

5307

GEOLOGICAL, GEOCHEMICAL AND
GEOPHYSICAL REPORT

ON THE
TOP GROUP

92H/5W

CHEHALIS LAKE, BRITISH COLUMBIA
NEW WESTMINSTER MINING DIVISION

LAT. 49° 27'

LONG. 122° 59'

FOR

STANDARD OIL COMPANY
OF BRITISH COLUMBIA

Work done between
July 12 and October 31, 1974

Department of Mines and Petroleum Resources ASSESSMENT REPORT NO. 5307 MAP

BY

R. R. CULBERT, PhD., P.Eng

STOKES EXPLORATION MANAGEMENT CO. LTD.

October 31, 1974.

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INTRODUCTION

This report concludes a program of geophysical, geochemical and geological work carried out during the summer and fall of 1974 on the West Harrison property (Top Claim Group) between Chehalis and Harrison Lakes in southwestern British Columbia. Field work was done at intervals from July 12 to October 31, 1974.

LOCATION AND ACCESS

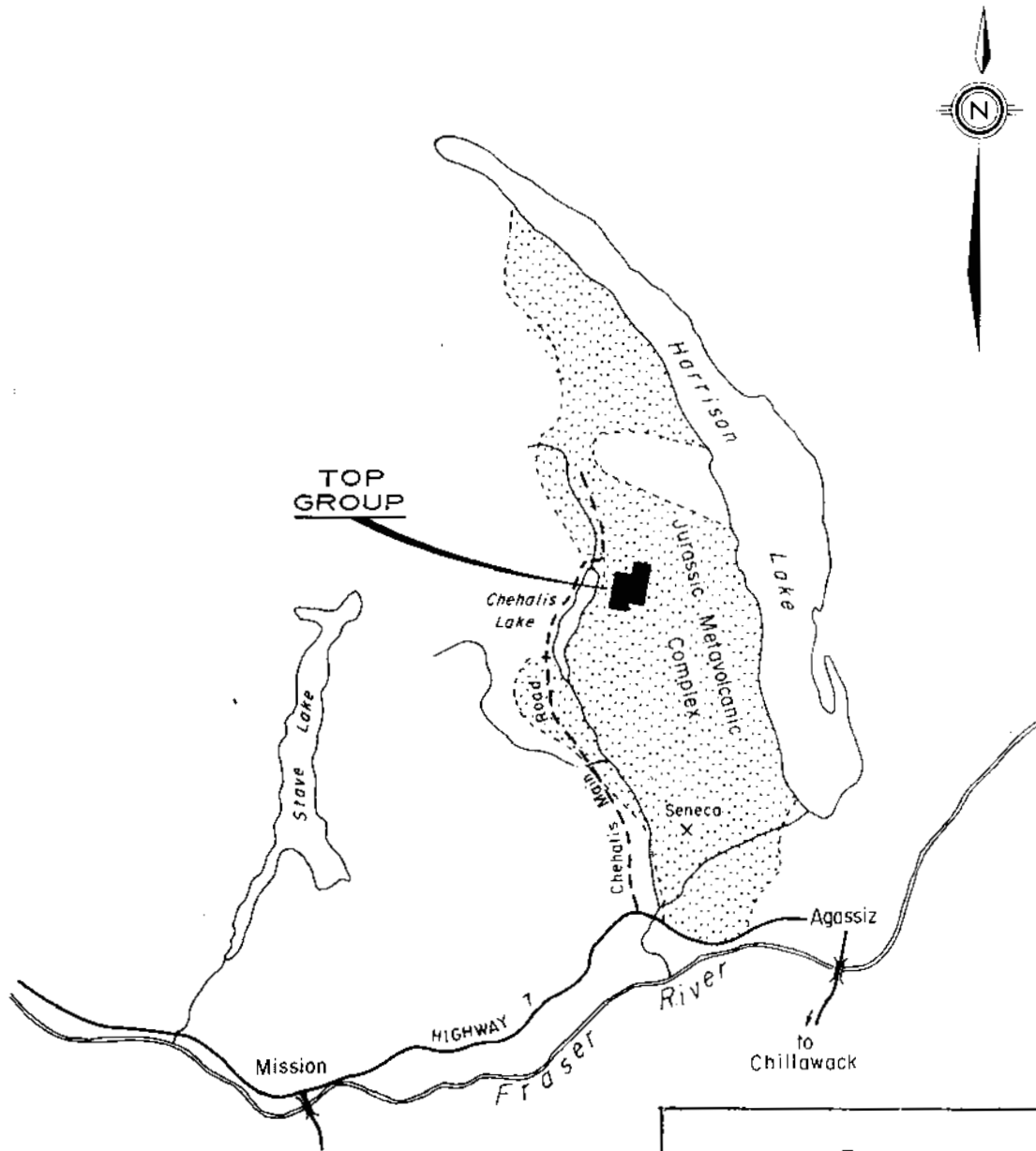
The Top Claims are located between 1500 and 4700 feet on the ridge east of the north end of Chehalis Lake. They are served by a good logging road of 22 miles length from Harrison Mills on Highway 7. The road is controlled by Canadian Forest Products and permission must be obtained to travel during working hours.

The property is entirely forested, the resulting gloom and thick lichen coating on outcrops making prospecting difficult. Most of the area slopes westward at roughly 30° with frequent cliffbands. Undergrowth is moderate, except for logging slash on the extreme lower margin. Snow may be expected in late September or October, and in 1974 some patches remained on the ridge throughout the year.

CLAIMS

The Top Group consists of contiguous claims located near Chehalis Lake in the New Westminster Mining Division. A sketch map showing the relative position of these claims follows this page. The claim block includes:

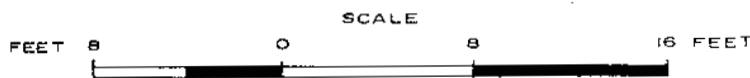
<u>Claim</u>	<u>Record No.</u>	<u>Record Date</u>
Top 10	26152	October 6, 1971
12	26154	"
14	26155	"
16 - 25	26157-66	"
26- 37	28442-53	May 4, 1973
Kazar 1 - 4	29597-601	October 21, 1974



Department of
 Mines and Petroleum Resources
 ASSESSMENT REPORT
 NO. 5307 MAP #1

FIGURE 1
 TOP GROUP
 LOCATION MAP

5307
 M1



OCT. 31, 1974

PROGRAM

A grid of east-west lines 500 feet apart has been flagged across the property and tied to control lines at 30 west and 15 east. Soil samples were collected at 200 foot spacings and magnetometer readings made at each 100 foot station. All lines were walked during geological mapping, with rock samples taken at frequent intervals. This extensive sampling was partly due to the prevailing poor lighting, but samples were also etched and stained to identify rock type, and those exhibiting coarse textures have been slabbed by saw. Samples were laid out grid-wise at the end of the program to see if colouration or other visible features showed mappable units, but this was not particularly successful as most visible characteristics appeared to be alteration dependent.

Four new claims (Kazar 1-4) were staked during this program to cover a gap of roughly 800 feet between Top claims of the block 26-37 and the other members of Top Group which had been staked at a prior date.

GEOLOGY

The Top Claims are underlain almost entirely by greenstones of the Harrison Lake formation. This rock group forms a belt trending northwest on the west side of Harrison Lake, between the Coast Mountains batholithic complex and the Cascade Fold Belt; (to the east). It is a complicated pile of volcanic flows and clastics with little in the way of dependable marker beds. The regional aspects of geology have not been studied in this program, but a reasonably detailed study of the Harrison Lake formation to the south of the property was made by R. I. Thompson of the B. C. Department of Mines in 1972. (Geology, Exploration and Mining in B.C. - 1972, p102-114).

It has not been possible to identify the mode of origin of most of the rocks observed on the Top Property, but generalizations may be made about the stratigraphic units. The overall picture is one of an emerging coastline, with acid pyroclastic activity to the north and andesitic eruptions to the south. The first three units appear to be largely pyroclastic, and good banding in Unit 1b is evidence that this series is marine in part at least.

Geology (Cont'd)

There is a tendency for the acid rocks to be coarser to the north. Unit 4 may be part of a classic andesite pile, which pinches out to the northwest and is replaced there by tuffs of lighter colouration. The fifth unit is likely dominated by sub-aerial ashflows of acid composition, and the final greenstones of Unit 6 are dominantly flows without sign of marine deposition. There are acid breccias scattered through the andesite pile, suggesting that Units 5 and 6 may have been, in part at least, coeval.

LITHOLOGIES

There is very little in the way of marker beds within the greenstones on Top Claims, and a number of characteristics were recorded in trying to map the stratigraphy. For the most part these characteristics have been of limited value, but it is instructive to consider each one and its relation to the final rock classification.

1. Colour

The rocks range through all shades of green and grey, but colour has not proven very useful in tracing units. To a major extent, it is determined here by alteration, with chloritization and epidote alteration tending to darken colours, while silicification and pyritic bleaching lighten them. Many dark rocks turned out to be rhyolites or latites upon staining, while white felsitic rocks were usually the result of shearing and silicification.

2. Textures

A number of textural features were recorded, and some proved of marginal value in mapping.

- a. Cherty: Denotes very fine grain rock with cherty or even glassy fracture. This texture was widespread, marking silicification and flow margins as well as certain stratigraphic units. The banded cherty rocks are likely fine tuffs.

Textures (Cont'd)

- b. **Crystal Tuffs and Porphyry:** Most rocks on this property contain plagioclase phenocrysts and this did not prove a mappable feature. Mafic and quartz crystals were less common and more useful. Quartz-eye porphyry members appeared in several units, but these are easily confused with quartz amygdules (common on upper property) and with a set of quartz-porphyry dacite dikes.
- c. **'Lapilli':** By prior definition, this refers to all clasts between 4mm and 32mm in size. They occur widely in all rock types, but were only mappable as characteristic of two units.
- 'Clasts' is perhaps a misleading word, for in practice all textural irregularities which were of appropriate size (and not obviously amydules) were placed in this category. These appeared in flows as well as tuffs and were seldom of a similar composition to the groundmass when observed on a stained surface. The most common form of small 'Lapilli', in the acid tuff especially, is an aggregate of plagioclase phenocrysts, often containing mafic crystals as well. Another common variety is an irregular, silicious nodule, commonly with pyrite or epidote, and resulting from silicification. Some 'lapilli' appears to have formed by metamorphism of amygdaloidal lavas, and most of the coarser varieties originated by processes which will be discussed under breccias.
- d. **Breccias:** By prior definition, this includes rocks with clasts over 32mm, independent of origin or fragment rounding. There are a number of basic types.

Where flows were involved, autoclastic breccias could be identified. Other cases involved two distinct lithologies and in some of these, the matrix appeared to have an intrusive relationship to the clast. Brecciation by a highly silicious 'dacite' matrix was especially common. Still other 'breccias' appear to have formed by silicification outward from a series of cracks.

Textures (Cont'd)

Of the apparently pyroclastic breccias, a major portion were chaotic and multilithic, being formed by an unsorted deposition of several different lithologies (including glass). Some of these are undoubtedly coarse greywacke, but others appear to have been deposited when plastic and are very likely pyroclastic flow breccias. Eutaxitic textures were, in fact, recognized in a few places.

3. Potassium Content

Rock samples were stained for potassium with sodium cobaltinitrite after etching with hydrofluoric acid. The etching is useful in determining silicification and identifying textures, while potassium content proved the most mappable characteristic on these claims. Secondary potassic alteration was also observed in a few localities. Many rocks were found to have an unusually high potassium content, and are likely of approximate latite composition. Definitions used in mapping are as follows:

- a. Latite - highly potassic groundmass - a few could be classified as rhyolites.
- b. Rhyodacite - faint potassic staining of groundmass. Some of these appear to have formed by alteration, especially silicification of the latites.
- c. Dacite and Andesite - among rocks without visible potassium, the light ones were defined as dacites and the darker as andesites. This may bear little relationship to their actual composition, for it is suspected that some of the darker rocks are basaltic, and colouration is controlled by alteration to a major extent. By and large, however, the division proved mappable.

4. Rock Unit Descriptions

Lower numbers considered to be stratigraphically lower.

Rock Unit Descriptions (Cont'd)

UNIT 1a. Lapilli Latites and Rhyodacites

These comprise three layers of green tuffs (both dark and light) separated by banded marine tuffs. The 'lapilli' are largely aggregates of plagioclase and chloritized mafic crystals. The three layers are quite similar to one another, and some of the rhyodacites are mottled, being formed by silicification of latites. There is a chaotic acid breccia roughly half way down the second of the three units, which carries pyrrhotite as well as pyrite.

UNIT 1b. Black Bedded Tuff

These are grey to black in colour and likely contain argillitic material. Visible bedding occurs in part of each unit, the balance being massive. Of the two units, the lower (inner) one contains potassic tuff layers, while the other is more heavily pyritized. This pyrite is fine grained and may be sedimentary.

The marine tuffs are badly cross-fractured and seem to vary between roughly 20 and 90 feet in width. The entire Unit One is over 1200 feet in thickness, and its lower boundary has not been recognized on the property.

UNIT 2. Lapilli Dacite and Andesite

This is a largely nondescript mixture of dacite and andesites which outcrops poorly in the west except along Top Creek. They are typically green rocks, and an unusually high percentage contain 'lapilli' clasts. Where they outcrop to the northeast on Mt. McRae, these rocks are largely of light colour due to silicification, but bear mafic crystals in a fine groundmass. Thickness is roughly 400 feet.

Rock Unit Descriptions (Cont'd)

UNIT 3. Quartz-Mafic Rhyodacite

This unit is comparatively thin (250 feet). Some lapilli latite occurs in it, but it is dominantly rhyodacite, often with quartz or mafic phenocrysts.

UNIT 4a. Grey Andesite Pile

This unusual formation becomes extremely thick to the south. To the north it is largely replaced by dacite, which is fine or 'cherty' in the northwest. These dacites (4a) are likely tuffs, but much of the main andesite pile (4b) appears to be composed of flows. There is a small band of white and green cherts involved (4x) but this banding results, in part at least, from silicification. The whole sequence may well be the northern margin of some coastal andesitic pile. Many of these rocks, in the southwest especially, have a grey colour rather than green.

UNIT 5. Acid Tuffs and Ashflows

This is an acid unit involving various tuffs and chaotic breccias. There is a subunit (5x) of banded cherty tuffs, typically white and brown. The sequence is not well exposed in the lower fold limb, the Top Creek section being badly sheared and silicified. On top of the ridge, however, some of the breccia have eutaxitic textures, and ashflows may well dominate.

UNIT 6. Upper Greenstones

These are dull greenstones, typically porphyritic and often amygdaloidal. They appear to be flows, quite likely subaerial.

Other Lithologies

In addition to the regular units, there are a number of dikes. Most of these are greenstones, and only rarely detectable against background lithologies. At least two systems of quartz-eye porphyry dikes were also recognized, however; one being grey and latitic and the other white, silicious and dacitic (with beta-quartz). These are minor intrusions, and with the exception of one large dacite dike, no attempt was made to map them. One major diorite dike was also observed.

The final rock classification mapped is the 'sheared felsites'. These are white rocks, typically highly pyritic and composed almost entirely of fine quartz and altered feldspars or clay minerals. They form by alteration (shearing and silicification) of other lithologies, and either lack potassium or bear only patchy remnants of a potassic groundmass.

STRUCTURE

The regional structure appears to involve a major recumbent fold plunging gently south. This interpretation is open to question, but is supported by the following evidence:

1. There is considerable symmetry in the formation, with units pinching out to the south.
2. Normal grading was observed in two places along the upper marine tuffs and reverse gradings in two of the lower bands. The ambiguity of grading in water laid tuffs must be kept in mind, however.
3. Some strange things happen to the stratigraphic ordering at Top Creek fault zone. Crossing from north to south, the upper units are displaced downward, the lower units displaced upward, and most of the Unit 1 (including all marine tuff bands) disappears. These observations are explained if the fault zone displaced the southern part of the fold so that the exposure there lies closer to the fold hinge.

Structure (Cont'd)

It is also possible, however, the Top Creek is a major fault boundary, and that the units on opposing sides are not the same. The few really good marker beds which exist do not cross this fault, and the rest of the stratigraphy is based largely on interbanded potassic and non-potassic rocks. Furthermore, the stratigraphic dips to south of the fault largely plunge to the east, while those to the north dip gently southward.

ALTERATION

The three widespread forms of alteration are silicification, pyritization and addition of epidote. To a major extent, these occur together, although their ranges are sufficiently distinct to be mapped separately. Veins commonly bear all three minerals. The silicification may be fine or diffused, and often difficult to observe except on etched surface. Pyrite and epidote tend to specifically attack lapilli and plagioclase phenocrysts. Potassic alteration was also observed locally, but is neither widespread, nor of apparent significance. A map of the alteration patterns has been included.

MINERALIZATION

Pyrite is widespread on the property, but occurs largely, if not exclusively, as an alteration. It may be sedimentary in some of the banded tuffs, but this is far from certain.

Galena, sphalerite and chalcopryrite were all found in minor amounts on the property. They occur in small veins or blebs within or near sheared, pyritized and silicified zones. Typically, they are accompanied by pyrrhotite and by carbonate (and locally sericite) alteration. They appear to be directly related to fracture zones, although it is marginally possible that the resulting creeks have exposed host rocks which do not otherwise outcrop.

The largest occurrence of mineralization found was along Top Creek at 2300 foot level (40 west by grid). This is a zone roughly $2\frac{1}{2}$ feet wide and 10 feet long, containing veins of massive galena and chalcopryrite up to $1\frac{1}{2}$ inches in width. It is associated with quartz, pyrrhotite and calcite in what is likely a lapilli tuff of Unit 1a. Shearing and silicification have largely converted the surrounding rocks to felsite, however.

Mineralization (Cont'd)

Comparison with Seneca Deposit

The Seneca deposit is a Kuroko style body in the Harrison formation south of Top property. It is thought to have formed at the end of a phase of acid volcanism in a shallow marine environment. Its stratigraphic setting is described in the forementioned report by Thompson as follows:

"The Seneca occurrence comprises massive sphalerite-pyrite-chalcopyrite as discontinuous lenses (pods?) within a thin acid pyroclastic host. The pyroclastic host is, predominantly a rhyolite lithic tuff and lapilli tuff. Rounded and subrounded rhyolite fragments 'float' in a fine-grained matrix of quartz and feldspar. Associated with the rhyolite tuff are lenses of breccia and lapilli tuff of bleached rhyolite fragments in a fine-grained, black somewhat friable matrix thought to represent lithified carbonaceous mud. Thin bands of laminated argillite and andesite lapilli tuff and breccia are intercalated. Thin rhyolite and andesite flows overlie the pyroclastic rocks. This succession, which has an aggregate thickness of approximately 200 feet is bounded above and below by dacite porphyry.

"Pyrite is ubiquitous throughout the pyroclastic host as fine disseminations, as rims around fragments, and along fractures. The sulphide lenses are intimately associated with the rhyolite lapilli tuff and intercalated argillaceous breccias."

It is of interest that veining and hydrothermal alteration are not features of the Seneca Deposit. It is also of interest, however, that it is the vicinity of the marine acid tuffs (Units 1 and 3) that have yielded high values in zinc geochemistry on Top property.

GEOCHEMICAL SURVEY

Soil samples were taken at 200 foot spacings along lines 500 feet apart. The minus-80 mesh fraction of this was analyzed for copper, silver, zinc and lead, with the results shown on accompanying map. Part of these analyses were done by Vangeochem Lab Ltd., and another part by Bondar-Clegg and Co. Ltd., both of North Vancouver. Slight adjustments were required so that the distribution curves for the results from these two sources matched more closely.

Geochemical Survey (Cont'd)

In field sampling, organic material was avoided where possible. In most areas soil profile was poorly developed and over much of the property soils overlay porous talus and may well have been leached. In the southeast facing bowl on the east side of the claims, the soils were underlain by deep clay and boulder till.

As the accompanying histograms of geochemical values show, there are no clearly distinct anomalous populations involved. The silver distribution, in fact, is hardly skewed, which is unusual for geochemical populations. Zinc has more skew and more singularly high values than is usual for background distributions.

The geochemical results are mapped in Figures 6 and 7. All elements give very similar patterns in their areal distribution of high values. This may, of course, mean that the response is to polymetallic mineralization; but correlations such as this very often arise from environmental control patterns such as variations in the acidity or ion retention capacity of soils.

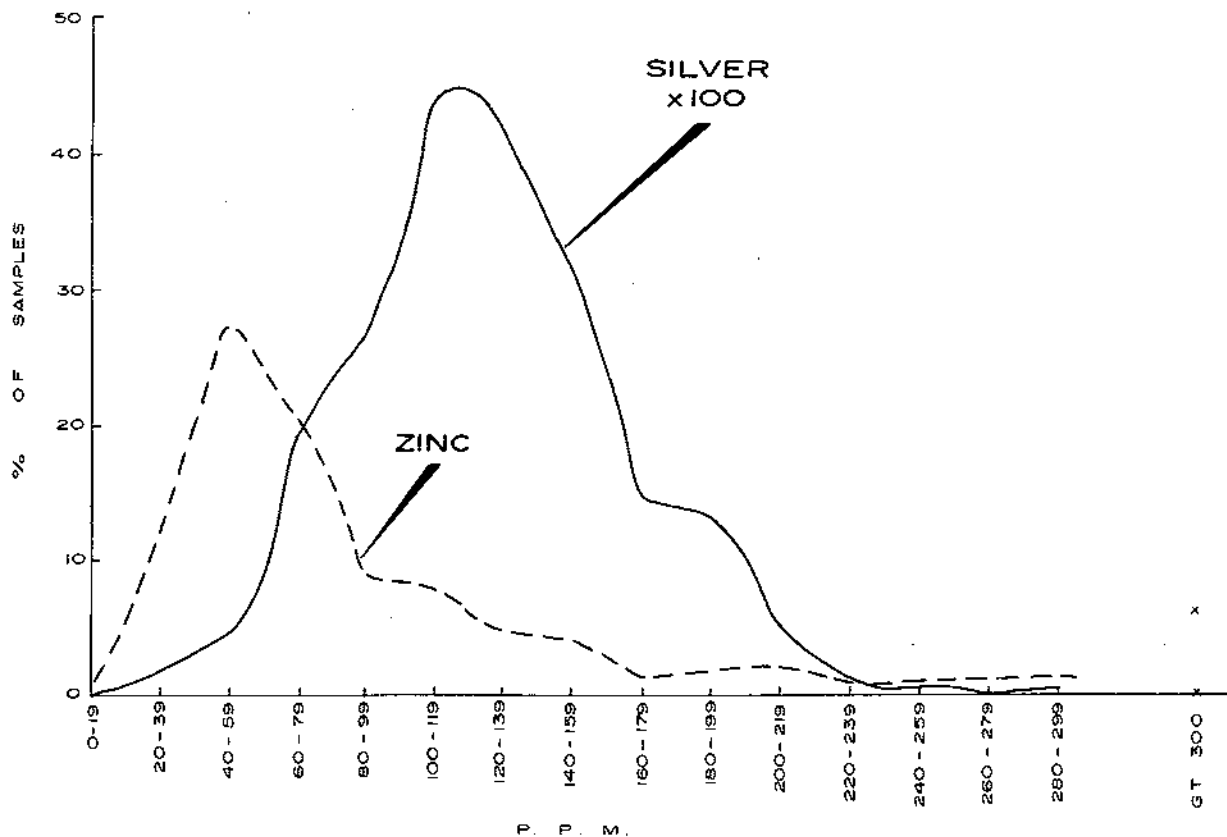
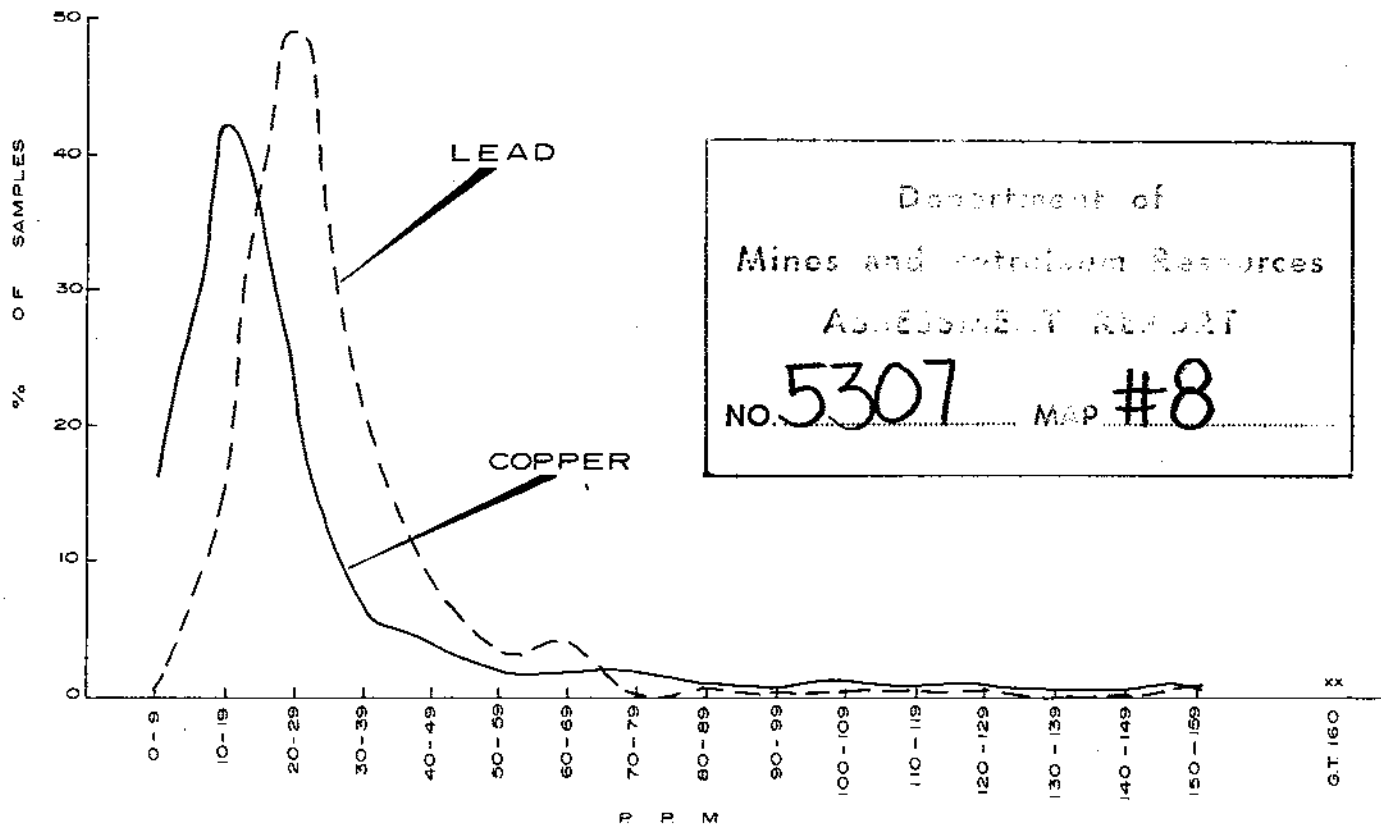
Those anomalous values (in lead, silver and copper especially) which lie near the Top Creek shear zone are quite likely associated with mineralization of the style already observed there. The fingers of intense geochemical highs which enter the grid on the 10 North line are in an area where several quartz porphyry dacite dikes were observed with intense pyritization in surrounding tuffs. From that vicinity, a band of anomalous values appears to follow the lower limit of Unit 4 around toward one of the more mineralized portions of the Top Creek section. Some pyrrhotite was observed in this area, as it was in a comparable stratigraphic position on the upper fold limb associated with the anomaly at 25S, 10W.

The most intense anomalies occur in an area of deep overburden and no outcrop in the extreme north corner. If this is related to underlying bedrock it would involve the lower limb of Unit 5, which has not been clearly observed, and which does not necessarily have the subaerial character of this unit where seen on the ridge.

There is also, however, a north-south trend to the anomalies which correlate with trends in the alteration patterns. Geochemical highs tend to follow zones of silicification and epidote alteration, which suggests that they are related to secondary fractures rather than specific lithologies.

GEOCHEMICAL SAMPLE DISTRIBUTIONS

(615 SAMPLES)



MAGNETIC SURVEY

Magnetometer readings were taken at 100 foot spacings on lines 500 feet apart across the Top property. Three magnetometers were employed in this survey, two being MF-2 models of the Scintrex, and the third a Hunter Jalander, Model 46-65.

One instrument was employed as a base station recorder for most of the program, and this data used to adjust for time variation in the magnetic field. Diurnal variation magnetographs were obtained for days when the base station recorder failed or was in field use. Further adjustments were found necessary because of differing response scales of the various instruments.

The results are contoured on accompanying Figure 5. Considering the variety of volcanic rocks and alteration, there was surprisingly little variation in magnetic intensity. There appears to be more magnetic expression in Units 4a and 6 (the andesite flow groups) than elsewhere, and the strangely shaped anomaly just south of grid center (zero north-zero west) may be related to metamorphism by the diorite. Otherwise, there is no obvious relationship of lithology to magnetic intensity. The areas of grey rock have more magnetic expression than the green ones, suggesting that alteration may have removed some of the original magnetic properties, but there is poor correlation with any of the alterations styles mapped. The geochemical anomalies occur in an area of almost no magnetic variation.

Briefly, the magnetic survey has yielded very little useful information on this property.

CONCLUSIONS

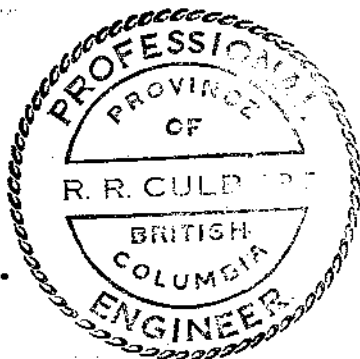
1. The property is underlain by a series of flows and pyroclastic rocks of the Harrison Lake Formation (Jurassic). These vary widely in texture and composition, and appear to have been deformed into a regional recumbent fold. There is one major cross-fault at Top Creek.
2. Alteration has been widespread, involving silicification, pyritization, epidote alteration and local potassic alteration. This has changed the appearance of many of the rocks and seems to be associated with copper-lead-zinc mineralization.

Conclusions (Cont'd)

3. The magnetic survey did not prove informative on this property.
4. Prospecting was hampered by the deep forest environment. What copper, zinc and lead mineralization was observed, was associated with pyrrhotite, silicification and often with carbonate alteration. These occurrences were generally near zones of shearing.
5. Copper, silver, lead and zinc values in soils showed similar anomalous structures in the northwestern and central portion of the property. These may in part be controlled by lithology, but the geochemical trends are more closely identified with alteration patterns. Zinc gives the clearest anomalies in this area.
6. The geochemical anomalies trend northward off the property with apparently increasing strength.
7. It does not seem very likely that the geochemical anomalies result from Kuroko-style mineralization. Some follow-up work is warranted however.

RECOMMENDATIONS

1. Soil samples with anomalous zinc values should be run for barium, as barite is a distinctive associate of Kuroko style mineralization both at Seneca and on Vancouver Island.
2. Rock chip sampling and microscopic examination of specimens from the anomalous areas should be carried out to determine more exactly the style of mineralization.
3. Geochemical and geological reconnaissance should be carried out in the area between Top Group and Jump Creek (from which the geochemical anomalies enter the sample grid). This would also serve to tie together the geology of Top and Ku Groups.



Respectfully submitted:
STOKES EXPLORATION
MANAGEMENT CO. LTD.

R. R. Culbert

R. R. Culbert, PhD, P. Eng

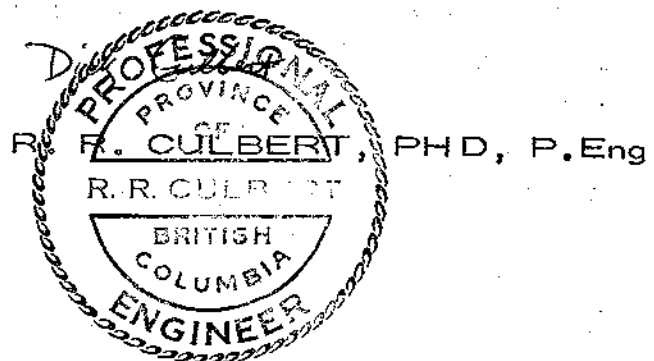
October 31, 1974.

CERTIFICATION

I, RICHARD R. CULBERT, do hereby certify that:

1. I am a Practicing Geological Engineer with Stokes Exploration Management Co. Ltd., at #713 - 744 West Hastings Street, Vancouver, and a resident of Vancouver, British Columbia.
2. I am a graduate of the University of British Columbia, 1963 in Geological Engineering.
3. I received a Doctorate from the Department of Geophysics at the University of British Columbia in 1970 and completed two years of post-doctoral research into mineral exploration technique at Dept. of Geology, University of Alberta, Edmonton, Alberta.
4. I am a member of the Association of Professional Engineers of the Province of British Columbia, and a member of the Canadian Institute of Mining and Metallurgy.
5. I have been actively involved in mineral exploration or exploration research during every field season since 1961.

I have no financial interest in the Top Property nor in Standard Oil Company of British Columbia.

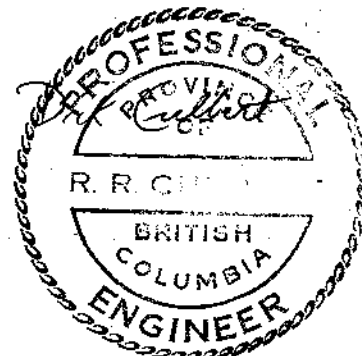


APPENDIX I

WEST HARRISON - TOP CLAIMS

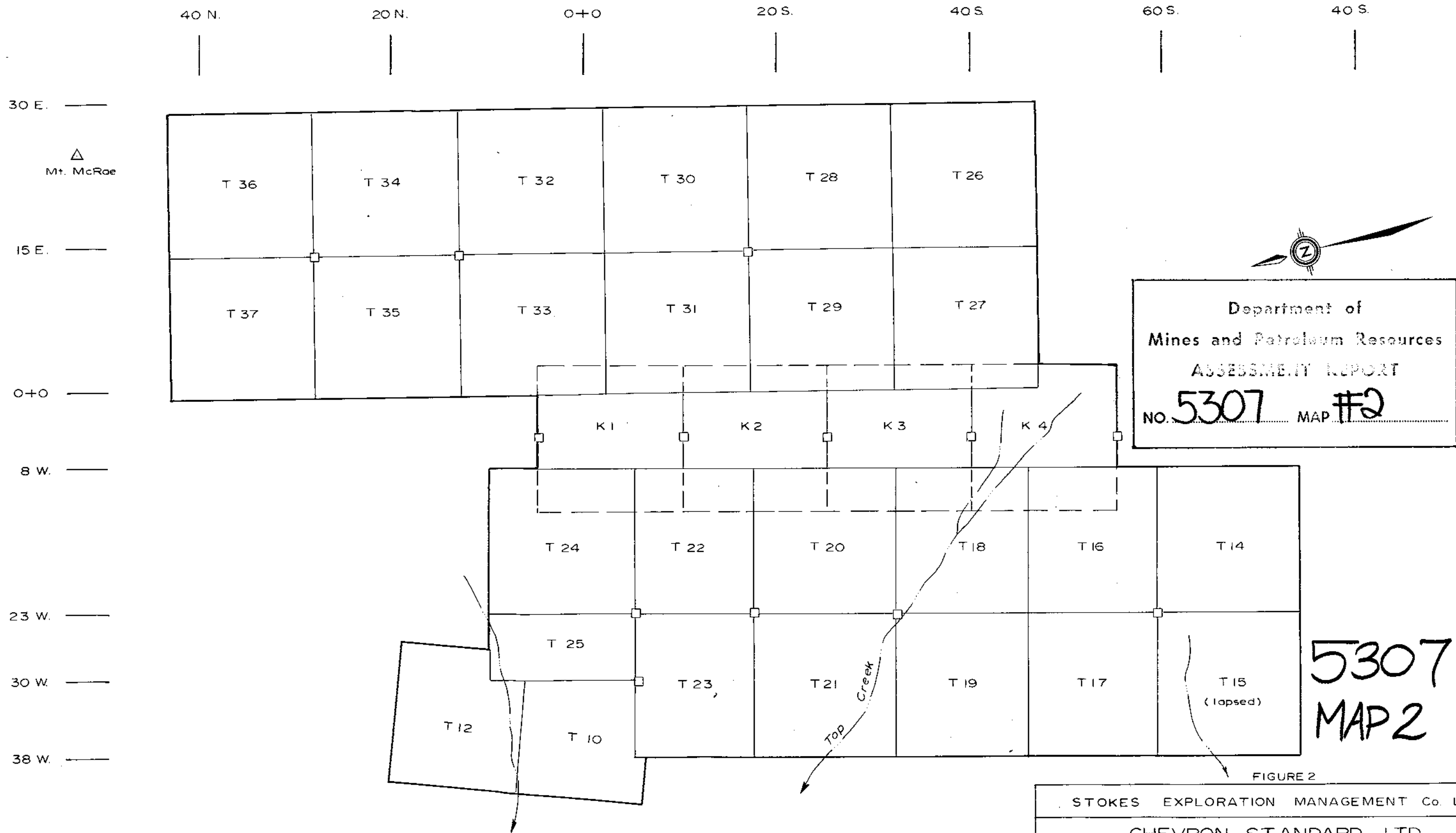
SUMMARY OF COSTS
FOR ASSESSMENT PURPOSES

Assays		\$2,119.29
Helicopters		624.97
Drafting and photocopying for reports		62.74
Long distance calls		45.10
Truck rental		909.56
Mag rentals		420.00
Rentals - VW camper, camp, power saw and topofil		1,363.62
Mine Recorder		25.00
Camp expenses:		
Room	23.70	
Groceries & meals	828.69	
Travel	252.02	
Supplies	326.40	
Claim tags	<u>2.50</u>	
		1,433.31
Service charge		<u>257.97</u>
		\$7,261.56
Wages		7,644.00
D. Arscott, P. Eng		500.00
R. R. Culbert, PhD, P. Dn		2,700.00
D. G. Leighton, Geologist		617.50
R. B. Stokes, P. Eng		<u>770.00</u>
TOTAL		<u>\$19,493.06</u>



Appendix I Cont'd)SUMMARY OF WAGES - WEST HARRISON

<u>Name</u>	<u>Type of Work</u>	<u>Dates Worked</u>	<u>No. of Days</u>	<u>Rate</u>	<u>Amount</u>
Bilquist, R.	Technician	Oct 10-15	6	75.60	453.60
Brooks, J.	Geologist	Sep 11-19	9	67.20	604.80
Burkitt, C.	Technician	July 12-18	7	50.40	352.80
Chase, W.	Field supervisor	July 12-19	8	67.20	537.60
Diston, R.	Technician	July 12-Sep 13	11 $\frac{1}{2}$	50.40	579.60
Forgeron, S.	Technician	Sep 11-Oct 15	26 $\frac{1}{2}$	58.80	1,558.20
Johnseon, E.	Technician	Sep 11-Oct 31	24	58.80	1,411.20
Needham, B.	Technician	Sep 11-Oct 18	18 $\frac{1}{2}$	58.80	1,087.80
Williams, L.	Technician	July 12-18	7	50.40	352.80
Winslow, J.	Geologist	Sep 11-Oct 18	10 $\frac{1}{2}$	67.20	<u>705.60</u>
					7,644.00
Arscott, D.	P.Eng	July 12-Oct 15	5	100.00	500.00
Leighton, D.G	Geologist	Oct 10-16	6 $\frac{1}{2}$	95.00	617.50
Culbert, R.R.	P.Eng	Sep 6-Oct 31	27	100.00	2,700.00
Stokes, R.B.	P.Eng	July 12 -Oct 15	6+	125.00	<u>770.00</u>
					<u>\$12,231.50</u>



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ASSESSMENT REPORT
NO. 5307 MAP #2

5307
MAP 2

LEGEND

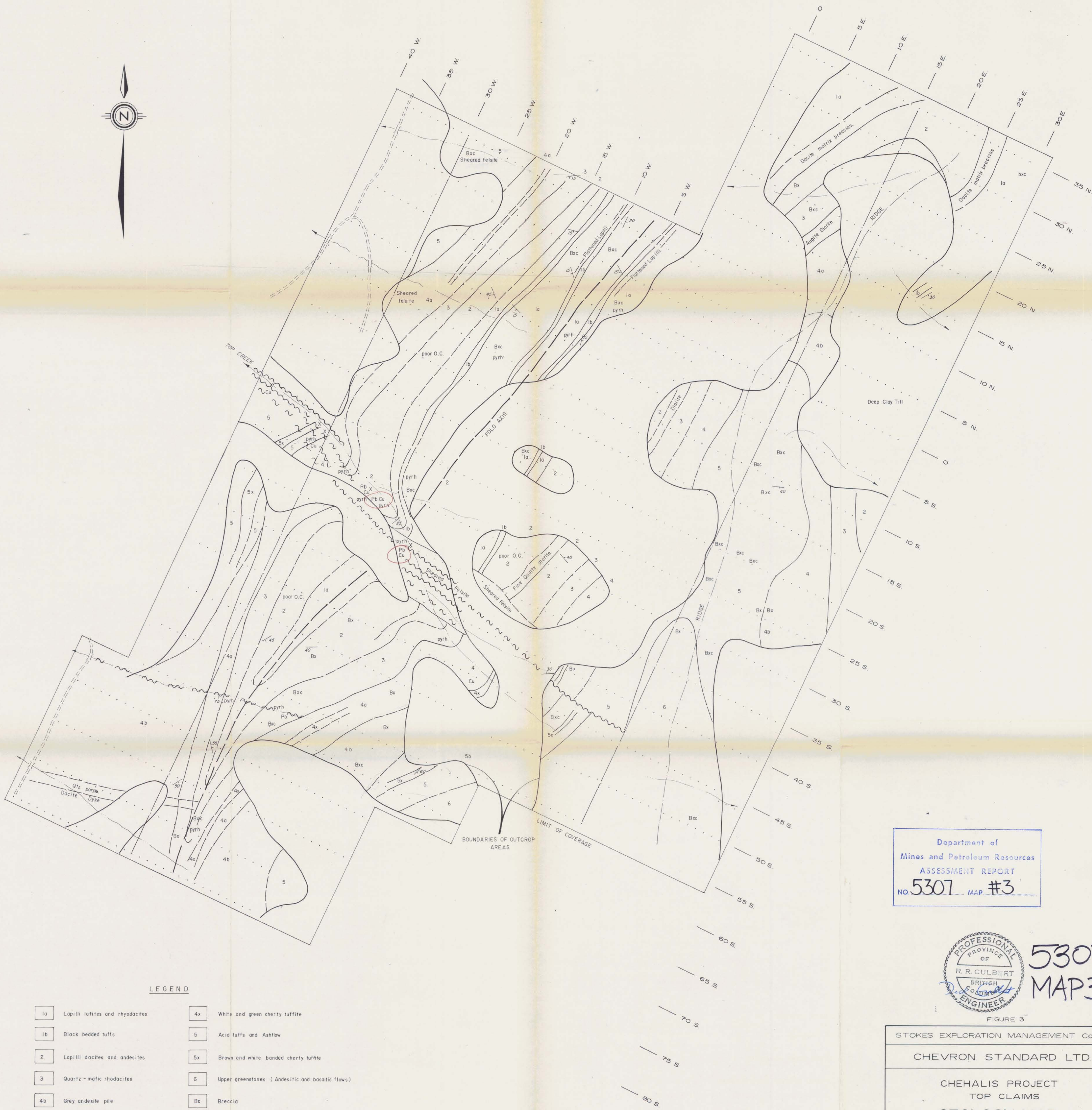
- T Top Claim
- K Kazar Claim
- Claim posts found.

STOKES EXPLORATION MANAGEMENT Co. LTD.
CHEVRON STANDARD LTD.
CHEHALIS PROJECT
TOP CLAIMS
CLAIM MAP

SCALE
FEET 1000 500 0 1000 2000 FEET

PROJECT No. C-423	SCALE 1" = 1000'	DATE OCT. 31 /74	DRAWN BY: R.R.C.
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FIGURE 2



LEGEND

- | | | | |
|----|---------------------------------|-----|--|
| 1a | Lapilli latites and rhyodacites | 4x | White and green cherty tuffite |
| 1b | Black bedded tuffs | 5 | Acid tuffs and Ashflow |
| 2 | Lapilli dacites and andesites | 5x | Brown and white banded cherty tuffite |
| 3 | Quartz-mafic rhodacites | 6 | Upper greenstones (Andesitic and basaltic flows) |
| 4b | Grey andesite pile | Bx | Breccia |
| 4a | Outer dacite phase | Bxc | Chaotic breccia (Usually acid or multilitic) |
| | | | |
| | | | |

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 5307 MAP #3



5307
MAP 3

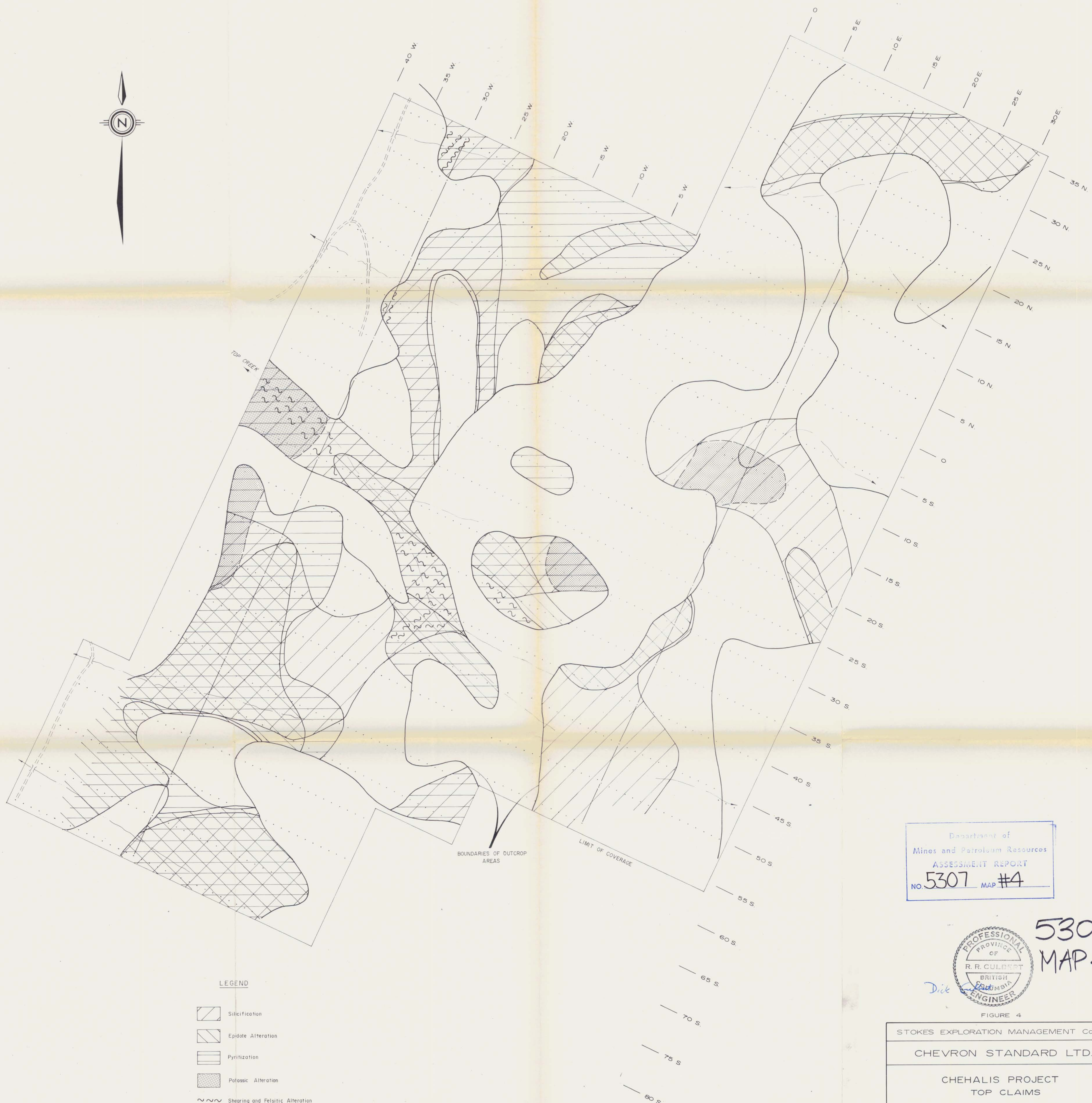
FIGURE 3

STOKES EXPLORATION MANAGEMENT Co. LTD.
CHEVRON STANDARD LTD.
CHEHALIS PROJECT
TOP CLAIMS
GEOLOGY MAP






SCALE
FEET 500 250 0 500 1000 FEET

PROJECT No. C-423	SCALE 1" = 500 Ft.	DATE OCT. 31/74	DRAWN BY: R. R. C.
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To accompany geological, geochemical, and geophysical report on Top Claims, New Westminster M.D. by R. Culbert, P. Eng. Dated Oct. 31, 1974.



LEGEND

-  Silicification
-  Epidote Alteration
-  Pyritization
-  Potassic Alteration
-  Shearing and Felsitic Alteration

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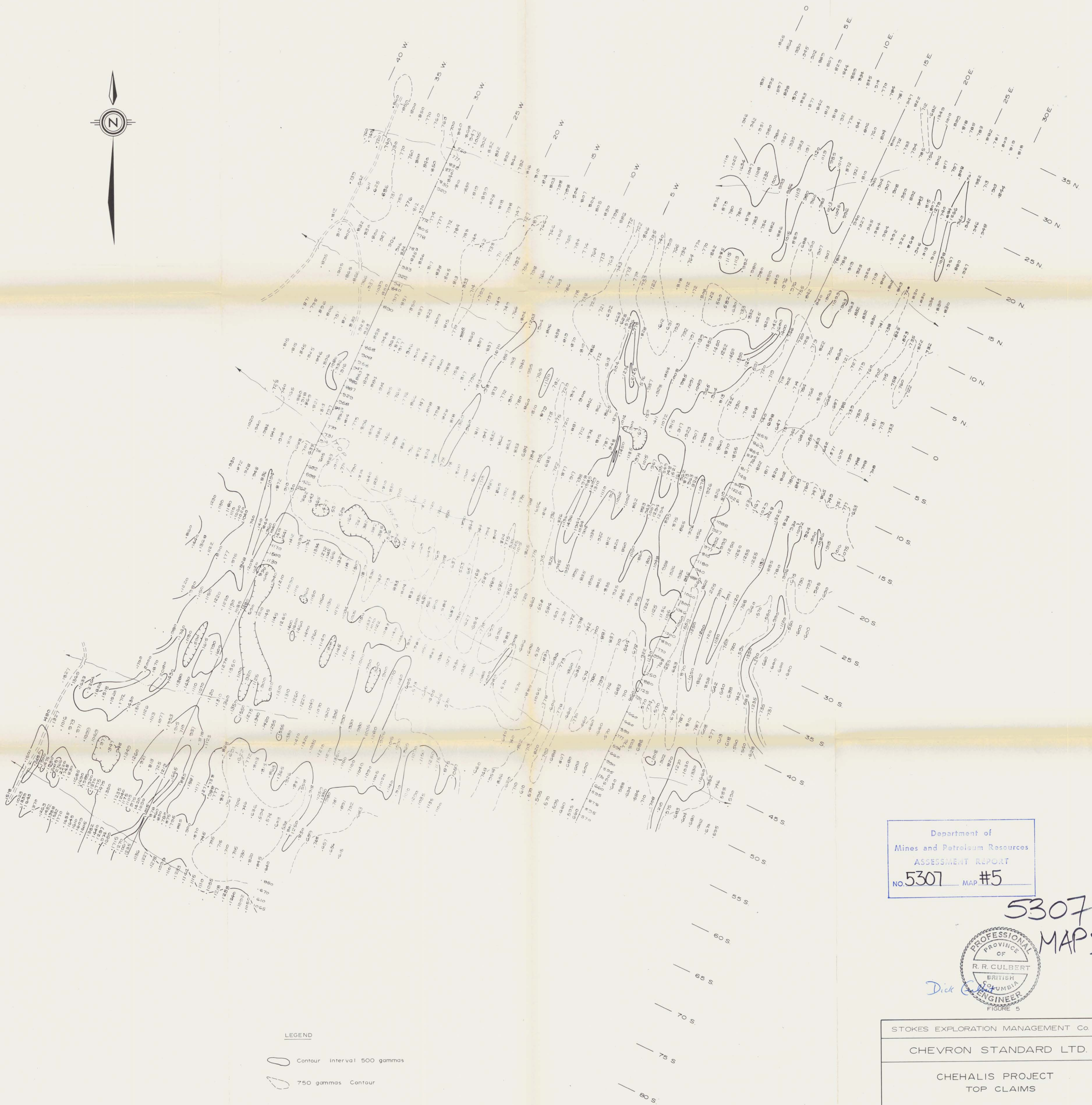


5307
MAP 4

FIGURE 4

STOKES EXPLORATION MANAGEMENT Co. LTD.			
CHEVRON STANDARD LTD.			
CHEHALIS PROJECT TOP CLAIMS ALTERATIONS			
SCALE FEET 500 250 0 500 1000 FEET			
PROJECT No. C-423	SCALE 1" = 500 Ft.	DATE OCT. 31/74	DRAWN BY: R. R. C.

To accompany geological, geochemical, and geophysical report on Top Claims,
New Westminster M.D. by R. Culbert, P. Eng. Dated Oct. 31, 1974.



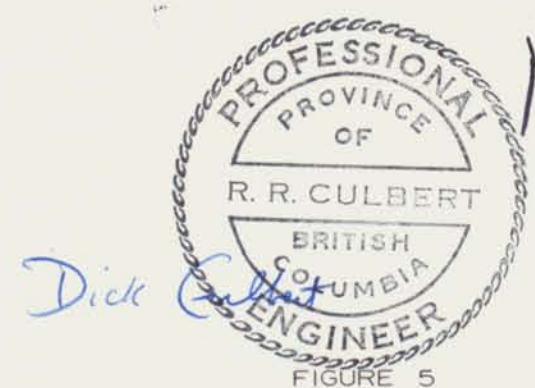
LEGEND

-  Contour Interval 500 gammas
-  750 gammas Contour

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SCALE 1" = 500 FT. 0 500 1000 FEET

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5307
MAPS



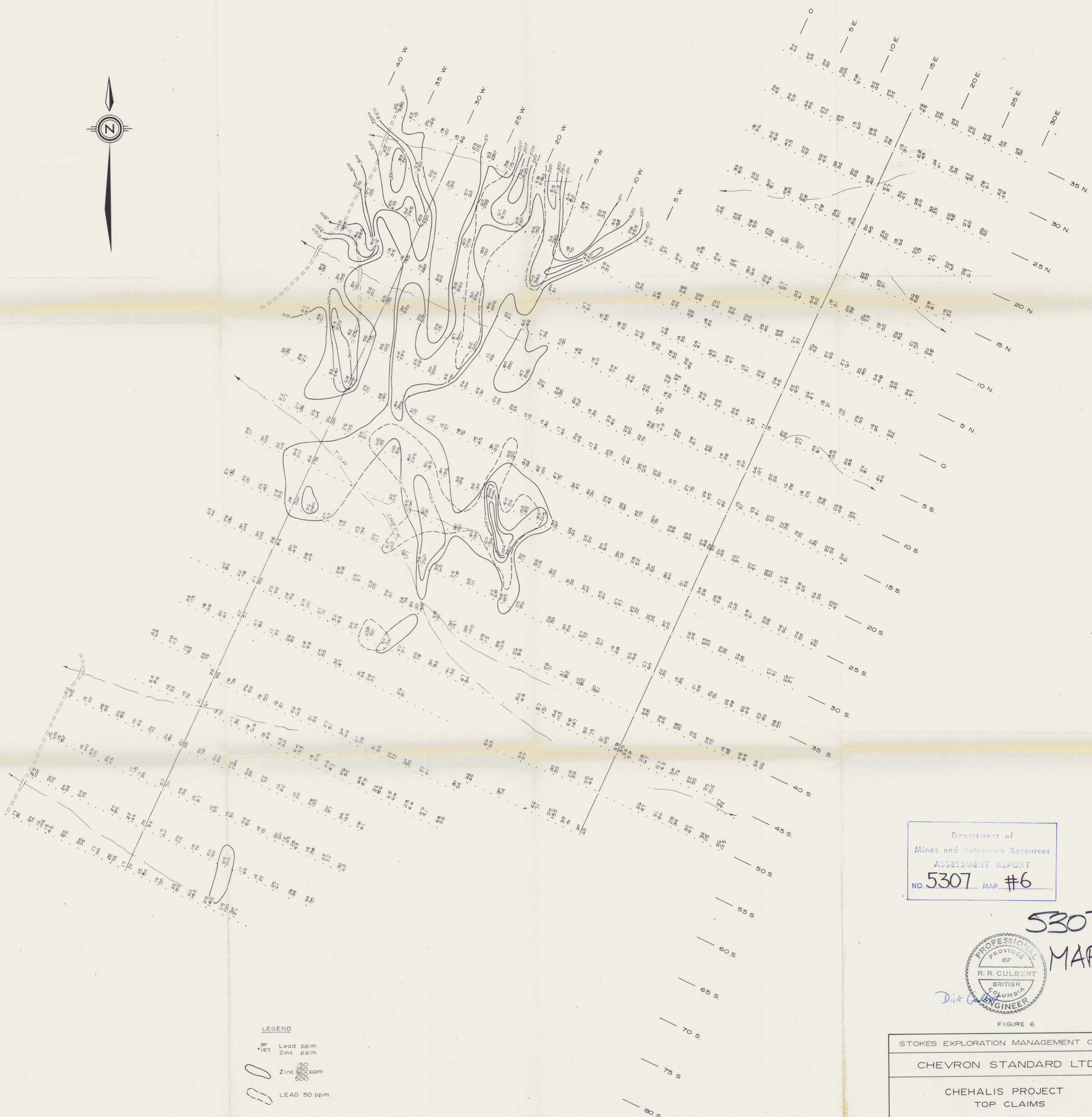
STOKES EXPLORATION MANAGEMENT Co LTD

CHEVRON STANDARD LTD.

CHEHALIS PROJECT
TOP CLAIMS

MAGNETOMETER SURVEY

PROJECT No C-423	SCALE 1" = 500 FT.	DATE OCT. 31/74	DRAWN BY: R. R. C.
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LEGEND
30 Lead ppm.
127 Zinc ppm.
150 Zinc ppm.
500 Zinc ppm.
LEAD 50 ppm.

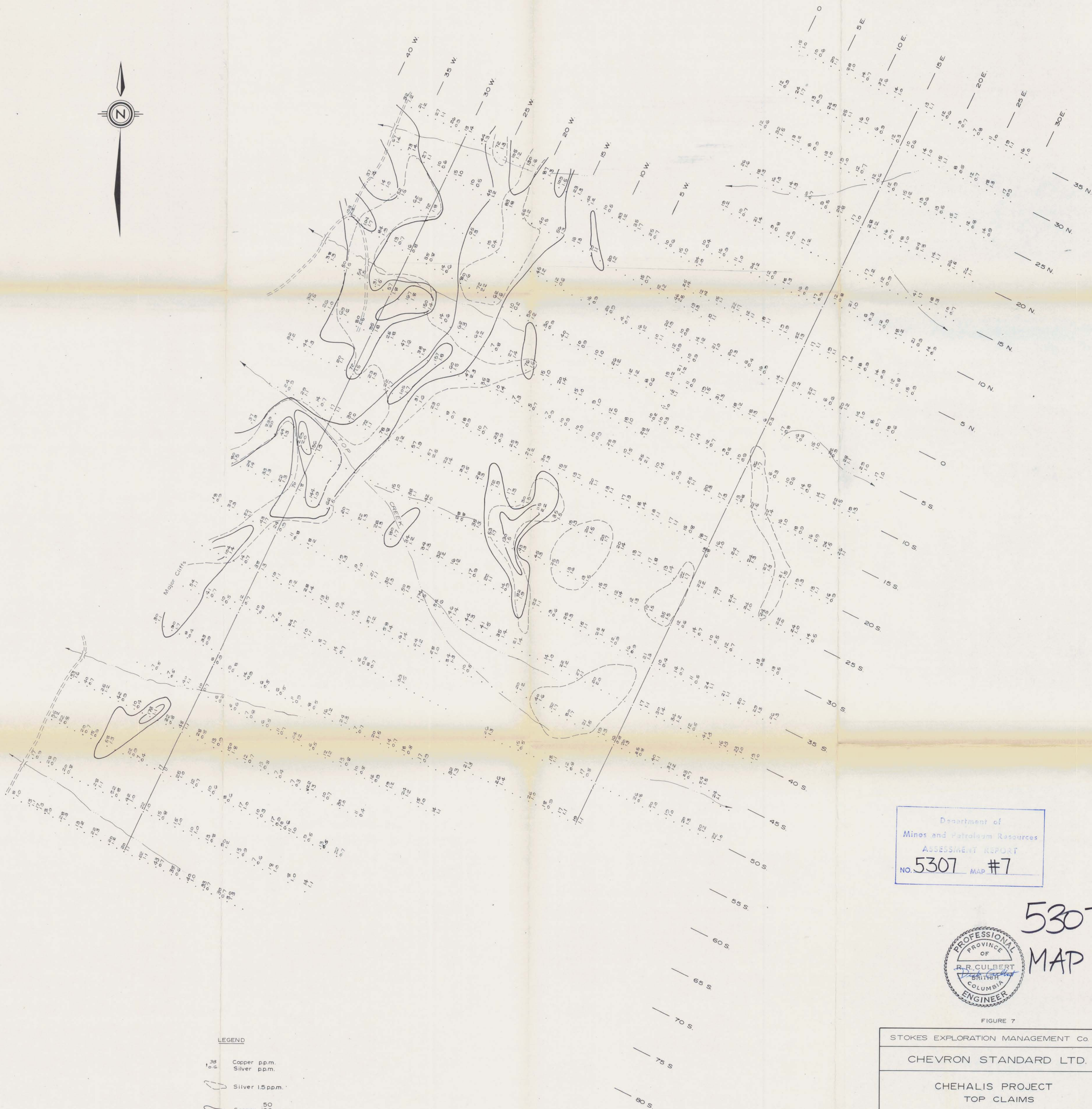
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ASSESSMENT REPORT
NO. 5307 MAP #6

5307
MAP 6
PROFESSIONAL
PROVINCE
OF
R. R. CULBERT
BRITISH
COLUMBIA
ENGINEER
Dik

FIGURE 6

STOKES EXPLORATION MANAGEMENT Co. LTD.			
CHEVRON STANDARD LTD.			
CHEHALIS PROJECT TOP CLAIMS			
LEAD & ZINC IN SOILS			
PROJECT No. C-423	SCALE: 1" = 500 Ft.	DATE: OCT 31/74	DRAWN BY: R. R. C.

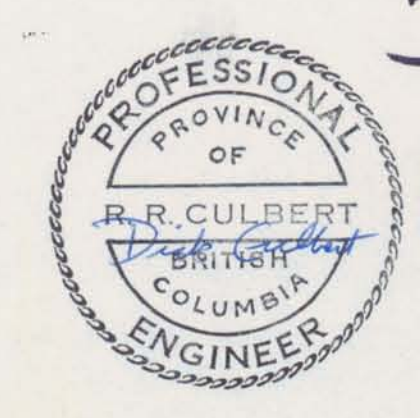
To accompany geological, geochemical, and geophysical report on Top Claims,
New Westminster, B.C. by R. Culbert, P. Eng. Dated Oct. 31, 1974.
FEET 0 500 1000 FEET



LEGEND

- Silver 1.5 ppm.
- - - - - Copper 50
- · · · · Copper 100 ppm
- · - · - Copper 200

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5307
MAP 7

FIGURE 7

STOKES EXPLORATION MANAGEMENT Co LTD			
CHEVRON STANDARD LTD.			
CHEHALIS PROJECT TOP CLAIMS			
COPPER & SILVER IN SOILS			
PROJECT No C-423	SCALE 1" = 500 FT.	DATE OCT. 31/74	DRAWN BY: R. R. C.

To accompany geological, geochemical, and geophysical report on Top Claims,
New Westminster M.D. by R. Culbert, P. Eng. Dated Oct. 31, 1974.

SCALE
0 500 1000 FEET