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GEOPHYSICAL REPORT ON AN
AIRBORNE MAGNETIC AND VLF-EM SURVEY
MEL 1-3, LEAH 1-4, DAN 1-4, DELTA 1-4
AND CHAD 1-3 CLAIMS
CARIBOO MINING DIVISION
LATITUDE: 52°04'N LONGITUDE: 121°17'W
NTS: 93A/3W

AUTHOR: Dennis V. Woods, Ph.D., P.Eng.
DATE OF WORK: 24 - 29 September 1988
DATE OF REPORT: 28 January 1989

GEOLOGICAL BRANCH
ASSESSMENT REPORT

18,347

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INTRODUCTION:

During the period 24-29 September 1988, an airborne reconnaissance magnetic and VLF-EM survey was conducted over the **Mel 1-3, Leah 1-4, Dan 1-4, Delta 1-4** and **Chad 1-3** claims in the central interior of British Columbia by Western Geophysical Aero Data Ltd. for **Tide Resources Ltd.** The survey area is about 30 kilometers north of Lac La Hache and 60 km east of Williams Lake (Figure 1).

The intention of this survey is to assist in the geological mapping and economic evaluation of the property, and to direct further exploration to favorable target areas. Approximately 580 line kilometers of airborne magnetic and VLF-EM data have been collected, processed, displayed and interpreted.

PROPERTY:

The **Mel 1-3, Leah 1-4, Dan 1-4, Delta 1-4** and **Chad 1-3** claims have been optioned to **Tide Resources Ltd.** The claims are described in the table below and illustrated in Figure 2.

Claim Name	Units	Record No.	Expiry Date
Mel 1	20	8835	November 5, 1989
Mel 2	20	8836	November 5, 1989
Mel 3	20	8837	November 5, 1989
Leah 1	20	8838	November 5, 1989
Leah 2	20	8839	November 5, 1989
Leah 3	20	8840	November 5, 1989
Leah 4	20	8841	November 5, 1989
Dan 1	20	8842	November 5, 1989
Dan 2	20	8843	November 5, 1989
Dan 3	20	8844	November 5, 1989
Dan 4	20	8845	November 5, 1989

121° 00'

52° 00'

N

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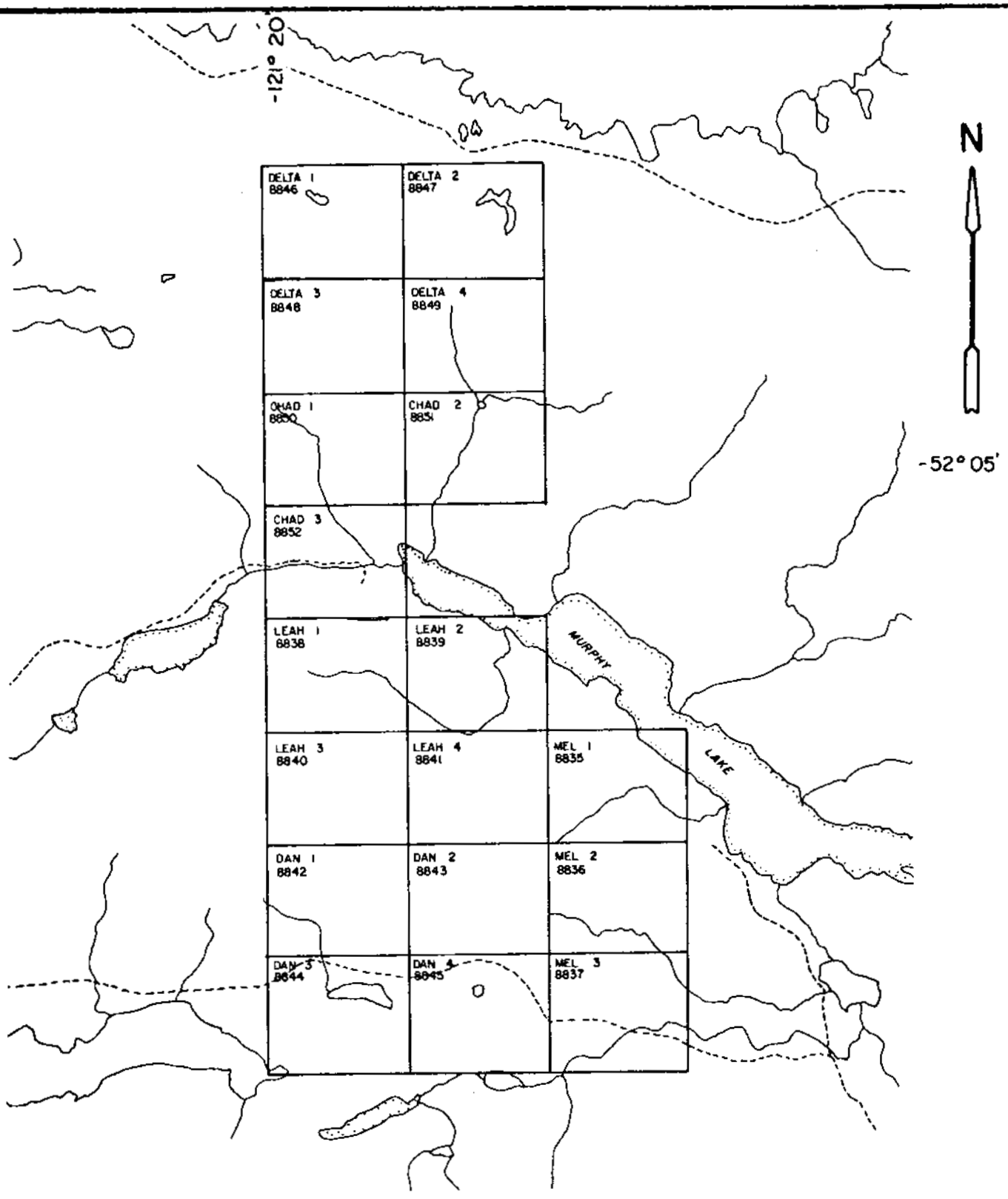
MEL 1-3, LEAH 1-4, DELTA 1-4 & CHAD 1-3 CLAIMS

LOCATION MAP

N.T.S. 93A/3W

SCALE = 1: 2 000 000

FIG. 1



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MEL 1-3, LEAH 1-4, DELTA 1-4 & CHAD 1-3 CLAIMS

CLAIMS MAP

N.T.S. 93A/3W

SCALE = 1:50 000

FIG. 2

Claim Name	Units	Record No.	Expiry Date
Delta 1	20	8846	November 5, 1989
Delta 2	20	8847	November 5, 1989
Delta 3	20	8848	November 5, 1989
Delta 4	20	8849	November 5, 1989
Chad 1	20	8850	November 5, 1989
Chad 2	20	8851	November 5, 1989
Chad 3	20	8852	November 5, 1989

The mineral claims were recorded in the Cariboo Mining Division at the village of Quesnel, B.C. and are in good standing through to 1989.

LOCATION AND ACCESS:

The claims are located about 30 kilometers north of the village of Lac La Hache, in the Cariboo region of British Columbia. Excellent gravel roads lead into the claim block from Highway 97: from the south at Lac La Hache and from the west at 150 Mile House. The Spout Lake, Murphy Lake and McIntosh Lake roads provide year around access to the south, central and north portions of the property. Secondary logging roads provide limited access to the remainder of the property.

The NTS coordinates of the claim block are 93A/3W. The approximate geographical coordinates are 52°04'N latitude and 121°17'W longitude.

PHYSIOGRAPHY:

The claim group is located in the Interior Plateau of British Columbia: an area of relatively low relief at approximately 3500 feet elevation. The northern half of the property consists of low, flat ground almost totally covered by glacial drift. The

southern half gradually slopes up from Murphy Lake at 2850 feet elevation to about 4000 feet elevation in the southwest corner of the property.

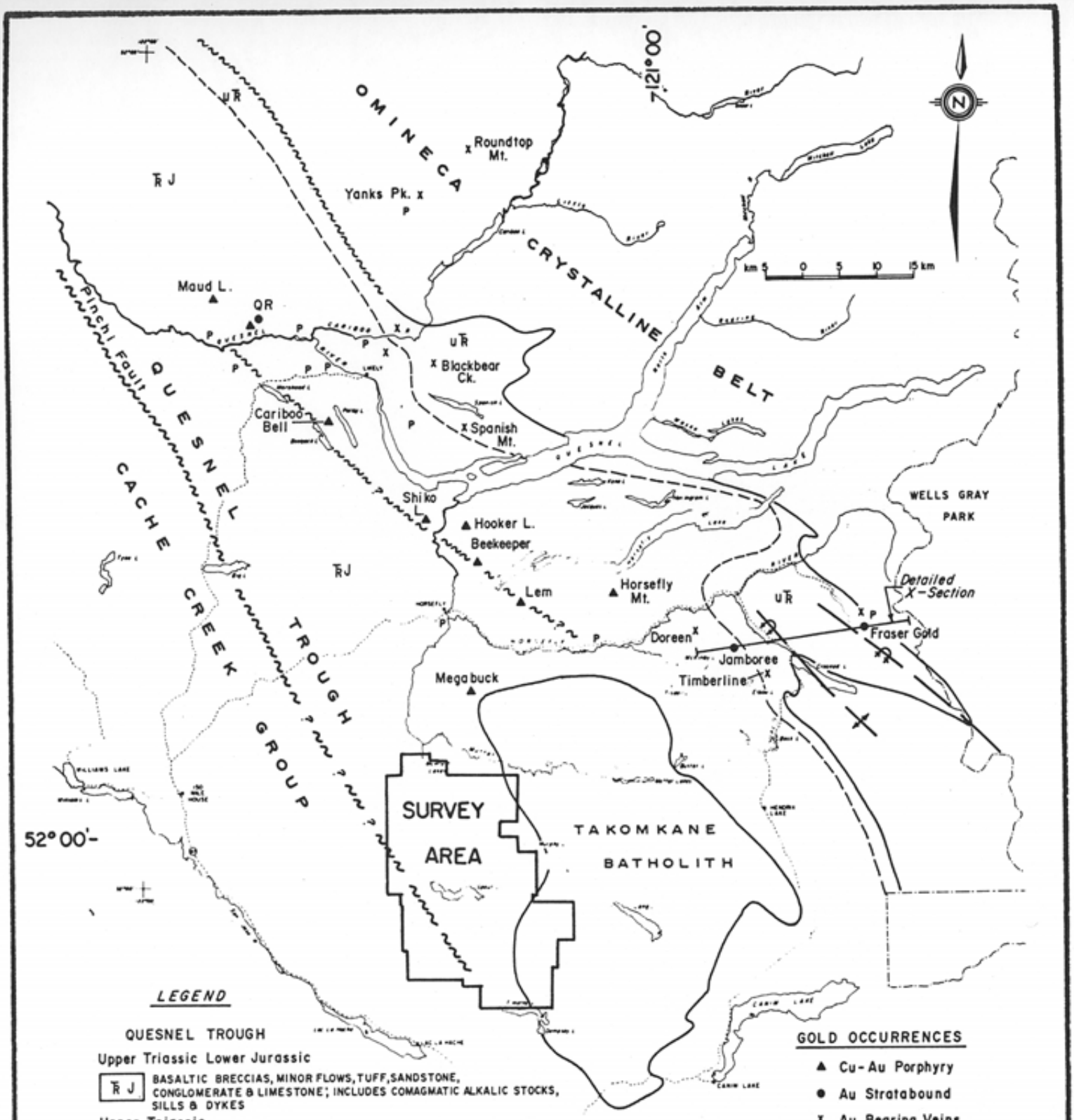
Ridge pole pine, spruce and fir with a minimum of underbrush and clean logging slashes give facile working conditions except in swampy areas in the northern half of the property.

REGIONAL GEOLOGY:

The **Mel 1-3, Leah 1-4, Dan 1-4, Delta 1-4** and **Chad 1-3** claims are situated near the eastern edge of the Intermontane belt within the Quesnel Trough of central B.C. (Figure 3). The Quesnel Trough is a northwesterly trending structural basin composed of Upper Triassic-Lower Jurassic volcanic and sedimentary rocks intruded by comagmatic syenitic and dioritic stocks and dykes. This belt of rocks, comprising units of the Nicola, Takla and Stuhini Groups, overlays early Paleozoic and Precambrian metamorphic rocks of the Omineca Crystalline Belt to the east, and is fault bounded by late Paleozoic sedimentary rocks of the Cache Creek Group to the west.

As discussed by Saleken and Simpson (1981), the Quesnel Trough is believed to be an island arc assemblage of alkalic volcanic, volcaniclastic and sedimentary rocks formed at an easterly-dipping subducting plate margin and obducted eastward onto the existing continental terrane during the middle Jurassic. Several volcanic centres within the trough are evident from subaerial flows and the presence of coarser clastic sediments. The volcanic centres and their related intrusives appear to be controlled by northwest trending, primary fault structures which were active into the late Mesozoic.

A linear band of alkalic stocks composed of diorite, monzonite and syenite intruded the volcanic/sedimentary strata at these volcanic centres. These intrusives are hosts for alkalic suite



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REGIONAL GEOLOGY

N.T.S. 93A/3W

From Saleken and Simpson (1981)

FIG. 3

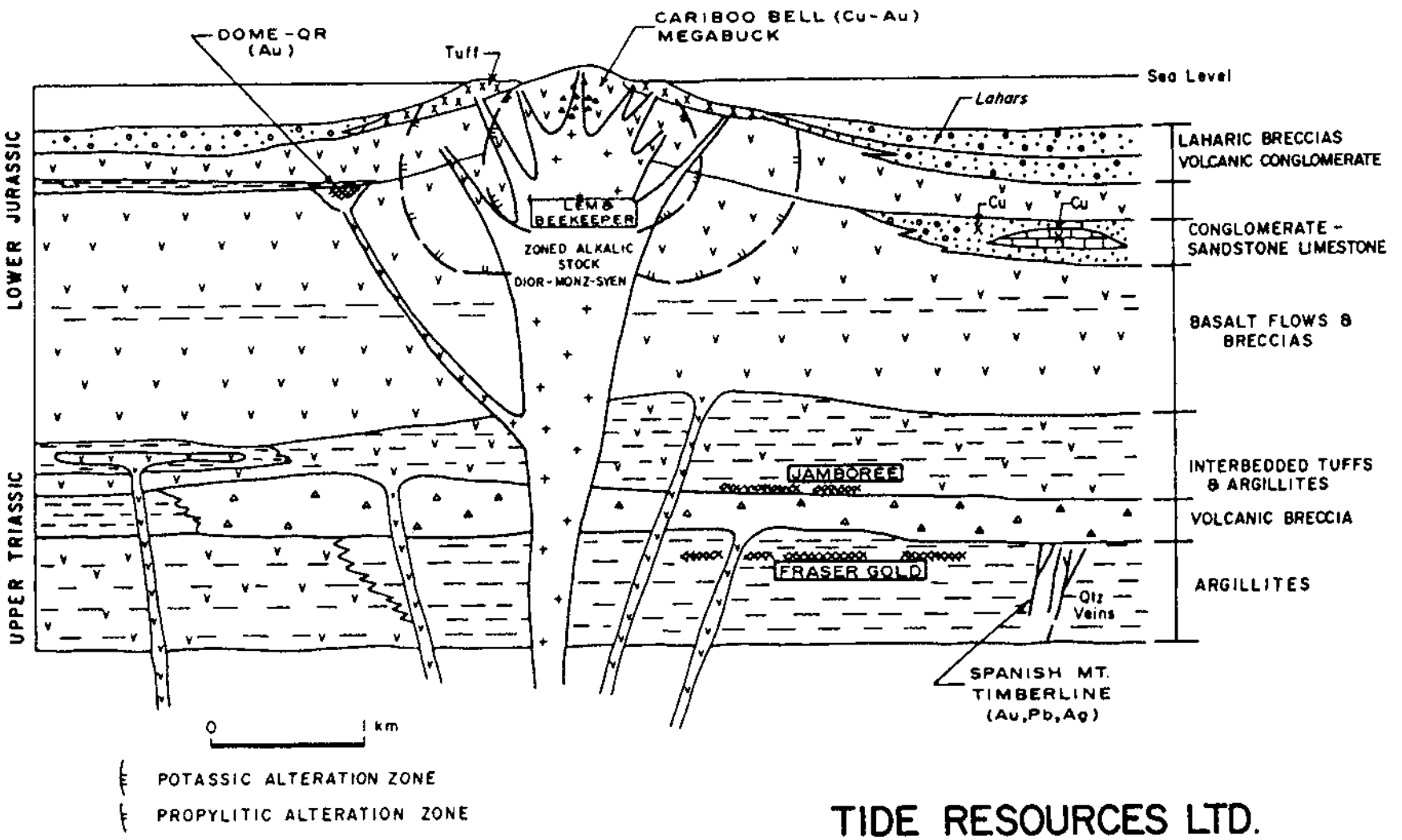
copper-gold porphyry mineral deposits such as Copper Mountain, Afton, Cariboo-Bell and the recently discovered QR gold mine. The Cariboo-Bell and QR deposits near Likely are located about 70 kms north of the claim block (Figure 3). Both deposits are presently undergoing further exploration. The QR deposit is reported to have reserves of 950,000 tons grading 0.21 oz/ton gold and the Cariboo-Bell, 117 million tons grading 0.31% copper and 0.012 oz/ton gold (Saleken and Simpson, 1981)

Figure 4 is a diagrammatic cross section through the Quesnel Trough from Saleken and Simpson (1981), showing relative stratigraphic positions of the known mineral deposits and their relationship to an alkalic intrusive complex. There are three main exploration targets:

1) Semi-conformable, stratabound gold mineralization hosted by permeable volcaniclastic or sedimentary rocks and associated with comagmatic feeder stocks or dykes (e.g. QR and Frasergold). According to Saleken and Simpson (1981), these deposits are believed to be products of exhaled volcanic emanation activity which resulted in gold-pyrite deposition in permeable horizons on, or slightly below, the sea floor. Strong carbonate alteration consisting of quartz, ankerite and epidote may be present directly below mineralized horizons.

2) Copper-gold porphyry deposits hosted in brecciated stockwork zones within magnetite-rich alkalic stock and dyke complexes (e.g. Cariboo-Bell and Megabuck). These deposits form large-tonnage orebodies amenable to open pit mining.

3) Vein-hosted gold deposits where the gold mineralization has been remobilized and concentrated in quartz veins in the vicinity of stratabound deposits. These deposits form small, high-grade orebodies which, because of previous discouraging results, have a low exploration priority.



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Diagrammatic Cross-section Through the Quesnel Trough Volcanic Complex, Showing Relative Stratigraphic Positions of Known Mineral Deposits

From Saleken and Simpson (1981)

FIG. 4

PROPERTY GEOLOGY:

As shown in Figure 5, most of the property is covered by Quaternary glacial deposits and alluvium. Hornblende-biotite quartz monzonites and granodiorites, and hornblende-biotite syenites and monzonites of the Takomkame batholith have been mapped to the southwest of Murphy Lake in the **Leah** claims and to the northeast of Spout Lake in the **Dan** claims by Campbell (1961). Hodgson and DePaoli (1972) mapped these intrusives as hornblende monzonites and interpret them as part of a separate, marginal cupola phase of the Takomkame batholith. The main body of the Takomkame batholith consisting of medium to coarse grained, porphyritic quartz monzonite is located immediately east of the property to the south of Murphy Lake.

Hodgson and DePaoli (1972) also mapped basalts, augite porphyry basalts and volcanic breccias of the Nicola Group to the north of Murphy Lake in the vicinity of the **Chad 2** claim and in the southeast corner of the property on the **Dan 4** and **Mel 3** claims. Broad magnetic highs in these areas, evident on G.S.C. regional aeromagnetic map (Figure 6), indicate that the Nicola volcanics probably underlay most of the northern and southeastern portions of the property. The circular magnetic low occupying the southwestern portion of the property is due to the satellite Takomkame monzonitic intrusive. The magnetic low along the eastern boundary of the property is due to the main body of the Takomkame quartz monzonite intrusive.

PREVIOUS WORK:

Although the Cariboo-Quesnel Gold Belt has a long history of placer gold exploration, there has been relatively little mineral exploration in the general vicinity of the claim group. Quartz vein gold occurrences were discovered in the 1930's at the

LEGEND FOR FIGURE 5

QUATERNARY
PLEISTOCENE AND RECENT

22 — Glacial deposits and recent alluvium; till, gravel, sand, silt, and clay; few if any bedrock exposures

TERTIARY
MIOCENE AND/OR LATER

20 — Basaltic flows; minor tuff, conglomerate, and sandstone

JURASSIC AND/OR CRETACEOUS AND (?) EARLIER

17 — 17a, hornblende-biotite and biotite-quartz monzonite and granodiorite, minor hornblende-biotite syenite and monzonite; 17b, hornblende-biotite syenite and monzonite; 17c, hornblende diorite; 17d, muscovite granite and quartz monzonite including pegmatite; 17e, gneissose biotite granodiorite, altered and gneissose diorite, and augen granite (part of unit 17e may be Palaeozoic); 17f, trachyte porphyry (may be volcanic); 17g, green andesite and fine-grained diorite (may be volcanic)

TRIASSIC
UPPER TRIASSIC

10 — 10a, green and purplish brown pebble and cobble conglomerate and sandstone; 10b, green andesitic volcanic rocks, andesitic feldspar porphyry, argillite, limestone, and pebble conglomerate

QUATERNARY
PLEISTOCENE AND RECENT

28 — *Till, gravel, clay, silt, alluvium, (few if any bedrock exposures)*

TERTIARY
MIOCENE AND/OR PLIOCENE

25 — *Plateau lava; olivine basalt, basalt andesite, related ash and breccia beds; basaltic arenite;* 25a, *olivine gabbro plugs*

EOCENE AND (?) OLIGOCENE
KAMLOOPS GROUP (21, 22)

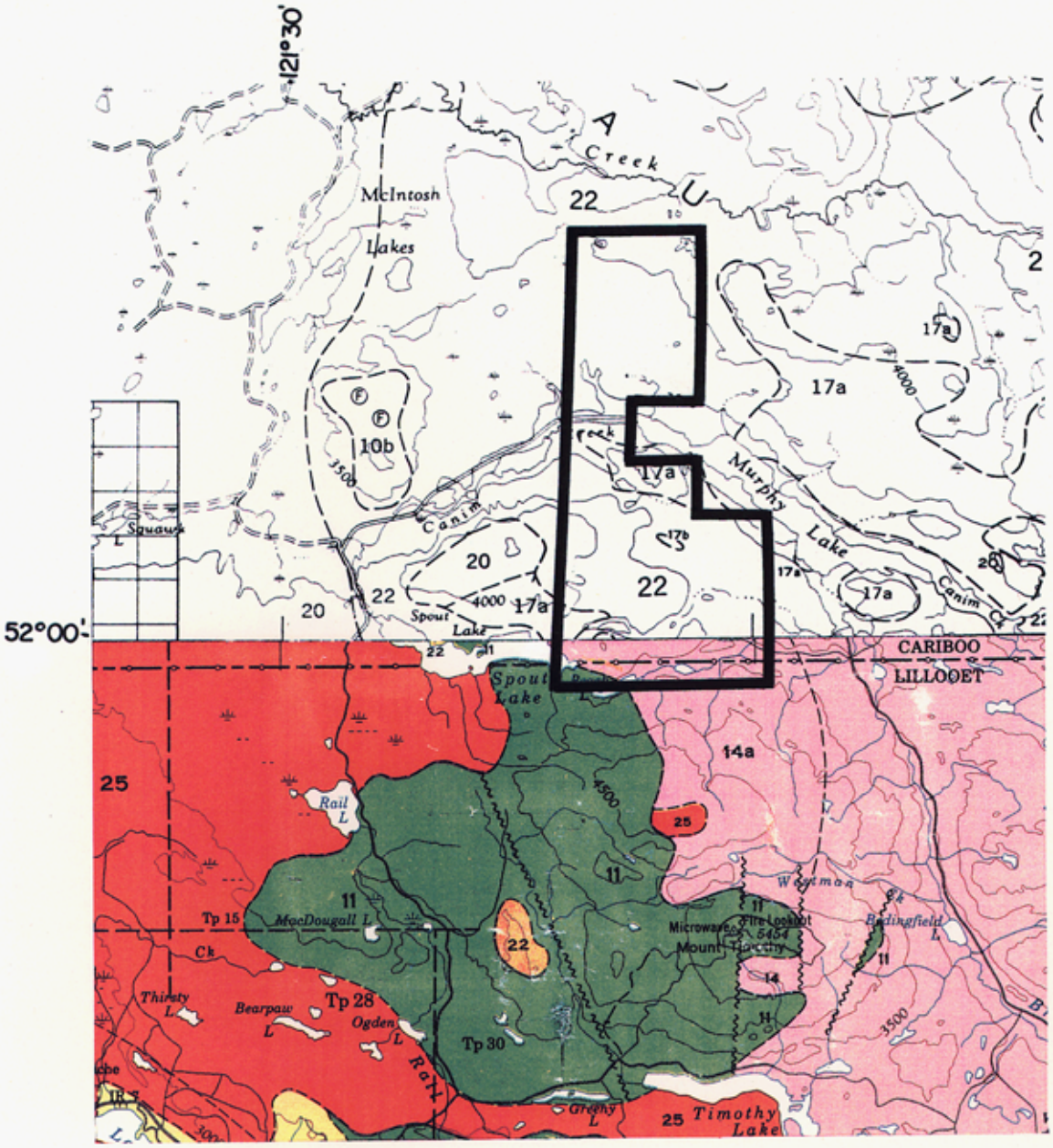
22 — *SKULL HILL FORMATION: dacite, trachyte, basalt, andesite, rhyolite, related breccias*

TRIASSIC OR JURASSIC
RHAETIAN OR HETTANGIAN

14 — *THUYA AND TAKOMKANE BATHOLITHS AND SIMILAR GRANITIC ROCKS: hornblende-biotite quartz diorite and granodiorite, minor hornblende diorite, monzonite, gabbro, hornblendite;* 14a, *diorite and syenodiorite;* 14b, *leuco-quartz monzonite and granodiorite*

TRIASSIC
KARNIAN AND NORIAN
NICOLA GROUP

11 — *Augite andesite flows and breccia, tuff, argillite, greywacke, grey limestone;* 11a, *includes minor 3 and 10*



TIDE RESOURCES LTD.

MEL 1-3, LEAH 1-4, DELTA 1-4 & CHAD 1-3 CLAIMS

LOCAL GEOLOGY

N.T.S. 93A/3W

SCALE = 1:250 000

FIG. 5

Frasergold and Spanish Mountain to the north and east (Figure 3), however it was not until the mid 1960's that significant exploration began in the region following the discovery of the Cariboo-Bell porphyry copper deposit.

A reconnaissance geochemical soil sampling program was conducted over most of the Spout Lake area by Coranex Limited (Janes,1967). Holman kits with Biquinoline and colorimetric determinations were the order of the day. The results of this work precipitated the staking of claims immediately south of the property and the eventual discovery of the WC, Peach, Tim and Miracle showings.

Coranex carried out follow-up magnetic and IP surveys and defined a number of anomalous IP zones in the vicinity of Peach Lake. Amax Potash Limited outlined the Tim showings with follow-up geological mapping and discovered the WC magnetite-copper skarn deposit south of Spout Lake (Hodgson and DePaoli, 1972). Percussion drilling by Amax intersected 160 feet of 1.63% copper with one 80 foot section running 2.28% copper (Hodgson and DePaoli, 1973). Additional diamond drilling on the WC deposit by Craigmont Mines returned good copper values in a number of holes; the best giving 20 feet of 2.47% copper (Vollo, 1975). No assays were done for gold.

The low base metal prices and introduction of super-royalties in the mid 1970's resulted in the expiration of many of the mineral claims. Exploration began again in the early 1980's for gold. BP-Selco conducted a broad scale soil sampling program and located several strong copper-gold geochemical anomalies that were not explored (Gamble and Hoffman, 1984). The Tim showings were tested by Stallion Resources Ltd. in the fall of 1983, and a zone of 10.7 meters assayed 4.6% copper, 1.7 oz/ton silver and a 1.5 m section with 0.119 oz/ton gold (Butler, 1984).

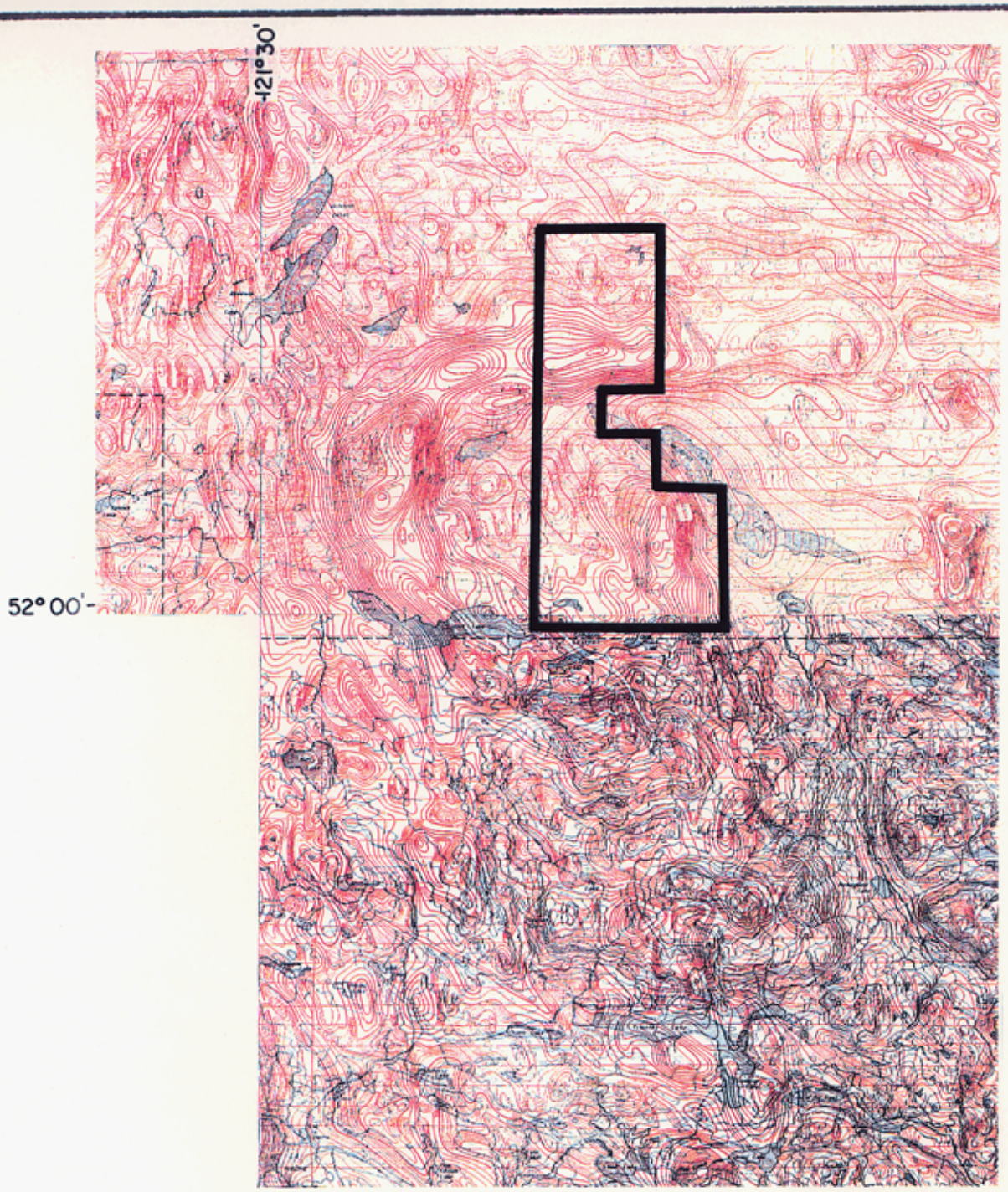
Following earlier reconnaissance work by Guichon Explorco Limited (Gamble,1983), the Miracle showing was located by prospectors Neils Kriberg and Don Fuller. Recent work by G.W.R. Resources Inc. has outlined a zone of copper-gold mineralization coincident with a magnetic high and an strong IP anomaly (White, 1987). Grab samples from the trench on the showing yielded over 1.5 oz/ton gold.

AIRBORNE MAGNETIC AND VLF-EM SURVEY:

This geophysical survey simultaneously monitors and records the output signal from a Develco tri-axis ringcore magnetometer and a Herz dual-frequency VLF-EM receiver. The sensors are installed in an aerodynamically stable "bird" which is towed sixty metres below a helicopter. Fixed to the helicopter skid is a shock and gimbal-mounted, downward-facing video camera. A video signal is recorded and later reviewed and correlated with a recent air photomosaic in order determine the precise locations of the flight paths. The elevation of the helicopter above the ground is recorded by a radar altimeter and monitored by the pilot and navigator in order to maintain a constant ground clearance.

A computer records readings of the magnitude of the earth's magnetic field and of the fields induced by two powerful VLF-EM transmitters (located in Annapolis, Maryland and Seattle, Washington). This data, the time and date it was observed, radar altimeter values, and survey fiducial points are all superimposed on the video image and recorded on both video cassettes and 3.5 inch computer diskettes.

Data quality is assured by the survey operator monitoring a real-time display of direct and unfiltered recordings of all the geophysical output signals while a navigator directs the helicopter pilot from an air photograph.



TIDE RESOURCES LTD.

MEL 1-3, LEAH 1-4, DELTA 1-4 & CHAD 1-3 CLAIMS

G.S.C. REGIONAL AEROMAGNETICS

N.T.S. 93A/3W

SCALE = 1:250 000

FIG. 6

DATA PROCESSING:

The video image, with superimposed line-fiducial identification, recording times, and the recorded data, is correlated with both the navigator's and operator's field notes and topographic features observed from the photomosaic. The "recovered" flight paths are digitized to obtain relative x and y positions which are then merged with the data. Subsequently, all geophysical data is filtered to remove spurious noise bursts and chatter, and then plotted as flight path profiles and contour maps for each of the sensors.

Both the total field magnetometer signal and the total field and quadrature components of VLF-EM signal are sensitive to topographic changes and bird oscillations. Short wavelength (less than 200 meters) oscillations, are attenuated by filtering the data with a digital low-pass filter. Long wavelength effects (anomalies greater than 2000 metres) attributed to topography, are also removed from the VLF-EM data by high-pass filtering.

DISCUSSION OF RESULTS:

The **Mel 1-3, Leah 1-4, Dan 1-4, Delta 1-4** and **Chad 1-3** claims were surveyed on 24-29 September 1988. Approximately 580 line kilometers of airborne magnetic and VLF-EM survey data have been recovered and evaluated.

Survey lines were flown east-west with an average line spacing of 200 metres. The geophysical survey data were recorded two times per second for an effective average sampling interval of 15 metres. The sensors were towed below the helicopter with an average terrain clearance of 30 metres.

Magnetic data are useful for mapping the position and extent of regional and local geological structures which have varying concentrations of magnetically susceptible minerals. Many

lithological changes correlate with a change in magnetic signature. Faults and shear zones are interpreted from linear gradients and discontinuities of the magnetic contour pattern or from linear magnetic lows.

VLF-EM data is useful for mapping conductive zones. These zones usually consist of argillaceous graphitic horizons, conductive clays, water-saturated fault and shear zones, or conductive mineralized bodies. Conductors are located at a change in sign (cross-over) of the quadrature component and a total field VLF-EM high.

The magnetic and VLF-EM data are shown as contoured total field maps of the entire survey area at 1:25,000 scale in Figure 7, 8, and 9 representing magnetic, Seattle VLF and Annapolis VLF respectively.

The magnetic data can be subdivided into five distinct domains, each with a unique pattern of magnetic response:

1. The south-eastern regions of the survey area, covering portions of the **Dan 2-4, Mel 1-3,** and **Leah 2** and **4** claims are typified by high magnetic amplitudes and relief. Portions of this region have been mapped by Hodgson and DePaoli (1972) as Nicola volcanics. The magnetic highs are probably due to concentrations of magnetite-rich syenodiorite stocks and dikes within the volcanic sequence. Lower magnetic amplitudes may be due to Quaternary glacial cover or Tertiary plateau basalts.

2. Areas to the west and northwest of the first region with low magnetic amplitude and relief, covering the **Dan 1, Leah 1** and **3** claims and portions of surrounding claims, are probably due to hornblende monzonite intrusives as mapped by Hodgson and DePaoli (1972).

3. An are of pronounced magnetic low to the northeast of the first two regions is caused by non-magnetic quartz monzonite and granodiorite intrusives of the Takomkane batholith. This region covers the north-eastern portions of the **Leah 2,** and **Mel 1** and **2** claims.

4. Immediately to the north of the monzonite and quartz monzonite intrusives is a band of moderate magnetic amplitude and relief similar to the first region in the south-eastern area of the property. Hodgson and DePaoli (1972) also mapped nicola volcanics in this area. The more moderate magnetic amplitude and relief may be due to a thicker cover of Quaternary glacial drift. The Nicola volcanics are interpreted to underlay the **Chad 1** and **2** claims and portions of the **Chad 3** and **Delta 3** claims.

5. Immediately to the north of the band of Nicola volcanics is an area of low magnetic amplitude and relief similar to the monzonite intrusive area in the south-western area of the property. This region covers most of the **Delta 1 - 4** claims and is interpreted to be caused by intrusive rocks. However, Nicola volcanic under deep glacial overburden cover may also be the cause of the observed magnetic response.

The most pronounced magnetic gradients and lineations have been identified as possible faults on Figure 7. Additional faults could be identified, however, those shown are clearly the most significant structures in the survey area. There appears to be more significant faults in the areas interpreted as Nicola volcanics, possibly due to the character of the bedrock but also because the high magnetic relief in these areas makes the identification of faults more apparent.

Numerous VLF-EM conductors have been located on Figures 8 and 9. Due to the high noise content in the VLF-EM data, even after processing and filtering, many of these conductors should be considered to be somewhat speculative. However, there appear to be more conductors in the regions of Nicola volcanics; and these should be considered most likely due to mineralized zones within the volcanic rocks.

CONCLUSIONS AND RECOMMENDATIONS:

A reconnaissance, helicopter-borne magnetic and VLF-EM survey has been carried out on the **Mel 1-3, Leah 1-4, Dan 1-4, Delta 1-4** and **Chad 1-3** claims of **Tide Resources Ltd.** Approximately 580 line kilometers of magnetic and VLF-EM data have been recovered to evaluate these claims.

The data indicate that large areas of the property are underlain by Nicola volcanic and volcaniclastic rocks. High magnetic amplitudes and relief in the south-eastern and north-central areas of the property indicate the presence of magnetite-rich alkalic intrusives within the Nicola volcanics which are known to host copper-gold porphyry deposits in surrounding regions. Portions of these areas, where magnetic intensities are more moderate, may have thick Quaternary glacial or Tertiary plateau basalt cover.

Major fault structures have also been interpreted form the magnetic data which may facilitate hydrothermal gold deposition. Numerous VLF-EM conductors have been interpreted throughout the property. The short strike-length conductors do not appear to have a preferred orientation and hence may be due to mineralization in shear or fault structures rather than graphitic sedimentary horizons. These conductors appear to be more prevalent in regions of Nicola volcanics and hence should receive high priority for follow-up work.

Further exploration is recommended on the property, focussing on the high magnetic anomalies and associated fault structures in the south-eastern and north-central areas of the property. Ground follow-up should initially proceed with geological mapping and prospecting, followed by a regional geochemical survey. Areas of interest should then be selected from the regional magnetic, VLF-EM, geology and geochemistry and surveyed by detailed ground magnetics, VLF-EM and soil geochemistry. Claims which have no significant areas of interest (e.g. within the magnetic intrusives) should be dropped. Given encouraging results, an induced polarization survey should be carried out in advance of trenching and drilling to indicate the most favorable zones of mineralization.

Respectfully submitted,

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Consulting Geophysicist

REFERENCES:

Butler, P., Diamond Drilling Report on the Tim 2 Claim, Clinton Mining Division, Stallion Resources Ltd., April 1984.

Campbell, R.B., Geology, Quesnel Lake (West Half), British Columbia, G.S.C. Map 3-1961, 1961.

Campbell, R.B. and Tipper, H.W., Geology of the Bonaparte Lake Map Area, G.S.C. Memoir 363, 1972.

Fox, P.E., Cameron, R.S., Hoffman, S.J., Geology and Soil Geochemistry of the Quesnel River Gold Deposit, British Columbia, GEOEXPO/86, The Association of Exploration Geochemists.

Gamble, D., Geochemical Survey, Core Claims, Clinton Mining Division, Guichon Explorco Limited, August 1983.

Gamble, A.P.D. and Hoffman, S.J., Assessment Report Soil Geochemical Survey on the Core 8 -13 Claims, Selco Division BP Resources Canada Limited, October 1984.

Hodgson, C.J., and DePaoli, G.M., 1971 Property Report, Spout Lake Copper Property, Amax Potash Limited, January 1972.

Hodgson, C.J., and DePaoli, G.M., Final 1973 Property Report, Spout Lake Copper Property, Amax Potash Limited, November 1973.

Janes, R.H., A Report on the Geochemistry of the Peach North & South Groups, Clinton Mining Division, Coranex Limited, August 1967.

Saleken, L.W. and Simpson, R.G., Cariboo-Quesnel Gold Belt, A Geological Overview, Western Miner, April 1981.

Vollo, N.B., Diamond Drilling Report, WC Group, Craigmont Mines Ltd., May 1975.

White, G.E., Geological, Geochemical and Geophysical Report, Miracle 2, 3, 4 and 5 Mineral Claims, Timothy Mt. Area, B.C., G.W.R. Resources Inc., October 1987.

INSTRUMENT SPECIFICATIONS

DEVELCO RINGCORE MAGNETOMETER

Model:	1210
Sensor:	3-axis ringcore fluxgate
Orthogonality:	±1° 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:	±5V dc for above ranges
Output Impedance:	600 ohms
Zero Field Offset:	< ±7 mG absolute
Linearity:	±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:	±3%, 0 to +60° 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 1 Hz (-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 SPECIFICATIONS

DATA ACQUIISITION 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 intergrating voltmeter HP44701A measures: DC voltage resistance AC voltage Range ±30V, ±0.008%, +300uV Intergration 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 ±0.09% 60 DC Common Mode Rejection with 1 KΩ in low lead 120 Effective Common Mode Rejection at 60 Hz ±0.09% with 1 KΩ 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.

INSTRUMENT SPECIFICATIONS

CONTROLLER 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 SPECIFICATIONS

HERZ TOTEM - 2A VLF-EM SYSTEM

Source of Primary Field:	-Global network of VLF "OMEGA" radio stations in the frequency range of 14 KHz to 30 KHz
Number of Channels:	Two; Field selectable by 100 Hz steps. Ex: Seattle, Washington at 24.8 KHz Annapolis, Maryland at 21.4 KHz
Type of Measurement:	Total Field Strength (Location of Conductors) Vertical Quadrature (useful in interpreting the quality and depth to a conductor) Horizontal Quadrature (orientation of field & structures)
Type of Sensor:	Ferrite antennae array of 3 orthoganal coils mounted in a fiberglass bird with preamp.
Output:	-0 to $\pm$ 1000 mV displayed on two switch selectable analogue meters. -noise monitoring light. - audio monitor speaker.

Filters:	Noise blanking spherics (lightning) Anti Aliasing filters (Adjacent Stations) Crystal Controlled Phase Lock loop digital tuning. 1 sec. output Time Constant.
Sensitivity:	130 micro V/m at 20 kHz.

INSTRUMENT SPECIFICATIONS

BARRINGER AIRBORNE MAGNETOMETER

MODEL:		M 1041
TYPE:		Proton Precession
RANGE:		20,000 to 100,000 gammas
ACCURACY:		+ 1 gamma at 24 V d.c.
SENSITIVITY:		1 gamma throughout range
CYCLE RATES:		
Manual	-	Pushbutton single cycle
External	-	Actuated by a contact closure (short) longer than 10 microseconds
Continuous	-	1.114 seconds with external pins shorted
Internal	-	1 second to 3 minutes in 1 second steps
OUTPUTS:		
Analogue	-	2 channels, 0 to 99 gammas or 0 TO 990 gammas at 1 m.a. or 100 mV full scale deflection.
Digital	-	Parallel output 5 figure 1248 BCD, TTL compatible
Visual	-	5 digit numeric display directly in gammas
SIZE:		Instrument set in console 19" x 3.5" x 10"
WEIGHT:		10.6 lbs.
POWER REQUIREMENTS:		28 ± 5 volts dc, @ 1.5 amps - polarizing 4 amps
DETECTOR:		Noise cancelling torroidal coil installed in air foil.

INSTRUMENT SPECIFICATIONS

FLIGHT PATH RECOVERY SYSTEM

i) T.V. Camera:

Model:	RCA TC2055 Vidicon
Power Supply:	12 volt DC
Lens:	variable, selected on basis of expected terrain clearance.
Mounting:	Gimbal and shock mounted in housing, mounted on helicopter skid.

ii) Video Recorder:

Model:	Sony SLO-340
Power Supply:	12 volt DC / 120 volt AC (60Hz)
Tape:	Betamax 1/2" video cassette - optional length.
Dimensions:	30 cm X 13 cm X 35 cm
Weight:	8.8 Kg
Audio Input:	Microphone in - 60 db low impedance microphone
Video Input:	1.0 volt P-P, 75Ω unbalanced, sync negative from camera.

iii) Altimeter:

Model:	King KRA-10A Radar Altimeter
Power Supply:	0-25 volt (1 volt/1000 feet) DC signal to analogue meter, 0-10 v (4mv/ft) analogue signal to data acquisition unit
Mounting:	fixed to T.V. camera housing, attached to helicopter skid.

STATEMENT OF QUALIFICATIONS

NAME: WOODS, Dennis V.

PROFESSION: Geophysicist

EDUCATION: B.Sc. Applied Geology
Queens' University

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 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 collected, processed and analyzed. Geological information was researched and compiled. This report and survey was prepared for an all inclusive fee of $36,240.00. This total is based upon a survey acquisition and processing cost of $53 per kilometre of collected total field magnetic data and two stations of VLF-EM data. The survey was conducted by Western Geophysical Aero Data Ltd. employees

Mobilization/demobilization - truck rental, helicopter ferry	$ 1,250.00
Photomosaic preparation	1,750.00
Survey - 580 kilometres of magnetic and VLF-EM data at $53 per kilometre	30,740.00
Report/Interpretation	2,500.00
TOTAL	$36,240.00

TOTAL ASSESSMENT VALUE OF THIS REPORT **$36,240.00**

GEOLOGICAL BRANCH
ASSESSMENT REPORT

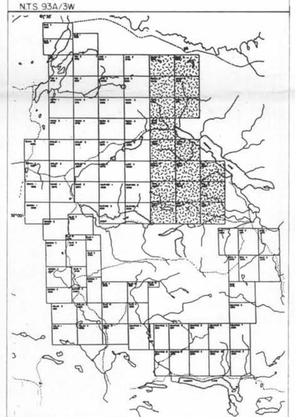
18,347

INTERPRETED FAULT

MONZONITIC INTRUSIVES

QUARTZ MONZONITE
GRANODIORITE INTRUSIVE

NTS 93A/3W



TIDE RESOURCES LTD.

LAC LA HACHE PROJECT
Northeast Block
Contoured Total Field Magnetics
Scale 1: 20000.0

0 400 800 1200 1600 2000 M

Date: December 1988 | Survey: September 1988 | Fig.7

WESTERN GEOPHYSICAL AERO DATA LTD.

GEOLOGICAL BRANCH
ASSESSMENT REPORT

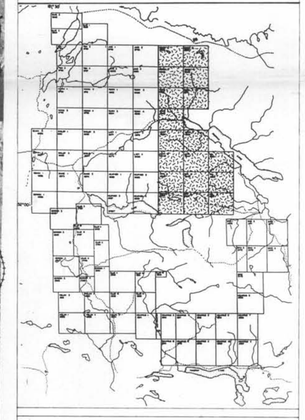
18,347

VLF-EM CONDUCTOR

\+ TOTAL FIELD - Base= 0
Scale= 25/cm

QUADRATURE - Base= 0
Scale= 25%/cm

NTS 93A/3W



TIDE RESOURCES LTD.

LAC LA HACHE PROJECT
Northeast Block
VLF-EM Profiles (Seattle)
Scale 1: 20000.0

0 400 800 1200 1600 2000 M

Date: December 1988 | Survey: September 1988 | Fig.8

WESTERN GEOPHYSICAL AERO DATA LTD.

GEOLOGICAL BRANCH
ASSESSMENT REPORT

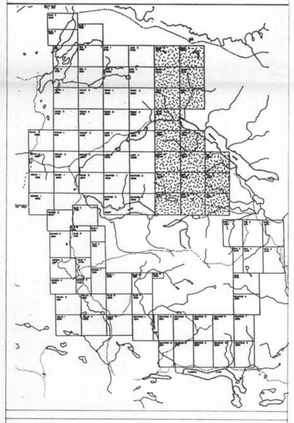
18,347

VLF-EM CONDUCTOR

\+ TOTAL FIELD - Base = 0
Scale = 25/cm

QUADRATURE - Base = 0
Scale = 25% /cm

N.T.S. 93A/3W



TIDE RESOURCES LTD.

LAC LA HACHE PROJECT
Northeast Block
VLF-EM Profiles (Annapolis)
Scale 1: 20000.0

0 400 800 1200 1600 2000 M

Date: December 1988	Survey: September 1988	Fig.9

WESTERN GEOPHYSICAL AERO DATA LTD.