

180 -# 327 -# 8088

GEOCHEMICAL REPORT

KARGEN DEVELOPMENT CORPORATION

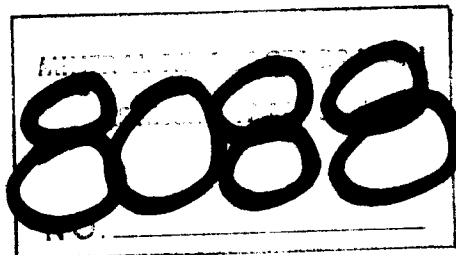
Sue, Crow and Levi mineral claims, Port Alberni
area, Alberni Mining Division, B. C.

Latitude 49° 07' N Longitude 124° 40' W N.T.S. 92 F/2E

AUTHOR: Glen E. White, P. Eng.

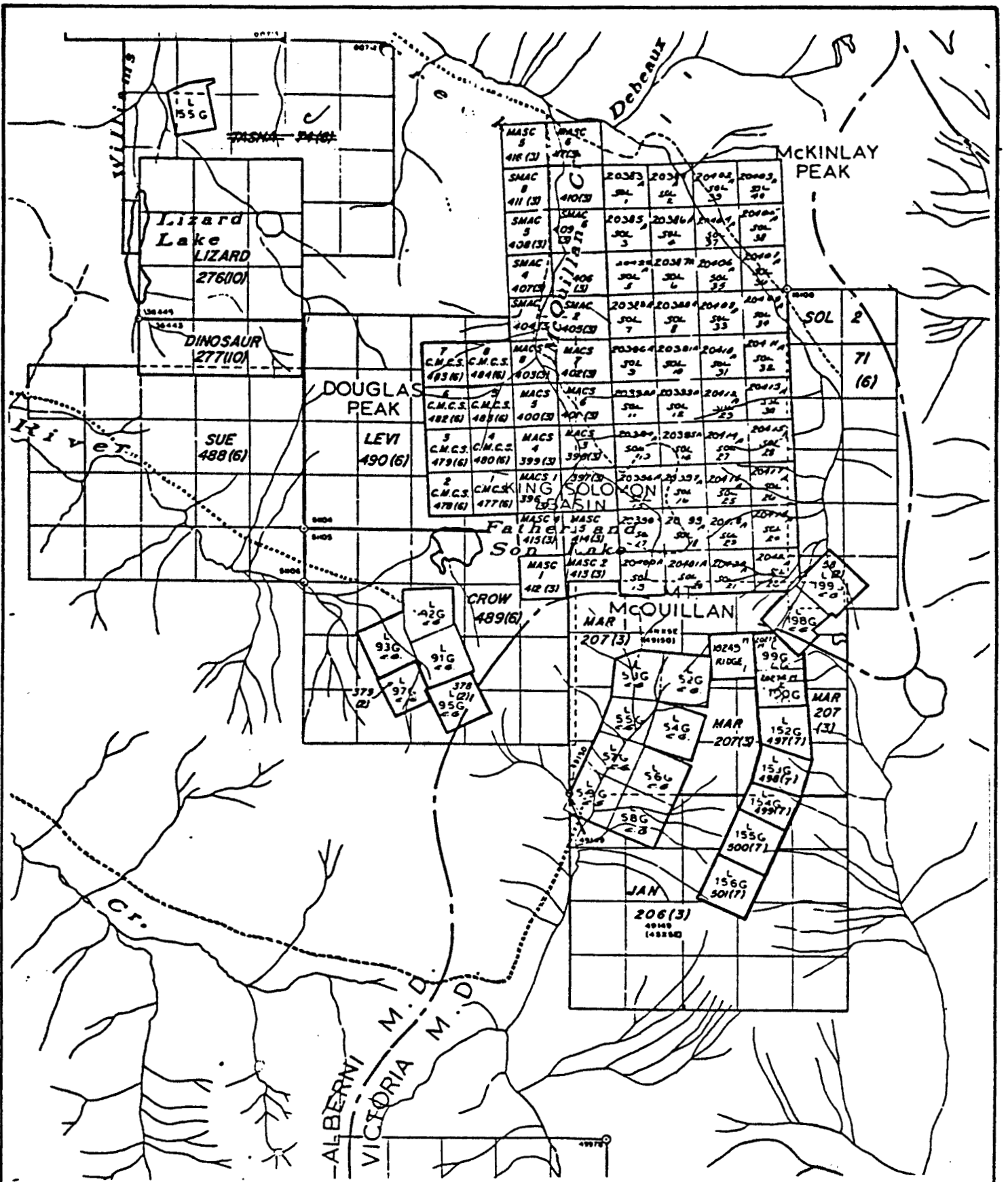
DATE OF WORK: October 4 - 17, 1979

DATE OF REPORT: February 5, 1980



Glen E. White

GEOPHYSICAL CONSULTING & SERVICES LTD.



KARGEN DEVELOPMENT CORPORATION
 SUE, CROW & LEVI CLAIMS
 LOCATION AND CLAIM MAP

NTS 92-F-2E

Glen & White
 geophysical consulting
 3
 111

SCALE 1" = 40 MILES

FIG 1

CONTENTS

	<u>PAGE</u>
Introduction.....	1
Property.....	1
Location and Access.....	1
General Geology.....	1 - 3
Survey Grid.....	3
Geochemical Survey.....	3
Discussion of Results.....	4 - 5
Conclusion and Recommendations.....	5 - 6
Statement of Qualifications.....	7
Cost Breakdown	8

Illustrations

Plate 1 - General Geology

Plate 2 - Regional Airborne Magnetics

Figure 1 - Claims and Location Map

Figure 2 - Geochemical Map - Copper

Figure 3 - Geochemical Map - Silver

Figure 4 - Geochemical Map - Zinc

INTRODUCTION

During the period October 4 - 17, 1979, a program of reconnaissance geochemical soil sampling was conducted over a portion of the Sue, Crow and Levi claims, Alberni area, on behalf of Kargen Development Corporation. The purpose of the survey was to try and locate a northwest extension of the old copper - gold mine known as the Thistle Mine, which mined some 5% copper containing 0.39 oz. gold per ton and 0.24 oz. silver per ton during the years 1938 - 1942.

PROPERTY

The property consists of the Sue, Crow and Levi mineral claims comprising some contiguous 60 units as illustrated in Figure 1. The record numbers are 488 - 490 respectively with an anniversary date of June 28, 1980.

LOCATION AND ACCESS

The mineral claims are in the area of Father and Son Lakes, some 18 km SE of Port Alberni.

Access to the property is by two-wheel vehicle along good logging roads up the Franklin River. Latitude $49^{\circ}07'N$, Longitude $124^{\circ}40'W$, N.T.S. 92 F/2E, Alberni Mining Division, B. C.

GENERAL GEOLOGY

Plates 1 and 2 show the general geology and airborne magnetometer data of the property. Gunnex explored the area from 1963 - 1965. The Thistle Mine workings are best described by their reports as follows:

General Geology:

The area was first mapped by Stevenson (map in 1944 report), and later, in 1962, by Jones of Hunting's Survey, who also did some field work in the area and visited the mine.

Stevenson has the area mapped as "older sediments" (Sicker group?) with "China Creek andesite", a group of older volcanics (apparently equivalent with Sicker volcanics) about ½ mile to the south.

Jones, who based his mapping on aeromagnetic interpretation, but also corrected some of Stevenson's mapping in the China Creek - Franklin River area, has mapped the mine area as Sicker volcanics, with a band of Sicker sediments to the NE curving around Father-and-Son Lake and a wider belt of Sicker sediments to the south. There is a contact with Vancouver volcanics to the east.

Muller's map, 1963, shows however, an opposite picture, with the mine in Vancouver volcanics and Sicker volcanics to the east, with a belt of Manaimo sediments in-between.

Since it is hard to say who is right, not much can be said about the general geology at present.

Geology on workings:

The country rock, however, in the area appears to be mostly volcanic, in which are shear zones mineralized with pyrite and chalcopyrite.

According to Stevenson (1944) the Thistle deposit consists of two chalcopyrite replacement ore bodies found along two shear zones about 130' apart, in a 200' wide band of altered limestone with attitude N20°W/60°-75°SW.

The limestone is enclosed on 3 sides, NE, SE and SW, and in part underlain by fine-grained diorite. The limestone has been largely replaced by fine-grained diopside, resulting in a dense, light-green rock that may be referred to as diopside rock. Although some small remnants of crystalline limestone, from a few inches to a few feet in maximum diameter, escaped replacement by the diopside many of them were later replaced by ore-minerals.

Strong faults are found along the ore-bodies and extend downward beyond the limits of known ore.

The ore consists mainly of chalcopyrite and some pyrite in a gangue of dirty grey calcite and a little quartz. Very fine magnetite is dispersed through much of the calcite; some of the magnetite has been oxidized to hematite, giving a dull reddish colour to calcite which encloses it.

Jones, 1962, mentions chloritic volcanic rocks and bedded tuffs (Sicker volcanics) NW of showing, with outcrops of hornblende diorite in minor coarse phase of hornblende to the west of the property. Toward Father-and-Son Lake are lavas with scattered pyrite. Some volcanic agglomerate and limestone was also seen near mine.

SUMMARY OF WORK: (After J.S.Stevenson, 1941-44)

Production:

The property has been idle since 1942. Between 1938 and 1942 6,867 tons of high-grade ore was shipped out, containing: 2,667 oz. of gold; 1,007 oz. of silver and 020,556 lbs. of copper.

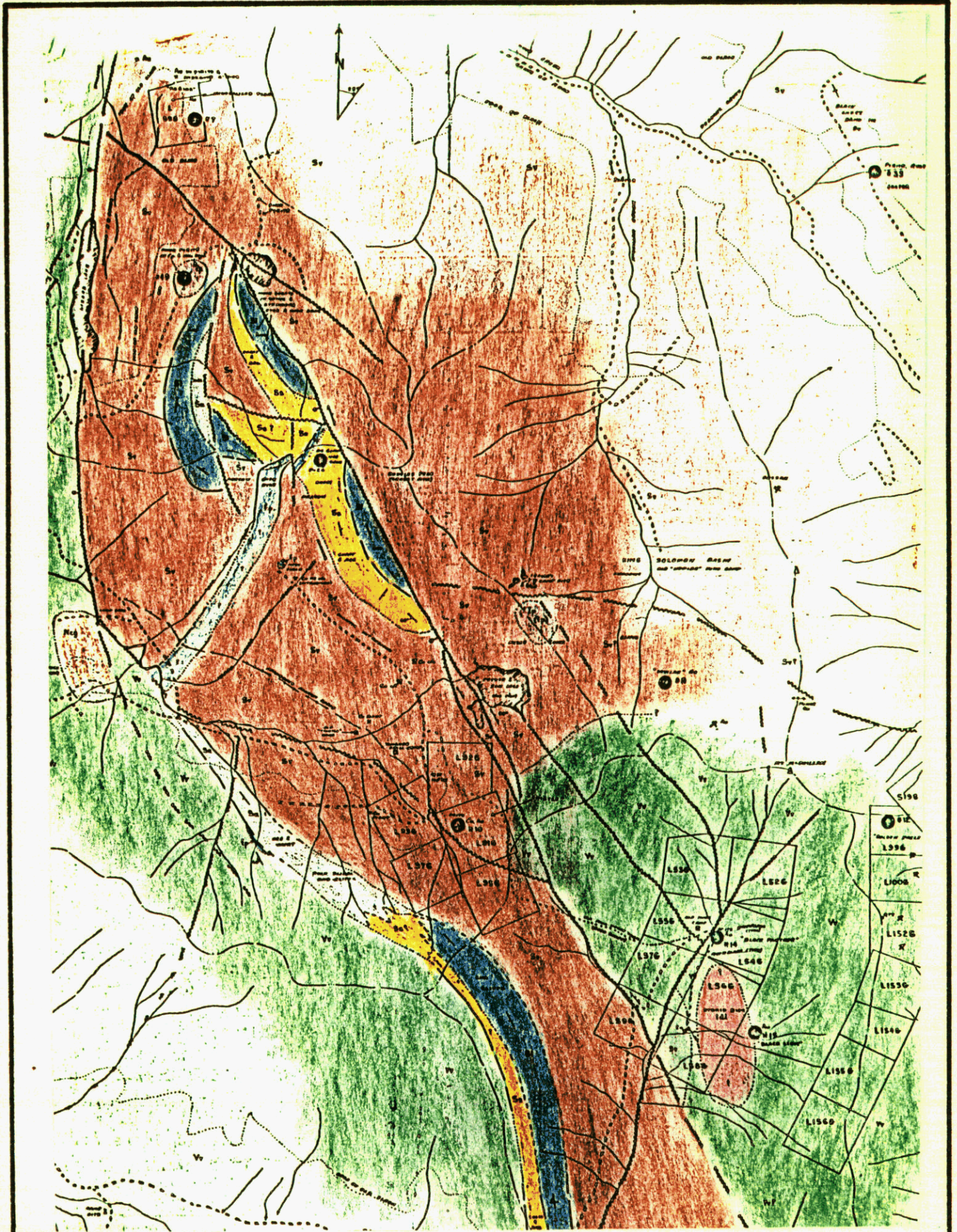
History:

The original staking of Thistle was done in 1896. By 1899 the "300" adit had been driven 90' and the "500" adit 65 feet. Access to property in 1901 was still by trail from Underwood Cove on Alberni Canal.

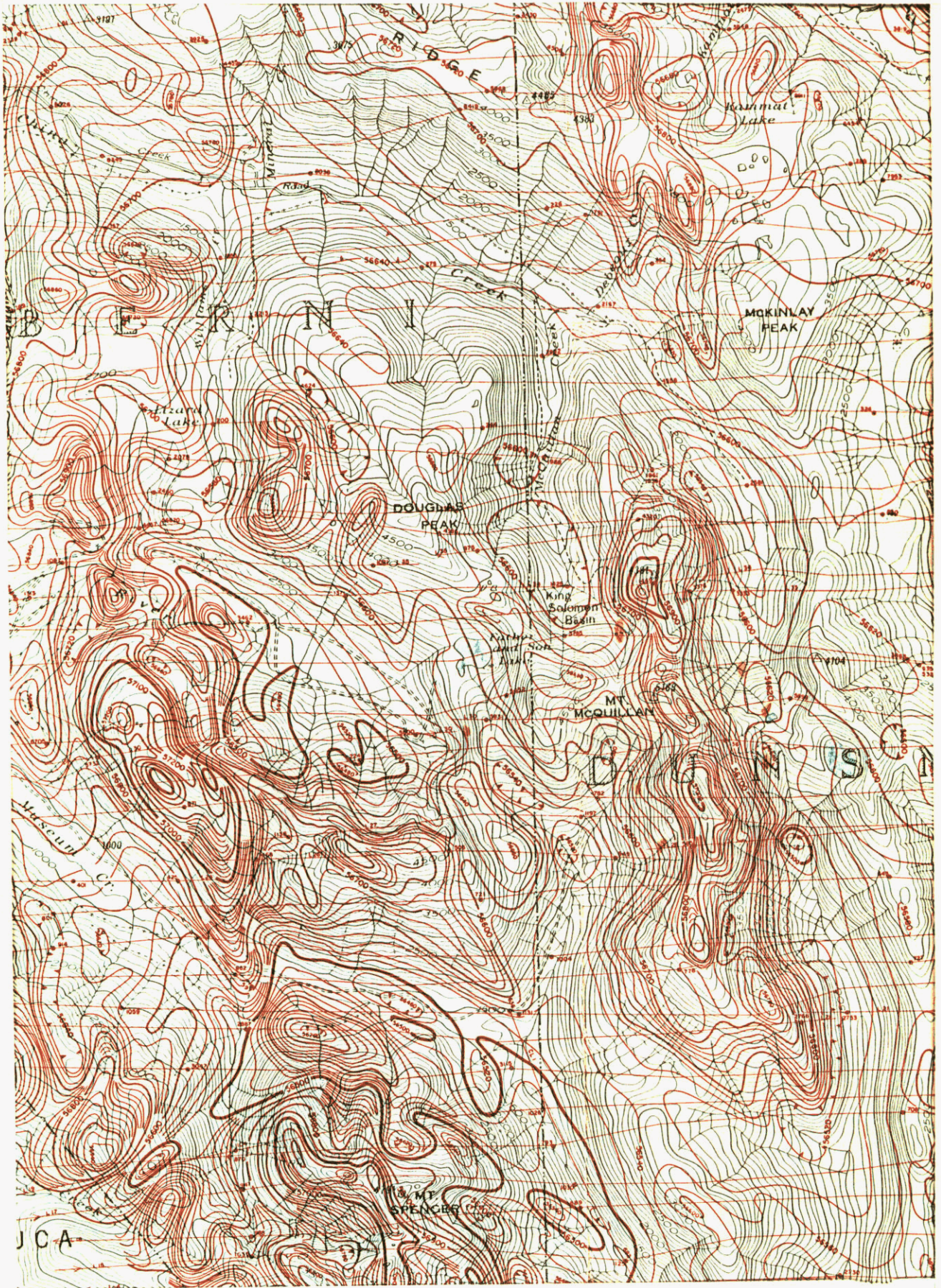
In 1901 a San Francisco Syndicate took over the property, did considerable development work and undertook to build a road from Alberni Canal to the mine, keeping some 200 men working for about two months. Due to weather, only half of the road was finished.

Very little mining was done from then until 1938, when property was acquired by United Prospectors Limited, of Victoria, who then finished the road and drove the adits to their present faces..

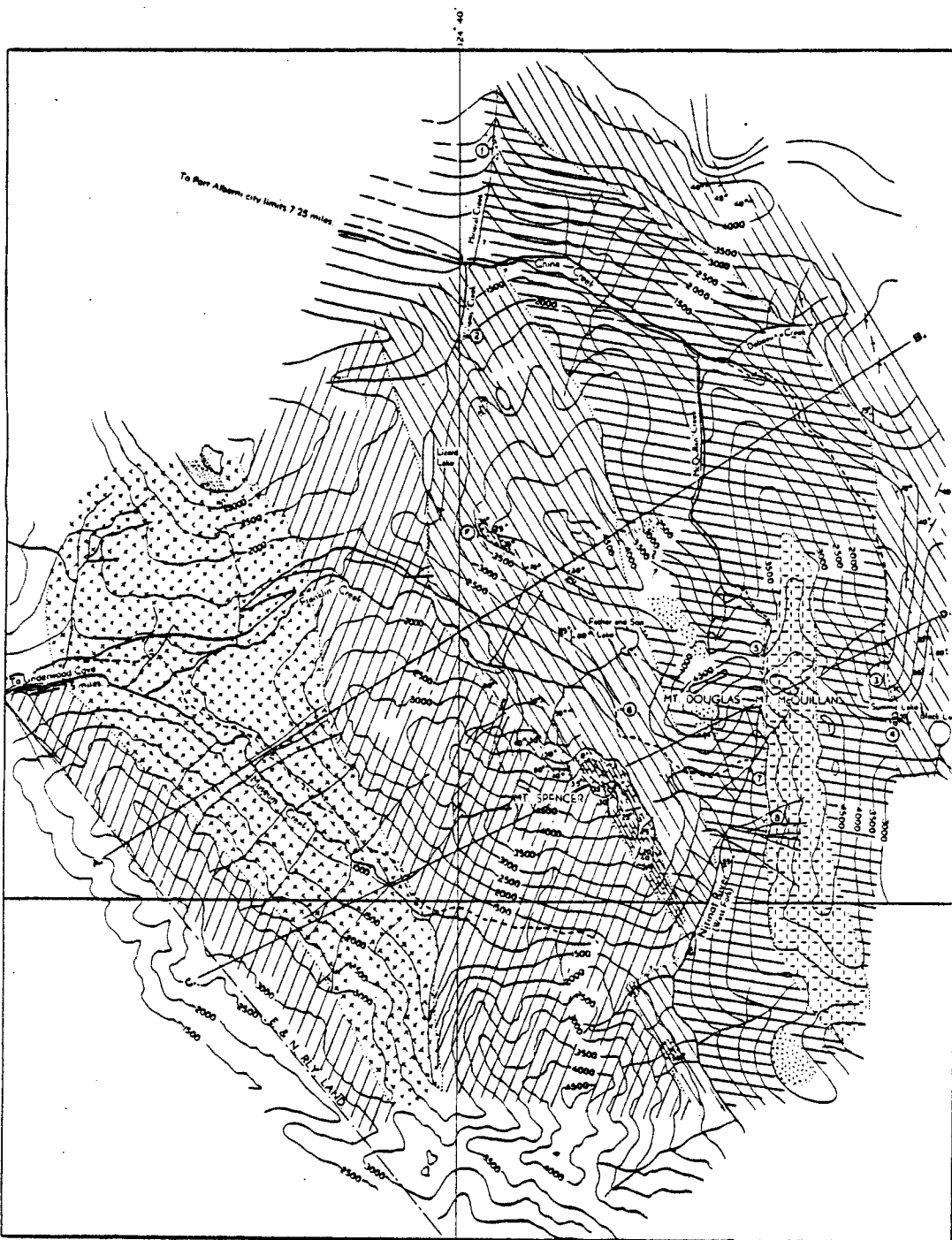
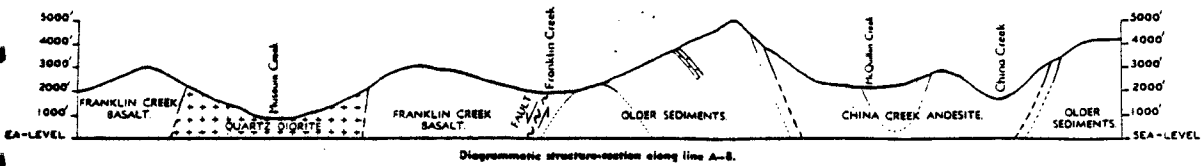
The ore was shipped between 1938 and 1942, by United Prospectors Limited, its lessees and Vancouver Island Diamond Drilling and Exploration Company, Limited, also of Victoria, an affiliated company. The latter company ceased operations at the Thistle in July, 1942, and since then the property has been idle.



Glen E. White
 geophysical consulting
 &
 services ltd.



Glen E. White
geophysical consulting
&
services ltd.



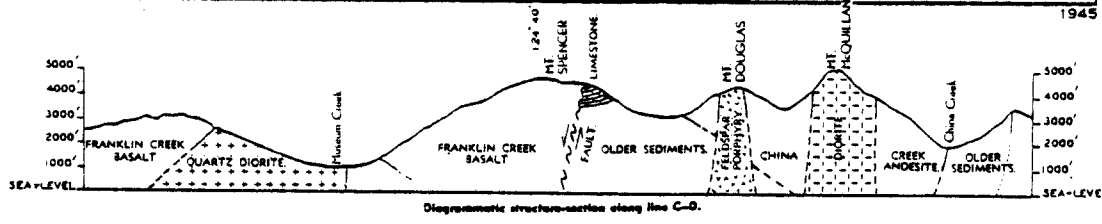
- ### LEGEND
- YOUNGER SEDIMENTS AND INTRUSIVES**
- Feldspar-hornblende porphyry
 - Cretaceous conglomerate, sandstone, and shale
- OLDER INTRUSIVES**
- Feldspar porphyry
 - Quartz diorite
 - Diorite
- VOLCANICS**
- Franklin Creek Basalt
 - China Creek Andesite
- OLDER SEDIMENTS**
- Limestone, Jasper, chert, tuff, and volcanic breccia
- Geologic boundary _____
- Fault _____
- Strike and dip of sediments _____
- Fossil locality _____
- Adit _____
- Promont _____
- Road _____
- Trail _____
- Contour interval 500 feet.
- Magnetic declination 25° East.

Topography in part from information supplied by the Department of Lands, British Columbia, and in part by the writer.

Geology by John S. Stevenson, 1941
British Columbia Department of Mines.

Scale $\frac{1}{4}$ 0 $\frac{1}{2}$ 1 Miles

- ### INDEX TO PROPERTIES.
- ① Vancouver Island Golds. (Consolidated Alberni)
 - ② Regina
 - ③ Golden Eagle
 - ④ B & K
 - ⑤ Haviiah
 - ⑥ Thistle
 - ⑦ Black Panther
 - ⑧ Black Lion



Geologic map of China Creek area. Scale 1 inch to 1 mile.

Plate 3 shows J. S. Stevenson's map which suggests that his older sediments (Sicker rocks) form an anticlinal structure. This would account for the sedimentary rocks in the old Thistle Mine whereas none are shown in the Gunnex mapping. It was the consideration of this author that the copper - gold deposit of the Thistle Mine is a complex remobilized volcanogenic occurrence. Thus, a geochemical survey was undertaken to try and locate a northwest extension of this zone.

SURVEY GRID

The survey grid consists of an east-west baseline from which north-south reconnaissance soil sampling lines were run every 200 m. Some 22 km of survey grid was established.

GEOCHEMICAL SURVEY

Soil samples of the upper "B" horizon were taken along the traverse lines at 50 m intervals. The soil samples were then placed in soil envelopes provided by Chemex Labs Ltd. of North Vancouver, B. C. The samples were delivered to the above lab where -80 mesh sieving, digestion by hot perchloric-nitric acid and analysis by atomic absorption were carried out under the supervision of professional geochemists. 362 samples were obtained and analysed for p.p.m. copper, silver and zinc.

DISCUSSION OF RESULTS

The copper, silver and zinc geochemical results are illustrated on Figures 2 - 4 respectively. The copper geochemical map depicts a strong geochemical anomaly some 1000 meters long in the northeast corner of the survey grid. This anomaly gives a number of high values around 400 p.p.m. above a background of some 30 p.p.m. The anomaly pattern is obviously affected by drainage but would appear to be orientated in a northwest direction parallel to the lithology and/or structure. A series of waterfalls was noted in the creek draining Father and Son Lakes. This map relate to a zone of structural weakness.

Plate 2 shows the northwest striking sicker rocks at $N40^{\circ} - 60^{\circ}W$. However, it does not show the $N20^{\circ}W$, 200 ft band of altered limestone which hosts the Thistle Mine. This band dips $60 - 75^{\circ}S$. Its presence in this area would indicate greater geologic complexity than suggested by the Gunnex mapping. The Crown Grants were positioned from topographic maps of the area. Recently obtained sketches of the road systems near the old mine would suggest the Crown Grants should be shafted northwestward some 100 m. The geochemical lines into this area show weak above background responses to 140 p.p.m. copper. This would suggest that the old mine has a very low geochemical profile. Rock geochemical samples around the anomaly show values of 24 - 58 p.p.m. copper on the southeast terminus of the anomaly trend. A rock sample above the anomaly on line 1200 E gives a value of 200 p.p.m.

Lines 600W, 800W and 1000W show moderately anomalous values draining downslope on the south ends of the lines.

The silver map does not show any definite anomalous values. From a statistical viewpoint, a number of 0.6 p.p.m. values occur along with the copper trend which may possibly indicate the presence of silver mineralization. Line 800E, stations 100M - 500M, were tested for p.p.b. gold. A 70 p.p.b. kick was obtained at 400M. The rest were less than 10 p.p.b. The Thistle Mine has no record of zinc mineralization whereas several of the other workings towards the east did. The geochemical zinc map shows a very low zinc environment with a background value of 50 p.p.m. A weak anomaly occurs on line 1200E where a value of 210 p.p.m. was obtained. The low zinc values and the presence of copper, silver and gold values would suggest that the copper geochemical anomaly is mineralogically similar to the old Thistle Mine and may possibly be a northward projected anticline limb or a faulted extension of that zone.

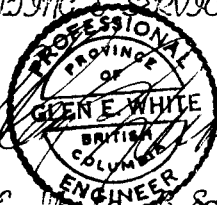
CONCLUSION AND RECOMMENDATIONS

A program of reconnaissance geochemical soil sampling was undertaken on a portion of the Sue, Crow and Levi mineral claims, Port Alberni area, B. C.

The soil sampling program delineated a 1 km long strong copper geochemical anomaly which appears to be open to the northwest. This anomaly would appear to have associated gold and silver values similar to the old Thistle Mine which is situated in the southeast of the survey area. It is recommended that the reconnaissance soil sampling be continued and that a detail grid be completed over the geochemical anomaly. This grid as well as being re-sampled should be surveyed with ground magnetometer

and VLF electromagnetometer instruments for near surface features. Deep penetrating vector pulse electromagnetometer surveying should then be undertaken to search for deeply buried targets.

Respectfully submitted,
GLEN E. WHITE GEOPHYSICAL
CONSULTING & SERVICES LTD.



Glen E. White, B.Sc., P. Eng.
Consulting Geophysicist

STATEMENT OF QUALIFICATIONS

NAME: WASTE, Glen E., P. Eng.

PROFESSION: Geophysicist

EDUCATION: B.Sc. Geophysics - Geology
University of British Columbia

PROFESSIONAL ASSOCIATIONS: Registered Professional Engineer,
Province of British Columbia

Associate member of Society of Exploration Geophysicists.

Past President of B. C. Society of Mining Geophysicists.

EXPERIENCE: Pre-graduate experience in Geology - Geochemistry - Geophysics with Anaconda American Brass.

Two years Mining Geophysicist with Sulmac Exploration Ltd. and Airborne Geophysics with Spartan Air Services Ltd.

One year Mining Geophysicist and Technical Sales Manager in the Pacific north-west for W. P. McGill and Associates.

Two years Mining Geophysicist and supervisor Airborne and Ground Geophysical Divisions with Geo-X Surveys Ltd.

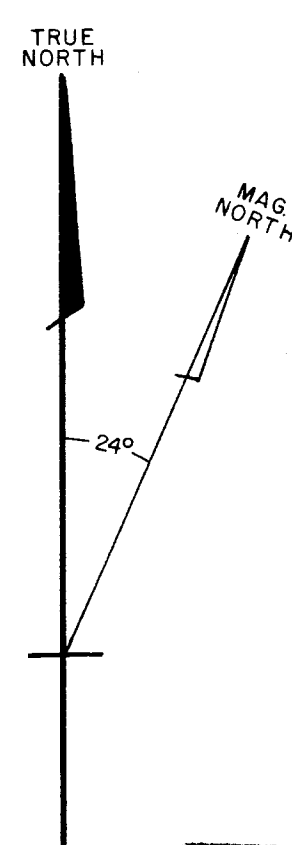
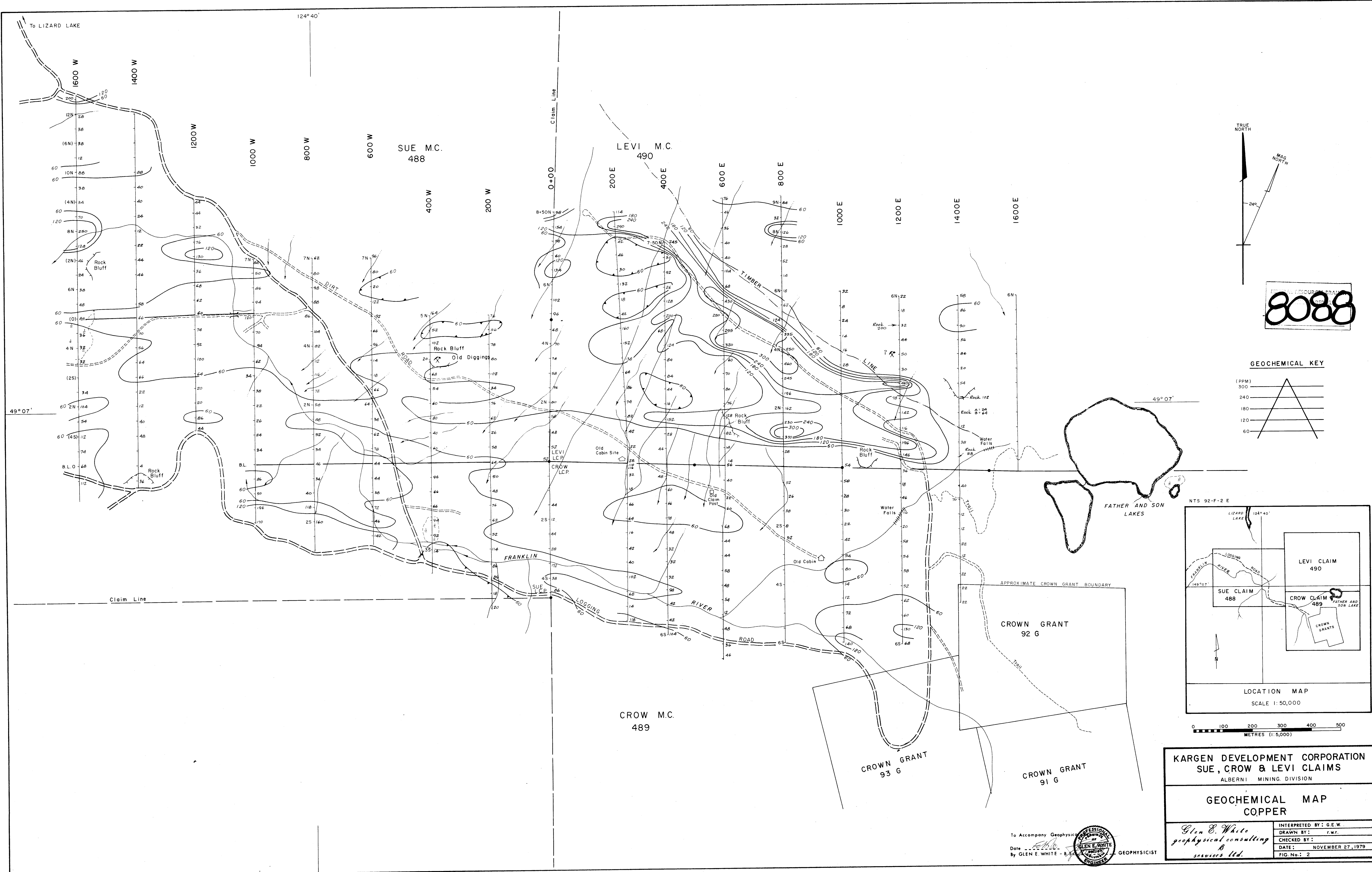
Two years Chief Geophysicist Tri-Con Exploration Surveys Ltd.

Nine years Consulting Geophysicist.

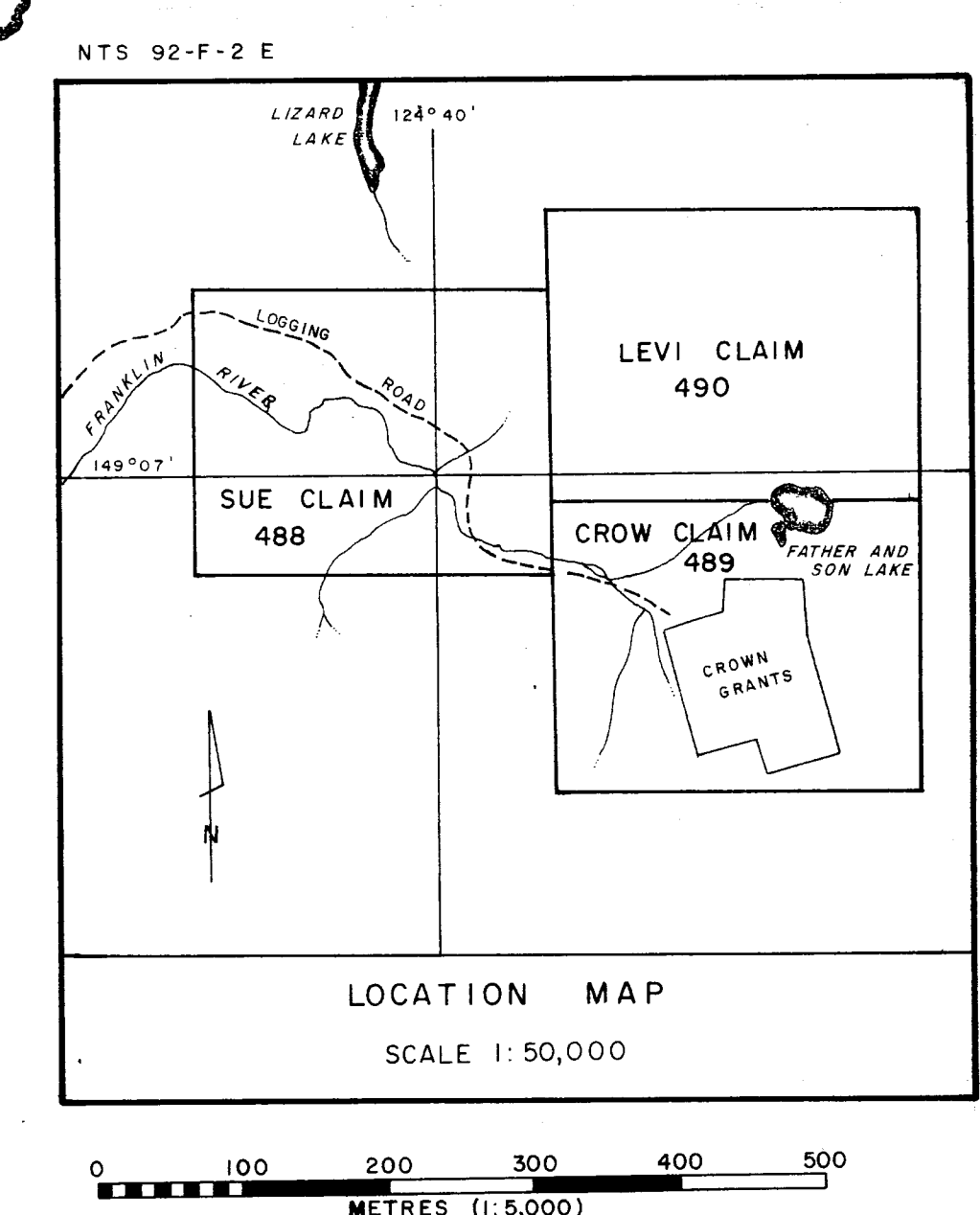
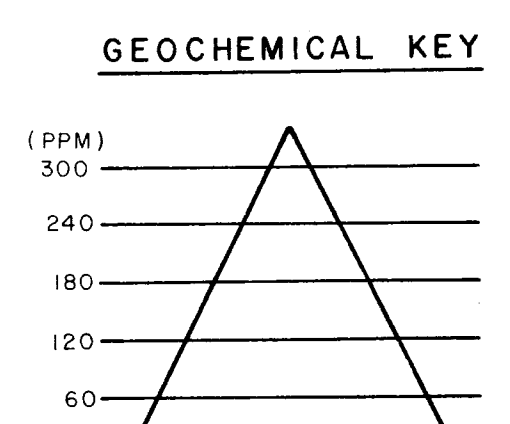
Active experience in all Geologic provinces of Canada.

COST BREAKDOWN

<u>Personnel</u>	<u>Date</u>	<u>Wages</u>	<u>Total</u>
G. Ennis.....	Oct. 4-17/79.....	\$160/day.....	\$2240.00
B. Elrix.....	"....."	110/day.....	1540.00
Meals and accomodations @ \$35/day/man.....			980.00
Vehicle 4x4 @ \$60/day all inclusive.....			840.00
Materials and hip chains.....			220.00
Geochemical analysis.....			1175.00
Drafting, interpretation and reports.....			750.00
Total.....			<u>\$7745.00</u>



8088



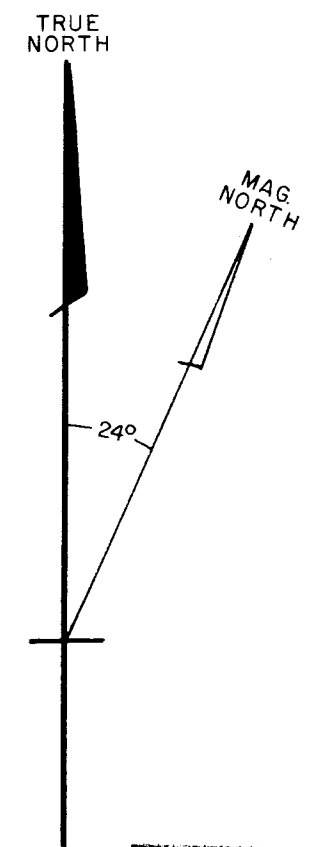
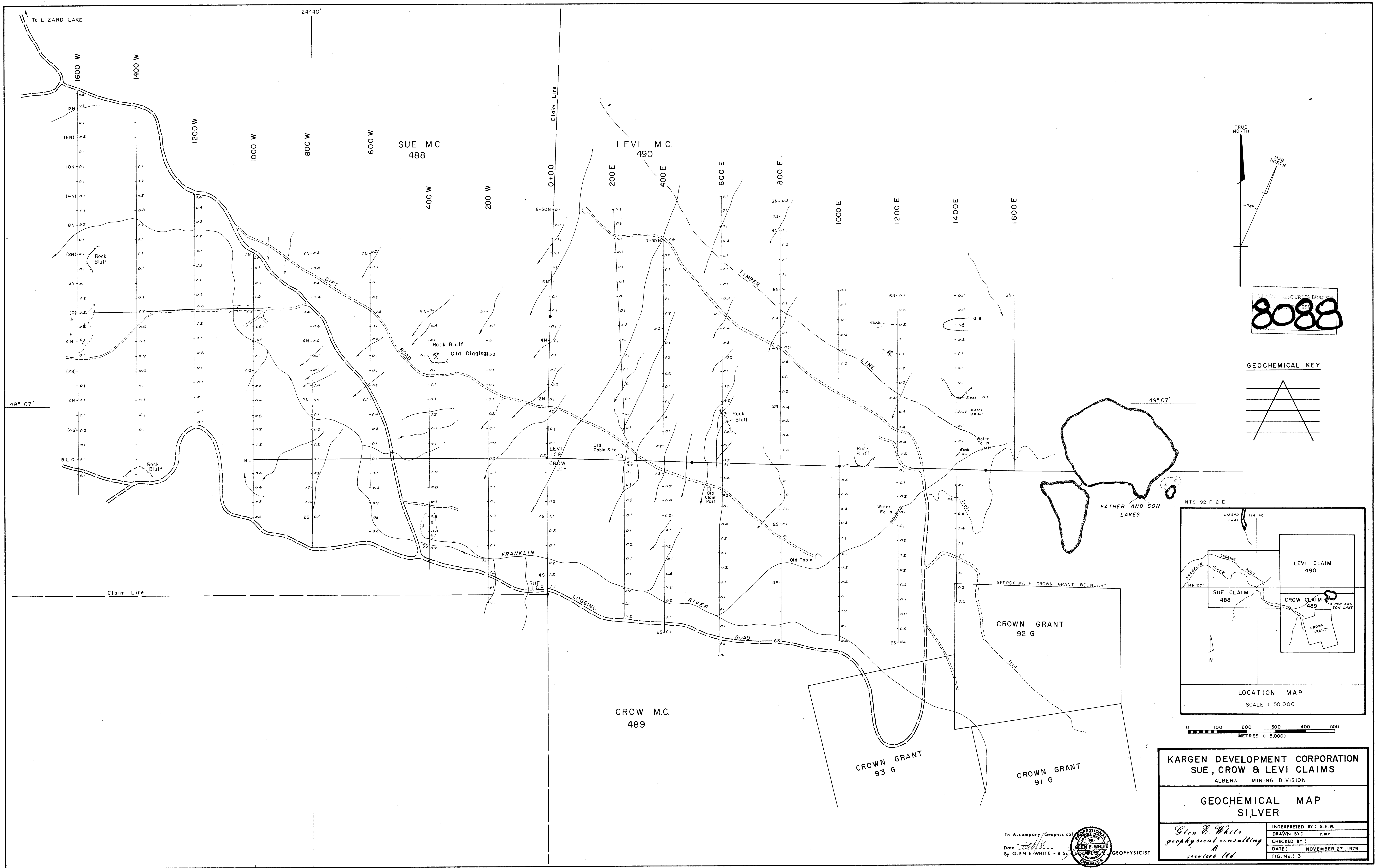
KARGEN DEVELOPMENT CORPORATION
SUE, CROW & LEVI CLAIMS
 ALBERTA MINING DIVISION

GEOCHEMICAL MAP
COPPER

Glen E. White
 geophysical consulting
 services Ltd.

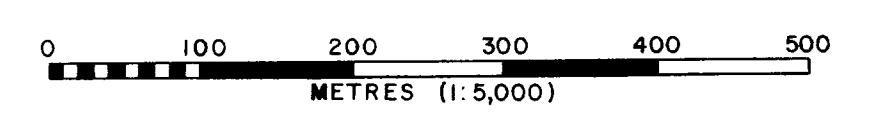
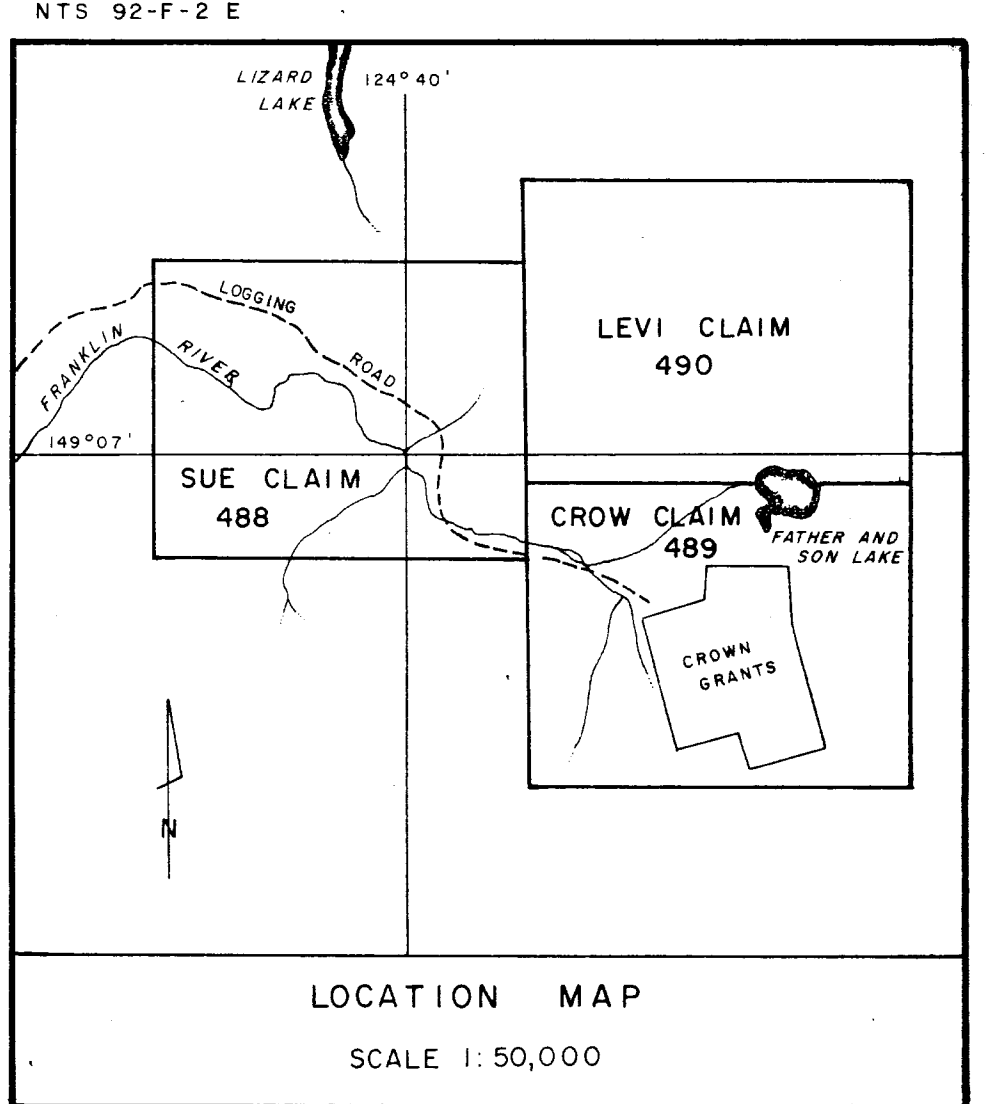
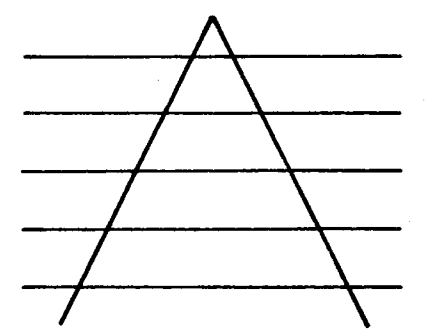
INTERPRETED BY: G.E.W.
DRAWN BY: G.W.
CHECKED BY:
DATE: NOVEMBER 27, 1979
FIG. No.: 2

To Accompany Geophysical
 Date: _____
 By: *Glen E. White*
GLEN E. WHITE
 PROFESSIONAL ENGINEER
 GEOPHYSICIST



MINERAL RESOURCES BRANCH
8088

GEOCHEMICAL KEY



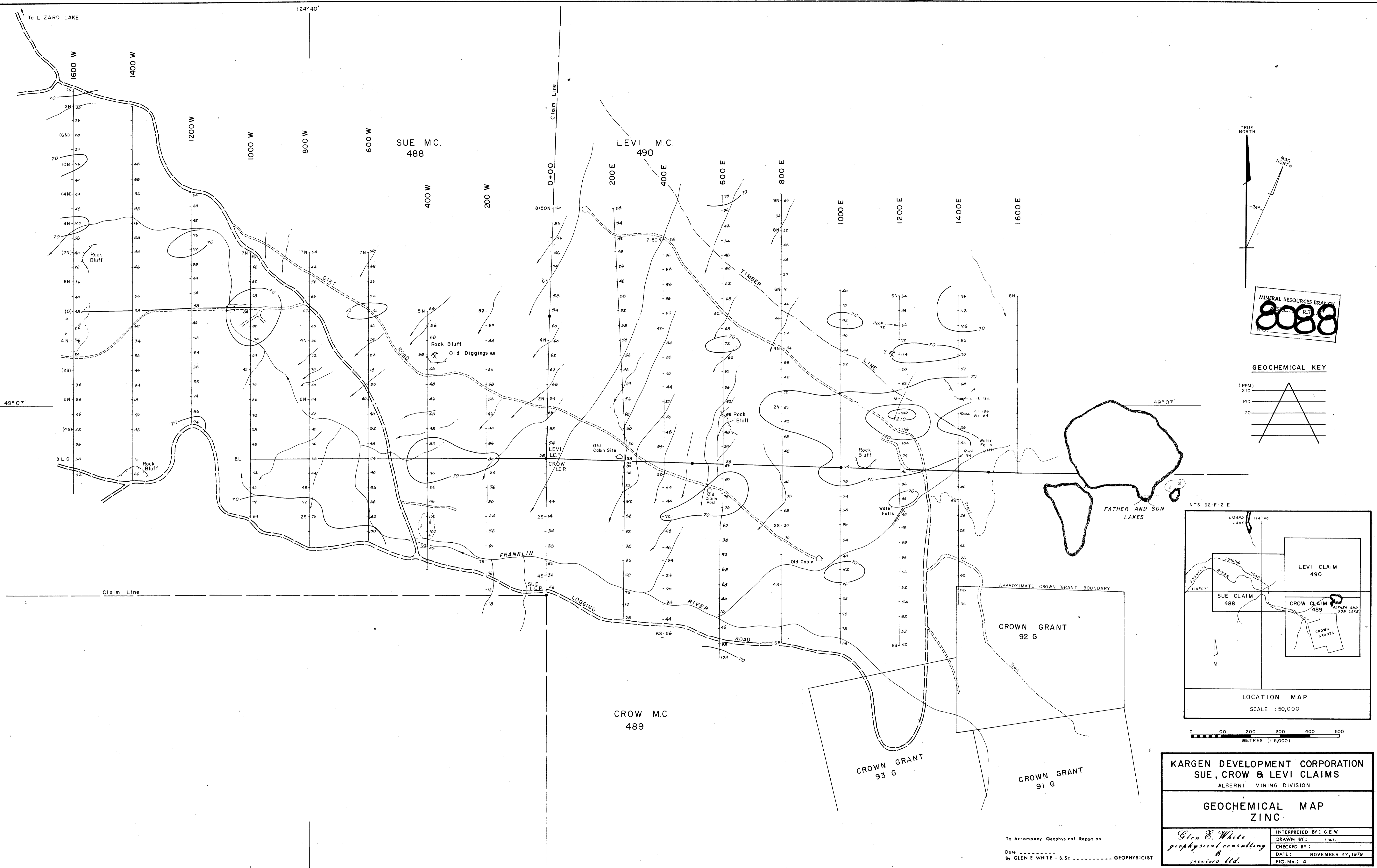
KARGEN DEVELOPMENT CORPORATION
 SUE, CROW & LEVI CLAIMS
 ALBERNI MINING DIVISION

GEOCHEMICAL MAP
 SILVER

Glen E. White
 geophysical consulting
 services Ltd.

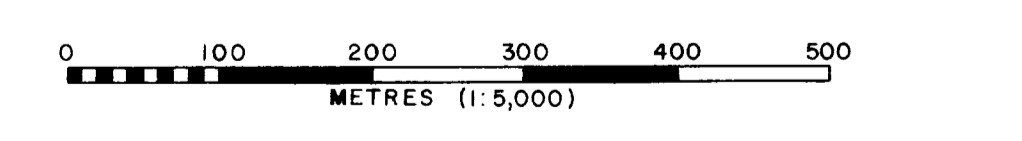
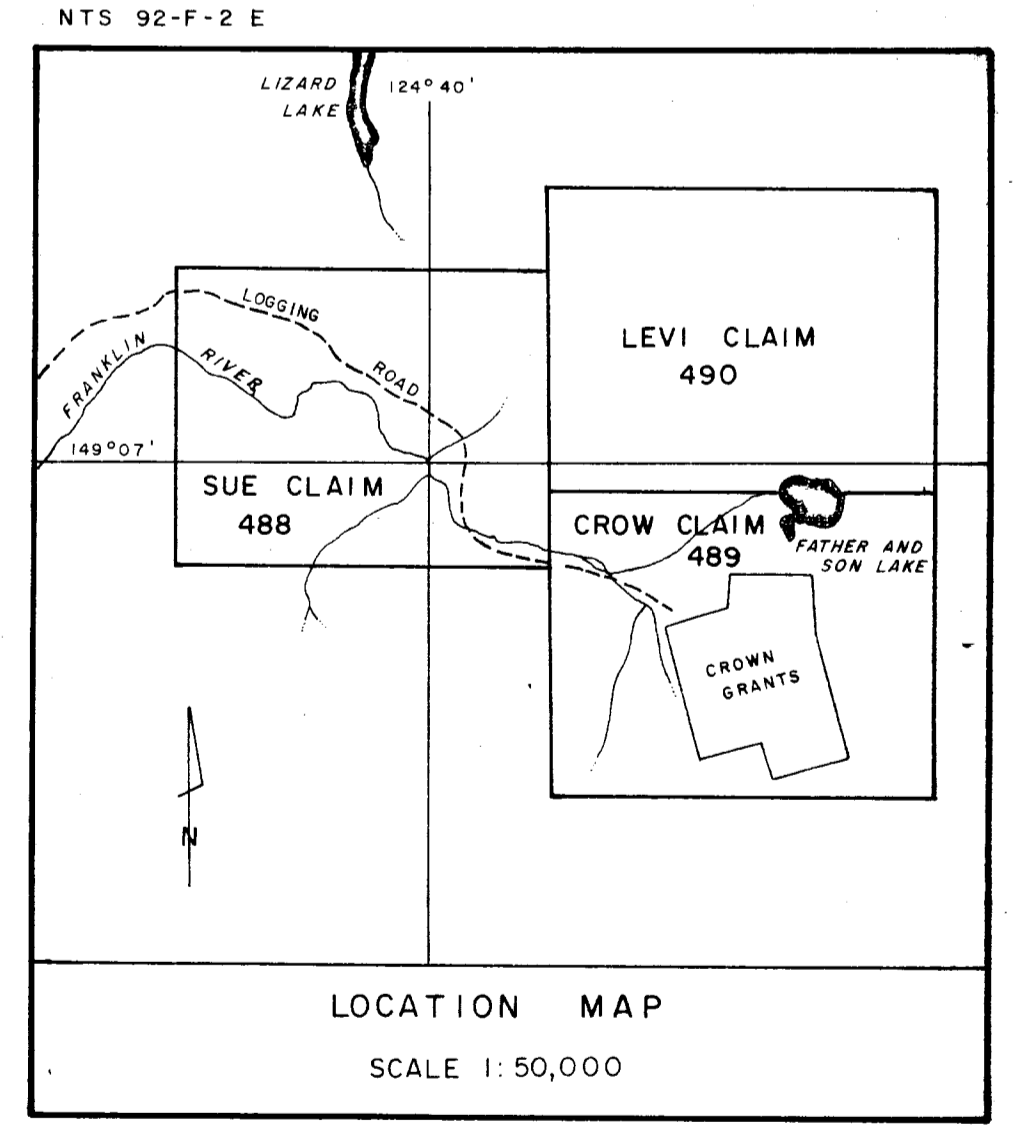
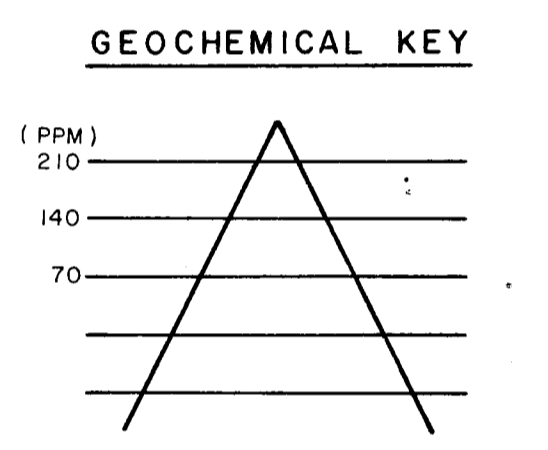
INTERPRETED BY: G.E.W.
DRAWN BY: T.W.F.
CHECKED BY:
DATE: NOVEMBER 27, 1979
FIG. No.: 3

To accompany Geophysical
 Date: *Feb 1980*
 By: GLEN E. WHITE - B.Sc.
 PROFESSIONAL GEOPHYSICIST



TRUE NORTH
MAG NORTH

MINERAL RESOURCES BRANCH
8088



KARGEN DEVELOPMENT CORPORATION
SUE, CROW & LEVI CLAIMS
ALBERTA MINING DIVISION

GEOCHEMICAL MAP
ZINC

Glen E. White
geophysical consulting
services Ltd.

INTERPRETED BY: G.E.W.
DRAWN BY: E.M.F.
CHECKED BY:
DATE: NOVEMBER 27, 1979
FIG. No.: 4

To Accompany Geophysical Report on
Date: _____
By GLEN E. WHITE - B.Sc. - GEOPHYSICIST