# GEOLOGICAL & GEOCHEMICAL ASSESSMENT REPORT

for



FRANK MILAKOVICH

on the

NORA CLAIM GROUP

Alberni Mining Division

NTS 92F/6W



Vancouver, B.C.
June 25, 1992

Laurence Sookochoff, P.Eng.
Sookochoff Consultants Inc.

# Geological & Geochemical Assessment Report

# on the

# Nora Claim Group

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# Geological & Geochemical Assessment Report

# on the

# Nora Claim Group

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## INTRODUCTION

In April 1992 localized geological and geochemical soil sampling programs were completed on the Nora claim group. The program was a continuation of the exploration of the claims which were previously explored in 1983 and 1991.

Based on the results of, and the recommendations from, a magnetometer survey completed in that year, the current field surveys were completed. In addition, a fault/fracture interpretation of aerial photographs covering the Nora claim group was completed.

The information for this report was obtained from sources as cited under Selected References and from the supervision of the exploration program reported on herein.

## SUMMARY and CONCLUSIONS

The Nora claim group consists of a contiguous 30 grid units and eight two post claims located 37 kilometres west-northwest of Port Alberni. Two kilometres east of the property, exploration work conducted from 1917 to 1970 included underground exploration to explore fissure veins mineralized with base and precious metals. On an adjacent property, 145,000 short tons grading 0.063 oz Au/ton have been delineated on quartz-carbonate fissure veins hosting gold bearing pyrite and arsenopyrite.

The Nora claim group is underlain by the same rock types as on the adjacent property which include dioritic intrusives in contact with predominant tuffaceous andesitic volcanics and greenstones. The property covers a portion of the major Taylor River structural system. A fault/fracture study of the claim group indicates that the principal target area for the location of potential mineral deposits would be along the parallel fracture along the north side of Taylor River.

Mineralization consists of predominantly pyrite and a local occurrence of malachite within quartz float located at the fault scarps demarking the northern limit of the Taylor River fault system.

Localized 1991 geological and geochemical survey on the Nora claims indicated a weak gold bearing epithermal system or proximal mineralization to the core of mineral deposition related to the epithermal system.

The 1992 geochemical survey resulted in the delineation of a central soil geochemical anomalous correllative zone interpreted to be localized at a structural intersection and possibly indicating the upper portion of the mineral signatures to an epithermal system.

## PROPERTY

The property consists of a two adjacent grid unit claims contiguous with eight two-post claims as follows:

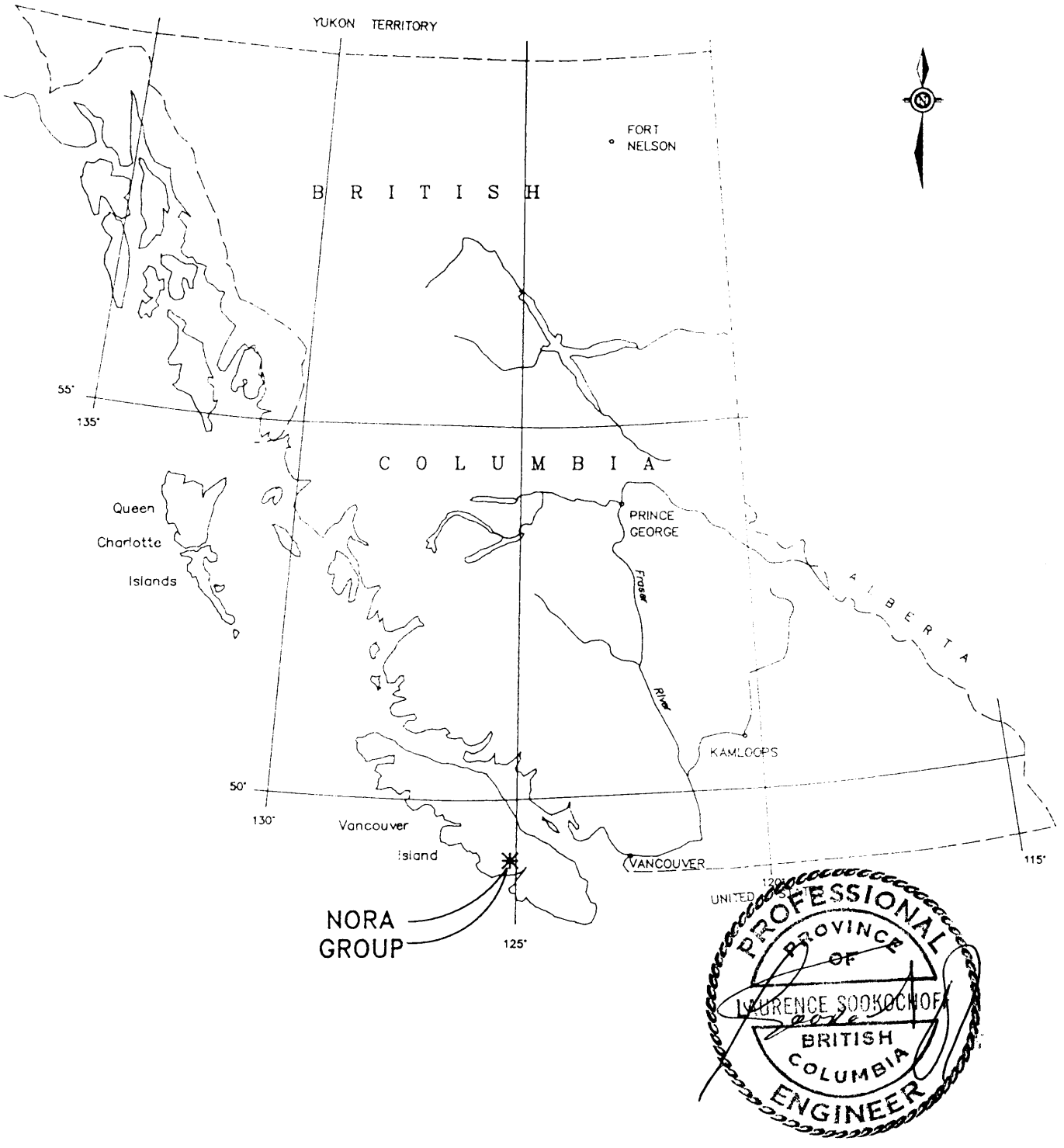
| Claim Name | Units | Record No. | Expiry Date* |
|---|---|---|---|
| Nora 1 | 16 | 1438 | May 07, 1993 |
| Nora 2 | 14 | 1439 | May 07, 1993 |
| Abraham 1-8 | 8 | 1916-1923 | November 24, 1993 |

* On the approval of one years assessment work filed May 04, 1992 for which this report is a part thereof.

## LOCATION AND ACCESS

The property is located on Vancouver Island 37 kilometres west-northwest of Port Alberni, B.C. The claim group straddles Taylor River and is eight kilometres west of the western limit of Sproat Lake.

The paved Highway No.4 provides direct access to the eastern portion of the property whereas secondary roads provide access to the western and central portion.




PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
LAURENCE SOOKOCHOFF

Scale 1:10,000,000

100 0 100 200 300 400 Km

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# NORA GROUP

ALBERNI M.D.

# LOCATION MAP

| SCALE: AS NOTED | DATE: Jun.'92 | N.T.S. 92F/6W | DRAWN BY: GEO-COMP | FIGURE: 1 |
|---|---|---|---|---|

## PHYSIOGRAPHY

The property is generally situated within the Island Mountain range with a major portion covering the Taylor River valley. The topography within the valley is of gentle to moderate slopes with elevations ranging from 80 metres, often abruptly changing to steep slopes and fault scarps to elevations of over 800 metres above sea level.

## WATER AND POWER

Sufficient water for all phases of the exploration program could be available from Taylor River or from many water courses which flow through the property.

## HISTORY

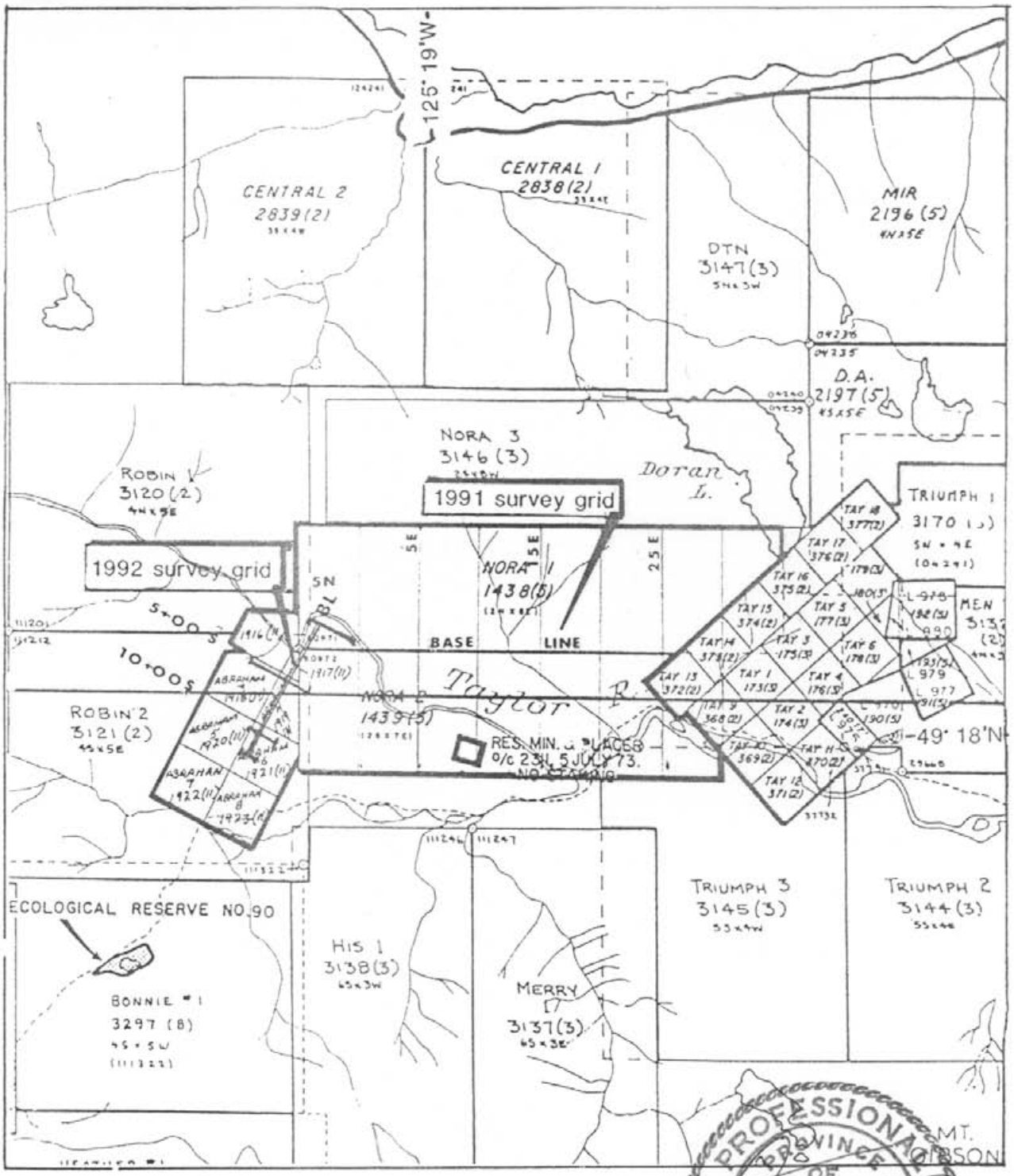
The history of the immediate area stems from the reference in the B.C. Minister of Mines Report for 1917 to the gold bearing veins on a property within two kilometres east of the eastern boundary of the Nora claim group. Adits were driven to explore fissure veins mineralized with base and precious metals. Exploration work continued to the mid 1970,s when surface and underground work was conducted on this property.

On an adjacent property to the east of the Nora property, Dalmatian Resources conducted surface exploration from 1974 and are continuing exploration in the 1991 season. Quartz-carbonate fissure veins mineralized with gold bearing pyrite and arsenopyrite have been explored resulting in the delineation of 145,000 short tons grading 0.063 oz Au/ton and 0.02 oz Au/ton on the Tay Vein (Lammle 1988).

The Nora claim group was previously explored by a ground magnetometer survey on the Nora claims in 1983 and on the Abraham claims in 1984. A localized geochemical and geological survey was completed on the Nora claims in 1991.

## REGIONAL GEOLOGY

The regional geology of the area, as presented by J.E. Muller in Open File 463, is stated as being part of the Insular Belt, the westernmost major tectonic subdivision of the Canadian Cordillera. The Insular Belt (Island Mountains) is further stated as containing a middle Paleozoic and a Jurassic volcanic-plutonic complex, both apparently underlain by gneiss-migmatite terranes and overlain respectively by Permo-Pennsylvanian and Cretaceous clastic sediments. A thick shield of Upper Triassic basalt, overlain by carbonate-clastic sediments, separates these two complexes in space and time.






N

• Dept. of Mines and Petroleum Resources Claim Map

0 1 2 3 4 Km

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# NORA GROUP

ALBERNI M.D.

# CLAIM MAP •

| SCALE: | DATE: | N.T.S. | DRAWN BY: | FIGURE: 2 |
|---|---|---|---|---|
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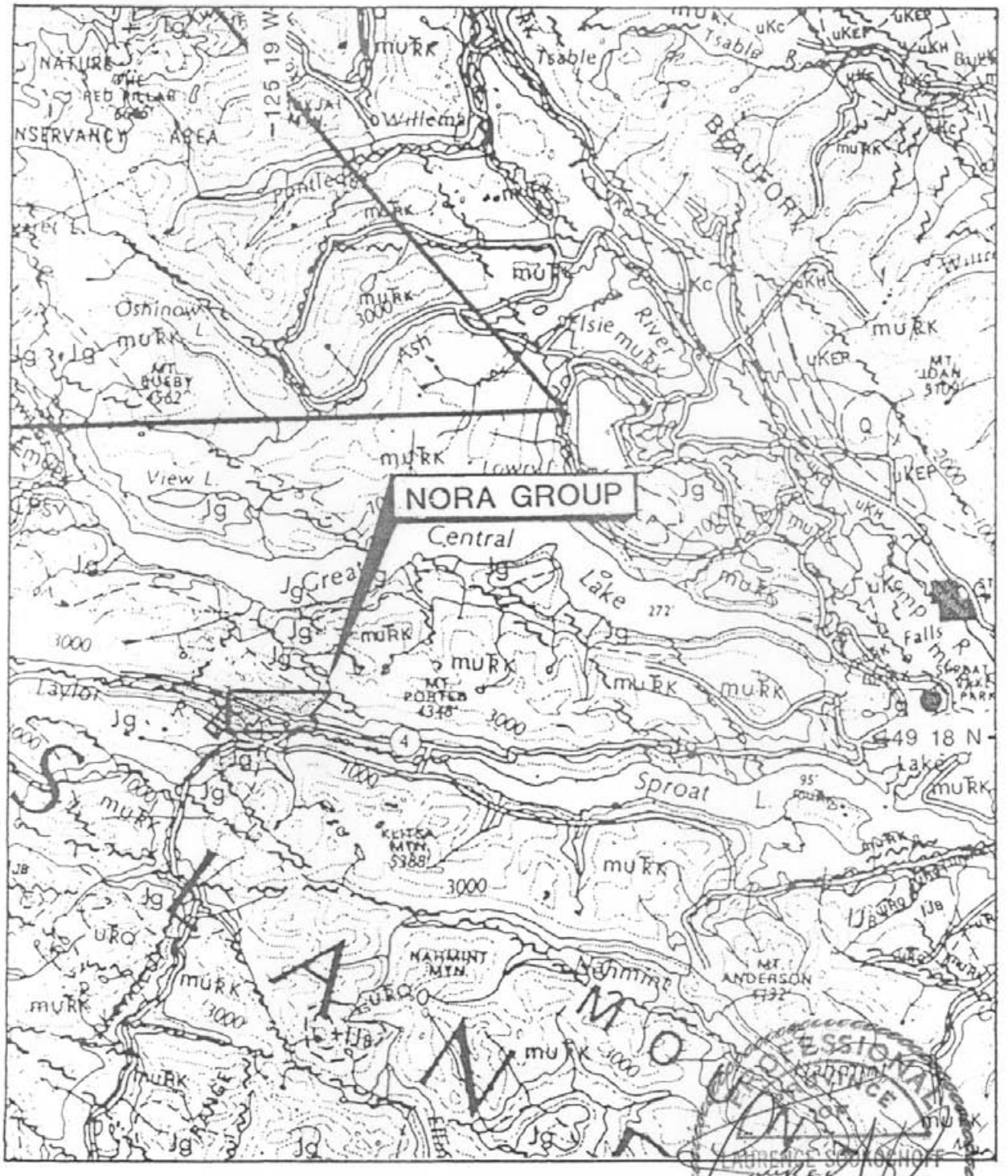
Muller states that the structure of the island is almost entirely dominated by steep faults. Only the flysch-type Pennsylvanian and Jura-Cretaceous sediments and associated thin-bedded tuffs show isoclinal shear folding. Faulting and rifting probably occurred during the outflow of Karmutsen lavas in Late Triassic time, establishing the northerly and westerly directed fault systems affecting Sicker and Vancouver Group rocks.

## PROPERTY GEOLOGY

The geology covered by the claim group as indicated on the GSC Map of East Vancouver Island Open File 463 (Muller 1977), is predominantly of the Karmutsen Formation of the Upper Triassic Vancouver Group (muTrk). The Karmutsen, as described by Muller (1977) is:

> "...composed of tholeiitic volcanic rocks, up to 6,000 m thick and underlying a large part of the island. In Carlisle's (1974) standard section the formation is composed of a lower member, about 2,600 m thick, of pillow lava; a middle member, about 800 m thick, of pillow breccia and aquagene tuff; and an upper member, about 2,900 m thick, of massive flows with minor interbedded pillow lava, breccia and sedimentary layers. Except in contact zones with granitic intrusions the volcanics exhibit low-grade metamorphism up to prehnite-pumpellyite grade. Their age is determined by that of the underlying Ladinian unit and by Upper Triassic, Karnian fossils in sediments in the upper member. The basaltic eruptions apparently started with pillow lavas in a deep marine rift basin, continued with aquagene tuff and breccia as the basin became shallower, and terminated with intrusion of subareal basalt flows. Because the volcanics were formed on a rifting oceanic crust they are probably only in some areas underlain by Sicker Group rocks, whereas elsewhere they constitute new oceanic floor."

The map shows the northeastern corner of the claim group in contact with the Island Intrusions (Jg). The southeastern corner is also underlain by the intrusions in contact partially by the major east-west trending Taylor River fault. Muller (1977) states that the Island Intrusions are batholiths and stocks of granitoid rocks ranging from quartz diorite (potash feldspar less than 10% of total feldspar; quartz 5-20%) to granite (potash feldspar more than 1/3 of total feldspar; quartz more than 20%). They underlie about one quarter of the island's surface and intrude Sicker, Vancouver and Bonanza Group rocks.




MULLER (1977) Open File 463

0 5 10 15 Km

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# NORA GROUP

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# REGIONAL GEOLOGY

| SCALE: | DATE: | N.T.S. | DRAWN BY: | FIGURE: |
|---|---|---|---|---|
| 1: 250,000 | Jun.'92 | 92F/6W | GEO-COMP | 3 |

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LAURENCE SOOKOCHOFF
BRITISH COLUMBIA

Cukor (1983), in a report on the Nora Property magnetometer survey, states that from a brief examination of some rock outcrops, the rock types are basically the same as on the neighbouring Tay Group and provides the following description of the rocks noted:

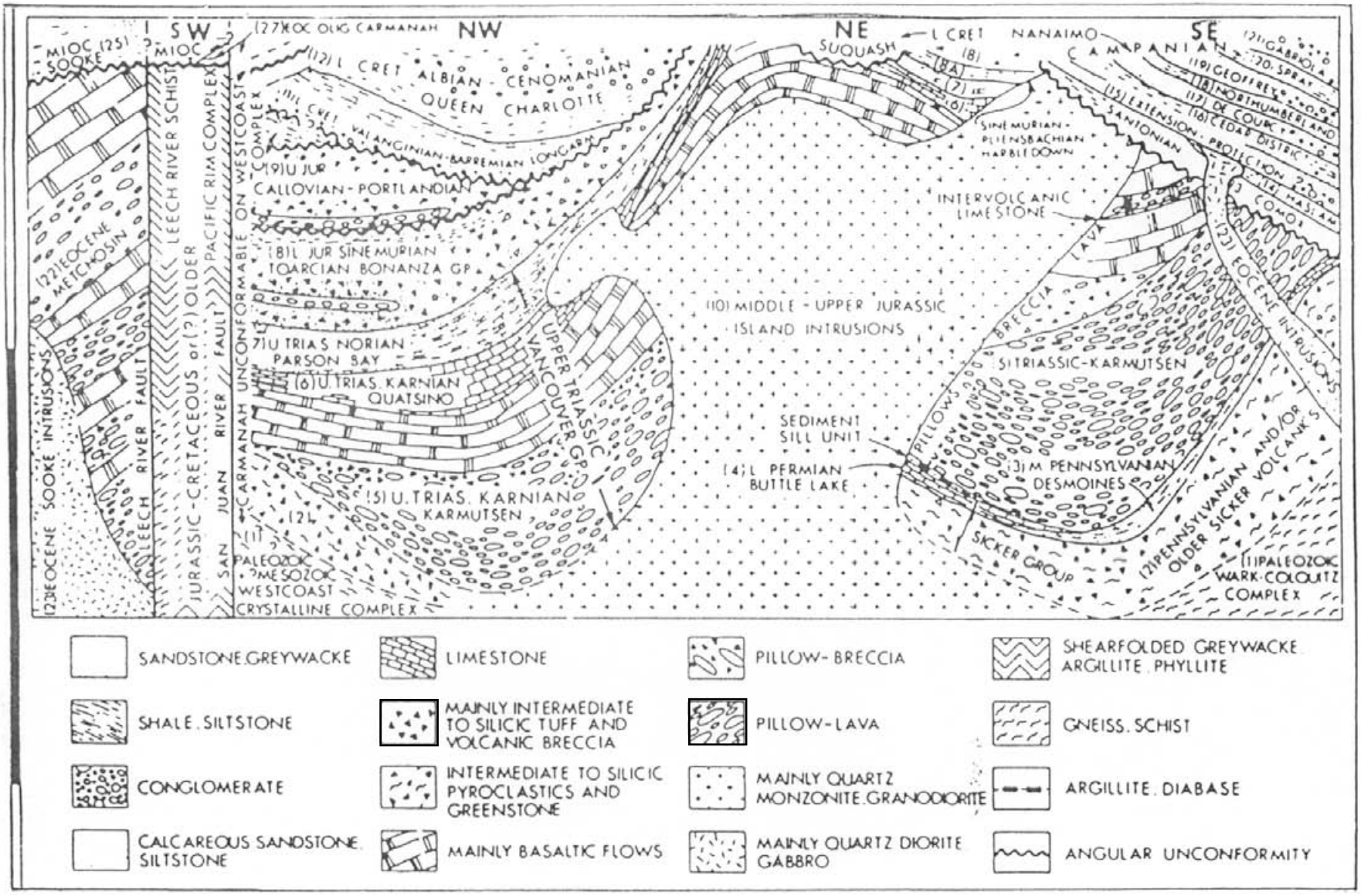
> "Andesitic volcanics, sometimes tuffaceous, are locally altered into greenstone. They are intruded by irregular stocks of dioritic rock which contain large xenolites of volcanic origin in the contact zone.
>
> Besides widespread, intense epidote-chlorite alteration, some potassic alteration was also noted. Hematite and limonite are also found along the fracture planes and pyrite disseminations are quite common. Manganese oxides are also present locally in fractures. Quartz veining was noted on several places, but so far no sulfide minerals have been found in those veins."

In the 1991 localized geological survey of the Nora claims of the Nora claim group, moderate to intense carbonate flooding of andesites in addition to possibly two injections of quartz-carbonate and\or carbonate manifest as hairline to veins up to two centimetres wide, occur within the mapped area. In the northeast portion, the andesites are heavily propylitized resulting in abundant chlorite and carbonate with minor epidote and pyrite.

The chloritic andesites or greenstones, where heavily carbonated, exhibit a lighter green appearance. The carbonated veins may occasionally contain angular fragments of the host rock and are locally sufficiently prolific to create a directional and irregular stockwork. An outcrop 200 metres south of the scarps indicates a moderate degree of low pH alteration and a stockwork of carbonate stringers.

A low degree of ankeritic alteration occurs locally usually accompanied with either silicification or quartz veins which occasionally exhibit a coxcomb texture. Quartz vein float located at the base of the fault scarp and adjacent to a creek which occupies a northwesterly structure is heavily oxidized and contains occasional pyrite blebs, limonite and ankerite on the fracture planes.

The fault scarps in this area mark the northern limit of the major Taylor River structural system with a weaker complementary fault system indicated in the northwesterly trending faults and fractures within the fault scarp area and to a lesser extent within the sparse outcrops southward in the Taylor River Valley.




MULLER (1977) Open File 463

Figure 4

# TABLE OF FORMATIONS OF VANCOUVER ISLAND

## SEQUENTIAL LAYERED ROCKS

| | PERIOD | | STAGE | GROUP | FORMATION | SYM-BOL | AVERAGE THICKNESS IN m. ± | LITHOLOGY |
|---|---|---|---|---|---|---|---|---|
| CENOZOIC | | | | | late Tert. volc's of Port McNeill | Tvs | | |
| | | | | | SOOKE BAY | mpTss | | conglomerate, sandstone, shale |
| | | | EOCENE to | | CARMANAH | eoTc | 1,200 | sandstone, siltstone, coglomerate |
| | | | OLIGOCENE | | ESCALANTE | eTe | 300 | conglomerate, sandstone |
| | | | early EOCENE | | METCHOSIN | eTM | 3,000 | basaltic lava, pillow lava, breccia, tuff |
| MESOZOIC | | LATE | MAESTRICHTIAN | NANAIMO | GABRIOLA | uKGA | 350 | sandstone, conglomerate |
| | | | | | SPRAY | uKs | 200 | shale, siltstone |
| | | | CAMPANIAN | | GEOFFREY | uKG | 150 | conglomerate, sandstone |
| | | | | | NORTHUMBERLAND | uKN | 250 | siltstone, shale, sandstone |
| | | | | | DE COURCY | uKDC | 350 | conglomerate, sandstone |
| | | | | | CEDAR DISTRICT | uKCD | 300 | shale, siltstone, sandstone |
| | | | | | EXTENSION - PROTECTION | uKEP | 300 | conglomerate, sandstone, shale, coal |
| | | | | | HASLAM | uKH | 200 | shale, siltstone, sandstone |
| | | | SANTONIAN | | COMOX | uKC | 350 | sandstone, conglomerate, shale, coal |
| | | EARLY | CENOMANIAN ALBIAN APTIAN ? | QUEEN CHARLOTTE | conglomerate unit | lKoc | 900 | conglomerate, greywacke |
| | | | | | siltstone shale unit | lKop | 50 | siltstone, shale |
| | | | VALANGINIAN BARREMIAN | | LONGARM | lKL | 250 | greywacke, conglomerate, siltstone |
| | JURASSIC | UPPER LATE | TITHONIAN CALLOVIAN | | Upper Jurassic sediment unit | uJs | 500 | siltstone, argillite, conglomerate |
| | | EARLY MIDDLE | TOARCIAN ? | BONANZA | volcanics | lJB | 1,500 | basaltic to rhyolitic lava, tuff, breccia, minor orgillite, greywacke |
| | | | PLIENSBACHIAN SINEMURIAN | | HARBLEDOWN | lJH | | orgillite, greywacke, tuff |
| | TRIASSIC | LATE | NORIAN | VANCOUVER | PARSON BAY | uTrPB | 450 | calcareous siltstone, greywacke, silty-limestone, minor conglomerate, breccia |
| | | | KARNIAN | | QUATSINO | uTrQ | 400 | limestone |
| | | | | | KARMUTSEN | muTrK | 4,500 | basaltic lava, pillow lava, breccia, tuff |
| | | MID | LADINIAN | | sediment - sill unit | TrDS | 750 | metasiltstone, diabase, limestone |
| PALEOZOIC | DEV. or EARLIER | PENN. and ? PERM. | | SICKER | BUTTLE LAKE | CPBL | 300 | limestone, chert |
| | | | | | sediments | CPSs | 600 | metagreywacke, argillite, schist, marble |
| | | | | | volcanics | CPSv | 2,000 | basaltic to rhyolitic metavolcanic flows, tuff, agglomerate |

## CRYSTALLINE ROCKS, COMPLEXES OF POORLY DEFINED AGE

| NAME | SYM-BOL | ISOTOPIC AGE Pb/U | ISOTOPIC AGE K/Ar | LITHOLOGY |
|---|---|---|---|---|
| SOOKE INTRUSIONS silicic | Tg | | 32-59 | quartzdiorite, trondhjemite, agmatite, porphyry |
| SOOKE INTRUSIONS basic | Tgb | | 31-49 | gabbro, anorthosite, agmatite |
| METCHOSIN SCHIST, GNEISS | TMn | | 47 | chlorite schist, gneissic amphibolite |
| LEECH RIVER FM | JKL | | 38-41 | phyllite, mica schist, greywacke, orgillite, chert |
| PACIFIC RIM COMPLEX | JKP | | | greywacke, orgillite, chert, basic volcanics, limestone |
| ISLAND INTRUSIONS | Jg | | 141-181 | granodiorite, quartzdiorite, granite, quartz monzonite |
| WESTCOAST COMPLEX silicic | PMns | 264 | 163-192 | quartz-feldspargneiss, metaquartzite, marble |
| WESTCOAST COMPLEX basic | PMnb | | | hornblende-plagioclase gneiss, quartz diorite, agmatite, amphibolite |
| diabase sills | PTrb | | | |
| limestone | Ls | | | |
| metavolcanic rocks | PMmv | | | metavolcanic rocks, minor metasediments; limestone, marble |
| TYEE INTRUSIONS | Pg | >390 | | metagranodiorite, metaquartzdiorite, metaquartz porphyry |
| COLQUITZ GNEISS | Pns | >390 | | quartz feldspar gneiss |
| WARK DIORITE GNEISS | Pnb | | 163-182 | hornblende-plagioclase gneiss, quartz diorite, amphibolite |

In the 1992 geological survey, samples from rock outcrops were taken and analyzed for mineral content to determine the correlation, if any, of the soil geochem results to the bedrock mineral values. The rock samples were all generally andesitic to basaltic and propylitically altered to variable degrees. The alteration includes general pervasive carbonate and as stringers, occasional epidote and moderate to heavy chlorite. Sulphides were not visually detected in the selected rock samples.

The mineral analyses of each rock sample is included on the individual map for the specific element. The balance of the 30 element ICP analysis plus the geochem gold values are documented by the accompanying assay certificates in Appendix I.

## MINERALIZATION

The mineralization is predominantly of pyrite and a rare occurrence of malachite. Pyrite occurs rarely on fracture planes, commonly with the rare quartz vein and as variable disseminations in association with ankerite in silicified or quartz veined zones. Malachite occurs in the quartz vein float.

In the 1991 geological survey, assays of selected rock samples returned anomalous gold values of up to 34 ppb with most of the anomalous samples localized along the fault scarp in the northeastern grid area. The anomalous gold bearing samples contain some degree of pyrite or limonite and some were anomalous in copper. Generally, samples from this area that were not anomalous in gold and in which pyrite was absent, were anomalous in arsenic.

In the 1992 geological survey, of six rock samples analyzed, the sample at 2+00E, 3+00S returned an exceptionally high zinc value of 5,033 Zn (0.05%). The sample is also anomalous in copper and silver.

## REVIEW OF EXPLORATION ON THE PROPERTY

### Exploration to 1991

Exploration completed on the Nora claim group prior to the current program consisted of a magnetometer survey, the results of which are reported by Cukor (1983 & 1984). On the Nora claims the magnetometer survey produced some low anomalous area which were recommended to be examined (Cukor 1983). On the Abraham claims, Cukor (1984) reports that the survey encountered a relief of 2,150 gammas and a considerable amount of magnetic structure.

## Exploration in 1991

### Geological Survey

The geological survey results from 1991 are included in the GEOLOGY and the MINERALIZATION section of this report.

### Geochemical Survey

The 1991 localized geochemical survey resulted in the location of anomalous arsenic and antimony values which correlate with an indicated cross structure as interpreted from a 1983 delineated magnetometer low. Rock geochem values of up to 34 ppb Au and soil geochem values of up to 18 ppb occur in the fault scarp area and within the area of quartz vein float. Prolific carbonate and/or quartz stringers and ankerite alteration also occur in this area. A low pH alteration zone occurs 200 metres south of the above in a heavily overburdened location.

### Fault/fracture study

A fault/fracture study of the Nora claim group indicated that the principal target for locating potential structurally controlled mineral deposits on the Nora claims would be along the parallel structures which strike southwest-northeast through the claims along the north side of Taylor River.

## 1992 EXPLORATION PROGRAM

### Geological Survey

The results of the geological survey are reported on in the GEOLOGY and MINERALIZATION section of this report.

### Geochemical Survey

A survey grid was initially established to cover a northeastern portion of the Abraham claims of the Nora claim group. The baseline is parallel to the claim line at 210°, approximately 150 metres to the southeast and from the northeast end of the Abraham 1 & 2 claims (which in this area is overstaked by the Nora 1 & 2) for 1,300 to the southwest. Cross lines were established at 100 metre intervals with samples taken at 50 metre stations along intervals of nine of the cross lines.

The samples were attempted to be taken consistently from below the "A" horizon of the podzolic grey-brown forest soil, however, due to the variable thickness of the humic layer, the desired "B" soil horizon was not always reached. Thus, the inconsistency of the sampled material could result in erratic values.

The soil was placed in wet-strength bags with the appropriate grid station marked thereon. Red flagging with the grid station was placed at the field station. A total of 107 samples were taken.

The samples were sent to Acme Analytical Laboratories Ltd. of Vancouver where a 30 element ICP test was completed. The ICP test involved the digestion of .500 grams of the soil sample with 3 ml 3-2-1 HCl-H2O at 95 deg. C for one hour and diluted to 10 ml with water.

The background, sub anomalous and anomalous values of four elements - arsenic, copper, lead and zinc - were determined utilizing a software program developed for an IBM PC computer. The statistical parameters are as follows:

| | Background | Sub Anomalous | Anomalous | Low | High |
|---|---|---|---|---|---|
| Copper | 70 | 102 | 135 | 1 | 198 |
| Lead | 3.1 | 4.7 | 6.3 | 2 | 22 |
| Zinc | 64 | 139 | 213 | 1 | 692 |
| Arsenic | 3.1 | 4.8 | 6.4 | 1 | 22 |

All values are in ppm.

The results of the survey are as follows:

Arsenic

A zone of anomalous and sub anomalous values of up to 22 ppm occurs centrally within the survey area. The zone appears to be biased in an east-west trend and with the localized above sub anomalous values peripheral to the central, a northerly trend is also apparent.

Zinc

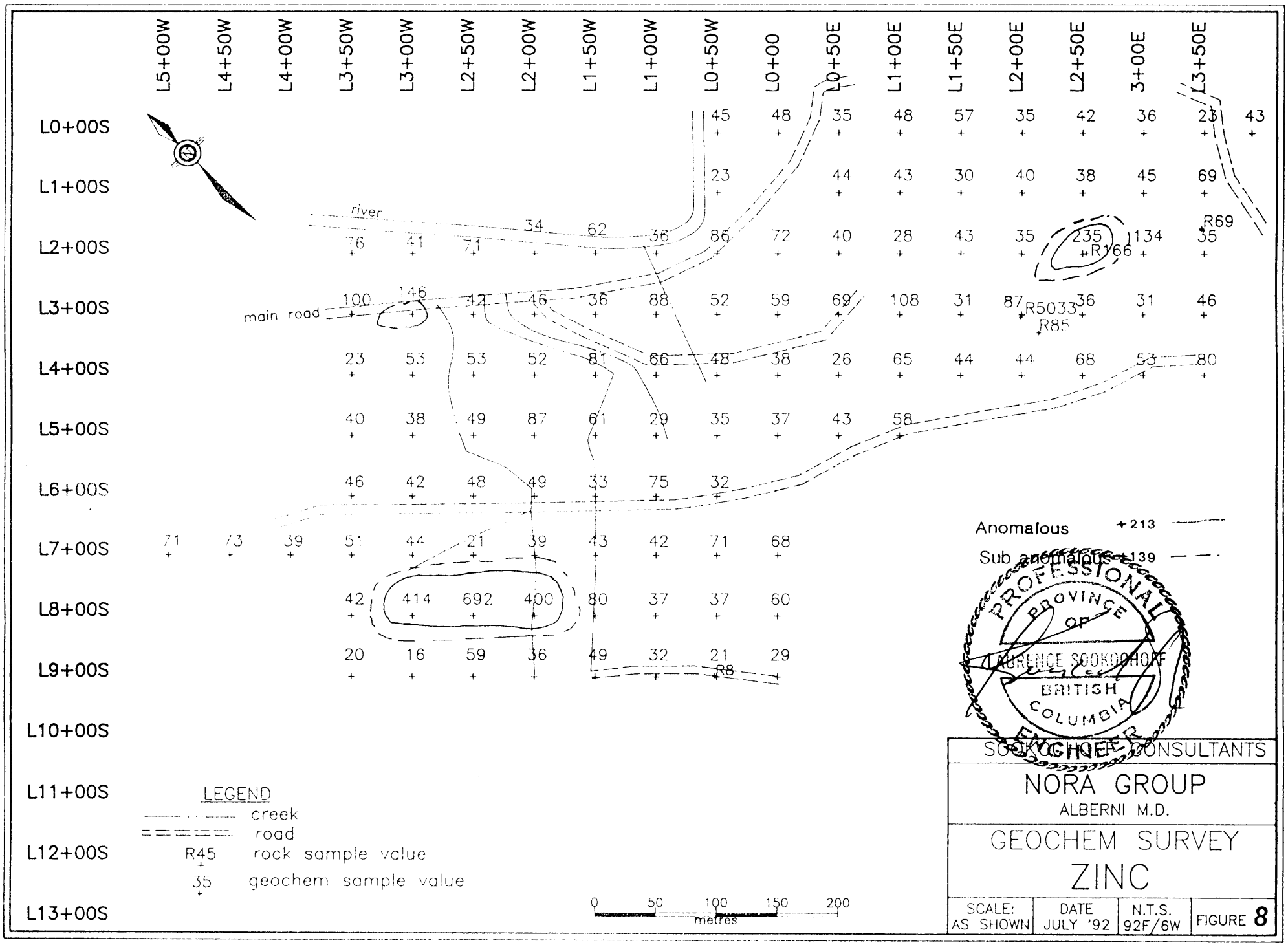
The anomalous values which occur peripheral to the central zone, range up to 692 ppm which is approximately three times the anomalous value of 213 ppm. The three highest values of 400 ppm, 414 ppm and 692 ppm occur contiguous along Line 8+00S within 100 metres west of the central zone.

Copper

The values above sub anomalous are sporadic throughout the survey area with only one value, which is sub anomalous, correllating with the central zone. The indicative trend of the localized values appear in an east-west and a northerly direction.

Lead

The two highest anomalous values of 24 ppm and 9 ppm and sub anomalous values are correllative with the central zone with low level anomalous and sub anomalous values occurring peripherally.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L11+00S
L12+00S
L13+00S
river
main road
R69
R166
R5033
R85
R8
Anomalous +213
Sub anomalous +139
LEGEND
creek
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R45 rock sample value
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metres
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GEOCHEM SURVEY
ZINC
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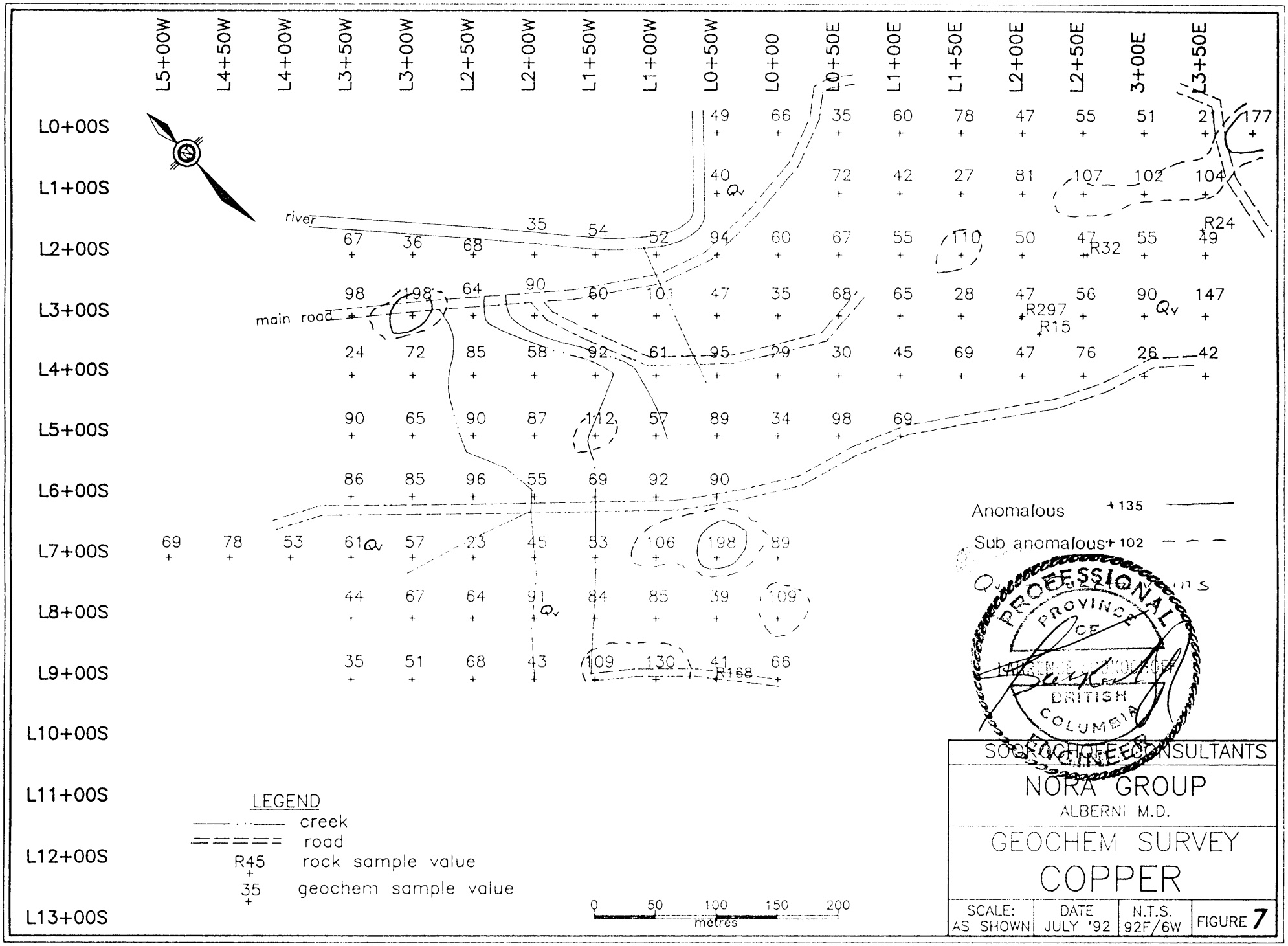
N.T.S. 92F/6W
FIGURE 8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R15
R168
Qv
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NORA GROUP
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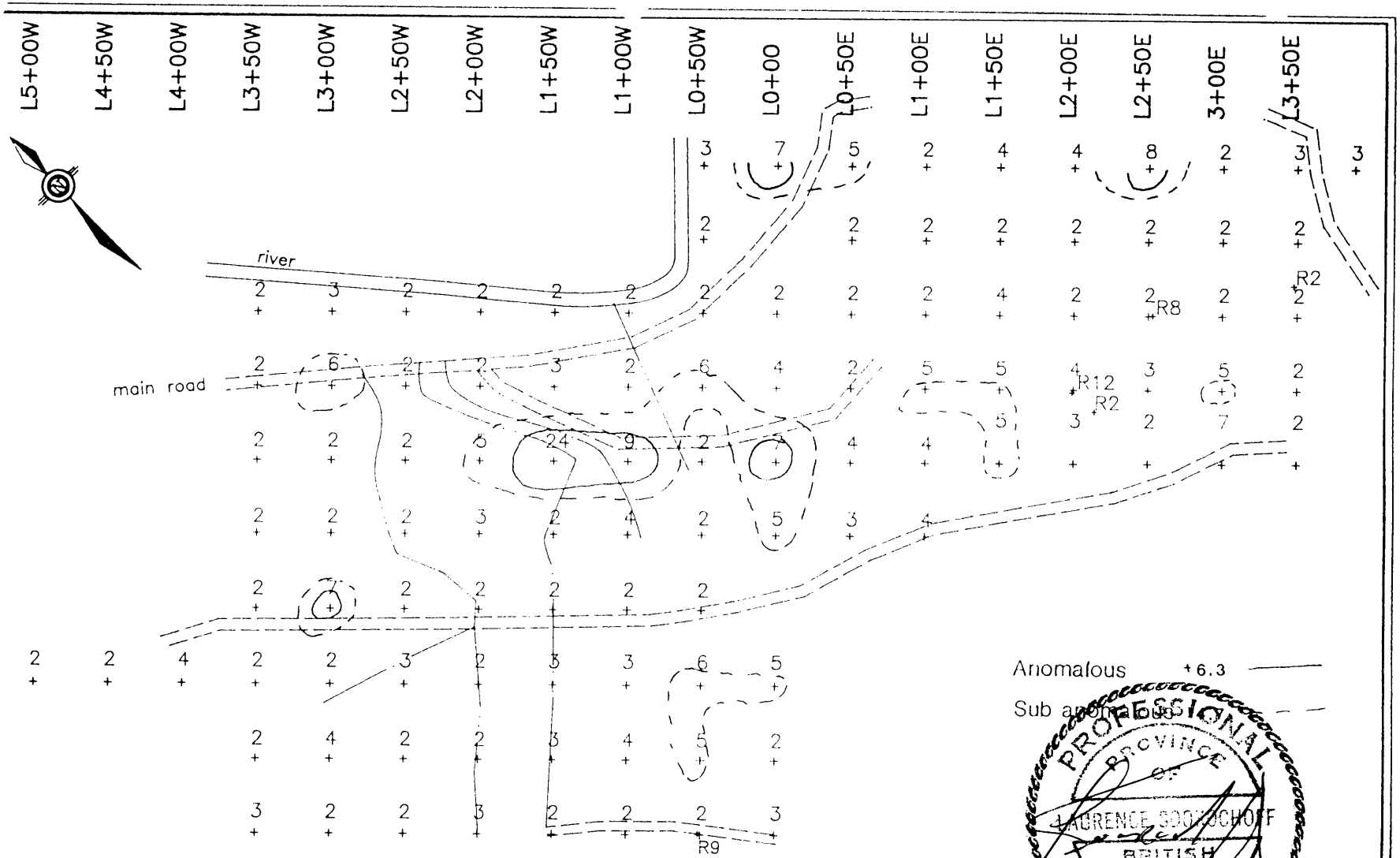
FIGURE 7

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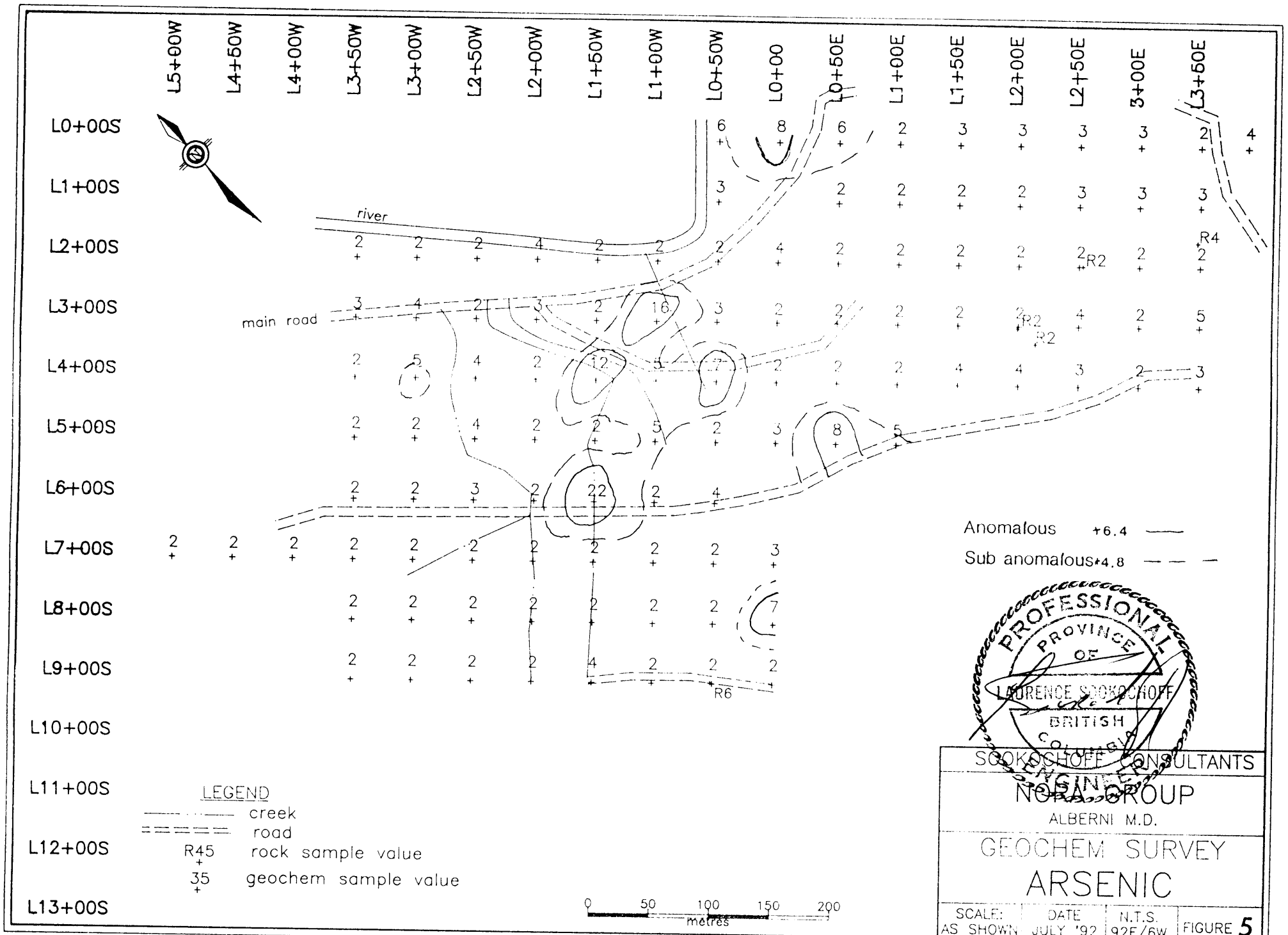
# NORA GROUP

ALBERNI M.D.

## GEOCHEM SURVEY

## LEAD

| SCALE: | DATE | N.T.S. | FIGURE |
|---|---|---|---|
| AS SHOWN | JULY '92 | 92F/6W | 6 |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L3+50W
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L7+00S
L8+00S
L9+00S
L10+00S
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main road
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R4
R6
Anomalous +6.4
Sub anomalous +4.8
LEGEND
creek
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35 geochem sample value
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NORA GROUP
ALBERNI M.D.
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SCALE: AS SHOWN
DATE JULY '92
N.T.S. 92F/6W
FIGURE 5

Generally a zone of anomalous and sub anomalous soil geochem arsenic values occuring centrally within the survey area is correllative in part with anomalous and sub anomalous lead values. Copper and zinc anomalous and sub anomalous values tend to occur peripheral to the central zone.

The pattern of the anomalous values appears as a general two directional trend reflecting potential structural mineral controlling features. The directions are most obvious with the copper anomalies (and sub anomalies) where northerly and east-northeasterly structures are reflected. Barren quartz veins, less than two cm wide, occur in association with the northerly trending structures.

The anomalous rock sample mineral values may not reflect be reflected by anomalous soil geochem values. The 5,033 ppm (0.5%) Zn value of a rock sample proximal to a near background soil geochem value of 87 ppm Zn indicates the poor rock and soil geochem correllation. However, in another case a rock sample bearing 166 ppm Zn is adjacent to a soil geochem value of 235 ppm Zn.

## CONCLUSIONS

The soil geochem survey indicated potential mineral controlling northerly and east-northeasterly trending structures which are indicated to intersect centrally in the survey area. The anomalous arsenic soil geochem values in the intersection area could reflect the upper portion of a mineralized zone emplaced within the favorably prepared plumbing system.

The arsenic could also reflect an overlaping sequence to the correlative lead zone. The peripheral lead, copper and zinc anomalous and sub anomalous soil values could reflect mineral leakages within confined less favorable directional structures. However, the area of the three consecutive highly anomalous soil values along Line 8+00S, west of the central zone and within an area of quartz veining, is significant and merits exploration.

## RECOMMENDATIONS

Field examination of the two delineated areas of interest - the central arsenic soil geochem zone and the anomalous zinc zone - should be examined to determine the causative source of the anomalous effects and continue exploration in these areas if warranted. The information obtained from the exploration of these two areas could be beneficial to the exploration of the unexplored portion of the property in the search for potentially economic mineral zones.

Respectfully submitted,
SOOKOCHOFF CONSULTANTS INC.


Laurence Sookochoff, P.Eng.

June 25, 1992
Vancouver, B.C.

## SELECTED REFERENCES

CLAPP, C.H. - Southern Vancouver Island, Part B, Canada Department of Mines Geological Survey Branch, Memoir No. 13.

CUKOR, V. - Report on the 1980 Exploration Program on the Tay Gold Property for Dalmatian Resources Ltd. August 1980.

- Summary of Exploration Programs on the Tay Gold Property. December 1983

MULLER, J.E. - Geology of Vancouver Island, Open File 463, Geological Survey of Canada, 1977.

SOOKOCHOFF, L. - Geological and Geochemical Assessmsnt Report on the Nora Claim Group for Frank Milakovich, June 25, 1991.

## CERTIFICATE

I, Laurence Sookochoff, of the city of Vancouver, in the Province of British Columbia, do hereby certify:

That I am a Consulting Geologist with offices at 1026-510 West Hastings Street, Vancouver, B.C. V6B 1L8

I further certify that:

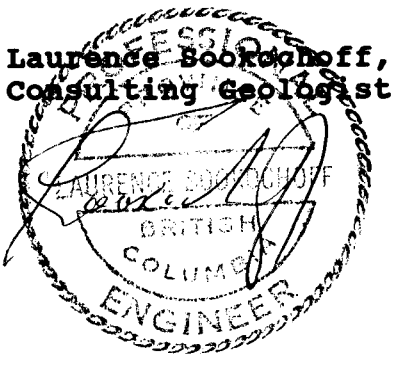
1. I am a graduate of the University of British Columbia (1966) and hold a B.Sc. degree in Geology.

2. I have been practising my profession for the past twenty-six years.

3. I am registered with the Association of Professional Engineers of British Columbia.

4. Information for the accompanying report was obtained from sources cited under Selected References and from the work performed on the exploration program reported on herein.

Laurence Sookochoff, P.Eng.
Consulting Geologist




June 25, 1992
Vancouver, B.C.

## STATEMENT OF COSTS

**FRANK MILAKOVICH**
**Nora Claim Group**

The field work on the Nora claim Group was carried out from April 07, 1992 to April 18, 1992 to the value of the following:

| | |
|---|---|
| Laurence Sookochoff, P.Eng. | |
| 4 days @ $500. | $ 2,000.00 |
| D. Patterson: | |
| Grid: 3 days @ $250.00 | |
| Sampling: 5 days @ $250.00 | 2,000.00 |
| Vehicle rentals, km charge and gas expense | 536.55 |
| Room & board: | |
| 13 man days @ $90.00 | 1,170.00 |
| Field supplies | 75.00 |
| Assays | 610.70 |
| Compilation & draughting | 500.00 |
| Report, xerox, printing | 750.00 |
| | $ 7,642.25 |

# Appendix I

## ASSAY CERTIFICATES

ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER B.C. V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716

# GEOCHEMICAL ANALYSIS CERTIFICATE

**Sookochoff Consultants Inc.** PROJECT NORA File # 92-0840 Page 1

1027 - 510 W. Hastings St, Vancouver BC V6B 1L8

| SAMPLE# | Cu ppm | Pb ppm | Zn ppm | Ag ppm | As ppm |
|---|---|---|---|---|---|
| BL00+00S L00+50W | 49 | 3 | 45 | .1 | 6 |
| BL00+00S L00+00 | 66 | 7 | 48 | .1 | 8 |
| BL00+00S L00+50E | 35 | 5 | 35 | .2 | 6 |
| BL00+00S L01+00E | 60 | 2 | 48 | .1 | 2 |
| BL00+00S L01+50E | 78 | 4 | 57 | .2 | 3 |
| BL00+00S L02+00E | 47 | 4 | 35 | .3 | 3 |
| BL00+00S L02+50E | 55 | 8 | 42 | .2 | 3 |
| BL00+00S L03+00E | 51 | 2 | 36 | .2 | 3 |
| BL00+00S L03+50E | 21 | 3 | 23 | .1 | 2 |
| BL00+00S L03+89E | 177 | 3 | 43 | .2 | 4 |
| BL01+00S L00+50W | 40 | 2 | 23 | .1 | 3 |
| BL01+00S L00+50E | 72 | 2 | 44 | .1 | 2 |
| BL01+00S L01+00E | 42 | 2 | 43 | .1 | 2 |
| RE BL01+00S L03+50E | 104 | 2 | 69 | .1 | 3 |
| BL01+00S L01+50E | 27 | 2 | 30 | .1 | 2 |
| BL01+00S L02+00E | 81 | 2 | 40 | .1 | 2 |
| BL01+00S L02+50E | 107 | 2 | 38 | .2 | 3 |
| BL01+00S L03+00E | 102 | 2 | 45 | .1 | 3 |
| BL01+00S L03+50E | 97 | 3 | 66 | .1 | 2 |
| BL02+00S L03+50W | 67 | 2 | 76 | .1 | 2 |
| BL02+00S L03+00W | 36 | 3 | 41 | .1 | 2 |
| BL02+00S L02+50W | 68 | 2 | 71 | .1 | 2 |
| BL02+00S L02+00W | 35 | 2 | 34 | .1 | 4 |
| BL02+00S L01+50W | 54 | 2 | 62 | .1 | 2 |
| BL02+00S L01+00W | 52 | 2 | 36 | .2 | 2 |
| BL02+00S L00+50W | 94 | 2 | 86 | .3 | 2 |
| BL02+00S L00+00 | 60 | 2 | 72 | .3 | 4 |
| BL02+00S L00+50E | 67 | 2 | 40 | .2 | 2 |
| BL02+00S L01+00E | 55 | 2 | 28 | .1 | 2 |
| BL02+00S L01+50E | 110 | 4 | 43 | .1 | 2 |
| BL02+00S L02+00E | 50 | 2 | 35 | .1 | 2 |
| BL02+00S L02+50E | 47 | 2 | 235 | .1 | 2 |
| BL02+00S L03+00E | 55 | 2 | 134 | .1 | 2 |
| BL02+00S L03+50E | 49 | 2 | 35 | .2 | 2 |
| BL03+00S L03+50W | 98 | 2 | 100 | .1 | 3 |
| BL03+00S L03+00W | 198 | 6 | 146 | .2 | 4 |
| BL03+00S L02+50W | 64 | 2 | 42 | .2 | 2 |
| STANDARD C | 57 | 41 | 141 | 7.4 | 42 |

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.
THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL. AU DETECTION LIMIT BY ICP IS 3 PPM.
ASSAY RECOMMENDED FOR ROCK AND CORE SAMPLES IF CU PB ZN AS > 1%, AG > 30 PPM & AU > 1000 PPB
- SAMPLE TYPE: P1 TO P3 SOIL P4 ROCK Samples beginning 'RE' are duplicate samples.

**DATE RECEIVED:** APR 22 1992 **DATE REPORT MAILED:** April 27/92 **SIGNED BY** .....D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

| SAMPLE# | Cu ppm | Pb ppm | Zn ppm | Ag ppm | As ppm |
|---|---|---|---|---|---|
| BL03+00S L02+00W | 90 | 2 | 46 | .1 | 3 |
| BL03+00S L01+50W | 60 | 3 | 36 | .3 | 2 |
| BL03+00S L01+00W | 101 | 2 | 88 | .1 | 16 |
| BL03+00S L00+50W | 47 | 6 | 52 | .1 | 3 |
| BL03+00S L00+00 | 35 | 4 | 59 | .1 | 2 |
| BL03+00S L00+50E | 68 | 2 | 69 | .1 | 2 |
| BL03+00S L01+00E | 65 | 5 | 108 | .1 | 2 |
| BL03+00S L01+50E | 28 | 5 | 31 | .1 | 2 |
| BL03+00S L02+00E | 47 | 4 | 87 | .1 | 2 |
| BL03+00S L02+50E | 56 | 3 | 36 | .1 | 4 |
| BL03+00S L03+00E | 90 | 5 | 31 | .1 | 2 |
| BL03+00S L03+50E | 147 | 2 | 46 | .1 | 5 |
| BL04+00S L03+50W | 24 | 2 | 23 | .1 | 2 |
| BL04+00S L03+00W | 72 | 2 | 53 | .1 | 5 |
| BL04+00S L02+50W | 85 | 2 | 53 | .1 | 4 |
| BL04+00S L02+00W | 58 | 5 | 52 | .1 | 2 |
| BL04+00S L01+50W | 92 | 24 | 81 | .6 | 12 |
| BL04+00S L01+00W | 61 | 9 | 66 | .3 | 5 |
| BL04+00S L00+50W | 95 | 2 | 48 | .1 | 7 |
| BL04+00S L00+00 | 29 | 7 | 38 | .1 | 2 |
| BL04+00S L00+50E | 30 | 4 | 26 | .1 | 2 |
| BL04+00S L01+00E | 45 | 4 | 65 | .1 | 2 |
| BL04+00S L01+50E | 69 | 5 | 44 | .2 | 4 |
| BL04+00S L02+00E | 47 | 3 | 44 | .3 | 4 |
| BL04+00S L02+50E | 76 | 2 | 68 | .1 | 3 |
| BL04+00S L03+00E | 26 | 7 | 53 | .1 | 2 |
| BL04+00S L03+50E | 42 | 2 | 80 | .1 | 3 |
| BL05+00S L03+50W | 90 | 2 | 40 | .1 | 2 |
| BL05+00S L03+00W | 65 | 2 | 38 | .1 | 2 |
| BL05+00S L02+50W | 90 | 2 | 49 | .1 | 4 |
| BL05+00S L02+00W | 87 | 3 | 87 | .1 | 2 |
| BL05+00S L01+50W | 112 | 2 | 61 | .1 | 2 |
| BL05+00S L01+00W | 57 | 4 | 29 | .1 | 5 |
| BL05+00S L00+50W | 89 | 2 | 35 | .1 | 2 |
| BL05+00S L00+00 | 34 | 5 | 37 | .1 | 3 |
| BL05+00S L00+50E | 98 | 3 | 43 | .1 | 8 |
| BL05+00S L01+00E | 69 | 4 | 58 | .1 | 5 |
| RE BL04+00S L03+00E | 25 | 6 | 37 | .1 | 2 |
| STANDARD C | 58 | 41 | 134 | 7.3 | 42 |

Sample type: SOIL. Samples beginning 'RE' are duplicate samples.

| SAMPLE# | Cu ppm | Pb ppm | Zn ppm | Ag ppm | As ppm |
|---|---|---|---|---|---|
| BL06+00S L03+50W | 86 | 2 | 46 | .1 | 2 |
| BL06+00S L03+00W | 85 | 7 | 42 | .1 | 2 |
| BL06+00S L02+50W | 96 | 2 | 48 | .1 | 3 |
| BL06+00S L02+00W | 55 | 2 | 49 | .3 | 2 |
| BL06+00S L01+50W | 69 | 2 | 33 | .2 | 22 |
| BL06+00S L01+00W | 92 | 2 | 75 | .1 | 2 |
| BL06+00S L00+50W | 90 | 2 | 32 | .1 | 4 |
| BL07+00S L05+00W | 69 | 2 | 71 | .2 | 2 |
| RE BL07+00S L02+50W | 23 | 3 | 21 | .1 | 2 |
| BL07+00S L04+50W | 78 | 2 | 73 | .1 | 2 |
| BL07+00S L04+00W | 53 | 4 | 39 | .1 | 2 |
| BL07+00S L03+50W | 61 | 2 | 51 | .2 | 2 |
| BL07+00S L03+00W | 57 | 2 | 44 | .1 | 2 |
| BL07+00S L02+50W | 22 | 5 | 21 | .2 | 2 |
| BL07+00S L02+00W | 45 | 2 | 39 | .3 | 2 |
| BL07+00S L01+50W | 53 | 3 | 43 | .1 | 2 |
| BL07+00S L01+00W | 106 | 3 | 42 | .2 | 2 |
| BL07+00S L00+50W | 198 | 6 | 71 | .4 | 2 |
| BL07+00S L00+00 | 89 | 5 | 68 | .2 | 3 |
| BL08+00S L03+50W | 44 | 2 | 42 | .1 | 2 |
| BL08+00S L03+00W | 67 | 4 | 414 | .1 | 2 |
| BL08+00S L02+50W | 64 | 2 | 692 | .1 | 2 |
| BL08+00S L02+00W | 91 | 2 | 400 | .1 | 2 |
| BL08+00S L01+50W | 84 | 3 | 80 | .1 | 2 |
| BL08+00S L01+00W | 85 | 4 | 37 | .2 | 2 |
| BL08+00S L00+50W | 39 | 5 | 37 | .1 | 2 |
| BL08+00S L00+00 | 109 | 2 | 60 | .1 | 7 |
| BL09+00S L03+50W | 35 | 3 | 20 | .2 | 2 |
| BL09+00S L03+00W | 51 | 2 | 16 | .2 | 2 |
| BL09+00S L02+50W | 68 | 2 | 59 | .2 | 2 |
| BL09+00S L02+00W | 43 | 3 | 36 | .1 | 2 |
| BL09+00S L01+50W | 109 | 2 | 49 | .1 | 4 |
| BL09+00S L01+00W | 130 | 2 | 32 | .1 | 2 |
| BL09+00S L00+50W | 41 | 2 | 21 | .1 | 2 |
| BL09+00S L00+00 | 66 | 3 | 29 | .1 | 2 |
| STANDARD C | 60 | 41 | 134 | 7.1 | 42 |

Sample type: SOIL. Samples beginning 'RE' are duplicate samples.

| SAMPLE# | Mo ppm | Cu ppm | Pb ppm | Zn ppm | Ag ppm | Ni ppm | Co ppm | Mn ppm | Fe % | As ppm | U ppm | Au ppm | Th ppm | Sr ppm | Cd ppm | Sb ppm | Bi ppm | V ppm | Ca % | P % | La ppm | Cr ppm | Mg % | Ba ppm | Ti % | B ppm | Al % | Na % | K % | W ppm | Au* ppb |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C 75200 | 2 | 45 | 11 | 56 | 2.7 | 105 | 80 | 737 | 9.90 | 9 | 5 | ND | 1 | 82 | .9 | 2 | 2 | 103 | .98 | .059 | 2 | 33 | 2.01 | 17 | .45 | 2 | 2.18 | .01 | .02 | 1 | 20 |
| C 75201 | 2 | 32 | 8 | 166 | .1 | 18 | 9 | 2142 | 3.05 | 2 | 5 | ND | 1 | 59 | .5 | 2 | 2 | 50 | .79 | .039 | 2 | 19 | 1.65 | 15 | .23 | 3 | 2.07 | .04 | .01 | 1 | 2 |
| C 75202 | 1 | 297 | 12 | 5033 | 1.0 | 88 | 40 | 5187 | 10.97 | 2 | 5 | ND | 2 | 17 | 13.6 | 2 | 2 | 147 | .83 | .045 | 2 | 75 | 4.24 | 10 | .35 | 2 | 4.32 | .01 | .04 | 1 | 6 |
| C 75203 | 2 | 15 | 2 | 85 | .1 | 5 | 10 | 775 | 2.45 | 2 | 5 | ND | 1 | 13 | .2 | 2 | 2 | 21 | .23 | .044 | 3 | 8 | .77 | 48 | .06 | 4 | 1.31 | .05 | .09 | 1 | 1 |
| C 75204 | 2 | 24 | 2 | 69 | .1 | 15 | 16 | 467 | 3.64 | 4 | 5 | ND | 1 | 90 | .2 | 2 | 2 | 38 | 4.06 | .005 | 2 | 9 | .21 | 5 | .08 | 9 | 3.26 | .02 | .01 | 1 | 1 |
| C 75205 | 14 | 168 | 9 | 8 | .3 | 55 | 86 | 213 | 16.77 | 6 | 5 | ND | 1 | 47 | .2 | 2 | 2 | 109 | .70 | .020 | 2 | 42 | .73 | 14 | .19 | 2 | 2.69 | .04 | .01 | 1 | 1 |
| RE C 75204 | 2 | 25 | 2 | 70 | .1 | 15 | 17 | 483 | 3.77 | 2 | 5 | ND | 1 | 94 | .2 | 2 | 2 | 40 | 4.23 | .004 | 2 | 8 | .21 | 4 | .08 | 8 | 3.38 | .02 | .01 | 1 | 1 |
| BL07+00S L03+38W | 2 | 56 | 3 | 65 | .1 | 18 | 17 | 1318 | 4.73 | 5 | 8 | ND | 1 | 68 | .3 | 2 | 2 | 101 | 1.63 | .033 | 2 | 15 | 1.63 | 50 | .23 | 2 | 2.97 | .08 | .01 | 1 | 2 |
| STANDARD C/AU-R | 19 | 56 | 38 | 138 | 7.2 | 70 | 32 | 1055 | 4.03 | 42 | 17 | 7 | 38 | 52 | 17.3 | 16 | 20 | 56 | .48 | .092 | 36 | 57 | .90 | 182 | .09 | 34 | 1.91 | .06 | .15 | 11 | 464 |

Sample type: ROCK. Samples beginning 'RE' are duplicate samples.
**AU* ANALYSIS BY ACID LEACH/AA FROM 10 GM SAMPLE.**