

ARIS SUMMARY SHEET

District Geologist, Smithers

Off Confidential: 89.04.15

ASSESSMENT REPORT 17593

MINING DIVISION: Omineca

PROPERTY: Nel
LOCATION: LAT 57 07 00 LONG 126 45 00
UTM 09 6332407 636245
NTS 094E02E 094E02W

CLAIM(S): Nel 1, Nel 3, Nell 2, Nell 4, Last

OPERATOR(S): Can. Venture

AUTHOR(S): Hermary, R.G.; Woods, D.V.

REPORT YEAR: 1988, 25 Pages

GEOLOGICAL

SUMMARY: The underlying rocks consist of basalt flows and breccia of the Upper Triassic Takla Group and Middle Jurassic Toodoggone Volcanics. The Toodoggone rocks include Adoogatcho Creek Formation crystal ash tuffs and Moyez Creek conglomerate, greywacke, bedded crystal tuff and epiclastic sedimentary rocks. These rocks are intruded by Jurassic granodiorite and quartz diorite. The majority of faults trend northeast and other faults tend to be cross-cutting.

WORK
DONE:

Geophysical

EMAB 180.0 km; VLF
Map(s) - 2; Scale(s) - 1:10 000

MAGA 180.0 km
Map(s) - 1; Scale(s) - 1:10 000

MINFILE: 094E 081, 094E 082

LOG NO: 0722 RD.

ACTION:

FILE NO:

**CANADIAN VENTURE CORPORATION
GEOPHYSICAL REPORT ON AN
AIRBORNE MAGNETIC AND VLF-EM SURVEY
NEL 1, NELL 2, NEL 3, NELL 4 AND LAST CLAIMS
OMINECA MINING DIVISION**

LATITUDE: 57° 07'30''N LONGITUDE: 126° 44'00''W

NTS: 94E/2E and 94E/2W

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Consulting Geophysicist

DATE OF WORK: 12 and 13 of April 1988

DATE OF REPORT: 30 June 1988

FILMED

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

17,593

TABLE OF CONTENTS	PAGE
INTRODUCTION	1
PROPERTY	1
LOCATION AND ACCESS	1-2
HISTORY AND PREVIOUS WORK	2-3
REGIONAL GEOLOGY	4-5
LOCAL GEOLOGY	5-6
AIRBORNE VLF-EM AND MAGNETIC SURVEY	6-7
DATA PROCESSING	7-8
DISCUSSION OF RESULTS	8-10
SUMMARY AND CONCLUSIONS	10-11
RECOMMENDATIONS	12
REFERENCES	13
INSTRUMENT SPECIFICATIONS	14-16
STATEMENT OF QUALIFICATIONS	
Richard G. Hermary, B.Sc.	17
Dennis V. Woods, Ph.D., P.Eng.	18
COST BREAKDOWN	19

ILLUSTRATIONS

- FIGURE 1 - Location Map
- FIGURE 2 - Claims Map
- FIGURE 3 - Geology
- FIGURE 4 - Total Field Magnetic Contour Map
- FIGURE 5 - Total Field VLF-EM Contour Map (Cutler-Annapolis)
- FIGURE 6 - Total Field VLF-EM Contour Map(Hawaii)

INTRODUCTION

On the 12 and 13 of April 1988 an airborne magnetic and VLF-EM survey was conducted over the Nel 1, Nell 2, Nel 3, Nell 4 and Last claims for the Canadian Venture Corporation. The claims are situated in the Toodoggone River area approximately 280 kilometres north of Smithers, B.C. The Nel 1, Nell 2, Nel 3, Nell 4 and Last claims will be referred to as the Nel Group in this report.

The intention of this survey is to direct further exploration to any favorable anomalous zones and assist in the geological mapping of the area. Approximately one hundred and eighty line kilometres of magnetic and VLF-EM data was gathered over the claims. The airborne magnetic and VLF-EM data has been examined in detail to evaluate the subject properties.

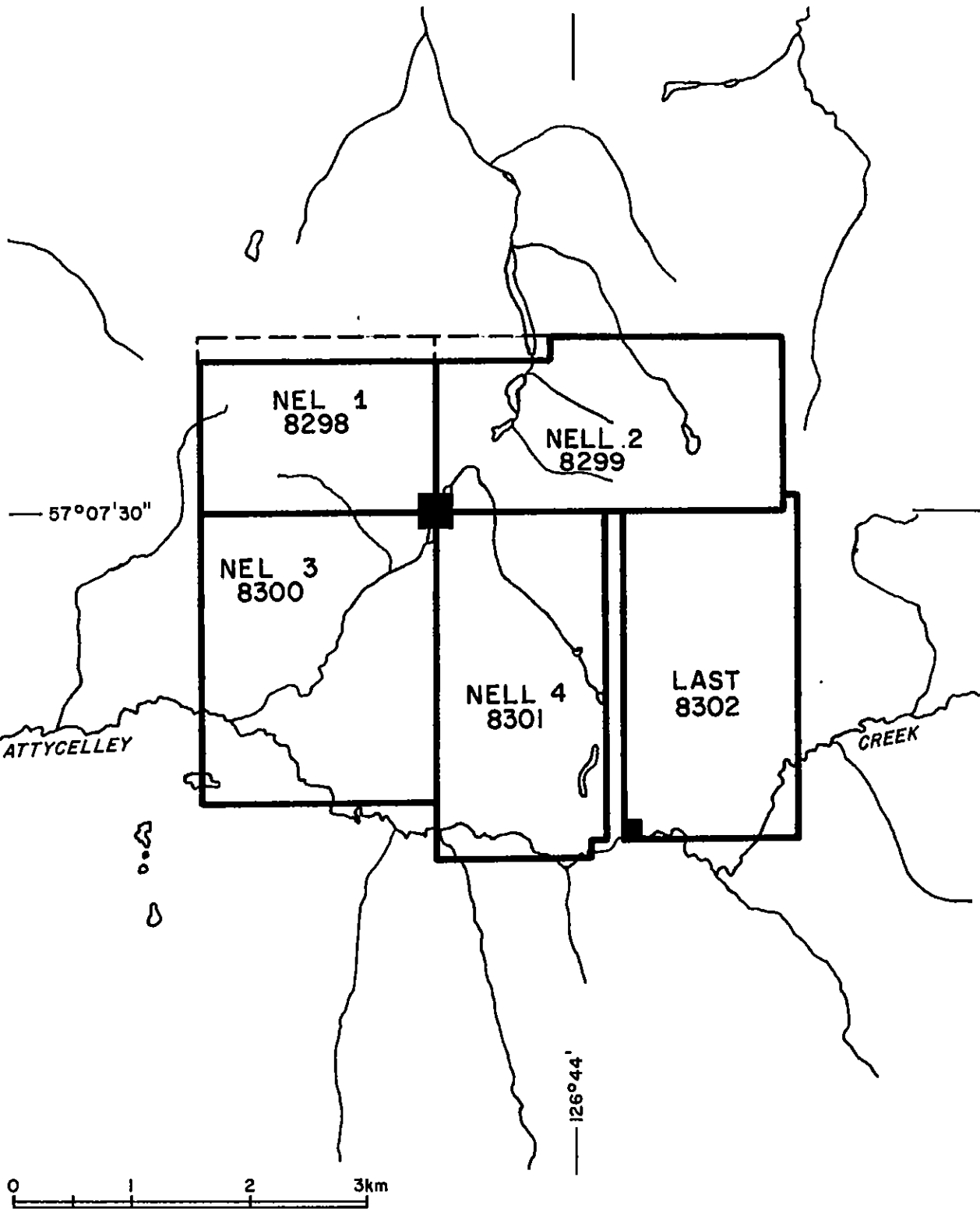
PROPERTY

The Nel Group is owned and operated by the Canadian Venture Corporation. The claims are described in the table below and illustrated in Figure 2.

Claim Name	Units	Record No.	Expiry Date
Nel 1	12	8298	April 16, 1989
Nell 2	18	8299	April 16, 1989
Nel 3	20	8300	April 16, 1989
Nell 4	18	8301	April 16, 1989
Last	18	8302	April 16, 1989

LOCATION AND ACCESS

The Nel Group is located in the Toodoggone River area approximately 280 kilometers north of Smithers, B.C. The properties lie thirty nine kilometers southeast of the Lawyers deposit operated by Cheni Gold Mines Inc. The claims are



CANADIAN VENTURE CORPORATION
 NEL CLAIM GROUP
 CLAIMS MAP
 N.T.S. 94E/2W, 2E

FIG. 2

situated south of the Toodoggone River and east of the Finlay River. They are located ten kilometres east of the confluence of the Firesteel and Finlay Rivers. The claims are situated within the Omineca Mining Division of B.C. The NTS map co-ordinates of the Nel Group is 94E/2E and 94E/2W. The approximate geographical coordinates are a latitude of 57° 07'30''N and a longitude of 126° 44'00''W.

Access to the area is usually achieved by fixed wing aircraft from Smithers, B.C. to the Sturdee River airstrip and then by helicopter to the specific claim area. The helicopters are usually based at the Sturdee River airstrip during the summer.

HISTORY AND PREVIOUS WORK

The Toodoggone area was investigated for placer gold in the 1920's and 1930's. A public company, Two Brothers Valley Gold Mines Ltd., undertook considerable test work, including drilling in 1934. Most of this work was directed towards extensive gravel deposits principally near the junction of McClair Creek and the Toodoggone River.

Gold-silver mineralization was discovered on the Chappelle (Baker Mine) property by Kennco Explorations (Western) Ltd. in 1969. DuPont of Canada Exploration Ltd. acquired the property in 1974 and began production at a milling rate of 100 tonnes per day in 1980. The mine closed in 1982 due to exhaustion of the known ore reserves.

Numerous other gold-silver discoveries were made in the 1970's and 1980's, including the Lawyers deposit which was discovered by Kennco in 1973 and optioned by SEREM Ltd. in 1979. Work on this property to date has included trenching, drilling and underground development. The mine is scheduled to begin production in late 1988 at a rate of 550 tonnes per day.

The gold-silver deposits on the Al property were discovered by Kidd Creek Mines Ltd. in the late 1970's. This property, together with the Moose and JD claims immediately to the east are now held by Energex Minerals Ltd. - the largest land holding in the Toodoggone area. Energex have outlined numerous showings and potential ore zones including the Thesis I and II, Bonanza and B.V. deposits. Open pit production is scheduled for late 1988 or early 1989.

Within the belt, three properties show ore reserves: Lawyers deposit (Cheni Gold Mines Inc.) 2,000,000 tonnes 0.2 oz/tonne Au, 7.1 oz/tonne Ag, Al property (Energex Minerals Ltd.) 1,000,000 tonnes 0.2 oz/tonne Au, and the Shas deposit (International Shasta/Esso Minerals) 250,000 tonnes 0.21 oz/tonne Au.

The Toodoggone area has been the scene of intense exploration activity during the past four years with numerous companies exploring over 3,000 mineral claim units. Exploration and development expenditures to 1988 are estimated to be in the order of \$150 million.

Previous reconnaissance exploration work on the Nel Group was carried out by Kidd Creek in 1982 on the Awesome claim (record number 4717) which was formerly owned by Inca Resources Ltd. This work consisted of geological mapping and soil and rock geochemical sampling on a five kilometre grid and trenched in two places. Fourteen of the soil and rock samples contained over 100 ppb Au and twenty nine samples contained more than 4 ppm Ag. The highest values were 4300 ppb for Au and 404 ppm for Ag. No other work on the claims is known by the authors.

REGIONAL GEOLOGY

The general geology of the area is shown on Preliminary Map 61, B.C. Ministry of Energy, Mines and Petroleum Resources by L.J. Diakow, A.Panteleyev and T.G.Schroeder, 1985 and an Open File, Geologic Survey of Canada, by H.Gabrielse, C.J.Dodds, J.L.Mansy and G.H.Eisbacher, 1976.

The Toodoggone River area is set within the Intermontaine Belt. The main geologic units are the Upper Cretaceous Sustut Group, the Lower to Middle Jurassic Toodoggone Volcanics, the Upper Triassic Takla Group and Permian carbonate units thought to belong to the Asitka Group. Several intrusive bodies of quartz monzonitic to grano-dioritic composition, irregular in size and shape (belonging to the Omineca Intrusives) intruded the volcanic-sedimentary complex in several localities. Swarms of dykes and small stocks are related to these intrusions.

The Asitka group limestones were deposited in a marine environment. The Takla rocks are the product of a volcanic event that may have been accompanied by an uplift of the whole area (possibly changing the environment from submarine to sub-areal). The result is a complex of interlayered volcanic and sedimentary units. This was followed by a period of regression and related deformations culminating in a volcanic episode during which the cyclic Toodoggone Volcanic rocks were formed. Toodoggone volcanism started with a quartzose acidic extrusion, followed by a mafic extrusion, and then by several intermediate extrusions. Much of the volcanics were porphyritic flows but within each cycle there are pyroclastic units and conglomerates, lahars and sandstones (reworked pyroclastics).

Of the structural elements, the most prominent are three fault zones, trending northwest-southeast, which are intermittently exposed where outcrop is developed and are clearly outlined by the airborne geophysics. They had a major role not only in

distribution of geologic units, but also in the emplacement of minerals. The same, northwest-southeast trend is also the general strike of the majority of the lithostratigraphic members.

Local uplifts accompanying intrusions resulted in several domal structures, characterized by a circular distribution of volcano-sedimentary units surrounding an intrusive core. The Toodoggone River area is an important host of numerous precious metal and base metal prospects. Four main mineral deposit types have been identified:

- porphyry - occurring mainly in Takla Group volcanics and Omineca intrusives.
- skarn - contact of limestones (Asitka, and some in Takla) with intrusive.
- stratabound - occurring in Takla limestones interbedded with cherts.
- epithermal - occurring mainly in Toodoggone Volcanics and in Takla rocks.

Of the four, the epithermal type is the most important, and has been subdivided into two subtypes: fissure vein deposits associated with fracture zones and possibly caldera formations, and hydrothermally altered and mineralized deposits (associated with major fault zones).

Most common ore minerals in epithermal type deposits are argentite, electrum, native gold and silver. Baker Mine and Lawyers Deposit are the two most prominent deposits of this type in the area.

LOCAL GEOLOGY

The Nel Group is underlain by two suites of the Toodoggone Volcanics, the Upper Triassic Talka Group and the Permian Asitka

Group (Figure 3). The property is heavily faulted as indicated by the mapped geology, the aerial photos and the magnetic data.

A gossan and/or limonitic zone is found in the centre of the claim group. The geologic setting of this zone has been summarized by Staargaard:

"Kidd Creek outlined a silicified zone between 20 and 40 metres in width which is hosted by andesitic lapilli tuffs of the Jurassic Toodoggone volcanics. The silicified material is made up of hematitic quartz breccia, large quartz veins, pervasive silicification and quartz veining. The main alteration is a zone of propylitization which envelopes the silicified zone. Narrow zones of argillic alteration occur within intensely silicified zones. The silicified zone is mineralized by a trace of pyrite which is partially to completely oxidized."

AIRBORNE VLF-ELECTROMAGNETIC AND MAGNETIC SURVEY

This survey simultaneously monitors and records the output signal from a Devlco tri-axis ringcore magnetometer and a Herz Totem 2A dual frequency VLF-EM receiver. The sensors are installed in an aerodynamically stable bird which is towed thirty metres below a helicopter. A shock and gimbal mounted TV camera, fixed to the helicopter skid, provides an input signal to a video cassette recorder allowing for accurate flight path recovery by correlation between the flight path video cassette and air photographs of the survey area. A KING KRA-10A radar altimeter allows the pilot to continually monitor and control terrain clearance along any flight path.

Continuous measurement are made of the earth's magnetic field and of two VLF-EM fields of two different frequencies. These measurements provide the magnitude of the earth's total magnetic

MINISTRY MAPPING 1971 TO 1984 MAINLY 1981-1984. ADDITIONAL SOURCES OF INFORMATION ASSESSMENT REPORTS. GEOLOGICAL SURVEY OF CANADA OPEN FILE #B3 1977. RADIOMETRIC DATING (K/Ar) BY J. HARAKAL, THE UNIVERSITY OF BRITISH COLUMBIA

LEGEND

QUATERNARY

PLEISTOCENE AND RECENT

UNCONSOLIDATED GLACIAL FLUVIOGLACIAL ALLUVIAL AND COLLUVIAL DEPOSITS

CRETACEOUS

UPPER CRETACEOUS

BUSTUT GROUP (TANGO CREEK FORMATION)

K POLYMICHTIC CONGLOMERATE SANDSTONE SHALE CARBONACEOUS MUDSTONE

JURASSIC

LOWER AND (?) MIDDLE JURASSIC

"TODDOGGONE VOLCANICS" (?) HAZELTON GROUP

9 UNDIVIDED PREDOMINANTLY GREY GREEN PURPLE AND ORANGE BROWN HORNBLende PLAGIOCLASE AND PLAGIOCLASE PHYRIC ANDESITE PORPHYRY FLOWS TUFFS BRECCIA SOME LAHAR CONGLOMERATE GREYWACKE SILT STONE RARE RHYOLITE PERLITE INCLUDES SOME DYKES AND SILLS

LOWER TO MIDDLE JURASSIC

"TODDOGGONE VOLCANICS" (CARTER, 1972)

GREY DACITE

8 DARK TO PALE GREY OR GREEN QUARTZOSE BIOTITE HORNBLende PLAGIOCLASE ASH FLOWS OF ANDESITIC AND RARELY DACITIC COMPOSITION VARIABLY WELDED WITH LOCALLY WELL DEVELOPED COMPACTION LAYERING. CONTAINS ABUNDANT GREY DACITE AND RARE GRANITIC CLASTS. OUTCROPS ARE COMMONLY BLOCKY AND STRONGLY JOINTED

182 ± 8 Ma
(GSC)
HORNBLende

8A POLYMICHTIC CONGLOMERATE WITH ABUNDANT TAKLA AND GREY DACITE CLASTS IN A QUARTZOSE SANDSTONE MATRIX

8B GREYWACKE CONGLOMERATE DERIVED ENTIRELY FROM GREY DACITE

TODDOGGONE CRYSTAL ASH TUFFS AND FLOWS

7 RECESSIVE GREY MAUVE PURPLE QUARTZOSE PLAGIOCLASE CRYSTAL TUFF LAPILLI TUFF AND BRECCIA WITH LESSER AGGLOMERATE LAHAR AND EPI CLASTIC BEDS INCLUDES SOME WELDED TUFFS AND PYROXENE HORNBLende FELDSPAR PORPHYRY FLOWS WHICH ARE LOCALLY DOMINANT. SOME MEMBERS CONTAIN NO QUARTZ. PINK WEATHERING WHERE LAUMONTITE IS ABUNDANT

188 ± 6 Ma
HORNBLende

7A EPICLASTIC RED BEDS - ARKOSIC SANDSTONE SILTSTONE CONGLOMERATE AND SLIDE DEBRIS. CONTAINS SOME CRYSTAL TUFF

TUFF PEAK FORMATION

6 PALE PURPLE, GREY AND GREEN BIOTITE AUGITE HORNBLende PLAGIOCLASE PORPHYRY FLOWS. SOME AUTOBRECCIATED FLOWS. MINOR SILLS AND PLUGS SOME CRYSTAL AND LAPILLI TUFF

197 ± 7 Ma
BIOTITE
200 ± 7 Ma
HORNBLende

6A CONGLOMERATE OR LAHAR DERIVED FROM UNITS 6 AND 6B WITH GRADED AND CROSSLAMINATED MUDSTONE AND SANDSTONE INTERBEDS. DEBRIS FLOWS LAPILLI AND CRYSTAL TUFFS

6B FLOWS SIMILAR TO UNIT 6 BUT CONTAINING SPARSE ORTHOCLASE MEGACRYSTS

McCLAIR CREEK FORMATION

6 PURPLE LAVENDER GREY RARELY GREY GREEN. CROWDED FINE TO MEDIUM GRAINED PLAGIOCLASE PORPHYRITIC FLOWS. INCLUDES SOME LAPILLI TUFF BRECCIA AND MINOR EPICLASTIC BEDS

6A INTRUSIVE DOME WITH AUTOBRECCIATED CARAPACE AND FLANKING BRECCIA

MAFIC FLOW AND TUFF UNIT

4 BASALT FLOWS - THIN BEDDED PURPLE TO DARK GREEN. COMMONLY EPIDOTIZED FINE GRAINED PYROXENE BASALT FLOWS AND TUFFS. INCLUDES SOME SILLS AND DYKES

4A PURPLE TO MAUVE. MEDIUM GRAINED PORPHYRITIC BASALT. LOCALLY MAUVE TO PINK. ZEOLITIZED WITH LAUMONTITE. POSSIBLE INTRUSIVE (LACCOLITH)

4B LAPILLI CRYSTAL AND ASH TUFF. WELL BEDDED. INCLUDES MINOR THINLY BEDDED SANDSTONE AND RARE CALCAREOUS SILTSTONE (MARL). TOTALLY OR IN PART EQUIVALENT TO UNIT 7

4C PYROXENE BIOTITE HORNBLende PORPHYRY FLOWS WITH TRACES OF QUARTZ AND K FELDSPAR. INTERBEDDED MINOR BRECCIA AND LAPILLI TUFF. TOTALLY OR IN PART EQUIVALENT TO UNIT 8

JURASSIC (CONTINUED)

LOWER TO MIDDLE JURASSIC (CONTINUED)

"TODDOGGONE VOLCANICS" (CARTER, 1972) (CONTINUED)

LAYERS - METSANTAN QUARTZOSE ANDESITE

3 GREEN TO GREY QUARTZOSE PYROXENE (?) BIOTITE HORNBLende PLAGIOCLASE PORPHYRY FLOWS AND TUFFS. QUARTZ CONTENT RANGES FROM NEGLIGIBLE TO ABOUT 3 PER CENT IN THE NORTH FLOWS. PREDOMINATE WITH LOCAL FLOW BRECCIA. LAPILLI TUFF AND RARE WELDED TUFF UNITS TOWARD THE SOUTH. ASH FLOWS ARE COMMON. INCLUDING RARE SURGE DEPOSITS. THE UNIT CONTAINS EXTENSIVE ZONES OF EPIDOTIZED, PHYRITIC ROCK WITH CHARACTERISTIC SALMON PINK AND ORANGE PLAGIOCLASE CRYSTALS

188 ± 6 Ma
HYDROTHERMAL
ADULARIA

MOYEZ CREEK VOLCANICLASTICS

2 CONGLOMERATE WITH SOME GRANITIC CLASTS. GRADED CROSS BEDDED GREYWACKE. WELL BEDDED CRYSTAL TUFF EPICLASTIC SEDIMENTS. LOCAL LAMINATED CALCAREOUS SILT (MARL). RARE THIN LIMESTONE AND CHERT. LOCAL COARSE LANDSLIDE DEBRIS AND LAHAR. IN PART OR TOTALLY EQUIVALENT TO UNIT 6A

2A CRYSTAL TUFFS IN THIN, WELL LAYERED UNITS. SOME EPICLASTIC SANDSTONE AND MUDSTONE. RARE PLANT FRAGMENTS IN SOME BEDS. MINOR LAPILLI TUFF

ADDOOGATCHO CREEK FORMATION

1 PALE REDDISH GREY TO DARK RED BROWN QUARTZOSE BIOTITE HORNBLende PHYRIC ASH FLOWS. THE ROCKS CONTAIN MINOR SANDINE AND RARE AUGITE. WELDING IS WIDESPREAD AND RANGES FROM INCIPENT TO EUTAXITIC. LOCALLY ORANGE TO BROWN VITROPHYRIC CLASTS ARE COMMON. INCLUDES LAPILLI TUFF AND BRECCIA UNITS AS WELL AS MINOR LAYERED GROUND SURGE DEPOSITS

189 ± 7 202 ± 7 Ma
BIOTITE
200 ± 7 Ma
HORNBLende
180 ± 7 Ma
HYDROTHERMAL
ALUNITE
(WHOLE ROCK)
204 ± 7 Ma
BIOTITE

1A CRYSTAL ASH TUFF LAPILLI TUFF AND RARE AGGLOMERATE WITH INTERSPERSED EPICLASTIC BEDS. TUFFACEOUS SEDIMENTS AND MINOR CONGLOMERATE THAT LOCALLY CONTAINS GRANITIC CLASTS. MINOR HORNBLende PLAGIOCLASE PHYRIC FLOWS FORMING SINGLE OR THIN COMPOSITE FLOW UNITS

1B QUARTZOSE PLAGIOCLASE PORPHYRY - JOINTED. DOMAL INTRUSION (?) OF HOMOGENEOUS APPEARING GREY TO GREEN. CHLORITIZED AND EPIDOTE ALTERED ROCK CONTAINING ABUNDANT INCLUSIONS OF TAKLA VOLCANICS AND RARE METAMORPHIC ROCK CLASTS

TRIASSIC

UPPER TRIASSIC

TAKLA GROUP

T DARK GREEN AUGITE PORPHYRY BASALT FLOWS AND BRECCIAs WITH LESSER FINE GRAINED ANDESITE TO BASALT FLOWS AND MINOR INTERBEDDED SILT STONE. TUFFACEOUS SEDIMENTS AND CHERT. CONTAINS LIMESTONE LENSES THAT MAY BE PART OF THE ASITKA GROUP

PALEOZOIC

PERMIAN

P ASITKA GROUP?

PREDOMINANTLY LIMESTONE (INCLUDING MARBLE AND MINOR SKARN) WITH SOME ARGILLITE, BLACK SHALE, AND CHERT UNITS COMPOSED OF LIMESTONE, CHERT, ARGILLITE, AND BASALT (Pv c) MAY BE IN PART OR TOTALLY TAKLA GROUP

INTRUSIVE ROCKS

JURASSIC

LOWER JURASSIC (DYKES, SILLS, AND SMALL PLUGS)

A BASALT

B AUGITE HORNBLende PORPHYRY - BASALTIC STOCK. DOMAL INTRUSION (OR TAKLA INLIER)

210 ± 6 Ma
HORNBLende

C BIOTITE HORNBLende DIORITE GABBRO

D PYROXENE PLAGIOCLASE PORPHYRY

LOWER TO MIDDLE JURASSIC (DYKES AND STOCKS)

E QUARTZ MONZONITE. GRANODIORITE - MEGACRYSTIC IN PART. MINOR SYENITE OR QUARTZOSE SYENITE ALONG CONTACTS

E1 GRANODIORITE. QUARTZ DIORITE - MEDIUM GRAINED PORPHYRITIC FOLIATED IN PART

F FELDSPAR PORPHYRY. HORNBLende FELDSPAR PORPHYRY - DYKES AND PLUGS. RARE QUARTZ FELDSPAR PORPHYRY

SYMBOLS

MINERAL OCCURRENCE (MINERAL INVENTORY FILE NUMBER) × 43

MINERAL PROSPECT (MINERAL INVENTORY FILE NUMBER) ✕ 34

EXPLORATION CAMP ⊖

PLACER WORKINGS *

PARK BOUNDARY ———

ROAD ———

MAIN OUTCROP AREAS ○

FAULT (OBSERVED, INFERRED) ———

THRUST OR REVERSE FAULT (OBSERVED, INFERRED) ———

GEOLOGIC CONTACT (DEFINED, ASSUMED) ———

BEDDING, LAYERING, FOLIATION (HORIZONTAL, INCLINED, VERTICAL) + 10/1

FOLD AXES ———

FOSSIL LOCALITY (PLANT DEBRIS) ⊕

RADIOMETRIC DATE SAMPLE SITE, AGE IN Ma (A) 104

VOLCANIC VENT ○

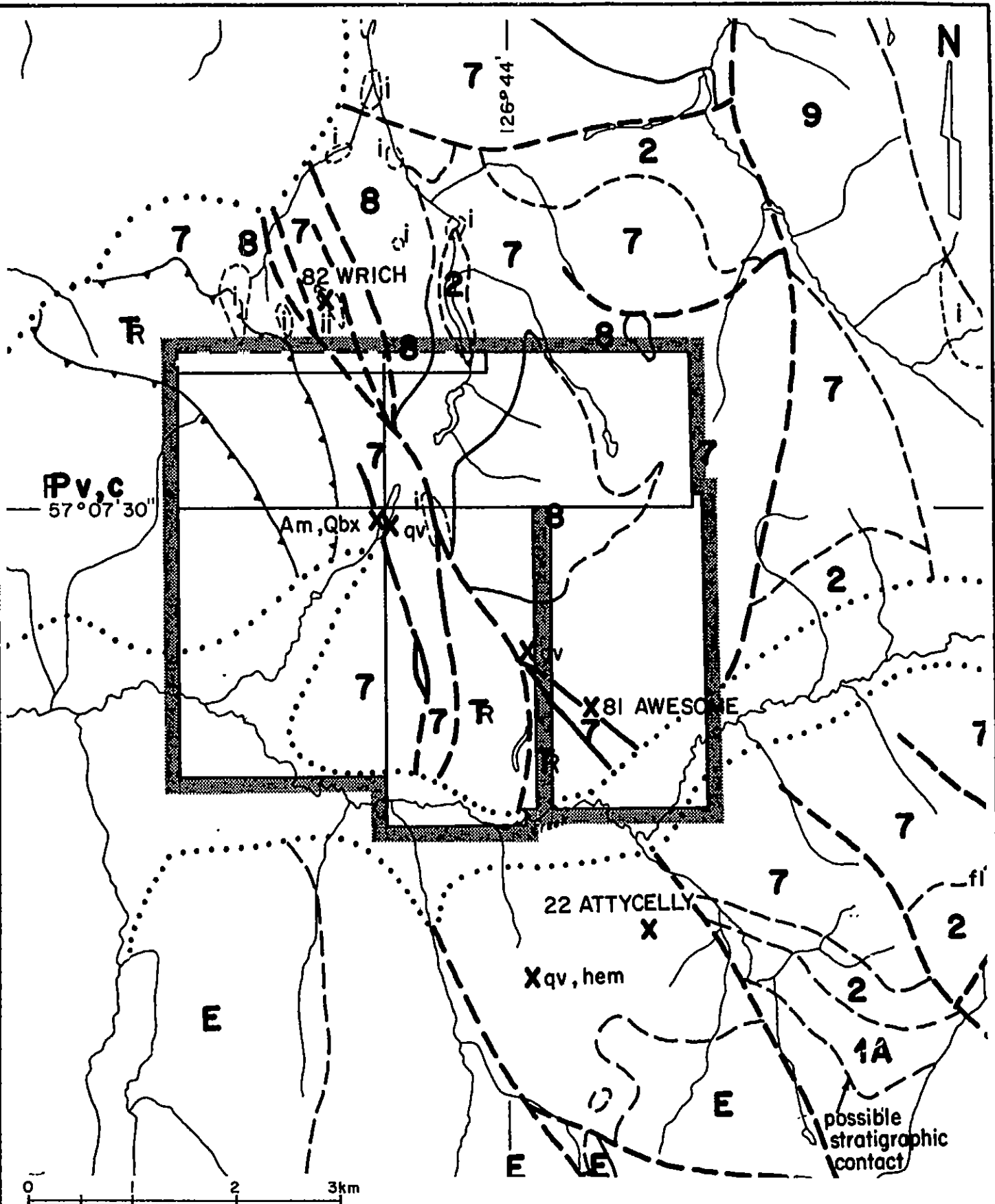
HYDROTHERMAL ALTERATION

FERRICRETE QUATERNARY FERRUGINOUS BRECCIA (V)

SILICA CLAY MINERALS + ALUNITE, BARITE (H)

CLAY MINERALS + ALUNITE, SILICA, HEMATITE (I)

GOSSAN LIMONITIC ZONE (J)



CANADIAN VENTURE CORPORATION
NEL CLAIM GROUP
GEOLOGY

LEGEND (showings)
 81 AWESOME = Amethst, pyrite
 Am, Qbx = Amethst, quartz breccia
 qv = Quartz vein

N. T. S. 94E/2W, 2E

FIG. 3

field, the magnitude of the two VLF-EM fields, and the quadrature component of the two VLF-EM fields. This data and other pertinent survey information is recorded in three independent modes: as printed text or profiles, on three and a half inch magnetic diskettes in ASCII format, and superimposed on the video picture and recorded on video cassettes.

Control of data quality is maintained by the operator scanning a printed output of direct and unfiltered recordings of all the geophysical instrumentation output signals. A portable Compaq computer acts as a system controller for a Hewllet-Packard 3852A data acquisition unit. The computer also processes all the incoming data and survey information and records it on three and a half inch diskettes. Furthermore, the magnetic and very low frequency electromagnetic data is superimposed along with the flight line number, fiducial number, date, time and terrain clearance upon the actual flight path video recording to allow exact correlation between geophysical data and ground location. The input signals are continuously updated on the video display every half second.

Correlation between the printed output, the ASCII data diskettes and the video flight path recovery tape is controlled via fiducial marks common to all systems. Line identification, flight direction and pertinent survey information are also recorded on the audio track of the video recording tape and in the operator's field notes.

DATA PROCESSING

Field data is digitally recorded, with the line number, fiducial number, date, time and the data, on magnetic diskettes in a format compatible with the Compaq Portable II computer. The recovered flight path locations are digitized and the field data is processed to produce plan maps of each of the parameters. A variety of formats are available in which to display the data.

All the survey data is routinely edited for spurious noise spikes. The total field intensity magnetic information is also corrected for any diurnal variations recorded on a base magnetometer located in the survey area. ;

Both the total field and quadrature components of the VLF-EM signals are sensitive to topographic changes and sensor oscillation. Oscillation effects are reduced by filters tuned to the dominant period. Long period effects attributable to topography can be removed by high pass filtering of the planimetric data.

All pertinent geophysical data is processed and plotted by computers. The processing and plotting is done in such a manner as to maximize the amount of information and detail allowed by the original data.

DISCUSSION OF RESULTS

The Nel Group was surveyed on the 12 and 13 of April 1988. Approximately one hundred and eighty line kilometers of airborne magnetic and VLF-EM survey data has been recovered and examined in detail to evaluate the Nel Group of claims.

Survey lines were flown east-west on 200 meter centres with data being digitally recorded at half second intervals, providing an average sample spacing of 15 metres. The sensors were towed beneath the helicopter and maintained a terrain clearance of approximately 60 meters. The magnetic data is presented in contour form on a photomosaic base map of the area as Figure 4. The total field VLF-EM data is presented in contour form as Figures 5 and 6 representing the Cutler-Annapolis and Hawaii frequency information respectively.

The magnetic data is a useful tool for mapping both regional and local geological structures. Many localized magnetic variations are observed which are attributed to lithological changes.

The VLF-EM data is useful for mapping conductive zones. These conductive zones usually consist of argillaceous graphitic horizons, conductive clays, water saturated fault and shear zones, or massive conductive mineralized bodies.

There are three distinctive magnetic features observed across the survey area. Firstly, Jurassic intrusions appear as magnetic highs; typically with an intensity of greater than 59000 nT. Secondly, major faults, fractures and shear zones appear as steep magnetic gradients. Finally, possible hydrothermal alterations appear as low magnetic responses. The combination of these three signatures are observed on the Nel Group claims. The magnetic response is interpreted as reflecting only the general geological environment of the area and does not map any mineralization directly.

The magnetic data indicates several possible intrusive bodies, numerous faults, and possible areas of hydrothermal alteration. Three magnetic highs are found in the southern half of the survey area. The high amplitude magnetic responses probably reflect Lower to Middle Jurassic granodiorite or quartz diorite dykes or plugs. These intrusions may be the source for the Toodoggone volcanics of the area. In addition, the magnetic highs appear to be related to mineral showings on the claim group.

The inferred faults are interpreted from the mapped geology, the aerial photographs and the magnetic data as illustrated on Figure 4. The majority of the faults generally trend northwest while the other faults trend northeast. Most of the faults parallel the regional geology and coincide with geologically mapped faults from the BCMEMPR Preliminary Map 61 (Diakov, et al. 1985).

The low magnetic responses found in the survey area with the exception of the one found in the southeast corner of the survey area may represent hydrothermal alteration. The magnetic low in the southeast corner is probably caused by deep overburden. The magnetic lows reflect hydrothermal alteration because of their proximity to the faults which may have provided the necessary structural setting for the hydrothermal alteration.

The VLF-EM data is presented in contour form on Figures 5 and 6 representing the Cutler-Annapolis and Hawaii transmitter station respectively. The Hawaii frequency information does not cover the whole survey area because the station was off and no other station was detectable due to spheric noise from the equipment. Nevertheless, anomalous conductive responses have been marked on the appropriate maps.

Long wavelength VLF-EM anomalies have been marked. These anomalies are caused by topographic features like ridges and hill tops. Otherwise, the VLF-EM conductive zones trend in a northwest-southeast direction. Several of the VLF-EM conductive zones are apparent on both total field VLF-EM contour maps. Furthermore, some conductive lineations coincide with geologically mapped and magnetically inferred faults. Some of the conductors are related to magnetic highs and the mapped mineral showing, namely in the southern central portion of the survey area.

SUMMARY AND CONCLUSIONS

On the 12 and 13 of April 1988 an airborne magnetic and VLF-EM survey was conducted over the Nel Group. One hundred and eighty line kilometres of geophysical data was gathered and processed to evaluate the Nel Group claims.

The magnetic data indicates three possible Lower to Middle Jurassic intrusive dykes or plugs of granodiorite or quartz diorite composition. These intrusions appear to be related to the mineral showings, in the central area of the claim group, especially along the faults.

Several northwest-southeast trending faults are inferred from the mapped geology, the aerial photographs and the total field magnetic data. The other inferred faults trend in a northeast-southwest direction and cut across the area geology. Most of the faults parallel or coincide with geologically mapped faults.

Several conductive lineations are mapped in the survey area and trend northwest-southeast. Some conductive zones appear to be related to a faults and/or magnetic highs, namely in the southern and western half of the survey area.

The airborne magnetic and VLF-EM survey has indicated an area of potential epithermal mineralization. The potential area of mineralization on the claims would be along the VLF-EM conductors, especially those coinciding or associated with faults and magnetic highs. Other areas of potential mineralization would be near magnetic lows associated with faulting or contacts.

The interpretation of the magnetic data, VLF-EM data and known geology indicates that faulting has occurred recently and is associated with intrusions. This combination of geological events and the presences of VLF-EM conductors and high amplitude magnetic responses offers excellent potential for mineralization.

RECOMMENDATIONS

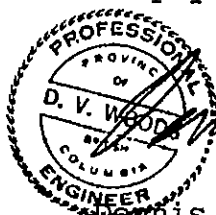
The airborne survey has indicated possible areas where mineralization may occur, specifically along the VLF-EM conductive lineations coinciding or associated with faults and magnetic highs. Other areas of potential mineralization are indicated by magnetic lows associated with interpreted faults, particularly in the vicinity of the Awesome and Wrich mineral showings.

Initial follow-up work should be a detailed ground magnetic and VLF-EM survey. The survey should be used to precisely locate ground targets. Following the ground magnetic and VLF-EM survey, an program of geological mapping with soil and rock sampling should be carried out. The samples should under go geochemical analysis for precious and base metals. Contingent upon encouraging results from the geophysics, geology and geochemistry, an advanced geophysical program utilizing induced polarization may be warranted to delineate anomalous mineralized zones for trenching and drilling targets.

Respectfully submitted,

R. Hermary

Richard G. Hermary, B.Sc.,
Geophysicist



Dennis V. Woods
Dennis V. Woods, Ph.D., P.Eng.
Consulting Geophysicist

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 Report #11174.

INSTRUMENT SPECIFICATIONSDELVCO RINGCORE MAGNETOMETER

Model:	1210
Sensor:	3-axis ringcore fluxgate
Orthogonality:	$\pm 1^\circ$ degree with respect to other axes and reference surface
Sensitivity:	0.0025 Milligauss (0.25 gamma)
Range:	± 1000 , ± 300 , ± 100 , ± 30 , ± 10 , ± 3 mG
Analog Output:	± 5 V dc for above ranges
Output Impedance:	600 ohms
Zero Field Offset:	$< \pm 7$ mG absolute
Linearity:	$\pm 0.5\%$
Noise:	0.1 to 1 Hz, 0.0025 mG peak-to-peak 1.0 to 10 Hz, 0.0025 mG peak-to-peak 1.0 to 100 Hz, 0.01 mG peak-to-peak
Gain Stability:	$\pm 3\%$, 0 to $+60^\circ$ C
Field Nulling:	± 0.04 mG to full scale
Low-Pass Filtering:	Switch selectable 1, 10, 100 and 500 Hz (-3 dB with -18 dB/octave roll-off, Butterworth response)
High-Pass Filtering:	Dc, 0.1, and 1Hz (-3 dB with -18 dB/octave roll-off, Butterworth response)
Notch Filter:	40-dB notch at 60 Hz, switch selectable, in or out
Battery Life:	25-hour minimum, rechargeable
AC Power:	115-230V; 1/4 A
Size:	Sensor: 3.2 cm x 3.5 cm x 10.16 cm Control Unit: 43 cm x 13 cm x 41 cm
Weight:	Sensor Probe: 0.62 kg Control Unit: 13.6 kg

INSTRUMENT SPECIFICATIONSCONTROLLER AND RECORDING SYSTEM

Type: Compaq Portable II
An 80286 microprocessor
640 Kbytes of RAM
2 three and a half inch 720 Kbyte drives
one 20-Megabyte fixed disk drive
Monochrome, dual-mode, 9-inch internal
monitor
Asynchronous communications interface
Parallel interface
Composite-video monitor interface
RGB monitor interface
RF modulator interface
Two expansion slots
Real-time clock
An 80287 coprocessor
A HPIB Interface Card

Data Storage: 3 1/2 inch diskettes in ASCII
Roland 1012 printer for printed output
Beta I video cassettes

Power Requirements: 115 Volt AC at 60 Hz

Weight: 11 kg

Dimensions: 45 cm x 25 cm x 30 cm

INSTRUMENT SPECIFICATIONSDATA ACQUISITION UNIT

Model:	HP-3852A	
Mainframe Supports:	Eight function module slots Data acquisition operating system System timer Measurement pacer Full alphanumeric keyboard, command and result displays	
Number of Channels:	20 channel relay multiplexer HP44708A/H	
Voltmeter:	5 1/2 to 3 1/2 digit integrating voltmeter HP44701A measures:	
	DC voltage	
	resistance	
	AC voltage	
	Range $\pm 30V$, $\pm 0.008\%$, $+300\mu V$	
	Integration Time 16.7 msec	
	Number of converted digits 6 1/2	
	Reading rate (readings/ sec)	57
	Min-Noise rejection (dB)	
	Normal Mode Rejection at 60 Hz $\pm 0.09\%$	60
	DC Common Mode Rejection with 1 K Ω in low lead	120
	Effective Common Mode Rejection at 60 Hz $\pm 0.09\%$ with 1 K Ω in low lead	150
Communication:	HPIB interface with Compaq	
Power Requirements:	110/220 Volts AC at 60/50 Hz	
Dimensions:	45.7 cm x 25.4 cm x 61.0 cm	
Weight:	9.5 kg.	

STATEMENT OF QUALIFICATIONS:

NAME: HERMARY, Richard G.

PROFESSION: Geophysicist

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

PROFESSIONAL

ASSOCIATIONS: B.C. Society of Exploration Geophysicist

EXPERIENCE: Six months as field geophysicist,
A & M Exploration Ltd.

One year with Western Geophysical Aero Data
Ltd.

STATEMENT OF QUALIFICATIONS

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EDUCATION: B.Sc. Applied Geology
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M.Sc. Applied Geophysics
Queen's University

Ph.D. Geophysics
Australian National University

PROFESSIONAL ASSOCIATIONS: Registered Professional Engineer
Province of British Columbia

Society of Exploration Geophysicists

Canadian Society of Exploration Geophysicists

Australian Society of Exploration Geophysicists

President, B.C. Geophysical Society

EXPERIENCE: 1971-79 - Field Geologist with St. Joe Mineral Corp. and Selco Mining Corp. (summers).
- Teaching assistant at Queen's University and the Australian National University.

1979-86 - Professor of Applied Geophysics at Queen's University.
- Geophysical consultant with Paterson Grant & Watson Ltd., M.P.H. Consulting Ltd., James Neilson and Assoc. Ltd., Foundex Geophysics Ltd.
- Visiting research scientist at Geological Survey of Canada and the University of Washington.

1986-88 - Project Geophysicist with Inverse Theory and Applications Inc.
- Chief Geophysicist with White Geophysical Inc.

COST BREAKDOWN

The geophysical data was analyzed, geological information researched and compiled, and this report prepared for an all inclusive fee of \$9,960.00. This total is based on a cost of \$47/km for total field magnetic and two station VLF-EM data. The survey was carried out by Ian Briadek and Bob Acheson.

Mob/Demob - truck rental, helicopter ferry	\$ 500.00
Survey - 180 km of magnetics and 2 stations of VLF-EM data at \$47/km	\$8,460.00
Report/Interpretation	<u>\$1,000.00</u>
TOTAL	\$9,960.00

TOTAL ASSESSMENT VALUE OF THIS REPORT	\$9,960.00
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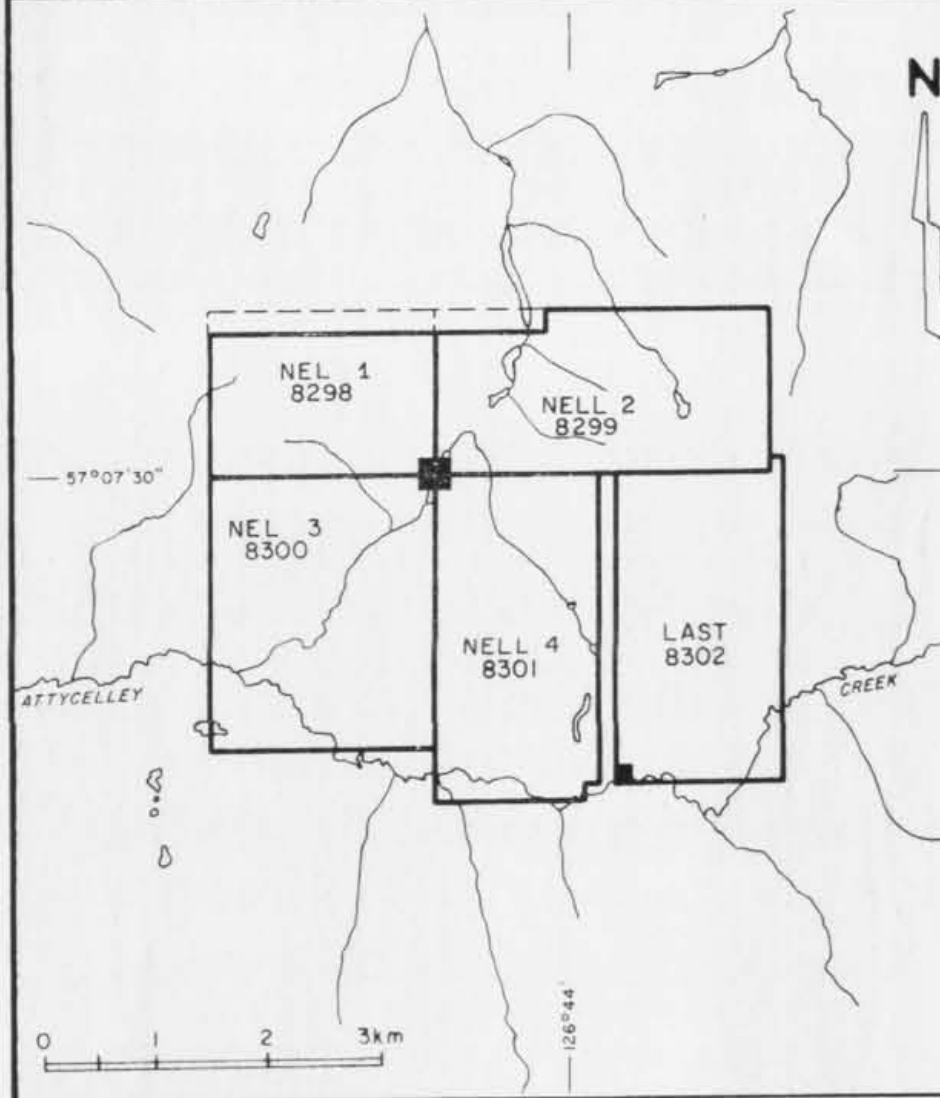


LEGEND:
 VLF-EM conductor due to topographic features — T —
 VLF-EM conductor —

GEOLOGICAL BRANCH
 ASSESSMENT REPORT

17,593

N.T.S. 94E/2W,2E



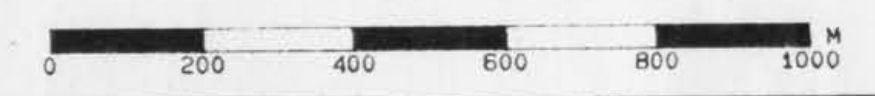
CANADIAN VENTURE CORPORATION

NEL GROUP

AIRBORNE MAGNETIC AND VLF-EM SURVEY

CONTOURED TOTAL FIELD VLF-EM (OUTLER 24.0 KHZ - ANNAPOLIS 21.4 KHZ)

Scale 1: 10000.0



Date: APRIL 1988

FIG 5

WESTERN GEOPHYSICAL AERO DATA LTD.





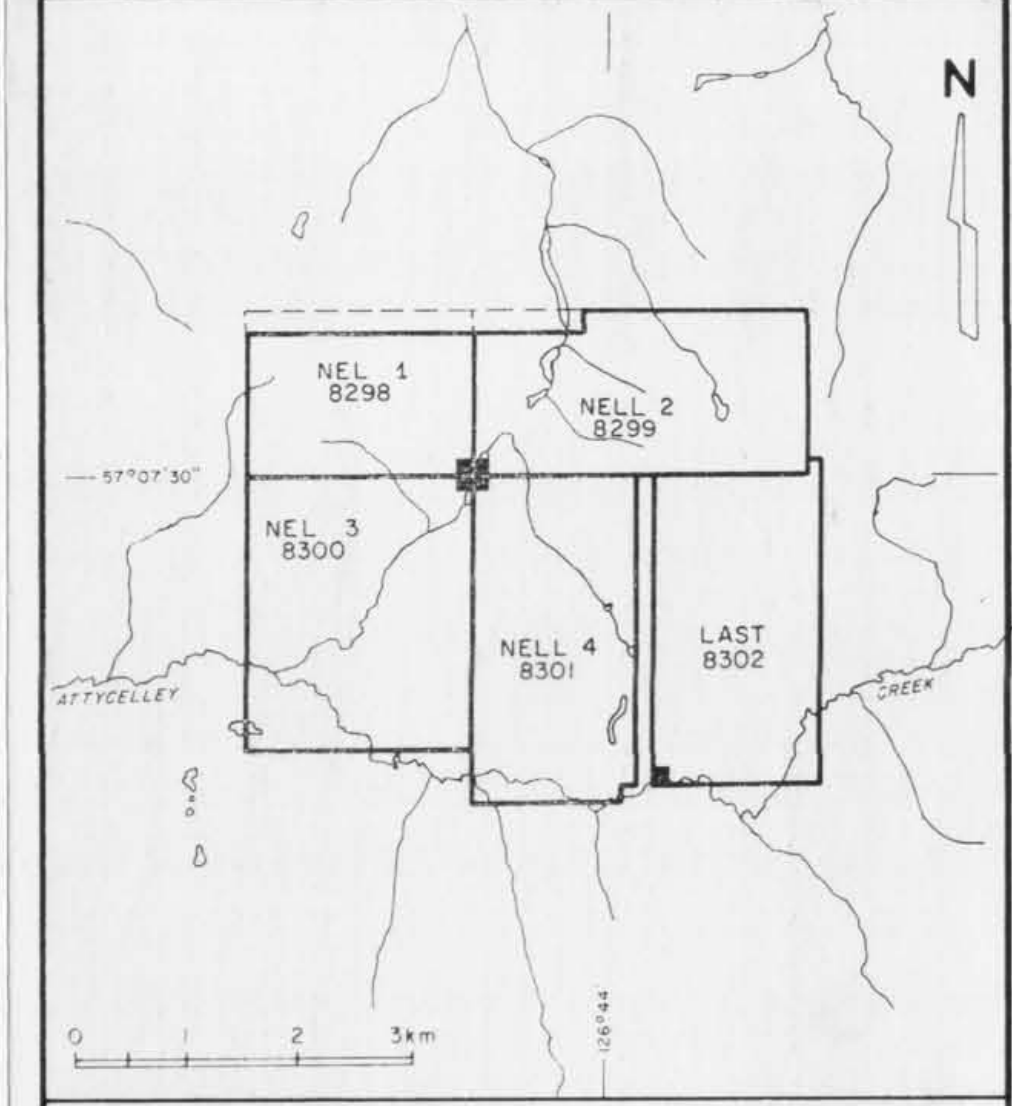
LEGEND:

Inferred thrust fault	—▲—▲—
Inferred fault	—▲—▲—
Mineral showing	~~~~~
Intrusive granodiorite or quartz diorite	G
Overburden	OB

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

17,593

N.T.S. 94E/2W, 2E



CANADIAN VENTURE CORPORATION

NEL GROUP
AIRBORNE MAGNETIC AND VLF-EM SURVEY
CONTOURED TOTAL MAGNETIC FIELD (nT)

Scale 1: 10000.0

Date: APRIL 1988

FIG. 4

WESTERN GEOPHYSICAL AERO DATA LTD.



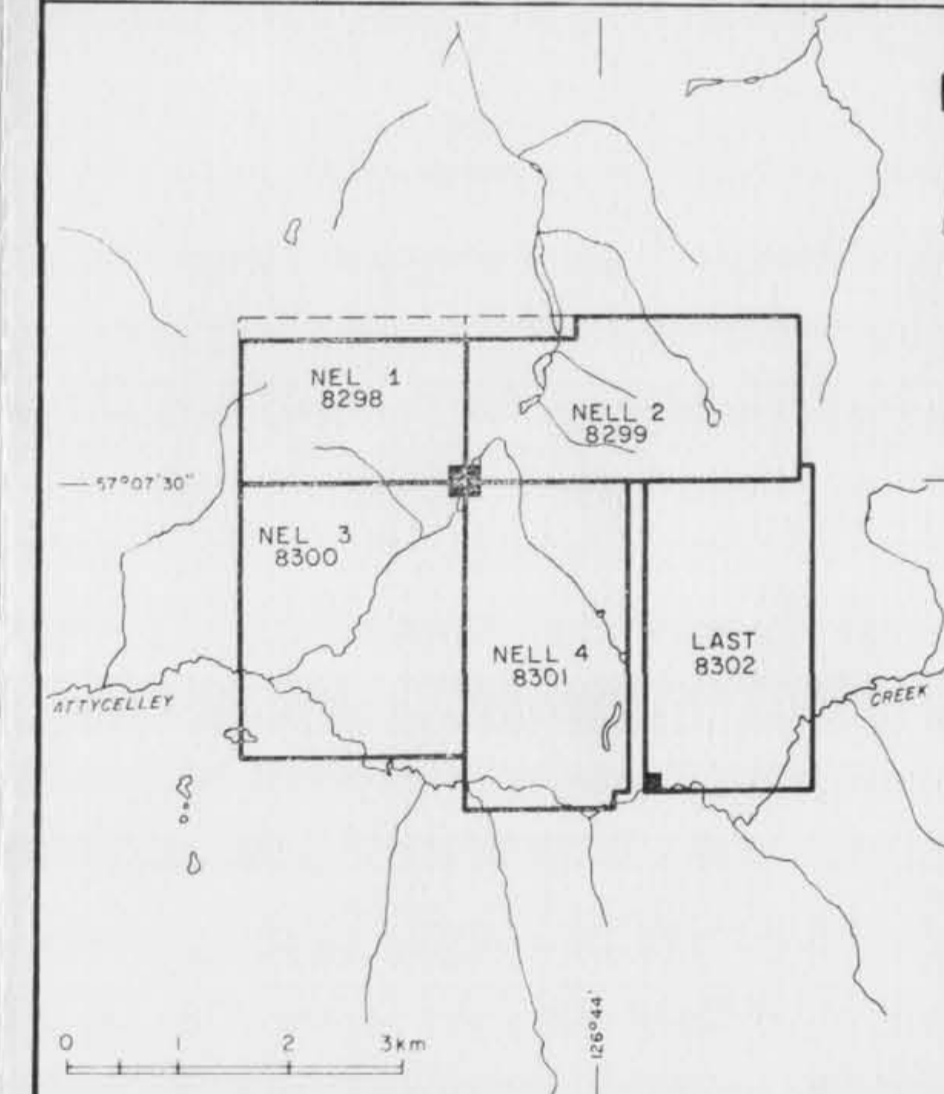


LEGEND:
 VLF-EM conductor due to topographic features — T —
 VLF-EM conductor —

GEOLOGICAL BRANCH
 ASSESSMENT REPORT

17,593

N.T.S. 94E/2W, 2E



CANADIAN VENTURE CORPORATION

NEL GROUP

AIRBORNE MAGNETIC AND VLF-EM SURVEY
 CONTOURED TOTAL FIELD VLF-EM (HAWAII 23.4)

Scale 1: 10000.0



Date: APRIL 1988

FIG 6

WESTERN GEOPHYSICAL AERO DATA LTD.

