GEOPHYSICAL REPORT

on an

AIRBORNE MAGNETIC SURVEY

on the

TAGETOCHLAIN LAKE PROPERTIES

of

GOLD RIVER MINES LTD

and

DUAL RESOURCES LTD. (GROUP II CLAIMS)

OMINECA M.D., B.C.

with results of soil geochemistry road sampling

LOCATION: Southeast end of Tagetochlain Lake, and 50 kms (31 miles) S20W of Houston, B.C.

: 53° 126° NW

: NTS - 93E/15W

Written for:

GOLD RIVER MINES LTD and

DUAL RESOURCES LTD Vancouver, B.C.

David G. Mark

GEOTRONICS SURVEYS LTD

307-475 Howe Street,

Vancouver, B.C.

date: April 6, 1977

MINERAL RESOURCES BRANCH **ASSESSMENT REPORT**

by:



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2 AIRBORNE MAGNETIC SURVEY
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SUMMARY

An airborne magnetic survey was carried out over the Tagetochlain (Poplar) Lake properties of Gold River Mines Ltd and Dual Resources Ltd (Group II Claims). The properties are located at the southeastern end of Tagetochlain Lake, 50 kilometers S20W of the town of Houston, British Columbia. Access is gained by the Houston-Tahtsa Lake road which runs southwesterly through the center of the properties. The terrain varies from flat and swamp-like within the center of the properties, to moderately steep in other areas. The object of the magnetic survey was to assist in mapping the geology.

Prior to the survey, the only work done on the property was soil sampling along the roads at tenth-mile intervals. This is discussed in the report as well.

The property is underlain by Hazelton sediments and volcanics which have been intruded by acidic to intermediate intrusives. Mineralization on the Utah property is mainly pyrite, chalcopyrite, and molybdenite occurring as fracture-fillings and disseminations within Hazelton argillites. Though neither the Gold River property nor the Dual property have been geologically mapped, some mineralization has been found.

The instruments used for the survey were an Elsec nuclear free precession magnetometer connected to an analog recorder. The survey was flown from a helicopter at a terrain clearance of 45 meters (150 feet) and a line spacing of 175 to 225 meters. The magnetic data was taken off the strip charts, plotted and contoured.

CONCLUSIONS

- As for the survey over the Group I claims, the aeromagnetic survey was fairly successful in mapping the intrusives as well as probable fault zones. However, it appears no previously unknown intrusives were discovered. Unless deep overburden is masking some intrusives, most of the survey area is underlain by the Hazelton rocks.
- The soil geochemistry survey along the roads, as mentioned in the previous report, is quite limited. However, it did pick up four anomalous zones within the southern survey area, two of which are considered quite strong (Zones 5 and 7).
- The Joey, Jackie and Inn claims are considered to be of strong economic interest largely because of the anomalous soil zones occurring within their boundaries.

RECOMMENDATIONS

- 1. The property should be geologically mapped in detail with strong emphasis on the Joey, Jackie and Inn claims.
- 2. The four soil geochemistry anomalies should be checked by detailed soil geochemistry surveys with the whole area of the Joey, Jackie and Inn claims being totally covered.
- 3. Unless the above exploration methods turn out very negative results, the Joey, Jackie and Inn claims should be surveyed by the induced polarization method. This method worked well on the Utah property.

 Dependent upon further results, other areas may warrant the IP method as well.
- 4. Parts of the property could be underlain by deep overburden. If exploration interest is shown in any of these areas, they should be checked by seismic refraction for overburden depth to determine whether they are feasible for exploration.

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INTRODUCTION AND GENERAL REMARKS

This report discusses the procedure, compilation and interpretation of an airborne magnetometer survey carried out over the Tagetochlain Lake properties of Gold River Mines Ltd and Dual Resources Ltd. Included in the report also are the results of soil sampling carried out along the roads during July, 1976. This report follows one dated December 8, 1976 on a combined airborne magnetic and VLF-EM survey over the Group I claims of Dual Resources Ltd.

The airborne survey was carried out by Thomas Rolston, who acted as both instrument operator and navigator. The total number of kilometers flown was 365.

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Airborne VLF-EM (very low frequency electromagnetic) data was also picked up but was inadvertently destroyed. It is intended to refly the VLF-EM survey at a later date.

The soil sampling was also carried out by Thomas Rolston. A total of 284 samples were picked up, but only 221 are shown on Figure 7. The remainder occur out of the map area on the Group I claims of Dual Resources Ltd.

The purpose of the airborne magnetic survey was to help map the geology of the claims area with the ultimate purpose being the delineation of areas of greater potential for copper sulphide deposits, especially like that of the adjoining copper deposit of Utah's.

Airborne surveys were considered particularly useful in this case since the properties cover such a wide area and since much of the properties are underlain by Quaternary overburden deposits.

The soil sampling was carried out along the roads as it was considered an inexpensive way to have a quick look (although not complete) at the properties.

The samples were tested for copper and molybdenum, the sulphides of which are found on the adjoining Utah property. Silver was also tested for, since much silver occurs in the general area.

Other than the interpretation, the information in this report is much the same as that in the previous report and is only repeated for the benefit of the reader.

PROPERTY AND OWNERSHIP

The Dual property consists of 17 claims staked under the modified grid system, totalling 289 units. The claims are found in two blocks of ten and seven claims each, respectively, as shown on Figure 2. They are as follows:

Claim Name	Units	Record No.	Recording date
GROUP I			
Dilys	20	186	November 10, 1975
Aspen	20	262	May 6, 1976
Peter	16	263	May 6, 1976
Mike	16	264	May 6, 1976
Joe	16	265	May 6, 1976
Mary-R	20	266	May 6, 1976
Duck	20	267	May 6, 1976
Mary-O	20	268	May 6, 1976
Mary-C	15	300	May 26, 1976
Sheila	8	301	May 26, 1976
GROUP II			
Tom	4	234	February 11, 1976
Ross	18	295	May 26, 1976
Ian	20	296	May 26, 1976
Vali	20	297	May 26, 1976
Blain	20	345	July 12, 1976
Joey	20	346	July 12, 1976
Jackie	16	347	July 12, 1976

The survey under discussion covers only the Group II claims. All claims are held by Dual Resources Ltd, of Vancouver, British Columbia.

The Gold River property, also as shown on Figure 2, is sandwiched in between Dual's Group I and Group II claims. It consists of 3 claims, staked under the modified grid system, with a total of 60 units, described as follows:

Claim Name	Units	Record No.	Recording date
Taga	20	232	Feb 13/77
Tush	20	233	Feb 13/77
Lain	20	235	Feb 13/77

LOCATION AND ACCESS

The properties are found at the southeast end of the Utah property and Tagetochlain Lake, as well as the east end of Hill-Tout Lake. The center is located about 50 kilometers (31 miles) by air S20W of the town of Houston, B.C.

The geographical coordinates are 53° 56'N latitude and 126° 56'W longitude.

Access is gained by the Houston-Tahtsa Lake gravel road which runs southwesterly through the two properties. The claims are about 80 kilometers (49 miles) along this road from Houston.

PHYSIOGRAPHY

The Gold River and Dual properties are found within the physiographic unit known as the Nechako Plateau, which is the northern part of the Interior Plateau. The Nechako Plateau is an area of low relief with great expanses of flat or gently rolling country. The plateau surface lies between 3,000 and 5,000 feet elevation.

The plateau was occupied by ice, which, in moving across it, marked the surface with thousands of grooves and drumlin-like ridges which are parallel to the ice flow. Numerous depressions left on the plateau surface after the ice retreat are now occupied by myriads of lakes. Glacial drift is widespread and a high percentage of bedrock is obscured.

Much of the two properties are found within the Nadina River valley, with the elevation varying from 2,700 feet to 3,100 feet a.s.l. Parts of the property reach higher elevations such as 3,600 feet within the center part of the Duck claim, 3,800 feet on the western edge of the Mary-O claim, and 3,700 feet on the northern edge of the Dilys and Aspen claims. The Ross claim is found at the southeastern end of a southeastern-trending ridge where the elevation reaches 3,800 feet.

Water is plentiful in the area from Tagetochlain Lake, Duck Lake, Hill-Tout Lake and Nadina River, as well as numerous small lakes, swamps and streams.

The area is moderately forested with fir, spruce, and poplar with the underbrush being minor. Large areas are covered by grassland. Also swamp-type vegetation occurs over much of the lower areas.

HISTORY OF PREVIOUS WORK

As the claims are presented staked, no previous work of any type has been carried out. Work on the adjoining Utah property has consisted of soil geochemistry; magnetic, induced polarization and electromagnetic surveying; trenching; geological mapping, and diamond drilling.

GEOLOGY

As neither the Gold River property nor the Dual property have been geologically mapped, much of the following information has been taken from Utah's assessment reports.

1. LITHOLOGY:

The oldest rocks of the area are those of the Jurassic Hazelton assemblage and are composed of both volcanic and sedimentary rocks. The Utah geologists on their property have subdivided this group into three units. The lower volcanic unit, exposed in the northwest part of their property, consists of andesitic tuff and lapilli tuff, agglomerates, and andesite-dacite flows, mostly porphyritic in feldspar. A middle sedimentary unit outcrops in the south-central portion of their property, and is comprised mainly of wellbanded horn-felsed argillites, with occasional interbeds of sandstone. The argillites, which contain much of the mineralization, are overlain by a conglomerate. An upper volcanic unit, in the southeastern part of their property, is comprised predominantly of purple andesites, porphyritic in feldspar, and minor agglomerates. The Hazelton rocks in this area strike 060 degrees and dip 75 degrees to the southeast. Most of the Dual property is probably underlain by Hazelton rocks.

Intruding into the Hazelton rocks are granodiorites, quartz diorites, diorites and granites of Upper Jurassic (?) and Later age. On the Utah property, four different stocks occur that are in general a feldspar porphyritic granodiorite. On the Dual property, Frank Onucki, who has prospected throughout the area, recognized at least three different intrusive rock-types. The intrusive occurring on the Duck Claim is apparently a microgranite that is similar to the microdiorite on the Nadina property five miles to the north-north-In the southwestern corner of the Mary-O claim, on the north side of the road, is an outcrop of coarse granite that apparently carries some chalcopyrite and pyrite, and in the northern part of the Dilys and Aspen claims on the southern end of Poplar Mountain, are outcrops of porphyritic monzonite. No mineralization has been recognized in this rock type.

A few kilometers to the east and southeast of the Dual property, are outcrops of the Upper Cretaceous to Oligocene Ootsa Lake Group. This group is composed of rhyolite, dacite, andesite, basalt, associated tuffs and breccias, minor conglomerates, sandstone and coal.

A number of kilometers to the east of the Sheila claim are outcroppings of Oligocene or Later basalts and tuffs.

There are basically four types of dykes that have been mapped on the Utah property. 1) Fine-grained dense andesite and basalt dykes crosscut, in a northeast and northwest direction, volcanic flows and agglomerates of the upper volcanic unit. 2) a hornblende diorite dyke with parallel strike and concordant dip intrudes the argillites.

3) Biotite feldspar porphyry dykes were found to strike north-northwest. 4) Two phases, a quartz feldspar porphyry and a rhyodacite porphyry, of a late, barren dyke system parallel the major north-northwest structure.

2. STRUCTURE:

The writer has interpretted lineations striking in a northnorthwest, northwest, northeast and east-west direction from the Government aeromagnetic maps of the area. On the Utah property, dominant faults and shears as well as dykes and stocks, have been found to strike in these directions.

3. ALTERATION:

A large alteration feature on the Utah property is a moderate to intense zone of sericitization and silicification giving a mineral assemblage of quartz-sericite-pyrite. Propyllization (alteration of mafics to chlorite-epidote) is also widespread.

4. MINERALIZATION:

On the Utah property, by far the most widespread sulphide, is pyrite, where it occurs related to the quartz-sericite alteration and increases in content adjacent to shears, faults and strong fracture sets. Also pyrite, chalcopyrite, and minor molybdenite occur as disseminations and fracture-fillings associated with quartz veining within altered argillite (quartz-sericite). Secondary copper minerals include malachite, azurite and tenorite. A third type of mineral occurrence is chalcopyrite occurring mainly as fracture-fillings associated with quartz in biotite porphyry.

The mineralization appears to be related to the dykes in that the better mineralization occurs in areas of greater concentrations of dykes.

On the Dual property, sulphide mineralization has been found on the Dilys claim where trenches have been dug (shown on Figure 6). The writer does not know how the mineralization occurs.

5. THE NADINA SILVER QUEEN PROPERTY:

The writer feels this property should be mentioned since it occurs on the east side of Owen Lake, which is only a few kilometers to the northeast of the Duck and Sheila claims.

Much of the property is underlain by the Tip Top andesite which consists of brown porphyritic lavas and pyroclastic beds. These are intruded by the Mine Hill microdiorite which is sill-like in form. The mineralization occurs in fissure-filling veins which have a vuggy structure and a colloform banding of the ore minerals and gangue. The main and most important vein system occurs in the microdiorite sill. Other vein systems occur in the Tip Top andesite. The main minerals are pyrite, sphalerite, chalcopyrite, galena, tennantite, and specularitic hematite, with values in silver and gold. The gangue constituents are cherty quartz, carbonate minerals such as rhodochrosite and siderite, and some barite.

SOIL GEOCHEMISTRY

A. SURVEY PROCEDURE:

The samples were picked up every tenth of a mile (160 meters) by a vehicle speedometer along all the roads throughout the property. They were dug with a mattock to such a depth that the B horizon was sampled. The samples were placed in brown wet-strength paper bags with the sample identification number being marked thereon.

B. TESTING PROCEDURE:

All samples were tested by Acme Analytical Laboratories of Burnaby, B.C. The sample is first thoroughly dried and then sifted through an -80 mesh screen. For copper, 1 gram of the sifted material is then put into a test tube with subsequent measured additions of a solution of perchloric and nitric acid. This mixture is next heated for a certain length of time. The parts per million (ppm) copper (or molybdenum, or silver) is then measured by atomic absorption.

C. TREATMENT OF DATA:

The values in ppm copper were grouped into logarithmic intervals of 0.10. The cumulative frequency for each interval was then calculated and then plotted against the correlating intervals to obtain the logarithmic cumulative frequency graph as shown on Figure 3.

The coefficient of deviation, indicative of the range or spread of values, was calculated to be 0.18 a somewhat low figure. Therefore, the range of values is rather narrow. This statistical parameter is indicative of how well the element has been mechanically or chemically dispersed. Considering the lower than average value, one could then say dispersion rate is rather low.

The graph for copper shows the mean background value to be about 17 ppm taken at the 50% level. The sub-anomalous threshold value (a term used by the writer to denote the minimum value that is not considered anomalous but still important as an indicator of mineralization), is taken at one standard deviation from the mean background value which is at the 16% level and is in this case 26 ppm.

The anomalous threshold value is two standard deviations away at the 2 1/2% level and is on this property 39 ppm.

The graph shows a break at the 34% and the 3% levels, which therefore indicates that there is an excess of high copper values in this area. This is usually the case where copper sulphide mineralization occurs.

Because of the narrow range of data in each case, the silver and molybdenum values were not statistically analyzed for threshold values. Rather, by "eyeballing" 0.2 ppm was considered anomalous for silver, and 3 ppm anomalous for molybdenum.

The values were plotted on Figure 8 which has a scale of 1 cm to 100 meters. As mentioned in the Introduction, only 221 of the samples were taken in the map area. The anomalous values are colour-coded as shown.

D. DISCUSSION OF RESULTS:

Anomalous zones 1 to 4 occur on the Dual Group I claims, and were discussed in the writer's previous report.

Anomalous Zone 5 is by far the most interesting soil anomaly on the property. It occurs on the Joey Claim, extends off of the western edge and is open to the west. It consists of 24 anomalous copper values varying up to 425 ppm, and over a length of 2.6 miles. Ten of these samples are also anomalous in molybdenum reaching a high of 14 ppm. Two are anomalous in silver at 0.3 ppm.

This zone occurs close to an intrusive where apparently copper and iron sulphides are found.

Zone No. 6 occurs on the Jackie and Inn Claims from sample No. 55.6 to 56.9, a distance of 1.3 miles. It consists of 12 samples anomalous (3) and sub-anomalous (9) in copper (26 to 46 ppm). Two of the samples are anomalous in silver at 0.3 ppm, and 2, anomalous in molybdenum at 3 ppm.

Anomalous Zone 7 occurs at the south end of the Jackie Claim with most of it being off of the claim. It consists of 13 sub-anomalous and anomalous copper values ranging up to 120 ppm. Six of the values are anomalous in silver, reaching a high of 3.1 ppm. Three are anomalous in molybdenum at 3 ppm each. The length of the zone is 1.5 miles and open to the south.

Zone 8 consists of 5 sub-anomalous values in copper over 0.6 miles on the border of the Tush and Inn claims. The values range from 27 to 37 ppm copper.

AIRBORNE MAGNETIC SURVEY

A. INSTRUMENTATION AND THEORY:

The magnetic data was detected using an ELSEC nuclear free precession magnetometer, type 592. This measures the absolute value of the earth's magnetic field intensity. The sensitivity is 1 gamma and the absolute calibration is governed by a crystal-controlled oscillator so that it cannot drift. Data was then recorded on a Bausch and Lomb 6" strip chart recorder.

Only two commonly occurring minerals are strongly magnetic; magnetite and pyrrhotite. Hence, magnetic surveys, both ground and airborne, are used to detect the presence of these minerals in varying concentrations. Magnetic data are also useful as a reconnaissance tool for mapping geologic lithology and structure since different rock types have different background amounts of magnetite and/or pyrrhotite.

B. SURVEY PROCEDURE:

A Bell G-2 helicopter was used to fly the survey. The survey was carried out by following pre-established lines on blown-up topographic maps of the area. Lines were 175 to 225 meters apart, and flown in an east-west direction. The terrain clearance was kept at approximately 45 meters. Tie points were made over prominent topographic features, were numbered, recorded and plotted on the maps.

The magnetic readings were taken with the magnetometer set on a 1.7 second recycling period which, considering the helicopter speed, corresponds to readings taken at intervals of about 45 meters.

C. COMPILATION OF DATA:

1. Magnetic Survey

A base map was prepared at a scale of 1 cm to 100 meters with the topographic features, flight lines and tie points. The magnetic data was then picked from the strip charts and placed on a copy of this base map with the values spaced 100 meters apart (Figure 4). 54,600 gammas was subtracted from each value for ease of handling so that 2,650 gammas, for example, actually reads 57,250 gammas total field.

On a second copy of the base map, the magnetic data was contoured at an interval of 100 gammas (Figure 5). The 2,400-gamma contour was felt to be close to the mean background level and therefore it was drawn in heavily. The contours below this value were drawn in lightly, and the contours above were drawn in slightly heavier (than the below 2,400-gamma contours).

D. DISCUSSION OF RESULTS

The writer carried out an interpretation of the government aeromagnetic data several months ago, some of which is shown on Figure 2. Though several lineations resulted, it was difficult to map the lithology, at least from the information available from the GSC geology maps for the area. However, more geological information has become available to the writer, some of it being the Utah's assessment reports. Also the writer is indebted to Frank Onucki for his geological knowledge of the area.

There is very good greement between the Gold River-Dual aeromagnetic survey and that of the Government. However, since the Gold Rive -Dual survey was flown at 45 meters terrain clearance a d the government's at 300 meters, the former is much more detailed. Features can be picked off of this survey that cannot be picked off of the Government map.

By correlating with the GSC geology map and from discussions with Onucki, the a romagnetic highs apparently reflect intrusives. In his previous report, the writer was unsure whether the intrus was were reflected by the 2500- or 2600-gamma contour. From the results of this survey, the writer feels it is the 2,000-gamma contour.

There are three magnetic highs that occur within the survey area. The most prominent one is that which occurs across the boundary of the Ross and Blain claims and strikes northwesterly off of the claims area.

The anomaly is 1,400 meters wide and seems to occur on the southern half or two-thirds of a northwesterly-striking hill. The anomaly reaches an intensity of over 3,200 gammas (57,800 gammas absolute).

This anomaly correlates very well with one on the government aeromagnetic map, and with an acidic intrusive of Upper Jurassic or Later (?) Age mapped by the Geological Survey of Canada. According to Frank Onucki, the rock-type is coarse granite and very barren of sulphides.

A second anomalous high occurs 500 meters to the west of the Blain Claim. It reaches an intensity of 2,900 gammas, appears to strike westerly, and is 400 meters wide by 1,100 meters long with it being open to the west. The rock type also according to Onucki is a quartz biotite feldspar porphyry. Apparently iron and copper sulphides are found throughout the intrusive. Zone 5 geochemical anomaly is located a few hundred meters to the southeast.

The third high is also westerly striking and occurs on the Lain Claim and to the south of the Peter, Mike, and Joe claims. Its dimensions are 800 meters wide by 5,300 meters long with the possibility of being open to the east. It also reaches an intensity of 2,900 gammas, but with a lower gradient than the other two anomalies. This could be due to the causitive source being at a greater depth.

This anomaly correlates with an acid intrusive that the GSC has mapped striking in a northeasterly direction. A north-

east-striking lineation truncates the western edge of the anomaly indicating the intrusive may have been displaced by a fault.

An area of "thumbprint" type anomalous lows occur in the southern part of the survey area from lines 69 to 75 and south of the survey area. This type of magnetic pattern is typical of Tertiary volcanics but the magnetic intensity of Tertiary volcanics is commonly higher than that of the surrounding rock-types. It is also unusual that the zone as a whole parallels the east-west flight lines. However, an east-west government aeromagnetic low is also found in this area.

A broad west-to northwest-striking magnetic low occurs in the center of the Ross, Taga, Tush and Lain claims. It may be a reflection of the sedimentary member of the Hazelton assemblage or possibly deeper overburden.

The rest of the survey area is devoid of any significant magnetic highs or lows. The magnetic expression, in other words, is fairly flat with the values varying little from the background value of 2,400 gammas. As for the abovementioned magnetic low, this is indicative of either deep overburden, which is entirely possible considering the relatively flat terrain, or sedimentary or non-magnetic volcanics of the Hazelton group.

Four magnetic lineations have been drawn on the magnetic contour map with Onucki's assistance and with the help of the government aeromagnetic map. Aeromagnetic lineations for the most part are a result of major faults, but could also be a result of lithological contacts. The lineations strike west, west to northwest, northeast, and north, respectively. The number of lineations drawn within this survey area are less than that of the north survey area. The major reason is that there is much less magnetic

expression within the southern part of the property.

Respectfully submitted, GEOTRONICS SURVEYS LTD.,

David G. Mark Geophysicist

April 6, 1977

-- Geotronics Surveys Ltd. ---

REFERENCES

- Aeromagnetic Map, Nadina River, B.C. Paper 5299, Sheet 93E/15, Geol. Surv. of Canada, 1969.
- Aeromagnetic Map, Lamprey Creek, B.C. Paper 5300, Sheet 93L/3, Geol. Surv. of Canada, 1969.
- Aeromagnetic Map, Owen Lake, B.C. Paper 5301, Sheet 93L/2, Geol. Surv. of Canada, 1969.
- Armstrong, J.E., Geology of Smithers Area, B.C. Prelim. Map 44-23, Geol. Surv. of Canada, 1944.
- Bowen, B. Geology and Geophysical Report on the Poplar Groups 1, 2, 3, 5, and 6 Omineca M.D., B.C. Utah Mines Ltd., Oct. 1975.
- Carter, N.C. <u>Description of Utah's Poplar Lake Property</u>, Geology, Exploration, and Mining in B.C., 1974, B.C. Department of Mines and Petroleum Resources, pp 256-257, 1975.
- Carter, N.C. and Kirkham, R.V. <u>Geological Compilation Map</u> of the Smithers, Hazelton and Terrace Areas, Map 69-1, B.C. Department of Mines and Petroleum Resources, 1969.
- Church, B.N. Goosly Lake, Geology, Exploration and Mining in B.C., 1969, B.C. Dept. of Mines & Petro. Res., pp 142-148, 1970.
- Church, B.N. Geology of the Owen Lake area, Geology, Exploration and Mining in B.C. 1969, B.C. Dept. of Mines & Petro Res. pp 122-140, 1970.
- Church, B.N. Geology of the Owen Lake, Parrot Lakes and Goosly Lake Area, Geology, Exploration and Mining in B.C. 1970, B.C. Dept. of Mines & Petro. Res., pp 119-140, 1971.
- Church, B.N. Geology of the Buck Creek Area, Omineca Mining Division, Prelim. Map No. 11, B.C. Dept. of Mines & Petro. Res., 1973.
- Duffel, S., Whitesail Lake Map Area B.C. Geol. Surv. of Can., Mem. 299, 1959.
- Hanson, G., Phemister, T.C., Lang, A.H. Geol. of Houston Area, B.C. Map 671A, Geol. Surv. of Can., 1942.

- Mark, David G. Geophysical Report on an Airborne Magnetic and VLF-EM Survey on the Tagetochlain Lake Property of Dual Resources Ltd., Omineca M.D., B.C. (with results of soil geochemistry road sampling), Geotronics Surveys Ltd., December, 1976.
- Onucki, Frank, personal communication, December, 1976.
- Schmidt, A.J., 1974 Drilling Report on the Poplar Lake Property, Omineca M.D., B.C. Utah Mines Ltd. Jan 1975.
- Schmidt, A.J., 1975 Drilling Report on the Poplar Lake Property, Omineca M.D., B.C. Utah Mines Ltd. Aug 1975.
- Tipper, H.W. Smithers Map Area, B.C. (93L) Report of Activities, Part A, April to October 1970, Paper 71-A, Geol. Surv. of Can., pp 34-36, 1-71.
- Tipper, H.W. Smithers Map Area, B.C. (93L) Report of Activities, Part A, April to October 1971, Paper 72-A, Geol. Surv. of Can., pp 39-41, 1972,
- Tough, T.R. Geological Report on the Tagetochlain Lake
 Property, Omineca M.D., B.C. for Dual Resources Ltd
 NPL, T.R. Tough & Associates Ltd., August 1976.
- Witherley, K.E. Geophysical Report on the Poplar Lake
 Property, Omineca M.D., B.C. Utah Mines Ltd, January,
 1975.

GEOPHYSICIST'S CERTIFICATE

I, DAVID G. MARK, of the City of Vancouver, in the Province of British Columbia, do hereby certify:

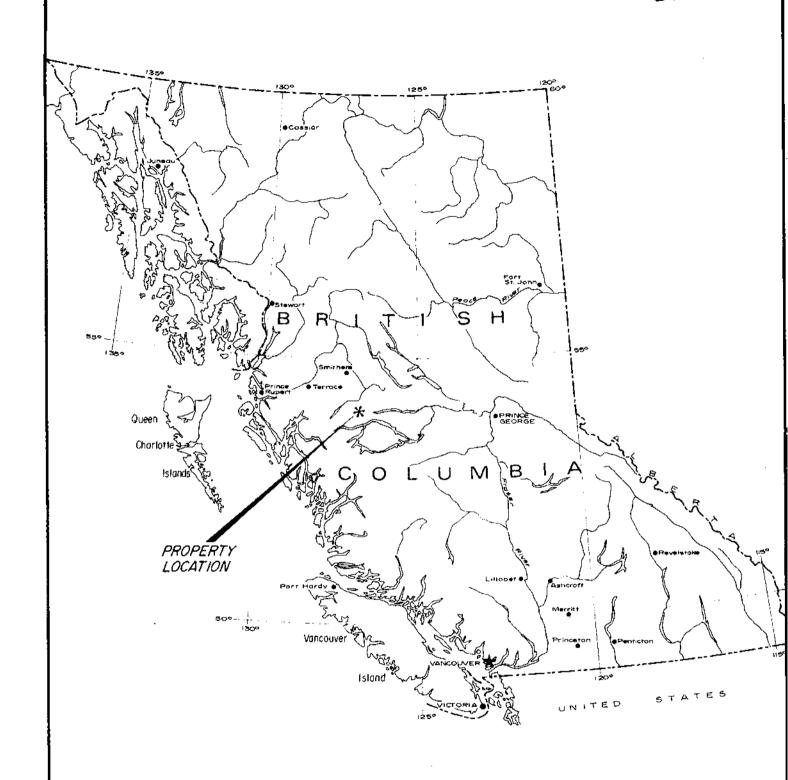
That I am a Consulting Geophysicist of Geotronics
Surveys Ltd., with offices at 307-475 Howe Street, Vancouver,
British Columbia.

I further certify:

- 1. I am a graduate of the University of British Columbia (1968) and hold a B.Sc., degree in Geophysics.
- 2. I have been practising in my profession for the past nine years and have been active in the mining industry for the past twelve years.
- 3. I am an active member of the Society of Exploration Geophysicists and a member of the European Association of Exploration Geophysicists.
- 4. This report is compiled from data obtained from an airborne magnetic survey, and a soil sampling survey both carried out by T. W. Rolston.
- 5. I have no direct or indirect interest in the properties or securities of Gold River Mines Ltd or Dual Resources Ltd., Vancouver, B.C. nor do I expect to receive any interest therein.

David G. Mark Geophysicist

April 6, 1977



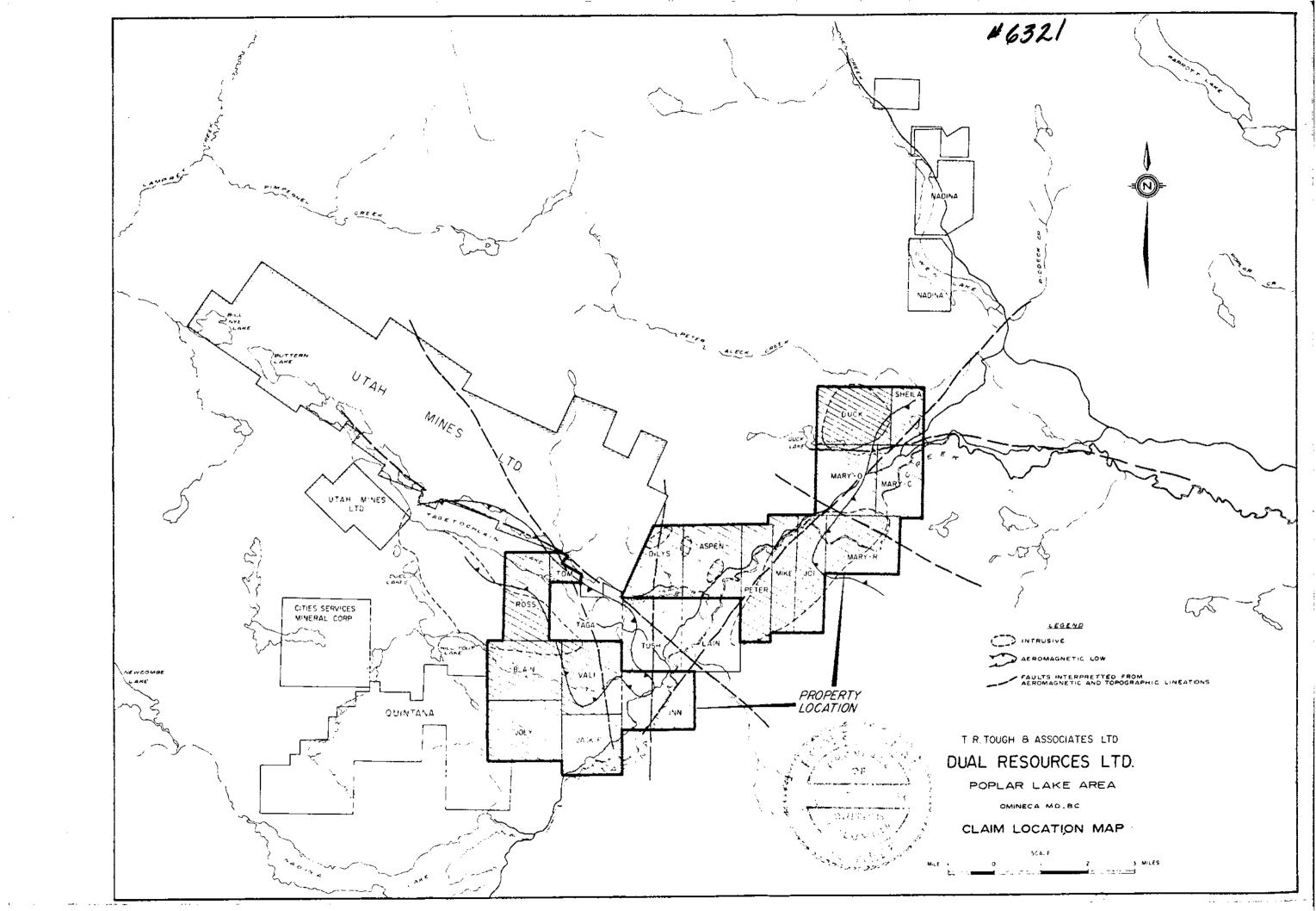
T.R. TOUGH & ASSOCIATES LTD.

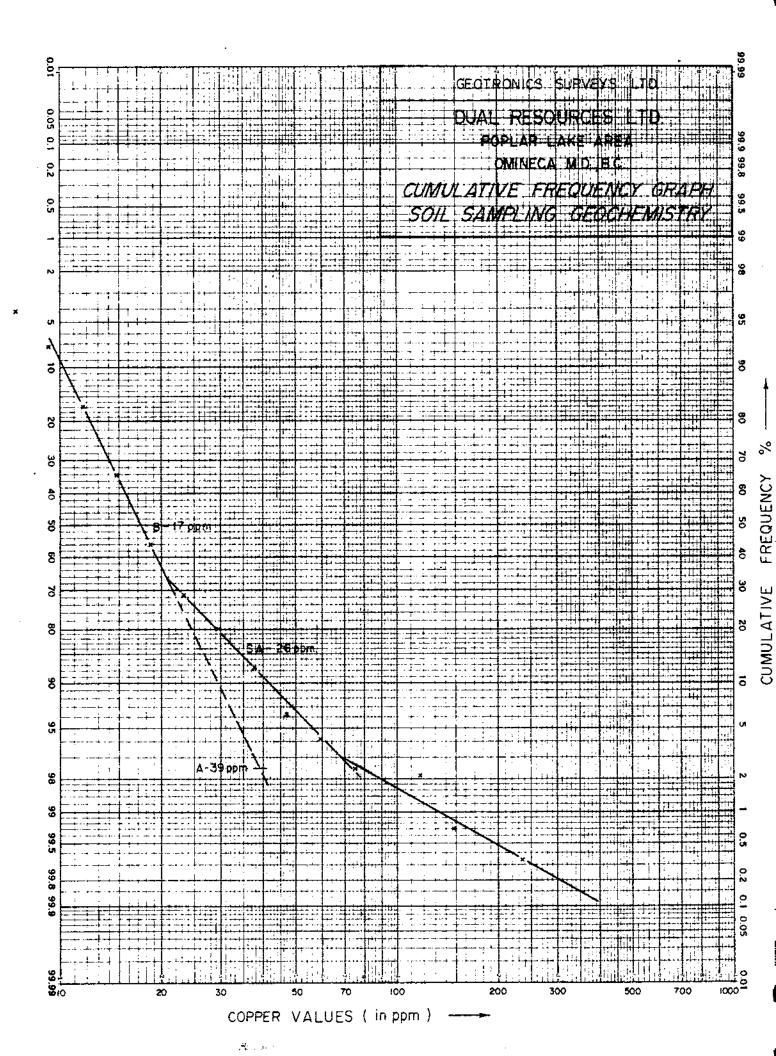
DUAL RESOURCES LTD.

LOCATION MAP

Miles 100 50 0 100 200 N

ALTAIR drafting services Ital.







420 - 890 West Pender St., Vancouver, S.C., V6C 139

三本 Telephone 687-6671

June 15, 1977

Dual Resources Ltd., 5316 Fleming Street, Vancouver, E.C.

Attention: Mr. L. Vigouret

Re: Combined magnetometer and V.L.F. E.M. airborne survey, Poplar Lake area, Omineca M.D.; Taga, Tush, Tom, Lain, Ross, Inn, Vali Mineral Glaims, Emport #123, Cost Statement.

The following cost breakdown for our complete airborne geophysical services works out to \$50.00 per kilometer, as laid out by our rate structure which was published and mailed out to our clients and the mining fraternity with the latest mail-out on January 1977.

Combined Airborne Magnetometer, VLP E.M. and Radiametrie Survey Costs:

Per kilometer: based on 200 Km survey (125 line miles)

1)	Nap preparation, air photos, etc.	\$	5.00
5)	Instrumentation		10.00
3)	Helicopter		10.00
4)	wages and allowances		15.00
5)	Interpretation and reports		10.00
	•	3	50.00

6) Mob. and demob. at additional cost

Our company flew 475 kilometers at the rate of \$50.00 per L. Km., total \$23,750.00 over your property area.

I trust this is the information you require for the Department of Mines and Petroleum Resources.

Yours truly.

Tom Rolston,

Project Manager, Airborne Div.

