

ARIS SUMMARY SHEET

District Geologist, Kamloops

Off Confidential: 90.01.20

ASSESSMENT REPORT 18277

MINING DIVISION: Lillooet

PROPERTY: Minto Ext  
LOCATION: LAT 50 55 00 LONG 122 43 00  
UTM 10 5640377 519917  
NTS 092J15E

CAMP: 034 Bridge River Camp

CLAIM(S): Minto Ext. 1-2

OPERATOR(S): Avino Mines

AUTHOR(S): Brewer, L.

REPORT YEAR: 1988, 24 Pages

COMMODITIES

SEARCHED FOR: Gold, Silver, Antimony

GEOLOGICAL

SUMMARY: Basaltic volcanics and cherty sediments of the Paleozoic Fergusson Group underlie the property. They strike north and dip steeply to the west. These are intruded by east dipping, north trending porphyry dykes of Tertiary age.

KEYWORDS: Paleozoic, Fergusson Group, Basaltic, Cherty, Sedimentary, Tertiary Porphyry dykes

WORK

DONE: Geophysical  
EMAB 53.9 km; VLF  
Map(s) - 1; Scale(s) - 1:10 000  
MAGA 53.9 km  
Map(s) - 1; Scale(s) - 1:10 000

18277  
COPY

GEOPHYSICAL REPORT  
ON  
AIRBORNE MAGNETIC AND VLF-EM SURVEYS  
OVER THE  
MINTO EXT CLAIMS  
TYAUGHTON LAKE, CARPENTER LAKE AREA  
LILLOOET MINING DIVISION  
BRITISH COLUMBIA

FILMED

---

PROPERTY : 10 km from Gold Bridge on the  
the southern flank of Pearson  
Ridge, between Carpenter Lake  
and Tyaughton Lake.

WRITTEN FOR : AVINO MINES LTD.  
#100-455 Granville Street  
Vancouver, B.C. V6C 1T1

SURVEYED BY : COLUMBIA AIRBORNE GEOPHYSICAL  
SERVICES (1984) LTD.  
#611-470 Granville Street  
Vancouver, B.C.  
V6C 1V5

WRITTEN BY : LLOYD C. BREWER  
COLUMBIA AIRBORNE GEOPHYSICAL  
SERVICES (1984) LTD.

DATED : OCTOBER 20, 1988

TABLE OF CONTENTS

SUMMARY	i
CONCLUSIONS	ii
RECOMMENDATIONS	iii
INTRODUCTION	1
PROPERTY AND OWNERSHIP	2
LOCATION AND ACCESS	2
PHYSIOGRAPHY	3
HISTORY OF PREVIOUS WORK	3
REGIONAL GEOLOGY	4
REGIONAL MINERALIZATION	5
PROPERTY GEOLOGY	5
INTSRUMENTATION AND THEORY	
(a) Magnetic	6
(b) VLF-EM	6
SURVEY PROCEDURE	8
DATA REDUCTION AND COMPILATION	8
DISCUSSION OF RESULTS	
(a) Magnetic Survey	9
(b) VLF-EM Survey	10
(c) Lineations	12
SELECTED BIBLIOGRAPHY	14
AUTHOR'S CERTIFICATION	15
AFFADAVIT OF COSTS	16

LIST OF ILLUSTRATIONS

At back of report

Property Location Map	1:8,600.000	Map 1
Claim Map	1:50,000	Map 2

In back pocket

Airborne Magnetic & VLF-EM	1:10,000	Map 3
----------------------------	----------	-------

SUMMARY

Airborne magnetic and VLF-EM surveys were carried out over the property owned by Avino Mines Ltd. of Vancouver, B.C. in the month of January 1988. The claims are located to the north of Carpenter Lake. Access is easily gained by a two-wheel drive vehicle. The terrain consist of moderate to dense coniferous trees. The purpose of the surveys was to aid in the mapping of geology as part of the exploration program in locating probable areas of gold mineralization.

The property occurs within highly altered and deformed sediments and volcanics of the Bridge River (Fergusson) Group. These units have been intruded by tertiary age porphyry dykes and sills. Both of these units are roughly north striking with dips varying from east to west.

In the area, mineralization is known to be associated with faults or shear zones in contact with the intrusive porphyry dykes or the stratographic contacts with the sediments and volcanics.

The airborne surveys were flown at about a 50 meter terrain clearance on contour lines with a separation varying from 100-200 meters. The instruments used being a Sabre Electronics VLF-Em proton precession magnetometer and a Sabre Electronics VLF-EM receiver. The magnetic data were picked from the strip charts and hand contoured. The contours were drawn on a survey plan on which the VLF-EM anomalies were plotted as well.

CONCLUSIONS

1. The magnetic survey shows the entire property is underlain by sediments and volcanics of the Bridge River Series and tertiary intrusives of porphyritic stock.

Mineralization in the Gold Bridge area is often related to structural controls such as faults and shear zones. As a result, magnetic lows, which can reflect these structures, indicate important areas for further exploration.

2. The VLF-EM survey revealed 7 multi-line conductors as well as several single line conductors: the majority of these conductor are reflecting shears, faults and contact zones, which are important in the placement of gold bearing quartz veins. Conductor 'a' is located on the eastern section of the survey areas; this is reflecting a cross fault between the main Tyaughton Creek and Carpenter Lake faults.
3. Both the VLF-EM and magnetic surveys revealed lineations within the survey area that are likely caused by fault, shear and/or contact zones. These can be important indicators of sulphide and native gold mineralization especially where the lineations cross.

RECOMMENDATIONS

These are as follows:

1. Thorough prospecting and/or geological mapping in addition to what so far has been carried out. This will also greatly aid in the interpretation of any geophysics and geochemistry that have been or may be carried out, especially the airborne magnetic survey.
2. Soil geochemistry sampling. The total sample picked up should be pulverized and not screened in order to preclude the screening out of coarser gold.
3. Ground VLF-EM and magnetic surveys as well as possibly low frequency EM in selected areas (such as MaxMin II EM system). The VLF-EM method has proven to be very useful in this area for discovering gold mineralization, especially together with soil sampling. An induced polarization resistivity survey should be considered since it may well prove to be one of the best tools available for this area.
4. Trenching and diamond drilling of promising targets resulting from the above work.

GEOPHYSICAL REPORT  
ON  
AIRBORNE MAGNETIC AND VLF-EM SURVEYS  
OVER THE  
MINTO EXT CLAIMS  
TYAUGHTON CREEK, CARPENTER LAKE AREA  
LILLOOET MINING DIVISION  
BRITISH COLUMBIA

---

INTRODUCTION AND GENERAL REMARKS

This report discusses the survey procedure, compilation of data and the interpretation of low-level airborne magnetic and VLF-EM surveys carried out over the MINTO EXT claims in the Tyaughton Creek, Carpenter Lake area, in January, 1988. The survey was carried out by Lloyd C. Brewer, instrument operator and project manager, and John Kime, navigator, both of whom are of Columbia Airborne Geophysical Services (1984) Ltd. A total of 59.3 line km of airborne survey was done over the property and surrounding area.

The object of the two surveys was to aid in the geological mapping of lithology and structure for the purpose of exploration of the type of gold mineralization as is found in the Gold Bridge and Bralorne area. Magnetic surveys have especially been proven to be a good geological mapping tool.



PROPERTY AND OWNERSHIP

The property consists of 3 claims totalling 30 units as shown on Map 2 and as described below.

<u>Claim Name</u>	<u># Units</u>	<u>Record #</u>	<u>Expiry Date</u>
MINTO EXT	8	2945	Aug. 20, 1993
MINTO EXT 1	10	2722	Feb. 15, 1993
MINTO EXT 3	10	2786	Mar. 12, 1993

The expiry date shown does not take into account the surveys under discussion as being accepted for assessment credits.

The three claims are owned by Avino Mines Ltd., of Vancouver, B.C.

LOCATION AND ACCESS

The property is located on the southern flank of Pearson Ridge, between Carpenter Lake and Tyaughton Creek, with the edge of the lake being the edge of the claims.

The geographical coordinates are 50°55'N latitude and 122°43'W longitude.

Access can be gained from the Lillooet/ Gold Bridge road which runs along the south side of Carpenter Lake through the claims. The distance from Gold Bridge to the property is about 10 km.

## PHYSIOGRAPHY

The property lies on the southern flank of Pearson Ridge in the Pacific Ranges which is a physiographic division of the Coast Mountains. The terrain is, in general, steep and mountainous, with the general slope facing southward towards Carpenter Lake.

Elevations vary from 1,400 m a.s.l. in the northeast corner of the Minto Ext claim, dropping to 850 m a.s.l. along the edge of Carpenter Lake.

The main water source would be from Carpenter Lake as well as a small creek running south into the Lake.

The forest cover is primarily fir and spruce, moderate in density and with an undergrowth light to moderate.

## HISTORY OF PREVIOUS WORK

This history is summarized from the Avino Mines property report, April 1986. The claims were originally staked in 1910 and worked until 1930. At this time the property was optioned to the Consolidated Mining and Smelting Company of Canada Ltd. They drove in three adits. Minto Gold Mines Ltd. took possession in 1933 and did further undergroundwork. This resulted in a 50 t/d production in 1934 and a 125 t/d production in 1935 & 1937. Pioneer Gold Mines Ltd. optioned the property in 1941 and dropped it in 1942. The Minto Mine produced a total of 88,902 tons of ore with grades of 0.20 oz/ton Au and 0.58 oz/ton Ag.

Surface trenching and drilling took place from 1943-45 after the discovery of the Winter Zone. No work was done thereafter until Avino Mines & Resources picked up the property in 1985, when they carried out surface surveys, trenching and sampling.

## REGIONAL GEOLOGY

The Bridge River district lies between the plutonic and metamorphic rocks of the Coast Plutonic Complex and the volcanic and sedimentary rocks of the western margin of the Intermontaine Belt. The oldest unit in the area is the Fergusson Group (Bridge River Group), consisting mostly of chert with margle, schist, gneiss and hornfels. It is assigned to the paleozoic by Church (1986). Overlaying the Fergusson Group is the Cadwallader Group of Upper Triassic Age. Three formations, the Pioneer Formation, the Noel Formation and the Hurley Formation, oldest to youngest repectively, make up this group. The Pioneer Formation consists of greenstones including pillow lavas and aquagene breccia. The Noel and Hurley Formations consist of argillite with some limestone and limey argillite.

The Taylor Creek Group is cretaceous in age and lies above the Cadwallader Group. It is mostly made up of coarse clastic sedimentary rocks including two conglomerate beds.

Three main igneous intrusions exist. These are the Bralorne diorite(Paleozoic), the President ultrabasic rocks (Jurassic-cretaceous), and the Coast Plutonic Rocks (Upper Cretaceous).

Structurally, the Bridge River District is complex. Much difficulty in interpretation is encountered due to deformation causing folding and widespread shearing and faulting. However, Cairnes (1937) has outlined the major structural features.

The area lies in a syncline within a major anticlinal arch trending north-westerly. The arch corresponds dominantly with the Fergusson Group. Younger formations lie within the syncline.

The general trend of formations is northwesterly. The southern end tends to trend more to the west while the northern end trends more northerly.

Two systems of faulting are predominant. One system encompasses two sets of fractures. The first strikes at about 35° to formational trends and dips steeply. The second strikes at or nearly at parallel with the formational trends and dips accordingly. The other system is found predominantly within the least competent rocks and generally has large displacements.

#### REGIONAL MINERALIZATION

The Bridge River Mining Camp is a major gold producer in B.C. Five properties in the area have achieved significant production. These are: Congress, Wayside, Minto, Pioneer and Bralorne. The vast fracture system may have acted as pathways for ore-bearing solution, with the Coast granitic intrusions providing the heat and water and possibly the metals necessary for ore formation. It has also been suggested that the ultrabasic rocks were the source of the metals (Church, 1986 a).

The Bralorne mine is the largest producer. Here the gold occurs as free gold in quartz veins with pyrite and arsenopyrite (1-3%). The veins strike up to 1,500 meters and average 1-2 meters wide. There is extensive hydrothermal carbonate alteration envelopes up to 70 meters wide. The age of mineralization ranges from Upper Cretaceous to Lower Tertiary.

#### PROPERTY GEOLOGY

Basaltic volcanics and cherty sediments of the Paleozoic Fergusson Group underlie the property. They strike north and dip steeply to the west. These are intruded by east dipping, north trending porphyry dykes of Tertiary age.

Due to tectonic deformation, the argillites are sheared and the cherts are brecciated. The basalts, being more competent, are only mildly deformed. Mineralized shear zones are often associated with the intrusive contacts of the porphyry dykes or the stratigraphic contacts of the sediments and volcanics (assessment report #13807).

## INSTRUMENTATION AND THEORY

### a) Magnetic Survey

The magnetic data are detected using a nuclear free precession proton magnetometer, manufactured by Sabre Electronic Instruments Ltd. of Burnaby, B.C. The magnetometer measures the total count of the earth's magnetic field intensity with a sensitivity of one gamma. The data are recorded on magnetic tape and 12 cm analog strip chart.

The magnetic patterns obtained from a regional airborne survey are directly related to the distribution of magnetite in the survey area. However, the geology cannot be deduced from isomagnetic maps by simply assuming that all magnetic highs are underlain by gabbro or ultramafic rocks, and that all magnetic lows are caused by limestone or chert. The problem with such a simplistic approach is that magnetite is not uniformly distributed in any type of rock. Other problems arise from the fact that most geologic terrains have rocks of high susceptibility superimposed on less 'magnetic' rocks, and vice versa. Cultural features such as powerlines, pipelines and railways also complicate matters. So many variables can be involved that it may be impossible to make a strictly accurate analysis of the geology of an area from magnetic data alone. It is preferable to use other information such as geological, photogeological and electromagnetic in combination with magnetic data to obtain a more accurate geological analysis.

### b) VLF-EM Survey

A two-frequency omni-directional receiver unit, manufactured by Sabre Electronic Instruments Ltd., of Burnaby, B.C., was used for the VLF-EM survey. The transmitters used are NLK Arlington (Seattle), Washington, operating on 24.8 KHz, and Annapolis, Maryland, transmitting at 21.4 KHz. These signals are used due to their ideal orientation with respect to northwest and eastwest geological structures, and their good signal strengths. The measurement taken during the survey is the variation in the horizontal component of the signal strength.

The VLF (Very Low Frequency) method uses powerful radio transmitters set up in various parts of the world for military communications. These powerful transmitters can induce electric currents in conductive bodies thousands of kilometers away from the radio source. The induced currents set up secondary magnetic fields which can be detected at surface through deviations in the normal VLF field. The VLF method is inexpensive and can be a useful initial tool for mapping structure and prospecting. Successful use of the VLF requires that the strike of the conductor be in the direction of the transmitting station so that the lines of magnetic field from the transmitter cut the conductor. Thus, conductors with northeast to southeast strikes will respond to Annapolis transmissions, while conductors striking north to west will respond to Seattle transmissions. Conductors striking east to northeast may respond to both stations, giving coincident field strength peaks.

The theory of VLF-EM interpretation is quite simple. Conductors are located at field strength maxima. In the Gold Bridge area, one may assume that a Seattle field strength peak represents a conductor with a generally north trend, and a Annapolis peak will be a conductor with an east-west trend. This, of course, only applies to conductors with clearly linear trends and cannot be assumed for single line anomalies.

It is impossible to determine the quality of conductors with any reliability, using field strength data alone. The question of linearity is in doubt if the conductor does not appear to cross the adjacent flight lines. The relatively high frequency results in a multitude of anomalies from unwanted sources such as swamps, creeks and cultural debris. However, the same characteristic also results in the detection of poor conductors such as faults, shear zones, and rock contacts, making the VLF-EM a powerful mapping tool.

The interpretive technique requires information from magnetic surveys, air photo analyses, and ground traverses to aid in discrimination between important and unwanted anomalies. Even armed with this information the interpreter can easily be misled.

## SURVEY PROCEDURES

A two meter bird was fitted with a magnetometer coil and 2 omni-directional EM receivers and towed beneath the helicopter on a 10 meter cable. The terrain clearance for the bird was 50 m.

The surveys were contour flown at a line spacing varying from 100 to 200 m. Navigation was visual, using 1:50,000 scale maps blown up to 1:10,000.

The aircraft used to conduct this survey was a Bell 206 Jet Ranger, owned and operated by Bob Holt. Airspeed was a constant 60 kph so that creek valleys and canyons were penetrated thoroughly. The slow airspeed provided safely, detailed coverage of boxed-in areas, and consistency of data retrieval, which is critical in rugged terrain.

The number of line km flown covering the area as shown on Map 3 is 53.9.

I have over 7 years of experience in conducting aerial magnetic and electro-magnetic surveys from fixed and rotary wing aircraft, under all types of terrain conditions.

## DATA REDUCTION AND COMPILATION

The observant magnetic total field was recorded on analogue strip charts. These were played back together with audio recordings containing fiducial markers, and the fiducial markers were transferred to the strip charts. The fiducial markers were identified with topographic features along the flight lines.

The magnetic data were taken from the strip charts and plotted. It was then contoured at a 100 gamma interval onto Map 3 at a scale of 1:10,000 (1 cm = 100 M).

The VLF-EM anomalies were taken from the strip charts and plotted on Map 3 with the magnetic contours. For each anomaly, a heavy line along the flight line was drawn showing its half-width. An 'S' or an 'A' designated the anomaly as being from the Seattle transmitter or the Annapolis transmitter.

A question mark on the anomaly indicates that it could be caused by terrain. The survey area was somewhat rugged causing numerous VLF-EM anomalous responses most of which was easily sorted out as being caused by terrain. However, some were difficult to sort out and they were therefore plotted with a question mark.

Strong anomalies were plotted with exclamation marks, and anomalies without any marks indicated average responses. Other symbols are explained on the sheets.

#### DISCUSSION OF RESULTS

##### a.) Magnetics

The magnetic field over the entire survey area is relatively quiet. The field ranges from a low of 800 gammas on the Minto Ext claim on the south eastern edge of the survey area to 1,900 gammas just off the western edge of the Minto Ext. #1 claim. The background for the survey would appear to be 1,100-1,200 gammas.

The magnetic anomalies of less than 1,200 gammas correlate closely with the undivided sediments and volcanics of the Bridge River (Fergusson) Group, with the higher values most likely reflecting the volcanic segments within this group.

Areas with a magnetic amplitude of greater than 1,200 gammas is most likely reflecting basaltic and porphyritic dykes and sills which are known to intrude the Bridge River Group. This phenomenon occurs at the south western corner of the survey area where the highest magnetic values are observed.

There are several other areas of magnetic disturbances, although of lower



amplitude, within the survey area. These are possibly reflecting prophyritic dykes and sills which have not fully intruded the Bridge River Group rocks.

Magnetic lows often occur along creek valleys, and/or areas of low topography. The reasons for this are as follows:

1. Valleys almost always contain deeper overburden which means the detecting element is further from the bedrock causing the magnetic field.
2. If the survey is flown across the valley or gully, then the detecting element is also further from the bedrock.
3. Gullies and valleys are often caused by faults and shear zones which are often reflected by magnetic lows.

b.) VLF-EM

The major cause of VLF-EM anomalies, as a rule are geologic structure such as fault, shear and breccia zones. It is therefore logical to interpret VLF-EM anomalies to likely be caused by these structural zones. Of course, sulphides may also be a causative source. But, in the writer's experience, when VLF-EM anomalies correlate with sulphide mineralization, the anomalies are usually reflecting the structure associated with the mineralization rather than the mineralization itself.

There is some variation in intensity from one VLF-EM anomaly to the next. This is not only due to the conductivity of a causative source, but also the direction it strikes relative to the direction to the transmitter. In other words, those conductors lying close to the same direction as the direction of the transmitter can be picked up easier than those that are lying at a greater angle. Depending upon it's conductivity, a conductor may not be picked up at all if it is at too great an angle.

A number of VLF-EM conductors (or anomalies) occur throughout the survey area. These have been labeled. There are a total of 7 main conductive zones with numerous single line anomalies. The zones are labeled on Fig. 3 using lower case letters 'a' to 'g' respectively.

Conductor 'a' is drawn with dashed lines. This occurs simply because the conductor was not picked up on all the flight lines. In other words, whenever there is a space within the line marking an axis of a conductor is where a flight line did not respond to the conductor.

As mentioned above, any VLF-EM conductor is indicative of geological structure. However, the longer conductors are much more indicative. These include conductors 'a' and 'g' where lengths vary from 1,200 to over 3,000 meters respectively. As previously mentioned, any parts of these anomalies could be reflecting structure.

Conductor 'a' is the longest and strongest VLF anomaly within the survey area. It has an axis length, open at both ends, of over 3,000 meters. This generally north striking conductor is most likely reflecting a cross fault related to the main Carpenter Lake fault and Tyaughton Creek fault. Its variable strike illustrates the complex tectonic deformation within the claims.

Conductor 'b' is a "boomerang" shaped anomaly occurring within the Bridge River Group units. It is a weak conductor with a north to northeast strike length of 600 meters.

Conductor 'c' is a strong conductor occurring on the northern claim line of the Minto Ext., within an area of relatively active magnetics. This conductor is most likely reflecting a northeast running fault/shear zone associated with a porphyritic dyke or sill.

Conductor 'd' is a strong conductor occurring over a steep north/south flowing channel on the southern edge of the survey. It is most likely caused by a fault or shear.

Conductor 'e' is located immediately to the west of conductor 'd'. It also occurs over a steep north/south flowing creek bed and is most likely reflecting a fault or shear zone.

Conductor 'f' is a strong conductor occurring along the contact as defined by aeromagnetics between the Bridge River Group and a porphyry intrusive. This conductor should further investigated as it may be reflecting mineralization associated with a shear/fault and the intrusive stock.

Conductor 'g' is of major exploration interest as it again may be reflecting a mineralized shear zone associated with the intrusive stock. It is a strong northerly trending anomaly with an axis length of 1,300 meters.

There are some single line anomalies within the property, any of which could easily be reflecting bedrock conductors associated with mineralization. For each anomaly, the strike of the causative source is unknown.

#### LINEATIONS

Lineal trends considered to be indicative of geological structure have been drawn on Map 3, taking into account:


- i) Magnetic lows which are often caused by the magnetite within the rocks being altered by geological structural processes.
- ii) VLF-EM anomalies which more often than not are reflecting structure.
- iii) Topographic depressions such as creek valleys which are usually caused by structure.

Several lineations that are indicative of faults and contacts have been

mapped across the property striking in different directions. Some or parts of the lineations correlated directly with known lithologic contacts and/or faults.

The lineations cross each other on the property in different areas. Structure is often important for the emplacement of mineralizing fluid especially where lineations cross or intersect. Thus, these areas may have greater exploration interest.

Respectfully submitted,



---

LLOYD C. BREWER  
PRESIDENT

COLUMBIA AIRBORNE GEOPHYSICAL  
SERVICES (1984) LTD.

October 20, 1988

BIBLIOGRAPHY

B.C. Ministry of Energy, Mines and Petroleum Resources; Property Report on the Minto Property, April 1986, prepared for Avino Mines and Resources Ltd., Assessment Report 13807.

British Columbia Mineral Exploration Review 1985, Information Circular 1988-1.

Cairnes, C.E. (1937): Geology and Mineral Deposits of the Bridge River Mining Camp, British Columbia, Geological Survey of Canada, Memoir 213, 140pp.

Church, B.N. (1986 a): Geology and Mineralization of the Bridge River Mining Camp (92J/15, 920/2, 92J/10), B.C. Ministry of Energy, Mines and Petroleum Resources, Geological Fieldwork, pp 23-29.

Church, B.N. (1986 b): The Pacific Eastern Gold Prospect Pioneer Extension Property, Lillooet Mining Division, (92J/15), B.C. Ministry of Energy, Mines and Petroleum Resources, Geological Fieldwork, pp 31-33.

Geological survey of Canada, Summary Report for the year 1912.

Ivosevic, Stanley, Gold and Silver Handbook: On the Geology, Exploration, Production, Economics of Large Tonnage, Low Grade Deposits. 1984.

Levinson, A.A. (editor) Precious Metals in the Northern Cordillera, 1982; Published by the Association of Exploration Geochemists.

McCann, W.S., Geology and Mineral Deposits of the Bridge River Map-area, British Columbia, 1922; memoir 130, Geological Survey of Canada.

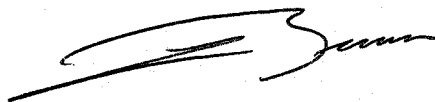
CERTIFICATION

I, Lloyd C. Brewer, of the city of Vancouver, in the Province of British Columbia, Canada, do hereby certify:

That I am owner and president of Columbia Airborne Geophysical Services (1984) Ltd., with offices located at #611-470 Granville Street, Vancouver, B.C.

I further certify:

1. I am president of Columbia Airborne Geophysical Services (1984) Ltd., and have been employed full time in the mineral exploration industry for the past 7 years, in Canada, United States and Mexico.
2. I was project manager and instrument operator for the Levon Group property aerial survey program, which covered over 1,800 lkm.
3. This report was compiled from data obtained from the airborne survey carried out by Columbia Airborne Geophysical Services (1984) Ltd., under my direct supervision, during December 1987 and January 1988.



LLOYD C. BREWER  
PRESIDENT

October 20, 1988

AFFADAVIT OF COSTS

I, Lloyd C. Brewer, president of Columbia Airborne Geophysical Services Ltd., certify that the airborne magnetic and VLF-EM surveys were flown in January, 1988 and that they were flown at cost of \$100.00/km, the total number of km being 53.9 to give a total cost of \$5,390.00.

Respectfully submitted,

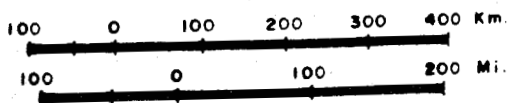
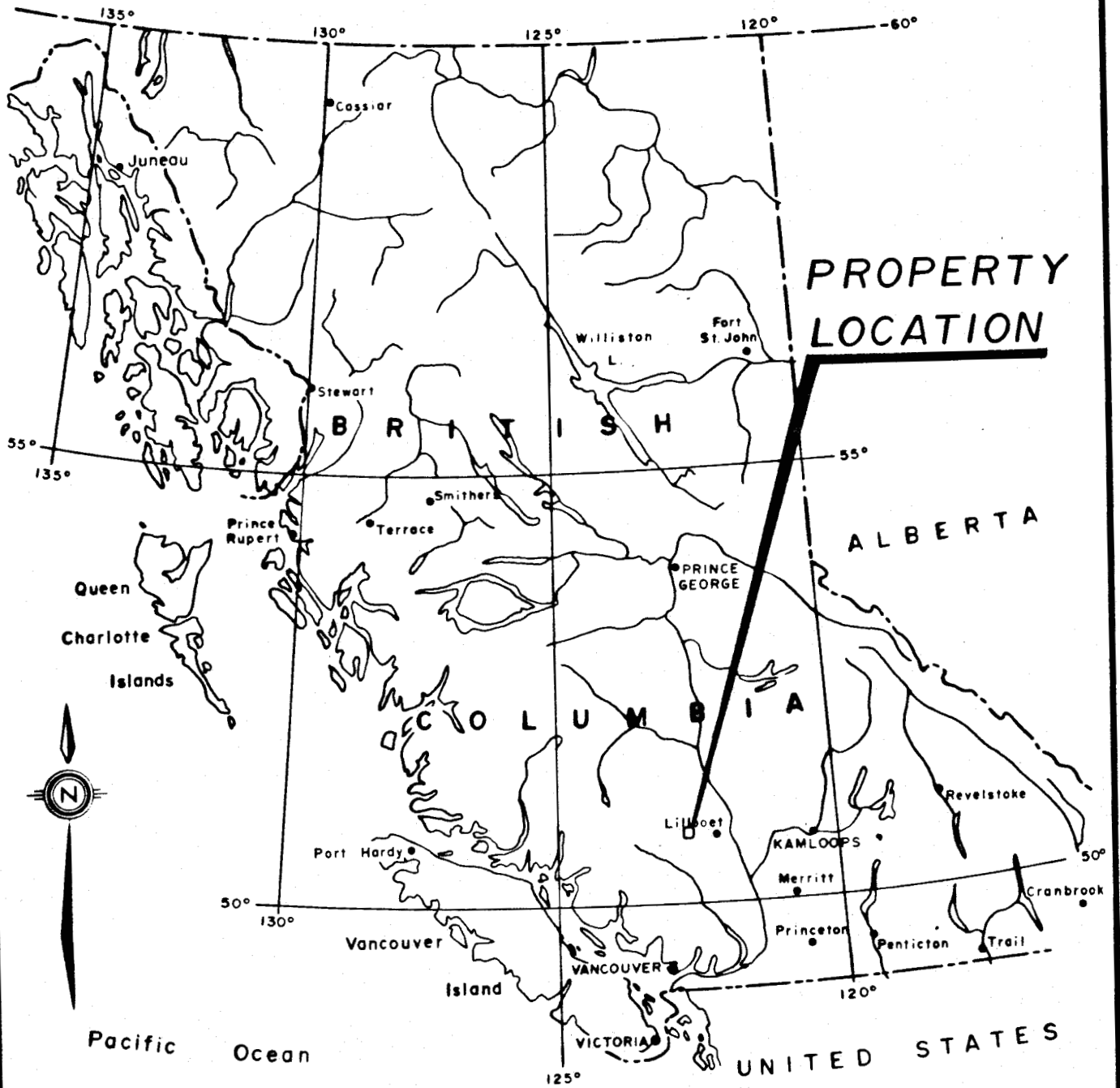


---

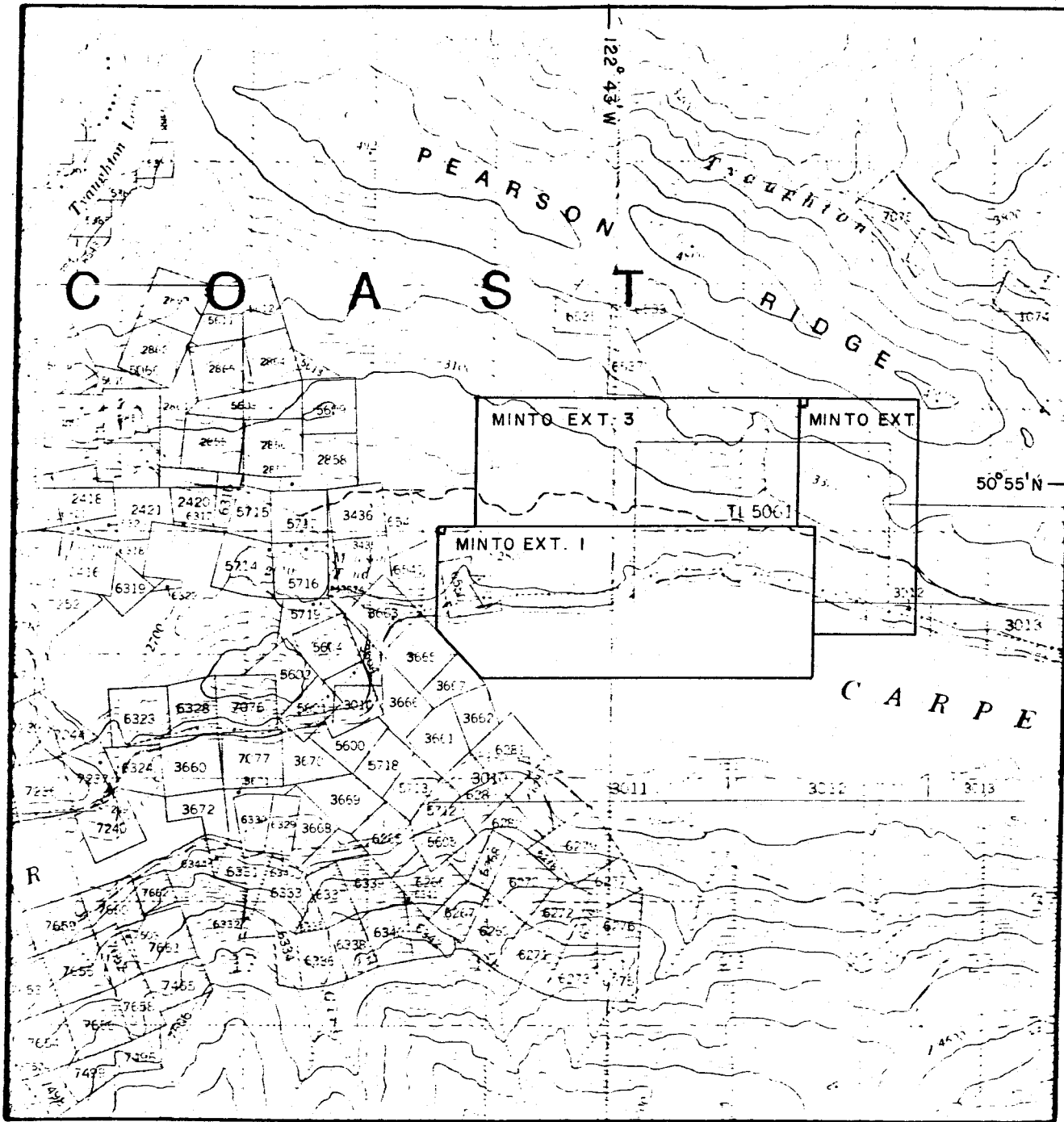
LLOYD C. BREWER  
PRESIDENT

COLUMBIA AIRBORNE GEOPHYSICAL  
SERVICES (1984) LTD.

October 20, 1988







KILOMETRES

AVINO MINES LTD.

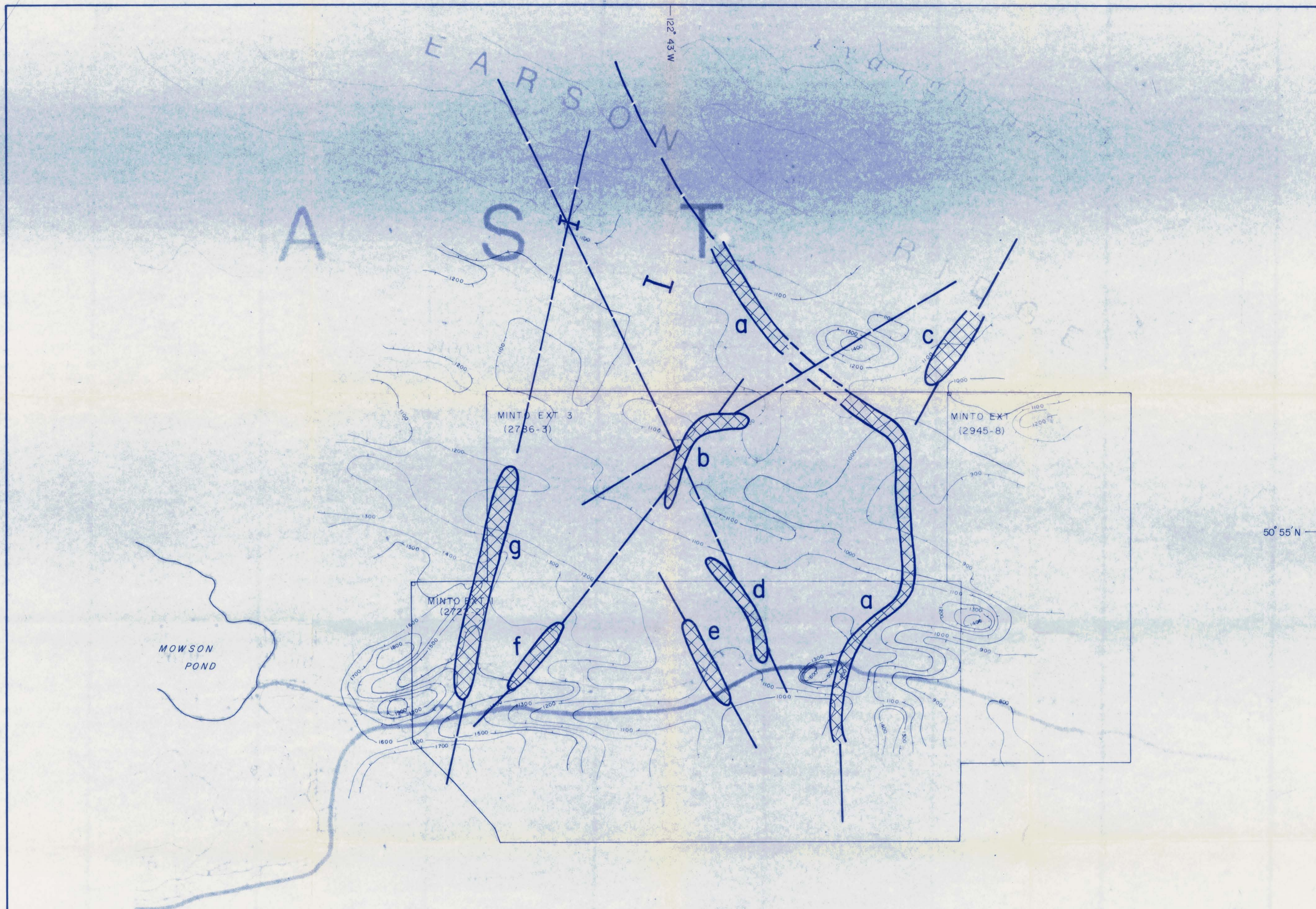
MINTO EXT. CLAIMS

TYAUGHTON CREEK, CARPENTER LAKE  
AREA

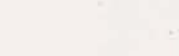





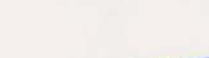





LILLOOET MD. BC.

CLAIM MAP

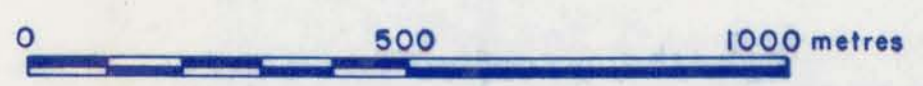
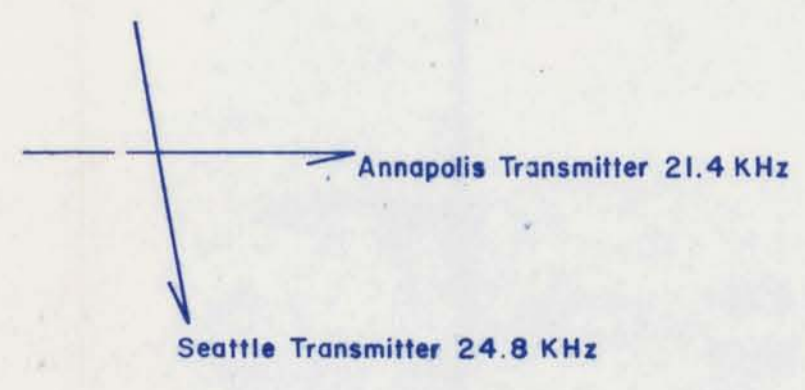
N.T.S. 92J/15E 1:50 000 MARCH/88 BY KC



**LEGEND**

-  PROPERTY BOUNDARY
  -  LEGAL CORNER POST
  -  FLIGHT LINES-WITH FIDUCIAL MARKERS
  -  VLF-EM SINGLE LINE CONDUCTOR
  -  MAGNETIC ANOMALY (reference to text)
  -  VLF CONDUCTOR (reference to text)
  -  GEOLOGICAL BOUNDARIES AS DEFINED BY AEROMAGNETICS
  -  LINEATION PRODUCED FROM MAGNETIC VLF-EM RESULTS. (suggesting geological structure)
  -  VLF-EM CONDUCTIVE ZONE
  -  100 gamma CONTOURS
  -  500 gamma CONTOURS
  -  MAGNETIC DEPRESSION
- NOTE: MAGNETIC BASE = 54,600 gammas

VLF-EM TRANSMITTER DIRECTION



SURVEY CARRIED OUT BY: COLUMBIA AIRBORNE GEOPHYSICAL SERVICES (1984) LTD.

GEOLOGICAL BRANCH  
ASSESSMENT REPORT

18,277

FIG. 4

AVINO MINES LTD.
MINTO EXT. CLAIMS
TYAUGHTON CREEK, CARPENTER LAKE
LILLOOET M.D. B.C.
AIRBORNE SURVEY
<b>VLF-EM ANOMALIES</b>
SCALE 1:10 000 NTS. 92 J/15E DATE: DEC., 1988



**LEGEND**

- PROPERTY BOUNDARY
- LEGAL CORNER POST
- FLIGHT LINES - WITH FIDUCIAL MARKERS

- 100 gamma CONTOURS
- 500 gamma CONTOURS
- MAGNETIC DEPRESSION

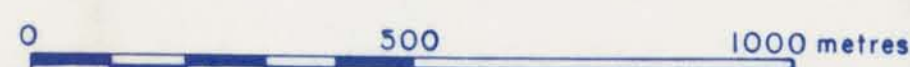
NOTE: MAGNETIC BASE = 54,600 gammas

GEOLOGICAL BRANCH  
ASSESSMENT REPORT

18,277

FIG. 3

AVINO MINES LTD.
MINTO EXT. CLAIMS
TYAUGHTON CREEK, CARPENTER LAKE
LILLOOET MD. B.C.
AIRBORNE SURVEY
MAGNETOMETER CONTOURS
SCALE 1:10,000 NTS 92-J/15E DATE DEC. 1988



SURVEY CARRIED OUT BY COLUMBIA AIRBORNE GEOPHYSICAL SERVICES (1984) LTD.