



2292

SUMMIT OILS LTD
LOLJUH CREEK PROPERTY
GEOCHEMICAL SURVEY
ZINC

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 2292 MAP #4



To accompany report by W.G. Stevenson & G.L. Anselmo on the Joe Claim
Group, on Loljuh Creek, Omineca Mining Division, dated January 30, 1969

David S. Chisholm



Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. **2292** MAP #2

- GEOLOGY**
- 1 [Pink box] Intrusive - syenite
 - 2 [Blue box] Hazelton volcanics - mainly trachyte
- * Indicates position of specimens referred to in report. F1, F2 are float specimens.
- A - A Location of magnetic profile

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SUMMIT OILS LTD
LOLJUH CREEK PROPERTY
CHAIN AND COMPASS CLAIM SURVEY
Including Geology and Drainage Survey

ppm
Cu 40 Silt sample
Zn 107
Ag 7

Limit of outcrop
Claim line
Base line
S.P. 2 Soil profiles

2438

7.5 5.0 2.5 0 750 1500
1" = 700'

To accompany report by W.G. Stevenson & G.L. Anselmo on the Joe Claim Group on Loljuh Creek, Omineca Mining Division, dated *January 20/70*

Harry L. Chisholm

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PACIFIC GEOCHEMICAL SERVICES LTD.

FIG. 2

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S U M M I T O I L S L T D.

L O L J U H C R E E K P R O P E R T Y

G E O C H E M I C A L , G E O L O G I C A L
& G E O P H Y S I C A L R E P O R T

By

P A C I F I C G E O C H E M I C A L S E R V I C E S L T D.

January 20, 1970.

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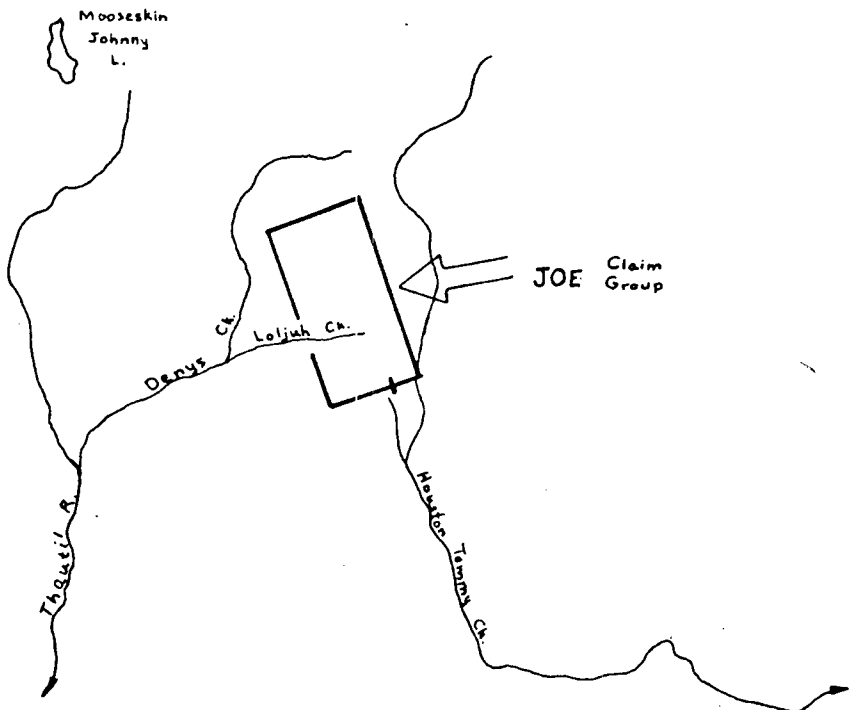
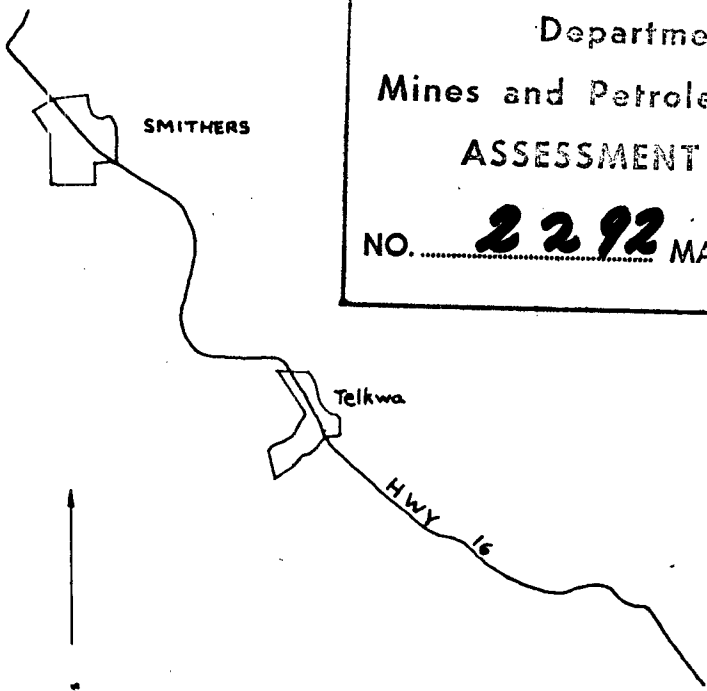
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NO. **2292** MAP **#1**



SUMMIT OILS LTD
LOLJUH CREEK
PROPERTY LOCATION MAP
1" - 4 mi.

FIG. 1

INTRODUCTION:

The Joe claims were staked by Summit Oils Ltd., with the objective of claiming ground covering an intersection of two magnetic trends which may indicate fault zones. These trends were discovered on release of the airborne magnetic survey, Map 5309-G. The property is in the vicinity of known mineral occurrences. The objective of the exploration program outlined in this report was to determine the significance of these magnetic trends on the property, and further, to attempt to outline any areas within the property that were geochemically anomalous.

A crew of five men were employed on the property to carry out the program which entailed geochemical, geological and geophysical work, as well as the surveying and flagging of a base line to establish control.

LOCATION AND ACCESS:

These mineral claims are located at $54^{\circ} 22'$ North Latitude and $127^{\circ} 12'$ West Longitude. They are positioned 30 miles South of Smithers, B. C., and immediately West of the Rock Claim Group held by Noranda Mines Ltd.

Access to the property is by helicopter from Smithers. There are no roads leading to the property, nor lakes on the property large enough to land a plane. Logging roads do extend from Telkwa to approximately eight miles from the Loljuh property.

PROPERTY:

A block of 64 Mineral Claims were staked and recorded during April and October, 1969. A chained and flagged base line was run on the property and 100' stations were established on these lines. The claims were surveyed by chain and Brunton Compass and were tied in to the base line. Using this method as control, the claim group was found to be secure and the claim boundaries are positioned on the ground as shown in Fig. 2.

GEOCHEMICAL PROFILE:

There were three soil profiles taken at various locations over the property. These locations are shown in Figure 2. The profile pits were dug to a depth of 16", and the different horizons were sampled.

In all three profiles the "A₀" horizon consisted of a distinct mat of pine needles and organic material. This was the case over all of the property and the layer was not sampled. The "A₀" horizon carried to a depth of ½" - 1".

The "A₁" and "A₂" horizons were intermixed to an extent that no distinct cutoff between horizons was noticeable. This mixture of the two horizons was composed of clays with minor amounts of humic or fibrous plant materials. It was light gray to gray brown and carried to a general depth of three inches.

The "B" horizon was in all cases composed of a friable clay with minor amounts of sand intermixed. It was light brown and carried from three inches to a general depth of ten inches. In all cases it appeared to be slightly oxidized.

The "C" horizon was light brown and was composed mainly of sandy clay. It was less oxidized than the "B" horizon, and contained approximately 5% angular rock. It carried from ten inches on down below the pit bottoms.

Round float in the form of pebbles in the soil sample holes and boulders on the surface, was found on the valley bottom which generally lies in the middle of the claim block and runs the length of the Joe 1 - 20 claims shown in Figure 2. Angular rock was found in the soil sample holes dug on the hillsides. Outcrop was encountered on these hillsides.

In profiles #1 & #2 the "B" horizon carried approximately the same amount of copper, silver and zinc as did the "C" horizon. In profile #3 however, the "C" horizon carried nearly twice the amount of copper and zinc and three times the amount of silver as did the "B" horizon.

In profiles #1 - #3 the "B" horizon carried approximately twice the amount of copper, silver and zinc as did the overlaying "A₁" - "A₂" mixed horizon.

The sampling depth of six to ten inches was determined from these profiles. This depth represented the "B" horizon in all cases. All profile samples were analysed for various metals and PH tests were run on them to determine the nature and extent of ion mobility in the soils of the property. The PH was "5" in all profile samples. Copper, silver and zinc ions tend to travel with relative ease in such an acid environment.

GEOCHEMICAL SURVEY:

Traverses were run by experienced field assistants using the pace and compass method. The samplers started from, and tied in to the base line for control. 152 soil samples were taken at 500' intervals on these traverses, with their locations flagged and coded. Twenty seven silt samples were taken while prospecting and following up the major drainages on the property. The silt sample locations are shown in Figure 2.

The sample holes were dug with a rock hammer, and the samples were taken by hand and placed in a water resistant bag, where they remained until analysis.

The samples were packaged and shipped to Chemex Laboratories Ltd., of North Vancouver, B.C., where drying, sieving and analysis by atomic absorption was carried out under the supervision of professional chemists.

All samples were run for copper, silver and zinc. The background values for these metals were found to be 30p.p.m. for copper, 0.8 p.p.m. for silver, and 70 p.p.m. for zinc. Intensities ranged from 5 - 2130 p.p.m. copper, less than 0.5 - 17.5 p.p.m. silver, and 36 - 635 p.p.m. zinc.

GEOLOGY:

A geological map which includes this area has been published by the B.C. Department of Mines and Petroleum Resources as Map 69-1 to a scale of 1" = 4 miles.

This map shows a wide expanse of rocks of the Hazelton formation of Jurassic age extending from Houston westerly to the Lohjuh claim block a distance of 23 miles. These rocks are principally red to green andesite flows and tuffs, with interbedded sedimentary rocks. A number of small igneous masses, intrusive into the volcanic and sedimentary series are shown through this area.

Our prospecting and geological mapping has indicated that approximately 97% of the claim block is void of outcrop. We have mapped intrusive rock in place at the southwest edge of the property. This intrusive igneous body is exposed over an area 500' by 500' and continues southerly beyond the limits of the claims. The outcrops that we have mapped elsewhere on the property are volcanic basalt and trachyte flows, part of the Hazelton formation. These are medium grained gray to red volcanics with red biotite crystals. I have attached a description of selected specimens of various rock types, the position of these is shown on the attached map marked Figure 2.

MINERALIZATION:

Our prospectors found copper mineralization near the south central part of the property on the mineral claim Joe Number 1. I visited the showing and found malachite stain within a breccia exposed over an area of 100 square feet. The continuation of breccia and mineralization beyond this outcrop was masked by unconsolidated drift and alluvium.

Iron stained rocks are exposed in a stream channel east of the claim block.

There were two individual instances where mineralized float was discovered. While crossing Denys Creek on a traverse, a piece of quartz containing tetrahedrite, bornite and native copper was found in the creek bed. Several more pieces were found further up the stream. Some of these particular pieces were associated with volcanics. The physical appearance of these mineralized rocks was angular; thereby giving evidence of near proximity to their source. This float material is noted in Figure 2 as "F₁".

While crossing Loljuh Creek on a traverse, a piece of siderite bearing galena, sphalerite, chalcopyrite, and iron pyrite was found in the creek bed. The rock was fresh and therefore is assumed to be from the immediate area. This float material is noted in Figure 2 as "F₂".

DESCRIPTION OF ROCK TYPES:

TRACHYTE

Fine-grained to porphyritic, light gray to purple, volcanic containing stains of limonite and manganese on fractures. The rock has approximately 0.5% disseminated magnetite and minor amounts of arsenopyrite.

SYENITE

Fine-grained, light to medium gray porphyry, with Plagioclase phenocrysts, chloritized/biotized hornblende and 1% - 1.5% disseminated magnetite.

DIABASE

Fine-grained, dark gray, intrusive or more probably a volcanic flow. The rock contains approximately 65% mafic minerals and 35% fresh unaltered plagioclase.

BASALT

Dark gray volcanic rock with porphyritic texture con-

tains abundant light colored plagioclase phenocrysts in dark gray groundmass with clots of rounded epidote. This may be intrusive basalt.

BRECCIA

Fragments of vesicular basalt in a fine grained matrix of syenite. Abundant epidote-zeolite alteration and both the fragments and matrix have been replaced. The matrix contains disseminated magnetite.

GEOPHYSICS:

The British Columbia Department of Mines and the Department of Energy, Mines and Resources of the Federal Government have jointly conducted an airborne magnetic survey over this region. Geophysical Map 5309-G published to a scale of 1" = 1 mile shows a complex pattern of magnetic intensities which probably reflect geology.

This magnetic map shows various anomalies, one of which shows trends which extend over the Joe claims.

A Scintrex MF-1R-100 model fluxgate magnetometer was used to run a survey on the base line. This magnetometer line is shown in red in Figure 2. The base line was surveyed along the center of the claims, thereby cutting the anomalous aeromagnetic contours. The purpose of the magnetic survey was to check the correlation between ground and aeromagnetics, and to check for possible structure (ie; faults and contacts).

The ground magnetic readings taken were at 100' intervals using an established base station to check for the intensity of the diurnal variation. Readings over the property ranged from 4400 to 7300 gammas.

CONCLUSIONS:

A - GEOCHEMISTRY

1. From analysis and PH testing of samples taken from three profiles on the property, a sampling depth of 8" - 12" ("B" horizon) was found to be the most likely sampling medium to give reliable geochemical readings.

2. Surface anomalies can be expected to have limits extended from the source due to the ease in which copper, silver and zinc ions will travel in the soils of the property. The high relief on the property should be considered as an important factor in measuring the size of the anomalies on the property, as ion migration

will occur distinctly in a downhill direction from the ion source.

3. Round rock in the valley bottom suggests definite glacial deposition of materials. Angular rock on the hillsides indicates near proximity of bedrock.

4. Silt samples taken at various locations on the drainages of the property are shown in Figure 2. The intensity of the metals in these samples have substantiated the soil anomalies and have shown that a detailed drainage follow-up program will assist in determining the upper elevational limits of the anomalies.

5. Areas of intensity in copper, silver and zinc shown in the geochemical maps are definitely anomalous and are indicative of a relatively strong source of these metals. There is a possibility of encountering significant copper, silver and zinc mineralization within these anomalies.

B - GEOLOGY

The discovery of copper mineralization in place on the claim group, as well as copper, silver, zinc and lead mineralization in pieces of float believed to have their origin within the claim group, give conclusive evidence that some rock formations on the property are carrying mineralization. Geochemical anomalies and magnetic response are of intensities great enough to suspect significant mineralization on the property.

C - GEOPHYSICS

1. There is an apparent correlation between ground and aeromagnetics. However, due to the small scale (approximately 7 X smaller) of the aeromagnetic map, the aeromagnetic profile is very smooth and does not show any abrupt changes. The ground magnetic profile however, does show such changes.

2. The abrupt changes shown on the ground magnetic profile may indicate significant structures such as faults or contacts.

RECOMMENDATIONS:

1. Establish a controlled grid on the property that will enable a detailed exploration program to be performed over the entire property.

2. Carry out geochemical sampling on the grid.

3. Carry out a geological survey on the grid.

4. Carry out a ground magnetic and an electromagnetic

survey on the established grid.

5. Intensify geochemical, geological, electromagnetic, magnetic, and induced polarization surveys on the areas proven worthy of such work, from the conclusions of steps 1 - 4.

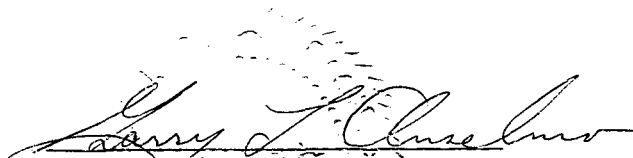
6. Further recommendations can be made in relation to cat-work and diamond-drilling on the outcome of step 5.

Project management carried out by G.L. Anselmo, BA, President of Pacific Geochemical Services Ltd., under the supervision of W.G. Stevenson, P.Engineer.

STATEMENT OF SUPERVISOR'S QUALIFICATIONS:

I, Garry L. Anselmo, DO HEREBY CERTIFY:

- That I have studied three years at U.B.C. in geology and geochemistry.
- That I am a graduate of Simon Fraser University.
- That I have worked two years at Britannia Beach with Anaconda American Brass Ltd., doing geochemical lab and field work.
- That I have worked two summers with Kennco Explorations (Western) Ltd. and one summer with Amax Explorations Ltd. in field explorations.
- That I am president and field manager for Pacific Geochemical Services Ltd. of 1424 Crown St., North Vancouver, British Columbia.


G.L. Anselmo, BA
President

STATEMENT OF OPERATOR'S QUALIFICATIONS

I, Alexander M. Homenuke, DO HEREBY CERTIFY:

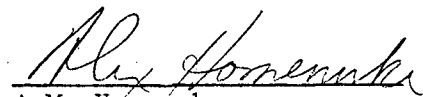
- That I attended the British Columbia Institute of Technology for two years.

- That I am a graduate of that Institute in Mining Technology.

- That I worked four summers as a helper for Canadian Longyear Ltd. diamond drilling.

- That I spent two months with Silver Standard Mines Ltd. and one summer with Amax Explorations Ltd. as a field assistant on reconnaissance.

- That upon graduation from B.C.I.T. I was employed by Pacific Geochemical Services Ltd. on permanent staff.


A.M. Homenuke

CERTIFICATE

I, William G. Stevenson, DO HEREBY CERTIFY:

- That I am a Consulting Geological Engineer with offices at Suite 209 Stock Exchange Building, 475 Howe Street, Vancouver 1, B.C.

- That I am a graduate of the University of Utah 1946, with a B.S. Degree.

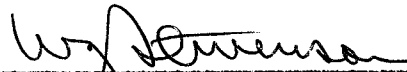
- That I am a registered Professional Engineer in the Association in British Columbia.

- That I have practised my profession for 22 years.

- That I have no direct, indirect or contingent interest in the Joe Mineral Claims or in the securities of Summit Oils Ltd., nor do I intend to receive any such interest.

- That This report dated January 20, 1970, is based on a study of published and unpublished maps and reports, discussions with colleagues and from examinations I conducted on August 3 and October 2, 1969. DATED at Vancouver, British Columbia, this 20th. day of January, 1970.

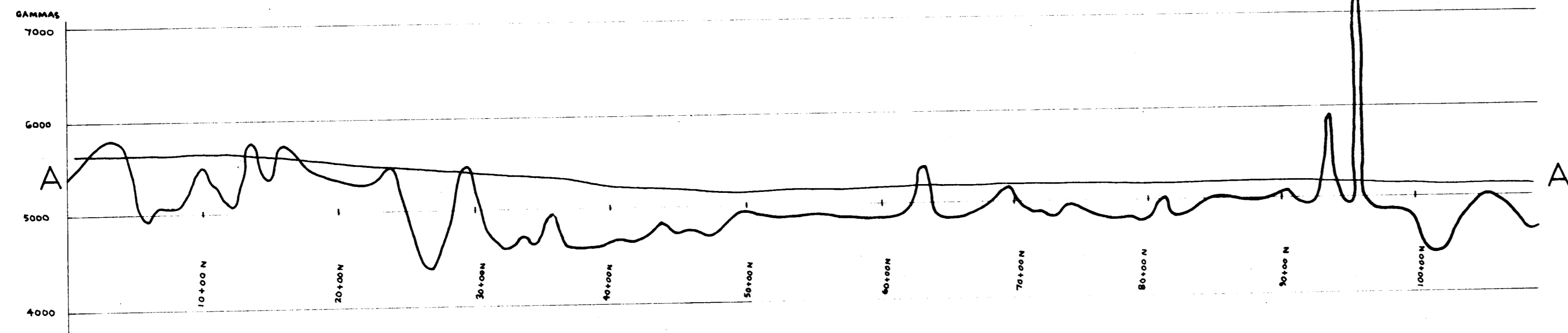
W.G. Stevenson & Associates Ltd.
Consulting Geologists



W.G. Stevenson, P.Eng.

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Mines and Petroleum Resources
ASSESSMENT REPORT
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SUMMIT OILS LTD
LOLJUH CREEK PROPERTY
MAGNETIC PROFILE

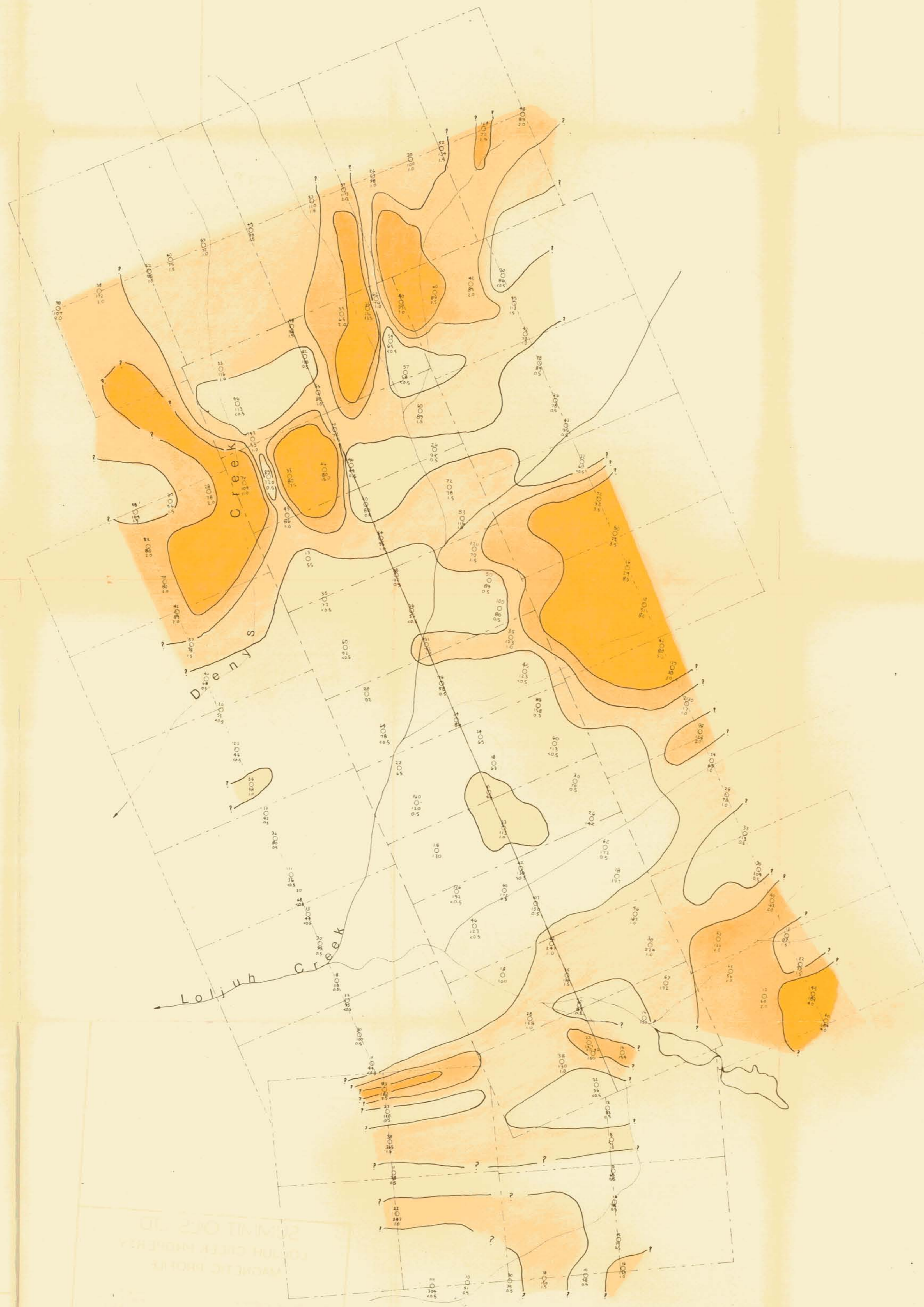
Ground Profile Aerial Profile
(from G.S.C. map 5309 G)

Profile location shown on Fig. 2

Harry L. Anselmo
To accompany report by W.G. Stevenson and G.L. Anselmo on the Joe claim
group, on Loljuh Creek, Omineca Mining Division, dated *January 20/70*

FIG. 6

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SUMMIT OILS LTD
LOLJUH CREEK PROPERTY
GEOCHEMICAL SURVEY
SILVER



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H. J. Anselmo

To accompany report by W. G. Stevenson & G. L. Anselmo on the Joe Claim
Group, on Loljuh Creek, Omineca Mining Division, dated January 30/69

FIG. 5

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NO. **2292** MAP **#3**

To accompany report by W.G. Stevenson & G.L. Anselmo on the Joe Claim
Group, on Loljuh Creek, Omineca Mining Division, dated *January 20/70*

SUMMIT OILS LTD
LOLUJH CREEK PROPERTY
GEOCHEMICAL SURVEY
COPPER

ppm
Sample site
Cu
Zn
Ag

ppm
70
50
30

--- Claim line
--- Base line

7 6 5 4 3 2 1 0 700 1400
1" = 700'

FIG. 3

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