1997
GEOLOGICAL, GEOCHEMICAL AND GEOPHYSICAL REPORT ON THE CARIBOU CREEK PROPERTY (CC 1 - 44 CLAIMS)

Watson Lake Mining District, Yukon Territory
NTS: 105C/1 & 105C/8, Lat 60°16'N; Long 132°03'W

May, 1998 (1997 ASSESSMENT REPORT)

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of $ 18,650.00.

M. B[illegible]
for Regional Manager, Exploration and
Geological Services for Commissioner
of Yukon Territory.

1997
GEOLOGICAL, GEOCHEMICAL AND GEOPHYSICAL REPORT ON THE CARIBOU CREEK PROPERTY (CC 1 - 44 CLAIMS)

Watson Lake Mining District, Yukon Territory
NTS: 105B and 105C, Lat 60°15'N; Long 132°04'W

May, 1998 (1997 ASSESSMENT REPORT)

by

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&
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Date Submitted: May, 1998
Field Period: 8 August - September 28, 1997

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1. SUMMARY AND CONCLUSIONS

The Caribou Creek property is located in the Yukon Territory 180 kilometres east of Whitehorse and 180 kilometres west of Watson Lake, on NTS map sheets 105C/1 and 105C/8, and consists of 44 contiguous mineral claims (CC 1 to 44) in the Watson Lake Mining District. The claims were acquired by staking during April and September 1997, and are owned 100 percent by Fairfield Minerals Ltd. Exploration is focussed primarily on copper-lead-zinc-silver mineralization hosted by deformed and metamorphosed volcanic and sedimentary rocks.

The CC claims are accessed by helicopter from temporary bases at Morley River, YT (30 km south of the property) and Swan Lake, BC (40 km southeast). The Alaska Highway passes 30 km south of the claim group. The property covers 10 square kilometres of moderate to steep forested slopes, extending up to subalpine zones above 1370 metres elevation. Bedrock exposure is fair to sporadic, with large expanses covered by glacial till and alluvium.

Known previous mineral exploration work in the area covered by the present claims is limited to reconnaissance programs carried out by Cordilleran Engineering for Regional Resources Ltd. in 1980, and by Fairfield Minerals Ltd. in 1996. Stream sediment sampling and follow-up work in 1980 identified a strong multi-element silt and soil geochemical anomaly and a small gossan in bedrock with significant levels of Cu, Pb and Zn. Prospecting in the area in 1996 failed to locate any significant mineralization. The initial CC 1 to 30 claims were staked in April 1997 to cover the stream sediment and soil anomalies from the 1980 sampling program, and the CC 31 to 44 claims were added in September to extend the property over favourable lithologies.

The Caribou Creek property is primarily underlain by a package of Paleozoic metavolcanic and metasedimentary schists, which are overlain (either structurally or stratigraphically) by Mississippian limestone. A variety of small intrusive bodies are present, at least some of which intrude both the schist and limestone.

Heavily disseminated pyrite is present within certain schist layers on the central and western property area, and may represent stratiform syngenetic type mineralization.

After claim acquisition, an 85 line-km airborne electromagnetic and magnetic survey was flown over the CC claim group as it existed in June 1997 (CC 1 - 30 claims). Several weak EM anomalies and magnetic trends parallel to stratigraphy were identified over widespread parts of the property.

A program of baseline cutting, soil sampling, geological mapping and prospecting was undertaken in August 1997. A band of anomalous Cu, Pb, Zn and Ag values in soils was identified on the central and western claims, and several occurrences of pyritic or rusty schist float and bedrock were noted in this area. To date, rock samples from these schists have not returned any significant analyses or assays for Cu, Pb, Zn, Ag or Au.

Encouraging results from soil sampling led to the addition of 14 more claims on the west and northwest of the initial block. In September 1997, an induced-polarization geophysical survey was conducted along 3 line-km in the central part of the property. The IP survey identified several zones of moderate chargeability anomalies within the area of anomalous soil geochemistry and near the main gossan zone.

Exploration results from the CC claims indicate good potential for discovery of economic polymetallic sulphide deposits within shallowly dipping schist units. Based on results from 1997, continued and expanded exploration is warranted.

2. RECOMMENDATIONS

Grid soil sampling at 200m x 50m spacings should be extended to the northern and western property boundaries (CC 10, 12, 14, 18 and 31-44 claims) to evaluate the potential for Cu-Pb-Zn-Ag mineralization. Approximately 400 stations would be sampled in this area, and up to 3 km of additional baselines and tielines may be necessary for grid control.

Fill-in soil sampling at 50m x 50m or 100m x 50m spacings should be completed around stations with strongly anomalous values of Cu, Pb, Zn or Ag in all parts of the property in order to provide tighter definition of anomalous zones. Approximately 80 samples are required to complete this work over the existing soil grid. Isolated single-point anomalies might be assessed in part by resampling and by careful consideration of the soil conditions at specific sample sites.

Detailed prospecting and mapping should be focused on areas of anomalous soil geochemistry. Areas of the highest priority would be the multi-element anomalies. Samples of any altered or mineralized rocks should be analysed for gold (AA) plus 30 elements (ICP).

Reverse-circulation drilling is recommended to test the extent of bedrock sulphide occurrences, particularly the main gossanous zone at 3150N/1250E. Any mineralization or alteration must be carefully and systematically sampled. All samples should be analysed for gold (AA) plus 30 elements (ICP). Extending the drilling program beyond the immediate area of known gossanous outcrops and strong geochemical response would be contingent upon favourable results from an initial phase of 12 holes drilled to a maximum depth of 50 m.

An induced polarization survey should be run along 800 metres of line 3100N from 900E to 1700E to provide more detailed coverage in the area of gossanous schist outcrop.

Further work would be contingent upon favourable results from any or all of the above.

Respectfully submitted

FAIRFIELD MINERALS LTD.

D.H. Ritcey, B.Sc., B.A., M.Sc.

E. A. Balon, P. Geo.

3. INTRODUCTION

3.1 Location and Physiography (Figures 1 and 2)

The Caribou Creek property is centred 37 kilometres northeast of Teslin in south-central Yukon Territory (Figure 1) at latitude 60°15'N and longitude 132°04'W, on NTS map sheets 105B/4, 105B/5, 105C/1 and 105C/8. The mineral property consists of 44 contiguous mineral claims (CC 1 to 44) in the Watson lake Mining District. The CC claims have no road access, and were serviced during the 1997 field season by helicopter from temporary bases established along the Alaska Highway at Morley River, YT (30 km south of the property) and Swan Lake BC, (40 km southeast).

The CC claims cover 900 hectares on a southwesterly facing slope at the southern end of the Englishman Range of the Cassiar Mountains (Figure 2). Topography throughout the property area is generally moderate, although locally steep with elevations ranging from 1100 to 1500 metres. Pass Creek drains much of the central and southern portion of the property, and flows westerly through a sharply incised valley. The northern and western CC claims are drained by smaller streams which flow generally to the west. Spruce, fir, pine and other less common species form dense forests on lower slopes and well-drained sites, but trees are interspersed with grassy subalpine meadows at higher elevations. Grassy marsh areas with willow, dwarf birch, and stunted conifers are widespread throughout the property. Subalpine conditions prevail above 1400 m elevation on a small portion of the property. Exposure of limestone bedrock is widespread at higher elevation along the northeastern margin of the claim group. Thicknesses of soil and till cover are quite variable, and bedrock exposure of schists is locally extensive in topographically lower areas. Annual temperatures range from approximately -40°C to +30°C and precipitation is moderate. No permafrost was encountered during exploration in the 1997 field season. The area is basically free of snow from June through September.

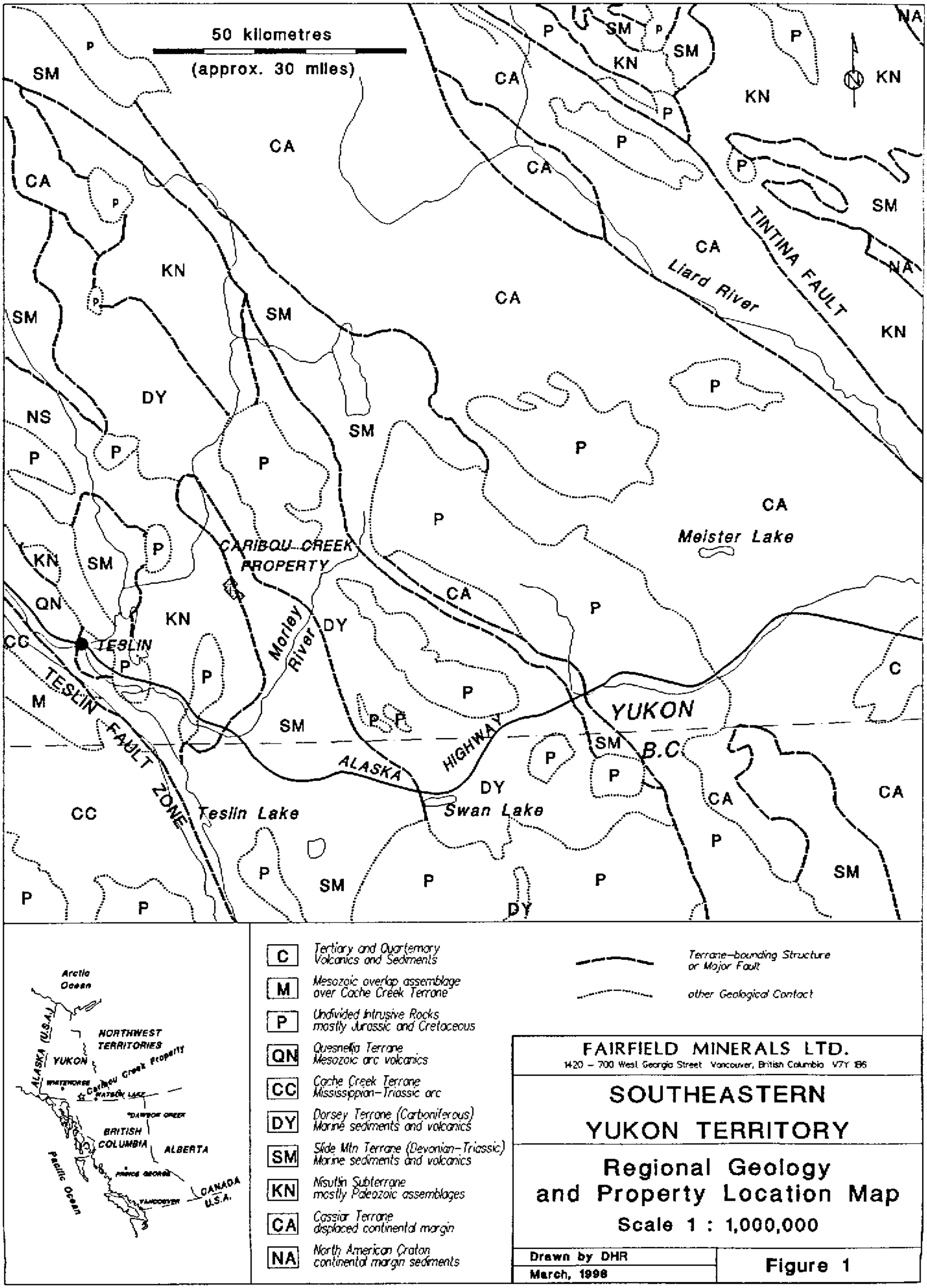
3.2 Claim Data (Figure 2, Table 1)

The CC 1 to 44 claims were staked by contractors or Fairfield employees during April and September 1997, and are owned 100 percent by Fairfield Minerals Ltd. The current status of all claims is indicated in Table 1 and their locations are shown on Figure 2.

3.3 History

No publicly available documentation exists for any prior mineral exploration in the area covered by the CC claims.

Reconnaissance exploration undertaken in 1980 included the collection of 17 stream sediment samples from the CC claims area and adjacent drainages, and 14 soil samples from limited follow-up work (Rowe, 1980). Anomalous to strongly anomalous metal contents were found in stream sediments (up to 880 ppm Cu, 187 ppm Pb and 1460 ppm Zn) downstream from a small gossan patch and in two small drainages 100 to 500 metres to the south. Anomaly follow-up by soil sampling and prospecting in 1980 identified some anomalous levels of Cu, Pb and Zn near the gossan area. Prospecting in the CC property area in 1996 failed to locate significant mineralization. The initial staking of 30 claims in April 1997 was intended to cover the original (1980) stream sediment and soil anomalies. A further 14 claims were added during the field season to extend the property over favourable schist horizons and other geochemical anomalies.



50 kilometres
(approx. 30 miles)
TINTINA FAULT
Liard River
Meister Lake
CARIBOU CREEK PROPERTY
Morley River
TESLIN
TESLIN FAULT ZONE
Teslin Lake
ALASKA HIGHWAY
YUKON
B.C.
Swan Lake
SM
P
CA
KN
NA
DY
NS
QN
CC
M
C
Arctic Ocean
NORTHWEST TERRITORIES
YUKON
ALASKA (U.S.A.)
Caribou Creek Property
WHITEHORSE
WATSON LAKE
DAWSON CREEK
BRITISH COLUMBIA
ALBERTA
PRINCE GEORGE
VANCOUVER
CANADA
U.S.A.
Pacific Ocean
C Tertiary and Quarternary Volcanics and Sediments
M Mesozoic overlap assemblage over Cache Creek Terrane
P Undivided Intrusive Rocks mostly Jurassic and Cretaceous
QN Quesnellia Terrane Mesozoic arc volcanics
CC Cache Creek Terrane Mississippian–Triassic arc
DY Dorsey Terrane (Carboniferous) Marine sediments and volcanics
SM Slide Mtn Terrane (Devonian–Triassic) Marine sediments and volcanics
KN Nisutlin Subterrane mostly Paleozoic assemblages
CA Cassiar Terrane displaced continental margin
NA North American Craton continental margin sediments
Terrane-bounding Structure or Major Fault
other Geological Contact
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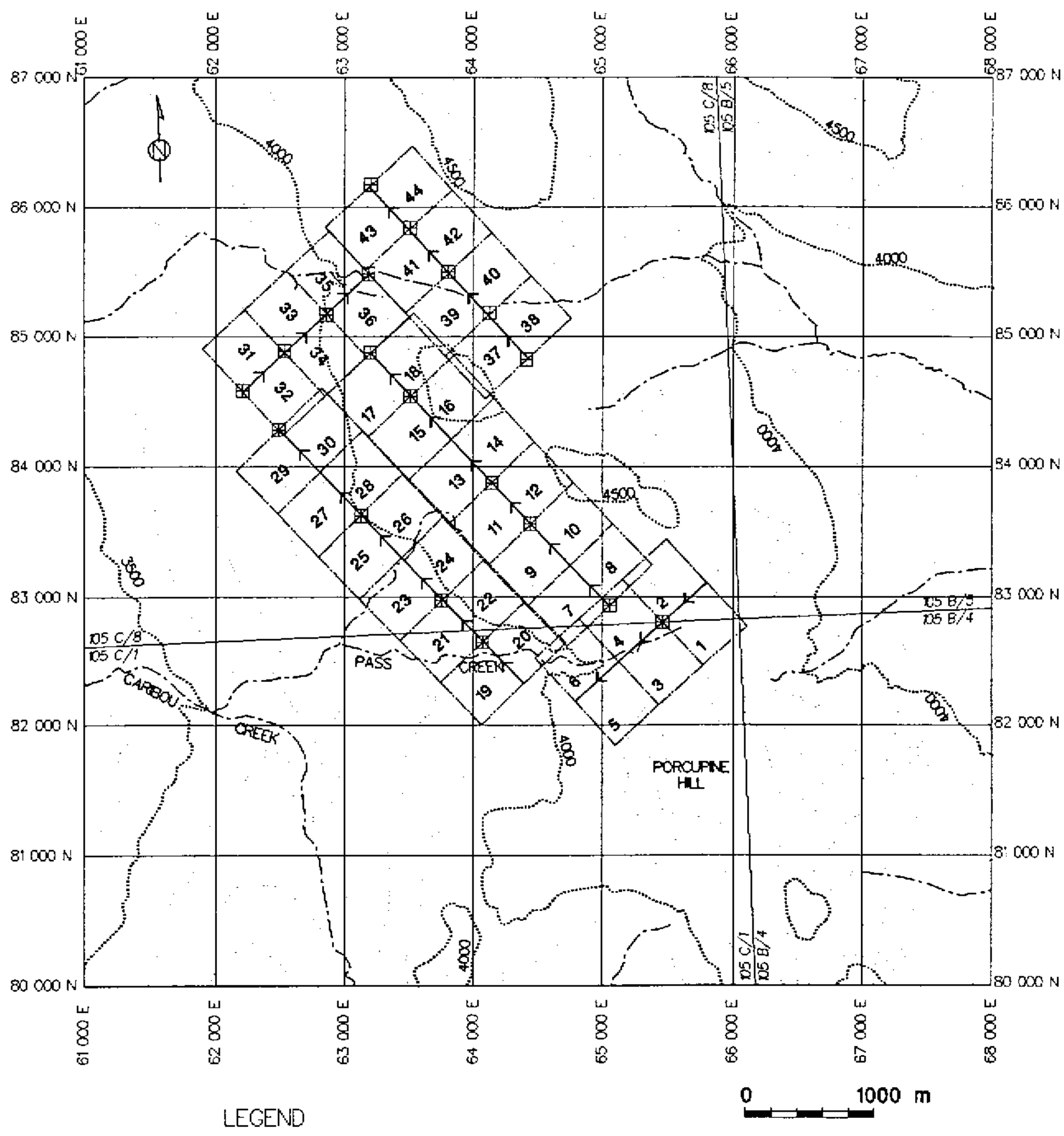
SOUTHEASTERN YUKON TERRITORY
Regional Geology and Property Location Map
Scale 1 : 1,000,000
Drawn by DHR
March, 1996
Figure 1

TABLE 1 Claim Status

Claim	Record #	Expiry Date	NTS	Mining Division
CC7	YB89118	4/14/03	105C/8	Watson Lake
CC8	YB89119	4/14/03	105C/8	Watson Lake
CC9	YB89120	4/14/03	105C/8	Watson Lake
CC10	YB89121	4/14/03	105C/8	Watson Lake
CC11	YB89122	4/14/03	105C/8	Watson Lake
CC12	YB89123	4/14/03	105C/8	Watson Lake
CC13	YB89124	4/14/03	105C/8	Watson Lake
CC14	YB89125	4/14/03	105C/8	Watson Lake
CC15	YB89126	4/14/03	105C/8	Watson Lake
CC16	YB89127	4/14/03	105C/8	Watson Lake
CC17	YB89128	4/14/03	105C/8	Watson Lake
CC18	YB89129	4/14/03	105C/8	Watson Lake
CC19	YB89130	4/14/03	105C/1	Watson Lake
CC20	YB89131	4/14/03	105C/1	Watson Lake
CC21	YB89132	4/14/03	105C/1	Watson Lake
CC22	YB89133	4/14/03	105C/1	Watson Lake
CC23	YB89134	4/14/03	105C/8	Watson Lake
CC24	YB89135	4/14/03	105C/8	Watson Lake
CC25	YB89136	4/14/03	105C/8	Watson Lake
CC26	YB89137	4/14/03	105C/8	Watson Lake
CC27	YB89138	4/14/03	105C/8	Watson Lake
CC28	YB89139	4/14/03	105C/8	Watson Lake
CC29	YB89140	4/14/03	105C/8	Watson Lake
CC30	YB89141	4/14/03	105C/8	Watson Lake
CC31	YB89977	4/14/03	105C/8	Watson Lake
CC32	YB89978	4/14/03	105C/8	Watson Lake
CC33	YB89979	4/14/03	105C/8	Watson Lake
CC34	YB89980	4/14/03	105C/8	Watson Lake
CC35	YB89981	4/14/03	105C/8	Watson Lake
CC36	YB89982	4/14/03	105C/8	Watson Lake
CC37	YB89983	4/14/03	105C/8	Watson Lake
CC38	YB89984	4/14/03	105C/8	Watson Lake
CC39	YB89985	4/14/03	105C/8	Watson Lake
CC40	YB89986	4/14/03	105C/8	Watson Lake
CC41	YB89987	4/14/03	105C/8	Watson Lake
CC42	YB89988	4/14/03	105C/8	Watson Lake
CC43	YB89989	4/14/03	105C/8	Watson Lake
CC44	YB89990	4/14/03	105C/8	Watson Lake



LEGEND

Claim Location Line and Direction

Other Claim Boundary

22 Claim Number (CC prefix omitted)

⊞ Claim Post, where located by GPS or grid tie-in

NOTE: Map grid is UTM Zone 8 prefixes 66xxxxxN and 6xxxxxE omitted

contour interval 100 feet

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CARIBOU CREEK PROPERTY
CC 1 - 44 CLAIMS
Watson Lake Mining District
NTS 105B/4, 105B/5, 105C/1, 105C/8, Yukon Territory

CLAIM LOCATION MAP

SCALE 1 : 50,000

Drawn by DHR	Figure 2
April, 1998	

pc>d:\cadd6\gcd\yukon\caribou\ccclaim.gcd

3.4 1997 Exploration Program

The 1997 field program comprised 69 person-days of field work: 6 for mobilization and demobilization of camp, 10 for cutting of baselines, 23 for soil sampling, 21 for geological mapping and prospecting including evaluation of soil anomalies, and 9 for cutting geophysical survey lines.

A Baseline 4200 metres long was cut and surveyed by Brunton compass and steel chain to establish grid control over most of the property area (Figure 3). The baseline (grid line 1900E) was cut at an azimuth 69 degrees west of magnetic north. Subsequent surveying with a hand held Global Positioning System (GPS) instrument demonstrated that this control line has an azimuth of 317.5 degrees (True) and that the local magnetic declination is 26.5 degrees East.

Grid soil sampling during 1997 amounted to 661 samples covering roughly 65% of the property at 50 metre stations on 200 metre spaced lines. Some closer-spaced sampling was done in the vicinity of the main gossanous zone. All soil samples were analysed for Cu, Pb, Zn, Ag and Ba by acid-leach / ICP analytical methods.

Prospecting and anomaly follow-up contributed 8 additional soil samples which were analysed for 30 elements by ICP, and for Au by Atomic Absorption. Six stream sediment samples were collected on the CC claims or in adjacent drainages. These were analysed for gold by AA and for 30 elements by ICP.

Mapping and prospecting involved the collection of 11 rock samples which were analysed for gold plus 30 elements. The majority of these samples were taken from the main gossanonous schist area, where several zones of leached and weathered mineralization in bedrock were mapped and sampled. Additionally, two rock samples with high concentrations of sulphide minerals were assayed for Ag and Au by fire assay, and for 15 elements by ICP.

An Induced Polarization survey totalling 3000 linear metres was completed in September. The main gossanous zone and its presumed down-dip extension to the northeast were covered by this survey. This geophysical work required 3000 metres of line cutting, separate from the baseline preparation.

4. GEOLOGY

4.1 Regional Geology (Figure 1)

Regional geology of the Caribou Creek area is shown on the southeast part of the Teslin map sheet (GSC Map 1125A by R. Mulligan, 1963 and GSC open file 2886 by Gordey and Stevens, 1994), and also on recent large-scale compilations by Wheeler and McFeely, 1991 (GSC Map 1712A) and Wheeler *et al.*, 1991 (GSC Map 1713A), which are summarized and simplified in Figure 1.

The Caribou Creek area is part of the Omineca Belt of the Canadian Cordillera (Gabrielse *et al.* 1991), a widespread zone of uplifted metamorphic and intrusive rocks that extends across the south-central Yukon from northwest to southeast. Within this broad belt, the CC claims are characterized by a package of Mississippian or older schists derived from sedimentary and volcanic protoliths (Mulligan, 1963), locally overlain by limestone. These units constitute part of the pericratonic Yukon-Tanana Terrane, which records Late Devonian to Early Mississippian continental arc magmatism (*e.g.* Mortensen, 1992, Nelson, 1997 Mihalynuk *et al.*, 1998). The Yukon-Tanana Terrane is widespread in parts of Alaska, Yukon, and northern British Columbia, and incorporates units of the Slide Mountain, Kootenay (Nisutlin), and Dorsey Terranes, which are present in two separate areas of Figure 1: (I) northeast of the Tintina Fault, and (II) between the continental Cassiar Platform area and the Teslin Fault Zone.

Rocks identified on Figure 1 as part of the Slide Mountain Terrane (Wheeler and McFeely, 1991; Wheeler *et al.*, 1991) are primarily or characteristically of marine volcanic origin. Structurally adjoining terranes, the Nisutlin allochthon (Nisutlin subterrane of Kootenay Terrane) to the west, and the Dorsey Terrane to the east, contain considerable age-equivalent strata but record, at least in part, distinct geologic histories. Although they are characteristically oceanic in origin, both the Dorsey Terrane and the Slide Mountain Terrane may have formed in close proximity to ancestral North America (Monger *et al.* 1991, and references therein), and the Nisutlin allochthon is included in the pericratonic Kootenay Terrane because of lithological and isotopic similarities (Monger *et al.*, 1991). The three major lithostratigraphic units of the Caribou Creek area (Nisutlin, Slide Mountain, and Dorsey) are therefore likely to be much more closely related than indicated by the sharp divisions on Figure 1. In the Teslin map area (NTS 105C), units shown on Figure 1 as Nisutlin and Slide Mountain terranes were grouped by Mulligan (1963) into a single map unit, the Big Salmon Complex. Recent syntheses (e.g. Mortensen 1992; Nelson, 1997), consider the Nisutlin Subterrane, Dorsey Terrane, and <u>much of</u> the Slide Mountain Terrane to be part of (or correlative extensions of), the larger, heterogenous Yukon-Tanana Terrane. Magmatic arc rocks of the Slide Mountain Terrane are correlated with or incorporated into the Yukon-Tanana Terrane (*e.g.* Mortensen, 1992, and references therein), whereas locally important ophiolitic units of Slide Mountain distinguish it from other Terranes.

Metavolcanic and metasedimentary rocks of the Nisutlin subterrane host important volcanogenic massive sulphide deposits *(e.g.* Kudz Ze Kayah, Wolverine) in the Finlayson Lake area, northeast of the Tintina Fault, about 180 km from Cabin Lake. Also in the Finlayson Lake district, massive sulphide mineralization has recently been discovered at the Ice property, within volcanic-sedimentary sequences of the Slide Mountain Terrane.

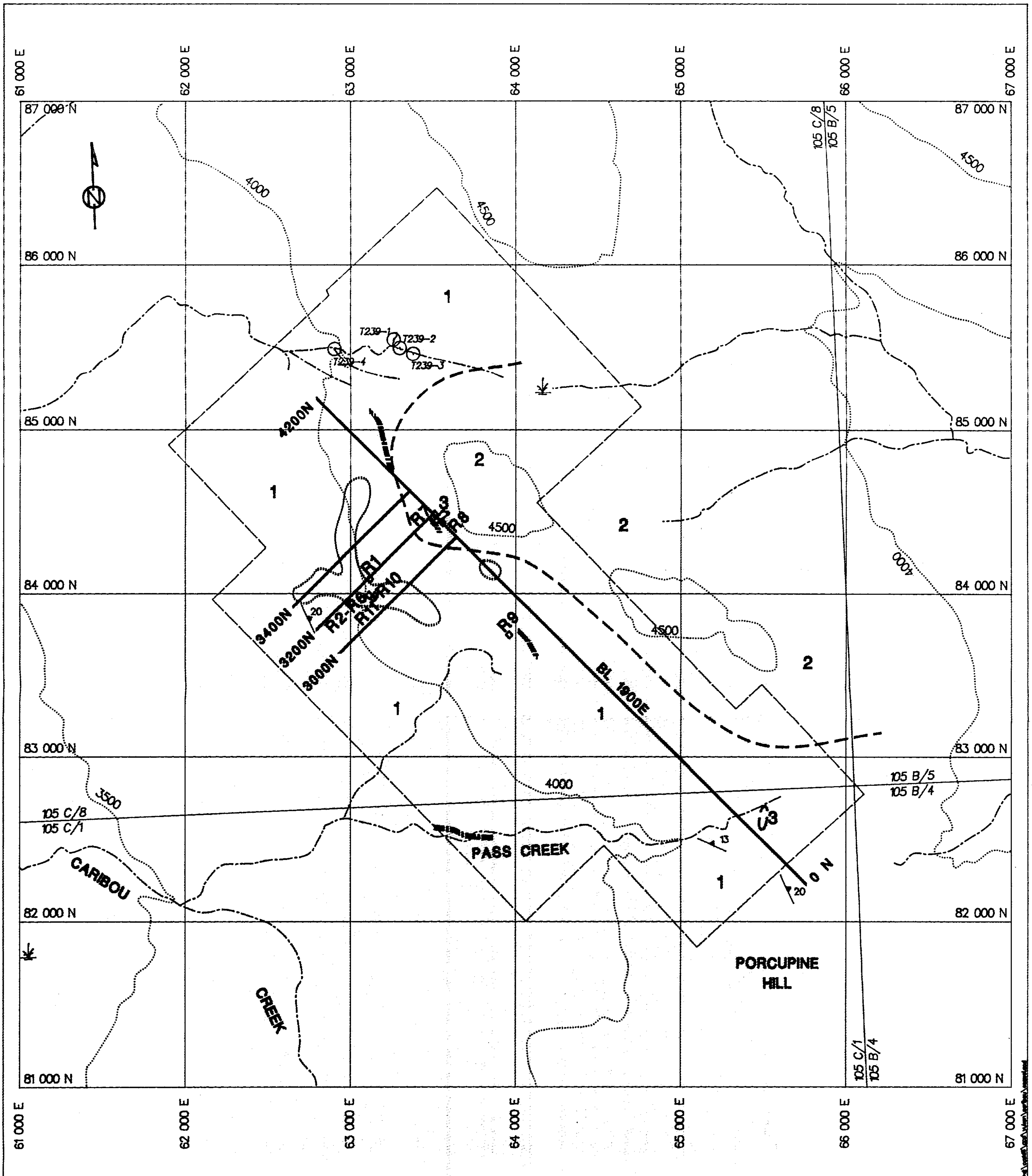
The Bar prospect, located 28 km north of the CC claims, is an example of sedimentary-exhalative Zn-Pb-Ag-Ba mineralization associated with chert, argillite, siltstone, and chert pebble conglomerate in the Dorsey Terrane. At Lang Creek near Cassiar in northern BC sulphide deposition in the Slide Mountain Terrane is manifested by Cu-Zn mineralization (possibly volcanogenic) in basalt and cherty argillite (Dawson et al., 1991).

4.2 Property Geology and Mineralization (Figure 3)

Reconnaissance-scale mapping was carried out over the CC 1 - 30 claims during the 1997 field season. The Caribou Creek property is underlain in large part by Mississippian or older metavolcanic and metasedimentary schists (Mulligan, 1963). These pale green chloritic quartz-rich schists (unit 1 on Figure 3) dip gently to the northeast throughout the property area, and are of a generally uniform appearance. A micaceous sheen is evident on many schistosity planes. At some localities, slightly elongate quartz "eyes" to 7 mm in maximum dimension are common. Other less widespread schist bands or layers contain abundant fine grained sericite and varying proportions of sulphide minerals, particularly coarsely crystalline pyrite. Prominent rusty gossanous schist layers were mapped and sampled at 3130N/1320E (up to 25 cm thick) and at 3075N/1240E (more than 2 m thick). These mineralized bands or layers are recessive and laterally discontinuous. Discontinuous pyrite-bearing quartz veins and lenses 1 to 10 cm thick occur locally in some rusty schist bands.

White to buff limestone (Unit 2 on Figure 3) is extensively exposed on higher ground of the northeastern CC claims. The contact between schist and limestone was not observed directly by mapping on the Caribou Creek property. Regionally, Mulligan (1963) considered the stratigraphic relationship to be disconformable, with the Mississippian fossiliferous limestone and associated sedimentary rocks providing a minimum age limit for the schists. Juxtaposition or superposition by faulting also seems plausible. Irregular networks of quartz veins are very common in the limestone, possibly indicative of brittle faulting. The differential weathering of fine grained carbonate versus resistant silica has produced some striking forms.

A variety of intrusive rock types are present on the CC claims. The extent and quality of bedrock exposure was generally not sufficient to trace the contacts of these bodies, and most are too small to be shown on Figure 3. Variably chloritized diorite was the most abundant igneous (or meta-igneous) rock type found during mapping, although andesitic rocks are also present, and abundant angular rubble or subcrop of hornblende-rich mafic porphyry was found at grid location 1855N/1755E. Medium grained diorite dykes (unit 3) intrude both units 1 and 2. At several localities along the 1900E baseline between 3140N and 3170N, quartz-calcite veining and rusty orange carbonate alteration with disseminated pyrite locally extend 10 to 30 cm into diorite, adjacent to the contact with essentially unaltered limestone.



LEGEND

- Property boundary
- Grid Baseline and other cutlines
- Geological Contact (approximate)
- 25 Schistosity strike and dip
- Generalized area of multi-element soil anomaly
- Airborne EM conductor
- R9 Rock Sample location, prefix CC97– omitted
- ⊙ Reconnaissance Stream Sediment Sample location

LITHOLOGIES:

3	Diorite
2	Limestone
1	Quartz–Chlorite–Mica Schist

map grid is UTM zone 8
prefixes 66xxxxxN and 6xxxxxE omitted
countour interval 500 feet

0 1000 m

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CARIBOU CREEK PROPERTY
CC 1 - 44 CLAIMS
Watson Lake Mining District
NTS 105B/4, 105B/5, 105C/1, 105C/8, Yukon Territory

COMPILATION MAP AND PROPERTY GEOLOGY
SCALE 1 : 25,000

Drawn by DHR March, 1998	**Figure 3**

5. GEOCHEMISTRY

5.1 Introduction

Geochemical work on the CC claims in 1997 consisted of grid soil sampling over 6 km^2 (661 samples), collection of 4 stream sediment samples and 8 soils during prospecting and anomaly follow-up, and both reconnaissance and detailed rock sampling (11 samples).

5.2 Sampling/Analytical Procedures

Grid soil sample locations were established by compassing and chaining out from the established grid baseline, and were marked with labelled weatherproof tags plus orange and blue flagging. Samples were collected from the "B" soil horizon (wherever available) with hand augurs, shovels, mattocks, or picks and placed in Kraft paper bags labelled with the appropriate grid coordinates. Sampling on some parts of the northwestern half of the grid was hampered by the presence of a thin organic-rich soil layer directly over bedrock. Reconnaissance sample sites were tied into the grid system where available, or located on base maps or aerial photographs. All soils were shipped to Acme Analytical Laboratories Ltd. in Vancouver where they were dried and sieved to provide a -80 mesh fraction. Prepared samples were treated by acid digestion followed by ICP spectroscopic determinations for Cu, Pb, Zn, Ag, and Ba. Reconnaissance type samples were additionally tested for gold by atomic absorption (AA) analysis following aqua regia digestion and MIBK extraction from a 10-gram subsample, and were analysed for a full 30 element suite (Mo, Cu, Pb, Zn, Ag, Ni, Co, Mn, Fe, As, U, Au, Th, Sr, Cd, Sb, Bi, V, Ca, P, La, Cr, Mg, Ba, Ti, B, Al, Na, K, and W) by ICP-emission spectroscopy.

Stream sediments were sampled by hand from active, flowing channels. After drying and sieving, the -80 mesh fraction was analysed for gold by AA, and for 30 elements by ICP.

Rock sample sites were marked with numbered pink flagging and were grid-referenced to soil stations. Samples CC97-R3, -R4 and -R5 were continuous or semi-continuous channel samples across the full thickness of pyritic quartz-sericite schist at the main gossan site. Other samples were selected from specific types of material. The rock samples had typical weights of 0.5 to 5 kilograms with chips ranging from 1 to 10 cm in diameter. They were shipped to Acme Analytical Laboratories Ltd. in Vancouver where they were crushed to -10 mesh size, and a 250 g split was pulverized to -100 mesh. A 0.5-gram split from each sample was analysed for 30-elements by ICP. Determinations of gold were made by AA analysis, using 20 gram subsamples. Samples CC97-R9 and -R11, which contained heavily disseminated to massive sulphide mineralization, were assayed for 15 elements (Mo, Cu, Pb, Zn, Ag, Ni, Co, Mn, Fe, As, U, Th, Cd, Sb, and Bi) by ICP and for Au and Ag by fire assay.

5.3 Soil Results

Certificates of analysis for all 1997 soil samples are contained in Section 12, and the baseline and coordinates used for the geochemical grid are indicated on Figure 3.

The most important result of soil sampling was the delineation of a multi-element soil anomaly with elevated values of Cu, Pb, Zn and Ag (Figure 3 and Plates 1 - 5). Copper analyses outline a coherent, arcuate anomaly centred on the main gossanous outcrop and extending from line 2800N to line 3600N (Plate 1), and an anomalous area indicated by reconnaissance samples near grid location 4200N/2200E. Most of the highest levels of Pb, Zn and Ag are also within these copper-rich zones (Plates 2 - 4). High levels of Cu and Zn near 1000E on line 3400N may represent additional mineralization or downslope dispersal from the main zone. Anomalous Cu and Zn values are also present along the baseline 1900E between 2700N and 2850N, upslope from the main anomalous zone and at the eastern limit of the sampled portion of the grid. Relatively high levels of barium in soils (>600 ppm, Plate 5) are more scattered than the other elements and correspond only vaguely to Cu, Pb and Zn anomalies.

5.4 Prospecting Results

Prospecting was conducted throughout the property, but was focused primarily on the areas where gossanous schist layers were found, and on Cu +/- Pb +/- Zn +/- Ag soil anomalies. Eleven rock samples and 6 stream sediments were collected; their locations are shown on Figure 3. Sample locations, brief descriptions, and selected analytical results are given in Table 2 and Table 3 for rocks and stream sediments respectively, and complete analyses for all 30 elements tested are included in Section 13.

No significant concentrations of Cu, Pb, or Zn were measured in any schist samples. Moderately elevated levels of Ag (greater than 10 times average abundance in crustal rocks) were reported for grab samples CC97-R1 and -R2. A subrounded cobble containing semi-massive pyrrhotite (sample CC97-R9), which is mineralogically and texturally distinct from the bedrock exposures of gossanous schists, returned a significant Cu assay (0.389%) and anomalous Ag, As, Bi and Co values (Table 2).

Stream sediments T239-1, -2, -3 and -4, collected from the northern CC claims, all have threshold to anomalous contents of lead. Of these 4 samples, T239-1 and T239-4 are strongly anomalous in copper and anomalous or possibly anomalous in zinc. In this same area, reconnaissance soil samples T239-S1 to -S6 were taken directly on or below rusty weathered outcrops of pyritic schists and yielded highly significant
results up to 752 ppm Cu, 42 ppm Pb, 776 ppm Zn and 1.1 ppm Ag. Results from these reconnaissance samples are included with grid soil samples on Plates 1 - 5.

TABLE 2 Rock Samples

Sample Number	Grid Location North	East	Description	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Au ppb	Other anomalous elements
CC97-R1	3130	1320	Representative sample of rusty schist band, 10 - 25 cm thick	35	24	11	0.9	6	
CC97-R2	3075	1240	Grab sample of moderately pyritic Quartz-sericite schist	21	29	7	1.2	34	
CC97-R3	3085	1235	Semi-continuous channel across rusty schist band 1.5 m thick	23	3	42	< 0.3	4	
CC97-R4	3070	1240	Semi-continuous channel across rusty schist band 2.1 m thick	14	20	43	< 0.3	4	
CC97-R5	3045	1245	Semi-continuous channel across rusty schist band 2.1 m thick	8	21	23	0.5	21	
CC97-R6	3070	1240	Selected grab sample of 10 cm qtz lens with 5% pyrite at top of -R4 channel	19	12	14	< 0.3	7	
CC97-R7	3168	1900	selected material from subcrop rubble of carbonate-altered diorite	66	0	66	< 0.3	5	0.159% P
CC97-R8	3147	1900	Selected grab sample of carbonate-altered diorite & qtz+carbonate+/-pyrite veins	64	5	53	0.3	2	0.13% P, 6.47% Ca

TABLE 2 (continued)

Sample Number	Grid Location North	East	Description	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Au ppb	Other anomalous elements
CC97-R9	2350	1690	Banded disseminated and massive pyrhotite in subrounded cobble	4158	7	149	1.5	3	16.98% Fe, 599 ppm As, 213 ppm Co, 79 ppm Bi
CC97-R1	3105	1245	Selected grab sample of schist with 2% pyrite at top of -R5 channel	6	30	< 1	0.8	24	
CC97-R1	3050	1230	Representative sample fro qtz-chlorite-sericite boulder with 20% pyrite grains and semi-massive aggregates to 4 mm	34	6	166	< 0.3	11	12.89% Fe, 1884 ppm Mn

TABLE 3 Stream Sediments

Sample Number	Grid Location (approx.) North	East	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Au ppb
T369-1	4094	2446	123	12	107	0.4	15
T369-2	4053	2439	69	11	92	< 0.3	6
T369-3	3968	2472	79	13	74	< 0.3	2
T369-4	3968	2472	120	27	176	0.3	2

6. AIRBORNE GEOPHYSICAL SURVEYS

6.1 Introduction

An airborne geophysical survey employing a five frequency electromagnetic system and a high sensitivity cesium vapour magnetometer was carried out over approximately 8 square kilometres of the Caribou Creek property by Aerodat Inc. in June 1997. This survey constituted the first work done after initial claim acquisition, and was undertaken primarily to rapidly provide geological information over a large area. All parts of the Aerodat report which are relevant to the CC claims are included in this report as Appendix A. Interpretation and modelling of the airborne geophysical data were conducted by S.J.V. Consultants Ltd. In March 1998. The full report prepared by S.J.V. Consultants is included as Appendix C.

6.2 Interpretive Results and Anomaly Evaluation

The largest aeromagnetic feature on the Caribou Creek property is the relatively low field area in the central to northeastern portion of the survey area. This low magnetic zone corresponds in part to the area underlain by limestone. The vertical magnetic gradient map displays a relatively quiet zone corresponding to limestone bedrock on high ground at the extreme northeastern limit of the survey area, and a distinct trend parallel to the valley of Pass Creek on the southern claims. Finer magnetic features consist of discontinuous trends generally parallel to the strike of schist layers over much of the property.

Interpretation by Aerodat designated four EM conductive anomalies on the CC claims, all with poor responses. Anomaly 1, centred near grid location 3700N/2100E has the greatest strike length and also has a magnetic association (see Aerodat Inc. Report in Appendix A. This potentially important airborne geophysical anomaly is located primarily on the CC 18 and 36 claims, which were not covered by the 1997 soil sampling program were not prospected or mapped in detail. The airborne geophysical response most nearly coincident with the soil geochemical anomaly and the main occurrence of gossanous schists is a pair of sharp EM magnetic anomalies associated with weak local magnetic highs.

7. INDUCED POLARIZATION SURVEY

7.1 Introduction

An induced polarization geophysical survey employing a 3 kw transmitter and 6 channel receiver was carried out along 3000 metres of cut line on the Caribou Creek property by Amerok Geosciences Ltd. in September 1997. This survey was undertaken primarily to determine the subsurface extent of alteration and mineralization discovered in the main gossan area. Survey lines were cut and surveyed at 200 metre spacings, extending southwesterly from the 1900E baseline (Figure 3). All parts of the Amerok report which are relevant to the CC claims are included in Appendix B of this volume. Interpretation of the IP data was conducted by S.J.V. Consultants Ltd. In March 1998. The full report prepared by S.J.V. Consultants is included in this report as Appendix C.

7.2 Interpretive Results and Anomaly Evaluation

As further discussed in Appendix B, certain technical problems were encountered with field equipment along portions of the survey lines. Calculated values of apparent resistivity, and to a lesser degree, of chargeability, may be in error for some of these areas, and the interpretations are therefore subject to confirmation.

Significant chargeability measurements (> 15 msec) were recorded along segments of survey line 3200N. Areas of high chargeability do not consistently correspond to areas of high or low apparent resistivity. The strongest near-surface chargeability anomaly roughly coincides with the position of the strongest multi element soil anomaly and the main gossanous outcrops near 1200E. The broken, discontinuous nature of chargeability anomalies on pseudosection 3200N and the lack of strong IP responses on the two adjacent survey lines suggest that no large stratiform zone of mineralization is present in this area.

8. PERSONNEL & CONTRACTORS

Personnel:	Fieldwork Period - 1997	
E.A. Balon, Prospector North Vancouver, BC	8 August - 28 September	7 days prospecting, claim maintenance, supervision, mobilization and demobilization
W. Jakubowski, Geologist Vancouver, BC	8 September	4 days prospecting and claim maintenance
D. Ritcey, Geologist Vancouver, BC	8 August -21 August	11½ days mapping and prospecting, 1½ day mobilization and demobilization

Contractors:	Fieldwork Period - 1997	
Aerodat Inc. Mississauga, ON	30 June	Airborne Geophysical Surveys
Amerok Geosciences Ltd. Whitehorse YT	26 - 28 September	Induced Polarization Survey
Bear Mountain Enterprises Whitehorse, YT	8 August - 10 September	18 man-days linecutting, 23 man-days soil sampling, 4 man-days mobilization and demobilization
Discovery Helicopters Atlin BC Troy Kirwan, Pilot	8 August - 2 October	Helicopter support, mobilization and demobilization

9. STATEMENT OF COSTS
(Consolidated for the period July 1, 1997 to March 31, 1998

<u>CARIBOU CREEK PROPERTY 1997 PROGRAMS</u>

SALARIES AND BENEFITS (Fairfield personnel: field time and report preparation)	$ 5,710
GEOCHEMICAL ANALYSIS, ASSAYS & FREIGHT (Acme Analytical and Greyhound)	4,830
GEOPHYSICAL SURVEYS:	
AIRBORNE / EM- MAG. (Aerodat Inc.)	9,300
GROUND / I.P. (Amerok Geosciences Ltd.)	5,420
INTERPRETATION (S.J.V. Consultants Ltd.)	3,650
GRID PREPARATION (LINECUTTING) & SOIL SAMPLING (Includes food & supplies for fly camp, Bear Mtn. & Twin Mtn. Enterprises)	13,090
HELICOPTER SUPPORT (Includes fuel & transportation of fuel)	18,530
FOOD & ACCOMODATION (Base Camp)	2,490
MISCELLANEOUS SUPPLIES, TELEPHONE & TRAVEL	480
TOTAL EXPENDITURES	**$ 63,500**

NOTES:
- All items rounded to nearest $10.00.
- Only $18,650.00 of expenditures utilized for assessment credits.

10. REFERENCES

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Wheeler, J.O., and McFeely, P. (compilers):

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11. STATEMENT OF QUALIFICATIONS

I, David Ritcey, of Vancouver, British Columbia hereby certify that:

1. I am a geologist residing at 205-230 West 10th Avenue and employed by Fairfield Minerals Ltd. of 1420 - 700 West Georgia Street, Vancouver, British Columbia.

2. I have received a B.Sc. degree from Dalhousie University, Halifax, N.S. in 1984 and a B.A. degree with First Class Honours in Geology from the same institution in 1989, and an M.Sc. degree in Geology from Memorial University of Newfoundland, St. John's, Nfld. in 1994.

3. I have worked as a professional geologist since 1989 in the Northwest Territories, Alberta, British Columbia, and Yukon Territory.

4. I am the principal author of this report and I supervised the field work conducted on the CC 1 - 44 mineral claims during the period August 8 to 21, 1997

FAIRFIELD MINERALS LTD.

David Ritcey, B.Sc., B.A., M.Sc.

May, 1998
Vancouver, B.C.

I, Edward A. Balon, of North Vancouver, British Columbia hereby certify that:

1. I am a prospector and geological/mining technician residing at 501-250 West First Street, and employed by Fairfield Minerals Ltd. of 1420 - 700 West Georgia Street, Vancouver, British Columbia V7Y 1B6.

2. I have received a Diploma in Mining Engineering Technology (integrated Geology, Mining and Metallurgy) from Northern College - Haileybury School of Mines, Ontario in 1970.

3. I have attended several Continuing Education Courses in Geoscience since 1970, including Exploration Geochemistry at the University of British Columbia, Vancouver, B.C. in 1984/1985.

4. I am a member of the Association of Professional Engineers and Geoscientists of the province of British Columbia, registration number 20265.

5. I have practiced my profession for twenty-eight years in British Columbia, Yukon and Northwest Territories.

6. I am the editor of this report and conducted or supervised part of the field work performed on the CC 1 - 44 mineral claims during the period August 8 to September 28, 1997.

FAIRFIELD MINERALS LTD.

E.A. Balon, P.Geo.

May, 1998
Vancouver, B.C.

12. Analysis & Assay Certificates

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

GEOCHEMICAL ANALYSIS CERTIFICATE

Fairfield Minerals Ltd. PROJECT CARIBOU CREEK/CC97-1 File # 97-4388 Page 1

1420 - 700 W. Georgia St., Vancouver BC V7Y 1B6 Submitted by: Ed Balon

SAMPLE#	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ba ppm
CC 1000N 1400E	44	5	68	<.3	303
CC 1000N 1450E	54	8	89	<.3	352
CC 1000N 1500E	29	12	70	<.3	108
CC 1000N 1550E	27	7	43	<.3	73
CC 1000N 1600E	133	18	111	.8	775
CC 1000N 1650E	41	7	42	<.3	144
CC 1000N 1700E	23	9	38	<.3	80
CC 1000N 1750E	11	7	39	<.3	38
CC 1000N 1800E	16	12	47	<.3	76
CC 1000N 1850E	12	8	47	<.3	47
CC 1000N 1950E	33	12	67	<.3	107
CC 1000N 2000E	19	7	52	<.3	84
CC 1000N 2050E	28	13	56	<.3	136
CC 1000N 2100E	19	8	47	<.3	85
CC 1000N 2150E	28	10	90	<.3	152
CC 1000N 2200E	21	6	53	<.3	100
CC 1000N 2250E	18	12	41	<.3	120
RE CC 1000N 2250E	19	13	44	<.3	127
CC 1000N 2300E	32	10	44	<.3	111
CC 1000N 2350E	16	13	43	<.3	110
CC 1000N 2400E	10	10	49	<.3	72
CC 1000N 2450E	17	13	76	<.3	143
CC 1000N 2500E	18	12	72	<.3	159
CC 600N 1300E	13	9	42	<.3	96
CC 600N 1350E	14	8	35	<.3	144
CC 600N 1400E	14	10	56	<.3	102
CC 600N 1450E	29	12	51	<.3	156
CC 600N 1500E	19	10	53	<.3	98
CC 600N 1550E	20	12	62	<.3	98
CC 600N 1600E	10	10	51	<.3	136
CC 600N 1650E	19	6	41	<.3	61
CC 600N 1700E	5	17	16	.3	40
CC 600N 1750E	10	11	43	<.3	48
CC 600N 1800E	30	7	55	.3	127
CC 600N 1850E	44	9	66	.4	336
STANDARD C3	63	35	146	5.5	126

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.
THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL.
- SAMPLE TYPE: SOIL Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

DATE RECEIVED: AUG 15 1997 DATE REPORT MAILED: Aug 21/97 SIGNED BY ....D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

Data FA

SAMPLE#	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ba ppm
CC 400N 1300E	17	10	58	<.3	190
CC 400N 1350E	39	8	87	.3	285
CC 400N 1400E	32	11	57	<.3	162
CC 400N 1450E	10	18	40	<.3	93
CC 400N 1500E	17	10	48	<.3	89
CC 400N 1550E	36	10	64	<.3	325
CC 400N 1600E	9	9	35	<.3	112
CC 400N 1650E	16	15	56	<.3	93
CC 400N 1700E	35	12	50	<.3	192
CC 400N 1750E	15	14	63	.3	105
CC 400N 1800E	21	8	68	<.3	77
CC 400N 1850E	18	14	64	<.3	103
CC 200N 1200E	18	8	56	<.3	160
CC 200N 1250E	14	16	62	<.3	187
CC 200N 1300E	10	12	56	<.3	330
CC 200N 1350E	22	11	60	<.3	325
CC 200N 1400E	63	14	74	<.3	184
CC 200N 1450E	11	13	44	<.3	86
RE CC 200N 1450E	11	15	45	<.3	89
CC 200N 1500E	16	14	57	<.3	149
CC 200N 1550E	52	11	79	<.3	291
CC 200N 1600E	12	10	31	<.3	109
CC 200N 1650E	44	16	64	<.3	142
CC 200N 1700E	11	12	35	<.3	84
CC 200N 1750E	12	11	42	<.3	83
CC 200N 1800E	9	8	29	<.3	71
CC 200N 1850E	25	18	60	<.3	137
CC 0N 1200E	6	20	32	<.3	94
CC 0N 1250E	14	19	56	<.3	79
CC 0N 1300E	13	22	54	<.3	67
CC 0N 1350E	30	33	71	<.3	305
CC 0N 1400E	35	19	63	<.3	372
CC 0N 1450E	87	22	53	<.3	384
CC 0N 1500E	18	18	71	<.3	120
CC 0N 1550E	12	9	36	<.3	79
STANDARD C3	62	37	144	5.4	127

Sample type: SOIL. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

Data FA

SAMPLE#	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ba ppm
CC 0N 1600E	8	14	23	<.3	87
CC 0N 1650E	13	11	43	<.3	67
CC 0N 1700E	12	11	35	<.3	66
CC 0N 1750E	23	15	68	<.3	106
CC 0N 1800E	19	18	76	<.3	112
CC 0N 1850E	16	14	46	<.3	87
CC BL 1900E 1000N	33	9	60	<.3	151
CC BL 1900E 950N	19	5	48	.4	92
CC BL 1900E 900N	37	9	61	<.3	146
CC BL 1900E 850N	18	12	42	<.3	61
CC BL 1900E 800N	31	16	41	<.3	92
CC BL 1900E 750N	33	7	49	.3	165
CC BL 1900E 700N	61	8	51	<.3	156
CC BL 1900E 650N	55	9	69	<.3	219
CC BL 1900E 600N	60	13	83	.3	341
CC BL 1900E 550N	21	15	61	<.3	79
CC BL 1900E 500N	16	8	39	<.3	51
CC BL 1900E 450N	14	19	40	<.3	88
CC BL 1900E 400N	17	15	38	<.3	144
CC BL 1900E 350N	26	16	64	<.3	132
CC BL 1900E 300N	21	18	83	<.3	78
CC BL 1900E 250N	13	20	38	<.3	80
CC BL 1900E 200N	18	17	46	<.3	67
CC BL 1900E 150N	16	12	46	<.3	79
RE CC BL 1900E 150N	16	11	45	<.3	78
CC BL 1900E 100N	27	14	53	<.3	104
CC BL 1900E 50N	11	17	39	<.3	60
CC BL 1900E 0N	12	12	23	<.3	68
STANDARD C3	61	32	142	5.3	130

Sample type: SOIL. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

Data FA

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

GEOCHEMICAL ANALYSIS CERTIFICATE

Fairfield Minerals Ltd. PROJECT CARIBOU CREEK/CC97-1 File # 97-4389

1420 - 700 W. Georgia St., Vancouver BC V7Y 1B6 Submitted by: Ed Balon

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Au* ppb
CC97-R1	8	35	24	11	.9	1	1	106	2.91	2	<8	<2	<2	6	<.2	<3	5	4	.01	.018	10	7	.06	128	<.01	<3	.25	.04	.12	3	6
CC97-R2	4	21	29	7	1.2	1	1	58	1.38	6	<8	<2	<2	3	<.2	<3	7	6	<.01	.004	6	15	.09	115	<.01	<3	.31	.01	.17	5	34
RE CC97-R2	4	20	26	7	1.2	1	1	57	1.35	5	<8	<2	<2	3	<.2	<3	8	5	<.01	.004	6	14	.09	113	<.01	<3	.30	.01	.17	4	<1

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.
THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL.
ASSAY RECOMMENDED FOR ROCK AND CORE SAMPLES IF CU PB ZN AS > 1%, AG > 30 PPM & AU > 1000 PPB
- SAMPLE TYPE: ROCK AU* - IGNITED, AQUA-REGIA/MIBK EXTRACT, GF/AA FINISHED.(20 GM)
Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

DATE RECEIVED: AUG 15 1997 DATE REPORT MAILED: Aug 26/97 SIGNED BY.......... D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

Data ___ FA ___

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

GEOCHEMICAL ANALYSIS CERTIFICATE

Fairfield Minerals Ltd. PROJECT CC PROPERTY/97-2 File # 97-4711

1420 - 700 W. Georgia St., Vancouver BC V7Y 1B6 Submitted by: David Ritcey

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Au* ppb
CC97-R3	2	23	3	42	<.3	1	<1	327	2.67	<2	<8	<2	<2	2	<.2	<3	<3	3	.01	.021	7	7	.56	62	<.01	<3	.77	.02	.11	2	4
CC97-R4	2	14	20	43	<.3	2	<1	264	3.02	4	<8	<2	<2	3	<.2	<3	<3	7	.02	.016	8	13	.51	70	<.01	<3	.67	.01	.15	5	4
CC97-R5	4	8	21	23	.5	1	<1	102	1.88	10	<8	<2	<2	2	<.2	<3	4	1	<.01	.008	7	8	.39	78	<.01	<3	.48	.01	.12	2	21
CC97-R6	2	19	12	14	<.3	1	1	119	4.35	<2	<8	<2	<2	2	<.2	<3	6	9	<.01	.007	3	12	.26	28	<.01	<3	.42	.01	.13	4	7
CC97-R7	1	66	<3	66	<.3	55	28	1010	5.72	15	<8	<2	2	57	.3	<3	4	178	1.78	.159	9	171	2.18	50	.06	<3	1.86	.03	.10	<2	5
RE CC97-R7	1	65	4	64	<.3	55	28	1001	5.64	15	<8	<2	2	56	.3	<3	<3	176	1.75	.158	9	170	2.16	50	.06	<3	1.84	.03	.10	<2	4
CC97-R8	1	64	5	53	.3	36	23	983	4.80	10	<8	<2	2	221	.3	5	4	62	6.47	.130	9	41	1.97	548	<.01	7	.61	.02	.29	<2	2
CC97-R10	3	6	30	<1	.8	1	<1	19	2.06	10	<8	<2	<2	3	<.2	<3	<3	1	.02	.003	3	8	.04	77	<.01	<3	.19	.01	.12	3	24

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.
THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL.
ASSAY RECOMMENDED FOR ROCK AND CORE SAMPLES IF CU PB ZN AS > 1%, AG > 30 PPM & AU > 1000 PPB
- SAMPLE TYPE: ROCK AU* - IGNITED, AQUA-REGIA/MIBK EXTRACT, GF/AA FINISHED.(20 GM)
Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

DATE RECEIVED: AUG 25 1997 **DATE REPORT MAILED:** Aug 29/97 **SIGNED BY**..........D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

 Data ___ FA ___

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

GEOCHEMICAL ANALYSIS CERTIFICATE

Fairfield Minerals Ltd. PROJECT CC PROPERTY/97-2 File # 97-4712

1420 - 700 W. Georgia St., Vancouver BC V7Y 1B6 Submitted by: David Ritcey

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Au* ppb
CC97-R9	<1	4158	7	149	1.5	106	213	297	16.98	599	<8	<2	<2	40	.3	<3	79	14	2.04	.043	2	18	1.16	24	.12	8	2.24	.23	.12	<2	3
CC97-R11	1	34	11	164	<.3	4	24	1884	12.89	10	<8	<2	<2	5	<.2	<3	<3	95	.17	.070	<1	9	3.57	6	<.01	<3	3.34	.01	.11	<2	11
RE CC97-R11	1	35	<3	167	<.3	4	24	1939	13.28	9	<8	<2	<2	6	<.2	<3	<3	99	.18	.071	<1	9	3.68	6	<.01	3	3.45	.01	.10	<2	11

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.
THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL.
ASSAY RECOMMENDED FOR ROCK AND CORE SAMPLES IF CU PB ZN AS > 1%, AG > 30 PPM & AU > 1000 PPB
- SAMPLE TYPE: ROCK   AU* - IGNITED, AQUA-REGIA/MIBK EXTRACT, GF/AA FINISHED.(20 GM)
Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

DATE RECEIVED: AUG 25 1997 **DATE REPORT MAILED:** Sept 5/97 **SIGNED BY** C.L. ....D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

                Data___ FA ____

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

ASSAY CERTIFICATE

Fairfield Minerals Ltd. PROJECT CC PROPERTY/97-2 File # 97-4712

1420 - 700 W. Georgia St., Vancouver BC V7Y 1B6 Submitted by: David Ritcey

SAMPLE#	Mo %	Cu %	Pb %	Zn %	Ag** oz/t	Ni %	Co %	Mn %	Fe %	As %	U %	Th %	Cd %	Sb %	Bi %	Au** oz/t
CC97-R9	<.001	.389	<.01	.02	.06	.010	.021	.03	14.60	.06	<.01	<.01	<.001	<.001	.01	<.001
CC97-R11	<.001	.004	<.01	.02	<.01	.001	.002	.20	11.84	<.01	<.01	<.01	<.001	<.001	<.01	.001

1 GM SAMPLE LEACHED IN 30 ML AQUA - REGIA, DILUTE TO 100 ML, ANALYSIS BY ICP.
AG** & AU** BY FIRE ASSAY FROM 1.A.T. SAMPLE.
- SAMPLE TYPE: ROCK

DATE RECEIVED: AUG 25 1997 DATE REPORT MAILED: Sept 5/97 SIGNED BY C.L.......D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

Data ✓ FA ✓

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

GEOCHEMICAL ANALYSIS CERTIFICATE

Fairfield Minerals Ltd. PROJECT CC PROPERTY/97-2 File # 97-4713 Page 1

1420 - 700 W. Georgia St., Vancouver BC V7Y 1B6 Submitted by: David Ritcey

SAMPLE#	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ba ppm
L4200N 550E	43	10	96	<.3	252
L4200N 600E	47	12	104	<.3	281
L4200N 700E	31	6	81	<.3	241
L4200N 750E	32	8	76	<.3	246
L4200N 800E	48	9	75	<.3	167
L4200N 850E	44	9	90	<.3	224
L4200N 900E	46	9	79	<.3	211
L4200N 950E	30	6	80	<.3	146
L4200N 1000E	34	5	79	<.3	139
L4200N 1050E	48	7	83	<.3	161
L4200N 1100E	61	12	113	<.3	226
RE L4200N 1100E	63	12	117	<.3	235
L4200N 1150E	47	14	109	<.3	317
L4200N 1200E	39	13	80	<.3	141
L4200N 1250E	41	13	81	.3	207
L4200N 1300E	56	11	82	<.3	150
L4200N 1350E	50	10	72	<.3	207
L4200N 1400E	187	10	78	.3	236
L4200N 1450E	41	7	52	<.3	136
L4200N 1500E	45	10	65	<.3	126
L4200N 1550E	15	14	95	<.3	78
L4200N 1600E	14	7	32	<.3	45
L4200N 1650E	19	22	141	<.3	113
L4200N 1700E	27	18	106	<.3	100
L4200N 1750E	16	9	93	<.3	79
L4200N 1800E	38	6	56	<.3	136
L4200N 1850E	25	6	64	<.3	208
L4000N 550E	33	12	87	<.3	154
L4000N 600E	45	12	102	<.3	256
L4000N 650E	36	13	106	<.3	304
L4000N 700E	30	11	82	<.3	299
L4000N 750E	44	9	103	<.3	278
L4000N 800E	31	10	74	<.3	273
L4000N 850E	34	6	87	<.3	260
L4000N 950E	30	8	79	<.3	287
STANDARD C3	64	32	156	5.6	142

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.
THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL.
- SAMPLE TYPE: SOIL Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

DATE RECEIVED: AUG 25 1997 DATE REPORT MAILED: Aug 30/97 SIGNED BY..........D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

 Data ✓ FA ____

SAMPLE#	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ba ppm
L4000N 1000E	34	9	76	<.3	259
L4000N 1050E	27	7	50	<.3	238
L4000N 1100E	31	10	54	<.3	160
L4000N 1150E	45	12	83	<.3	191
L4000N 1200E	50	14	121	<.3	281
L4000N 1250E	61	10	84	<.3	164
L4000N 1300E	58	10	63	<.3	119
L4000N 1350E	67	14	54	<.3	125
L4000N 1400E	50	9	48	<.3	230
L4000N 1450E	24	11	59	<.3	68
RE L4000N 1450E	23	10	60	<.3	69
L4000N 1500E	71	64	191	<.3	231
L4000N 1550E	7	12	29	<.3	49
L4000N 1600E	38	12	79	<.3	148
L4000N 1650E	21	8	74	<.3	84
L4000N 1700E	55	12	80	<.3	90
L4000N 1750E	25	10	54	<.3	164
L4000N 1800E	23	9	49	<.3	146
L4000N 1850E	67	10	62	<.3	76
L3800N 550E	30	10	80	<.3	139
L3800N 600E	40	13	71	<.3	153
L3800N 650E	30	11	72	<.3	138
L3800N 700E	57	14	76	<.3	157
L3800N 750E	42	14	100	<.3	267
L3800N 800E	35	10	88	<.3	231
L3800N 850E	39	14	99	<.3	311
L3800N 900E	41	15	109	<.3	269
L3800N 950E	46	9	93	<.3	294
L3800N 1000E	28	14	80	<.3	329
L3800N 1050E	23	9	71	<.3	141
L3800N 1100E	34	11	93	<.3	227
L3800N 1150E	60	9	96	<.3	207
L3800N 1200E	55	15	91	<.3	210
L3800N 1250E	37	9	63	<.3	94
L3800N 1350E	152	10	59	<.3	230
STANDARD C3	63	31	153	5.4	140

Sample type: SOIL. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

Data ___ FA ___

SAMPLE#	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ba ppm
L3800N 1400E	196	4	42	<.3	262
L3800N 1450E	17	4	29	<.3	79
L3800N 1500E	30	9	62	<.3	155
L3800N 1550E	110	12	78	<.3	143
L3800N 1600E	51	14	90	<.3	119
L3800N 1650E	138	4	104	<.3	220
L3800N 1700E	69	11	78	<.3	202
L3800N 1750E	33	15	65	<.3	143
L3800N 1800E	21	10	108	<.3	146
L3800N 1850E	25	9	60	<.3	76
RE L3800N 1850E	24	8	59	<.3	70
L3600N 550E	38	13	80	<.3	142
L3600N 600E	46	8	93	<.3	202
L3600N 650E	72	9	121	<.3	156
L3600N 700E	90	15	213	<.3	229
L3600N 750E	64	9	121	<.3	230
L3600N 800E	51	12	89	<.3	253
L3600N 850E	18	4	42	<.3	255
L3600N 900E	26	10	52	<.3	108
L3600N 950E	29	14	124	<.3	227
L3600N 1000E	26	7	73	<.3	126
L3600N 1050E	29	9	94	<.3	133
L3600N 1100E	173	6	97	.4	653
L3600N 1150E	46	7	63	<.3	139
L3600N 1200E	97	8	130	<.3	337
L3600N 1250E	28	18	96	<.3	115
L3600N 1300E	135	10	64	<.3	254
L3600N 1350E	51	13	57	<.3	150
L3600N 1400E	30	15	96	.3	277
L3600N 1450E	53	43	200	<.3	120
L3600N 1500E	88	7	94	<.3	264
L3600N 1550E	47	8	68	<.3	235
L3600N 1600E	340	6	42	.3	451
L3600N 1650E	710	12	209	<.3	153
L3600N 1700E	346	17	205	<.3	256
STANDARD C3	68	35	163	5.7	141

Sample type: SOIL. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

Data FA

SAMPLE#	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ba ppm
L3600N 1750E	48	8	63	<.3	155
L3600N 1800E	56	23	120	<.3	261
L3600N 1850E	18	10	61	<.3	167
L3400N 550E	24	12	62	<.3	143
L3400N 600E	33	11	76	<.3	208
L3400N 650E	31	13	88	<.3	228
L3400N 700E	29	7	87	<.3	154
L3400N 750E	24	14	114	<.3	167
L3400N 800E	37	12	94	<.3	241
L3400N 900E	123	13	359	<.3	273
L3400N 950E	87	9	192	<.3	142
L3400N 1000E	477	20	1297	.5	239
L3400N 1050E	59	10	128	<.3	150
L3400N 1100E	114	13	112	<.3	211
L3400N 1150E	389	23	215	<.3	252
L3400N 1200E	94	16	179	<.3	111
L3400N 1250E	55	19	110	<.3	160
L3400N 1300E	8	8	27	<.3	35
L3400N 1350E	566	10	49	.3	515
L3400N 1400E	18	5	21	<.3	110
L3400N 1450E	24	7	27	<.3	61
RE L3400N 1450E	24	7	28	<.3	63
L3400N 1500E	86	16	45	<.3	347
L3400N 1550E	36	10	58	<.3	89
L3400N 1600E	23	12	56	<.3	209
L3400N 1650E	21	8	58	<.3	208
L3400N 1700E	146	15	56	<.3	209
L3400N 1750E	50	19	224	<.3	589
L3400N 1800E	15	9	50	<.3	144
L3400N 1850E	8	5	42	<.3	33
L3200N 600E	27	10	65	<.3	218
L3200N 650E	20	11	83	<.3	144
L3200N 700E	28	10	80	<.3	142
L3200N 750E	27	8	65	<.3	230
L3200N 800E	25	9	60	<.3	179
STANDARD C3	61	39	152	5.0	134

Sample type: SOIL. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

Data FA

SAMPLE#	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ba ppm
L3200N 850E	24	9	65	<.3	156
L3200N 900E	43	9	68	<.3	246
L3200N 950E	53	8	64	<.3	114
L3200N 1000E	71	13	82	.4	280
L3200N 1050E	29	11	66	<.3	160
L3200N 1100E	21	9	73	<.3	124
L3200N 1150E	30	21	196	<.3	66
L3200N 1200E	390	2047	925	1.5	94
L3200N 1250E	2271	59	1130	.6	286
L3200N 1300E	49	13	132	<.3	146
L3200N 1350E	39	24	171	<.3	93
RE L3200N 1350E	39	20	171	<.3	94
L3200N 1400E	53	3	22	<.3	116
L3200N 1450E	64	8	54	<.3	167
L3200N 1500E	61	6	24	<.3	139
L3200N 1550E	43	12	123	<.3	82
L3200N 1600E	36	15	159	<.3	287
L3200N 1650E	21	<3	55	<.3	1530
L3200N 1700E	44	12	43	<.3	309
L3200N 1750E	7	5	18	<.3	35
L3200N 1800E	49	11	106	<.3	135
L3200N 1850E	19	9	49	<.3	83
L3000N 550E	31	11	36	<.3	102
L3000N 600E	28	13	50	<.3	224
L3000N 650E	23	10	54	<.3	206
L3000N 700E	21	8	59	<.3	146
L3000N 750E	13	9	42	<.3	125
L3000N 800E	26	8	52	<.3	165
L3000N 850E	23	11	59	<.3	233
L3000N 900E	30	9	46	<.3	293
L3000N 950E	17	13	61	<.3	125
L3000N 1000E	3	7	21	<.3	49
L3000N 1050E	3	15	44	<.3	50
L3000N 1100E	8	7	19	<.3	91
L3000N 1150E	118	9	63	<.3	272
STANDARD C3	64	38	157	5.4	138

Sample type: SOIL. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

Data FA ____

SAMPLE#	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ba ppm
L3000N 1200E	42	6	38	<.3	160
L3000N 1250E	310	4	56	.3	274
L3000N 1300E	932	6	162	.4	451
L3000N 1350E	2675	14	641	.4	439
L3000N 1400E	532	114	633	.9	633
L3000N 1450E	257	9	444	.6	261
L3000N 1500E	41	4	77	<.3	251
L3000N 1550E	29	6	55	<.3	344
L3000N 1600E	30	14	43	<.3	378
L3000N 1650E	19	4	83	<.3	158
RE L3000N 1650E	19	<3	83	<.3	153
L3000N 1700E	199	8	55	<.3	432
L3000N 1750E	36	20	117	.3	139
L3000N 1800E	30	5	67	<.3	136
L3000N 1850E	15	13	67	<.3	133
L2800N 550E	26	8	50	<.3	233
L2800N 600E	16	6	60	<.3	162
L2800N 650E	28	7	59	<.3	231
L2800N 700E	32	9	71	<.3	132
L2800N 750E	17	5	73	<.3	129
L2800N 800E	18	14	64	<.3	126
L2800N 850E	16	5	46	<.3	126
L2800N 900E	19	7	82	<.3	182
L2800N 950E	22	11	60	<.3	183
L2800N 1000E	20	9	47	<.3	129
L2800N 1050E	53	7	42	<.3	149
L2800N 1100E	29	7	119	<.3	107
L2800N 1150E	62	4	197	<.3	167
L2800N 1200E	25	6	89	<.3	146
L2800N 1250E	141	6	60	.3	470
L2800N 1300E	18	6	45	<.3	160
L2800N 1350E	105	7	52	<.3	430
L2800N 1400E	242	13	36	.3	854
L2800N 1450E	386	6	79	<.3	404
L2800N 1500E	38	6	92	<.3	441
STANDARD C3	63	37	152	5.2	137

Sample type: SOIL. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

Data FA

SAMPLE#	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ba ppm
L2800N 1550E	67	7	76	<.3	256
L2800N 1600E	22	11	51	<.3	245
L2800N 1650E	15	11	72	<.3	118
L2800N 1700E	63	11	75	<.3	149
L2800N 1750E	78	9	116	<.3	120
L2800N 1800E	35	17	124	<.3	90
L2800N 1850E	28	9	88	<.3	76
L2600N 550E	31	6	56	<.3	276
L2600N 600E	32	3	44	<.3	160
L2600N 650E	23	<3	62	<.3	117
L2600N 700E	44	9	71	<.3	308
L2600N 750E	28	7	68	<.3	164
L2600N 800E	31	5	93	<.3	207
L2600N 850E	26	7	65	<.3	264
L2600N 900E	16	9	74	<.3	158
L2600N 950E	24	7	62	<.3	193
RE L2600N 950E	26	<3	63	<.3	210
L2600N 1000E	24	7	71	<.3	157
L2600N 1050E	25	5	40	<.3	261
L2600N 1100E	28	7	48	<.3	162
L2600N 1150E	42	6	53	<.3	324
L2600N 1250E	116	8	78	.4	444
L2600N 1300E	52	7	46	<.3	250
L2600N 1350E	23	6	44	<.3	77
L2600N 1400E	28	9	64	1.2	145
L2600N 1450E	33	3	94	<.3	280
L2600N 1500E	32	4	74	<.3	252
L2600N 1550E	40	5	40	<.3	108
L2600N 1600E	38	16	64	<.3	140
L2600N 1650E	24	6	77	<.3	117
L2600N 1700E	23	15	93	<.3	86
L2600N 1750E	26	10	103	<.3	78
L2600N 1800E	17	10	122	.4	90
L2600N 1850E	10	4	57	<.3	94
L2400N 550E	23	7	54	<.3	115
STANDARD C3	65	32	159	5.5	140

Sample type: SOIL. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

Data FA

SAMPLE#	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ba ppm
L2400N 600E	23	4	63	<.3	143
L2400N 650E	27	9	67	<.3	157
L2400N 700E	26	4	66	<.3	234
L2400N 750E	31	6	66	<.3	161
L2400N 800E	24	6	66	<.3	157
L2400N 850E	19	7	50	<.3	100
L2400N 900E	40	10	66	<.3	272
L2400N 950E	39	9	60	<.3	241
L2400N 1000E	33	11	55	<.3	302
L2400N 1050E	32	7	61	<.3	250
L2400N 1100E	32	6	59	<.3	224
L2400N 1150E	35	10	64	<.3	239
RE L2400N 1150E	38	11	69	<.3	255
L2400N 1200E	39	8	61	<.3	325
L2400N 1250E	23	7	49	<.3	147
L2400N 1300E	16	8	53	<.3	135
L2400N 1350E	20	9	73	<.3	146
L2400N 1400E	18	9	75	<.3	75
L2400N 1450E	22	5	57	<.3	104
L2400N 1500E	53	7	70	<.3	126
L2400N 1550E	39	8	153	<.3	155
L2400N 1600E	45	11	86	<.3	146
L2400N 1650E	37	11	57	<.3	195
L2400N 1700E	29	10	57	<.3	250
L2400N 1750E	30	7	48	<.3	156
L2400N 1800E	22	11	51	<.3	130
L2400N 1850E	30	13	88	<.3	164
L2200N 550E	28	9	63	<.3	235
L2200N 600E	38	10	70	<.3	282
L2200N 650E	38	9	50	<.3	245
L2200N 700E	40	7	55	<.3	280
L2200N 750E	61	11	94	<.3	374
L2200N 800E	47	8	80	<.3	490
L2200N 850E	33	7	70	<.3	420
L2200N 900E	16	7	69	<.3	234
STANDARD C3	69	37	159	5.6	145

Sample type: SOIL. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

Data FA

SAMPLE#	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ba ppm
L2200N 950E	24	10	54	<.3	254
L2200N 1000E	37	10	58	<.3	288
L2200N 1050E	15	9	70	<.3	222
L2200N 1100E	31	9	79	<.3	319
L2200N 1150E	29	9	57	<.3	262
L2200N 1200E	26	10	52	<.3	157
L2200N 1250E	9	7	21	<.3	76
L2200N 1300E	16	10	48	<.3	220
L2200N 1350E	14	11	44	<.3	48
L2200N 1400E	8	8	36	<.3	26
L2200N 1450E	17	9	44	<.3	52
L2200N 1500E	24	6	43	<.3	126
L2200N 1550E	7	10	20	<.3	112
L2200N 1600E	29	6	58	<.3	117
L2200N 1650E	39	5	70	<.3	127
RE L2200N 1650E	39	3	70	<.3	128
L2200N 1700E	44	10	81	<.3	274
L2200N 1750E	33	20	82	<.3	251
L2200N 1800E	22	7	43	<.3	147
L2200N 1850E	84	19	96	.6	240
L2000N 550E	72	17	94	.6	267
L2000N 600E	15	5	15	<.3	112
L2000N 650E	18	13	51	<.3	125
L2000N 700E	35	6	49	<.3	197
L2000N 750E	26	7	42	<.3	142
L2000N 800E	38	8	46	<.3	163
L2000N 850E	40	9	59	<.3	254
L2000N 900E	20	6	42	<.3	154
L2000N 950E	41	12	67	<.3	280
L2000N 1000E	40	11	56	<.3	272
L2000N 1050E	30	11	50	<.3	199
L2000N 1100E	48	9	46	<.3	262
L2000N 1150E	20	6	37	<.3	110
L2000N 1200E	44	8	60	<.3	304
L2000N 1250E	39	6	59	.4	336
STANDARD C3	64	35	149	5.4	140

Sample type: SOIL. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

Data FA

SAMPLE#	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ba ppm
L2000N 1300E	38	17	68	<.3	334
L2000N 1350E	20	14	75	<.3	229
L2000N 1400E	23	14	55	<.3	118
L2000N 1450E	18	12	49	<.3	124
L2000N 1500E	15	14	37	<.3	63
L2000N 1550E	42	10	60	<.3	164
L2000N 1600E	17	13	42	<.3	94
L2000N 1650E	20	6	41	<.3	97
L2000N 1700E	33	18	42	<.3	115
L2000N 1750E	23	26	28	<.3	58
L2000N 1800E	46	12	49	.4	105
L2000N 1850E	107	10	65	<.3	117
L1800N 550E	23	7	50	<.3	162
L1800N 600E	26	8	58	<.3	231
L1800N 650E	15	9	73	<.3	84
L1800N 700E	24	12	48	<.3	151
L1800N 750E	44	19	57	<.3	351
L1800N 800E	22	18	62	<.3	242
RE L1800N 800E	22	15	61	<.3	240
L1800N 850E	27	10	57	<.3	154
L1800N 900E	20	9	51	<.3	126
L1800N 950E	34	9	57	<.3	168
L1800N 1000E	12	8	36	<.3	80
L1800N 1050E	32	14	54	<.3	239
L1800N 1100E	26	12	48	<.3	144
L1800N 1150E	15	9	32	<.3	68
L1800N 1200E	24	10	50	<.3	158
L1800N 1250E	20	9	43	<.3	143
L1800N 1300E	31	10	59	<.3	215
L1800N 1350E	39	13	71	<.3	295
L1800N 1400E	36	12	72	<.3	349
L1800N 1450E	43	9	46	<.3	506
L1800N 1500E	58	10	52	<.3	255
L1800N 1550E	63	11	51	<.3	101
L1800N 1600E	33	16	45	<.3	91
STANDARD C3	64	39	150	5.3	138

Sample type: SOIL. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

Data FA

SAMPLE#	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ba ppm
L1800N 1650E	76	18	92	<.3	97
L1800N 1700E	84	17	69	<.3	113
L1800N 1750E	67	11	59	<.3	86
L1800N 1800E	743	16	95	.7	144
L1800N 1850E	17	14	31	<.3	132
BL 1900E 4200N	23	14	80	<.3	138
BL 1900E 4150N	28	8	49	<.3	154
BL 1900E 4100N	18	11	92	<.3	90
BL 1900E 4050N	26	9	53	<.3	152
BL 1900E 4000N	27	10	54	<.3	116
BL 1900E 3950N	20	8	52	<.3	112
BL 1900E 3900N	18	11	62	<.3	77
BL 1900E 3850N	19	13	76	<.3	134
BL 1900E 3800N	17	12	85	<.3	94
BL 1900E 3750N	24	11	78	<.3	238
BL 1900E 3700N	20	8	53	<.3	155
BL 1900E 3650N	22	6	49	<.3	158
BL 1900E 3600N	27	13	53	<.3	113
BL 1900E 3550N	19	12	71	<.3	89
RE BL 1900E 3550N	19	14	70	<.3	87
BL 1900E 3500N	32	10	57	<.3	109
BL 1900E 3450N	10	7	50	<.3	50
BL 1900E 3400N	24	9	75	<.3	111
BL 1900E 3350N	22	14	114	<.3	109
BL 1900E 3300N	17	11	59	<.3	101
BL 1900E 3250N	19	14	103	<.3	121
BL 1900E 3200N	21	9	53	<.3	112
BL 1900E 3150N	31	12	106	<.3	134
BL 1900E 3100N	14	13	127	<.3	109
BL 1900E 3050N	10	10	161	<.3	74
BL 1900E 3000N	11	14	87	<.3	46
BL 1900E 2950N	16	9	44	<.3	75
BL 1900E 2900N	14	19	99	<.3	67
BL 1900E 2850N	11	21	339	<.3	75
BL 1900E 2800N	27	11	274	<.3	73
STANDARD C3	64	36	151	5.3	136

Sample type: SOIL. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

Data___ FA ____

SAMPLE#	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ba ppm
BL 1900E 2750N	75	14	96	<.3	56
BL 1900E 2700N	440	20	319	<.3	48
BL 1900E 2650N	66	14	147	<.3	129
BL 1900E 2600N	70	14	58	<.3	135
BL 1900E 2550N	38	11	52	<.3	135
BL 1900E 2500N	22	13	54	<.3	125
BL 1900E 2450N	26	6	68	<.3	118
BL 1900E 2400N	17	9	56	<.3	142
BL 1900E 2350N	32	12	68	<.3	119
BL 1900E 2300N	34	16	62	<.3	138
BL 1900E 2250N	29	14	62	<.3	119
BL 1900E 2200N	44	19	115	<.3	152
BL 1900E 2150N	58	25	140	.3	123
BL 1900E 2100N	54	19	105	<.3	141
BL 1900E 2050N	65	9	42	<.3	89
RE BL 1900E 2050N	64	10	40	<.3	89
BL 1900E 2000N	38	16	100	<.3	144
BL 1900E 1950N	5	10	19	<.3	30
BL 1900E 1900N	34	11	48	<.3	159
BL 1900E 1850N	11	15	49	<.3	112
BL 1900E 1800N	11	14	52	<.3	132
BL 1900E 1750N	11	10	47	<.3	134
BL 1900E 1700N	11	14	72	<.3	167
BL 1900E 1650N	60	18	57	.3	283
BL 1900E 1600N	22	20	62	<.3	218
BL 1900E 1500N	86	11	98	<.3	238
BL 1900E 1450N	63	6	64	<.3	136
BL 1900E 1350N	15	3	19	<.3	89
BL 1900E 1300N	40	7	52	<.3	144
BL 1900E 1250N	32	10	59	<.3	161
BL 1900E 1200N	10	20	47	<.3	54
BL 1900E 1150N	10	10	45	<.3	71
BL 1900E 1100N	17	7	69	<.3	103
BL 1900E 1050N	16	8	57	<.3	110
STANDARD C3	64	35	155	5.3	138

Sample type: SOIL. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

Data ___ FA ___

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

GEOCHEMICAL ANALYSIS CERTIFICATE

Fairfield Minerals Ltd. PROJECT CC/97-3 File # 97-4848 Page 1

1420 - 700 W. Georgia St., Vancouver BC V7Y 1B6 Submitted by: Ed Balon

SAMPLE#	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ba ppm
L3150N 1100E	18	4	64	<.3	155
L3150N 1150E	15	9	133	<.3	91
L3150N 1200E	324	69	1127	.5	132
L3150N 1250E	280	12	159	<.3	209
L3150N 1300E	765	8	151	<.3	145
L3100N 1100E	54	4	66	<.3	185
L3100N 1150E	4	4	37	<.3	28
L3100N 1200E	8	6	81	<.3	18
RE L3100N 1200E	10	7	87	<.3	43
L3100N 1250E	10	35	27	<.3	58
L3100N 1300E	689	18	83	<.3	240
L3050N 1100E	101	8	125	<.3	292
L3050N 1150E	8	7	22	<.3	40
L3050N 1200E	6	5	19	<.3	24
L3050N 1250E	12	14	27	.3	46
L3050N 1300E	63	6	92	<.3	167
L1600N 750E	29	7	48	<.3	191
L1600N 800E	29	3	70	<.3	205
L1600N 850E	21	4	51	.3	121
L1600N 900E	15	7	39	<.3	110
L1600N 950E	23	4	36	<.3	129
L1600N 1000E	20	5	42	<.3	97
L1600N 1050E	18	6	47	<.3	104
L1600N 1100E	32	7	75	<.3	149
L1600N 1150E	26	5	64	<.3	187
L1600N 1200E	32	8	65	<.3	194
L1600N 1250E	32	5	61	<.3	205
L1600N 1300E	38	11	89	<.3	280
L1600N 1350E	21	4	60	<.3	220
L1600N 1400E	53	<3	74	<.3	89
L1600N 1450E	13	8	36	<.3	51
L1600N 1500E	63	13	65	.4	282
L1600N 1550E	64	15	75	.4	267
L1600N 1600E	55	9	64	.4	211
L1600N 1650E	54	8	51	<.3	207
STANDARD C3	65	31	160	5.5	147

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.
THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL.
- SAMPLE TYPE: SOIL Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

DATE RECEIVED: AUG 27 1997 **DATE REPORT MAILED:** Sept 3/97 **SIGNED BY**.......... D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

Data FA

SAMPLE#	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ba ppm
L1600N 1700E	45	14	31	<.3	468
L1600N 1750E	11	7	17	<.3	52
L1600N 1800E	43	14	46	<.3	140
L1600N 1850E	181	18	88	.3	264
L1400N 950E	45	6	78	<.3	292
L1400N 1000E	29	4	53	<.3	216
L1400N 1050E	37	5	63	<.3	238
L1400N 1100E	46	9	75	<.3	261
L1400N 1150E	37	6	64	<.3	206
L1400N 1200E	33	8	60	<.3	170
L1400N 1250E	33	5	64	<.3	236
RE L1400N 1250E	32	3	62	<.3	232
L1400N 1300E	25	5	61	<.3	138
L1400N 1350E	53	10	121	<.3	461
L1400N 1400E	47	13	86	<.3	259
L1400N 1450E	32	6	59	<.3	183
L1400N 1500E	40	11	66	<.3	273
L1400N 1550E	16	5	56	<.3	186
L1400N 1600E	11	10	35	<.3	37
L1400N 1650E	31	4	78	<.3	168
L1400N 1700E	37	8	79	<.3	172
L1400N 1750E	43	10	78	<.3	206
L1400N 1800E	29	8	53	<.3	192
L1400N 1850E	53	8	46	<.3	178
L1400N 1950E	65	3	58	<.3	107
L1400N 2000E	20	10	99	<.3	111
L1400N 2050E	30	11	73	<.3	188
L1400N 2100E	39	7	104	.3	153
L1400N 2150E	72	9	111	.3	191
L1400N 2200E	44	14	129	<.3	149
L1400N 2250E	12	9	76	<.3	173
L1400N 2300E	18	15	92	<.3	131
L1400N 2350E	32	7	71	.3	159
L1200N 1250E	34	3	59	<.3	165
L1200N 1300E	31	5	51	<.3	151
STANDARD C3	69	39	166	5.6	157

Sample type: SOIL. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

Data ___ FA ___

ACME ANALYTICAL

Fairfield Minerals Ltd. PROJECT CC/97-3 FILE # 97-4848

ACME ANALYTICAL

SAMPLE#	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ba ppm
L1200N 1350E	28	5	52	<.3	173
L1200N 1400E	39	7	74	<.3	190
L1200N 1450E	51	8	120	.5	228
L1200N 1500E	40	10	71	<.3	191
L1200N 1550E	55	10	71	<.3	239
L1200N 1600E	41	6	56	<.3	243
L1200N 1650E	19	7	51	<.3	122
L1200N 1700E	39	4	67	.5	184
L1200N 1750E	12	7	29	<.3	70
L1200N 1800E	12	11	79	.3	140
L1200N 1850E	9	7	28	<.3	46
L1200N 1950E	33	5	49	<.3	143
L1200N 2000E	23	13	94	<.3	171
L1200N 2050E	58	4	58	.4	206
L1200N 2100E	69	6	54	.4	212
L1200N 2150E	14	5	68	<.3	136
L1200N 2200E	32	12	58	<.3	161
L1200N 2250E	10	17	121	<.3	92
L1200N 2300E	11	9	66	<.3	158
RE L1200N 2300E	11	7	66	<.3	151
L1200N 2350E	19	6	84	<.3	200
L800N 1500E	34	9	61	<.3	203
L800N 1550E	28	8	60	<.3	224
L800N 1600E	51	<3	60	<.3	172
L800N 1650E	68	4	79	<.3	148
L800N 1700E	54	8	81	<.3	166
L800N 1750E	48	<3	50	<.3	131
L800N 1800E	29	<3	56	<.3	110
L800N 1850E	44	11	68	<.3	139
L800N 1950E	11	12	27	<.3	62
L800N 2000E	18	8	48	<.3	110
L800N 2050E	37	14	34	<.3	141
L800N 2100E	32	8	57	.3	205
L800N 2150E	33	8	70	<.3	118
L800N 2200E	61	<3	68	<.3	193
STANDARD C3	65	36	158	5.7	149

Sample type: SOIL. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

Data / FA ____

SAMPLE#	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ba ppm
L800N 2250E	25	11	49	<.3	109
L800N 2300E	103	3	93	.5	371
L800N 2350E	72	12	117	.4	165
L800N 2400E	23	8	57	<.3	130
L800N 2450E	10	16	29	<.3	71
L800N 2500E	19	5	37	<.3	81
L600N 1950E	22	4	40	<.3	94
L600N 2000E	55	11	116	<.3	299
L600N 2050E	74	14	55	.3	175
L600N 2100E	59	4	73	<.3	299
L600N 2150E	45	<3	64	<.3	321
L600N 2200E	29	7	48	<.3	145
RE L600N 2200E	27	6	46	.3	139
L600N 2250E	24	5	34	<.3	114
L600N 2300E	20	5	73	<.3	167
L600N 2350E	58	10	59	<.3	314
L600N 2400E	63	21	70	<.3	271
L600N 2450E	114	6	58	.4	271
L600N 2500E	41	5	31	.3	58
L400N 1950E	13	14	47	<.3	78
L400N 2000E	52	16	91	.3	170
L400N 2050E	16	17	28	<.3	74
L400N 2100E	11	17	28	<.3	49
L400N 2150E	27	8	53	<.3	119
L400N 2200E	20	22	118	.3	140
L400N 2250E	33	7	59	<.3	158
L400N 2300E	16	6	37	<.3	165
L400N 2350E	8	3	16	.4	65
L400N 2400E	32	3	42	<.3	152
L400N 2450E	16	7	40	.3	146
L400N 2500E	32	9	42	<.3	167
L400N 2550E	86	5	78	.3	124
L200N 1950E	20	14	58	.4	86
L200N 2000E	44	20	55	<.3	167
L200N 2050E	23	15	54	<.3	86
STANDARD C3	70	35	169	5.7	162

Sample type: SOIL. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

Data ___ FA ___

SAMPLE#	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ba ppm
L200N 2100E	13	12	52	<.3	72
L200N 2150E	14	18	20	.3	82
L200N 2200E	44	17	89	<.3	471
L200N 2250E	40	10	63	<.3	188
RE L200N 2250E	41	9	62	<.3	197
L200N 2300E	41	13	52	.3	327
L200N 2350E	51	13	66	<.3	279
L200N 2400E	24	13	52	<.3	159
L200N 2450E	13	10	61	<.3	117
L200N 2500E	31	11	56	<.3	203
L200N 2550E	11	12	38	<.3	72
L0N 1950E	29	13	127	<.3	144
L0N 2000E	19	15	36	<.3	127
L0N 2050E	17	17	75	<.3	184
L0N 2100E	20	11	66	<.3	238
L0N 2150E	60	13	106	<.3	317
L0N 2200E	27	5	99	<.3	195
L0N 2250E	13	15	42	<.3	95
L0N 2300E	199	8	81	<.3	300
L0N 2350E	25	13	48	<.3	143
L0N 2400E	29	28	91	<.3	141
L0N 2450E	5	<3	7	.3	33
L0N 2500E	13	16	33	<.3	98
L0N 2550E	19	20	55	<.3	99
STANDARD C3	69	36	165	5.5	157

Sample type: SOIL. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

Data ___ FA ___

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

GEOCHEMICAL ANALYSIS CERTIFICATE

Fairfield Minerals Ltd. PROJECT CC/97-4 File # 97-5363

1420 - 700 W. Georgia St., Vancouver BC V7Y 1B6 Submitted by: E.A. Balon

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Au* ppb
CC 3185N 1250E	1	116	7	129	<.3	16	16	601	3.39	<2	<8	<2	<2	22	<.2	<3	<3	74	.46	.083	9	22	1.62	115	.10	3	1.86	.01	.06	<2	3
CC 3200N 1200E	1	74	20	210	<.3	3	6	620	1.62	<2	<8	<2	<2	20	2.1	<3	<3	25	.73	.038	9	7	.35	154	.06	<3	.92	.01	.05	<2	<1
T239-S1	4	546	42	561	<.3	24	21	974	7.31	11	<8	<2	<2	39	.4	4	<3	97	.08	.107	8	61	2.08	308	.06	<3	2.90	.01	.07	<2	14
T239-S2	4	298	13	158	.9	16	6	852	10.95	10	<8	<2	<2	28	<.2	<3	4	124	.03	.085	4	68	1.87	240	.10	<3	2.59	.01	.18	<2	35
T239-S3	5	369	9	155	<.3	19	11	898	11.54	9	<8	<2	<2	39	.3	3	<3	91	.02	.065	9	78	2.38	228	.03	<3	3.16	.01	.27	<2	13
RE T239-S3	7	375	10	155	<.3	18	12	862	11.00	10	10	<2	<2	38	<.2	5	3	88	.02	.064	10	75	2.28	269	.03	<3	3.04	.01	.26	<2	-
T239-S4	9	752	23	776	1.1	31	56	1907	9.33	14	<8	<2	<2	17	1.0	<3	<3	100	.09	.127	8	60	2.30	544	.01	<3	3.20	.01	.07	2	20
T239-S5	3	31	11	98	.3	1	3	327	8.29	<2	12	<2	2	22	.2	<3	<3	30	.02	.085	11	7	1.57	230	.03	3	2.55	.01	.17	<2	2
T239-S6	19	15	27	35	<.3	<1	3	102	14.66	11	14	<2	<2	2	<.2	<3	3	18	.01	.096	4	3	.22	129	.05	3	2.10	<.01	.07	<2	7

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.
THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL.
- SAMPLE TYPE: SOIL AU* - AQUA-REGIA/MIBK EXTRACT, GF/AA FINISHED.(10 GM)
Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

DATE RECEIVED: SEP 15 1997 DATE REPORT MAILED: Sept 26/97 SIGNED BY...[signature]....D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

Data___ FA ___

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

GEOCHEMICAL ANALYSIS CERTIFICATE

Fairfield Minerals Ltd. PROJECT CC/97-4 File # 97-5364

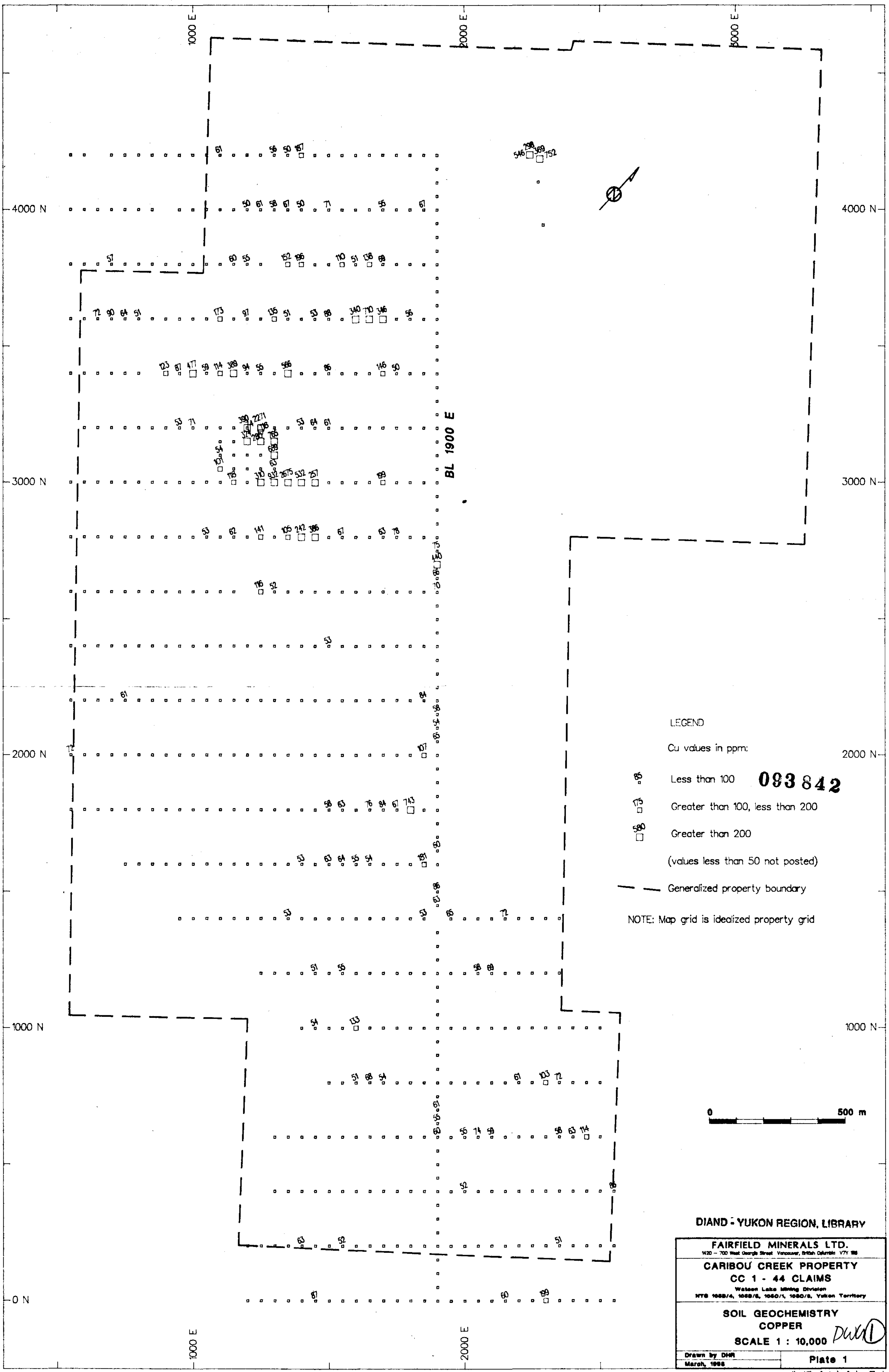
1420 - 700 W. Georgia St., Vancouver BC V7Y 1B6 Submitted by: E.A. Balon

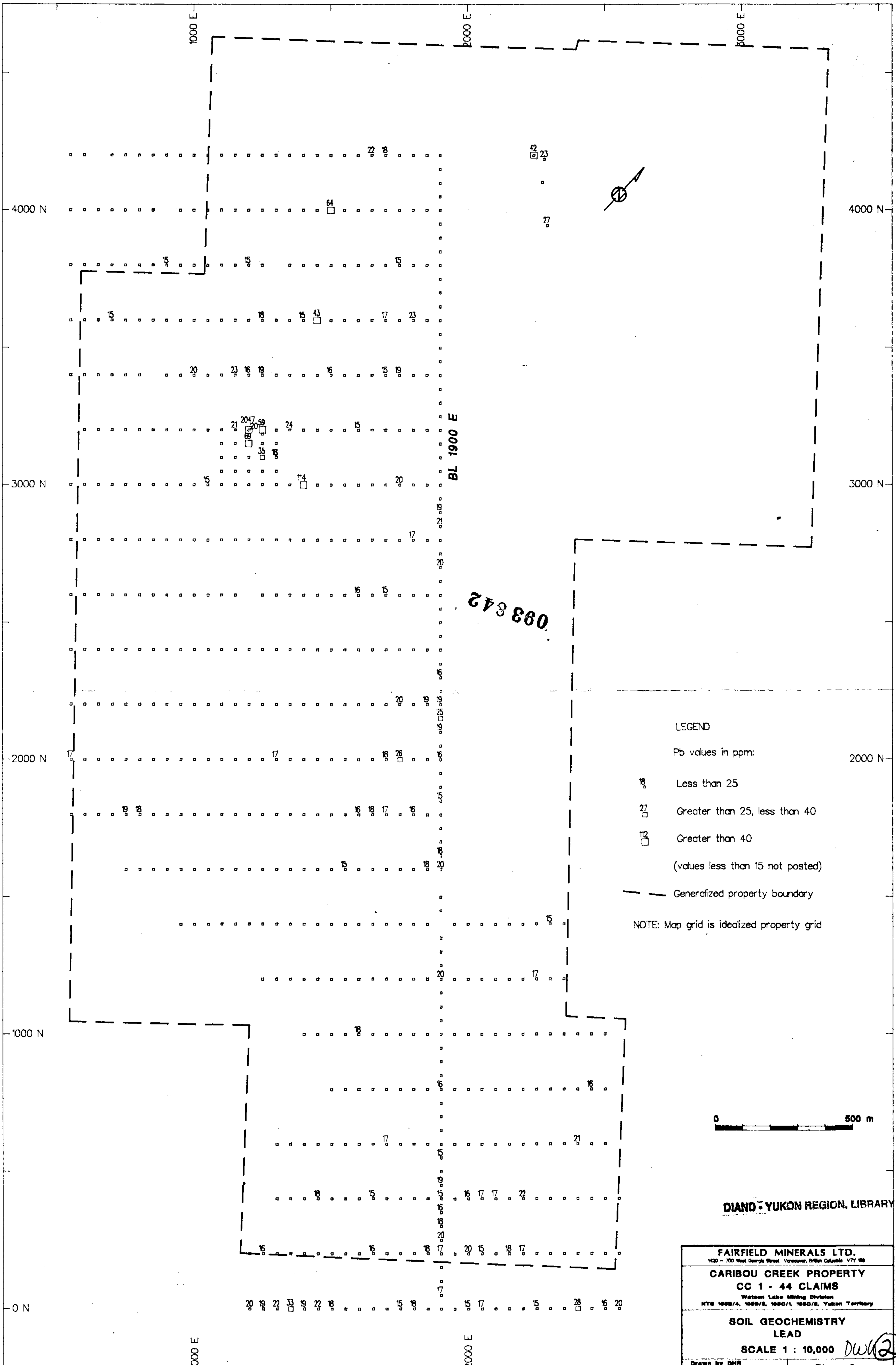
SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Au* ppb
T239-1	1	123	12	107	.4	25	13	510	3.10	4	<8	<2	<2	28	.5	<3	<3	48	1.28	.083	19	44	.89	213	.06	3	1.62	.01	.10	<2	15
T239-2	2	69	11	92	<.3	22	16	522	3.53	13	<8	<2	<2	28	.5	3	<3	34	1.32	.074	22	39	1.06	162	.03	4	1.69	.01	.06	<2	6
T239-3	<1	79	13	74	<.3	24	11	434	2.71	4	<8	<2	<2	25	.3	<3	<3	53	1.13	.073	15	43	.70	136	.08	3	1.19	.01	.08	<2	2
T239-4	<1	120	27	176	.3	23	13	470	3.18	3	<8	<2	<2	22	.3	<3	<3	51	.63	.073	13	38	1.22	214	.06	3	2.05	.01	.07	<2	2
RE T239-4	<1	119	29	175	.3	24	13	461	3.13	3	<8	<2	<2	21	.2	<3	<3	51	.63	.071	12	40	1.21	214	.06	<3	2.04	.01	.07	<2	1

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.
THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL.
- SAMPLE TYPE: STREAM SED. AU* - AQUA-REGIA/MIBK EXTRACT, GF/AA FINISHED.(10 GM)
Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

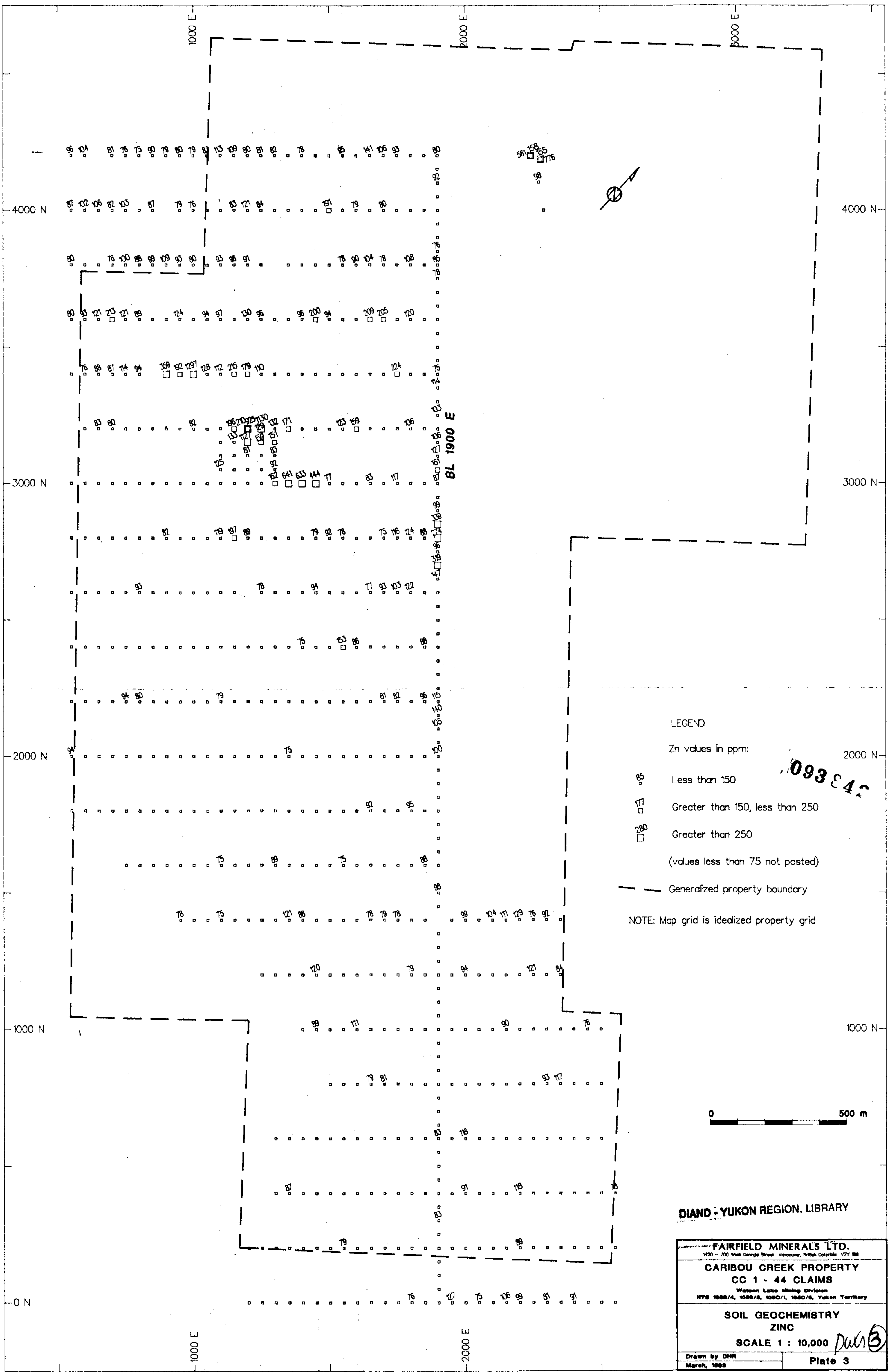
DATE RECEIVED: SEP 15 1997 **DATE REPORT MAILED:** Sept 26/97 **SIGNED BY** C.L........D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

Data ✓ FA ____


1000 E
2000 E
3000 E
4000 N
3000 N
2000 N
1000 N
0 N
BL 1900 E
LEGEND
Cu values in ppm:
Less than 100
Greater than 100, less than 200
Greater than 200
(values less than 50 not posted)
Generalized property boundary
NOTE: Map grid is idealized property grid
093842
0
500 m
DIAND - YUKON REGION, LIBRARY
FAIRFIELD MINERALS LTD.
CARIBOU CREEK PROPERTY
CC 1 - 44 CLAIMS
Watson Lake Mining Division
SOIL GEOCHEMISTRY
COPPER
SCALE 1 : 10,000
Drawn by DHR
March, 1988
Plate 1



1000 E
2000 E
3000 E
4000 N
3000 N
2000 N
1000 N
0 N
BL 1900 E
093 642
LEGEND
Pb values in ppm:
Less than 25
Greater than 25, less than 40
Greater than 40
(values less than 15 not posted)
Generalized property boundary
NOTE: Map grid is idealized property grid
0
500 m
DIAND - YUKON REGION, LIBRARY
FAIRFIELD MINERALS LTD.
CARIBOU CREEK PROPERTY
CC 1 - 44 CLAIMS
Watson Lake Mining Division
SOIL GEOCHEMISTRY
LEAD
SCALE 1 : 10,000
DWG 2
Drawn by DHR
March, 1988
Plate 2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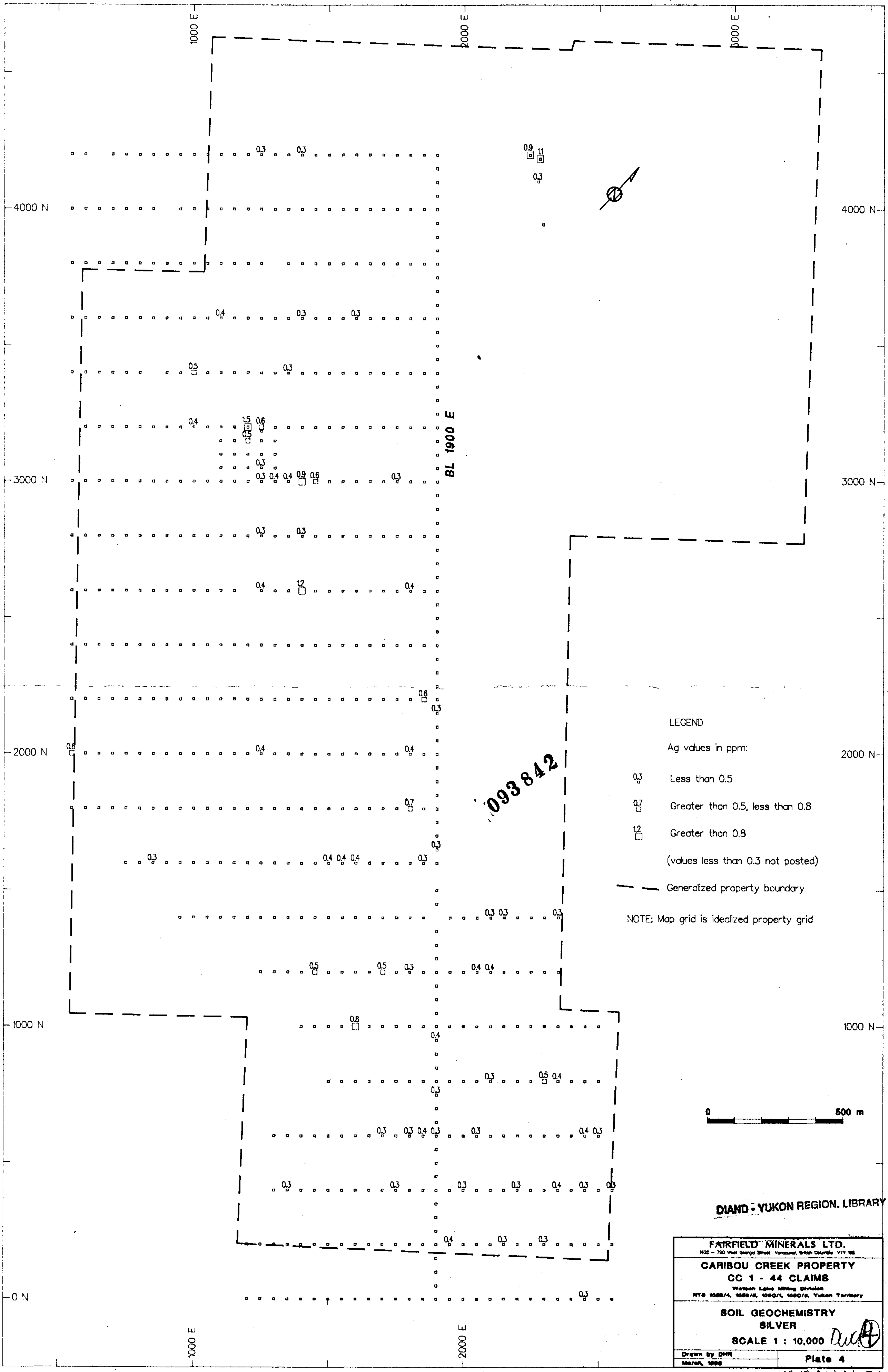
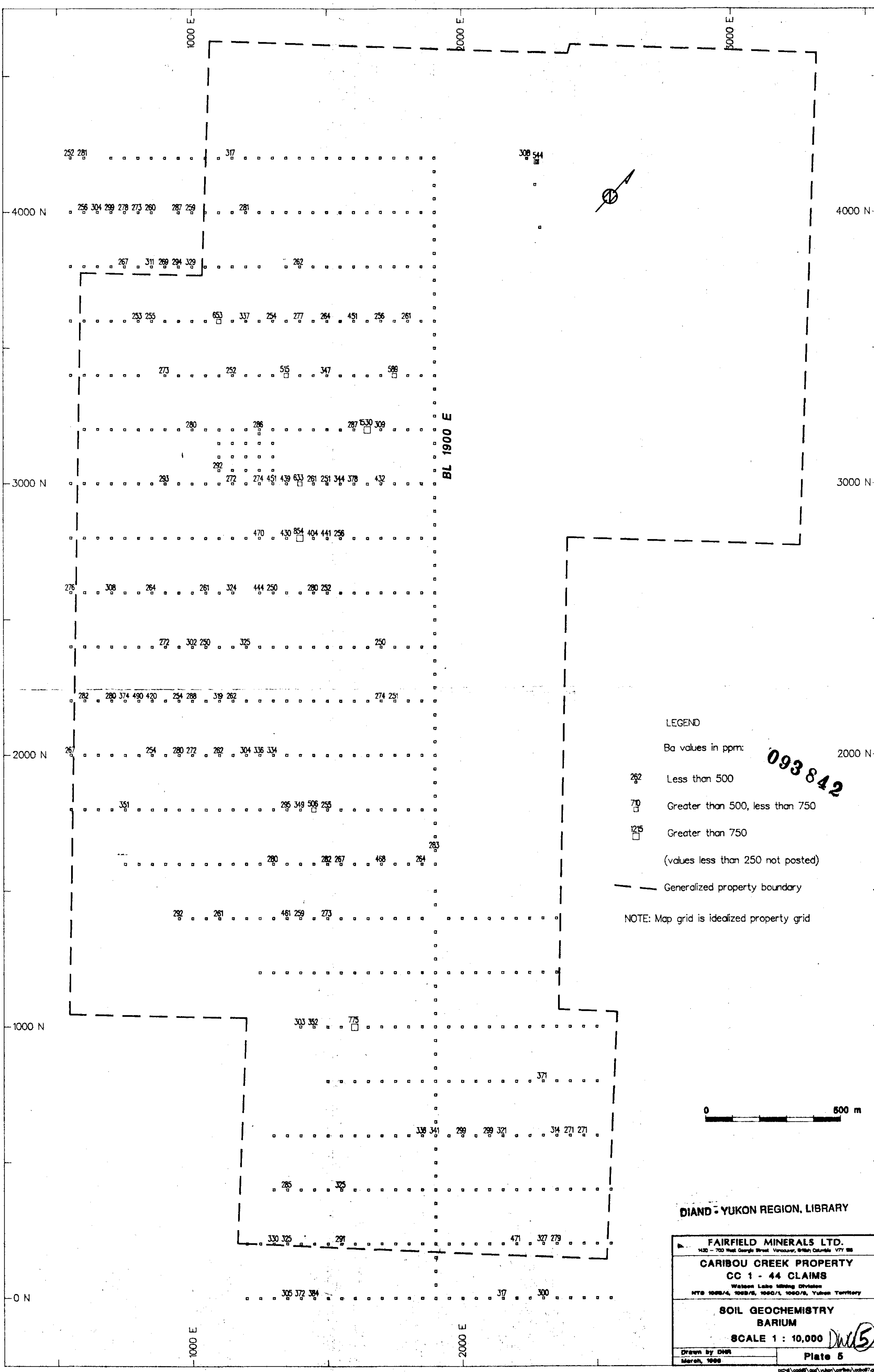
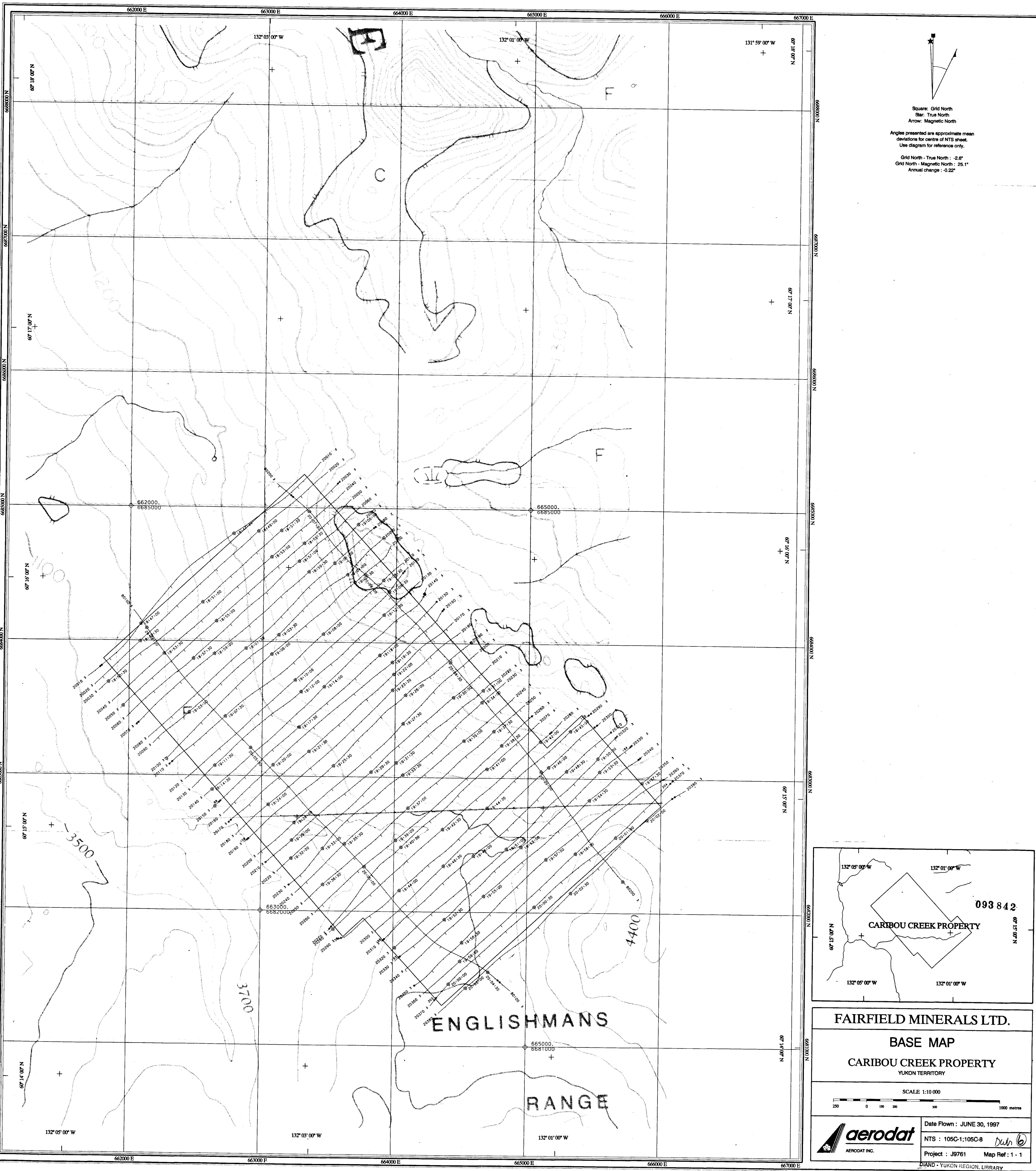
2000 E
3000 E
4000 N
3000 N
2000 N
1000 N
0 N
BL 1900 E
LEGEND
Zn values in ppm:
Less than 150
Greater than 150, less than 250
Greater than 250
(values less than 75 not posted)
Generalized property boundary
NOTE: Map grid is idealized property grid
0
500 m
DIAND - YUKON REGION, LIBRARY
FAIRFIELD MINERALS LTD.
CARIBOU CREEK PROPERTY
CC 1 - 44 CLAIMS
Watson Lake Mining Division
SOIL GEOCHEMISTRY
ZINC
SCALE 1 : 10,000
Drawn by DNR
March, 1988
Plate 3


1000 E
2000 E
3000 E
4000 N
3000 N
2000 N
1000 N
0 N
BL 1900 E
LEGEND
Ag values in ppm:
0.3 Less than 0.5
0.7 Greater than 0.5, less than 0.8
1.2 Greater than 0.8
(values less than 0.3 not posted)
Generalized property boundary
NOTE: Map grid is idealized property grid
0 500 m
093842
DIAND - YUKON REGION, LIBRARY
FAIRFIELD MINERALS LTD.
CARIBOU CREEK PROPERTY
CC 1 - 44 CLAIMS
Watson Lake Mining Division
SOIL GEOCHEMISTRY
SILVER
SCALE 1 : 10,000
Drawn by DHR
Plate 4


1000 E
2000 E
3000 E
4000 N
3000 N
2000 N
1000 N
0 N
BL 1900 E
LEGEND
Ba values in ppm:
262 Less than 500
710 Greater than 500, less than 750
1215 Greater than 750
(values less than 250 not posted)
Generalized property boundary
NOTE: Map grid is idealized property grid
093842
0
500 m
DIAND - YUKON REGION, LIBRARY
FAIRFIELD MINERALS LTD.
CARIBOU CREEK PROPERTY
CC 1 - 44 CLAIMS
SOIL GEOCHEMISTRY
BARIUM
SCALE 1 : 10,000
Drawn by DHR
March, 1986
Plate 5


ENGLISHMANS
RANGE
CARIBOU CREEK PROPERTY
093 842
Square: Grid North
Star: True North
Arrow: Magnetic North
Angles presented are approximate mean deviations for centre of NTS sheet. Use diagram for reference only.
Grid North - True North : -2.6°
Grid North - Magnetic North : 25.1°
Annual change : -0.22°
FAIRFIELD MINERALS LTD.
BASE MAP
CARIBOU CREEK PROPERTY
YUKON TERRITORY
SCALE 1:10 000
250 0 100 200 500 1000 metres
aerodat
AERODAT INC.
Date Flown : JUNE 30, 1997
NTS : 105C-1;105C-8
Project : J9761
Map Ref : 1 - 1
DIAND - YUKON REGION, LIBRARY

APPENDIX A:
Aerodat Inc. Report on Airborne Electromagnetic and Magnetic Survey

REPORT

ON A
COMBINED HELICOPTER-BORNE
ELECTROMAGNETIC AND MAGNETIC SURVEY
CABIN LAKE AND CARIBOU CREEK PROPERTIES
YUKON TERRITORY
NTS 105 B/4, 105 C/1, 105 C/8

FOR

FAIRFIELD MINERALS LIMITED
SUITE 1420, 700 WEST GEORGIA STREET
P.O. BOX 10071 PACIFIC CENTRE
VANCOUVER, BRITISH COLUMBIA
CANADA V7Y 1B6

BY

AERODAT INC.
6300 NORTHWEST DRIVE
MISSISSAUGA, ONTARIO
CANADA L4V 1J7
PHONE: 905-671-2446

July 31, 1997

R. W. Woolham, P. Eng.
Consulting Geophysicist

J9761

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LIST OF APPENDICES

REPORT ON A COMBINED HELICOPTER-BORNE ELECTROMAGNETIC AND MAGNETIC SURVEY CABIN LAKE AND CARIBOU CREEK PROPERTIES YUKON TERRITORY

1. INTRODUCTION

This is a report on an airborne geophysical survey carried out for Fairfield Minerals Ltd. by Aerodat Inc. under a contract dated May 23, 1997. Principal geophysical sensors included a five frequency electromagnetic system and a high sensitivity cesium vapour magnetometer. Ancillary equipment included a colour video tracking camera, Global Positioning System (GPS) navigation instrumentation, a radar altimeter, a power line monitor and a base station magnetometer.

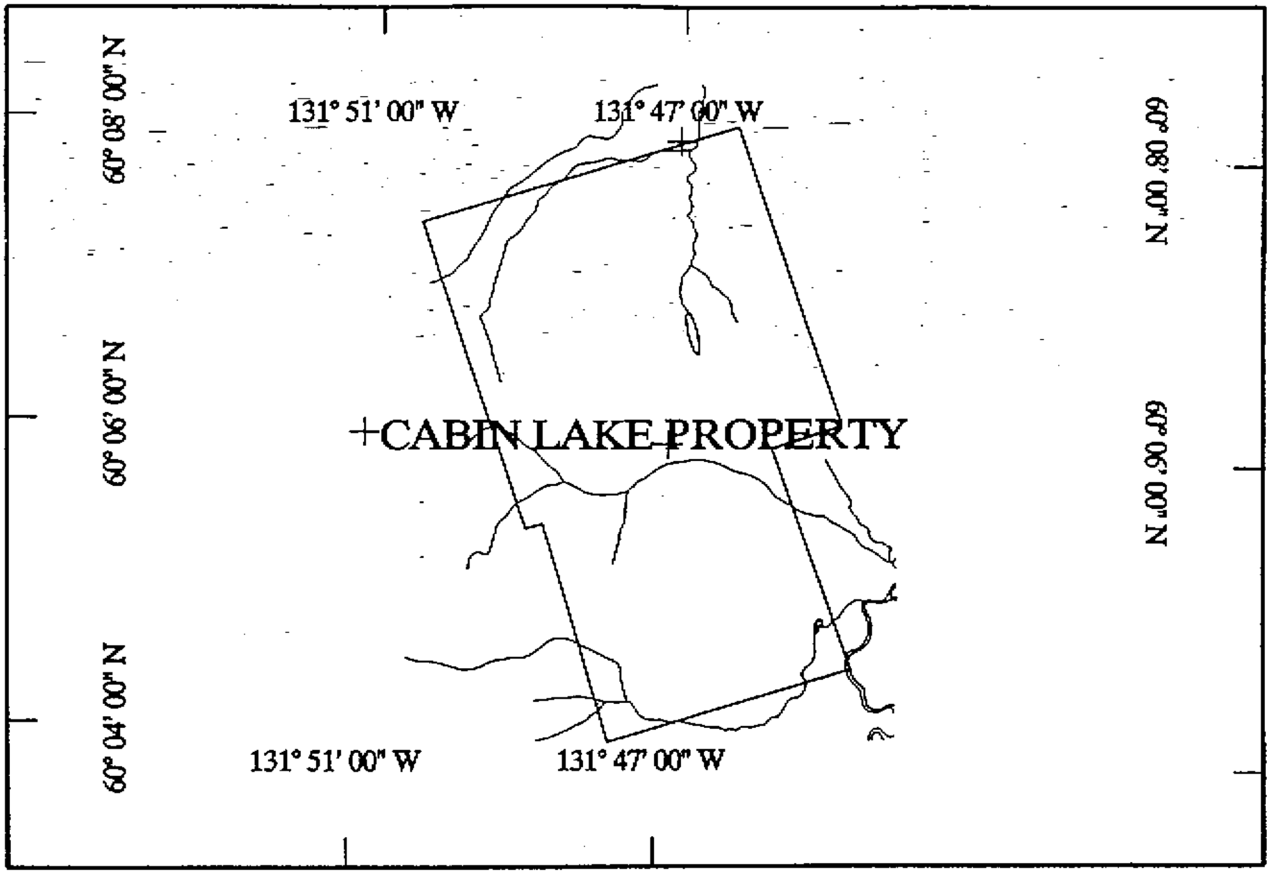
The survey covered two areas, the Cabin Lake property and the Caribou Creek property, totalling about 20.3 and 6.4 square kilometres respectively. The properties are located approximately 170 km east-southeast of Whitehorse. Total survey coverage for the Cabin Lake property is 277 line km including 25 km of tie lines and for the Caribou Creek property 85 km including 8 km of tie lines. The Aerodat Job Number is J9761.

This report describes the survey, the data processing, data presentation and interpretation of the geophysical results. Identified electromagnetic anomalies appear on selected map products as anomaly symbols with interpreted source characteristics. The interpretation map indicates conductive areas of possible interest. It also shows prominent structural features interpreted from the magnetic results. Significant structural, conductive and/or magnetic associations are the basis for the selection of specific geophysical anomalies for further investigation.

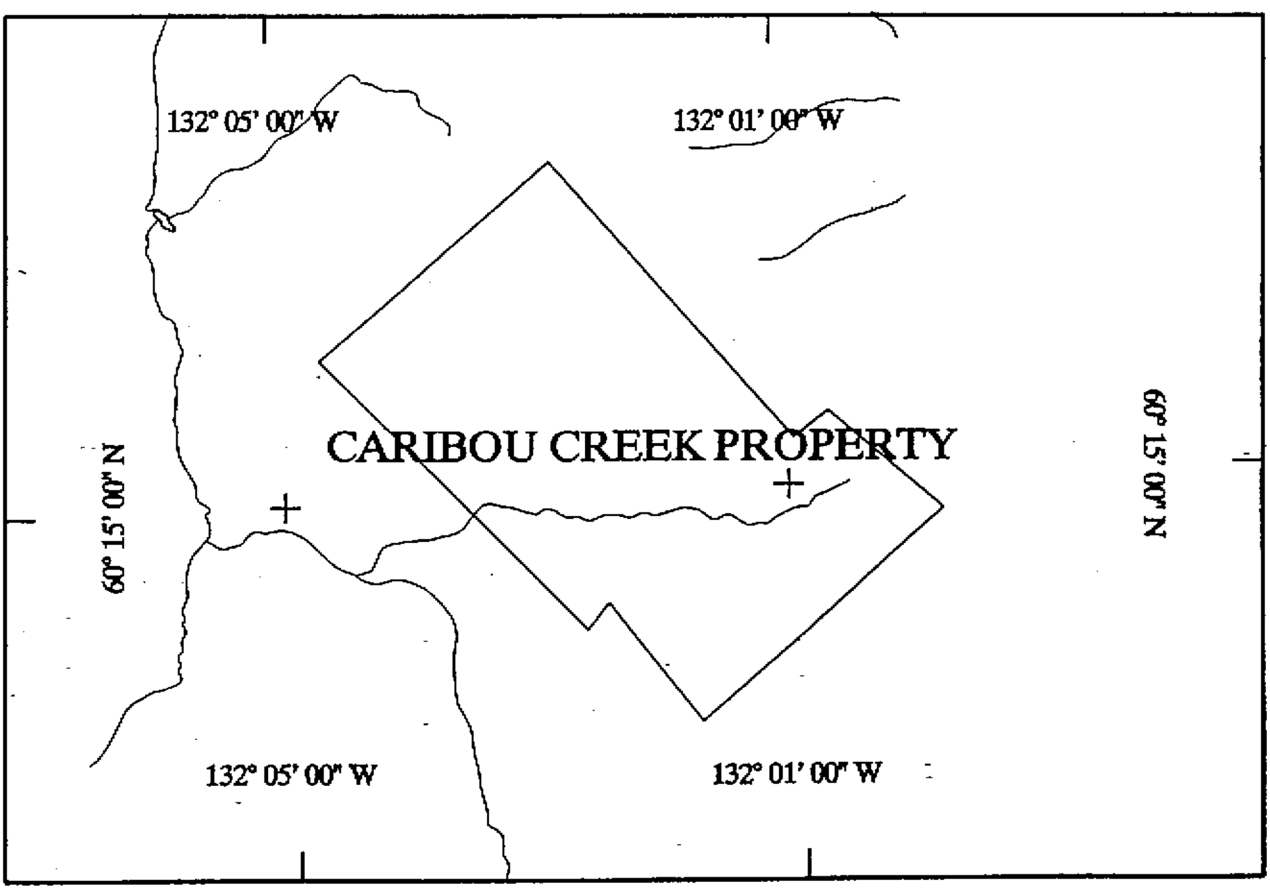
2. SURVEY AREA

The survey areas are about 35 km east-northeast of Teslin on the Englishman's Range of Mountains. Topography is shown on the 1:50,000 scale NTS map sheets 105 B/4, C/1 and C/8. Local relief is rugged. Elevations range from 915 m to over 1,650 m above mean sea level on the Cabin Lake property and from 1,100 m to 1,400 m on the Caribou Creek property. The survey area is shown in the attached index map that includes local topography and latitude - longitude coordinates. This index map also appears on all map products. The flight line direction is north 74° east on the Cabin Lake property and north 48° east on the Caribou Creek property . Line spacing is 100 metres.

INDEX MAPS



60° 08' 00" N
60° 06' 00" N
60° 04' 00" N
131° 51' 00" W
131° 47' 00" W
CABIN LAKE PROPERTY
131° 51' 00" W
131° 47' 00" W
60° 08' 00" N
60° 06' 00" N



132° 05' 00" W
132° 01' 00" W
CARIBOU CREEK PROPERTY
60° 15' 00" N
132° 05' 00" W
132° 01' 00" W
60° 15' 00" N

3. AIRCRAFT AND SURVEY EQUIPMENT

3.1 Aircraft

The survey aircraft was an Aerospatialle AS 315B helicopter (C-FJJW), piloted by D. Rokosh, owned and operated by Turbowest Helicopters Ltd. J. Douglas of Aerodat acted as navigator and equipment operator. Aerodat performed the installation of the geophysical and ancillary equipment. The survey aircraft is flown at a mean terrain clearance of 60 metres and speed of 60 knots.

3.2 Electromagnetic System

The **H**elicopter **E**lectro**M**agnetic system (HEM) is an Aerodat multi-frequency configuration. Two vertical coaxial coil pairs operate at frequency ranges of 900 Hz and 4,500 Hz and two or three horizontal coplanar coil pairs at frequency ranges of 900, 4,500 Hz and 33 kHz. The actual frequencies used depend on the particular bird configuration. At the present time Aerodat has ten bird systems. This survey utilized the Harrier bird with frequencies of 913 Hz and 4,427 Hz for the coaxial coil pairs and 858 Hz, 4,830 Hz and 32,550 Hz for the coplanar coil pairs. The transmitter-receiver separation is 6.4 metres. Inphase and quadrature signals are measured simultaneously for the five frequencies with a time constant of 0.1 seconds. The HEM bird is towed 30 metres below the helicopter.

3.3 Magnetometer

A Scintrex H8 cesium, optically pumped magnetometer sensor, measures the earth's magnetic field. The sensitivity of this instrument is 0.001 nanoTesla at a sampling rate of 0.2 second. The sensor is towed in a bird 15 metres below the helicopter 45 metres above the ground.

3.4 Ancillary Systems

Base Station Magnetometer

A Gem Systems, Inc. GSM19 magnetometer, or similar unit, is set up at the base of operations to record diurnal variations of the earth's magnetic field. Synchronization of the clock of the base station with that of the airborne system is checked each day to insure diurnal corrections will be accurate. Recording resolution is 1 nT with an update rate of four seconds. Magnetic field variation data are plotted on a 3" wide gridded paper chart analog recorder. Each division of the grid (0.25") is equivalent to one minute (chart speed) or five nT (vertical sensitivity). The date, time and current total field magnetic value are automatically recorded every 10 minutes. The data is also saved to digital tape.

Radar Altimeter

A King KRA-10 radar altimeter records terrain clearance. The output from the instrument is a linear function of altitude. The radar altimeter is pre-calibrated by the manufacturer and is checked after installation using an internal calibration procedure.

Tracking Camera

A Panasonic colour video camera records the flight path on VHS video tape. The camera operates in continuous mode. The video tape also shows the flight number, 24 hour clock time (to .01 second), and manual fiducial number.

Global Positioning System (GPS)

Global Positioning Systems utilize at present 25 active satellites orbiting the earth. The orbital period for each satellite is approximately 12 hours with an altitude of approximately 12,600 miles (~ 20,000 km). Each satellite contains a very accurate cesium clock which is synchronized to a common clock by the ground control stations (operated by the U.S. Air Force).

The satellites radiate individually coded radio signals which are received by the user's GPS receiver. Along with timing information, each satellite transmits ephemeris (astronomical almanac or table) information which enables the receiver to compute the satellite's precise spatial position. The receiver decodes the timing signals from the satellites in view (4 or more for a three dimensional fix) and, knowing their respective locations from the ephemeris information, computes a latitude, longitude, and altitude for the user. This position fix process is continuous and can be updated once per second.

Differential GPS is employed to eliminate the problem of selective availability where the US Defence Department corrupts the satellite's timing signal. Differential GPS utilizes a GPS reference receiver which must be established within a few hundred miles from the survey aircraft. The GPS System computes differential corrections as a post-processing operation to achieve accuracies in the 2 to 5 metre range.

A Magnavox 9212 (12 channel) GPS receiver is used in the aircraft. Nortech differential GPS processing software is used to compute the differentially corrected GPS positions on a daily flight basis. The navigational unit in the aircraft supplies continuous information to the pilot and allows multiple way point entry.

The Picodas PNAV 2001 survey navigation system is utilized on the aircraft to provide a left/right indicator for the pilot. The single point GPS positions are logged onto the PICODAS or RMS digital acquisition systems along with the magnetometer data. The single point GPS accuracy is much better than 25 metres. The GPS positions are converted to NAD27 format for inclusion in the technical report and in the digital archive data.

Analog Recorder

An RMS dot matrix recorder displays the data during the survey. Record contents are as follows:

LABEL	PARAMETER	CHART SCALE
MAGF	Total Field Magnetics, Fine	2.5 nT/mm
MAGC	Total Field Magnetics, Coarse	25 nT/mm
L9XI	900 Hz, Coaxial, Inphase	2.5 ppm/mm
L9XQ	900 Hz,Coaxial,Quadrature	2.5 ppm/mm
M4XI	4,500 Hz, Coaxial, Inphase	2.5 ppm/mm
M4XQ	4,500 Hz, Coaxial, Quadrature	2.5 ppm/mm
L8PI	900 Hz, Coplanar, Inphase	10 ppm/mm
L8PQ	900 Hz, Coplanar, Quadrature	10 ppm/mm
M4PI	4,500 Hz, Coplanar, Inphase	10 ppm/mm
M4PQ	4,500 Hz, Coplanar, Quadrature	10 ppm/mm
H3PI	33,000 Hz, Coplanar, Inphase	20 ppm/mm
H3PQ	33,000 Hz, Coplanar, Quadrature	20 ppm/mm
BALT	Barometer	50 ft/mm
RALT	Radar Altimeter	10 ft/mm
PWRL	50/60 Hz Power Line Monitor	-

Data is recorded with positive - up, negative - down. The analog zero of the radar altimeter is 5 cm from the top of the analog record. A helicopter terrain clearance of 60 m should therefore be seen some 3 cm from the top of the analog record.

Chart speed is 2 mm/second. The 24-hour clock time is printed every 20 seconds. The total magnetic field value is printed every 30 seconds. The ranges from the radar navigation system are printed every minute.

Vertical lines crossing the record are manual fiducial markers activated by the operator. The start of any survey line is identified by two closely spaced manual fiducials. The end of any survey line is identified by three closely spaced manual fiducials. Manual fiducials are numbered in order. Every tenth manual fiducial is indicated by its number, printed at the bottom of the record.

Calibration sequences are located at the start and end of each flight and at intermediate times where needed.

Digital Recorder

A DGR-33 data system records the digital survey data on magnetic media. Contents and update rates are as follows:

DATA TYPE	RECORDING INTERVAL	RECORDING RESOLUTION
Magnetometer	0.1 second	0.001 nT
HEM, (8 or 10 Channels)	0.1 second	
HEM, coaxial- 900 Hz/4,500 Hz		0.03 ppm
HEM, coplanar- 900 Hz/4,500 Hz		0.06 ppm
HEM, coplanar- 33,000 Hz		0.125 ppm
Position (2 Channels)	0.2 second	0.1 m
Altimeter	0.2 second	0.05 m
Power Line Monitor	0.2 second	
Manual Fiducial		
Clock Time		

4. SURVEY LOGISTICS AND CALIBRATION

4.1 Survey

The survey was completed on June 30, 1997. Principal personnel are listed in Appendix I. A total of three survey flights was required to complete the project. Aircraft ground speed is maintained at approximately 60 knots (30 metres per second) and mean terrain clearance of 60 metres consistent with the safety of the aircraft and crew.

4.2 Navigation

A global positioning system (GPS) consisting of a Magnavox MX 9212, or similar system, operated in differential mode guides aircraft navigation and flight line control. Field processing of the differential GPS data in the field utilizes a PC using software supplied by the manufacturer. One system is installed in the survey helicopter. This involves mounting the receiver antenna on the casing ("bird") containing the magnetometer sensor. A second system acts as the base station.

The published NTS maps provide the Universal Transverse Mercator (UTM) coordinates of the survey area corners. These coordinates program the navigation system. A test flight confirms if area coverage is correct. Thereafter the navigation system guides the pilot along the survey traverse lines marked on the topographic map. The operator also enters manual fiducials over prominent topographic features. Survey lines showing excessive deviation are re-flown.

The operator calibrates the geophysical systems at the start, middle (if required) and end of every survey flight. During calibration the aircraft is flown away from ground effects to record electromagnetic zero levels.

4.3 Calibration and Data Verification

The operator calibrates the geophysical systems including the barometric altimeter at the start, middle (if required) and end of every survey flight. Immediately after takeoff and before landing the altimeter values are compared with the 30 m separation between the helicopter and EM sensor. The geophysical systems are calibrated and monitored as follows:

Electromagnetics

The system is nulled and phased according to Aerodat's standard procedures. Any discrepancies from previous surveys require an external Q coil calibration. The External Calibration Procedure is done at the start of every survey and every week thereafter until the survey has been completed. There are four parts to the External Calibration Procedure. After system has warmed up, they are:

1.) Null each frequency
2.) Phase each frequency
3.) Set the gain for each frequency
4.) Note the response of the internal Cal-coil

The phasing is done with a ferrite bar. The gain calibration is done using a calibration coil which is mounted at a pre-set location off the end of the bird.

The phasing and calibration is checked with the internal Q coil. The internal Q coil is activated prior to and at the end of each flight with the system flying out of ground effect (250 m or higher) to assure correct EM calibration. Analog trace locations are corrected for all channels when the system is out of ground effect. If excessive drift is present on the EM system the preceding procedures are repeated as required.

Magnetics

The airborne magnetic data is monitored in the aircraft by means of a 4th difference of the data which is calculated and presented on the airborne analog recorder. Should the 4th difference exceed the allowable specification, the portion of the flight line thereby affected is reflown.

The fourth difference is defined as:

$$FD_i = X_{i+2} - 4x_{i+1} + 6x_i - 4x_{i-1} + X_{i-2}$$

where X_i is the i^{th} total field sample. The fourth difference in this form has units of nT. High frequency noise should be such that the fourth differences divided by 16 are generally less than ± 0.1 nT The fourth difference is displayed on analog at scales of 0.20 nT/cm.

Altimeters

The radar altimeter test is carried out before and after the survey and if any of the altitude equipment is changed. The radar altimeter reading is determined when flying at barometric altitudes of 60, 120, 180 and 240 meters above the base airstrip. Also, the barometric altimeter is calibrated pre-flight and post-flight using the radar altimeter to determine the drift and this drift is applied to the data in the subsequent data processing.

Video Flight Path Verification

The record from the video camera is monitored continuously in flight. The video tape is reviewed immediately after each flight to ensure that the quality is acceptable. Selective flight path verification is performed as necessary.

Lag Tests

Before survey production commences and when any major survey equipment modification or replacement occurs, a lag test is performed to determine the time difference between the magnetometer reading, the electronic navigation reading and the operation of the positioning equipment. These tests are flown at the survey flight altitude in two (2) directions across a distinct magnetic anomaly and a recognizable feature whose exact location is known.

5. DATA PROCESSING AND PRESENTATION

5.1 Base Map

The base map is taken from a photographic enlargement of the NTS topographic maps. A UTM reference grid (grid lines usually every kilometre) and the survey area boundaries are added. After registration of the flight path to the topographic base map, some topographic detail and the survey boundary are added digitally. This digital image forms the base for the colour and shadow maps.

In order to check positioning and provide more detailed topography a digital terrain model (DTM) is generated by calculating the difference between the barometric and radar altimeter readings along the flight path. This pseudo elevation map can be plotted as a topographic map and geophysical features of interest can be checked for possible topographic expressions. Levelling errors are sometimes present in steep topographic gradients due to the forward pointing radar altimeter and helicopter orientation.

5.2 Flight Path Map

Global Positioning System

The GPS receiver takes in coded data from satellites in view and there after calculates the range to each satellite. The coded data must therefore include the instantaneous position of the satellite relative to some agreed earth-fixed coordinate system.

A further calculation using ranges to several satellites gives the position of the receiver in that coordinate system (eg. UTM, lat/long.). The elevation of the receiver is given with respect to a model ellipsoidal earth.

Normally the receiver must see four satellites for a full positional determination (three space coordinates and time). If the elevation is known in advance, only three satellites are needed. These are termed 3D and 2D solutions.

The position of the receiver is updated every tenth of a second. The accuracy of any one position determination is described by the Circular Error Probability (CEP). Ninety-five percent of all position determinations will fall within a circle of a certain radius. If the horizontal position accuracy is 25 m CEP, for example, 95% of all trials will fall within a circle of 25 m radius centred on the mean. The system may be degraded for civilian use and the autonomous accuracy is then 100 m CEP. This situation is called selective availability (SA). Much of this error (due principally to satellite position/time errors and atmospheric delays) can be removed using two GPS receivers operating simultaneously. One receiver acting as the base station, is at a known position. The second remote receiver is in the unknown position. Differential corrections determined for the base station may then be applied to the remote station. Differential positions are accurate to five m CEP (for a one second sample). Averaging will reduce this error further.

Flight Path

The flight path is drawn using linear interpolation between x,y positions from the navigation system. These positions are updated every second (or about 3.0 mm at a scale of 1:10,000). Occasional dropouts occur when the optimum number of satellites are not available for the GPS to make accurate positional determinations. Interpolation is used to cover short flight path gaps. The navigator's flight path and/or the flight path recovered from the video tape may be stitched in to cover larger gaps. Such gaps may be recognized by the distinct straight line character of the flight path.

The manual fiducials are shown as a small circle and labelled by fiducial number. The 24-hour clock time is shown as a small square, plotted every 30 seconds. Small tick marks are plotted every two seconds. Larger tick marks are plotted every 10 seconds. The line and flight numbers are given at the start and end of each survey line.

The aircraft position is expressed in geographic latitude and longitude coordinates, using the North American Datum NAD27 based on the Clarke 1866 ellipsoid. Any particular survey area located on the globe has a specific reference ellipsoid or projection zone. A further refinement for a better fit to the earth's surface at the survey location is applied by adding or subtracting slight x, y and/or z datum shifts (a few metres to hundreds of metres) to the origin of the ellipsoid. The geographic coordinates are converted to fit this ellipsoid before calculating the UTM coordinates. The UTM coordinates are expressed as UTM eastings (x) and UTM northings (y).

The flight path map is merged with the base map by matching UTM coordinates from the base maps and the flight path record. The match is confirmed by checking the position of prominent topographic features as recorded by manual fiducial marks or as seen on the flight path video record.

5.3 Electromagnetic Survey Data

The electromagnetic data are recorded digitally at a sample rate of 10 per second with a time constant of 0.1 seconds. A two stage digital filtering process rejects major sferic events and reduces system noise. Local sferic activity can produce sharp, large amplitude events that cannot be removed by conventional filtering procedures. Smoothing or stacking will reduce their amplitude but leave a broader residual response that can be confused with geological phenomena. To avoid this possibility, a computer algorithm searches out and rejects the major sferic events. This is referred to as a "surgical mute" in signal processing terms. The signal to noise ratio is further enhanced by the application of a low pass digital filter. This filter has zero phase shift that prevents any lag or peak displacement from occurring, and it suppresses only variations with a wavelength less than about 0.25 seconds. This low effective time constant gives minimal profile distortion.

Following the filtering process, a base level correction is made using electromagnetic zero levels determined during high altitude calibration sequences. The correction applied is a linear function of time that ensures the corrected amplitude of the various inphase and quadrature components is zero when no conductive or permeable source is present. The filtered and levelled data are the basis for the determination of apparent resistivity (see following section). The inphase and quadrature responses along the flight line are presented in profile form offset along the flight lines. Differentiation of the various profiles is achieved using two colours (coaxial and coplanar) and two line weights (inphase and quadrature). For interpretation purposes the coaxial and coplanar data sets for a similar frequency range are presented together on one map (900 Hz and/or 4,500 Hz)

5.4 Total Field Magnetics

The aeromagnetic data is corrected for diurnal variations by adjustment with the recorded base station magnetic values. No corrections for regional variations are applied. The corrected profile data are interpolated on to a regular grid using an Akima spline technique. The grid provided the basis for threading the presented contours. The minimum contour interval is 2 nT with a grid cell size of 25 m. Magnetic high areas are assigned warm colours (orange/red) while magnetic low areas show as cool colours (blue).

5.5 Calculated Vertical Magnetic Gradient

The vertical magnetic gradient is calculated from the gridded total field magnetic data. The calculation is based on a 17 x 17 point convolution in the space domain or FFT processing which involves using a two dimensional Fourier Transform, applying a vertical derivative operator and transforming the filtered data back into the space domain. The results are contoured using a minimum contour interval of 0.02 nT/m. Grid cell sizes are the same as those used in processing the total field data. The high and low amplitude responses are give the same colour representation as the total field contours.

5.6 Colour Relief or Shadow Map of Total Field Magnetics

A useful manipulation of the magnetic data is the production of a colour shadow map. It is an aid in the interpretation and presentation of the magnetic information. The shadow map displays two independent variables simultaneously on the same map. The two variables are the amplitude and the gradient of the quantity measured over the mapping region. At every point or grid cell on the map the hue represents the amplitude of the magnetic value and the lightness/darkness of the hue is varied according to the slope or gradient of the data at the cell location. The gradient is translated into a reflectance parameter with respect to a chosen illumination direction. Subtle magnetic structures having a specific trend are enhanced or attenuated depending on the position and angle to the horizon of the light source relative to the trend. If the light source is orthogonal to the trend there will be maximum shadow relief. Regional discontinuities representing fault structures are easily recognized with shadow enhancement.

5.7 Apparent Resistivity

The apparent resistivity is calculated by assuming a 200 metre thick conductive layer over resistive bedrock. The computer determines the resistivity that would be consistent with the sensor elevation and recorded inphase and quadrature response amplitudes at the selected frequency. The apparent resistivity profile data is re-interpolated onto a regular grid at a 25 metres true scale interval using an Akima spline technique and contoured using logarithmically arranged contour intervals. The minimum contour interval depends on the selected frequency and is in units of log(ohm.m) in logarithmic intervals of 0.1, 0.5, 2.0, 5.0 etc. The colour presentation assigns warmer colours (reds) to low resistivity or very conductive responses and cooler colours (blues) to high resistivity or poor conductivity responses.

The highest measurable resistivity is approximately equal to the transmitter frequency. The lower limit on apparent resistivity is rarely reached.

6. DELIVERABLES

The report on the results of the survey is presented in two copies. The report includes folded white print copies of all black line maps. Two copies of the colour and shadow maps are in accompanying map tube(s).

The black line maps show topography, UTM grid coordinates and the survey boundary. The survey data are presented in sets of numbered maps in the following format:

I BLACK LINE MAPS: (Scale 1:10,000)

Map No. Description

1. BASE MAP; screened topographic base map plus survey area boundary, and UTM grid.

2. COMPILATION / INTERPRETATION MAP; with base map, flight path map and HEM anomaly symbols with interpretation .

3. TOTAL FIELD MAGNETIC CONTOURS; with base map, HEM anomaly symbols and flight lines.

4. VERTICAL MAGNETIC GRADIENT CONTOURS; with base map, HEM anomaly symbols and flight lines.

5A. APPARENT RESISTIVITY CONTOURS; apparent resistivity calculated for the coplanar 900 Hz data, with base map, HEM anomaly symbols and flight lines.

5B. APPARENT RESISTIVITY CONTOURS; apparent resistivity calculated for the coplanar 4,500 Hz data, with base map, HEM anomaly symbols and flight lines.

II COLOUR MAPS: (Scale 1:10,000)

1. TOTAL FIELD MAGNETICS; with superimposed contours, flight lines, topographic features and HEM anomaly symbols.

2. VERTICAL MAGNETIC GRADIENT; with superimposed contours, flight lines, topographic features and HEM anomaly symbols.

3A. HEM OFFSET PROFILES; coplanar 900 Hz and coaxial 900 Hz data with flight lines, topographic features and HEM anomaly symbols.

3B. HEM OFFSET PROFILES; coplanar 4,500 Hz and coaxial 4,500 Hz data with flight lines, topographic features and HEM anomaly symbols.

3C. HEM OFFSET PROFILES; coplanar 33,000 Hz data with flight lines, topographic features and HEM anomaly symbols.

4A. APPARENT RESISTIVITY; calculated for the coplanar 900 Hz data with superimposed contours, flight lines, topographic features and HEM anomaly symbols.

4B. APPARENT RESISTIVITY; calculated for the coplanar 4,500 Hz data with superimposed contours, flight lines, topographic features and HEM anomaly symbols.

III SHADOW DERIVATIVE: (Scale 1:10,000)

1. TOTAL FIELD MAGNETICS SHADOW MAP; with suitable sun angle

The processed digital data, including both the profile and the gridded data, is on CD ROM'S (ISO 9660). Profile data is written as columnar ASCII records and the gridded data as standard Geosoft PC grids. A full description of the format is included with the package. All gridded data can be displayed on IBM compatible microcomputers using the Aerodat AXIS (Aerodat Extended Imaging System) or RTI (Real Time Imaging) software package. The complete data package includes all analog records, base station magnetometer records, flight path video tape and original map cronaflexes.

7. INTERPRETATION

7.1 Area Geology

The properties cover the mid-Palaeozoic volcanic-plutonic rocks of the Yukon-Tanana Terrane comprising, in part, mafic and felsic metavolcanics, carbonaceous metasediments, quartzeye grits and orthogneiss intruded by felsic and mafic stocks. Cominco Ltd.'s ABM deposit at its Kudz Ze Kayah project in the Finlayson Lake area is within the same geological environment.

This massive sulphide, Kuroko-style, base metal deposit is hosted by Devonian to Mississippian age interlayered metavolcanic and metasedimentary rocks of the Yukon-Tanana Terrane. The deposit hosts a reserve, minable by open-pit methods, of 11.3 million tonnes grading 5.9% zinc, 1.5% lead and 0.9% copper. The Wolverine and Lynx deposits discovered by Westmin Resources are similar orebodies located about 20 km east of the ABM deposit. A geological resource estimate for these deposits total 5.3 million tonnes grading 13.0% zinc, 1.5% lead and 1.4% copper plus values in gold and silver (The Northern Miner, June 23, 1997).

7.2 Magnetic Interpretation

The total field magnetic responses reflect major changes in the magnetite content of the underlying rock units. The amplitude of the magnetic responses relative to the regional background help to assist in identifying specific magnetic and nonmagnetic units related to, for example, mafic flows or tuffs, mafic to ultramafic intrusives, felsic intrusives, felsic volcanics and/or sediments etc. Obviously, several geological sources can produce the same magnetic response. These ambiguities can be reduced considerably if basic geological information on the area is available to the geophysical interpreter.

In addition to amplitude variations, magnetic patterns related to the geometry of the particular rock unit also help in determining the probable source of the magnetic response. For instance, long narrow magnetic linears usually reflect mafic tuff/flow horizons or mafic intrusive dyke structures while semi-circular features with complex magnetic amplitudes may be produced by local plug-like intrusive sources such as pegmatites, carbonatites or kimberlites.

The calculated vertical magnetic gradient assists considerably in mapping weaker magnetic linears that are partially masked by nearby higher amplitude magnetic features. The broad zones of higher magnetic amplitude, however, are severely attenuated in the vertical magnetic gradient results. These higher amplitude zones reflect rock units having magnetic susceptibility signatures. For this reason both the total and gradient magnetic data sets must be evaluated.

Theoretically the magnetic gradient zero contour line marks the contacts or limits of large magnetic sources. This applies to wide sources, greater than 50 metres, having simple slab geometries and shallow depth.(See discussion in Appendix II) Thus the gradient map also aids in the more accurate delineation of contacts between differing magnetic rock units.

The cross cutting structures, shown on the interpretation map as faults, are based on interruptions and discontinuities in the magnetic trends. Generally, sharp folding of magnetic units will produce a magnetic pattern indistinguishable from a fault break. Thus, if anomaly displacements are small such fault structures, where they mark an anomaly interruption, may actually represent a deformation node rather than faulting.

7.3 Magnetic Survey Results and Conclusions

To facilitate the following discussion of the magnetic results it is suggested the interpretation map be compared with the total field and vertical gradient magnetic colour contour maps either as overlays or side by side.

On the interpretation maps the relatively higher amplitude magnetic horizons and trends are indicated with thick lines while lower amplitude more subtle linears are shown with thinner lines. These linears and trends probably reflect mafic intrusive and extrusive rocks related to mafic volcanic units, sills or dyke structures. Below background non-magnetic zones are outlined with thick dashed lines and depression symbols. Such zones usually map felsic or sedimentary rocks. Local smaller negative zones can also indicate possible alteration effects, felsic intrusives or diatremes. North-northeast to east-west striking fault structures are positioned on the interpretation maps to explain some of the discontinuities and displacements in the magnetic trends. A discussion of the results for each survey block follows:

Cabin Lake Property

Caribou Creek Property

The magnetic background is interpreted to be the same as for the Cabin Lake Property at 57,825 nT. Amplitudes are decidedly lower with ranges from about 50 nT below background to 175 nT above background. These low amplitudes suggest felsic to intermediate volcanic and/or sedimentary rocks are present in this area. Anomaly trends are sinuous and strike east-west in the east corner of the area then turn in a general northwest direction. The highest amplitude zone covers the southwest half of the survey block. Small non-magnetic zones occupy the west, central and east parts of the block.

7.4 Electromagnetic Anomaly Selection/Interpretation

Vertical to Near Vertical Tabular Conductive Sources

Usually two sets of stacked colour coded profile maps of one coaxial and one coplanar inphase and quadrature responses are used to select conductive anomalies of interest. These HEM intercepts are automatically plotted on the various map products listed previously. Selection of HEM anomaly intercepts is based on conductivity as indicated by the inphase to quadrature ratios of the 900 Hz and/or 4,500 Hz coaxial data, anomaly shape, and anomaly profile characteristics relative to coaxial and corresponding coplanar responses. The peak of the coaxial responses is picked for digitizing as that defines the position of any near vertical to dipping tabular source.

These response shapes are illustrated in Appendix II, in the figure entitled "HEM Response Profile Shapes .....". Profile A illustrates the coaxial and coplanar signature of a vertical source while profiles B and C show the effect of dip on the coplanar and coaxial profiles. For a gently dipping source the small up-dip tail of the coplanar profiles B and C is not present and there is just a shift of the coplanar peak down dip from the coaxial peak.

Flat Lying Conductive Sources

Flat lying responses are characterized by identically shaped coaxial and coplanar response profiles. Profile I, Appendix II, illustrates a flat source response. Variations in the conductivity and thickness of flat lying sources produces peaks and valleys in the profile data. Ordinarily the anomaly peaks from flat lying sources are not selected for plotting as HEM intercepts. Their locations have little meaning if the source is flat lying.

Nevertheless, if the sources are gently dipping the peaks sometimes have line to line continuity and may show the "grain" of the underlying geology. A much better presentation of conductive flat lying sources is achieved by the resistivity calculations and map plots. Comparison of the resistivity data with geological information can then ascertain if the source of the responses are of possible geological interest.

It is difficult to differentiate between responses associated with the edge effects of flat lying conductors and actual poor conductivity bedrock conductors on the edge of or overlain by flat lying conductors. Extensive flat lying to gently dipping conductors often have an "edge effect" anomaly which is a coaxial peak on the flank of the coplanar responses similar to one side of profile E, G or H, Appendix II. Often only one edge can be seen if the source is dipping. Such edge effect anomalies are often seen marking the perimeter of lakes or swamps containing conductive material.

Poor conductivity bedrock conductors having low dips will also exhibit responses that may be interpreted as surficial overburden conductors. In such cases, where the source of the conductive response appears to be ambiguous, the coaxial peak of the anomaly is still selected for plotting. In some situations the conductive response has line to line continuity and some magnetic association thus providing possible evidence that the response is related to an actual bedrock source.

Flat lying limited width ribbon type conductive responses with some strike length are sometimes also present. These responses are characterized by a "M" shaped coaxial anomaly with a single peaked coplanar anomaly centred in the trough between the two coaxial peaks. This is illustrated in Appendix II in the same figure as previously mentioned (see profile shape E or G). The actual geometry of the source of these ribbon type responses is difficult to determine. They could represent a synclinal structure such as would be produced by combining dipping profiles C and B.

Negative Inphase Responses

In some areas the inphase profile component exhibits a negative anomaly response usually over obvious magnetic areas. This is produced by local concentrations of magnetite and usually occurs when the sensor is flying close to the ground surface. If only magnetite is present there will be no quadrature response associated with the negative inphase response. If conductive material is present, however, such as graphite or sulphides, a positive quadrature response will be evident with the negative inphase response. In this case the anomaly is selected for plotting and evaluation and designated as a magnetic/conductive response.

Depth and Conductivity Calculation

The calculation of the depth to the conductive source and its conductivity is based on the 4,500 Hz coaxial data assuming a thin vertical sheet model. The amplitude of the inphase and quadrature responses are used for the calculations which are automatically determined by computer. These data are listed in Appendix III and the depth and conductivity values are shown with each plotted anomaly. Further detailed discussion and illustration of the determination of these values is contained in Appendix II. Note the depth calculation for those conductors having a gently dipping to flat lying profile signature will not be accurate although the conductivity value will have some relative meaning.

The selected HEM intercepts are automatically categorized according to their conductivity and amplitude. The calculation of the conductivity of low amplitude anomalies can be very inaccurate. Therefore, anomalies having amplitudes below a certain level and/or low conductivity value are given a zero rating with the category increasing for increasing conductivity values that are statistically reliable.

7.5 Electromagnetic Survey Results and Conclusions

Conductive flat lying to gently dipping material is contributing to the electromagnetic responses in various degrees throughout the survey block. There is a definite correlation between low resistivity and topographically low areas along drainage gulleys and on the flanks of hills. This usually reflects the effects of conductive overburden containing clay minerals. The highest elevations produce high resistivity responses.

Conductive intercepts with some evident line to line continuity are joined together with short dashed line segments. Some of these have poor conductivity signatures with a dominate quadrature response and little inphase response. In some locations there is a definite inphase component especially where the amplitude of the quadrature response is quite high. This still indicates relatively poor conductivity. In certain instances, however, the quadrature peak is superimposed on an elevated quadrature background. Without the high background effect the amplitude of the quadrature response is often similar or less than the inphase amplitude. This implies a much better conductivity than that calculated by the normal conductivity calculation which does not take into account high background levels. These types of anomalies as well as other definitive inphase/quadrature responses are circled on the interpretation maps and numbered for investigation. The results for each property are discussed following:

Cabin Lake Property

Caribou Creek Property

Most of the responses on this block are related to poor conductivity surficial material associated with drainage and conductive alluvial. Many have the profile characteristics typical of edge effect sources associated with the edges of flat lying conductors as explained in the previous section. There are relatively few HEM intercepts compared to the previous property and all have poor conductivity responses. Nevertheless, four of these are designated for investigation. Number 1 and 4 have some strike length while 1 and 3 have magnetic associations although the associations could be fortuitous. None of the designated anomalies are considered to be good exploration targets for massive sulphides but checking of the anomalies on a low priority basis is suggested.

8. RECOMMENDATIONS

Selection of geophysical anomalies for further investigation is based on the structural and magnetic associations of the designated conductors as well as their relative conductivity. Prior to any ground follow-up, the following priority categories should be reviewed with respect to the geological target model being sought and known geology and mineralization in the area.

The conductors are prioritized as first or second priority investigation targets based on their relative conductivity. On the Cabin Lake Property, first priority targets are 1, 4, 5 and 6 to 9 and the remaining designated investigation areas, 2, 3, 10 to 17 are considered second priority objectives. On the Caribou Creek Property, as just mentioned, the four designated anomalies are considered to be low priority exploration targets.

The magnetic and conductive anomalies recommended for investigation represent a first phase exploration program. Additional work will be contingent on the results of this program. More detailed geological information used in conjunction with geophysics may help to direct further exploration efforts.

Respectfully submitted,

R. W. Woolham, P.Eng.
Consulting Geophysicist

for

AERODAT INC.

J9761

July 31, 1997

APPENDIX I

PERSONNEL

FIELD

Flown	June 30, 1997
Pilot(s)	D. Rokosh
Operator(s)	J. Douglas

OFFICE

Processing	Will Icay George McDonald
Report	R. W. Woolham

APPENDIX II

GENERAL INTERPRETIVE CONSIDERATIONS

GENERAL INTERPRETIVE CONSIDERATIONS

Electromagnetic

The Aerodat electromagnetic system utilized two different transmitter-receiver coil geometries. The traditional coaxial coil configuration is operated at widely separated frequencies. The horizontal coplanar coil configuration is similarly operated at different frequencies where at least one pair is approximately aligned with one of the coaxial frequencies.

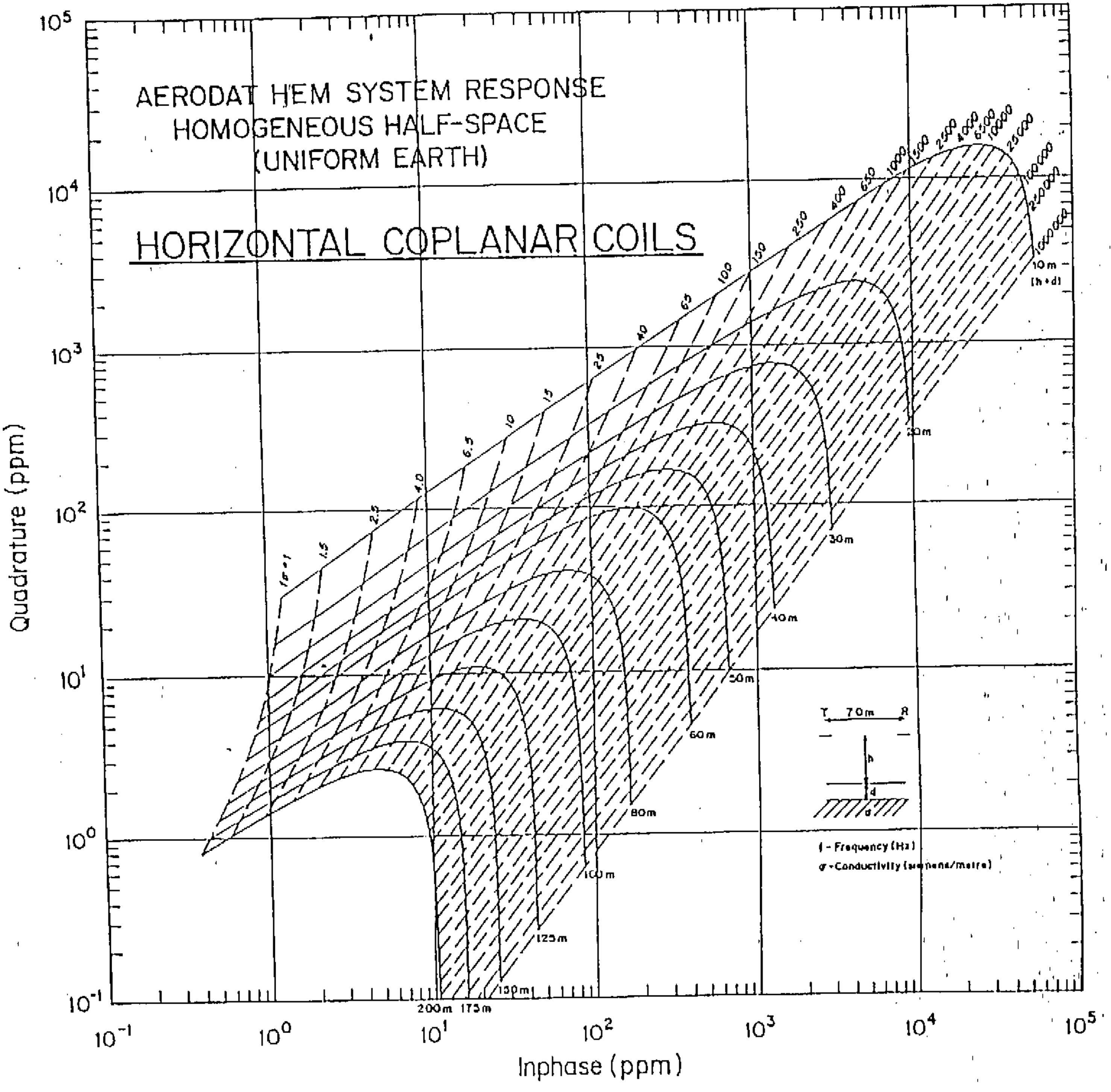
The electromagnetic response measured by the helicopter system is a function of the "electrical" and "geometrical" properties of the conductor. The "electrical" property of a conductor is determined largely by its electrical conductivity, magnetic susceptibility and its size and shape; the "geometrical" property of the response is largely a function of the conductor's shape and orientation with respect to the measuring transmitter and receiver.

Electrical Considerations

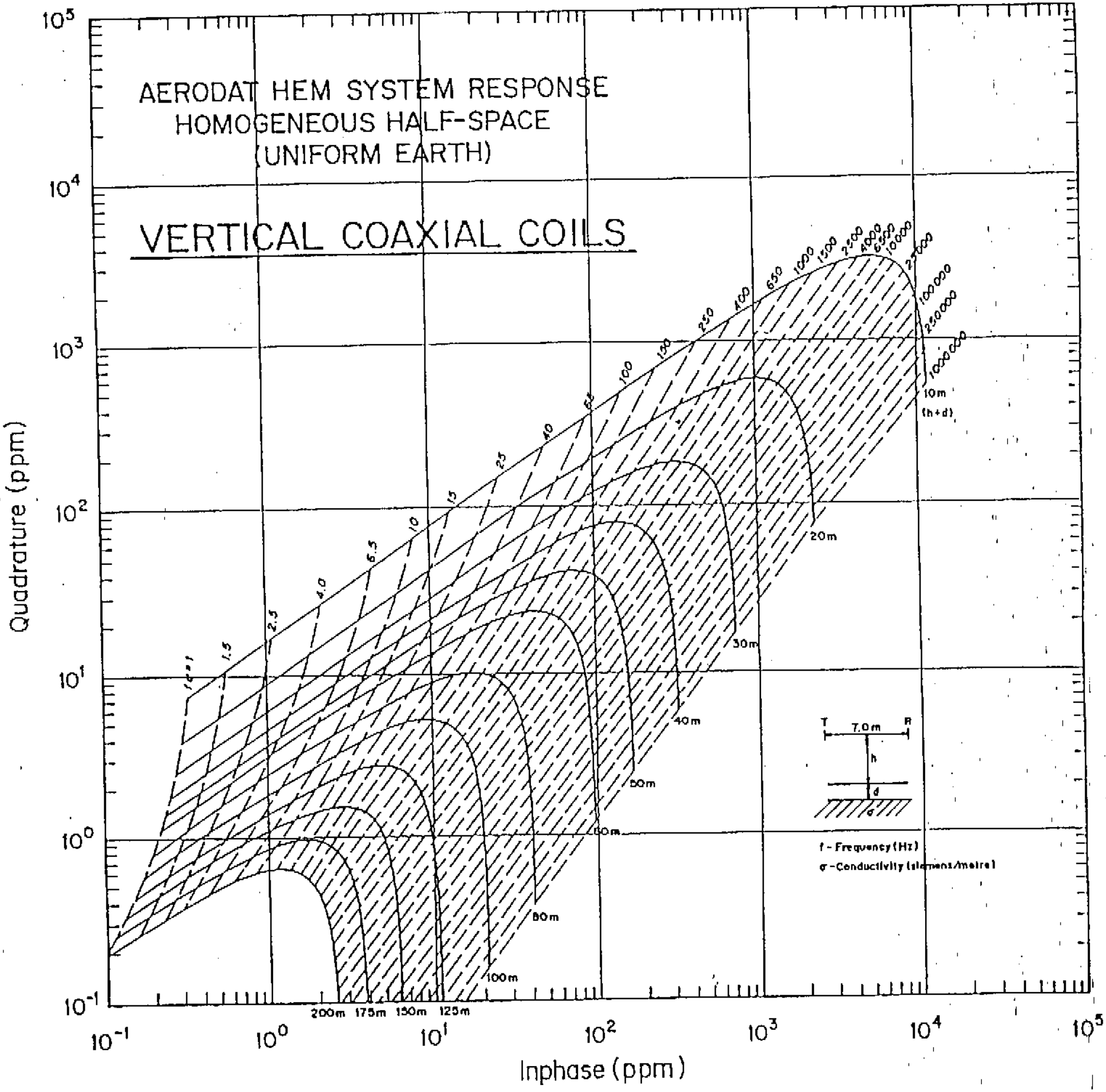
For a given conductive body the measure of its conductivity or conductance is closely related to the measured phase shift between the received and transmitted electromagnetic field. A small phase shift indicates a relatively high conductance, a large phase shift lower conductance. A small phase shift results in a large inphase to quadrature ratio and a large phase shift a low ratio. This relationship is shown quantitatively for a non-magnetic vertical half-plane and half space models on the accompanying phasor diagrams. Other physical models will show the same trend but different quantitative relationships

The phasor diagram for the vertical half-plane model, as presented, is for the coaxial coil configuration with the amplitudes in parts per million (ppm) of the primary field as measured at the response peak over the conductor. To assist the interpretation of the survey results the computer is used to identify the apparent conductance and depth at selected anomalies. The results of this calculation are presented in anomaly listings included in the survey report and the conductance and inphase amplitude are presented in symbolized form on the map presentation.

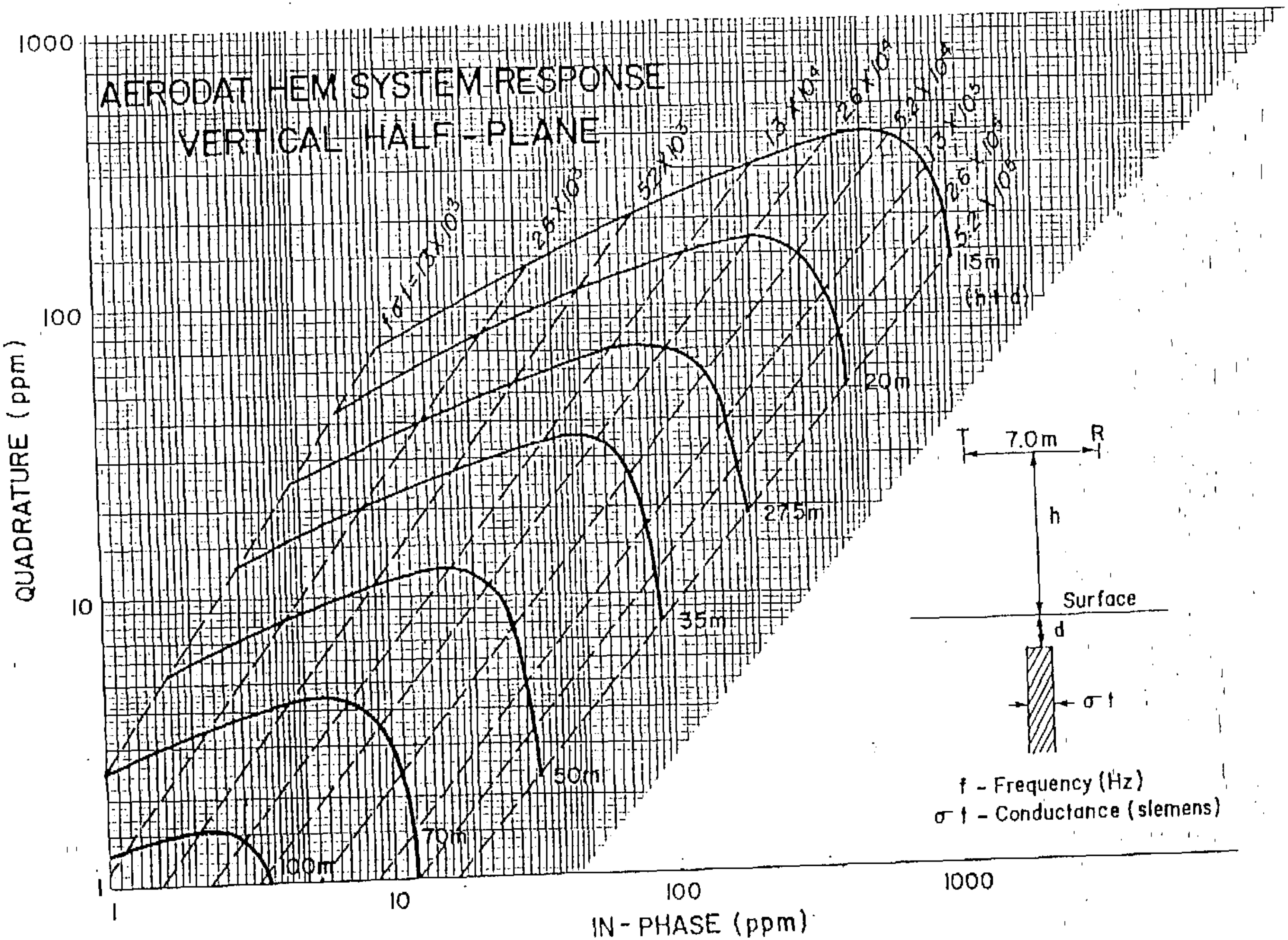
The conductance estimate is most reliable when anomaly amplitudes are large and background resistivities are high. Where the anomaly is of low amplitude and background resistivities are low, the conductance estimates are much less reliable. In such situations, the conductance estimate is often quite low regardless of the true nature of the conductor. This is due to the elevated background response levels in the quadrature channel. In an extreme case, the conductance estimate should be discounted and should not prejudice target selection.



AERODAT HEM SYSTEM RESPONSE
HOMOGENEOUS HALF-SPACE
(UNIFORM EARTH)
HORIZONTAL COPLANAR COILS
Quadrature (ppm)
Inphase (ppm)
f - Frequency (Hz)
σ - Conductivity
T 7.0m R
h
d
10m (h+d)
20m
30m
40m
50m
60m
80m
100m
125m
150m
175m
200m



AERODAT HEM SYSTEM RESPONSE
HOMOGENEOUS HALF-SPACE
(UNIFORM EARTH)
VERTICAL COAXIAL COILS
Quadrature (ppm)
Inphase (ppm)
10m
(h+d)
20m
30m
40m
50m
60m
80m
100m
200m
175m
150m
125m
7.0m
T
R
h
d
f - Frequency (Hz)
σ - Conductivity (siemens/metre)


AERODAT HEM SYSTEM RESPONSE
VERTICAL HALF-PLANE
1000
100
10
1
QUADRATURE (ppm)
1
10
100
1000
IN-PHASE (ppm)
15m
(h+d)
20m
27.5m
35m
50m
70m
100m
T
7.0m
R
h
Surface
d
σ t
f - Frequency (Hz)
σ t - Conductance (siemens)

The conductance and depth vales as presented are correct only as far as the model approximates the real geological situation. The actual geological source may be of limited length, have significant dip, may be strongly magnetic. Its conductivity and thickness may vary with depth and/or strike and adjacent bodies and overburden may have modified the response. In general the conductance estimate is less affected by these limitations than is the depth estimate, but both should be considered as relative rather than absolute guides to the anomaly's properties.

Conductance in mhos is the reciprocal of resistance in ohms and in the case of narrow slab-like bodies is the product of electrical conductivity and thickness.

The higher ranges of conductance, greater than 2-4 mhos, indicate that a significant fraction of the electrical conduction is electronic rather than electrolytic in nature. Materials that conduct electronically are limited to certain metallic sulphides and to graphite. High conductance anomalies, roughly 10 mhos or greater, are generally limited to massive sulphides or graphites.

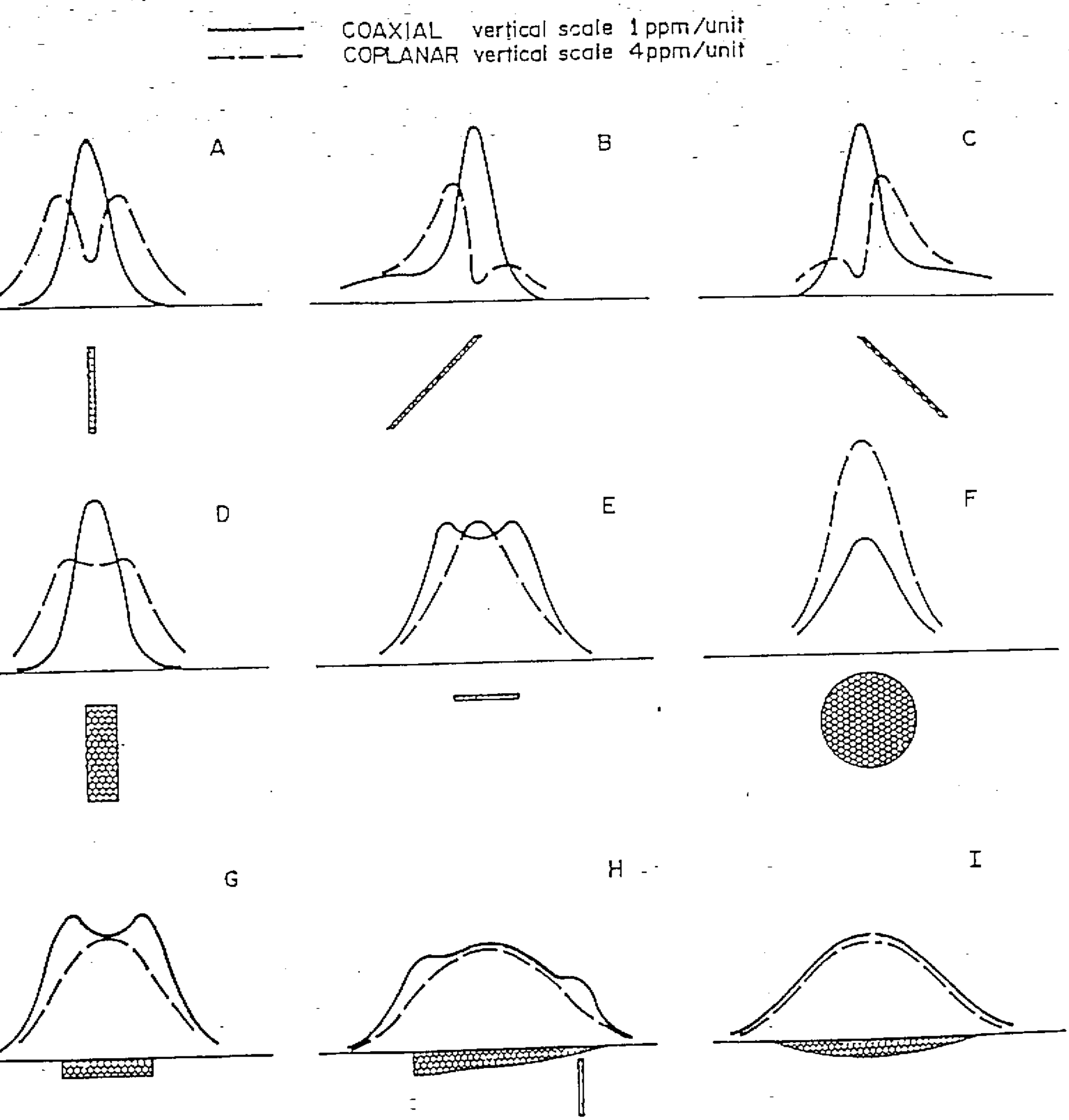
Sulphide minerals, with the exception of such ore minerals as sphalerite, cinnabar and stibnite, are good conductors. Sulphides may occur in a disseminated manner that inhibits electrical conduction through the rock mass. In this case the apparent conductance can seriously underrate the quality of the conductor in geological terms. In a similar sense the relatively non-conducting sulphide minerals noted above may be present in significant concentrations in association with minor conductive sulphides, and the electromagnetic response will only relate to the minor associated mineralization. Indicated conductance is also of little direct significance for the identification of gold mineralization. Although gold is highly conductive, it would not be expected to exist in sufficient quantity to create a recognizable anomaly. Minor accessory sulphide mineralization may however provide a useful indirect indication.

In summary, the estimated conductance of a conductor can provide a relatively positive identification of significant sulphide or graphite mineralization. A moderate to low conductance value does not rule out the possibility of significant economic mineralization.

Geometrical Considerations

Geometrical information about the geologic conductor can often be interpreted from the profile shape of the anomaly. The change in shape is primarily related to the change in inductive coupling among the transmitter, the target, and the receiver. The accompanying figure shows a selection of HEM response profile shapes from nine idealized targets. Response profiles are labelled A through I. These labels are used in the discussion which follows.

HEM RESPONSE PROFILE SHAPE AS AN INDICATOR OF CONDUCTOR GEOMETRY



In the case of a thin, steeply dipping, sheet-like conductor, the coaxial coil pair will yield a near symmetric peak over the conductor. On the other hand, the coplanar coil pair will pass through a null couple relationship and yield a minimum over the conductor, flanked by positive side lobes (Profile A). As the dip of the conductor decrease from vertical, the coaxial anomaly shape changes only slightly, but in the case of the coplanar coil pair the side lobe on the down dip side strengthens relative to that on the up dip side (Profiles B and C).

As the thickness of the conductor increases, induced current flow across the thickness of the conductor becomes relatively significant and complete null coupling with the coplanar coils is no longer possible (Profile D). As a result, the apparent minimum of the coplanar response over the conductor diminishes with increasing thickness, and in the limiting case of a fully 3 dimensional body or a horizontal layer or half-space, the minimum disappears completely.

A horizontal conducting layer such as a horizontal thin sheet or overburden will produce a response in the coaxial and coplanar coils that is a function of altitude (and conductivity if not uniform). The profile shape will be similar in both coil configurations with an amplitude ratio (coplanar:coaxial) of about 4:1* (Profiles E and G).

In the case of a spherical conductor, the induced currents are confined to the volume of the sphere, but not relatively restricted to any arbitrary plane as in the case of a sheet-like form. The response of the coplanar coil pair directly over the sphere may be up to 8* times greater than that of the coaxial pair (Profile F).

In summary, a steeply dipping, sheet-like conductor will display a decrease in the coplanar response coincident with the peak of the coaxial response. The relative strength of this coplanar null is related inversely to the thickness of the conductor. A pronounced null indicates a relatively thin conductor. The dip of such a conductor can be inferred from the relative amplitudes of the side-lobes.

Massive conductors that could be approximated by a conducting sphere will display a simple single peak profile form on both coaxial and coplanar coils, with a ratio between the coplanar to coaxial response amplitudes as high as 8*.

Overburden anomalies often produce broad poorly defined anomaly profiles (Profile I). In most cases, the response of the coplanar coils closely follows that of the coaxial coils with a relative amplitude ration of 4*.

Occasionally, if the edge of an overburden zone is sharply defined with some significant depth extent, an edge effect will occur in the coaxial coils. In the case of a horizontal conductive ring or ribbon, the coaxial response will consist of two peaks, one over each edge; whereas the coplanar coil will yield a single peak (Profile H).

* It should be noted at this point that Aerodat's definition of the measured ppm unit is related to the primary field sensed in the receiving coil without normalization to the maximum coupled (coaxial configuration). If such normalization were applied to the Aerodat units, the amplitude of the coplanar coil pair would be halved.

Magnetics

The Total Field Magnetic Map shows contours of the total magnetic field, uncorrected for regional variation. Whether an EM anomaly with a magnetic correlation is more likely to be caused by a sulphide deposit than one without depends on the type of mineralization. An apparent coincidence between an EM and a magnetic anomaly may be caused by a conductor which is also magnetic, or by a conductor which lies in close proximity to a magnetic body. The majority of conductors which are also magnetic are sulphides containing pyrrhotite and/or magnetite. Conductive and magnetic bodies in close association can be, and often are, graphite and magnetite. It is often very difficult to distinguish between these cases. If the conductor is also magnetic, it will usually produce an EM anomaly whose general pattern resembles that of the magnetics. Depending on the magnetic permeability of the conducting body, the amplitude of the inphase EM anomaly will be weakened, and if the conductivity is also weak, the inphase EM anomaly may even be reversed in sign.

The interpretation of contoured aeromagnetic data is a subject on its own involving an array of methods and attitudes. The interpretation of source characteristics for example from total field results is often based on some numerical modelling scheme. The vertical gradient data is more legible in some aspects however and useful inferences about source characteristics can often be read off the contoured VG map.

The zero contour lines in contoured VG data are often sited as a good approximation to the outline of the top of the magnetic source. This only applies to wide (relative to depth of burial) near vertical sources at high magnetic latitudes. It will give an incorrect interpretation in most other cases.

Theoretical profiles of total field and vertical gradient anomalies from tabular sources at a variety of magnetic inclinations are shown in the attached figure. Sources are 10, 50 and 200 m wide. The source-sensor separation is 50 m. The thin line is the total field profile. The thick line is the vertical gradient profile.

The following comments about source geometry apply to contoured vertical gradient data for magnetic inclinations of 70 to 80°.

Outline

Where the VG anomaly has a single sharp peak, the source may be a thin near-vertical tabular source. It may be represented as a magnetic axis or as a tabular source of measurable width - the choice is one of geological preference.

Where the VG anomaly has a broad, flat or inclined top, the source may be a thick tabular source. It may be represented as a thick body where the width is taken from the zero contour lines if the body dips to magnetic north. If the source appears to be dipping to the south (i.e. the VG anomaly is asymmetric), the zero contours are less reliable indicators of outline. The southern most zero contour line should be ignored and the outline taken from the northern zero contour line and the extent of the anomaly peak width.

Dip

A *symmetrical vertical gradient response* is produced by a body dipping to magnetic north. An asymmetrical response is produced by a body which is vertical or dipping to the south. For southern dips, the southern most zero contour line may be several hundred meters south of the source.

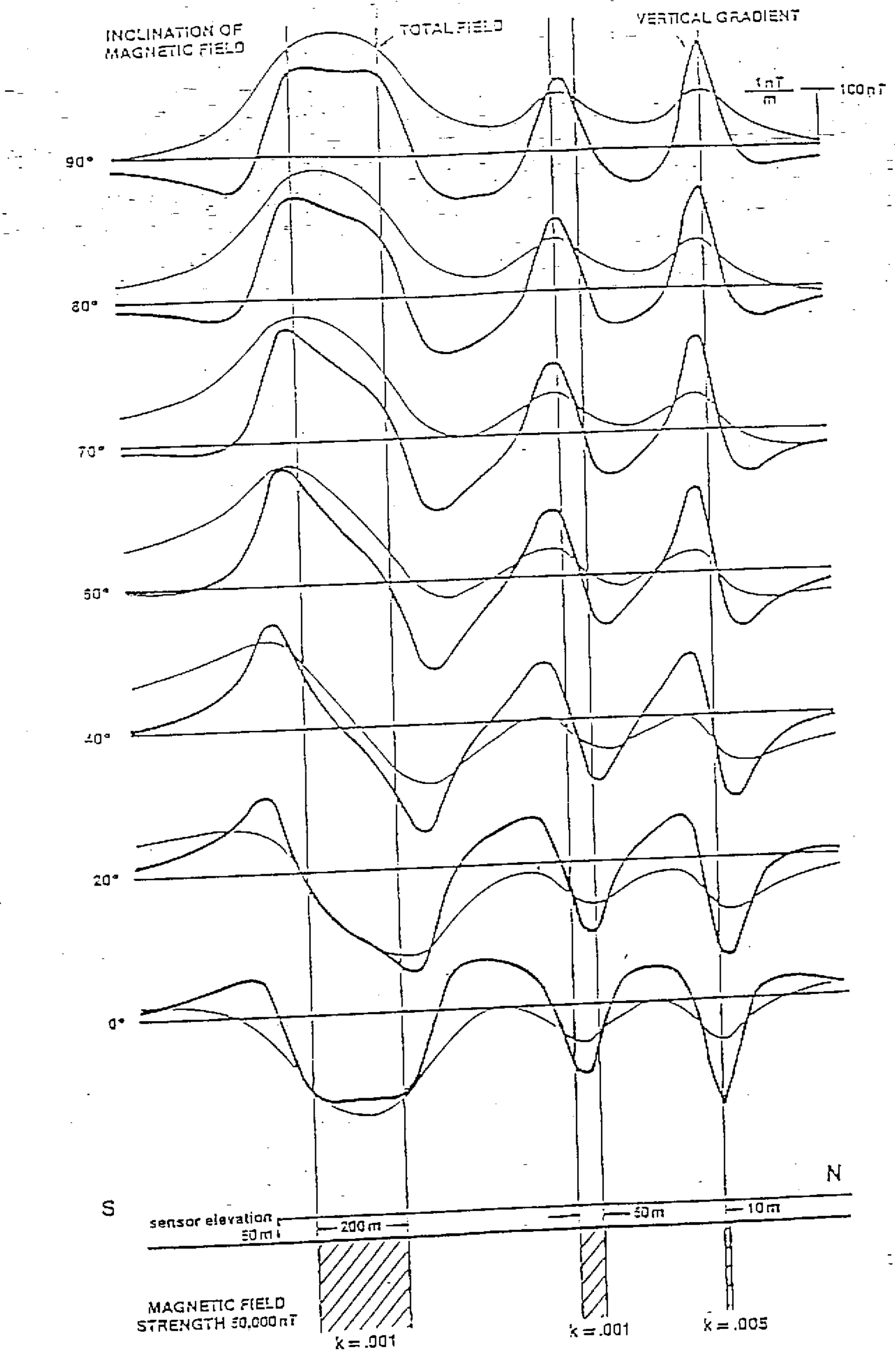
Depth of Burial

The source-sensor separation is about equal to half of the distance between the zero contour lines for thin near-vertical sources. The estimated depth of burial for such sources is this separation minus 50 m. If a variety of VG anomaly widths are seen in an area, use the narrowest width seen to estimate local depths.

VLF Electromagnetics

The VLF-EM method employs the radiation from powerful military radio transmitters as the primary signals. The magnetic field associated with the primary field is locally horizontal and normal to a line pointing at the transmitter.

The Herz Totem uses three coils in the X, Y, Z configuration to measure the total field and vertical quadrature component from two VLF stations. These stations are designated Line and Ortho. The line station is ideally in a direction from the survey area at right angles to the flight line direction. Conductors normal to the flight line direction point at the line station and are therefore optimally coupled to VLF magnetic fields and in the best situation to gather secondary VLF currents. The ortho station is ideally 90 degrees in azimuth from the line station.



INCLINATION OF MAGNETIC FIELD
TOTAL FIELD
VERTICAL GRADIENT
1 nT / m
100 nT
90°
80°
70°
60°
40°
20°
0°
S
N
sensor elevation 50 m
200 m
50 m
10 m
MAGNETIC FIELD STRENGTH 50,000 nT
k = .001
k = .001
k = .005

The relatively high frequency of VLF (15-25) kHz provides high response factors for bodies of low conductance. Relatively "disconnected" sulphide ores have been found to produce measurable VLF signals. For the same reason, poor conductors such as sheared contacts, breccia zones, narrow faults, alteration zones and porous flow tops normally produce VLF anomalies. The method can therefore be used effectively for geological mapping. The only relative disadvantage of the method lies in its sensitivity to conductive overburden. In conductive ground to depth of exploration is severely limited.

The effect of strike direction is important in the sense of the relation of the conductor axis relative to the energizing electromagnetic field. A conductor aligned along a radius drawn from a transmitting station will be in a maximum coupled orientation and thereby produce a stronger response than a similar conductor at a different strike angle. Theoretically, it would be possible for a conductor, oriented tangentially to the transmitter to produce no signal. The most obvious effect of the strike angle consideration is that conductors favourably oriented with respect to the transmitter location and also near perpendicular to the flight direction are most clearly rendered and usually dominate the map presentation.

The total field anomaly is an indicator of the existence and position of a conductor. The response will be a maximum over the conductor, without any special filtering, and strongly favour the upper edge of the conductor even in the case of a relatively shallow dip.

Conversely a negative total field anomaly is often seen over local resistivity highs. This is because the VLF field produces electrical currents which flow towards (or away from) the transmitter. These currents are gathered into a conductor and are taken from resistive bodies. The VLF system sees the currents gathered into the conductor as a total field high. It sees the relative absence of secondary currents in the resistor as a total field low.

As noted, VLF anomaly trends show a strong bias towards the VLF transmitter. Structure which is normal to this direction may have no associated VLF anomaly but may be seen as a break or interruption in VLF anomalies. If these structures are of particular interest, maps of the ortho station data may be worthwhile.

Conductive overburden will obscure VLF responses from bedrock sources and may produce low amplitude, broad anomalies which reflect variations in the resistivity of thickness of the overburden.

Extreme topographic relief will produce VLF anomalies which may bear no relationship to variations in electrical conductivity. Deep gullies which are too narrow to have been surveyed at a uniform sensor height often show up as VLF total field lows. Sharp ridges show up as total field highs.

The vertical quadrature component over steeply dipping sheet-like conductor will be a cross-over type response with the cross-over closely associated with the upper edge of the conductor.

The response is a cross-over type due to the fact that it is the vertical rather than total field quadrature component that is measured. The response shape is due largely to geometrical rather than conductivity considerations and the distance between the maximum and minimum on either side of the cross-over is related to target depth. For a given target geometry, the larger this distance the greater the depth.

The vertical quadrature component is rarely presented. Experience has shown the total field to be more sensitive to bedrock conductors and less affected by variations in conductive overburden.

Apparent Resistivity/Conductivity Maps

Overburden and different types of bedrock may be modelled as a large area horizontal conductor of fixed thickness. A phasor diagram may be constructed, in the same fashion as for the vertical sheet, to convert the measured HEM in-phase and quadrature response to a depth and conductivity value for a horizontal layer. Traditionally if the thickness is large, an infinite half-space, the associated conductivity value is referred to as "apparent conductivity". We have generalized the use of the word "apparent" to include any model where the thickness of the layer is a fixed as opposed to a variable parameter. The units of apparent resistivity are ohm-m and those of apparent conductivity are the inverse mhos/m or siemen/m. If the chosen model layer thickness is close to the true thickness of the conductor then the apparent conductivity will closely conform to the true value; however, if the thickness is inappropriate the apparent value may be considerably different from the true value.

The benefit of the apparent conductivity mapping is that it provides a simple robust method of converting the HEM in-phase and quadrature response to apparent change in ground conductivity.

A phasor diagram for several apparent resistivity models is presented. The general forms for the various thicknesses is very similar and also closely resembles the diagram for the vertical sheet. The diagrams also show the curves for apparent depth. As with the conductivity value the depth value is meaningful if the model thickness closely resembles the true conductive layer thickness. If the HEM response from a thin conducting layer is applied to a thick layer model the apparent conductivity and depth will be less than the true conductivity and depth.

APPENDIX III

ANOMALY LISTINGS

J9761 (CARIBOU CREEK PROPERTY) ANOMALY LISTING

FLIGHT	LINE	ANOMALY	CATEGORY	AMPLITUDE (PPM) INPHASE	QUAD.	CONDUCTOR CTP MHOS	DEPTH MTRS	BIRD HEIGHT MTRS		
3	20010	A	0	1.6	5.6	0.0	14	34	663154.3	6685072.0
3	20020	A	0	2.1	7.6	0.0	11	31	663176.0	6685005.5
3	20030	A	0	0.8	16.8	0.0	0	32	663224.8	6684903.0
3	20040	A	0	0.0	14.5	0.0	0	44	663266.3	6684826.5
3	20060	A	0	2.0	15.2	0.0	0	36	663258.6	6684594.0
3	20070	A	0	4.1	18.4	0.0	0	36	663312.2	6684495.5
3	20090	A	0	4.7	23.1	0.0	0	31	663468.2	6684392.0
3	20110	A	0	4.4	20.4	0.0	0	32	663545.8	6684142.5
3	20130	A	0	10.8	63.7	0.0	0	22	662581.6	6683010.0
3	20130	B	0	5.1	18.7	0.1	0	32	663601.1	6683912.0
3	20150	A	0	8.7	35.8	0.1	0	29	663687.4	6683725.0
3	20150	B	0	3.7	28.4	0.0	0	27	663784.4	6683820.0
3	20150	C	0	1.7	18.8	0.0	2	20	664177.8	6684176.0
3	20190	A	0	2.3	20.7	0.0	0	27	664121.4	6683656.0
3	20200	A	0	8.6	12.6	0.5	0	58	663348.7	6682749.5
3	20230	A	0	14.8	44.9	0.2	0	27	663530.9	6682553.0
3	20230	B	0	9.2	62.5	0.0	0	21	664154.9	6683090.5
3	20240	A	0	13.2	33.6	0.3	0	41	663617.6	6682490.5
3	20250	A	0	15.6	51.6	0.2	0	22	663821.7	6682501.0
3	20260	A	0	2.2	11.3	0.0	6	27	664946.7	6683396.5
3	20260	B	0	2.1	11.1	0.0	0	35	664819.2	6683264.0
3	20270	A	0	3.2	14.8	0.0	0	34	664834.1	6683191.5
3	20280	A	0	2.9	17.3	0.0	0	35	665134.9	6683314.5
3	20280	B	0	3.4	17.2	0.0	0	34	665021.6	6683213.0
3	20280	C	0	17.2	34.6	0.4	0	38	663846.3	6682144.5
3	20290	A	0	15.9	32.5	0.4	0	35	664051.2	6682165.0

Estimated depth may be unreliable because the stronger part of the conductor may be deeper or to one side of the flight line, or because of a shallow dip or overburden effects.

J9761 (CARIBOU CREEK PROPERTY) ANOMALY LISTING

FLIGHT	LINE	ANOMALY	CATEGORY	AMPLITUDE (PPM) INPHASE	QUAD.	CONDUCTOR CTP MHOS	DEPTH MTRS	BIRD HEIGHT MTRS		
3	20320	A	0	10.5	33.7	0.2	0	36	664132.3	6681845.5
3	20330	A	0	9.8	44.2	0.1	0	25	664523.0	6682086.0
3	20340	A	0	2.9	19.8	0.0	0	33	665747.4	6683094.0
3	20350	A	0	8.0	31.2	0.1	0	36	664501.9	6681761.5
3	20360	A	0	4.3	24.2	0.0	0	36	664323.6	6681472.5
3	20380	A	0	3.4	19.1	0.0	0	35	666114.1	6682880.0
3	20380	B	0	1.7	15.9	0.0	0	36	665968.1	6682756.0
3	20380	C	0	2.7	16.7	0.0	0	40	664578.8	6681463.5

Estimated depth may be unreliable because the stronger part of the conductor may be deeper or to one side of the flight line, or because of a shallow dip or overburden effects.

APPENDIX IV

CERTIFICATE OF QUALIFICATION

I, Roderick W. Woolham of the town of Pickering, Province of Ontario, do hereby certify that:-

1. I am a geophysicist and reside at 1463 Fieldlight Blvd., Pickering, Ontario, L1V 2S3

2. I graduated from the University of Toronto in 1961 with a degree of Bachelor of Applied Science, Engineering Physics, Geophysics Option. I have been practising my profession since graduation.

3. I am a member in good standing of the following organizations: Professional Engineers Ontario (Mining Branch); Society of Exploration Geophysicists; South African Geophysical Association; Prospectors and Developers Association of Canada.

4. I have not received, nor do I expect to receive, any interest, directly or indirectly, in the properties or securities of Fairfield Minerals Ltd. or any affiliate.

5. The statements contained in this report and the conclusions reached are based upon evaluation and review of maps and information supplied by Aerodat.

6. I consent to the use of this report in submissions for assessment credits or similar regulatory requirements.

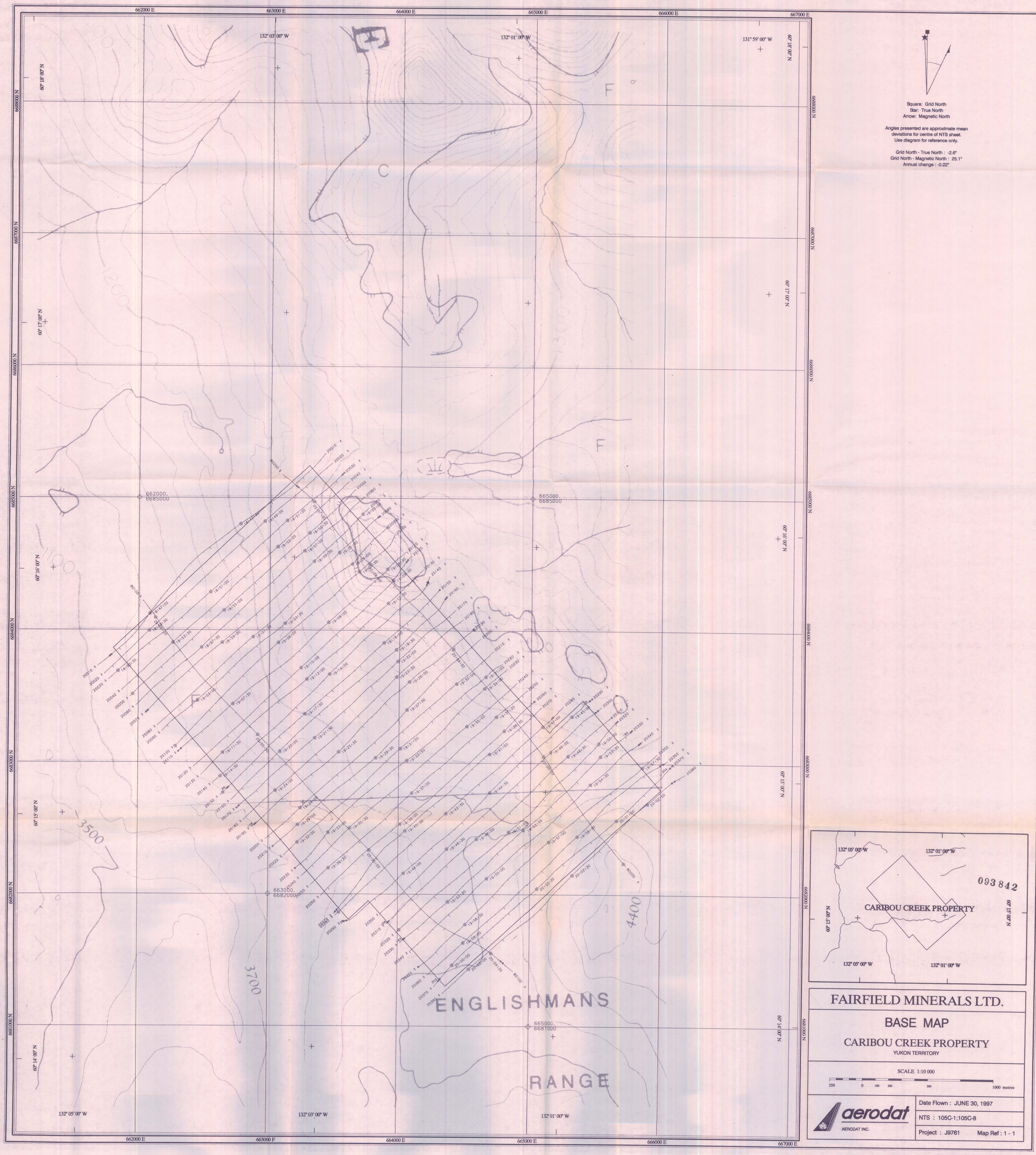
REGISTERED PROFESSIONAL ENGINEER R. W. WOOLHAM PROVINCE OF ONTARIO

R. W. Woolham, P.Eng.

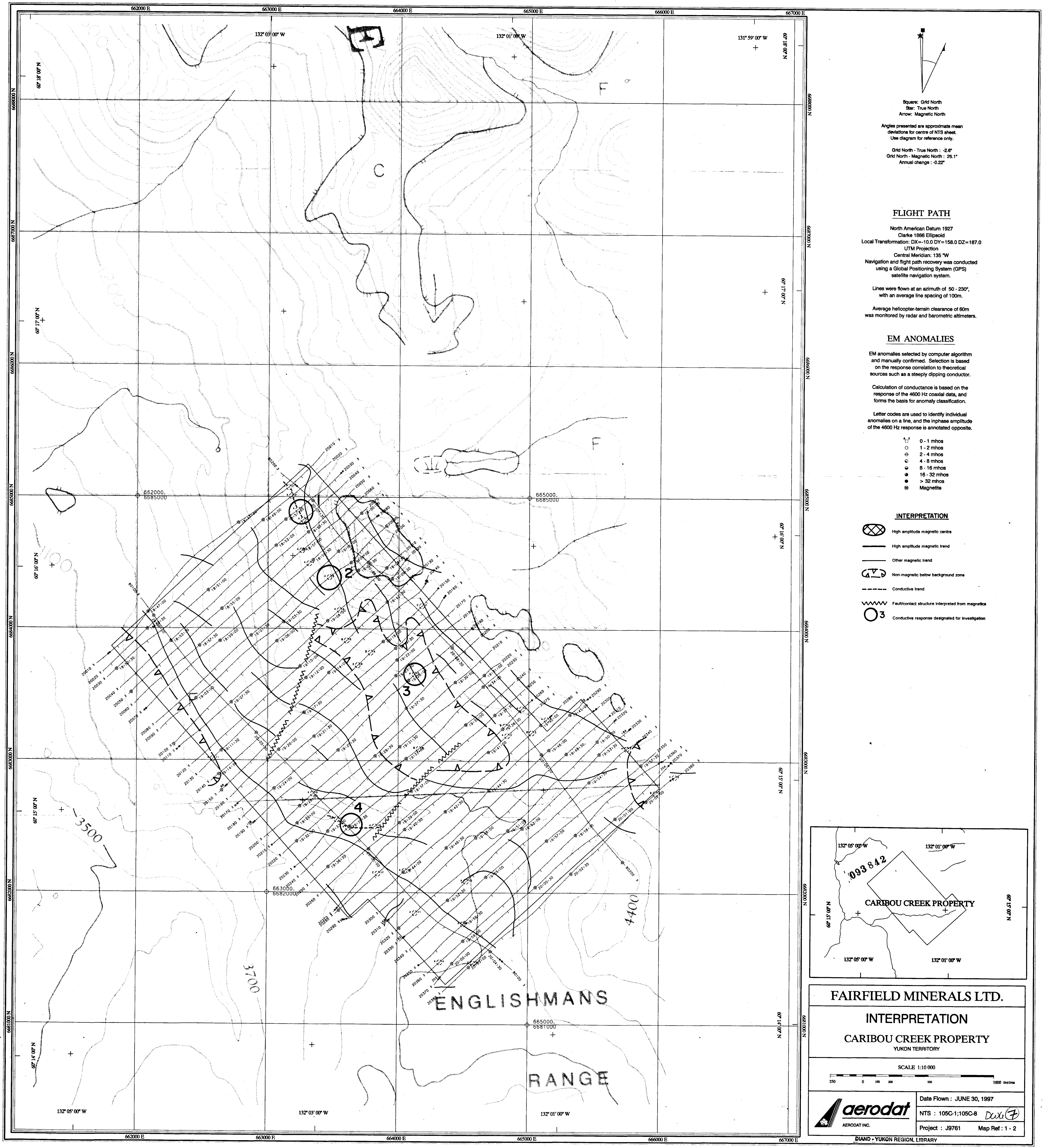
Pickering, Ontario

J9761

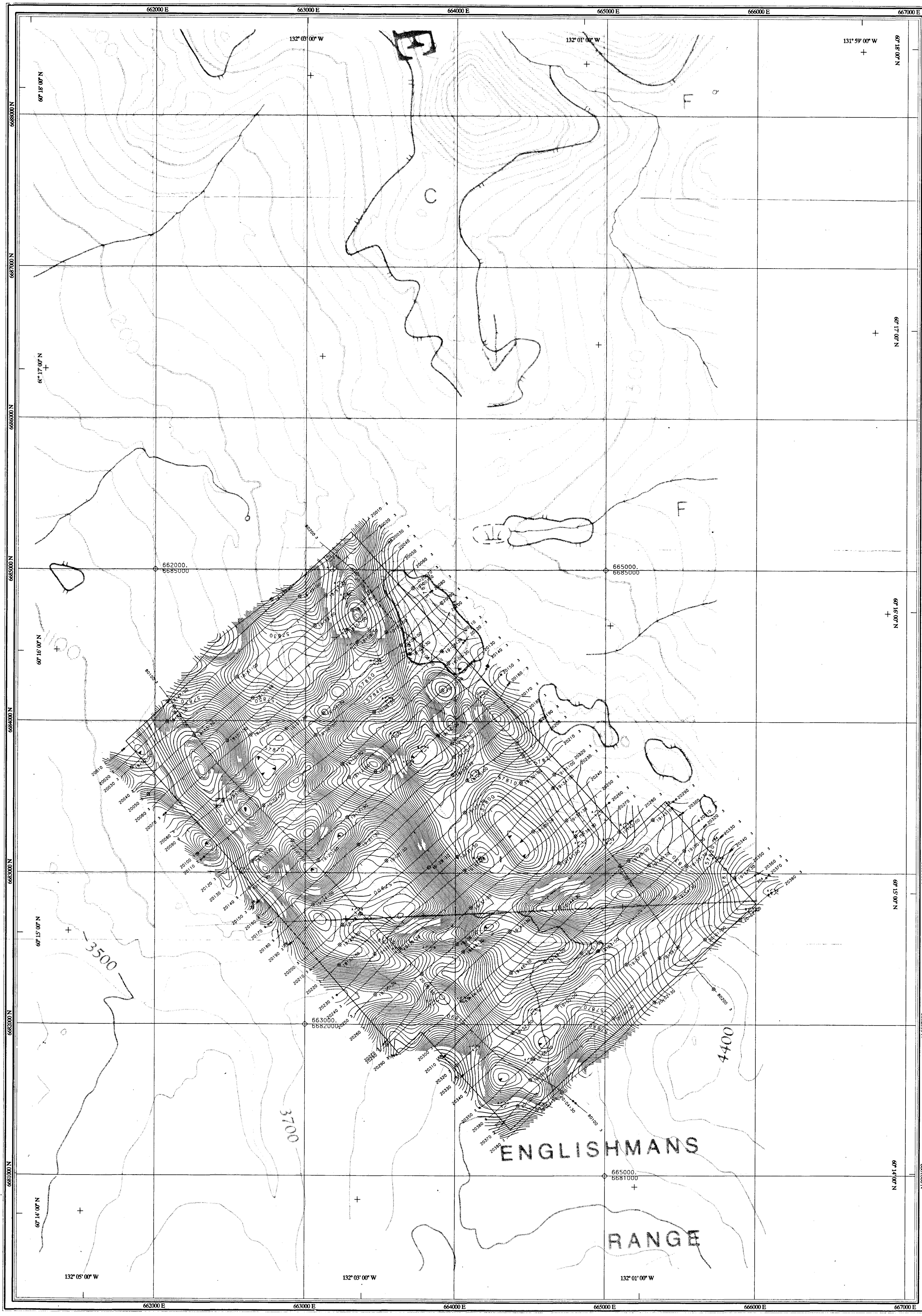
July 31, 1997

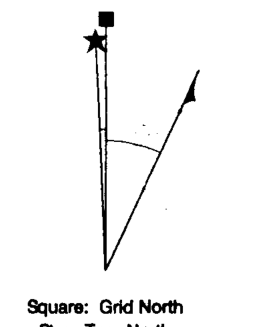


ENGLISHMANS
RANGE
3500
3700
4400
662000 E
663000 E
664000 E
665000 E
666000 E
667000 E
132° 05' 00" W
132° 03' 00" W
132° 01' 00" W
131° 59' 00" W
60° 18' 00" N
60° 17' 00" N
60° 16' 00" N
60° 15' 00" N
60° 14' 00" N
Square: Grid North
Star: True North
Arrow: Magnetic North
Angles presented are approximate mean deviations for centre of NTS sheet.
Use diagram for reference only.
Grid North - True North : -2.6°
Grid North - Magnetic North : 25.1°
Annual change : -0.22°
CARIBOU CREEK PROPERTY
093 842
FAIRFIELD MINERALS LTD.
BASE MAP
CARIBOU CREEK PROPERTY
YUKON TERRITORY
SCALE 1:10 000
250 0 100 200 500 1000 metres
AERODAT INC.
Date Flown : JUNE 30, 1997
NTS : 105C-1;105C-8
Project : J9761
Map Ref : 1 - 1



662000 E
663000 E
664000 E
665000 E
666000 E
667000 E
132° 03' 00" W
132° 01' 00" W
131° 59' 00" W
60° 18' 00" N
60° 17' 00" N
60° 16' 00" N
60° 15' 00" N
60° 14' 00" N
6688000 N
6687000 N
6686000 N
6685000 N
6684000 N
6683000 N
6682000 N
6681000 N
C
F
1
2
3
4
3500
3700
4400
ENGLISHMANS
RANGE
Square: Grid North
Star: True North
Arrow: Magnetic North
Angles presented are approximate mean deviations for centre of NTS sheet. Use diagram for reference only.
Grid North - True North : -2.6°
Grid North - Magnetic North : 25.1°
Annual change : -0.22°
FLIGHT PATH
North American Datum 1927
Clarke 1866 Ellipsoid
Local Transformation: DX=-10.0 DY=158.0 DZ=187.0
UTM Projection
Central Meridian: 135 °W
Navigation and flight path recovery was conducted using a Global Positioning System (GPS) satellite navigation system.
Lines were flown at an azimuth of 50 - 230°, with an average line spacing of 100m.
Average helicopter-terrain clearance of 60m was monitored by radar and barometric altimeters.
EM ANOMALIES
EM anomalies selected by computer algorithm and manually confirmed. Selection is based on the response correlation to theoretical sources such as a steeply dipping conductor.
Calculation of conductance is based on the response of the 4600 Hz coaxial data, and forms the basis for anomaly classification.
Letter codes are used to identify individual anomalies on a line, and the inphase amplitude of the 4600 Hz response is annotated opposite.
0 - 1 mhos
1 - 2 mhos
2 - 4 mhos
4 - 8 mhos
8 - 16 mhos
16 - 32 mhos
> 32 mhos
Magnetite
INTERPRETATION
High amplitude magnetic centre
High amplitude magnetic trend
Other magnetic trend
Non-magnetic below background zone
Conductive trend
Fault/contact structure interpreted from magnetics
Conductive response designated for investigation
132° 05' 00" W
132° 01' 00" W
60° 15' 00" N
1093842
CARIBOU CREEK PROPERTY
FAIRFIELD MINERALS LTD.
INTERPRETATION
CARIBOU CREEK PROPERTY
YUKON TERRITORY
SCALE 1:10 000
250
0
100
200
500
1000 metres
aerodat
AERODAT INC.
Date Flown : JUNE 30, 1997
NTS : 105C-1;105C-8
Dwg 7
Project : J9761
Map Ref : 1 - 2





Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet. Use diagram for reference only.

Grid North - True North : -2.6°
Grid North - Magnetic North : 25.1°
Annual change : -0.22°

TOTAL FIELD MAGNETICS

Total field magnetic intensity contour data, measured by a cesium high sensitivity magnetometer at an average sensor elevation of 45m, and corrected for diurnal variation.

Map contours are in nanoTeslas, and are multiples of those listed below:

2 nT
10 nT
50 nT
250 nT
1000 nT

FLIGHT PATH

North American Datum 1927
Clarke 1866 Ellipsoid
Local Transformation: DX=-10.0 DY=158.0 DZ=187.0
UTM Projection
Central Meridian: 135 °W
Navigation and flight path recovery was conducted using a Global Positioning System (GPS) satellite navigation system.

Lines were flown at an azimuth of 50 - 230°, with an average line spacing of 100m.

Average helicopter-terrain clearance of 60m was monitored by radar and barometric altimeters.

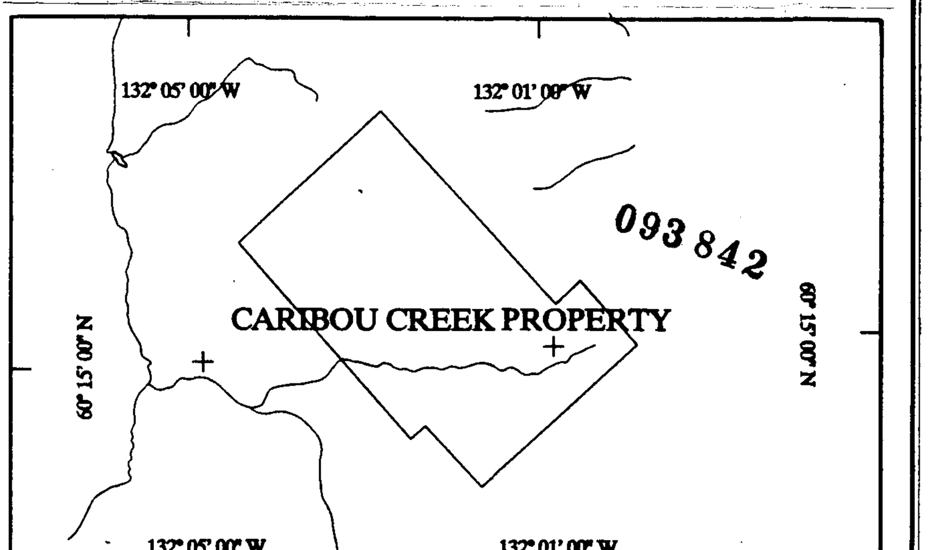
EM ANOMALIES

EM anomalies selected by computer algorithm and manually confirmed. Selection is based on the response correlation to theoretical sources such as a steeply dipping conductor.

Calculation of conductance is based on the response of the 4600 Hz coaxial data, and forms the basis for anomaly classification.

Letter codes are used to identify individual anomalies on a line, and the inphase amplitude of the 4600 Hz response is annotated opposite.

0 - 1 mhos
1 - 2 mhos
2 - 4 mhos
4 - 8 mhos
8 - 16 mhos
16 - 32 mhos
> 32 mhos
Magnetite



FAIRFIELD MINERALS LTD.

TOTAL FIELD MAGNETICS

CARIBOU CREEK PROPERTY

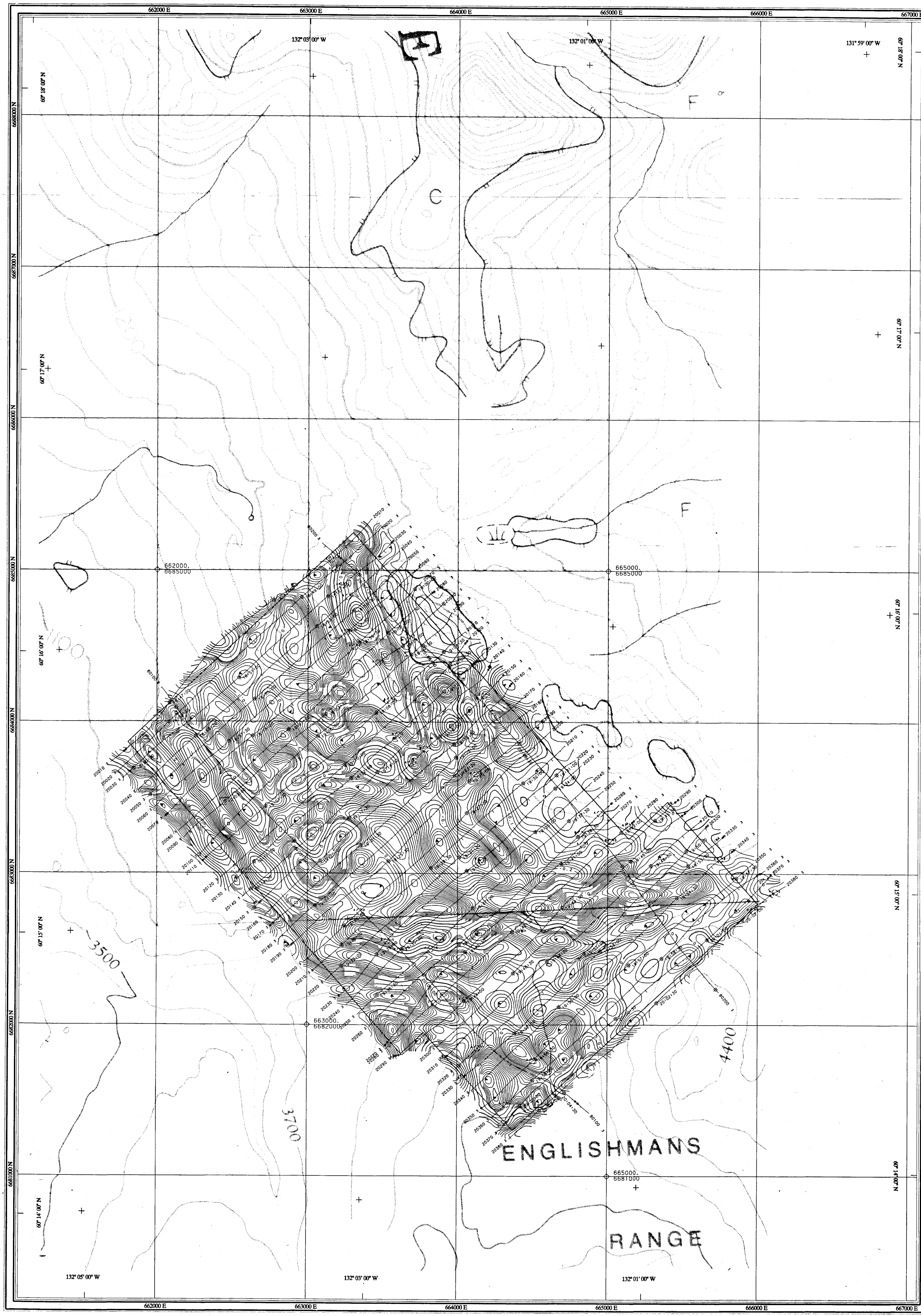
YUKON TERRITORY

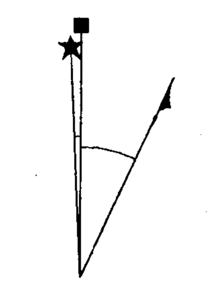
SCALE 1:10 000

250 0 100 200 500 1000 metres

aerodat
AERODAT INC.

Date Flown : JUNE 30, 1997
NTS : 105C-1;105C-8 Dwg (8)
Project : J9761 Map Ref : 1 - 3





Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet. Use diagram for reference only.

Grid North - True North : -2.6°
Grid North - Magnetic North : 25.1°
Annual change : -0.22°

VERTICAL GRADIENT

Vertical magnetic gradient contour data, calculated from the gridded total field magnetics data by a 17x17 convolution filter.

Map contours are in nanoTeslas/metre, and are multiples of those listed below:

- 0.02 nT/m
- 0.10 nT/m
- 0.50 nT/m
- 2.00 nT/m
- 10.0 nT/m

FLIGHT PATH

North American Datum 1927
Clarke 1866 Ellipsoid
Local Transformation: DX=-10.0 DY=158.0 DZ=187.0
UTM Projection
Central Meridian: 135 °W
Navigation and flight path recovery was conducted usihg a Global Positioning System (GPS) satellite navigation system.

Lines were flown at an azimuth of 50 - 230°, with an average line spacing of 100m.

Average helicopter-terrain clearance of 60m was monitored by radar and barometric altimeters.

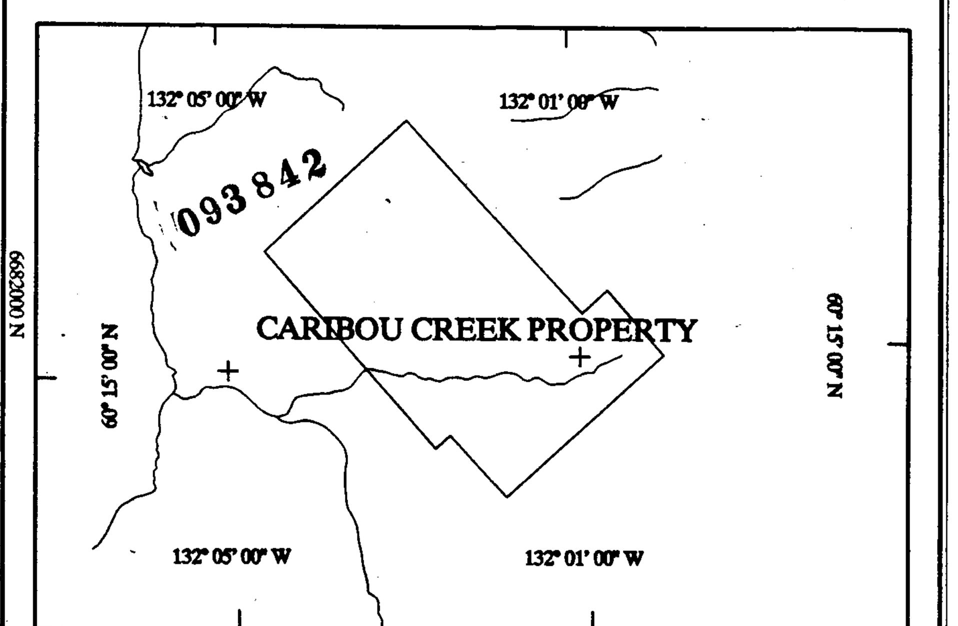
EM ANOMALIES

EM anomalies selected by computer algorithm and manually confirmed. Selection is based on the response correlation to theoretical sources such as a steeply dipping conductor.

Calculation of conductance is based on the response of the 4600 Hz coaxial data, and forms the basis for anomaly classification.

Letter codes are used to identify individual anomalies on a line, and the inphase amplitude of the 4600 Hz response is annotated opposite.

- 0 - 1 mhos
- 1 - 2 mhos
- 2 - 4 mhos
- 4 - 8 mhos
- 8 - 16 mhos
- 16 - 32 mhos
- > 32 mhos
- Magnetite



FAIRFIELD MINERALS LTD.

VERTICAL MAGNETIC GRADIENT

CARIBOU CREEK PROPERTY

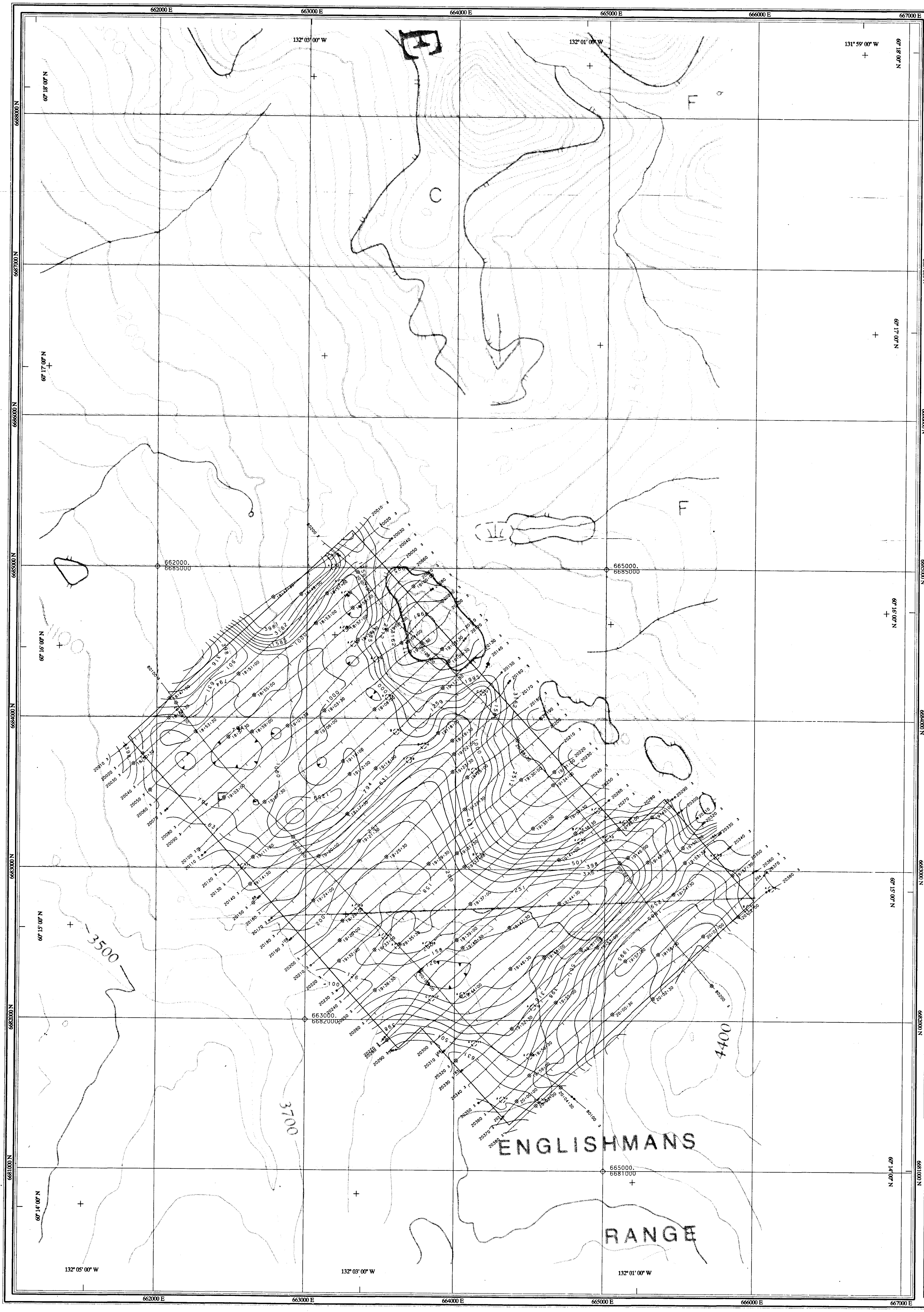
YUKON TERRITORY

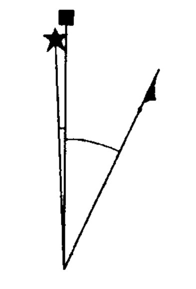
SCALE 1:10 000

250 0 100 200 500 1000 metres

aerodat
AERODAT INC.

Date Flown : JUNE 30, 1997	
NTS : 105C-1;105C-8	DWG 9
Project : J9761	Map Ref : 1 - 4





Square: Grid North
Star: True North
Arrow: Magnetic North

Angles presented are approximate mean deviations for centre of NTS sheet. Use diagram for reference only.

Grid North - True North : -2.6°
Grid North - Magnetic North : 25.1°
Annual change : -0.22°

APPARENT RESISTIVITY

Apparent resistivity calculated from the measured 4175 Hz coplanar EM response, assuming a resistive half-space (200m) model. Average sensor elevation was 30m.

Map contours are in ohm·m, at logarithmic intervals, in multiples of those listed below:

0.1 log(ohm·m)
0.5 log(ohm·m)
2.0 log(ohm·m)

FLIGHT PATH

North American Datum 1927
Clarke 1866 Ellipsoid
Local Transformation: DX=-10.0 DY=158.0 DZ=187.0
UTM Projection
Central Meridian: 135 °W
Navigation and flight path recovery was conducted using a Global Positioning System (GPS) satellite navigation system.

Lines were flown at an azimuth of 50 - 230°, with an average line spacing of 100m.

Average helicopter-terrain clearance of 60m was monitored by radar and barometric altimeters.

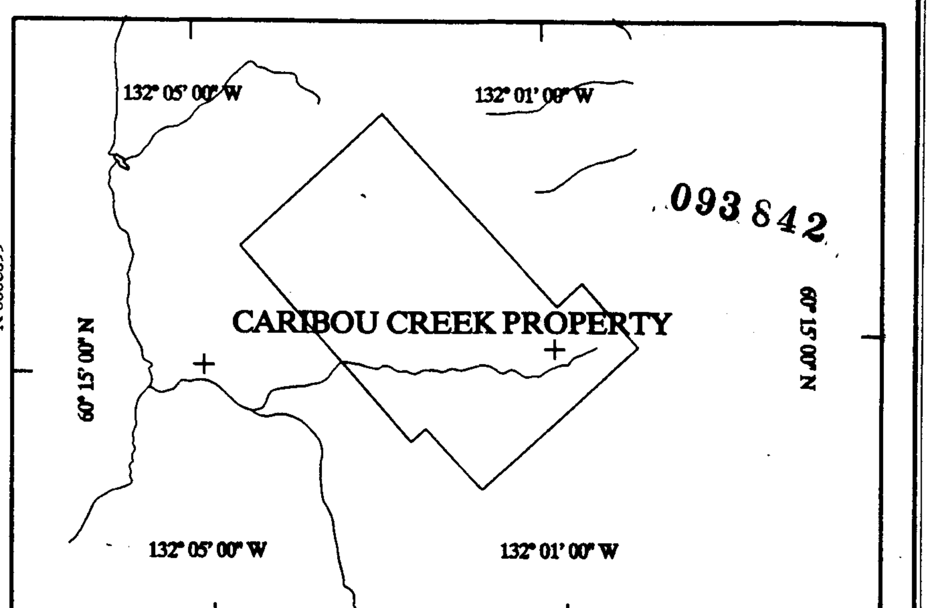
EM ANOMALIES

EM anomalies selected by computer algorithm and manually confirmed. Selection is based on the response correlation to theoretical sources such as a steeply dipping conductor.

Calculation of conductance is based on the response of the 4600 Hz coaxial data, and forms the basis for anomaly classification.

Letter codes are used to identify individual anomalies on a line, and the inphase amplitude of the 4600 Hz response is annotated opposite.

- 0 - 1 mhos
- 1 - 2 mhos
- 2 - 4 mhos
- 4 - 8 mhos
- 8 - 16 mhos
- 16 - 32 mhos
- > 32 mhos
- Magnetite



FAIRFIELD MINERALS LTD.

APPARENT RESISTIVITY
4175 Hz COPLANAR

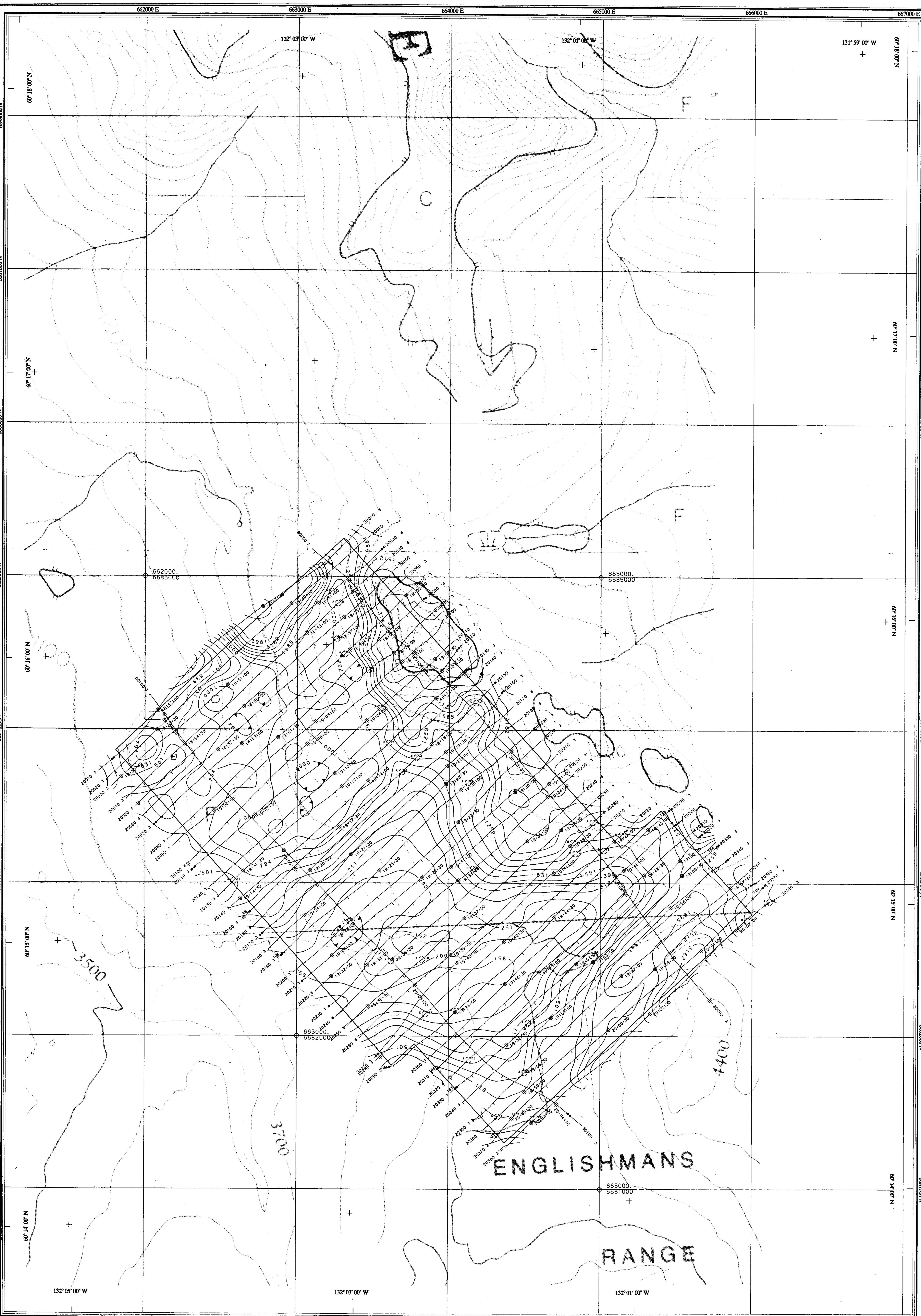
CARIBOU CREEK PROPERTY
YUKON TERRITORY

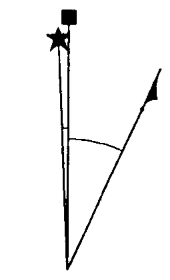
SCALE 1:10 000

250 0 100 200 500 1000 metres

AERODAT INC.

Date Flown : JUNE 30, 1997
NTS : 105C-1;105C-8 DWG (10)
Project : J9761 Map Ref : 1 - 5A





Angles presented are approximate mean deviations for centre of NTS sheet. Use diagram for reference only.

Grid North - True North : -2.6°
Grid North - Magnetic North : 25.1°
Annual change : -0.22°

APPARENT RESISTIVITY

Apparent resistivity calculated from the measured 4600 Hz coaxial EM response, assuming a resistive half-space (200m) model. Average sensor elevation was 30m.

Map contours are in ohm·m, at logarithmic intervals, in multiples of those listed below:

0.1 log(ohm·m)
0.5 log(ohm·m)
2.0 log(ohm·m)

FLIGHT PATH

North American Datum 1927
Clarke 1866 Ellipsoid
Local Transformation: DX=-10.0 DY=158.0 DZ=187.0
UTM Projection
Central Meridian: 135 °W
Navigation and flight path recovery was conducted using a Global Positioning System (GPS) satellite navigation system.

Lines were flown at an azimuth of 50 - 230°, with an average line spacing of 100m.

Average helicopter-terrain clearance of 60m was monitored by radar and barometric altimeters.

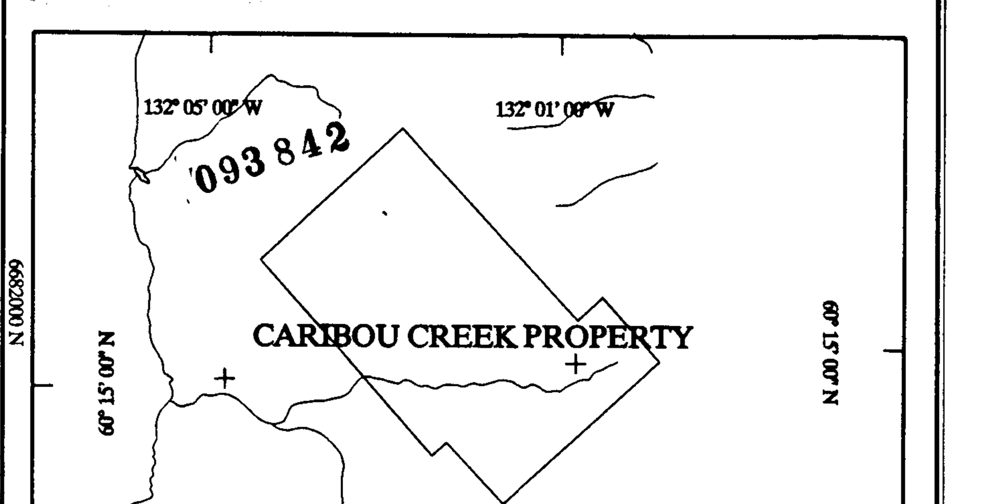
EM ANOMALIES

EM anomalies selected by computer algorithm and manually confirmed. Selection is based on the response correlation to theoretical sources such as a steeply dipping conductor.

Calculation of conductance is based on the response of the 4600 Hz coaxial data, and forms the basis for anomaly classification.

Letter codes are used to identify individual anomalies on a line, and the inphase amplitude of the 4600 Hz response is annotated opposite.

0 - 1 mhos
1 - 2 mhos
2 - 4 mhos
4 - 8 mhos
8 - 16 mhos
16 - 32 mhos
> 32 mhos
Magnetite



FAIRFIELD MINERALS LTD.

APPARENT RESISTIVITY
4600 Hz COAXIAL

CARIBOU CREEK PROPERTY
YUKON TERRITORY

SCALE 1:10 000

250 0 100 200 500 1000 metres

AERODAT INC.

Date Flown : JUNE 30, 1997
NTS : 105C-1;105C-8 DWG (11)
Project : J9761 Map Ref : 1 - 5 B

APPENDIX B:
Amerok Geosciences Ltd. Report on Induced Polarization Survey

FAIRFIELD MINERALS LTD.

INDUCED POLARIZATION SURVEY ON THE CABIN LAKE AND CARIBOU CREEK PROPERTIES, SMART RIVER AREA, YUKON TERRITORY

M.A. Power M.Sc. P. Geoph.

Location: 60° 05' N 131° 45' W
NTS: 105 B 4/5, C 8
Mining District: Watson Lake, YT
Date: November 3, 1997

SUMMARY

Induced polarization and resistivity surveys were conducted on the Cabin Lake and Caribou Creek properties held by Fairfield Minerals Ltd. to investigate copper-lead-zinc mineralization in metamorphic rocks. A total of 7.1 line-km was surveyed on the Cabin Lake grid and 3.0 line-km was surveyed on the Caribou Creek grid. The surveys were conducted in the time domain with a dipole-dipole array, reading from n=1 to 6. The resistivity data and, to a lesser extent, the chargeability data is contaminated with systematic low voltages traced to a short and consequent ground fault in a wire reel. Despite this problem, the data is interpretable. On the Cabin Lake grid, the surveys detected a zone of anomalously high chargeability and resisitivity coincident with the up-slope limit of a large copper soil geochemistry anomaly. The geophysical anomalies extend from Line 4700N to 5300N. Mineralization in this area consists of disseminated mineralization in metavolcanic and metasedimentary schist and the anomalies are consistent with this mineralization. On the Caribou Creek grid, the geophysical surveys detected two narrow chargeability anomalies on one of three survey lines centred on a copper soil geochemistry anomaly.

1.0 INTRODUCTION

This report describes induced polarization (IP) and resistivity surveys conducted on the Cabin Lake and Caribou Creek mineral properties held by Fairfield Minerals Ltd. in the southern Yukon Territory. The surveys were conducted to investigate multi-element soil geochemical anomalies and Cu-Pb-Zn mineralization encountered in bedrock.

2.0 LOCATION AND ACCESS

The Cabin Lake and Caribou Creek mineral properties are located in the Watson Lake mining district of the southern Yukon Territory, centred at approximately 60° 05' N 131° 45' W. The properties are located near the Smart River, north of the Alaska Highway and east of Teslin. The properties are accessible by helicopter with the nearest staging point being the Smart River pulloff on the Alaska Highway.

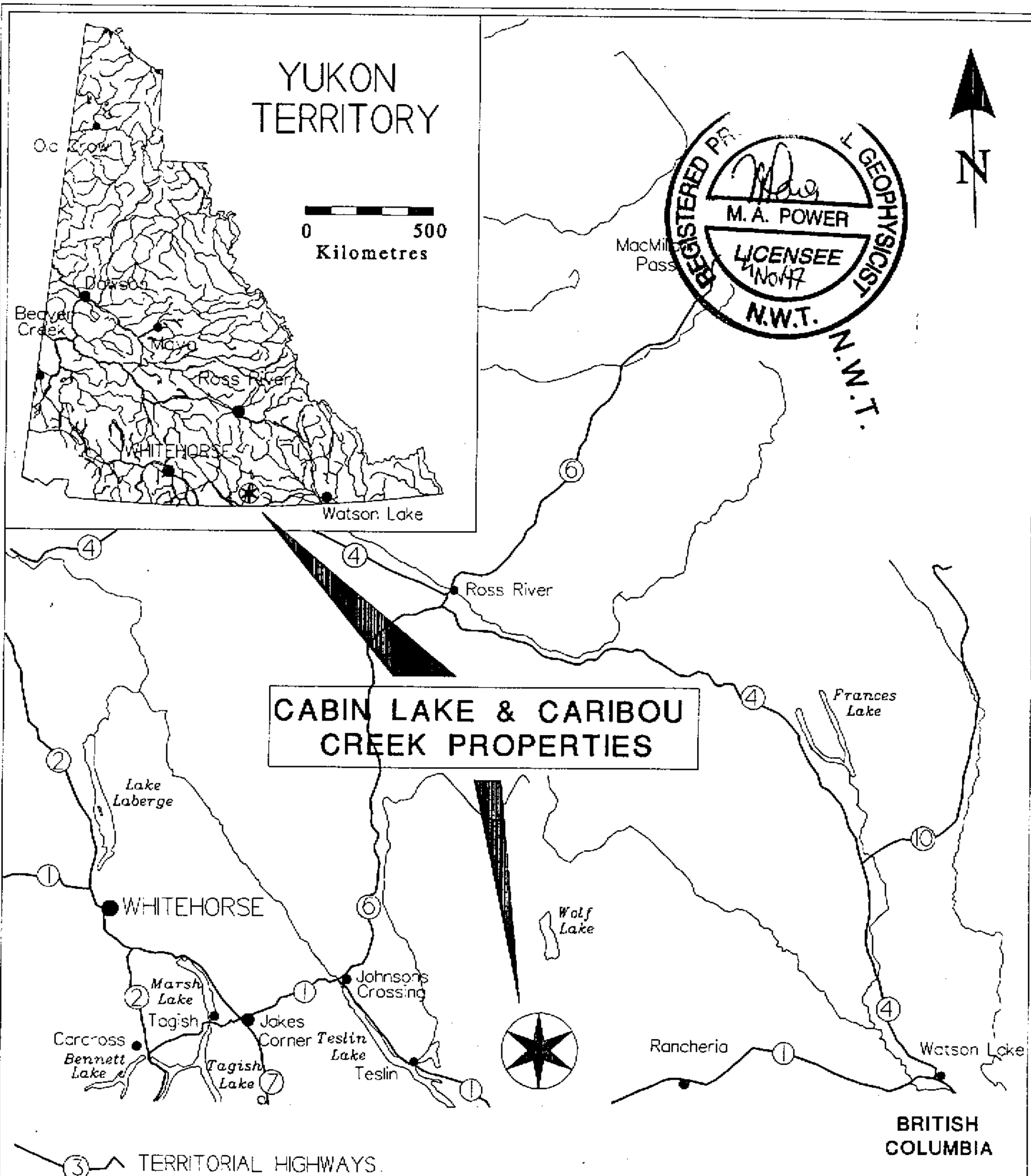
3.0 GRID

Survey grids were cut on both properties and the lines surveyed on these grids are show in Figures 2 and 3. Survey lines were cut and straight-chained (not slope corrected) with stations placed at 25 m intervals. Stations were marked with half-length, tagged survey lathe.

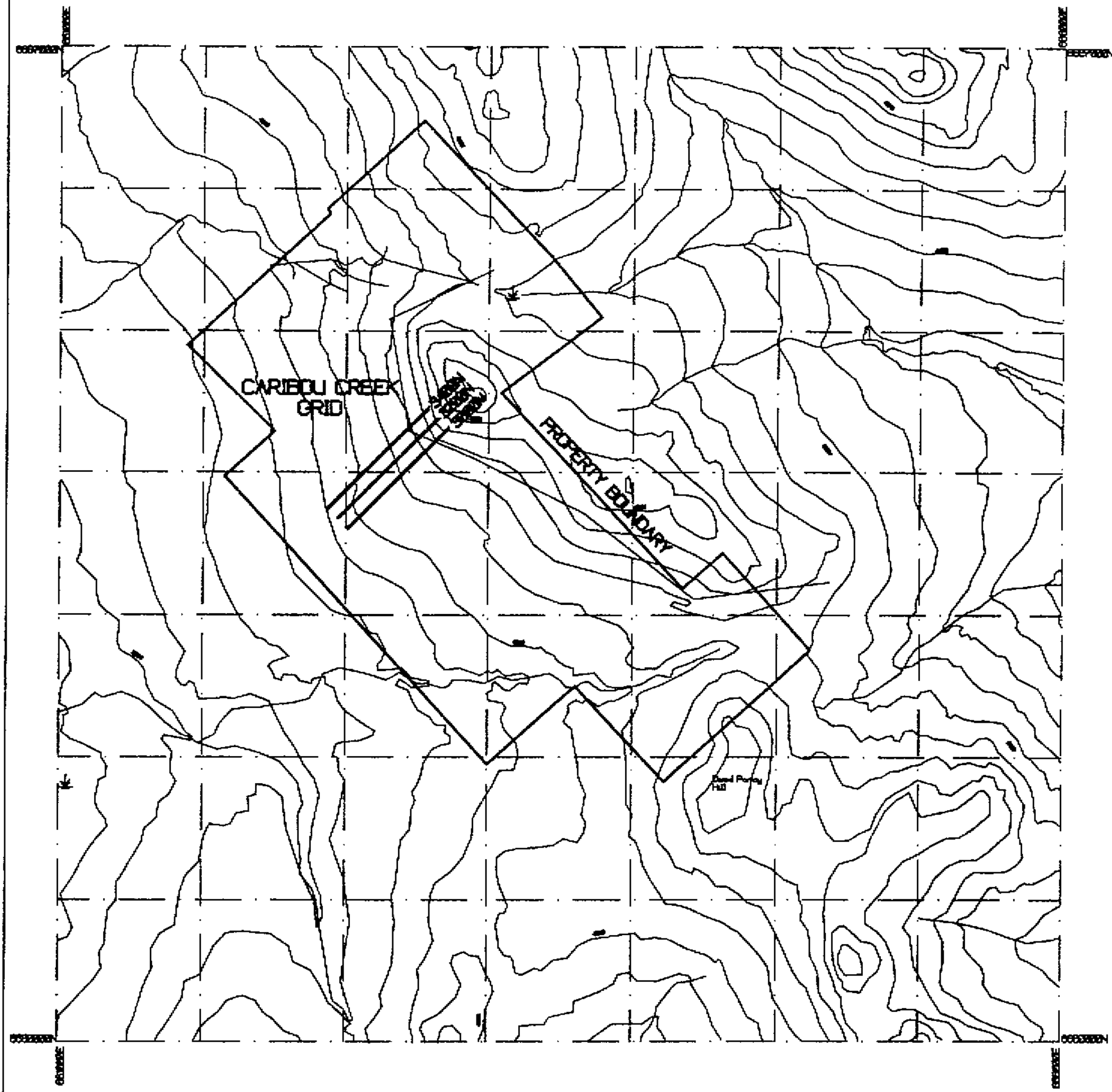
4.0 PERSONNEL AND EQUIPMENT

The surveys were conducted by an IP crew consisting of Carmen Lee (crew chief), Dan Hall, Chris Gooliaff and Debra Smith. For an initial test survey, Mike Power acted as crew chief. During mobilization and demobilization, the crew was assisted by Jeff Boyce and Gill McDougall who drove an additional truck required to transport some of the equipment. The crew were equipped with the following instruments and equipment:

<u>Transmitter:</u>	Phoenix IPT-1 mated with 2.5 KW motor generator. Maximum output voltage: 1500 V / maximum output power approximately 2.2 KW.
<u>Receiver:</u>	IRIS IP-6 digital 6-channel IP time domain receiver
<u>Data processing:</u>	P-100 laptop and Fujitsu wide carriage colour printer. Data processing with Geopak IPSECT software and proprietary



FAIRFIELD MINERALS LTD.	CABIN LAKE AND CARIBOU CREEK PROPERTIES
LOCATION AND ACCESS	MINING DISTRICT: WATSON LAKE
	NTS: 105 B/S · SCALE: 1:2,500,000
	DRAWN BY: C.L.
AMEROK GEOSCIENCES LTD.	DATE: 06 OCT 97 · FIGURE: 1



FAIRFIELD MINERALS LTD.	CARIBOU CREEK PROPERTY	
CARIBOU CREEK GRID IP SURVEY	MINING DISTRICT:WATSON LAKE	
	NTS: 105 C/8	SCALE:1:50000(A)
	OPERATOR: CL/CG/DS/DH	
AMEROK GEOSCIENCES LTD.	DATE: 06OCT97	FIGURE: 3

data conversion software.

Other equipment: 6-conductor 25 m IP cables, stainless steel electrodes, 4 km wire, winders, VHF radios, 2WD truck and 4-man camp.

The crew spent a total of 9 days on the properties. The survey log is attached as Appendix B.

5.0 SURVEY SPECIFICATIONS

The IP surveys were conducted according to the following specifications:

Array:	Dipole-dipole
Dipole spacing:	25 m
Separations read:	n=1 to 6
Signal:	0.125 Hz / 50% duty cycle / reversing polarity
Receiver synch:	synchronization using n=1 dipole signal in most cases.
Signal sampling:	10 windows, semilogarithmic sampling over 2 s.
Measurements:	Vp - primary voltage prior to shutoff M_n - nth time slice chargeability (n=1 to 10) Mt - total chargeability Ro - apparent resistivity Sp - self potential Rs - electrode resistance
Noise threshold:	Standard deviation in Mt kept to $\leq$ 5 ms where possible. In the event that this was not possible, readings were repeated several times to ensure repeatability.
Stacking:	minimum 15 times

6.0 DATA

Copies of the dump files and Geosoft format .dat files were delivered to Fairfield Minerals Ltd. with an earlier field report. Data in this report is displayed in conventional pseudosection format on the plots attached to this report in Appendix C. The resistivities and chargeabilities in the pseudosections are apparent values and not true depictions of subsurface chargeability or resistivity. The apparent resistivities are calculated from the applied current and the primary voltage (ie. the voltage immediately prior to signal termination) using equations incorporating the geometry of the array.

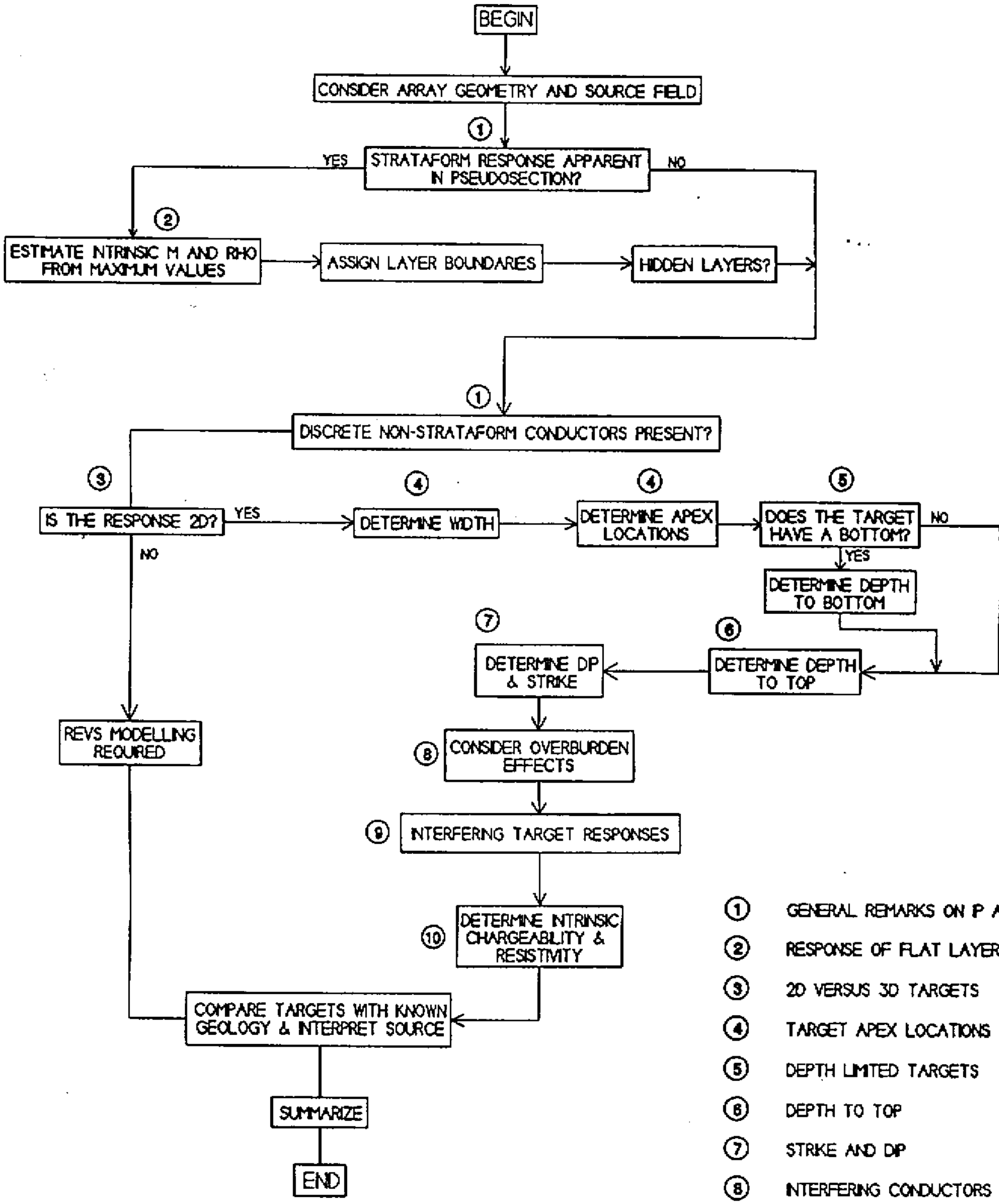
The location of picked chargeability and resistivity anomaly source bodies are shown as thick lines above the anomaly locations on the pseudosections. These thick lines indicate the horizontal projection of the source body apex (ie. the top of the source body).

A pronounced striping is apparent in the resistivity pseudosections and, to a much lesser extent, some of the chargeability pseudosections. This consists of alternately high and low resistivities recorded on adjacent slashes across the pseudosection. The dip direction of the striping corresponds to the direction in which the receiving array was set up relative to the transmitting dipoles. Receiving arrays west of the current dipoles produced west dipping slashes and vice versa. Unfortunately, the crew chief did not recognize this as a signal problem and it was not corrected in the field.

This problem was traced to a short in a current reel which grounded the wire to the georeel and winder. To maximize survey efficiency, the georeels were placed near the transmitter and the current wire spun off down the survey lines to the current electrodes. The short partially grounded the current wire at the transmitter site. When the lead electrode was connected to the transmitter through this wire, the Vp at the receiver dropped, lowering the apparent resistivity. Since the electrodes were moved down the line alternatively, this created alternating bands of high and low resistivity in the pseudosections. The chargeability results were far less affected by this problem because chargeability is normalized against the Vp. The striping effect varied along the line depending upon the resistance at the current electrodes and the resistance of the ground at the transmitter. The worst striping occurred where the transmitter was located in conductive ground and the current electrodes in resistive ground. The effect of this striping cannot be removed from the data and it inhibits full interpretation of the resistivity data in some cases. Data which was seriously affected was deleted before plotting. This accounts for the missing data points in the pseudosections.

7.0 INTERPRETATION PROCEDURES

The data was interpreted using a procedure sketched schematically in Figure 4. The numbers in the flow chart refer to information sheets in the company interpretation manual. Key features of the responses mentioned in these sheets are summarized below and are drawn from summaries and investigations by Telford *et. al.* (1990),



1. GENERAL REMARKS ON IP ANOMALIES
2. RESPONSE OF FLAT LAYERS
3. 2D VERSUS 3D TARGETS
4. TARGET APEX LOCATIONS AND WIDTHS
5. DEPTH LIMITED TARGETS
6. DEPTH TO TOP
7. STRIKE AND DIP
8. INTERFERING CONDUCTORS
9. OVERBURDEN EFFECTS
10. INTRINSIC M AND RHO

Figure 4.

IP Interpretation flow-chart.

Sumner (1985), Hanneson (1990), Hohmann (1990), and Coggon (1973).

The source field for the surveys was a grounded current dipole with a spacing of 25 m near a reading array of 25 m dipoles. The receiving dipoles were separated from the current dipole by a variable spacing of 1 to 6 times the 25 m dipole spacing. The source field from a grounded current dipole is symmetric about the midpoint of the pair and drops off dramatically with distance. There are no effects in the pseudosections which are primarily due to the source field aside from the striping mentioned above.

7.1 Overburden responses

Overburden responses in a dipole-dipole survey show up as a flat-lying layer in the pseudosection. The depth to the boundary between layers of different resistivity or chargeability can be estimated as 1.5 to 2.0 times separation at which the gradient between the two layers is the greatest. This inevitably leads to an overestimation if the dipole spacing is large relative to the thickness of the layer. In some cases, the overburden response is not visible as a separate resistivity anomaly but is apparent as a flat lying layer of lower chargeability - usually only down to n=1. This is attributed to oxidation or leaching of chargeable minerals or graphite from bedrock near the surface or to the absence of chargeable minerals in overburden.

7.2 Two dimensional versus three dimensional responses

Responses were interpreted as two dimensional (ie. extending along strike to some extent) unless otherwise stated. If a target is in fact three dimensional and is interpreted as being two dimensional, the contrast between the host and target properties will be underestimated.

7.3 Apex location and width

Targets which are less than one half a dipole spacing (ie. 12.5 m) will produce single slash responses. The apparent dip of the single slash response *does not* indicate the dip of the feature but merely indicates which electrode was closer to the source. A thin target may also produce a symmetric two-slash response if it is centred at an electrode site. The width of the source body was considered to be definitely less than 12.5 m if a single slash anomaly was encountered and to be at least 25 m if a symmetric response were encountered. It is difficult to discriminate between a 12.5 and 25 m wide target response if the response is symmetric and the author has chosen to err on the wide side. If the response at the shortest separation is wider than one dipole, this is an indication that the source body is also wider than one dipole. The width of the response at the shortest separation was used to determine the width of the source body in most case; in certain circumstances, however, the response was compared with model responses to determine the source width. The solid lines in the pseudosections and on the anomaly maps show the horizontal location of the top of the source bodies and the apparent width of the target.

7.4 Depth to top

The depth to the top of a source body is generally indicated by the shortest separation at which the response if visible. Thus a target at a depth of 25 m would be expected to produce some response at n=1 but a target with a top at 50 m would generally not be visible at n=1.

7.5 Dip direction

The dip direction and dip of a source body are difficult to estimate with dipole-dipole data. Dip must be estimated using both the resistivity and chargeability data because the dip direction will be different depending upon whether the chargeable target is more or less resistive than the host. If the target is more resistive than the host, the dip in the chargeability pseudosection will be in the same direction as the target. If the target is less resistive than the host, the apparent dip will be opposite the true dip. At a dipping contact, the steepest gradient in a resistivity section dips in the opposite direction to the true dip of the contact. Estimates of dip direction are difficult or impossible to make where targets of alternating resistivity are adjacent to each other.

7.6 Target resistivity and chargeability

Estimates of true or intrinsic target chargeability and resistivity can be made once the interpretor has some idea of the target dimensions. In general, for a given resistivity and chargeability contrast, the target response will decrease as the target dimensions decrease. In addition, the amplitude of the chargeability contrast will be affected by the resistivity contrast. Targets which are very resistive or very conductive will show much lower apparent chargeabilities relative to true chargeability.

A three dimensional target (eg. a sphere) will produce an anomaly with a maximum apparent chargeability which is at best 30% of the true chargeabililty response. If the target is two dimensional, the maximum apparent chargeability is 50% of the true chargeability unless the target is thin in which case the maximum apparent chargeability will be up to 40% of the true intrinsic chargeability.

Estimates of the true chargeability and, to a lesser extent, resistivity can be used to estimate the probable source of an anomaly. Chargeabilities are largely determined by the bulk concentration of chargeable minerals such as sulphides or graphite. It is difficult to discriminate between the two although spectral IP analysis shows a lot of promise in this direction. Targets containing 2 to 8% sulphides show chargeabilities of 50 to 100 ms and this threshold was used by the author to determine which of the targets may merit further investigation.

8.0 RESULTS

Descriptions of the data, anomalies and interpreted source parameters for each line follow, grouped by grid.

8.1 Cabin Lake Grid

8.2 Caribou Creek Grid

Line 3000N

The topography on Line 3000N slopes to grid W at 10 to 50% with no significant inflection points. There are no resistivity anomalies in the pseudosection which appear to be caused by topography. The resistivity data shows some striping and a number of suspect slashes have been deleted. The chargeability data is not significantly affected by striping. There is no overburden response apparent in either pseudosection.

There are no significant chargeability anomalies apparent on Line 3000N. Two resistivity anomalies may relate to geological features. A narrow (25 m) resistivity low centred at 1750E is adjacent to a zone of high resistivity to the east. This appears to be the contact between quartz-chlorite-sericite schist to the west and limestone to the east. The limestone also appears to have a slightly higher chargeability than the schist unit.

Line 3200N

The topography on Line 3000N slopes to grid W at 0 to 30% with no significant inflection points. There are no resistivity anomalies in the pseudosection which appear to be caused by topography. The resistivity data shows pronounced striping and a number of suspect slashes have been deleted. The chargeability data is not significantly affected by striping. There is no overburden response apparent in either pseudosection.

A single slash chargeability anomaly occurs at 1175E - 1200E. This appears to originate from a thin (<12.5m) shallow (0-25m) source body. A dip cannot be reliably estimated from the response because the source appears to be quite thin. The chargeability anomaly is adjacent to an apparent thin source resistivity low. It is possible however that the resisitivity low may be amplified by striping.

A second chargeability anomaly is centred at 1238E. The response appears to originate from a 25 m wide source at a depth of 25 m. The negative chargeability recorded at 1225E strongly suggests that this electrode site is close to but not coincident with the source. This anomaly is adjacent to a deep (75-100m) resistivity anomaly centred at 1275E.

A third chargeability anomaly is centred at 1450E. The full response is not apparent in the pseudosection because of deleted data contaminated by striping and thus it is impossible to fully interpret the response.

Line 3400N

The topography on Line 3400N slopes to grid W at 10 to 35% with no significant inflection points. There are no resistivity anomalies in the pseudosection which appear to be caused by topography. The resistivity data shows some striping and some suspect data points have been deleted. There is some evidence of striping in the otherwise flat chargeability data. There is no significant overburden response apparent in either pseudosection.

There are no significant chargeability anomalies apparent on Line 3400N. A broad zone of elevated resistivity (1000 - 2000 ohm-m) occurs in the interval 1350E - 1550E.

Discussion

Figure 6 is an anomaly map displaying the location of IP and resistivity anomalies on the Caribou Creek grid. A narrow copper soil geochemical anomaly trends across the grid and is indicated by the >200 ppm Cu contour, shown on the plot in grey shade. The geochemical anomaly is very narrow with sample values dropping quickly from greater than 200 ppm to background in 50 to 100 m. Significant chargeability anomalies were recorded only on Line 3200N. Spot high soil geochemical values are coincident with chargeability anomalies centred at 1188E and 1238E on this line. The geophysical anomalies detected do not explain the high geochemical values recorded along a much more extensive trend which cuts across the grid. It appears that either the mineralization hosting the copper mineralization does not respond to the induced polarization method or that the source is deeper than approximately 150 m.

8.0 CONCLUSIONS

The results of these surveys lead to the following conclusions:

a. The IP and resistivity survey on the Cabin Lake grid

b. The IP and resistivity survey on the Caribou Creek grid delineated a single line chargeability high and associated resistivity high within a large copper soil geochemical anomaly. The geophysical anomaly cannot explain the widespread soil geochemical anomaly. The source of this anomaly may be beyond the effective depth of penetration of the IP survey (150 m) or the mineralization may have no geophysical signature.

9.0 RECOMMENDATIONS

If geological data and trenching results support the above conclusions, it is recommended that:

a. The zone of high chargeability identified on the Cabin Lake grid

b. The geophysical anomalies detected on the Caribou Creek grid do not merit drill testing based on the restricted size of the targets detected. Additional surveys should be conducted using a wider dipole spacing and on lines adjacent to the surveyed grid lines to further investigate the soil anomalies.

Respectfully submitted,
AMEROK GEOSCIENCES LTD.

REGISTERED PROFESSIONAL GEOPHYSICIST
M.A. POWER
LICENSEE
N.W.T.

M.A. Power P. Geoph.
Geophysicist

4 NOV 97
GEOSCIENCES LTD.

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Coggon, J.H. (1973). A comparison of IP electrode arrays. Geophysics Vol. 38, No 4. pp 737-761.

Hanneson, J.E. (1990) A model for interpreting IP/resistivity data from areas of steep dip and thin overburden. in: Fink, J.B. *et. al.* (ed.) Induced polarization: applications and case histories. Tulsa: Society of Exploration Geophysicists.

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Telford, W.M.; L.P. Geldart and R.E. Sheriff (1990) Applied Geophysics (2nd Edition) New York: Cambridge University Press.

APPENDIX A. CERTIFICATE

I, Michael Allan Power, M.Sc. P.Geo., P.Geoph., with business and residence addresses in Whitehorse, Yukon Territory do hereby certify that:

1. I am a member of the Association of Professional Engineers and Geoscientists of British Columbia (registration number 21131) and a professional geophysicist registered by the Northwest Territories Association of Professional Engineers, Geologists and Geophysicists (licensee L942).

2. I am a graduate of the University of Alberta with a B.Sc. (Honours) degree in Geology obtained in 1986 and a M.Sc. in Geophysics obtained in 1988.

3. I have been actively involved in mineral exploratioin the Northern Cordillera since 1988.

4. I have no interest, direct or indirect, nor do I hope to receive any interest, direct or indirect, in Fairfield Minerals Ltd. or any of its properties.

Dated this 3rd day of November, 1997 in Whitehorse, Yukon.

Respectfully Submitted,

Michael A. Power M.Sc. P. Geoph.

APPENDIX B. SURVEY LOG

Tue 02SEP97 — Test survey on Line 5100N, Cabin Lake grid.

Sun 21SEP97 — Drove to Smart River and slung in camp to Cabin Lake Property; camp installed by 8 pm.

Mon 22SEP97 — Surveyed L4900N and L5000N.
Wx: Sunny and overcast

Production: L4900N: 2300E - 1500E
L5000N: 2000E - 1400E
Total: 1.4 line-km

Tues 23SEP97 — Surveyed L5200N and L5300N.
Wx: Overcast, light showers in the afternoon

Production: L5200N: 2000E - 1400E
L5300N: 2700E - 1600E
Total: 1.7 line-km

Wed 24SEP97 — Surveyed L5500N and 5700N. Overall good day.
Minimal noise in the data.
Wx: Overcast and periodic light showers

Production : L 5500N: 2700E - 1800E
L 5700N: 2700E - 2000E
Total: 1.6 line-km

Thurs 25SEP97 — Surveyed L4700N. Finished surveying on the Cabin Lake Grid.
Wx: Overcast and light showers

Production: L4700N: 2550-1500E
Total: 1.05 line-km

Fri 26SEP97 — Surveyed L3000N on the Cariboo Creek Property.
Wx: Partly cloudy

Production: L3000N: 900-1900E
L3200N: 1400-1900E

Total: 1.5 line-km

Sat 27SEP97	Surveyed L3200N and L3400N. Some telluric noise in the late morning. Finished surveying on the Cariboo Creek Property. Wx: Overcast and cooler today Production: L3200N: 1425-900E L3400N: 1900-900E Total: 1.5 line-km
Sun 28SEP97	Demobe from camp to the Morley River Lodge. Arrived in Whitehorse at around 4pm.

Personnel:

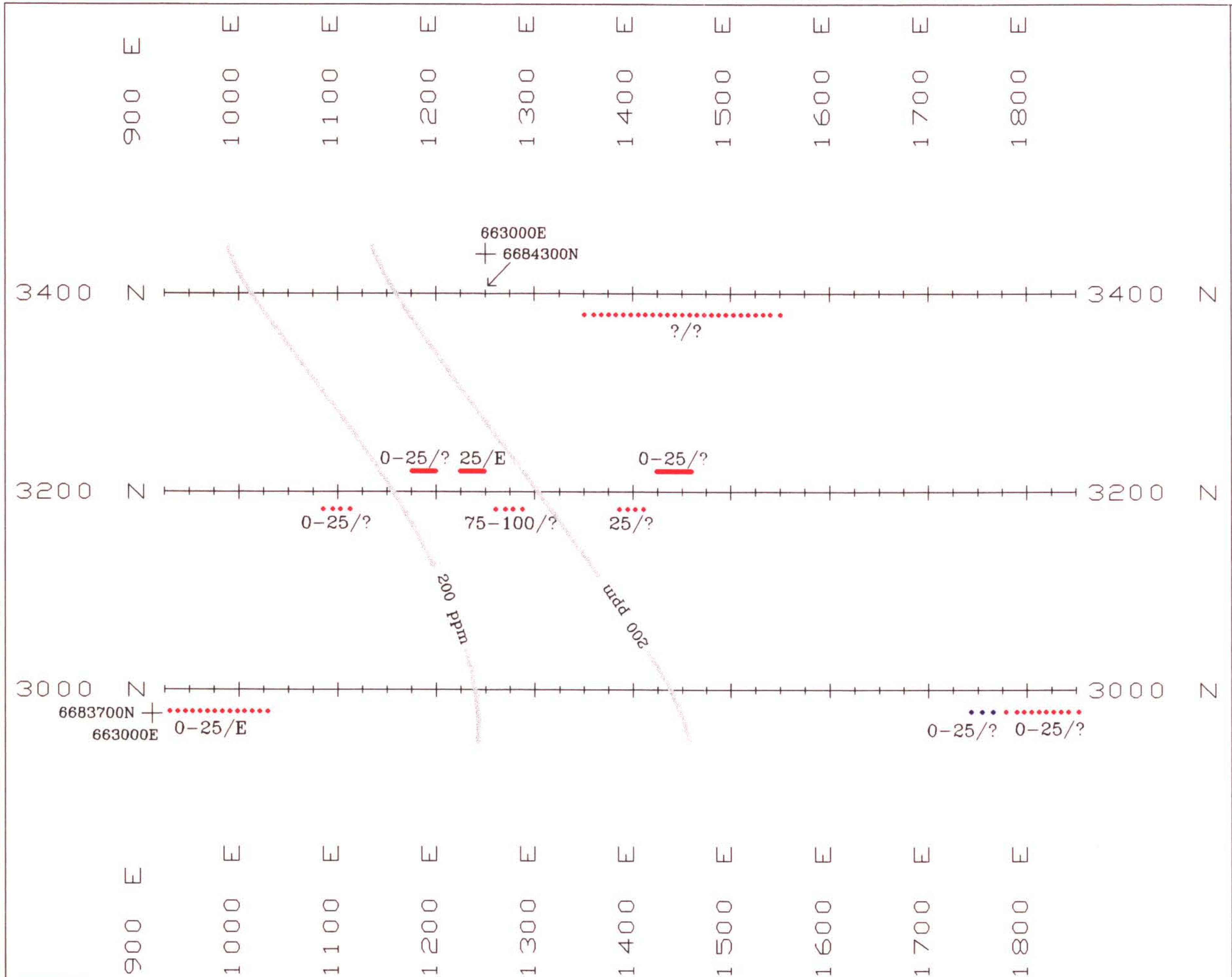
Mike Power
Site 6 Comp 11
Whitehorse, Y.T.

Dan Hall
11 Canyon Crescent
Whitehorse Y.T.

Debra Smith
#12 Takhinni Hot Springs Road
Whitehorse Y.T.

Carmen Lee
#12 Takhinni Hot Springs Road
Whitehorse, Y.T.

Chris Gooliaff
11 Tay Road
Whitehorse Y.T.



LEGEND

DEPTH/DIP
0-25/? CHARGEABILITY (msec)
25/? RESISTIVITY (ohm-m)

HIGH

LOW

>200 ppm Cu

663000E
6684300N DATUM NAD27 UTM ZONE 8

0 metres 200

SCALE: 1:5000

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CARIBOU CREEK PROPERTY

NTS: 105 C/8

CARIBOU CREEK GRID ANOMALY MAP

FIGURE 6

AMEROK GEOSCIENCES LTD.

093842 (12)

REGISTERED PROFESSIONAL GEOPHYSICIST
M.A. POWER
LICENSEE
N.W.T.

LINE : 3000 N

INDUCED POLARIZATION SURVEY

DIPOLE-DIPOLE ARRAY

A NA A

DEPTH POINT

N = 1, 2, 3, 4, ...

"A" SPACING = 25.0 METRES

REGISTERED PROFESSIONAL ... GEOPHYSICIST LICENSEE N.W.T.

FAIRFIELD MINERALS LTD.

CARIBOO CREEK PROPERTY

DATE : 29SEPT97	REF : 97-30

SCALE = 1: 1500

AMEROK GEOSCIENCES LTD.

093842

LINE : 3200 N

INDUCED POLARIZATION SURVEY

DIPOLE-DIPOLE ARRAY

DEPTH POINT

N = 1, 2, 3, 4, ...

"A" SPACING = 25.0 METRES

REGISTERED PROFESSIONAL GEOPHYSICIST M.A. [illegible] LICENSEE N.W.T.

FAIRFIELD MINERALS LTD.

CARIBOO CREEK PROJECT

DATE : 29SEPT97 REF : 97-30

SCALE = 1: 1500

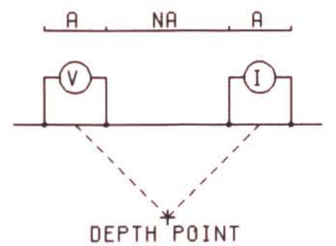
AMEROK GEOSCIENCES LTD.

093842

LINE : 3400 N

INDUCED POLARIZATION SURVEY

DIPOLE-DIPOLE ARRAY



N = 1, 2, 3, 4, ...
"A" SPACING = 25.0 METRES

REGISTERED PROFESSIONAL GEOPHYSICIST
LICENSEE
N.W.T.

FAIRFIELD MINERALS LTD.

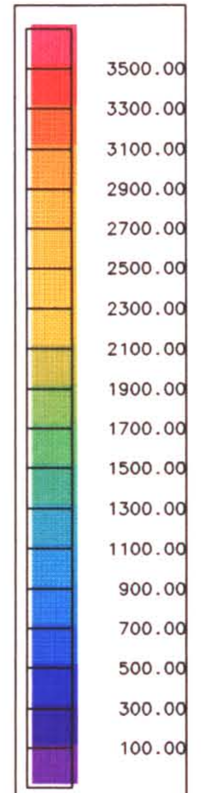
CARIBOO CREEK PROJECT

DATE : 29SEPT97 | REF : 97-30

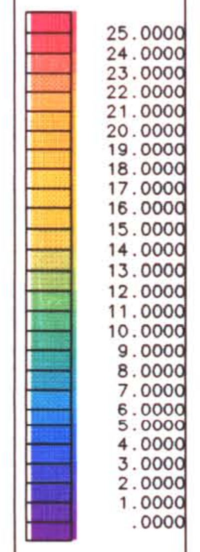
SCALE = 1: 1500

AMEROK GEOSCIENCES LTD.

RESISTIVITY
(ohm-m)



CHARGEABILITY
(msec)



093842

APPENDIX C:
S.J.V. Consultants Report on Geophysical Interpretation and Modelling

S.J.V. Consultants Ltd. / SJ Geophysics Ltd.

11762 - 94th Ave., Delta, B.C., V4C 3R7 Ph: (604) 582-1100 Fax: (604) 589-7466 Email: sydv@sjgeop.bc.ca

Fairfield Minerals Ltd.
Suite 1420 – 700 West Georgia St.
Vancouver, B.C.

March 27, 1998

Dear Sirs:

At your request I have reviewed the airborne and ground geophysical data gathered across the Caribou Creek property. This included airborne magnetic and electromagnetic data collected by Aerodat Inc, June 30, 1997 and induced polarization data collected by Amerok Geosciences Ltd. in September, 1997. The following comments document my interpretation based on this data and discussions with Dave Ritcey, project geologist. A 1:25,000 scale map, highlighting interpreted features over a topographic and magnetic contour base accompanies this letter.

I have reviewed all five frequencies of EM data in profile format as well as the plan contour maps of the resistivity as calculated from the 4175 Hz coplanar and 4600 Hz coaxial coils.

The strongest EM anomalies occur as broad inphase and quadrature highs in the south central portion of the claim area. The general area is most clearly outlined as a large resistivity low on the calculated resistivity maps. These anomalies are typically generated from a flat lying, near surface conductive layer and are interpreted as an overburden response. This interpretation is supported by the fact that the anomalous area generally mirrors two drainage systems that flow into Caribou Creek to the southwest. There are numerous variations within the larger anomaly. These are most likely related to changes in the thickness and composition of the overburden material although some could be indications of conductors at depth. This area is not considered a high priority target at this time however, should new exploration data change this status, these questionable EM targets should be re-evaluated.

There are no high conductivity EM responses noted in this area. There are however, several weak conductivity lineations that may be of exploration interest. These targets are flagged on the accompanying interpretation map and include the four targets selected and numbered by Aerodat. Anomalies 1 and 2 are slightly higher amplitude expressions along a 1.5 km long northerly trending linear. These targets coincide with a magnetic lineation and are interpreted as reflecting a geological contact. This area is particularly interesting in that the geophysical trends appear to parallel two anomalous geochemical targets. Anomaly 4 coincides with a section of Pass Creek and is likely related to it. None of these EM anomalies are considered high priority targets for massive sulphide mineralization.

There are eight occurrences of sharp, inphase EM lows evident in the data as illustrated on the accompanying interpretation map. These responses could be indicative of near surface magnetite. Two of these anomalies are located in the area of the IP survey. They are located near line 3200N, stations 1325E and 1490E. They appear to coincide with the edges of the easternmost chargeability anomaly mapped on this line. One possible explanation is that they map an alteration zone around the edge of the resistivity and chargeability high. Both of these anomalies are also reflected as very weak positive anomalies in the magnetic data.

The magnetic data was reviewed in both plan contour and stacked profile format. The relatively low range of amplitudes measured (~ 230 nT) imply sedimentary and metamorphic and/or felsic volcanics as the underlying host rocks. No high amplitude anomalies indicative of intrusive activity were noted.

The magnetic data is dominated by two large trends. A NW trending magnetic high parallels the SW edge of the survey block. It is characterized by a sharp gradient along its' SW flank and a more gradual gradient to the NE. This response is likely reflecting the geologically mapped quartz-chlorite-mica schist unit. The east central portion of the survey block hosts a lower magnetic response, with a distinct arcuate lineation outlining its southeastern edge. This response is more typical of a sedimentary host, possibly an unmapped, buried extension to the limestone unit mapped along the northeastern portion of the map.

This low amplitude response is markedly quiet however the surrounding trends contain numerous local lineations that can be traced between survey lines. Some of these trends are more evident on the calculated vertical gradient maps, which were also used in this interpretation. Discontinuities and offsets along these lineations are evidence of faulting. There are numerous options available for interpreting these faults. The Aerodat interpretation map has highlighted two of the major breaks. I have interpreted several additional trends that can also be interpreted as faults and illustrated them on the accompanying interpretation map.

Although there is some localized correlation between the magnetics and topography, most of the linear magnetic trends clearly cross topographic features and can be attributed to the underlying geology. A profile analysis of these lineations provides useful geological mapping information. Six magnetic profiles crossing linear trends were generated from the plan map and used in a forward case 2-D modeling routine. This study was run to assist in the structural interpretation of the magnetic survey. Detailed results of this study are attached to this letter as Appendix 1 and are also briefly described below.

Profiles A and B cross the SW flank of the main, NW trending magnetic high while profile C crosses the NE flank of the same feature. These studies suggest the causative body is a thick (~100-150m) layer that is either flat lying or dips at a shallow angle (~7° at profile B to ~24° at profiles A and C) to the NE. The magnetic high is only some 90-120 nT in amplitude and could caused by a susceptibility change of some 0.0004 to 0.0010 emu. (~0.1 to 0.3% magnetite equivalent). This variation suggests a contact between sedimentary and metamorphic or acidic volcanic rocks. The peak of the magnetic high maps the surface projection of the top of the magnetic unit while the negative lobe to the SW is generally controlled by the bottom of the unit.

Profile D crosses a relatively symmetrical, northerly trending magnetic high band, some 400 metres wide and open to the north. This feature is particularly interesting in that it appears to parallel geochemical anomalies. The model study suggests the magnetic response could be generated by a relatively gentle antiformal structure (25° to the east and 35° to the west). This response can also be modeled as a thin, folded layer. The projected outcrop of the crest of this structure coincides with discrete topographic breaks along a westerly facing slope. The projected outcrop of the top of this zone coincides with EM anomaly 1 and likely maps a geological contact between limestone to the east and schist to the west.

Profile E crosses one of two localized magnetic gradients that form a NW-SE linear in the northeast portion of the map. The anomalies roughly coincide with a geologically mapped limestone-schist contact. The model study across this feature implies the geological mapping has identified the eastern edge of the schist unit and that it appears to dip at a shallow angle (~ 28°) to the northeast. The near surface projection of the western edge of the unit is interpreted to lie some 150 metres to the southwest and dip near vertically.

Profile F crosses a broad, east-west trending magnetic high that forms the southern edge of the large magnetic low dominating the east central portion of the map. The model study implies the controlling contact dips at an angle of ~23° near surface and steepens to ~60° at depth.

Exploration efforts are currently focusing on geochemical anomalies in the north central portion of the map area. Last summer, a small amount of induced polarization surveying was completed across the geochemical target. Three lines, spaced 200 metres apart were surveyed using a dipole - dipole array configuration with an "a" spacing of 25 metres and "n" values of 1 to 6. Three anomalous chargeability targets were identified on the central line (3200N), coincident with the geochemical anomalies. No anomalies were apparent on the two adjacent lines. The chargeability anomalies need to be detailed prior to recommending drill targets. I recommend that additional IP surveying be run along survey lines established at 3100N and 3300N. Furthermore, the array configuration should be modified to utilize an "a" spacing of 50 metres in order extend the depth of investigation.

The apparent correlation between the geochemical anomalies and the northerly trending band of high magnetics (Profile D) suggests that the source of the geochemical anomalies may be structurally controlled. A ground magnetic survey is recommended using minimum line and station spacings of 100 metres and 25 metres respectively to detail the trend defined by the airborne survey and extend coverage to the north.

Respectfully submitted

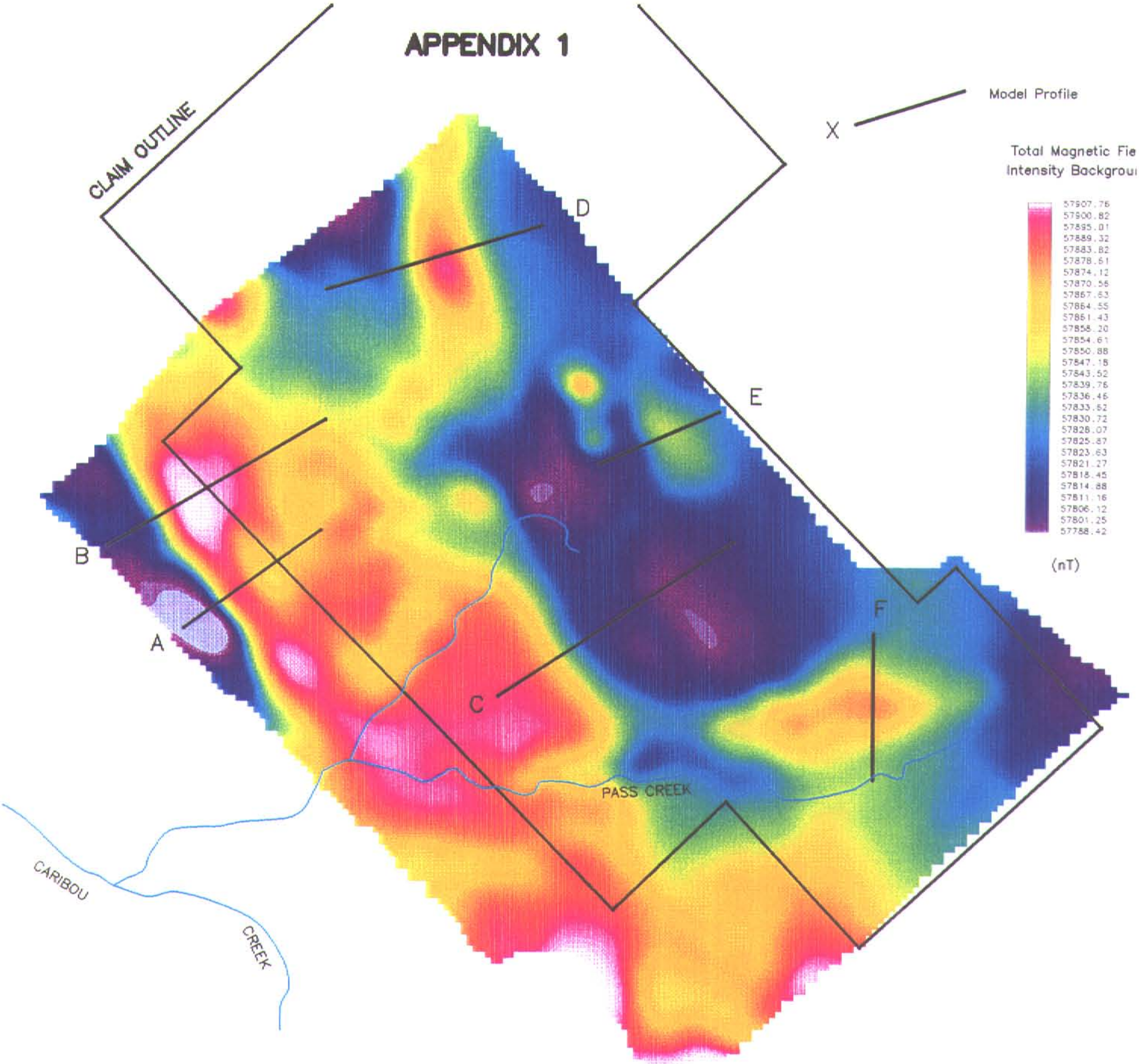
per S.J.V. Consultants Ltd.

PROFESSIONAL
PROVINCE OF
E.T. PEZZOT
BRITISH COLUMBIA
SCIENTIST

E. Trent Pezzot, B.Sc., P.Geo
Geophysics, Geology

Encl.

APPENDIX 1



FAIRFIELD MINERALS LTD.

CARIBOU CREEK PROPERTY

CC 1 – 44 CLAIMS

Watson Lake Mining Division

NTS 105B/4, 105B/5, 105C/1, 105C/8, Yukon Territory

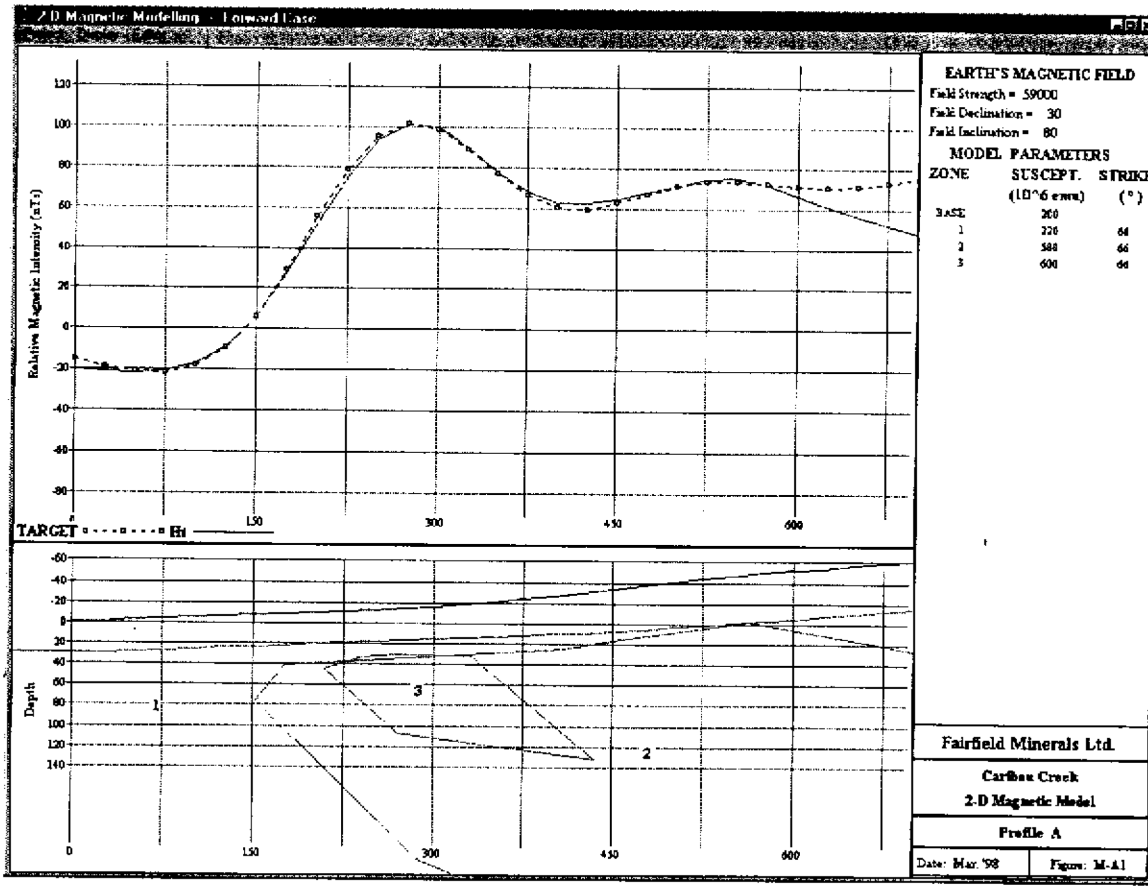
MAGNETIC MODEL STUDY

200 0 200 400 600

SCALE IN METRES

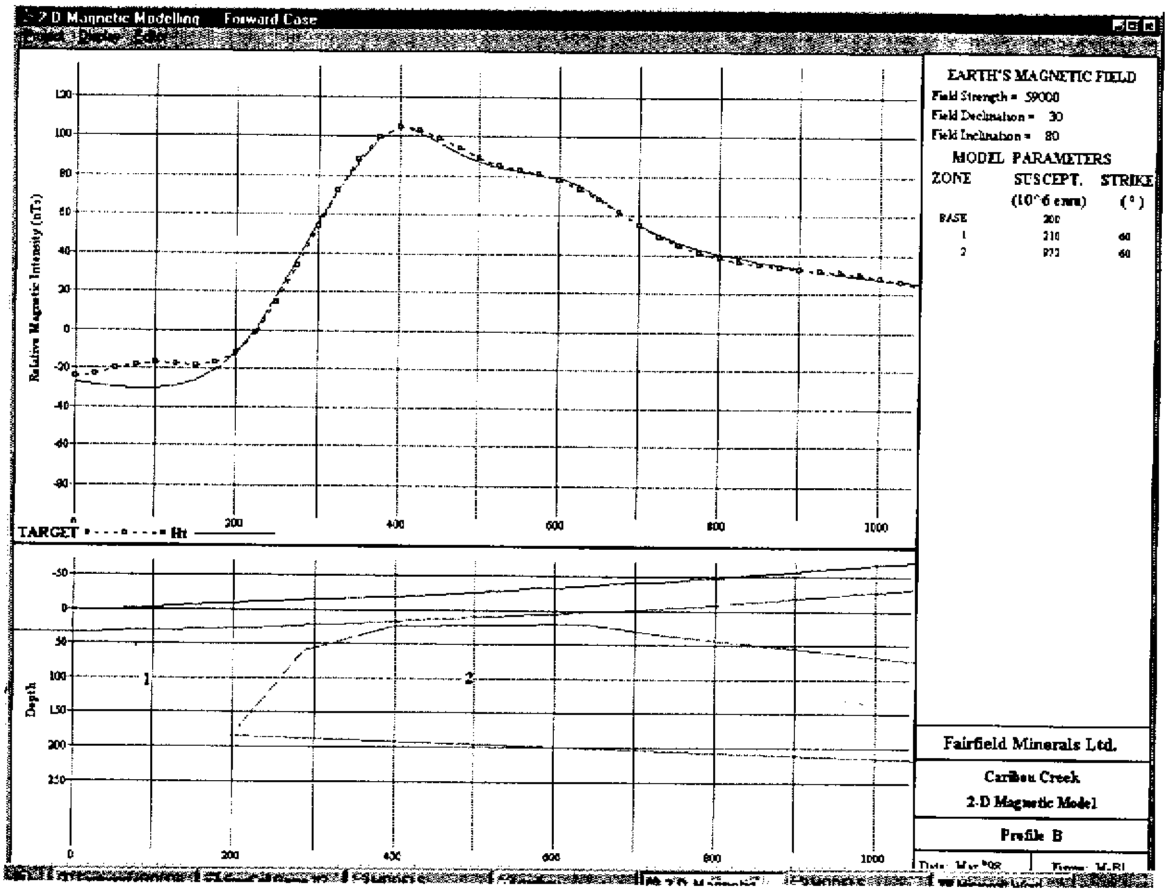
S.J.V. Consultants Ltd.

Profile A



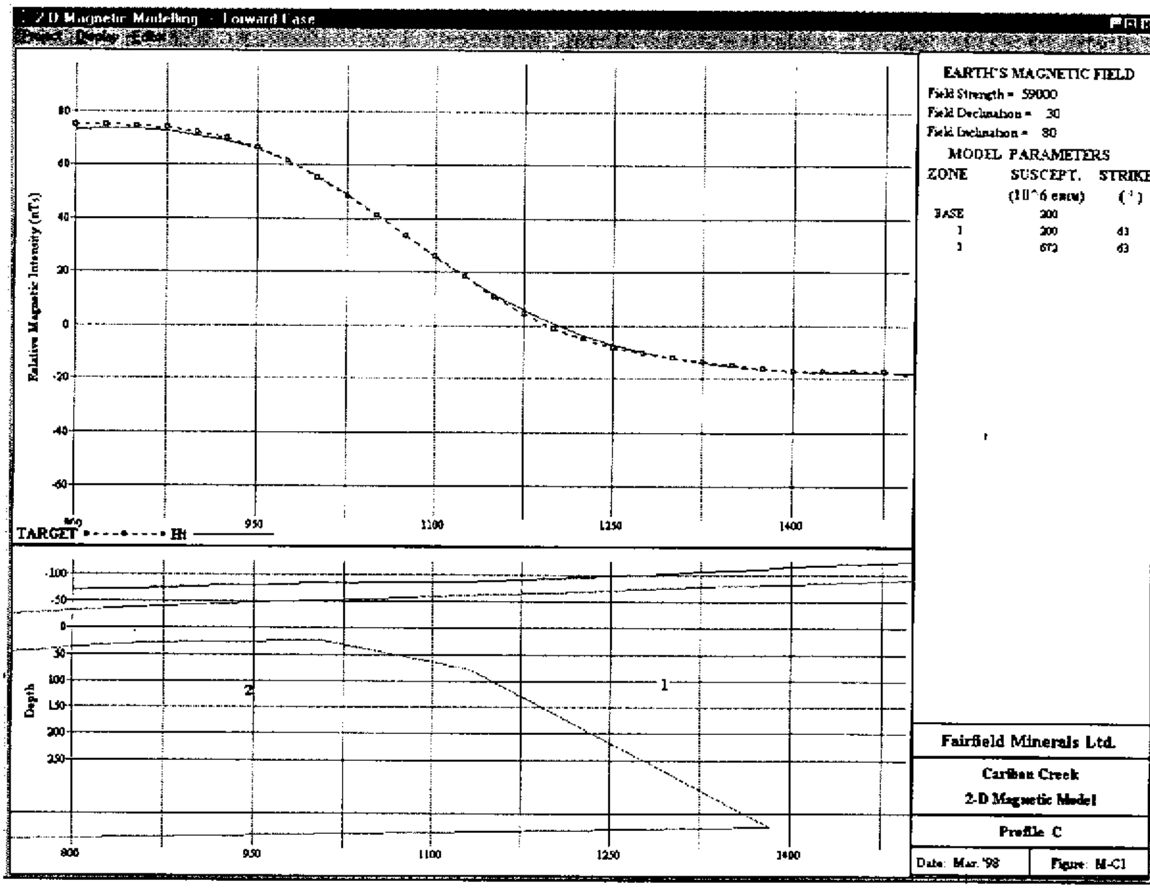
Profile A crosses the SW flank of the main NW trending magnetic high. The 120 nT anomaly could be generated from a nearly horizontal body some 100 metres thick at its' western end and thickening to the east. The prominent positive lobe at the western end of the layer could be caused by a localized increase in the magnetic susceptibility, as illustrated above, or by structure at the top of the layer. The amplitude of this response suggests the source body has a magnetic susceptibility contrast of some 0.00035 to 0.001000 emu greater than the host. This equates to approximately 0.1% to 0.3% magnetite equivalence and could be easily accounted for by a change between sedimentary and metamorphic or felsic volcanic rocks.

Profile B



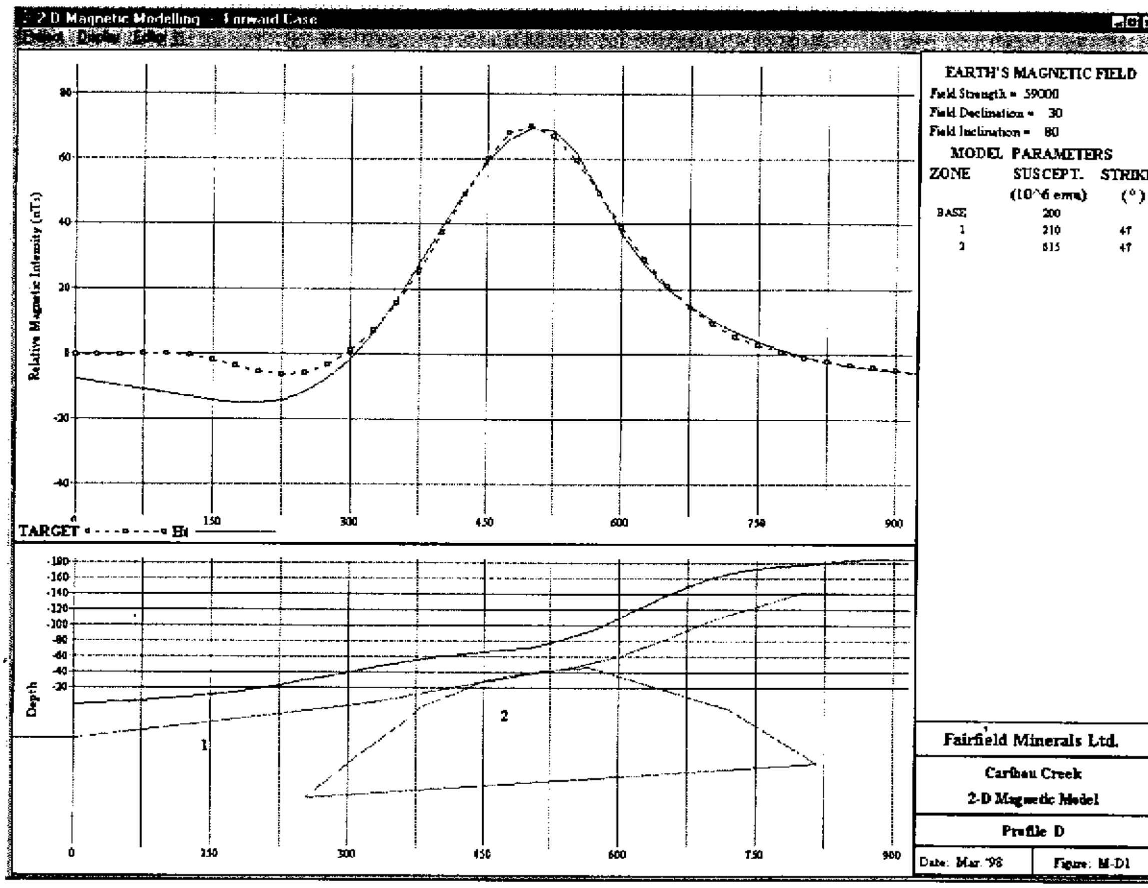
Profile B also crosses the SW flank of the main NW trending magnetic high. This response can be interpreted as resulting from a 150 metre thick zone of 0.000700 emu susceptibility material (~0.25% magnetite equivalent). This zone appears to dip ~7° to the northeast. The updip edge of this unit likely grades into lower susceptibility material. Surface mapping will likely locate the contact immediately west of the magnetic peak although the higher susceptibility zone likely extends further to the west at depth, as illustrated above.

Profile C



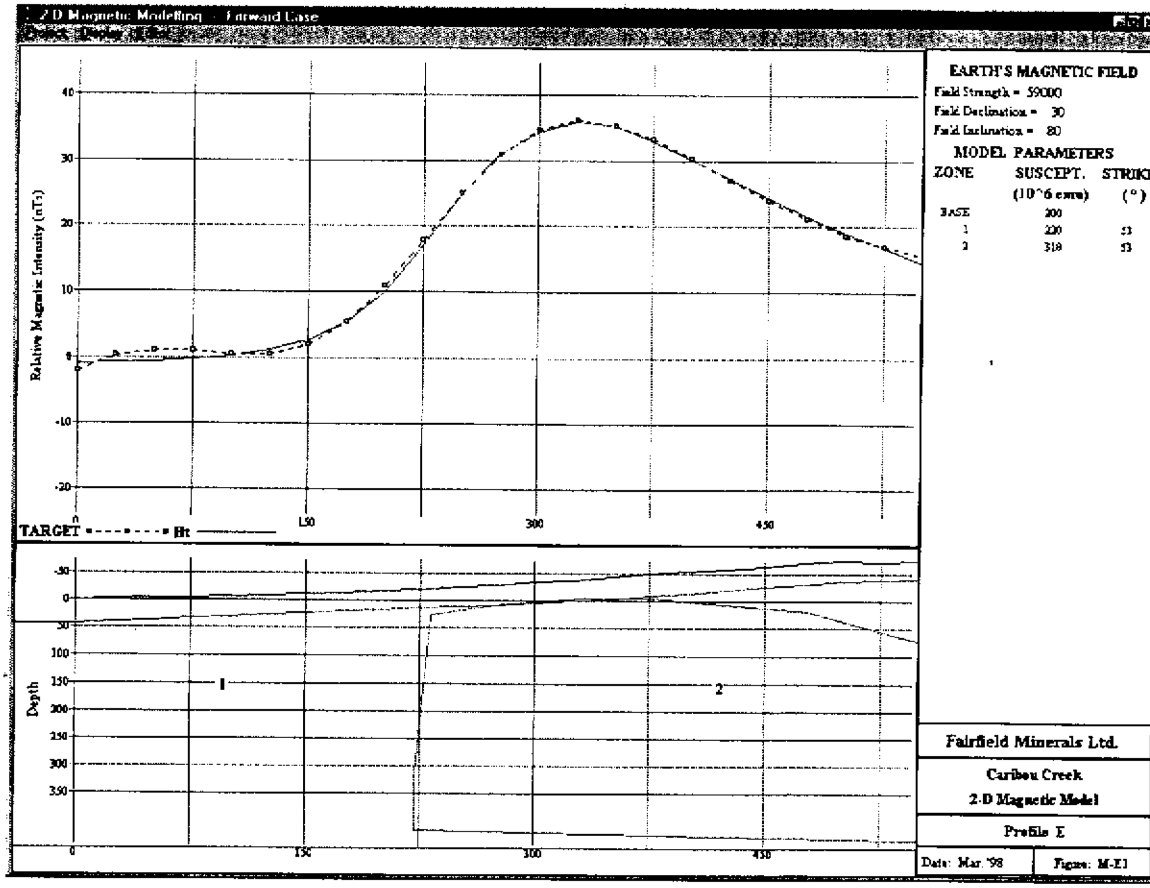
Profile C crosses the NE flank of the same magnetic high trend modeled in profiles A and B. This study suggests the top of the high susceptibility unit likely dips some 23° to the east at shallow depths and increases to some 50° at depth. The gentle curvature to this profile suggests the source contact is probably buried at a depth greater than 80 metres from the surface. It is unclear whether the covering material is a magnetically neutral sedimentary rock or unconsolidated overburden.

Profile D



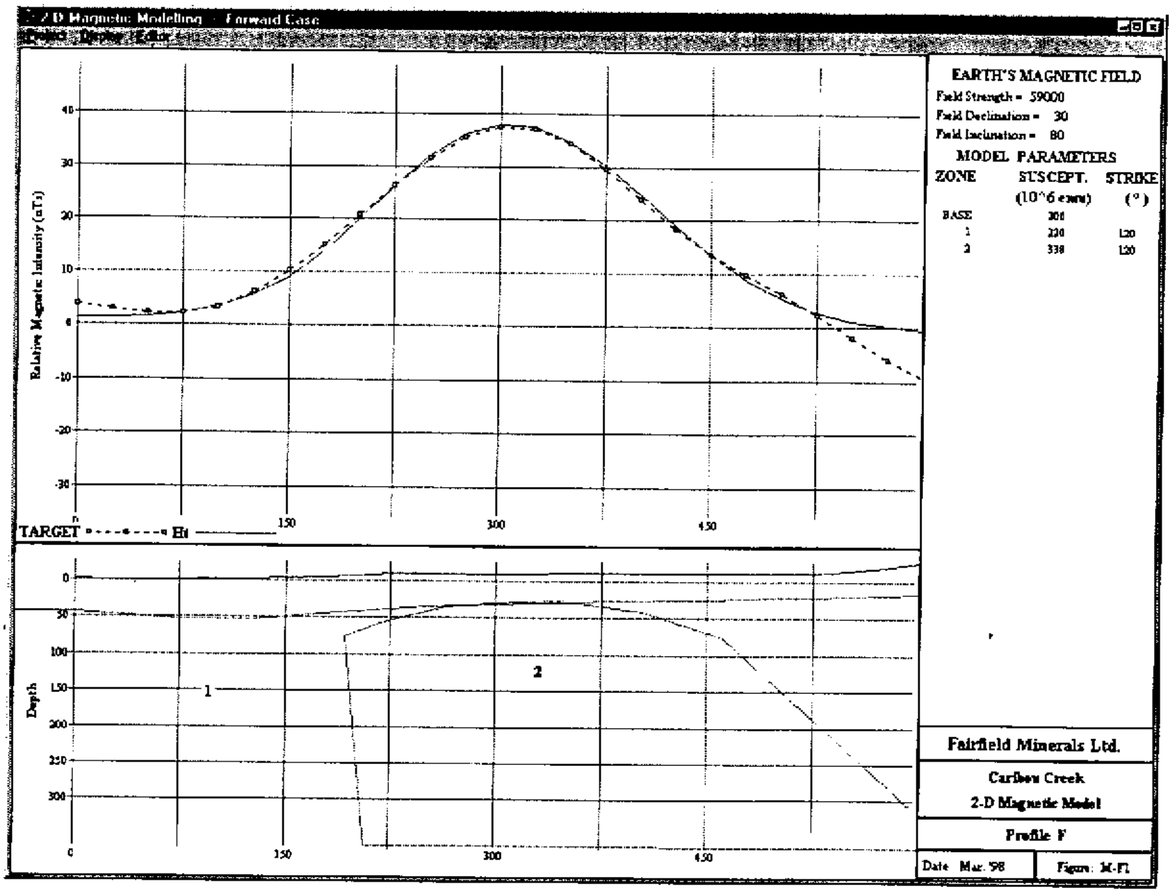
Profile D crosses a relatively symmetrical, northerly trending magnetic high band, some 400 metres wide and open to the north. This feature is particularly interesting in that the high priority geochemical anomalies are located along the western flank of the anomaly. The model study suggests the magnetic response could be generated by a relatively gentle antiformal structure the flanks of which dip ~25° to the east and ~35° to the west. A thinner, folded layer with the same general structural characteristics can also produce this profile. The projected outcrop of the crest of this structure coincides with discrete topographic breaks along a westerly facing slope. EM anomaly 1 is located immediately east of the peak of the anomaly and appears to coincide with the projected outcrop at the top of this zone. This suggests the EM response is mapping the geological contact between limestones and schists. The negative lobe along the western edge of the anomaly is likely caused by interference from another high susceptibility rock facies to the west.

Profile E

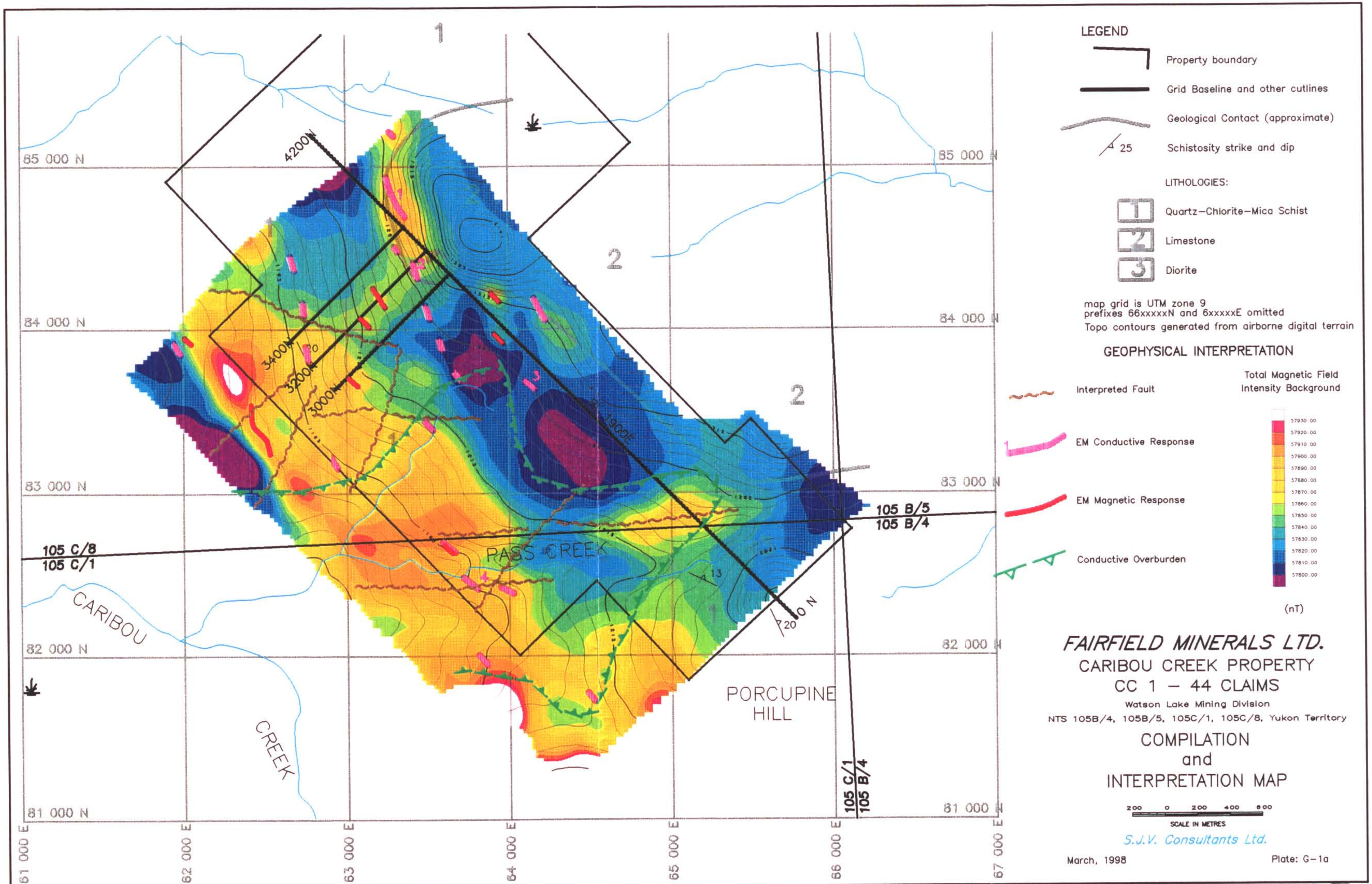


Profile E crosses one of two localized magnetic gradients that form a NW-SE linear in the northeast portion of the map. The anomalies roughly coincide with a geologically mapped limestone-schist contact. The model study across this feature implies the geological mapping has identified the eastern edge of the schist unit and that it appears to dip at a shallow angle (~ 28°) to the northeast. The near surface projection of the western edge of the unit is interpreted to lie some 150 metres to the southwest and dip near vertically.

Profile F



Profile F crosses a broad, east-west trending magnetic high that forms the southern edge of the large magnetic low dominating the east central portion of the map. The model study implies the controlling contact dips to the north at an angle of ~23° near surface and steepens to ~60° at depth. These dip angles are similar to those estimated from profile C, which is located along this same contact.


LEGEND
Property boundary
Grid Baseline and other cutlines
Geological Contact (approximate)
25
Schistosity strike and dip
LITHOLOGIES:
1 Quartz–Chlorite–Mica Schist
2 Limestone
3 Diorite
map grid is UTM zone 9
prefixes 66xxxxxN and 6xxxxxE omitted
Topo contours generated from airborne digital terrain
GEOPHYSICAL INTERPRETATION
Interpreted Fault
EM Conductive Response
EM Magnetic Response
Conductive Overburden
Total Magnetic Field Intensity Background
(nT)
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COMPILATION and INTERPRETATION MAP
SCALE IN METRES
S.J.V. Consultants Ltd.
March, 1998
Plate: G-1a
85 000 N
84 000 N
83 000 N
82 000 N
81 000 N
61 000 E
62 000 E
63 000 E
64 000 E
65 000 E
66 000 E
67 000 E
105 B/5
105 B/4
105 C/8
105 C/1
PASS CREEK
CARIBOU
CREEK
PORCUPINE HILL
4200N
3400N
3200N
3000N
1900E
0 N
093842
16