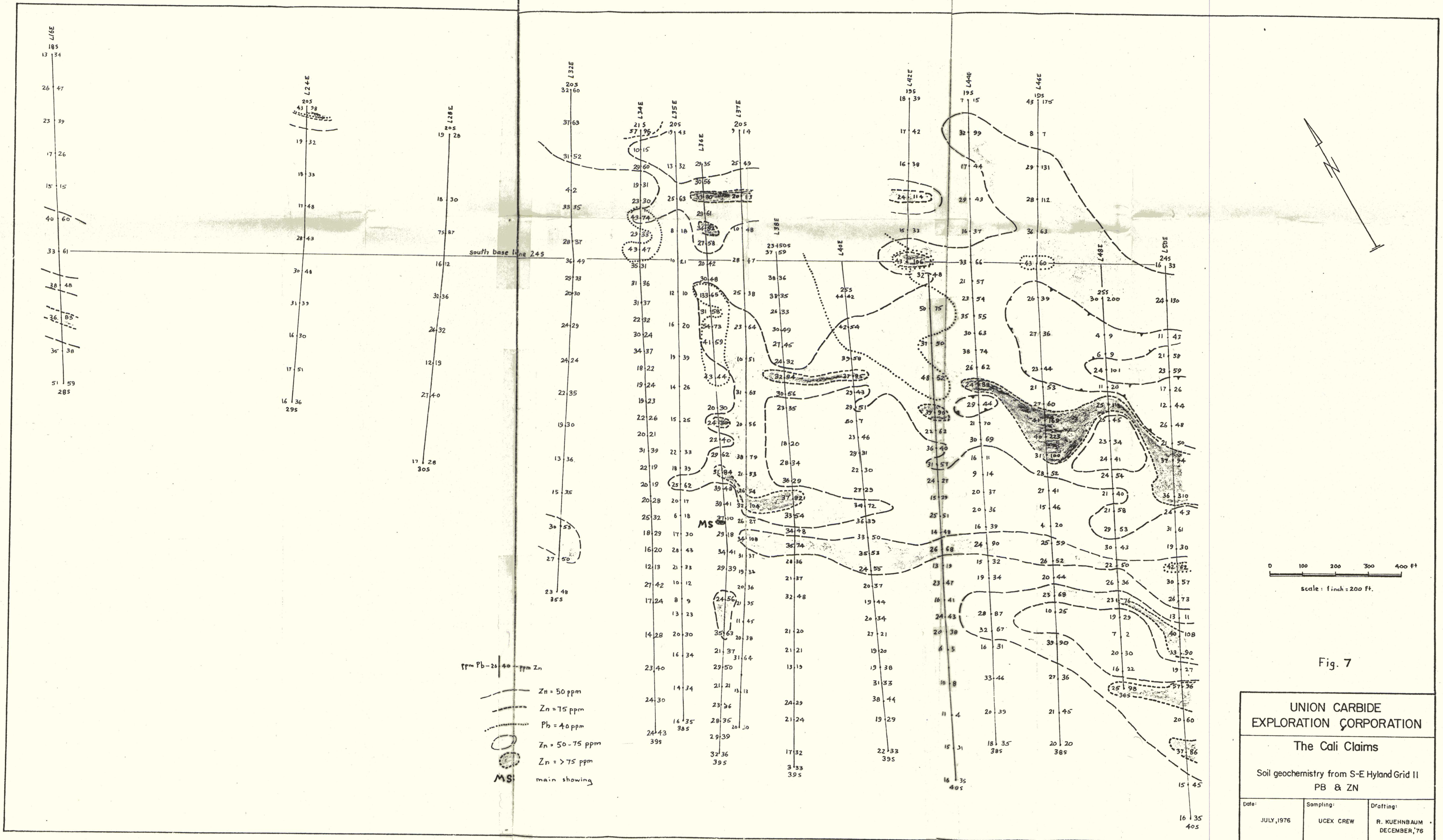
I hereby certify that the following are the results of assays made by us upon the herein described core samples

MARKED	GOLD		SILVER	Cu	Pb	Zn	W	WO_3			TOTAL VALUE PER TON (2000 LBS.)
	Ounces per Ton	Value per Ton	Ounces per Ton	Percent	Percent	Percent	Percent	Percent	Percent	Percent	
Cali #6 230 - 240			0.05	0.11	L0.05	L0.05	0.07	0.09			
L denotes 'less than'											

Registered Assayer, Province of British Columbia


south base line 24S
HG-295 12
sample number
total scheelite counts
(MS) "main showing"
0-19 grains
20-49 "
50-99 "
> 100 "
0 100 200 300 400 ft
scale: 1 inch = 200 ft.
UNION CARBIDE
EXPLORATION CORPORATION
The Cali Claims
total scheelite grain counts in panned concentrates of soils from S-E Hyland Grid II
Date: JULY, 1976
Sampling: UCEX CREW
Drafting: R. KUEHNBAUM DEC '76
Fig. 6

DD-93



South base line 24S
ppm Pb - 26 | 40 - ppm Zn
Zn = 50 ppm
Zn = 75 ppm
Pb = 40 ppm
Zn = 50-75 ppm
Zn = > 75 ppm
MS: main showing
0 100 200 300 400 ft
scale: 1 inch = 200 ft.
UNION CARBIDE EXPLORATION CORPORATION
The Cali Claims
Soil geochemistry from S-E Hyland Grid II
PB & ZN
Date: JULY, 1976
Sampling: UCEX CREW
Drafting: R. KUEHNBAUM DECEMBER, '76

Fig. 7

DD-93

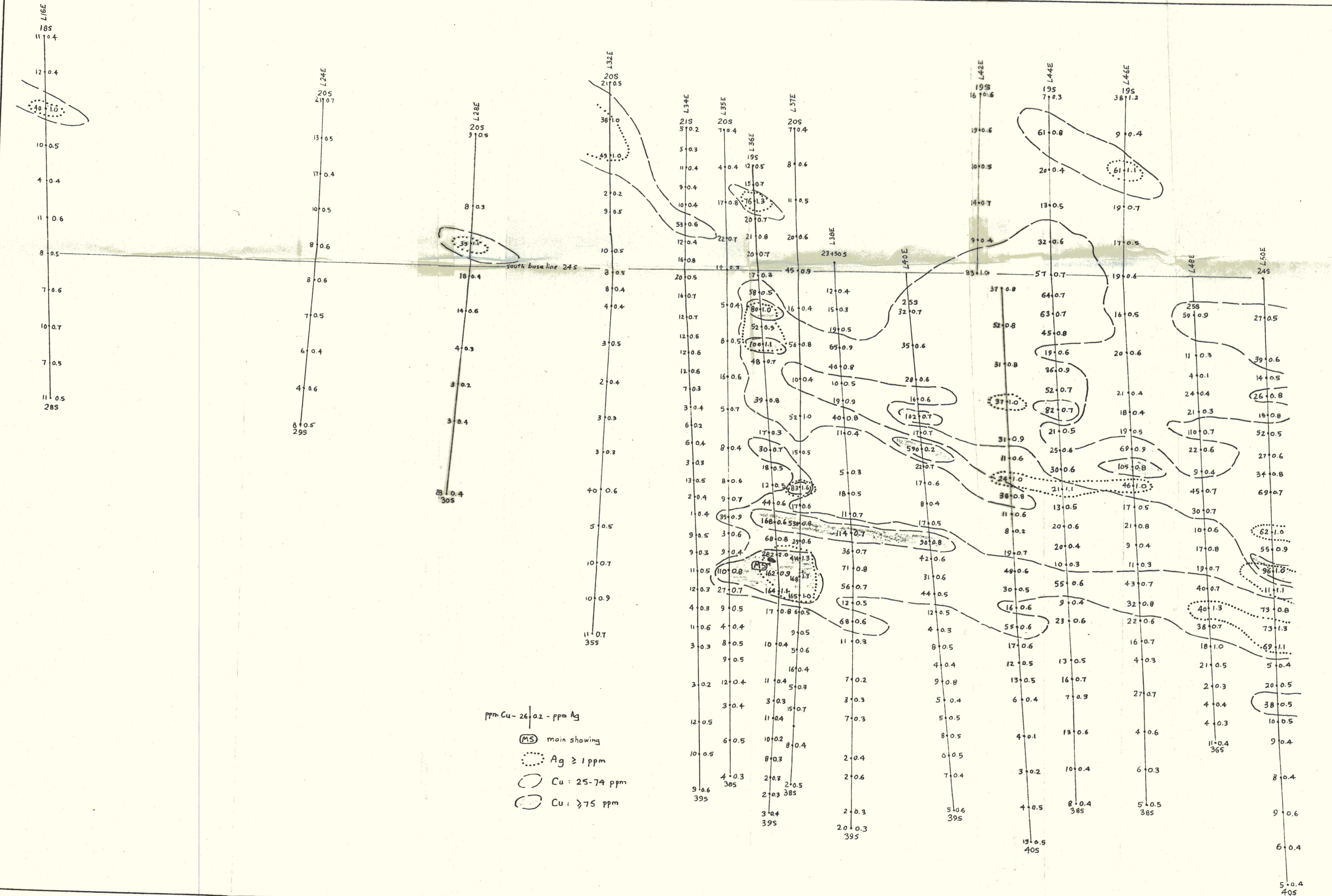


Fig. 8

UNION CARBIDE EXPLORATION CORPORATION

The Cali Claims

Soil geochemistry from S-E Hyland Grid II
CU & AG

Date:	Sampling:	Drafting:
JULY, 1976	UCEX CREW	R. KUEHNBAUM DECEMBER, '76

DD-93

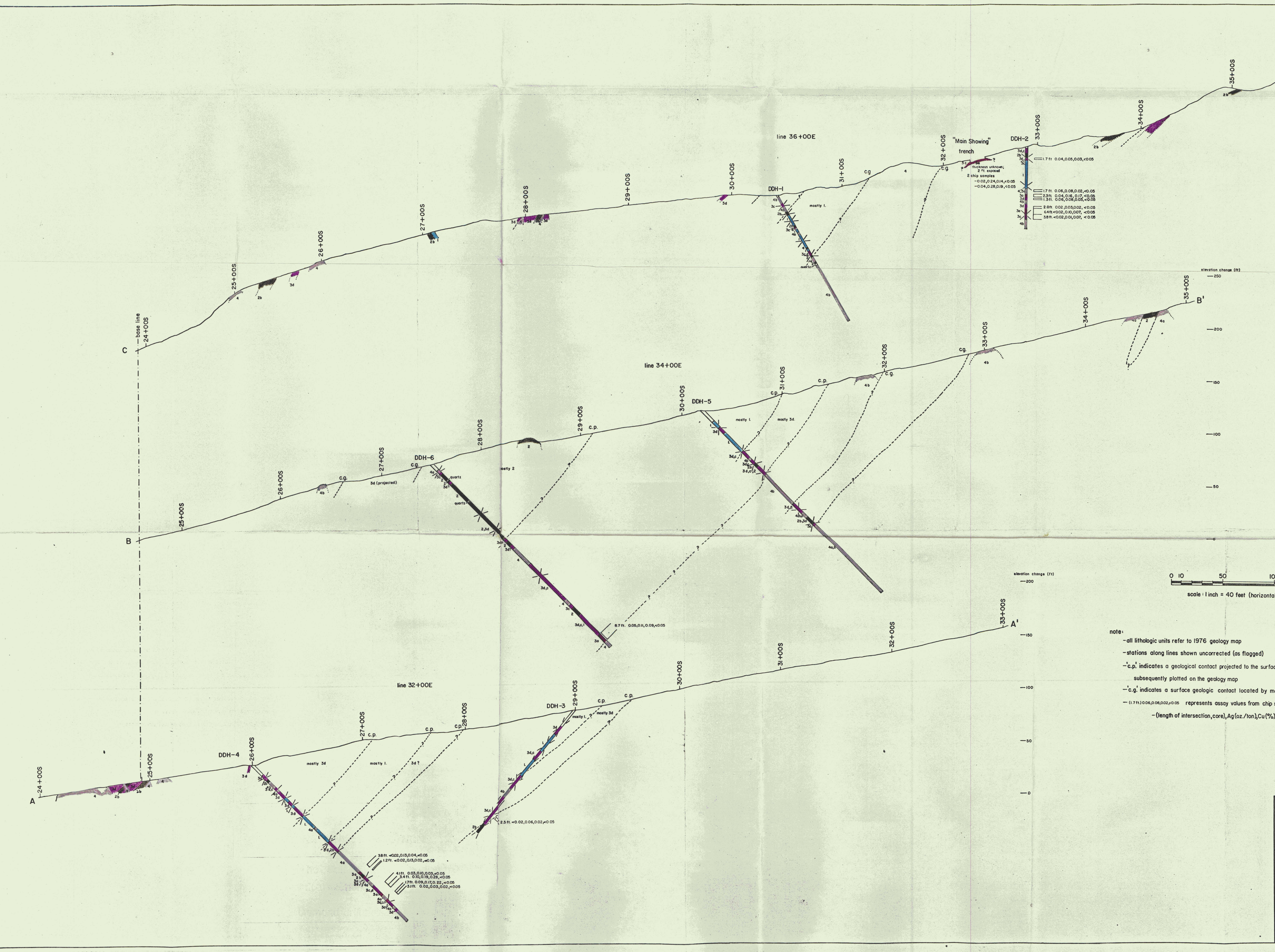


FIGURE 9

UNION CARBIDE EXPLORATION CORPORATION

The Cali Claims vertical sections through diamond drill holes

date	compilation	drafting
August, 1976	R. Kuehnbaum	R. Kuehnbaum Dec. '76

DD-93